Planning Commission Meeting
September 17, 2024 - 6:30 PM
City Hall Council Chambers
AGENDA

I. PUBLIC PARTICIPATION

A. Public Participation Information

The City of Auburn Planning Commission Meeting scheduled for Tuesday, September 17, 2024, at 6:30 p.m., will be held in-person and virtually. To attend the meeting virtually, please click one of the links below, or call into the meeting at one of the phone numbers listed:

Join Zoom Meeting: https://us06web.zoom.us/j/7999102307
Meeting ID: 799 910 2307
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Meeting ID: 799 910 2307
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II. CALL TO ORDER

A. **ROLL CALL/ESTABLISHMENT OF QUORUM**

B. **PLEDGE OF ALLEGIANCE**

III. PUBLIC COMMENT

Comment from the audience on any proposal for action by the Commission. If the comment is related to an action subsequently listed here as a public hearing, the comment should be provided at the time of the public hearing.

IV. APPROVAL OF MINUTES

A. July 16, 2024 Minutes from the Planning Commission Meeting

V. INTRODUCTION

A. Presentation Overview (Teague)

Brief overview of upcoming Element Presentations and Public Hearing schedule.

VI. OTHER BUSINESS

A. Sewer Systems Plan (Elwell)

Planning Commission deliberation and action on the proposed changes to the Sewer System Plan, which is incorporated by reference in the Utilities Element.

B. Parks and Recreation PROS Plan (Gouk)

Staff presentation to the PROS Plan.

VII. COMMUNITY DEVELOPMENT REPORT

VIII. ADJOURNMENT

The City of Auburn Planning Commission is a seven member advisory body that provides recommendations to the Auburn City Council on the preparation of and amendments to land use plans and related codes such as zoning. Planning Commissioners are appointed by the Mayor and confirmed by the City Council.

Actions taken by the Planning Commission, other than approvals or amendments to the Planning Commission Rules of Procedure, are not final decisions; they are in the form of recommendations to the city council which must ultimately make the final decision.

AGENDA BILL APPROVAL FORM

Agenda Subject:
July 16, 2024 Minutes from the Planning Commission Meeting

Date:
August 21, 2024

Department:
Community Development

Attachments:
July 16, 2024 Draft Minutes

Budget Impact:
Current Budget: $0
Proposed Revision: $0
Revised Budget: $0

Administrative Recommendation:

Background for Motion:

Background Summary:

Reviewed by Council Committees:

Councilmember:

Staff: Alexandria Teague

Meeting Date: September 17, 2024

Item Number:

CITY OF AUBURN WASHINGTON

Planning Commission Meeting
July 16, 2024 - 6:30 PM
City Hall Council Chambers
MINUTES

I. PUBLIC PARTICIPATION

A. Public Participation Information

The City of Auburn Planning Commission Meeting was held in person and virtually.

II. CALL TO ORDER

Chair Judi Roland called the meeting to order at 6:30 p.m. in the Council Chambers of Auburn City Hall, 25 West Main Street.

A. ROLL CALL/ESTABLISHMENT OF QUORUM

Commissioners present: Chair Judi Roland, Julie Berry, Kent Sprague, William Stewart, and Lynn Walters. Commissioner William Stewart arrived at 6:34 p.m. and, Vice Chair Phillip Stephens attended virtually. Commissioner Aaron VanderPol was excused.

Staff members present: Planning Services Manager Alexandria Teague, Acting City Attorney Doug Ruth, Acting City Attorney Charlotte Storey, Director of Public Works Ingrid Gaub, Senior Planner Josh Steiner, Assistant Director of Engineering Services Jacob Sweeting, City Clerk Shawn Campbell, and Acting Deputy City Clerk Gerri Blackwell.

B. PLEDGE OF ALLEGIANCE

Chair Roland led those in attendance in the Pledge of Allegiance.

III. PUBLIC COMMENT

There was no public comment.

IV. APPROVAL OF MINUTES

A. June 18, 2024 Minutes from the Planning Commission Meeting

Commissioner Sprague moved and Commissioner Walters seconded to approve the June 18, 2024 Planning Commission Meeting Minutes.

MOTION CARRIED UNANIMOUSLY. 6-0

V. INTRODUCTION

A. Presentation Overview (Steiner)

Brief overview of upcoming Element Presentations and Public Hearing schedule.

Planner Steiner provided a brief overview of the upcoming Element Presentations and Public Hearing schedule

Commissioners verified if action will be taken on the Elements presentation at this meeting.

VI. PUBLIC HEARINGS

A. Utilities Element (Steiner)

Public Hearing for the public testimony and Planning Commission deliberation on the Utilities Element

Chair Roland opened the Public Hearing at 6:37 p.m.

There were no written or virtual comments.

Planner Steiner provided a general overview of the Utilities Element and core changes, overview of Capital Facilities Element and how the Plans fit together, an overview of City owned and privately owned Utilities, Element update framework, agency comments, and types of the two capital facilities.

In-Person Comments:

Linda Redmond, Auburn WA
Linda expressed concerns regarding cell phone towers.

Commissioners discussed inclusion of private utility companies.

Chair Roland closed the Public Hearing at 6:52 p.m.

B. Transportation Element (Sweeting)

Public Hearing for the public testimony and Planning Commission deliberation on the Transportation Element

Chair Roland opened the Public Hearing at 6:52 p.m.

There were no virtual or written comments.

Assistant Director Sweeting provided an overview of the Transportation Plan, including public outreach update, future plans, a summary of public comments, and the existing and future bike facility map.

In-Person Comments:

Shirley Chittenden, Auburn WA
Shirley discussed concerns about the proposed roundabout at 23rd ST SE & R ST SE.

Commissioners discussed an update of bus route 497 and expressed gratitude Muckleshoot was included.

Chair Roland closed the Public Hearing at 7:03 p.m.

VII. OTHER BUSINESS

A. Community Development Elements Planning Commission Action

Planning Commission to take action on Land Use Element, Housing Element, Historic Preservation Element, Economic Development Element, and Climate Element of the Comprehensive Plan Update.

Commissioner Sprague moved and Commissioner Walters seconded to recommend adoption to the City Council.

MOTION CARRIED UNANIMOUSLY. 6-0

B. Transportation Element Planning Commission Action

Planning Commission to take action on Transportation Element of the Comprehensive Plan Update.

Commissioner Sprague moved and Commissioner Walters seconded to accept the Transportation Element.

MOTION CARRIED UNANIMOUSLY. 6-0

VIII. COMMUNITY DEVELOPMENT REPORT

Chair Roland recognized Acting City Attorney Doug Ruth and his contributions to Planning Commission.

The Commission asked for information on the Carnegie Library.

IX. ADJOURNMENT

There being no further business to come before the Planning Commission, the meeting was adjourned at 7:09 p.m.

APPROVED this 4th day of September, 2024.

JUDI ROLAND, CHAIR

Gerri Blackwell, Acting Deputy City Clerk

The City of Auburn Planning Commission is a seven member advisory body that provides recommendations to the Auburn City Council on the preparation of and amendments to land use plans and related codes such as zoning. Planning Commissioners are appointed by the Mayor and confirmed by the City Council.

Actions taken by the Planning Commission, other than approvals or amendments to the Planning Commission Rules of Procedure, are not final decisions; they are in the form of recommendations to the city council which must ultimately make the final decision.

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AGENDA BILL APPROVAL FORM

Agenda Subject:
Presentation Overview (Teague)

Date:
August 28, 2024

Department:
Community Development

Attachments:
Planning Commission Memorandum

Budget Impact:
Current Budget: $0
Proposed Revision: $0
Revised Budget: $0

Administrative Recommendation:

Background for Motion:

Background Summary:
See attached Memorandum

Reviewed by Council Committees:

Councilmember:

Staff: Alexandria Teague

Meeting Date: September 17, 2024

Item Number:

Memorandum

To: Judi Roland, Chair, Planning Commission
Planning Commission Members

From: Alexandria Teague, Planning Services Manager, Comm. Dev. Dept

Date: September 4, 2024

Re: **Special Planning Commission Meeting – 9/17: 2024 Comprehensive Plan - Planning Commission**

Each city and county in Washington state is required to conduct a periodic update of its comprehensive plan and development regulations per RCW 36.70A.130 (The Growth Management Act or GMA). In general, the purpose is to ensure consistency with the Puget Sound Regional Council Vision 2050, the Countywide Planning Policies (for Auburn this means both Pierce and King County), any changes in state laws over the intervening time, and to respond to changing conditions within the local community.

Tonight, a staff presentation on the Parks and Recreation Pros Plan will be conducted. Planning Commission will also deliberate and take action on acceptance of the Sewer Systems Plan, which is incorporated by reference in the Utilities Element. These plans are indicated as "Package 2" plans. Future Planning Commission deliberation and action (recommendation to City Council) on remaining Elements and Systems Plans, indicated as "Package 2", is expected at the October 23, 2024, meeting.

This meeting is open to the public and has been advertised appropriately as a regular meeting. The table below illustrates current, past, and upcoming Planning Commission meetings for the Comprehensive Plan update, as well as subject.

Subject	Public Meeting	Public Hearing	Deliberation and Action
Planning Commission – Package 1			
Land Use	✓	✓	July 16
Housing	✓	✓	July 16
Historic Preservation	✓	✓	July 16
Economic Development	✓	✓	July 16
Climate	✓	✓	July 16
Planning Commission – Package 2			

Sewer Plan	✓	✓	September 17
Stormwater Plan	✓	✓	✓
Transportation	✓	✓	✓
Parks and Open Space Element	✓	✓	✓
Parks PROS Plan	September 17	October 23	October 23
Stormwater Plan	✓	✓	✓
Capital Facilities	✓	✓	October 23
Water System Plan	✓	October 23	October 23
Utilities Element	✓	✓	October 23
Planning Commission Action – Recommendation for Adoption to City Council			
Package 1			✓
Package 2			October 23

For reference, the current adopted Comprehensive Plan Elements can be found here.

Feel free to contact Alexandria Teague, Planning Services Manager, at ateague@auburnwa.gov or 253-931-3003 with any questions.

Included Attachments:
Attachment A – Sewer System Plan
Attachment B – Parks and Recreation PROS Plan

AGENDA BILL APPROVAL FORM

Agenda Subject:
Sewer Systems Plan (Elwell)

Date:
August 28, 2024

Department:
Community Development

Attachments:
Sewer System Plan - 1
Sewer System Plan - 2
Sewer System Plan - 3
Sewer System Plan - 4
System Sewer Plan - 5
System Sewer Plan - 6
System Sewer Plan - 7
System Sewer Plan - 8
System Sewer Plan - 9
System Sewer Plan - 10
System Sewer Plan - 11
Sewer System Presentation

Budget Impact:
Current Budget: $0
Proposed Revision: $0
Revised Budget: $0

Administrative Recommendation:

Background for Motion:

Background Summary:
See Attachments

Reviewed by Council Committees:

Councilmember:

Staff: Robert Elwell

Meeting Date: September 17, 2024

Item Number:

CITY OF AUBURN WASHINGTON



2024 Comprehensive Sewer Plan

DRAFT / September 2024

carollo

2024 Comprehensive Sewer Plan

DRAFT / September 2024

This document is released for the purpose of information exchange review and planning only under the authority of Edward A. Wicklein, September 6, 2024, State of Washington PE No. 43049.



1200 FIFTH AVENUE, SUITE 900 ▪ SEATTLE, WASHINGTON 98101 ▪ P 206-684-6532

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Abbreviations

ACC	Auburn City Code
ADWF	average dry weather flow
APWA	American Public Works Association
BWF	base wastewater flow
CCF	per hundred cubic feet
CCTV	closed-circuit television
CFP	Capital Facilities Program
CIG	Climate Impacts Group
CIP	capital improvement program
City	City of Auburn, Washington
CMMS	computerized maintenance management system
CP	concrete pipe
CSWD	Criteria for Sewage Works Design
D	diameter
d/D	depth/diameter
DOC	Department Operations Center
DOH	Washington State Department of Health
DWF	dry weather flow
Ecology	Washington State Department of Ecology
Engineering	Engineering Services Division
FOG	fats, oils, and greases
FSE	food service establishment
FTE	full-time equivalent
G.O.	general obligation
GIS	geographic information system
gpad	gallons per acre per day
gpm	gallons per minute.
GWI	groundwater infiltration
H&H	hydrologic and hydraulic
HGL	hydraulic grade line
I/I	inflow and infiltration
LID	Local Improvement District
LOS	Level of Service
LWSD	Lakehaven Water and Sewer District
M	million
M&O	Maintenance and Operation
MBR	membrane bioreactor

mgd	million gallons per day
MH	manhole
MIT	Muckleshoot Indian Tribe
MWPAAC	Metropolitan Water Pollution Abatement Advisory Committee
NASSCO	National Association of Sewer Service Companies
NE	northeast
NW	northwest
PAA	potential annexation area
PACP	Pipeline Assessment and Certification Program
Plan	Comprehensive Sewer Plan Update
PW	Public Works
PWTF	Public Works Trust Fund
PWWF	peak wet weather flow
R&R	repair and replacement
RCE	Residential Customer Equivalents
RCW	Revised Code of Washington
RDI	rainfall derived infiltration
RUL	remaining useful life
RWSP	Regional Wastewater Services Plan
SCADA	supervisory control and data acquisition
SCWSD	Soos Creek Water and Sewer District
SDC	system development charges
SE	southeast
SOS	Save Our Streets
SSO	sanitary sewer overflow
SSSA	Sanitary Sewer Service Area
SW	southwest
TAZ	traffic area zone
TM	technical memorandum
ULID	Utility Local Improvement District
Utility	Sanitary Sewer Utility
VCP	vitrified clay pipe
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WWF	wet weather flow

EXECUTIVE SUMMARY

ES.1 Introduction

This *Comprehensive Sewer Plan* (Plan) for the City of Auburn, Washington (City) is an update to the previous Plan, adopted in 2016. This Plan should be considered a General Sewer Plan under the authority of Washington Administrative Code (WAC) Section 173-240-050. This Plan reflects changes in existing and projected land use and population levels, extensions to the public sewer collection system, and completion of sewer capital projects since the completion of the previous Plan.

Additionally, since the adoption of the previous Plan, both the City and King County have performed extensive flow monitoring of the City's collection system that, along with updated asset data, provides valuable information for updating the hydrologic and hydraulic (H&H) model used for system capacity assessment.

This Plan includes estimated periods that are intended to be used as a framework for future workload planning and funding decisions, and within which future actions and decisions are anticipated to occur. The purpose of the Plan is to guide the City with respect to future activities and improvements for the Sanitary Sewer Utility (Utility). To fulfill this stated purpose, the following objectives were achieved:

- Evaluation and updates to sewer policies to better reflect and integrate with overall City Comprehensive Plan policies.
- Plan for updating the comprehensive sanitary sewer system inventory, based on the City's geographic information system (GIS), that incorporates currently available infrastructure data into a digital database that can be directly linked with the hydraulic model used for analyzing the system.
- Hydraulic modeling analysis to evaluate existing system capacity.
- Future population and development projections were used to evaluate future sewer capacity needs.
- The Plan for sewer service extensions was refined, including where extensions will occur and how the City will serve these areas.
- Documentation of the City's existing Maintenance and Operation (M&O) program, and evaluation of existing Utility staffing and standard procedures.
- Completed a financial analysis of the Utility, including a projection of cost to provide sewer service and development of a funding strategy for identified goals.
- Developed a capital improvement program (CIP) by sustainably meeting required customer service needs, effectively managing risks, and minimizing the City's costs of sewer asset ownership.
- Prioritization of capital improvement projects to accommodate both 6- and 20-year funding frameworks.

ES.2 System Goals for Long Term

This Plan presents policies and standards related to system development, maintenance, funding, and general guidelines for Sanitary Sewer Utility operation. These policies define limits and outline how the wastewater collection system should be operated and maintained and are grouped within the following goal statements:

- **Goal 1:** Plan for sewer extensions and capacity upgrades to reflect the planning and growth projections included in the City's Comprehensive Plan, such that the public sewer system, when constructed, will have adequate capacity to support all future planned development.
- **Goal 2:** Plan for future service to all properties in the City within urban density areas.
- **Goal 3:** Manage the extension of the public sewer system to minimize future costs to operate and maintain.
- **Goal 4:** Design, operate, and maintain the public sewer system in a manner that increases reliability and efficiency, and demonstrates environmental stewardship.
- **Goal 5:** Apply asset best management principles to the City's sewer infrastructure.
- **Goal 6:** Manage the sewer utility funds and resources in a professional manner in compliance with applicable laws, regulations, and City financial policies, which requires ongoing monitoring of revenues and expenses in order to make prudent business decisions and report to City officials, as needed, regarding the status of utility operations.

ES.3 Sewer Utility Evaluation

The City customer base continues to increase through system growth by development, redevelopment, and connection of on-site system properties to the system. With the additional customers served, some of the City's sewer infrastructure may reach its conveyance capacity. In addition, the installed sewer infrastructure continues to age:

- Hydraulic Modeling: The City hydraulic model was updated to reflect currently installed infrastructure. Current sanitary loading was developed from flow monitor data collected through recent temporary monitor programs, as well as long term sites. A total of 22 sites were used for modeling to develop land used based flow factors, and dry and wet weather model calibration.
- System Evaluation: The flow factors were used to develop a future flow projection based on a combination of general population projects, anticipated land use changes to address City and State requirements. The hydraulic model was used for evaluating current and figure capacity needs. In addition, installed infrastructure age was evaluated relative to anticipated useful life expectancy.
- Maintenance and operation: The current organization and common procedures associated with the ongoing maintenance and operation of the City sewer utility system are reviewed. The primary purpose being to establish a baseline understanding of the proactive and responsive maintenance procedures performed by City staff. This baseline understanding is used herein to evaluate Sewer Utility (Utility) staffing, data collection and computerized record-keeping needs, and other Utility requirements to continue to meet the Utility's goals.

ES.4 Capital Improvement and Financial Plan

This Plan includes time frames, which represent the intended framework for future funding decisions and within which future actions and decisions are intended to occur. However, these time frames are estimates, and depending on factors involved in the processing of applications and project work, and availability of funding, the timing may change. The framework does not represent actual commitments by the City. Project identification is an ongoing effort requiring periodic evaluation.

The CIP list was developed based on incorporating the City's Capital Facilities Plan (CFP), identification of equipment limitations within the M&O group, and identification of areas of improvement. The CIP focuses on addressing known problems in a manner identifying cost-effective solutions that incorporate the risks associated with substandard facilities and the uncertainty inherent in engineering calculations/model simulations. The CIP places emphasis on projects identified for implementation between 2025 and 2030, which constitutes the 6-year planning period for utility capital funding requirements and staffing needs. This period provides a realistic outer limit for accurately forecasting the annual cycle of utility projects and priorities. This Plan also includes a 20-year CIP that examines long-term capital requirements, such as the replacement of infrastructure as it exceeds its useful life. All projects in the CIP are consistent with the LOS.

For implementing the CIP and sustaining long term operation of the Utility, a financial program is outlined that allows the City sewer utility to remain financially viable during the planning period. This financial viability analysis considers the historical financial condition, current and identified future financial and policy obligations, M&O needs, and the financial impacts of the capital projects identified in this Plan. Furthermore, this chapter provides a review of the sewer utility's current rate structure with respect to rate adequacy and customer affordability. The results of this analysis indicate that at existing rate levels the utility will be deficient beginning in 2028. To keep pace with expenses, the City has adopted a 7.50 percent rate increase in 2025. An annual rate increase is recommended for several years, as well as a regular review and update the key underlying assumptions that compose the multi-year financial plan to ensure that adequate revenues are collected to meet the City's total financial obligations.

ES.5 System Administration Plan

In addition to the projects listed in the CIP, this Plan includes other tasks and activities that should be priorities during this planning period. These include:

- Renewal of the franchise agreement with King County which expires in 2027, and beginning negotiation of an extension to the Sewage Disposal Agreement which expires in 2036.
- The continued implementation of asset management principles including:
  - Completing the inventory of sewer assets
  - Verifying and updating asset data/information as part of normal maintenance activities.
  - Integrating condition assessment information into the City's CMMS as a tool for prioritizing rehabilitation and replacement decisions
  - For assets with poor condition scores, determining the consequences of failure to help assess asset criticality.
  - Use condition assessment studies included in the CIP to make long-term maintenance, upgrade, rehabilitation, and replacement decisions for key assets.

- Proactively discouraging the discharge of substances detrimental to the sanitary sewer and wastewater treatment system by:
  - Enforcing the requirements to manage fats, oils, and grease (FOG) by restaurants and other businesses likely to discharge FOG into the sewer system.
  - Educating residents about the negative effects of discharging FOG on both private and public portions of the sanitary sewer system.
  - Educating residents about the negative effects of discharging cleaning wipes, pharmaceuticals, and other prohibited discharges to the sewer system, and promoting alternative disposal methods.

CHAPTER 1 INTRODUCTION AND BACKGROUND

This *Comprehensive Sewer Plan* (Plan) for the City of Auburn, Washington (City) is an update to the previous Plan, adopted in 2016. This Plan should be considered a General Sewer Plan under the authority of Washington Administrative Code (WAC) Section 173-240-050, and within this document, Comprehensive Sewer Plan and General Sewer Plan should be considered synonymous. This Plan reflects changes in existing and projected land use and population levels, extensions to the public sewer collection system, and completion of sewer capital projects since the completion of the previous Plan.

Additionally, since the adoption of the previous Plan, both the City and King County have performed extensive flow monitoring of the City's collection system that, along with updated asset data, provides valuable information for updating the hydrologic and hydraulic (H&H) model used for system capacity assessment.

This Plan includes estimated periods that are intended to be used as a framework for future workload planning and funding decisions, and within which future actions and decisions are anticipated to occur. These time lines are estimates and depending on factors including staff availability, available resources, coordination with other City departments, and overall development activity, the actual timing of actions described by this Plan may differ. The timing estimates for activities included in this Plan do not represent actual commitments by the City.

This Plan meets the requirements of the Washington State Department of Ecology (Ecology) as set forth in WAC Section 173-240-050. The Plan was submitted to Ecology; the Washington State Department of Health (DOH); King and Pierce counties; the cities of Algona, Bonney Lake, Kent, and Pacific; Lakehaven Water and Sewer District (LWSD); Soos Creek Water and Sewer District (SCWSD); and the Muckleshoot Indian Tribe (MIT).

1.1 Purpose and Objectives

The purpose of the Plan is to guide the City with respect to future activities and improvements for the Sanitary Sewer Utility (Utility). To fulfill this stated purpose, the following objectives were achieved:

- Evaluation and updates to sewer policies to better reflect and integrate with overall City Comprehensive Plan policies.
- Plan for updating the comprehensive sanitary sewer system inventory, based on the City's geographic information system (GIS), that incorporates currently available infrastructure data into a digital database that can be directly linked with the hydraulic model used for analyzing the system.
- Hydraulic modeling analysis to evaluate existing system capacity.
- Future population and development projections were used to evaluate future sewer capacity needs.
- The Plan for sewer service extensions was refined, including where extensions will occur and how the City will serve these areas.
- Documentation of the City's existing Maintenance and Operation (M&O) program, and evaluation of existing Utility staffing and standard procedures.
- Completed a financial analysis of the Utility, including a projection of cost to provide sewer service and development of a funding strategy for identified goals.

- Developed a capital improvement program (CIP) by sustainably meeting required customer service needs, effectively managing risks, and minimizing the City's costs of sewer asset ownership.
- Prioritization of capital improvement projects to accommodate both 6- and 20-year funding frameworks.

1.2 Document Organization

This Plan is organized to focus on the actions that the Utility will take while implementing Plan recommendations. Supporting documentation and background information is included in appendices where appropriate. The Plan is organized into the following chapters:

- **Chapter 1 - Introduction and Background:** Explains the need for updating previous sewer planning documentation and outlines specific objectives of the Comprehensive Sewer Plan Update and provides background information regarding the Utility and Sanitary Sewer Service Area (SSSA).
- **Chapter 2 - Wastewater System Goals and Policies:** Specifies the utility's goals and policies used to develop capital improvements and future M&O activities.
- **Chapter 3 - Planning Considerations**: Describes the factors used to project the future capacity needs of the system.
- **Chapter 4 - Description of Existing System:** Describes the existing conditions of the City's sanitary sewer system.
- **Chapter 5 - Wastewater System Analysis:** Presents methodologies used to evaluate system capacity and future sewer extensions.
- **Chapter 6 - Maintenance and Operations:** Provides an overview of the organization and common procedures associated with the ongoing M&O program and evaluates existing Utility staffing needs based on established Level of Service (LOS) goals.
- **Chapter 7 - Capital Improvement Plan:** Describes recommended capital improvement projects including cost estimates.
- **Chapter 8 - Finance:** Develops a funding plan that optimizes use of rates, systems development charges, and other service fees based on projected Utility spending requirements and a review of funding sources and City financial policies.
- **Appendix A - Inter-local Agreements and Outside Agency Correspondence:** Provides copies of inter-local agreements related to sanitary sewer conveyance and disposal.
- **Appendix B - Hydraulic Model Update, Calibration, and Capacity Analysis:** Provides a detailed review of the hydraulic modeling completed for near- and long-term land use modeling scenarios to identify areas of capacity concern.
- **Appendix C - Pump Station Information:** Provides detailed information related to the pump stations (pump sizes, wet well size, etc.).
- **Appendix D - SEPA Compliance:** Provides a letter documenting the "Determination of Non-Significance."
- **Appendix E –** Reclaimed Water Checklist: A copy of the King County reclaimed water checklist from the 2024 Water System Plan.

1.3 Background

This section includes background information related to the development of the City's current wastewater collection and conveyance system. A description of the City SSSA is also included, along with information on adjacent sewer utilities, which will facilitate an understanding of existing and potential collaboration opportunities with other purveyors to enhance system reliability and/or reduce costs. Changes to land use planning efforts affecting the City SSSA are also discussed.

The City of Auburn vicinity within the greater region is shown in Figure 1.1.

1.3.1 Previous Auburn Comprehensive Sewer Plans

The current wastewater planning effort supersedes previous plans prepared in 1968, 1982, 2001, 2009, and 2016. This Plan builds upon concepts established in the five previous plans modifying, or updating goals, policies, and analyses to account for present conditions.

1.3.2 City Comprehensive Plan

The City most recently revised its City Comprehensive Plan in June 2015. The City Comprehensive Plan incorporates the Comprehensive Sewer Plan by reference. The City is in the process of updating the City Plan for adoption in 2024.

1.3.3 Sanitary Sewer Service Area

The City SSSA has not changed significantly since the 2016 *Comprehensive Sewer Plan*. Service has been extended to a small area of unincorporated King County located west of Algona. The current SSSA is shown on Figure 1.2.

As of September 2023, the City serves 13,417 single-family residential customers within its SSSA. Additionally, commercial customers (including non-single-family customers) equate to 19,980 Residential Customer Equivalents (RCE) based on total water consumption records for commercial connections. The City tracks total RCEs and reports to the County quarterly.

The City coordinates service at the boundary of its SSSA with nearby sewer utilities. When the City's SSSA extends beyond current corporate limits, the City requires a franchise to own, maintain, and manage the wastewater facilities within King and Pierce counties' rights-of-way. This coordination with other utilities and King and Pierce counties is discussed in Section 1.4.

1.3.4 Existing Land Use Plans

Various land use plans govern development with the City SSSA; these plans are described in the following sections.

1.3.4.1 King County Comprehensive Plan

Urban unincorporated areas of the City's SSSA within King County are subject to the King County *Comprehensive Plan*, as most recently updated and adopted in December 2022. This section highlights portions of the King County document affecting policy direction for functional plans, such as this City of Auburn *Comprehensive Sewer Plan*.

In the 2022 King County *Comprehensive Plan*, policy F-255 states:

In the Urban Growth Area, all new development shall be served by public sewers unless:

a. *Application of this policy to a proposal for a single-family residence on an individual lot would deny all reasonable use of the property; or*
b. *Sewer service is not available for a proposed short subdivision of urban property in a timely or reasonable manner as determined by the Utility Technical Review Committee. [1]These on-site systems shall be managed by one of the following entities, in order of preference:*
    i. *The sewer utility whose service area encompasses the proposed short subdivision; or*
    ii. *The provider most likely to serve the area; or;*
    iii. *An Onsite Sewage System Maintainer certified by Public Health - Seattle & King County.*

The onsite system shall meet all state and county approval requirements. The approved short subdivision shall indicate how additional lots to satisfy the minimum density requirement of the zoning will be located on the subject property in case sewers become available in the future. There shall be no further subdivision of lots created under this policy unless served by public sewers.

In conjunction with policy F-255, policy F-256 states:

> *In the Urban Growth Area, King County and sewer utilities should jointly prioritize the replacement of on-site systems that serve existing development with public sewers, based on the risk of potential failure. King County and sewer utilities should analyze public funding options for such conversion and should prepare conversion plans that will enable quick and cost-effective local response to health and pollution problems that may occur when many on-site systems fail in an area.*

Chapter 5 discusses potential sewer extensions within currently unsewered areas. The City's SSSA currently includes three areas of unincorporated King County, as shown on Figure 1.2.

1.3.4.2 Pierce County Comprehensive Plan

Urban unincorporated areas of the City's SSSA within Pierce County are subject to the *Pierce County Comprehensive Plan*, as most recently updated and adopted in July, 2023. Several goals and policies included in the Pierce County document affect policy direction for functional plans, this City of Auburn *Comprehensive Sewer Plan Update* such as:

- GOAL U-2 - Provide urban level facilities and services only within the designated Urban Growth Areas prior to or concurrent with development.
    - U-2.1 - Encourage the provision of urban level services from cities or appropriate regional service providers.
    - U-2.3 - Preserve the rural way of life by not providing urban LOS' within rural areas.
- GOAL U-15 - Provide sanitary sewers within the urban area.
    - U-15.6 - Recognize on-site septic systems within the Urban Growth Area are considered interim facilities.

Chapter 5 discusses potential sewer extensions within currently unsewered areas. The City's SSSA currently includes one area of unincorporated Pierce County, as shown on Figure 1.2.

[1] The Utility Technical Review Committee (UTRC) is a King County Committee that reviews sewer and water plans and makes recommendations to the Council/Executive.

1.3.5 Wastewater Treatment

The City is a component agency of the King County Wastewater Treatment Division. As such, its Sewer Utility operates a collection system that discharges collected wastewater to King County facilities for conveyance to King County's South Plant for treatment, outside of the service area to the North. The South Plant operates under a permit from the Department of Ecology, and the County is required to continually upgrade its treatment processes to ensure its effluent and other treatment byproducts meet the most current environmental standards.

The City's agreements with King County can be found in Appendix A, and are active until 2036. It is expected that negotiations for extending that agreement will occur during this planning period. Under the current agreement, the City is obligated to deliver all of the sewage and industrial wastes collected or received by the City, and Metro (King County) shall accept the sewage and industrial wastes delivered for treatment. There is currently no limit on the quantity of wastewater delivered by the City to Metro (King County).

1.3.5.1 King County Regional Wastewater Services Plan

In 2007, King County adopted a revised *Regional Wastewater Services Plan* (RWSP), which outlined proposed wastewater conveyance improvements. Improvements that impact the City collection and conveyance system included the following:

- Stuck River Trunk: New gravity pipe constructed to convey flow away from the M Street Trunk to the Lakeland Hills Trunk Line and eventually the Auburn West Interceptor.
- Pacific Pump Station discharge: New pipe to convey flow north from the Pacific Pump Station to the Auburn West Interceptor.
- Auburn West Interceptor Parallel: New gravity pipe to replace or parallel an existing portion of the Auburn West Interceptor between 15th Street SW and West Main Street.

The Stuck River Trunk was completed in 2013. The Pacific Pump Station discharge and Auburn West Interceptor Parallel were completed in 2018.

Based on the completion of most of the projects included in the RWSP, King County issued its final report on the RWSP in 2017.

The County has continued to identify projects for its Conveyance System Improvements Program based on decennial flow monitoring data and updated land use and population projections. Those projects include the replacement of the Lakeland Hills Pump Station located along the White River within Roegner Park, which is planned for the year 2031.

In 2019, the County began the planning process for what is to be called the Clean Water Plan. Activities included evaluation of existing assets, analysis of evolving environmental regulations, decennial flow monitoring, future land use projection, and gathering stakeholder input. This planning effort is currently paused pending clarity on future regulations but is expected to resume once that clarity is achieved.

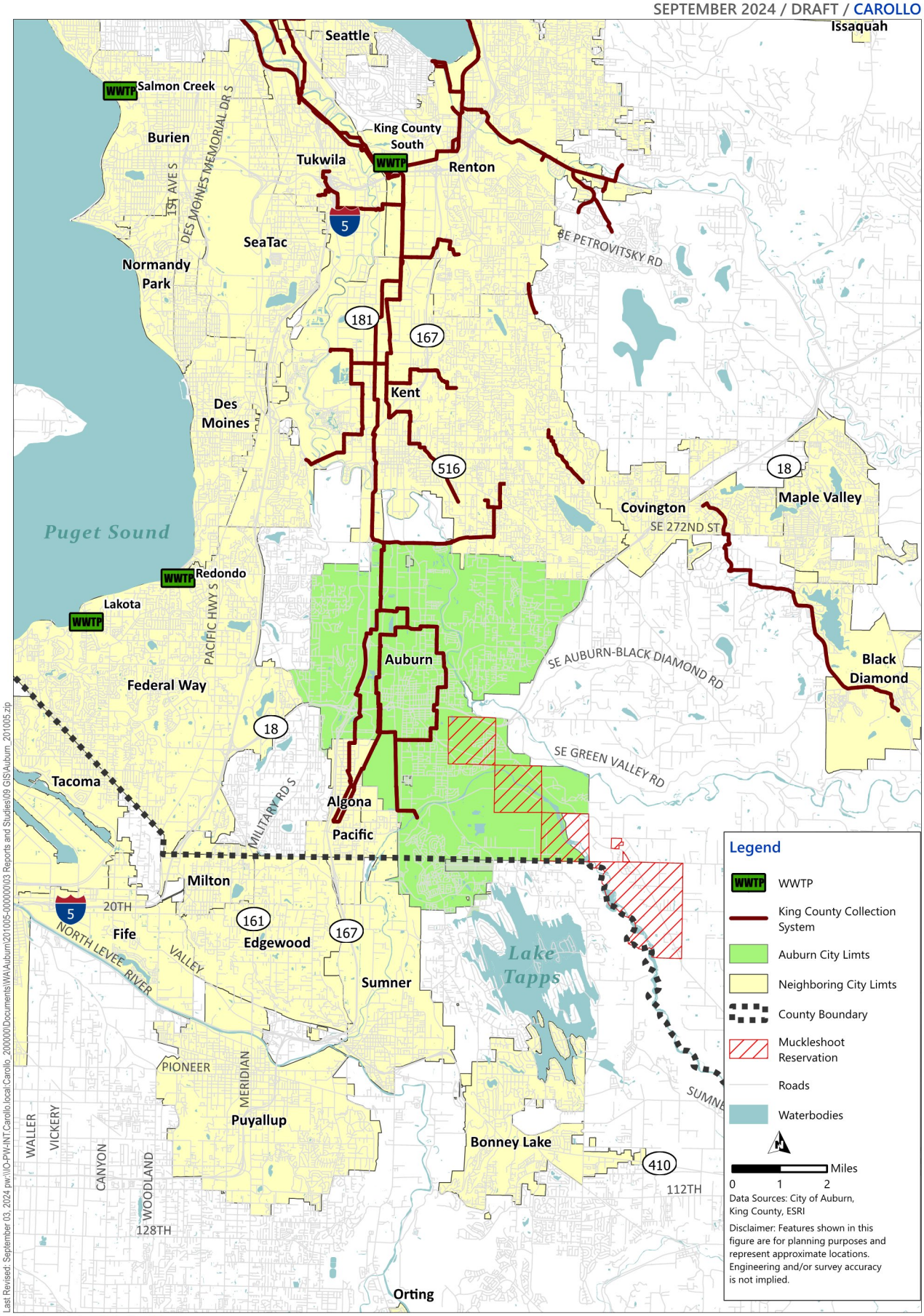

Figure 1.1 Vicinity Map
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

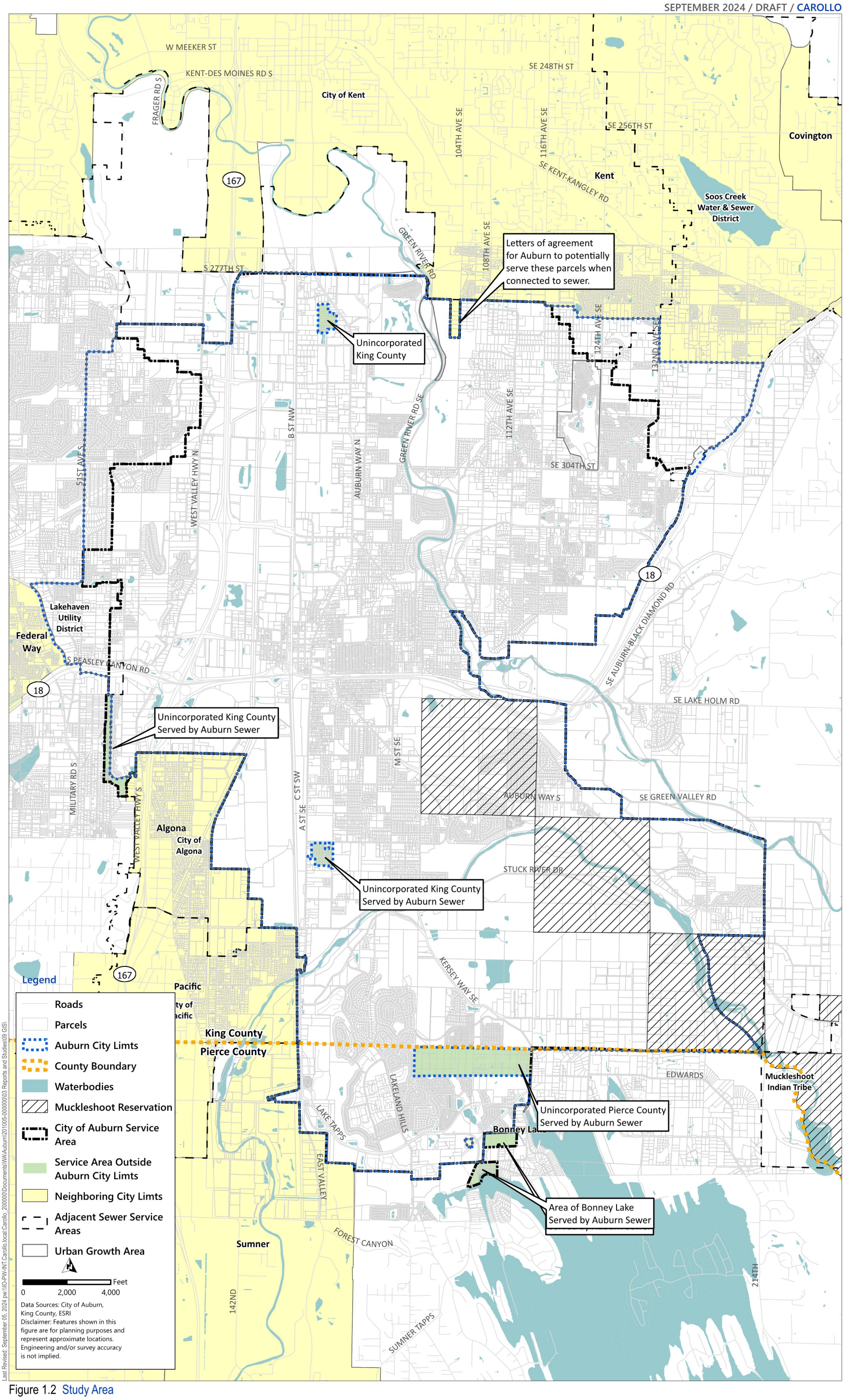

Figure 1.2 Study Area
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

1.3.6 City of Auburn Water Resources Protection Report

As identified in the City's 2016 *Sewer Plan*, coordination with the Water Utility will be necessary in the future, as many of the City's unsewered areas lie within the Water Resource Protection Areas identified in the *Water Resources Protection Report* completed in 2000. In particular, planning for future wastewater infrastructure could include the importance of removing potential contamination (i.e., onsite sewer systems) from those areas, based on coordination with the Water Utility. Auburn City Code 16.10 (Critical Areas) now refers to the areas as "Aquifer Recharge Areas" and regulates activities within them.

1.3.7 City of Auburn Water Conservation

The City of Auburn's Sanitary Sewer Service Area largely overlaps with its Water Service Area, therefore, water conservation efforts undertaken by the City's Water Utility will, by far, be the most likely to affect sewage flows handled by the City's sewage collection system. The Water Utilities program is described in Section 4.3 of the 2024 Water System Plan. The primary effect of such measures on the sewer system would be to reduce the overall wastewater flow, while potentially increasing wastewater strength. Since the City's sewer hydraulic model calibration was based on actual measured flows, the effects of existing conservation measures have been accounted for. Further increased effectiveness of water conservation efforts could result in capacity improvement projects being eliminated or delayed if anticipated flow increases are not realized.

1.4 Neighboring Sewer Utilities

The communities surrounding the City administer their own wastewater conveyance and collection systems. The following sections describe these systems and discuss interlocal agreements between the City and these communities that establish SSSA boundaries and other conditions of service. Neighboring sewer utilities that serve a portion of Auburn are identified in Figure 1.2.

1.4.1 Soos Creek Water and Sewer District and City of Kent

In the northeast corner of the city, within the Lea Hill sewer basin (as shown on Figure 1.2), there are small areas served by the Soos Creek Water and Sewer District (SCWSD) and the City of Kent. In 2001, prior to annexation of the Lea Hill area by the City, the City executed interlocal agreements with SCWSD and the City of Kent, establishing sanitary sewer service area boundaries in the basin. The agreements enable SCWSD and the City of Kent to provide the most efficient method of sanitary sewer service to this portion of the City while ensuring adherence to the City's development standards. Copies of these agreements are included in Appendix A.

As development in Lea Hill occurs, the City will continue to work with both agencies to refine our respective planning areas as needed.

1.4.2 City of Pacific

An interlocal agreement establishing sanitary sewer service area boundaries between the City and the City of Pacific was executed in 2008. This agreement allows Auburn to provide sanitary sewer service to property located on the eastern portion of Pacific's municipal boundary, which lies in the vicinity of

Auburn's wastewater infrastructure. The agreement recognizes that Auburn has sufficient wastewater conveyance capacity to support the SSSA with maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning. The cities of Auburn and Pacific are considering allowing the area described in the agreement to be annexed by Auburn. A copy of this agreement is included in Appendix A.

1.4.3 Muckleshoot Indian Tribe Reservation

The MIT reservation is located within and to the southeast of Auburn city limits, as shown in Figures 1.1 and 1-2. In 1997, the MIT, Indian Health Service, and City of Auburn entered into an agreement for the City to provide wastewater service to the MIT property located outside city limits, outside the potential annexation area (PAA), and outside the Urban Growth Area. An additional agreement, signed in 2004, superseded the 1997 agreement, and outlined cost sharing in the replacement and maintenance to the conveyance system from the south end of the City on Auburn Way South to the connection to King County's M Street Trunk. Two outcomes of that agreement were that (1) the MIT become a component agency of the King County Wastewater Treatment Division, which officially occurred in July 2004; and (2) the MIT would own a portion of the capacity within the Auburn Way South sewer line for the conveyance of sewage from a portion of MIT properties located outside the City's service area to King County.

In 2013, Resolution 4902 established a master agreement/provision for City utility services on MIT lands. Lands owned by the MIT within the City SSSA are billed as ordinary ratepayers. Development of lands within the MIT reservation must be in accordance with the master agreement. MIT-related agreements are included in Appendix A.

1.4.4 Lakehaven Water and Sewer District

In 2004, an interlocal agreement was established between LWSD (then known as Lakehaven Utility District) and the City delineating a mutual sewer service area boundary within a portion of the West Hill Service Area within the City.

Amendments to this agreement were made in 2005, and 2018, transferring sewer service from LWSD to the City for portions of the area known as Jovita Heights-West Hill. Copies of both LWSD agreements are included in Appendix A.

1.4.5 City of Algona

The City of Algona borders the City of Auburn to the southwest. In 2003, the cities of Algona and Auburn executed an interlocal agreement establishing sanitary sewer service area boundaries. The agreement allows Algona to provide sewer service to a small area in southwest Auburn, within the city limits and adjacent to Algona. Sewer service by Algona provides efficiency in the use of existing and future facilities. An additional agreement between Auburn and Algona was executed in 2020 to clarify the connection locations and billing responsibilities for several parcels located along the service area boundary. Copies of both Algona agreements are included in Appendix A.

1.4.6 City of Bonney Lake

An addendum to a 1998 interlocal agreement establishing sanitary sewer service area boundaries between the cities of Bonney Lake and Auburn to roughly coincide with Auburn's PAA boundaries was executed in February 2005. The addendum added a single parcel to the City SSSA because the parcel was partially located in both Auburn's and Bonney Lake's service areas as a result of the previous agreement.

In April 2005, an interlocal agreement was established for Auburn to provide sanitary sewer service to a parcel within Bonney Lake's SSSA (and designated within Pierce County's Urban Growth Area). The maximum efficiency in the use of existing and future facilities is achieved by having Auburn provide sewer service to this area within Bonney Lake. A subsequent agreement, executed in August 2005, allows for Bonney Lake to serve the parcel in question once a sewer franchise with Pierce County has been secured for the area of Pierce County in which this parcel is located. Copies of both Bonney Lake agreements are included in Appendix A.

1.4.7 King County

In 2002, the City of Auburn was granted a sanitary sewer franchise from King County to operate, maintain, repair, and construct sewer mains, service lines, and appurtenances in, over, along, and under County roads and rights-of-way in areas that, at that time, were located within unincorporated areas of King County. The legal descriptions of the areas covered by that agreement were updated through an amendment approved in January 2013. Copies of the agreement and amendment (Resolution 5027) are included in Appendix A. That franchise agreement will expire in 2027, so a renewal of the agreement should be sought during this planning period.

CHAPTER 2 WASTEWATER SYSTEM GOALS AND POLICIES

This chapter presents policies and standards that guide the operation and development of the City's wastewater collection and conveyance system.

2.1 City Comprehensive Plan Consistency

The City Comprehensive Plan serves as the City's blueprint for managing growth, encompassing policies aimed at protecting critical areas and preserving natural resource lands. This plan also designates urban growth areas, outlines the preparation of comprehensive utility plans, and an implementation approach through capital investments, and development regulations. The City Comprehensive Plan provides a framework of policies for development, expansion, and maintenance of the Utility reflected in this Plan.

2.2 Business Practices/Asset Management

The City desires to employ recognized best business practices that result in an efficient and cost-effective operation of the Sanitary Sewer Utility. The City shall identify the key business functions within the Sanitary Sewer Utility (e.g., billing, permitting, asset management, and planning) and develop supporting best business practices for each.

The City understands that defining and implementing best business practices is a long-term effort and will require a stepwise approach. Given that the Utility is largely composed of physical assets that have the greatest value and deserve the greatest commitment to operate and maintain, the City shall continue to prioritize asset management.

Asset management is a systematic approach to keep assets in good working order to minimize future maintenance and replacement costs, and especially to avoid costly deferred maintenance. The best practices for asset management involve systematically basing choices on an understanding of asset condition and performance, risks, and costs in the long term. Asset management best practices include:

- Having extensive knowledge about assets and their costs for maintenance and replacement (i.e., detailed inventories).
- Maintaining Levels of Service.
- Taking a life-cycle approach to asset management planning.
- Implementing the planned solutions to provide a reliable, cost-effective service.

Since the adoption of the 2016 Comprehensive Sewer Plan, the Utility has compiled an inventory of assets and their conditions for approximate 70 percent of its current assets. The Utility shall continue implementing the above best practices during the next planning period.

2.3 Sewer Comprehensive Plan Policies, Standards, and Guidelines

This Plan presents policies and standards related to system development, maintenance, funding, and general guidelines for Sanitary Sewer Utility operation. These policies define limits and outline how the wastewater collection system should be operated and maintained and are grouped within goal statements that are headlined under the following categories:

- Service Area.
- System Planning.
- Operations and Maintenance.
- Environmental Stewardship.
- System Performance and Reliability.
- Fiscal Responsibility.

2.3.1 Service Area

Goal 1: Plan for sewer extensions and capacity upgrades to reflect the planning and growth projections included in the City's Comprehensive Plan, such that the public sewer system, when constructed, will have adequate capacity to support all future planned development.

- Policy 1.1 - Incorporate the Comprehensive Sewer Plan as an Element of the City's Comprehensive Plan.
- Policy 1.2 - Sewer Service provided by outside purveyors within City limits are required to obtain a franchise with the City and are required to conform to all federal, state, and local laws and regulations. (ACC 20.02.040 and 20.04).
- Policy 1.3 - Future land use patterns for the SSSA will correspond to existing uses or current designations or as otherwise identified in the City's Comprehensive Plan.
- Policy 1.4 - Require that, if a sewer system extension is needed to serve new development, that it is built prior to or simultaneously with such development, according to the size and configuration identified by the Comprehensive Sewer Plan and the City's Comprehensive Plan, as necessary to serve all planned development. (ACC 13.20.270).
- Policy 1.5 - Require the owner of a property connecting to the public sewer system be responsible for the cost of the sewer line across the frontage of, and within their property (ACC 13.20.270), and for a proportionate share of the costs of pump stations, trunk lines, and other facilities specifically designed to enable service to a larger basin. As such:
  - Property owners connecting to existing sewer facilities may be required to reimburse the installer of those facilities, if the facilities satisfy the responsibility described above. (ACC 3.25).
  - Developers, or the City if it funds the construction, may be eligible to be reimbursed, by property owners connecting to the public sewer system, for the cost of installing those facilities that benefit multiple properties. (ACC 3.25).
  - Required improvements may be deferred for reasons of efficiency, but the property owner will, in the future, be obligated to pay a proportionate share of the construction of that required improvement.

2.3.2 System Planning

Goal 2: Plan for future service to all properties in the City within urban density areas.

- Policy 2.1 - System planning will include a provision for future sewer service to all unsewered properties within the SSSA.
- Policy 2.2 - Identify, through interlocal agreements, a sanitary sewer provider for those properties located within the City, but outside the City's SSSA.
- Policy 2.3 - Consider, but not encourage, providing sanitary sewer service to properties outside the SSSA. Property owners outside the SSSA bear the burden of pursuing adjacent sewer providers for service prior to seeking service from Auburn. Considerations for service include:
  - An analysis of the capacity of existing City of Auburn facilities.
  - Required upgrades to City of Auburn facilities.
  - Operational costs added to the Utility.
  - Potential revenue from the added service area.
  - Concurrence of the existing sanitary sewer service area provider.
  - The temporary or permanent nature of the service.
  - The need to permanently adjust the service area boundary and have it approved by the Boundary Review Board.
  - Potential impacts to public health.
- Policy 2.4 - Consider allowing properties within the SSSA to receive service from an adjacent sewer agency. Considerations for service by an adjacent agency include:
  - Future City of Auburn sewer service plans and the anticipated short and long-term timing of such an extension.
  - The effect of long-term capital costs on other future City of Auburn Customers.
  - The willingness/ability of the adjacent agency to provide service.
  - The temporary or permanent nature of the service change.
  - The need to permanently adjust the service area boundary and have it approved by the Boundary Review Board.
  - The potential impact on public health.
- Policy 2.5 - The Sanitary Sewer Utility does not intend and will not plan to extend sanitary sewer service to or through King or Pierce County rural zoned property. Exceptions will only be considered for reasons of health, safety, or service to a school in accordance with King or Pierce County policies and with the approval of King or Pierce County.
- Policy 2.6 - Allow development where public sewer service is not readily available to be served by individual onsite (septic) systems, if the individual lots are suitable for onsite systems, per the requirements and approval of King County or Pierce County Department of Health, and the City's or Counties' development codes. The allowance of the use of onsite systems will consider City water resource protection efforts and possible impacts to city drinking water sources. (ACC 13.20.060, 13.20.080, and 13.20.090).

- Policy 2.7 - Require a connection to public sewer if an existing onsite (septic) system fails and a permit to repair that system cannot be issued by the County Health Department that has jurisdiction. (ACC13.20.060 and 13.20.070).
- Policy 2.8 - Maintain an asset database to be used in prioritizing asset maintenance and repair and replacement activities. The database includes asset age and material information, and will be validated and updated through inspections, records review, and other available information.

2.3.3 Operations and Maintenance

Goal 3: Manage the extension of the public sewer system to minimize future costs to operate and maintain.

- Policy 3.1 - Set standards for the design and construction of the sanitary sewer infrastructure primarily based on the technical criteria found in the most recent versions of the Ecology publication Criteria for Sewage Works Design (CSWD) and Washington State Department of Transportation (WSDOT)/ American Public Works Association (APWA) Standard Specifications. (ACC 13.20.270).
- Policy 3.2 - Maintain specific criteria for the design and repair of public and private sewer systems, through the City of Auburn Engineering Design and Construction Standards. (ACC13.20.270 and 13.20.300).
- Policy 3.3 - Require the transport of sewage by gravity whenever feasible in order to increase reliability, sustainability, and long-term cost effectiveness.
- Policy 3.4 - Allow pumped systems when it is not feasible to install a total gravity system. Feasibility criteria include the relative elevations of the property to be served and existing sewer infrastructure and physical conditions, such as the existence and nature of critical areas, which may impact the constructability and maintainability of proposed gravity sewer extensions.
- Policy 3.5 - Allow non-gravity services (e.g., grinder pumps, low-pressure force mains, or other on-site pumping facilities) in extenuating circumstances when service by gravity is infeasible, provided that the cost of installation, operation, and maintenance of a non-gravity system shall be borne by the property owner, community association, developer, etc. The City will evaluate applications for non-gravity services consistent with ACC 13.20.200. The City will not install, own, or maintain (outside of emergencies) any part of a private non-gravity system. (ACC 13.20.500 and 13.20.510).
- Policy 3.6 - Give preference to the construction of fewer large public pump stations over a greater number of smaller public pump stations.
- Policy 3.7 - Allow private sewer conveyance systems, consistent with Washington Administrative Code (WAC) 173-240-104(3)(b), within the SSSA as long as they are designed and operated per City standards and are not part of sewer extensions to other parcels. Multiple connections per parcel are allowed. (ACC13.20.500).

2.3.4 Environmental Stewardship

Goal 4: Design, operate, and maintain the public sewer system in a manner that increases reliability and efficiency, and demonstrates environmental stewardship.

- Policy 4.1 - Comply with all federal, state, and local regulations in operation and maintenance of the City's wastewater collection and conveyance infrastructure.

- Policy 4.2 - Prevent storm drainage from entering the sanitary sewer system and pursue inflow and infiltration (I/I) reduction for the purposes of eliminating or reducing required capacity upgrades and reducing maintenance costs (to include reducing wear and tear on pump stations) when determined to be cost-effective. (ACC13.20.130).
- Policy 4.3 - In order to protect public health and the environment, require a property owner to promptly repair any private sewer system failure. If the property owner fails to do so, the City will take such action, as it deems necessary, to prevent or rectify an overflow, including but not limited to temporarily suspending occupancy of the premises or repairing the system at the property owner's expense. (ACC 13.20.500 and 13.20.510).
- Policy 4.4 - Support the use of reclaimed water technologies where economically feasible. City staff will evaluate opportunities for reclaimed water use and support initiatives where the benefits outweigh costs.
- Policy 4.5 - Size the sewer collection system for peak wet weather flow rates that include I/I flows. Gravity sewers will be sized to convey the once-per-20-year peak hour flow without surcharging.
- Policy 4.6 - Size pump stations and force mains for peak wet weather flow rates that include I/I flows. Pump stations will be sized to convey the once per 5-year flow with one pump out of service and convey the once per 20-year flow with all pumps in service.
- Policy 4.7 - Maintain, operate, and repair public sewers and portions of private side sewers located within public rights-of-way, except when damage is caused by discharges from private property or trees located on private property. (ACC13.20.120 and 13.20.182).
- Policy 4.8 - Review complaints/citizen reports and claims made against the City for damages caused by sanitary sewers to identify and make improvements as required.
- Policy 4.9 - Communicate proactively with the community and stakeholders regarding wastewater service improvements.
- Policy 4.10 - Investigate all customer service calls within 24 hours and record results in the computerized maintenance management system (CMMS).
- Policy 4.11 - In cooperation with King County, seek to eliminate prohibited discharges to the public sanitary sewer system. (ACC 13.20.140, 13.20.156, 13.20.158, and 13.20.160).
- Policy 4.12 - Require that businesses which may introduce fats, oils, and greases (FOG) into the waste stream have a grease interceptor installed and maintained to minimize FOG discharge to the public sewer system. (ACC 13.22.020).

2.3.5 System Performance and Reliability

Goal 5: Apply asset best management principles to the City's sewer infrastructure.

- Policy 5.1 - Develop and implement system improvements, infrastructure renewal (repair, rehabilitation, or replacement), and M&O programs for the wastewater system according to asset management principles that address the triple bottom line (economic, social, and environmental benefits and costs), minimize asset life-cycle costs, and incorporate risk management into decision making.
- Policy 5.2 - Monitor the frequency and causes of any service disruptions and develop programmatic methods for reducing the number of disruptions.

- Policy 5.3 - Perform condition assessments of critical assets, developing and implementing a condition assessment schedule for all critical assets.
- Policy 5.4 - Assign industry standard design lives for sewage assets. The actual physical assessment will be compared to the theoretical design life to determine the optimal economic life. Seek to repair or replace system assets before they exceed their economic life. The number of high-criticality assets beyond their economic life will be minimized.
- Policy 5.5 - Conduct maintenance activities at a level that is consistent with optimizing system reliability, asset economic life, and system performance.
- Policy 5.6 - Maintain a level of reliability for pump stations provided by redundancy of critical mechanical and electrical components. Provide backup power generators or dual power feeds and provide a minimum of two pumps at each pump station.
- Policy 5.7 - Implement the use of the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) for inspection of all pipelines.
- Policy 5.8 - Create, update on a routine basis, and use an emergency response plan for critical facilities.
- Policy 5.9 - When necessary, work on private property on private assets when the private asset is negatively impacting the public system. If the condition requiring such work is the responsibility of the owner, the City shall seek to recover the costs for the work. (ACC 13.20.510).
- Policy 5.10 - Replace or repair private side sewers as part of a City initiated project to reduce I/I of extraneous water into the sanitary sewer system where shown to be cost-effective versus capacity improvements. (ACC13.20.130).
- Policy 5.11 - Monitor the frequency, location, and details of all odor-related complaints. At a minimum, respond, research the cause of, and propose control methods once three complaints per month at a site are documented.
- Policy 5.12 - Take adequate measures to ensure system security. At a minimum, maintain security at pump stations by using the SCADA system (motion detection, intrusion alarms) to alert City personnel when unauthorized access is occurring.
- Policy 5.13 - Take appropriate measures to ensure the redundancy and security of data related to the sewer system, including, but not limited to the supervisory control and data acquisition (SCADA), CMMS, GIS, and closed-circuit television (CCTV) systems as well as permitting and other development records.
- Policy 5.14 - Encourage employee participation in workshops, seminars, and other education programs to improve job skills. The City may pay fees and employees' time for the required certification testing, as well as required annual renewal fees if such certification is a job requirement.

2.3.6 Fiscal Responsibility

Goal 6: Manage the sewer utility funds and resources in a professional manner in compliance with applicable laws, regulations, and City financial policies, which requires ongoing monitoring of revenues and expenses in order to make prudent business decisions and report to City officials, as needed, regarding the status of utility operations.

- Policy 6.1 - Implement an adequate system of internal financial controls and adopt a biennial budget.
- Policy 6.2 - Remain a self-supported enterprise fund; however, grants and other alternative financing may be sought and used.
- Policy 6.3 - Assess appropriate rates and system development charges (SDC) to fund the ongoing maintenance, operation, and capital expenditures of the Utility, in accordance with the Comprehensive Sewer Plan. Periodic cost of service studies shall be completed to reassess the monthly service and SDCs.
- Policy 6.4 - Maintain adequate reserves for operation and maintenance, capital improvement, and Sewer revenue bond obligations in order to ensure that the Utility can provide continuous, reliable service and meet its financial obligations under reasonably anticipated circumstances.
- Policy 6.5 - Establish Sewer rates at a level sufficient to pay expenses and maintain adequate reserves.
- Policy 6.6 - Structure Sewer rates to allocate costs fairly and equitably among different customer classes.
- Policy 6.7 - Charge uniform Sewer rates for all Utility customers of the same class throughout the SSSA.
- Policy 6.8 - Consider providing rate assistance programs for qualified specific low-income seniors or totally or permanently disabled citizens.
- Policy 6.9 - Establish fees and charges to recover utility costs related to development.
- Policy 6.10 - Require new customers to substantially pay for the costs of improvements designed to accommodate growth, while the costs to operate, maintain, repair, replace, and improve the existing system capacity are paid by all sewer system customers.
- Policy 6.11 - Sustain funding for the CIP at a level sufficient to maintain system integrity.
- Policy 6.12 - Reinvest in Utility capital assets in order to ensure that the integrity of the existing Utility plant and equipment is maintained. This reinvestment is generally referred to as repair and replacement (R&R).
- Policy 6.13 - In addition to projects designed to maintain and replace existing facilities, seek to invest annually in system improvements designed specifically to upgrade the system in order to meet State regulations and the City's standards and criteria. These improvements may include upgrades to the sanitary sewer SCADA and data management systems, and upgrades to increase safety for both City personnel and the public, bring noncompliant infrastructure into compliance, and reduce environmental impacts.

- Policy 6.14 - Consider replacing or upsizing sewer facilities in the right-of-way whenever a street is to be substantially reconstructed or other significant utility work is to be completed, especially when sewer improvements are specifically identified in the Comprehensive Sewer Plan. In addition, consider street and other utility improvement needs when replacing or upsizing sewer facilities.
- Policy 6.15 - Consider installing public sewer extensions by the formation of Local Improvement Districts whenever a street is to be substantially reconstructed or a new street built where public sewer does not currently exist.
- Policy 6.16 - Consider investing in sewer extensions and the construction of pump stations based on the following considerations:
  - Cost of the infrastructure.
  - Size of the service area as measured by potential customers or customer equivalents.
  - Potential coordination with other City Capital projects that will decrease the overall cost of the proposed extension.
  - The ability to recoup costs from future customers whose connection was facilitated by the investment.

CHAPTER 3 PLANNING CONSIDERATIONS

This chapter includes information related to the projected future development of the City and the resulting needs for capacity improvements to the wastewater collection and conveyance system. Recent needs for changes to land use planning efforts affecting the City SSSA are also discussed.

3.1 Planning Area

The Comprehensive Sewer Plan Study Area is shown in Figure 1.2. It generally encompasses the area within the incorporated city limits of Auburn with the following exceptions (Shown on Figure 1.2):

- Some areas on the West Hill are within the City but are served by the LWSD.
- Some areas of Lea Hill are within the City but are served by the SCWSD or the City of Kent.
- The City currently conveys flows from areas within Bonney Lake's service area that are adjacent to the southernmost boundary of Auburn's service area and for which Bonney Lake does not yet have adequate infrastructure.
- The City currently serves a small area of the City of Pacific just north of the White River.
- The City currently serves an area of Unincorporated King County just west of the city limits.
- There are several areas within the City which are islands of unincorporated King or Pierce County. These areas are within the City's urban growth area and sewer service area.

3.2 Basis of Planning

An evaluation was made of the existing system conditions and for the projected flow conditions in 2044.

Hydraulic modeling for the existing flow conditions was developed using measured rainfall, flow data collected from October 2020 to May 2022 and the physical characteristics of the existing collection and conveyance system.

Future flow conditions were projected using estimated growth developed during the current preparation of the City's Comprehensive Plan. Housing Unit and Employment growth projections/goals were distributed to areas of expected growth throughout the City based on the availability, or anticipated availability of necessary infrastructure such as transportation and utilities, as well as the concentration of developable land. The anticipated additional flow from that growth was then incorporated into the hydraulic model to identify areas where increased capacity will be required as that growth occurs.

3.3 Land Use

Land use designations are used to encourage growth in areas where the City's infrastructure, including the sanitary sewer system, is or will be adequate to serve that additional growth. The City currently uses 13 land use designations within four general categories.

Table 3.1 Land Use Categories

General Categories	Designations
Residential	▪ Residential Conservancy ▪ Single Family Residential ▪ Moderate Density Residential ▪ Multiple Family
Commercial	▪ Downtown Urban Center ▪ Neighborhood Commercial ▪ Light Commercial ▪ Heavy Commercial ▪ Mixed Use
Industrial	▪ Light Industrial ▪ Heavy Industrial
Public and Institutional	▪ Open Space ▪ Public/Quasi Public

These designations, along with their accompanying zoning, aim to achieve the growth patterns included in the projections. Any changes to land-use designations during the current planning cycle are expected to support the projected growth, and therefore, expected to maintain the projected wastewater flows.

The current land use designations for the City are shown in Figure 3.1

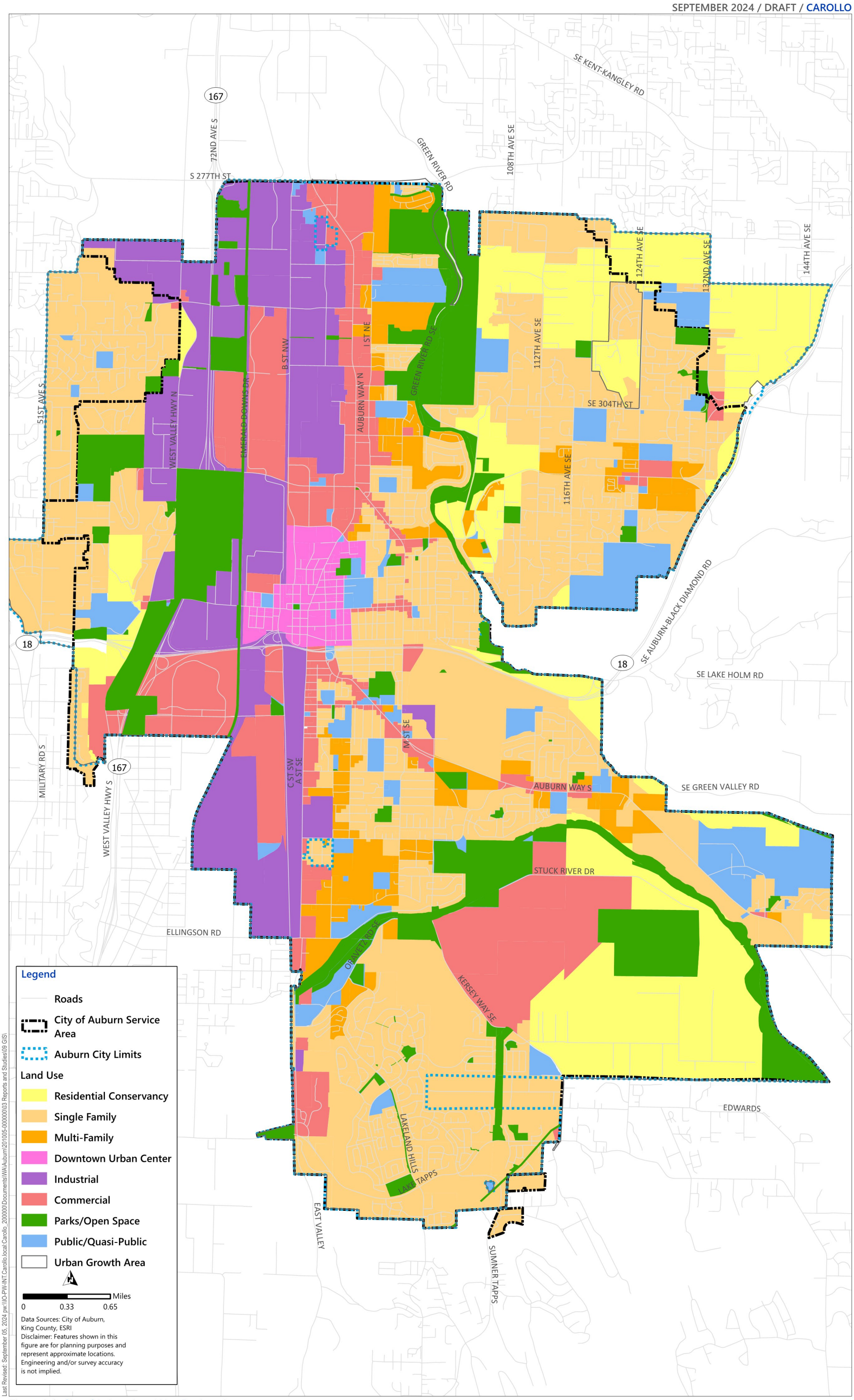

Figure 3.1 City of Auburn Land Use Designations

3.3.1 Description of Land Use Designations

Below is a description of the characteristics and goals of each of the land use designations. Each of the categories and designations are accompanied by specific policies and associated zoning designed to achieve the described character.

3.3.1.1 Residential

- Residential Conservancy - This designation should consist primarily of low-density residential uses (one dwelling unit per four acres is allowed) and accessory agricultural uses in areas featuring environmental constraints or requiring special protection such as the Coal Creek Springs watershed area, low-lying areas along the Green River, and areas that are isolated from urban services. This designation will serve to both protect environmental features and to hold areas for higher density development until public facilities become available.
- Single Family Residential - This designation is the predominant land-use category in the City. Maintaining and creating a diverse arrangement of interconnected subdivisions, neighborhoods, and communities that have a mix of densities and housing types; linkages with other residential areas and commercial hubs through nonmotorized modes, such as pedestrian and bicycling, and vehicular modes will be encouraged.
- Moderate Density Residential - These designated areas are planned to accommodate a variety of residential dwelling types. Varying densities may be permitted to provide a transition between single-family residential and other more intensive uses or activities (such as arterial streets) based on adjacent density, intensity, and/or character. Appropriate densities in these areas generally range from 7 to 20 dwelling units per acre. Dwelling types generally range from single-family dwelling to multiple-family dwellings, with larger structures allowed (within the density range) where offsetting community benefits can be identified.
- Multiple Family - This category shall be applied to those areas that are either now developed or are reserved for multiple family dwellings. Densities may range from 20 to 24 units per acre. These communities are served by transit, have nonmotorized connections to surrounding amenities and services, or have access to on-site amenities.

3.3.1.2 Commercial

- Downtown Urban Center - This category should be applied exclusively to downtown Auburn. The area should be developed in consistently with and conducive to pedestrian-oriented activities. The ambiance of the downtown area should encourage leisure shopping, provide services to local residents and area employees, and provide amenities that attract regional visitors and shoppers.
- Neighborhood Commercial - Low-intensity, small-scale commercial services that meet the daily needs of and complement the quality of the residential neighborhoods they serve. Commercial uses need to be carefully located, (if located within single-family residential neighborhoods), or should be buffered from single-family residential areas. These areas are characterized by lower traffic, fewer operating hours, smaller-scale buildings, and less signage than light commercial areas.

- Light Commercial - This category represents the prime commercial designation for small- to moderate-scale commercial activities. These commercial areas should be developed in a manner consistent with and attractive to pedestrian-oriented activities. Such areas should encourage walkability, leisure shopping, engaging public space, and should provide other amenities conducive to attracting shoppers.
- Heavy Commercial - This category is intended to accommodate uses that would also facilitate a wide range of heavier commercial uses involving extensive storage or vehicular movement.

3.3.1.3 Industrial

- Light Industrial - This category is intended to accommodate a wide range of industrial and commercial uses. This designation is intended to provide an attractive location for manufacturing, processing and assembling land use activities that contribute to quality surroundings. A wide variety of appropriate commercial uses in this designation benefit from the location, access, physical configuration, and building types of these properties. It is distinguished from heavier industrial uses by means of performance criteria. All significant activities shall take place inside buildings, and the processing or storage of hazardous materials shall be strictly controlled and permitted only as an incidental part of another use.
- Heavy Industrial - This designation allows the full range of industrial uses, as well as certain heavy commercial uses that serve the needs of workers in light industries are also appropriate.

3.3.1.4 Public and Institutional

- Open Space - This category shall be applied to areas that are owned by a public entity and maintained in a largely undeveloped state. It includes parks, watersheds, shoreline areas, significant wildlife habitats, storm drainage ponds, utility corridors with public access, and areas with significant development restrictions.
- Public/Quasi Public - This category covers those areas that are reserved for public or quasi-public uses. It is intended to include those areas of a significant size, and not those smaller public uses that are consistent with and may be included in another designation. These public uses include public schools, developed parks, and uses of quasi-public character such as large churches and private schools. Public uses of an industrial character are included in the industrial designation, and small-scale religious institutions of a residential character are included in the residential designation. Streets, utilities, and other separate uses are not intended to be mapped separately as Public/Quasi-Public.

3.4 Sewer System Flow Components

The City has separate sewer and stormwater collection systems, where only wastewater is conveyed in the sanitary sewer system. However, some groundwater and stormwater inevitably enter the sanitary sewer through defects in pipes and manholes (MH) and illicit storm drain connections. Therefore, sewer flows may vary substantially between dry and wet weather.

The different flow components are described in the section below.

3.4.1 Dry Weather Flow Components

There are two components of dry weather flow:

- Base wastewater flow (BWF).
- Dry weather groundwater infiltration (GWI).

3.4.1.1 Base Wastewater Flow

The BWF is the sanitary flow generated by routine water usage of the City's residential, commercial, and mixed-use customers. The collection system's primary function is conveying this flow. The flow has a diurnal pattern that varies by customer. Typically, a residential diurnal pattern has two peaks with the more pronounced peak following the wake-up hours of the day, and a less pronounced peak occurring in the evening. Commercial and mixed-use patterns, though they vary depending on the type of use, typically have more consistent higher flow patterns during business hours, and lower flows at night. Furthermore, a weekend diurnal flow pattern may vary from the diurnal flow experienced during a typical weekday.

3.4.1.2 Groundwater Infiltration

Dry weather GWI enters the sewer system through defects such as cracks, misaligned joints, MH defects, and broken pipelines. Dry weather GWI only occurs when the relative depth of the groundwater table is higher than the depth of the pipeline and where there is a defect; therefore, it varies throughout the system. Dry weather GWI (or base infiltration) cannot easily be separated from BWF by flow measurement techniques. Therefore, dry weather GWI is typically grouped with BWF.

3.4.1.3 Average Dry Weather Flow

Average dry weather flow (ADWF) is the average flow that occurs on a daily basis during the dry weather season and is representative of routine wastewater discharges into the collection system from customers as well as baseline groundwater infiltration.

3.4.2 Wet Weather Flow Components

Wet weather flow (WWF) includes two components:

- Inflow and Infiltration (I/I).
- Wet weather GWI.

3.4.2.1 Inflow and Infiltration

The stormwater I/I response in the sewer system to rainfall is seen immediately (inflow) or within hours after the storm (infiltration).

Inflow is stormwater that enters the sewer system via a direct connection to the system, such as roof drain and downspout connections, leaky MH covers, and illicit storm drain cross-connections. Infiltration is stormwater that enters the sewer system by percolating through the soil and then through defects in pipelines, MHs, and joints. An adverse effect of I/I entering the sewer system is an increase both the flow

volume and peak flows so that the sewer system could be operating at or above its capacity. If too much I/I enters the sewer system, sanitary sewer overflows (SSO) could occur.

3.4.2.2 Wet Weather Groundwater Infiltration

Wet weather GWI is not specific to a single rainfall event, but rather to the effects on the sewer system over the entire wet weather season. The depth of the groundwater table rising above the pipe invert elevation causes GWI. Sewer pipes within close proximity to a body of water can be greatly influenced by groundwater effects.

Wet weather GWI is associated with extraneous water entering the sewer system through defects in pipes and MHs while the ground is saturated during the wet weather season. Wet weather GWI may occur throughout the year, although rates are typically higher in the late winter and early spring in the Pacific Northwest.

3.4.2.3 Peak Wet Weather Flow

Peak wet weather flow (PWWF) is the highest observed hourly flow that occurs following the selected design storm event. PWWF in a sewer system can be more than ten times the base flow, causing utilities to construct high-capacity infrastructure to convey and treat these flows. For Auburn most of the basins have a peak factor below 5 for the 20-year design storm, with one small basin over 10 as noted in Chapter 5.

3.5 Average Dry Weather Flow

Developing an accurate estimate of the future quantity of wastewater generated at build-out of the collection system is an important step in maintaining and sizing sewer system facilities, for both existing conditions and future scenarios.

Base flow can be estimated for a wastewater system by comparing dry weather flow and wet weather flow at the various flow monitoring locations. To estimate ADWF for more specific areas, such as individual wastewater basins, dry weather flows are typically estimated based on the area contributing to flows and flow coefficients developed for each land use type. This method is developed based on the assumption that areas with similar land uses, such as low-density residential parcels, produce equivalent quantities of wastewater flow. System-wide flows can be compared to measured flows at flow monitor locations. This method of estimating base flows is an industry standard for planning and provides sufficiently accurate data for planning purposes.

3.5.1 Average Dry Weather Flow Development

Existing ADWFs for each basin were estimated using data from the Flow Monitoring Program for each of the flow monitoring basins. ADWF was developed using the driest days from the flow monitoring period based on the following set of minimum criteria:

- Less than 0.1 inch of rain the previous day.
- Less than 0.4 inch of rain in the previous three days.
- Less than 1.0 inch of rain in the previous five days.

- Selected days must exhibit average-day flows within 85 percent to 115 percent of the average-day flows of remaining dry days.
- In addition, those dry days that exhibited unusual flow patterns were not used to generate net dry day flow values for a basin.

Characteristic dry weather 24-hour diurnal flow patterns for each site were developed based on the hourly data. The hourly flow data were also used to calibrate the hydraulic model for the observed dry weather flows during the flow monitoring period. Hourly patterns for weekday and weekend flows vary and were separated to better understand dry weather flow. Additional information on this process is outlined in Appendix B.

3.6 Wet Weather Flow

PWWF in a wastewater collection system are caused by rainfall dependent I/I. Peak hour flows can result in flows more than ten times the base flow, causing utilities to construct high-capacity infrastructure to convey and treat these extraneous flows.

Existing and projected PWWFs are predicted using the hydraulic model and design storm used for this Plan. This analysis uses a 20-year recurrence interval design storm, illustrated in Chapter 5 - Wastewater System Analysis. This storm was identified in the 2012 King County I/I Study and corresponds to the recurrence interval within historical King County rainfall. To represent typical Pacific Northwest winter rainfall conditions, antecedent rainfall was added from historical data. Additionally, climate change risk was evaluated by modifying the design storm to represent possible changes to local rainfall based on the latest available research. Further details on the development of the design storm and climate evaluation can be found in Chapter 5 - Wastewater System Analysis.

CHAPTER 4 DESCRIPTION OF EXISTING SYSTEM

This chapter describes the existing wastewater collection and conveyance system and SSSA. The City provides wastewater collection services to city residences and businesses through multiple facilities including gravity sewers, pump stations, and force mains. The wastewater flow is conveyed to the King County Regional Wastewater System for treatment and disposal. The City's system consists of 17 sewer pump stations, approximately 5,500 MHs, and approximately 210 miles of sewers and force mains. The City's system is intended to collect and convey only sanitary flow, but the flow also includes rainfall-derived I/I. There are no known SSO in the system.

4.1 Overview

For purposes of discussion, the City's wastewater collection system is divided geographically into five major sewer basins. The descriptions of the five major sewer basins (Valley, West Hill, Lea Hill, Auburn Way South, and South Hill) are presented below and shown on Figure 4.1.

4.1.1 Valley Sewer Basin

The Valley Sewer Basin is located on the valley floor and contains the oldest portions of the City's sewer collection system. Four primary King County trunk sewer lines (Stuck River Trunk Sewer, M Street Trunk Sewer, Auburn Interceptor Sewer, and Auburn West Interceptor Sewer) convey flow from south to north along this sewer basin, providing the backbone for service to the City. The Valley Sewer Basin receives flows from the other four sewer basins and conveys these flows to the King County sewer trunk lines. The topography of the valley is very flat with a minor incline, sloping down from the south end of Auburn (elevation 109 feet) to the north end of Auburn (elevation 53 feet). Seven pump stations are located within the Valley Sewer Basin to serve areas which are unable to reach the King County trunk lines by gravity. The City provides service to two small areas of unincorporated King County, located within the sewer basin. The Valley Sewer Basin is bounded by the Lea Hill and Auburn Way South sewer basins to the east, the South Hill Sewer Basin and the Cities of Algona and Pacific to the south, the West Hill Sewer Basin to the west, and the city of Kent to the north.

4.1.2 West Hill Sewer Basin

The West Hill Sewer Basin includes areas located on the West Hill above the valley floor as well as areas of the valley adjacent to the hill. Flows from the West Hill Basin are conveyed to two King County trunk lines—the Auburn West Valley Interceptor and the Auburn Interceptor. Two pump stations serve portions of this basin. The Peasley Ridge Pump Station serves a small area on the westernmost edge of the basin. The Hudson Pump Station serves a flat area on the valley floor in the north end of the basin. The West Hill Sewer Basin is bounded by the Valley Sewer Basin to the east, city of Algona to the south, LWSD to the west, and City of Kent to the north.

The western boundary of the West Hill Sewer Basin, which is also the western boundary of the service area, was established by interlocal agreements with LWSD in 2004, 2005, and 2018 (see Appendix A).

4.1.3 Lea Hill Sewer Basin

The Lea Hill Sewer Basin is the portion of the city located to the east of the Green River. Sewer flows exit this basin into the Valley Sewer Basin by river crossings at the 8th Street Bridge or the Green River Siphon (see Section 4.2.4). Four pump stations serve the Lea Hill Sewer basin. The Rainier Ridge, Verdana, and Promenade Pump Stations are located on the east portion of the Lea Hill Sewer basin and convey sewage to high points on the hill where it can flow via gravity to the river crossings. The Riverside Pump Station serves low areas just east of the Green River and lifts sewage to the gravity sewer main that conveys flows across the 8th Street Bridge. There is a significant unsewered area in the north portion of the Lea Hill Sewer Basin. The area is substantially developed with single-family homes on lots between ¼-acre and 1 acre that use existing on-site septic systems. The northeast area of the sewer basin is served by SCWSD and the City of Kent (see Figure 4.1).

The basin is bounded on the south and west by the Green River. The north and east boundaries of the Lea Hill Sewer Basin were established by a 2001 interlocal agreement with the City of Kent and by a 2006 interlocal agreement with the SCWSD (see Appendix A).

4.1.4 Auburn Way South Sewer Basin

The Auburn Way South Sewer Basin is located east of the Valley Sewer Basin along Auburn Way South on the Enumclaw Plateau. It is geographically bounded by State Route 18 to the north and the White River to the south. The southeast portion of the Auburn Way South Sewer Basin borders the MIT reservation sewer service area. The City and the Muckleshoot Utility District jointly own a major trunk line that discharges to King County's Stuck River Trunk Line and/or the M Street Trunk Line at the northwest edge of the sewer basin.

4.1.5 South Hill Sewer Basin

The South Hill Sewer Basin is bounded by the White River to the north and east, City of Pacific to the west, and City of Sumner and Pierce County to the south. Portions of the Pierce County area lie with the City of Bonney Lake's Sewer Service Area. The western half of the South Hill Sewer Basin has been developed as a residential area. The eastern half (east of Kersey Way) of the sewer basin is currently developed as a low-density residential area and is unsewered. There is a large 300–400-acre gravel pit that is intended to be developed as a residential area within the next several years. Its development will require the installation of a sewer pump station to convey the flow from at least a portion of that project. Three pump stations (Area 19, Terrace View, and North Tapps) serve the southern extent of the sewer basin. All of the flow from the South Hill Sewer Basin is conveyed to King County's Lakeland Hills Pump Station, then pumped to King County's Lakeland Hills Trunk sewer located in the Valley Sewer Basin.

4.2 Sanitary Sewer Facilities

The following sections provide information regarding the City's wastewater facilities. Locations of the pumping facilities, river crossings, King County trunk lines, and other key system elements are shown in Figure 4.2. Ownership of interceptor and collection system pipelines is indicated by line color. Figure 4.2 also shows the City's potable water pumps, wells, and reservoirs. The City draws its potable water from deep aquifer wells located throughout its geographical boundaries. While no sewage treatment facilities are located within the City, portions of the conveyance system are located in the vicinity of some of those wells. Most of the sewer lines are located more than 100 feet from the wellheads as stipulated for new sewer works by Ecology's CSWD (G2-1.5.3), two well sites are close to 100 feet from existing sanitary sewers in the central part of the system. As part of the sewer inspection activities outlined the Chapter 7 CIP, the distance between wellheads and sewers will be definitively measured at these sites. If sanitary sewers are within 100 feet from the wellheads, based on condition and other projects in the vicinity, the sewer distance can be addressed as part of the Sanitary Sewer Repair and Replacement/System Improvements project summarized in Chapter 7, following the outlined priority methodology.

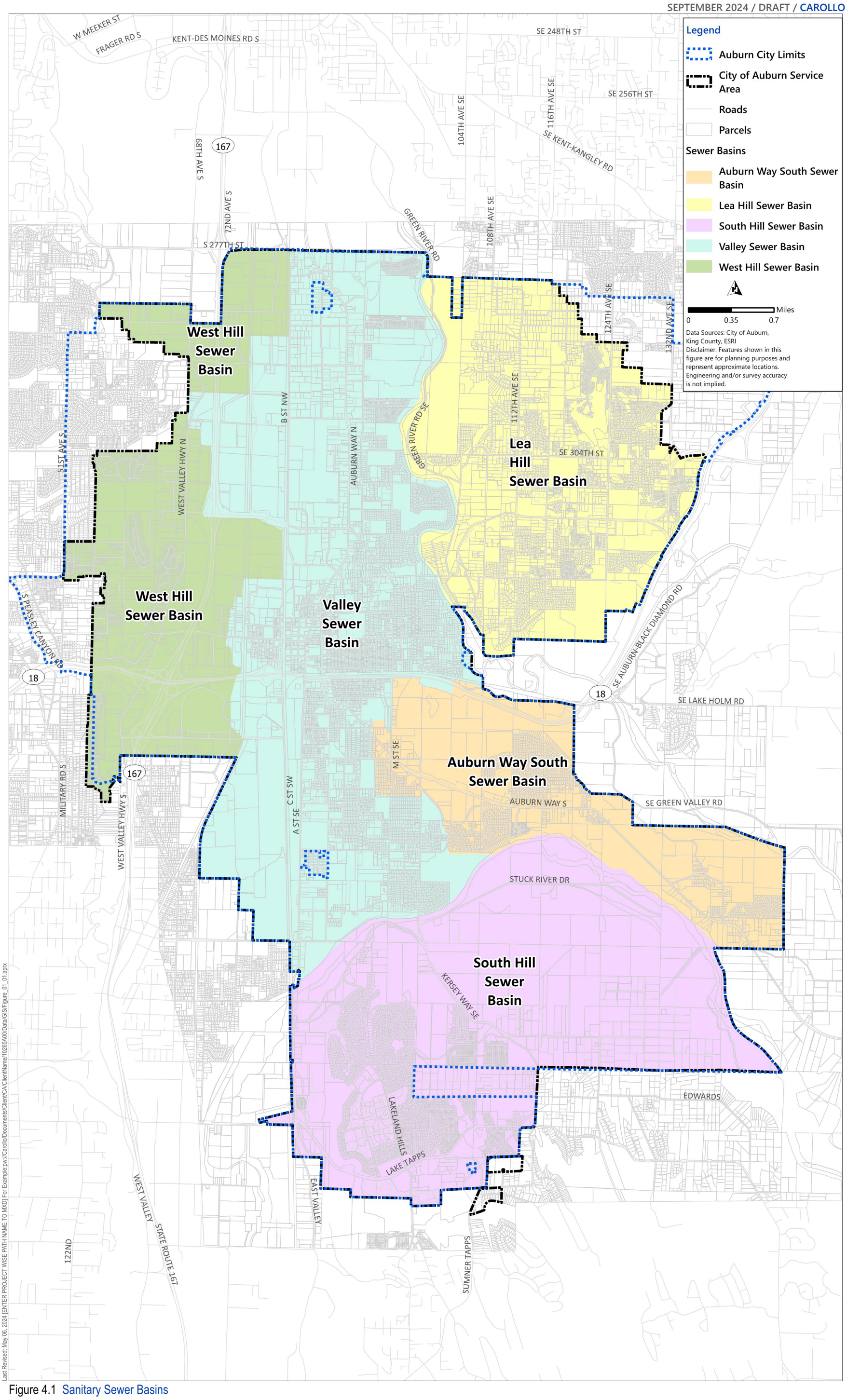

Figure 4.1 Sanitary Sewer Basins
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

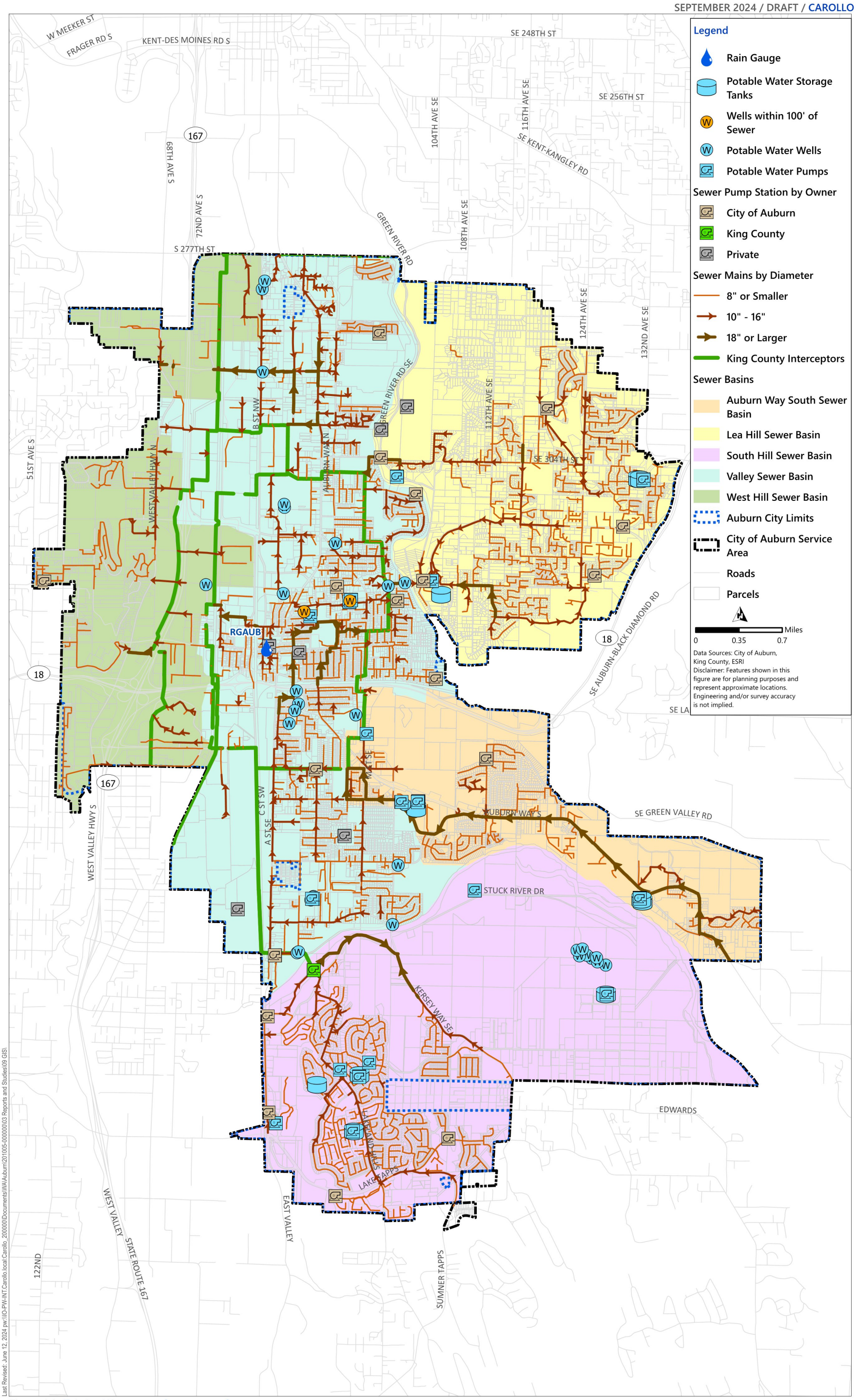

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Figure 4.2 Existing Wastewater Conveyance System

4.2.1 Critical Infrastructure

For planning purposes, the City considers all sewer pump stations, force mains, river crossings, and areas downstream of these facilities to be critical infrastructure. The critical infrastructure designation also applies to major trunk lines (pipes greater than or equal to 12 inches in diameter). Also, all gravity sewer lines serving the hospital, city hall, City maintenance facility, Justice Center, and fire stations are considered critical. These critical assets are shown in Figure 4.3.

4.2.2 Pump Stations

Since preparation of the *2016 Comprehensive Sewer Plan*, the City has added two new sewer pump stations associated with new developments, the Hudson, and Promenade Pump Stations.

The City currently has 17 pump stations within its SSSA. The pump stations are listed in Table 4.1 along with their location and year of construction or most recent replacement. More detailed information regarding the pump stations is provided in Appendix C.

Table 4.1 City of Auburn Sewer Pump Station Inventory

Pump Station	Year Constructed/ Replaced	Cross Streets	Approximate Address
South Hill Sewer Basin			
Area 19	2006	Lake Tapps Pkwy. E and west of 72nd St. SE	800 71st Street SE
North Tapps	2007	Lake Tapps Pkwy. SE and west of 176th Ave. E	2610 Lake Tapps Pkwy. SE
Terrace View	2007	East Valley Hwy. E and north of Terrace View Dr. SE	6005 East Valley Highway
Valley Sewer Basin			
Auburn 40	2010	42nd St NE and O Pl. NE	4159 O Pl. NE
Ellingson	2011	41st St. SE, East of A St. SE	40 41st St. SE
F Street	1980	F St. SE and 17th St. SE	1700 F St. SE
Hudson	2020	S 287th St and West Valley Hwy	6408 S 287th St.
R Street	1977	R St. NE and 6th St. NE	600 R St. NE
Valley Meadows	1992	4th St. SE and V St. SE	2022 4th St. SE
8th Street	1974	J St. NE and 8th St. NE	900 8th St. NE
22nd Street	1967	22nd St. SE and Riverview Dr.	1950 22nd St. NE
Auburn Way South Sewer Basin			
Dogwood	2010	Dogwood St. SE and 15th St. SE	1423 Dogwood St. SE
West Hill Sewer Basin			
Peasley Ridge	2001	S. 320th St. and 53rd Ave. S	5225 S 320th St.
Lea Hill Sewer Basin			
Promenade	2018	SE 312th St and 132nd Way SE	12900 SE 312th St.
Rainier Ridge	1980	125th Pl. SE and south of SE 318th Way	31809 125th Pl. SE
Riverside	1981	8th St. NE and 104th Ave. SE	31902 104th Ave. SE
Verdana	2011	118th Ave SE and SE 296th Pl.	11807 SE 296th Place (Kent)

4.2.3 Gravity and Force Main Collection System

The City sewer collection system includes approximately 205 miles of gravity and 5 miles of force main pipe. The collection system is primarily composed of polyvinyl chloride pipe with an 8-inch diameter. Older areas of the collection system consist of concrete or clay pipe, which the City has been replacing with other material when repairs are required or anticipated. The City is continually updating its digital geographic and record-keeping systems to include pipeline information such as material, diameter, installation date, and TV reports. Figure 4.4 provides a visual representation (by overall system percentage) of pipeline characteristics, including unknown and/or unrecorded data. The largest current data gap is the installation date of collection system facilities. The recently formed Public Works GIS group has begun a more detailed inventory and data collection effort that is compiling data from a variety of sources to increase the reliability and usefulness of the system data. As part of the City's asset management efforts, City maintenance staff will verify collection system information during routine inspections.

Additional conveyance facilities, primarily owned by King County, are also located within the Auburn SSSA. King County conveyance facilities are discussed in Section 4.3.

4.2.4 Side Sewer Laterals

Generally, each building has a separate side sewer lateral connecting the building sewer to the public main. The Utility is responsible for the maintenance and repair of the portion of side sewer laterals within the right-of-way.

4.2.5 River Crossings

The City of Auburn collection system contains two crossings of the Green River. The crossings are located at the 8th Street NE bridge and near 26th Street NE, both are shown in Figure 4.2. Detailed descriptions of each river crossing are provided below.

4.2.5.1 Green River Crossing (via 8th Street NE)

The Green River crossing was constructed in 1965. The crossing consisted of a cast-iron pipe mounted on the 8th Street NE bridge. When the bridge was replaced in 1971, that pipe was replaced with a combination of ductile iron pipe and "reinforced plastic mortar pipe cast in concrete." Because the midpoint of the bridge is at a higher elevation than the bank on either side, the pipe does not have a positive downhill slope across the bridge and must rely on upstream pressure developed in the line as it comes down Lea Hill to force the flow across the bridge. The pipe continuing up Lea Hill is approximately 900 linear feet and is constructed of 14-inch-diameter cast-iron pressure pipe. At the bottom of the hill, just upstream of the bridge, a valve chamber once housed a mechanically operated control valve. The valve was originally designed to remain closed until pressure, as caused by the upstream pipe filling, opened the valve, and released the flow across the bridge. Due to significant development on the east side of the river, flow within this sewer segment became sufficiently high to maintain continuous scouring flow along the flatter portion of the pipeline, so the valve has been removed.

4.2.5.2 Green River Crossing (via Inverted Siphon at 26th Street NE)

The inverted siphon across the Green River near 26th Street NE was constructed in 1986 and includes parallel 8- and 12-inch-diameter siphon pipelines. The 8-inch-diameter siphon is typically in use. When increased flows occur, wastewater will be redirected to the 12-inch-diameter siphon. If needed, both siphons are capable of operating together. The siphon facility includes a flushing manhole, located in Isaac Evans Park.

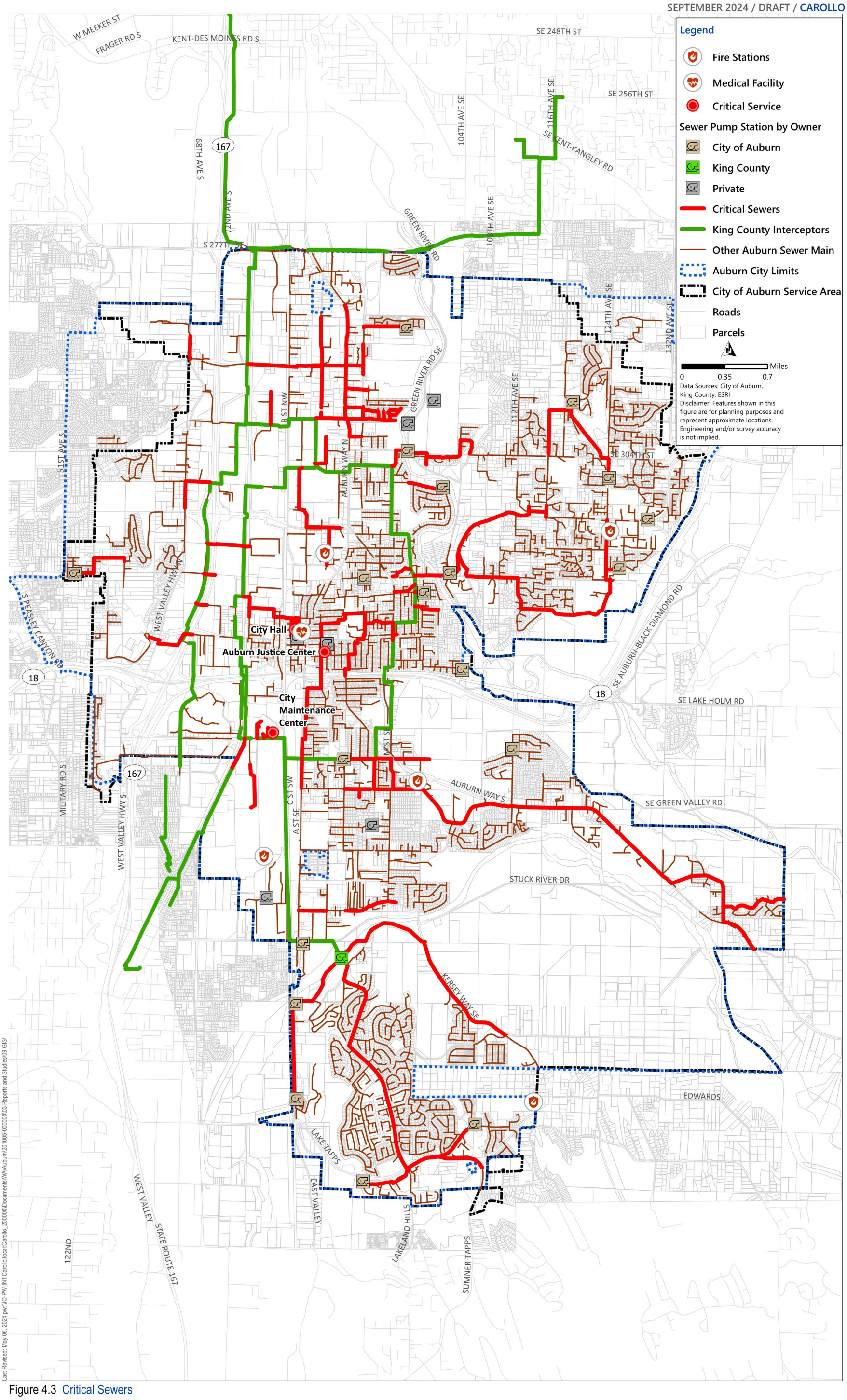


Figure 4.3 Critical Sewers
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

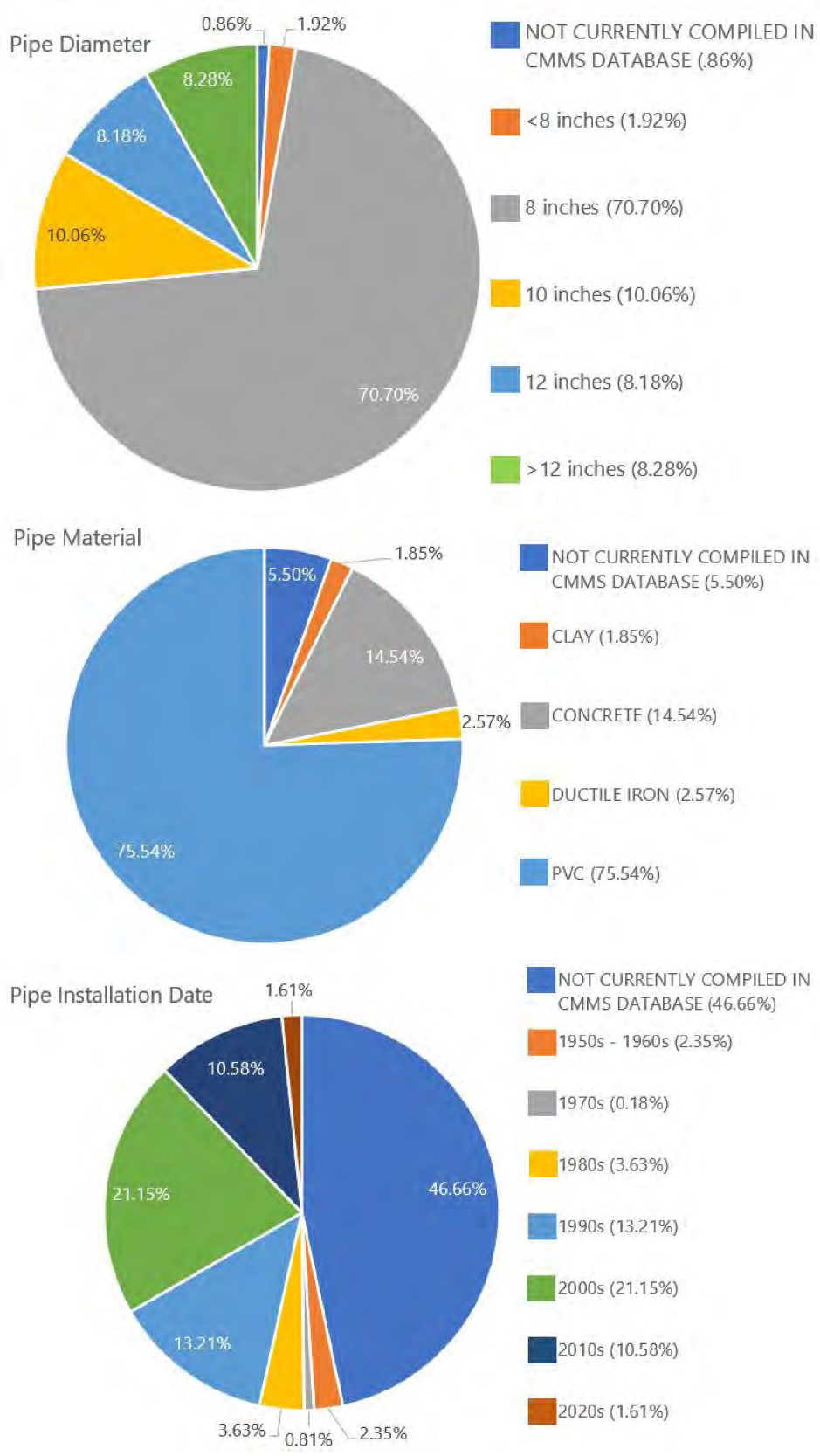


Figure 4.4 City of Auburn Collection System Summary Statistics

4.3 King County Conveyance

The King County wastewater conveyance facilities serving the City include the Auburn Interceptor, Auburn West Valley Interceptor, Auburn West Interceptor, M Street Trunk sewer, the newly constructed Stuck River Trunk sewer, the Lakeland Hills Trunk sewer, and the Lakeland Hills Pump Station. As shown in Figure 4.2, the King County facilities convey wastewater from the south to the north, collecting flow from the Auburn SSSA. The Auburn West Valley Interceptor begins in Algona and flows through the West Hills sewer basin. The Lakeland Hills Trunk sewer and Auburn West Interceptor carry flow from the Lakeland Hills Pump Station north. The M Street Trunk sewer lies mainly on the eastern side of the Valley basin. The Stuck River Trunk sewer extends from the south end of the M Street Trunk sewer in a westerly direction, where it intersects the Lakeland Hills Trunk sewer. All flows are conveyed to the King County South Treatment Plant in Renton, Washington.

King County has initiated a project to replace the Lakeland Hills Pump Station by 2031. The replacement station will serve the same basin as the existing station but will include elements to increase its reliability and maintainability. The capacity of the station will be designed to reflect future growth within its basin.

4.4 Infiltration and Inflow

As part of the analysis of the 2016 Plan, the City used King County Decennial Flow Monitoring (from 2009-2011) and sewer pump station data to identify areas within the service area that may be experiencing high levels of I/I. During this planning period, City staff hired a contractor to install temporary flow meters at specific locations within the potential high I/I areas to locate specific areas of high I/I more precisely. This monitoring corresponded with King County's most recent decennial flow monitoring effort (2020-2022), so that the data from both projects could be shared. The results and conclusions from this effort are included in Chapter 5.

King County, along with the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC), which is made up of component agencies (Cities and Districts who operate sewer collection systems convey the wastewater to King County for treatment), have worked together since 2000 to measure I/I and have piloted several programs to identify and reduce I/I. Actions included flow monitoring, smoke testing, CCTV inspection, and construction projects designed to reduce I/I to the extent that the required capacity of conveyance and storage facilities could be reduced. While the pilot projects were somewhat successful in reducing I/I, it was not clear that costs of the projects were less than the costs of expanding downstream capacity to convey such flows.

From 2017 until now, King County and MWPAAC have explored concepts to reduce I/I programmatically, focusing on private side sewers and the reduction of I/I over the long term. These efforts included developing or enhancing standards for side sewer construction, encouraging proactive maintenance for side sewers, and identifying and mitigating sources on private property. The strategy with the most potential impact is a proposal to require inspection and repair of side sewers at the point-of-sale of a property. Since this proposal will likely require legislative action and input from a large field of stakeholders, pursuit of that strategy may be included in the upcoming Clean Water Plan planning effort.

4.5 Odor Control and Corrosion

Sewer Policy 5.11 commits the City to monitor frequent odor complaints and to act when three per month are documented. City staff investigate all odor complaints to determine their source, persistence, and potential source if it can be identified. Strategies for mitigating odor include sealing sewer manhole lids, adding bioxide to pump station wet wells to minimize the generation of hydrogen sulfide gas, and filtering wet well ventilation at pump stations. These strategies have been effective, and the City currently has no sites where persistent odor has been detected or reported.

City staff assess corrosion in the system as part of manhole inspections, CCTV inspections of sewer mains, and pump station wet well maintenance activities. The City has not identified any persistent widespread problems with corrosion, but as specific incidents of corrosion are identified those observations are recorded in the City's CMMS. Strategies for managing corrosion include replacing or lining (using Cured-in-Place Pipe) sewer mains, replacing corroded manhole rings and covers, and coating concrete pump station wet wells.

4.6 Industrial Waste Discharges

As part of its conveyance service, the City accepts industrial waste from permitted industrial waste dischargers. King County staff manage the industrial waste program, including permitting, inspection, record-keeping, and enforcement. While that responsibility lies mainly with County staff, City staff help to proactively identify potential dischargers as part of the business license review process. Table 4.2 below identifies the current industrial waste dischargers within the City SSSA. For updated Industrial Waste Discharge Permit information, contact King County's Industrial Waste Program by phone (206.477.5300) or E-mail (Info.KCIW@kingcounty.gov).

Table 4.2 City of Auburn Industrial Waste Discharge Permits

Company name	Business type	Address	Permit type	Permitted Discharge (gpd)
ABAF - Imaginetics	Metal Finishing - Cfr 433	3410 A Street SE	Permit	21.000
Accurate Industries	Metal Finishing - Cfr 433	233 D Street NW	Zero Discharge (Categorical)	0
Aero Controls Inc. - 20th Street	Metal Finishing - Cfr 433	1610 20Th Street NW	Minor Discharge Authorization	100
American Powder Coating	Metal Fabrication	3802 B Street NW	Letter Of Authorization	250
Auburn Dairy Products Inc.	Food Processing-Dairy	702 W. Main Street	Permit	50.000
Auburn, City of - Decant Facility	Decant Station	1305 C Street SW	Major Discharge Authorization	2.000
Boeing Commercial Airplane - Auburn	Metal Finishing - Cfr 433	700 15Th Street SW	Permit	1.209.000
Costco Optical Lab No. 190 - Auburn	Manufacturing-Misc	1802 M Street NW	Major Discharge Authorization	24.500
Formula Corp. - Auburn	Soap And Detergent Mfg - Cfr 417	4432 C Street NE	Permit	16.000

Company name	Business type	Address	Permit type	Permitted Discharge (gpd)
Hexacomb Corp.	General Type	2820 B Street NW, Suite 111	Letter Of Authorization	705
Hospital Central Services Association Inc.	Laundry - Linen	1600 M Street W	Major Discharge Authorization	50,000
MechPro Inc.	Metal Finishing - Cfr 433	1320 26Th Street NW #4	Zero Discharge (Categorical)	0
Oldcastle Infrastructure	Cement/Readymix	2808 A Street SE	Major Discharge Authorization	7.000
Ply Gem Pacific Windows Corp.	Manufacturing-Misc	5001 D Street NW	Minor Discharge Authorization	19.000
Plymouth Poultry Vanguard	Food Processing	3416 B St NW	Letter Of Authorization	1.000
Safeway Inc. - Auburn Distribution Center	Vehicle Washing	3520 Pacific Avenue S.	Letter Of Authorization	1,750
Skills Inc. - Auburn Facility	Metal Finishing - Cfr 433	715 30Th Street NE	Permit	16,300
Thermaline Inc.	Metal Finishing - Cfr 433	1531 14Th St NW	Zero Discharge (Categorical)	0
Thyssenkrupp Aerospace, dba TMX Aerospace	General Type	5002 D Street NW, Suite 104	Major Discharge Authorization	10,000
Waste Management Inc. - South Sound	Container Washing	701 2Nd Street NW	Major Discharge Authorization	5,000
WCR Inc.	Metal Finishing - Cfr 433	3126 C Street Ne	Permit	21,000
Fleet Clean	Pressure Washing	104 49th Street NW	Major Discharge Authorization	1,000
New Type	Laboratory Wastewater	3205 C Street NE	Letter of Authorization	100
Auburn Mechanical	Manufacturing	22 42nd Street NW		19,000

King County Industrial Waste staff have indicated that the overall volume of industrial waste flows has generally been consistent and primarily concentrated during working hours during weekdays. While the City does not limit or prescribe the number or types of industrial businesses in the City, it is assumed that collectively, the amount and quality of future industrial wastewater flows from those businesses will be similar to existing flows.

City Engineering staff manage commercial restaurant dischargers in accordance with ACC Chapter 13.22. Maintenance activities related to commercial pretreatment facilities, specifically the City's FOG Reduction Program, are discussed in Chapter 6, Section 6.3.

4.7 Water Reclamation and Reuse

Reclaimed water is wastewater that has been treated to a level at which it can be used safely and effectively for beneficial, non-drinking water purposes. The City does not currently use reclaimed water because there are no nearby sources or transmission pipelines for reclaimed water. While immediate opportunities are not available, the City is in favor of the concept of water reuse, and as technology, economics, and/or the development of infrastructure makes such use feasible, the City would encourage its use. The City participates in the King County reclaimed water program, which completed a Reclaimed Water Comprehensive Plan in 2012, and includes a completed King County Water Reclamation Evaluation Checklist, a copy of which is included as Appendix E, as part of the Water System Plan (WSP).

This section summarizes the regulatory framework surrounding the generation and use of reclaimed water, potential reclaimed water sources and users, and City planning for near-term reclaimed water use within the City SSSA.

4.7.1 Regulatory Framework

The state has identified reclaimed water as an important water resource management strategy that offers benefits related to potable water supply, wastewater management, and environmental enhancement. State law supports the beneficial reuse of reclaimed water for consumptive applications (such as irrigation, commercial and industrial process use, etc.) and non-consumptive purposes (including groundwater recharge via surface percolation or direct injection, wetland enhancement, and stream flow augmentation).

DOH and Ecology have developed standards that guide the planning and development of reclaimed water projects and systems. These standards, summarized in the jointly published *Water Reclamation and Reuse Standards* (September 1997), describe the allowable beneficial uses of reclaimed water and the required levels of treatment appropriate for each use. The Standards establish four classes of reclaimed water; A, B, C, and D. Class A reclaimed water represents the highest level of treatment, referring to water that is oxidized, coagulated, filtered, and disinfected to certain standards. Of all levels of reclaimed water, Class A is acceptable for the widest range of uses. Additional clarification and guidance related to the design of reclaimed water facilities are provided in Ecology's Criteria for Sewage Works Design (Ecology, 2008).

Ecology prepared draft reclaimed water regulations (WAC 173-219) to further define and provide guidance for reclaimed water facilities and uses. The rule-making process began with legislation in 2006 that amended the Reclaimed Water Use Act, Revised Code of Washington (RCW) Chapter 90.46, and directed Ecology to coordinate with DOH, form a stakeholder Rule Advisory Committee, and adopt a comprehensive rule for reclaimed water use by December 2010. The overall goal was to develop a Reclaimed Water Program through rules, guidance, and statutes that runs smoothly and consistently while protecting public health and the environment. Several drafts of the proposed rule were made available for review by stakeholders, and significant comments were submitted, but the rule-making process was suspended by executive order before it could be completed. Ecology reactivated the rulemaking process in June 2014. The revised reclaimed water rule was incorporated into WAC 173-219 in 2018.

4.7.2 Potential Reclaimed Water Sources

This section identifies potential sources of reclaimed water in the vicinity of the City SSSA.

Receiving water from any of the existing treatment plants would involve the construction of long (7-15 mile) pipelines since none of them are located in or immediately adjacent to Auburn. Also, since reclaimed water cannot be mixed with potable water, all of the options listed below would also require the installation of a separate reclaimed water distribution system to convey that water directly to potential users.

4.7.2.1 King County

City of Auburn wastewater is treated at King County's South Treatment Plant, located in Renton, approximately 13 miles north of Auburn. Although South Plant does generate reclaimed water for onsite uses, nearby irrigation, and habitat restoration, there are no existing or planned transmission lines south to the City of Auburn. The status of current King County reclaimed water comprehensive planning is discussed in Section 4.6.3.

4.7.2.2 City of Sumner

The City of Sumner wastewater treatment plant is located approximately 8 miles south of the city of Auburn. Sumner does not currently produce reclaimed water for offsite uses, but the City will continue to monitor Sumner's plans for reclaimed water use to determine if transmission of reclaimed water from Sumner to the City is feasible and cost-effective for potential users within the City SSSA.

4.7.2.3 Lakehaven Water and Sewer District

LWSD owns and operates two wastewater treatment plants, the Lakota and Redondo facilities, located approximately seven miles to the west and northwest of the City. LWSD does not currently produce reclaimed water but has evaluated the feasibility of producing reclaimed water for landscape irrigation and groundwater recharge. Because the Redondo facility site is limited with respect to expansion area, reclaimed water improvements, if implemented, would likely occur at the Lakota facility. The City will continue to monitor LWSD planning efforts with respect to reclaimed water production and reuse.

4.7.2.4 City of Auburn

Although the City does not operate a centralized wastewater treatment plant, a smaller, satellite reclaimed water production facility could feasibly be installed at one of the City's pump stations. A satellite facility could be used to capture wastewater flows from a specific basin, and then generate reclaimed water for uses nearby. While a range of treatment approaches may be employed at a satellite facility, many utilities are implementing membrane bioreactor (MBR) technology in these types of applications, because of the small footprint required relative to other, more conventional forms of wastewater treatment. Solids generated at the satellite facility would be returned to the collection system and conveyed to King County's South Treatment Plant. While currently, the capital investment for such a facility is prohibitive as technology and cost effectiveness improves, such a facility would be considered.

4.7.3 Potential Reclaimed Water Users

Starting in 2009, King County began development of a Reclaimed Water Comprehensive Plan to evaluate expansion of its existing reclaimed water program over a 30-year period. The City of Auburn supported the County's planning process by providing non-potable water use data by specific parcel. City staff and elected officials also participated in reclaimed water workshops held at key points in the County planning process. Although the Reclaimed Water Comprehensive Plan was not completed, some of the concepts evaluated during that process will inform the development of a plan for reclaimed water as part of King County's Clean Water Plan. The most likely reclaimed water customers would be in the irrigation class, as noted in the WSP.

4.7.4 Reclaimed Water Summary

The City of Auburn is not planning any specific capital improvements related to producing and/or conveying reclaimed water for the following reasons:

- King County and other nearby treatment plant sources of reclaimed water are unlikely to be developed for use within the City SSSA in the near term.
- The City currently has adequate water supply in the near term and the need for offsetting potable water demands is low at this time.
- The capital costs related to design, construction, and permitting of a reclaimed water production facility are large relative to the benefit at this time.

The City acknowledges the value that a reclaimed water program might offer in the future, especially if a nearby reclaimed water source with associated conveyance piping is extended to the City's SSSA. The City will continue to monitor reclaimed water planning by nearby purveyors, the adequacy of the City's water rights to meet current and future potable water demand, and the industrial user base, or other significant user to evaluate whether reclaimed water is a feasible and economically viable alternative. City staff will also continue to participate in King County's Clean Water Plan to promote the City's interests in County policies, criteria, and implementation strategies.

CHAPTER 5 WASTEWATER SYSTEM ANALYSIS

5.1 Introduction

The City customer base continues to increase through system growth by development, redevelopment, and connection of on-site system properties that were not previously connected to the system. With the additional customers served, some of the City's sewer infrastructure may reach its conveyance capacity. This chapter presents an evaluation of the available capacity of the existing system to convey current and future projected sewer flows and develops appropriate CIP to address any deficiencies. Using the City's updated and re-calibrated collection system hydraulic model, major pipes and lift stations in the collection system were evaluated using the established capacity criteria. The modeled collection system consists primarily of large gravity sewers which represents a skeletonized version that includes all key components of the system. The modeling focused on the key conveyance infrastructure, neglecting smaller collector pipes which generally have adequate capacity to convey the flow. This approach reduces the modeling computational effort, while providing necessary conveyance information. Additional details on the hydraulic model update and calibration can be found in Technical Memorandum (TM) 1 - Model Calibration Report (Appendix B).

The collection system was evaluated for two planning scenarios:

- Existing - Based on 2020-2021 flow monitor data.
- Future year 2044 - Based on traffic area zone (TAZ) projected population and employment developed from Puget Sound Regional Council projections by Leland Consulting Group.[1][2]

This chapter presents potential deficiencies under both existing and future conditions and includes an I/I analysis.

5.2 Design and Performance Criteria

Defining performance criteria and key conveyance events is a critical step in the master planning process because it sets evaluation metrics for the collection system infrastructure's ability to meet service goals set by the City. It is important to differentiate performance criteria from design criteria when judging the performance of collection system infrastructure:

- Design criteria establish the standards for designing and constructing new sewers and lift stations.
- Performance criteria establish the standards that are used to analyze adequacy of existing facilities and to trigger infrastructure improvements meeting design criteria.

The collection system's function is to convey sanitary flows from residential and commercial customers to King County's trunk system that takes flows to the King County South Treatment Plant. However, additional wet weather flow from rain and groundwater sources may enter the system that also need to

[1] Auburn Comprehensive Plan: Industry Composition, Location, and Work from Home Memo | Draft, 10/6/2023, Leland Consulting Group.
[2] Auburn Comprehensive Plan: TAZ Allocations under No Action and Preferred Land Use Scenarios | Draft, 10/6/2023, Leland Consulting Group.

be conveyed. Wet weather flows vary with storm size, intensity, and timing. For planning purposes, a design storm is simulated in the hydraulic model, which is used as the evaluation point for the modeled infrastructure. The following sections describe the City's established design criteria and performance criteria used in this analysis.

5.2.1 Design Storm

Design storms are simulated rainfall events used to analyze the performance of a collection system under peak flows and have a specific recurrence interval and rainfall duration. The National Oceanic and Atmospheric Administration publishes isopluvial (rainfall contour) maps that can be used to approximate the total rainfall depth for a range of design storms. Additionally, an appropriate hydrograph for the storm is required to distribute the rain through the design period. Finally antecedent conditions should be considered, as Pacific Northwest storms tend to span multiple days which can lead to saturated ground conditions increasing runoff. The best approach to address hydrograph and antecedent conditions is to base analysis on a historical precedent. The City has selected a weather event from 1996 with a recurrence interval of 20 years for the design storm based on an analysis done for the 2016 Comprehensive Sewer Plan. At that time, a long-term simulation was done with rainfall data from January 1, 1949 through December 31,2012 to identify 20-year peak flow frequency. The third largest event appeared to have a 25-year recurrence and fourth largest appeared to have an 18-year recurrence, with both events producing similar peak RDII flows of 27.19 mgd and 27.03 mgd, respectively. Therefore, the third largest event that occurred on February 5, 1996 was selected to represent the 20-year design storm.

Figure 5.1 shows the historical design storm used for the capacity analysis. A period of rain events occurred over five days. The storm peak lasts 24 hours at the end of the event, with a peak rainfall intensity of 0.29 inches per hour and a 24-hour volume of 2.39 inches.



Figure 5.1 20 Year Design Storm

5.2.2 Climate Risk

As described in the previous section, the performance criteria for this master planning effort are evaluated using historical events and by performing statistical analysis to determine the likelihood of recurrence. This is standard practice but does not incorporate expected local and regional climate changes in the future. Over the coming decades, it is expected that the Pacific Northwest will see extreme precipitation events with increasing frequency.

To help plan for this future, this master planning effort evaluated regionally-downscaled climate model results from the University of Washington Climate Impacts Group (CIG). CIG has statistically downscaled an ensemble of global climate models to a 12-km grid and provides expected increases in 1-hour and 24-hour precipitation for various recurrence intervals. These values were used to determine the expected percent change for the 20-year design storm characteristics (peak rainfall intensity of 0.29 inches per hour and a 24-hour volume of 2.39 inches) for the future year being evaluated (2044) as well as the end of the century. Since CIG averages model results over a 30-year period, 2044 is represented by the 2030 - 2059 model ensemble results and the end of the century is represented by 2070 - 2099. Table 5.1 and 5.2 show the ensemble average, maximum and minimum results for both time periods.

Table 5.1 Summary of Potential Future Characteristics for the Design Storm, 2030 - 2059

Parameter	Ensemble Average	Ensemble Maximum	Ensemble Minimum
Peak Intensity (inches per hour)	0.36 (+24%)	0.46 (+58%)	0.26 (-10%)
24-hr Volume (inches)	3.85 (+17%)	5.07 (+54%)	2.89 (-12%)

Table 5.2 Summary of Potential Future Characteristics for the Design Storm, 2079 - 2099

Parameter	Ensemble Average	Ensemble Maximum	Ensemble Minimum
Peak Intensity (inches per hour)	0.42 (+45%)	0.59 (+103%)	0.30 (+2%)
24-hr Volume (inches)	4.24 (+29%)	5.76 (+75%)	3.39 (3%)

These results were used in the existing models to analyze the adequacy of existing facilities and can be used to set future design criteria. Climate change modeling will continue to advance, with new techniques and improved computer processing allowing for more robust projections in the future. In 2021, the Intergovernmental Panel on Climate Change released the most recent major update to the global Coupled Model Intercomparison Project. CIG is currently working to downscale results from those models and compare them to the previous generation used in this study. Following CIG's work, it is recommended that the City review those results to determine if further changes to future design criteria are required.

5.2.3 Conveyance System

It is common practice to use a diameter-based flow depth criteria for pipes both when evaluating exiting sewers and designing new sewers. The depth/diameter (d/D) ratio is defined as the depth (d) of flow in a pipe divided by the pipe's diameter (D). For the conveyance system, the design criteria and performance criteria are outlined below and shown in Figure 5.2:

- Performance Criteria: During PWWF for the design storm, water levels should not surcharge pipes (maximum d/D of 1.0). Pipes that surcharged and exceeded a d/D of 1 and were less than 6 feet from the ground surface in manholes were considered deficient. In Figure 5.2, the hydraulic grade line (HGL) is surcharged and therefore would be considered deficient.

- Design Criteria: Sewers shall be designed to not surcharge or flow at a maximum d/D of 1.0 at peak flow rates for both existing and build-out conditions.

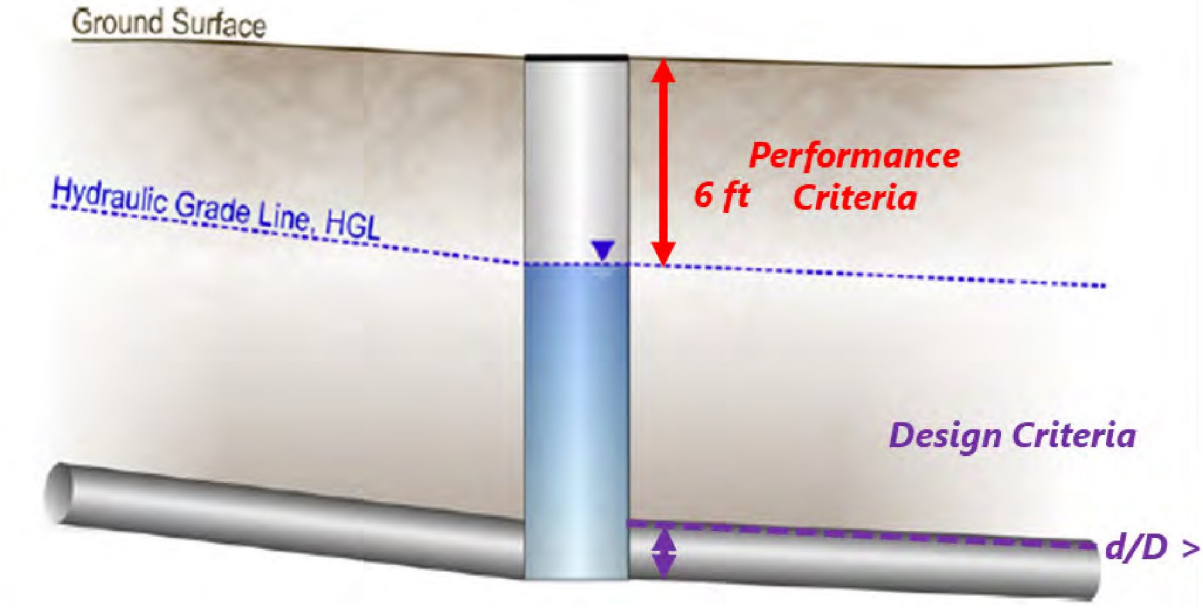


Figure 5.2 Design and Performance HGL Criteria

5.2.4 Lift Stations and Force Mains

Any new lift station recommendations will need to follow Washington State Department of Ecology's Criteria for Sewage Works Design (Orange Book) recommendations for lift stations and force main construction to meet Ecology requirements. Ecology's requirements are outlined below:

- The firm capacity of a pumping station shall be equal to or greater than the peak hourly design flow. Because mechanical and electrical equipment is typically designed for a 20-year life, it is recommended that the peak design flow be based on a 20-year forecast or greater.
- The number of pumps selected shall allow the station to provide the peak design flow with the largest pump out of service.
- The station shall be designed to remain fully operational during the 100-year event.
- Pumps should be designed for pumping sewage and capable of passing solids at least 3 inches in diameter. Pump suction and discharge should be 4 inches or greater.

The City's performance criteria requirements for existing lift stations include firm capacity (i.e., capacity with largest pump out of service) and force main velocities. According to Washington's Orange Book, firm lift capacity shall be provided to manage the design storm peak hour flow, also known as the PWWF, from the lift station's tributary area with the largest pump out of service. Therefore, the City's lift stations should have sufficient firm capacity to pump the PWWF during the design storm.

The evaluation of existing force mains is based on recommendations in the Orange Book for a maximum pipe velocity of 8 feet per second or less during the PWWF for the design storm. The design of new force mains should keep the minimum velocity above 2 feet per second to minimize solids settling.

5.3 Future Conditions Flow Projection

The 2044 scenario flow projection was based on the existing condition flows developed in Appendix B, TM 1 - Model Calibration Report Section 1.6.

5.3.1 Future Conditions Average Dry Weather Flow Development

TAZ blocks provided estimates of existing (2021) and future (2044) units of employment, single family, multi family, housing units, and population. These TAZ blocks were spatially joined to the modeled catchment layer to determine the units in the City's collection system. Figure 5.3 outlines the TAZ blocks within the City's service area.

Table 5.3 outlines the TAZ unit type for 2021 and 2044. The unit type increase was used to calculate a scaling factor, or the unit of increase between the 2021 and 2044 units. The scaling factor was used to project the future ADWF for every catchment in the collection system. The project sanitary flow summary by TAZ type are shown in Table 5.3.

Table 5.3 Flow Projections Summary

TAZ Type	2021 Total Units	2044 Total Units	Scaling Factor	2021 Sanitary Flow (mgd)	2044 Sanitary Flow (mgd)
Single Family	14,841	21,631	1.46	3.03	4.50
Multi-Family	16,985	20,578	1.21	0.90	1.16
Employment	47,738	65,674	1.38	4.49	6.25
Housing Unit	31,457	42,219	-	-	-
Population	86,149	114,056	-	-	-
Total	-	-	-	8.45	11.92

Notes:
mgd - million gallons per day.

5.3.2 Future Conditions Wet Weather Flow Assumptions

Figure 5.4 identifies the portion of the collection system that is currently developed with available sewer in yellow, the portion that likely will not be developed is in red, and the orange section identifies areas that can be developed or are not currently connected to a sewer. The areas shown that likely cannot be developed are due to steep slopes greater than 40 percent grade or large wetlands occupying a large portion of the area. There are likely smaller areas within the system that similarly cannot be developed, but are not easily captured in the larger planning effort. It was assumed that all developable parcels would be developed and connected for the 2044 scenario in the model including those with on-site systems, contributing a WWF I/I component from the contributing area. It was assumed that the I/I of future sewered areas would be 1,500 gallons per acre per day (gpad) during the design storm. This I/I rate is slightly higher than the King County target value of 1,100 gpad, providing a level of conservatism in projecting future peak flows, and closer to the actual level of I/I into the system. The hydrologic model components Model A and rainfall derived infiltration (RDI) were set at 0.65 percent and 2.58 percent respectively, to represent such an I/I rate. Figure 5.5 below shows a detailed map of the City's existing and future sewer system, including future pump stations and mains.

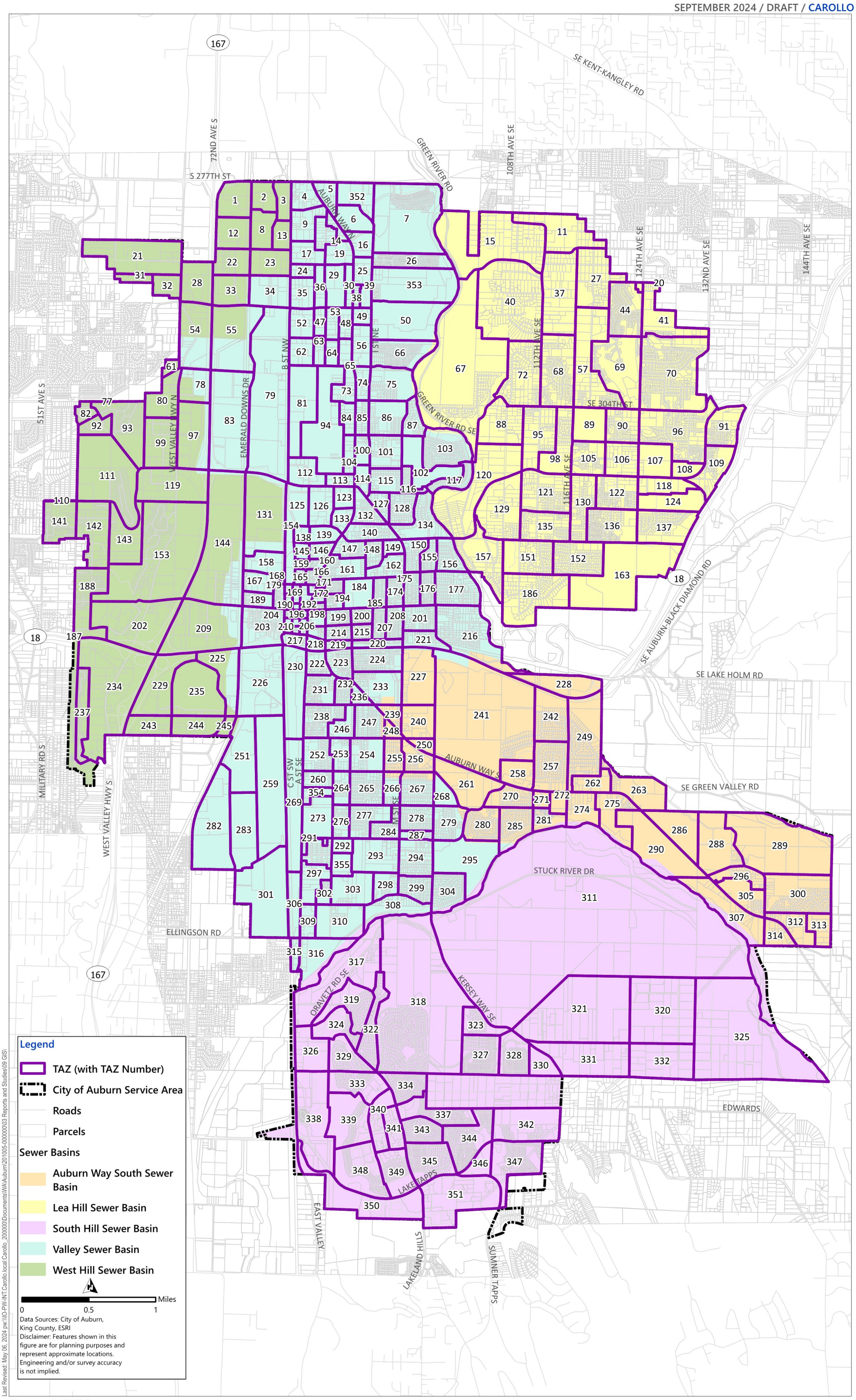


Figure 5.3 TAZ Data
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

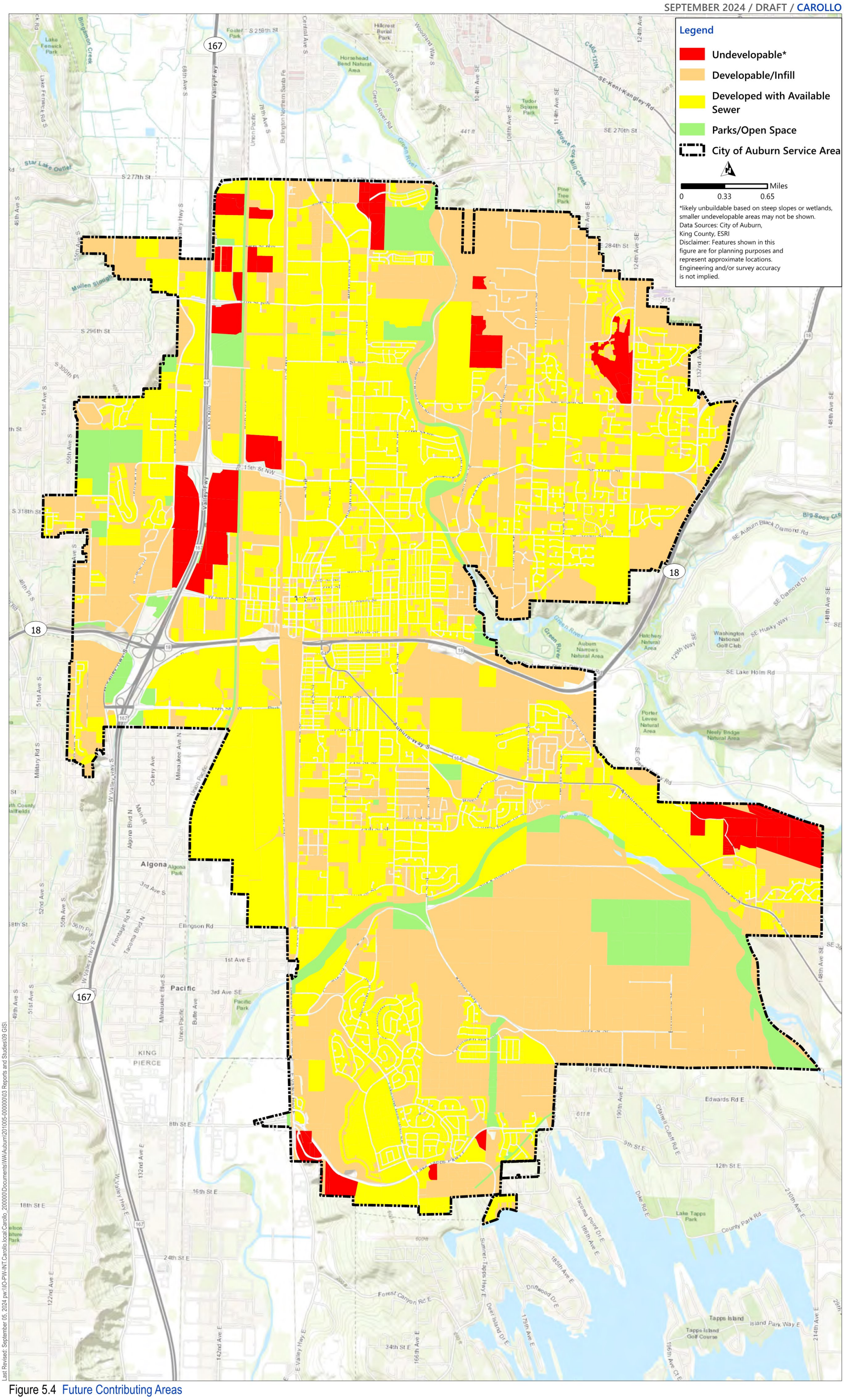
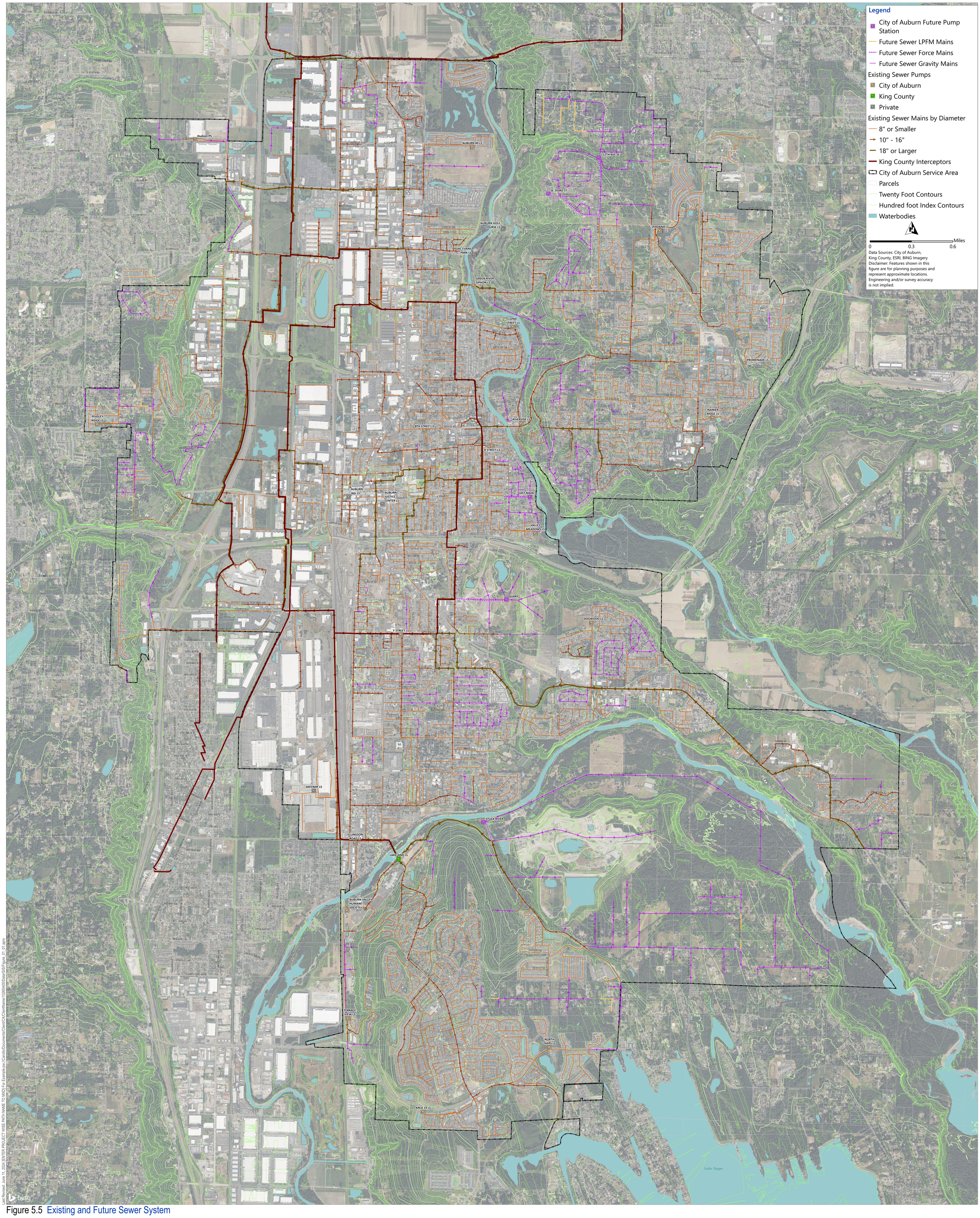


Figure 5.4 Future Contributing Areas



Last Revised: June 11, 2024 [ENTER PROJECT WISE PATH NAME TO MXD] For Example:pw://Carollo/Documents/Client/CA/ClientName/102654/00/Data/GIS/Figure_01_01.aprx

Figure 5.5 Existing and Future Sewer System

5.4 Gravity Collection System Deficiencies

A capacity analysis of the modeled collection system was performed using the City's calibrated hydraulic model, the design storm, and referring to the above outlined evaluation criteria in Section 5.2. The capacity analysis entailed identifying areas in the sewer system where the performance criteria or the capacity of lift stations was exceeded.

5.4.1 Key Causes of Deficiencies

The calibrated hydraulic model was run with the design storm to determine areas that may be triggering potential capacity deficiencies based on the system performance criteria. The key causes triggering deficiencies in the City's collection system included:

- Adverse slopes and misaligned inverts.
- Pipe restrictions (a single or few smaller diameter pipes between larger diameter pipes).
- Pipe diameter too small or at too flat a slope to convey the PWWF.

5.4.2 Existing System Potential Deficiencies

For the existing planning scenario, the current PWWF was routed through the hydraulic model. The peak HGL in manholes and gravity pipelines were compared to the established performance criteria. In general, the modeled collection system has sufficient capacity to convey existing flows during the design storm. The existing deficiencies are relatively minor; their locations are shown on Figure 5.6 in red and yellow. Figure 5.7 also identifies shallow manholes (manholes with a depth less than 6 feet). A total of 7,428 feet of pipe is surcharged, 1 manhole (MH) may flood, and 47 MHs are within 6 feet of the rim during the design storm.

5.4.3 2044 Potential System Deficiencies

For the 2044 planning scenario, additional contributing areas, and additional dry weather flow (DWF) were added to the model based on the projected growth identified in Section 5.3. In general, system HGL increases with additional flows. A total of 16,842 feet of piping may surcharge during PWWF, 3 MH are potentially flooding and 64 MHs are within 6 feet of the rim. The 2044 deficiencies are identified in red and yellow on Figure 5.7. The 2044 deficiencies with the climate change design storm are shown in red and yellow on Figure 5.8. The climate change design storm leads to 29,538 feet of surcharging pipe, 6 MH potentially flooding and 76 MHs within 6 feet of the rim.

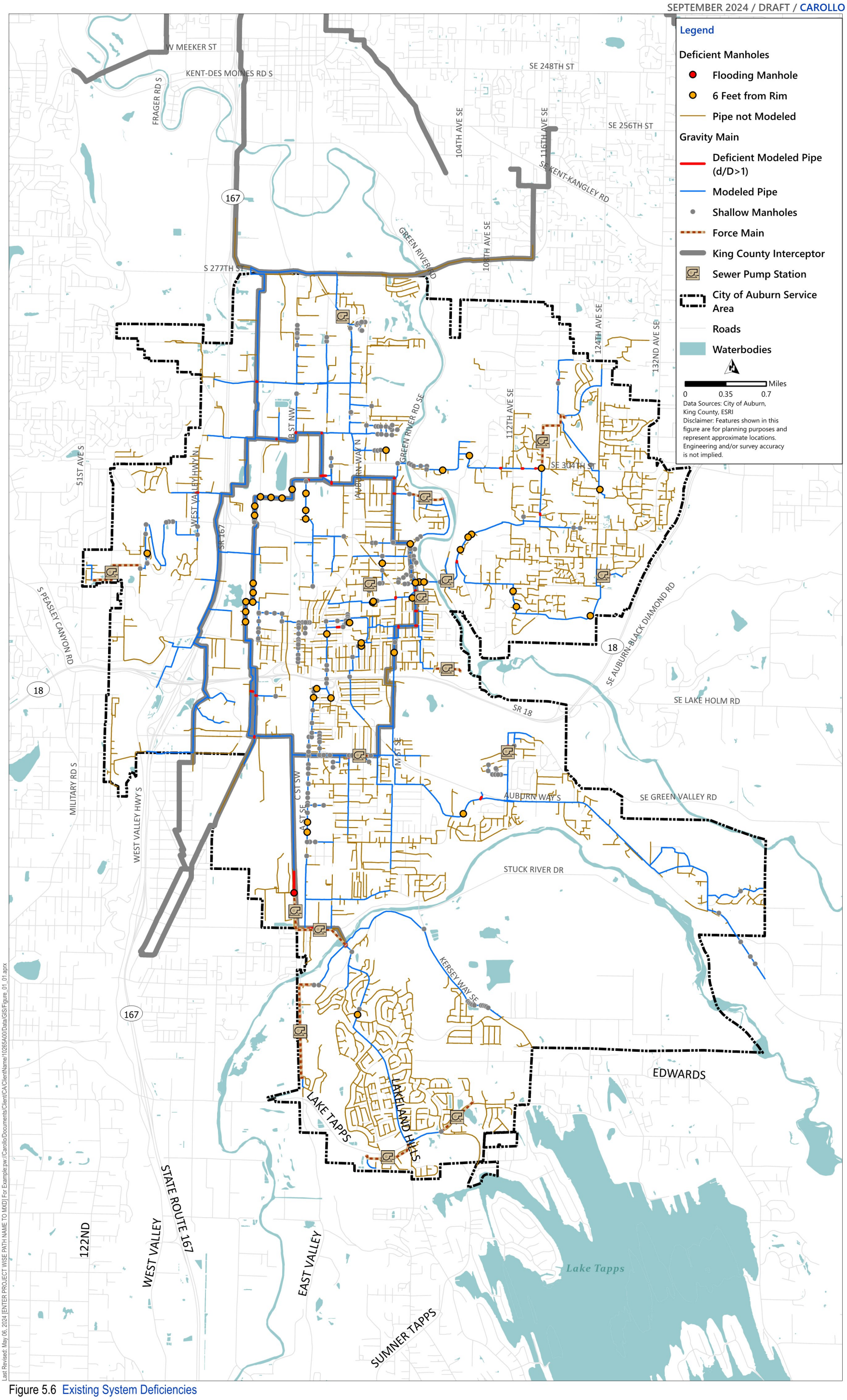


Figure 5.6 Existing System Deficiencies

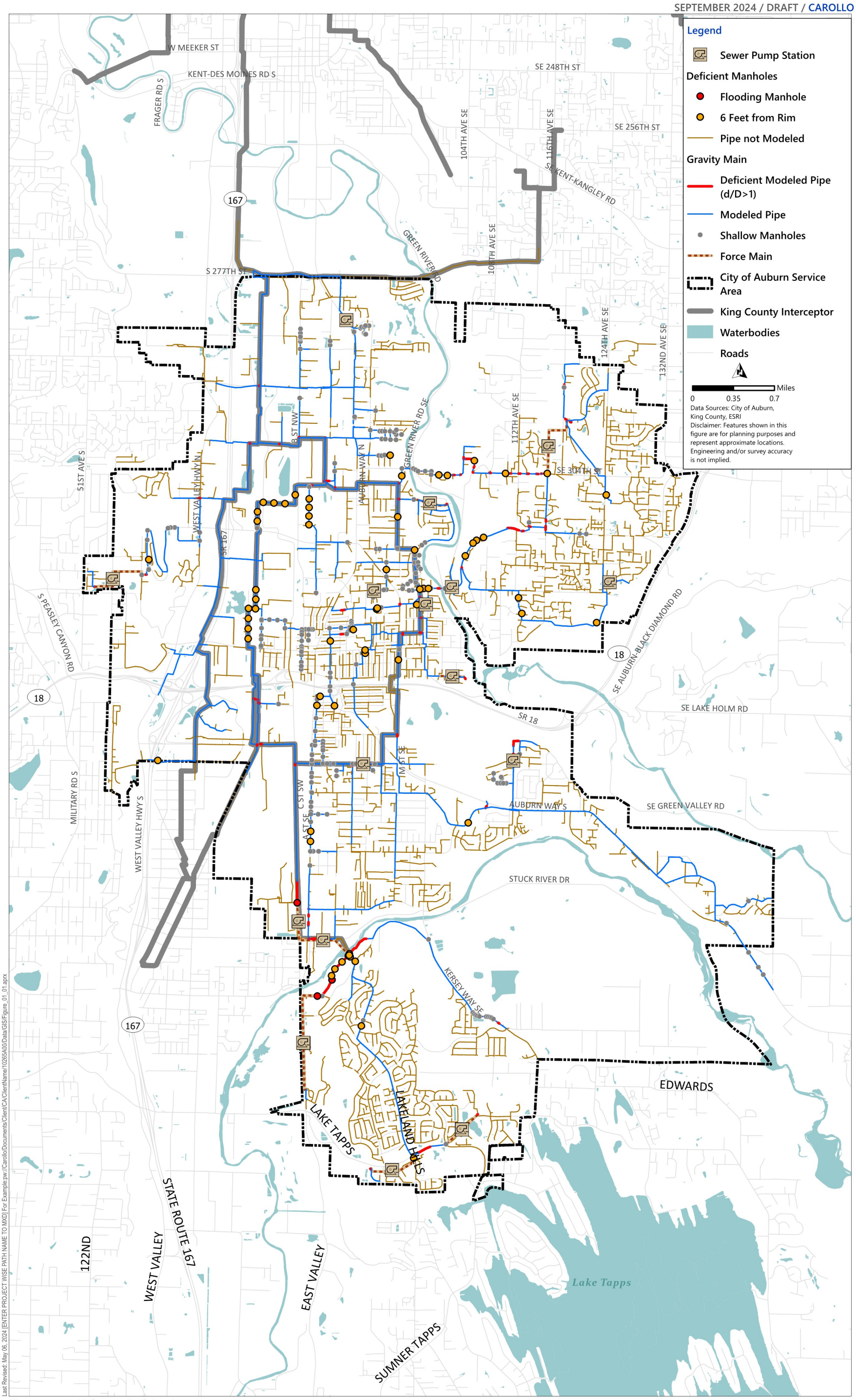


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Figure 5.7 2044 System Deficiencies
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

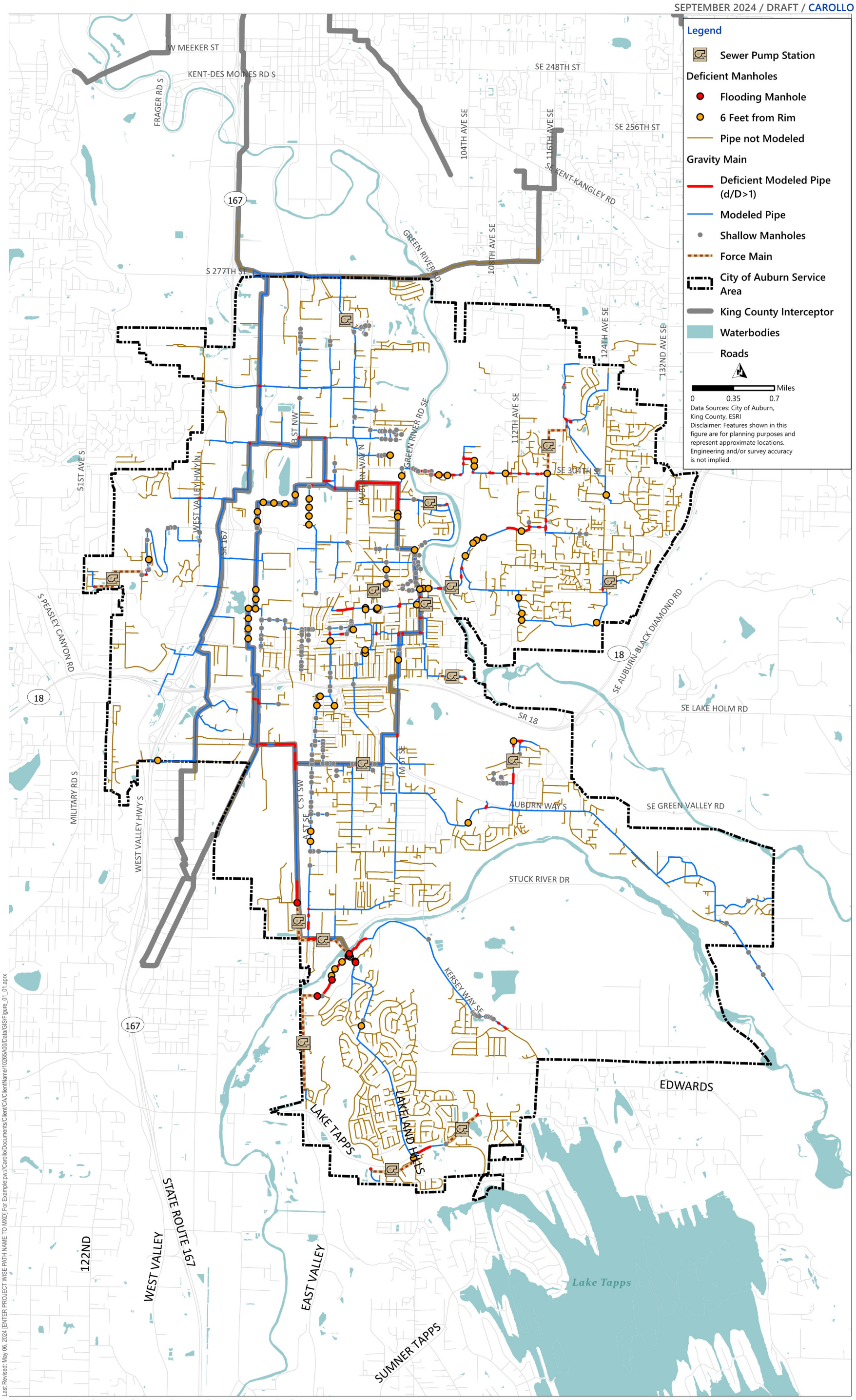

Figure 5.8 2044 Climate Change Design Storm System Deficiencies

5.5 Lift Station and Force Main Evaluation

Ensuring lift stations have adequate capacity to convey PWWFs is important for preventing sewage overflows at or near lift stations. In accordance with the established performance criteria, the City's existing modeled lift stations were evaluated to determine if each one has the available capacity to convey existing and future PWWFs with the largest pump out of service (i.e., its firm capacity). If a lift station has inadequate capacity to pump the PWWFs, the water level in the wet well may rise to the overflow point, spilling sewage.

The City's hydraulic model includes 14 of the 17 City owned lift stations located in the collection system. The estimated current and future PWWFs were compared to the 14 lift stations' firm capacities. Lift stations with an influent PWWF above the existing firm capacity were flagged as deficient. Table 5.4 summarizes the results of the lift station evaluation. Rainier Ridge and Dogwood are shown as deficient under 2044 PWWFs.

Table 5.4 Lift Station Analysis

Lift Station	Number of Pumps	Total Capacity(1) (gpm)	Firm Capacity(1) (gpm)	Existing PWWF (gpm)	2044 PWWF (gpm)
Area 19	2	650	325	120	124
Terrace View	2	1,350	675	114	282
Ellingson Road	2	3,054	1,527	1,355	1,456
Auburn 40	2	880	440	---(2)	---(2)
F Street	2	800	400	265	370
Riverside	2	800	400	126	198
R Street	2	200	100	50	58
Peasley Ridge	2	550	275	47	115
Rainier Ridge	2	400	200	184	**366**
Valley Meadows	2	250	125	20	66
22nd Street	2	1,100	550	90	109
8th Street	2	300	150	94	106
North Tapps	2	1020	510	24	28
Verdana	3	3,000	2,000	975	1,219
Dogwood	2	600	300	239	**395**
Hudson	2	1,200	600	---(2)	---(2)
Promenade	2	348	174	---(2)	---(2)

Notes:
(1) The total and firm capacity of the station is based on the pump design point, assuming the pumps will be able to steadily deliver the flow.
(2) The model is skeletonized, including only larger diameter piping and key connections, these pumps our outside of the modeled portion of the system.
gpm - gallons per minute.

5.6 Inflow and Infiltration Evaluation

I/I occurs in all sanitary sewer systems. Infiltration is defined as water entering the sanitary sewer system through pipes, joint connections, manhole covers, and walls. Inflow is defined as water discharged to the sanitary sewer system through connections to roof drains, yard drains, foundation drains, and cross connections with storm sewers and combined sewers. The combination of I/I may be a major portion of the total wastewater flow which is carried by the sanitary sewer system.

The *City of Auburn 2016 Comprehensive Sewer Plan, Brown and Caldwell* (2016 CSP) provided recommendations to improve the City's collection system. The *Auburn Washington Rainfall Derived Infiltration and Inflow Report 2022, ADS* (2022 RDII Report) provided an initial look at the I/I across the City. The results of both the analyses are summarized below:

- Current levels of I/I were not causing capacity-related issues (2016 CSP).
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- Two of the larger basins, Y-1 and Y-3 exhibited slightly higher than the moderate threshold level of 10 gallons/linear feet/inch rainfall as RDII (2022 RDII Report). Converting to area based RDII shows that Y-1 is estimated at 2,700 gpad and Y-3 at 4,100 gpad.
- The upper most part of basin A9 (sub basin A9e) is responsible for the large majority of RDII measured from this A9 area. In the basin A8 area, only sub basin A8b stood out as having potentially elevated RDII. Only the southern part of basin A7 (A7e and A7g) area stood out as having potentially elevated RDII (2022 RDII Report). These four basins had greater than 25 gallons/linear feet/inch rainfall, or all greater than 12,000 gpad.

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Table 5.5 summarizes the peaking factor and I/I rate for each flow monitoring basin during the design storm. Figure 5.9 outlines the Peak I/I rate by flow monitoring basin. King County has a target I/I rate of 1,100 gpad during the design storm. Although some basins exceed the County target, the City average I/I rate is 1,446 gpad during the design storm.

Table 5.5 I/I Summary by Flow Monitoring Basin for the Design Storm

Flow Monitoring Basin	Gross ADWF (mgd)	Gross PWWF (mgd)	Net ADWF (mgd)	Net PWWF (mgd)	Contributing Area (acres)	I/I Rate (gpad)	Peaking Factor
A1	0.33	0.78	0.10	0.24	244	627	2.4
A1c	0.23	0.54	0.15	0.32	151	1,180	2.2
A1d	0.08	0.21	0.08	0.21	52	2,417	2.5
A3	0.14	0.21	0.14	0.21	83	802	1.5
A4	0.25	0.40	0.25	0.40	113	1,273	1.6
A6	0.09	0.47	0.09	0.47	98	3,847	5.1
A7	0.14	1.28	0.14	1.28	109	10,409	8.8
A9	0.06	0.43	0.06	0.43	53	7,000	7.4
A10	0.29	1.15	0.05	0.66	115	5,366	14.4
A11(1)	0.07	0.43	0.01	0.00	17	-	-
A12	0.02	0.08	0.02	0.08	21	3,063	4.6
A13	0.04	0.11	0.04	0.11	63	1,048	2.5
A14	0.18	0.43	0.12	0.28	102	1,580	2.3
A15	0.06	0.15	0.06	0.15	72	1,300	2.7
A16	0.24	0.48	0.24	0.48	285	855	2.0
Y-1	0.40	1.01	0.40	1.01	94	6,454	2.5
Y-2	1.03	4.06	1.03	4.06	872	3,471	3.9
Y-3	0.66	3.63	0.66	3.63	541	5,494	5.5
Y-4	0.14	0.29	0.14	0.29	179	840	2.0
WINT003	3.26	8.11	2.32	2.91	1,871	314	1.3
MSTTR02(1)	2.73	7.99	0.62	0.25	482	-	-
AUBRN53	7.81	20.03	1.34	2.95	1,212	1,322	2.2
Average						1,446	

Notes:
(1) PWWF constrictions upstream limit net PWWF calculation, making it difficult to determine accurate I/I values in these basins.

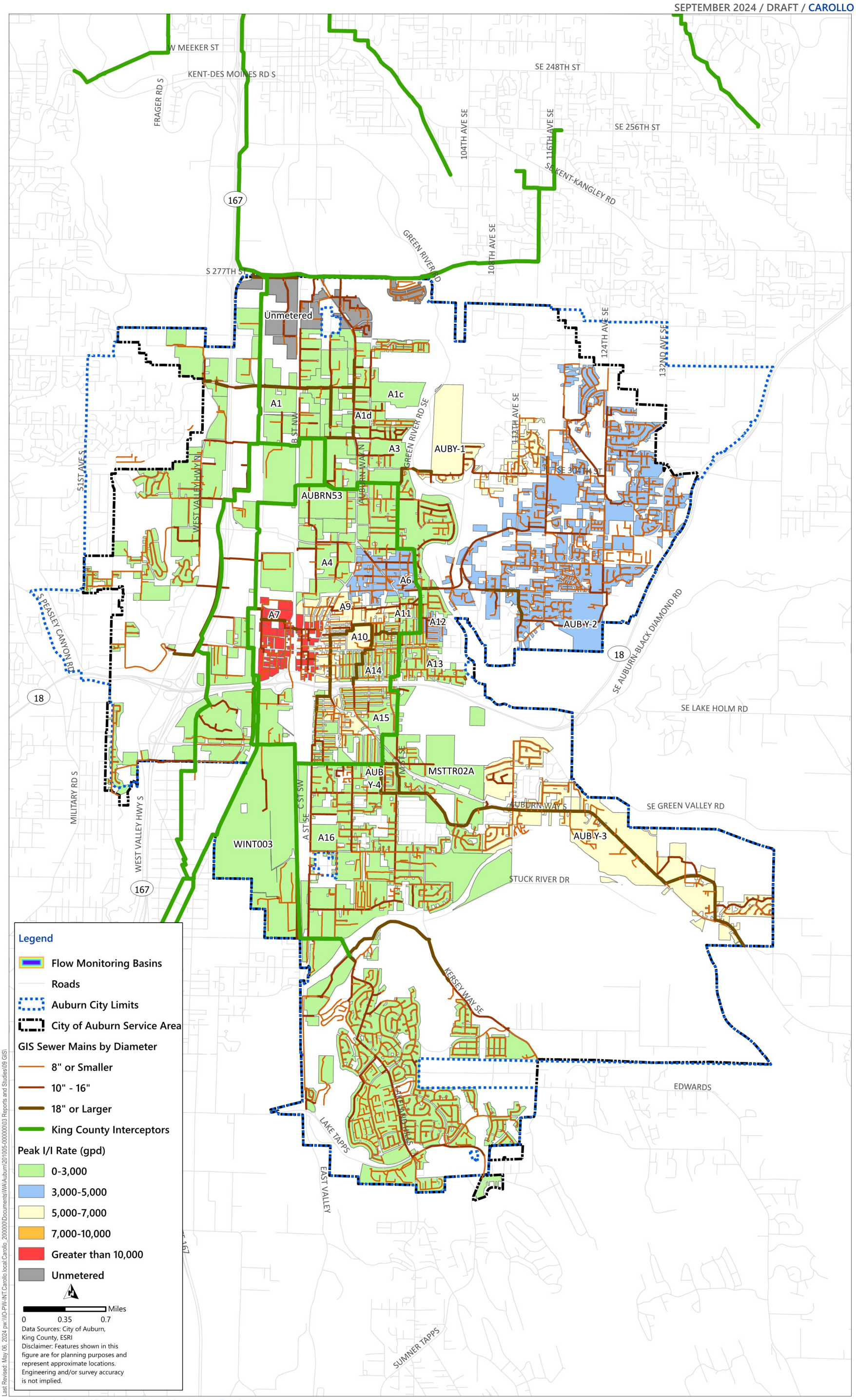

Figure 5.9 Peak I/I Rate by Flow Monitoring Basin

5.7 Remaining Useful Life

One key criteria used for assessing vulnerability and long-term rehabilitation and replacement needs is a remaining useful life (RUL) estimate. This estimate represents how many years a pipe with a certain material has before the likelihood of failure significantly increases.

Pipe age and material type are used to determine the RUL of the collection system pipelines. GIS data and field research were used to determine the type of material and year or decade that pipe segments were installed and identify data gaps. The City is in the process of updating its asset inventory, so the data to conduct a comprehensive analysis of RUL across the system is not complete. Upon substantial completion of the inventory work, the City should analyze the complete set of data to project rehabilitation and replacement needs.

Pipe manufacturers establish a theoretical useful life based on pipe material; however, the actual useful life is also influenced by local soil conditions, aggressive wastewater materials, methods of installation, etc. The original useful life for pipe of known material varies from 75 years for concrete pipe (CP) to 100 years for vitrified clay pipe (VCP). Since the age and material data for some of the pipelines were unavailable, it is assumed that the original useful life for all pipes of unknown age and materials is 75 years. Table 5.6 presents the estimated useful life of pipes of various materials.

Table 5.6 Useful Life of Pipes

Pipe Material	Original Useful Life (years)
Polyvinyl Chloride	100
Unknown	75
Concrete	75
Vitrified Clay	100
Ductile Iron	75
High Density Polyethylene	90
Clay	75
Cured in Place Liner	75

Table 5.7 summarizes the City's gravity sewer system available information by material type and known age into short (less than 10 years), medium (10-20 years), and long-term (greater than 20 years) for replacement needs, as well as unknown where age or material type is not current in the GIS. The cells are color-coded to show the three categories of RUL and unknown; orange is the unknown, red indicates pipe that is expected to reach the end of useful life in the next 10 years or has reached its useful life, yellow represents pipe with a RUL of between 10 and 20 years, and green represents pipe that has a RUL of over 20 years. In total, approximately one percent of the existing collection pipes with a known installation year are expected to reach the end of their useful lives by the year 2034. The table shows that the City GIS database is currently missing information of material type and/or approximate installation year for a large portion of the system.

Table 5.7 Remaining Useful Life

Feet of Pipeline					
Pipe Material	Less than 10 Years	10-20 Years	Greater than 20 Years	Unknown Install Date	Total
Unknown	1,541	2,153	10,855	55,723	70,272
Clay			199	13,226	13,425
Concrete		14,998	8,219	119,443	142,660
Cured in Place Liner			3,408		3,408
Ductile Iron			14,860	9,616	24,475
High Density Polyethylene			18,759	4,555	23,315
Polyvinyl Chloride			443,899	381,190	825,089
Vitrified Clay			3,280(1)	3,280	3,280
Total	1,541	17,150	500,199	587,033	1,105,923

Notes:
(1) Likely greater than 20 years as material use was stopped more than 20 years ago.

As noted earlier, prior to developing any detailed formal replacement and rehabilitation programs based on this information, a thorough assessment of the collection system asset management should be completed to update the age and material information in the GIS system where missing. Material and age of pipelines is critical to understanding when pipeline replacement may be needed. The material type and age will provide a picture of when the asset may need updating. The asset inventory effort should determine the following attributes for all City owned facilities:

- Material.
- Age of installation, or estimate based on material.

As the majority of the system has more than 20-years or unknown remaining useful life, the City should focus on identifying the unknown information prior to the next plan update. Based on a complete picture of material and age, long term costing can then be developed to create an effect renewal and replacement program, thereby ensuring the long term reliability of this key City asset.

While the RUL analysis provides a guide to when pipes may need replacing, short term decisions that prioritize which pipes to rehabilitate or replace must take other factors into account, including:

- Pipe Condition Scores - Based on CCTV inspections and standard scoring criteria.
- Pipe Criticality - The consequences of a pipe failure both for customers affected and environmental concerns.
- Efficiency - Considering replacement or rehabilitation of pipes in conjunction with other City projects save funds.

5.8 Recommendations

5.8.1 Asset Inventory, System Inspections, and Remaining Useful Life

An asset inventory effort is underway that will update the asset database with information available from as-built drawings and inspection records. An inspection program of laterals in City right-of-way (ROW) is being planned by the City to better understand current conditions. This inspection program would provide several key benefits for the City, including better information on pipe material, condition, and age. This program would allow for filling in GIS data gaps on pipe materials to enhance asset management capabilities. When updating GIS records with material, the installation date could also be added to the records to further improve understanding of a pipeline's potential remaining useful life. The inspection program would also provide significant insights on potential sources of I/I within the limited areas having elevated WWFs.

5.8.2 Capacity Evaluation Recommendations

Figure 5.10 outlines the key conveyance deficiencies in the system, where a pipe is both surcharged and 6 feet from the rim. The figure identifies which scenario the deficiency is a part of with existing surcharged pipes shown in red, the 2044 surcharged pipes in green, and the 2044 with climate change pipes in purple. The figure also shows the peak I/I rate to help identify if I/I is a significant contributing factor. I/I investigation is recommended to address capacity deficiencies in basins with an I/I rate above 5,000 gpad. Ideally, the lateral inspection program would start with a high I/I basin.

Table 5.8 outlines six different deficiency areas. These areas are classified by timing, recommendation, and extent of surcharging and deficient manholes. These areas are included withing the CIPs in Chapter 7 with some additional discussion, however not all of them have a specific CIP number associated with them. Area 1 has high I/I and is recommended for continued monitoring with a specific CIP Project 9. Area 4 is a large project with a specific CIP. Areas 2, 3 5 and 6 are all shorter lengths of piping and included within a programmatic CIP.

5.8.3 Future Population Growth

Although this Plan anticipates population and employment growth projected during the development of the City Comprehensive Plan, recent legislation (e.g. HB1110 passed in 2023 and upcoming HB1245) may permit or promote growth in a manner not anticipated by this Plan. As growth occurs, the utility may need to reevaluate pump station or other conveyance systems to ensure adequate capacity exists.

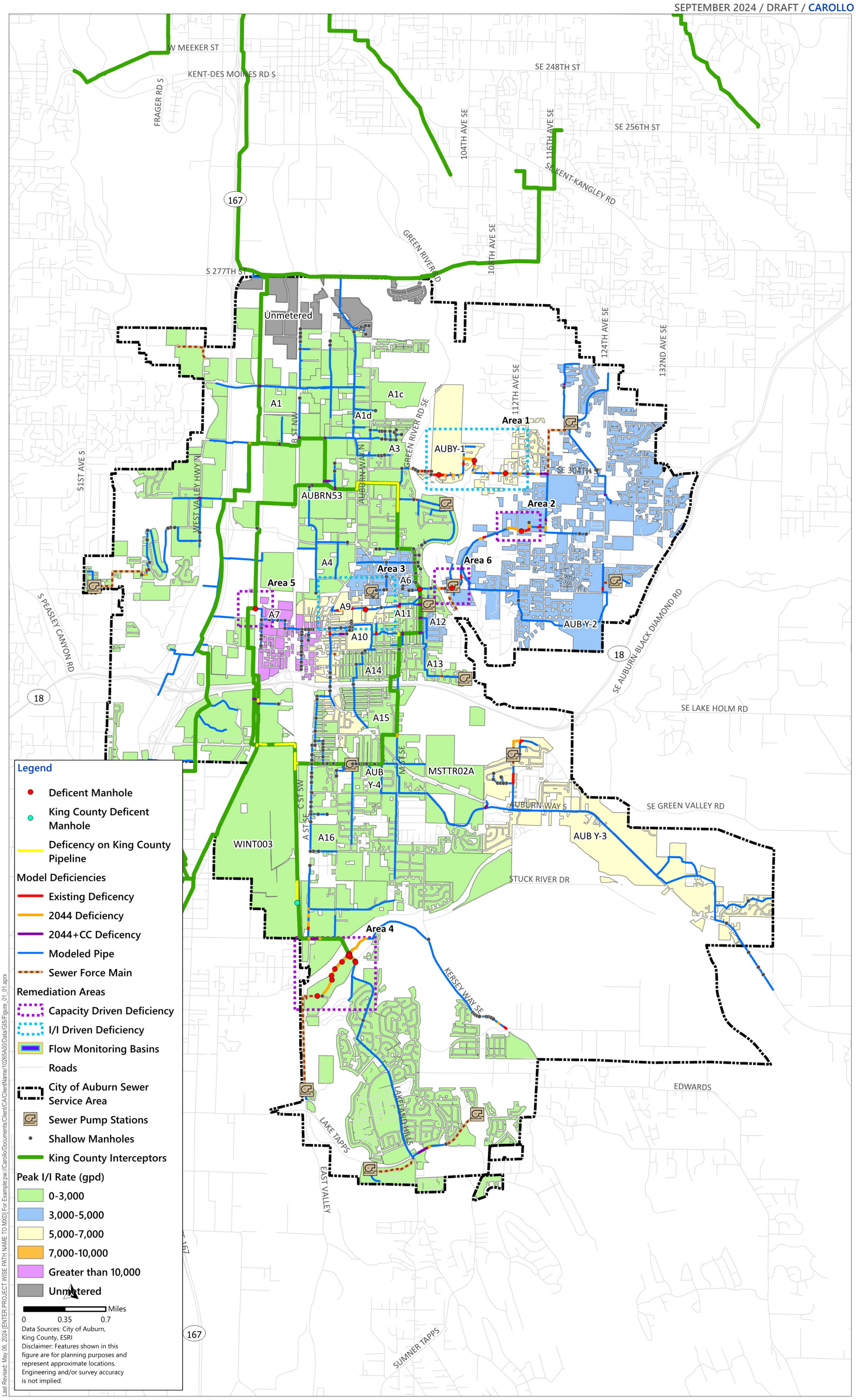

Figure 5.10 Recommended Remediation Strategies

5.4 Gravity Collection System Deficiencies

A capacity analysis of the modeled collection system was performed using the City's calibrated hydraulic model, the design storm, and referring to the above outlined evaluation criteria in Section 5.2. The capacity analysis entailed identifying areas in the sewer system where the performance criteria or the capacity of lift stations was exceeded.

5.4.1 Key Causes of Deficiencies

The calibrated hydraulic model was run with the design storm to determine areas that may be triggering potential capacity deficiencies based on the system performance criteria. The key causes triggering deficiencies in the City's collection system included:

- Adverse slopes and misaligned inverts.
- Pipe restrictions (a single or few smaller diameter pipes between larger diameter pipes).
- Pipe diameter too small or at too flat a slope to convey the PWWF.

5.4.2 Existing System Potential Deficiencies

For the existing planning scenario, the current PWWF was routed through the hydraulic model. The peak HGL in manholes and gravity pipelines were compared to the established performance criteria. In general, the modeled collection system has sufficient capacity to convey existing flows during the design storm. The existing deficiencies are relatively minor; their locations are shown on Figure 5.6 in red and yellow. Figure 5.7 also identifies shallow manholes (manholes with a depth less than 6 feet). A total of 7,428 feet of pipe is surcharged, 1 manhole (MH) may flood, and 47 MHs are within 6 feet of the rim during the design storm.

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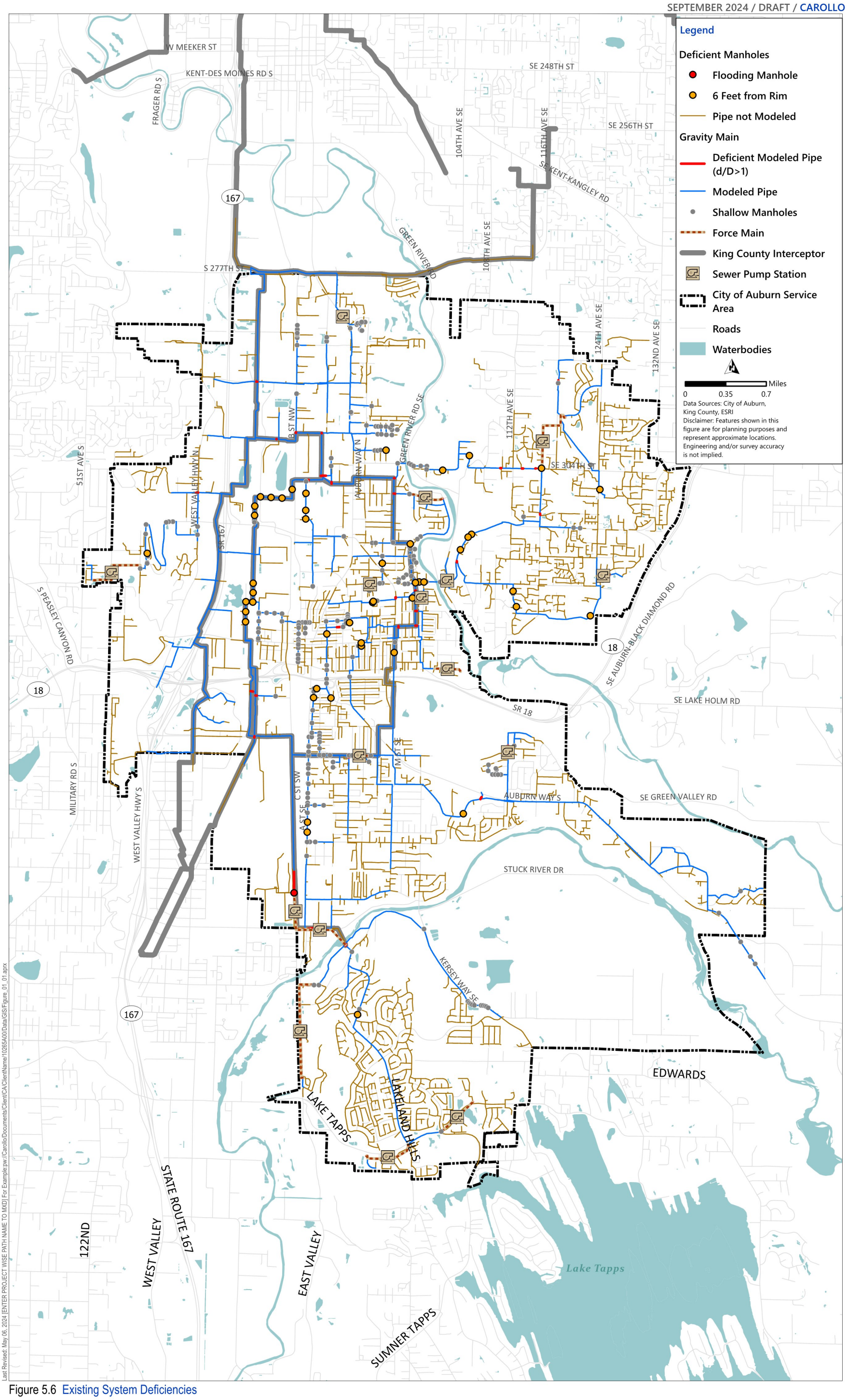

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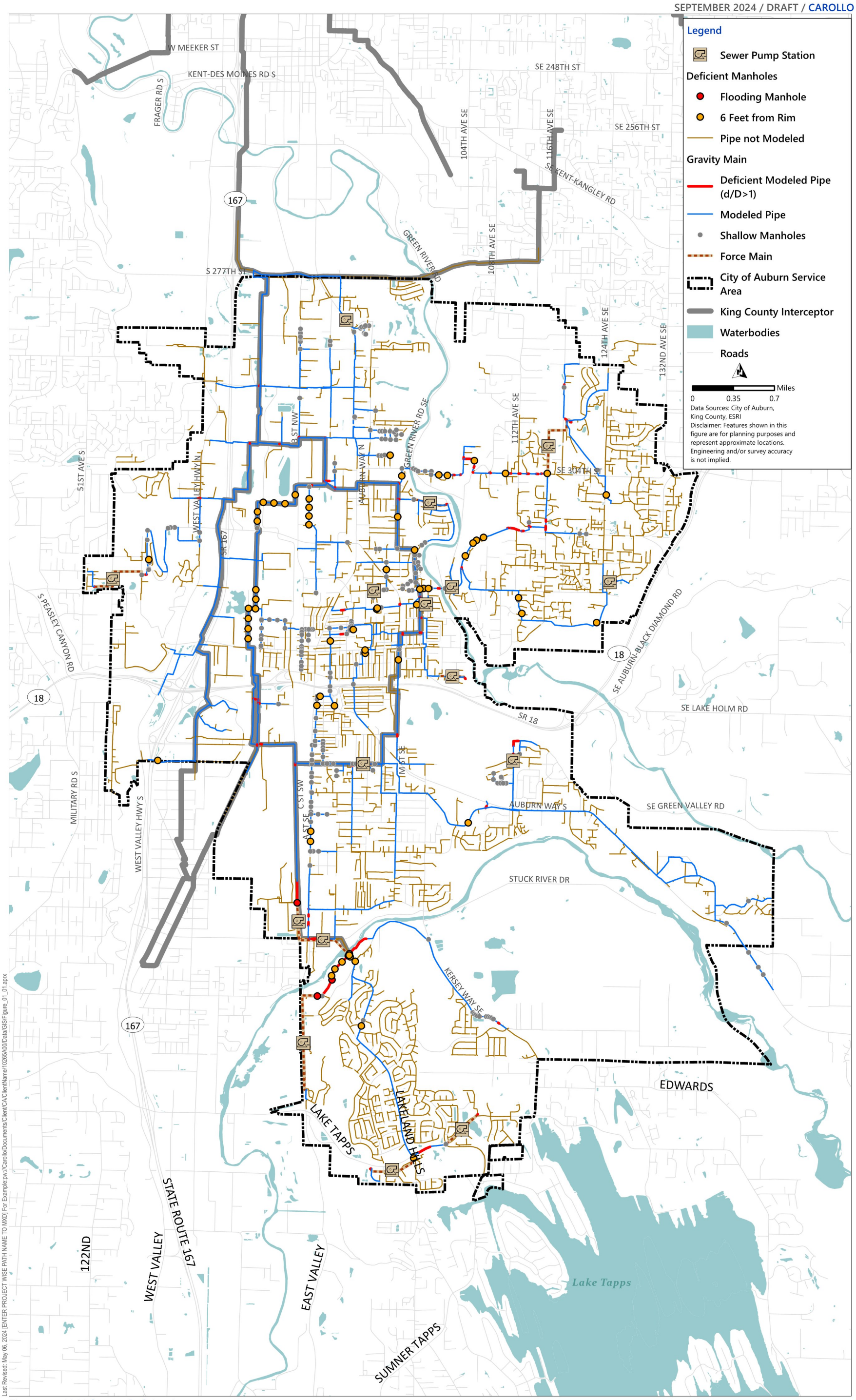

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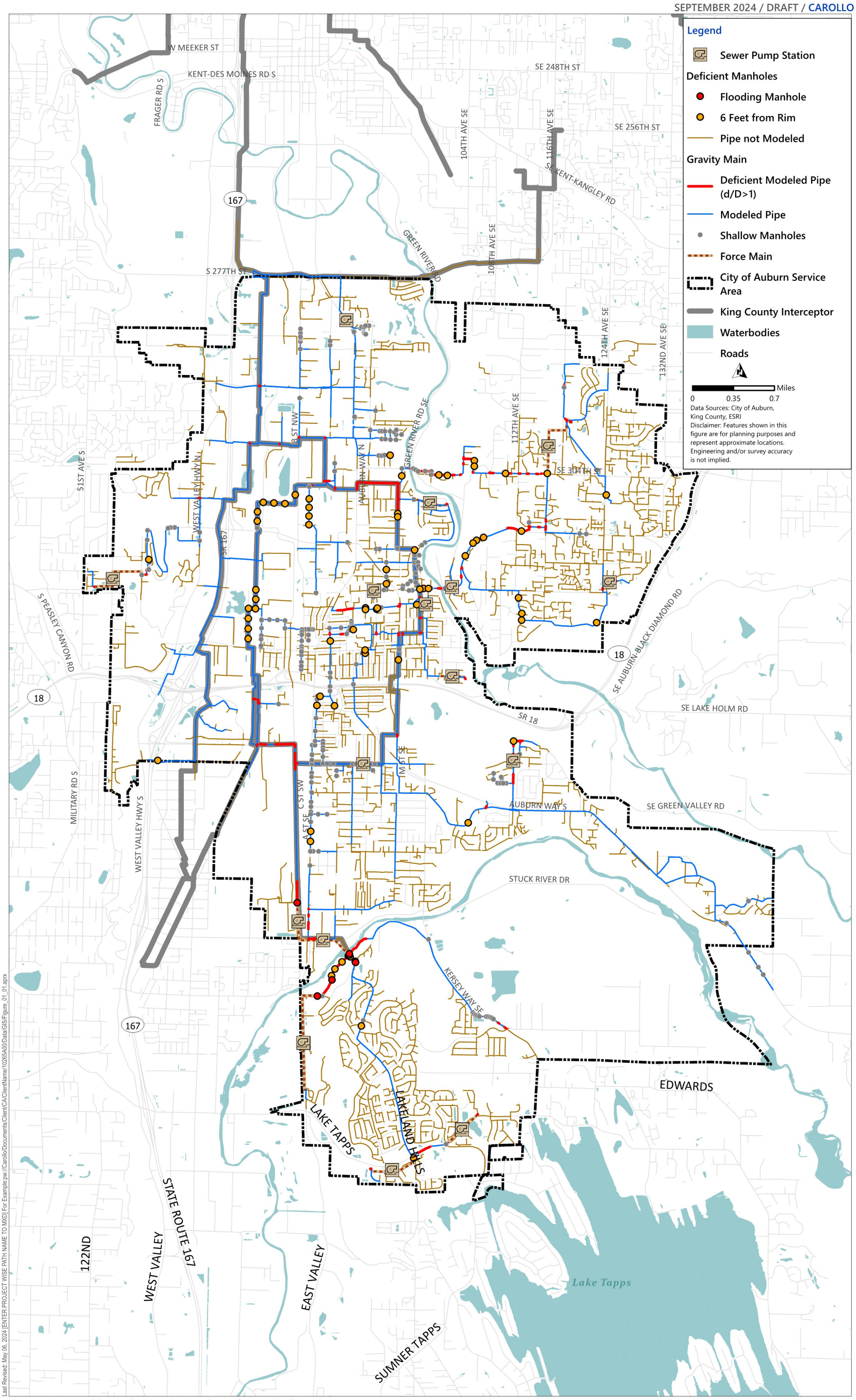

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A9	0.06	0.43	0.06	0.43	53	7,000	7.4
A10	0.29	1.15	0.05	0.66	115	5,366	14.4
A11(1)	0.07	0.43	0.01	0.00	17	-	-
A12	0.02	0.08	0.02	0.08	21	3,063	4.6
A13	0.04	0.11	0.04	0.11	63	1,048	2.5
A14	0.18	0.43	0.12	0.28	102	1,580	2.3
A15	0.06	0.15	0.06	0.15	72	1,300	2.7
A16	0.24	0.48	0.24	0.48	285	855	2.0
Y-1	0.40	1.01	0.40	1.01	94	6,454	2.5
Y-2	1.03	4.06	1.03	4.06	872	3,471	3.9
Y-3	0.66	3.63	0.66	3.63	541	5,494	5.5
Y-4	0.14	0.29	0.14	0.29	179	840	2.0
WINT003	3.26	8.11	2.32	2.91	1,871	314	1.3
MSTTR02(1)	2.73	7.99	0.62	0.25	482	-	-
AUBRN53	7.81	20.03	1.34	2.95	1,212	1,322	2.2
Average						1,446	

Notes:
(1) PWWF constrictions upstream limit net PWWF calculation, making it difficult to determine accurate I/I values in these basins.

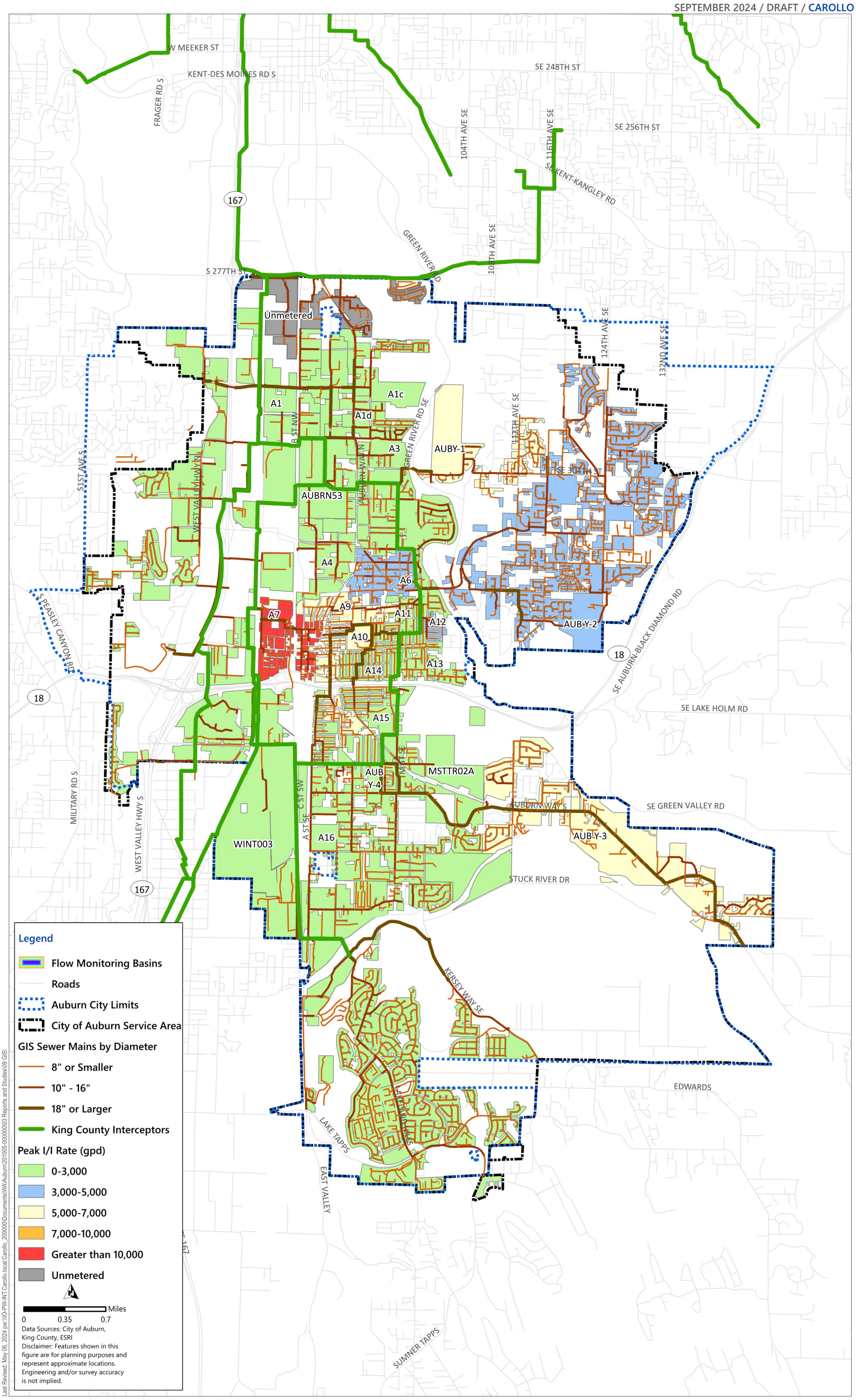


Figure 5.9 Peak I/I Rate by Flow Monitoring Basin

5.7 Remaining Useful Life

One key criteria used for assessing vulnerability and long-term rehabilitation and replacement needs is a remaining useful life (RUL) estimate. This estimate represents how many years a pipe with a certain material has before the likelihood of failure significantly increases.

Pipe age and material type are used to determine the RUL of the collection system pipelines. GIS data and field research were used to determine the type of material and year or decade that pipe segments were installed and identify data gaps. The City is in the process of updating its asset inventory, so the data to conduct a comprehensive analysis of RUL across the system is not complete. Upon substantial completion of the inventory work, the City should analyze the complete set of data to project rehabilitation and replacement needs.

Pipe manufacturers establish a theoretical useful life based on pipe material; however, the actual useful life is also influenced by local soil conditions, aggressive wastewater materials, methods of installation, etc. The original useful life for pipe of known material varies from 75 years for concrete pipe (CP) to 100 years for vitrified clay pipe (VCP). Since the age and material data for some of the pipelines were unavailable, it is assumed that the original useful life for all pipes of unknown age and materials is 75 years. Table 5.6 presents the estimated useful life of pipes of various materials.

Table 5.6 Useful Life of Pipes

Pipe Material	Original Useful Life (years)
Polyvinyl Chloride	100
Unknown	75
Concrete	75
Vitrified Clay	100
Ductile Iron	75
High Density Polyethylene	90
Clay	75
Cured in Place Liner	75

Table 5.7 summarizes the City's gravity sewer system available information by material type and known age into short (less than 10 years), medium (10-20 years), and long-term (greater than 20 years) for replacement needs, as well as unknown where age or material type is not current in the GIS. The cells are color-coded to show the three categories of RUL and unknown; orange is the unknown, red indicates pipe that is expected to reach the end of useful life in the next 10 years or has reached its useful life, yellow represents pipe with a RUL of between 10 and 20 years, and green represents pipe that has a RUL of over 20 years. In total, approximately one percent of the existing collection pipes with a known installation year are expected to reach the end of their useful lives by the year 2034. The table shows that the City GIS database is currently missing information of material type and/or approximate installation year for a large portion of the system.

Table 5.7 Remaining Useful Life

Feet of Pipeline					
Pipe Material	Less than 10 Years	10-20 Years	Greater than 20 Years	Unknown Install Date	Total
Unknown	1,541	2,153	10,855	55,723	70,272
Clay			199	13,226	13,425
Concrete		14,998	8,219	119,443	142,660
Cured in Place Liner			3,408		3,408
Ductile Iron			14,860	9,616	24,475
High Density Polyethylene			18,759	4,555	23,315
Polyvinyl Chloride			443,899	381,190	825,089
Vitrified Clay			3,280(1)	3,280	3,280
Total	1,541	17,150	500,199	587,033	1,105,923

Notes:
(1) Likely greater than 20 years as material use was stopped more than 20 years ago.

As noted earlier, prior to developing any detailed formal replacement and rehabilitation programs based on this information, a thorough assessment of the collection system asset management should be completed to update the age and material information in the GIS system where missing. Material and age of pipelines is critical to understanding when pipeline replacement may be needed. The material type and age will provide a picture of when the asset may need updating. The asset inventory effort should determine the following attributes for all City owned facilities:

- Material.
- Age of installation, or estimate based on material.

As the majority of the system has more than 20-years or unknown remaining useful life, the City should focus on identifying the unknown information prior to the next plan update. Based on a complete picture of material and age, long term costing can then be developed to create an effect renewal and replacement program, thereby ensuring the long term reliability of this key City asset.

While the RUL analysis provides a guide to when pipes may need replacing, short term decisions that prioritize which pipes to rehabilitate or replace must take other factors into account, including:

- Pipe Condition Scores - Based on CCTV inspections and standard scoring criteria.
- Pipe Criticality - The consequences of a pipe failure both for customers affected and environmental concerns.
- Efficiency - Considering replacement or rehabilitation of pipes in conjunction with other City projects save funds.

5.8 Recommendations

5.8.1 Asset Inventory, System Inspections, and Remaining Useful Life

An asset inventory effort is underway that will update the asset database with information available from as-built drawings and inspection records. An inspection program of laterals in City right-of-way (ROW) is being planned by the City to better understand current conditions. This inspection program would provide several key benefits for the City, including better information on pipe material, condition, and age. This program would allow for filling in GIS data gaps on pipe materials to enhance asset management capabilities. When updating GIS records with material, the installation date could also be added to the records to further improve understanding of a pipeline's potential remaining useful life. The inspection program would also provide significant insights on potential sources of I/I within the limited areas having elevated WWFs.

5.8.2 Capacity Evaluation Recommendations

Figure 5.10 outlines the key conveyance deficiencies in the system, where a pipe is both surcharged and 6 feet from the rim. The figure identifies which scenario the deficiency is a part of with existing surcharged pipes shown in red, the 2044 surcharged pipes in green, and the 2044 with climate change pipes in purple. The figure also shows the peak I/I rate to help identify if I/I is a significant contributing factor. I/I investigation is recommended to address capacity deficiencies in basins with an I/I rate above 5,000 gpad. Ideally, the lateral inspection program would start with a high I/I basin.

Table 5.8 outlines six different deficiency areas. These areas are classified by timing, recommendation, and extent of surcharging and deficient manholes. These areas are included withing the CIPs in Chapter 7 with some additional discussion, however not all of them have a specific CIP number associated with them. Area 1 has high I/I and is recommended for continued monitoring with a specific CIP Project 9. Area 4 is a large project with a specific CIP. Areas 2, 3 5 and 6 are all shorter lengths of piping and included within a programmatic CIP.

5.8.3 Future Population Growth

Although this Plan anticipates population and employment growth projected during the development of the City Comprehensive Plan, recent legislation (e.g. HB1110 passed in 2023 and upcoming HB1245) may permit or promote growth in a manner not anticipated by this Plan. As growth occurs, the utility may need to reevaluate pump station or other conveyance systems to ensure adequate capacity exists.

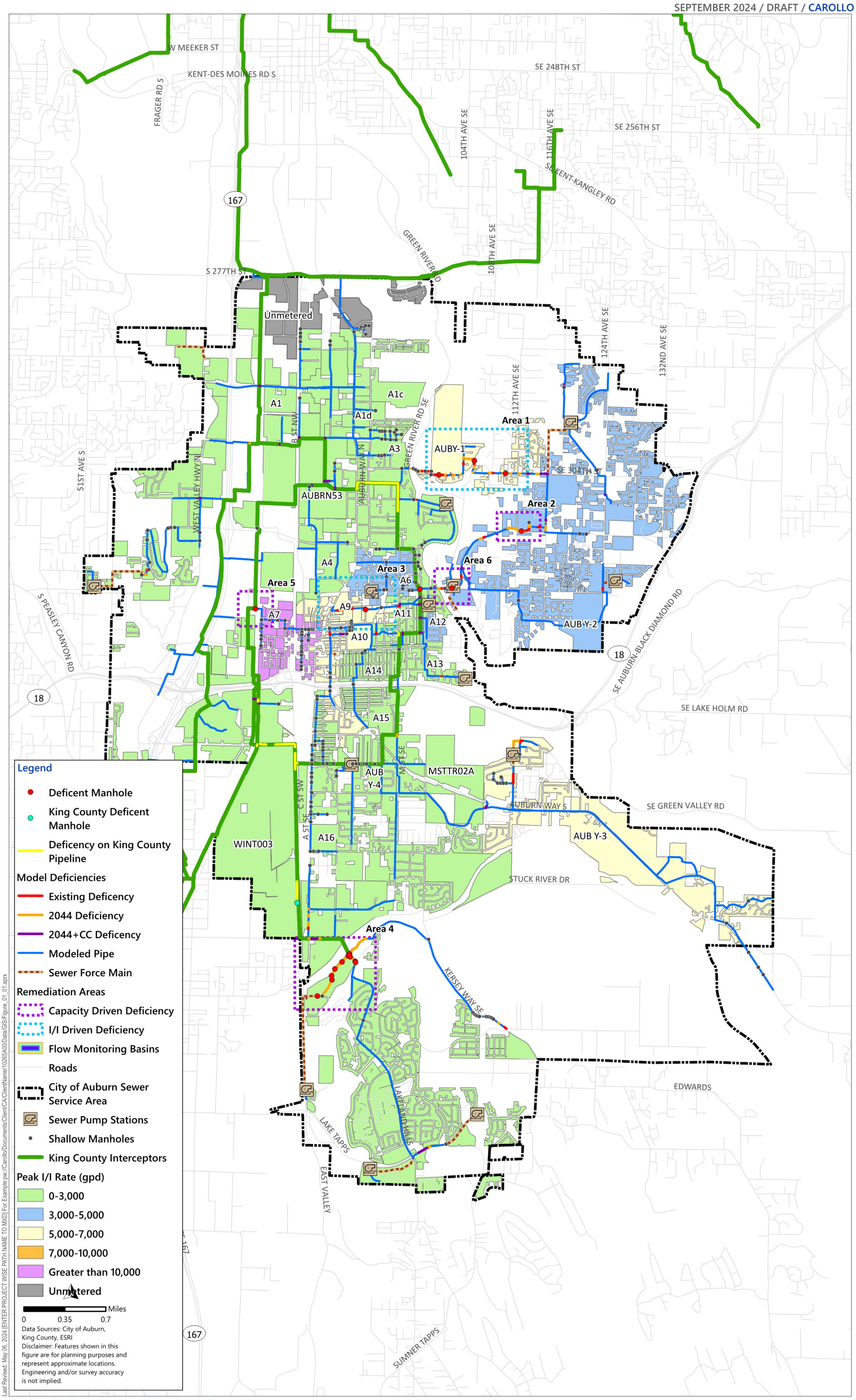


Figure 5.10 Recommended Remediation Strategies

Table 5.8 Capacity Deficiencies

Area Number	Location	Timing	Pipe Diameter	Approximate Depth (feet)	Number of Manholes Impacted	Linear Feet of Surcharged Pipe (feet)	Flow Monitoring Basin I/I Rate (gpad)	Recommendation
Area 1	Along SE 304th Street and 304th Place, between 116th Avenue SE and the Green River crossing	2044	10-inch to 18-inch	9	3	2,666	6,454	Additional I/I Monitoring
Area 2	From Lea Hill Road SE to SE 311 Street	2044	12-inch	10	1	1,243	3,471	Capacity Driven – Recommend Upsizing
Area 3	6th Street NE to H Street NE, through Veterans Memorial Park	2044	10-inch	7	1	836	7,000	I/I Remediation
Area 4	Oravetz Place SE to the Lakeland Hills force main, through Roegner Park	Existing	8-inch to 24-inch	12	11	4,158	314	Capacity Driven – Recommend Upsizing
Area 5	Just south of 6th Street NW near the Interurban Trail	Existing	18-inch	6	1	72	314	Capacity Driven – Recommend Upsizing
Area 6	SE 320th Street and 102nd Avenue SE	Existing	12-inch to 14-inch	10	1	602	3,471	Capacity Driven – Recommend Upsizing

Notes:
NE - northeast; NW - northwest; SE - southeast; SW - southwest.

5.8.4 Inflow and Infiltration Evaluation Recommendations

5.8.4.1 Recommended Strategies for Additional Monitoring or Investigation

The City has few high I/I basins and minimal I/I driven capacity deficiencies. Figure 5.8 outlined the location of three areas that are in high I/I rate basins. Based on previous I/I analyses, and capacity deficiencies identified in the model, the following I/I basins are to be prioritized:

- A10.
- A9.
- A8.
- A7.
- AUB Y-1.
- AUB Y-3.

ADS flow monitoring performed additional micro monitoring for basins A9, A8, and A7 and identified sub-areas of focus, discussed in the next section. Basins AUB Y-1 and AUB Y-3 both have elevated I/I rates that cause some risk of deficiency. It is recommended that additional monitoring at and upstream of meter AUB Y-1 and AUB Y-3 be done and continued periodical monitoring of flows in the high I/I basis to understand if conditions are stable or degrading.

5.8.4.2 Recommended Remediation Strategies

Reduction of I/I in wastewater systems can be a difficult and costly task to undertake. Identifying specific sources, developing metrics for tracking the effectiveness of reduction techniques, and balancing the cost against capacity projects are all major challenges.

Common techniques for reducing I/I include the following:

- Direct Disconnects: This includes disconnecting roof downspouts, yard drains, foundation drains, stormwater catch basins, and/or any connection to the wastewater system causing inflow. Disconnection of these items may require additional provisions for stormwater drainage.
- Repair and replacement of Pipes: This includes replacing or repairing public wastewater pipes, typically due to poor condition, root intrusion, and disconnected joints. Options for pipe replacement include open-cut trench construction or using trenchless technologies, such as pipe bursting or cured in-place pipe. These options need to be assessed for local conditions, such as pipe condition, adjacent utilities, and soil type.
- Repair and replacement of Manholes: Several options exist for sealing manholes and preventing infiltration through faulty joints and cracks. Alternatives include grouting, coating, installing a liner, and/or applying an external sealant.

- Repair and replacement of Laterals and Side Sewers: This includes replacing or repairing laterals and side sewers due to poor condition and the presence of infiltration. Faulty side sewers and laterals are known to be large contributors of I/I. Identifying and repairing multiple faulty laterals and side sewers on private property can be more difficult and expensive than repairing a public wastewater pipe, and replacing or repairing side sewers on private property is the responsibility of property owners. Methods for repairing or replacing laterals and side sewers are similar to those described for public pipes. Trenchless technologies, which are less obtrusive than open-cut trenches are effective for replacing laterals and side sewers while minimizing impacts to landscaping and driveways. The City can repair or replace portions of side sewers within rights-of-way, and should support efforts to encourage property owners to replace portions on private property.

At this point, the City is experiencing relatively low I/I driven issues in concentrated areas. Area 6 is likely deficient due to elevated I/I in the A9e subbasin. It is recommended that the I/I remediation strategies outlined above be investigated further for I/I reduction in subbasin A9e. The lateral inspection program should start with this basin.

CHAPTER 6 MAINTENANCE AND OPERATIONS

This chapter provides an overview of the organization and common procedures associated with the ongoing maintenance and operation of the City sewer utility system, the primary purpose being to establish a baseline understanding of the proactive and responsive maintenance procedures performed by City staff. This baseline understanding is used herein to evaluate Sewer Utility (Utility) staffing, data collection and computerized record-keeping needs, and other Utility requirements to continue to meet the Utility's goals.

The City sewer system, detailed in Chapter 4, consists of approximately 210 miles of collection system piping, approximately 5,500 manholes, 17 sewer utility pump stations, and 3 siphons and serves more than 16,000 Utility customers. Utility staff also maintain 7 stormwater pump stations and 5 sewer pump stations serving individual facilities owned by other City departments.

6.1 Utility Responsibility and Authority

This section provides an overview of the Utility organization and basic information related to Utility staffing, training, and education.

6.1.1 Organizational Structure

The Utility is operated as a utility enterprise under the direction of the Public Works (PW) Department Director. PW is responsible for planning, design, construction, operation, maintenance, quality control, and management of the sewer system. The City has a mayor-council form of government; therefore, the PW Director reports to the Mayor. The Mayor provides direct administration and management of the utility. The City Council provide direction on policies and budget.

The Engineering Services Division (Engineering) within PW is the lead group for comprehensive sewer system planning, development of a CIP, and the design, construction, and inspection of projects related to the sewer system. The Utilities Engineering Manager oversees Utilities Engineering, including the Sewer Utility Engineer, and reports directly to the PW Director.

The M&O Services Division within PW is the lead group for the maintenance, inspection, and operation, of the physical assets of the Sewer Utility. The Storm/Sewer Manager oversees the Utility's 10 employees including the Sewer Field Supervisor and is responsible for the day-to-day maintenance and operation of the system. The Storm/Sewer Manager reports to the M&O Services General Manager, who, in turn, reports to the PW Director.

The location of the Utility within the overall PW organizational structure is shown in Figure 6.1.

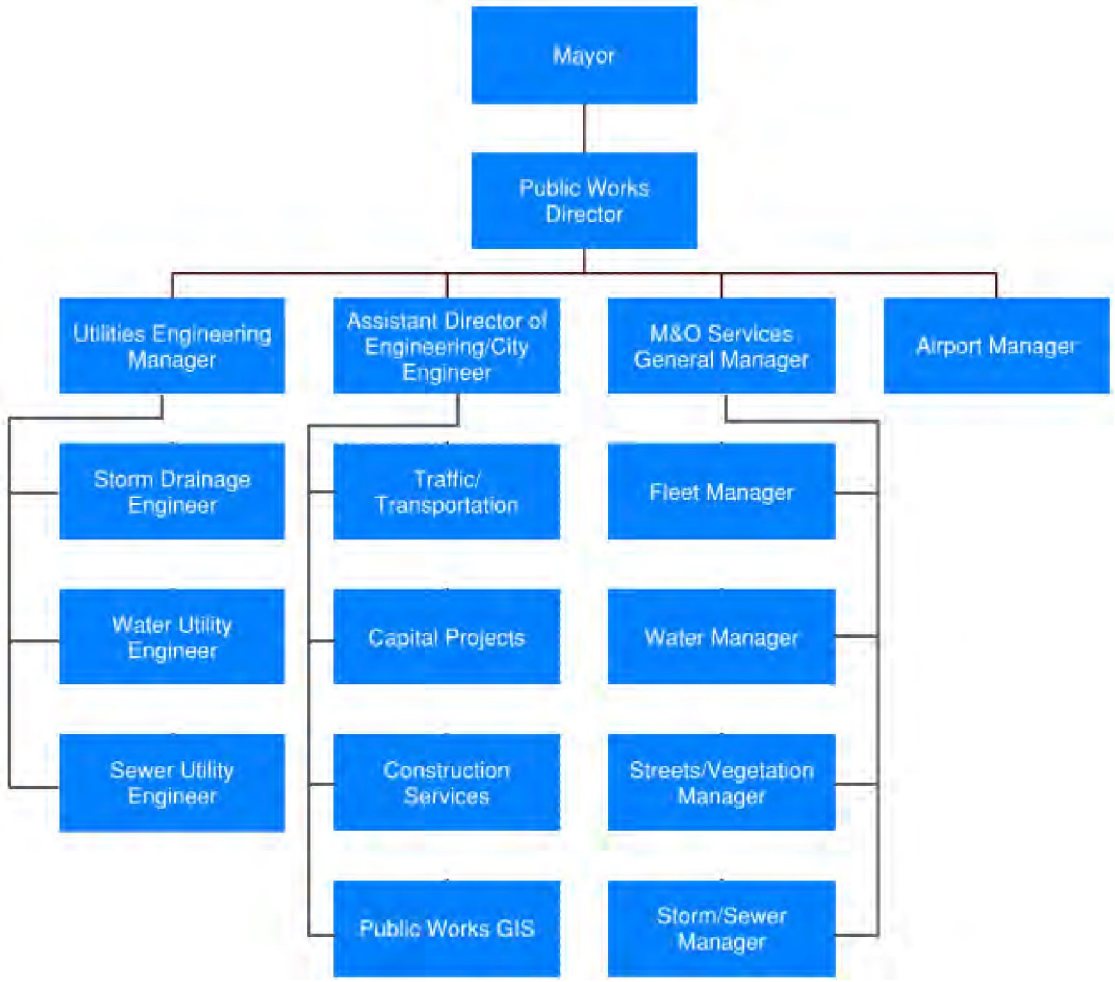


Figure 6.1 City of Auburn Public Works Department Organizational Chart

6.1.2 Staffing Level

The Utility currently employs 10 full-time M&O field staff plus a Storm/Sewer Manager and a Sewer Field Supervisor, who perform administrative duties. This chapter does not include an evaluation of Utility management, including regulatory compliance, planning, and coordination with other City departments. The position titles and primary functions of the full-time M&O field staff working within the Sewer Division are shown in Table 6.1.

Table 6.1 Sewer Utility M&O Field Personnel

Position	Primary Function(s)
Sewer/Storm Manager	Utility administrative duties.
Sewer Field Supervisor	Supervision of field staff.
Sewer Specialist	Two full-time staff dedicated to pump station inspection and maintenance.
Lead Maintenance Worker II	One full-time staff dedicated to operating the CCTV Inspection Program.
Maintenance Worker II	Five full-time staff dedicated to field inspection and maintenance.
Maintenance Worker I	Two full-time staff dedicated to field inspection and maintenance.

6.1.3 Level of Service

The Utility operates in accordance with the policies outlined in Chapter 2, and internally adopted goals integral to policy implementation. These goals are generally based on the current staffing level and tasks deemed most critical to the City and its residents.

6.1.4 Operator Training and Education

The City recognizes the value of having a knowledgeable and well-trained staff operating the Utility and encourages employees to obtain the highest level of training available. At this time, the State of Washington does not require certification for sewer maintenance operators. Seminars, conferences (specifically the annual Washington Wastewater Collection Personnel Association conference), and college coursework have become tools to advance knowledge for maintenance staff with subjects covered including safety, pumps, generators, forklift training, confined space, first aid, CPR, and electric and electronic fundamentals.

Many M&O staff serve in a specialized capacity. This can promote expertise, but also has the potential to limit the ability of the Utility to absorb absences due to vacation, sickness, retirement, and termination. To mitigate this limitation, the City has broadened the scope of the Utility's education system by cross-training staff, primarily staff that will serve in an on-call capacity and will be required to respond to off-duty emergencies.

6.2 Routine Operations

Routine M&O activities for the Utility can be divided into functional groups by facility type, as described in the following sections.

6.2.1 Pump Station Maintenance

Utility staff are responsible for maintenance of 29 pump stations, including 17 sewer utility stations (see Chapter 4), 7 stormwater utility stations, and 5 pump stations serving facilities owned by other City departments, at the Auburn Golf Course, Auburn City Hall, Auburn Justice Center, Isaac Evans Park, and Auburn Valley Humane Society. M&O activities include scheduled weekly and monthly equipment and grounds maintenance as well as emergency generator testing and maintenance. Pump station maintenance is a full-time commitment for two Utility staff teams which each include a maintenance worker and a sewer specialist.

6.2.1.1 Weekly Activities

Weekly pump station inspections are intended as a quick check to ensure proper operation and performance, and to identify potential non-emergency concerns to be addressed during scheduled monthly maintenance. Equipment maintenance schedules are based on manufacturers' recommendations. Depending on the site and time of year, ground maintenance may also be performed weekly or monthly as conditions dictate.

Weekly pump station maintenance activities include the following tasks:

- Perform a general visual inspection of grounds and pump station structure or vault.
- Check equipment for abnormal vibrations.
- Check lubrication of all pumping equipment.
- Check and clean, as needed, seal filters.
- Check ultrasonic level sensor.
- Check pump run times.
- Bleed lines of moisture.
- Inspect/exercise control valves.
- Check wet well for debris.
- Manually run the pump and observe wet well level.
- Security fencing inspection.

Weekly inspection activities are intended to be completed in less than one hour for each pump station.

6.2.1.2 Monthly Activities

Monthly pump station maintenance activities incorporate weekly activities while allowing more time for detailed maintenance and to address any previously identified concerns. Monthly maintenance can be particularly important for older pump stations, where equipment and facilities require more attention.

Monthly pump station maintenance activities include the following tasks:

- Inspect and test engine-generators (see below).
- Inspect pump station mechanical bypass pumping.
- Flush sump pit and manually run sump pump.
- Clean pump station interior and, at a minimum, wipe down control panels and pumps, and wash down/disinfect floor.
- Inspect fall restraint system.
- Spot-check control system and telemetry alarms.
- Inspect cathodic protection.
- Conduct building safety inspection.
- Test automatic transfer switch operation.
- Clean seal filters and vacuum probes.
- Clean check valves.
- Inspect the bioxide system.
- Inspect odor control systems.
- Inspect ventilation systems.
- Inspect chain hoist and crane systems.
- Inspect ladders and stairs.

- Check dehumidifier.
- Inspect electrical panels and variable frequency drive pumps.
- Inspect remote terminal units that connect pump stations to the Supervisory Control and Data Acquisition (SCADA) system.

The duration of monthly inspection activities varies widely depending upon the age/condition of the pump station and observations made during previous weekly inspections. On average, monthly inspections are assumed to be completed within four hours at each pump station.

6.2.1.3 Yearly Activities

Yearly maintenance includes actions that take significantly more time than routine activities and often require coordination/scheduling with additional City staff and/or outside vendors.

Yearly pump station maintenance activities include, but are not limited to, the following tasks:

- Mag meter calibrations.
- Chain hoist and crane load testing.
- Impellers an expeller inspection.
- Volute and motor inspection.

6.2.1.4 Generator Testing and Maintenance

City Utility staff perform limited maintenance on emergency generators serving sewer and stormwater pump stations, primarily to verify the generator's ability to perform in an emergency. Emergency generators are exercised, and fuel levels are evaluated during monthly maintenance activities. Private contracting services are used for detailed generator maintenance. It is recommended that detailed generator maintenance be performed annually, including filter changes and load bank testing.

Permanent generators are located at all 17 Utility-owned sewer pump stations. Four of the stormwater pump stations are equipped with permanent engine-generators. During a power outage, pump stations at City Hall and the Justice Center are run via generators that serve the building. Those two generators are maintained by the Administration Department, Facilities Division. In the event of a generator failure, pump stations can be operated using portable generators owned and maintained by the PW Department.

6.2.1.5 Wet Well Cleaning and Inspection

Wet well cleaning is performed by Utility staff as needed, but on average is necessary twice annually. Some pump stations in service areas with a noted high amount of fat, oils, and grease (FOG) accumulation require cleaning at a higher frequency (see Section 6.3).

During cleaning, wet wells are drained and the inside is cleaned with high-pressure water. Accumulated FOG and sludge/sediments are suctioned from the wet well using the City's vactor truck and transported to a disposal facility. During cleaning, Utility staff inspect all floats, sensors, and other hardware while the wet well is drained, and they also visually inspect the wet well structure for damage.

6.2.2 Collection System Maintenance

Utility staff are responsible for maintenance of approximately 210 miles of collection system piping and approximately 5,500 manholes. M&O activities include pipe cleaning/jetting, closed-circuit television (CCTV) inspection, and manhole inspection and maintenance.

6.2.2.1 Manhole Maintenance

Manhole maintenance includes initial inspection and potential follow-up cleaning and/or repair. Inspection is usually performed in conjunction with CCTV and jetting operations. The inspection includes the following:

- Visual confirmation of proper flow conveyance.
- Assessment of solids buildup in the manhole.
- Evaluation of structural damage or wear and the integrity/condition of manhole covers and ladder rungs.
- Confirmation and/or population of data stored in the computerized maintenance management system (CMMS).

Follow-up cleaning and maintenance work orders are generated based upon the results of initial inspection recorded in the CMMS, and typically require a two-person crew. Based upon recent maintenance history, it is estimated that approximately one in 10 manhole inspections leads to further cleaning. The City estimates that a total of 50 manholes per year require some repair.

6.2.2.2 Sewer Pipeline Cleaning and CCTV Inspection

Cleaning and inspection of the sewer system is performed using City-owned vactor/jet truck and CCTV equipment. Cleaning and CCTV inspection are typically performed in tandem from manhole to manhole by a two- or three-person crew for each task.

Jetting of sewer pipelines and subsequent vactor truck removal is the principal means of removing debris, sludge, FOG, and obstructions from the sewer system. A hose with a special end fitting is inserted into a pipe and high-pressure water (up to 2,500 pounds per square inch) is sent through the hose. The high-pressure water exits the small hole at the tip of the nozzle, breaking down and/or scouring obstructions. Debris is then removed via suction by the vactor truck equipment at each manhole.

Following cleaning, CCTV inspection is performed to identify structural defects and potential pipeline leaks. Routine CCTV inspection of the sewer system is an essential component of the M&O program as it can identify trouble spots before larger failures occur and can provide the City with accurate information about the condition of the sewer collection system. Between 2007 and 2019, inspection reports and digital video captured by the CCTV crews have been stored within the City's computer network using PIPELOGIX software). Since 2020, inspection data has been stored electronically using WinCan software. The PW GIS Group is in the process of inventorying sewer assets and updating data attributes. As part of that effort, Engineering staff is developing a procedure to export condition assessment data from WinCan to the CMMS. The intent of this data sharing is to be able to provide a more accurate planning tool based upon the known condition of wastewater system assets.

The City's goal is to clean and inspect all sewer collection pipes, using the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP), within the system on a seven-year cycle. On average, a three-person crew can clean approximately 3,000 feet of pipe per day or inspect approximately 1,500 feet of pipe per day.

Some of the City's larger, high-flow pipes are challenging for staff to inspect using the current set of equipment. In 2019-2020, the City hired a contractor to perform CCTV inspections on all 18-inch diameter sewer pipes and larger. While no major deficiencies were found, some degradation of older concrete pipe was observed. Staff intends to repeat some of those large diameter pipe inspections during this planning cycle to assess whether additional degradation has occurred and to help project and plan for future repair and replacement needs.

6.2.3 Field Operations

In addition to the M&O activities discussed in Sections 6.2.1 and 6.2.2, the Utility typically maintains a two-person field crew that performs a variety of other ongoing Utility functions. The Utility is also available to assist other PW divisions such as Water, Stormwater, or Transportation during manpower shortages or emergencies. Sewer staff perform liaison functions with Engineering and construction inspections for new projects, repairs, or modification of existing lines.

Currently, services for Utility locates are performed by two designated locators who are under the supervision of the Water Division Manager.

Examples of field operations activities include:

- **Repair:** Sewer staff perform repair of minor pipe breaks/leaks and other system infrastructure.
- **Engineering:** Sewer staff often provide facility inspection services for Engineering projects and support Engineering through visual observation in the field.
- **Vehicle and Equipment Maintenance**: The Utility maintains an extensive inventory of equipment available to respond to problems or emergencies. The fleet is currently equipped with seven trucks, one CCTV van, one sewer vactor/jet truck, and one emergency bypass pump. Each component of this fleet is equipped with valve operators and traffic control equipment.
- **Supply Inventory:** The Utility maintains an inventory of supplies and parts that are available for use in responding to emergency situations as well as normal Utility operations. Supplies and parts are tracked in an inventory control system that allows easy identification of available materials.

It is difficult to quantify the field tasks performed by Utility staff in terms of equivalent staff. Many of these tasks are performed outside of a regular maintenance schedule. The evaluation of existing staffing requirements in Section 6.6 assumes that a two-person field operations crew is maintained for a majority (0.75) of working days, or 1.5 full-time equivalent (FTE).

6.3 Fats, Oils, and Grease Reduction Program

FOG causes many operational challenges in the collection and treatment systems when not properly disposed of at the source. When FOG enters a sewer, it cools, solidifies, and can stick to the interior of pipes. FOG buildup increases over time, reducing the capacity of pipe to convey wastewater, potentially causing backups in the sewer system and operational concerns within pump stations. As of 2024,

Engineering employs two staff members who, among other duties, implement and oversee the City's FOG Reduction Program. The program focuses on regulation of food service establishments (FSE) and FOG generating food processing businesses, as well as public education to minimize the amount of FOG entering the City sewer system. (Note: Each staff member designates 25 percent of their time to the FOG program. Prior to 2024, only one position was available for this effort).

The City currently monitors approximately 174 FSEs within the service area, most of which are required to use grease trap/interceptor pretreatment facilities before discharging to the sewer collection system. FSEs are identified through the business licensing process, during which all FSEs are required to submit a FOG Control Plan per Auburn City Code (ACC) Chapter 13.22. ACC also codifies requirements for installation of pretreatment facilities (typically grease traps and interceptors), cleaning and maintenance, water quality testing, and record-keeping. City policy is to work with FSEs on a cooperative basis through outreach activities; however, refusal to comply with City requirements can result in code enforcement action.

Because of limited staffing for the program, inspection and education efforts have focused primarily on managing requirements for businesses to have a FOG Control Plan and reacting to areas with observed FOG issues. In 2024, an additional staff person was hired to enable a more regular, proactive inspection schedule and more consistent monitoring of grease interceptor cleaning. Regular FOG inspections will also be combined with stormwater source control inspections to use staff resources more efficiently.

Because areas with observed FOG issues are not all downstream from FSEs, staff will continue to monitor those areas and reach out to residents of both single-family and multi-family housing.

In addition to efforts to reduce the amount of FOG in the system, education and outreach efforts include:

1. Discouraging the flushing of cleaning wipes that may be labeled "flushable," but that do not disperse in water. These items can clog sewer lines and get caught in pumps, increasing maintenance efforts within both the City collection and conveyance system, and King County's treatment system.
2. Discouraging the disposal into the sewer system of pharmaceuticals, microplastics, and other prohibited discharges by educating the public on the harmful effects of those substances in the wastewater stream and by promoting alternative disposal methods.
3. Working with the King County Wastewater Treatment Division, Industrial Waste Program, to identify manufacturing and other businesses that discharge substances that may be detrimental to the wastewater treatment process.

6.4 Non-Routine and Emergency Operations

This section discusses unscheduled activities performed by Utility staff and provides a response plan for emergency conditions. The intent of the routine inspection and maintenance activities discussed in Sections 6.2 and 6.3 is to minimize, through proactive management of the sewer facilities, the potential for conditions that could lead to emergencies.

6.4.1 Customer Service Requests

Customer service requests, such as a localized sewer backup complaint, trigger creation of a task to inspect the affected area or sewer facility and identify potential solutions. In some cases, relatively simple solutions can alleviate the issue. However, other cases require coordination with Engineering or

other City departments. On average, Utility staff respond to approximately 50 customer service/complaint-related tasks per year. The effort required to resolve complaints varies considerably.

Good record-keeping can help with complaint resolution by ensuring that all relevant data are gathered and by serving as a reminder to resolve the complaint and notify the complainant. When a complaint is received, the following information should be recorded to the greatest extent possible:

- Name and contact information of the person making the complaint.
- Brief description of the nature of the complaint.
- If sewer overflow, include estimate of volume and duration of overflow.
- Time and date the complaint was received.
- M&O staff assigned to respond.

If any sewage is spilled to the environment, staff will immediately report the spill to the Department of Ecology's ERTS System.

Following the initial response, the complaint record is updated to include the results of inspections and corrective actions taken, if any. If the complaint cannot be resolved internally within the Utility, the complaint record is forwarded to Engineering for further investigation. Notification of any system investigation and/or action is provided to the customer making the complaint.

6.4.2 Emergency Response Program

For specifically sewer related emergencies, the Utility has implemented a standby program whereby one on-call employee is designated to be the first to receive after-hours emergency calls. Most sewer system problems that occur outside normal working hours are reported through the City's 911 emergency response system. An emergency call-out list is provided to the emergency operator in order to contact Utility staff in case of an emergency. Pump station SCADA alarms are also forwarded to the on-call employee. The primary responder to those after-hours calls is the on-call employee. Utility staff have been trained to respond to system emergencies and staff maintains a "Wastewater Standby Manual" with pertinent information helpful in resolving spills, blockages, and other emergencies. The contacted staff assesses the situation, contacts additional staff as necessary, and then responds in accordance with established emergency response procedures.

For citywide emergencies such as severe weather events, flooding, landslides, power outages, or other events with widespread impact across the PW Director or designee will activate the Department Operations Center (DOC) which operates at the M&O facility. By direction of the DOC Operations Chief, Sewer Utility staff will be used for any PW operations and will not necessarily be limited to sewer operations. To help manage staff and operations during such incidents, the PW Department has implemented several standard operating procedures that outline employee responsibilities for availability, work response, etc.

For longer lasting or regional emergencies, City resources, including staff will be managed in accordance with the City's Comprehensive Emergency Management Plan dated October 21, 2019. The primary objectives of the Comprehensive Emergency Management Plan are to ensure public safety, restore essential services as quickly as possible, and provide assistance to other areas as required. That plan outlines responsibilities of City departments related to the mitigation of the emergency situation within

the City, and coordination and support of or from other organizations such as King County, Pierce County, the State of Washington, and neighboring cities.

6.5 Communications, Data Collection, and Record-Keeping

This section describes the electronic communication, data collection, and record-keeping systems used by Utility staff.

6.5.1 Telemetry and Pump Station Controls

The Utility uses a SCADA system to monitor and operate, as necessary, the sewer and storm pump stations from a centralized location. SCADA information from all sewer, storm, and water facilities is routed via radio signals to the M&O control center located at 1305 C Street SW. The control center monitors wet well levels at all of the sewer pump stations together with pump run times and cycles.

Logic programming automates the sewer pump station operation via ultrasonic level detectors with backup high float switches. The control center is configured to sound an alarm in the M&O building if a recognized anomaly is detected. The alarm system is contacts Utility staff to investigate the anomaly in the event that the problem occurs during non-working hours. All alarm and pump information is recorded within the computer that functions as the control center.

6.5.2 Data Collection and Record-Keeping

Data collection and record-keeping functions for the Utility are performed using a Web-based CMMS software package provided by Cartegraph Inc. The CMMS integrates GIS data with Utility records, providing managers with overview information about system and operational performance, and field crews with information related to the condition and failure history of specific wastewater facilities. The City currently uses the CMMS to plan field staff activities (tasks), record results of both routine and non-routine maintenance, and compare actual maintenance efforts to City goals. The City is also using the CMMS as an asset management tool, through which the City optimizes staffing and capital resource planning.

In recent years, the City has made considerable progress in adding asset information to the CMMS, specifically GIS data, physical information related to size and material, and installation date. However, significant inventory work, which is underway, is still required to fully utilize the asset management function of the CMMS, and the addition of information related to risk, asset criticality, and condition is also necessary. To assist the City's transition to an asset management program, the attributes listed below should be used within the CMMS to define each of the City sewer assets (manhole, pipe segment, pump, etc.).

6.5.2.1 Asset-Specific Attributes

The following asset-specific attributes are related to the asset and, besides replacement cost, remain relatively unchanged over time:

- **Asset ID:** The unique asset number that is used by all business systems to identify an asset.
- **Location:** Where the asset is located (GIS).
- **In-service date:** The date the asset was placed into service.

- **Replacement cost:** The cost to replace the asset and the year that the cost data were calculated.
- **Useful life:** The average life expectancy of the asset.
- **Asset criticality:** A value assigned to each asset that indicates how essential it is to maintain service. Typically, it is defined as a combined score based on the consequence of failure and the likelihood of failure, as defined below:
  - **Consequence of failure:** The social and economic cost if the asset fails.
  - **Likelihood of failure (condition):** The estimated time until the asset fails, usually based on condition.
- **Asset class:** A group of assets that share the same characteristics (e.g., manholes, pipe segments). Asset class is used to estimate replacement costs and useful life of groups of assets.
- **Nameplate information and asset specifications:** Important information that is used to uniquely describe an asset such as the manufacturer name, type of asset, serial number, size, material, etc. This information is used for asset identification, replacement, and repair.

6.5.2.2 Maintenance and Operation Attributes

The following M&O attributes are captured as part of the operations, maintenance, and repair history associated with each asset.

- **Asset ID:** Most work orders should be associated with one or more assets. The asset ID is used to uniquely associate work with individual assets.
- **Issue, cause, action:** These codes are used to classify historical M&O activities associated with corrective actions or unplanned maintenance.
  - **Issue:** What is the problem observed in the field?
  - **Cause:** What is the underlying cause of the problem?
  - **Action:** What was done to address the cause?
- **Target start/stop date and actual dates:** Recording the estimated and actual start and stop dates for a work order can help in determining efficiency, planning workloads, and assessing repair costs.
- **Task costs:** Task order costs include labor, parts, materials, and equipment, and should be accurately recorded for each work order.
- **Task type:** Task order types are used to group and compare different types of work activities. Typical work order types include:
  - **Capital improvement:** Work associated with a capital improvement project.
  - **Corrective maintenance:** Work associated with an unplanned repair.
  - **Preventive maintenance:** Work associated with a planned preventive maintenance activity.
  - **Predictive maintenance:** Work associated with predictive measures (usually for critical assets).
- **Warranty information:** Helps to determine assets that are under warranty and the warranty maintenance requirements.

6.6 Existing Staffing Requirements

Existing staffing requirements for M&O activities as discussed in this chapter were compiled and evaluated to determine staffing requirements needed to efficiently operate, maintain, repair, and collect and report the information necessary to properly operate the sewer system. Table 6.2 evaluates the estimated time to conduct sewer system M&O tasks in the manner currently performed. Calculated days for each M&O activity are for a single person performed over an eight-hour "day." Therefore, an activity that is performed quarterly and that requires four hours and two M&O staff to complete would result in an annual requirement of four days.

Table 6.2 Sewer System Maintenance and Operation Task Summary

Work Activity	FTE Days Required Annually	Assumptions/City Goal
Collection System Maintenance		
Manhole inspection	35	Inspect once every 5 years, total of 5,500 manholes. Perform 32 inspections per day with one-person crew.
Manhole cleaning	28	One cleaning is required for every 20 inspections. Two-person crew, 2 hours each.
Manhole repair	40	40 repairs per year. Two-person crew, 4 hours each.
Pipeline cleaning	238	City goal is 220,000 feet per year (entire system in 7 years). A three-person crew cleans approximately 3,000 feet of pipe per day.
CCTV inspection	370	City goal is 220,000 feet per year (entire system in 7 years). A two-person crew inspects approximately 1,200 feet of pipe per day.
Pump Station Maintenance		
Weekly routine maintenance	377	29 pump stations weekly (52 per year). Two-person crew, 1 hour each.
Monthly routine maintenance	174	29 pump stations monthly (12 per year). Two-person crew, 2 hours each.
Wet well cleaning	29	29 pump stations, 2 per year. Two-person crew, 2 hours each.
Other Sewer M&O Activities		
Field operations	375	Two-person field crew for 0.75 of working days (1.5 FTE).
Customer service requests/complaints	50	50 requests per year. Two-person crew, 4 hours each.
Data entry	130	20 hours per week total.
Subtotal	1,846	
Total	2,172	Assumes 15% unquantified work
Total number of working days available at current staffing level	2,140	Based on 5-year average
Current FTEs	10	2,045 days required divided by 200 days per FTE year.
Number of FTEs required	10.1	

Table 6.2 shows that the Utility is appropriately staffed with respect to meeting current City goals for M&O activities. The analysis confirms the qualitative assessment of staffing adequacy provided by City Maintenance staff. The City has consistently approached assessment and maintenance goals, but has little room for deviation from normal procedure due to equipment failure, employee turnover, sickness, additional training, etc. To mitigate shortfalls, areas of the collection system have received higher priority due to frequent need for maintenance (older pipe in poor condition), relatively flat slopes, or high concentrations of FOG. As the system grows and ages, there will likely be a need for additional staff to perform more frequent cleaning and CCTV inspection of the entire system and to account for sewer system expansion with overall city growth.

6.7 Potential Improvement Opportunities and Capital Needs

Based upon discussions with City staff and analysis of M&O activities discussed in this chapter, the following improvement opportunities are available to the Utility. These opportunities are based on improving existing services and improving work productivity:

- Continue to integrate asset management with existing Utility management software (CMMS and GIS):
  - » Continue to add GIS attributes to known Utility assets.
  - » Perform and document condition assessments. Use defined criteria (such as leaks/cracks observed, cleanliness, and other specific measures) and provide staff training to ensure assessment consistency. Use NASSCO PACP-certified inspection programs to integrate inspection results with CMMS.
  - » Use the results of condition assessments to move toward risk-based maintenance to best utilize staff resources. For example, consistently high assessment scores would result in a lower risk or need for maintenance/inspection, allowing M&O staff to be diverted to more essential activities.
  - » Use the compiled results of condition-based assessments to more systematically program repair, rehabilitation and replacement of aging sewer pipes.
- Complete CCTV inspection of inverted siphons that cross the Green River. The City does not have the equipment to inspect these facilities; therefore, contract services will be required.
- Hire a contractor to perform follow-up inspections of the City's large diameter pipes (with a greater than 18-inch diameter) to assess degradation since the previous inspections in 2020.
- Initiate a program to inspect and correct deficiencies in portions of side sewers that are the City's responsibility, meaning the portions located within City rights-of-way. Such a program could include adding additional "side launch" inspection capabilities to the City's current CCTV equipment, hiring a contractor to conduct inspections, or some combination of the two. The compiled results of those inspections would be used to initiate repairs, whether they be done by current staff, or by one of various methods of delivering a capital project.
- Utilize new engineering staff to oversee the cleaning programs more proactively for grease traps and interceptors by food service establishments, and more frequently educate the public about the harmful effects of discharging FOG and other prohibited substances to the public sewer system.

CHAPTER 7 CAPITAL IMPROVEMENT PLAN

This chapter discusses recommended capital projects for the City's sewer system service area (SSSA). The capital projects necessary to meet and maintain the City's level of service (LOS), as described by the goals and policies in Chapter 2 of this Plan, through the 20-year planning period (2025–2044) are presented as a Capital Improvement Plan (CIP).

This Plan includes time frames, which represent the intended framework for future funding decisions and within which future actions and decisions are intended to occur. However, these time frames are estimates, and depending on factors involved in the processing of applications and project work, and availability of funding, the timing may change. The framework does not represent actual commitments by the City. Project identification is an ongoing effort requiring periodic evaluation. This CIP list was developed based on incorporating the City's Capital Facilities Plan (CFP), identification of equipment limitations within the M&O group, and identification of areas of improvement.

7.1 Capital Improvement Plan

The CIP focuses on addressing known problems in a manner identifying cost-effective solutions that incorporate the risks associated with substandard facilities and the uncertainty inherent in engineering calculations/model simulations. A flow chart depicting the process of CIP development is shown in Figure 7.1.

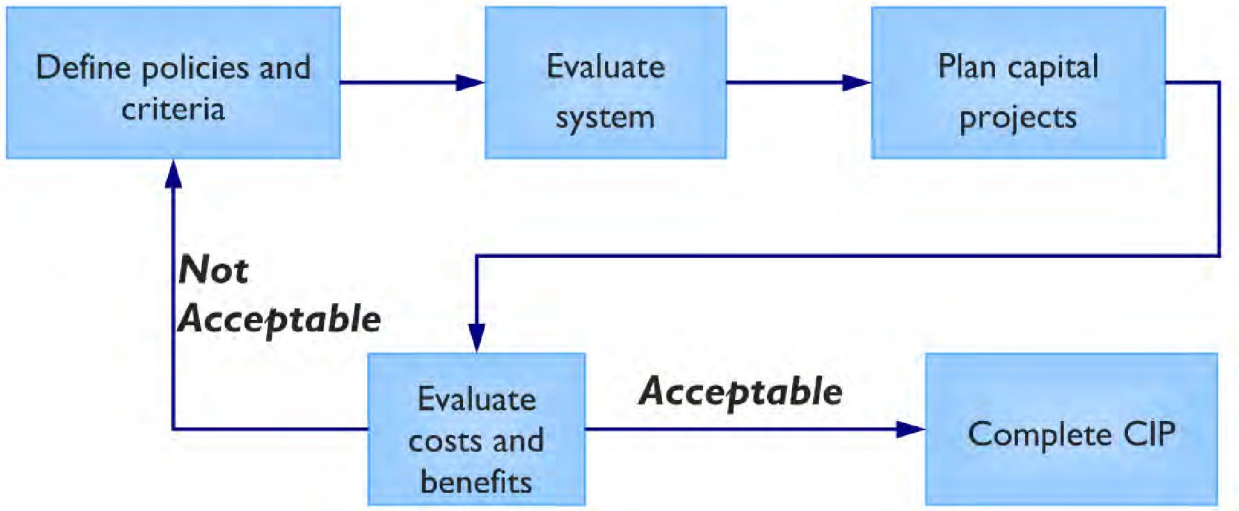


Figure 7.1 CIP Development Flow Chart

The CIP places emphasis on projects identified for implementation between 2025 and 2030, which constitutes the 6-year planning period for utility capital funding requirements and staffing needs. This period provides a realistic outer limit for accurately forecasting the annual cycle of utility projects and priorities. This Plan also includes a 20-year CIP that examines long-term capital requirements, such as the replacement of infrastructure as it exceeds its useful life. All projects in the CIP are consistent with the LOS.

7.1.1 Project Priority

All projects in the CIP have been prioritized for implementation. Priority was assigned as one of three designations. Projects in the top tier, or highest priority, are designated Priority 1; projects in the middle tier are designated Priority 2; and projects with the lowest priority relative to the other projects are considered Priority 3. The priority levels are based on how the proposed project impacts LOS. The project descriptions below include the designated priority.

7.1.2 Project Cost

Estimated costs for each project are included in the CIP descriptions below. The costs are planning-level estimates. Actual costs will depend on various factors at the time of design and construction including labor and material costs. Estimated costs include an allowance for engineering, legal, and administration fees, construction contingencies, contractor overhead, and general conditions. Permitting and land, easement, and/or right-of-way acquisitions are not included in the cost estimate. The costs estimates are in 2024 dollars. CIP Projects 1 and 2 are part of the City's Capital Facilities Plan, where the City developed the costs for these projects.

7.1.3 Project Summary

The CIP projects mainly consist of ongoing and programmatic capital improvements. Ongoing projects include projects identified through previous studies. The City has previously allocated funding to each of these projects, which are currently in various stages of execution. These projects must continue to receive funding under the CIP until completion and have been included in this document to provide a complete picture of the program. Programmatic projects are included in the CIP to provide funding for maintaining and/or improving the LOS. These projects do not address a problem at a specific location but allocate budget for addressing LOS goals citywide. As discussed in Chapter 5, the system hydraulic analysis outlined six areas with future capacity deficiencies. Capacity-related capital projects have been included in the six-year or 20-year planning period, specifically Projects 1 and 4, which are described below in Section 7.2.2. The next Plan update, scheduled for 2032 and repeating every 10 years, has been included as a cost in Table 7.1.

7.2 Capital Improvement Projects

7.2.1 Summary Table

Table 7.1 presents Annual Project Cost Summary for 6-Year and 20-Year CIP.

Table 7.1 Annual Project Cost Summary for 6-Year and 20-Year CIP

Project Number	Project Name	Priority	2025	2026	2027	2028	2029	2030	2025-2030	2031-44	20-Year Project Cost	CIP Allocation (Growth/ Expansion)	CIP Allocation (Repair/ Replacement)
1	Sanitary Sewer Repair and Replacement/System Improvements (Includes Areas 2, 3, 5 and 6 identified in Figure 5.10)	1	$350,000	$1,800,000	$350,000	$1,800,000	$350,000	$1,800,000	$6,450,000	$15,050,000	$21,500,000	5%	95%
2	Street Utility Improvements	1	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,800,000	$4,200,000	$6,000,000		100%
3	Side Sewer Inspections	1	$370,000	$370,000	$370,000	$370,000	$370,000	$370,000	$2,220,000	$1,480,000	$3,700,000		100%
4	Sewer Pump Station Replacement/Improvement	2	$0	$0	$400,000	$800,000	$1,000,000	$2,000,000	$4,200,000	$10,950,000	$15,150,000	25%	75%
5	Siphon Assessment and Cleaning	1	$0	$0	$580,000	$0	$0	$0	$580,000	$580,000	$1,160,000		100%
6	Pump Station Condition Assessment	1	$0	$105,000	$0	$0	$0	$0	$105,000	$105,000	$210,000		100%
7	Manhole Ring and Cover Replacement	2	$90,000	$90,000	$90,000	$90,000	$90,000	$90,000	$540,000	$1,260,000	$1,800,000		100%
8	Cleaning and Inspection of Large-Diameter Pipe (21-inches and larger)	2	$0	$0	$0	$950,000	$0	$0	$950,000	$1,900,000	$2,850,000		100%
9	Inflow and Infiltration Monitoring (Area 1, Figure 5.10)	3	$0	$0	$0	$0	$0	$530,000	$530,000	$1,590,000	$2,120,000		100%
10	Roegner Park Sewer Capacity Improvements (Area 4, Figure 5.10)	1	$0	$0	$120,000	$0	$0	$1,080,000	$1,200,000	$0	$1,200,000	60%	40%
11	Rainier Ridge Pump Station Replacement	1	$4,000,000	$0	$0	$0	$0	$0	$4,000,000	$0	$4,000,000	50%	50%
12	1st and R Sewer Replacement	2	$400,000	$0	$0	$0	$0	$0	$400,000	$0	$400,000		100%
13	Plan Update	1	$0	$0	$0	$0	$0	$0	$0	$800,000	$800,000		100%
	Total Cost of Priority 1 Projects		**$5,020,000**	**$2,575,000**	**$1,720,000**	**$2,470,000**	**$1,020,000**	**$3,550,000**	**$16,355,000**	**$20,735,000**	**$37,090,000**		
	Total Cost of Priority 2 Projects		**$490,000**	**$90,000**	**$ 490,000**	**$1,840,000**	**$1,090,000**	**$2,090,000**	**$6,090,000**	**$14,110,000**	**$20,200,000**		
	Total Cost of Priority 3 Projects		**$0**	**$0**	**$0**	**$0**	**$0**	**$530,000**	**$530,000**	**$1,590,000**	**$2,120,000**		
	Total CIP Cost		**$5,510,000**	**$2,665,000**	**$2,210,000**	**$4,310,000**	**$2,110,000**	**$6,170,00**	**$22,975,000**	**$36,435,000**	**$59,410,000**		

7.2.2 Project Descriptions

Table 7.2 Project Descriptions

Project Number	1
Project Name	**Sanitary Sewer Repair and Replacement/System Improvements (Includes Areas 2, 3, 5 and 6 identified in Figure 5.10)**
Location	Throughout the SSSA
Priority	1
Schedule	Ongoing, alternating a large project every other year
Problem Summary	As infrastructure ages, failures begin to appear, causing LOS issues
Description	This project is R&R of existing sewer lines, manholes, public side sewers, and other facilities. These assets will be identified through modeled capacity evaluation, areas identified with elevated inflow and infiltration, CCTV inspection and routine cleaning and monitoring. This particular program includes proposed projects that do not have an approved Project Management Plan, or are not associated primarily with the Save Our Streets (SOS) or other transportation improvements. Anticipated projects include biannual, standalone, R&R projects for sewer lines that are broken, misaligned, "bellied," or otherwise require an inordinate amount of maintenance effort or present a risk of backup or trench failure, and facilities that generate consistent odor complaints. Improvements identified through this program may be completed as components of larger projects to gain efficiency in project costs. Additionally, system improvements that enhance the ability to maintain service are included here. It is anticipated, as data such as pipe age, pipe material, condition rating (based on CCTV inspection), and consequence of failure are consolidated in Cartegraph, that planning for the R&R program will be based on a systematic analysis of that data. This project is planned to occur during both the 6- and 20-year CIPs.
Recommended Predesign Refinements	As sewer mains are prioritized for replacement based on age, criticality and condition assessments, continual coordination with other utility and street improvements should be made to increase efficiency.
Cost Estimate	Costs developed by the City and carried over from the Capital Facilities Plan: ▪ 2025 - $350,000 ▪ 2026 - $1,800,000 ▪ 2027 - $350,000 ▪ 2028 - $1,800,000 ▪ 2029 - $350,000 ▪ 2030 - $1,800,000 ▪ 2031–44 - $15,050,000
20 Year Project Cost	$21,500,000

Project Number	2
Project Name	**Street Utility Improvements**
Location	Throughout the SSSA
Priority	1
Schedule	Ongoing
Problem Summary	As infrastructure ages, failures begin to appear, causing LOS issues.
Description	This project is R&R of existing sewer lines, manholes, and public side sewers located within the project limits of City arterial transportation projects and within the SOS program. Coordinating sanitary sewer utility projects with local street and arterial transportation projects can lower the unit cost of pipe replacement by eliminating the pavement restoration component of the sewer project's costs. This project is planned to occur during both the 6- and 20-year CIPs.
Recommended Predesign Refinements	Refine list as additional information becomes available.
Cost Estimate	Costs developed by the City and carried over from the Capital Facilities Plan: ▪ 2025 - $300,000 ▪ 2026 - $300,000 ▪ 2027 - $300,000 ▪ 2028 - $300,000 ▪ 2029 - $300,000 ▪ 2030 - $300,000 ▪ 2031–44 - $4,200,000
20 Year Project Cost	$6,000,000

Project Number	3
Project Name	**Side Sewer Inspections**
Location	Throughout the SSSA
Priority	1
Schedule	2025-2034
Problem Summary	The most common cause for sewer backups in the City in recent years has been the failure of side sewers. Throughout the City the condition of lateral sewers on City property is generally unknown.
Description	Use the services of a contractor to systematically inspect, via CCTV, lateral sewers within City rights-of-way and identify needed repairs. Anticipate conducting approximately 1,600 inspections per year, for 10 years to capture information on 100% of these facilities. Initial inspections will concentrate on areas known to primarily have concrete or clay side sewers.
Recommended Predesign Refinements	Review existing CCTV and GIS information to identify gaps in material type and age that should also be collected during the program.
Cost Estimate	$370,000 per year for 10 years
10 Year Project Cost	$3,700,000

Project Number	4
Project Name	**Sewer Pump Station Replacement/Improvements**
Location	Throughout the SSSA
Priority	1
Schedule	2025-30
Problem Summary	The 2016 Pump Station Condition Assessment identified Rainier Ridge and 22nd Street pump stations as the highest priority stations, followed by R Street and 8th Street pump stations for needing to be renovated, replaced, and/or relocated based on condition, safety concerns, and to accommodate growth. The Rainer Ridge pump station project is ongoing and expected to be mostly complete under the prior CIP. This CIP provides for a programmatic program to renovate or replace the next pump stations on a bi-annual basis following completion of Rainer Ridge. The preliminary anticipated order for modification/replacement is: 1. 22nd Street Pump Station. 2. Riverside Pump Station. 3. Dogwood Pump Station Capacity Improvements. 4. R Street Pump Station. 5. 8th Street Pump Station. It is anticipated that additional stations will require significant improvements and/or replacement within the 6 – 20 year planning horizon as well. The estimated cost for 22nd Street is distributed between 2027 and 2030. The estimated costs for the next identified pump stations are used as a placeholder for project value and distributed from 2031 to 2044. Following the results of the systematic pump station evaluation study updated scheduled for 2026 (CIP project 6, Pump Station Inspections), the sequence or identification of pump stations requiring R&R, and detailed scope of improvements for each of these stations will be developed.
Description	This project will renovate or replace one pump station within the 6-year CIP and allocates money for R&R of unknown pump stations in the 6- to 20-year CIP.
Recommended Predesign Refinements	The costs below for all pump stations do not include provisions for new gravity or force main piping. The costs also assume that the existing generators on site will be reused and that no additional land or site improvements are required.

Project Number	4	
Project Name	**Sewer Pump Station Replacement/Improvements**	
Cost Estimate	1. **22th Street Pump Station (2027-2030)**	
	Based on 2016 Condition Assessment	$4,200,000
	Subtotal	**$4,200,000**
	2. **Riverside Pump Station (2031-2033)**	
	Package pump station	$2,724,000
	Project contingency (50% of all above costs)	$1,362,000
	Washington State and King County taxes (10.2% of construction costs)	$417,000
	Subtotal construction costs	**$4,503,000**
	Administration, engineering design, and permitting (30% of costs)	$1,347,000
	Subtotal	**$5,850,000**
	3. **Dogwood Pump Station (2034-2035)**	
	Package pump station	$256,000
	Project contingency (50% of all above costs)	$128,000
	Washington State and King County taxes (10.2% of construction costs)	$39,000
	Subtotal construction costs	**$423,000**
	Administration, engineering design, and permitting (30% of costs)	$127,000
	Subtotal	**$550,000**
	4. **R Street Pump Station (2037-2039)**	
	Package pump station	$605,000
	Project contingency (50% of all above costs)	$302,500
	Washington State and King County taxes (10.2% of construction costs)	$93,000
	Subtotal construction costs	**$1,000,500**
	Administration, engineering design, and permitting (30% of costs)	$299,500
	Subtotal	**$1,300,000**
	5. **8th Street Pump Station (2041-2043)**	
	Package pump station	$1,513,000
	Project contingency (50% of all above costs)	$756,500
	Washington State and King County taxes (10.2% of construction costs)	$231,000
	Subtotal construction costs	**$2,500,500**
	Administration, engineering design, and permitting (30% of costs)	$749,500
	Subtotal	**$3,250,000**
20 Year Project Cost	$15,150,000	

Project Number	5	
Project Name	**Siphon Assessment and Cleaning**	
Location	Green River crossing near 26th Street NE; Green River crossing over 8th Street NE Bridge	
Priority	1	
Schedule	2027, repeated in 10 years, 2037 or as inspection results warrant	
Problem Summary	Currently, the City does not have the required equipment to complete inspections of the three siphons located within its collection system, and little is known about their condition.	
Description	This project would inspect each siphon to determine and or update its condition and help set future inspection/cleaning protocols. The siphons would be inspected prior to cleaning to determine what their in-situ condition is, then if required the lines would be cleaned and re-inspected. Based on the debris level and condition of the pipes, future activities can be planned. Repeat in 10 years. For cost efficiencies, it is assumed that all three sites would be completed under one contract. This project is planned to occur during both the 6- and 20-year CIPs.	
Recommended predesign refinements	Determine flow rates required for bypass pumping/trucking. Verify the assumption that the Green River crossing at 26th Street NE can be diverted to each barrel without the need for additional bypass pumping.	
Cost Estimate	**Green River crossing via Inverted Siphon at 26th Street NE: 488 feet of 8-inch and 12-inch HDPE**	
	Initial CCTV	$6,600
	Cleaning	$15,600
	Post-cleaning CCTV	$6,600
	Subtotal	**$28,800**
	Green River Crossing via 8th Street NE Bridge: 1,191 feet of 14-inch CIP	
	Traffic control	$117,000
	Bypass pumping	$124,000
	Initial CCTV	$8,000
	Cleaning	$23,000
	Post-cleaning CCTV	$8,000
	Subtotal	**$280,000**
	Subtotal line-item costs	**$308,800**
	Project contingency (30% of all above costs)	$92,600
	Washington State and King County taxes (10.2% of construction costs)	$40,900
	Subtotal construction costs	**$442,300**
	Administration, engineering design, and permitting (30% of costs)	$132,700
20 Year Project Cost	$1,160,000	

Project Number	6	
Project Name	**Pump Station Condition Assessment**	
Location	Throughout the SSSA	
Priority	1	
Schedule	2026 and 2036	
Problem Summary	The City last completed a pump station condition assessment in 2016. Since that time, improvements/ upgrades to the stations have been made, and the pump stations have continued to age. To adequately plan for future pump station investments, re-inspection is required.	
Description	The assessment will evaluate the apparent physical condition of existing stations and equipment. The purpose of the assessment is to predict future serviceability and anticipated longevity for development of future CIPs. Pump stations must meet the adopted system performance and reliability goals, and current code conditions, which may differ from those that existed when the stations were originally built. The assessment would identify requirements necessary to meet the City's goals, requirements necessary for the health and safety of staff and the public, and suggestions that might increase reliability or reduce cost of operations or maintenance. Similar to the 2016 assessment, equipment checklists will be prepared for mechanical/hydraulic and electrical/control systems, site visits to all stations will be made, as-built information and M&O manuals will be reviewed, and M&O personnel will be asked about known issues at each location. Station operation will be observed, but no detailed physical testing of equipment, wiring, controls, or structures will be included. The results of this assessment will compared to the previous inspection to identify observable degradation of especially the older stations. To continue to stay up to date on pump station needs, it is recommended to repeat the inspection within the 20-year CIP.	
Recommended Predesign Refinements	None	
Cost Estimate	Engineering services for condition assessment	$70,200
	Subtotal line-item costs	**$70,200**
	Project contingency (30% of all above costs)	$21,100
	Subtotal inspection costs	**$91,300**
	Administration (15% of costs)	$13,700
20 Year Project Cost	$210,000	

Project Number	7	
Project Name	**Manhole Ring and Cover Replacement**	
Location	Throughout the SSSA	
Priority	2	
Schedule	Ongoing	
Problem Summary	Frame and covers on sewer manholes are continually subject to impact from vehicles. While other portions of the of the manhole structures generally remain in adequate condition, the frames and covers often to be replaced.	
Description	This project would establish an ongoing CIP to provide funds for continued replacement of frames and covers. These replacements may occur as part of other City capital projects or as a stand-alone ring and cover replacement project. The cost for this effort is based on historical, all-inclusive spending from previous City of Auburn work. This project is planned to occur during both the 6- and 20-year CIPs.	
Recommended Predesign Refinements	None.	
Cost Estimate for year 2025	Frame and cover replacement annual	$90,000
	Subtotal line-item costs	**$90,000**
	Project contingency (0% of all above costs)	$0
	Washington State and King County taxes (10.2% of construction costs)	Included
	Subtotal construction costs	**$90,000**
	Administration, engineering design, and permitting (0% of costs)	$0
20 Year Project Cost	$1,800,000	

Project Number	8	
Project Name	**Cleaning and Inspection of Large-Diameter Pipe**	
Location	Throughout the SSSA	
Priority	2	
Schedule	2028, positioned in an off year of CIP 1, repeated in 10 years, 2037 or as initial inspection warrants.	
Problem Summary	M&O staff are not currently equipped to efficiently clean and inspect pipe larger than 18 inches in diameter and meet other goals for cleaning and inspection.	
Description	This project would clean and internally inspect approximately half of the pipe owned by the City that is 21 inches and larger in diameter per effort. This is approximately 39,000 feet, ranging in diameter from 21 inches up to 36 inches. This project is planned to occur during both the 6- and 20-year CIPs.	
Recommended Predesign Refinements	Review existing CCTV inspection information to see if any of the large-diameter pipe has been inspected and determine if it needs cleaning.	
Cost Estimate	Cleaning	$318,000
	CCTV	$106,000
	Disposal	$6,000
	Traffic control	$12,000
	Subtotal line-item costs	**$442,000**
	Project contingency (50% of all above costs)	$221,000
	Washington State & King County taxes (10.2% of construction costs)	$67,600
	Subtotal construction costs	**$730,600**
	Administration, engineering design, and permitting (30% of costs)	$219,000
20 Year Project Cost	$2,850,000	

Project Number	9	
Project Name	**Long Term Inflow and Infiltration Monitoring**	
Location	Throughout the SSSA	
Priority	3	
Schedule	Collect additional data during plan updates to monitor system conditions	
Problem Summary	Based on previous flow monitoring, I/I does not appear to be causing any large scale capacity issues within the city system, and limited areas of elevated I/I have been identified. As part of future plan updates, the I/I should be evaluated and compared with past results to understand if conditions are stable or changed. Excessive localized I/I can also be an indicator of poor sewer main and side sewer condition, and could help prioritize ongoing sewer cleaning and replacement programs.	
Description	This project would monitor flow at key points in the collection system during plan updates. This data will then be used in for Comprehensive Sewer Plan for modeling purposes and I/I assessment. Effort should be made to coordinate flow monitoring with the King County's Decennial Flow Monitoring.	
Recommended Predesign Refinements	Analyze prior flow metering data and hydraulic model results to develop a flow monitoring plan.	
Cost Estimate	Flow monitoring (four flow meters and two rain gauges for 6 months per year)	$284,500
	Subtotal line-item costs	**$284,500**
	Project contingency (30% of all above costs)	$85,400
	Washington State & King County taxes (10.2% of construction costs	$37,700
	Subtotal construction costs	**$407,600**
	Administration, engineering design, and permitting (30% of costs)	$122,300
20 Year Project Cost	$2,120,000	

Project Number	10
Project Name	**Roegner Park Sewer Capacity Improvements (Area 4, Figure 5.10)**
Location	Roegner Park between Oravetz Place to just north of the Lakeland Hills Pump Station.
Priority	1
Schedule	Anticipated design to begin in 2027, with construction anticipated 2030. As King County proceeds with plans to replace the Lakeland Hills Pump Station, staff will determine the optimal time to replace the lines depending on the siting and construction schedule of the County project.
Problem Summary	Hydraulic modelling indicated that the sewer mains just upstream of the Lakeland Hills Pump Station will be surcharged during the design storm event by the year 2044.
Description	This project will replace the potentially surcharging sewer mains will larger pipes or pipes with a modified slope to increase their capacity. The Lakeland Hill Pump Station is being replaced by King County and that project is expected to be complete in 2031. The City will work with County staff during the design phase of each project to identify the most efficient time to construct both projects.
Recommended Predesign Refinements	Coordinate final location and discharge elevations for the pump station wet well prior to design. Some of the surcharged pipes lie within an easement across Auburn School District Athletic Fields. Construction should be scheduled to be least impactful to their operations.
Cost Estimate	2027 - $120,000 2030 - $1,080,000
6 Year Project Cost	$1,200,000
Project Number	**11**
Project Name	**Rainier Ridge Pump Station Replacement**
Location	126th Avenue SE within the Rainier Ridge Development
Priority	1
Schedule	Design will be complete and preliminary construction will begin in 2024. The remainder of the construction will be completed in 2025.
Problem Summary	The existing station is currently under capacity and has little room to expand, and the force main has needed repair several times over the past 20 years.
Description	The project is replacing the existing Rainier Ridge Pump Station located by the edge of a cul-de-sac with a new station located on a City owned parcel that includes a storm pond. The project involves installing gravity lines to accommodate the station relocation and a new force main to be located within an easement on the Green River College property.
Recommended Predesign Refinements	Project is underway
Cost Estimate	2025 - $4,000,000
Current Planning Period Project Cost	$4,000,000

Project Number	12
Project Name	**1st and R Sewer Replacement**
Location	Between 1st Street NE and 2nd Street NE, east of 'R' Street NW.
Priority	2
Schedule	Design work will begin 2024. Construction is anticipated to be completed in 2025.
Problem Summary	There is an existing clay pipe that has significant sags which allow sediment and debris to collect and has caused periodic backups in homes served by the line.
Description	The project will replace the line with a new PVC pipe and reconnect all side sewers. The project requires significant coordination between the City and residents, as the sewer main lies along abutting back property lines of the homes served by the line. The City does not have explicit easements for the sewer main.
Recommended Predesign Refinements	During design, contact will be made with each property owner to discuss rights-of-entry, permanent easements, etc.
Cost Estimate	2025 - $400,000
6 Year Project Cost	$400,000
Project Number	**13**
Project Name	**Plan Update**
Location	Throughout the SSSA
Priority	1
Schedule	Every 10 years
Problem Summary	The City maintains a current Comprehensive Sewer Plan to meet Washington Administrative Code (WAC) Section 173-240-050.
Description	The plan update is a combination of City and Consultant work. The update typically includes review of the existing system and practices, hydraulic modeling, evaluation of system capacity, development of a 6 and 20 year capital improvement program, planning for enhancement of the utility's maintenance and operations, and final plan preparation and assembly
Recommended Predesign Refinements	N/A
Cost Estimate	$400,000
20 Year Project Cost	$800,000

CHAPTER 8 FINANCIAL PLAN

8.1 Introduction

This chapter was prepared by FCS GROUP to provide a financial program that allows the City sewer utility to remain financially viable during the planning period. This financial viability analysis considers the historical financial condition, current and identified future financial and policy obligations, M&O needs, and the financial impacts of the capital projects identified in this Plan. Furthermore, this chapter provides a review of the sewer utility's current rate structure with respect to rate adequacy and customer affordability.

8.2 Past Financial Performance

This section includes a historical summary of financial performance as reported by the City, including fund resources and uses arising from cash transactions.

8.2.1 Comparative Financial Statements

The City legally owns and operates a sewer utility. Table 8.1 shows a summary of sewer fund resources and uses arising from cash transactions for the previous six years (2017 through 2022). 2023 financial statements were not available at the time the chapter was developed. Table 8.2 shows a summary of assets and liabilities, with the difference between the two reported as "net position". Increases and decreases in net position are useful indicators of the financial position of the City's utility. Noteworthy findings and trends for the historical performance and condition of the City's sewer utility are then discussed.

Table 8.1 Summary of Historical Fund Resources and Uses Arising from Cash Transactions

	2017	2018	2019	2020	2021	2022
Operating Revenues						
Charges for Service	$26,369,496	$26,582,233	$26,559,461	$25,357,477	$27,402,561	$28,925,941
Other Operating Revenue	$-	$-	$-	$-	$-	$-
Total Operating Revenues	**$26,369,496**	**$26,582,233**	**$26,559,461**	**$25,357,477**	**$27,402,561**	**$28,925,941**
Operating Expenses						
Maintenance and Operations	$19,055,093	$19,117,920	$19,553,676	$19,125,939	$19,244,065	$20,656,344
Administration	$4,464,901	$4,509,602	$4,519,668	$4,556,451	$5,455,736	$4,115,950
Depreciation and Amortization	$2,199,711	$2,234,136	$2,275,905	$2,337,347	$2,382,652	$2,478,902
Other Operating Expenses	$6,648	$103,267	$-	$-	$-	$-
Total Operating Expenses	**$25,726,353**	**$25,964,925**	**$26,349,249**	**$26,019,737**	**$27,082,453**	**$27,251,196**
Operating Income (Loss)	$643,143	$617,308	$210,212	$(662,260)	$320,108	$1,674,745
Non-Operating Revenues (Expenses)						
Interest Revenue	$164,566	$350,596	$451,889	$120,844	$21,240	$335,524
Other Non-Operating Revenue	$73,739	$71,039	$279,452	$36,167	$765	$21,860
Gain (Loss) on Scale of Capital Assets	$-	$-	$-	$-	$-	$-
Interest Expense	($258,270)	(244,962)	($231,100)	($38,434)	($72,545)	($58,844)
Other Non-Operating Expense	$-	$-	$-	($31,102)	$-	($240,442)
Total Non-Operating Revenues (Expenses)	**$(19,965)**	**$176,673**	**$500,241**	**$87,475**	**($50,540)**	**$58,098**
Income (Loss) Before Contributions and Transfers	$623,178	$793,981	$710,453	($574,785)	$269,568	$1,732,843
Capital Contributions	$873,779	$2,299,751	$2,417,611	$2,801,816	$2,653,740	$666,761
Transfers In	$800,000	$-	$-	$-	$-	$-
Transfers Out	($962,905)	($95,244)	($64,119)	($63,399)	($91,086)	($59,555)
Change in Net Position	$1,334,052	$2,998,488	$3,063,945	$2,163,632	$2,832,222	$2,340,049
Net Position, January 1	**$84,591,243**	**$85,925,295**	**$88,923,783**	**$91,987,728**	**$94,151,360**	**$96,983,582**
Net Position, December 31	**$85,925,295**	**$88,923,783**	**$91,987,728**	**$94,151,360**	**$96,983,582**	**$99,323,631**
M&O Coverage Ratio	102.5%	102.4%	100.8%	97.5%	101.2%	106.1%
Net Operating Income as a % of Operating Revenue	2.4%	2.3%	0.8%	-2.6%	1.2%	5.8%
Debt Service Coverage Ratio	5.41	5.40	4.70	5.59	6.94	10.68

8.2.1.1 Findings and Trends

- The City's sewer charges for services increased from $26.4 million (M) in 2017 to $28.9M in 2022. The average annual increase was approximately 1.9 percent per year, with a total increase of 9.7 percent from 2017 to 2022. Charges for service increased each year, except for 2020 where revenues fell by 4.5 percent. Operating expenditures increased by $1.5M across the six years with an average annual increase of 1.2 percent. Similar to revenues, expenditures dropped in 2020, but to a lesser extent, decreasing by 1.3 percent. With growth in total operating revenues slightly outpacing growth in operating expenses, operating income has been positive in five of the last six years, with 2020 being the exception, where the utility posted an operating loss of $662,000. As many will note, 2020 was not a typical year and likely affected by the global pandemic restrictions in place at the time.
- The M&O coverage ratio (total operating revenues divided by total operating expenses) was 102.5 percent in 2017. With relatively stable revenues and expenses, this metric has maintained its stability, ending 2022 at 106.1 percent. A ratio of 100.0 percent or greater shows that operating revenue will successfully cover operating expenses, and the utility has remained above this ratio for five of the last six years. Again, 2020 was the exception when the ratio decreased to 97.5 percent.
- Net operating income as a percentage of operating revenue was 2.4 percent in 2017, decreasing to negative 2.6 percent in 2020, before recovering back to 5.8 percent by 2022. Similar to the M&O coverage ratio, these trends show how successfully operating revenue actually covered operating expenses, with higher positive numbers being the best and negative numbers showing a need for improvement. In addition, these trends demonstrate the ability of the utility to invest in capital, whether through direct cash transfers or the issuance and servicing of debt.
- The debt service coverage ratio measures the amount of cash flow available to meet principal and interest payments. Typically, revenue bond debt service coverage requires a minimum factor of 1.25 during the life of the loans. This ratio is calculated by dividing cash or net operating income (operating revenues less operating expenses) by annual revenue bond debt service. The debt service coverage ratio for all outstanding revenue bond debt ended 2017 at 5.4, decreasing to 4.7 in 2020, when revenues decreased, before rebounding to 10.7 by 2022. The fact that this ratio has sustained levels higher than the minimum target of 1.25 indicates a stable capacity for new debt and will likely result in favorable terms when entering the bond market.

Table 8.2 Summary of Historical Comparative Statements of Net Position

	2017	2018	2019	2020	2021	2022
Current Assets						
Cash and Cash Equivalents	$16,427,725	$15,768,440	$13,572,363	$16,258,323	$20,799,254	$22,972,741
Investments	$-	$2,004,660	$6,578,855	$4,521,754	$-	$-
Restricted Cash:						
Bond Payments	$535,820	$535,243	$534,067	$451,161	$438,395	$438,395
Customer Deposits	$79,473	$95,300	$77,353	$61,526	$61,527	$61,527
Other (Reserve for Bonds and Rate Stabilization)	$516,173	$516,173	$516,075	$295,639	$295,639	$294,444
Customer Accounts	$2,745,457	$3,516,161	$3,971,951	$4,063,452	$4,146,223	$4,504,623
Other Receivables	$-	$19,200	$19,200	$19,200	$-	$-
Due From Other Governmental Units	$-	$-	$-	$-	$-	$-
Inventories	$9,103	$8,316	$9,220	$13,117	$13,059	$12,867
Total Current Assets	$20,313,751	$22,463,493	$25,279,084	$25,684,172	$25,754,097	$28,284,597
Noncurrent Assets						
Long-Term Contracts, Leases and Notes	$645,900	$623,400	$623,400	$623,400	$600,900	$578,400
Net Pension Asset	$-	$-	$-	$-	$1,360,112	$533,150
Capital Assets Not Being Depreciated:						
Land	$1,695,023	$1,695,023	$1,695,023	$1,695,023	$1,695,023	$1,695,023
Intangible - Water Rights	$-	$-	$-	$-	$-	$-
Construction In Progress	$1,121,482	$1,270,093	$243,140	$1,053,882	$865,150	$883,132
Capital Assets:						
Buildings and Equipment	$1,255,947	$1,274,801	$1,304,180	$1,304,180	$1,304,180	$1,304,180
Improvements Other Than Buildings	$101,366,336	$103,581,870	$106,432,969	$109,169,429	$113,189,587	$114,548,300
Right of Use (Leases)	$-	$-	$-	$-	$-	$-
Less Accumulated Depreciation	($31,609,927)	($33,844,064)	($36,119,969)	($38,457,317)	($40,839,968)	($43,318,870)
Total Noncurrent Assets Net of Accumulated Depreciation	**$74,474,761**	**$74,601,123**	**$74,178,743**	**$75,388,597**	**$78,174,984**	**$76,223,315**
Total Assets	**$94,788,512**	**$97,064,616**	**$99,457,827**	**$101,072,769**	**$103,929,081**	**$104,507,912**
Deferred Outflows of Resources						
Deferred Outflow from Bond Refunding	$-	$-	$-	$34,939	$34,939	$34,939
Deferred Outflow related to Pensions	$200,138	$174,689	$187,172	$208,339	$193,419	$535,880
Total Deferred Outflows of Resources	**$200,138**	**$174,689**	**$187,172**	**$243,278**	**$228,358**	**$570,819**
Current Liabilities						
Current Payables	$393,163	$409,231	$515,602	$895,896	$612,294	$516,801
Claims Payable	$-	$-	$-	$-	$-	$-
Loans Payable - Current	$288,262	$288,262	$288,262	$288,262	$288,262	$288,262
Employee Leave Benefits - Current	$103,747	$105,009	$94,806	$105,009	$153,048	$151,157
Leases Payable - Current	$-	$-	$-	$-	$-	$-
Revenue Bonds Payable - Current	$262,685	$274,960	$287,235	$233,225	$244,273	$255,320
Payable From Restricted Assets:						
Accrued Interest	$279,081	$265,509	$251,338	$160,194	$146,794	$132,796
Deposits	$79,473	$95,300	$77,353	$61,526	$61,527	$61,527
Other Liabilities Payable	$172	$-	$-	$-	$-	$-
Total Current Liabilities	**$1,406,583**	**$1,438,271**	**$1,514,596**	**$1,744,112**	**$1,506,198**	**$1,405,863**
Noncurrent Liabilities						
Employee Leave Benefits	$31,332	$37,988	$25,197	$37,988	$66,243	$57,986
Loans Payable	$2,090,408	$1,802,146	$1,513,884	$1,225,622	$937,360	$649,098
Leases Payable	$-	$-	$-	$-	$-	$-
Revenue Bonds Payable	$4,206,276	$3,924,924	$3,631,296	$3,341,264	$3,030,092	$2,707,872
Net Pension Liability	$1,130,142	$771,584	$599,334	$588,136	$167,400	$328,393
Total Noncurrent Liabilities	**$7,458,158**	**$6,536,642**	**$5,769,711**	**$5,193,010**	**$4,201,095**	**$3,743,349**
Total Liabilities	**$8,864,741**	**$7,974,913**	**$7,284,307**	**$6,937,122**	**$5,707,293**	**$5,149,212**
Deferred Inflows Of Resources						
Deferred Inflow Related to Leases	$-	$-	$-	$-	$-	$-
Deferred Inflow Related to Pensions	$198,614	$340,609	$372,964	$227,565	$1,466,564	$605,888
Total Deferred Inflows of Resources	$198,614	$340,609	$372,964	$227,565	$1,466,564	$605,888
Net Position						
Net Investment in Capital Assets	$67,517,050	$68,222,674	$68,368,733	$70,127,985	$72,152,380	$71,568,397
Restricted For:						
Debt Service	237,092	250,664	264,737	196,971	148,845	242,859
Rate Stabilization	$-	$-	$-	$-	$-	$-
Pension Asset	$-	$-	$-	$-	$-	533,150
Unrestricted	18,171,153	20,450,445	23,354,258	23,826,404	24,682,357	26,979,225
Total Net Position	**85,925,295**	**88,923,783**	**91,987,728**	**94,151,360**	**96,983,582**	**99,323,631**
Current Ratio	14.4	15.6	16.7	14.7	17.1	20.1
Debt to Net Position Ratio	0.08	0.07	0.06	0.06	0.05	0.04
Debt to Noncurrent Capital Assets Ratio	0.10	0.09	0.08	0.07	0.06	0.05

8.2.1.2 Findings and Trends

- The Current Ratio is calculated by dividing unrestricted current assets by current liabilities and measures an entity's ability to pay short-term obligations. This ratio ranges from a low of 14.4 in 2017, ending at a high of 20.1 in 2022. Anything above 2.0 for this liquidity ratio is good.
- The Debt to Net Position Ratio compares total debt to total net position, which is the difference between current assets and liabilities. This ratio begins at 0.08 or 8 percent debt in 2017 and decreases to 0.04 by 2022. For utilities, a ratio of 40 to 60 percent helps to moderate rate impacts by spreading costs over a longer period of time. Based on these results, the City may consider utilizing debt service for future capital investments, especially if it benefits system expansion.
- The Debt to Noncurrent Capital Asset Ratio compares total debt to noncurrent capital assets, which are also known as property, plant, and equipment. This ratio begins at 0.10 or 10 percent debt to 90 percent noncurrent assets in 2017. Noncurrent capital assets increase by $1.7M throughout the six-year history while debt decreases $2.9M, and the ratio decreases to 5 percent by 2022. Similar to the debt to net position ratio, these results indicate the utility has ample borrowing capacity and may consider utilizing debt service for future capital investments, especially if it benefits system expansion. A ratio of 40 percent debt to 60 percent equity or below is a general industry target

8.3 Financial Plan

The sewer utility is responsible for generating sufficient revenue to meet all of its costs. The primary source of funding is derived from ongoing monthly service charges, with additional revenue coming from late penalties and interest earnings. The City controls the level of user charges and, with City Council approval, can adjust user charges as needed to meet financial objectives.

The financial plan can only confirm financial feasibility if it considers the total system costs of providing sewer services, both operating and capital. To meet these objectives, the following elements have been completed.

1. **Capital Funding Plan** - Identifies the total CIP obligations of the planning period. The plan defines a strategy for funding the CIP, including an analysis of available resources from rate revenues, existing reserves, connection charge revenues, debt financing, and any special resources that may be readily available (e.g., grants, developer contributions, etc.). The capital funding plan impacts the financial plan through the use of debt financing (resulting in annual debt service) and the assumed rate revenue made available for capital funding.
2. **Financial Forecast** - Identifies future annual non-capital costs associated with the operation, maintenance, and administration of the sewer system. Included in the financial plan is a reserve analysis that forecasts cash flow and fund balance activity, along with testing for satisfaction of actual or recommended minimum fund balance policies. The financial plan ultimately evaluates the sufficiency of utility revenues in meeting all obligations, including cash uses such as operating expenses, debt service, capital outlays, and reserve contributions, as well as any coverage requirements associated with long-term debt. The plan also identifies the future adjustments required to fully fund all utility obligations in the planning period.

8.3.1 Capital Funding Plan

To properly evaluate future capital funding needs, capital costs were escalated by 3.00 percent annually to the year of planned spending. The CIP developed for this Plan identifies $45.7M in escalated project costs over the 10-year planning horizon from 2024-2033. The 20-year period, through 2043, includes $81.3M in total escalated project costs.

A summary of the 10-year and 20-year CIPs are shown in Table 8.3. As shown, each year has varied capital cost obligations depending on construction schedules and infrastructure planning needs.

Table 8.3 10-Year and 20-Year CIPs

Year	Unescalated $	Escalated $
2024	$6,725,000	$6,725,000
2025	$5,510,000	$5,675,300
2026	$2,665,000	$2,827,299
2027	$2,210,000	$2,414,927
2028	$4,310,000	$4,850,943
2029	$2,110,000	$2,446,068
2030	$6,170,000	$7,367,303
2031	$1,720,000	$2,115,383
2032	$3,490,000	$4,421,028
2033	$5,240,000	$6,837,011
10-Year Total	**$40,150,000**	**$45,680,261**
2034 - 2043	$22,845,000	$35,581,679
20-Year Total	**$62,995,000**	**$81,261,940**

Table 8.4 provides more detail for the 10-year CIP.

Table 8.4 10-Year CIP (Escalated $)

Project	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Sanitary Sewer Repair and Replacement/System Improvements	$300,000	$360,500	$1,909,620	$382,454	$2,025,916	$405,746	$2,149,294	$430,456	$2,280,186	$456,671
Street Utility Improvements	$347,000	$309,000	$318,270	$327,818	$337,653	$347,782	$358,216	$368,962	$380,031	$391,432
Side Sewer Inspections	$-	$381,100	$392,533	$404,309	$416,438	$428,931	$441,799	$-	$-	$-
Sewer Pump Station Replacement/Improvement	$-	$-	$-	$437,091	$900,407	$1,159,274	$2,388,105	$553,443	$1,140,093	$5,871,479
Siphon Assessment and Cleaning	$-	$-	$-	$633,782	$-	$-	$-	$-	$-	$-
Pump Station Condition Assessment	$-	$-	$111,395	$-	$-	$-	$-	$-	$-	$-
Manhole Ring and Cover Replacement	$86,000	$92,700	$95,481	$98,345	$101,296	$104,335	$107,465	$110,689	$114,009	$117,430
Cleaning and Inspection of Large-Diameter Pipe (21-inches and larger)	$-	$-	$-	$-	$1,069,233	$-	$-	$-	$-	$-
Inflow and Infiltration Monitoring	$-	$-	$-	$-	$-	$-	$632,848	$651,833	$-	$-
Roegner Park Sewer Capacity Improvements	$-	$-	$-	$131,127	$-	$-	$1,289,576	$-	$-	$-
Rainier Ridge Pump Station Replacement	$4,400,000	$4,120,000	$-	$-	$-	$-	$-	$-	$-	$-
1st and R Sewer Replacement	$-	$412,000	$-	$-	$-	$-	$-	$-	$-	$-
Plan Update	$300,000	$-	$-	$-	$-	$-	$-	$-	$506,708	$-
Garden Avenue Realignment	$200,000	$-	$-	$-	$-	$-	$-	$-	$-	$-
Jornada Park Access Imp	$100,000	$-	$-	$-	$-	$-	$-	$-	$-	$-
M Street Widening	$232,000	$-	$-	$-	$-	$-	$-	$-	$-	$-
Regional Growth Center Access Improvements	$160,000	$-	$-	$-	$-	$-	$-	$-	$-	$-
2024 Sewer Repair and Replacement	$600,000	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total	$6,725,000	$5,675,300	$2,827,299	$2,414,927	$4,850,943	$2,446,068	$7,367,303	$2,115,383	$4,421,028	$6,837,011

8.4 Available Funding Assistance and Financing Resources

Feasible long-term capital funding strategies must be defined to ensure that adequate resources are available to fund the CIP identified in this Plan. In addition to the City's resources, such as accumulated cash reserves, capital revenues, and rate revenues designated for capital purposes, capital needs can be met from outside sources, such as grants, low-interest loans, and bond financing. The following is a summary of the City's internal and external resources.

8.4.1 City Resources

Resources appropriate for funding capital needs include accumulated cash in the capital fund, rate revenues designated for capital spending purposes, developer contributions, and capital-related charges such as system development charges. The first two resources will be discussed in the **Fiscal Policies** section of the **Financial Forecast**. Capital-related charges are discussed below.

8.4.1.1 System Development Charges

A connection charge such as the City's system development charge (SDC) refers to a one-time charge imposed on new customers as a condition of connecting to the sewer system. The purpose of the SDC is two-fold: 1) to promote equity between new and existing customers; and 2) to provide a source of revenue to fund capital projects. Revenue can only be used to fund utility capital projects or to pay debt service incurred to finance those projects. In the absence of a connection charge, growth-related capital costs would be borne in large part by existing customers. In 2024, the City charged all new customers an SDC of $3,544 per residential customer equivalent.

8.4.1.2 Local Facilities Charges

While a connection charge is the manner in which new customers pay their share of system investment costs, local facilities charge funding is used to pay the costs of local facilities that connect each property to the system's infrastructure. Local facilities funding is often overlooked in rate forecasting because it is funded upfront by either connecting customers and developers, or through an assessment to properties, but never from rates.

A number of mechanisms can be considered toward funding local facilities. One of the following scenarios typically occurs: (a) the utility charges a connection fee based on the cost of the local facilities (under the same authority as the facilities assessment fee); (b) a developer funds an extension of the system to its development and turns those facilities over to the utility (contributed capital); or (c) a local assessment is set up called a Utility Local Improvement District (ULID/LID) or a Local Utility District, which collects tax revenue from benefited properties.

A local facilities charge is a variation of the connection charge. It is a city-imposed charge to recover the cost related to service extension to local properties. Often called a front-footage charge and imposed on the basis of footage of the main "fronting" a particular property, it is usually implemented as a reimbursement mechanism to a city for the cost of a local facility that directly serves a property. It is a form of a connection charge and thus can accumulate up to 10 years of interest. It typically applies in instances when no developer-installed facilities are needed through developer extension due to the prior existence of available mains already serving the developing property.

The developer extension is a requirement that a developer install on-site and sometimes off-site improvements as a condition of extending service. These are in addition to the connection charge required and must be built to City standards. Part of the agreement between the City and the developer planning to extend service might include a latecomer agreement, resulting in a latecomer charge to new connections for the developer extension.

Latecomer charges are a variation of developer extensions, whereby new customers connecting to a developer-installed improvement make a payment to the City based on their share of the developer's cost. The City passes this charge on to the developer who installed the facilities. As part of the developer extension process, this defines the allocation of costs and records latecomer obligations on the title of affected properties. No interest is allowed, and the reimbursement agreement cannot exceed 20 years in duration.

ULID/LID is another mechanism for funding infrastructure that assesses benefited properties based on the special benefit received by the construction of specific facilities. Most often used for local facilities, some ULIDs also recover related general facilities costs. Substantial legal and procedural requirements can make this a relatively expensive process, and there are mechanisms by which a ULID can be rejected.

8.4.2 Outside Resources

This section outlines various grant, loan, and bond opportunities available to the City through federal and state agencies to fund the CIP identified in the Plan.

8.4.2.1 Grants and Low-Cost Loans

Historically, federal and state grant programs were available to local utilities for capital funding assistance. However, these assistance programs have been mostly eliminated, substantially reduced in scope and amount, or replaced by loan programs. Remaining grant programs are generally lightly funded and heavily subscribed. Nonetheless, the benefit of low-interest loans makes the effort of applying worthwhile.

8.4.2.2 Bond Financing

General Obligation Bonds - General obligation (G.O.) bonds are bonds secured by the full faith and credit of the issuing agency, committing all available tax and revenue resources to debt repayment. With this high level of commitment, G.O. bonds have relatively low interest rates and few financial restrictions. However, the authority to issue G.O. bonds is restricted in terms of the amount and use of the funds, as defined by the Washington constitution and statute. Specifically, the amount of debt that can be issued is linked to assessed valuation.

Revised Code of Washington 39.36.020 states:

> *(2)(a)(ii) Counties, cities, and towns are limited to an indebtedness amount not exceeding one and one-half percent of the value of the taxable property in such counties, cities, or towns without the assent of three-fifths of the voters therein voting at an election held for that purpose.*
>
> *(b) In cases requiring such assent counties, cities, towns, and public hospital districts are limited to a total indebtedness of two and one-half percent of the value of the taxable property therein.*

While bonding capacity can limit the availability of G.O. bonds for utility purposes, these can sometimes play a valuable role in project financing. A utility rate savings may be realized through two avenues: the lower interest rate and related bond costs, and the extension of repayment obligation to all tax-paying properties (not just developed properties) through the authorization of an ad valorem property tax levy.

Revenue Bonds – Revenue bonds are commonly used to fund utility capital improvements. The debt is secured by the revenues of the issuing utility. With this limited commitment, revenue bonds typically bear higher interest rates than G.O. bonds and require security conditions related to the maintenance of dedicated reserves (a bond reserve) and financial performance (added bond debt service coverage). The City agrees to satisfy these requirements by resolution as a condition of bond sale.

Revenue bonds can be issued in Washington without a public vote. There is no bonding limit, except perhaps the practical limit of the utility's ability to generate sufficient revenue to repay the debt and provide coverage. In some cases, poor credit might make issuing revenue bonds problematic.

8.4.3 Capital Financing Strategy

An ideal capital financing strategy would include the use of grants and low-cost loans when debt issuance is required. However, these resources are very limited and competitive in nature and do not provide a reliable source of funding for planning purposes. It is recommended that the City pursue these funding avenues but assume revenue bond financing to meet the needs which can't be met by available cash resources. The capital financing strategy developed to fund the CIP identified in this Plan assumes the following funding resources:

- Accumulated cash reserves,
- Transfers of excess cash (over minimum balance targets) from the Operating Fund,
- System development charge revenue, and
- Interest earned on Capital Fund balances.

The cash resources described above are anticipated to fund 100.0 percent of the 10-year CIP and 20-year CIP. No new debt is anticipated in the next 10-year or 20-year planning periods. Table 8.5 presents the 10-year and 20-year capital financing strategy.

Table 8.5 10-Year and 20-Year Capital Financing Strategy

Year	Capital Expenditures	System Development Charge Revenue	Cash/Reserve Funding	Total Financial Resources
2024	$6,725,000	$325,000	$6,400,000	$6,725,000
2025	$5,675,300	$468,144	$5,207,156	$5,675,300
2026	$2,827,299	$484,117	$2,343,181	$2,827,299
2027	$2,414,927	$500,635	$1,914,291	$2,414,927
2028	$4,850,943	$517,717	$4,333,226	$4,850,943
2029	$2,446,068	$535,382	$1,910,687	$2,446,068
2030	$7,367,303	$553,649	$6,813,654	$7,367,303
2031	$2,115,383	$572,539	$1,542,844	$2,115,383
2032	$4,421,028	$592,074	$3,828,953	$4,421,028
2033	$6,837,011	$612,276	$6,224,736	$6,837,011
Subtotal	**$45,680,261**	**$5,161,534**	**$40,518,727**	**$45,680,261**
2034-2043	$35,581,679	$7,397,790	$28,183,889	$35,581,679
Total	**$81,261,940**	**$12,559,324**	**$68,702,617**	**$81,261,940**

8.5 Financial Forecast

The financial forecast, or revenue requirement analysis, forecasts the amount of annual revenue that needs to be generated by user rates. The analysis incorporates operating revenues, M&O expenses, debt service payments, rate-funded capital needs, and any other identified revenues or expenses related to operations. The objective of the financial forecast is to evaluate the sufficiency of the current level of rates. In addition to annual operating costs, the revenue needs also include debt covenant requirements and specific fiscal policies and financial goals of the City.

For this analysis, two revenue sufficiency tests have been developed to reflect the financial goals and constraints of the City: cash needs must be met; and debt coverage requirements must be realized. In order to operate successfully with respect to these goals, both tests of revenue sufficiency must be met.

Cash Test - The cash flow test identifies all known cash requirements for the City in each year of the planning period. Typically, these include M&O expenses, debt service payments, rate-funded system reinvestment funding or directly funded capital outlays, and any additions to specified reserve balances. The total annual cash needs of the City are then compared to projected cash revenues using the current rate structure. Any projected revenue shortfalls are identified, and the rate increases necessary to make up the shortfalls are established.

Coverage Test - The coverage test is based on a commitment made by the City when issuing revenue bonds and some other forms of long-term debt. For the purposes of this analysis, revenue bond debt is assumed for any needed debt issuance. As a security condition of issuance, the City would be required per covenant to agree that the revenue bond debt would have a higher priority for payment (a senior lien) compared to most other expenditures; the only outlays with a higher lien are M&O expenses. Debt service coverage is expressed as a multiplier of the annual revenue bond debt service payment. For example, a 1.00 coverage factor would imply that no additional cushion is required. A 1.25 coverage factor means revenue must be sufficient to pay M&O expenses, annual revenue bond debt service payments, and an additional 25.0 percent of annual revenue bond debt service payments. The excess cash flow derived from the added coverage, if any, can be used for any purpose, including funding capital projects. Targeting a higher coverage factor can help the City achieve a better credit rating and provide lower interest rates for future debt issues.

In determining the annual revenue requirement, both the cash and coverage sufficiency tests must be met, and the test with the greatest deficiency drives the level of needed rate increase in any given year.

8.5.1 Current Financial Structure

The City maintains a fund structure and implements financial policies that target management of a financially viable and fiscally responsible sewer system.

8.5.1.1 Fiscal Policies

A summary of the key financial policies employed by the City, as well as those recommended and incorporated in the financial program, are discussed below.

Operating Fund - Operating reserves are designed to provide a liquidity cushion to ensure that adequate cash working capital will be maintained to deal with significant cash balance fluctuations, such as seasonal fluctuations in billings and receipts, unanticipated cash expenses, or lower than expected revenue

collections. Like other types of reserves, operating reserves also serve another purpose: they help smooth rate increases over time. Target funding levels for an operating reserve are generally expressed as a certain number of days of M&O expenses, with the minimum requirement varying with the expected revenue volatility. Industry practice for utility operating reserves ranges from 30 days (8.0 percent) to 120 days (33.0 percent) of M&O expenses, with the lower end more appropriate for utilities with stable revenue streams and the higher end more appropriate for utilities with significant seasonal or consumption-based fluctuations.

This financial plan targets a minimum balance in the sewer utility Operating Fund equal to 60 days of M&O expenses.

Capital Fund - A utility capital contingency reserve is an amount of cash set aside in case of an emergency should a piece of equipment or a portion of the utility's infrastructure fail unexpectedly. The reserve also could be used for other unanticipated capital needs, including capital project cost overruns. Industry practices range from maintaining a balance equal to 1.0 to 2.0 percent of fixed assets, an amount equal to a 5-year rolling average of CIP costs, or an amount determined sufficient to fund equipment failure (other than catastrophic failure). The final target level should balance industry practices with the risk level of the City.

This financial plan targets a minimum balance in the sewer utility capital fund equal to 1.0 percent of fixed assets.

Metro Sub Fund - The City's sewer utility collects rate revenue for treatment expenses provided by King County's Sewer Treatment Division. Rates are collected to offset regional treatment expenses and are treated as a pass-through for forecasting purposes. Similar to the operating and capital reserves, the metro sub-fund reserve is meant to provide a liquidity cushion as well as provide for unexpected contingencies.

The current metro sub-fund reserve target is set at $625,000, or approximately 3.0 percent of total operating expenses.

System Reinvestment - System reinvestment funding promotes system integrity through ongoing repair and replacement of system infrastructure. Ideally, a detailed asset management plan would guide the level of rate funded system reinvestment, however, in absence of this level of effort, annual depreciation expense is commonly used as a measure of the decline in asset value associated with routine use of the system. Particularly for utilities that do not already have an explicit system reinvestment policy in place, implementing a funding level based on full depreciation expense could significantly impact rates. An alternative benchmark is annual depreciation expense net of debt principal payments on outstanding debt. This approach recognizes that customers are still paying for certain assets through the debt component of their rate and intends to avoid simultaneously charging customers for an asset and its future replacement. The specific benchmark used to set system reinvestment funding targets is a matter of policy that must balance various objectives, including managing rate impacts, keeping long-term costs down, and promoting "generational equity" (i.e., not excessively burdening current customers with paying for facilities that will serve a larger group of customers in the future).

The City is currently phasing in system reinvestment funding, aiming to reach 75.0 percent of annual depreciation levels by 2029. With this phase-in strategy in place, the City is forecast to fund an average of $1.7M in capital costs annually through rate revenues within the 10-year forecast period.

Debt Management - It is prudent to consider policies related to debt management as part of a broader utility financial policy structure. Debt management policies should be evaluated and formalized, including the level of acceptable outstanding debt, debt repayment, bond coverage, and total debt coverage targets. The City has one outstanding sewer revenue bond, as well as two Public Works Trust Fund loans, which will both be repaid between 2024-2026. This forecast meets or exceeds the required revenue bond debt service coverage of 1.25.

8.5.1.2 Financial Forecast

The financial forecast is primarily based upon the City's budget through 2024 and takes into consideration other key factors and assumptions needed to develop a complete portrait of the City's annual sewer utility financial obligations. The following is a list of the key revenue and expense factors and assumptions used to develop the financial forecast.

- **Growth** - Rate revenue escalation is based on a 0.40 percent growth rate developed based on actual historical trends at the City. While the Plan assumes an annual growth rate of 1.33 percent for units and 1.51 percent for flow, the City preferred a more conservative growth rate for the financial planning purpose.
- **Revenue** - The City has two general revenue sources: 1) sewer service charges (rate revenue); and 2) miscellaneous (non-rate) revenue. In the event of a forecasted annual shortfall, rate revenue can be increased to meet the annual revenue requirement. For the purpose of this financial forecast, rate revenues are forecasted to increase with customer growth. Non-rate revenues are held constant throughout the forecast period, with the exception of interest earnings which are calculated based on projected balances and assumed investment rates.
  - **King County Metro Service Charges** - The City collects rate revenue for treatment expenses provided by King County's Sewer Treatment Division. Rates are collected to offset regional treatment expenses and are treated as a pass-through for forecasting purposes.
- **System Development Charge Revenue** - The existing system development charges are applied to the projected new connections to forecast revenue. Based on the growth assumptions described above, the connection charge will generate an average of $516,000 annually from 2024-2033. This equates to an average of 126 new connections per year. Connection charge revenue is directed towards annual capital needs.
- **Expenses** - M&O expense projections are based on the City's budget through 2024 with general cost inflation increases of 3.0 percent, labor cost inflation of 5.0 percent for 2025 and 2026, decreasing to 3.0 percent thereafter and benefit cost inflation increases of 12.50 percent for 2025 and 2026, decreasing to 5.5 percent per year thereafter. Budget figures were used for taxes through 2024. Future taxes are calculated based on forecasted revenues and prevailing tax rates.
  - **King County Metro Service Charges** - Rates are expected to increase by approximately 5.75 percent in 2025, followed by 7.00 percent annually from 2026-2028, increasing to 8.25 percent annually from 2029-2031 and finally 9.26 percent annually from 2032-2034 (Based on the recent King County Sewer Treatment Division Financial Plan).
  - **Facilities G.O. Bond** - In order to construct a new facility for the City, the sewer utility will fund part of a General Obligation Bond totaling $38M. Beginning in 2025, the sewer utility's proportionate share of the bond is forecasted at $333,000 annually for the remainder of the twenty-year forecast.

- **Existing Debt** - The sewer utility has three outstanding debt issues: one revenue bond, and two Public Works Trust Fund (PWTF) loans. The 2020 refunding revenue bond has annual payments averaging $375,000 that end after 2030 when the loan is repaid. The PWTF loans combined annual payment is $292,000 in 2024 before the first PWTF loan is repaid, dropping the annual payment to $182,000 for 2025 and 2026, when the second PWTF loan is repaid. The total annual existing debt service obligations begin 2024 at $669,000, decreasing to $376,000 with the repayment of the PWTF loans and will be completely repaid by 2030.
- **Future Debt** - No new debt is anticipated in the 10-year and 20-year forecast periods.
- **Transfers to Capital** - Operating fund balance above the minimum requirement is assumed to be available to fund capital projects and projected to be transferred to the Capital Fund each year, if needed. In total, the utility is forecast to fund $23.5M in capital projects from excess operating fund cash.

Although the financial plan is completed through 2043, the rate strategy focuses on the shorter-term planning period of 2024 through 2033. It is recommended that the City revisit the proposed rates every two to three years to ensure that the rate projections developed remain adequate. Any significant changes should be incorporated into the financial plan and future rates should be adjusted as needed.

Table 8.6, following, summarizes the annual revenue requirements based on the forecast of revenues, expenditures, fund balances, and fiscal policies.

The financial forecast indicates that at existing rate levels the utility will become deficient in 2028 as growth in expenses outpaces growth in revenues and the utility phases in rate funded system reinvestment levels towards their fiscal policy goal of full annual depreciation funding.

8.5.1.3 City Funds and Reserves

Table 8.7 shows a summary of the projected Operating Fund and Capital Fund ending balances through 2033 based on the rate forecasts presented above. The Operating Fund is maintained at a minimum of 60 days of M&O expenses, and the Capital Fund balance continues to meet or exceed the minimum target of 1.00 percent of fixed assets in every year of the forecast.

Table 8.6 10-Year Financial Forecast

Revenue Requirement	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Revenues										
Rate Revenues Under Existing Rates	$10,794,348	$10,837,525	$10,880,876	$10,924,399	$10,968,097	$11,011,969	$11,056,017	$11,100,241	$11,144,642	$11,189,220
King County Metro Charge	$22,023,000	$23,289,792	$24,920,237	26,666,572	28,536,789	30,894,541	33,444,109	36,205,476	39,558,279	43,218,789
Non-Rate Revenues	$136,700	$139,751	$123,600	106,765	106,847	106,947	107,062	106,636	107,338	107,501
Total Revenues	$32,954,048	$34,267,068	$35,924,713	$37,697,736	$39,611,733	$42,013,457	$44,607,188	$47,412,353	$50,810,259	$54,515,510
Expenses										
Cash Operating Expenses	$8,270,883	$8,529,150	$8,893,962	$9,137,639	$9,392,749	$9,657,439	$9,932,109	$10,217,105	$10,513,087	$10,820,294
King County Metro Charge	$22,023,000	$23,289,792	$24,920,237	26,666,572	28,536,789	30,894,541	33,444,109	36,205,476	39,558,279	43,218,789
Existing Debt Service	$668,964	$558,512	$557,058	375,738	375,001	373,528	373,774	$-	$-	$-
New Debt Service	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Rate Funded System Reinvestment	$198,877	$414,781	$761,873	$1,435,024	$1,780,240	$2,261,992	$2,372,501	$2,404,232	$2,470,547	$2,573,102
Total Expenses	**$31,161,724**	**$32,792,235**	**$35,133,130**	**$37,614,973**	**$40,084,780**	**$43,187,499**	**$46,122,493**	**$48,826,813**	**$52,541,914**	**$56,612,186**
Total Surplus (Deficiency)	**$1,792,324**	**$1,474,834**	**$791,583**	**$82,763**	**($473,047)**	**($1,174,043)**	**($1,515,305)**	**($1,414,459)**	**($1,731,655)**	**($2,096,675)**
Annual Rate Adjustment		**7.50%**	**2.25%**	**2.25%**	**2.25%**	**2.25%**	**2.25%**	**.25%**	**2.25%**	**2.25%**
Cumulative Annual Rate Adjustment		**7.50%**	**9.92%**	**12.39%**	**14.92%**	**17.51%**	**20.15%**	**2.85%**	**25.62%**	**28.44%**
Rate Revenues After Rate Increase	$10,794,348	$11,650,340	$11,960,122	$12,278,142	$12,604,618	$12,939,775	$13,283,843	$13,637,061	$13,999,670	$14,371,921
Additional Taxes from Rate Increase	-	$119,726	$158,971	$199,404	$241,056	$283,962	$328,155	$373,669	$420,540	$468,806
Net Cash Flow After Rate Increase	**$1,792,324**	**$2,167,922**	**$1,711,859**	**$1,237,102**	**$922,417**	**$469,801**	**$384,367**	**$749,174**	**$702,834**	**$617,220**
Coverage After Rate Increases	10.63	13.46	12.55	12.15	12.29	12.39	12.50	n/a	n/a	n/a

Table 8.7 Ending Cash Balance Summary

Ending Fund Balances	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Operating Fund	$1,378,480	$1,421,525	$1,482,327	$1,522,940	$1,565,458	$1,609,573	$1,655,351	$1,702,863	$1,752,181	$1,803,382
Capital Fund	$20,036,228	$17,969,817	$18,398,962	$19,300,174	$17,820,089	$18,775,281	$14,860,470	$16,572,125	$16,032,955	$13,107,670
Total	**$21,414,708**	**$19,391,342**	**$19,881,289**	**$20,823,114**	**$19,385,547**	**$20,384,854**	**$16,515,821**	**$18,274,988**	**$17,785,136**	**$14,911,052**

8.6 Current and Projected Rates

8.6.1 Current Rates

The existing sewer rates consist of a monthly fixed rate for the single family class. The non single family class pays a monthly fixed rate plus a volume rate per hundred cubic feet (CCF) of flow over the monthly usage allowance of 7.5 CCF per unit. In addition to the monthly rates charged by the City, separate rates are applied to each account for treatment expenses provided by King County. Rates for treatment expenses are set by the King County Sewer Division and are treated as a path-through. The exhibits below summarize the existing and proposed City of Auburn rates, as well as the existing and proposed King County Sewer Division rates. Total bills for customers will include both a City of Auburn and a King County Treatment component.

Table 8.8 shows the existing City of Auburn and King County Sewer Division rate schedule.

Table 8.8 Existing Schedule of Rates

Description	2024 Existing
Monthly Fixed Charges	
Single Family	$30.04
Non Single Family	$32.95
King County Treatment	$55.11
Volume Charge per CCF (Over 7.5 CCF/unit)	
Non Single Family	$3.34
Non Single Family - King County	$7.35

8.6.2 Projected Rates

The financial forecast discussed above indicates the need for annual rate adjustments in order to satisfy all forecasted financial obligations. The City has adopted a 7.50 percent rate increase for 2025, with annual 2.25 percent increases forecasted from 2026 through 2033. Table 8.9 shows the projected rates with increases applied uniformly to the sewer fixed and flow components of all classes, where applicable.

Table 8.9 Proposed Schedule of Rates

Description	Existing	Proposed								
		2025	2026	2027	2028	2029	2030	2031	2032	2033
Monthly Fixed Charges										
Single Family	$30.04	$32.29	$33.02	$33.76	$34.52	$35.30	$36.09	$36.90	$37.73	$38.58
Non Single Family	$32.95	$35.42	$36.22	$37.03	$37.86	$38.71	$39.58	$40.47	$41.38	$42.31
King County Treatment	$55.11	$58.28	$62.36	$66.73	$71.41	$77.31	$83.69	$90.60	$98.99	$108.15
Volume Charge per CCF (over 7.5 CCF/unit)										
Non Single Family	$3.34	$3.59	$3.67	$3.75	$3.83	$3.92	$4.01	$4.10	$4.19	$4.28
Non Single Family - King County	$7.35	$7.77	$8.32	$8.90	$9.52	$10.31	$11.16	$12.08	$13.20	$14.42

8.7 Affordability

A common affordability metric used by the Environmental Protection Agency to measure the relative financial impact sewer rates have on a community as a whole considers whether rates exceed 2.50 percent of a community's median household income. The average median household income for the City was $87,406 between 2018 and 2022, expressed in 2022 dollars, according to the U.S. Census Bureau. The 2022 value is escalated based on the actual rate of inflation in 2023 of 4.31 percent and the 3.00 percent inflation rate used in the financial forecast to project the median household income in future years. Table 8.10 presents the City's monthly sewer bill, inclusive of the King County Sewer Division's component, projected to 2033 and tested against the 2.50 percent monthly affordability threshold.

Table 8.10 Community Affordability Test

Year	Inflation	Median HH Income	2.5% Monthly Threshold	Projected Monthly Bill	% of Median HH Income
2022	-	$87,406	$-	$-	-
2023	4.31%	$91,173	$-	$-	-
2024	3.00%	$93,908	$195.64	$85.15	1.09%
2025	3.00%	$96,726	$201.51	$90.57	1.12%
2026	3.00%	$99,627	$207.56	$95.38	1.15%
2027	3.00%	$102,616	$213.78	$100.49	1.18%
2028	3.00%	$105,695	$220.20	$105.93	1.20%
2029	3.00%	$108,866	$226.80	$112.61	1.24%
2030	3.00%	$112,132	$233.61	$119.78	1.28%
2031	3.00%	$115,495	$240.62	$127.50	1.32%
2032	3.00%	$118,960	$247.83	$136.72	1.38%
2033	3.00%	$122,529	$255.27	$146.73	1.44%

Applying the 2.50 percent monthly affordability test, the City's rates are forecasted to remain within the indicated affordability range through 2033.

8.8 Conclusion

The results of this analysis indicate that at existing rate levels the utility will be deficient beginning in 2028. To keep pace with expenses and continue to uphase in rate funded system reinvestment towards depreciation levels, the City has adopted a 7.50 percent rate increase in 2025. Forecasting into the future a 2.25 percent annual rate increase will be required from 2026 through 2033. It is recommended that the City regularly review and update the key underlying assumptions that compose the multi-year financial plan to ensure that adequate revenues are collected to meet the City's total financial obligations.

APPENDIX A

INTER-LOCAL AGREEMENTS AND OUTSIDE AGENCY CORRESPONDENCE

A1: KING COUNTY

- Sewage Disposal Service with Metro (Ordinance 2774, and Resolutions 1727 and 2090)
- Franchise Agreement No. 14458

A2: SOOS CREEK WATER AND SEWER DISTRICT

- Service Area Boundaries (Resolution 3321)

A3: CITY OF KENT

- Sewer Service Boundaries (Resolution 3322)

A4: CITY OF PACIFIC

- Sewer Service Boundaries (Resolutions 4335 and 730)

A5: MUCKLESHOOT INDIAN TRIBE

- Sewer Service Boundaries (Resolution 4902)
- Wastewater Conveyance Cost Sharing (Resolution 3660)
- Temporary Sewage Lift Station Operation (Resolution 3502)

A6: LAKEHAVEN UTILITY DISTRICT

- Sewer Service Boundaries (Resolutions 3651, 3824, and 2005-1038)
- Sewer District's Sanitary Sewer Service Area (Resolution 5353)

A7: CITY OF ANGOLA

- Sewer Service Boundaries (Resolution 3589)
- Water And Sewer Utility Service, Billing, And Collection (Resolution 5505)

A8: CITY OF BONNEY LAKE

- Sewer Service Boundaries (Resolutions 3760 and 3796)
- Right of Way Use Permits (Resolutions 3873 and 1471)

APPENDIX A1

KING COUNTY

- Sewage Disposal Service with Metro (Ordinance 2774, and Resolutions 1727 and 2090)
- Franchise Agreement No. 14458

CITY OF AUBURN, WASHINGTON

ORDINANCE NO. 2774

AN ORDINANCE authorizing the Mayor and City Clerk to sign an agreement for sewage disposal between the City of Auburn and the Municipality of Metropolitan Seattle.

WHEREAS, the City of Auburn and the Municipality of Metropolitan Seattle (Metro) have engaged in extensive negotiations relating to the provision by Metro of sewage disposal service to the City; and

WHEREAS, the City Council now believes that the negotiators for the City and Metro have agreed to and have submitted to the City Council an agreement which serves the best interest of the City; NOW, THEREFORE,

THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, DO ORDAIN, as follows:

Section 1. The Mayor and City Clerk of the City are hereby authorized to execute on behalf of the City the agreement for sewage disposal between the City and the Municipality of Metropolitan Seattle, and to cause that agreement to be transmitted to the Municipality of Metropolitan Seattle.

PASSED at a regular open public meeting of the Auburn City Council, Auburn, Washington, this 5th day of November, 1973.

Stanley P Kinsey
Mayor

ATTEST:

Carla L Dysley
City Clerk

PUBLISHED: 3-1-74

APPROVED AS TO FORM:

City Attorney

Executed in 6 counterparts of which this is counterpart No. 6

MUNICIPALITY OF METROPOLITAN SEATTLE

CITY OF AUBURN

AGREEMENT FOR SEWAGE DISPOSAL

THIS AGREEMENT is made as of this 1st day of March, 1974, between the CITY OF AUBURN, a municipal corporation of the State of Washington (hereinafter referred to as the "City"), and the MUNICIPALITY OF METROPOLITAN SEATTLE, a municipal corporation of the State of Washington (hereinafter referred to as "Metro").

W I T N E S S E T H:

WHEREAS, the public health, welfare and safety of the residents of the City and the residents of the metropolitan area require the elimination of potential sources of water pollution and the preservation of the fresh and salt water resources of the area; and

WHEREAS, the State of Washington Department of Ecology has adopted water quality standards and a plan of implementation thereof which requires that certain major sewage disposal works be constructed and operated and that the cities and special districts within the metropolitan area dispose of their sewage in accordance with a comprehensive plan for the metropolitan area; and

WHEREAS, Metro is engaged in developing and operating a metropolitan sewage disposal system and the City is engaged in developing and operating a sewage collection system; and

WHEREAS, to provide for the disposal by Metro of sewage collected by the City, it is necessary that a contract be now entered into establishing the rights and duties of the parties;

NOW, THEREFORE, in consideration of the mutual covenants contained herein, IT IS HEREBY AGREED AS FOLLOWS:

Section 1. Definition of Terms. The following words and phrases used in this contract shall have the meanings hereinafter set forth in this section:

a) The words "Comprehensive Plan" shall mean the Comprehensive Sewage Disposal Plan adopted in Resolution No. 23 of the Municipality of Metropolitan Seattle and all amendments thereof heretofore or hereafter adopted.

b) The words "Metropolitan Sewerage System" shall mean all of the facilities to be constructed, acquired or used by Metro as a part of the Comprehensive Plan. The Metropolitan Sewerage System shall generally include sewage disposal facilities with capacity to receive sewage from natural drainage areas of approximately one thousand acres or more. The Metropolitan Sewerage System shall thus include trunk or interceptor sewer facilities extending to a point within each tributary and natural drainage area where not more than one thousand acres remain to be served beyond the upper terminus of such trunk or interceptor sewer.

c) The words "Local Sewerage Facilities" shall mean all facilities owned or operated by a Participant for the local collection of sewage to be delivered to the Metropolitan Sewerage System and all side sewers and connection fittings connected directly to such System which serve customers of the Participant.

d) The words "Metropolitan Area" shall mean the area contained within the boundaries of the

Municipality of Metropolitan Seattle as now or hereafter constituted.

e) The word "Participant" shall mean each city, town, county, sewer district, municipal corporation, person, firm or private corporation which shall dispose of any portion of its sanitary sewage into the Metropolitan Sewerage System and shall have entered into a contract with Metro providing for such disposal.

f) The words "Residential Customer" shall mean a single family residence billed by a Participant for sewerage charges.

Section 2. Delivery and Acceptance of Sewage. On the first day of the month next following the execution of this contract or the acceptance by Metro of a federal grant by the United States Environmental Protection Agency for construction of the "Auburn Interceptor" as hereinafter defined, whichever is the later, the City shall deliver to the Metropolitan Sewerage System all of the sewage and industrial wastes collected or received by the City, and Metro shall accept the sewage and industrial wastes delivered for treatment subject to such reasonable rules and regulations as may be adopted from time to time by the Metropolitan Council. Metro shall not directly accept sewage or wastes from any person, firm or corporation which is located within the boundaries of or is delivering its sewage into the Local Sewerage Facilities of the City without the written consent of the City. The City shall not deliver sewage to any other agency for disposal without the written consent of Metro.

The treatment and disposal by Metro of the sewage and industrial waste delivered by the City to Metro shall comply with all applicable federal and state standards and requirements.

Section 3. Construction of Metro Facilities. Metro shall construct, acquire or otherwise secure the right to use all facilities within King County required for the disposal of sewage delivered to Metro pursuant to this Agreement and shall perform all services required for the maintenance, operation, repair, replacement or improvement of the Metropolitan Sewerage System, including any additions and betterments thereto. Except as otherwise provided in Sections 9 and 10 of this Agreement, Metro shall in its sole discretion determine the nature, location and the time of construction of facilities of the Metropolitan Sewerage System.

Section 4. Connection of Local Sewerage Facilities to Permanent Facilities of the Metropolitan Sewerage System. Local Sewerage Facilities of the City shall be connected to the Metropolitan Sewerage System at such time as any of the permanent facilities of such Metropolitan Sewerage System shall be available to receive sewage collected by such local facilities. The initial connection of all such local facilities existing at the time of this Agreement shall be accomplished at the expense of Metro. Subsequent connections shall be accomplished at the expense of the City in accordance with the rules and regulations of Metro and at such point or points of connection as shall be determined by Metro, except that the City shall have the right to connect any of its local facilities into any manhole of the Metropolitan Sewerage System, and such right may be exercised whether or not the same has been approved by any agency other than the parties. The City shall secure and pay for the right to use all Local Sewerage Facilities of another Participant which may be required to deliver the City's sewage to the Metropolitan Sewerage System.

Section 5. Payment for Sewage Disposal. For the disposal of sewage hereafter collected by the City and delivered to Metro the City shall pay to Metro, on or before the last day of each month during the term of this Agreement, commencing on the first day of the month next following the date of execution of this contract or the acceptance by Metro of a federal grant by the United States Environmental Protection Agency for the construction of the "Auburn Interceptor," as hereinafter defined, whichever is the later, a sewage disposal charge determined as provided in this Section 5.

1. For the quarterly periods ending March 31, June 30, September 30 and December 31 of each year, every Participant shall submit a written report to Metro setting forth (a) the number of Residential Customers billed by such Participant for local sewerage charges as of the last day of the quarter, (b) the total number of all customers billed by such Participant as of such day and (c) the total water consumption during such quarter for all customers billed by such Participant other than Residential Customers. The quarterly water consumption report of the City shall be taken from water meter records and may be adjusted to exclude water which, under the rules and regulations of Metro, needs not and in fact does not enter the sanitary facilities of a customer. Where actual sewage flow from an individual customer is metered, the metered sewage flow shall be reported in lieu of adjusted water consumption. The total quarterly water consumption report in cubic feet shall be divided by 2,700 to determine the number of Residential Customer equivalents represented by each Participant's customers other than single family residences. Metro shall maintain a permanent record of the quarterly customer reports from each Participant.

The City's first quarterly report shall cover the period from the date when sewage is first delivered to Metro to the end of the quarter in which such delivery occurs and shall be submitted within thirty days thereafter. Succeeding reports

shall be made for each quarterly period thereafter and shall be submitted within thirty (30) days following the end of the quarter.

2. a) To form a basis for determining the monthly sewage disposal charge to be paid by each Participant during any particular quarterly period, Metro shall ascertain the number of Residential Customers and Residential Customer equivalents of each Participant. This determination shall be made by taking the sum of the actual number of Residential Customers reported as of the last day of the next to the last preceding quarter and the average number of Residential Customer equivalents per quarter reported for the four quarters ending with said next to the last preceding quarter, adjusted for each Participant to eliminate any Residential Customers or Residential Customer equivalents whose sewage is delivered to a governmental agency other than Metro or other than a Participant for disposal outside of the Metropolitan Area. The number thus determined is hereinafter called the "basic reported number".

b) For the initial period until the City shall have submitted six consecutive quarterly reports, the basic reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in this subparagraph (b). On or before the tenth day of each month beginning with the month prior to the month in which sewage from the City is first delivered to Metro, the City shall submit a written statement of the number of Residential Customers and Residential Customer equivalents estimated to be billed by the City during the next succeeding month. For the purpose of

determining the basic reported number of Residential Customers or Residential Customer equivalents of the City for such next succeeding month, Metro may at its discretion adopt either such estimate or the actual number of Residential Customers and Residential Customer equivalents reported by the City as of the last day of the next to the last preceding reported quarter. After the City shall have furnished six consecutive quarterly reports, the basic reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in the immediately preceding subparagraph (a).

c) If the City shall fail to submit the required monthly and/or quarterly reports when due, Metro may make its own estimate of the number of Residential Customers and Residential Customer equivalents of the City and such estimate shall constitute the basic reported number for the purpose of determining sewage disposal charges.

d) The basic reported number of Residential Customers and Residential Customer equivalents of the City shall be further adjusted by adding thereto twenty-five percent (25%) of the number of Residential Customers or Residential Customer equivalents of the City located outside the boundaries of Metro. The sum thus determined is hereinafter called the "adjusted reported number". If all of the area located within the City or any area located outside the City and served into its Local Sewerage Facilities shall be annexed to Metro at any time after the date of this agreement or if the twenty-five percent additive adjustment shall have been paid by the City for a period of ten years, said additive adjustment shall be eliminated effective as of the first day of the month following such annexation as to the number of

Residential Customers or Residential Customer equivalents located within such annexed area and in any event shall be eliminated entirely upon the tenth anniversary of the date when sewage disposal charges shall have first been paid to Metro by the City. If the additive adjustment described above shall not be applied to the Residential Customers or Residential Customer equivalents of any other Participant located outside of the present boundaries of Metro under any future agreement between Metro and such Participant or shall be applied in a lesser amount, then the additive adjustment described in this paragraph (d) shall be correspondingly reduced or deleted. The adjusted reported number of Residential Customers and Residential Customer equivalents of the City shall be the number of Residential Customers and Residential Customer equivalents reported by the City for the purpose of determining sewage disposal charges pursuant to Paragraph 3 of this section.

3. The monthly sewage disposal charge payable to Metro shall be determined as follows:

a) Prior to July 1st of each year, Metro shall determine its total monetary requirements for the disposal of sewage during the next succeeding calendar year. Such requirements shall include the cost of administration, operation, maintenance, repair and replacement of the Metropolitan Sewerage System, establishment and maintenance of necessary working capital and reserves, the requirements of any resolution providing for the issuance of revenue bonds of Metro to finance the acquisition, construction or use of sewerage facilities, plus not to exceed 1% of the foregoing requirements for general administrative overhead costs.

b) To determine the monthly rate per Residential Customer or Residential Customer equivalent to be used during

the next succeeding calendar year, the total monetary requirements for disposal of sewage as determined in subparagraph 3(a) of this section shall be divided by twelve and the resulting quotient shall be divided by the total number of Residential Customers and Residential Customer equivalents of all Participants for the October-December quarter preceding said July 1st.

c) The monthly sewage disposal charges paid by each Participant to Metro shall be obtained by multiplying the monthly rate by the number of Residential Customers and Residential Customer equivalents of the Participant. An additional charge may be made for sewage or wastes of unusual quality or composition requiring special treatment, or Metro may require pretreatment of such sewage or wastes. An additional charge may be made for quantities of storm or ground waters entering those Local Sewerage Facilities which are constructed after January 1, 1961, in excess of the minimum standard established by the general rules and regulations of Metro, except that any such additional charges shall be offset by any expenditures made by the City on the planning and development of facilities for the correction of inflow and infiltration into the existing sewerage system of the City. If the City shall expend more than $50,000.00 in any one year on such planning and development from any source other than categorical grants, the amount expended over $50,000.00 in that year may be credited once to any future years in which the actual expenditure was less than $50,000.00 so as to avoid the collection in those years of the additional charge provided in the immediately preceding sentence.

4. A statement of the amount of the monthly sewage disposal charge shall be submitted by Metro to each Participant on or before the first day of each month and payment of such charge shall be due on the last day of such month. If any charge or portion thereof due to Metro shall remain unpaid for fifteen days following its due date, the Participant shall be charged with and pay to Metro interest on the amount unpaid from its due date until paid at the rate of 6% per annum, and Metro may, upon the failure of any Participant to pay such amount, enforce payment by any remedy available at law or equity.

5. The City irrevocably obligates and binds itself to pay its sewage disposal charge out of the gross revenues from sewage collected or received by the City. City further binds itself to establish, maintain and collect charges for sewer service which will at all times be sufficient to pay all costs of maintenance and operation of the sewer system of the City, including the sewage disposal charge payable to Metro hereunder and sufficient to pay the principal of and interest on any revenue bonds of the City which shall constitute a charge upon such gross revenues. It is recognized by Metro and the City that the sewage disposal charge paid by the City to Metro shall constitute an expense of maintenance and operation of the sewer system of the City. The City shall provide in the issuance of future sewer revenue bonds of the City that expenses of maintenance and operation of the sewer system of the City shall be paid before payment of principal and interest of such bonds. The City shall have the right to fix its own schedule of rates and charges for sewer service provided that same shall produce revenue sufficient to meet the covenants contained in this Agreement.

Section 6. Responsibility of City. The City shall be responsible for the delivery to the Metropolitan Sewerage System of sewage collected by the City, for the construction, maintenance, and operation of Local Sewerage Facilities, for the prompt connection of all premises served by such facilities, and for the payment of all costs incident to the collection of such sewage and its delivery to the Metropolitan Sewerage System.

Section 7. Records. Permanent books and records shall be kept by Metro and the City of the respective rates established, the volumes of sewage delivered and discharged into the Metropolitan Sewerage System wherever such volumes are measured and the number of Residential Customers and Residential Customer equivalents reported. In addition, Metro shall keep complete books of account showing all costs incurred in connection with the Metropolitan Sewerage System, and the City shall

keep complete records showing the amount billed to each of its customers for sewer service and the basis used for such billing including sewage flow and water consumption for each customer where applicable. The records required by this paragraph shall be available for examination by either party at any reasonable time.

Section 8. Development of Metropolitan Sewerage System It is contemplated that the Metropolitan Sewerage System will be developed in stages and, except as provided in Section 9 hereof, the nature of all facilities of the Metropolitan Sewerage System to be constructed, acquired or used and the time of such construction, acquisition or use shall be determined in the sole discretion of Metro, it being contemplated that Metro shall ultimately provide sewage disposal for the entire Metropolitan Area and such adjacent areas as may feasibly be served into the Metropolitan Sewerage System.

Section 9. Construction of Certain Metropolitan Trunk Sewers by Metro. Metro agrees that it will design, construct and inspect facilities of the Metropolitan Sewerage System generally described on Exhibit "A" attached hereto (the "Auburn Interceptor") upon the execution of this contract and the acceptance by Metro of a federal grant by the United States Environmental Protection Agency for construction of said Auburn Interceptor. The facilities shall be connected and ready for service within twenty-four calendar months next after the execution of this contract and the acceptance by Metro of a federal grant by the United States Environmental Protection Agency for the construction of the Auburn Interceptor. The date of connection may be extended by the time consumed by acts of God, strikes, material shortages or other delays beyond the control of Metro or its contractors. In the event of a dispute

over the existence of any of the delays permitting such date to be extended or over the amount of time of such extension, either party may submit such dispute to the Superior Court of King County for arbitration. If such facilities are not completed by such date or extension thereof, the amount of Metro charges paid by the City from such date to the actual date of completion thereof may be used by the City as a credit in determining the feasibility of construction of future Metropolitan Sewerage System facilities which the City may request Metro to build. Such credit shall be applied directly against that portion of the cost of such future facilities which is borne by Metro, other than by grants, and the test of feasibility used by Metro shall be one which is then generally applied by Metro to all extensions of the Metropolitan Sewerage System.

In addition, Metro shall place in every construction contract relating to the Interceptor sewers described in Exhibit "A" a provision for the payment of each such contractor of liquidated damages to the City of $300.00 per day for each day such construction has not been completed after such date or extension thereof, and such liquidated damage provision shall provide for the enforcement thereof by the City. Metro shall not approve any such time extension without prior approval of the City, which shall not be unreasonably withheld.

Metro shall construct that portion of the West Valley Interceptor from 11th Avenue North (in Algona) to Main Street (in Auburn) within a reasonable time after the Auburn Interceptor shall have been completed and the City shall have requested such construction, and the City shall provide a pump station and force main connection from the West Valley Highway along Main Street to

the existing Boeing Trunk sewer. Metro shall approve the design of and shall operate and maintain the pump station. At such time as the pump station is no longer required by Metro, the possession of such facility and responsibility for operation and maintenance therefor shall revert to the City.

At such time as the City shall request Metro to construct additional Metropolitan Sewerage System facilities within King County and within the drainage area of the City's Local Sewerage Facilities and such construction is feasible under the test of feasibility then generally applied by Metro to all extensions of the Metropolitan Sewerage System, Metro shall construct such additional facilities within a reasonable time after such request.

The City shall grant to Metro without cost a fifteen-foot permanent easement and an adequate construction easement on City property for the construction of a portion of the Auburn Interceptor. The location of such easement shall commence at the influent structure of the existing City Sewage Lagoon, thence northerly and generally parallel to the existing City Sewage Lagoon to 30th Street Northeast, the exact location to be agreed upon by Metro and the City.

Section 10. Use by Metro of City Sewerage Facilities. Certain existing sewerage facilities of the City can serve as "temporary" Metropolitan Sewerage System facilities and certain existing sewerage facilities can serve as "permanent" Metropolitan Sewerage System facilities. Effective on the date sewage disposal charges shall first be chargeable hereunder, or such earlier date as may be mutually agreed upon (hereinafter called "takeover date"), Metro shall have the right to use and the duty to maintain, operate, repair and replace the facilities owned by the City which are described on Exhibit "B" attached hereto and by this reference made a part hereof. The City shall have the right to jointly use the interceptor sewers described on Exhibit "B" as

City trunk sewers for the delivery of any sewage collected by the City, but the making of any additional lateral and side sewer connections shall be subject to approval by Metro of the manner such connections are to be made, based on adopted Metro standards.

If sewage disposal charges are chargeable to the City and if the City shall construct an additional freeway crossing with the approval by Metro of the design and location of such facility or crossing, the City shall be reimbursed for the City's actual cost thereof (less any grants received) in addition to the amount of reimbursement set forth below. The freeway reimbursement shall be made in cash within thirty-five (35) days following completion and billing by the City, but no sooner than the takeover date. The City shall continue to own the facilities described in this Section 10 and shall continue to pay the principal of and interest on any bonds issued to pay in whole or in part the cost of acquisition and construction of such facilities, provided that facilities which are designated as "permanent" shall be conveyed by the City to Metro by quit claim deed upon payment of all presently outstanding revenue bonds or general obligation bonds of the City secured by or issued to acquire or construct said facilities.

The right of Metro to use any of the facilities which are designated as "temporary" shall expire at such time as Metro shall no longer require the use of such portion. Upon thirty (30) days' notice by Metro to the City, such temporary facilities shall be returned to the City and Metro's obligation to maintain, operate, repair and replace these temporary facilities shall cease. It is contemplated by this Agreement that the City shall, at the earliest practicable date and at its expense, separate the storm and sanitary sewage in areas of the City where storm and sanitary sewage are now combined. The right of Metro to use the

City Sewage Treatment Lagoon after interception shall terminate when the City shall have applied after the date of this contract at least $207,000 of City funds, from any source other than categorical grants, to the construction of storm sewer separation facilities. Metro shall have the right to salvage any equipment which it has installed or purchased from the City in the "temporary" facilities after the period of Metro's use, otherwise such facilities shall be returned to the City in "as then is" condition upon expiration of use by Metro.

For the privilege of using the facilities described in Exhibit "B" Metro shall pay to the City the total amount of $713,713 (hereinafter called "amount of reimbursement"). Said amount of reimbursement shall be subject to reduction and reimbursement to Metro for any grant hereafter received by the City applicable to such facilities. Metro shall also reimburse the City for the package lift station located at 41st and A Street S.E. as shown on Exhibit "B" within thirty (30) days after the City transfers title to the lift station facility and underlying property to Metro. The Metro reimubrsement shall include the actual cost of acquisition of the property plus the current depreciated value of the lift station facility which is agreed to be $37,445.00..

Metro further agrees that prior to advertisement for bids for the construction of the facilities generally described on Exhibit "A" attached hereto, or any future construction of Metropolitan Sewerage System facilities to which Local Sewerage Facilities of the City could directly connect, it will submit plans and specifications for those facilities to the City for its review and upon timely notice to the City may indicate to Metro where manhole stub connections should be installed and Metro shall thereafter install same, in anticipation of further future connections by the City at those points. The installation of such stubs will be at no cost or expense to the City. The City shall have the right to connect any Local Sewerage Facilities to those stubs. The City shall also have a right to approve the location of Metropolitan Sewerage System facilities on City-owned property or right of ways, which approval shall not be unreasonably withheld.

The City shall give written notice to Metro prior to the takeover date, setting forth the manner in which the amount of reimbursement shall be paid. The City may elect to receive all or any portion of said amount in cash within thirty (30) days following the date when sewage disposal charges shall first be chargeable hereunder (hereinafter called "cash payment date") and may elect to receive any portion which is not paid on said cash payment date together with interest thereon at the rate of 4% per annum from said date, in the form of a credit against the City's monthly sewage disposal charge in equal monthly amounts sufficient to amortize such unpaid amount of reimbursement and interest thereon prior to July 1, 1980. The City may at any time after the cash payment date elect to receive any unpaid portion of the amount of reimbursement in cash with interest at the rate of 4% per annum to date of final payment by giving written notice to Metro at least one year prior to the date such final payment is to be made.

Section 11. Joint Use of Auburn Interceptor. The City and Metro agree that the Auburn Interceptor (hereinafter called "the Interceptor") shall serve as both a Metropolitan and a Local Sewerage Facility wherever the City has authority to provide local service. The City shall have the right to make direct local connections to said Interceptor for which the City shall pay to Metro, before making said connection, the sum of $8.00 per front foot of each parcel of property served on each side of the Interceptor or a total of $16.00 per front foot of each parcel of property served if local service is given on both sides of the Interceptor. Said amount represents the estimated cost of constructing an eight-inch (8") local sewer on the same alignment as the Interceptor throughout that portion where local connections are allowed. Upon payment of said amount, the City shall own an eight-inch (8") equivalent share of the Interceptor where local service is given on both sides of the Interceptor, and one-half thereof where service is given on only one side. Local connection to the Interceptor may be made by the City in such a manner as

shall be approved by Metro. The City shall hold Metro harmless from any loss, cost, charge, liability or expense resulting from or arising out of damage to the Interceptor or to the persons or property of others caused by the making of such connections or the City's failure to observe any covenant of this Agreement relating to such connections.

Section 12. Construction and Maintenance of Local Sewerage Facilities. The City shall either construct, operate and maintain at its expense or cause others to construct, operate and maintain at their expense in a proper fashion, any Local Sewerage Facilities other than joint use facilities connected to the Interceptor up to and including the tee connection. Metro shall have no responsibility for either construction, operation or maintenance of such Local Sewerage Facilities.

Section 13. Infiltration and Inflow in Auburn System. The City shall prepare and deliver to Metro on or before April 15, 1974, an inflow and infiltration analysis and survey of the existing Auburn Sewer System which shall comply with applicable regulations of the United States Environmental Protection Agency. Metro shall include in the Auburn Interceptor grant application the grant eligible portions of the cost of such evaluation studies and the grant eligible portions of the cost of any improvements or corrections to Auburn Sewer System facilities which are tributary to such Interceptor, which are recommended by the evaluation studies and which comply with applicable United States Environmental Protection Agency regulations.

Metro shall reimburse the City for the eligible portions of the evaluation studies and improvements or corrections as grant funds are received by Metro for such purposes.

Section 14. Insurance and Liability for Damages. The City and Metro shall respectively secure and maintain with responsible insurers all such insurance as is customarily maintained with respect to sewage systems of like character against loss of or damage to the

sewerage facilities of the City and Metro respectively and against public and other liability to the extent that such insurance can be secured and maintained at reasonable cost. Any loss or damage occurring as a result of the operation by Metro of the Metropolitan Sewerage System, the temporary facilities described in Exhibit "B" and the joint use sewers referred to in Section 10, shall be the sole liability of Metro and any loss or damage occurring as a result of the operation by the City of the Local Sewerage Facilities shall be the sole liability of the City.

Section 15. Assignment. The City shall not have the right to assign this Agreement or any of its rights and obligations hereunder either by operation of law or by voluntary agreement without the written consent of Metro, acting reasonably, and neither party may terminate its obligations hereunder by dissolution or otherwise without first securing the written consent of the other party, acting reasonably, and this Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the parties hereto. In the event that the City should be dissolved or should no longer be authorized to operate sewer facilities, the Local Sewerage Facilities owned and operated by the City shall be assigned and transferred to Metro or such other public agency authorized by law to operate sewer facilities which agrees to carry out the terms of this Agreement, subject to any outstanding debts of the City which have been incurred for the specific purpose of constructing or acquiring such facilities and subject to the acceptance by Metro or that other agency of the obligation to continue to provide sewer service to the residents served by such local facilities upon payment by such residents of sewage disposal charges determined as herein provided and the reasonable costs of local sewer service.

Section 16. Effective Date and Term of Contract. This Agreement shall be in full force and effect and binding upon the

parties hereto upon the execution of the Agreement and shall continue in full force and effect until July 1, 2016.

Section 17. Termination of Auburn-Algona Pacific Agreement. Upon execution of this Agreement and the execution of sewage disposal agreements between Metro and the Cities of Algona and Pacific, that certain sewage disposal contract dated August 18, 1970 between the Cities of Auburn, Algona and Pacific shall be terminated by the City. This same paragraph shall be included in any subsequent contract for sewage disposal entered into between Metro and the Cities of Algona and Pacific.

Section 18. Notice. Whenever by this Agreement notice is required to be given, the same shall be given by registered mail addressed to the respective parties at the following addresses:

Municipality of Metropolitan Seattle
410 West Harrison Street
Seattle, Washington 98119

City of Auburn
20 "A" Street Northwest
Auburn, Washington 98002

unless a different address shall be hereafter designated in writing by either of the parties. The date of giving such notice shall be deemed to be the date of mailing thereof. Billings for and payments of sewage disposal costs may be made by regular mail.

Section 19. Execution of Documents. This Agreement shall be executed in six counterparts, any of which shall be regarded for all purposes as one original. Each party agrees that it will execute any and all deeds, instruments, documents and resolutions or ordinances necessary to give effect to the terms of this Agreement.

Section 20. Waiver. No waiver by either party of any term or condition of this Agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach whether of the same or a different provision of this Agreement.

Section 21. Remedies. In addition to the remedies provided by law, this Agreement shall be specifically enforceable by either party.

Section 22. Entirety. This Agreement merges and supersedes all prior negotiations, representations and agreements between the parties hereto relating to the subject matter hereof and constitutes the entire contract between the parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CITY OF AUBURN, WASHINGTON

Stanley P. Kersey, Mayor

ATTEST:

Earla L. Byerley, City Clerk

MUNICIPALITY OF METROPOLITAN SEATTLE

By C. Carey Donworth
C. Carey Donworth
Chairman of the Council

ATTEST:

B. J. Carol
B. J. Carol
Clerk of the Council

STATE OF WASHINGTON)
) ss
COUNTY OF KING)

On this 1st day of March, 1978, before me personally appeared STANLEY P. KERSEY and EARLA L. BYERLEY, to me known to be the Mayor and City Clerk, respectively, of the City of Auburn, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year first above written.

Marian Osborn
NOTARY PUBLIC in and for the State of Washington, residing at Enumclaw

STATE OF WASHINGTON)
) ss
COUNTY OF KING)

On this 1st day of MARCH, 1978, before me personally appeared C. CAREY DONWORTH and B. J. CAROL, to me known to be the Chairman of the Council and Clerk of the Council, respectively, of the Municipality of Metropolitan Seattle, a municipal corporation, and acknowledged the within and foregoing instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year first above written.

Jack A. Hakala
NOTARY PUBLIC in and for the State of Washington, residing at SEATTLE

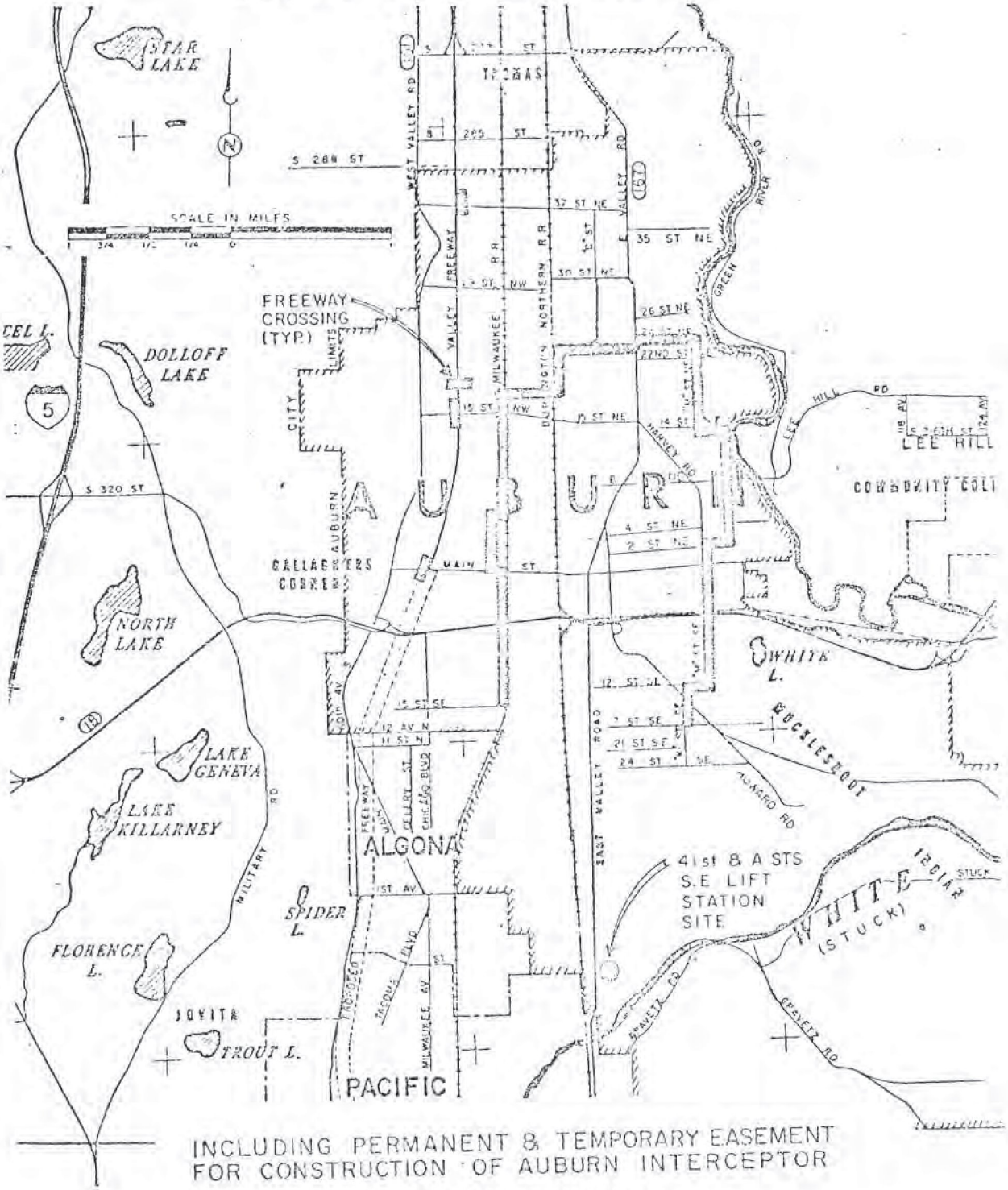
EXHIBIT "A"

The Auburn Interceptor is a permanent Metropolitan Sewerage System facility that will provide interceptor service for that portion of the Green River Valley that includes Auburn's sewer service area south and west of the Green River, the towns of Algona and Pacific, and the West Hill, South Kent and Thomas sewer service areas. The interceptor commences at the influent structure of the existing Auburn sewage lagoon, thence northerly and westerly in easement and public right-of-way through the City of Kent to a connection with the existing Metro-Kent Cross Valley Interceptor.

EXHIBIT "B"

PERMANENT FACILITIES

INTERCEPTOR SEWERS AND LIFT STATION SITE * DESCRIBED ON THE MAP BELOW



INCLUDING PERMANENT & TEMPORARY EASEMENT FOR CONSTRUCTION OF AUBURN INTERCEPTOR

TEMPORARY FACILITIES

TEMPORARY FACILITIES INCLUDE THE EXISTING SEWAGE LAGOON AND APPURTENANT STRUCTURES AND EQUIPMENT LOCATED BETWEEN BURLINGTON NORTHERN RAILROAD AND "C" STREET N.E. EXTENDED AND SOUTH OF 30TH STREET N.E. THE EXISTING LAGOON OUTFALL AND PACKAGE LIFT STATION LOCATED AT 41ST AND A STREET S.E. *

* Purchase of LIFT STATION SITE and PACKAGE LIFT STATION subject to exercise of Option

RESOLUTION NO. 1727

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK OF THE CITY OF AUBURN, TO EXECUTE AN EXTENSION OF AGREEMENT FOR SEWAGE DISPOSAL BETWEEN THE CITY OF AUBURN AND THE MUNICIPALITY OF METROPOLITAN SEATTLE (METRO), ORIGINAL AGREEMENT AUTHORIZED BY CITY OF AUBURN ORDINANCE NO. 2774 DATED NOVEMBER 5, 1973.

THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

THE Mayor and City Clerk of the City of Auburn, Washington, are hereby authorized to execute an Extension of Agreement for Sewage Disposal between the City of Auburn and the Municipality of Metropolitan Seattle (METRO). (The original Agreement was authorized by City of Auburn Ordinance No. 2774, dated November 5, 1973.) A copy of said Extension of Agreement is attached hereto, denominated as Exhibit "A" and made a part hereof as though set forth in full herein.

The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directions of this legislation.

DATED and SIGNED this 2nd day of February, 1987.

CITY OF AUBURN

MAYOR

ATTEST:

City Clerk

RESOLUTION NO. 1727 EXHIBIT "A"

CITY OF AUBURN

MUNICIPALITY OF METROPOLITAN SEATTLE

EXTENSION OF AGREEMENT FOR SEWAGE DISPOSAL

WHEREAS, the City of Auburn, (the "City") and the Municipality of Metropolitan Seattle (the "Municipality") are parties to a certain Agreement for Sewage Disposal (the Agreement") dated March 1, 1974, pursuant to which the City delivers to the Municipality for treatment and disposal all the sewage and industrial wastes it collects from its service area; and

WHEREAS, the Agreement expires by its terms on July 1, 2016; and

WHEREAS, it is in the best interests of the City and the Municipality that the expiration date of the Agreement be extended in order to allow the Municipality to sell and issue its sewer revenue bonds with maturities extending beyond 2016;

NOW, THEREFORE, in considreation of the mutual covenants contained herein and in the Agreement, it is hereby agreed as follows:

The Agreement for Sewage Disposal between the City of Auburn and the Municipality of Metropolitan Seattle dated March 1, 1974, is hereby extended for a period of twenty years and shall continue in full force and effect until July 1, 2036.

IT IS FURTHER AGREED that all other provisions of said Agreement shall remain unchanged, and the Agreement dated March 1, 1974, as extended herein shall constitute the entire Agreement for Sewage Disposal between the parties.

DATED this ~~9th~~ 19th day of ~~February~~ March, 1987.

CITY OF AUBURN

MAYOR

ATTEST:

Robin Wohlhueter, City Clerk

MUNICIPALITY OF METROPOLITAN SEATTLE

By: Gary Zimmerman
Chairman of the Council

ATTEST:

Bonnie Mattson, Clerk of the Council

RESOLUTION NO. 2090

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERAGENCY AGREEMENT BETWEEN THE CITY OF AUBURN AND METRO TO PROVIDE AN AMENDMENT TO THE SEWAGE DISPOSAL AGREEMENT.

THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

Section 1. The Mayor and City Clerk of the City of Auburn are herewith authorized to execute an Interagency Agreement between the City of Auburn and METRO to provide an amendment to the sewage disposal agreement in order to implement the recommendations of the Rate Structure Advisory Committee adopted by the Metro Council July 6, 1989. A copy of said Agreement is attached hereto and denominated Exhibit "A".

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

DATED and SIGNED this 4th day of June, 1990.

CITY OF AUBURN

MAYOR

ATTEST:

Robin Wohlhueter, City Clerk

APPROVED AS TO FORM:

Marguerite Schellentrager,
City Attorney

RECEIVED
JUN 21 1990
CITY OF AUBURN
CITY CLERKS OFFICE

CITY OF AUBURN

MUNICIPALITY OF METROPOLITAN SEATTLE

AMENDMENT TO AGREEMENT
FOR SEWAGE DISPOSAL

THIS AMENDMENT made as of the 14th day of June, 1990 between the City of Auburn, a municipal corporation of the State of Washington (hereinafter referred to as the "City") and the Municipality of Metropolitan Seattle, a metropolitan municipal corporation of the State of Washington (hereinafter referred to as "Metro");

WITNESSETH:

WHEREAS, the parties have entered into a long term Agreement for Sewage Disposal dated March 1, 1974 (hereinafter referred to as the "Basic Agreement"); and

WHEREAS, an advisory committee composed of elected and appointed officials in the metropolitan area was appointed by the Metropolitan Council to examine the structure of Metro's charges to its participants; and

WHEREAS, said advisory committee, following extensive research, study and deliberations, has recommended certain changes in the structure of Metro's charges to its participants and implementation of said changes requires amendment of the Basic Agreement; and

WHEREAS, the parties have determined that the recommendations are in the best public interest and therefore desire to amend said Basic Agreement to implement said recommendations;

NOW, THEREFORE, it is hereby agreed as follows:

Copy filed Pro

Pro 2091

Section 1. Amendment of Section 5 of the Basic Agreement. Section 5 of the Basic Agreement is hereby amended to read as follows:

"Section 5. Payment for Sewage Disposal. For the disposal of sewage hereafter collected by the City and delivered to Metro the City shall pay to Metro on or before the last day of each month during the term of this Agreement, a sewage disposal charge determined as provided in this Section 5.

1. For the quarterly periods ending March 31, June 30, September 30 and December 31 of each year every Participant shall submit a written report to Metro setting forth:

(a) the number of Residential Customers billed by such Participant for local sewerage charges as of the last day of the quarter,

(b) the total number of all customers billed for local sewerage charges by such Participant as of such day, and

(c) the total water consumption during such quarter for all customers billed for local sewerage charges by such Participant other than Residential Customers.

The quarterly water consumption report shall be taken from water meter records and may be adjusted to exclude water which does not enter the sanitary facilities of the customer. Where actual sewage flow from an individual customer is metered, the metered sewage flows shall be reported in lieu of adjusted water consumption. The total quarterly water consumption report in cubic feet shall be divided by 2,250 to determine the number of Residential Customer equivalents represented by each Participant's customers other than single family residences. Metro shall maintain a permanent record of the quarterly customer reports from each Participant.

Pln. 2090

The City's first quarterly report shall cover the first quarterly period following the date when sewage is first delivered to Metro and shall be submitted within thirty days following the end of the quarter. Succeeding reports shall be made for each quarterly period thereafter and shall be submitted within thirty (30) days following the end of the quarter.

2. (a) To form a basis for determining the monthly sewage disposal charge to be paid by each Participant during any particular quarterly period, Metro shall ascertain the number of Residential Customers and Residential Customer equivalents of each Participant. This determination shall be made by taking the sum of the actual number of Residential customers reported as of the last day of the next to the last preceding quarter and the average number of Residential Customer Equivalents per quarter reported for the four quarters ending with said next to the last preceding quarter, adjusted for each Participant to eliminate any Residential Customers or Residential Customer equivalents whose sewage is delivered to a governmental agency other than Metro or other than a Participant for disposal outside of the Metropolitan Area.

(b) For the initial period until the City shall have submitted six consecutive quarterly reports, the reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in this subparagraph (b). On or before the tenth day of each month beginning with the month prior to the month in which sewage from the City is first delivered to Metro, the City shall submit a written statement of the number of Residential Customers and Residential Customer equivalents estimated to be billed by the City during the next succeeding month. For the purpose of determining the basic reported number of Residential Customers and

Pos 2091

Residential Customer equivalents of the City for such next succeeding month, Metro may at its discretion adopt either such estimate or the actual number of Residential Customers and Residential Customer equivalents reported by the City as of the last day of the next to the last preceding reported quarter. After the City shall have furnished six consecutive quarterly reports the reported number of Residential Customers and Residential Customer equivalents of the City shall be determined as provided in the immediately preceding subparagraph (a).

(c) If the City shall fail to submit the required monthly and/or quarterly reports when due, Metro may make its own estimate of the number of Residential Customers and Residential Customer equivalents of the City and such estimate shall constitute the reported number for the purpose of determining sewage disposal charges.

3. The monthly sewage disposal charge payable to Metro shall be determined as follows:

(a) Prior to July 1st of each year Metro shall determine its total monetary requirements for the disposal of sewage during the next succeeding calendar year. Such requirements shall include the cost of administration, operation, maintenance, repair and replacement of the Metropolitan Sewerage System, establishment and maintenance of necessary working capital and reserves, the requirements of any resolution providing for the issuance of revenue bonds of Metro to finance the acquisition, construction or use of sewerage facilities, plus not to exceed 1% of the foregoing requirements for general administrative overhead costs.

(b) To determine the monthly rate per Residential Customer or Residential Customer equivalent to be used during said next succeeding calendar year, the total monetary requirements for disposal of sewage as determined

Res-2090

in subparagraph 3(a) of this section shall be divided by twelve and the resulting quotient shall be divided by the total number of Residential Customers and Residential Customer equivalents of all Participants for the October-December quarter preceding said July 1st; provided, however, that the monthly rate shall not be less than Two Dollars ($2.00) per month per Residential Customer or Residential Customer equivalent at any time during the period ending July 31, 1972.

(c) The monthly sewage disposal charge paid by each Participant to Metro shall be obtained by multiplying the monthly rate by the number of Residential Customers and Residential Customer equivalents of the Participant. An additional charge may be made for sewage or wastes of unusual quality or composition requiring special treatment, or Metro may require pretreatment of such sewage or wastes. An additional charge may be made for quantities of storm or ground waters entering those Local Sewerage Facilities which are constructed after January 1, 1961 in excess of the minimum standard established by the general rules and regulations of Metro.

4. The parties acknowledge that, by resolution of the Metropolitan Council, Metro may impose a charge or charges directly on the future customers of a Participant for purposes of paying for capacity in Metropolitan Sewage Facilities and that such charges shall not constitute a breach of this agreement or any part thereof. The proceeds of said charge or charges, if imposed, shall be used only for capital expenditures or defeasance of outstanding revenue bonds prior to maturity.

In the event such a charge or charges are imposed, the City shall, at Metro's request, provide such information regarding new residential customers and residential customer

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equivalents as may be reasonable and appropriate for purposes of implementing such a charge or charges.

5. A statement of the amount of the monthly sewage disposal charge shall be submitted by Metro to each Participant on or before the first day of each month and payment of such charge shall be due on the last day of such month. If any charge or portion thereof due to Metro shall remain unpaid for fifteen days following its due date, the Participant shall be charged with and pay to Metro interest on the amount unpaid from its due date until paid at the rate of 6% per annum, and Metro may, upon failure to pay such amount, enforce payment by any remedy available at law or equity.

6. The City irrevocably obligates and binds itself to pay its sewage disposal charge out of the gross revenues of the sewer system of the City. The City further binds itself to establish, maintain and collect charges for sewer service which will at all times be sufficient to pay all costs of maintenance and operation of the sewer system of the City, including the sewage disposal charge payable to Metro hereunder and sufficient to pay the principal of and interest on any revenue bonds of the City which shall constitute a charge upon such gross revenues. It is recognized by Metro and the City that the sewage disposal charge paid by the City to Metro shall constitute an expense of the maintenance and operation of the sewer system of the City. The City shall provide in the issuance of future sewer revenue bonds of the City that expenses of maintenance and operations of the sewer system of the City shall be paid before payment of principal and interest of such bonds. The City shall have the right to fix its own schedule of rates and charges for sewer service provided that same shall produce revenue sufficient to meet the covenants contained in this Agreement.

Pen 2197

Section 2. Effective Date of Amendment. This amendment shall take effect at the beginning of the first quarter following the date first written above with quarters beginning January 1, April 1, July 1, and October 1.

Section 3. Basic Agreement Unchanged. Except as otherwise provided in this amendment, all provisions of the basic agreement shall remain in full force and effect as written therein.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

CITY OF AUBURN

Mayor

ATTEST:

ROBIN WOHLHUETER, CITY CLERK

APPROVED AS TO FORM:

MARGUERITE SCHELLENTRAGER, CITY ATTORNEY

MUNICIPALITY OF METROPOLITAN SEATTLE

Gary Zimmerman
Chair of the Council

ATTEST:

Res 2090

Section 2. Effective Date of Amendment. This amendment shall take effect at the beginning of the first quarter following the date first written above with quarters beginning January 1, April 1, July 1, and October 1.

Section 3. Basic Agreement Unchanged. Except as otherwise provided in this amendment, all provisions of the basic agreement shall remain in full force and effect as written therein.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

CITY OF AUBURN

Mayor

ATTEST:

ROBIN WOHLHUETER, CITY CLERK

APPROVED AS TO FORM:

MARGUERITE SCHELLENTRAGER, CITY ATTORNEY

MUNICIPALITY OF METROPOLITAN SEATTLE

~~Gary Zimmerman~~
Chair of the Council

ATTEST:

Res 2091

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St
Auburn, WA 98001



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PAGE 001 OF 024
10/01/2002 14:08
KING COUNTY, WA

2002 100 1031676

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein)

24/42

1 Franchise Agreement

PNUT

Reference Number(s) of Documents assigned or released:

W4072-12

☐ Additional reference #'s on page ___ of document

Grantor(s) (Last name first, then first name and initials)

1 King County

Grantee: (Last name first)

1 Auburn, City of

Title Document(s) were filed for record by Pacific Northwest Title as an accommodation only. It has not been examined as to proper execution or as to its affect upon title

Legal Description (abbreviated i.e. lot, block, plat or section, township, range)

See Exhibit A

☒ Additional legal is on page 3 of the document

Assessor's Property Tax Parcel/Account Number:

King County Franchise No 14458

☐ Assessor Tax # not yet assigned

Unofficial Document

Unofficial Document

14458
July 23, 2002

Franchise No. 14458

In the matter of the application for a franchise to operate, maintain, repair, and construct and sewer mains, service lines, and appurtenances in, over, along, and under County roads and rights-of-way in King County, Washington

---

The application of the City of Auburn for a franchise to operate, maintain, repair and construct sewer mains, service lines, and appurtenances in, over, along, and under County roads and rights-of-way located within the area described in attached Exhibit "A" has been heard on this 26th day of August, 2002 All of the property described in Exhibit "A" lies outside the limits of any incorporated Town or City.

Legal notice of the franchise application and of the hearing has been given as is required by law.

The King County Council, having considered the interests proposed and advanced, and finding that the granting of this franchise is in the public interest, ORDERS that a franchise be granted to the City of Auburn, the Grantee, subject to the conditions set forth in Exhibit "B" attached hereto, this franchise and Ordinance No 14458. This franchise grants the right, privilege, authority and franchise to operate, maintain, repair and construct mains and service lines and appurtenances as a part of its distribution system in, over, along, and under County roads and rights-of-way located within the area described in Exhibit "A"

2002 100 1031676

Res 3511

This franchise is granted subject to all of the terms and conditions contained herein, within Ordinance No 14458 and Exhibit "B", and shall expire in twenty-five years on 9/14, 2027.

Dated this 4 day of September, 20___.

KING COUNTY, WASHINGTON

BY _____

TITLE King County Executive

2002 100 1031676

The undersigned accepts all the rights, privileges, and duties of this franchise subject to all terms, conditions, stipulations, and obligations contained herein, within Ordinance 14458 and Exhibit "B"

CITY OF AUBURN
GRANTEE

BY _____

TITLE Mayor

Dated this 16th day of September, 2002

Unofficial Document

EXHIBIT " A"

Area A

BEGINNING AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 16, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M WITH THE SOUTHEASTERLY MARGIN OF THE RIGHT OF WAY FOR PRIMARY STATE HIGHWAY NUMBER 2, AKA STATE HIGHWAY 18,
THENCE NORTHEASTERLY ALONG SAID SOUTHEASTERLY MARGIN OF SAID RIGHT OF WAY FOR STATE HIGHWAY NUMBER 2 TO THE SOUTH LINE OF SECTION 34, TOWNSHIP 22 NORTH, RANGE 5 EAST, W.M ,
THENCE WESTERLY ALONG THE SOUTH LINE OF SAID SECTION 34 AND ALONG THE SOUTHERLY LIMITS OF THE CITY OF KENT TO THE SOUTHWEST CORNER OF SAID SECTION 34,
THENCE CONTINUING NORTHERLY AND WESTERLY ALONG THE WEST LINE OF SAID SECTION 34 AND THE SOUTHERLY LIMITS OF THE CITY OF KENT THROUGH SECTIONS 33 AND 32, TOWNSHIP 22 NORTH, RANGE 5 EAST, W.M. TO THE NORTHEAST CORNER OF THAT PORTION OF LAND ANNEXED BY THE CITY OF KENT BY CITY OF KENT ORDINANCE NUMBER 3171,
THENCE SOUTHERLY ALONG THE EAST BOUNDARY OF SAID KENT CITY LIMITS ESTABLISHED BY CITY OF KENT ORDINANCE NUMBER 3171 TO THE SOUTHEAST CORNER THEREOF, AND AN ANGLE POINT IN THE EASTERLY BOUNDARY OF THE CITY OF AUBURN CITY LIMITS AS ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 4710,
THENCE SOUTHERLY ALONG THE EASTERLY CITY LIMITS OF THE CITY OF AUBURN ANNEXED TO THE CITY OF AUBURN BY ORDINANCES 4710, 3266, AND 5370 TO THE EASTERLY EDGE OF THE GREEN RIVER,
THENCE SOUTHERLY ALONG THE EASTERLY EDGE OF THE GREEN RIVER TO THE NORTHERLY LINE OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 5346,
THENCE NORTHEASTERLY, EASTERLY AND SOUTHERLY ALONG THE EASTERLY CITY LIMITS OF THE CITY OF AUBURN ANNEXED TO THE CITY OF AUBURN BY ORDINANCES 5346, 5088, AND 5346 TO THE EAST-WEST CENTERLINE OF SECTION 17, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M.;
THENCE EASTERLY ALONG SAID EAST-WEST CENTERLINE OF SAID SECTION 17 AND ALONG THE EAST-WEST CENTERLINE OF SECTION 16, TOWNSHIP 21 NORTH, RANGE 5 EAST, W M. TO THE POINT OF BEGINNING

SITUATE IN KING COUNTY, WASHINGTON

2002 100 1001676

Area B

BEGINNING AT THE NORTHWEST CORNER OF THE SOUTH HALF OF SECTION 35, TOWNSHIP 22, RANGE 4, SOUTH ALONG THE WEST LINE OF SAID SECTION TO A POINT WHERE IT INTERSECTS WITH NORTH LINE OF SECTION 2, TOWNSHIP 21, RANGE 4 EAST, THENCE SOUTH ALONG SAID LINE TO ITS INTERSECTION WITH NORTHWEST CORNER OF SECTION 11, TOWNSHIP 21, RANGE 4, THENCE SOUTH ALONG SAID LINE TO ITS INTERSECTION WITH THE NORTHEAST CORNER OF SECTION 15, TOWNSHIP 21, RANGE 4 EAST, THENCE WEST ALONG THE NORTH LINE OF SECTION 15, TOWNSHIP 21, RANGE 4, TO THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID SECTION 15, THENCE SOUTH ALONG THE WEST LINE OF SAID SECTION 15, TO SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 15, THENCE EAST ALONG THE SOUTH LINE OF SAID SECTION 15 TO ITS INTERSECTION WITH THE NORTHWEST CORNER OF SECTION 23, TOWNSHIP 21, RANGE 4, THENCE SOUTH ALONG THE WEST LINE OF SAID SECTION 23, TO SOUTHWEST CORNER OF NORTHWEST QUARTER OF SAID SECTION 23, THENCE EAST ALONG THE SOUTH LINE OF THE NORTHWEST QUARTER OF ITS INTERSECTION WITH THE WEST LINE OF THE CORPORATE BOUNDARY OF THE CITY OF AUBURN LOCATED IN SAID SECTION 23, THENCE CONTINUING ALONG SAID CORPORATE BOUNDARY LOCATED IN SECTION 14, 11, 2 , 35, 22, 5, TO ITS NORTH LINE OF THE SOUTH HALF
OF SECTION 36, TOWNSHIP 22, RANGE 5 EAST, THENCE WEST ALONG SAID NORTH LINE TO ITS INTERSECTION WITH THE NORTHWEST CORNER OF THE SOUTH HALF OF SECTION 35, TOWNSHIP 22, RANGE 4 EAST, ALSO KNOWN AS THE TRUE POINT OF BEGINNING.

2002 100 1031676

Area C

THAT PORTION OF WHITE RIVER VALLEY HOME TRACTS SECOND ADDITION LOCATED IN THE WEST HALF OF SOUTHWEST QUARTER OF SECTION 31 TOWNSHIP 22 NORTH, RANGE 5 EAST, W M , DESCRIBED AS FOLLOWS

BEGINNING AT THE SOUTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 3823, THENCE NORTHERLY ALONG THE EAST BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3823 TO THE SOUTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 4347, THENCE NORTHERLY ALONG THE EAST BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4347 TO AN ANGLE POINT IN THE SOUTHERLY BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 4780 AND AMENDED BY CITY OF AUBURN ORDINANCE NUMBER 4843, THENCE NORTHERLY, EASTERLY AND NORTHERLY ALONG THE BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4843 TO THE SOUTHWESTERLY MARGIN OF

AUBURN WAY NORTH AND THE WESTERLY BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 2511, THENCE SOUTHEASTERLY ALONG THE WESTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 2511 TO THE NORTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 3621, THENCE WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3621 TO THE NORTHWEST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 3621, THENCE SOUTHERLY AND EASTERLY ALONG THE BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3621 TO THE WESTERLY LINE OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 2511; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 2511 TO THE NORTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 5412, THENCE WEST ALONG THE NORTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 5412 TO THE NORTHWEST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 5412; THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 5412 TO THE BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 2511; THENCE WEST ALONG SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 2511 TO THE POINT OF BEGINNING

SITUATE IN KING COUNTY, WASHINGTON

2002 100 1001676

Area D

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 31, AND THE SOUTHWEST QUARTER OF SECTION 32, ALL IN TOWNSHIP 22 NORTH, RANGE 5 EAST, W M , DESCRIBED AS FOLLOWS

BEGINNING AT THE NORTHWEST CORNER OF THAT PORTION OF LAND ANNEXED BY THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 4710,
THENCE SOUTHERLY ALONG THE WESTERLY BOUNDARY OF SAID AUBURN CITY LIMITS ESTABLISHED BY CITY OF AUBURN ORDINANCE NUMBER 4710 TO THE EASTERLY EDGE OF THE GREEN RIVER,
THENCE NORTHERLY ALONG SAID EASTERLY EDGE OF THE GREEN RIVER TO THE SOUTHERLY LINE OF THE CITY OF KENT CITY LIMITS,
THENCE EASTERLY ALONG SAID SOUTHERLY LINE OF THE CITY OF KENT CITY LIMITS TO THE POINT OF BEGINNING

SITUATE IN KING COUNTY, WASHINGTON

Unofficial Document

Area E

THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 17, TOWNSHIP 21 NORTH, RANGE 5 EAST, W M DESCRIBED AS FOLLOWS·

BEGINNING AT A POINT ON WESTERLY MARGIN OF THE GREEN RIVER AT THE INTERSECTION OF THE NORTHERLY BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 1543, THENCE WESTERLY AND NORTHERLY ALONG SAID NORTHERLY BOUNDARY THEREOF, TO A POINT ON THE WEST BOUNDARY OF THE EAST HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 17; THENCE NORTHERLY ALONG SAID WEST BOUNDARY OF THE EAST HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 17, A DISTANCE OF 320 FEET MORE OR LESS TO THE SOUTHERLY BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 4317, THENCE EASTERLY AND NORTHERLY ALONG THE EASTERLY BOUNDARY THEREOF TO THE WESTERLY MARGIN OF SAID GREEN RIVER, THENCE SOUTHEASTERLY ALONG SAID WESTERLY MARGIN OF THE GREEN RIVER TO THE POINT OF BEGINNING

SITUATE IN KING COUNTY, WASHINGTON

2002 100 1031676

Area F

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 17, TOWNSHIP 21 NORTH, RANGE 5 EAST, W M , KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS

BEGINNING AT THE NORTHWEST CORNER OF SAID SOUTHWEST QUARTER OF SECTION 17, THENCE SOUTHERLY ALONG THE WEST BOUNDARY OF SAID SOUTHWEST QUARTER OF SECTION 17 A DISTANCE OF 33.01 FEET TO THE SOUTH MARGIN OF EAST MAIN STREET (SE 328TH ST) EXTENDED TO THE WEST AND THE TRUE POINT OF BEGINNING, THENCE CONTINUING SOUTHERLY ALONG SAID WEST BOUNDARY OF THE SOUTHWEST QUARTER OF SECTION 17 TO THE NORTHWEST CORNER OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 1991, THENCE EASTERLY TO THE NORTHEAST CORNER OF SAID AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 1991, THENCE SOUTHERLY ALONG THE EAST BOUNDARY OF SAID AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 1991 TO THE NORTHERNMOST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 2085, THENCE EASTERLY ALONG SAID NORTHERNMOST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 2085 AND CONTINUING EASTERLY ALONG THE NORTHERNMOST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 2229 TO THE WESTERNMOST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 3525, THENCE NORTHERLY ALONG SAID WESTERNMOST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 3525 TO THE NORTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 3525, THENCE EASTERLY ALONG SAID NORTH BOUNDARY OF

AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 3525 TO THE EAST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 3525, THENCE SOUTHERLY ALONG THE EAST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 3525 TO THE NORTH MARGIN OF SECOND STREET SE (SE 330TH ST) AND THE NORTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5350, THENCE EASTERLY ALONG SAID NORTH MARGIN OF SECOND STREET SE AND SAID NORTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5350 TO THE SOUTHWEST CORNER OF LOT 1, BLOCK 2 OF THE PLAT OF EAST AUBURN GARDEN TRACTS AS RECORDED IN VOLUME 18 OF PLATS, PAGE 98, RECORDS OF KING COUNTY, WASHINGTON, THENCE SOUTHERLY ALONG THE WEST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5350 TO THE NORTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 4605, THENCE EASTERLY ALONG THE NORTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 4605 TO THE WEST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5505, THENCE NORTHERLY AND EASTERLY ALONG THE BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5505 TO THE WEST MARGIN OF THE GREEN RIVER, THENCE NORTHWESTERLY ALONG SAID WEST MARGIN OF THE GREEN RIVER TO THE SOUTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5084, THENCE WESTERLY ALONG SAID SOUTH BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5084 TO THE SOUTHWEST CORNER THEREOF, THENCE NORTHERLY ALONG THE WEST BOUNDARY OF AUBURN ANNEXATION DESCRIBED IN CITY OF AUBURN ANNEXATION ORDINANCE 5084,TO THE SOUTH MARGIN OF EAST MAIN STREET (SE 328TH ST), THENCE WESTERLY ALONG SAID SOUTH MARGIN OF EAST MAIN STREET TO THE TRUE POINT OF BEGINNING.

SITUATE IN KING COUNTY, WASHINGTON

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Area G

THAT PORTION SOUTH AUBURN GARDEN TRACTS LOCATED IN GOVERNMENT LOT 2 IN THE NORTHWEST QUARTER OF SECTION 30 TOWNSHIP 21 NORTH, RANGE 5 EAST, W M., DESCRIBED AS FOLLOWS

BEGINNING AT THE SOUTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 3726; THENCE NORTHERLY ALONG THE EAST BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3726 TO THE SOUTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 4138; THENCE NORTHERLY ALONG THE EAST BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4138 TO THE SOUTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 4665; THENCE NORTHERLY ALONG THE EAST BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4665 TO THE SOUTHERLY BOUNDARY THAT PORTION OF LAND ANNEXED TO THE CITY OF

AUBURN BY CITY OF AUBURN ORDINANCE 1279, THENCE EAST ALONG THE SOUTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE 1279 TO THE NORTHWEST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 3244, THENCE SOUTH ALONG THE WESTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE 3244 TO THE SOUTHWEST CORNER OF SAID PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 3244, THENCE EAST ALONG THE SOUTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3244 TO THE SOUTHEAST CORNER OF SAID PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 3244; THENCE NORTH ALONG THE EASTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3244 TO THE SOUTHERLY BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 1279; THENCE EAST ALONG THE SOUTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 1279 TO THE NORTHWEST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 1225, THENCE SOUTH ALONG THE WESTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 1225 TO THE NORTHERLY BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 3839, THENCE WESTERLY, NORTHERLY AND WESTERLY ALONG THE NORTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3839 TO THE NORTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 4449, THENCE WEST ALONG THE NORTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4449 TO THE SOUTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 4518, THENCE NORTH ALONG THE EASTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4518 TO THE NORTHEAST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE 4518, THENCE WEST ALONG THE NORTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 4518 TO THE EAST MARGIN OF "A" STREET SE AND THE EAST BOUNDARY OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ANNEXATION 1171, THENCE NORTH ALONG THE EASTERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 1171 TO THE SOUTHWEST CORNER OF THAT PORTION OF LAND ANNEXED TO THE CITY OF AUBURN BY CITY OF AUBURN ORDINANCE NUMBER 3726; THENCE EAST ALONG THE SOUTHERLY BOUNDARY OF SAID CITY LIMITS AS ESTABLISHED BY ORDINANCE NUMBER 3726 TO THE POINT OF BEGINNING

SITUATE IN KING COUNTY, WASHINGTON

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Consent

EXHIBIT "B"

TERMS AND CONDITIONS APPLICABLE TO UTILITIES FRANCHISES GRANTED BY KING COUNTY

THIS FRANCHISE is subject to the following terms and conditions:

1 DEFINITIONS

References to any County official or office also refers to any office that succeeds to any or all of the responsibilities of the named office or official. References to laws or "applicable laws" include federal, state, and local laws and regulations adopted pursuant to those laws; unless otherwise stated, references to laws include laws now in effect, as the same may be amended from time to time during the operation of this franchise. In addition, the following definitions shall apply:

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Cable Services The term "Cable Services" is used as defined in 47 United States Code 522 (5), as amended

Cable System The term "Cable System" is used as defined in 47 United States Code 522 (6), and King County Code 6.a 010 (J) as amended

County Road Rights-of-Way. The term "County Road Rights-of-Way" includes any road, street, avenue, or alley located within the area described in the attached Exhibit "A", it does not include recreational or nature trails except where the trails intersect or are within roads, streets, avenues or alleys

Director. The term "Director" refers to the chief executive of the King County Department of Transportation.

Grantee. The term "Grantee" refers to the City of Auburn, its successors and those assignees approved pursuant to paragraph 16 herein

Utility. The term "utility" refers either to the Grantee or, depending on the context, to any other person, firm, or corporation, public or private, which may hold a franchise to maintain and operate similar facilities in, under, over, across, and along any of the County property described in Exhibit "A"

Council. The term "Council" refers to the King County Council, acting in its official capacity.

Other Governing Body The term "Other Governing Body" refers to any public official or other public board or body as may have the power and jurisdiction to permit or regulate the installation and maintenance of utilities and other facilities in, under, over, across, and along any of the county property described in Exhibit "A"

2 ACCEPTANCE BY GRANTEES OF TERMS AND CONDITIONS

The full acceptance of this franchise and all of its terms and conditions shall be filed with the Clerk of the Council within thirty (30) days from _____, 20____, by the Grantee. Full acceptance of this franchise is a condition precedent to its taking effect, and unless this franchise is accepted within the time specified, this grant will be null and void and have no force or effect.

3 NON-EXCLUSIVE FRANCHISE

This franchise is not exclusive. It does not prohibit King County from granting franchises for other public or private utilities, in, under, over, across, and along any County property, including County road rights-of-way.

This franchise does not prevent or prohibit King County from constructing, altering, maintaining or using any County road rights-of-way covered by this franchise. King County retains full power to make all changes, relocations, repair, maintenance, etc as it may deem fit.

4. JURISDICTION

This franchise is intended to convey limited rights and interest only as to those roads and rights-of-way in which King County has an actual interest It is not a warranty of title or of interest in County road rights-of-way.

Whenever any of the County road rights-of-way as designated in this franchise, by reason of the subsequent incorporation of any Town or City or extension of the limits of any Town or City, shall later fall within the City or Town limits, this franchise shall continue in force and effect until such time as the incorporation and/or annexation is complete according to applicable State law, after which time the County will no longer have any responsibility for maintenance of any County roads, rights-of-way or other County property within the area of annexation/incorporation.

None of the rights granted to the Grantee shall affect the jurisdiction of King County over County road rights-of-way or the County's power to perform work upon its roadways, rights-of-way or appurtenant drainage facilities including by constructing, altering, renewing, paving, widening, grading, blasting or excavating

All of the rights herein granted shall be subject to and governed by this franchise; provided, however, that nothing in this franchise may be construed in any way as limiting King County's rights to adopt ordinances which are necessary to protect the health, safety and welfare of the general public

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5. REGULATION OF USE AND CONTROL

This franchise does not deprive King County of any powers, rights, or privileges it now has or may later acquire in the future to regulate the use of and to control the County road rights-of-way covered by this franchise

This franchise authorizes the use of County rights-of-way solely for the delivery by the Grantee of sewer service to it customers. Additional uses of County rights-of-way by the Grantee, including for cable communication services, shall first require a separate franchise from King County, which conforms to the requirements of K.C.C 6.27 as amended, or K C C. 6.27A as amended, and other applicable law.

Any use of the Grantee's equipment of facilities in County rights-of-way by others, including for telecommunication or cable communication services, is prohibited unless separately authorized and approved in writing by King County The Grantee agrees that prior to authorizing any person to use the Grantee's equipment or facilities located in County rights-of-way, the Grantee will require the user to provide the Grantee with an affidavit that it has obtained the necessary franchise or other approval from the County to operate and provide the proposed service in County rights-of-way. At least thirty (30) days prior to executing any agreement with a potential user for the use of the Grantee's equipment or facilities, the Grantee shall fax the affidavit to the King County Office of Cable Communication at 206-296-0842.

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6 EMINENT DOMAIN

This franchise and the limited rights and interests for the operation, maintenance, repair, and construction of Grantee's transmission and service lines and appurtenances are subject to the exercise of eminent domain In the event of an exercise of eminent domain by King County, the value to be attributed to all the rights and interests granted under this franchise shall not exceed the actual amount the Grantee paid to King County in obtaining this franchise.

7 ENFORCEMENT

Failure of King County, on one or more occasions to exercise a right or to require compliance or performance under this franchise or any applicable law, shall not be deemed to constitute a waiver of such right or a waiver of compliance or performance, unless such right has been specifically waived in writing Failure of King County to enforce or exercise its rights under any provision of this franchise or applicable law does not constitute a waiver of its rights to enforce or exercise a right in any other provision of this franchise or applicable law.

8 INDEMNITY AND HOLD HARMLESS

The Grantee agrees to indemnify and hold harmless King County as provided herein to the maximum extent possible under law Accordingly, the Grantee agrees for itself, its successors, and assigns to defend, indemnify and hold harmless King County, its appointed and elected officials, and employees from and against liability for all claims, demands, suits, and judgments, including

costs of defense thereof, for injury to persons, death, or property damage which is caused by, arises out of, or is incidental to Grantee's exercise of rights and privileges granted by this franchise The Grantee's obligations under this section shall include:

(a) Indemnification for such claims whether or not they arise from the sole negligence of the Grantee, the concurrent negligence of both parties, or the negligence of one or more third parties.

(b) The duty to promptly accept tender of defense and provide defense to the County at the Grantee's own expense

(c) Indemnification of claims made by the Grantee's own employees or agents.

(d) Waiver of the Grantee's immunity under the industrial insurance provisions of Title 51 RCW, which waiver has been mutually negotiated by the parties.

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In the event it is necessary for the County to incur attorney's fees, legal expenses, or other costs to enforce the provisions of this section, all such fees, expenses and costs shall be recoverable from the Grantee.

In the event it is determined that RCW 4 24.115 applies to this franchise agreement, the Grantee agrees to defend, hold harmless and indemnify King County to the maximum extent permitted thereunder, and specifically for its negligence concurrent with that of King County to the full extent of Grantee's negligence Grantee agrees to defend, indemnify and hold harmless the County for claims by Grantee's employees and agrees to waiver of its immunity under Title 51 RCW, which waiver has been mutually negotiated by the parties.

King County shall give the Grantee timely written notice of the making of any claim or of the commencement of any such action, suit, or other proceeding covered by the indemnity in this section. In the event any such claim arises, the County or any other indemnified party shall tender the defense thereof to the Grantee and the Grantee shall have the duty to defend, settle, or compromise any claims arising hereunder and the County shall cooperate fully therein

Notwithstanding the above, the County shall have no obligation to tender a defense as a condition of the indemnity where there is a material conflict between the interests of the Grantee and King County.

9 VACATION

If at any time King County vacates any County road rights-of-way covered by this franchise, King County will not be held liable for any damages or loss to the Grantee by reason of such vacation King County may, after giving thirty (30) days written notice to the Grantee, terminate this franchise with respect to any County road rights-of-way vacated

10. REPAIR, REMOVAL OR RELOCATION

The Grantee hereby covenants, at its own expense, to repair, remove, or relocate existing facilities including all appurtenant facilities and service lines connecting its system to users, within King County road rights-of-way if such repair, removal, or relocation is required by King County for any County road purpose Such repair, removal, or relocation shall not be unreasonably required

The grantee shall, at no expense to the County, adjust, remove or relocate existing facilities within County road rights-of-way, including all appurtenant facilities and service lines connecting its system to users, if the County determines such adjustment, removal or relocation is reasonably necessary to allow for an improvement or alteration planned by the County in such road right-of-way The County shall give the Grantee written notice of such requirement as soon as practicable, at the beginning of the pre-design stage for projects that are part of the County's capital improvement program, including such available information as is reasonably necessary for the Grantee to plan for such adjustment, removal or relocation

For projects that are a part of the County's capital improvement program, in addition to any other notice given to the Grantee, the County shall provide a vertical and horizontal profile of the roadway and drainage facilities within it, both existing and as proposed by the County, and the proposed construction schedule; notwithstanding any permit conditions that may later be applied to the County project, this initial design information shall be given at least 180 days before construction is scheduled to begin, except in cases of urgent construction or emergencies The Grantee shall respond to this notice, and to any later notices of revised designs based on permit conditions, within no more than thirty (30) days by providing to the County the best available information as to the location of all of the Grantee's facilities, including all appurtenant facilities and service lines connecting its system to users and all facilities that it has abandoned, within the area proposed for the public works project

The County shall offer the Grantee the opportunity to participate in the preparation of bid documents for the selection of a contractor to perform the public works project as well as all required adjustments, removals or relocations of the Grantee's facilities Such bid documents shall provide for an appropriate cost allocation between the parties The County shall have sole authority to choose the contractor to perform such work The Grantee and the County may negotiate an agreement for the Grantee to pay the County for its allocation of costs, but neither party shall be bound to enter into such an agreement Under such an agreement, in addition to the Grantee's allocation of contractor costs, the Grantee shall reimburse the County for cost, such as for inspections or soils testing, related to the Grantee's work and reasonably incurred by the County in the administration of such joint construction contracts Such costs shall be calculated as the direct salary cost of the time of County professional and technical personnel spent productively engaged in such work, plus overhead costs at the standard rate charged by the County on other similar projects, including joint projects with other County agencies

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11. REQUIREMENT OF CONSTRUCTION PERMITS

The Grantee, its successors or assigns, has the right, privilege, and authority to enter the County road rights-of-way for the purpose of operating, maintaining, repairing or construction its transmission and service lines and appurtenances on the condition that it obtains permits approved by the Director and Property Services Division and, when applicable, by the Department of Development and Environmental Services. Applications for work permits shall be presented to the Property Services Division, which may require copies of plans, blueprints, cross-sections, or further detailing of work to be done In the event of an emergency, the Grantee may immediately commence the necessary work and shall apply the next business day for the work permit Any work done, whether by Grantee, its contractors, or third parties will include necessary paving, patching, grading and any other reasonably necessary repair or restoration to the County road rights-of-way. All work shall be done to the satisfaction of the Director.

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All equipment, lines and appurtenances which are used in the operation, maintenance, repair or construction of the Grantee's service and which are located within the County road rights-of-way shall be considered to be part of the Grantee's system and shall be the responsibility of the Grantee. All permits for the operation, maintenance, repair or construction of said system shall be applied for and given in the name of the Grantee, who will be responsible for all work done under the permit The Grantee remains responsible whether the work is done by the Grantee, its contractors, or by third parties

The Grantee shall post a bond to King County in the amount necessary for road restoration. The amount of the bond shall be set by the Department of Transportation, Roads Services Division and shall be filed with the Property Services Division before the issuance of any permit.

The Grantee shall, at no expense to the County, assume the following obligations with respect to the facilities connected to its system that are within County road rights-of-way and which it does not own, including appurtenant facilities and service lines connecting its system to users

(a) The Grantee shall apply for, upon request and on behalf of the owner of the facilities, a County right-of-way construction permit for any repairs required for such facilities; provided such owner agrees to reimburse the Grantee for all costs incurred by the Grantee and any other reasonable conditions the Grantee requires as a precondition to applying for the permit All work to be performed in the County right-of-way shall comply with all conditions of the County permit and all applicable County requirements. The Grantee may at its option perform any part of the repair with its own forces or require the owner to employ a contractor for that purpose, provided such contractor is approved by the County;

(b) In the event that the County determines emergency repair of such facilities is necessary to halt or prevent significant damage to County road rights-of-way or significant threats to the health, safety and welfare of parties other than the owner or the occupants of the building served by such facilities, the Grantee shall take prompt

remedial action to correct the emergency to the County's approval, which the County shall not unreasonably withhold,

(c) When the County or its contractor provides notice to the Grantee, pursuant to RCW 19.122, of its intent to excavate within County road rights-of-way, the Grantee shall provide to the County or its contractor the best information available from the Grantee's records or, where reasonable, from the use of locating equipment as to the location of such facilities, including surface markings where these would reasonably be of use in the excavation. If the Grantee fails to make good faith efforts to provide the above information within the deadlines provided by RCW 19 122, the Grantee shall hold the County harmless for all reasonable costs that result from damage to such facilities if such damage occurs as a result of the failure to provide such information. Nothing in this subsection is intended or shall be construed to create any rights in any third party or to form the basis for any obligation or liability on the part of the County or the Grantee toward any third party, nor is anything in this subsection intended to be construed to alter the rights and responsibilities of the parties under RCW 19.122, as amended

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12. RESTORATION OF COUNTY ROAD RIGHTS-OF-WAY

After work on, under or adjacent to County road rights-of-way, the Grantee is responsible for and will leave all County road rights-of-way in as good a condition as they were in before any work was done. In the event that the Grantee, its contractors, or third parties working under permit should fail to restore County road rights-of-way to the satisfaction of the Director, King County may make such repairs or restorations as are necessary to return the County road rights-of-way to its pre-work condition. Upon presentation of an itemized bill for repairs or restorations, including the costs of labor and equipment, the Grantee will pay the bill within thirty (30) days If suit is brought upon the Grantee's failure to pay for repair and restoration, and if judgment in such a suit is entered in favor of King County, then the Grantee shall pay all of the actual costs, including interest from the date the bill was presented, disbursements, and attorney's fees and litigation related costs incurred.

13 PERFORMANCE OF WORK

The Grantee covenants that in consideration for the rights and privileges granted by this franchise, all work performed by the Grantee on County road rights-of-way shall conform to all County requirements including, but not limited to, the requirements of the current edition of the County Road Standards in force when the work is performed and all traffic control shall also conform to the current edition of the Manual of Uniform Traffic Control Devices in force when the work is performed.

14 BLASTING REQUIREMENTS

The right to operate, maintain, repair and construct Grantee's distribution and service lines and appurtenances granted by this franchise does not preclude King County, its agents or contractors

from blasting, grading, or doing other road work to the Grantee's lines and appurtenances Except in the case of an emergency, the Grantee will be given ten (10) business days written notice of any blasting so that the Grantee may protect its lines and appurtenances If the Grantee notifies the County within ten (10) business days that the facilities will have to be relocated to protect them from blasting, the County will defer the blasting for up to ninety (90) days from the date of the original notice. In no event will the Grantee be given less than two (2) business days written notice of any blasting Notification of any excavation shall be provided through the One-Call System as provided by RCW 19.122, as hereinafter amended.

15 SURVEY MARKERS AND MONUMENTS

It shall be the responsibility of the Grantee performing any construction work in the County road rights-of-way to restore any survey markers or monuments disturbed by such construction in accordance with RCW 58.09.130, and as hereinafter amended

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16. ASSIGNMENT

The Grantee shall not have the right to assign this franchise without the consent of the Metropolitan King County Council given by Ordinance No assignment shall be effective unless an acceptance by the assignee of all rights, conditions, terms, provisions, and responsibilities contained within the franchise, as well as surety bonds, which the Council deems necessary to be posted, are received. Council approval of the assignment may be made subject to the assignee's acceptance of new or modified terms of the franchise

17. EXPIRATION AND RENEWAL

To the extent described in Exhibit "A", all rights granted by this franchise to County road rights-of-way outside incorporated Towns and Cities apply to all existing County road rights-of-Way improved and unimproved and to all County road rights-of-way acquired by King County during the term of this franchise

If the Grantee has initiated a renewal of this franchise before it expires, the County may, at its sole discretion, extend the term of the franchise on a month to month basis for up to one year. Should the County elect to extend the franchise, written notice shall be provided to the Grantee before the franchise expiration date

If the Grantee has not applied for a renewal of this franchise before it expires, King County has the right to remove or relocate any lines and appurtenances of the Grantee as is reasonably necessary for the public's health, welfare, safety, or convenience including, but not limited to, the safe operation of County roads, franchise holders, or for the construction, renewing, altering, or improving of any County road right-of-way, or for the installation of lines and/or facilities of other franchise holders Grantee shall be liable for the costs incurred in any removal or relocation of its lines and appurtenances under this section Costs include the expense of labor and equipment

Upon expiration of this franchise, the Grantee shall continue to be responsible for the operation and maintenance of existing facilities in the County road rights-of-way until removed, assigned to another franchised utility or abandoned; however, the Grantee shall not have the right to provide additional services or construct new facilities. King County will issue permits required for the repair and maintenance of the existing facilities in accordance with K.C.C. 14.44 055 as amended and Section 11 of this franchise. This section and sections 8, 10-13 and 15 of this franchise shall continue in force until such time as the lines are removed from County road rights-of-way, assigned to another franchised utility, or abandoned in place with the approval of the Manager of the Department of Transportation, Road Services Division.

18. RESERVATION OF RIGHTS

King County specifically reserves for itself the right to impose a utility tax on the Grantee if State of Washington grants such taxing authority and the local option is exercised by the King County Council

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King County also specifically reserves the right to exercise authority it has or may acquire in the future to secure and receive fair market compensation for the use of its property, pursuant to an ordinance. If King County elects to exercise such authority, the fair market compensation requirement for Grantee shall be imposed by ordinance not less than one hundred eighty (180) days after written notice ("Compensation Notice") is delivered to the Grantee, said Compensation Notice identifying with specificity the definition, terms and/or formula to be used in determining such fair market compensation. Acceptance of King County's definition terms and/or formula identified in the Compensation Notice will occur if the Grantee accepts in writing within thirty (30) days of receipt of the Compensation Notice, or, if Grantee takes no action in writing within thirty (30) days of receipt of the Compensation Notice, in which case the applicable ordinance that the King County Council passes will be determinative

Nothing in this section shall be construed as an agreement by the Grantee of King County's right to exercise authority it has or may acquire in the future to secure and receive fair market compensation for the use of property. Nothing in this section shall be construed to prohibit the Grantee from challenging, in King County Superior Court or a court of competent jurisdiction, the legality of such right

Grantee's rejection of the definition, terms, and/or formula identified in the Compensation Notice will only occur if such rejection is in written form, identifying with specificity the grounds for such rejection, and delivered to King County within thirty (30) days after receipt of the Compensation Notice, in which case the below identified arbitration terms will apply.

(a) The Grantee and King County will select one arbitrator each, and the two selected arbitrators will select a third arbitrator. If the two arbitrators have not selected a third arbitrator within thirty (30) days after the selection of the last selection of the two, either the Grantee or King County may apply to the presiding judge of the King County Superior Court for the appointment of a third arbitrator. The three

arbitrators will determine the method for determining the fair market compensation for the County property used by the Grantee The arbitration procedure employed shall be consistent with the rules and procedures of the American Arbitration Association The decision of a majority of the arbitrators will bind both the Grantee and King County. At the conclusion of the arbitration, the arbitrators will submit written reports to the Grantee and King County, which shall contain all pertinent evidence that, led to their conclusion together with an explanation of their reasoning for such conclusion.

(b) The fees of the arbitrators selected by each party shall be paid by that party and the fees of the third arbitrator shall be paid one-half by the County and the Grantee. The County and the Grantee shall share the other costs of the proceeding equally

(c) In event that the question of fair market compensation is not resolved prior to the effective date specified by the ordinance authorizing said compensation, the arbitration decision will be applied retroactively to the effective date in the ordinance The Grantee will pay the retroactive sum plus interest in the amount of twelve percent (12%) per annum

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Nothing in this franchise may be construed to limit the exercise of authority now or later possessed by the County or any other governing body having competent jurisdiction to fix just, reasonable and compensatory rates or other requirements for services under this franchise. Nothing in this section shall be construed to prohibit the Grantee from challenging, in King County Superior Court or a court of competent jurisdiction, the authority of the County or any other governing body to fix rates or other requirements for services.

19. COMPLIANCE WITH LAWS

Grantee shall conform to all applicable federal, state and local laws and regulations including, but not limited to, the State Environmental Policy Act and King County environmental standards and ordinances.

20 NON-DISCRIMINATION CLAUSE

In all hiring or employment made possible or resulting from this franchise agreement, there shall be no discrimination against any employee or applicant for employment because of sex, sexual orientation, age, race, color, creed, national origin, marital status or the presence of any sensory, mental, or physical handicap, unless based upon a bona fide occupational qualification, and this requirement shall apply to but not be limited to the following: employment, advertising, lay-off or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship

No person shall be denied, or subjected to discrimination in receipt of the benefit of any services or activities made possible by or resulting from this agreement on the grounds of sex, sexual

orientation, race, color, creed, national origin, age except minimum age and retirement provisions, marital status, or the presence of any sensory, mental or physical handicap

Any violation of this provision shall be considered a violation of a material provision of this agreement and shall be grounds for cancellation, termination or suspension in whole or in part, of the agreement by the County and may result in ineligibility for further County agreements.

The Grantee shall make the best efforts to make opportunities for employment and/or contracting services available to women and minority persons The Grantee recognizes that King County has a policy of promoting affirmative action, equal opportunity and has resources available to assist Grantee in these efforts.

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21. PENALTY FOR VIOLATION OF CONDITIONS

If the Grantee shall violate or fail to comply with any of the material terms, conditions, or responsibilities of this franchise through neglect or failure to obey or comply with any notice given the Grantee under the provisions of this franchise or if the Grantee abandons its franchise, the Council may revoke this franchise King County shall give written notice of its intent to revoke this franchise. A public hearing shall be scheduled within forty-five (45) days following the notification. The decision to revoke this franchise will become effective ninety (90) days following the public hearing if the County, by ordinance, finds·

A That the Grantee has not substantially cured the violation or failure to comply which was the basis of the notice; or

B. that the violation or failure to comply which was the basis of the notice is incapable of cure, or

C that the Grantee has repeatedly violated or failed to comply with any of the material terms, conditions, or responsibilities of the franchise, even though the individual violations have been cured, and

D. that the revocation of the franchise is in the public interest.

During the forty-five (45) days following the notification, the Grantee shall have the opportunity to remedy the failure to comply

22 RIGHT OF APPEAL

Decisions, requirements, or approvals of the Director are binding on the parties to this document Appeals from the Director's determinations will be made by filing a complaint with the King County Superior Court

23 SEVERANCE

This franchise gives effect to purposes and uses, which are consistent with economical and efficient services rendered in the public interest. If any provision of this franchise, or its application is determined to be invalid by a court of law, then the remaining provisions of this franchise shall continue and remain valid unless the dominant purpose of the franchise would be prevented or the public interest is no longer served

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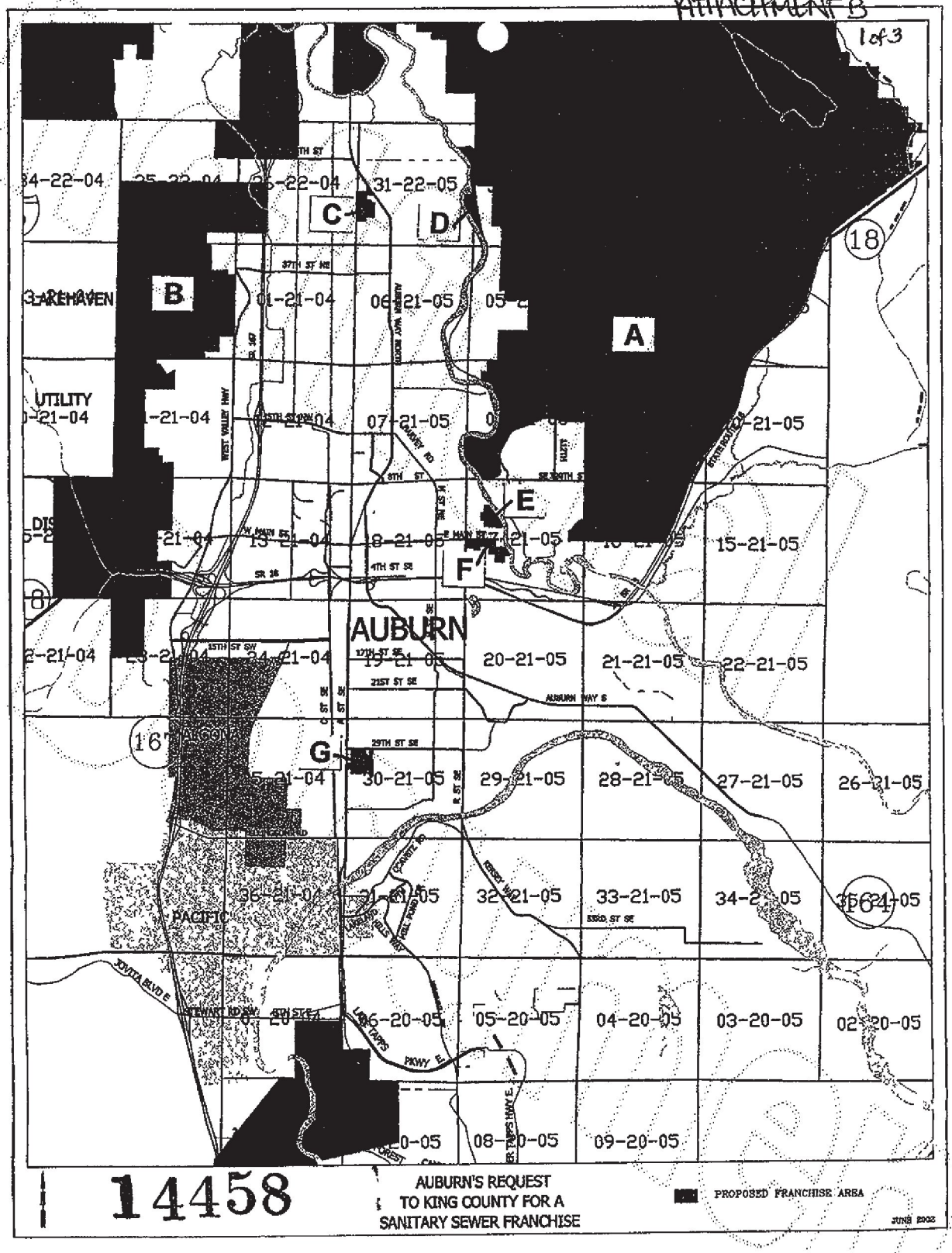
Unofficial Document

ATTACHMENT B
1 of 3

2002 100 1001676



14458

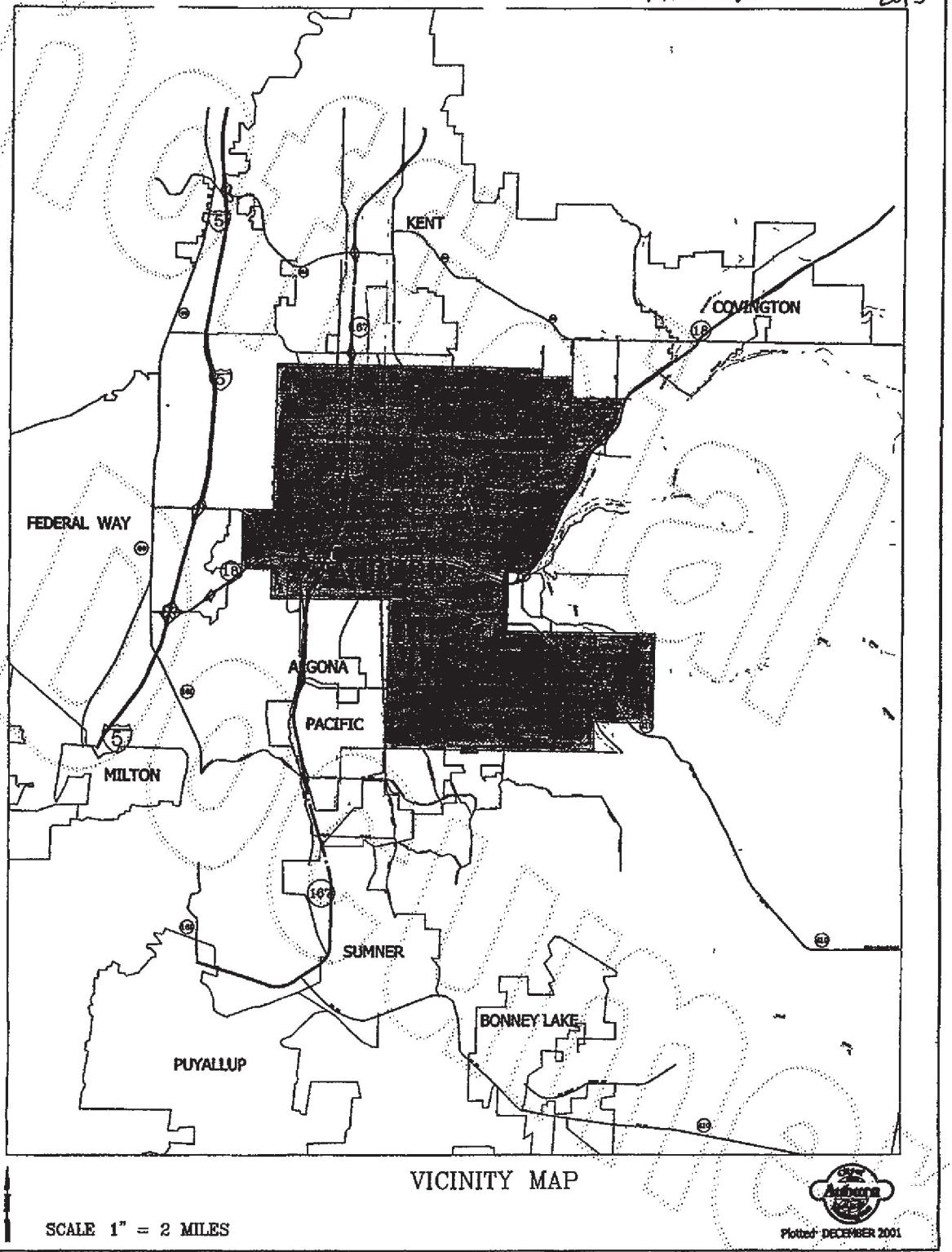
AUBURN'S REQUEST
TO KING COUNTY FOR A
SANITARY SEWER FRANCHISE

JUNE 2002

14458

ATTACHMENT B 2 of 3

2002 100 1001676



VICINITY MAP

SCALE 1" = 2 MILES

Plotted: DECEMBER 2001

14458

ATTACHMENT B 3 of 3

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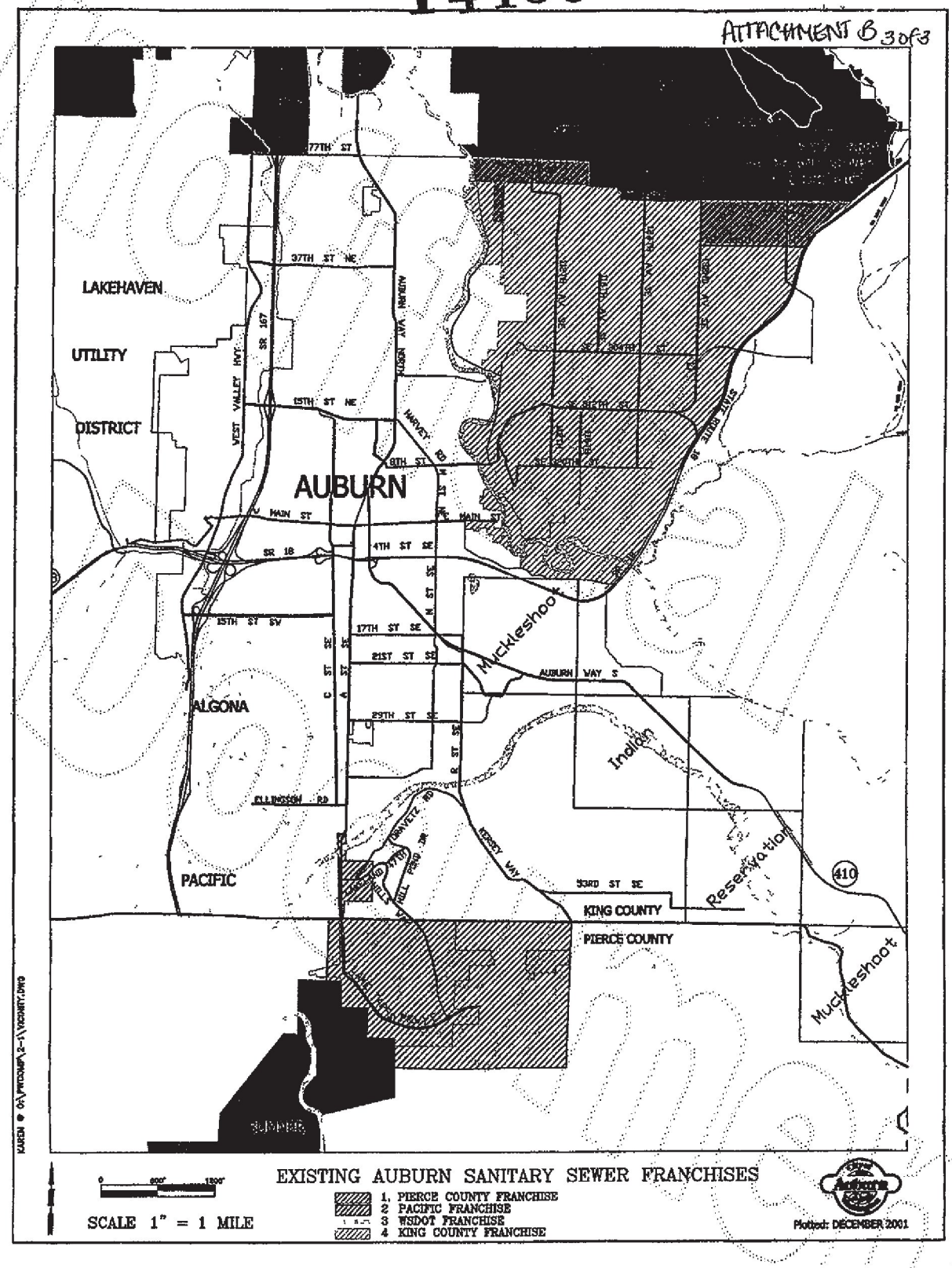

APPENDIX A2

SOOS CREEK WATER AND SEWER DISTRICT

- Service Area Boundaries (Resolution 3321)

RESOLUTION NO. 3321

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES BETWEEN THE CITY OF AUBURN AND THE SOOS CREEK WATER AND SEWER DISTRICT.

WHEREAS, pursuant to RCW 35A.11.040, Auburn has the legal authority to exercise its powers and perform any of its functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn has the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn has the legal authority to maintain a sewerage system; and

WHEREAS, pursuant to RCW 57.08.044, Soos Creek Water and Sewer District has the legal authority to provide sewer service to property owners in areas outside existing district boundaries; and

WHEREAS, pursuant to RCW 57.08.044, Soos Creek Water and Sewer District has the legal authority to enter into contracts with any municipal corporation for the purpose of providing sewer service to those property owners outside the existing district boundaries.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

Section 1. The Mayor and City Clerk of the City of Auburn are herewith authorized to execute an Interlocal Agreement establishing sanitary sewer service boundaries between the City of Auburn and Soos Creek Water and Sewer District District. A copy of said Agreement is attached hereto, denominated as Exhibit "1" and made a part hereof as though set forth in full herein.

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

DATED this 20th day of February, 2001.

CITY OF AUBURN

Charles A. Booth

CHARLES A. BOOTH
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Michael J. Reynolds,
City Attorney



Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):
10/17 PNWT W-8384-12

INTERLOCAL AGREEMENT BETWEEN CITY OF AUBURN AND THE SOOS CREEK WATER & SEWER DISTRICT FOR THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

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Grantor(s)/Borrower(s) (Last name first, then first name and initials)

CITY OF AUBURN & SOOS CREEK WATER & SEWER DISTRICT

Grantee/Assignee/Beneficiary: (Last name first)

CITY OF AUBURN & SOOS CREEK WATER & SEWER DISTRICT

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page ____ of document.

Assessor's Property Tax Parcel/Account Number

PER RCW 39.34

☐ Assessor Tax # not yet assigned

Said document(s) were filed for record by Pacific Northwest Title as accommodation only. It has not been examined as to proper execution or as to its effect upon title.

SOOS CREEK WATER AND SEWER DISTRICT and CITY OF AUBURN INTERLOCAL AGREEMENT FOR THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into this 21st day of March, 2001, by and between the **SOOS CREEK WATER AND SEWER DISTRICT**, a Washington municipal corporation (hereinafter referred to as "Soos Creek"), and the **CITY OF AUBURN**, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35A.11.040, Auburn has the legal authority to exercise its powers and perform any of its functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn has the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn has the legal authority to maintain a sewerage system; and

WHEREAS, pursuant to RCW 57.08.044, Soos Creek has the legal authority to provide sewer service to property owners in areas outside existing district boundaries; and

WHEREAS, pursuant to RCW 57.08.044, Soos Creek has the legal authority to enter into contracts with any municipal corporation for the purpose of providing sewer service to those property owners outside the existing district boundaries, and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, Auburn desires new development within it's Potential Annexation Area to complete a Pre-annexation agreement with Auburn prior to receiving a certificate of sanitary sewer availability; and

WHEREAS, portions of the Soos Creek sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of Auburn's Potential Annexation Area; and

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WHEREAS, Auburn has evaluated and determined it is not cost feasible to provide sewer service to those properties located within Auburn's Potential Annexation Area adjacent to Soos Creek's sanitary sewer infrastructure; and

WHEREAS, the parties desire to allow Soos Creek to construct, reconstruct, repair and maintain sewer facilities as necessary, and to authorize connections for service to noted areas, or portions thereof; and

WHEREAS, Soos Creek's sewer service to these areas will provide for maximum efficient use of existing and future facilities together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. **Sewer Service Area.** The parties have agreed to a permanent sewer service area boundary between them. The boundary is graphically depicted on the map attached hereto as Exhibit "A", which is by this reference incorporated herein. Both parties further agree that Soos Creek in providing sewer service to the area shown on Exhibit "A", as "Area To Be Served By Soos Creek", shall be furnishing sewer service to properties within Auburn's Potential Annexation Area. Soos Creek shall provide service in accordance with and subject to the terms and conditions of this Agreement.

2. **Service Area Responsibility.** Auburn shall have responsibility to provide sanitary sewer service to the area(s) on Auburn's side of the respective service area boundaries as delineated by this agreement, whether or not annexed to Auburn, and subject to such reasonable conditions and terms of service as Auburn deems appropriate. Soos Creek shall have responsibility to provide sanitary sewer service to the area(s) on Soos Creek's side of the respective service area boundaries as delineated by this agreement, whether or not annexed to Auburn, and subject to such reasonable conditions and terms of service as Soos Creek deems appropriate. Auburn hereby gives consent to Soos Creek for such service within Soos Creek's corporate boundaries as they presently exist, or as they may be modified in the future by annexation. Soos Creek shall be responsible for obtaining all necessary governmental franchises, approvals, easements and permits for the installation of said sewerage system within their delineated boundary.

3. **Sewer Availability Certificates.** Both parties acknowledge that Auburn may exercise planning jurisdiction over territory to which it will not provide sanitary sewer service in accordance with this agreement. Auburn hereby agrees that its planning shall be for sanitary sewer service to be provided by Soos Creek in those areas shown in Exhibit "A" as Soos Creek's service area; provided, however, that commencing on March 1, 2001, Soos Creek sewer availability certificates for all

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service areas to be served by Soos Creek within Auburn and/or Auburn's Potential Annexation Area (PAA) in accordance herewith, shall be issued to applicants for sewer service only through Auburn.

4. Soos Creek Comprehensive Sewer Planning Area. The terms of this agreement will be included as an element of Soos Creek's Comprehensive Sewerage Plan. Soos Creek will submit to Auburn all Comprehensive Sewerage Plans thereto involving area and/or system improvements within Auburn's planning area. The Comprehensive Sewerage Plans and amendments shall be in compliance with Auburn's Standards for sanitary sewer service within Auburn and/or Auburn's PAA, except where preexisting facilities may differ from Auburn's standards. As facilities are replaced or as new facilities are planned and constructed within Auburn and/or Auburn's PAA, they shall conform to Auburn's service and facility standards for sanitary sewer service then in effect.

5. Auburn Comprehensive Plan. The terms of this agreement will be included as an element of the sewerage portion of Auburn's Comprehensive Plan, and Soos Creek's Comprehensive Plan.

6. Future Annexations. Each of the parties agree that Soos Creek shall provide sanitary sewer service to the areas shown in Exhibit "A" without regard to the present corporate limits of the parties, and without regard to future corporate limits as they may be amended by annexation to either party.

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7. Reliance. Each party hereto acknowledges that the terms hereof will be relied upon by the other in its comprehensive planning to meet the needs of the service area designated herein.

8. Liability. Neither party to this agreement shall be liable for any failure or interruption of service in the service area of the other party, as designated herein, except as may be specifically caused by the other party.

9. Government Approvals. The parties will give notice of the adoption of this Agreement to Metropolitan/King County, to the Department of Ecology, to the Department of Health, and to any other agency with jurisdiction or mission relevant to the terms hereof, and shall cooperate and assist in all reasonable manner in procuring any necessary approvals hereof by those agencies.

10. Boundary Review Board. In the event that implementation of the terms hereof results in permanent sewer service to areas that will be outside the respective service boundaries of Soos Creek or Auburn, the parties will at the time of such service jointly seek approval of the King County Boundary Review Board in accordance with R.C.W. 36.93.090.

11. Service Amendments. Any changes to the service areas described herein shall be by mutual agreement. Each party may give permission to the other on a case-by-case basis to provide service by one party into the other party's adjacent or nearby service area based upon considerations of economic efficiency for providing the service with mutual consent of Auburn's Director of Public Works and Soos Creek's District Manager.

12. Alteration, Amendment, Modification, or Termination. Soos Creek and Auburn hereby reserve the right to alter, amend modify or terminate the terms and conditions of this Agreement upon consent of both Parties given in writing.

13. Indemnification and Hold Harmless. Each Party hereto agrees to protect, defend, and indemnify the other Party, its officers, officials, employees and agents from any and all cost, claims judgements and/or awards of damages, arising out of or in any way resulting from the Party's default, failure of performance, or negligent conduct associated with this agreement, by the Party, its employees, subcontractors or agents. Each Party agrees that its obligations under this provision extend to any claim, demand, and/or cause of action brought by or on behalf of any of its employees, or agents. The foregoing indemnity is specifically and expressly intended to constitute a waiver of each Party's immunity under Washington's Industrial Insurance Act, RCW Title 51, as respects the other Party only, and only to the extent necessary to provide each Party with a full and complete indemnity of claims made by the other Party's employees. The Parties acknowledge that these provisions were specifically negotiated and agreed upon by them.

In the event either Party incurs any costs including attorney fees to enforce the provisions of this article and prevails in such enforcement action, all such costs and fees shall be recoverable from the losing Party.

The provisions of this section shall survive the expiration or earlier termination of this agreement with regard to any event that occurred prior to or on the date of such expiration or earlier termination.

14. Dispute Resolution. In the event that any dispute arises between the Parties, either Party may request in writing that the issue in dispute be resolved by Mediation and, if necessary, binding Arbitration. In the event the matter cannot be resolved by the mediation process then it shall go promptly to binding Arbitration with no right of appeal. Arbitration shall be by the American Arbitration Association, or by such other entity as the Parties agree.

15. Sanctity of Agreement. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the

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terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

16. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Soos Creek or Auburn regarding provision of sewer service, except as specifically set forth herein.

SOOS CREEK WATER AND SEWER DISTRICT

Approved by Resolution No. 2141-S of the Soos Creek Water and Sewer District, Washington, at its regular meeting held on the 21st day of March, 2001.

By:

~~Ben Spear~~, President of Board
Karen L. Webster

Attest:

Secretary of Board
Philip W. Sullivan

Approved as to form:

Soos Creek Attorney
Michael R. Harris

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CITY OF AUBURN

Approved by Resolution No. 3321 of the City of Auburn, Washington, at its regular meeting held on the 20th day of February, 2001.

By:

Charles A. Booth, Mayor

Attest:

Danielle Daskam, City Clerk

THE CITY OF AUBURN CORPORATE SEAL

Approved as to form:

Michael Reynolds, City Attorney

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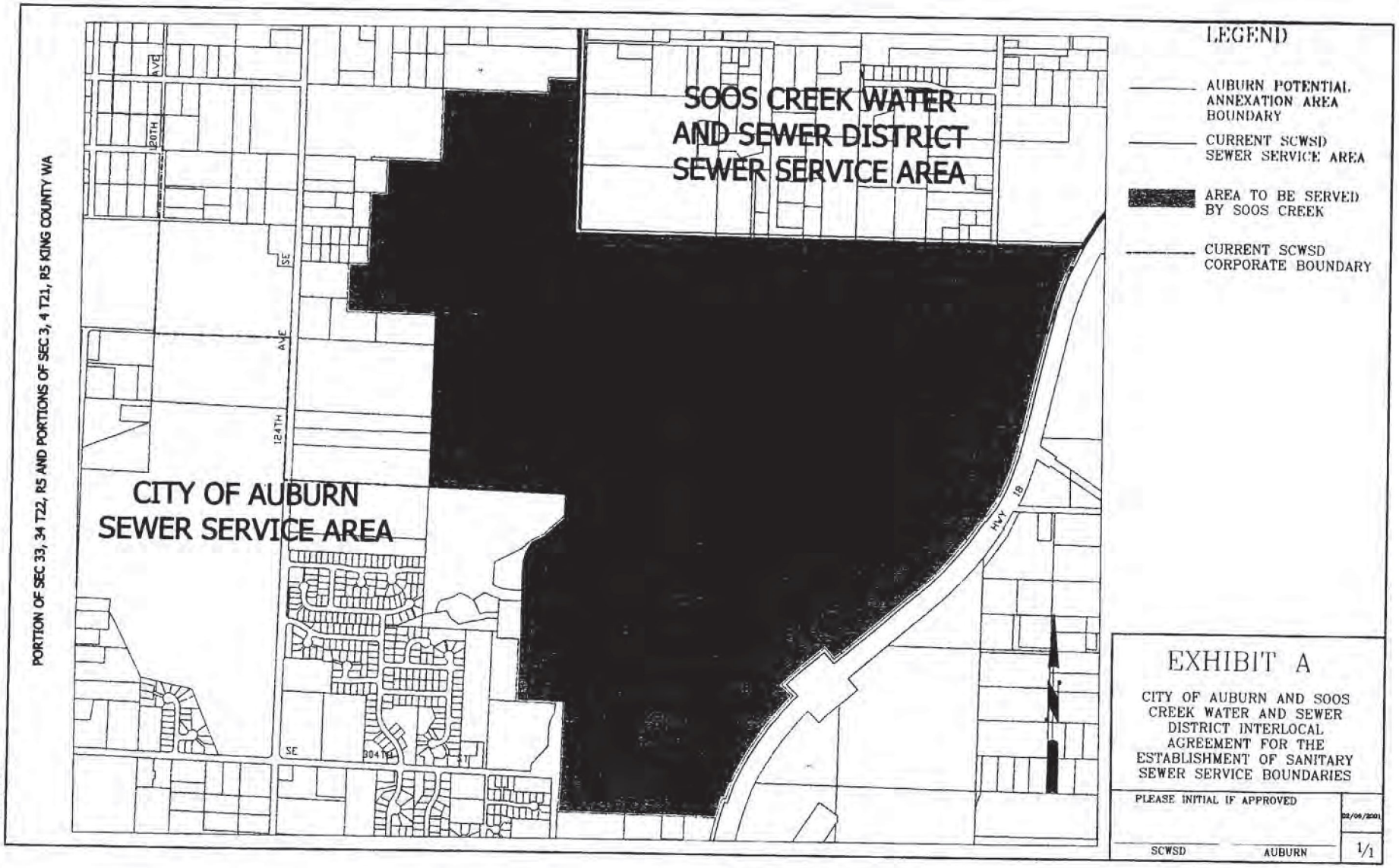

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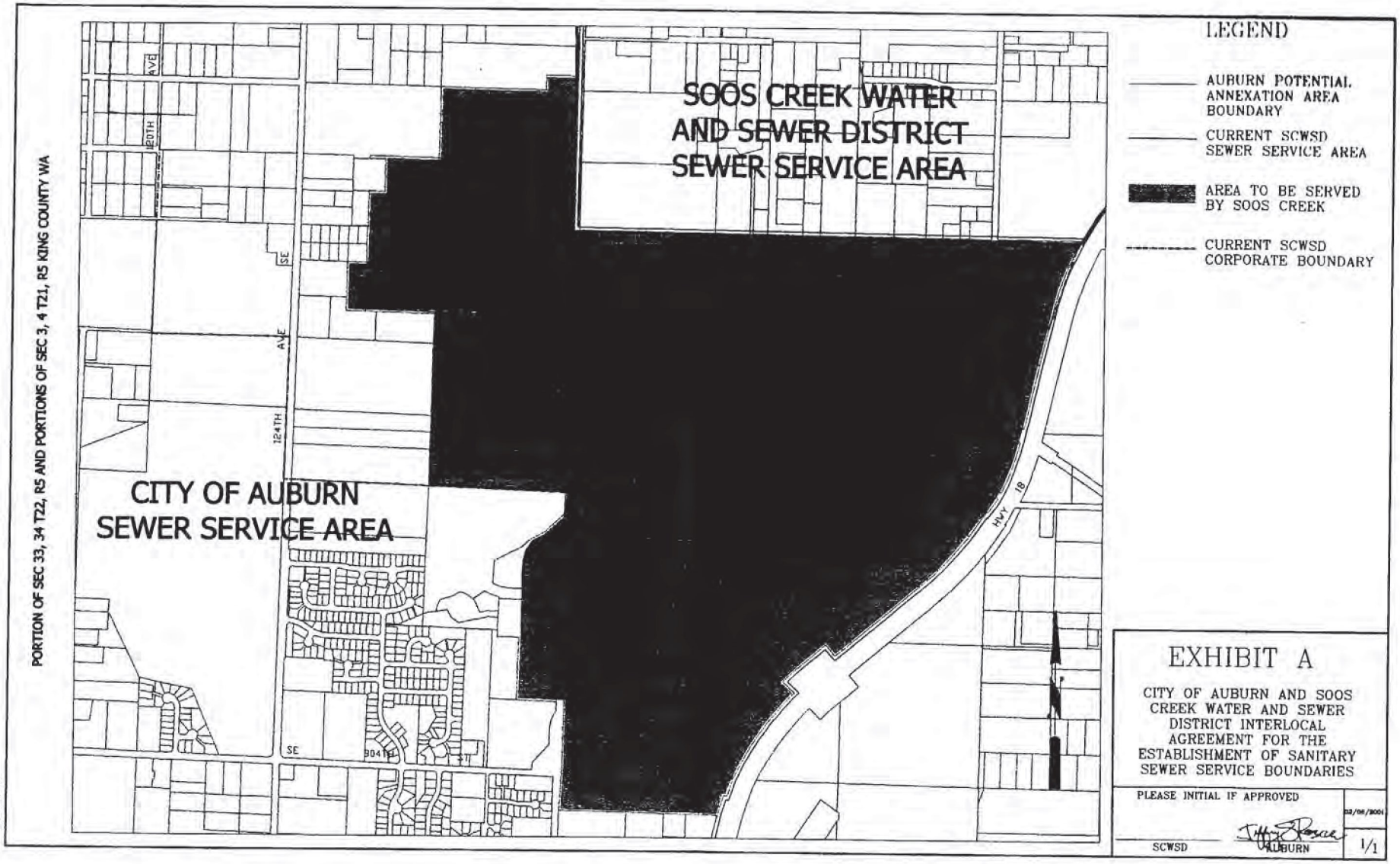

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JUNE 2000

LEGEND

- SCWSD CORPORATE BOUNDARY
- SCWSD SEWER PLANNING AREA BOUNDARY
- CITY OF KENT CORPORATE BOUNDARY
- CITY OF AUBURN SEWER SERVICE AREA BOUNDARY
- SEWER SERVICE DIVISION LINE

EXHIBIT "A"

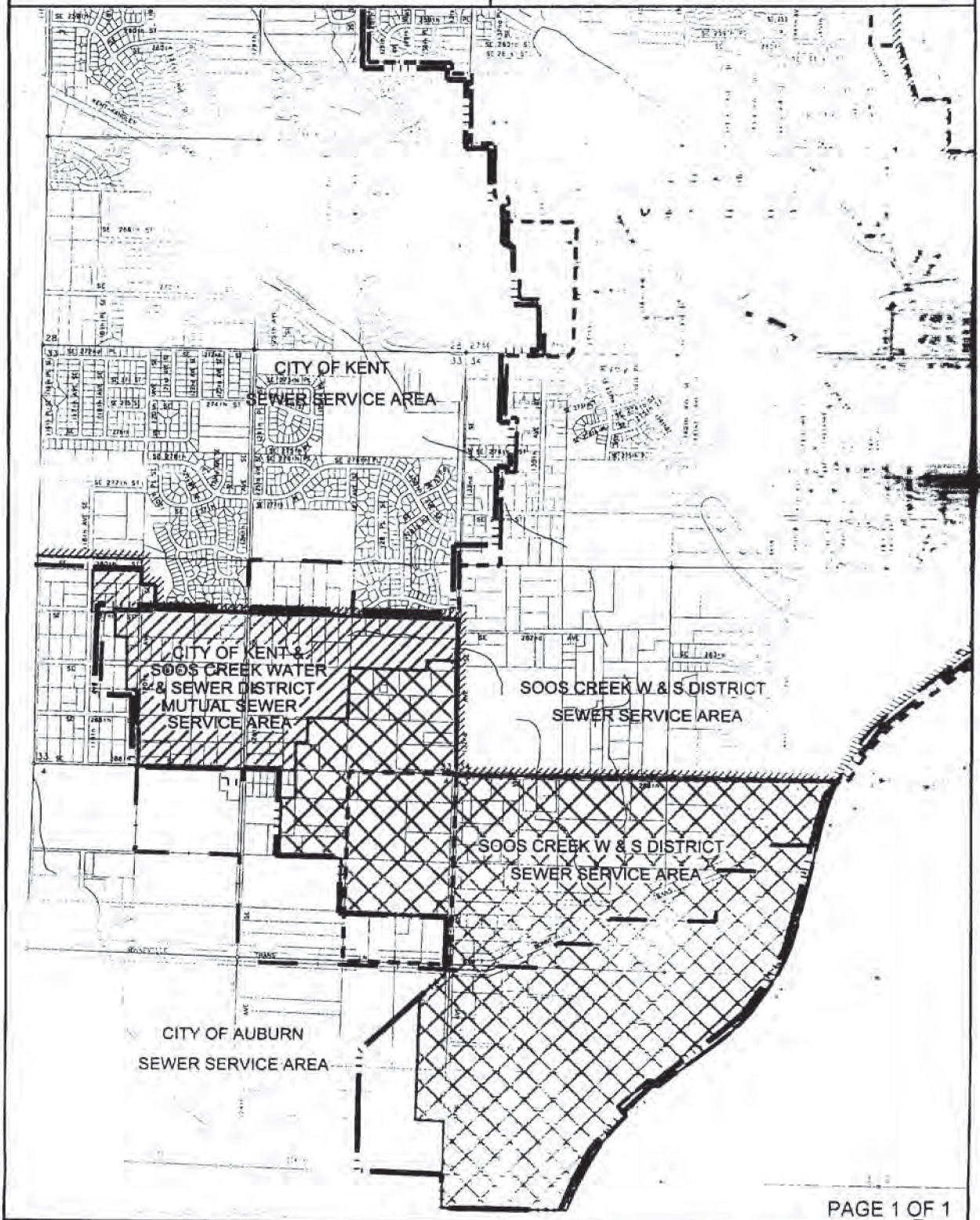
CITY OF AUBURN / SOOS CREEK WATER & SEWER DISTRICT INTERLOCAL AGREEMENT

PROPOSED SEWER SERVICE PLANNING AREAS

APPROVAL

SOOS CREEK W & S DISTRICT

CITY OF AUBURN



PAGE 1 OF 1

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APPENDIX A3

CITY OF KENT

- Sewer Service Boundaries (Resolution 3322)

RESOLUTION NO. 3322

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES BETWEEN THE CITY OF AUBURN AND THE CITY OF KENT.

WHEREAS, pursuant to RCW 35A.11.040 Auburn and Kent have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Kent have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn and Kent have the legal authority to maintain a sewerage system.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

Section 1. The Mayor and City Clerk of the City of Auburn are herewith authorized to execute an Interlocal Agreement establishing sanitary sewer service boundaries between the City of Auburn and the City of Kent. A copy of said Agreement is attached hereto, denominated as Exhibit "1" and made a part hereof as though set forth in full herein.

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

DATED this 20th day of February, 2001.

CITY OF AUBURN

Charles A. Booth

CHARLES A. BOOTH
MAYOR

ATTEST:

Danielle E. Daskam

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Michael J. Reynolds,
City Attorney



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PACIFIC NW TIT AG 14.00
PAGE 001 OF 007
04/06/2001 15:37
KING COUNTY, WA

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

2001 040 6001623

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):
7/14 PNWT W-8385-12

INTERLOCAL AGREEMENT BETWEEN CITY OF AUBURN AND THE CITY OF KENT FOR THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUDNARIES

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)

CITY OF AUBURN & CITY OF KENT

Grantee/Assignee/Beneficiary: (Last name first)

CITY OF AUBURN & CITY OF KENT

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page ____ of document.

Assessor's Property Tax Parcel/Account Number

PER RCW 39.34

☐ Assessor Tax # not yet assigned

Said document(s) were filed for record by Pacific Northwest Title as accommodation only. It has not been examined as to proper execution or as to its effect upon title.

CITY OF KENT and CITY OF AUBURN INTERLOCAL AGREEMENT FOR THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into this 5th day of March, 2001, by and between the **CITY OF KENT**, a Washington municipal corporation (hereinafter referred to as "Kent"), and the **CITY OF AUBURN**, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35A.11.040 Auburn and Kent have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Kent have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn and Kent have the legal authority to maintain a sewerage system; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, Auburn desires new developments within it's Potential Annexation Area to complete a Pre-annexation agreement with Auburn prior to receiving a certificate of sanitary sewer availability; and

WHEREAS, portions of the Kent sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of Auburn's Potential Annexation Area; and

WHEREAS, Auburn has evaluated and determined it is not cost feasible to provide direct sewer service to Auburn's Potential Annexation Area property existing adjacent to Kent's sanitary sewer infrastructure; and

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WHEREAS, the parties desire to allow Kent to construct, reconstruct, repair and maintain sewer facilities as necessary, and to authorize connections to Kent's sewer system for service to noted areas, or portions thereof; and

WHEREAS, Kent's sewer service to these areas will provide for maximum efficient use of existing and future facilities together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. Sewer Service Area. The parties have agreed to a sewer service area boundary between them. The boundary is graphically depicted on the map attached hereto as Exhibit "A", which is by this reference incorporated herein. Both parties further agree that Kent in providing sewer service to the area shown on Exhibit "A", as Area To Be Served By Kent, shall be furnishing sewer service to properties within Auburn's Potential Annexation Area. Kent shall provide service in accordance with and subject to the terms and conditions of this Agreement.

2. Management, Regulation and Control of Sewer System. Kent shall have the sole responsibility and authority to construct, maintain, manage, conduct and operate its sewerage system as installed within the area described in Exhibit "A", together with any additions, extensions and betterments thereto. Kent shall also be responsible for obtaining all necessary governmental franchises, approvals, easements and permits for the installation of said sewerage system as described above.

3. Service Rates and Connection Charges.

a) **Permit Required.** No connection shall be made to Kent's sanitary sewer system unless the property owner first pays the associated fees and submits the proper information to obtain a Kent sanitary sewer connection permit. The connection shall be subject to inspection and approval for compliance with Kent's Sanitary Sewer Standards as adopted at the time the connection is made.

b) **Rates.** The rates charged to the sanitary sewer customer by Kent within the area described in Exhibit "A" shall be fixed, altered, regulated and controlled by Kent pursuant to all applicable laws or regulations promulgated on the subject of rates and charges for sewer service. No surcharge shall be charged to the customers served under this agreement on the sole basis that those customers are within Auburn's Potential Annexation Area.

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4. Planning Areas. Kent hereby acknowledges the region to be within Auburn's Potential Annexation Area. Both parties acknowledge that Auburn desires a Pre-annexation Agreement from property seeking a sewer certificate of availability within Auburn's Potential Annexation Area.

5. Sewer Availability Certificates. Commencing on March 1, 2001, Kent shall issue sewer availability certificates for property within the area described in Exhibit "A". Kent agrees not to issue the availability certificate or any side sewer permit in the case of an existing development until Kent receives a copy of the City of Auburn Pre-Annexation Agreement in a form accepted and approved by the City of Auburn.

6. Future Annexations. Each of the parties agree that Kent shall provide sanitary sewer service to the areas shown in Exhibit "A" without regard to the present corporate limits of the parties, and without regard to future corporate limits as they may be amended by annexation to either party.

7. Kent Comprehensive Sewer Planning. The terms of this Agreement will be included as an element of Kent's Comprehensive Sewerage Plan. Kent will submit to Auburn all Comprehensive Sewerage Plans and amendments thereto involving area and/or system improvements within Auburn's planning area.

8. Auburn Comprehensive Planning. The terms of this Agreement will be included as an element of the sewerage portion of Auburn's Comprehensive Plan.

9. Reliance. Each party hereto acknowledges that the terms hereof will be relied upon by the other in its comprehensive planning to meet the needs of the service area designated herein.

10. Liability. Neither party to this agreement shall be liable to the other party for any failure or interruption of service in the service area of the other party.

11. Government Approvals. The parties will give notice of the adoption of this Agreement to Metropolitan/King County, to the Department of Ecology, to the Department of Health, and to any other agency with jurisdiction or mission relevant to the terms hereof, and shall cooperate and assist in all reasonable manner in procuring any necessary approvals hereof by those agencies.

12. Boundary Review Board. In the event that implementation of the terms hereof results in permanent sewer service to areas that will be outside the respective service boundaries of Kent or Auburn, the parties will at the time of such service jointly seek approval of the King County Boundary Review Board in accordance with R.C.W. 36.93.090.

13. Service Amendments. Any changes to the service areas described herein shall be by mutual agreement. Each party may give permission to the other on a

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case-by-case basis to provide service by one party into the other party's adjacent or nearby service area based upon considerations of economic efficiency for providing the service with mutual consent of the Director of Public Works from both jurisdictions.

14. Alteration, Amendment or Modification. Kent and Auburn hereby reserve the right to alter, amend or modify the terms and conditions of this Agreement upon written agreement of both parties to such alteration, amendment or modification.

15. Sanctity of Agreement. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

16. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Kent or Auburn regarding provision of sewer service, except as specifically set forth herein.

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CITY OF KENT
Approved by ~~Resolution No~~. MOTION of the City of Kent, Washington, at its regular meeting held on the 6TH day of FEBRUARY, 2001.

By:

Mayor

Attest:

Brenda Jacober
City Clerk, City of Kent

Approved as to form:

Kent City Attorney, DEPUTY

CITY OF AUBURN

Approved by Resolution No. 3322, of the City of Auburn, Washington, at its regular meeting held on the 20th day of February, 2001.

By: Attest:

Charles A. Booth, Mayor

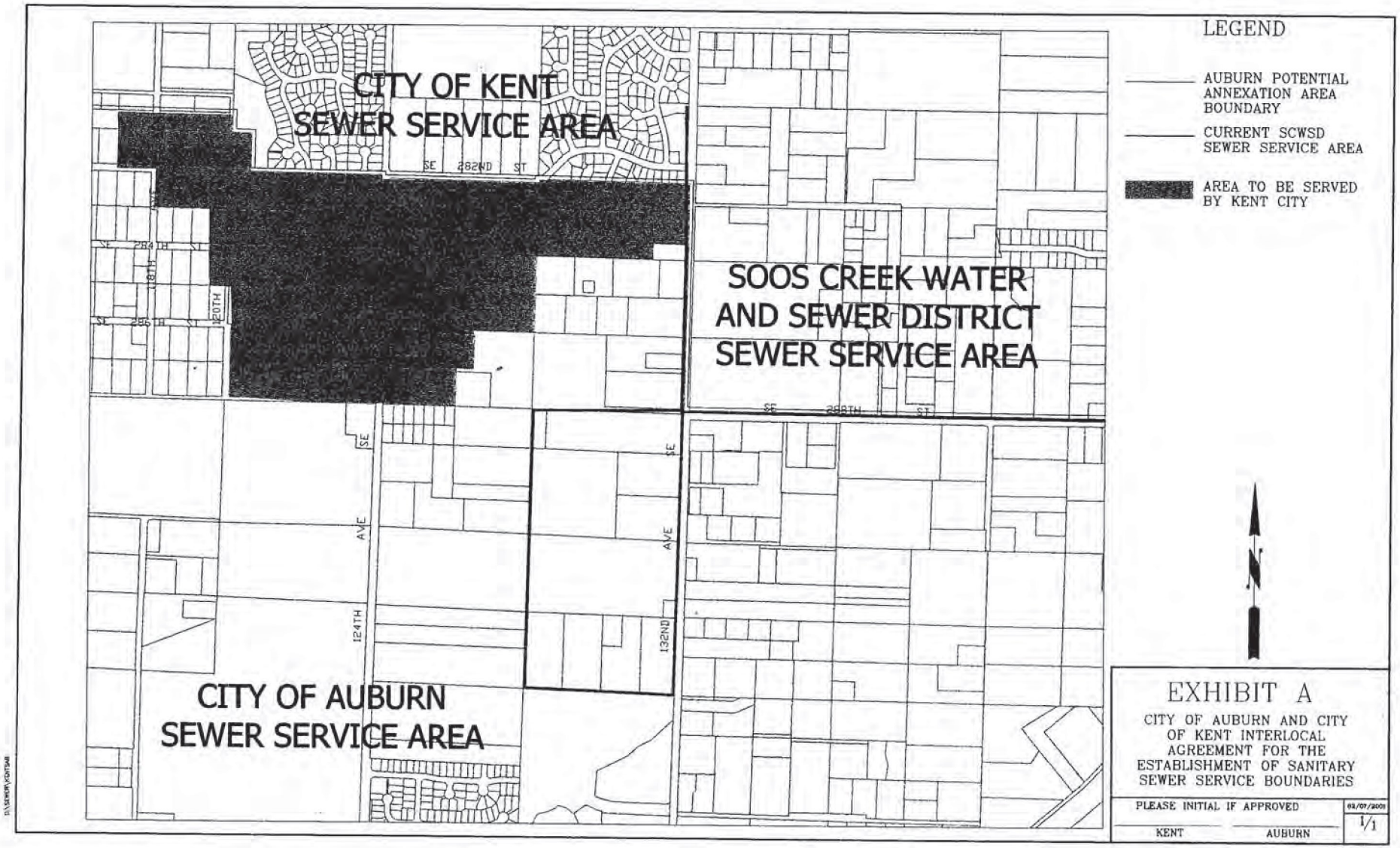
Danielle Daskam, City Clerk

Approved as to form:

Auburn City Attorney

2001 040 6001623

Exhibit "1"
Resolution No. 3322



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APPENDIX A4

CITY OF PACIFIC

- Sewer Service Boundaries (Resolutions 4335 and 730)

RESOLUTION NO. 4335

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES BETWEEN THE CITY OF AUBURN AND THE CITY OF PACIFIC

WHEREAS, pursuant to RCW 35A.11.040 and RCW 35A.21.150 the City of Auburn ("Auburn") and the City of Pacific ("Pacific") have the authority to exercise a wide variety of municipal powers, including providing sewer service; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Pacific have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of municipal services; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized and are situated so as to be capable of affording public sanitary sewer service to a portion of Pacific; and

WHEREAS, Pacific has evaluated and determined it is in Pacific's best interest to allow Auburn to provide sanitary sewer service to property within

Pacific's municipal boundary that lies in the vicinity of Auburn's sanitary sewer infrastructure; and

WHEREAS, Auburn has sufficient wastewater conveyance capacity within their sanitary sewer facilities to support these adjustments to the existing sanitary sewer service areas; and

WHEREAS, Auburn's delivery of sanitary sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

Section 1. The Mayor and City Clerk of the City of Auburn are herewith authorized to execute an Interlocal Agreement establishing sanitary sewer service boundaries between the City of Auburn and the City of Pacific, which agreement shall be in substantial conformity with the Agreement a copy of which is attached hereto, marked as Exhibit "A" and incorporated herein by this reference.

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. This resolution shall be in full force and effect upon passage and signatures hereon.

DATED this 5th day of May, 2008.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam, City Clerk

APPROVED AS TO FORM:

Daniel B. Heid, City Attorney

INTERLOCAL AGREEMENT
between
CITY OF PACIFIC and CITY OF AUBURN
for the
THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into by and between the **CITY OF PACIFIC**, a Washington municipal corporation (hereinafter referred to as "Pacific"), and the **CITY OF AUBURN**, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35A.11.040 Auburn and Pacific have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Pacific have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn and Pacific have the legal authority to maintain a sewerage system; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized and are situated so as to be capable of affording public sanitary sewer service to a portion of Pacific; and

WHEREAS, Pacific has evaluated and determined it is in Pacific's best interest to allow Auburn to provide sanitary sewer service to property within Pacific's municipal boundary that lies in the vicinity of Auburn's sanitary sewer infrastructure; and

WHEREAS, Auburn has sufficient wastewater conveyance capacity within their sanitary sewer facilities to support these adjustments to the existing sanitary sewer service areas; and

WHEREAS, the parties desire to allow Auburn to construct, reconstruct, repair and maintain sewer facilities, and to authorize connections to Pacific's sewer system for service to the areas noted in Attachment "A"; and

WHEREAS, Auburn's delivery of sanitary sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. Sewer Service Area. The parties have agreed that Auburn will provide sanitary sewer service to a portion of Pacific as graphically depicted on the map attached hereto as Attachment "A", which is by this reference incorporated herein. Both parties further agree that Auburn, in providing sewer service to the area as shown on Attachment "A", shall be furnishing sewer service to properties within Pacific's water service area and Pacific's municipal jurisdiction in accordance with and subject to the terms and conditions of this Agreement.

2. Management, Regulation and Control of Sewer System. Auburn shall have the sole responsibility and authority to construct, maintain, manage and operate its sewerage system as installed within the areas described in Attachment "A", together with any additions, extensions and betterments thereto. Auburn shall also be responsible for obtaining all necessary governmental franchises, approvals, easements and permits for the installation, maintenance, and operation of said sewerage systems as described above.

3. Rates, Charges, Permits, and Billing Responsibilities. Through this Agreement Auburn will be responsible to own, operate, and maintain the sanitary sewer system including private side sewers within the public right of way. Auburn shall issue certificates of sewer availability when requested by the property owners.

No connection or modification shall be made to Auburn's sanitary sewer system and or private side sewer services connected to Auburn's sewer system unless the property owner first pays the associated fees and submits the proper information to obtain an Auburn sanitary sewer permit. Sanitary sewer permits shall be subject to inspection and approval for compliance with Auburn's Sanitary Sewer Standards as adopted at the time the connection is made.

The rates charged to Auburn's sanitary sewer customers shall be fixed, altered, regulated and controlled by Auburn pursuant to all applicable laws or regulations promulgated on the subject of rates and charges for sewer service. No surcharge shall be charged to the customers served under this agreement on the sole basis that those customers are outside of Auburn's city limits.

To establish a quantitative usage, Pacific shall provide to Auburn the quantity of potable water used by those properties connected to Auburn's sanitary sewer system. Pacific shall provide water usage information every other month to Auburn and Auburn shall send a bill every other month for sewer service. Pacific shall give Auburn the right to read water meters described in Attachment "A" manually if desired by Auburn. Auburn shall also have the ability to annually request water usage data from Pacific for said properties.

4. Boundary Review Board. Pacific and Auburn will, at the time of service through this agreement provide a copy of to the King County Boundary Review Board in accordance with R.C.W. 36.93.090.

5. Comprehensive Sewer Planning. The terms of this Agreement will be included as an element of Auburn and Pacific's Comprehensive Sewerage Plans.

6. Reliance. Each party hereto acknowledges that the other will rely upon the terms of this agreement in its comprehensive planning to meet the needs of the service area designated herein.

7. Indemnification. Pacific agrees to indemnify and hold Auburn and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against Auburn arising out of, in connection with, or incident to the execution of this agreement and/or Pacific's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Auburn, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Pacific; and provided further, that nothing herein shall require Pacific to hold harmless or defend Auburn, its agents, employees, and/or officers, from any claims arising from the sole negligence of Auburn, its agents, employees, and/or officers. No liability shall attach to Auburn by reason of entering this agreement except as expressly provided herein.

Auburn agrees to indemnify and hold Pacific and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever king or nature, brought against Pacific arising out of, in connection with, or incident to the execution of this agreement and/or Auburn's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Pacific, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Auburn; and provided further, that nothing herein shall require Auburn to hold harmless or defend Pacific, its agents, employees, and/or officers, from any claims arising from the sole negligence of

Pacific, its agents, employees, and/or officers. No liability shall attach to Pacific by reason of entering this agreement except as expressly provided herein.

8. Assignment. The parties shall not assign this agreement or any interest, obligation or duty therein without the express written consent of the other party.

9. Attorney's Fees. If either party shall be required to bring any action to enforce any provision of this Agreement, or shall be required to defend any action brought by the other party with respect to this Agreement, and in the further event that one party shall substantially prevail in such action, the losing party shall, in addition to all other payments required therein, pay all of the prevailing party's reasonable costs in connection with such action, including such sums as the court or courts may adjudge reasonable as attorney's fees in trial court and in appellate courts.

10. Government Approvals. The parties will give notice of the adoption of this Agreement to King County's Department of Natural Resources – Wastewater Treatment Division, to the Department of Health, and to any other agency with jurisdiction or mission relevant to the terms hereof, and shall cooperate and assist in all reasonable manner in procuring any necessary approvals hereof by those agencies.

11. Service Amendments. Any changes to the service areas described herein shall be by mutual agreement. Each party may give permission to the other on a case-by-case basis to provide service by one party into the other party's adjacent or nearby service area based upon considerations of economic efficiency for providing the service with mutual consent of Auburn's Director of Public Works and Pacific's Director of Public Works.

12. Notices. All notices between the two agencies hereunder may be delivered or mailed. If mailed, they shall be sent to the following respective addresses:

City of Pacific
Director of Public Works
PO Box 250
100 3rd Avenue SE
Pacific, WA 98047
253-833-2741

City of Auburn
Director of Public Works
25 west Main Street
Auburn, WA 98001
253-931-3010

or to such other representative as either party may hereafter from time to time designate in writing. All notices and payments mailed by regular post (including first class) shall be deemed to have been given on the second business day following the date of mailing, if properly mailed and addressed. Notices and payments sent by certified or registered mail shall be deemed to have been given on the day next

following the date of mailing, if properly mailed and addressed. For all types of mail, the postmark affixed by the United States Postal Service shall be conclusive evidence of the date of mailing.

13. Alteration, Amendment or Modification. Pacific and Auburn hereby reserve the right to alter, amend or modify the terms and conditions of this Agreement upon written agreement of both parties to such alteration, amendment or modification. Such written consent(s) shall be filed with this agreement for future reference.

14. Sanctity of Agreement. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

15. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Pacific or Auburn regarding provision of sewer service, except as specifically set forth herein.

16. Miscellaneous.

A. The captions in this agreement are for convenience only and do not in any way limit or amplify the provisions of this agreement.

B. This agreement is established in perpetuity. Modifications can be established upon written agreement between both parties.

C. The purpose of this agreement is to clarify Pacific and Auburn's sanitary sewer responsibilities for providing service and maintaining public sewer facilities.

D. If any term, provision, condition or portion of this Agreement is held to be invalid, or unenforceable by a final decision of any court having jurisdiction on the matter, the remaining of this Agreement or the application of such term or provision to persons or circumstances other then those as to which it is held invalid or unenforceable shall not be affected thereby and shall continue in full force and effect, unless such court determines that invalidity or unenforceability materially interferes with or defeats the purposes hereof, at which time Auburn or Pacific shall have the right to terminate the Agreement.

E. No modifications or amendments of this agreement shall be valid or effective unless evidenced by an agreement in writing signed by both parties.

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the day and year first above written.

CITY OF PACIFIC
Approved by Resolution No. 730 of the City of Pacific, Washington, at its regular meeting held on the 12th day of May, 2008.

By:

RICHARD HILDRETH,
Mayor, City of Pacific

Attest:

SANDY PAUL-LYLE,
City Clerk, City of Pacific

Approved as to form:

ALBERT A ABUAN,
City Attorney, City of Pacific

CITY OF AUBURN
Approved by Resolution No. 4335, of the City of Auburn, Washington, at its regular meeting held on the 5th day of May, 2008.

By:

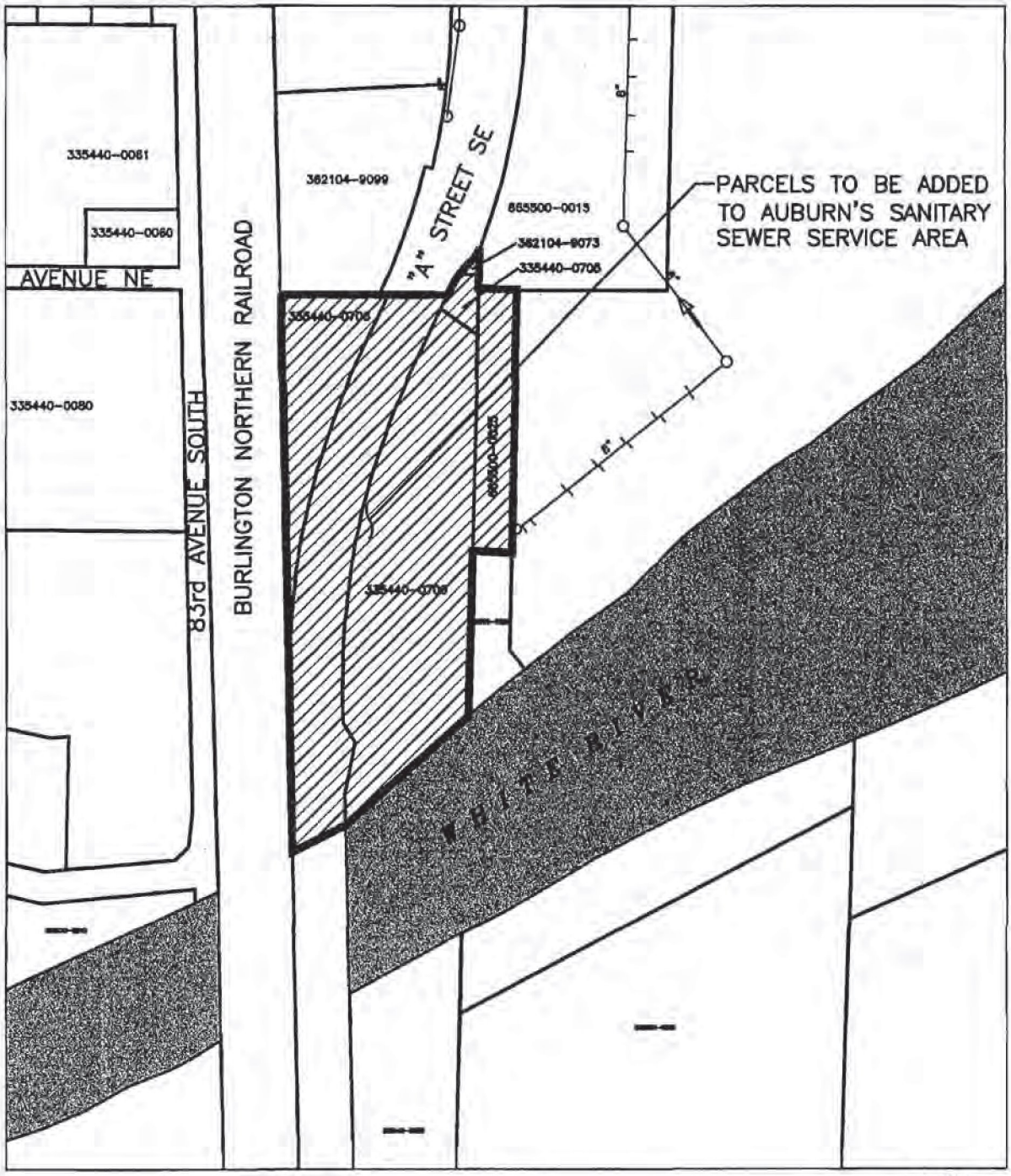
PETER B. LEWIS,
Mayor, City of Auburn

Attest:

DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:

DANIEL B. HEID,
City Attorney, City of Auburn



CITY OF AUBURN WASHINGTON

ATTACHMENT A

PACIFIC - AUBURN
SANITARY SEWER SERVICE AGREEMENT

Exhibit A
Resolution No. 4335
Page 7 of 7

CITY OF PACIFIC
WASHINGTON

COPY

RESOLUTION NO. 730

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PACIFIC, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES BETWEEN THE CITY OF PACIFIC AND THE CITY OF AUBURN

WHEREAS, pursuant to RCW 35A.11.040 Pacific and Auburn have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Pacific have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn and Pacific have the legal authority to maintain a sewerage system.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PACIFIC, WASHINGTON, AS FOLLOWS:

Section 1. The Mayor and City Clerk of the City of Pacific are herewith authorized to execute an Interlocal Agreement establishing sanitary sewer service boundaries between the City of Pacific and the City of Auburn. A copy of said Agreement is attached hereto, as Exhibit "1" and made a part hereof as though set forth in full herein.

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

PASSED BY THE PACIFIC CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE 12TH DAY OF MAY, 2008.

CITY OF PACIFIC

Mayor Richard Hildreth

ATTEST/AUTHENTICATED:

Sandy Paul CMC

Sandy Paul - Lyle, City Clerk

Approved as to form:

Albert Abuan, City Attorney

Filed with the City Clerk: May 1, 2008
Passed by the City Council: May 12, 2008
Resolution No. 730
Effective: May 12, 2008

APPENDIX A5

MUCKLESHOOT INDIAN TRIBE

- Sewer Service Boundaries (Resolution 4902)
- Wastewater Conveyance Cost Sharing (Resolution 3660)
- Temporary Sewage Lift Station Operation (Resolution 3502)

RESOLUTION NO. 4902

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO ENTER INTO A MASTER AGREEMENT/PROVISIONS FOR MUNICIPAL UTILITY SERVICES ON TRUST LANDS, REPLACING AND SUPERSEDING THE AGREEMENT PREVIOUSLY APPROVED AND AUTHORIZED BY RESOLUTION NO 4883

WHEREAS, the City of Auburn has been approached by representatives of the Muckleshoot Indian Tribe with a request for an agreement whereby the City would provide municipal utilities to the Tribe for property being developed by the Tribe, and

WHEREAS, representatives of the City and the Tribe have negotiated an agreement that accommodates that request and that addresses the relationship of the City and the Tribe in connection with the provision of such utilities, the terms of which are beneficial to both parties, and

WHEREAS, in connection herewith, the Auburn City Council heretofore approved and authorized an agreement for municipal utility services on Tribal or Indian Trust lands through Resolution No 4883, and

WHEREAS, following the passage of said Resolution No 4883, representatives of the City of Auburn and the Muckleshoot Indian Tribe discussed some changes to the agreement authorized by resolution No 4883, which changes are acceptable to both the City and the Muckleshoot Indian Tribe

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows

Section 1. That the Mayor and City Clerk, or designees, are hereby authorized to execute the Master Agreement/Provisions for Municipal Utility Services on Trust

Lands in substantial conformity with the Agreement marked as Exhibit A attached hereto and incorporated herein by this reference, replacing the Agreement approved and authorized by Resolution No 4883

Section 2 That the Mayor is authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation

Section 3. That this Resolution shall take effect and be in full force upon passage and signatures hereon

Dated and Signed this 22nd day of January, 2013

CITY OF AUBURN

PETER B LEWIS, MAYOR

ATTEST

Danielle E Daskam, City Clerk

APPROVED AS TO FORM

Daniel B Heid, City Attorney

CITY OF AUBURN WASHINGTON

MASTER AGREEMENT/PROVISIONS FOR MUNICIPAL UTILITY SERVICES ON TRUST LANDS

City of Auburn
Engineering Division
Development Section
Public Works Department

25 West Main St.
Auburn, WA 98001-4998
(253) 931-3010
FAX (253) 931-3053

MASTER AGREEMENT FOR MUNICIPAL UTILITY SERVICES ON TRUST LANDS

The **CITY OF AUBURN** ("City"), and the **MUCKLESHOOT INDIAN TRIBE** ("Tribe" - also hereafter referred to in this agreement as "Developer") enter into this Municipal Utilities Service Agreement ("Agreement"), and make the following expressed mutual promises and covenants regarding the Developer's proposed Public Facility Extension ("Extension(s)")

The City agrees to accept the Extension(s) for operation and maintenance if the Developer, at the Developer's expense, designs, constructs, conveys and transfers said Extension(s) to the City pursuant to the terms and conditions of this Agreement. This Agreement is valid and binding for the Developer's Extension(s) serving Indian owned lands within the Muckleshoot Indian Reservation and the City of Auburn's municipal water and sewer service area.

I. DEFINITIONS

For the purposes of this agreement the terms in this Section shall have the following meanings

- **Public Facilities.** City sanitary sewer facilities (sewer mains, manholes, and appurtenances) and water facilities (water mains, service lines between mains and water meters, meter services including setter, meter and box, fire hydrants, and appurtenances)
- **Utility Right-of-Way Easement.** A nonexclusive perpetual right-of-way easement on the Property granting the City the right to operate, maintain, repair, replace, improve, remove, enlarge Public Facilities and the right to access the Property for providing Solid Waste services.
- **Indian Property.** For the purposes hereof, Indian Property refers to residential properties owned by the Tribe or held in Trust by the Bureau of Indian Affairs (BIA) for the benefit of the Tribe or individual Indians.
- **Utility Services.** City water, sanitary sewer, storm drainage, and solid waste services, pursuant to Chapters 13 06, 13.20, 13 48 and 8 08, respectively, of the Auburn City Code (ACC)

II. CITY RESPONSIBILITIES

Pursuant to the terms and conditions of this agreement the City agrees to·

A. Provide municipal Utility Services to the Property in conformance with City regulations governing Utility Services.

B Comply with the Utility Right-of-way provisions herein.

III. TRIBE RESPONSIBILITIES

Pursuant to the terms and conditions of this agreement the Tribe shall be responsible for the following:

A. Complying with the Utility Right-of-way provisions herein.

B Extending Public Facilities in compliance with terms herein.

IV. INDIAN PROPERTY RESIDENT RESPONSIBILITIES

Those people who reside on the residential properties of the Tribe and who receive utility services from the City pursuant to this Agreement shall comply with and be subject to, the ACC provisions and requirements for the construction, operation, maintenance, and payment for the above described Utility Services, and their receipt of and eligibility for City Utilities shall be conditioned on and subject to the following:

A. City Utility Customers who are residents of Indian Property shall, in advance of the City initiating new City Utility Services or re-initiating previously established City Utility Service that has been cancelled or suspended for nonpayment, deposit with the City the amounts of Utility Service Deposits required for City Utilities. The deposit for residents of Indian Property may be made in the form of cash, cash equivalent, or a bond or guarantee for the deposit amount in a form acceptable to the City, whereby the Tribe is guaranteeing the deposit amount._Residents of Indian property who cannot pay the deposit amount, or provide the City with a bond or guarantee of the deposit amount by the Tribe in a form acceptable to the City, may request that the City grant a full or partial waiver(s) to the Utility Customer from the deposit requirement because of special humanitarian or health circumstances. The City shall have the sole discretion to grant such waivers, and determine if they shall be full or partial waivers. If the waiver is granted by the City, no deposit or only a reduced deposit shall be required.

B City Utility Customers who are residents of Indian Property shall agree to pay, and shall execute documents evidencing such agreement to pay, the utility bills in accordance with the requirements of Chapter 8 08 [Solid Waste Utility], Chapter 13 06 [Water Utility], Chapter 13.20 [Sewer Utility] and Chapter 13.48 [Storm Drainage Utility] of the Auburn City Code (ACC).[1]

V. EXTENSION FEES

City of Auburn Ordinance No 5819 amended ACC13 40 050, Utility Extension Fees, so that fees for private streets or private drainage associated with Planned Unit Developments or Gated

[1] The form of the Agreement for Payment of Utilities shall be in a form devised by the City, such as the sample set forth herein as Exhibit "F" APPLICATION FOR UTILITY SERVICE & DEPOSIT AGREEMENT, Provided that the City reserves the right to modify or amend the Agreement as it deems advisable, to accomplish the purposes intended.

Communities can be included in the Facility Extension Fees. The Developer agrees to pay applicable City Utility Extension Fees as calculated by the City in accordance with applicable City Codes, generally as indicated herein below in Exhibit D hereto

The Developer shall also pay reasonable additional fees to the City in the event the City needs to obtain consulting support services to assist the City when the scope of the Extension is beyond the City's normal area of expertise or the City's ability to review within a reasonable time.

Furthermore, the Developer is responsible to pay fees associated with the Valley Regional Fire Authority's (VRFA) review of plans as requested by the City The City will allocate these fees, as established by the Auburn Fee Schedule; at the time the 40% Extension Fee is submitted. If extended review is required additional fees will be collected prior to Construction.

VI. CONSTRUCTION DRAWINGS

The Developer shall submit construction drawings ("plans") and supporting technical documents designed and developed by a professional engineer registered in the State of Washington to the City for review and approval at the time of application.

The plans and supporting materials shall comply with the City of Auburn's Design Standards and Construction Standards for water, sanitary sewer, and storm water drainage utilities. For all work conducted in City streets and rights-of-ways, and for work to be conducted in the portion of any tribal or private road or right of way immediately abutting City streets or rights-of-way, the plans shall also be in compliance with City design and construction standards for City streets and rights-of-way.

If design or construction activities on the extension(s) become inactive on the Developer's part for a period of six months, the City may require the plans be revised to conform to existing field conditions, or to meet current City design standards and regulations. The City may also require the execution of a new Agreement, in which case, this Agreement shall become null and void.

After all plan reviews have been completed and corrections made, and if all other requirements have been met, the City will request that the Developer/Engineer submit a full set of plans on mylar for City approval and signature. The Developer/Engineer shall also submit AutoCAD electronic files with the mylar. The signed mylar shall then be used to make all plan copies for use during the construction process.

VII. UTILITY RIGHTS-OF-WAY EASEMENT

At the Developer's expense, a nonexclusive perpetual right-of-way easement on the Property shall be granted to the City giving the City the right to operate, maintain, repair, replace, improve, remove, enlarge Public Facilities and the right to access the Property for providing Solid Waste services. The Utility Right-of-way or Easement shall be in a form acceptable to the

City Recording of the Utility Right of Way or Easement shall take place upon acceptance by the City of affected Public Utilities.

VIII. PAYBACK AGREEMENT

The City may enter into a Payback Agreement, if applicable, with the Developer pursuant to the requirements of RCW 35 91, RCW 35 72, and ACC 12.70 and 13 40.060. The Developer must submit a complete application to the City no later than 90 calendar days of the acceptance of the facility improvements. The City shall not consider an application for a payback agreement that is submitted later than 90 days after acceptance of the facility improvements. If the City has agreed to a warranty acceptance as provided for in Section XIII of this Agreement, the Developer must file an application for a payback agreement no later than 90 days after the warranty acceptance date for those improvements accepted under the warranty application, and no later than 90 days after final acceptance for the remaining improvements. After a complete application has been accepted the City will then work with the Developer to determine the appropriate cost allocation method and evaluate the eligibility of the submitted costs. A standard form of the agreement and an application handout outlining the payback process are available upon request.

IX. INSURANCE

Throughout the period of performance of this Agreement for all construction related activities, the Developer or Contractor shall carry and maintain commercial general liability insurance with limits of not less than one million dollars ($1,000,000 00) per occurrence for bodily injury, including death, and one million dollars ($1,000,000.00) per occurrence for property damage or, alternatively, one million dollars ($1,000,000.00) per occurrence combined single limit for bodily injury and property damage combined, and two million dollars ($2,000,000.00) general aggregate.

This insurance shall be in a form and with an insurer acceptable to the City, and shall contain coverage for all premises and operation, broad form property damage, contractual liability (including without limitation that specifically mentioned in the Agreement, and products and contemplated operations insurance.

This insurance shall provide coverage for explosion, collapse, underground excavation, and lateral support.

Any policy or policies that provide the insurance required in this Agreement shall name the City as an additional insured on a separate endorsement, to the extent of the contractual obligations set forth here. If the Contractor, as the Agent of the Developer, provides the required insurance, then such insurance shall name both the Developer and the City as additional insured.

Before the beginning of the period of performance under this Agreement, the Developer shall provide for City review and approval, a certificate of insurance reflecting full compliance with

the requirements set forth in this Agreement. The certificate shall be kept current and in compliance throughout the period of performance until final acceptance by the City (and for two years thereafter for products and contemplated operations liability), and shall provide for 30 days advance written notice to the City if cancellation or material change adversely affect the interests of the City

Throughout the period of performance of the Agreement, the Developer shall cover or maintain insurance in compliance with the applicable worker's compensation laws, with respect to all of its respective employees working on or about the facility site, regardless of whether such coverage or insurance is mandatory or merely elective under the law

For the purposes hereof, the period of performance of this Agreement includes and refers to the time during which any party hereto is obligated to perform tasks required herein.

X. INDEMNIFICATION

The Developer shall defend, indemnify and hold the City, its elected and appointed officials, employees, and agents harmless from any actions, causes of action, liabilities, claims, suits, judgments, liens, awards, demands, and damages of any kind including, property damage, personal injury, or death (including any claims brought by employees of the Contractor or any subcontractor) arising out of or in connection with the performance of this Agreement, to the extent that such claims arise out of the negligent act or omission or willful misconduct of the Developer, Contractor, any subcontractor, or their employees arising out of, or in any way related to, their performance of the Agreement, including without limitation the provision of services, personnel, facilities, equipment, support, supervision or review. The City shall be indemnified and held harmless for all expenses, costs of litigation, and reasonable attorney's fees, expert witness fees, and costs of services of engineering and other personnel related to any such action, or incident to establishing the right to indemnification, to the extent such claims arise from any negligent act or omission or willful misconduct of the Developer, Contractor, any subcontractor, or their employees arising out of, or in any way related to, their performance of the Agreement, including without limitation the provision of services, personnel, facilities, equipment, support, supervision, or reviews. The City's obligations herein are subject to judicial, legislative, and regulatory restrictions beyond the City's control (Including, but not limited to the Endangered Species Act) The applicant releases the City from any and all direct or indirect liability or damages related to actions beyond the City's control.

In the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Developer and the City, its officers, officials, employees, and volunteers, the Developer's liability hereunder shall be only to the extent of the Developer's negligence. The Developer expressly waives any immunity under industrial insurance, whether arising from RCW Title 51 entitled "Industrial Insurance" or any other statute or source as provided in Article IX solely for the benefit of the City and solely to the extent of the indemnity set forth in this Agreement. This waiver has been mutually agreed by

the Parties. The provisions of this section shall survive the expiration or termination of this Agreement.

The Developer shall, at the City's request, furnish comprehensive evidence that all obligations of the nature designated in this agreement have been paid, discharged, or waived.

XI. CONSTRUCTION

All of the following applicable conditions shall be satisfied before a notice to start construction will be issued to the Contractor·

A. Approved Plans have been copied and distributed to all applicable parties and the signed original mylars returned to the City (see Article VI herein)

B Attend a Pre-construction Meeting between the City and the Developer's contractor

C Provide a Performance Bond or Assignment of Funds to the City in an amount and fashion that would adequately cover any work needed in any City right-of-way or on City utility lines.

D Provide Certificate of Insurance to the City naming the City (and Developer if Contractor supplies insurance) as an additional insured (see Article IX herein)

E. Non-Indian Contractors Possess an Active Contractor's Labor & Industry license; and Indian Contractors Possess an Active Contractor's Labor & Industry license if they are going to do any work in or on the City's right-of-way or City utility lines.

F Provide an Emergency Call List for Contractor and Subcontractors.

G Obtain a Business License with the City for all non-Indian contractors and subcontractors when working within the City limits, and for all contractors and subcontractors who will do any work in or on the City's right-of-way or City utility lines.

H. Obtain Authorized Construction Period for construction work to be completed within the existing public right-of-way (see additional information in Article VII herein), if applicable.

I. For work outside of Auburn's City limits, adequate County permits/approvals must be in place. The City will apply for the right-of-way permit(s) once plans are approved.

J If sewer extension, King County Waste Water Treatment Division approval is needed. The City will submit for approval, once plans are approved.

K. Provide Proof of Contract for Private Utility Relocates. The Developer acknowledges the obligation to enter into a separate contract, at the Developer's

expense, to relocate private utility facilities as necessary to comply with City Standards where applicable.

The City shall provide part-time inspection of the public and private Extension, to assist in determining that the work and materials meet the City's design standards and construction standards. The City shall also assist the Developer in complying with the present City rules, regulations, and resolutions and the terms of this Agreement. This assistance does not relieve the Developer of responsibility for complying with the plans, specifications, or terms of this Agreement, or any rules and regulations imposed by the City, County, or other agencies.

All construction performed by the Developer shall be in compliance with City design and construction standards for water, sanitary sewer and storm drainage utilities. For all work conducted in City streets and rights-of-ways, and for work to conducted in the portion of any tribal or private road or right of way immediately abutting City streets or rights-of-way, the work shall also be in compliance with City design and construction standards for City streets and rights-of-way

The Developer shall be responsible for acquiring the City's Construction Standards and having a copy on-site during construction.

The Developer agrees to comply with all Federal, State, County, and City regulations applicable to the Developer while construction is in progress in public rights-of-way

For public extensions that include construction within the existing public right-of-way or work on City utility lines, the City shall determine a reasonable time frame in which the Developer will complete all work within the existing right-of-way, including final clean up This time frame shall be the Authorized Construction Period for such work, and it shall be designated in calendar days and will be determined at the pre-construction conference. The Authorized Construction Period shall start when work first begins on this phase of the project or on a date specific set to minimize any public inconvenience. If the required work is not completed within the allotted time, the City will suspend all public and private Extension-related work other than those activities necessary to complete the required right of way improvements. If the restoration of the existing public right-of-way is not completed within the time period defined above, the Developer agrees that the City may hire an independent contractor to complete the necessary work and bill the Developer for the actual costs.

The City has the authority to decide all questions regarding the quality and acceptability of the materials furnished and of the work performed for the construction of the improvements. The City shall also have the authority to suspend construction work, in whole or part, for the failure of the Developer/Contractor to carry out the work in conformance with City development regulations, City construction standards, and approved plans.

The Developer's contractor shall make a written request to the City a minimum of 72 hours in advance when work is to be performed on Saturdays, Sundays, Holidays, or other than normal working hours. Written permission from the City shall be required before the contractor is allowed to work during any such requested hours. Approval of the contractor's request shall be dependent on the City's ability to provide adequate construction project monitoring during the requested time.

XII. ACCEPTANCE OF EXTENSION FOR OPERATION AND OWNERSHIP

The City agrees to accept the Extension for operation and ownership upon approval of the completion of all the facilities and the full compliance of the terms and conditions of this Agreement, including the following requirements

A. Approved Maintenance Guarantee (see Section XIII herein)

B. Executed Bill of Sale (see Section XIV herein)

C Certified and Approved Record Construction Drawings on Mylar & a copy of the Electronic CAD Drawing File(s) (see Section XV herein).

D. Executed Public Utility Right of Way or Easement (see Section XVII herein and Exhibit A).

E. Approved Developer Contribution Document provided for all facilities involving work in City right-of-way or on City utility lines (see Section XIV herein)

F Final Storm Water Site Plan (Report) and Cover Letter. This letter shall address any changes between the project's original storm water site plan (report) and the final construction of detention/retention and water quality facilities (see Section XVI herein).

Upon approval and acceptance, the City shall send a letter to the Developer accepting the system for ownership and operation.

If a Payback Agreement is applicable, the Developer will be required to provide the City with cost data within 90 calendar days of project acceptance. The City will provide sample cost data documentation for information.

The City shall release the Performance Guarantee, if applicable, to the Developer within 30 days of the letter of acceptance.

XIII. MAINTENANCE GUARANTEE

Before the City accepts the public portion of the Extension for operation and ownership, the Developer shall provide a one-year Maintenance Guarantee in the amount of two thousand dollars ($2,000.00) or ten percent (10%) of the City's estimated replacement costs of the

improvements, whichever is greater For some facilities, the City may require the Developer to provide a Maintenance Guarantee beyond the one-year period. If the City elects to so require, the City shall notify the Developer before the start of construction.

Two forms of Maintenance Guarantees are acceptable: 1) a Maintenance Bond or 2) an Assignment of Funds. Any request to use other forms of Maintenance Guarantee will be determined on a case by case basis by the City Engineer

The Developer may designate an Agent, such as a contractor or engineer, to provide the required Maintenance Guarantee to the City In such event, the Developer shall remain responsible for the contractual obligations set forth in this agreement. If the Agent defaults on the Maintenance Bond, this authorization for designation of an Agent does not preclude the City proceeding to foreclosure or demanding forfeiture of the bond against the Developer

The Developer shall bear the expense of the bond. If at any time a surety on any such bond is declared bankrupt, loses its right to do business in the State of Washington, or is removed from the list of Surety companies acceptable on Federal bonds, the Developer shall substitute an acceptable bond or bonds in such form and sum and signed by such other surety or sureties as may be satisfactory to the City. The Developer shall pay all premiums on these bonds.

The Assignment of Funds will be in a required amount held in a Financial Institution acceptable by the City and secured under the use of the City of Auburn Standard Assignment of Funds form. During this maintenance guarantee period, the Developer shall warrant that the materials and equipment furnished by the Developer for the Extension are in normal working order and condition except where abused or neglected by the City The Developer shall guarantee that it will repair or replace at its own expense any work or material that proves to be defective during such warranty period.

Two months prior to the end of the maintenance guarantee period (usually one year), the Developer will be required to have all public sanitary sewer and storm lines cleaned and then inspected with a remote television unit by an approved firm, **at Developer's expense**. The video will then be compared to the tape made prior to acceptance to ensure that no substantial change has occurred. The City shall then re-inspect the Extension for warranty compliance. If this re-inspection determines that the Extension functions as intended at the time of acceptance, the City shall release the Maintenance Bond. If the re-inspection determines that the Extension is not functioning as intended at the time of acceptance, the Developer shall replace or repair said Extension and the City, at its option, may extend the maintenance period for such replacement or repair for another one year. After an acceptable maintenance inspection, the City will release the Maintenance Bond and accept the facility for maintenance.

XIV. BILL OF SALE

Before the City accepts the public portion of the Extension for operation and ownership, the Developer agrees to execute an approved Bill of Sale (the City will prepare this document, once information is received, for Developer's signature) for the improvements that are to be dedicated to the City The Bill of Sale will provide for the transfer of title of the public portion of the Extension from the Developer to the City and will further include the following items.

A. The Developer is the lawful Owner of the public portion of the Extension and it is free from all encumbrances.

B The Developer has paid all bills for all labor and material used during construction of the Extension or has obtained lien wavers from all persons who have not been paid for their labor or material.

C. The Developer has the right to transfer the public portion of the Extension to the City for the consideration of incorporation into the City system.

D The Developer will warrant the public portion of the Extension and defend the same against lawful claims and demands of all persons for one year from the date the Bill of Sale is accepted by the City

XV. RECORD CONSTRUCTION DOCUMENTS

Before the City accepts the public portion of the Extension for operation and ownership, the Developer agrees to provide the City with certified record construction drawings and related electronic file information.

The Certified Record Construction Drawing comes in a **two-step process** as follows

Step 1: The certified paper (red-line) record drawings for all facilities shall be submitted for review and approval using the Engineer of Record as the point of contact. These drawings must accurately reflect all field design revisions made to the Extension during the construction process. The changes shall be in conformance with the City's record construction drawing requirements, available upon request from the City. The revisions shall be noted on the approved paper plan set.

Step 2: Once the City approves the certified paper (red-line) record drawings, then all required record drawing information shall be clearly shown on the original approved mylars. The electronic record drawing file shall also be provided at this time.

XVI. FINAL STORM WATER SITE PLAN (REPORT)

A certified and final storm (drainage) water site plan (report) and cover letter will also be required. Document the as-constructed changes to the storm improvements, not included in the original approved report. Record construction document requirements are available upon request from the Public Works Department.

It is provided, however, that insofar as the Developer provides Low Impact Development, as defined in the ACC, the Developer shall be entitled to the fee structure and adjustments included therewith.

The City and Tribe further agree that should the Tribe in the future desire to provide comparable municipal solid waste service to Indian property within Auburn's utility service area, the Tribe and the City will engage in good faith discussions on the discontinuance of City solid waste service to persons on Indian property eligible to receive tribal solid waste service.

XVII. PUBLIC UTILITY RIGHTS OF WAY OR EASEMENTS

The plan approval process may require providing utility rights of way or easements(s) for the facility extension. The Developer shall provide a legal description and an exhibit of the affected property, an updated title report, plat certificate (current to within 30 days), or other documentation acceptable to the City demonstrating its authority to convey a utility right of way or easement, and documentation of signatory authority (whether representative, individual, partnership or corporation) All legal descriptions must be signed and stamped by a professional Land Surveyor The City and Tribe will then draft the required legal documents and return them to the Developer for signatures and approval by the Bureau of Indian Affairs. The signed documents shall then be returned to the City where, concurrent with City acceptance of the utility improvements the documents will be sent to the Bureau of Indian Affairs and King County for recording. If during construction, changes are made that affect the right-of-way dedication and/or easement(s), corrections will be made and the documents will be re-recorded.

NOTE.

- King County or Pierce County Recorder's offices require a specific format on submittals. All attachments submitted shall be provided electronically in the following formats; Legal Descriptions in MS Word, and Exhibits in AutoCAD PDF is also acceptable provided the county specific format is followed. All attachments shall be formatted to 8 ½ x 11-inch and 8 ½ x 14-inch paper size and have a minimum margin of 1-inch top, bottom and sides. Use of 8 ½ x 14-inch paper size shall be limited to exhibit attachments.
- Any writing or markings, including the notary stamp, which intrudes into the document's margin area, may be cause for the document to be returned. Original documents used for recording **shall not** be stapled.

XVIII. SERVICE CONNECTIONS

There will be no water meter installation or usage of the public portion of the Extension before the City accepts the Extension for operation and ownership or the Developer has entered into the Warranty Acceptance of Partial Extension (Alternative Process), as described above.

The Developer shall notify the City in writing of any intent to make service connections to the public portion of the Extension or any existing City system. No connections to, nor utilization of, the public portion of the Extension or any existing City system shall be made without the express written consent of the City Note that certain other utility permit fees and system development charges may be required prior to service connection. In addition, the City shall supervise all service connections.

Connections to and utilization of the public portion of the Extension shall not relieve the Developer of the obligation to correct defects in labor or materials as provided in the Maintenance Bond section of this Agreement. All City-authorized connections shall be subject to the control, use, and operation of the City, which shall be subject to all regulations and conditions of service.

XIV. DEVELOPER CONTRIBUTION DOCUMENTATION

As per ACC 13 40 040, a written statement as to the actual cost of the public utility and street extension(s) shall be provided at the time the public utility extension(s) is turned over to the City This is to be turned in on the Developer Contribution Document at the time the Bill of Sale and/or Record Drawings are turned in.

XX. STATE LAW REQUIREMENTS

Nothing herein shall be construed as to limit the City of Auburn's ability to take such actions as it deems necessary to comply with the requirements of Washington state law in implementing this Agreement, provided that, nothing herein shall be deemed as granting or expanding the jurisdiction of the City of Auburn to regulate the use of Indian lands or Indian activity within the Muckleshoot Indian Reservation, or the City of Auburn's authority to tax Indian lands or activities.

XXI. AGREEMENT ALTERATIONS OR AMENDMENTS

No amendment, modification or waiver of any condition, provision or term of this Agreement shall be valid or of any effect unless made in writing, signed by the party or parties to be bound, or such party's or parties' duly authorized representative(s) and specifying with particularity the nature and extent of such amendment, modification or waiver Any waiver by any party of any default of the other party shall not effect or impair any right arising from any subsequent default.

Nothing herein shall limit the remedies or rights of the parties under this Agreement.

XXII. ASSIGNMENT BINDING ON SUCCESSORS AND ASSIGNS

Neither party to this Agreement shall assign any right or obligation hereunder in whole or in part, without the prior written consent of the other party hereto No assignment or transfer of any interest under this Agreement shall be deemed to release the assignor from any liability or obligation under this Agreement, or to cause any such liability or obligation to be reduced to a secondary liability or obligation.

This Agreement shall be binding upon, and the benefits and obligations provided for herein shall inure to and bind, the parties hereto and their respective successors and assigns, provided that this section shall not be deemed to permit any transfer or assignment otherwise prohibited by this Agreement. This Agreement is for the exclusive benefit of the parties hereto and it does not create a contractual relationship with or exist for the benefit of any third party, including contractors, sub-contractors and their sureties, except as provided in Article XXIII.

The tenants and occupants of the residences to be served by the Grantee's utilities shall execute an agreement agreeing to be bound by the terms hereof, including the provisions of Article XXV, Governing Law, and agreeing to comply with the utility payment obligations in accordance with City of Auburn City Codes.

XXIII. NO THIRD PARTY BENEFICIARIES

This Agreement is solely for the benefit of the Parties and the owners and occupants of residences served by City utilities who have executed an agreement to be bound by the terms of this Agreement. No third party other than an owner or occupant of a residence who has executed an agreement to be bound by this Agreement shall be entitled to claim or enforce any rights here under.

XXIV. WAIVER

A failure by either party to exercise its rights under this Agreement shall not preclude that party from subsequent exercise of such rights and shall not constitute a waiver of any other rights under this Agreement unless stated to be such in writing signed by an authorized representative of the party and attached to the original Agreement.

XXV. GOVERNING LAW

This Agreement and the rights of the parties hereunder , including actions to enforce the terms of this Agreement and actions to collect monies due as utility payments including utility deposits provided in connection herewith, shall be governed by the interpreted in accordance with applicable provisions of the Auburn City Code and the laws of the State of Washington and venue for any action hereunder shall be in the courts of King County State of Washington in which the project is located, provided, however, that it is agreed and understood that any applicable statute of limitation shall commence no later than the final acceptance date of the Extension or, if the City declines to accept the extension, the date of the letter from the City declining to accept the Extension.

The Developer (Muckleshoot Indian Tribe) does hereby expressly waive its right to sovereign immunity and its right to assert sovereign immunity defense in the courts of the State of Washington for the limited purpose of any legal claim or complaint for the interpretation and/or and/or enforcement of this Agreement, and/or for any complaints or counterclaims for monetary damages or equitable relief for any breach of this Agreement, and/or for the enforcement of any

final judgment by any court of the State of Washington regarding such matters. This limited waiver of immunity is solely for the benefit of the City of Auburn for the purposes stated herein, and the Tribe does not waive its sovereign immunity as to any party other than the City.

XXVI. SEVERABILITY AND SURVIVABILITY

If any provisions of this Agreement or any provision of any document incorporated by reference shall be held invalid, such invalidity shall not affect the other provisions of this agreement which can be given effect without the invalid provision, if such remainder conforms to the requirements of applicable law and the fundamental purpose of this Agreement. To this end, the provisions of this Agreement are declared to be severable.

In addition to the length of time elements of this agreement remain in force and effect, some provisions hereof shall remain in full force and effect indefinitely, for as long as utility services are provided by the City to the property owned by or under the influence or control of the Developer, including, but not limited to the obligations to pay City Utility Fees and Indemnify the City per Article X.

XXVII. ATTORNEY FEES

In the event of litigation or other legal action to enforce any rights, responsibilities or obligations under this Agreement, the prevailing parties shall be entitled to receive its reasonable costs and attorney's fees.

XXVIII. CAPTIONS, HEADINGS AND TITLES

All captions, headings or titles in the paragraphs or sections of this Agreement are inserted for convenience of reference only and shall not constitute a part of this Agreement or act as a limitation of the scope of the particular paragraph or sections to which they apply As used herein, where appropriate, the singular shall include the plural and vice versa and masculine, feminine and neuter expressions shall be interchangeable. Interpretation or construction of this Agreement shall not be affected by any determination as to who is the drafter of this Agreement, this Agreement having been drafted by mutual agreement of the parties.

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XXIV. ENTIRE AGREEMENT

This Agreement with Exhibits A through D contains the entire understanding of the parties hereto in respect to the transactions contemplated hereby and supersedes all prior agreements and understandings between the parties with respect to such subject matter.

DATED this 8th day of March, 2012.

CITY OF AUBURN

Peter B. Lewis, Mayor

STATE OF WASHINGTON)
)ss
COUNTY OF KING)

I certify that I know or have satisfactory evidence that ~~Dennis Selle,~~ Peter B Lewis to me known as the ~~City Engineer~~ Mayor representing the City of Auburn's ~~Department of Public Works~~, who acknowledged that he signed this instrument and acknowledged it to be his free and voluntary act for the uses and purposes mentioned in this instrument.

Dated March 3, 2013

Shawn Campbell

Shawn Campbell
Notary Public in and for the State of Washington
residing at Auburn WA
My appointment expires April 9, 2016

SHAWN K. CAMPBELL NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES 4-09-16

SIGNATORY - INDIVIDUALS

DATED this _____ day of _____, 20____

_____

_____

STATE OF WASHINGTON)
)ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that _____ and _____ is/are the person(s) who appeared before me, and said **individuals(s)** acknowledged that he/she/they signed this instrument and acknowledged it to be his/her/their free and voluntary act for the uses and purposes mentioned in this instrument.

Dated _____

_____

_____
Notary Public in and for the State of Washington
residing at _____
My appointment expires _____

SIGNATORY - PARTNER

DATED this _____ day of _____, 20____.

_____

_____

STATE OF WASHINGTON)
)ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that _____ and _____ is/are the person(s) who appeared before me, and said **partner(s)** acknowledged that he/she/they signed this instrument and acknowledged it to be his/her/their free and voluntary act for the uses and purposes mentioned in this instrument.

Dated _____

_____

_____
Notary Public in and for the State of Washington
residing at _____
My appointment expires _____

SIGNATORY - TRIBAL

DATED this 15 day of March, 2013

Virginia Cross
Chairperson

STATE OF WASHINGTON)
)ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that Virginia Cross is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the Chairperson of the Muckleshoot Indian Tribe, a federally recognized Indian tribe, to be the free and voluntary act of such party for the uses and purposes mentioned in this instrument.

Dated 3/1/2013

Bobbie Jo Norton
Notary Public in and for the State of Washington
residing at Auburn, WA
My appointment expires 7/25/2015

BOBBIE JO NORTON NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES 07-27-15

SIGNATORY – TAX EXEMPT AGENCY

DATED this _____ day of _____, 20___

_____
Representative

STATE OF WASHINGTON)
)ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the Representative _____ of _____ _____, a **Tax Exempt Agency**, to be the free and voluntary act of such party for the uses and purposes mentioned in this instrument.

Dated _____

_____

_____
Notary Public in and for the State of Washington
residing at _____
My appointment expires _____

SIGNATORY - LLC

DATED this _____ day of _____, 20____

_____
Authorized Signature

_____
Authorized Signature

STATE OF _____)
)ss.
COUNTY OF _____)

I certify I have know or have satisfactory evidence that _____
_____
_____ is/are the person(s) who appeared before me, and said person(s) acknowledged that he/she/they signed this instrument on oath stated that he/she/they was/were authorized to execute the instrument and acknowledge as the _____ of the _____, a limited liability company, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated _____

_____

_____
Notary Public in and for the State of Washington
residing at _____
My appointment expires_____

EXHIBIT A

GRANT UTILITY SERVICES EASEMENT FOR RIGHT OF WAY ON TRUST LANDS

REFERENCE #·
GRANTOR. **THE MUCKLESHOOT INDIAN TRIBE**
GRANTEE **CITY OF AUBURN**
SHORT LEGAL. NE ¼ SE ¼ SEC 20, TWN 21N, R5E
ASSESSOR'S PROPERTY TAX PARCEL. 202105-9001
TRUST ALLOTMENT #· 109-2

For and in consideration of the CITY OF AUBURN'S Agreement to provide municipal water sanitary sewer, storm drainage and solid waste services to lots adjacent to this Right of Way, One Dollar ($1 00) and other valuable consideration in hand paid, **THE MUCKLESHOOT INDIAN TRIBE** ("Grantor" herein), hereby apportions, conveys and warrants to **THE CITY OF AUBURN,** a Washington Municipality ("Grantee" herein), for the purposes hereinafter set forth, a nonexclusive perpetual municipal utilities right-of-way easement over, under, along, across and through the following described real property (the "Property" herein) in King County, Washington.

SEE EXHIBIT "B" ATTACHED HERETO AND BY THIS REFERENCE MADE A PART HEREOF.

Except as may be otherwise set forth herein Grantee's rights shall be exercised upon that portion of the Property (the "Right-of-Way" herein) described as follows.

SEE EXHIBIT "C" ATTACHED HERETO AND BY THIS REFERENCE MADE A PART HEREOF.

Grantor also conveys to Grantee all of its right, title, and interest in the water service lines, meters, valves, and other portions of the water distribution system located within the Right of Way.

1. **PURPOSE.** In order for the City of Auburn to provide municipal utilities to properties that are held in Federal Trust status, the parties to this agreement hereby set forth the terms and conditions that are required for such services to be provided. Grantee shall have the right to operate, maintain, repair, replace, improve, remove, enlarge one or more water distribution or sanitary sewer utility facilities to include but are not limited to underground pipes,

lines, vaults, manholes, meters and valves within the easement defined in Exhibit D for the purposes of serving the properties described in this agreement.

The Utilities shall be designed and constructed in conformance with the City of Auburn Design and Construction Standards to secure the payment of all City utility fees & charges for existing and new developments on Federal trust lands within the city, the city will establish a security account that will be applicable to all new utility accounts effective with the date of approval of this agreement.

2. SPECIFIC PROVISIONS. The parties agree to the following terms

GRANTOR AGREES

A. The Grantor agrees to construct all Utilities and upon acceptance by the City, grant ownership to the Grantee.

B. The Grantor agrees all Utilities shall be designed and constructed in accordance to City of Auburn Design and Construction Standards.

C The Grantor agrees to obtain all permits and approvals from the Grantee for the extension of the Utilities including water connection permits, sanitary sewer connection permits and the execution and compliance with the Public Facility Extension Agreement.

D. Conservation. Grantor will be responsible for any and all soil and resource conservation and protection measures, including weed control, on the land covered by the Right-of-Way

GRANTEE AGREES:

A No Compensation; Damages. Grantee owes no compensation to Grantor or any third parties for the rights herein granted.

B Indemnification. Grantee agrees to indemnify the Grantor, against any liability, personal injury and property damage to the extent caused by the negligent acts or omissions of Grantee in the re-construction, maintenance, occupancy or use of the Right-of-Way by Grantee, its employees, contractors and their employees, or subcontractors and their employees. Provided, however, that nothing herein shall require Grantee to indemnify, defend, and hold the Grantor, harmless for any such liability attributable to the negligence of the Grantor

C. Restoration. Grantee agrees to restore the easement area as nearly as reasonably possible to their original condition upon the completion of construction or maintenance activities to the extent compatible with the purpose for which the

Right-of-Way was granted, however, Grantee has no obligation for preservation or repair beyond the area directly impacted by said activities

D Revocation/Abandonment/Termination. Grantee agrees that upon termination of the Right-of-Way by mutual consent Grantee shall, be responsible for abandoning the utility services in place.

3. USE. Grantor reserves the right to use the Right-of-Way for any purpose not inconsistent with the rights herein granted and Grantee agrees not to interfere with the use of the lands by or under the authority of the landowners for any purpose not inconsistent with the primary purpose for which the Right-of-Way is granted, provided, however, Grantor shall not construct or maintain any buildings, structures or other objects on the Right-of-Way. Grantor's use of the Right-of-Way may include, but is not limited to, use for an existing or future Tribal or Bureau of Indian Affairs roadway and for the installation, operation and transmission of utility services by third parties, including Tribal utilities once by mutual consent the parties agree to terminate City utility services.

4. ACCESS. Grantee shall have the right of access to the Right-of-Way over and across the Easement Property to enable Grantee to exercise its rights hereunder, provided that Grantee shall reasonably compensate Grantor for any damage to the property caused by the Grantee in exercise of such right of access. To the extent reasonably practicable, Grantee shall use Grantor's right of way for such access, and shall utilize portions of the Property outside Grantor's right of way only when and to the extent additional access is reasonably necessary or in the event of an emergency

5. CUTTING OF TREES. Grantee shall have the right to cut or trim any and all brush or trees or other vegetation standing or growing upon the Right-of-Way pursuant to section 2(e) above. However, any trees upon property outside of this Right-of-Way which, in falling, could in Grantee's reasonable judgment, be a hazard to Grantee's facilities may not be cut absent permission of the property owner, except in the case of any overhead facilities, if any, Grantee reasonably believes an emergency exists that requires the cutting of such trees.

6. SUCCESSORS AND ASSIGNS. Grantee shall have the right to assign, apportion or otherwise transfer any or all of its rights, benefits, privileges and interests arising in and under this easement. Without limiting the generality of the foregoing, the rights and obligations of the parties shall inure to the benefit of and be binding upon their respective successors and assigns.

7. TERMINATION AND ABANDONMENT. This Right of Way may be terminated or abandoned as follows:

A. The rights herein granted shall continue until such time as Grantee ceases to use the Right-of-Way for a period of two (2) successive years, in which event this agreement shall terminate and all rights hereunder, and any improvements remaining in the Right-of-Way shall revert to or otherwise become the property of Grantor

B The Right of Way may be terminated by mutual consent in a written agreement.

8. GRANTOR'S LIMITED WAIVER OF SOVEREIGN IMMUNITY. Grantor voluntarily grants Grantee a waiver of its sovereign immunity and its right to assert a sovereign immunity defense in the Courts of Washington for for the limited purpose of any legal claim or complaint for the interpretation and/or enforcement of this agreement, and/or for any complaints or counterclaims for monetary damages or equitable relief for any breach of this agreement, and/or for the enforcement of any final judgment entered by any court of the State of Washington regarding such matters. Grantor consents to jurisdiction of the courts of the State of Washington as having exclusive jurisdiction to hear, resolve and enter final judgment on any legal dispute by and between the parties to this agreement and/or their affected officers, officials, and employees concerning the interpretation of this agreement, enforcement of any of its provisions, and any complaints or counterclaims for monetary damages and/or equitable relief for any alleged or actual breach of any provision of this agreement and/or for the enforcement of any final judgment entered by any court of the State of Washington regarding such matters. The limited waiver of sovereign immunity set out in this paragraph is solely for the benefit of Grantee. This agreement is not intended to and shall not be interpreted or construed to create any rights, benefits or interests in any person or entity other than the parties hereto

DATED this _____ day of _____, 2012.

GRANTOR.
The Muckleshoot Indian Tribe

By: _____

Title: _____

STATE OF WASHINGTON)
) ss.
COUNTY OF _____)

On this _____ day of _____, 2012, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____, to me known to be the person who signed as _____ of THE MUCKLESHOOT INDIAN TRIBE that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said TRIBE for the uses and purposes therein mentioned, and on oath stated that _____ was authorized to execute said instrument on behalf of THE MUCKLESHOOT INDIAN TRIBE.

IN WITNESS WHEREOF I have hereunto set my hand and official seal the day and year first above written.

_____
(Signature of Notary)

_____
(Print or stamp name of Notary)
***NOTARY PUBLIC** in and for the State of Washington,*
residing at _____
My Commission expires _____

Notary seal, text and all notations must be inside 1" margins

APPROVAL.
United States Department of the Interior
Bureau of Indian Affairs

Approved pursuant to 209 DM 8, 230 DM 1, 3 IAM 4, 4a.

BY: _____

TITLE: _____

EXHIBIT B

LEGAL DESCRIPTION OF THE PROPERTY

EXHIBIT ATTACHED AND ADDED AS THE NEXT PAGE

EXHIBIT C

SURVEYOR'S EASEMENT AND LEGAL DESCRIPTION

EXHIBIT ATTACHED AND ADDED AS THE NEXT PAGE

EXHIBIT D

PUBLIC FACILITIES EXTENSION FEES

The Public Facilities Extension Fees shall be generally calculated as follows:[2]
The extension fee shall be the greater of the sum of the categories (a+b+c+d) as shown below, for a total of $_____ (the amount of the extension fee shall be as calculated per the formulas below) This fee pays for the detailed plan review, field inspections and other City Administrative costs accrued during this project. The fee is based on the preliminary plan information provided by the Developer. The parties agree that the City may require an adjusted fee in addition to the fee calculated in this section based on the final improvement quantities at the time of approval of the construction drawings if the improvement quantities have changed from those indicated above.

The Developer shall pay forty percent (**40%**) of this extension fee $_____ (the amount of the extension fee shall be as calculated per the formulas below) before the City will begin detailed plan review

a) For water, sewer, & storm facilities the extension fee is based on the combined linear footage of all utilities and is determined by:

   The first 0 LF to 1000 LF will be charged at $5.50 per LF plus,

   The next 1001 LF to 2500 LF will be charged at $2.80 per LF plus,

   Any additional over 2500 LF will be charged at $1 65 per LF

b) For street facilities the extension fee is determined by:

   The first 0 LF to 500 LF will be charged at $6 90 per LF plus,

   The next 501 LF to 1000 LF will be charged at $4 10 per LF plus,

   Any additional over 1000 LF will be charged at $1 10 per LF

[2] It is provided, however, that in the event of any inconsistency or discrepancy between the above provisions and provisions of the Coty Code, the City Code shall control.

c) For non-linear extension such as pump stations and traffic signals the extension fee will be determined by the City Engineer based on an estimate of the City's labor cost associated with the plan review, inspection, and administration of the application.

d) For that portion of the water and sewer facility located outside City limits, but within existing County (King or Pierce) right-of-way, an additional fee is determined by:

$444 00 plus $5 00 per LF of the combined water and sewer extension located in existing County (King or Pierce) right-of-way

The remaining sixty percent **(60%)** of the extension fee $_____ (the amount of the extension fee shall be as calculated per the formulas above) and any fee adjustment, shall be paid upon approval of the construction drawings and prior to the start of construction.

EXHIBIT E

PERFORMANCE GUARANTEE

Before construction starts, the Developer will be required to furnish an approved Performance Guarantee based on one hundred twenty-five percent (125%) of the City-estimated installation costs for the public improvements constructed within the existing **City** right-of-way, easements, or when the City Engineer deems it to be in the City's best interest to secure a Performance Guarantee.

Two forms of Performance Guarantees are acceptable· 1) a Performance Bond or 2) an Assignment of Funds. Any request to use other forms of Performance Guarantee will be determined on a case by case basis by the City Engineer

The Developer may designate an Agent such as a contractor or engineer to provide the required Performance Guarantee to the City. In such event, the Developer shall remain responsible for the contractual obligations set forth in this Agreement:

The Performance Bond in a penal sum equal to a minimum of the amount described above shall be conditioned upon the performance by the Developer of all undertakings, covenants, terms, and conditions of the Agreement relating to the Extension. The Developer or Agent shall execute such bond and a corporate bonding company licensed to transact such business in the State of Washington, and who are named on a current list of surety companies acceptable as published by the Insurance Commissioner's office, shall act as surety.

The Developer shall bear the expense of the bond. If at any time a surety on any such bond is declared bankrupt, loses its right to do business in the State of Washington, or is removed from the list of approved surety companies, the Developer shall substitute an acceptable bond or bonds in the form and sum and signed by another surety or sureties as may be satisfactory to the City. The Developer shall pay the premiums on such bonds.

The Assignment of Funds will be in a required amount held in a Financial Institution acceptable by the City and secured under the use of the City of Auburn Standard Assignment of Funds form.

EXHIBIT F
CITY OF AUBURN
25 W MAIN STREET
AUBURN, WA 98001

APPLICATION FOR UTILITY SERVICE & DEPOSIT AGREEMENT

Service Address _____ Phone _____ Own _____ Rent _____

Name of Landlord _____ Mailing Address _____

Applicant One

Name _____ Phone _____ Date of Birth _____

Current Employer _____ Employer Phone _____

Employer Address _ _____

Applicant Two

Name _____ Phone _____ Date of Birth _____

Current Employer _____ Employer Phone _____

Employer Address _____

In case emergency services are required, and we are unable to locate you, please list a friend or relative whom we could contact:

Name _____ Phone _____ Address _____

I/we agree to pay all required utility deposits and to pay service fees for utilities provided to me by the City of Auburn, including water, sanitary sewer, storm drainage, and solid waste services, pursuant to Chapters 13.06, 13.20, 13 48 and 8 08, respectively, of the Auburn City Code (ACC). I/we further agree to comply with the requirements of said chapters of the ACC If I/we fail to pay bills on a timely basis, I/we understand that utility service may be discontinued. Should I/we leave the City of Auburn service area with an outstanding utility balance due, or should my service be disconnected/discontinued for non-payment, my deposit will be applied to said outstanding account, and the balance (if any) forwarded to me/us. In case of disconnection for non-payment, I/we understand that full payment of any outstanding balance up to and including the date of disconnection, and service charge(s) will be required in order to have utilities reconnected at the location or for me/us to get utility service at a new location in the service area. I/we understand that in the event that I/we are renting, our landlord may request information or be notified of the status of my/our account. I/we further agree that in the event that any action is taken to collect payments due for utility services or for enforcement of any other requirement or obligations of the City utility services, or my/our rights thereto, venue for such action shall be in the courts of King County, Washington.

Date _____ Signed _____

Date _____ Signed _____

FOR OFFICE USE

Application taken by _____ *Deposit Amount $*_____ *Date Deposit Received* _____

Customer Moved, Applied on Final Bill _____ *Date* _____ *Check #*_____

Customer Move, Refunded Full Deposit _____ *Date* _____ *Check #*_____

RESOLUTION NO. 3660

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN INTERLOCAL AGREEMENT WITH THE MUCKLESHOOT INDIAN TRIBE FOR THE COST SHARING IN THE REPLACEMENT AND MAINTENANCE OF A NEW WASTEWATER CONVEYANCE FACILITY CONVEYING WASTEWATER FROM MUCKLESHOOT INDIAN TRIBE PARCELS LOCATED OUTSIDE CITY LIMITS TO KING COUNTY CONVEYANCE AND TREATMENT FACILITIES

WHEREAS, both the City and the MIT are agencies qualified to engage in furnishing sanitary sewer service within their approved service areas; and

WHEREAS, the King County Department of Natural Resources, Water Pollution Control Division is engaged in developing and operating a regional sewage disposal system and the City and the MIT are engaged in developing and operating a sewage collection system; and

WHEREAS, the City and MIT intend to replace the Auburn Way South Sanitary Sewer Conveyance System (hereinafter AWSCS); and

WHEREAS, the replaced AWSCS is the subject of this Agreement, and is intended to be consistent with applicable law and comprehensive planning for sewage disposal; and

WHEREAS, the MIT desires to provide sewer service only to customers within the MIT's approved sewer service area; and

WHEREAS, Auburn's existing wastewater conveyance facility surcharges and requires improvements to allow for additional flow capacity and avoiding potential overflow of sewage and the damages associated with said overflows; and

WHEREAS, the MIT desires ownership of a portion of the capacity within a sanitary sewer conveyance facility extending from that portion of the MIT service area, outside of the City's service area, into King County's wastewater conveyance system; and

WHEREAS, this agreement shall supercede the existing Auburn – MIT sanitary sewer Agreement, executed in accordance with City Ordinance No. 4967; and

WHEREAS, to provide wastewater conveyance and ownership responsibilities of the public sanitary sewer facilities that extend from the boundary of the City's service area along Auburn Way South to King County's conveyance facilities at the corner of 17th Street SE and K Street SE, it is necessary that this agreement be entered into between the City and the MIT, establishing the rights and duties of the parties; and

WHEREAS, the Muckleshoot Indian Tribe, and the City of Auburn are authorized to enter into this Agreement under the authority of their respective enabling legislation and under the authority of Chapter 39.34 RCW, the Interlocal Cooperation Act; and

WHEREAS, the MIT received approval from the Bureau of Indian Affairs, hereinafter referred to as "BIA", for this agreement, pursuant to Title 25, Section 81, of the U.S. Code, or the BIA has determined and so informed the MIT that approval of this Agreement is not required under 25 USC 81.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows:

Section 1. The Mayor is hereby authorized to execute an interlocal agreement with the Muckleshoot Indian Tribe, in substantial conformity with the

agreement attached hereto, marked as Exhibit 1and incorporated herein by this reference.

Section 2. That the Mayor is authorized to implement such other administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. That this resolution shall take effect and be in full force upon passage and signatures hereon.

DATED and signed this 1st day of March 2004.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Daniel B. Heid,
City Attorney



Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):

Interlocal Agreement (RES 3660)

41/59 PNWT
W9276-12

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)
Auburn, City of

Grantee/Assignee/Beneficiary: (Last name first)
1. Muckleshoot Indian Tribe

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page of document.

Assessor's Property Tax Parcel/Account Number
N/A

☐ Assessor Tax # not yet assigned

EXHIBIT 1

AUBURN - MUCKLESHOOT INDIAN TRIBE SANITARY SEWAGE AGREEMENT

(Auburn Way South Sanitary Sewer Conveyance System)

For the construction, ownership, and maintenance of the sanitary sewer conveyance facility that provides service to Muckleshoot tribal property located outside of Auburn's municipal limits to King County's wastewater conveyance and treatment facilities.

This Agreement is entered into in King County, Washington, between the City of Auburn, a municipal corporation under the laws of the State of Washington, hereinafter referred to as the "City" and the Muckleshoot Indian Tribe, a federally recognized Indian Tribe located on the Muckleshoot Indian Reservation, hereinafter referred to as the "MIT"

WHEREAS, both the City and the MIT are agencies qualified to engage in furnishing sanitary sewer service within their approved service areas; and

WHEREAS, the public health, welfare and safety of the residents of the City, the MIT and the residents of their service areas require the elimination of potential sources of water pollution and the preservation of the fresh water resources of the area; and

WHEREAS, the King County Department of Natural Resources, Water Pollution Control Division, hereinafter referred to as "King County", is engaged in developing and operating a regional sewage disposal system and the City and the MIT are engaged in developing and operating a sewage collection system; and

WHEREAS, consistent with the standards prescribed by the State of Washington, Department of Ecology, hereinafter referred to as "DOE", for the collection and disposal of sewage effluent within the State, the City and the MIT are improving a sanitary sewage conveyance system that conveys wastewater from the MIT and the City service areas to King County's facilities; and

WHEREAS, the City and MIT intend to replace the Auburn Way South Sanitary Sewer Conveyance System (hereinafter AWSCS); and

WHEREAS, the replaced AWSCS is the subject of this Agreement, and is intended to be consistent with applicable law and comprehensive planning for sewage disposal; and

WHEREAS, the MIT desires to provide sewer service only to customers within the MIT's approved sewer service area; and

WHEREAS, Auburn's existing wastewater conveyance facility surcharges and requires improvements to allow for additional flow capacity and avoiding potential overflow of sewage and the damages associated with said overflows; and

WHEREAS, the MIT desires ownership of a portion of the capacity within a sanitary sewer conveyance facility extending from that portion of the MIT service area, outside of the City's service area, into King County's wastewater conveyance system; and

WHEREAS, to provide for the conveyance and disposal of sewage conveyed to King County from properties located within City's service area and from that portion of the MIT service area located outside of the City's service area, the two parties are entering into contracts with King County; and

WHEREAS, this agreement shall supercede the existing Auburn – MIT sanitary sewer Agreement, hereinafter referred to as the "1997 Auburn MIT Agreement" executed in accordance with City Ordinance No. 4967; and

WHEREAS, the City and MIT are entering into this Agreement, on a government to government basis, with the intention of cooperatively and equitably designing, and constructing the AWSCS and thereafter assuring that its operation meets the needs of the parties, as more fully set out in this Agreement; and,

WHEREAS, to provide wastewater conveyance and ownership responsibilities of the public sanitary sewer facilities that extend from the boundary of the City's service area along Auburn Way South to King County's conveyance facilities at the corner of 17th Street SE and K Street SE (the King County M Street Trunk Line), it is necessary that this agreement be entered into between the City and the MIT, establishing the rights and duties of the parties; and

WHEREAS, the MIT has determined and so informed the City that approval of this Agreement is not required by the Bureau of Indian Affairs under Title 25, Section 81, of the U.S. Code.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and in order to provide a connection between the City's, the MIT's and King County's wastewater conveyance facilities, IT IS HEREBY AGREED AS FOLLOWS:

I. SEWAGE FLOW CAPACITY

1.1 MIT's comprehensive planning has determined that the portion of MIT service area located outside of Auburn's municipal city limits (south of the south section line to Section 27, Township 21, Range 5) will require a maximum peak capacity of 7.85 CFS within the AWSCS.

1.2 The City's comprehensive planning has determined that the City's maximum peak capacities within the AWSCS are as set out in Exhibit "A". The AWSCS shall be sized to convey the MIT's and the City's combined maximum peak capacities consistent with this Agreement. A table listing the capacity requirements for the AWSCS is provided in Exhibit "A", a copy of which is attached hereto and is incorporated herein by this reference.

2. MIT/CITY RELATIONSHIP FOR WASTEWATER CAPACITY AND NATURE OF PARTICIPATION

2.1 Ownership and Participation: The MIT and the City shall each own a portion of the capacity of the AWSCS as shown in Exhibit "A". MIT affirms that the City shall have the administrative role for the implementation of the AWSCS and the City affirms that MIT may, in its discretion, maintain active participation in the implementation consistent with the terms of this Agreement and the equity provided by the MIT to the AWSCS project.

2.1.1 Nature of capacity ownership: The respective capacity ownership interests of the MIT and City in the AWSCS shall be determined by the maximum capacity contribution that each makes to the AWSCS, as noted in Exhibit "A". The MIT and City have agreed on wastewater conveyance capacity maximums at specific locations along the sections of AWSCS. Those maximum capacity estimates are set out in Exhibit "A". Until changed by mutual agreement of the parties the capacities set out in Exhibit "A" shall govern the capacity ownership under this Agreement. The parties will share equally in the project costs.

2.1.2 Additional Capacity: Should either party desire to increase its respective capacity in the AWSCS beyond the maximum capacities set out in Exhibit A, the party seeking the additional capacity shall be responsible for the costs associated with the facilities necessary to provide the additional capacity. Either party may rent, assign or convey to the other a portion of the capacity that a party has as set out in Exhibit A if a party has no need for the capacity. Any conveyance of capacity may be for an agreed period or may be a permanent transfer. If a party does convey a portion of its capacity to the other party the parties shall agree on fair compensation for the transferred capacity. In the absence of an agreement between the parties, no party may take any

action that would use, or appropriate to itself any of the unused capacity that the other party may have in the AWSCS; nor take any action that would limit, reduce or interfere with the ability or right of the other party to fully use the full capacity that the party owns under this Agreement. The right held by both parties to this Agreement to use its full ownership interests in the AWSCS shall not be subject to modification under Section 10.

2.1.3 Total Capacity: The City's maximum capacity and the MIT's maximum capacity shall be equal to 100% of the AWSCS capacity. Any remaining excess capacity within the AWSCS due to pipe sizing shall be owned by the parties based upon their respective percentage contributions determined from the maximum capacities as set out in Exhibit "A".

2.1.4 City and MIT Representation: The City and MIT will each designate a representative who may be assisted by other employees and/or project advisors, to assure that each may fully participate as provided under this Agreement. The representatives and advisors will work to minimize areas of dispute, and to resolve all implementation issues as they arise and, as far as possible, minimize the need for recourse to dispute resolution provisions of this Agreement.

2.2 Project Costs and Responsibilities: For purposes of this Agreement, the MIT and City have agreed upon a plan as outlined in Exhibit "A", for the upgrade of the AWSCS to meet the needs of both the City and MIT. Only costs directly attributable to the AWSCS shall be considered as Project Costs. Activities, responsibilities, and costs not directly attributable to the AWSCS are not to be considered Project Costs and shall not be included in the allocation of costs under this Agreement.

2.2.1 Allocation of Costs: The parties have agreed to share equally (50%-50%) in the costs required to upgrade the AWSCS. The capacity each party will have in the upgraded system is as noted in Exhibit "A". "Project Costs" subject to allocation include the following: design engineering, construction, permitting, inspection, contract administration services, and other cost items agreed to by the parties. Each party will be responsible for payment of its share of the actual agreed costs. An estimate of the agreed costs for each segment is set out in Exhibit "A". The following costs incurred by the City prior to the execution of this Agreement shall be included in the allocated costs between the parties, subject to the cost allocation formula set out in this section:

Consoer Townsend Envirodyne Engineers, Inc. for Section B design plans and a preliminary design for the entire AWSCS, $276,585.16.

Pentec Environmental, Inc. for a wetland assessment for Section B's proposed alignment, $3,499.75.

2.2.2 Invoicing and Fund Distribution: The City shall provide to the MIT an invoice for the design, construction and project management and inspection work of the AWSCS done pursuant to Section 2.3 of this Agreement. The MIT shall provide for a fund transfer of the MIT's share of the invoice amount to a financial institution of the City's choice within 5 calendar days of the date that the MIT receives the invoice. To the extent that the MIT disputes the amount of the invoice, or whether the contract or the work performed is in conformity with this Agreement and the approved contract documents, that dispute shall be resolved under Section 10 of this Agreement. Interest of 5% shall be added to any invoice that is 30 days past due and found to be properly owed.

2.2.3 Alternative Invoicing and Fund Distribution: At the option of the City, it may elect to receive the MIT share of the design, construction, project management work and inspection of the AWSCS done pursuant to Section 2.3 and this section, but not under Section 2.2.2. The City shall make its election in writing to the MIT at the same time that the design or construction contracts to design or build each segment of the AWSCS is executed by the City. Once the City makes election it may not change its decision during the design or construction of the segment awarded without the consent of the MIT.

(a) Prior to letting of the consultant contract or the request for bids and upon notification by the City that the City has committed funds to meet its payment obligations under this Agreement, the MIT shall deposit their share of the estimated project costs into a bank account that Auburn can draw from to pay for work related to the AWSCS segment being constructed or the consultant contract. The parties agree that costs incurred in design and construction of the AWSCS will be paid equally by the City and MIT as the costs are incurred, except as otherwise set out in this Agreement. Once funds are deposited into this account they will be unavailable for MIT until project completion or if the project is terminated early, upon termination. The account will earn interest for the MIT. Payment from this account does not guarantee MIT approval or waive the MIT's right to protest any expenditure by the City.

(b) MIT approved contract changes may require additional funds be deposited into this account to ensure sufficient funding to support MIT's portion of said change. Account adjustments shall occur within 10 calendar days of MIT approval for said change.

(c) To the extent that the MIT has provided construction funds that remain unexpended at the end of the construction of a segment of

the AWSCS, any remaining funds shall be carried forward and shall be used to fund a portion of the MIT's share of a subsequent section. When the entire AWSCS is completed or upon termination if terminated early with funds remaining in the MIT's account, those funds, with accrued interest, shall be refunded to the MIT. The City shall provide periodic reports, no less frequently than quarterly on the expenditure of funds for the project, as noted in Section 2.2.4 and at the completion or termination of each segment a final accounting of the funds expended will be provided.

(d) To the extent that the parties to this Agreement have a dispute with respect to invoices, the reasonableness of costs associated with a segment or other matters related as a party's duty to fund, that dispute shall be resolved under the procedures set out in Section 10 of this Agreement.

2.2.4 Final Accounting: The City shall provide periodic reports, no less frequently than quarterly on the expenditure of funds for the project, as noted in Sections 2.2.1 and 2.2.2. At the completion or termination of each segment the City will provide a final accounting of the funds expended.

2.3 Design and Construction Contract Development: The City shall be the contracting agent responsible for managing contracts with design and construction professionals consistent with the terms of this agreement and applicable laws. Direction to the consultant and contractor shall be through the City, which is the contracting party.

2.3.1 Reviews: The MIT shall have the opportunity to participate in the review and approval of: (1) the selection of any consultants, contractors, consistent with any bid documents and bid procedures, and the development of their corresponding contracts for work to be paid by allocated funds under this Agreement; and (2) design documents (including any intermediate designs that require approval) bid documents, construction plans, budgets, sequencing changes, schedules, project specifications, and similar documents. MIT review(s) and approval(s) shall take place prior to the time that such document(s) are considered final by the City and prior to the time that such documents are submitted by the City to the contracting party for signature. The parties shall work cooperatively to assure that all relevant comments are considered in the contract development process. MIT shall provide its approval, disapproval, comments, or notice of its intention to waive its rights to approve within 15 calendar days of the date that the documents are submitted for MIT review and approval. Failure to respond in the time set out in this section shall constitute approval of the document. Once MIT approval is granted, no further changes to the contract shall be allowed without further concurrence between both parties.

2.3.2 Correspondence and Meetings: The MIT shall receive pertinent copies of project correspondence and may, at its option, audit the City's project file and participate in any matter relating to the project including work schedules, project meetings, project reports, change orders, claims, pay estimates, billings, project close out, provision for continuation of services, and related matters. The City shall inform the MIT of all progress and design meetings with the consultant/contractor and MIT may, at its option, attend these meetings. The MIT may contest any billing as not being consistent with applicable contract documents or the terms of this Agreement and take any actions necessary to protect its interests if claims are filed. Progress meetings will be established regularly but no less frequently than monthly to confer on the construction project and any other aspect of the AWSCS project. To the extent that the MIT believes that the City is not complying with the terms of any construction contract or the terms of this Agreement and the dispute is not resolved, either party may seek to resolve the dispute under Section 10 of this Agreement.

2.3.3 Scheduling: The proposed construction sequencing for improvements to the AWSCS is as identified in Exhibit A. Approval of this Agreement confirms the parties' agreement with the sequencing and grants the City authority to begin processing bills for funds expended on the design of the AWSCS consistent with the provisions set out in Section 2 of this Agreement.

To the extent the parties are unable to reach agreement or any party believes the other is acting inconsistent with the terms of this section, the dispute shall be resolved under Section 10 of this Agreement.

2.4 Actual Construction: The City shall be responsible for the actual construction of the AWSCS, paying all construction related costs consistent with the construction/bid documents and assuring that construction of each segment is completed pursuant to the contract terms and consistent with the terms of this Agreement and Exhibit "A". The City shall be responsible for preparing record drawings and providing one full and complete copy to the MIT within 90 calendar days of final project acceptance by the City. The City shall follow normal contracting rules, procedures, and standards as commonly accepted by the public works industry, except as might be modified by this Agreement.

2.4.1 Project Monitoring: The City shall be responsible for monitoring construction, and shall assure that all contractors, subcontractors and material men are paid and any liens are discharged as required in the respective contracts, or by operation of law. MIT shall not be liable for any cost, expense or liability associated with the failure to pay any contractor, subcontractor or material man.

The MIT shall have access to the project site at all times that construction operations are underway for the purpose of monitoring the project progress and ensuring compliance with contract documents and the terms of this Agreement. The MIT shall follow appropriate safety requirements for construction zones and shall report any concerns to the City Project Manager or Project Inspector consistent with Section 2.3.

2.4.2 The City shall indemnify MIT against any loss, cost or expense arising out of any action brought against MIT seeking payment for work done on the AWSCS based on a contract that is not approved by MIT.

2.5 Contract Changes: The City may, without MIT prior concurrence, approve changes for consultant and construction contracts up to 5% of original contract costs. The 5% of an approved construction contract may be set out in any one segment as either,

(a) minor changes (individual changes under $5,000 each),
(b) line item quantity changes (changes to a line item quantity on the bid form), or as
(c) a change order (if the individual change exceeds $5,000).

Changes in bid quantities, minor changes, or change orders shall all be brought to the MIT's attention no later than the next scheduled progress meeting between the City and MIT. A description of the change along with an explanation for the change shall be supplied to the MIT for its concurrence. If MIT determines that the change was not proper it may refuse to pay that portion of the cost of the change that would otherwise be allocated to the MIT. If the parties do not agree on this issue then the issue or disagreement shall be resolved under the procedures set out in Section 10.

Contract changes exceeding 5% of the total contract estimate shall require City and MIT approval prior to implementation. All changes that require City council approval shall also require MIT approval without regard to the amount. City and MIT shall provide their approval, disapproval, comments, or notice of its intention to waive its rights to approve within 15 calendar days of the date that the change is submitted in writing to each of the agencies. Failure to respond in the time set out in this section shall constitute approval of the document.

2.6 Final Inspection: Every contract let to construct, modify, or repair the AWSCS shall provide for a final inspection of the work done prior to any final payment under the contract or the release of any funds held back. The City shall take the lead in providing a final inspection. The MIT shall be informed of any final inspection or testing events at the time of scheduling, or 5 calendar days prior to any scheduled inspection, whichever is the shorter. The MIT may provide input and options, on the methods and means to be used to

inspect the completion of each segment; the entire AWSCS; and during the life of this Agreement, any repairs or modifications done to the AWSCS. The MIT, in its discretion, may participate in or monitor the final inspection. If the parties cannot agree on the methods and means of any final inspection the dispute shall be resolved under the procedures set out in Section 10 of this Agreement.

3. OPERATIONS AND MAINTENANCE

3.1 Operation and Maintenance Duty: The City shall be responsible for undertaking all the routine operation and maintenance associated with the AWSCS. Routine operations and maintenance shall consist of inspection and cleaning of the trunk line together with the activities set out in Exhibit "B. The MIT's duty to contribute to operations and maintenance shall commence when the MIT and King County execute the Agreement set out in Section 4.

3.2 MIT Contribution: MIT's maximum obligation to contribute towards the operations and maintenance set out in Section 3.1 shall be $600.00 (six hundred dollars) per year. This fee shall be payable within the month of January of each year. The MIT shall have no other financial obligation to fund operation and maintenance set out in Section 3.1.The MIT shall begin making this contribution upon the establishment of the MIT as a King County Component Agency for the conveyance and treatment of wastewater flows to King County. This fee shall be reviewed after 15 years from the date of this Agreement. If an increase in the annual fee is determined justifiable then the City and the MIT shall negotiate the new fee.

3.2.1 In order to measure MIT wastewater volume and contribution, MIT shall install and maintain a flow meter to be located at the southern terminus of the AWSCS. The meter shall have a totalizer that records the volume of wastewater conveyed to the AWSCS. This meter shall be used in quantifying MIT wastewater flow into King County's system.

3.2.2 If requested by MIT, the City will install, at the City's expense and at a location designated by the MIT, a temporary flow monitor to sufficiently capture the cumulative City and MIT flows in the conveyance piping. The meter will be installed at a frequency not to exceed once every 20 months. The City shall have three months to establish the meter upon receipt of written request by the MIT. All information concerning the flows from said meter shall be provided to the MIT. Any information provided from King County to City concerning the flows from the AWSCS shall be forwarded to MIT for their records within 15 calendar days of receipt.

3.3 Extraordinary Repair: Should the AWSCS require additional repair or maintenance or upgrade over and above the routine maintenance

described in part 3.1, in order to meet the requirements of the MIT and City, and where the need for maintenance is not caused by the negligence of either party, the City and MIT shall meet together to agree on the nature and cost of the repair or upgrade. Upon reaching agreement on the nature and costs of the repair, each party shall contribute to the repair and/or upgrade in the same percentage as each contributed to the construction of the AWSCS. The City may complete repairs without concurrence from MIT where the failure to immediately complete the repairs would create a public health hazard caused by the release of wastewater outside of the sewer system. When the City acts without the concurrence of MIT, the City shall document the reasons for such repair and costs. MIT may contest the need for the emergency repair and or the amount expended. If the parties are unable to reach agreement on the nature of Extraordinary Repairs, the costs associated with such repairs, or any dispute than resolution will be sought under Section 10 of this Agreement.

3.4 Coordination of Operation and Maintenance: The parties shall each name one representative to coordinate operation and maintenance matters and to serve as a medium of communication on such matters. The representatives shall meet at least monthly to examine and agree on maintenance schedules, cost items and similar matters relating to the operation and maintenance of the AWSCS. Neither representative shall have the power to bind or commit a party to costs that exceed the operation and maintenance fund established in the Agreement. Disputes shall be resolved under the procedures set out in Section 10.

3.5 Effective Date: The duty of the MIT to contribute to Extraordinary Repairs under Section 3.3 shall apply only to those segments of the AWSCS that are replaced under this Agreement and only when the replacement is complete. The MIT shall not be responsible for the cost of ordinary repairs and maintenance under Section 3.1 on Segments of the AWSCS that have not been replaced under this Agreement where the cost of ordinary maintenance and repair is related to the age of the AWSCS extant as of the date of this Agreement.

4. SEPARATE AGREEMENT BETWEEN KING COUNTY AND TRIBE.

4.1 The MIT shall execute a separate interlocal agreement with King County for King County's conveyance and treatment of the MIT's wastewater.

4.2 The MIT shall be governed by the existing conditions of the 1997 Auburn MIT Agreement for wastewater conveyance established with the City as noted in Exhibit "C", a copy of which is attached hereto and is incorporated herein by this reference, until an agreement is established between the MIT and King County for the conveyance and treatment of

wastewater. Upon the establishment of said agreement with King County the MIT shall begin paying Operation and Maintenance fees as set out in Section 3.2 of this Agreement.

4.3 Upon the establishment of said agreement with King County the City shall provide the MIT with a final monthly sewer bill based upon all the facilities that have connected to the sanitary sewer pipe that drains into Auburn. The MIT shall supply documentation detailing all of the MIT connections to the wastewater conveyance facility.

4.4 Upon the execution of this Agreement, Section 5.1 of the 1997 Agreement shall not apply, and the MIT may continue to move wastewater through the existing and when completed new AWSCS without regard to the number of MIT hook-ups or the source of the wastewater so long as the wastewater meets the standards set out in the 1997 agreement and capacity within the AWSCS is not exceeded. Prior to the completion of the AWSCS, if capacity within the existing AWSCS is exceeded then the MIT shall be required to delay their peak flows until off-peak hours or until the problem lines are repaired. For the purpose of this Section 4.4 off-peak hours shall be defined as weekends and anytime except 6:30 AM to 6:30 PM.

4.5 The parties agree that upon establishment of the MIT as a King County wastewater agency, the MIT will no longer be subject to any City fees including but not limited to monthly service fees and new connection system development charges, unless otherwise noted in this Agreement. All fees associated with conveyance, treatment, and disposal of wastewater shall be billed from King County directly to the MIT except the maintenance and operational costs outlined in Section 3.2 above.

4.5.1 The King County capacity charge shall continue to be billed directly to the MIT from King County for new connections to the sanitary sewer system.

5. WASTEWATER COLLECTION LIMITATIONS

5.1 The MIT agrees to limit its local sanitary sewer service area for sewer connections to Indian lands located on or near the MIT Reservation located outside of the City's service area as defined as of the effective date of this Agreement. This region is consistent with the area used to define the peak flows noted in Exhibit "A".

5.2 The capacity required by the City for the AWSCS shall provide service to those properties within the City's approved service area based upon existing zoning, future growth projections, and topographical features.

5.2.1 Nothing in this Agreement is intended to apply City zoning to MIT owned lands within the City.

5.3 The MIT and City may agree in the future to add MIT land located within the City's service area to the MIT's service area. If the MIT and the City so agree, the respective Operation and Maintenance obligation of the parties set out in Section 3 shall be adjusted.

6. WASTEWATER OPERATIONAL LIMITATION

6.1 The MIT and City agree to maintain soluble hydrogen sulfide levels in the City's and MIT's wastewater below 0.5 ppm over a six-hour average. Each will provide chemical addition to its wastewater infrastructure if sulfide is determined to be creating a corrosive environment. In addition, the parties shall require pretreatment of industrial wastes to King County standards and shall require grease traps to be installed and maintained by all restaurants.

6.2 The MIT and City shall enforce all sewage collection and transmission system wastewater quality standards required by King County Department of Natural Resources and Parks, Wastewater Treatment Division and/or the EPA, as applicable, for all wastewater discharged into the AWSCS. To the extent that the City imposes additional limits on sewage that may be accepted into the City's sanitary sewer system, those additional limitations shall apply to the MIT so long as they (a) address the quality of effluent accepted into the system; and (b) apply to all customers served by the City either directly or by contract. Provided, that prior to the imposition of any limit, the City shall confer with the MIT and provide assurances to the MIT that any change will not affect or otherwise limit existing MIT services. Provided further, the City may not impose any additional limit that would affect the right of the MIT to fully utilize its capacity ownership rights in the AWSCS, or that would be inconsistent with the express provisions and limits set out in this Agreement. The MIT shall deliver to the AWSCS only such sewage collected or received by the MIT as is in conformity with the rules and standards set out in this section. The MIT shall not accept sewage or wastes from any person, firm, corporation, or other entity that is located outside of its service area boundaries, without written consent of the City. Should the MIT or the City at any time suspect that the wastewater is not meeting these standards, the party suspected of being in violation shall make every effort to locate and eliminate the source of contamination.

6.3 Damage to the AWSCS resulting from wastewater from either the MIT or City collection systems that does not meet the standards of Section 6.1 and 6.2, shall be addressed as follows: Where the MIT is the offending party, it will reimburse the City for any and all such damages; where the City is the offending party it shall be responsible for repairing any damage at its sole

cost and expense. In addition, either party that believes that the other party is delivering wastewater to the AWSCS that does not meet the standards set out in this section may seek injunctive relief under Section 10.3 against the offending party to enjoin the violation without first complying with the requirements of Sections 10.1 and 10.2.

6.4 MIT specifically agrees that should the City believe that the MIT is delivering wastewater that does not meet the standards set out in this Agreement and the City does not take action permitted under Section 6.3, the failure to take such action shall not be deemed a waiver of any of the City's rights under this Agreement and the MIT will not assert the doctrine of wavier, estoppel, or laches against the City in any subsequent action relating to the delivery of wastewater that does not meet the standards under this Agreement.

7. RESPONSIBILITY FOR DAMAGES

7.1 The City and the MIT shall each be responsible for any damage that is caused to the AWSCS (not including routine maintenance and repair) by their respective negligent acts or the acts of their customers. In such case the cost of repair shall be born by the negligent party.

7.2 The City shall perform repairs to the AWSCS as noted in Section 3.3. Where the repair was necessitated by the negligent actions of the MIT as described in Section 7.1 above, the reasonable cost for such repairs will be billed to the MIT, and shall bear interest, at the then existing ninety (90) day Treasury Bill rate, after thirty days from the date of billing. Where the repairs to the AWSCS are caused by the City, the City shall complete the repairs, at its sole expense, in a reasonable time so as not to interfere with the continued operation of the AWSCS. Where the damage is caused by both the MIT and City, each shall be equally (50%-50%) responsible for its share of the damage repair costs. Questions as to whether particular damage is the result of the negligence of either or both parties and the needed repairs to fix the damage shall be resolved under Section 10.

8. CAPACITY RIGHTS

Payment of invoices associated with the design, construction, inspection and project management of AWSCS's sewer improvements entitles the MIT to ownership of capacity within the AWSCS as outlined within Exhibit "A".

9. TERMINATION OF AGREEMENT

It is the intention of the parties that this Agreement shall not terminate during its term. If a party believes that the other party is in violation of this Agreement, that party may seek redress under Section 10. Provided, that the

parties thereto may agree in writing to terminate this Agreement on whatever terms and conditions they determine to be acceptable. Provided further, that neither party may force the other party to terminate this Agreement, nor shall the failure to agree to terminate this Agreement be subject to the procedure setout in Section 10.

10. DISPUTE RESOLUTION AND LIMITED WAIVER OF SOVEREIGN IMMUNITY

10.1 **Dispute Resolution - Mediation.** In the event the MIT and the City are engaged in a dispute, which relates to or arises under this Agreement, and they are unable to resolve said dispute within 30 calendar days, either party may request mediation.

10.1.1 The party requesting Mediation shall notify the other party in writing of its request to mediate a dispute identified in Section 10.1. If the parties agree to enter into mediation within 20 calendar days from such request the matter shall be deemed stayed and the arbitration clause contained herein shall not be put into effect. Mediation shall continue for no more than 90 calendar days at which point the mediation shall be deemed failed unless the parties have reached an agreement and have had such agreement approved by the governing bodies of each respective party and, if applicable, the Bureau of Indian Affairs. The parties may agree to continue mediation for a longer period. If such agreement is not approved by the governing bodies of each respective party or is not enforceable in the United States District Court for the Western District of Washington, the mediation shall be deemed failed and the unresolved issue shall be submitted to binding arbitration as set forth herein.

10.2 **Failure to mediate:** In the event that the parties do not reach an agreement to mediate within 20 calendar days of receipt of the notice requesting mediation by the non-requesting party, the matter shall be submitted to binding arbitration as set forth herein.

10.3 **Arbitration:** Any controversy or claim that relates to or arises under this Agreement or the breach thereof, shall be settled by arbitration administered by the American Arbitration Association in accordance with its applicable rules. Judgment on the decision rendered by the arbitrator may be entered into the United States District Court for the Western District of Washington. The arbitrator shall not have authority to enter an order terminating this Agreement.

10.4 **Attorney fees and costs:** Each party shall bear its own costs of mediation and arbitration.

10.5 **Limited Waiver of Sovereign Immunity and Consent to Jurisdiction of Federal Court.** The MIT hereby waives its sovereign immunity and consents to the jurisdiction of the United States District Court for the Western District of Washington concerning disputes regarding the interpretation of this Agreement and the enforcement of any rights, obligations or liabilities, in law or in equity, pertaining to hold harmless provisions of this Agreement. Such waiver of Sovereign Immunity and Consent to jurisdiction shall apply to no other court. This Limited Waiver of Sovereign Immunity and Consent to Jurisdiction has been specifically negotiated by the parties and the decision of the City to enter into this Agreement was made in part based on this limited waiver of sovereign immunity.

10.6 **Disclaimer of MIT Tribal Court Jurisdiction.** The MIT agrees that the MIT Tribal Court has no jurisdiction over the force, effect, and interpretation of this Agreement, nor the resolution of disputes that pertain to its implementation. The MIT further agrees that it has no authority to submit the City to the jurisdiction of the MIT Tribal Court with regard to any sewer-related matters or disputes that may arise between the parties under this Agreement.

11. PERFORMANCE, AMENDMENT, AND INTERPRETATION

Each party agrees that it will execute any and all instruments, documents and resolutions or ordinances necessary to give effect to the terms of this Agreement.

This Agreement may be modified only if such modifications are written and approved by written resolutions adopted jointly by the Auburn City Council, the MIT Tribal Council, and the BIA, if required.

The parties shall comply with all applicable rules and regulations pertaining to them in connection with the matters covered herein.

This document has been mutually negotiated between the parties. No adverse inference or ambiguity shall be construed against the party preparing this document for signature. No waiver by either party of any term or condition of this Agreement shall be deemed or construed to be a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether of the same or a different portion of this Agreement.

12. TERM OF AGREEMENT

The initial Term of this Agreement shall continue until the AWSCS constructed under this Agreement is replaced in its entirety or 50 years whichever is the longer. If the parties jointly agree to replace the AWSCS the

parties shall negotiate the terms and conditions of a new agreement that provides for both MIT and City ownership and use of capacity in the new sewer line. If the parties can not reach an agreement on the terms of a new agreement with respect to the new AWSCS, then the MIT may continue to have the right to use the AWSCS in the same manner and under the same conditions as set out in this Agreement until the existing AWSCS is fully replaced or until the 50 year term referred to above ends, whichever is longer.

13. INDEMNIFICATION

The MIT agrees to indemnify and hold the City and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, losses, damages or costs, of whatsoever kind or nature, brought against the City arising out of, in connection with, or incident to the execution of this Agreement and/or the Tribe's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of the City, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of the Tribe; and provided further, that nothing herein shall require the Tribe to hold harmless or defend the City, its agents, employees, and/or officers, from any claims arising from the sole negligence of the City, its agents, employees, and/or officers. No liability shall attach to the City by reason of entering this Agreement except as expressly provided herein.

The City agrees to indemnify and hold the MIT and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, losses, damages or costs, of whatsoever kind or nature, brought against the MIT arising out of, in connection with, or incident to the execution of this Agreement and/or the City's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of the MIT, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of the City; and provided further, that nothing herein shall require the City to hold harmless or defend the MIT, its agents, employees, and/or officers, from any claims arising from the sole negligence of the MIT, its agents, employees, and/or officers. No liability shall attach to the MIT by reason of entering this Agreement except as expressly provided herein.

Each party shall maintain in full force and effect throughout the term of this Agreement a policy of comprehensive general liability insurance, or demonstrate that the party is self-insured, with minimum coverage of one

million dollars per occurrence / two million dollars aggregate for personal injury, including death, and property damage. The parties may agree to increase the coverage limits set out in this section or if no agreement on different limits can be reached, any party can submit the issue for resolution under Section 10. If insurance is provided the insured party shall include the other party as an additional named insured. If a party relies on self-insurance, the other party shall be named as a third party beneficiary with enforcement rights to seek indemnification.

The City and MIT agree to hold each other harmless from third-party claims arising from the use of wastewater conveyance facilities within the respective jurisdictions and service areas.

14. ASSIGNMENT

The parties shall not assign this Agreement or any interest, obligation or duty therein without the express written consent of the other party.

15. ATTORNEY'S FEES

If either party shall be required to bring any action to enforce any provision of this Agreement, or shall be required to defend any action brought by the other party with respect to this Agreement, and in the further event that one party shall substantially prevail in such action, the losing party shall, in addition to all other payments required therein, pay all of the prevailing party's reasonable costs in connection with such action, including such sums as the court or courts may adjudge reasonable as attorney's fees in trial court and in appellate courts.

16. NOTICES

All notices between the two agencies hereunder may be delivered or mailed. If mailed, they shall be sent to the following respective addresses:

City of Auburn
Public Works Director
25 West Main Street
Auburn, WA 98001
(253)-931-3010

Muckleshoot Indian Tribe
Assistant Tribal Operations Manager
Community Development
39015 172nd Ave. S.E.
Auburn, WA 98092
253-876-3104

or to such other representative addresses as either party may hereafter from time to time designate in writing. All notices and payments mailed by first class mail, postage prepaid shall be deemed to have been given on the second business day following the date of mailing, if properly mailed and addressed.

Notices and payments sent by certified or registered mail shall be deemed to have been given on the day next following the date of mailing, if properly mailed and addressed. For all types of mail, the postmark affixed by the United States Postal Service shall be conclusive evidence of the date of mailing.

17. NONDISCRIMINATION

Each of the parties, for itself, its heirs, personal representatives, successors in interest, and assigns, as part of the consideration hereof, does hereby covenant and agree that it will comply with statutes, executive orders and such rules as are promulgated there under that are applicable to a party to assure that no person shall on the grounds of race, creed, color, national origin, sex, age, or the presence of any sensory, mental or physical handicap be discriminated against or receive discriminatory treatment by reason thereof.

18. INTEGRATION.

This Agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the terms of this Agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

19. OBLIGATION INTACT.

Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either the MIT or the City regarding provision of sewer service, except as specifically set forth herein.

20. OBLIGATION TO COMPLETE PROJECT.

The Parties expect that the AWSCS shall be constructed in substantially the same form as described in Exhibit A. The parties expect that, absent an unforeseen intervening event that is outside the control of the parties, that could not be avoided by the use of due care, that all segments of the AWSCS will be completed within six years of the effective date of this Agreement, unless otherwise agreed upon by the parties. Should either party fail to take any action required under this Agreement such that the AWSCS is delayed or its construction stopped, the other party may seek injunctive relief under Section 10 to compel the other party to undertake any required action under this Agreement to complete the AWCSC. Provided, that if the City is the non-complying party, the MIT may continue to transport effluent through the existing Auburn Way South sewer line to accommodate at least a peak flow of 1.34cfs without any limitation on the source of such effluent so long as it comes from the MIT service area and meets effluent standards set out in this Agreement until the AWSCS is completed. Provided further, unless a court holds otherwise, should the City be held to be legally incapable of completing the AWSCS the MIT may transport effluent through the existing Auburn Way South

sewer line to accommodate at least a peak flow of 1.34cfs without any limitation on the source of such effluent so long as it comes from the MIT service area and meets effluent standards set out in this Agreement. Provided further, to the extent that the MIT has paid any money to the City as required under this Agreement and the City has become legally incapable of completing the AWSCS, the City shall return to the MIT any funds paid by the MIT, including accrued interest, without regard to whether the funds have been expended by the City, unless some other agreement between the MIT and the City can be established.

IN WITNESS TO THE TERMS OF THIS AGREEMENT, the parties hereto have subscribed their names:

MUCKLESHOOT INDIAN TRIBE

3-19-04

John Daniels Jr. Date
Chairperson, Muckleshoot Tribal Council

CITY OF AUBURN

3/26/04

Peter B. Lewis, Date
Mayor, City of Auburn

ATTEST:

Danielle Daskam,
City Clerk, City of Auburn

APPROVED AS TO FORM:

Daniel B. Heid
City Attorney, City of Auburn

Exhibit A
Auburn - Muckleshoot Indian Tribe Sanitary Sewage Agreement
Auburn Way South Conveyance System (AWSCS)

Section	Begin SSMH	End SSMH	Length of Pipe (ft)	Peak Flows (cfs)			Pipe Size (in)	Flow Allocation (%)		Estimated Construction Cost ($)
				MIT	Auburn	Total Accum.		MIT	Auburn	
	1216-20	1216-18	680	7.85	1.10	8.95	21			
A	1216-18	1216-13	1,090	7.85	1.10	8.95	21	86.6%	13.4%	$ 693,700
	1216-13	1216-63	410	7.85	1.75	9.60	21			
	1216-63	1115-13	1,330	7.85	2.24	10.09	24			
	1115-13	1115-11	640	7.85	2.85	10.70	24			
B	1115-11	1115-28	2,080	7.85	3.98	11.83	24	69.2%	30.8%	$ 2,481,800
	1115-28	1114-07	1,780	7.85	3.98	11.83	24			
	1114-07	1114-04	1,000	7.85	3.98	11.83	24			
	1114-04	1013-15	2,490	7.85	6.63	14.48	24			
C	1013-15	1012-36A	1,310	7.85	7.02	14.87	24	53.6%	46.4%	$ 1,500,800
	1012-36A	1012-35	330	7.85	7.02	14.87	24			
	1012-35	1012-33	350	7.85	7.43	15.28	24			
D	1012-33	1012-17	630	7.85	10.67	18.52	24	43.3%	56.7%	$ 1,217,000
	1012-17	1011-07	2,370	7.85	10.67	18.52	24			
	1011-07	1010-44	2,610	7.85	11.4	19.25	24			
E	1010-44	1010-31	1,400	7.85	13.69	21.54	27	38.3%	61.7%	$ 2,612,000
	1010-31	910-29	2,010	7.85	13.69	21.54	36			
Total			22,510	7.85	13.69	21.54				$ 8,505,300

Priority Schedule:

Priority 1	MH 1216-13 to MH 1114-04
Priority 2	MH 1114-04 to MH 1010-44
Priority 3	MH 1010-44 to MH 910-29
Priority 4	MH 1216-20 to MH 1216-13

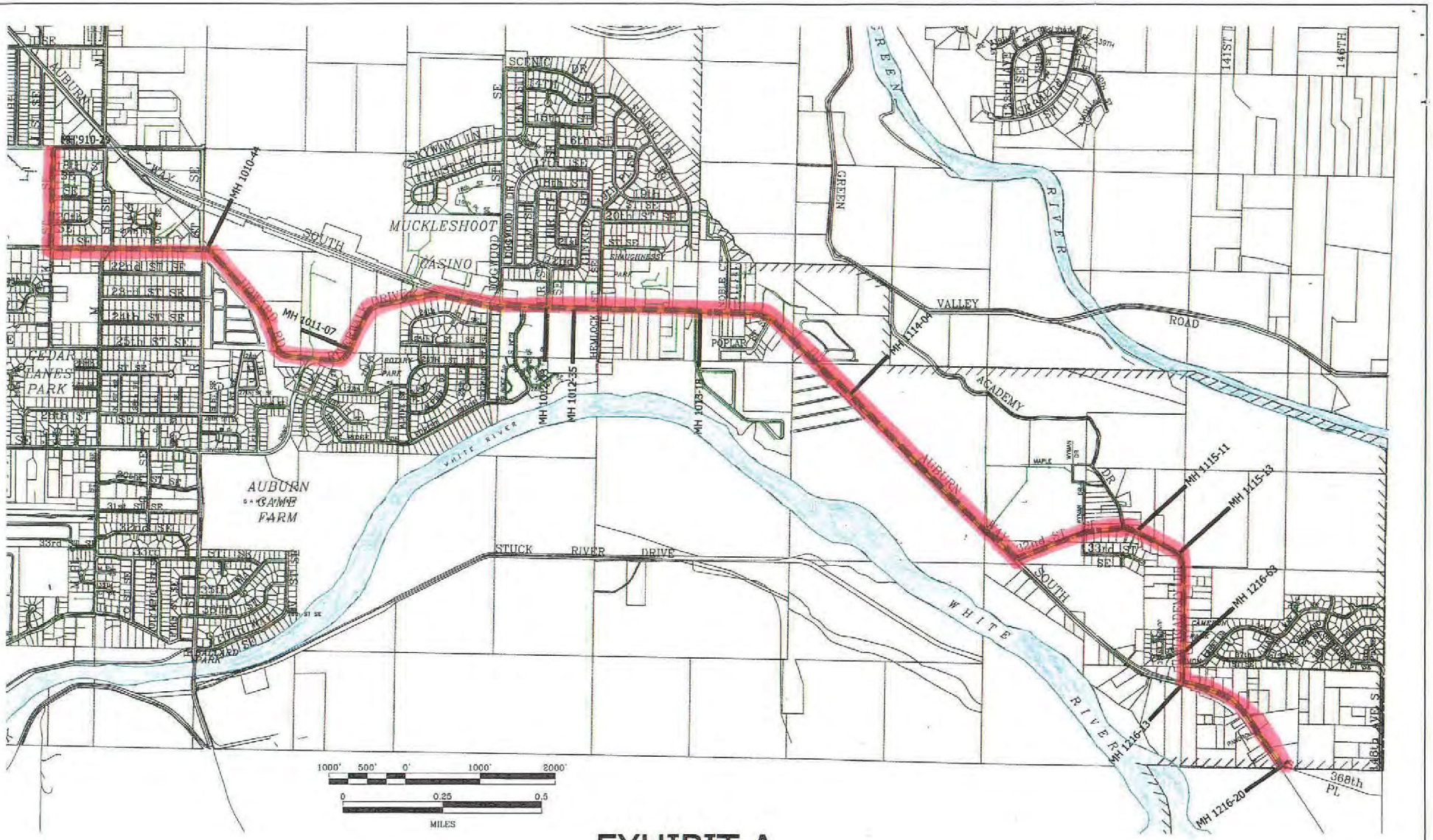

EXHIBIT A

AUBURN MUCKLESHOOT INDIAN TRIBE SANITARY SEWAGE AGREEMENT

AUBURN WAY SOUTH CONVEYANCE SYSTEM

Existing Sanitary Sewer
Proposed Replacement
Auburn City Limits

Plotted: December 2003

Exhibit 1 Exhibit A
Resolution No. 3660
Page 2 of 2

Exhibit B
Auburn-Muckleshoot Indian Tribe Sanitary Sewage Agreement

Auburn Way South Conveyance System (AWSCS) Operation and Maintenance Activities

Line Locates
Locate sewer lines for construction activities that take place near existing sewer pipes.

High Velocity Jetting
Use high-pressure water discharged from a nozzle to scrub the internal surfaces of the AWSCS.

Vacuum Cleaning
Vacuum clean the AWSCS to collect solids, fats, oils and possibly grease that may have accumulated. This will typically be done in conjunction with high pressure cleaning.

Rat Baiting
Place rat poison in manholes to eliminate existing or potential problems.

Visual Inspection of AWSCS
Pull manhole lids to visually observe the flow and assess whether capacity problems are being experienced. This will be done most frequently during storm events.

Smoke Testing
Smoke test AWSCS to determine if any cracks or broken pipe exist.

TV Inspection
Inspect AWSCS for breaks, bellies or other pipeline problems.

Manhole Maintenance
Re-grout AWSCS manhole collars that may have shifted and cracked allowing ground water to enter the manhole. Add a riser ring if needed due to manhole settlement.

Repairs and Replacement
Repairs and replacement to the AWSCS shall be made consistent with the terms of the Agreement.

Exhibit C

SANITARY SEWAGE CONNECTION AGREEMENT

between the

CITY OF AUBURN

and the

MUCKLESHOOT INDIAN TRIBE

of the

MUCKLESHOOT INDIAN RESERVATION
KING COUNTY, WASHINGTON, USA

This Agreement is entered into on this ___ day of _____, 1997, in King County, Washington, between the City of Auburn, a municipal corporation under the laws of the State of Washington, hereinafter referred to as the "City," and the Muckleshoot Indian Tribe, a federally recognized Indian Tribe located on the Muckleshoot Indian Reservation, hereinafter referred to as the "MIT" and "MIT Reservation" respectively.

WHEREAS, in order to meet the standards prescribed by the State of Washington, Department of Ecology, for the collection and disposal of sewage effluent within the State, the City constructed a sanitary sewage collection system including transmission facilities to the King County Department of Natural Resources, Water Pollution Control Division, hereinafter referred to as "Metro", wastewater treatment plant; and

WHEREAS, the MIT has identified the need for community sewage collection and disposal facilities to resolve current sanitation needs of the MIT Reservation not currently served by a sanitary sewage collection system; and

WHEREAS, the Indian Health Service, hereinafter referred to as "IHS," the Environmental Protection Agency, hereinafter referred to as "EPA," the MIT and the City concur in the need for a sewage collection, treatment and disposal system to protect the health of MIT members and to safeguard the environment in and around the MIT Reservation; and

WHEREAS, the IHS, the EPA, the MIT and the City have entered into a separate Memorandum of Agreement to provide for the construction of a sewage collection and transmission system on the MIT Reservation and for connection of this sewage system to the City's sewage system utilizing funding from the Indian Set-Aside Program of the Clean Water Act - 1987 amendments, through the EPA and funding from the IHS through Sanitation Facilities Construction Program, Public Law 86-121, under Project PO-94-690; and

WHEREAS, this Agreement is required by EPA and IHS for the MIT to obtain the funding to resolve its current residential sanitation needs; and

WHEREAS, the consideration the City will receive from this Agreement is enhancement of public health by connecting current septic systems to a new sewer system; and

WHEREAS, furtherance of public health and safety of area inhabitants requires that all sewage collected by the MIT and discharged into the City's system of sanitary sewers be both non-harmful and non-toxic to both the City's system of sanitary sewers and area residents, as well as in conformity with reasonable rules and regulations; and

WHEREAS, the Auburn City Council has by Resolution No. 2800 and 2671, a copy of which ~~is~~ attached hereto and is incorporated herein by this reference, expressly reviewed and reaffirms the policy set forth in Resolution No. 2671 authorizing the execution of the September 6, 1995, Memorandum of Agreement Among the IHS, the EPA, the City, and the MIT of the MIT Reservation, also identified as Public Law 86-121, Project PO-94-690 ("Four Party Agreement" herein), and thereby authorized its Mayor to execute this Agreement which authorizes sanitary sewage connections for residential, single family housing units and specific existing non-residential facilities;

WHEREAS, all parties agree that this Agreement is solely for the purpose of protecting public health and contemplates only the connection of the 40 existing homes in the Skopabsh Village, up to 230 units of residential housing, and those other facilities set forth in the City's Resolution No. 2671, page two, which are defined as "Tribal administration, Tribal school, library, senior center, Tribal store, churches";

WHEREAS, the MIT Tribal Council has by Resolution No. 97-188, a copy of which is attached hereto and is incorporated herein by this reference, expressly reviewed and approved this Agreement and secured Bureau of Indian Affairs, hereinafter referred to as "BIA", approval pursuant to Title 25, Section 81, of the U.S. Code; and

WHEREAS, the dispute resolution provisions of this Agreement shall apply to all issues arising between the parties which relate to sewer and sewer related services; and

NOW, THEREFORE, in order to provide for connection and continued use of the MIT's sewage collection and transmission system to the City's sewage system, the parties mutually agree:

I. CONNECTION AUTHORIZED

1.1 MIT is authorized to connect to City sewer line to service only 40 existing homes in Skopabsh Village, MIT residential units in existence at the time of City Resolution No. 2671 passage (estimated to be approximately 130 units), up to a maximum of 100 additional units of single family housing, and MIT governmental or community facilities such as administration, school, library, senior center, store, and churches.

II. CITY'S SYSTEM DEVELOPMENT CHARGE

2.1 **Determination of System Development Charge.** That the MIT agrees to provide the City with a listing of all connections to the MIT's sewage system and agrees to pay the City a one-time System Development Charge, hereinafter referred to as SDC, for each connection to the MIT's sewage system. This listing will be updated by the MIT as needed on a monthly basis as an attachment to the monthly utility fee paid to the City. The SDC for each connection shall be as calculated utilizing Metro forms 1057, 1058, and 0461, latest revisions, copies of which are attached hereto, for Residential Customer Equivalents, hereinafter referred to as "RCE's". The MIT has already pre-paid the SDC's for 230 RCE units with IHS funds in April, 1996. The current charge for a single family residential and every other RCE connection is $840.

2.2 This SDC rate is subject to change as described in Article XIV. of this Agreement.

2.3 The City agrees to waive the SDC for the 40 existing MIT homes in the Skopabsh Village housing area due to these homes being connected to the City sewage system since 1977.

III. CITY'S USER FEE

3.1 Because the MIT has responsibility for ownership, operation and maintenance of the MIT's sewage collection and transmission system, the parties agree that the MIT will provide the City with a monthly user fee equivalent to fifty percent (50%) of the user fee charged to City customers.

3.2 The MIT will provide the City with 50% of the City monthly user fee as charged to the City customers. For other than single family residential connection, this will include an additional volume amount per month. The volume amount shall be calculated as follows:

V = monthly volume from water service meter, in cubic feet
R = current applicable rate, in dollars

$$\text{Volume amount billing} = \frac{[V - 750] * R * (0.5)}{(100) * (7.5)}$$

3.3 Each connection other than single family residential shall have a water service meter installed prior to sanitary sewer connection. Each single family residential connection shall have a water service meter installed prior to 1 September 1997, or prior to sanitary sewer connection thereafter.

3.4 This rate and the applicable percentage to ownership, operation, and maintenance is subject to change as described in Article XIV. of this Agreement.

IV. METRO'S USER FEE

4.1 The MIT will provide the City with the Metro monthly user fee as charged to the City customers. For other than single family residential connection, this will include an additional volume amount per month. The volume amount shall be calculated as follows:

V = monthly volume from water service meter, in cubic feet
R = current applicable rate, in dollars

$$\text{Volume amount billing} = \frac{[V - 750] * (R)}{(100) * (7.5)}$$

4.2 Each connection other than single family residential shall have a water service meter installed prior to sanitary sewer connection.

4.3 This rate is subject to change as described in Article XIV. of this Agreement.

V. QUALITY OF SEWAGE

5.1 The MIT agrees to connect only the 40 homes in the Skopabsh Village, up to 230 units of residential housing, and those other facilities set forth in the City's Resolution No. 2671, page two, which are defined as "Tribal administration, Tribal school, library, senior center, Tribal store, churches ..." that discharge domestic type sewage into the City's sewage system. The MIT will not permit industrial waste producing developments to connect to their community sewage system. For

purposes of this Agreement domestic type sewage shall be defined as that type of sewage which is contributed by a residential user.

5.2 The MIT agrees to enforce all sewage collection and transmission system effluent quality standards as required by the City, Metro and/or the EPA for all effluent discharged into the City's sewage system. The MIT shall deliver to the City sanitary sewer system only such sewage collected or received by the MIT as is in conformity with and subject to such reasonable rules and regulations as currently exist or as may be adopted from time to time by the City, Metro, or the EPA. The MIT shall not accept sewage or wastes from any person, firm, corporation, or other entity which is located within or without it boundaries, or is otherwise delivering its sewage into the MIT's sanitary sewer system, without written consent of the City. Should the MIT or the City at any time suspect that the effluent from the MIT collection system is not meeting these standards, the MIT shall make every effort to locate and eliminate the source of contamination.

5.3 Should damages to the City system result from effluent from the MIT's collection system that does not meet the standards of Section 5.2, the MIT will reimburse the City for any such damages.

5.4 The MIT's transmission of effluent to the City which does not meet the effluent quality standards as required by the City, Metro, and/or the EPA shall constitute a material breach of this Agreement by the MIT entitling the City to immediately terminate this Agreement for cause. Without terminating this Agreement, the City may in its sole discretion and upon provision of notice to the MIT refuse to accept any effluent it believes is not meeting the effluent quality standards as required by the City, Metro, and/or the EPA and continue to accept effluent which does meet applicable standards. In such event, the MIT specifically agrees that the City shall not be deemed to have waived any of its rights under this Agreement and the MIT will not assert doctrines of waiver, estoppel, and laches against the City in any subsequent action pertaining to this Agreement and the rejection and acceptance of conforming and non-conforming effluents.

VI. ~~SEWER COMMISS~~SYSTEMS COORDINATION

6.1 In the interest of continuing to promote better communication and cooperation between the MIT and the City, both parties agree to send a representative to participate in all regular and special meetings of the MIT's Utility District and the City's Public Works Committee. Both parties shall notify the other party in writing of all such meetings.

6.2 The MIT and the City agree to provide technical and operational assistance to the other party upon request and as resources of manpower or equipment or plant may be available on a cost reimbursable basis. If one party assists the other, the party assisted agrees to honor payment of billings for labor and equipment rental. Both parties will make available established hourly rates for purposes of encouraging this program.

VII. SEWAGE FLOW MEASUREMENT

7.1 The quantity of sewage entering the City's collection system shall be measured by a flow meter located in the City's regulation station. The proper calibration of this flow meter will be the responsibility of the City. The MIT shall keep monthly records of the sewage pumps running time hour meters and of the average pumping rate for each pump for comparison and confirmation of the flow meter calibration on an annual cycle. In the event that the flow meter appears to have malfunctioned, the hour meter readings and the corresponding flow rates shall be used to determine the amount of sewage that has been pumped to the City's sewage system until the flow meter repairs are completed. The MIT will report the total sewage flow as measured utilizing the pump running time hour meters estimated method to the City monthly, as an attachment to the monthly user fee payment.

VIII. TRIBAL OR CITY OWNERSHIP AND MAINTENANCE

8.1 The MIT shall own, operate and maintain all gravity collection lines, sewage lift stations and force main piping located upstream of the City's regulation station and generally within the southeastern portion of the MIT Reservation in Sections 1, 2 and 12 of Township 20 North, Range 5 East, W.M., but, also including the gravity and force main piping located outside of the MIT Reservation boundaries in Section 35 of Township 21 North, Range 5 East, W.M., upstream from the City's regulation station.

8.2 The gravity and force main line located downstream from the City's regulation station to the connection manhole at the corner of Auburn-Enumclaw Highway and 368th Street shall be conveyed to and be owned, operated and maintained by the City provided however that MIT residential connections will be permitted, but no non-MIT connections will be authorized without MIT written approval.

8.3 The MIT operations staff shall operate their facilities in conformance with the Plan of Operation developed with the assistance of the IHS during the design and construction of the facilities.

8.4 In order to maintain compatibility of design/construction operating systems, the MIT agrees to construct and maintain all property referred to herein in accordance with standards and specifications provided by the City.

IX. INTERRUPTION OF SERVICE

9.1 It is understood that the City will periodically need to restrict or shut off sewage flow into their collection system in order to perform repair or maintenance on downstream facilities. For scheduled maintenance or repair activities the City shall notify the MIT, in writing, at least five working days in advance. Such notice shall indicate the work that is to be performed, the anticipated duration of this work, what restrictions or changes to the Plan of Operation will be necessary and a contact person for coordinating all activities with the MIT's operations staff.

9.2 It is also understood that emergency situations may arise that could threaten public health and/or the continued operation of the City's sewage collection system and the City may be unable to notify the MIT in the manner prescribed above (in Section 9.1). In such a situation the City shall use best efforts to contact the MIT's Utility staff (operator or Council officers) and request assistance in regulating the discharge of effluent from the MIT's sewage system.

9.3 The MIT, by reason of this Agreement, shall grant the City an access easement to pump station #2 sufficient to permit the City to regulate the sewage flow and to permit emergency repair work on the City's sewage system. A copy of the Easement form is attached hereto as Exhibit A and is incorporated herein by reference as though fully set forth.

9.4 The MIT agrees to assume liability, if any, for sewage back-ups, if any, within the MIT's sewage system that are caused by capacity shortfalls and flow control spill incidents within the MIT's sewage system, and will hold the City harmless from any such claims, all as more particularly described in Article X. of this Agreement.

9.5 The MIT shall procure and maintain in full force and effect throughout the term of this Agreement a policy of comprehensive general liability insurance with minimum coverage of one million dollars per occurrence/two million dollars aggregate for personal injury including death, and property damage. As a condition of providing service, the City reserves the right, in its sole discretion, to demand increased minimum coverage limits at five (5) year intervals from the date of signing hereof. In the event the MIT does not provide proof of insurance issued by a company approved by the City, with increased limits, within thirty (30) days of such request the City shall be authorized to procure such a policy on its own behalf and deduct such policy premiums from the reserve account established pursuant to this Agreement. Such policy shall name the City as an additional named insured and shall include a provision in such policy prohibiting cancellation or reduction in coverage except upon at least thirty (30) written days notice to the City. Cancellation or reduction of the required insurance shall constitute a material breach of this Agreement and, at the City's sole option, may constitute grounds for the City to immediately terminate this Agreement. Further, the MIT agrees to execute all documents and do all things necessary to allow the City, as additional named insured, to recover directly from the insurance carrier in the event of loss, without having to first commence dispute resolution proceedings or bring suit against the MIT.

X. SEWAGE FLOW CAPACITY

Release Monitoring, Metering and Regulation:

10.1 **Conceptual Premises.** The MIT and the City agree to the following conceptual premises with regard to operation and maintenance of the sewer system pursuant to this Agreement:

A. Prior to City approval of sanitary sewer connection, the City shall approve construction documents as per the Four Party Agreement and the following plans, specifications, and conditions will be met:

1. The MIT agrees to construct and dedicate in fee title all infrastructure concerning the system, except for the regulation station vault to be designed and constructed by the City, from the upstream side of the vault, northwesterly to the City's receiving manhole near the City limits. (Exhibit B: general map illustration)

2. The City will design and construct the regulation station, downstream monitoring gauges, telemetry and control cabinet. The City will seek to coordinate this design with the MIT's consultant (IHS) to assure compatibility with the connection and regulation telemetry of the MIT's #2 pump station.

3. The MIT and City agree to cost share the City's design and construction effort referenced in Section 10.1.A.2. on a 50/50 percentage basis according to and for the mutual benefits accruing to both parties. The MIT agrees to pay its share of the City's improvements prior to construction contract award. No connection shall be allowed until such time as all payments are received by the City.

4. The MIT and City agree to share the monthly communication and any associated maintenance and repair bills as necessary to operate and maintain the telemetry system so long as the MIT's sanitary sewer system is connected to the City's sanitary sewer system. These costs will be included on each monthly sewer bill presented to the MIT. The City will be responsible for maintaining the telemetry system up to and including the telemetry intertie box located at the pump station #2. The MIT hereby grants the City and its system maintenance agents right of entry to all locations served by the City's telemetry system.

10.2 **Regulatory Concept:** Generally the system components consist of:

1. Downstream monitoring gauges will be installed at two manholes in the City's system for purposes of measuring, recording and telemetering "real time" control signals to the MIT's pump station that regulates releases to the City's system.

2. A regulatory vault consisting of and containing a manual gate valve, a motor operated ball valve, flow meter, and telemetry devices shall be installed at a location along the force main downstream of Pump Station #2.

3. In Pump Station #2 the design shall provide an additional wet well surcharge minimum capacity volume of 1,400 cubic feet to accommodate pump regulation. Pumping capacity at Pump Station #2 may be overridden by City telemetry. Override telemetry will control operation of both high volume and low volume pumps, as the IHS has installed no variable flow pumps. As such, the only operations available are fixed high volume, fixed low volume, and all off - no volume.

4. The regulation of the pump station shall be responsive to the downstream monitoring gauge signals and the flow control valve in the regulation vault to assure the performance objectives outlined herein are met, and maximum flows are therefor not exceeded.

5. The telemetry system shall be capable of recording the actual flow data in digital format on a continuous basis and down-loading to a computer system in both the MIT office and the City utility office via modem. The computer software will be capable of showing the real-time flow data at all monitored points (Pump Station #2, Regulatory vault, and monitoring gauges).

6. As the City and MIT decide to modify this Agreement to accommodate adjustments of release rates allowable, the telemetry system shall be capable of receiving programmable updates.

7. Prior to issuance of the connection approval the MIT and its contractor will perform commissioning tests to demonstrate to the City's satisfaction that the system accomplishes the following performance objectives:

a. The pump station responds to regulate the flow releases to the City's system in such a manner that when the City's pipe being monitored is equal to or greater than 80% full as measured by

flow depth within the pipe, the pumping rate is curtailed, and if necessary, reduced to zero.

b. As the City's pipe being monitored drops to a 75% of full condition, the system will query the status of wet well levels and pump down times to assess when pumps are re-energized to commence pumping. The system will periodically continue to query system status at such time as pumping decisions are required.

c. The pump station can be calibrated to deliver flows as dictated by the City's downstream capacity available, and within the limits of flow control as provided by IHS construction to date.

d. At a monitored one-foot surcharge within a gauging manhole, the regulation station will automatically shut off influent flow from the MIT's Pump Station #2, and influent flow shall remain off until the surcharge has disappeared. This will be the only condition mandating zero flow from the MIT's Pump Station #2 except for emergency conditions.

10.3 **Maximum Flow to Be Accepted By City.** The maximum allowable sewage flow rate from the MIT's sewage system to the City's sewage system shall not exceed the capacity available within the City's system at any time as determined by City monitoring gauges. Such flow can be released at any time capacity is available within the City's system.

10.4 **Funding of Future Improvements By MIT A Condition Precedent to Continuing Flow to the City System.**

a. The MIT acknowledges that its share of funding the design and construction of any future capacity expansion effort of the City system is an express condition precedent to the City proceeding with expansion of its system. Payment of this funding share by the MIT is necessitated by the fact that acceptance of MIT flow by the City will consume previously existing capacity, makes such capacity unavailable to the City, and requires subsequent improvements to the City system in order for the City to have and maintain the capacity necessary for the City's own needs and uses. Such funding amounts may be credited against future MIT SDC amounts, if any.

b. The prorata share of City system expansion projects between the MIT and the City shall be determined based on benefit received.

XI. COLLECTION OF FEES, TERMINATION OF SERVICE, AND BREACH OF AGREEMENT

11.1 Collection of Development Charges, User, and Connection Fees.

A. Payment as Condition Precedent. The Agreement is between the MIT and the City and no third parties, even though third parties may be indirectly benefited. As a condition precedent to connection and continued service, the MIT shall pay all necessary development charges and user fees. Additionally the MIT shall apply for any necessary City approvals on behalf of members or property owners within MIT jurisdiction who desire to be connected to the sewer system. The City's issuance of a permit shall be directly conditioned upon completion of those items specified in any particular permit as well as the MIT's payment of the permit fees. The MIT and the City expressly agree that the City shall not be responsible for collecting of SDC's, user charges, permitting fees, or any other moneys of any kind from any other individual or entity.

B. Establishment of Reserve Account for Future System Expansion and Related Costs. The City and MIT shall, upon execution of this Agreement, establish a supplemental reserve account in the amount of Five Hundred Thousand Dollars ($500,000.00) to provide for future funding of anticipated system expansion necessitated on account of increased flows resulting from this Agreement, non-budgeted uses of funds necessitated by natural disasters and other public health reasons, payment of insurance premiums, and any other unpaid charges or fees pertaining to the use of the system or permits pertaining thereto. The City and the MIT shall each contribute Two Hundred Fifty Thousand Dollars ($250,000.00) and the fund shall be maintained at this level with each party replacing the funds which are withdrawn on account of its respective obligations. The fund shall be established in a Restricted Use account of the Sanitary Sewer Fund as designated by the City. The interest accruing thereon, if any, shall be apportioned between the parties in relation to their respective contributions and any such interest and principal remaining at the termination of this Agreement shall be returned to the remitter of such funds upon such termination and settlement of all claims and disputes pertaining to this Agreement. The City shall, upon consultation

with the MIT, be authorized to immediately draw upon and use the funds in the reserve account for the uses and purposes herein mentioned. The City shall account to the MIT for all such funds used. Nothing contained herein shall derogate from the need of the MIT to pay in advance as a condition precedent for the City's performance under other provisions of this Agreement.

11.2 **MIT's Right to Terminate Agreement.** The MIT shall have the right to terminate the discharge of sewage from their sewage system to the City's at any time for any reason, or no reason whatsoever, by providing the City with a minimum of five (5) years' written notice prior to termination of such discharge. The City agrees to terminate this Agreement with the MIT at the date noted upon said written notice. Monetary and other obligations owed by the MIT to the City on the date of termination shall survive.

11.3 **City's Right to Terminate Agreement.** The City shall have the right to terminate this Agreement at any time for any reason, or no reason whatsoever, by providing the MIT with a minimum of five (5) years' written notice prior to termination. The City shall also have the right to immediately terminate this Agreement for any reason constituting a material breach. In addition to those breaches defined by law, the City and the MIT expressly agree that a material breach justifying the City to immediately terminate service shall include, but not be limited to, the non-payment of SDC's or user fees, failure of the MIT to provide proof of insurance required herein, exceeding the number of type of sewer connections allowed under this Agreement, discharge of non-domestic sewage into the system, and/or failure of MIT to honor easements, and/or failure to fund the reserve account specified herein.

11.4 **Right to Rely upon Notice of Termination.** As between the City and the MIT, in the event that one party, hereinafter referred to as the "Transmitting Party," sends the other party a notice to terminate this Agreement, the party receiving such notice, hereinafter referred to as the "Receiving Party," shall have a right to rely upon such notice. Absent prior written agreement to the contrary, the Transmitting Party shall not be allowed to revoke its notice of intent to terminate this Agreement or to otherwise keep this Agreement in full force and effect beyond the termination date specified in the notice. This provision shall be effective regardless of whether or not the Transmitting Party actually changes its position, or the Receiving Party otherwise relies in any material manner upon the Transmitting Party's notice of termination.

XII. DISPUTE RESOLUTION AND LIMITED WAIVER OF SOVEREIGN IMMUNITY

12.1 **Dispute Resolution - Mediation.** In the event the MIT and the City are engaged in a dispute which relates to this Agreement or any other issue arising relating to sanitary sewer, and they are unable to resolve said dispute within ninety (90) days, either party may request mediation of any dispute, in any manner agreed upon by the parties.

a. Mediation shall be commenced by the party requesting it notifying the other party in writing of its request to mediate a dispute arising between the parties which relate to sanitary sewer and sewer related services. If the parties agree to enter into mediation within 20 days from such request the matter shall be deemed stayed and the arbitration clause continued herein shall not be put into effect. Mediation shall continue for no more than one hundred twenty (120) days at which point the mediation shall be deemed failed unless the parties have reached an agreement and have had such agreement approved by the governing bodies of each respective party and, if applicable, the Bureau of Indian Affairs. If such agreement is not approved by the governing bodies of each respective party or is not enforceable in the United States District Court for the Western District of Washington, the mediation shall be deemed failed and the unresolved issue shall be submitted to binding arbitration as set forth herein.

b. In the event the parties do not reach an agreement to mediate within twenty (20) days of receipt of the notice requesting mediation by the non-requesting party, the matter shall be submitted to binding arbitration as set forth herein.

c. Each party shall bear its own costs of mediation.

12.2 **Arbitration.** Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by arbitration administered by the American Arbitration Association in accordance with its applicable rules. Judgment on the decision rendered by the arbitrator may be entered into the United States District Court for the Western District of Washington. Each party shall bear its own costs of arbitration.

12.3 **Limited Waiver of Sovereign Immunity and Consent to Jurisdiction of Federal Court.** The MIT hereby waives its sovereign immunity and consents to the jurisdiction of the United States District Court for the Western District of Washington concerning disputes regarding the interpretation of this Agreement and the enforcement of any rights hereunder, including collection of any SDC's, User Fees, or other obligations or liabilities, in law or in equity, pertaining to hold harmless provisions of this Agreement. Such waiver of Sovereign Immunity and Consent to jurisdiction shall apply to no other court. This Limited Waiver of Sovereign Immunity and Consent to Jurisdiction has been specifically negotiated by the parties and decision of the City to extend sanitary sewer service to the MIT and a portion of the MIT's payments hereunder are expressly made the consideration for this Limited Waiver and Consent to Jurisdiction.

12.4 **Disclaimer of MIT Tribal Court Jurisdiction.** The MIT agrees that the MIT Tribal Court has no jurisdiction over the force, effect, and interpretation of this Agreement, nor the resolution of disputes which pertain to its implementation. The MIT further agrees that it has no authority to submit the City to the jurisdiction of the MIT Tribal Court with regard to any sewer-related matters or disputes which may arise between the parties.

XIII. FEE AND CHARGES PAYMENTS

13.1 The City shall bill the MIT on a monthly basis for any fees or charges as determined in Articles II, III, and IV of this Agreement. The MIT shall have thirty (30) days to provide payment of the amount to the City from the date of bill issuance.

13.2 In the event that any payments for a sewer bill due under this Agreement shall remain unpaid in excess of the thirty (30) days from the date of issuance, then the bill shall be delinquent. In the event that a bill becomes delinquent, the City shall give the MIT fifteen (15) days' notice of its intent to enforce collection of said bill. A bill which has been properly addressed and deposited in the United States Postal Service shall be deemed to be presented to the MIT for payment.

13.3 If the MIT believes that the City's bill for fees or charges is in error, the MIT shall notify the City of the error no later than fifteen (15) days following the date of bill issuance, accompanied by any supporting documents. Within ten (10) days thereafter, the City and MIT shall meet to attempt to resolve the dispute. If the dispute cannot be resolved

informally, then the parties shall proceed pursuant to Article XII (Dispute Resolution). In any event, the MIT shall pay any uncontested portion of the bill within thirty (30) days after date of issuance. The MIT shall also continue to pay uncontested subsequent monthly bills as provided in this Section.

13.4 If the bill remains unpaid fifteen (15) days following the City's notice of intent to enforce collection, then the City may at its discretion discontinue service to the MIT; provided that the MIT has not provided notice to the City pursuant to Paragraph 12.1. If the MIT has given such notice, the City shall have the authority to discontinue service for failure to pay only in the event that the MIT has not paid the uncontested portion of the bill.

13.5 If the billing dispute is resolved in favor of the City pursuant to Article XII (Dispute Resolution), and the bill remains unpaid for five working days thereafter, the City may at its discretion discontinue service to the MIT unless otherwise specified within the dispute resolution.

XIV. CHANGES TO RATES AND CHARGES

The City's and/or Metro's user fee rate structure and charges for the MIT shall be changed only at such times as the City and/or Metro adjusts its rates and charges through established procedures for all other users.

XV. HOLD HARMLESS AND INDEMNIFICATION

The MIT agrees to indemnify and hold harmless City, and its agents and employees, from and against all claims, damages, losses, and expenses, including reasonable attorneys' fees, which originate from events which occur on MIT owned or controlled land or facilities including, but not being limited to, sanitary sewer backups, floods, spillage, property damage, personal injury, and other types of sewage contamination, except that this indemnification shall not apply to the sole negligent or intentional acts of the City and its agents and employees.

XVI. PERFORMANCE OF AGREEMENT

Each party agrees that it will execute any and all instruments, documents and resolutions or ordinances necessary to give effect to the terms of this Agreement. Furthermore, the City shall have access at reasonable times and on reasonable notice to inspect the MIT's sanitary sewer system and related

facilities for the purpose of verification of the number of hook ups, type of discharge, and operation levels which constitute the basis of the MIT's obligations to the City on account of fees and charges.

XVI. AMENDMENT OF THIS AGREEMENT

This Agreement may be modified only if such modifications are written and are approved by written resolutions adopted jointly by the Auburn City Council, the MIT Tribal Council, and the BIA.

XVII. CONSTRUCTION AND INTERPRETATION.

This document has been mutually negotiated between the parties. No adverse inference or ambiguity shall be construed against the party preparing this document for signature. No waiver by either party of any term or condition of this Agreement shall be deemed or construed to be a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether of the same or a different portion of this Agreement.

XVIII. TERM OF AGREEMENT.

The initial Term of this Agreement shall be fifty (50) years from the date that the parties executed this Agreement unless terminated earlier pursuant to Section XI of this Agreement. This Agreement shall be automatically renewed for an additional term of fifty (50) years (without any action required by either party), provided that either party may decline to renew the Agreement by notifying the other party by written notice at least five (5) years prior to the end of the initial Term of this Agreement.

IN WITNESS TO THE TERMS OF THIS AGREEMENT, the parties hereto have subscribed their names:

MUCKLESHOOT INDIAN TRIBE

John Daniels Jr.

~~Virginia Cross~~, Chairperson,
Muckleshoot Tribal Council
Date: 5-6-97

Consented to, Agreed and Approved as to Form:

United States Department of Interior

Bureau of Indian Affairs
Accommodation Approval

BY: Jill A. Black MAY 20 1997

Its: Superintendent, Puget Sound Agency Date: _____

Approved as to Form:

N/A
Tribal Attorney

CITY OF AUBURN

BY: Charles A. Booth
CHARLES A. BOOTH,
MAYOR

ATTEST:

Robin Wohlhueter
Robin Wohlhueter,
City Clerk

APPROVED AS TO FORM:

Michael J. Reynolds
Mike J. Reynolds,
City Attorney

RESOLUTION NO. 3502

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERLOCAL AGREEMENT BETWEEN THE CITY OF AUBURN AND THE MUCKLESHOOT INDIAN TRIBE FOR THE OPERATION OF A TEMPORARY SEWAGE LIFT STATION.

WHEREAS, the Muckleshoot Indian Tribe (Tribe), and the City of Auburn (Auburn) are authorized to enter into this Agreement under the authority of their respective enabling legislation and under the authority of Chapter 39.34 RCW, the Interlocal Cooperation Act; and

WHEREAS, the parties desire clarification on the ownership, the maintenance, and the operational responsibilities for a lift station serving the Swan Flats development; and

WHEREAS, it is in the public interest for the parties herein to enter into a sanitary sewer agreement for the operation of a sanitary sewer lift station to facilitate service from the Swan Flats plat.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

Section 1. Pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and the Tribe have legal authority to cooperate with other localities on the basis of mutual advantage and provision of services.

Section 2. The Mayor and City Clerk of the City of Auburn are herewith authorized to execute the Interlocal Agreement between Auburn and the Tribe with minor administrative changes if required. A copy of said Agreement is attached hereto, denominated as Exhibit "A" and made a part hereof as though set forth in full herein.

Section 3. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

Section 4. This resolution shall be in full force and effect upon passage and signatures hereon.

DATED this 5th day of August, 2002.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Daniel B. Heid,
City Attorney

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

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KING COUNTY, WA

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):

Interlocal Agreement (RES 3502) Sanitary Sewer – Swan Flats

3/26 PNLWT
w6179-12

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)
Auburn, City of

Grantee/Assignee/Beneficiary: (Last name first)
1. Muckleshoot Indian Tribe

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page of document.

Assessor's Property Tax Parcel/Account Number

N/A

☐ Assessor Tax # not yet assigned

EXHIBIT "A"

Interlocal Agreement between the Muckleshoot Indian Tribe and the City of Auburn

(Sanitary Sewer Service for Swan Flats)

THIS INTERLOCAL AGREEMENT made and entered into, pursuant to the interlocal Cooperation Act, chapter 39.34 of Revised Code of Washington, on the 5th day of, August, 2002, by and between the CITY OF AUBURN, a municipal corporation of the State of Washington (hereinafter referred to as "Auburn"), and the MUCKLESHOOT INDIAN TRIBE, a federally recognized Indian Tribe located upon the Muckleshoot Indian Reservation (hereinafter referred to as "Tribe").

WITNESSETH:

WHEREAS, the Tribe has purchased the single-family housing plat known as Swan Flats for the construction of single-family homes; and

WHEREAS, a temporary, private sewage lift station is established to facilitate the conveyance of the Swan Flats' wastewater into Auburn's public sanitary sewer system; and

WHEREAS, the lift station required by the Swan Flats plat for sanitary sewer services shall be owned, maintained, and operated by the Tribe; and

WHEREAS, once improvements have been made to the public sanitary sewer system located along Academy Drive to facilitate gravity wastewater flow from Swan Flats to the improved sewer line then Auburn shall bypass the private lift station and establish the piping required to connect Swan Flats plat with Auburn's sewer system without the use of pumps; and

WHEREAS, the property owners' responsibility to own, operate, and maintain the sanitary sewer lift station servicing the Swan Flats plat was imposed upon the plat and is not being imposed upon the Tribe as a special condition; and

WHEREAS, the Tribe and Auburn are willing to enter into this agreement which clarifies the maintenance responsibilities for the existing lift station servicing the Swan Flats plat; and

WHEREAS, the Tribe has purchased a majority of the properties within the Swan Flats plat and desires to be the responsible party for the operation and maintenance of the private sanitary sewer lift station in lieu of a homeowners association.

NOW, THEREFORE in consideration of their mutual covenants, conditions, and promises, THE PARTIES HERETO DO HEREBY AGREE as follows:

1. CONDITIONS

A. Auburn shall install sanitary sewer pipe to bypass the Swan Flats lift station concurrent with any sanitary sewer improvements done to the existing public sewer line along Academy Drive that would facilitate gravity sewer service from Swan Flats.

B. The Tribe shall own, operate, and maintain the lift station established upon Lot 1 of the Swan Flats plat until the gravity facilities are constructed and the pump station is no longer required for service.

C. The Muckleshoot Indian Tribe shall post an all weather sign with a minimum letter height of one inch that details the appropriate person and/or agency and phone number of who to contact if the sewer lift station requires service. The current contact information established by the Muckleshoot Indian Tribe for the servicing of the lift station is as follows:

DEWEY MILLER
Muckleshoot Indian Tribe
Public Works
360-802-4727

After hour phone numbers and emergency contacts shall be mentioned on the sign and supplied to Auburn 20 days prior to the effective date of this Agreement.

D. If Tribal response is delayed and the City is contacted, and a health hazard is created due to the failure of the lift station then the City may respond to contain and possibly correct the health situation until Tribal response is on-site. The Tribe agrees to reimburse the City for reasonable expenses for time and materials related to any such response.

E. No connections shall be made to Auburn's public sewer system without first obtaining the appropriate permits from the City as established within Auburn City Code 13.20.

F. Upon installation of the sanitary sewer bypass of the Swan Flats lift station by the City, the Tribe shall cap the existing eight-inch PVC sewer pipe, conveying wastewater from the City's sewer system to the lift station, at the property line to lot one. The tribe may request that the City do this work at the time of the diversion at no cost to the Tribe. After connection to the City gravity sewer system the Tribe may dispose of or retain the lift station as it deems appropriate.

2. INSURANCE

The Tribe shall maintain, at a minimum, a two million liability insurance policy as of the effective date of this agreement; the Tribe shall continue such insurance coverage during the term of this agreement unless otherwise agreed upon by the parties.

3. INDEMNIFICATION

A. The Tribe agrees to indemnify and hold the City and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against the City arising out of, in connection with, or incident to the execution of this agreement and/or the Tribe's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of the City, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of the Tribe; and provided further, that nothing herein shall require the Tribe to hold harmless or defend the City, its agents, employees, and/or officers, from any claims arising from the sole negligence of the City, its agents, employees, and/or officers. No liability shall attach to the City by reason of entering this agreement except as expressly provided herein.

B. The City agrees to indemnify and hold the Tribe and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever king or nature, brought against the Tribe arising out of, in connection with, or incident to the execution of this agreement and/or the City's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of the Tribe, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of the City; and provided further, that nothing herein shall require the City to hold harmless or defend the Tribe, its agents, employees, and/or officers, from any claims arising from the sole negligence of the Tribe, its agents, employees, and/or officers. No liability shall attach to the Tribe by reason of entering this agreement except as expressly provided herein.

4. COMPLIANCE WITH REGULATIONS AND LAWS

The parties shall comply with all applicable rules and regulations pertaining to them in connection with the matters covered herein.

5. DISPUTE RESOLUTION AND LIMITED WAVIER OF SOVEREIGN IMMUNITY

A. In the event the Tribe and the City are engaged in a dispute, which relates to this Agreement, and they are unable to resolve said dispute within ninety (90)

days, either party may request mediation of any dispute in any manner agreed upon by the parties.

a. Mediation shall be commenced by the party requesting it by notifying the other party in writing of its request to mediate a dispute arising between the parties which relate to sanitary sewer and sewer related services to Swan Flats. If the parties agree to enter into mediation within twenty (20) days from such request the matter shall be deemed stayed and the arbitration clause continued herein shall not be put into effect. Mediation shall continue for no more than one hundred and twenty (120) days at which point the mediation shall be deemed failed unless the parties have reached an agreement and have had such agreement approved by the governing bodies. If such agreement is not approved by the governing bodies of each respective party or is not enforceable in the United States District Court for the Western District of Washington, the Mediation shall be deemed failed and the unresolved issue shall be submitted to binding arbitration as set forth herein.

b. In the event the parties do not reach an agreement to mediate within twenty (20) days of receipt of the notice requesting mediation by the non-requesting party, the matter shall be submitted to binding arbitration as set forth herein.

c. Each party shall bear its own cost of mediation.

B. Any controversy or claim arising out of or relating to this agreement, or the breach thereof, shall be settled by arbitration administered by the American Arbitration Association in accordance with its applicable rules. Judgment on the decision rendered by the arbitrator may be entered into the United States District Court for the Western District of Washington. Each party shall bear its own costs of arbitration.

C. The Tribe hereby waives its sovereign immunity and consents to the jurisdiction of the United States District Court for the Western District of Washington concerning disputed regarding the interpretation of this Agreement and the enforcement of any rights hereunder, including other obligations or liabilities, in law or in equity, pertaining to immunity provisions of this Agreement. Such waiver of Sovereign Immunity and Consent to jurisdiction shall apply to no other court.

D. The Tribe agrees that the Muckleshoot Indian Tribal Court has no jurisdiction over the force, effect, and interpretation of this Agreement, nor the resolution of disputes that pertain to its implementation. The Tribe further agrees that it has no authority to submit the City to the jurisdiction of the Muckleshoot Indian Tribal Court with regards to any sewer-related matters or disputes which may arise between the parties.

6. ASSIGNMENT

The parties shall not assign this agreement or any interest, obligation or duty therein without the express written consent of the other party.

7. ATTORNEY'S FEES

If either party shall be required to bring any action to enforce any provision of this Agreement, or shall be required to defend any action brought by the other party with respect to this Agreement, and in the further event that one party shall substantially prevail in such action, the losing party shall, in addition to all other payments required therein, pay all of the prevailing party's reasonable costs in connection with such action, including such sums as the court or courts may adjudge reasonable as attorney's fees in trial court and in appellate courts.

8. NOTICES

All notices between the two agencies hereunder may be delivered or mailed. If mailed, they shall be sent to the following respective addresses:

The Muckleshoot Indian Tribe
Thomas Reber
Muckleshoot Indian Tribe
Assistant Tribal Operations Manager
Community Development
40320 Auburn Enumclaw Road
Auburn, WA 98092
Phone # 360.802.1922
Fax # 360.802.4727

The City of Auburn
Jeff Roscoe
Sanitary Sewer Engineer
Auburn Public Works
Department
25 West Main Street
Auburn WA 98001-4998
Phone # 253.931.4008
FAX # 253.931.3053

or to such other representative addresses as either party may hereafter from time to time designate in writing. All notices and payments mailed by regular post (including first class) shall be deemed to have been given on the second business day following the date of mailing, if properly mailed and addressed. Notices and payments sent by certified or registered mail shall be deemed to have been given on the day next following the date of mailing, if properly mailed and addressed. For all types of mail, the postmark affixed by the United States Postal Service shall be conclusive evidence of the date of mailing.

9. NONDISCRIMINATION

Each of the parties, for itself, its heirs, personal representatives, successors in interest, and assigns, as part of the consideration hereof, does hereby covenant and agree that it will comply with applicable statutes, executive orders and such rules as are promulgated to assure that no person shall on the grounds of race, creed, color, national origin, sex, age, or the presence of any sensory, mental or physical handicap be discriminated against or receive discriminatory treatment by reason thereof.

10. INTEGRATION.

This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements

other than those listed herein, which vary the terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

11. OBLIGATION INTACT.

Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either the Tribe or the City regarding provision of sewer service, except as specifically set forth herein.

12. MISCELLANEOUS

A. The captions in this agreement are for convenience only and do not in any way limit or amplify the provisions of this agreement.

B. The duration of this agreement shall be until the sanitary sewer improvements are established that will allow the City to extend a gravity sewer main to bypass the private lift station or for the period of time it reasonably takes for the performance of parties as completed herein.

C. The purpose of this agreement is to clarify the Tribe's role for the maintenance and operation of the private lift station together with the City's role in the establishment of a gravity sewer system to serve Swan Flats.

D. The performances of the duties of the parties provided hereby shall be done in accordance with standard operating procedures and customary practices of the parties.

E. No provision of this agreement shall relieve either party of its public agency obligations and/or responsibilities imposed by law.

F. If any term, provision, condition or portion of this Agreement is held to be invalid, or unenforceable by a final decision of any court having jurisdiction on the matter, the remaining of this Agreement or the application of such term or provision to persons or circumstances other then those as to which it is held invalid or unenforceable shall not be affected thereby and shall continue in full force and effect.

G. No modifications or amendments of this agreement shall be valid or effective unless evidenced in writing and signed by both parties.

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the day and year first above written.

MUCKLESHOOT INDIAN TRIBE

PASSED by Resolution No. **02-235** of the Muckleshoot Indian Tribe, at its special meeting held on the 2nd day of August, 2002.

By:

11/6/02

JOHN DANIELS, JR., CHAIR — Date

CITY OF AUBURN

PASSED by Resolution No. **3502** of the City of Auburn, Washington, at its regular meeting held on the 5th day of August, 2002.

By:

11/2/02

PETER B. LEWIS, MAYOR — Date

Attest:

Danielle Daskam, City Clerk

Approved as to form:

Daniel B. Heid, City Attorney

APPENDIX A6

LAKEHAVEN UTILITY DISTRICT

- Sewer Service Boundaries (Resolutions 3651, 3824, and 2005-1038)
- Sewer District's Sanitary Sewer Service Area (Resolution 5353)

RESOLUTION NO. 3651

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES BETWEEN THE LAKEHAVEN UTILITY DISTRICT AND THE CITY OF AUBURN

WHEREAS, pursuant to RCW 35.A.11.040, Auburn has the legal authority to exercise its powers and perform any of its functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn has the legal authority to cooperate with other localities and utilities on the basis of mutual advantage and the efficient provision of municipal services; and

WHEREAS, pursuant to RCW 35A.21.150, Auburn has the legal authority to maintain a sewerage system; and

WHEREAS, pursuant to RCW 57.08.044, Lakehaven has the legal authority, whether by contract or otherwise, to provide sewer service to property owners in areas outside existing district boundaries; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, Lakehaven's 1999 Draft Comprehensive Wastewater System Plan notes a region within Auburn's Potential Annexation Area (hereinafter referred to as "Auburn's PAA") to which Lakehaven intends to provide sanitary sewer service; and

WHEREAS, Lakehaven is currently providing sanitary sewer service within Auburn's PAA; and

WHEREAS, portions of the Lakehaven sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of Auburn's PAA; and

WHEREAS, Auburn has evaluated sewer service issues and determined that it is not cost feasible to provide direct sewer service within its PAA adjacent to Lakehaven's sanitary sewer infrastructure; and

WHEREAS, Lakehaven's delivery of sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities and sanitary sewer planning;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows:

Section 1. The Mayor is hereby authorized to execute an Interlocal Agreement Establishing Sanitary Sewer Service Boundaries between the Lakehaven Utility District and the City of Auburn in substantial conformity with

the agreement attached hereto, marked as Exhibit "A" and incorporated herein by this reference.

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. This resolution shall be in full force and effect upon passage and signatures hereon.

DATED this 20th day of January, 2004.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Daniel B. Heid,
City Attorney



20041129000249
PACIFIC NW TIT AG 31.00
PAGE001 OF 013
11/29/2004 10:09
KING COUNTY, WA

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):

Interlocal Agreement (RES 3651)

13/31 PMNT
W9278-12

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)
Auburn, City of

Grantee/Assignee/Beneficiary: (Last name first)
1. Lakehaven Utility District

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page of document.

Assessor's Property Tax Parcel/Account Number
N/A

☐ Assessor Tax # not yet assigned

EXHIBIT "A"

LAKEHAVEN UTILITY DISTRICT and CITY OF AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into this 2nd day of February, 2004, by and between **LAKEHAVEN UTILITY DISTRICT**, a Washington municipal corporation (hereinafter referred to as "Lakehaven"), and the **CITY OF AUBURN**, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35.A.11.040, Auburn has the legal authority to exercise its powers and perform any of its functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn has the legal authority to cooperate with other localities and utilities on the basis of mutual advantage and the efficient provision of municipal services; and

WHEREAS, pursuant to RCW 35A.21.150, Auburn has the legal authority to maintain a sewerage system; and

WHEREAS, pursuant to RCW 57.08.005(5) and 57.08.044, Lakehaven, as a special purpose water/sewer district, has the legal authority, whether by contract or otherwise, to provide sewer service to property owners in areas outside existing district boundaries; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, Lakehaven's adopted and approved 1999 Comprehensive Wastewater System Plan and its Amendment No. 1 notes a region within Auburn's Potential Annexation Area (hereinafter referred to as "Auburn's PAA") to which Lakehaven intends to provide sanitary sewer service; and

WHEREAS, Lakehaven is currently providing sanitary sewer service within Auburn's PAA; and

WHEREAS, portions of the Lakehaven sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of Auburn's PAA; and

WHEREAS, Auburn has evaluated sewer service issues and determined that it is not cost feasible to provide direct sewer service within its PAA adjacent to Lakehaven's sanitary sewer infrastructure; and

WHEREAS, Lakehaven's delivery of sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities and sanitary sewer planning;

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. Sewer Service Area. The parties have agreed to a mutual sewer service planning boundary as depicted on the maps attached hereto as Attachment 1 and legally described in Attachment 2, which are by this reference incorporated herein. Both parties further agree that, through this designation of the service boundary, Lakehaven shall provide sanitary sewer service to properties mutually within its sanitary sewer service area and Auburn's PAA, also depicted on Attachment 1, in accordance with and subject to the terms and conditions of this Agreement.

2. Management, Regulation and Control of Sewer System. Lakehaven shall have the sole responsibility and authority to construct, maintain, manage, conduct and operate its sewerage system within the area mutually designated as Lakehaven's sanitary sewer service area and Auburn's PAA as depicted in Attachment 1, together with any additions, extensions and betterments thereto. Lakehaven shall also be responsible for obtaining all necessary governmental franchises, approvals, easements and permits for the installation of the sewerage system and improvements to be located therein.

3. Service Rates and Connection Charges.

a) **Permit Required.** No connection shall be made to Lakehaven's sanitary sewer system unless the property owner first pays the associated fees and submits the proper information to obtain a Lakehaven sanitary sewer connection permit, and otherwise meets the requirements for service as provided in duly adopted Resolutions of Lakehaven. The connection shall be subject to inspection for compliance with Lakehaven's standards as adopted at the time the connection is made.

b) **Rates.** The rates charged to the sanitary sewer customer by Lakehaven mutually within Lakehaven's sanitary sewer service area and Auburn's PAA, as depicted on Attachment 1, shall be fixed, altered, regulated and otherwise controlled by Lakehaven pursuant to the limitation on such authority as set forth in Chapter 57 RCW, or other applicable laws.

4. Sewer Availability Certificates. Lakehaven shall continue to issue sewer availability certificates for property located both within its sanitary sewer service area and Auburn's PAA, as depicted in Attachment 1.

5. Future Annexations. Each of the parties agree that Lakehaven shall provide sanitary sewer service to the area depicted in Attachment 1 without regard to the present corporate boundaries of the parties and without regard to future corporate boundaries as they may be periodically altered through annexation.

6. Lakehaven Comprehensive Sewer Planning. The terms of this Agreement will be included as an amendment to Lakehaven's Comprehensive Wastewater System Plan. Lakehaven will submit to Auburn all Comprehensive Wastewater System Plans and amendments thereto involving areas and/or system improvements within Auburn's PAA.

7. Auburn Comprehensive Sewer Planning. The terms of this Agreement will be included as an amendment to Auburn's Comprehensive Sewerage Plan. Auburn will submit to Lakehaven all Comprehensive Sewerage System Plans and amendments thereto involving area and/or system improvements within Auburn's PAA.

8. Reliance. Each party hereto acknowledges that the terms hereof will be relied upon by the other in its comprehensive planning to meet the needs of the service area designated herein.

9. Liability. The parties agree that this Agreement shall not be a source of liability for either party for any failure or interruption of service in the service area of the other party, as designated herein.

10. Government Approvals. Auburn will give notice of the adoption of this Agreement to Metropolitan/King County, to the Department of Ecology, to the Department of Health, and to any other agency with jurisdiction over, or other interest in, the terms hereof, and the parties shall cooperate and assist each other in all reasonable manner in procuring any necessary approvals hereof by those agencies.

11. Boundary Review Board. In the event that implementation of the terms hereof results in permanent sewer service to areas that will be outside the respective service boundaries of Lakehaven or Auburn, the parties will, at the time of such service, jointly seek King County Boundary Review Board approval of such service in accordance with RCW 36.93.090.

12. Service Amendments. Any changes to the service areas described herein shall be by mutual written agreement. Each party, through Auburn's Director of Public Works and Lakehaven's General Manager respectively, may give written permission to the other, on a case-by-case basis, to provide service to the other party's adjacent or nearby sewer service area based upon considerations of economic efficiency. Such written permission(s) shall be filed with this agreement for future reference.

13. Alteration, Amendment or Modification. Any alterations, amendments or modifications to this agreement shall be by mutual consent of the parties.

14. Indemnification and Hold Harmless. Each Party hereto agrees to protect, defend, and indemnify the other Party, its officers, officials, employees and agents from any and all cost, claims judgements and/or awards of damages, arising out of or in any way resulting from the Party's default, failure of performance, or negligent conduct associated with this agreement, by the Party, its employees, subcontractors or agents. Each Party agrees that its obligations under this provision extend to any claim, demand, and/or cause of action brought by or on behalf of any of its employees, or agents. The foregoing indemnity is specifically and expressly intended to constitute a waiver of each Party's immunity under Washington's Industrial Insurance Act, RCW Title 51, as respects the other Party only, and only to the extent necessary to provide each Party with a full and complete indemnity of claims made by the other Party's employees. The Parties acknowledge that these provisions were specifically negotiated and agreed upon by them.

15. Miscellaneous. Auburn and Lakehaven agree that an area in the vicinity of 51st Avenue South and South 320th Street and depicted in Attachment 3 is currently being served by Auburn via temporary pump station and may in the future be more efficiently served by a gravity conveyance system discharging to Lakehaven's facilities. This section does not obligate Lakehaven to accept any sanitary sewer facilities in said area. This section is intended only to make Lakehaven aware of Auburn's desire to eventually adjust the sanitary sewer service boundaries to allow Lakehaven to provide sanitary sewer service to said area, and for Lakehaven to plan for this action. Auburn and Lakehaven will abide by Section 12 of this Agreement when adjusting sanitary sewer service boundaries.

16. Integration. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

17. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Lakehaven or Auburn regarding provision of sewer service, except as specifically set forth herein.

LAKEHAVEN UTILITY DISTRICT

Approved by Resolution No. 2004-1006 of the Lakehaven Utility District, Federal Way, Washington, at its regular meeting held on the 8th day of January, 2004.

By:

Donald T. Perry, General Manager
Lakehaven Utility District

Approved as to form:

Steven H. Pritchett, General Counsel
Lakehaven Utility District

CITY OF AUBURN

Approved by Resolution No. **3651** of the City of Auburn, Washington, at its regular meeting held on the 20th day of January, 2004.

By:

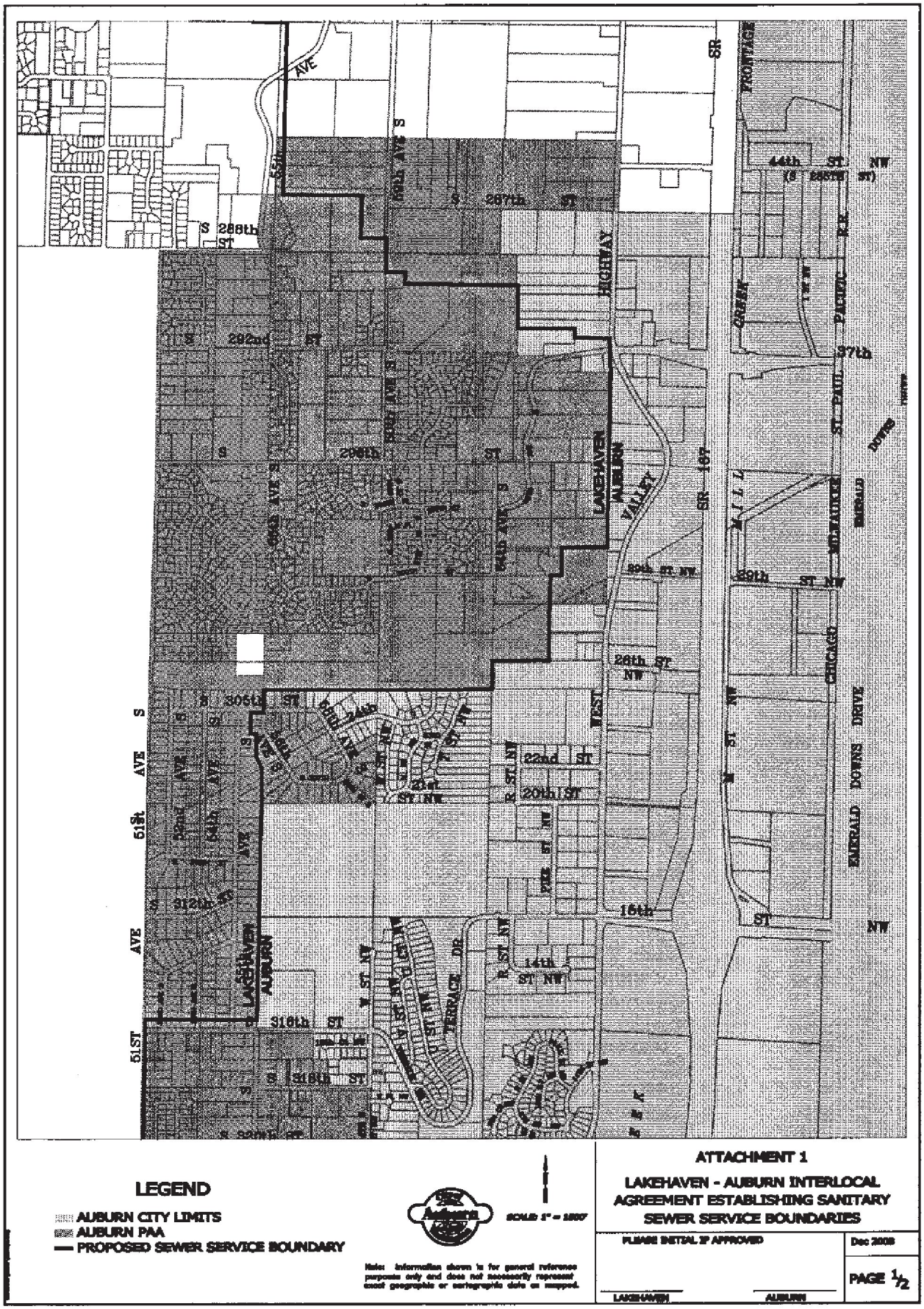
Peter B. Lewis, Mayor
City of Auburn

Attest:

Danielle Daskam, City Clerk

Approved as to form:

Daniel B. Heid, City Attorney



LEGEND

- AUBURN CITY LIMITS
- AUBURN PAA
- PROPOSED SEWER SERVICE BOUNDARY

SCALE 1" = 1800'

Note: Information shown is for general reference purposes only and does not necessarily represent exact geographic or cartographic data as mapped.

ATTACHMENT 1

LAKEHAVEN - AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

PLEASE INITIAL IF APPROVED

Dec 2008

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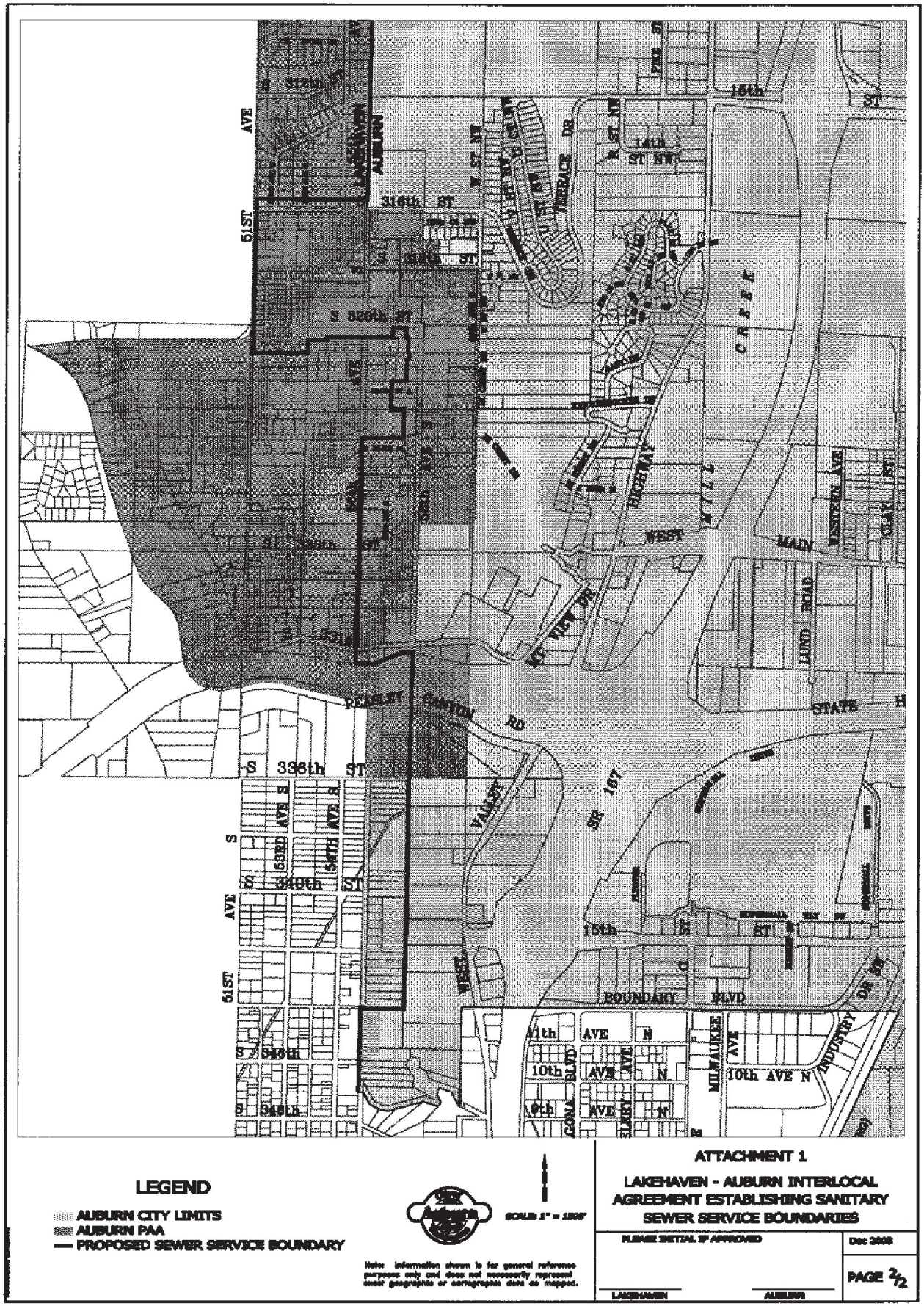
LAKEHAVEN _____ AUBURN _____



LEGEND

- AUBURN CITY LIMITS
- AUBURN PAA
- PROPOSED SEWER SERVICE BOUNDARY

SCALE 1" = 1500'

Note: Information shown is for general reference purposes only and does not necessarily represent exact geographic or cartographic data as mapped.

ATTACHMENT 1

LAKEHAVEN - AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

PLEASE INITIAL IF APPROVED

LAKEHAVEN _____ AUBURN _____

Dec 2008

PAGE 2/2

Attachment 2

LAKEHAVEN UTILITY DISTRICT and CITY OF AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

BOUNDARY DESCRIPTION

BEGINNING at a point 170 feet east of the Northwest corner of the Southeast quarter of the Southwest quarter of Section 35, Township 22 North, Range 4 East, W.M., in King County, Washington;

THENCE south 662.54 feet, more or less, to the North line of the South half of said subdivision;

THENCE easterly along said North line to a point 300 feet west of the East line of said subdivision;

THENCE south to a point 170 feet north of the South line of said subdivision;

THENCE east 300 feet, more or less, to the East line of said subdivision;

THENCE southerly along said East line to the South line of said Section 35;

THENCE continuing southerly along the West line of the Northeast quarter of Section 2, Township 21 North, Range 4 East, W.M., in King County, Washington, a distance of 221.12 feet;

THENCE easterly, parallel with the North line of said subdivision, 220.20 feet;

THENCE southerly, parallel with the West line of said subdivision, 130 feet;

THENCE easterly, parallel with the North line of said subdivision, 1,304.44 feet;

THENCE southerly, parallel with the West line of said subdivision, 494 feet;

THENCE easterly, parallel with the North line of said subdivision, 680.8 feet;

THENCE southerly, parallel with the West line of said subdivision, 100 feet;

THENCE easterly, parallel with the North line of said subdivision, 428 feet, more or less, to the East line of said subdivision;

THENCE southerly, along said East line to the Northeast corner of the South half of the South half of the Northeast quarter of the Southeast quarter of said Section 2;

THENCE westerly, along the North line of said subdivision, 518.77 feet;

THENCE southerly, parallel with the East line of said subdivision, 328.01 feet;

THENCE westerly, along the South line of said subdivision, 130.02 feet, more or less to the Northeast corner of the West half of the Southeast quarter of the Southeast quarter of said Section 2;

THENCE southerly, along the East line of said subdivision, 964.41 feet;

THENCE westerly, parallel with the North line of said subdivision, 650 feet, more or less, to the East line of the Southwest quarter of the Southeast quarter of said Section 2;

THENCE southerly, along said East line, 328.77 feet, more or less, to the South line of said subdivision;

THENCE westerly, along said South line, to the centerline of 56th Avenue South;

THENCE southerly, along said centerline of 56th Avenue South, to the centerline of South 305th Street in Section 11, Township 21 North, Range 4 East, W.M., in King County, Washington;

THENCE westerly, along said centerline of South 305th Street, to a point of intersection with the northerly projection of the West line of Lot 2, Block 5, Auburn Heights Park Division No. 2, according to the plat thereof recorded in Volume 49, Page 99, records of King County, Washington;

THENCE southerly, 320 feet, more or less, parallel with said West line of Lot 2, to the South line of Lot 4, Block 5, of said plat;

THENCE easterly, along said South line of Lot 4, to the Northwest corner of Lot 5, Block 5 of said plat;

THENCE southerly and southeasterly, along the West lines of Lots 5 and 9, of said plat, to the Northeast corner of Block 7, Auburn Heights Park Division No. 1, according to the plat thereof recorded in Volume 49 of Plats, Page 56, records of King County, Washington;

THENCE southerly, along the East line of Block 7 of said plat, to the Southeast corner of Lot 2, Block 7, of said plat;

THENCE westerly, parallel with the South line of said plat, along the north lines of Lot 19 and Lot 1, Block 6, Lot 15 and Lot 1, Block 5, and Lot 26, Block 4, of said plat, to the centerline of 51st Avenue South;

THENCE southerly, along said centerline of 51st Avenue South, to the Southwest corner of said Section 11;

THENCE continue southerly, along the West line of Section 14, Township 21 North, Range 4 East, W.M., in King County, Washington, 329.57 feet;

THENCE east 30 feet to the Southwest corner of Lot 15, Peasley Ridge, according to the plat thereof recorded in Volume 201, Pages 66-71, records of King County, Washington;

THENCE continue easterly, along the South line of said plat, to the Southeast corner of Tract D Peasley Ridge;

THENCE northerly, along the East line of said Tract D, 150 feet, more or less, to the Northwest corner of Lot 2, King County Short Plat No. 1080026R, as recorded under Recording No. 8106080708, records of King County, Washington;

THENCE easterly, along the North line of said Lot 2, to the West line of Lot 1, King County Short Plat No. 1080027, as recorded under Recording No. 8106080709, records of King County, Washington;

THENCE northerly, along the West line of said Lot 1, to the Northwest corner thereof;

THENCE easterly, along the North lines of Lots 1, 2 and 4, of said short plat, to the Northeast corner of said Lot 4;

THENCE East 60 feet to the West line of Lot 19, West Auburn Five-Acre Tracts, according to the plat thereof recorded in Volume 15, Page 12, records of King County, Washington;

THENCE southerly, along the West line of said Lot 19, 9.43 feet;

THENCE easterly, parallel with the North line of said Lot 19, 294.8 feet;

THENCE northerly, parallel with the West line of said Lot 19, 119.43 feet, more or less, to the South margin of South 320th Street;

THENCE easterly, along said south margin of South 320th Street, 150 feet;

THENCE southerly, parallel with the West line of said Lot 19, 119.43 feet;

THENCE easterly, parallel with the North line of said Lot 19, 9.59 feet;

THENCE southerly, parallel with the West line of said Lot 19, 5 feet;

THENCE easterly, parallel with the North line of said Lot 19, 13.53 feet;

THENCE southerly, parallel with the West line of said Lot 19, 178.866 feet, more or less, to the most Northwesterly corner of Lot 4, King County Short Plat No. 278048, as recorded under Recording No. 8004030782, records of King County, Washington;

THENCE southerly, along the West line of said Lot 4, to the Southwest corner thereof and the North line of Lot 2, King County Short Plat No. 1077053, as recorded under Recording No. 7808100856;

THENCE westerly, along the North line of said Lot 2, to the Northwest corner thereof;

THENCE southerly, along the West lines of Lot 2 and Lot 4 of said short plat, to the North line of Lot 30, West Auburn Five-Acre Tracts, according to the plat thereof recorded in Volume 15, Page 12, records of King County, Washington;

THENCE easterly, along the North line of said Lot 30, 147.35 feet;

THENCE southerly, parallel with the East line of said Lot 30, to the centerline of South 324th Street;

THENCE westerly, along said centerline of South 324th Street, to the centerline of 56th Avenue South;

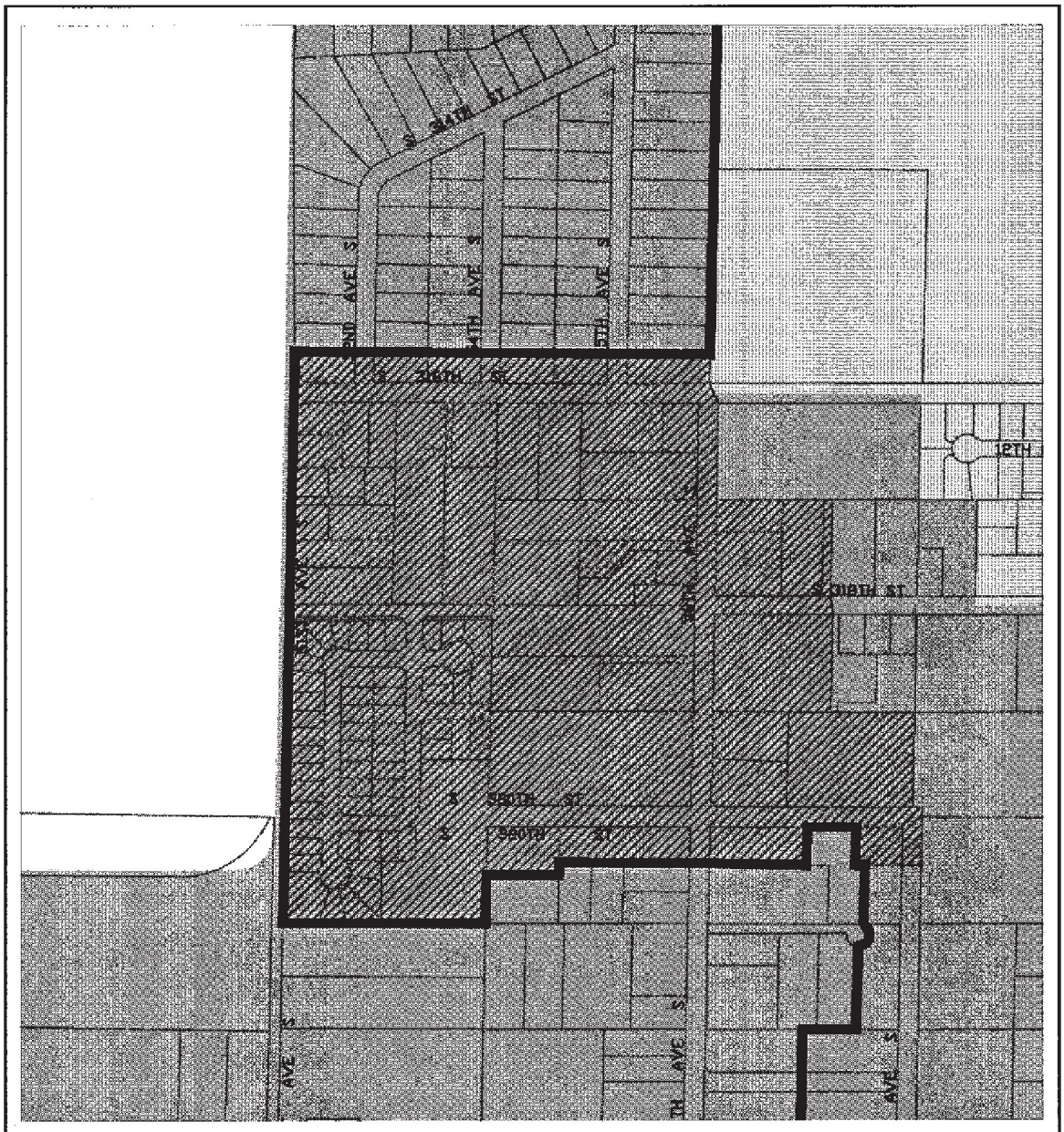
THENCE southerly, along said centerline of 56th Avenue South, to the North margin of State Highway No. 18;

THENCE easterly, along said North margin of State Highway No. 18, to the southerly projection of the centerline of 58th Avenue South;

THENCE southerly, along said centerline of 58th Avenue South, to the centerline of South 344th Street;

THENCE westerly, along said centerline of South 344th Street, to the centerline of 56th Avenue South;

THENCE southerly, along said centerline of 56th Avenue South, to the easterly projection of the South line of Lot 24, Block 27, Jovita Heights, according to the plat thereof recorded in Volume 20 of Plats, Page 12, records of King County, Washington, and the terminus of this boundary description.



LEGEND

AUBURN SERVICE AREA THAT MAY BE SERVED BY LAKEHAVEN

PAA

AUBURN CITY LIMITS

D:\SEWER\LAKEXD.DWG

Attachment 3

Lakehaven - Auburn Interlocal Agreement Establishing Sanitary Sewer Service Boundaries

Dec 2003	PAGE 1 /1

RESOLUTION NO. 3824

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN INTERLOCAL AGREEMENT WITH THE LAKEHAVEN UTILITY DISTRICT FOR THE PURPOSE OF PROVIDING SANITARY SEWER SERVICE FROM AUBURN TO PROPERTY LOCATED WITHIN THE LAKEHAVEN UTILITY DISTRICT'S SANITARY SEWER SERVICE AREA

WHEREAS, pursuant to RCW 35A.11.040 Auburn has the legal authority to exercise its powers and perform any of its functions as set forth in RCW 39.34; and

WHEREAS, in January 2004 the Commissioners of the Lakehaven Utility District adopted Resolution No. 2004-1006 authorizing the General Manager to execute an interlocal agreement with Auburn, which agreement was subsequently signed by the City of Auburn as authorized under Auburn Resolution No. 3651; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, a single family residential development (hereinafter referred to as "Jovita Heights-West Hill") has been proposed that lies within the distinct Sanitary Sewer Service Areas of both Auburn and Lakehaven as established and described in the Original Agreement; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized with sufficient wastewater conveyance capacity and are situated so as to be capable of affording sewer service to those portions of Jovita Heights-West Hill that lie within both the Auburn Sanitary Sewer Service Area and the Lakehaven Sanitary Sewer Service Area; and

WHEREAS, portions of the Lakehaven sanitary sewer system have been sized with sufficient wastewater conveyance capacity and are situated so as to be capable of affording sewer service to those portions of Jovita Heights-West Hill that lie within both the Lakehaven Sanitary Sewer Service Area and the Auburn Sanitary Sewer Service Area; and

WHEREAS, the developer of Jovita Heights - West Hill has requested that Auburn provide sanitary sewer service to the entire development to afford maximum efficiency in its use of existing and future facilities; and

WHEREAS, Auburn has evaluated sanitary sewer service issues relative to the developer's request and determined that it is feasible for Auburn to provide sanitary sewer service to the entire development.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows:

Section 1. The Mayor is hereby authorized to execute an Interlocal Agreement with the Lakehaven Utility District in substantial conformity with the

agreement attached hereto, marked as Exhibit "1" and incorporated herein by this reference

Section 2. That the Mayor is authorized to implement such other administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. That this Resolution shall take effect and be in full force upon passage and signatures hereon.

Dated and Signed this 22nd day of February, 2005.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Daniel B. Heid,
City Attorney

EXHIBIT 1

AMENDMENT NO. 1
TO THE LAKEHAVEN UTILITY DISTRICT AND CITY OF AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into this 22nd day of February, 2005, by and between **LAKEHAVEN UTILITY DISTRICT**, a Washington municipal corporation (hereinafter referred to as "Lakehaven"), and the **CITY OF AUBURN**, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington, as an amendment to the Interlocal Agreement dated February 2, 2004, between the parties and executed on the 8th day of January, 2004, and the 20th day of January, 2004, respectively (hereinafter referred to as "Original Agreement").

WITNESSETH:

WHEREAS, in January 2004 the Commissioners of the Lakehaven Utility District adopted Resolution No. 2004-1006 authorizing the General Manager to execute an interlocal agreement with Auburn, which agreement was subsequently signed by the City of Auburn as authorized under Auburn Resolution No. 3651; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, a single family residential development (hereinafter referred to as "Jovita Heights-West Hill") has been proposed that lies within the distinct Sanitary Sewer Service Areas of both Auburn and Lakehaven as established and described in the Original Agreement; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized with sufficient wastewater conveyance capacity and are situated so as to be capable of affording sewer service to those portions of Jovita Heights-West Hill that lie within both the Auburn Sanitary Sewer Service Area and the Lakehaven Sanitary Sewer Service Area; and

WHEREAS, portions of the Lakehaven sanitary sewer system have been sized with sufficient wastewater conveyance capacity and are situated so as to be capable of affording sewer service to those portions of Jovita Heights-West Hill that lie within both the Lakehaven Sanitary Sewer Service Area and the Auburn Sanitary Sewer Service Area; and

WHEREAS, the developer of Jovita Heights-West Hill has requested that Auburn provide sanitary sewer service to the entire development to afford maximum efficiency in its use of existing and future facilities; and

WHEREAS, Auburn has evaluated sanitary sewer service issues relative to the developer's request and determined that it is feasible for Auburn to provide sanitary sewer service to the entire development; and

WHEREAS, Lakehaven has evaluated the request and determined that, conditioned on mitigation of the impacts incident thereto, Lakehaven can transfer to Auburn that portion of its Sanitary Sewer Service Area that lies within Jovita Heights-West Hill so that Auburn can provide sanitary sewer service to the entire development.

NOW, THEREFORE in consideration of their mutual covenants, conditions, and promises, **IT IS HEREBY AGREED** by and between the parties hereto as follows:

ITEM ONE REVISION TO ATTACHMENT 1 OF THE ORIGINAL AGREEMENT, Page 2 of 2:

Attachment 1 of the Original Agreement is a graphical representation of the sanitary sewer service area boundary between Auburn and Lakehaven as established in the Original Agreement. Page Two of Attachment 1, as such Attachment 1 is attached hereto and by this reference incorporated herein, revises the sanitary sewer service area shown in the Original Agreement to reflect the transfer to Auburn of certain sanitary sewer service areas originally granted to Lakehaven; more specifically, those parcels located within the City of Auburn, east of 56th Avenue South between South 336th Street and South 344th Street, together with those parcels located outside the City of Auburn, east of 55th Avenue South between South 340th Street and South 348th Street.

ITEM TWO REVISION TO ATTACHMENT 2 OF THE ORIGINAL AGREEMENT:

The legal description for the sanitary sewer service area boundary is revised to reflect the service area modification described in Item One of this Amendment. Attachment 2 is attached hereto as the legal description of the revised sanitary sewer service area boundary and by this reference is incorporated herein.

ITEM THREE REVISION TO SECTION 1: Sewer Service Area.

Section One of the Original Agreement, entitled "Sewer Service Area," is hereby amended to hereinafter read as follows:

The parties have agreed to a mutual sewer service planning boundary as depicted on the maps attached hereto as Attachment 1 and as legally described in Attachment 2, which are by this reference each incorporated herein. Both parties further agree that, through this designation of the sanitary sewer service boundary, Lakehaven shall provide sanitary sewer service to properties mutually within its revised sanitary sewer service area and Auburn's PAA, also depicted on Attachment 1, while Auburn shall provide sanitary sewer service to properties located within its revised sanitary sewer service area, including portions of Lakehaven's corporate boundary, in accordance with and subject to the terms and conditions of this Agreement.

ITEM FOUR REMAINING TERMS UNCHANGED:

That all other provisions of the Original Agreement not herein amended shall remain in full force and effect.

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the day and year first below written.

LAKEHAVEN UTILITY DISTRICT

Approved by Resolution No. 2005-1038 of the Lakehaven Utility District, Federal Way, Washington, at its regular meeting held on the 10th day of March, 2005.

By:

DONALD T. PERRY, GENERAL MANAGER
Lakehaven Utility District

Approved as to form:

STEVEN H. PRITCHETT, GENERAL COUNSEL
Lakehaven Utility District

CITY OF AUBURN

Approved by Resolution No. 3824 of the City of Auburn, Washington, at its regular meeting held on the 22nd day of February, 2005.

By: _____

PETER B. LEWIS,
Mayor, City of Auburn

Attest:

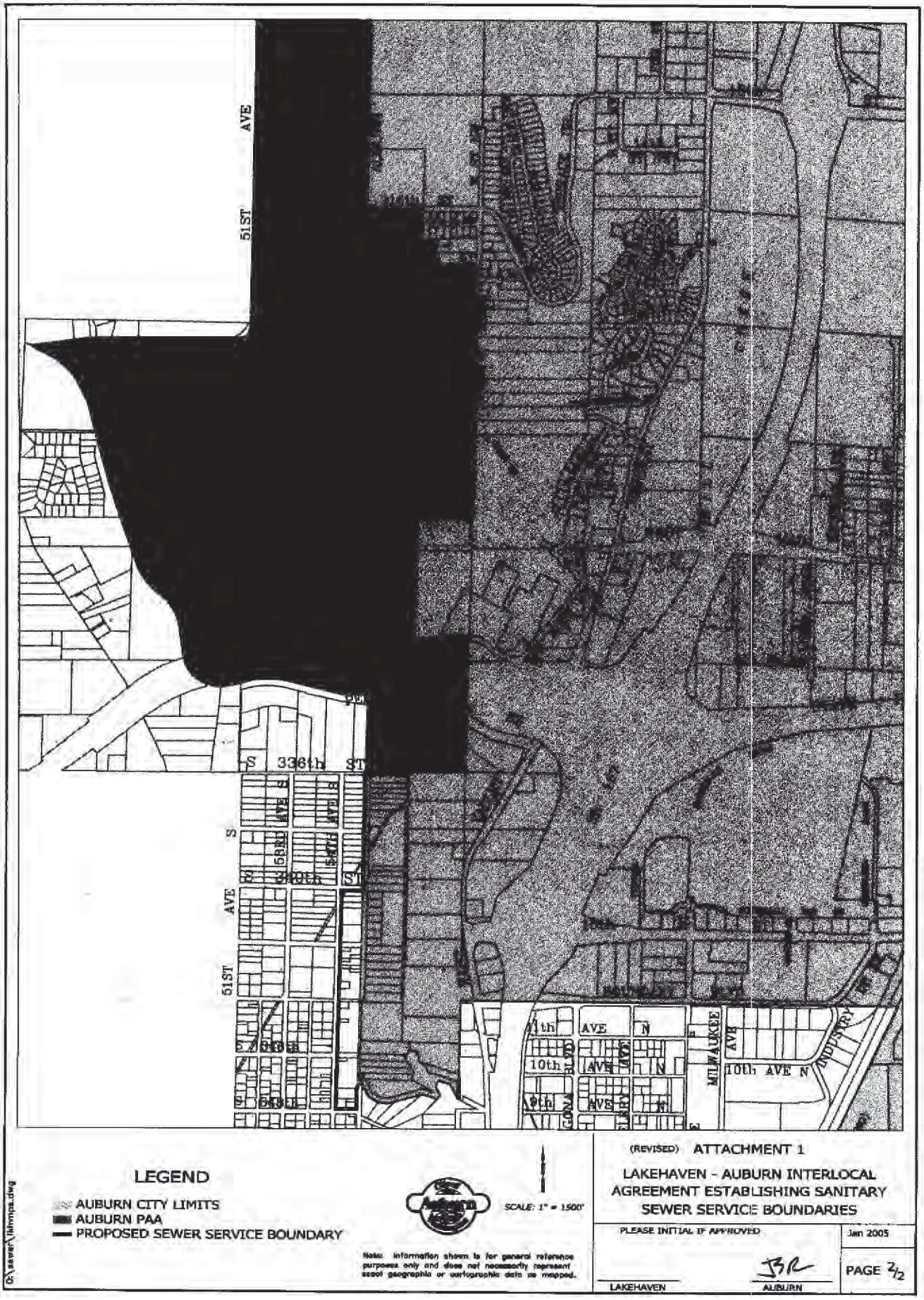
_____

DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:

_____

DANIEL B. HEID,
City Attorney, City of Auburn



LEGEND

- AUBURN CITY LIMITS
- AUBURN PAA
- PROPOSED SEWER SERVICE BOUNDARY

SCALE: 1" = 1500'

Note: Information shown is for general reference purposes only and does not necessarily represent exact geographic or cartographic data as mapped.

(REVISED) ATTACHMENT 1

LAKEHAVEN - AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

PLEASE INITIAL IF APPROVED

Jan 2005

LAKEHAVEN

AUBURN

PAGE 2/2

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Attachment 2
(REVISED)

LAKEHAVEN UTILITY DISTRICT and CITY OF AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

BOUNDARY DESCRIPTION

BEGINNING at a point 170 feet east of the Northwest corner of the Southeast quarter of the Southwest quarter of Section 35, Township 22 North, Range 4 East, W.M., in King County, Washington;

THENCE south 662.54 feet, more or less, to the North line of the South half of said subdivision;

THENCE easterly along said North line to a point 300 feet west of the East line of said subdivision;

THENCE south to a point 170 feet north of the South line of said subdivision;

THENCE east 300 feet, more or less, to the East line of said subdivision;

THENCE southerly along said East line to the South line of said Section 35;

THENCE continuing southerly along the West line of the Northeast quarter of Section 2, Township 21 North, Range 4 East, W.M., in King County, Washington, a distance of 221.12 feet;

THENCE easterly, parallel with the North line of said subdivision, 220.20 feet;

THENCE southerly, parallel with the West line of said subdivision, 130 feet;

THENCE easterly, parallel with the North line of said subdivision, 1,304.44 feet;

THENCE southerly, parallel with the West line of said subdivision, 494 feet;

THENCE easterly, parallel with the North line of said subdivision, 680.8 feet;

THENCE southerly, parallel with the West line of said subdivision, 100 feet;

THENCE easterly, parallel with the North line of said subdivision, 428 feet, more or less, to the East line of said subdivision;

THENCE southerly, along said East line to the Northeast corner of the South half of the South half of the Northeast quarter of the Southeast quarter of said Section 2;

THENCE westerly, along the North line of said subdivision, 518.77 feet;

THENCE southerly, parallel with the East line of said subdivision, 328.01 feet;

THENCE westerly, along the South line of said subdivision, 130.02 feet, more or less to the Northeast corner of the West half of the Southeast quarter of the Southeast quarter of said Section 2;

THENCE southerly, along the East line of said subdivision, 964.41 feet;

THENCE westerly, parallel with the North line of said subdivision, 650 feet, more or less, to the East line of the Southwest quarter of the Southeast quarter of said Section 2;

THENCE southerly, along said East line, 328.77 feet, more or less, to the South line of said subdivision;

THENCE westerly, along said South line, to the centerline of 56th Avenue South;

THENCE southerly, along said centerline of 56th Avenue South, to the centerline of South 305th Street in Section 11, Township 21 North, Range 4 East, W.M., in King County, Washington;

THENCE westerly, along said centerline of South 305th Street, to a point of intersection with the northerly projection of the West line of Lot 2, Block 5, Auburn Heights Park Division No. 2, according to the plat thereof recorded in Volume 49, Page 99, records of King County, Washington;

THENCE southerly, 320 feet, more or less, parallel with said West line of Lot 2, to the South line of Lot 4, Block 5, of said plat;

THENCE easterly, along said South line of Lot 4, to the Northwest corner of Lot 5, Block 5 of said plat;

THENCE southerly and southeasterly, along the West lines of Lots 5 and 9, of said plat, to the Northeast corner of Block 7, Auburn Heights Park Division No. 1, according to the plat thereof recorded in Volume 49 of Plats, Page 56, records of King County, Washington;

THENCE southerly, along the East line of Block 7 of said plat, to the Southeast corner of Lot 2, Block 7, of said plat;

THENCE westerly, parallel with the South line of said plat, along the north lines of Lot 19 and Lot 1, Block 6, Lot 15 and Lot 1, Block 5, and Lot 26, Block 4, of said plat, to the centerline of 51st Avenue South;

THENCE southerly, along said centerline of 51st Avenue South, to the Southwest corner of said Section 11;

THENCE continue southerly, along the West line of Section 14, Township 21 North, Range 4 East, W.M., in King County, Washington, 329.57 feet;

THENCE east 30 feet to the Southwest corner of Lot 15, Peasley Ridge, according to the plat thereof recorded in Volume 201, Pages 66-71, records of King County, Washington;

THENCE continue easterly, along the South line of said plat, to the Southeast corner of Tract D Peasley Ridge;

THENCE northerly, along the East line of said Tract D, 150 feet, more or less, to the Northwest corner of Lot 2, King County Short Plat No. 1080026R, as recorded under Recording No. 8106080708, records of King County, Washington;

THENCE easterly, along the North line of said Lot 2, to the West line of Lot 1, King County Short Plat No. 1080027, as recorded under Recording No. 8106080709, records of King County, Washington;

THENCE northerly, along the West line of said Lot 1, to the Northwest corner thereof;

THENCE easterly, along the North lines of Lots 1, 2 and 4, of said short plat, to the Northeast corner of said Lot 4;

THENCE East 60 feet to the West line of Lot 19, West Auburn Five-Acre Tracts, according to the plat thereof recorded in Volume 15, Page 12, records of King County, Washington;

THENCE southerly, along the West line of said Lot 19, 9.43 feet;

THENCE easterly, parallel with the North line of said Lot 19, 294.8 feet;

THENCE northerly, parallel with the West line of said Lot 19, 119.43 feet, more or less, to the South margin of South 320th Street;

THENCE easterly, along said south margin of South 320th Street, 150 feet;

THENCE southerly, parallel with the West line of said Lot 19, 119.43 feet;

THENCE easterly, parallel with the North line of said Lot 19, 9.59 feet;

THENCE southerly, parallel with the West line of said Lot 19, 5 feet;

THENCE easterly, parallel with the North line of said Lot 19, 13.53 feet;

THENCE southerly, parallel with the West line of said Lot 19, 178.866 feet, more or less, to the most Northwesterly corner of Lot 4, King County Short Plat No. 278048, as recorded under Recording No. 8004030782, records of King County, Washington;

THENCE southerly, along the West line of said Lot 4, to the Southwest corner thereof and the North line of Lot 2, King County Short Plat No. 1077053, as recorded under Recording No. 7808100856;

THENCE westerly, along the North line of said Lot 2, to the Northwest corner thereof;

THENCE southerly, along the West lines of Lot 2 and Lot 4 of said short plat, to the North line of Lot 30, West Auburn Five-Acre Tracts, according to the plat thereof recorded in Volume 15, Page 12, records of King County, Washington;

THENCE easterly, along the North line of said Lot 30, 147.35 feet;

THENCE southerly, parallel with the East line of said Lot 30, to the centerline of South 324th Street;

THENCE westerly, along said centerline of South 324th Street, to the centerline of 56th Avenue South;

THENCE southerly, along said centerline of 56th Avenue South, to the North margin of State Highway No. 18;

THENCE easterly, along said North margin of State Highway No. 18, to the southerly projection of the centerline of 58th Avenue South;

THENCE southerly, along said centerline of 58th Avenue South, to the North margin of South 336th Street;

THENCE westerly, along said North margin of South 336th Street to the West margin of 56th Avenue South;

THENCE southerly, along said West margin of 56th Avenue South to the North margin of South 340th Street;

THENCE westerly, along said North margin of South 340th Street to the West margin of 55th Avenue South;

THENCE southerly, along said West margin of 55th Avenue South to the South margin of South 348th Street;

THENCE easterly, along said South margin of South 348th Street to the East margin of 56th Avenue South;

THENCE northerly, along said East margin of 56th Avenue South, to the easterly projection of the South line of Lot 24, Block 27, Jovita Heights, according to the plat thereof recorded in Volume 20 of Plats, Page 12, records of King County, Washington, and the terminus of this boundary description.

LAKEHAVEN UTILITY DISTRICT
King County, Washington

Resolution No. 2005-1038

A RESOLUTION of the Board of Commissioners of the Lakehaven Utility District, King County, Washington, approving an amendment to the sanitary sewer service boundary with the City of Auburn, authorizing the General Manager to execute an agreement reflecting such amendment on behalf of the District and amending District Resolution No. 2004-1006.

WHEREAS, the District is authorized under state law to provide water and sanitary sewer service pursuant to adopted comprehensive plans, and

WHEREAS, under authority of existing regulatory requirements, the District and the City of Auburn have determined to establish, by interlocal agreement, service area boundaries between their respective water and sewer systems, and

WHEREAS, since the adoption of the sewer service area boundary, Auburn and the District have concluded that certain territory within the area designated for sewer service by the District would be better served by Auburn, and

WHEREAS, Auburn and the District have discussed terms for an agreement which would transfer the service jurisdiction for such area to Auburn, and

WHEREAS, the Board believing the transfer of service jurisdiction to be in the best interests of the District

NOW, THEREFORE, **BE IT RESOLVED** as follows:

1. The District hereby approves an amendment to the "Interlocal Agreement Establishing Sanitary Sewer Service Boundaries" with the City of Auburn to provide that the area referenced in Exhibit "A" shall hereinafter be included within the service area jurisdiction of the City of Auburn.
2. The General Manager is hereby directed to execute an agreement with Auburn to provide for such transfer.
3. Resolution No. 2004-1006 is hereby amended in part to reflect the transfer of service jurisdiction herein.
4. This Resolution shall be effective on the date of adoption below.

ADOPTED by the Board of Commissioners of Lakehaven Utility District, King County, Washington, at an open public meeting this 10th day of March, 2005.

ATTEST:

President and Commissioner	Yea	Nay	Abstain
Vice President and Commissioner	Yea	Nay	Abstain
Secretary and Commissioner	Yea	Nay	Abstain
Commissioner	Yea	Nay	Abstain
Commissioner	Yea	Nay	Abstain

Approved as to form:
General Counsel

RESOLUTION NO. 5353

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN AMENDMENT TO THE INTERLOCAL AGREEMENT WITH THE LAKEHAVEN WATER AND SEWER DISTRICT FOR THE PURPOSE OF MODIFYING THE SEWER DISTRICT'S SANITARY SEWER SERVICE AREA

WHEREAS, pursuant to RCW 35.A.11.040, Auburn has the legal authority to exercise its powers and perform any of its functions as set forth in RCW 39.34; and

WHEREAS, in January 2004 the Commissioners of the Lakehaven Utility District adopted Resolution No. 2004-1006 authorizing the General Manager to execute an interlocal agreement with Auburn, which agreement was subsequently signed by the City of Auburn as authorized under Auburn Resolution No. 3651; and

WHEREAS, in March 2005 the Commissioners of the Lakehaven Utility District adopted Resolution No. 2005-1038 authorizing the General Manager to execute an amendment to the interlocal agreement with Auburn, which amendment subsequently signed by the City of Auburn as authorized under Auburn Resolution No. 3824; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized with sufficient wastewater conveyance capacity and are situated so as to be capable of affording sewer service to a number of properties that lie within the Lakehaven Sanitary Sewer Service Area and adjacent to Auburn's Sanitary Sewer Service Area; and

WHEREAS, Auburn has evaluated sanitary sewer service issues relative to the adjacent properties and determined that it is feasible for Auburn to provide sanitary sewer service to those properties; and

WHEREAS, Lakehaven has evaluated the request and determined that Lakehaven can transfer to Auburn that portion of its Sanitary Sewer Service Area adjacent to the City of Auburn's infrastructure so that Auburn can provide sanitary sewer service to those properties.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, RESOLVES as follows:

Section 1. The Mayor is hereby authorized to execute an amendment to the Interlocal Agreement with Lakehaven Utility District, in substantial conformity with the agreement attached hereto, marked as Exhibit A and incorporated herein by this reference.

Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directions of this legislation.

Section 3. This Resolution shall take effect and be in force upon passage and signatures thereon.

DATED and SIGNED on this 19th day of March, 2018.

CITY OF AUBURN

Nancy Backus

NANCY BACKUS, MAYOR

ATTEST:

Danielle E. Daskam

Danielle E. Daskam, City Clerk

APPROVED AS TO FORM:

Daniel B. Heid, City Attorney

EXHIBIT A TO RESOLUTION 5353

AMENDMENT NO. 2
TO THE LAKEHAVEN WATER AND SEWER DISTRICT AND CITY OF AUBURN
INTERLOCAL AGREEMENT ESTABLISHING
SANITARY SEWER SERVICE BOUNDARIES

AMENDMENT NO. 2
TO THE LAKEHAVEN WATER AND SEWER DISTRICT AND CITY OF AUBURN
INTERLOCAL AGREEMENT ESTABLISHING
SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into this 12th day of April 2018, by and between LAKEHAVEN WATER AND SEWER DISTRICT, a Washington municipal corporation (hereinafter referred to as "Lakehaven"), and the CITY OF AUBURN, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington, as an amendment to the Interlocal Agreement dated February 2, 2004, between the parties and executed on the 8th day of January, 2004, and the 20th day of January, 2004, respectively (hereinafter referred to as "Original Agreement") as amended by Amendment No. 1 to that agreement, dated February 22, 2005, between the parties and executed on the 10th day of March, and the 22nd day of February, 2005, respectively.

WITNESSETH:

WHEREAS, in January 2004 the Commissioners of the Lakehaven Water and Sewer District adopted Resolution No. 2004-1006 authorizing the General Manager to execute an interlocal agreement with Auburn, which agreement was subsequently signed by the City of Auburn as authorized under Auburn Resolution No. 3651; and

WHEREAS, in March 2005 the Commissioners of the Lakehaven Water and Sewer District adopted Resolution No. 2005-1038 authorizing the General Manager to execute an amendment to the interlocal agreement with Auburn, which amendment subsequently signed by the City of Auburn as authorized under Auburn Resolution No. 3824; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized with sufficient wastewater conveyance capacity and are situated so as to be capable of affording sewer service to a number of properties that lie within the Lakehaven Sanitary Sewer Service Area and adjacent to Auburn's Sanitary Sewer Service Area; and

WHEREAS, Auburn has evaluated sanitary sewer service issues relative to the adjacent properties and determined that it is feasible for Auburn to provide sanitary sewer service to those properties; and

WHEREAS, Lakehaven has evaluated the request and determined that Lakehaven can transfer to Auburn that portion of its Sanitary Sewer Service Area adjacent to the City of Auburn's infrastructure so that Auburn can provide sanitary sewer service to those properties.

NOW, THEREFORE in consideration of their mutual covenants, conditions, and promises, IT IS HEREBY AGREED by and between the parties hereto as follows:

ITEM ONE REVISION TO SERVICE AREA BOUNDARY

The parties have agreed to modify the mutual sewer service planning boundary as established in the Original Agreement and modified by Amendment No. 1. The properties depicted in Exhibit A and described in Exhibit B are hereby designated to be within the City of Auburn's sanitary sewer service area and no longer within the Lakehaven Water and Sewer District's sanitary sewer service area.

ITEM TWO REMAINING TERMS UNCHANGED:

That all other provisions of the Original Agreement as modified by Amendment No. 1 not herein amended shall remain in full force and effect.

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the day and year first below written.

LAKEHAVEN WATER AND SEWER DISTRICT

Approved by Resolution No. 2018-1306 of the Lakehaven Water and Sewer District, Federal Way, Washington, at its regular meeting held on the 12th day of April, 2018.

By:

Approved as to Form:

CITY OF AUBURN
Approved by Resolution No. 5353 of the City of Auburn, Washington, at its regular meeting held on the 19th day of March, 2018.

By:

Nancy Backus
Nancy Backus, Mayor

Attest:

City Clerk

Approved as to form:

City Attorney

EXHIBIT 'A'

Legal Description for Lakehaven to Auburn Sewer Service Transfer Area

A portion of the southeast quarter of the southwest quarter of Section 14 and the northeast quarter of the northwest quarter of section 23, all in Township 21 North, Range 4 East, W.M., City of Auburn, King County, Washington, said portion described as follows:

Commencing at an angle point in the westerly boundary of the Interlocal Agreement described in City of Auburn Resolution 3824 dated February 22, 2005, said angle point being at the intersection of the north margin of State Highway No. 18 and the southerly projection of the centerline of 58th Avenue South;

Thence southerly along said westerly boundary and said southerly projection of 58th Avenue South to the south margin of the lands conveyed to the City of Auburn from the State of Washington in deed recorded under King County Recording No. 8709221482 and the point of beginning for this boundary description;

Thence continuing southerly along said westerly boundary and said southerly projection of 58th Avenue South to the north margin of South 336th Street;

Thence westerly along said westerly boundary and the north margin of South 336th Street to the west margin of 56th Avenue South;

Thence southerly along said westerly boundary and the west margin of 56th Avenue South to the north margin of South 340th Street;

Thence westerly along said westerly boundary and said north margin of South 340th Street to the east margin of 55th Avenue South;

Thence leaving said westerly boundary of City of Auburn Resolution 3824, northerly along said east margin of 55th Avenue South to the south margin of South 336th Street;

Thence easterly along said south margin of South 336th Street to the southerly projection of the west line of the southeast quarter of the southwest quarter of said Section 14;

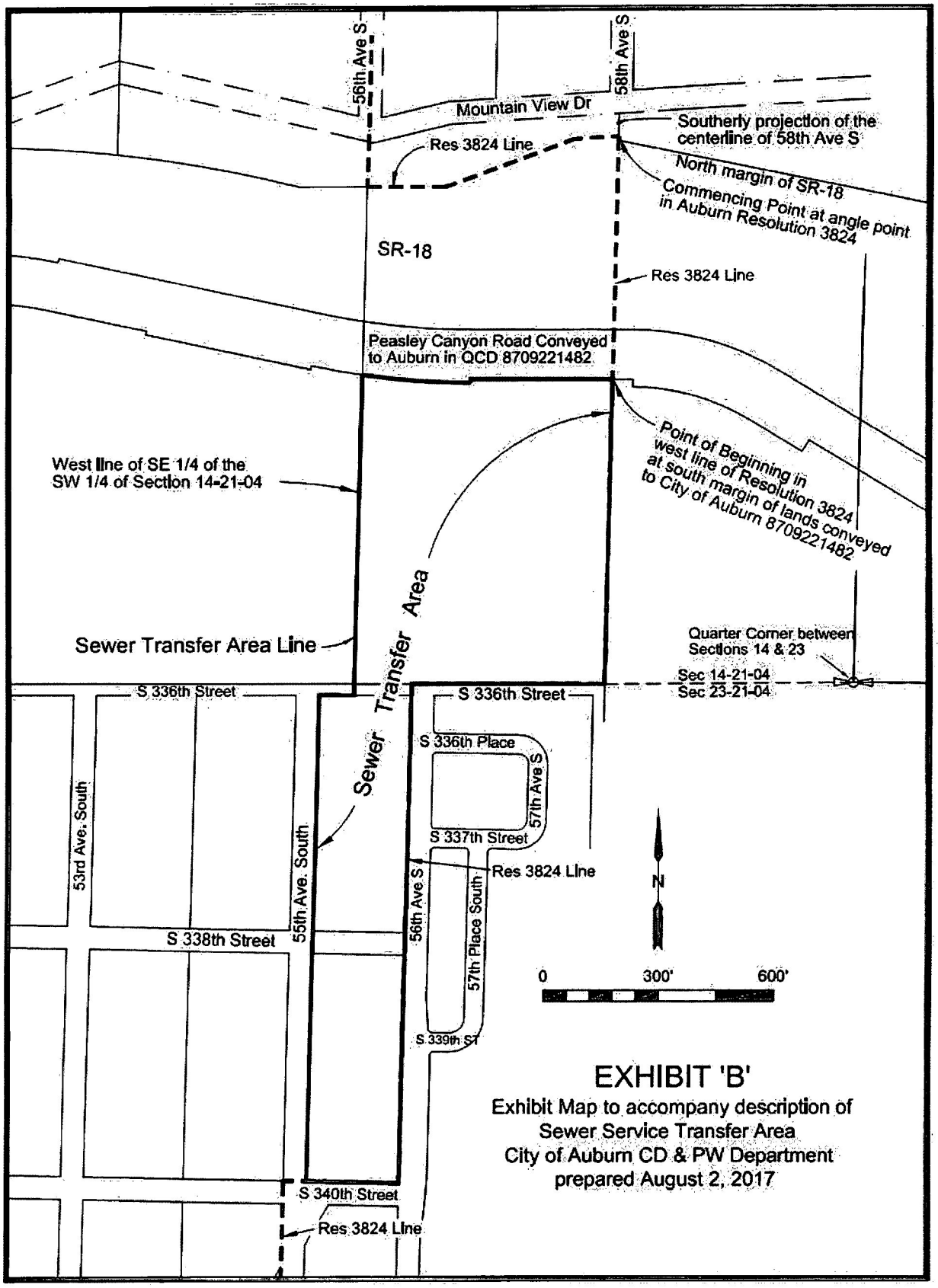
Thence northerly along said west line to said south margin of the lands conveyed to the City of Auburn in deed recorded under King County Recording No. 8709221482;

Thence easterly along said south margin to the point of beginning.

9/11/2017

ROBERT R. BURTON
STATE OF WASHINGTON
22954
REGISTERED
PROFESSIONAL LAND SURVEYOR

O:\SURVEY\PROJECTS\ADM431-Sewer\2017 Sewer Franchise Legal - Jovita Hts area\Legal Description Lakehaven to Auburn Sewer Transfer Area.doc 9/11/2017


56th Ave S
58th Ave S
Mountain View Dr
Res 3824 Line
Southerly projection of the centerline of 58th Ave S
North margin of SR-18
Commencing Point at angle point in Auburn Resolution 3824
SR-18
Res 3824 Line
Peasley Canyon Road Conveyed to Auburn in QCD 8709221482
Point of Beginning in west line of Resolution 3824 at south margin of lands conveyed to City of Auburn 8709221482
West line of SE 1/4 of the SW 1/4 of Section 14-21-04
Sewer Transfer Area
Sewer Transfer Area Line
Quarter Corner between Sections 14 & 23
Sec 14-21-04
Sec 23-21-04
S 336th Street
S 336th Street
S 336th Place
57th Ave S
S 337th Street
Res 3824 Line
53rd Ave. South
55th Ave. South
56th Ave S
57th Place South
S 338th Street
S 339th St
N
0
300'
600'
S 340th Street
Res 3824 Line
EXHIBIT 'B'
Exhibit Map to accompany description of
Sewer Service Transfer Area
City of Auburn CD & PW Department
prepared August 2, 2017

LAKEHAVEN WATER AND SEWER DISTRICT
King County, Washington

Resolution No. 2018-1306

A RESOLUTION of the Board of Commissioners of the Lakehaven Water and Sewer District, King County, Washington, approving Amendment No. 2 to the sanitary sewer service boundary with the City of Auburn, authorizing the General Manager to execute an agreement reflecting such amendment on behalf of the District and amending District Resolution No. 2004-1006.

WHEREAS, the District is authorized under state law to provide water and sanitary sewer service pursuant to adopted comprehensive plans, and

WHEREAS, under authority of existing regulatory requirements, the District and the City of Auburn have determined to establish, by interlocal agreement, service area boundaries between their respective water and sewer systems, and

WHEREAS, since the adoption of the sewer service area boundary, Auburn and the District have concluded that certain territory within the area designated for sewer service by the District would be better served by Auburn, and

WHEREAS, the parties have previously executed Amendment No. 1 to the interlocal agreement to transfer service jurisdiction of an area to Auburn, and

WHEREAS, Auburn and the District have discussed terms for a second amendment which would transfer the service jurisdiction for an additional area to Auburn, and

WHEREAS, the Board believing the transfer of service jurisdiction to be in the best interests of the District

NOW, THEREFORE, BE IT RESOLVED as follows:

1. The District hereby approves an Amendment No. 2 to the "Interlocal Agreement Establishing Sanitary Sewer Service Boundaries" with the City of Auburn to provide that the area referenced in Exhibit "A" shall hereinafter be included within the service area jurisdiction of the City of Auburn.

2. The General Manager is hereby directed to execute an agreement with Auburn to provide for such transfer.

3. Resolution No. 2004-1006 is hereby amended in part to reflect the transfer of service jurisdiction herein.

4. This Resolution shall be effective on the date of adoption below.

ADOPTED by the Board of Commissioners of Lakehaven Water and Sewer District, King County, Washington, at an open public meeting this 12th day of April, 2018.

ATTEST:

President and Commissioner	Yea	Nay	Abstain
Vice President and Commissioner	Yea	Nay	Abstain
Secretary and Commissioner	Yea	Nay	Abstain
Commissioner	Yea	Nay	Abstain
Commissioner	Yea	Nay	Abstain

Approved as to form:

General Counsel

Lakehaven
WATER & SEWER DISTRICT

31627 1st Avenue South • P.O. Box 4249 • Federal Way, WA 98063-4249
253-941-1516 Federal Way • 253-927-2922 Tacoma • www.lakehaven.org

RECEIVED
APR 19 2018
City of Auburn
CDPW - Engineering Services

April 17, 2018

Robert Elwell, P.E.
City of Auburn
25 West Main Street
Auburn, Washington 98001-4998

RE: AUBURN-LAKEHAVEN SEWER INTERLOCAL AGREEMENT AMENDMENT (NO. 2)
Revised Sewer Service Area Boundary

Mr. Elwell:

Enclosed is an original signed copy of Lakehaven Resolution 2018-1306, adopted by Lakehaven's Board of Commissioners on 4/12/18, along with an original of the referenced ILA Amendment signed by the Board President & Lakehaven's General Counsel; amending the sewer service area boundary in the vicinity of southeast Peasley Canyon. At this time, Lakehaven will consider the service area boundary amended accordingly. Thanks for your assistance in this matter.

Let me know if there's any questions or if additional information is needed.

Sincerely,

Brian Asbury
Development Engineering Supervisor

Enclosures

APPENDIX A7

CITY OF ANGOLA

- Sewer Service Boundaries (Resolution 3589)
- Water And Sewer Utility Service, Billing, And Collection (Resolution 5505)

RESOLUTION NO. 3589

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES BETWEEN THE CITY OF AUBURN AND THE CITY OF ALGONA

WHEREAS, pursuant to RCW 35A.11.040 Auburn and Algona have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Algona have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn and Algona have the legal authority to maintain a sewerage system.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

Section 1. The Mayor and City Clerk of the City of Auburn are herewith authorized to execute an Interlocal Agreement establishing sanitary sewer service boundaries between the City of Auburn and the City of Algona in the

form substantially as the agreement attached hereto, marked as Exhibit "1" and incorporated herein by this reference.

Section 2. That the Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directions of this legislation.

Section 3. That this resolution shall be in full force and effect upon passage and signatures hereon.

DATED this 21st day of April, 2003.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam, City Clerk

APPROVED AS TO FORM:

Daniel B. Heid, City Attorney

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):

Interlocal Agreement (RES 3589) Sanitary Sewer Boundaries

8/26 PLAT
L-6179

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)
Auburn, City of

Grantee/Assignee/Beneficiary: (Last name first)
1. Algona, City of

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page of document.

Assessor's Property Tax Parcel/Account Number

N/A

☐ Assessor Tax # not yet assigned

EXHIBIT 1

INTERLOCAL AGREEMENT
between
CITY OF ALGONA and CITY OF AUBURN
for the
THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

THIS AGREEMENT, made and entered into this 21st day of April, 2003, by and between the **CITY OF ALGONA**, a Washington municipal corporation (hereinafter referred to as "Algona"), and the **CITY OF AUBURN**, a Washington municipal corporation, (hereinafter referred to as "Auburn"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35A.11.040 Auburn and Algona have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Auburn and Algona have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Auburn and Algona have the legal authority to maintain a sewerage system; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Algona sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of the Auburn Sanitary Sewer Service Area; and

WHEREAS, Auburn has evaluated and determined it is in Auburn's best interest to allow Algona to provide sewer service to property within Auburn's municipal boundary that lies adjacent to Algona's sanitary sewer infrastructure; and

WHEREAS, Algona has sufficient capacity within their sanitary sewer facilities to support these adjustments to the existing sewer service areas; and

WHEREAS, the parties desire to allow Algona to construct, reconstruct, repair and maintain sewer facilities, and to authorize connections to Algona's sewer system for service to the areas noted in Exhibit A; and

WHEREAS, Algona's delivery of sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. **Sewer Service Area.** The parties have agreed to adjust their sewer service area boundary between them. The area to be adjusted is graphically depicted on the map attached hereto as Exhibit "A", which is by this reference incorporated herein. Exhibit "A" represents an increase in Algona's sewer service area and a decrease in Auburn's current sewer service area. Both parties further agree that Algona, in providing sewer service to the additional areas as shown on Exhibit "A", shall be furnishing sewer service to properties within Auburn's water service area and Auburn's municipal jurisdiction in accordance with and subject to the terms and conditions of this Agreement.

2. **Management, Regulation and Control of Sewer System.** Algona shall have the sole responsibility and authority to construct, maintain, manage, conduct and operate its sewerage system as installed within the areas described in Exhibit "A", together with any additions, extensions and betterments thereto. Algona shall also be responsible for obtaining all necessary governmental franchises, approvals, easements and permits for the installation, maintenance, and operation of said sewerage systems as described above.

3. **Rates, Charges, Permits, and Billing Responsibilities.** Through this Agreement Auburn is turning over the responsibility to own, operate, and maintain the sanitary sewer system including private side sewers within the public right of way to Algona. Algona shall be the responsible agency to issue sewer certificates of availability for any development located within the area described by Exhibit "A".

No connection or modification shall be made to Algona's sanitary sewer system and or private side sewer services connected to Algona's sewer system unless the property owner first pays the associated fees and submits the proper information to obtain an Algona sanitary sewer permit. Sanitary sewer permits shall be subject to inspection and approval for compliance with Algona's Sanitary Sewer Standards as adopted at the time the connection is made.

The rates charged to Algona's sanitary sewer customers shall be fixed, altered, regulated and controlled by Algona pursuant to all applicable laws or regulations

promulgated on the subject of rates and charges for sewer service. No surcharge shall be charged to the customers served under this agreement on the sole basis that those customers are outside of Algona's city limits.

To establish a quantitative usage, Algona shall manually read Auburn's water meters servicing those properties described in Exhibit "A". Algona shall also have the ability to annually request water usage data from Auburn for said properties.

4. Boundary Review Board. In the event that implementation of the terms hereof results in permanent sewer service to areas that will be outside the respective service boundaries of Algona or Auburn, the parties will at the time of such service jointly seek approval of the King County Boundary Review Board in accordance with R.C.W. 36.93.090.

5. Comprehensive Sewer Planning. The terms of this Agreement will be included as an element of Auburn and Algona's Comprehensive Sewerage Plans.

6. Reliance. Each party hereto acknowledges that the other will rely upon the terms of this agreement in its comprehensive planning to meet the needs of the service area designated herein.

7. Indemnification. Algona agrees to indemnify and hold Auburn and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against Auburn arising out of, in connection with, or incident to the execution of this agreement and/or Algona's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Auburn, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Algona; and provided further, that nothing herein shall require Algona to hold harmless or defend Auburn, its agents, employees, and/or officers, from any claims arising from the sole negligence of Auburn, its agents, employees, and/or officers. No liability shall attach to Auburn by reason of entering this agreement except as expressly provided herein.

Auburn agrees to indemnify and hold Algona and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever king or nature, brought against Algona arising out of, in connection with, or incident to the execution of this agreement and/or Auburn's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Algona, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Auburn; and provided further, that nothing

herein shall require Auburn to hold harmless or defend Algona, its agents, employees, and/or officers, from any claims arising from the sole negligence of Algona, its agents, employees, and/or officers. No liability shall attach to Algona by reason of entering this agreement except as expressly provided herein.

8. **Assignment.** The parties shall not assign this agreement or any interest, obligation or duty therein without the express written consent of the other party.

9. **Attorney's Fees.** If either party shall be required to bring any action to enforce any provision of this Agreement, or shall be required to defend any action brought by the other party with respect to this Agreement, and in the further event that one party shall substantially prevail in such action, the losing party shall, in addition to all other payments required therein, pay all of the prevailing party's reasonable costs in connection with such action, including such sums as the court or courts may adjudge reasonable as attorney's fees in trial court and in appellate courts.

10. **Government Approvals.** The parties will give notice of the adoption of this Agreement to King County's Department of Natural Resources – Wastewater Treatment Division, to the Department of Health, and to any other agency with jurisdiction or mission relevant to the terms hereof, and shall cooperate and assist in all reasonable manner in procuring any necessary approvals hereof by those agencies.

11. **Service Amendments.** Any changes to the service areas described herein shall be by mutual agreement. Each party may give permission to the other on a case-by-case basis to provide service by one party into the other party's adjacent or nearby service area based upon considerations of economic efficiency for providing the service with mutual consent of Auburn's Director of Public Works and Algona's Director of Public Works.

12. **Notices.** All notices between the two agencies hereunder may be delivered or mailed. If mailed, they shall be sent to the following respective addresses:

City of Algona
Director of Public Works
402 Wards Street
Algona, WA 98001
253-833-2741

City of Auburn
Director of Public Works
25 west Main Street
Auburn, WA 98001
253-931-3010

or to such other representative as either party may hereafter from time to time designate in writing. All notices and payments mailed by regular post (including first class) shall be deemed to have been given on the second business day following the date of mailing, if properly mailed and addressed. Notices and payments sent by

certified or registered mail shall be deemed to have been given on the day next following the date of mailing, if properly mailed and addressed. For all types of mail, the postmark affixed by the United States Postal Service shall be conclusive evidence of the date of mailing.

13. Alteration, Amendment or Modification. Algona and Auburn hereby reserve the right to alter, amend or modify the terms and conditions of this Agreement upon written agreement of both parties to such alteration, amendment or modification. Such written consent(s) shall be filed with this agreement for future reference.

14. Sanctity of Agreement. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

15. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Algona or Auburn regarding provision of sewer service, except as specifically set forth herein.

16. Miscellaneous.

A. The captions in this agreement are for convenience only and do not in any way limit or amplify the provisions of this agreement.

B. This agreement is established in perpetuity. Modifications can be established upon written agreement between both parties.

C. The purpose of this agreement is to clarify Algona's and Auburn's sanitary sewer responsibilities for providing service and maintaining public sewer facilities.

D. If any term, provision, condition or portion of this Agreement is held to be invalid, or unenforceable by a final decision of any court having jurisdiction on the matter, the remaining of this Agreement or the application of such term or provision to persons or circumstances other then those as to which it is held invalid or unenforceable shall not be affected thereby and shall continue in full force and effect, unless such court determines that invalidity or unenforceability materially interferes with or defeats the purposes hereof, at which time Auburn or Algona shall have the right to terminate the Agreement.

E. No modifications or amendments of this agreement shall be valid or effective unless evidenced by an agreement in writing signed by both parties.

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the day and year first above written.

CITY OF ALGONA
Approved by Resolution No. 70303 of the City of Algona, Washington, at its regular meeting held on the 1st day of April, 2003.

By:

GLENN WILSON,
Mayor, City of Algona

Attest:

DANIELLE STAFFORD,
City Clerk, City of Algona

Approved as to form:

GEORGE KELLEY,
City Attorney, City of Algona

CITY OF AUBURN
Approved by Resolution No. 3589, of the City of Auburn, Washington, at its regular meeting held on the 21st day of April, 2003.

By:

PETER B. LEWIS,
Mayor, City of Auburn

Attest:

DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:

DANIEL B. HEID,
City Attorney, City of Auburn

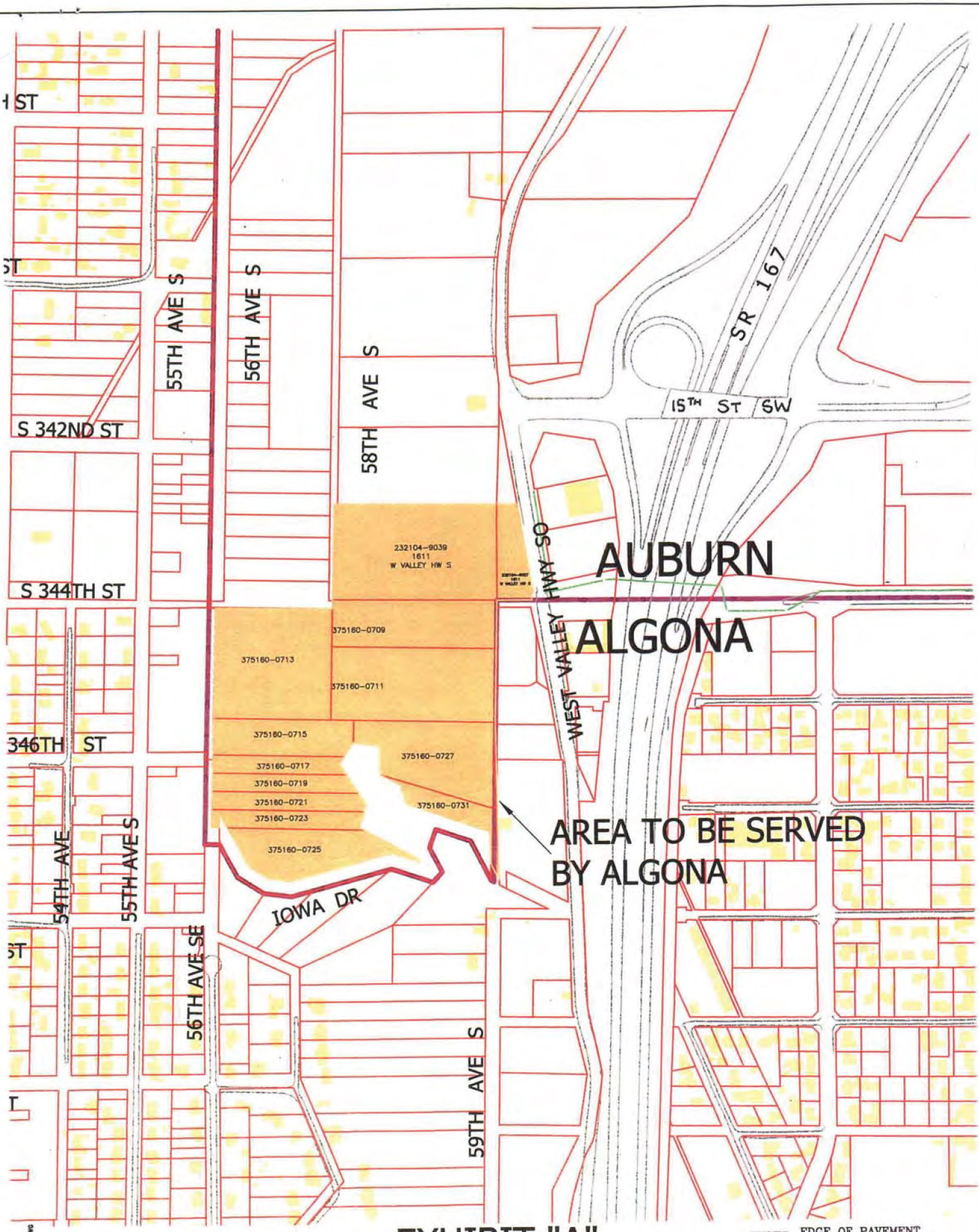


EXHIBIT "A"

Auburn's Sewer Service Area to be Transferred to Algona

EDGE OF PAVEMENT
SEWER
PARCEL LINE
CITY LIMITS

Exhibit 1
Resolution 3589
Page 7 of 7

PAGE 1 of 1

RESOLUTION NO. 5505

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN INTERLOCAL AGREEMENT CONCERNING WATER AND SEWER UTILITY SERVICE, BILLING, AND COLLECTION

WHEREAS, both Algona and Auburn (each a "Party" and collectively "the Parties") are "public agencies" as defined by Chapter 39.34 RCW, and are authorized by that statute to cooperate on a basis of mutual advantage in order to provide for services and facilities;

WHEREAS, Algona owns and operates a water utility ("Algona Water System") and a sanitary sewer utility ("Algona Sewer System"), which collectively provide water and sewer service to customers located within Algona's utility service area(s);

WHEREAS, Auburn owns and operates a water utility ("Auburn Water System") and a sanitary sewer utility ("Auburn Sewer System"), which collectively provide water and sewer service to customers located within Auburn's utility service area(s);

WHEREAS, there are three parcels located within the City limits of Auburn at 1611 West Valley Highway S (APN 2321049039), 1743 West Valley Highway S (APN 3751600709) and 1929 West Valley Highway S (APN 3751600711) (collectively, "West Valley Parcels") that are connected to and served by the Auburn Water System, but are also connected to and served by the Algona Sewer System;

WHEREAS, there are four parcels located within the City limits of Algona at 502 Boundary Boulevard (APN 0301510060), 512 Boundary Boulevard (APN 0301510120), 1196 Industry Drive N (APN 0301510190) and a vacant parcel located between 502 and 512 Boundary Boulevard (APN 0301510100) (collectively, "Boundary Boulevard Parcels")

that are connected to and served by the Algona Water Utility, but are also connected to and served by the Auburn Sewer System;

WHEREAS, the dissociation between the water and sewer service connections for the West Valley Parcels and Boundary Boulevard Parcels is longstanding and of uncertain origin;

WHEREAS, to the best of the Parties' mutual belief and understanding, said dissociation may have resulted from various factors, including without limitation the timing of annexation, development and/or utility connection of the underlying properties;

WHEREAS, the water and sewer utility usage of the West Valley Parcels has historically been roughly equivalent to the water and sewer utility usage of the Boundary Boulevard Parcels;

WHEREAS, each Party's billing and collection for sanitary sewer service usage is based primarily upon water usage, such that each Party may approximately measure, bill and collect for a customer's sewer utility service by measuring the volume of water service provided to that customer;

WHEREAS, the significant expense of connecting the West Valley Parcels to the Auburn Sewer System, and of connecting the Boundary Boulevard Parcels to the Algona Sewer System, would be greatly disproportionate to the practical benefits resulting from such connection, which would be nominal;

WHEREAS, the Parties are currently evaluating permanent options to address the issue of water and sewer utility service for the West Valley Parcels and Boundary Boulevard Parcels and will continue to engage in discussions regarding the same as the

lines require repair or replacement or as development in the respective area(s) occurs; and

WHEREAS, as an interim approach, the Parties mutually desire to simplify the billing relationships and to contractually define their respective rights, obligations costs and liabilities regarding the provision of water and sewer utility service to the West Valley Parcels and the Boundary Boulevard Parcels while a permanent solution is identified and implemented.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, RESOLVES as follows:

Section 1. The Mayor is authorized to execute an interlocal agreement with the City of Algona, in substantial conformity with the agreement attached as Exhibit A.,

Section 2. The Mayor is authorized to implement those administrative procedures necessary to carry out the directives of this legislation.

Section 3. This Resolution will take effect and be in full force on passage and signatures.

Dated and Signed this 6th day of April, 2020.

CITY OF AUBURN

Nancy Backus
NANCY BACKUS, MAYOR

ATTEST:

Shawn Campbell
Shawn Campbell, MMC, City Clerk

APPROVED AS TO FORM:

Kendra Comeau
Kendra Comeau, City Attorney

EXHIBIT A TO RESOLUTION 5505

INTERLOCAL COOPERATION AGREEMENT CONCERNING WATER AND SEWER UTILITY SERVICE, BILLING AND COLLECTION

INTERLOCAL COOPERATION AGREEMENT

Water and Sewer Utility Service, Billing and Collection

THIS INTERLOCAL COOPERATION AGREEMENT ("Agreement") is entered into as of April 9, 2020 ("Effective Date") by and between the City of Algona, Washington ("Algona") and the City of Auburn, Washington ("Auburn"), both municipal corporations organized under the laws of the State of Washington, pursuant to the Interlocal Cooperation Act, Chapter 39.34 RCW.

Recitals

A. Both Algona and Auburn (each a "Party" and collectively "the Parties") are "public agencies" as defined by Chapter 39.34 RCW, and are authorized by that statute to cooperate on a basis of mutual advantage in order to provide for services and facilities.

B. Algona owns and operates a water utility ("Algona Water System") and a sanitary sewer utility ("Algona Sewer System"), which collectively provide water and sewer service to customers located within Algona's utility service area(s).

C. Auburn owns and operates a water utility ("Auburn Water System") and a sanitary sewer utility ("Auburn Sewer System"), which collectively provide water and sewer service to customers located within Auburn's utility service area(s).

D. There are three parcels located within the City limits of Auburn at 1611 West Valley Highway S (APN 2321049039), 1743 West Valley Highway S (APN 3751600709) and 1929 West Valley Highway S (APN 3751600711) (collectively, "West Valley Parcels") that are connected to and served by the Auburn Water System, but are also connected to and served by the Algona Sewer System.

E. There are four parcels located within the City limits of Algona at 502 Boundary Boulevard (APN 0301510060), 512 Boundary Boulevard (APN 0301510120), 1196 Industry Drive N (APN 0301510190) and a vacant parcel located between 502 and 512 Boundary Boulevard (APN 0301510100) (collectively, "Boundary Boulevard Parcels") that are connected to and served by the Algona Water Utility, but are also connected to and served by the Auburn Sewer System.

F. The dissociation between the water and sewer service connections for the West Valley Parcels and Boundary Boulevard Parcels is longstanding and of uncertain origin. To the best of the Parties' mutual belief and understanding, said dissociation may have resulted from various factors, including without limitation the timing of annexation, development and/or utility connection of the underlying properties.

G. The water and sewer utility usage of the West Valley Parcels has historically been roughly equivalent to the water and sewer utility usage of the Boundary Boulevard Parcels.

H. Each Party's billing and collection for sanitary sewer service usage is based primarily upon water usage, such that each Party may approximately measure, bill and collect for a customer's sewer utility service by measuring the volume of water service provided to that customer.

I. The significant expense of connecting the West Valley Parcels to the Auburn Sewer System, and of connecting the Boundary Boulevard Parcels to the Algona Sewer System, would be greatly disproportionate to the practical benefits resulting from such connection, which would be nominal.

J. The Parties are currently evaluating permanent options to address the issue of water and sewer utility service for the West Valley Parcels and Boundary Boulevard Parcels and will continue to engage in discussions regarding the same as the lines require repair or replacement or as development in the respective area(s) occurs.

K. As an interim approach, the Parties mutually desire to simplify the billing relationships and to contractually define their respective rights, obligations costs and liabilities regarding the provision of water and sewer utility service to the West Valley Parcels and the Boundary Boulevard Parcels while a permanent solution is identified and implemented.

NOW, THEREFORE, in consideration of the mutual benefits set forth herein, and other good and sufficient consideration the receipt and sufficiency of which are mutually acknowledged, including without limitation the public interest, the Parties hereby agree as follows:

Terms

Section 1. Authority and Purpose. This Agreement is executed pursuant to Chapter 39.34 RCW as a cooperative endeavor of the Parties. The purpose of this Agreement is to establish a contractual relationship governing the provision of water and sewer utility service for the West Valley Parcels and the Boundary Boulevard Parcels, and to set forth the Parties' respective rights, obligations, costs and liabilities regarding this undertaking. This Agreement shall be reasonably construed in furtherance of said purpose.

Section 2. West Valley Parcels—Connection, Service, Billing and Collection.

2.1 Connection and Service. The West Valley Parcels shall remain connected to and served by the Auburn Water System and the Algona Sewer System.

2.2 Billing and Collection. Auburn shall be exclusively responsible for billing and collecting utility payments from the West Valley Parcels for both water and sewer utility service pursuant to Auburn's adopted utility rate schedule(s). Auburn shall maintain accurate records of water and sewer usage, billing and payments with respect to the West Valley Parcels, but shall not be required to remit any such payments to Algona except as expressly set forth in this Agreement.

Section 3. Boundary Boulevard Parcels—Connection, Service, Billing and Collection.

3.1 Connection and Service. The Boundary Boulevard Parcels shall remain connected to and served by the Algona Water System and the Auburn Sewer System.

3.2 Billing and Collection. Algona shall be exclusively responsible for billing and collecting utility payments from the Boundary Boulevard Parcels for both water and sewer utility service pursuant to Algona's adopted utility rate schedule(s). Algona shall maintain accurate records of water and sewer usage, billing and payments with respect to the Boundary Boulevard Parcels, but shall not be required to remit any such payments to Auburn except as expressly set forth in this Agreement.

Section 4. Inspection Rights; Annual Review.

4.1 Inspection Rights. Each Party shall, upon written request, promptly provide the other Party with access to and copies of its utility billing records for the West Valley Parcels and the Boundary Boulevard Parcels.

4.2 Annual Review. Upon the request of Algona, Auburn shall provide to Algona a written summary of the water and sewer utility billing and collection records of the West Valley Parcels for the preceding year. Upon the request of Auburn, Algona shall provide a written summary of the water and sewer utility billing and collection records of the Boundary Boulevard Parcels for the preceding year. Upon receipt of the above-referenced written summaries, the Parties shall confer as deemed mutually appropriate to determine whether to continue, terminate or amend this Agreement.

Section 5. Ownership, Regulation Operation, Maintenance and Repairs. Except as otherwise expressly provided herein, nothing in this Agreement shall be construed as altering or otherwise modifying the Parties' respective rights, duties, obligations and liabilities concerning their respective water and sewer utility systems. Without limitation of the foregoing: Auburn shall own and remain exclusively responsible for all regulation, operation, maintenance and repairs of the Auburn Water System and the Auburn Sewer System, and (ii) Algona shall own and remain exclusively responsible for all regulation, operation, maintenance and repairs of the Algona Water System and the Algona Sewer System.

Section 6. Meter Removal. Algona may in its sole discretion remove or otherwise decommission Algona's utility service meters for any or all of the West Valley Parcels. Algona agrees to provide at least five business days' notice to Auburn of any meter removal or decommissioning.

Section 7. Term. This Agreement shall be in force as of the Effective Date written above following mutual execution by the Parties, and shall remain in effect for ten (10) years thereafter ("Term"), unless terminated earlier in accordance with Section 8. The Parties may at their option extend the Term for one or more mutually agreed upon periods through a writing signed by both Parties.

Section 8. Termination. Either Party may terminate this Agreement with or without cause by providing the other Party with one hundred and eighty (180) days written notice of its intent to terminate.

Section 9. Administration; No Separate Entity Created. The Algona Public Works Director and the Auburn Public Works Director shall serve as joint administrators of this Agreement. No separate legal entity is formed hereby.

Section 10. Property Acquisition, Retention and Disposition. No joint acquisition of real or personal property is contemplated by this Agreement. Except as provided in this section, any other real or personal property acquired by a Party shall remain within the sole and exclusive ownership and control of that Party following the termination or expiration of this Agreement.

Section 11. Indemnification. Each Party shall defend, indemnify and hold the other Party, its officers, officials, employees and volunteers harmless from and against any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or resulting from the acts, errors or omissions of the first Party in its performance of this Agreement. Without prejudice to the foregoing, it is expressly understood that each Party's obligations under this section shall include exclusive responsibility for any claims, injuries, damages, losses or suits arising out of or otherwise relating to the content and validity of that Party's codes, ordinances and regulations, and that the other Party, its officers, officials, employees and volunteers shall have no liability or responsibility whatsoever therefore.

It is further specially and expressly understood that the indemnification provided herein constitutes each Party's waiver of immunity under industrial insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the Parties.

The provisions of this section shall survive the expiration or termination of this Agreement.

Section 12. Governing Law and Venue; Attorneys' Fees. This Agreement shall be governed by the laws of the State of Washington. The venue for any action arising out of this Agreement shall be the Superior Court for King County, Washington. The substantially prevailing Party in any such action shall be entitled to an award of its reasonable attorneys' fees.

Section 13. No Employment Relationship Created. The Parties agree that nothing in this Agreement shall be construed as creating an employment relationship between Algona and any employee, agent, representative or contractor of Auburn, or between Auburn and any employee, agent, representative or contractor of Algona.

Section 14. Notices. Notices to Algona shall be sent to the following address:

City of Algona
Attn: Public Works Director
200 Washington Blvd.
Algona, WA 98001

Notices to Auburn shall be sent to the following address:

City of Auburn
Attn: Public Works Director
25 W. Main Street
Auburn, WA 98001

Section 15. Duty to File or Post Agreement. Prior to this Agreement's entry into force, Auburn shall, pursuant to RCW 39.34.040, (1) file this Agreement with the King County Auditor's Office, or (2) list this Agreement by subject on Auburn's internet web site.

Section 16. Integration. This document, together with any exhibits thereto, constitutes the entire embodiment of the contract between the Parties, and, unless modified in writing by an amendment signed by the Parties hereto, shall be implemented exclusively as described above. All oral agreements and understandings between the Parties related to the subject matter hereof shall be deemed superseded by this Agreement and shall hereinafter be null and void.

Section 17. No Third-Party Beneficiary Created. This Agreement is executed for the sole and exclusive benefit of the signatory Parties. Nothing in this Agreement, whether expressed or implied, is intended to confer any right, remedy or other entitlement upon any person other than the Parties hereto, nor is anything in this Agreement intended to relieve or discharge the obligation or liability of any third party, nor shall any provision herein give any third party any right of action against any party hereto.

Section 18. Signatory Warranty. Each signatory hereto warrants and represents that he/she has been authorized to execute this Agreement by appropriate action of the legislative body of his/her respective city.

Section 19. Execution in Counterparts. This Agreement may be executed in separate counterparts.

Section 20. Regulatory Authority Reserved. Nothing herein shall be construed as waiving, limiting or otherwise abridging in any manner regulatory authority of either party, which Algona and Auburn each hereby expressly reserve in full.

EXECUTED this 9th day of April, 2020.

CITY OF ALGONA

Dave Hill, Mayor

ATTEST/AUTHENTICATED

Jennifer Garnica, City Clerk

APPROVED AS TO FORM

Algona City Attorney

CITY OF AUBURN

Nancy Backus, Mayor

ATTEST/AUTHENTICATED

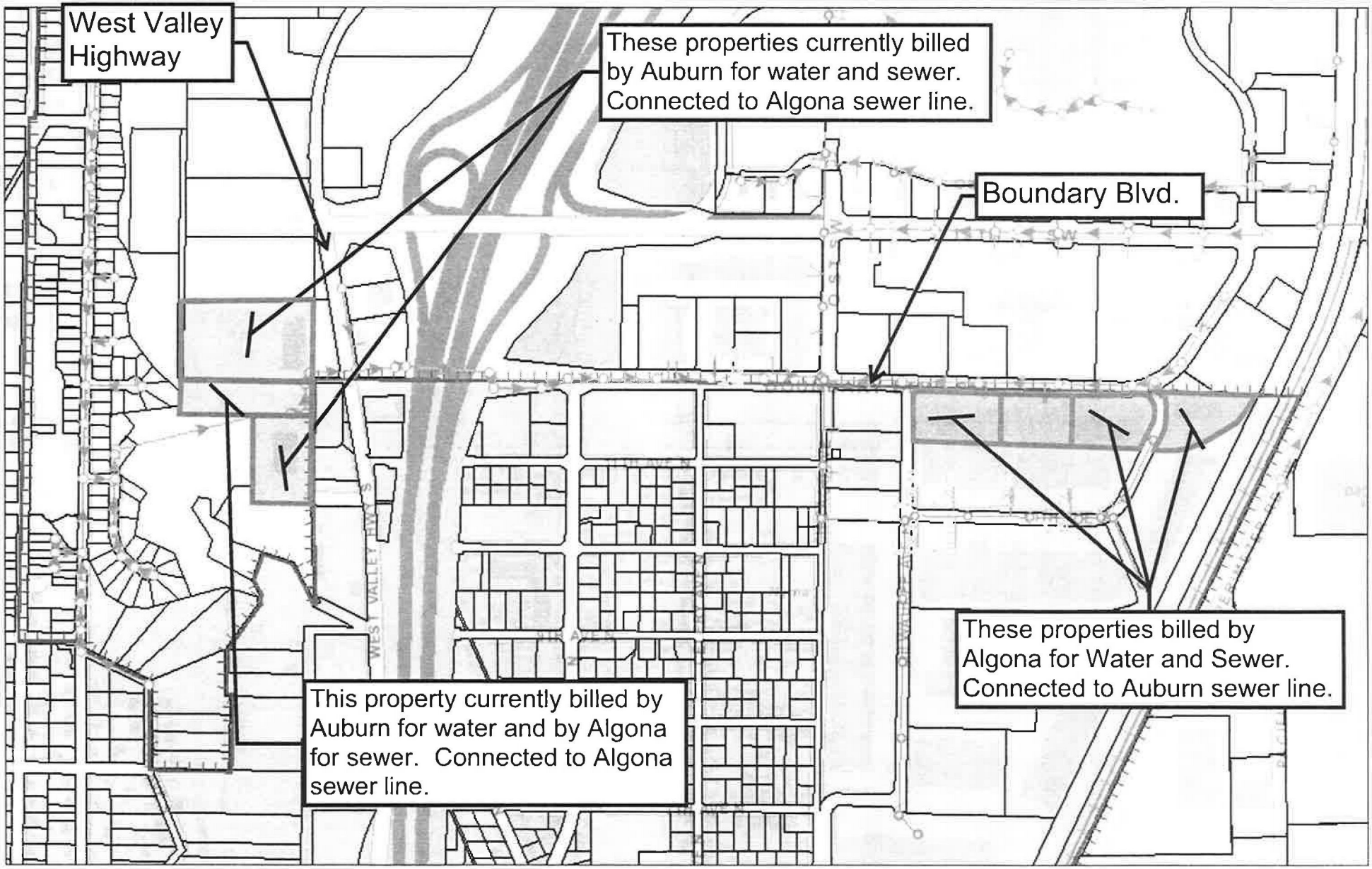
Shawn Campbell, City Clerk

APPROVED AS TO FORM

Auburn City Attorney

Auburn - Algona Utility Agreement

Printed Date: 3/19/2020
Map Created by City of Auburn eGIS
Imagery Date: May 2015



1,333.3 0 666.7 1,333.3 Feet

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

1in = 667 ft 1: 8,000

Information shown is for general reference purposes only and does not necessarily represent exact geographic or cartographic data as mapped. The City of Auburn makes no warranty as to its accuracy.

APPENDIX A8

CITY OF BONNEY LAKE

- Sewer Service Boundaries (Resolutions 3760 and 3796)
- Right of Way Use Permits (Resolutions 3873 and 1471)

PNWF W2305-12

200508220499 8 PGS
08-22-2005 10:30am $0.00
PIERCE COUNTY, WASHINGTON

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):

Interlocal Agreement (RES 3760)

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)
Auburn, City of

Grantee/Assignee/Beneficiary: (Last name first)
1. Bonney Lake, City of

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page of document.

Assessor's Property Tax Parcel/Account Number
N/A

☐ Assessor Tax # not yet assigned

#39

RESOLUTION NO. 3760

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE AN ADDENDUM TO AN INTERLOCAL AGREEMENT BETWEEN THE CITY OF AUBURN AND THE CITY OF BONNEY LAKE FOR THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

WHEREAS, in March of 1998 the City Council of the City of Auburn adopted Resolution No. 2925 authorizing the Mayor and City Clerk to execute a settlement agreement that was subsequently signed by the City of Auburn and the City of Bonney Lake; and

WHEREAS, among other items, that settlement agreement set forth a water service area boundary between the City of Auburn and the City of Bonney Lake; and

WHEREAS, subsequent to approval of the settlement agreement the Potential Annexation Areas (PAA) for the City of Auburn and City of Bonney Lake were amended to coincide with the water service area boundary; and

WHEREAS, since the time of the agreement it has been found that a parcel was divided by the water service area boundary set forth in said settlement agreement, and by the subsequent PAA boundary established based on the water service area boundary, and said parcel lies partially within and partially outside of the Auburn PAA; and

WHEREAS, part of the Lake Tapps Parkway East extension's right-of-way also lies partially within and partially outside of the Auburn water service area boundary established by the settlement agreement, and partially within and partially outside the subsequent PAA boundary established based on the water service area boundary; and

WHEREAS, sound growth management and transportation planning principles are best served by including entire parcels and entire street right-of-ways entirely within a PAA.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows:

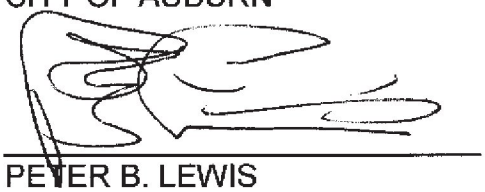
Section 1. The Mayor and City Clerk are hereby authorized to execute Addendum No. 1 to the Settlement Agreement between the City of Auburn and the City of Bonney Lake in substantial conformity with the Addendum attached hereto, marked as Exhibit "A" and incorporated herein by this reference.

Section 2. That the Mayor is authorized to implement such other administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. That this Resolution shall take effect and be in full force upon passage and signatures hereon.

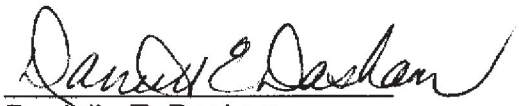
Dated and Signed this 7th day of February, 2005.

CITY OF AUBURN



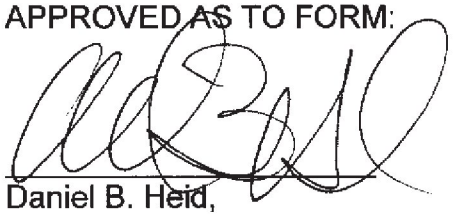
PETER B. LEWIS
MAYOR

ATTEST:



Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:



Daniel B. Heid,
City Attorney

ADDENDUM NO. 1

ADDENDUM TO SETTLEMENT AGREEMENT BETWEEN THE CITY OF BONNEY LAKE AND THE CITY OF AUBURN RELATING TO WATER SERVICE AREA BOUNDARY

THIS ADDENDUM is made and entered into this 14th day of February, 2005, by and between the **CITY OF BONNEY LAKE**, a municipal corporation of the State of Washington (hereinafter referred to as "Bonney Lake") and the **CITY OF AUBURN**, a municipal corporation of the State of Washington (hereinafter referred to as the "Auburn"), as an addendum to the Settlement Agreement between the parties executed on the 5th day of March, 1998.

W I T N E S S E T H:

WHEREAS, in March 1998 the City Council of the City of Auburn passed Resolution No. 2925 authorizing the Mayor and City Clerk to execute a settlement agreement that was subsequently signed by the City of Auburn and the City of Bonney Lake; and

WHEREAS, among other items, the settlement agreement set forth a water service area boundary between the City of Auburn and the City of Bonney Lake; and

WHEREAS, Exhibit B to the settlement agreement implied that Auburn's Urban Growth Area (UGA) was established to conform with the water service area boundary set forth in the settlement agreement; and

WHEREAS, subsequent to approval of the settlement agreement the Potential Annexation Area (PAA) for the City of Auburn was amended to coincide with the water service area boundary; and

WHEREAS, Exhibit B to the settlement agreement stated that the UGA and water service area boundary was established to follow property lines; and

WHEREAS, since the time of the agreement it has been found that a parcel was divided by the water service area boundary set forth in said settlement agreement, and by the subsequent PAA boundary established based on the water service area boundary, and said parcel lies partially within and partially outside of the Auburn PAA; and

WHEREAS, part of the Lake Tapps Parkway East extension's right-of-way also lies partially within and partially outside of the Auburn water service area boundary established by the settlement agreement, and partially within and partially outside the subsequent PAA boundary established based on the water service area boundary; and

WHEREAS, sound growth management and planning principles are best served by including entire parcels within a PAA.

NOW THEREFORE in consideration of their mutual covenants, conditions and promises, the PARTIES DO HEREBY AGREE as follows:

ITEM ONE: ADDITION OF PROPERTY
The Settlement Agreement is revised to include a portion of Pierce County parcel # 052005-4046, a portion of the Lake Tapps Parkway as it extends from the west boundary of 182nd Ave East west to Auburn's existing Urban Growth Area, and a portion of the natural gas pipe line parcel as noted in the attached Exhibit C. Exhibit C, attached hereto and incorporated by reference as if fully set forth herein, shall provide both a graphical representation and a legal description for the parcels that are to be included in Auburn's UGA for urban services and incorporated into the area that Bonney Lake shall be the water purveyor for within Auburn's UGA as defined in the original settlement agreement between Auburn and Bonney Lake.

ITEM TWO: REMAINING TERMS UNCHANGED:
That all other provisions of the Settlement Agreement between the parties executed on the 5th day of March, 1998, shall remain unchanged, and in full force and effect.

IN WITNESS WHEREOF the parties hereto have executed this Agreement as of the day and year first above written.

CITY OF BONNEY LAKE

ROBERT YOUNG, Mayor

Attest:

Harwood Edvalson, City Clerk

Approved as to form:

James Dionne, City Attorney

CITY OF AUBURN

PETER B. LEWIS, Mayor

Attest:

Danielle E. Daskam. City Clerk

Approved as to form:

Daniel B. Heid, City Attorney

EXHIBIT C

ADDENDUM 1
AUBURN BONNEY LAKE SETTLEMENT AGREEMENT

LEGAL DESCRIPTION OF AREA

THAT PORTION OF SECTION 5, TOWNSHIP 20 NORTH, RANGE 5 EAST, W.M. IN PIERCE COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 5;

THENCE WESTERLY ALONG THE SOUTH LINE OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 5 A DISTANCE OF 1360 FEET, MORE OR LESS, TO THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO EL PASO NATURAL GAS COMPANY BY DEED RECORDED UNDER PIERCE COUNTY AUDITOR'S NUMBER 2410280;

THENCE NORTHEASTERLY ALONG SAID NORTHWESTERLY LINE A DISTANCE OF 1880 FEET, MORE OR LESS, TO THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 5;

THENCE EASTERLY ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER A DISTANCE OF 700 FEET, MORE OR LESS, TO THE WEST LINE OF THE LANDS GRANTED TO PIERCE COUNTY FOR 182ND AVENUE EAST DESCRIBED IN DEED RECORDED UNDER PIERCE COUNTY AUDITOR'S NUMBER 2257762;

THENCE SOUTHERLY ALONG THE WEST LINE OF 182ND AVENUE EAST AS DESCRIBED IN SAID INSTRUMENT A DISTANCE OF 40 FEET, MORE OR LESS, TO THE SOUTH LINE OF THE LANDS CONVEYED TO PIERCE COUNTY IN DEED RECORDED UNDER AUDITORS FILE NUMBER 9902110924;

THENCE WESTERLY ALONG LAST SAID SOUTH LINE AND ALONG THE SOUTH LINE OF THE LANDS CONVEYED TO PIERCE COUNTY IN DEED RECORDED UNDER AUDITORS FILE NUMBER 200405180889 AND DEPICTED IN MAP ON FILE IN THE OFFICE OF THE DIRECTOR OF PIERCE COUNTY PUBLIC WORKS AND UTILITIES IN TACOMA, WASHINGTON, ENTITLED "LAKE TAPPS PARKWAY EAST – RIGHT OF WAY PLAN - CRP 5486" AND BEARING APPROVAL DATE OF NOVEMBER 17, 2003, A DISTANCE OF 600 FEET, MORE OR LESS, TO THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 5;

THENCE SOUTHERLY ALONG THE EAST LINE OF SAID WEST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 5 A DISTANCE OF 1220 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

H:\StaffFiles\WO\Utility - Sewer\le\Bonney Lake\Addendum Settlement Legal Description.DOC

EXHIBIT C

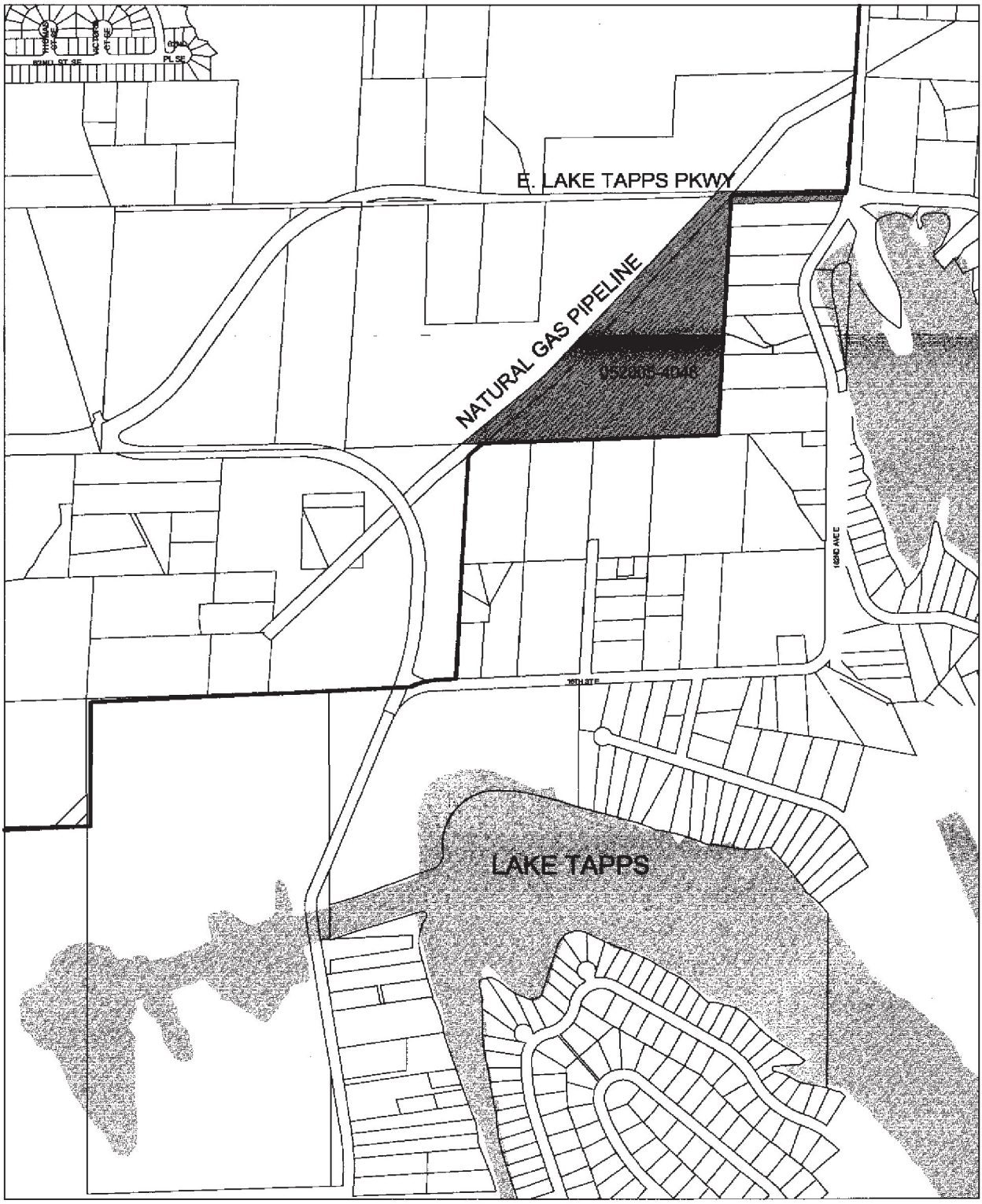


EXHIBIT A
RESOLUTION NO. 3760
PAGE 4 OF 4

EXHIBIT C
ADDENDUM NO. 1 TO THE MARCH 98
AUBURN - BONNEY LAKE
SETTLEMENT AGREEMENT
PAGE 2 OF 2

PNW W2371-13

2

200511100193 14 PGS
11-10-2005 10:49am $0.00
PIERCE COUNTY, WASHINGTON

Return Address:
Auburn City Clerk
City of Auburn
25 West Main St.
Auburn, WA 98001

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein):

Interlocal Agreement (Resolution No. 3796)

Reference Number(s) of Documents assigned or released:
☐Additional reference #'s on page _____ of document

Grantor(s)/Borrower(s) (Last name first, then first name and initials)
Auburn, City of

Grantee/Assignee/Beneficiary: (Last name first)
1. Bonney Lake, City of

Legal Description (abbreviated: i.e. lot, block, plat or section, township, range)

PER RCW 39.34

☐ Additional legal is on page of document.

Assessor's Property Tax Parcel/Account Number
N/A

☐ Assessor Tax # not yet assigned

Said document(s) were filed for record by Pacific Northwest Title as accommodation only. It has not been examined as to proper execution or as to its effect upon title.

11-F

RESOLUTION NO. 3796

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN INTERLOCAL AGREEMENT WITH THE CITY OF BONNEY LAKE TO PROVIDE SANITARY SEWER SERVICE FROM AUBURN TO PROPERTY LOCATED WITHIN BONNEY LAKE'S SANITARY SEWER SERVICE AREA

WHEREAS, pursuant to RCW 35A.11.040 Bonney Lake and Auburn have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Bonney Lake and Auburn have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Bonney Lake and Auburn have the legal authority to maintain a sewerage system; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system are sized and are situated so as to be capable of affording sewer service to a portion of the Bonney Lake Sanitary Sewer Service Area; and

WHEREAS, Bonney Lake has evaluated and determined it is in Bonney Lake's best interest to establish this Agreement allowing Auburn to provide sewer service to property within Bonney Lake's sanitary sewer service area that lies in the vicinity of Auburn's sanitary sewer infrastructure; and

WHEREAS, Auburn's delivery of sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows:

Section 1. The Mayor is hereby authorized to execute an Interlocal Agreement with the City of Bonney Lake in substantial conformity with the agreement attached hereto, marked as Exhibit "1" and incorporated herein by this reference.

Section 2. That the Mayor is authorized to implement such other administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. That this Resolution shall take effect and be in full force upon passage and signatures hereon.

Dated and Signed this 4th day of April, 2005.

CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

Daniel B. Heid,
City Attorney

EXHIBIT 1

INTERLOCAL AGREEMENT
between
CITY OF AUBURN and CITY OF BONNEY LAKE
for the
THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

(Fairweather Cove)

Recording # 200511100193

THIS AGREEMENT, made and entered into by and between the **CITY OF AUBURN**, a Washington municipal corporation (hereinafter referred to as "Auburn"), and the **CITY OF BONNEY LAKE**, a Washington municipal corporation, (hereinafter referred to as "Bonney Lake"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35A.11.040 Bonney Lake and Auburn have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Bonney Lake and Auburn have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Bonney Lake and Auburn have the legal authority to maintain a sewerage system; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of the Bonney Lake Sanitary Sewer Service Area; and

WHEREAS, Bonney Lake has evaluated and determined it is in Bonney Lake's best interest to establish this Agreement allowing property located within Bonney Lake's sewer service area and designated within Pierce County's Urban Growth Area (CUGA), to connect into Auburn's public sanitary sewer facilities; and

WHEREAS, Auburn recognizes the negative impacts septic tanks can have on water quality and the quality of life within and around Lake Tapps; and

WHEREAS, Auburn has sufficient wastewater conveyance capacity within their sanitary sewer facilities to support these adjustments to the existing sewer service areas; and

WHEREAS, Auburn's delivery of sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. Sewer Service Area. The parties have agreed that Auburn will provide sanitary sewer service to Bonney Lake for a portion of Bonney Lake's sanitary sewer service area as graphically depicted on the map and legally described as Attachment "A", attached hereto, which is by this reference incorporated herein. Attachment "A" represents Bonney Lake's sewer service area that Bonney Lake has negotiated with Auburn for wastewater conveyance and treatment via Auburn and King County facilities. The actual sewer service provider to the area depicted within Attachment "A" shall remain Bonney Lake. Both parties further agree that Auburn and Bonney Lake shall be subject to the terms and conditions of this Agreement.

2. Management, Regulation and Control of Sewer System. Auburn shall have the sole responsibility and authority to construct, maintain, manage, conduct and operate its sewerage system as installed within Auburn's sanitary sewer service area. Auburn shall be responsible for obtaining and maintaining a franchise from Pierce County for Auburn facilities located in Pierce County right of way.

Bonney Lake shall have the sole responsibility and authority for those facilities that extend outside of the public right of way within the region depicted within Attachment "A". Bonney Lake shall be responsible for obtaining and maintaining a franchise from Pierce County for Bonney Lake facilities located in Pierce County right of way. Bonney Lake shall be responsible for the issuance of side sewer permits and the inspection of facilities located upon private property. Certificates of sewer availability shall be issued from Auburn to Bonney Lake. Bonney Lake shall be responsible for ensuring the conditions of these certificates are met.

3. Rates, Charges, Permits, and Billing Responsibilities. Auburn rates and connection charges (system development charges) shall be billed from Auburn to Bonney Lake in accordance with existing Auburn City Code at the time of service. Bonney Lake shall provide Auburn with the appropriate information so that accurate billings can be established. Auburn and King County shall have the authority to visit sites, upon threat of termination of service, to verify information provided by the property owner and/or Bonney Lake is accurate. King County's capacity charge shall be billed to the property seeking service directly from King County. Bonney Lake may elect to pay the King County capacity charge directly to King County and collect

the costs with the price of the Bonney Lake permit. Auburn shall issue permits to Bonney Lake prior to Bonney Lake's issuing of permits to the property owners. Neither Auburn nor this agreement governs Bonney Lake's rates and fees to be charged to the property owner for the appropriate Bonney Lake side sewer permit.

For Commercial establishments, no additional connections or modification to existing facilities shall be made that would alter the number of plumbing fixtures in the facilities that convey wastewater to Auburn, unless the property owner first pays the associated fees and submits the proper information to obtain a Bonney Lake sanitary sewer permit. Bonney Lake shall in turn seek an Auburn side sewer permit.

Sanitary sewer permits shall be subject to inspection and approval by Bonney Lake. Bonney Lake shall ensure that compliance with Auburn's Sanitary Sewer Standards, as adopted at the time the connection, is made. With this agreement Bonney Lake is providing Auburn with the right to manually read Bonney Lake's water meters for the properties described in Attachment "A"; however, if requested by Auburn, Bonney Lake shall provide water usage information.

The rates and fees charged to Auburn's sanitary sewer customers shall be fixed, altered, regulated and controlled by Auburn pursuant to all applicable laws and regulations promulgated on the subject of rates and charges for sewer service. No surcharge shall be charged to the customers served under this agreement on the sole basis that those customers are outside of Auburn's city limits.

Auburn shall send bills for sanitary sewer service from said property to Bonney Lake's Finance department once every two months.

4. Boundary Review Board. In the event that implementation of the terms hereof results in permanent sewer service to areas that will be outside the respective service boundaries of Auburn or Bonney Lake, the parties will at the time of such service jointly seek approval of the Pierce County Boundary Review Board in accordance with R.C.W. 36.93.090.

5. Comprehensive Sewer Planning. The terms of this Agreement will be included as an element of Bonney Lake and Auburn's Comprehensive Sewerage Plans.

6. Reliance. Each party hereto acknowledges that the other will rely upon the terms of this agreement in its comprehensive planning to meet the needs of the service area designated herein.

7. Indemnification. Auburn agrees to indemnify and hold Bonney Lake and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against Bonney Lake arising out of, in connection with, or incident to the execution of this

agreement and/or Auburn's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Bonney Lake, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Auburn; and provided further, that nothing herein shall require Auburn to hold harmless or defend Bonney Lake, its agents, employees, and/or officers, from any claims arising from the sole negligence of Bonney Lake, its agents, employees, and/or officers. No liability shall attach to Bonney Lake by reason of entering this agreement except as expressly provided herein.

Bonney Lake agrees to indemnify and hold Auburn and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against Auburn arising out of, in connection with, or incident to the execution of this agreement and/or Bonney Lake's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Auburn, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Bonney Lake; and provided further, that nothing herein shall require Bonney Lake to hold harmless or defend Auburn, its agents, employees, and/or officers, from any claims arising from the sole negligence of Auburn, its agents, employees, and/or officers. No liability shall attach to Auburn by reason of entering this agreement except as expressly provided herein.

8. Assignment. The parties shall not assign this agreement or any interest, obligation or duty therein without the express written consent of the other party.

9. Attorney's Fees. If either party shall be required to bring any action to enforce any provision of this Agreement, or shall be required to defend any action brought by the other party with respect to this Agreement, and in the further event that one party shall substantially prevail in such action, the losing party shall, in addition to all other payments required therein, pay all of the prevailing party's reasonable costs in connection with such action, including such sums as the court or courts may adjudge reasonable as attorney's fees in trial court and in appellate courts.

10. Government Approvals. The parties will give notice of the adoption of this Agreement to King County's Department of Natural Resources – Wastewater Treatment Division, to the Pierce County Department of Health, and to any other agency with jurisdiction or mission relevant to the terms hereof, and shall cooperate and assist in all reasonable manner in procuring any necessary approvals hereof by those agencies.

11. Service Amendments. Any changes to the service areas described herein shall be by mutual agreement. Each party may give permission to the other on a case-by-case basis to provide service by one party into the other party's adjacent or nearby service area based upon considerations of economic efficiency for providing the service with mutual consent of Bonney Lake's Director of Public Works and Auburn's Director of Public Works.

12. Notices. All notices between the two agencies hereunder may be delivered or mailed. If mailed, they shall be sent to the following respective addresses:

City of Auburn
Director of Public Works
25 West Main Street
Auburn, WA 98001

253-931-3010

City of Bonney Lake
Director of Public Works
PO Box 7380
19306 Bonney Lake Blvd
Bonney Lake, WA 98390
253-862-8602

or to such other representative as either party may hereafter from time to time designate in writing. All notices and payments mailed by regular post (including first class) shall be deemed to have been given on the second business day following the date of mailing, if properly mailed and addressed. Notices and payments sent by certified or registered mail shall be deemed to have been given on the day next following the date of mailing, if properly mailed and addressed. For all types of mail, the postmark affixed by the United States Postal Service shall be conclusive evidence of the date of mailing.

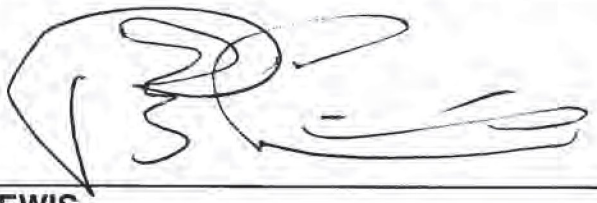
13. Alteration, Amendment or Modification. Auburn and Bonney Lake hereby reserve the right to alter, amend or modify the terms and conditions of this Agreement upon written agreement of both parties to such alteration, amendment or modification. Such written consent(s) shall be filed with this agreement for future reference.

14. Sanctity of Agreement. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

15. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Auburn or Bonney Lake regarding provision of sewer service, except as specifically set forth herein.

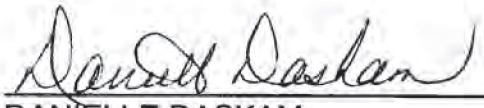
CITY OF AUBURN

Approved by Resolution No. **3796**, of the City of Auburn, Washington, at its regular meeting held on the 4th day of April, 2005.

By: 

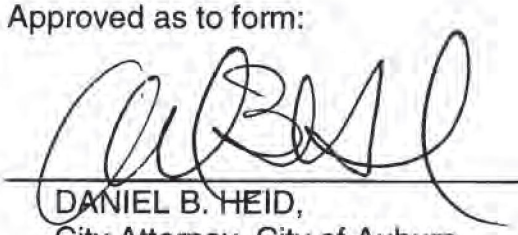
PETER B. LEWIS,
Mayor, City of Auburn

Attest:



DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:



DANIEL B. HEID,
City Attorney, City of Auburn

ATTACHMENT "A"

Legal Description

THAT PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 20 NORTH, RANGE 5 EAST, LYING EASTERLY OF SUMNER TAPPS HIGHWAY, SOUTHERLY OF NORTH TAPPS ROAD (16TH STREET EAST (FOREST CANYON ROAD)); EASTERLY OF THE PLAT OF LAKE TAPPS TACOMA POINT ADDITION, ACCORDING TO PLAT RECORDED IN BOOK 17 OF PLATS AT PAGES 1 TO 8, INCLUSIVE, AND NORTHERLY OF THE INTAKE CANAL TO LAKE TAPPS, IN PIERCE COUNTY, WASHINGTON. EXCEPT THAT PORTION LYING WITHIN LAKE TAPPS.

AREA DESCRIBED IS APPROXIMATELY $\pm$ 16.7 ACRES.
PARCEL NUMBER 0520081001

SE QUARTER OF SECTION 8, TOWNSHIP 20 N, RANGE 5 E

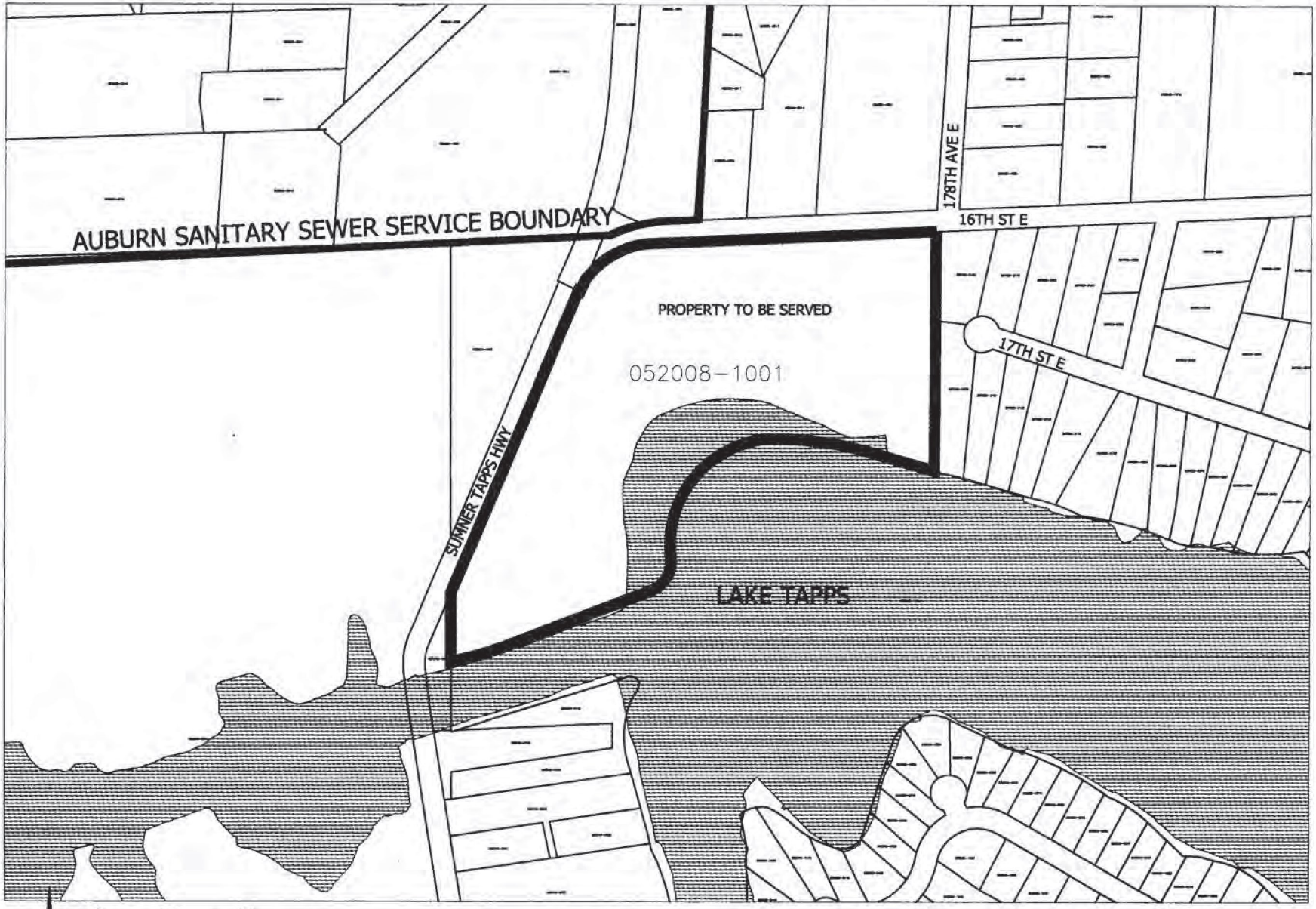


EXHIBIT A
BONNEY LAKE - AUBURN
SANITARY SEWER SERVICE AGREEMENT
FAIRWEATHER COVE

PLOTTED: MARCH 2005

ATTACHMENT "A"
Page 2 of 2

Exhibit 1
Resolution No. 3796
Page 9 of 9

Pierce County Recording
200511100194

RESOLUTION NO. 3873

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, AUTHORIZING THE MAYOR TO EXECUTE AN INTERLOCAL AGREEMENT WITH THE CITY OF BONNEY LAKE FOR THE ESTABLISHMENT OF A RIGHT OF WAY USE PERMIT WITH PIERCE COUNTY

WHEREAS, both Auburn and Bonney Lake are agencies qualified to engage in furnishing sanitary sewer service within their approved service areas; and

WHEREAS, the residential development of "Fairweather Cove" is located within an unincorporated area of Pierce County designated to be serviced with sanitary sewer service from Bonney Lake at approximately 16th Street East and Sumner Tapps Highway,

WHEREAS, Bonney Lake lacks a franchise to operate, maintain, repair, and construct sewer mains and service lines, and appurtenances in, over, along, and under County roads and rights-of-way within the area of Pierce County, Washington in which Fairweather Cove is located; and

WHEREAS, Bonney Lake is in the process of completing an update to its Comprehensive Sewer Plan and intends to thereafter apply for, and receive, a franchise with Pierce County to enable it to provide sewer service to that area of Pierce County in which Fairweather Cove is located; and

WHEREAS, Auburn maintains a franchise agreement with Pierce County, dated July 8, 1996, and expiring on July 8, 2021, covering the area of Pierce County in which Fairweather Cove is located; and

WHEREAS, while service through Auburn's sewer system is available, sewer service to Fairweather Cove is more feasible through Bonney Lake's sewer system; and

WHEREAS, Bonney Lake received a request for sewer service to Fairweather Cove from Harbour Homes, the owner thereof, hereinafter referred to as "Developer", in August 2001; and

WHEREAS, Bonney Lake and Auburn are pursuing a separate agreement between them that would allow for Bonney Lake to convey wastewater from a portion of Bonney Lake's service area into Auburn's wastewater conveyance system for treatment and disposal in an effort to provide for the most efficient sewer service to future customers at a reasonable cost; and

WHEREAS, both Bonney Lake and Auburn agree that Fairweather Cove is best served by Bonney Lake under an interlocal agreement with Auburn; and

WHEREAS, Bonney Lake entered into a Developer Public Facility Extension Agreement ("Extension Agreement"), with the Developer under which the Developer is required to construct necessary public improvements to serve Fairweather Cove; and

WHEREAS, Auburn is willing to accept interim ownership and to assume interim responsibility for operation and maintenance of the Developer's public sewer improvements, subject to the terms, limitations, and conditions of this Agreement; and

WHEREAS, Bonney Lake is willing to accept transfer of ownership and responsibility for operation and maintenance of the Developer's public

sewer improvements upon obtaining a sanitary sewer franchise from Pierce County to serve the area in which Fairweather Cove is located.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, HEREBY RESOLVES as follows:

Section 1. The Mayor is hereby authorized to execute an interlocal agreement with the City of Bonney Lake, in substantial conformity with the agreement attached hereto, marked as Exhibit 1 and incorporated herein by this reference.

Section 2. That the Mayor is authorized to implement such other administrative procedures as may be necessary to carry out the directives of this legislation.

Section 3. That this resolution shall take effect and be in full force upon passage and signatures hereon.

DATED and signed this 18th day of July, 2005.

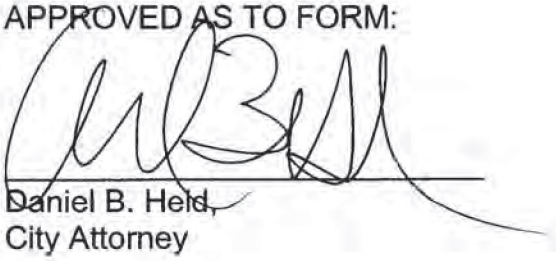
CITY OF AUBURN

PETER B. LEWIS
MAYOR

ATTEST:

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:



Daniel B. Held,
City Attorney

EXHIBIT 1

AUBURN – BONNEY LAKE INTERLOCAL AGREEMENT For Pierce County Right of Way Permit

(Fairweather Cove)

This Agreement entered into by and between the City of Bonney Lake, a municipal corporation of the State of Washington (hereinafter "Bonney Lake"), and the City of Auburn, a municipal corporation of the State of Washington (hereinafter "Auburn").

WHEREAS, both Auburn and Bonney Lake are agencies qualified to engage in furnishing sanitary sewer service within their approved service areas; and

WHEREAS, the residential development of "Fairweather Cove" is located within an unincorporated area of Pierce County designated to be serviced with sanitary sewer service from Bonney Lake at approximately 16th Street East and Sumner Tapps Hwy.,

WHEREAS, Bonney Lake lacks a franchise to operate, maintain, repair, and construct sewer mains and service lines, and appurtenances in, over, along, and under County roads and rights-of-way within the area of Pierce County, Washington in which Fairweather Cove is located; and

WHEREAS, Bonney Lake is in the process of completing an update to its Comprehensive Sewer Plan and intends to thereafter apply for, and receive, a franchise with Pierce County to enable it to provide sewer service to that area of Pierce County in which Fairweather Cove is located; and

WHEREAS, Auburn maintains a franchise agreement with Pierce County, dated July 8, 1996, and expiring on July 8, 2021, covering the area of Pierce County in which Fairweather Cove is located; and

WHEREAS, while service through Auburn's sewer system is available, sewer service to Fairweather Cove is more feasible through Bonney Lake's sewer system; and

WHEREAS, Bonney Lake received a request for sewer service to Fairweather Cove from Harbour Homes, the owner thereof, hereinafter referred to as "Developer", in August 2001; and

WHEREAS, Bonney Lake and Auburn are pursuing a separate agreement between them that would allow for Bonney Lake to convey wastewater from a portion of Bonney Lake's service area into Auburn's wastewater conveyance system for treatment and disposal in an effort to provide for the most efficient sewer service to future customers at a reasonable cost; and

WHEREAS, both Bonney Lake and Auburn agree that Fairweather Cove is best served by Bonney Lake under an interlocal agreement with Auburn; and

WHEREAS, Bonney Lake entered into a Developer Public Facility Extension Agreement ("Extension Agreement"), with the Developer under which the Developer is required to construct necessary public improvements to serve Fairweather Cove; and

WHEREAS, Auburn is willing to accept interim ownership and to assume interim responsibility for operation and maintenance of the Developer's public sewer improvements, subject to the terms, limitations, and conditions of this Agreement; and

WHEREAS, Bonney Lake, shall accept transfer of ownership and responsibility for operation and maintenance of the Developer's public sewer improvements upon obtaining a sanitary sewer franchise from Pierce County to serve the area in which Fairweather Cove is located.

NOW, THEREFORE BE IT AGREED AS FOLLOWS:

1. Consistent with the terms of this Agreement and Auburn's sewer franchise agreement with Pierce County, Auburn shall own, operate, and maintain, for the period of time described herein, public sewer improvements for Fairweather Cove, constructed pursuant to the Extension Agreement between Bonney Lake and Developer, to the point of connection of said improvements with Auburn's existing gravity sewer located along the Sumner Lake Tapps Hwy. Auburn shall receive wastewater from Fairweather Cove through these improvements, and shall provide sewer service from this point through Auburn's conveyance system to King County's conveyance system for ultimate disposal at the King County sewer treatment plant located in Renton, Washington.

2. Bonney Lake shall administer all aspects of the Extension Agreement, including the construction of the sewer improvements required to serve Fairweather Cove to Bonney Lake standards. Auburn shall have the right to inspect and approve plans for and construction of the public sewer improvements required to serve Fairweather Cove as necessary to comply with Auburn's sewer franchise with Pierce County. Upon request from Bonney Lake, Auburn shall

apply for the R-O-W permit required from Pierce County for construction of the Developer's public sewer improvements in Pierce County right-of-way.

3. Auburn and Bonney Lake shall work in good faith to review all project plans, and to inspect all project construction, in a timely manner, and, where and when appropriate, to modify Bonney Lake's standards to facilitate compliance with the terms and conditions of Auburn's sewer franchise with Pierce County. Bonney Lake agrees that it shall be responsible to comply with any requirements that may be generated if this Agreement is submitted to the Pierce County Boundary Review Board for approval.

4. Upon Developer's completion of construction of sewer improvements and satisfaction of all terms and conditions of the Extension Agreement Bonney Lake shall transfer temporary ownership to Auburn, for all public sewer improvements in Pierce County required to serve Fairweather Cove.

5. Following satisfactory completion of the sewer improvements, property owners within Fairweather Cove may apply for connection to the sewer system as single-family residential customers of the Bonney Lake Sewer Utility. Connection charges, monthly rates and other charges shall be collected as defined by the Auburn - Bonney Lake Interlocal Agreement for the Establishment of Sanitary Sewer Service Boundaries attached hereto and incorporated herein by this reference as Attachment B (Auburn Resolution No. 3796).

6. In consideration of the receipt of the charges referenced in paragraph 5 above, Bonney Lake agrees to provide the operation, repair and maintenance, both ordinary and extraordinary, of the Auburn-owned public sewer improvements for Fairweather Cove, as referenced in paragraph 4 of this Agreement. If any such operation and maintenance triggers any of the provisions of Auburn's sewer franchise with Pierce County, Bonney Lake shall promptly notify Auburn. Bonney Lake shall abide by any such provisions at the sole discretion of Auburn and at the sole cost of Bonney Lake.

7. Upon Bonney Lake's written notice to Auburn that it has secured a sewer franchise with Pierce County for the area of Pierce County in which the Fairweather Cove development is located, a copy of which franchise shall be provided with the written notice to Auburn, Auburn shall, by bill of sale, immediately thereafter transfer ownership of the facilities temporarily owned by Auburn pursuant to this Agreement, to Bonney Lake.

8. Bonney Lake agrees to reimburse Auburn for all expenses incurred by Auburn, including the cost of time spent by Auburn employees calculated at labor rates used to establish Auburn's fees and charges, in connection with this Agreement and the provision of service to Bonney Lake's customers pursuant to the provisions herein. Auburn agrees to submit to Bonney Lake, no less than

annually, a statement of charges due and Bonney Lake shall pay the same within 45 days of the billing date. The parties agree to work cooperatively to resolve any dispute that may arise with respect to any such billing.

9. This Agreement may be terminated or modified, but only as agreed to in writing by both the parties.

10. Bonney Lake and Auburn agree to indemnify, defend and hold each other harmless from and against any loss, cost, damage, or expense of any kind arising out of injury to person or damage to property in any manner caused by the parties' own negligent conduct in the performance of this interlocal agreement.

11. This Agreement constitutes the only agreement between the parties concerning sewer service to the Fairweather Cove Development and nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Bonney Lake or Auburn regarding the provision of sewer service within their respective service areas except as specifically set forth herein.

CITY OF AUBURN

Approved by Resolution No. 3873 of the City of Auburn, Washington, at its regular meeting held on the 18th day of July, 2005.

By: _____

Peter B. Lewis, Mayor
City of Auburn

Attest:

_____

Danielle Daskam, City Clerk

Approved as to form:

_____

Daniel B. Heid, City Attorney

CITY OF BONNEY LAKE
Approved by Resolution No. 1471 of the City of Bonney Lake, Washington, at its regular meeting held on the 9th day of August 2005.

By: _____

Bob Young, Mayor
City of Bonney Lake

Attest:

_____

Woody Edvalson, City Clerk

Approved as to form:

_____

James Dionne, City Attorney

ATTACHMENT "B"

INTERLOCAL AGREEMENT
between
CITY OF AUBURN and CITY OF BONNEY LAKE
for the
THE ESTABLISHMENT OF SANITARY SEWER SERVICE BOUNDARIES

(Fairweather Cove)

THIS AGREEMENT, made and entered into by and between the **CITY OF AUBURN**, a Washington municipal corporation (hereinafter referred to as "Auburn"), and the **CITY OF BONNEY LAKE**, a Washington municipal corporation, (hereinafter referred to as "Bonney Lake"), both being duly organized and existing under and by virtue of the laws of the State of Washington,

WITNESSETH:

WHEREAS, pursuant to RCW 35A.11.040 Bonney Lake and Auburn have the legal authority to exercise their powers and perform any of their functions as set forth in RCW 39.34; and

WHEREAS, pursuant to RCW 39.34, the Interlocal Cooperation Act, Bonney Lake and Auburn have the legal authority to cooperate with other localities on the basis of mutual advantage and provision of services; and

WHEREAS, pursuant to RCW 35A.21.150 Bonney Lake and Auburn have the legal authority to maintain a sewerage system; and

WHEREAS, the parties recognize the responsibility of public sanitary sewer utilities to provide efficient and reliable service to their customers at reasonable cost; and

WHEREAS, portions of the Auburn sanitary sewer system have been sized and are situated so as to be capable of affording sewer service to a portion of the Bonney Lake Sanitary Sewer Service Area; and

WHEREAS, Bonney Lake has evaluated and determined it is in Bonney Lake's best interest to establish this Agreement allowing property located within Bonney Lake's sewer service area and designated within Pierce County's Urban Growth Area (CUGA), to connect into Auburn's public sanitary sewer facilities; and

WHEREAS, Auburn recognizes the negative impacts septic tanks can have on water quality and the quality of life within and around Lake Tapps; and

ATTACHMENT "B"

WHEREAS, Auburn has sufficient wastewater conveyance capacity within their sanitary sewer facilities to support these adjustments to the existing sewer service areas; and

WHEREAS, Auburn's delivery of sewer service to these areas will provide the maximum efficiency in the use of existing and future facilities, together with orderly and efficient sanitary sewer planning.

NOW, THEREFORE:

IT IS HEREBY AGREED by and between the parties hereto as follows:

1. **Sewer Service Area.** The parties have agreed that Auburn will provide sanitary sewer service to Bonney Lake for a portion of Bonney Lake's sanitary sewer service area as graphically depicted on the map and legally described as Attachment "A", attached hereto, which is by this reference incorporated herein. Attachment "A" represents Bonney Lake's sewer service area that Bonney Lake has negotiated with Auburn for wastewater conveyance and treatment via Auburn and King County facilities. The actual sewer service provider to the area depicted within Attachment "A" shall remain Bonney Lake. Both parties further agree that Auburn and Bonney Lake shall be subject to the terms and conditions of this Agreement.

2. **Management, Regulation and Control of Sewer System.** Auburn shall have the sole responsibility and authority to construct, maintain, manage, conduct and operate its sewerage system as installed within Auburn's sanitary sewer service area. Auburn shall be responsible for obtaining and maintaining a franchise from Pierce County for Auburn facilities located in Pierce County right of way.

Bonney Lake shall have the sole responsibility and authority for those facilities that extend outside of the public right of way within the region depicted within Attachment "A". Bonney Lake shall be responsible for obtaining and maintaining a franchise from Pierce County for Bonney Lake facilities located in Pierce County right of way. Bonney Lake shall be responsible for the issuance of side sewer permits and the inspection of facilities located upon private property. Certificates of sewer availability shall be issued from Auburn to Bonney Lake. Bonney Lake shall be responsible for ensuring the conditions of these certificates are met.

3. **Rates, Charges, Permits, and Billing Responsibilities.** Auburn rates and connection charges (system development charges) shall be billed from Auburn to Bonney Lake in accordance with existing Auburn City Code at the time of service. Bonney Lake shall provide Auburn with the appropriate information so that accurate billings can be established. Auburn and King County shall have the authority to visit sites, upon threat of termination of service, to verify information provided by the

property owner and/or Bonney Lake is accurate. King County's capacity charge shall be billed to the property seeking service directly from King County. Bonney Lake may elect to pay the King County capacity charge directly to King County and collect the costs with the price of the Bonney Lake permit. Auburn shall issue permits to Bonney Lake prior to Bonney Lake's issuing of permits to the property owners. Neither Auburn nor this agreement governs Bonney Lake's rates and fees to be charged to the property owner for the appropriate Bonney Lake side sewer permit.

For Commercial establishments, no additional connections or modification to existing facilities shall be made that would alter the number of plumbing fixtures in the facilities that convey wastewater to Auburn, unless the property owner first pays the associated fees and submits the proper information to obtain a Bonney Lake sanitary sewer permit. Bonney Lake shall in turn seek an Auburn side sewer permit.

Sanitary sewer permits shall be subject to inspection and approval by Bonney Lake. Bonney Lake shall ensure that compliance with Auburn's Sanitary Sewer Standards, as adopted at the time the connection, is made. With this agreement Bonney Lake is providing Auburn with the right to manually read Bonney Lake's water meters for the properties described in Attachment "A"; however, if requested by Auburn, Bonney Lake shall provide water usage information.

The rates and fees charged to Auburn's sanitary sewer customers shall be fixed, altered, regulated and controlled by Auburn pursuant to all applicable laws and regulations promulgated on the subject of rates and charges for sewer service. No surcharge shall be charged to the customers served under this agreement on the sole basis that those customers are outside of Auburn's city limits.

Auburn shall send bills for sanitary sewer service from said property to Bonney Lake's Finance department once every two months.

4. Boundary Review Board. In the event that implementation of the terms hereof results in permanent sewer service to areas that will be outside the respective service boundaries of Auburn or Bonney Lake, the parties will at the time of such service jointly seek approval of the Pierce County Boundary Review Board in accordance with R.C.W. 36.93.090.

5. Comprehensive Sewer Planning. The terms of this Agreement will be included as an element of Bonney Lake and Auburn's Comprehensive Sewerage Plans.

6. Reliance. Each party hereto acknowledges that the other will rely upon the terms of this agreement in its comprehensive planning to meet the needs of the service area designated herein.

ATTACHMENT "B"

7. **Indemnification**. Auburn agrees to indemnify and hold Bonney Lake and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against Bonney Lake arising out of, in connection with, or incident to the execution of this agreement and/or Auburn's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Bonney Lake, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Auburn; and provided further, that nothing herein shall require Auburn to hold harmless or defend Bonney Lake, its agents, employees, and/or officers, from any claims arising from the sole negligence of Bonney Lake, its agents, employees, and/or officers. No liability shall attach to Bonney Lake by reason of entering this agreement except as expressly provided herein.

Bonney Lake agrees to indemnify and hold Auburn and its agents, employees, and/or officers, harmless from and shall process and defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, loses, damages or costs, of whatsoever kind or nature, brought against Auburn arising out of, in connection with, or incident to the execution of this agreement and/or Bonney Lake's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of Auburn, its agents, employees, and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of Bonney Lake; and provided further, that nothing herein shall require Bonney Lake to hold harmless or defend Auburn, its agents, employees, and/or officers, from any claims arising from the sole negligence of Auburn, its agents, employees, and/or officers. No liability shall attach to Auburn by reason of entering this agreement except as expressly provided herein.

8. **Assignment.** The parties shall not assign this agreement or any interest, obligation or duty therein without the express written consent of the other party.

9. **Attorney's Fees.** If either party shall be required to bring any action to enforce any provision of this Agreement, or shall be required to defend any action brought by the other party with respect to this Agreement, and in the further event that one party shall substantially prevail in such action, the losing party shall, in addition to all other payments required therein, pay all of the prevailing party's reasonable costs in connection with such action, including such sums as the court or courts may adjudge reasonable as attorney's fees in trial court and in appellate courts.

ATTACHMENT "B"

10. Government Approvals. The parties will give notice of the adoption of this Agreement to King County's Department of Natural Resources – Wastewater Treatment Division, to the Pierce County Department of Health, and to any other agency with jurisdiction or mission relevant to the terms hereof, and shall cooperate and assist in all reasonable manner in procuring any necessary approvals hereof by those agencies.

11. Service Amendments. Any changes to the service areas described herein shall be by mutual agreement. Each party may give permission to the other on a case-by-case basis to provide service by one party into the other party's adjacent or nearby service area based upon considerations of economic efficiency for providing the service with mutual consent of Bonney Lake's Director of Public Works and Auburn's Director of Public Works.

12. Notices. All notices between the two agencies hereunder may be delivered or mailed. If mailed, they shall be sent to the following respective addresses:

City of Auburn
Director of Public Works
25 West Main Street
Auburn, WA 98001

253-931-3010

City of Bonney Lake
Director of Public Works
PO Box 7380
19306 Bonney Lake Blvd
Bonney Lake, WA 98390
253-862-8602

or to such other representative as either party may hereafter from time to time designate in writing. All notices and payments mailed by regular post (including first class) shall be deemed to have been given on the second business day following the date of mailing, if properly mailed and addressed. Notices and payments sent by certified or registered mail shall be deemed to have been given on the day next following the date of mailing, if properly mailed and addressed. For all types of mail, the postmark affixed by the United States Postal Service shall be conclusive evidence of the date of mailing.

13. Alteration, Amendment or Modification. Auburn and Bonney Lake hereby reserve the right to alter, amend or modify the terms and conditions of this Agreement upon written agreement of both parties to such alteration, amendment or modification. Such written consent(s) shall be filed with this agreement for future reference.

14. Sanctity of Agreement. This agreement constitutes the entire agreement of the parties regarding the subject matter hereof, and there are no other representations or oral agreements other than those listed herein, which vary the

terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

15. Obligation Intact. Nothing herein shall be construed to alter the rights, responsibilities, liabilities, or obligations of either Auburn or Bonney Lake regarding provision of sewer service, except as specifically set forth herein.

16. Miscellaneous.

A. The captions in this agreement are for convenience only and do not in any way limit or amplify the provisions of this agreement.

B. This agreement is established in perpetuity. Modifications can be established upon written agreement between both parties.

C. The purpose of this agreement is to clarify Auburn's and Bonney Lake's sanitary sewer responsibilities for providing service and maintaining public sewer facilities.

D. If any term, provision, condition or portion of this Agreement is held to be invalid, or unenforceable by a final decision of any court having jurisdiction on the matter, the remaining of this Agreement or the application of such term or provision to persons or circumstances other then those as to which it is held invalid or unenforceable shall not be affected thereby and shall continue in full force and effect, unless such court determines that invalidity or unenforceability materially interferes with or defeats the purposes hereof, at which time Bonney Lake or Auburn shall have the right to terminate the Agreement.

E. No modifications or amendments of this agreement shall be valid or effective unless evidenced by an agreement in writing signed by both parties.

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the day and year first above written.

ATTACHMENT "B"

CITY OF BONNEY LAKE
Approved by Resolution No. _____ of the City of Bonney Lake, Washington, at its regular meeting held on the _____ day of _____, 2005.

By:

_____
ROBERT YOUNG,
Mayor, City of Bonney Lake

Attest:

_____
HARWOOD T. EDVALSON
City Clerk, City of Bonney Lake

Approved as to form:

_____
JAMES DIONNE,
City Attorney, City of Bonney Lake

CITY OF AUBURN
Approved by Resolution No. **3796**, of the City of Auburn, Washington, at its regular meeting held on the _____ day of _____, 2005.

By:

_____
PETER B. LEWIS,
Mayor, City of Auburn

Attest:

_____
DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:

_____
DANIEL B. HEID,
City Attorney, City of Auburn

ATTACHMENT "B"

ATTACHMENT "A"

Legal Description

THAT PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 20 NORTH, RANGE 5 EAST, LYING EASTERLY OF SUMNER TAPPS HIGHWAY, SOUTHERLY OF NORTH TAPPS ROAD (16TH STREET EAST (FOREST CANYON ROAD)); EASTERLY OF THE PLAT OF LAKE TAPPS TACOMA POINT ADDITION, ACCORDING TO PLAT RECORDED IN BOOK 17 OF PLATS AT PAGES 1 TO 8, INCLUSIVE, AND NORTHERLY OF THE INTAKE CANAL TO LAKE TAPPS, IN PIERCE COUNTY, WASHINGTON. EXCEPT THAT PORTION LYING WITHIN LAKE TAPPS.

AREA DESCRIBED IS APPROXIMATELY $\pm$ 16.7 ACRES.
PARCEL NUMBER 0520081001

SE QUARTER OF SECTION 8, TOWNSHIP 20 N, RANGE 5 E

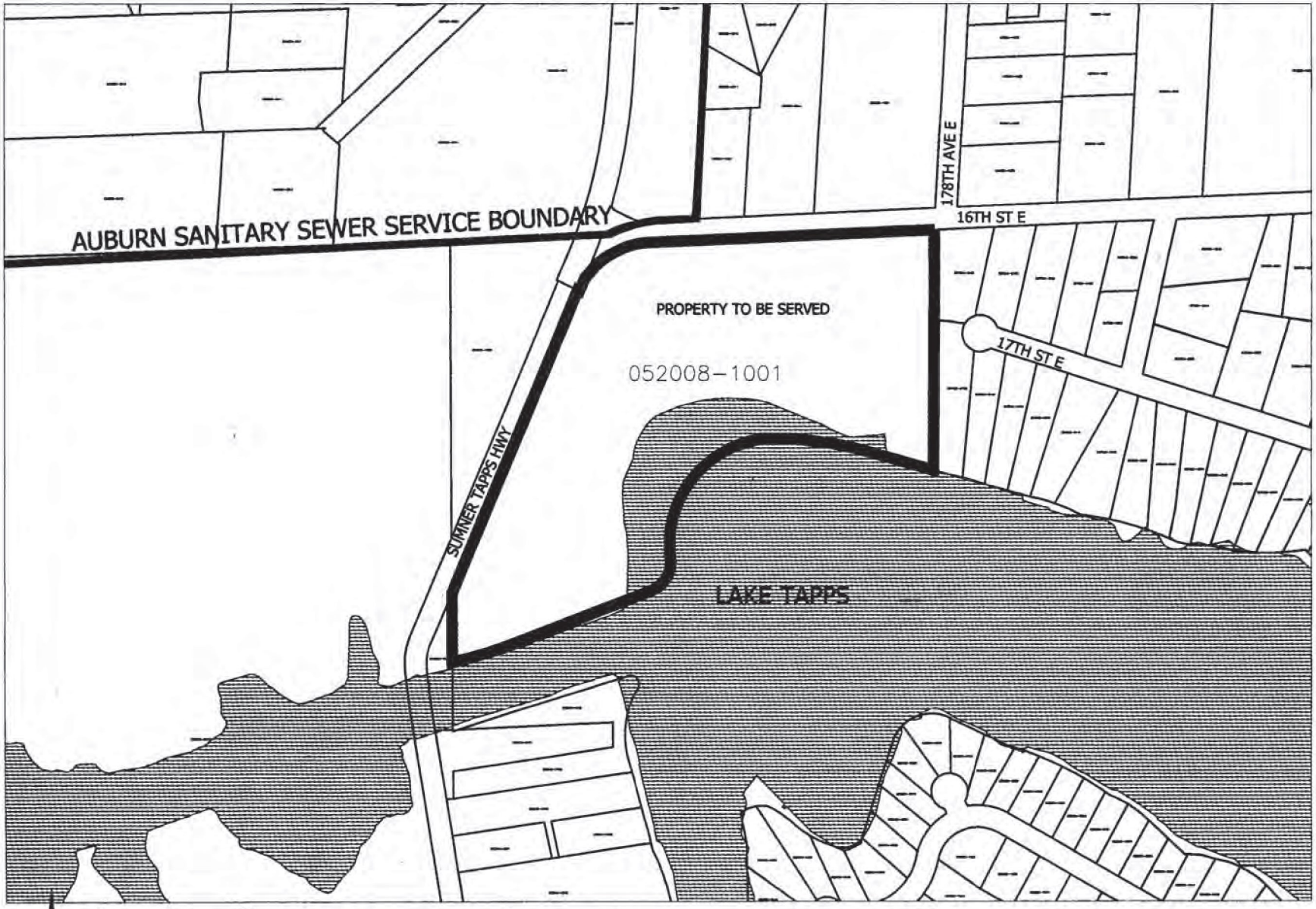


EXHIBIT A
BONNEY LAKE - AUBURN
SANITARY SEWER SERVICE AGREEMENT
FAIRWEATHER COVE

PLOTTED: MARCH 2005

ATTACHMENT "A"
Page 2 of 2

RESOLUTION NO. 1471

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BONNEY LAKE, PIERCE COUNTY, WASHINGTON, AUTHORIZING AN INTERLOCAL AGREEMENT BETWEEN CITY OF AUBURN AND CITY OF BONNEY LAKE PIERCE COUNTY RIGHT OF WAY PERMIT FOR SEWER SERVICE TO FAIRWEATHER COVE.

The City Council of the City of Bonney Lake, Washington, does hereby resolve that the Mayor is authorized to sign the contract attached hereto and incorporated herein by this reference.

PASSED by the City Council this 9th day of August 2005.

Robert Young, Mayor

ATTEST:

Harwood T. Edvalson, City Clerk

APPROVED AS TO FORM:

James Dionne, City Attorney

APPENDIX B

HYDRAULIC MODEL UPDATE, CALIBRATION, AND CAPACITY ANALYSIS

CITY OF AUBURN WASHINGTON

2024 Comprehensive Sewer Plan



TECHNICAL MEMORANDUM 1

Model Calibration Report

FINAL / May 2024

carollo

2024 Comprehensive Sewer Plan

TECHNICAL MEMORANDUM 1

Model Calibration Report

FINAL / May 2024



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Abbreviations

ADWF	average dry weather flow
BWF	base wastewater flow
City	City of Auburn
CIWEM	Chartered Institution of Water and Environmental Management
du/acre	dwelling units per acre
DWF	dry weather flow
FRC	fast response curve
GIS	geographic information system
gpda	gallons per day per acre
GWI	groundwater infiltration
HGL	hydraulic grade line
I/I	inflow and infiltration
mgd	million gallons per day
RDI	rainfall derived infiltration
RDII	rainfall derived infiltration and inflow
SRC	slow response curve
SSO	sanitary sewer overflow
UDG	Urban Drainage Group
WWF	wet weather flow

TM 1 MODEL CALIBRATION REPORT

1.1 Introduction

Sanitary Sewer collection system models are valuable tools used to assess the performance of collection systems during dry and wet weather conditions, and to plan for future improvements. These models provide a means to simulate the impact of different sized storms on the collection system and determine where system deficiencies are likely to occur. In addition, a well-calibrated model provides an easy way to test alternative improvement scenarios. This Technical Memorandum summarizes the City of Auburn's (City) sewer collection system hydraulic model update and calibration for use in the City's sewer system conveyance planning.

1.2 Existing Service Area

The City's service area is shown in Figure 1.1. The service area contains approximately 17,968 acres. The current service area includes most of the City limits, parts of City of Kent, some unincorporated areas of both King and Pierce County's, and part of the Muckleshoot Indian Reservation.

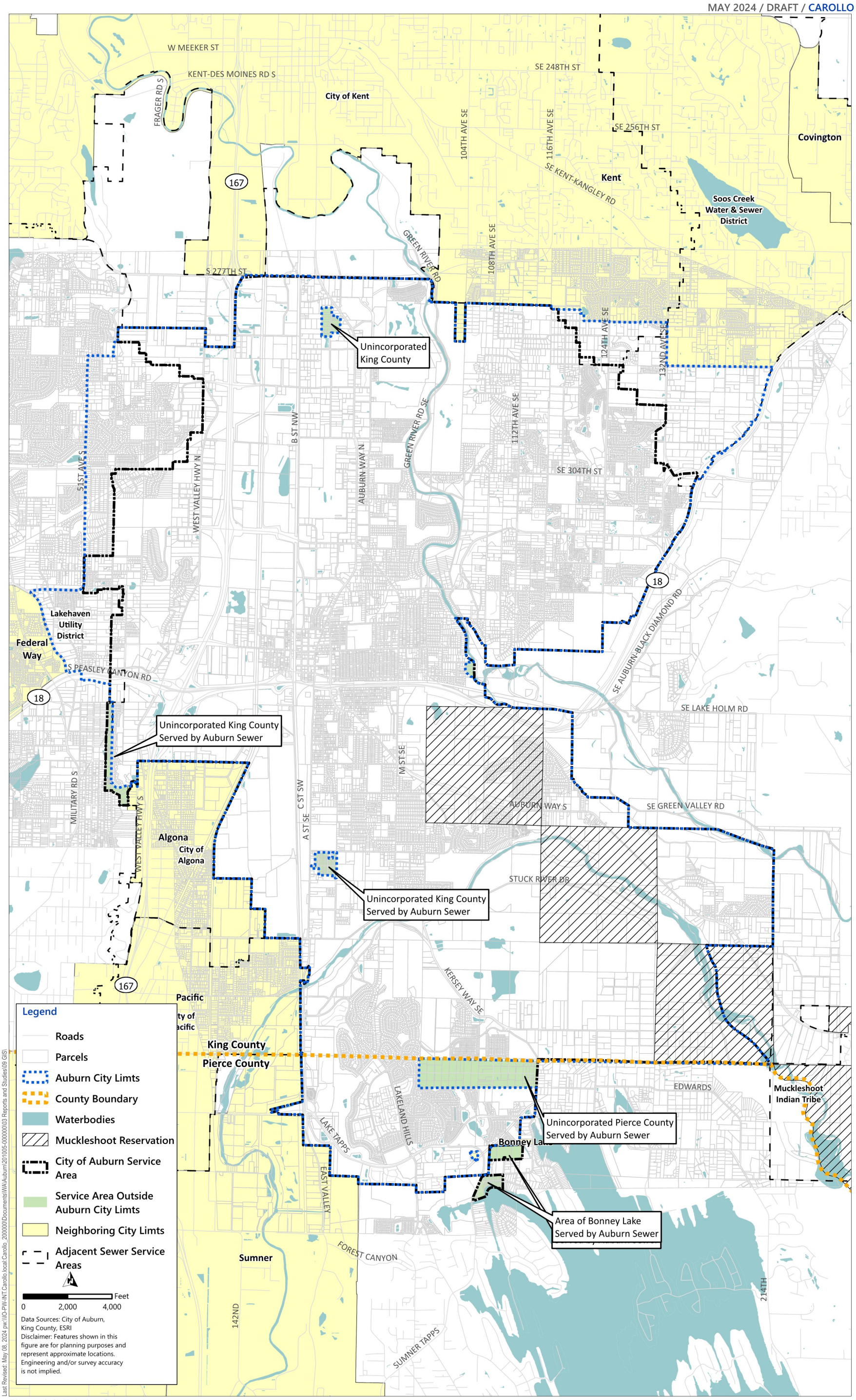


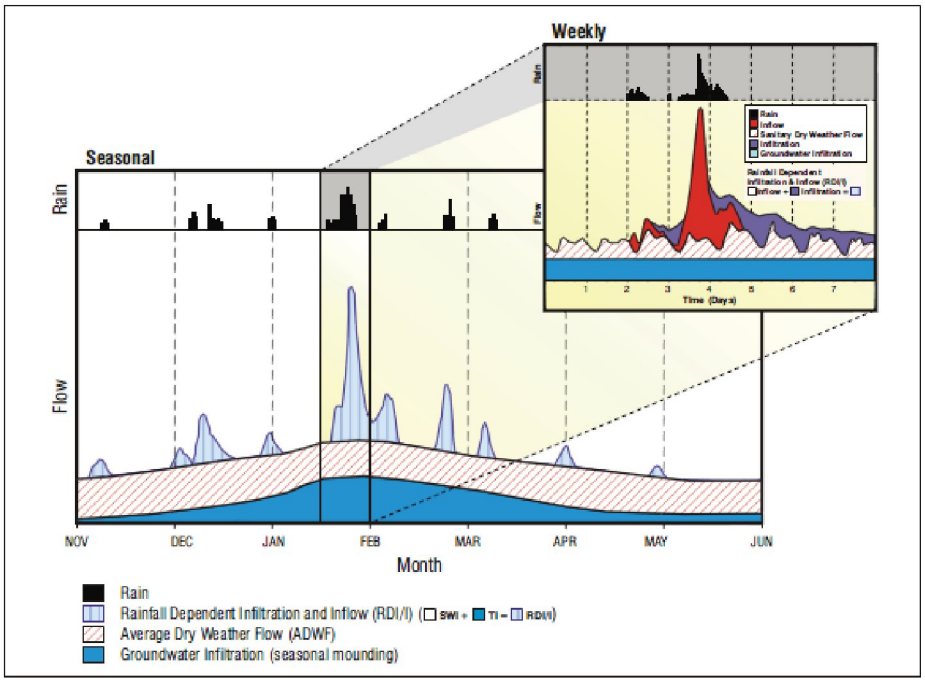
Figure 1.1 Existing Service Area

1.3 Sewer Collection Flows

Sewer collections systems are intended to convey sanitary flows, but frequently have additional flows from other sources. The different flow components are described in the section below and illustrated in Figure 1.2.

1.3.1 Dry Weather Flow Components

Average dry weather flow (ADWF) is the flow that is always entering the collection system on a daily basis. There are two primary components of ADWF, base wastewater flow (BWF) that is the sanitary flow the system is intended to convey, and dry weather ground water infiltration. ADWF was estimated from an average of dry weather flow (DWF) data at each flow meter from 2020 to 2022. Section 1.4 describes the flow monitoring efforts performed by ADS Environmental Services (ADS), which went into determining the ADWFs. The ADWF serves as the baseline flow in the hydraulic model.



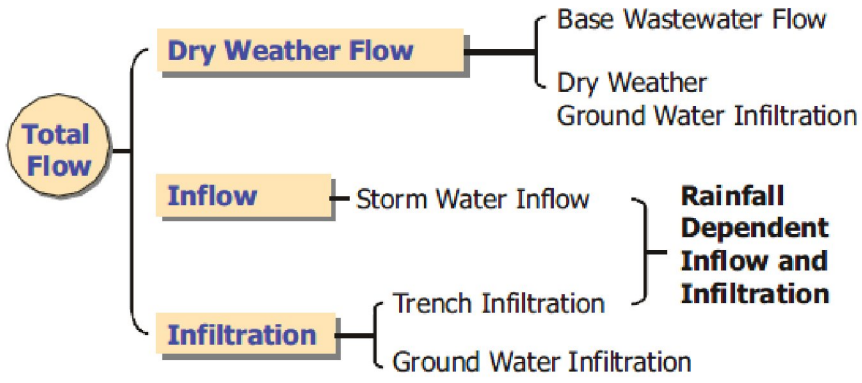


Figure 1.2 Typical Wastewater Flow Components

Note: This figure is not based on flow data specific to the City.

1.3.1.1 Base Wastewater Flow

The BWF is the sanitary flow generated by routine water usage of the collection system service area residential, commercial, and industrial customers. Conveying this flow is the primary function of the collection system. The flow has a diurnal (24-hour) pattern that varies by individual customer's water use patterns. Typically, a residential diurnal pattern has two peaks with the more pronounced peak following the wake-up hours of the day, and a less pronounced peak occurring in the evening. Commercial and industrial patterns, though they vary depending on the type of use, typically have more consistent higher flow patterns during business hours, and lower flows at night. Furthermore, the diurnal flow pattern of a weekend may vary from the diurnal flow experienced during a weekday. Diurnal patterns are applied to ADWFs, and cumulatively make up the flows through the wastewater collection system. The diurnal patterns utilized for the City's collection system basins are developed in Section 1.4.2.1.

1.3.1.2 Dry Weather Groundwater Infiltration

Dry weather groundwater infiltration (GWI) will enter the sewer system when the relative depth of the groundwater table is higher than the depth of the pipeline and the sanitary sewer pipe, allowing infiltration through defects such as cracks, misaligned joints, and broken pipelines. Dry weather GWI (or base infiltration) cannot easily be separated from BWF by flow measurement techniques. Therefore, dry weather GWI is typically grouped with BWF.

1.3.2 Wet Weather Flow Components

Wet weather flow (WWF) includes two components:

- Inflow and infiltration (I/I): The stormwater I/I response in the sewer system to rainfall is seen immediately (inflow) or within hours after the storm (infiltration).
- GWI: Wet weather GWI is not specific to a single rainfall event, but instead from effects of saturated soils on the sewer system over the entire wet weather season. The depth of groundwater rising above the pipe invert elevation causes GWI. Sewer pipes within close proximity to a body of water can also be greatly influenced by groundwater effects.

1.3.2.1 Inflow and Infiltration

I/I are rainfall derived flows in the collection system from specific storm events. Inflow is stormwater that enters the sewer system via a direct connection to the system, such as roof drain and downspout connections, leaky manhole covers, and inappropriate storm drain connections. Infiltration is stormwater that enters the sewer system by percolating through the soil and entering through foundation drains and sumps inappropriately connected to the system, defects in pipelines, manholes, and joints. Some common sources of I/I are shown in Figure 1.3. The adverse effects of I/I entering the sewer system is increases in both flow volume and peak flows such that the sewer system may operate at or above its capacity, as illustrated in Figure 1.4. If too much I/I enter the sewer system, sanitary sewer overflows (SSO) could occur.

1.3.2.2 Groundwater Infiltration

GWI, one of the components of I/I, is associated with extraneous water entering the sewer system through defects in pipes and manholes while the ground is saturated during the wet weather season. GWI is related to the condition of the sewer pipes, manholes, and groundwater levels. GWI may occur throughout the year, although rates are typically higher in the late winter and early spring in the Pacific Northwest.

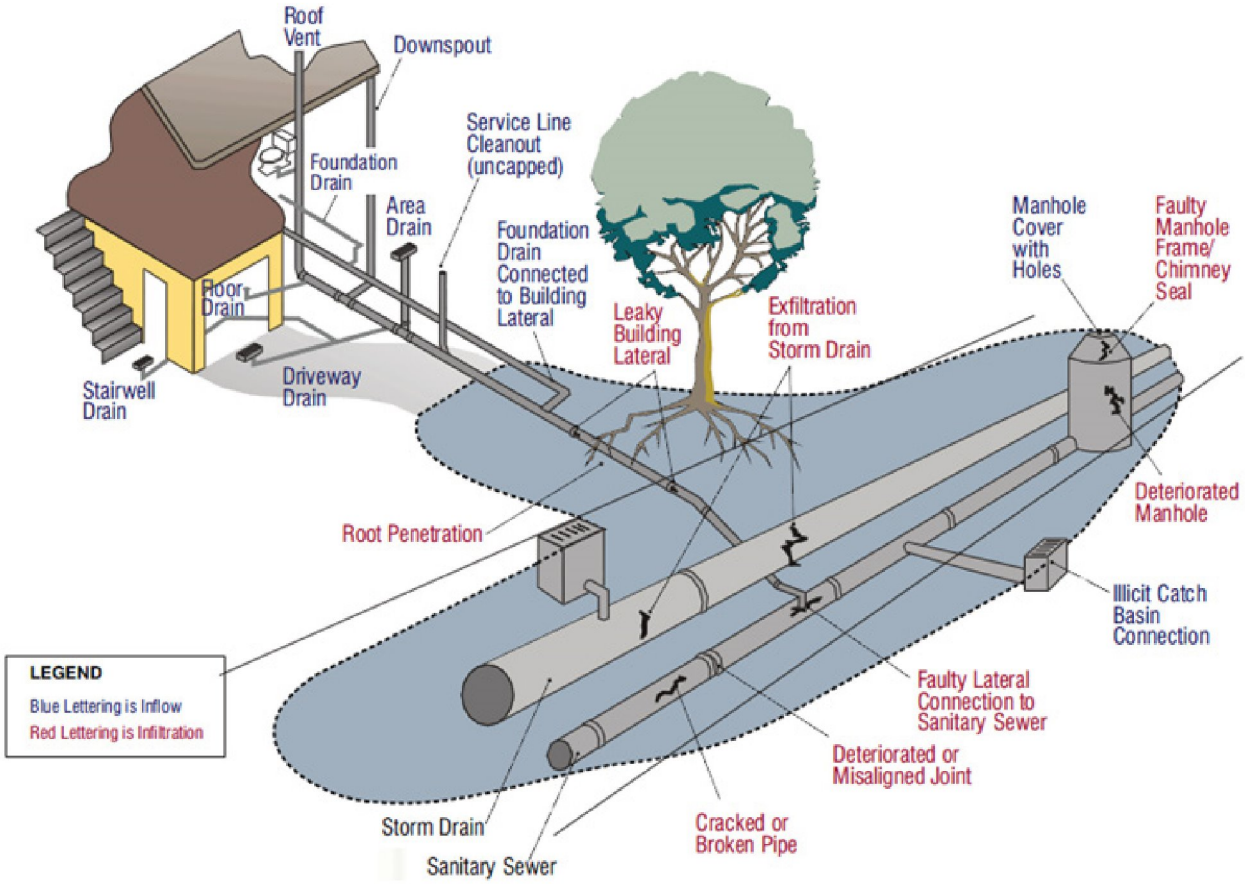


Figure 1.3 Typical Sources of I/I

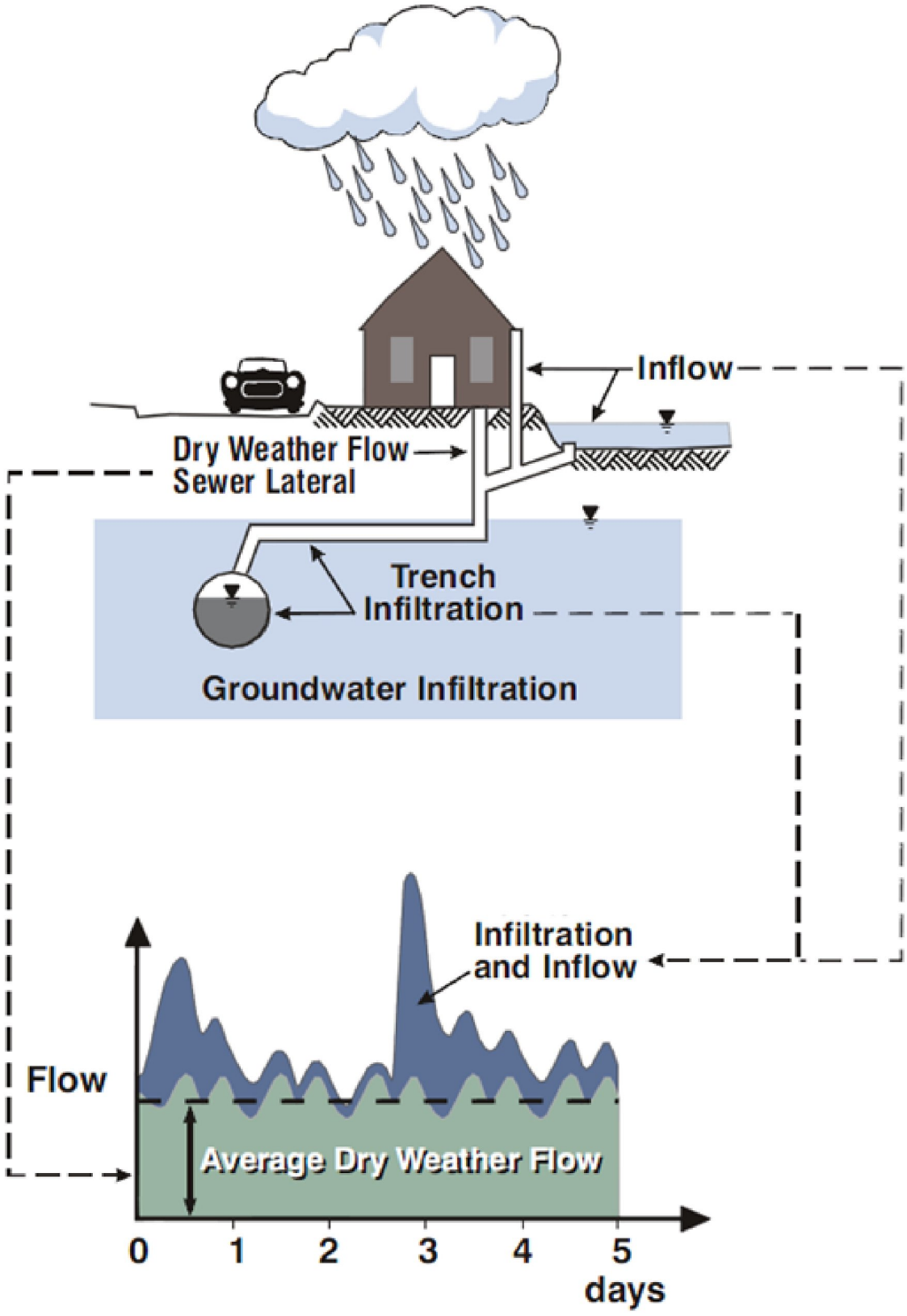


Figure 1.4 Typical Effects of I/I

1.4 Flow Monitoring Program

Prior to the Comprehensive Sewer Planning effort, the City contracted with ADS to conduct a temporary flow monitoring program within the City's sanitary sewer collection system. The City also obtained flow data from meters within the City that are part of King County's larger flow monitoring program. The purposes of the flow monitoring program were to collect data for correlating actual collection system flows to the hydraulic model predicted flows, evaluate the system's capacity, and estimate basin I/I. The flow monitoring data was collected for a period of two years of wet season, monitoring from 2020 to 2022. The "Auburn WA 2020-21 Draft I&I Report v1" prepared by ADS summarizes the flow monitoring program and was submitted to the City as a stand-alone report. The report can be found in Attachment 1A.

1.4.1 Program Description

1.4.1.1 Flow Monitoring Sites and Tributary Areas

A total of 40 sewer basins were monitored during the flow monitoring period from 2020 to 2022 within the service area, and seven King County meters recorded data within the City. A total of 20 of the meters and all seven of the King County meters recorded data over the first wet season from October 2, 2020 to April 15, 2021. Four meters recorded data from 2020 to 2022. The remaining 16 meters were sub-basin monitoring over the 2021-2022 wet weather season.

The remainder of this report will focus on the 22 flow monitoring locations that encompass larger tributary areas and have accurate data for the first wet season period. These meters were selected for calibration and offer the best distribution of data across the collection system and encompass the City's critical sewered areas. These 22-meter locations are identified in Figure 1.5. Table 1.1 lists the flow monitoring locations that were selected for calibration and the diameters for the associated sewers. Figure 1.6 provides a schematic illustrating all 47 flow monitoring locations relationship to help understand how the basins connect and the time data was recorded at each meter site. Figure 1.7 provides the same schematic showing the meters that were selected for model calibration.

Meter data quality was reviewed at all sites and deemed acceptable to use for model calibration. The quality of meter data and other trends in the flow can be determined from scattergraphs, which plot the depth versus velocity as compared to the manning's curve for the pipe segment. Scattergraphs for each site can be found in the Flow Meter Quality Review, Attachment 1B.

Table 1.1 Flow Monitoring Locations

Meter ID	Upstream Pipe ID	Manhole ID	Upstream Pipe Diameter (inch)
A1	308-19	308-20	21
A1c	309-08	309-06	18
A1d	309-11	309-10	18
A3	409-55	409-34	18
A4	508-28	508-17	12
A6	610-30	610-31	12
A7	708-07	707-03	18
A9	710-32	710-31	10
A10	710-152	710-151	24
A11	710-19	710-142	12
A12	710-43	710-42	12
A13	710-130	710-85	8
A14	710-148	710-149	18
A15	809-30	809-30	21
A16	809-44A	809-56	18
Y-1	410-76	410-16	18
Y-2	611-53	611-02	14
Y-3	1012-55	1012-55	24
Y-4	1010-02	1010-02	18
WINT003	508-01	508-02	42
MSTTR02	509-16	509-16	36
AUBRN53	207-02	207-01	72

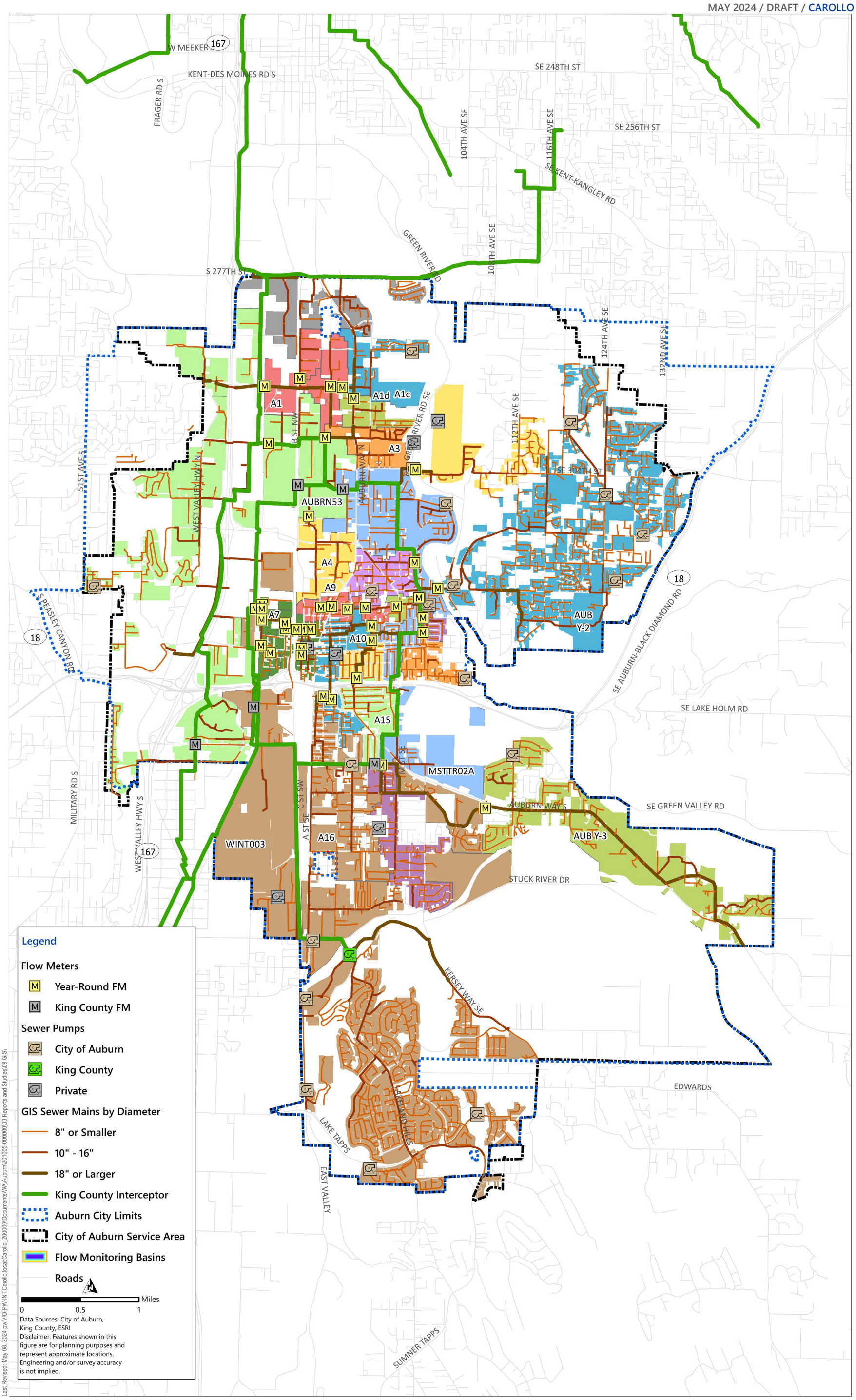


Figure 1.5 Flow Monitoring Locations
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

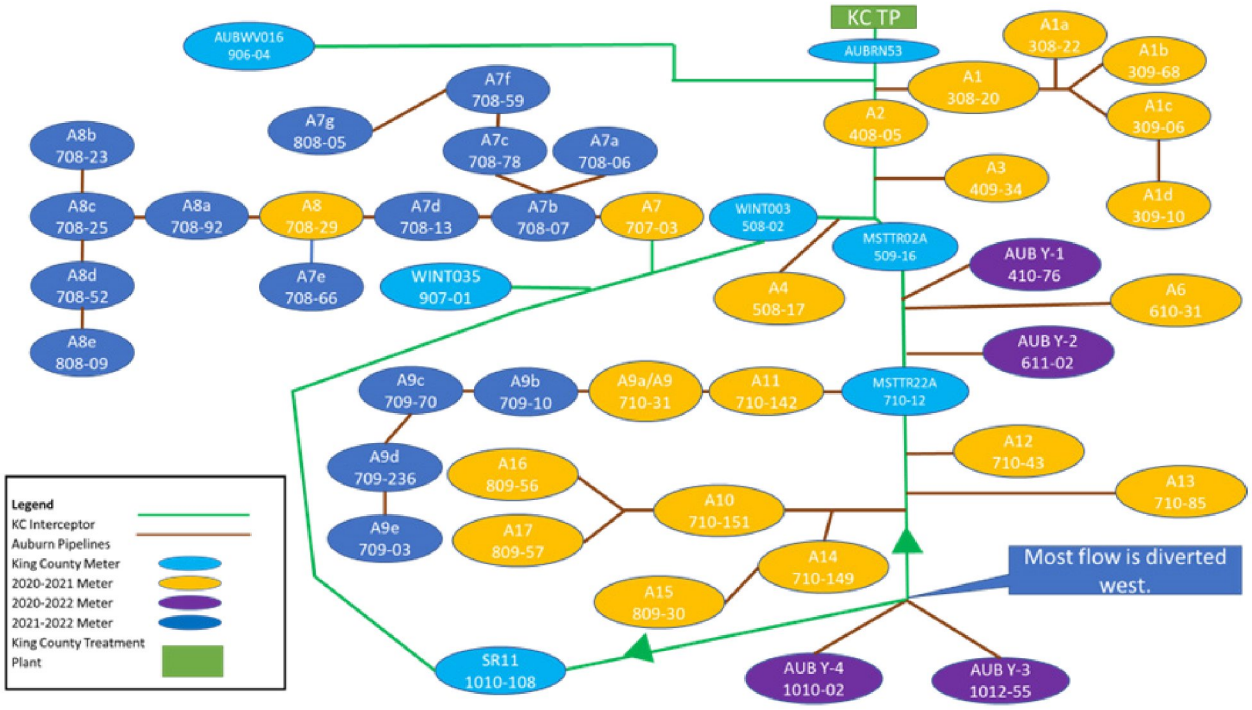


Figure 1.6 Flow Monitoring Schematic

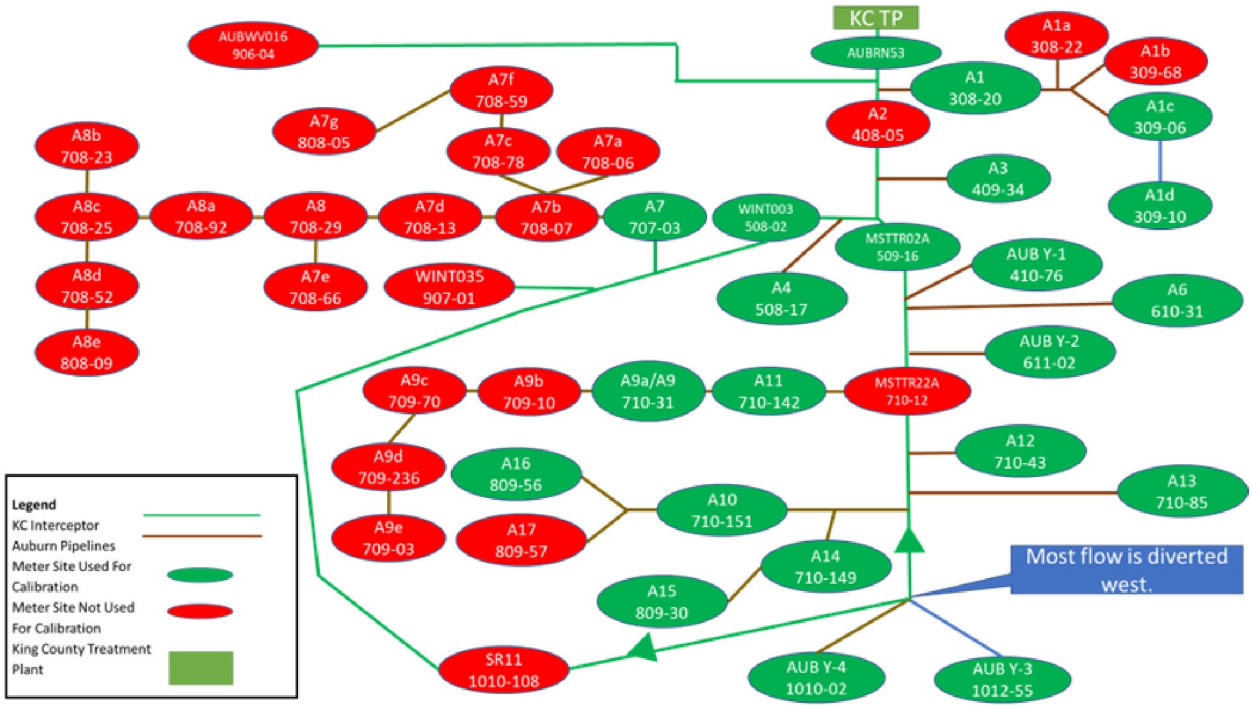


Figure 1.7 Flow Monitoring Schematic of Meters Chosen for Calibration

1.4.1.2 Flow Meter Description

The flow meters used were area velocity meters. The velocity meter measured water with a Doppler signal and the depth measured with either a submerged pressure sensor or level transducer. Level was converted to area based on the pipe diameter. ADS selected the optimal type of flow meter to use on a site-to-site basis based on the hydraulic characteristics at each site, as well as other factors.

ADS conducted an analysis of the data retrieved from each flow meter and made adjustments as needed for calibration based on the field measurements. The flow at each meter was then calculated at 15-minute intervals based on the continuity equation:

$$Q = V \times A$$

Where:

- Q = Pipeline flow rate, cubic feet per second.
- V = Average velocity, feet per second.
- A = Cross sectional flow area, square feet.

1.4.1.3 Rain Gauges

One rain gauge was installed by ADS to record rainfall that occurred throughout the flow monitoring program and six existing king county rain gauges were used. The location of the rain gauge is shown in Figure 1.5.

1.4.2 Flow Monitoring Results

The flow monitoring program data were evaluated by components including DWF, rainfall, and WWF. Data collected from flow meter AUB A-1 is presented throughout this Technical Memorandum as an example of the type of data and the results from the flow monitoring program. Results for all other meters are included in Attachment 1B.

1.4.2.1 DWF Data

Base flow can be estimated for a wastewater collection system by comparing DWF and WWF at the flow monitoring locations. To estimate ADWF for more specific areas, such as individual wastewater basins, DWF's are typically estimated based on the area contributing to flows and flow coefficients developed for each land use type. This method is based on the assumption that areas with similar land uses, such as low-density residential parcels, produce equivalent quantities of wastewater flow on a per area basis. System-wide flows can be compared to known flows at flow monitors to verify accuracy. This method of estimating base flows is an industry standard for planning and provides sufficiently accurate data for planning purposes.

Existing ADWFs for each basin were estimated using data from the flow monitoring program for each of the flow monitoring basins. ADWF was developed using the driest days from the flow monitoring period based on the following set of minimum criteria:

- Less than 0.1 inch of rain in the previous 24 hours.
- In addition, those dry days that exhibited unusual flow patterns were not used to generate net dry day flow values for a basin.

Characteristic dry weather 24-hour diurnal flow patterns for each site were developed from hourly data. The hourly flow data were also used to calibrate the hydraulic model for the observed DWF's during the flow monitoring period. Hourly patterns for weekday and weekend flows vary and were separated to better define DWF. An example of the ADWF from Flow Meter AUB A-1, are shown in Figure 1.8. Both gross and net ADWF are developed for each meter data set. Gross ADWF corresponds to the total measured flow at the meter and includes all upstream areas while net basin flows are those associated only with the basin as monitored by its meter of the same name, and therefore excludes all flow from upstream meters (if any). A summary of the DWFs is outlined in Table 1.2.

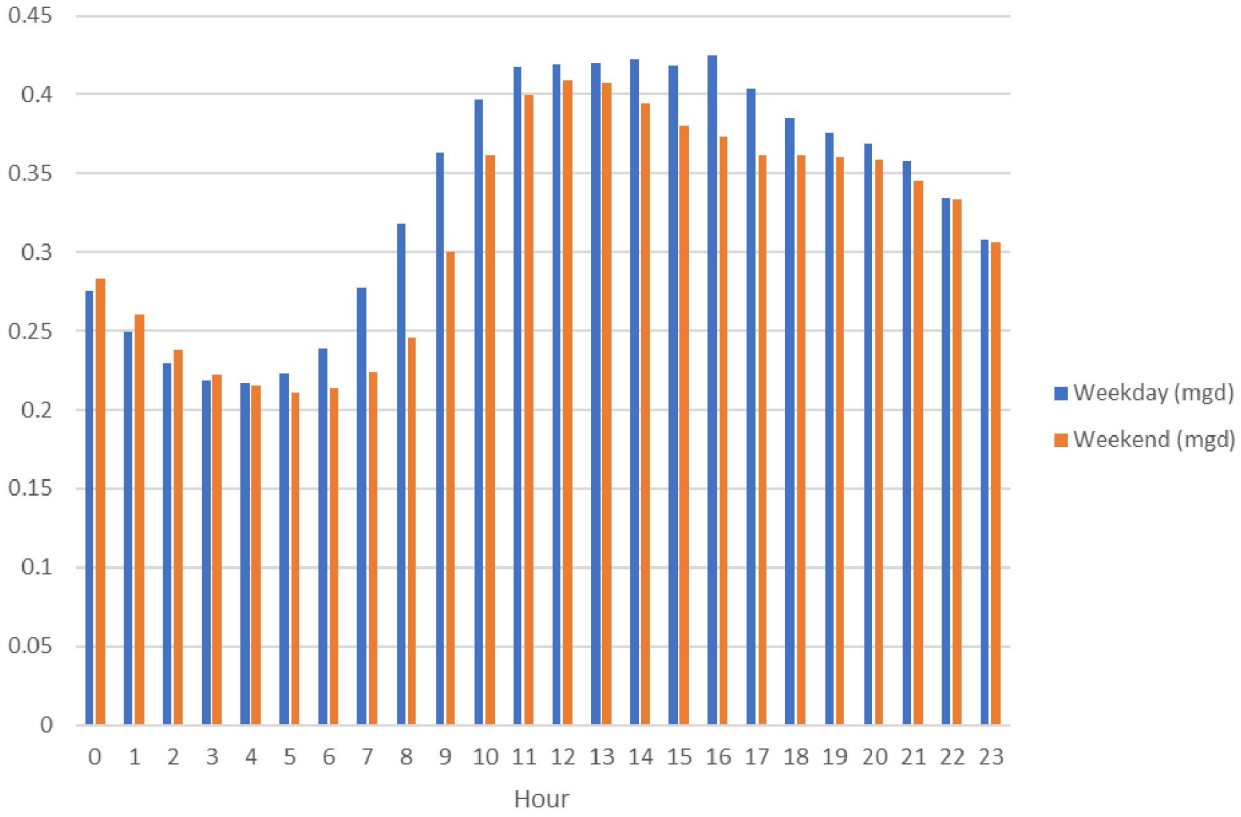


Figure 1.8 Typical Weekday vs Weekend DWF (Meter AUB A-1)

Table 1.2 ADWF Development Summary

Meter ID	Weekday Gross ADWF (mgd)	Weekend Gross ADWF (mgd)	Weekday/Weekend Ratio	Gross ADWF (mgd)	Net ADWF (mgd)
A1	0.336	0.316	1.065	0.330	0.042
A1c	0.229	0.236	0.970	0.231	0.146
A1d	0.085	0.085	1.000	0.085	0.085
A3	0.280	0.284	0.988	0.281	0.281
A4	0.255	0.253	1.010	0.255	0.255
A6	0.091	0.094	0.966	0.092	0.092
A7	0.158	0.112	1.412	0.145	0.003
A9	0.057	0.057	0.998	0.057	0.057
A10	0.286	0.286	1.000	0.286	0.006
A11	0.065	0.066	0.991	0.066	0.008
A12	0.018	0.020	0.872	0.018	0.018
A13	0.044	0.045	0.977	0.044	0.044
A14	0.177	0.181	0.983	0.178	0.122
A15	0.056	0.059	0.953	0.057	0.057
A16	0.239	0.242	0.987	0.240	0.240
Y-1	0.396	0.415	0.954	0.401	0.401
Y-2	1.023	1.060	0.965	1.033	1.033
Y-3	0.658	0.657	1.002	0.657	0.657
Y-4	0.141	0.148	0.955	0.143	0.143
WINT003	3.271	3.258	1.004	3.267	2.321
MSTTR02	0.336	0.316	1.065	0.330	0.661
AUBRN53	7.817	7.800	1.002	7.812	0.949

Abbreviations: mgd - million gallons per day.

1.4.2.2 Rainfall Data

An important part of the flow monitoring program is the collection and analysis of rainfall data. Four significant rainfall events occurred during the course of the flow monitoring period, as well as a few other relatively minor events. The storms recorded during the flow monitoring program generated an I/I response in the collection system and were appropriate for I/I analysis and model calibration purposes. The hourly flow measured at seven different rain gauges recording rainfall over the course of the flow monitoring program are illustrated in Figure 1.9. Figure 1.10 illustrates the total accumulation of rainfall over the course of the flow monitoring period for the gauges including the ADS tipping bucket type rain gauge (RG41Y). Table 1.3 summarizes the four largest events over the total rainfall period, recorded at the RGAUB rain gauge. The RGAUB rain gauge best represented the rainfall distribution between the gauges and was used in the model for WWF calibration.

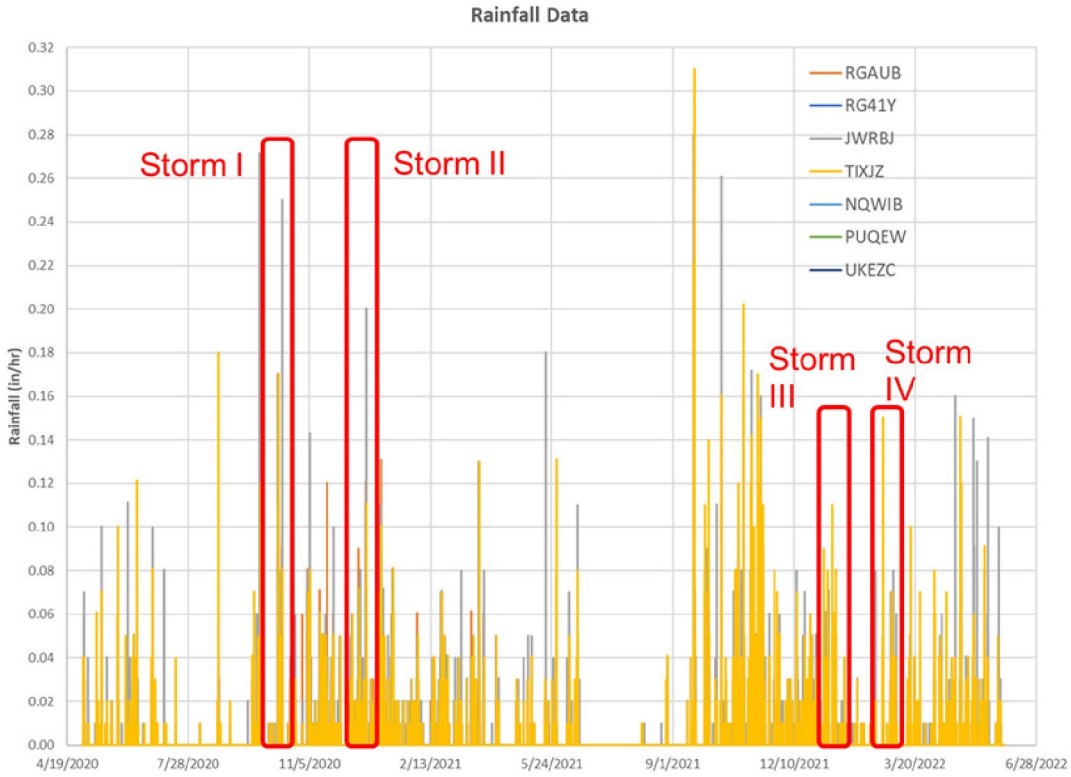


Figure 1.9 Rainfall Intensity

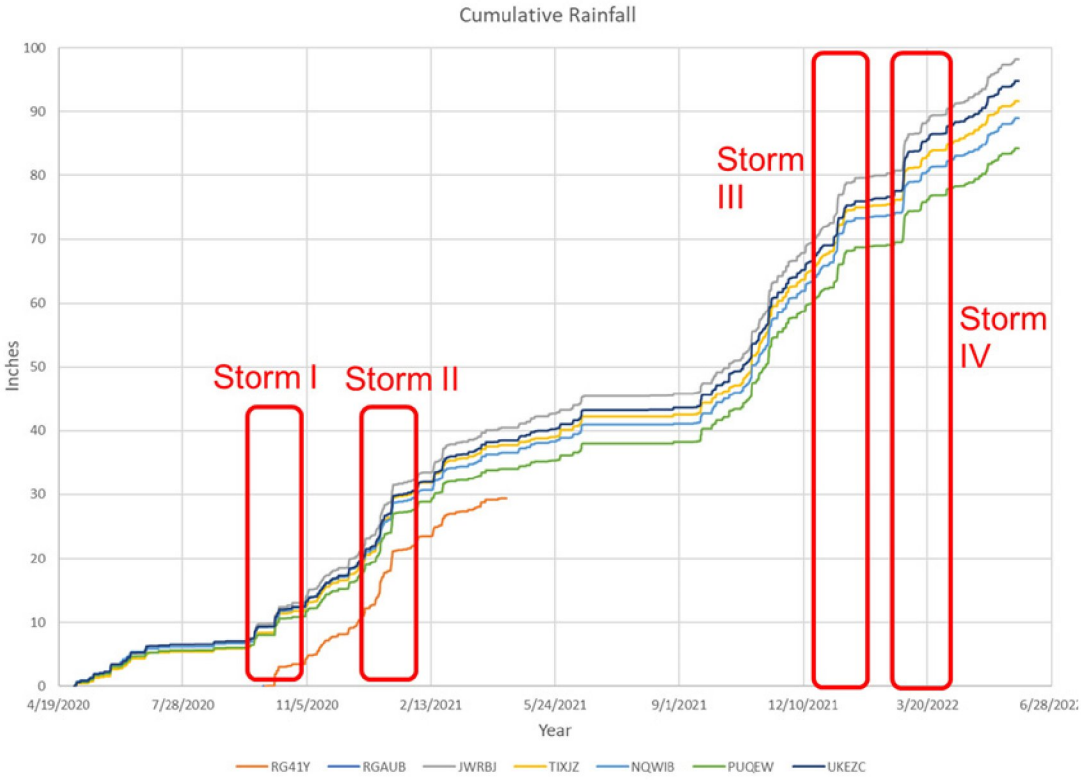


Figure 1.10 Cumulative Rainfall

Table 1.3 Largest Storm Events

Storm Event	Start Date	End Date	Total Event Rainfall (inch)	Max 24-hour Volume (inch)	Peak Intensity (inch/hour)
Storm I	October 6, 2020	October 13, 2020	1.98	1.52	0.17
Storm II	December 30, 2020	January 6, 2021	4.06	1.66	0.13
Storm III	January 8, 2021	January 15, 2021	3.20	2.08	0.06
Storm IV	February 18, 2021	February 25, 2021	1.67	1.31	0.07

1.5 Zoning and Land Use Data

Land use designations and regulations provide important information in evaluating existing sewer system capacity. Land use determines the area available for various types of development including both single-family and multi-family residential development, as well as commercial and industrial uses that provide the economic base necessary to support residential development.

Land use information is an integral component in estimating the amount of wastewater generated within any City. The type of land use in an area will affect the volume of wastewater generated. Additionally, the service area is typically comprised of both sewered and unsewered areas: sewered areas contribute flow to the collection system, while unsewered areas are vacant, undeveloped land, or development such as parks or parking facilities without a wastewater connection and do not currently contribute flow to the collection system.

Future land use designations can be different from the existing zoning designations. A relationship between existing and future designations was developed, based on the Comprehensive Land Use Plan. This relationship was expanded based on the City's geographic information system (GIS) Table 1.4 summarizes the correlation between zoning and land use and was used to develop wastewater flow coefficients.

Table 1.4 Existing Zoning and Future Land Use Correlation

Land Use Designation	Zoning
Residential Conservancy	Residential Conservancy
Single Family	Residential 20, 16, 7, 5, 1 du/Acre, Planned Unit Development District, Lea Hill Overlay
Moderate Density Residential	Residential 10 du/acre
Heavy Commercial	Heavy Commercial District, Mixed Use Commercial
Light Industrial	Light Industrial District, Central Business District
Light Commercial	Light Commercial District, Neighborhood Shopping District
Heavy Industrial	Heavy Industrial District
Multi-Family	Residential Manufactured/Mobile Home Community
Institutional	Institutional Use District, Public Use District, Airport Landing Field District
Downtown Urban Center	Downtown Urban Center
Neighborhood Commercial	Residential Office District, Residential Office District-Hospital
Open Space	Open Space
Parks	Parks

Abbreviations: du/acre – dwelling units

1.5.1 Zoning and Existing Served and Connected Area

The current zoning within the existing service area is shown in Figure 1.11. Right-of-Ways, unbuildable land, open space and parks were removed from this analysis, as these areas are assumed to contribute no sanitary flows to the collection system. Table 1.5 provides a summary of the zoning categories and acreages for the existing service area and connected area from each category.

Table 1.5 Existing Zoning Summary

Zoning	Area (acres)	Percent of Total Area
Airport Landing Field District	110	0.6%
Central Business District	28	0.2%
Downtown Urban Center	91	0.5%
Heavy Commercial District	1,183	6.6%
Heavy Industrial District	776	4.3%
Institutional Use District	1,041	5.8%
Lakeland Hills South Special Plan Area – Planned Unit Development	667	3.7%
Light Commercial District	242	1.3%
Light Industrial District	1,272	7.1%
Mixed Use Commercial	67	0.4%
Neighborhood Shopping District	9	0.0%
Open Space/Parks	1,125	6.3%
Planned Unit Development District	136	0.8%
Public Use District	531	3.0%
Residential 1 du/acre	751	4.2%
Residential 10 du/acre	205	1.1%
Residential 16 du/acre	38	0.2%
Residential 20 du/acre	511	2.8%
Residential 5 du/acre	2,758	15.3%
Residential 7 du/acre	1,617	9.0%
Residential Conservancy	1,245	6.9%
Residential Manufactured/Mobile Home Community	443	2.5%
Residential Office District	75	0.4%
Residential Office District-Hospital	1	0.0%
Terrace View District	50	0.3%
Unclassified Use District	379	2.1%
Unknown(1)	501	2.8%
Right-of-Way	2,116	11.8%
Total	**17,968**	**100.0%**

Notes:
(1) Land Use is based on City's GIS, areas within the service boundary, but outside City limits including the area in Kent, Bonney Lake and unincorporated King and Pierce County are listed as Unknown.

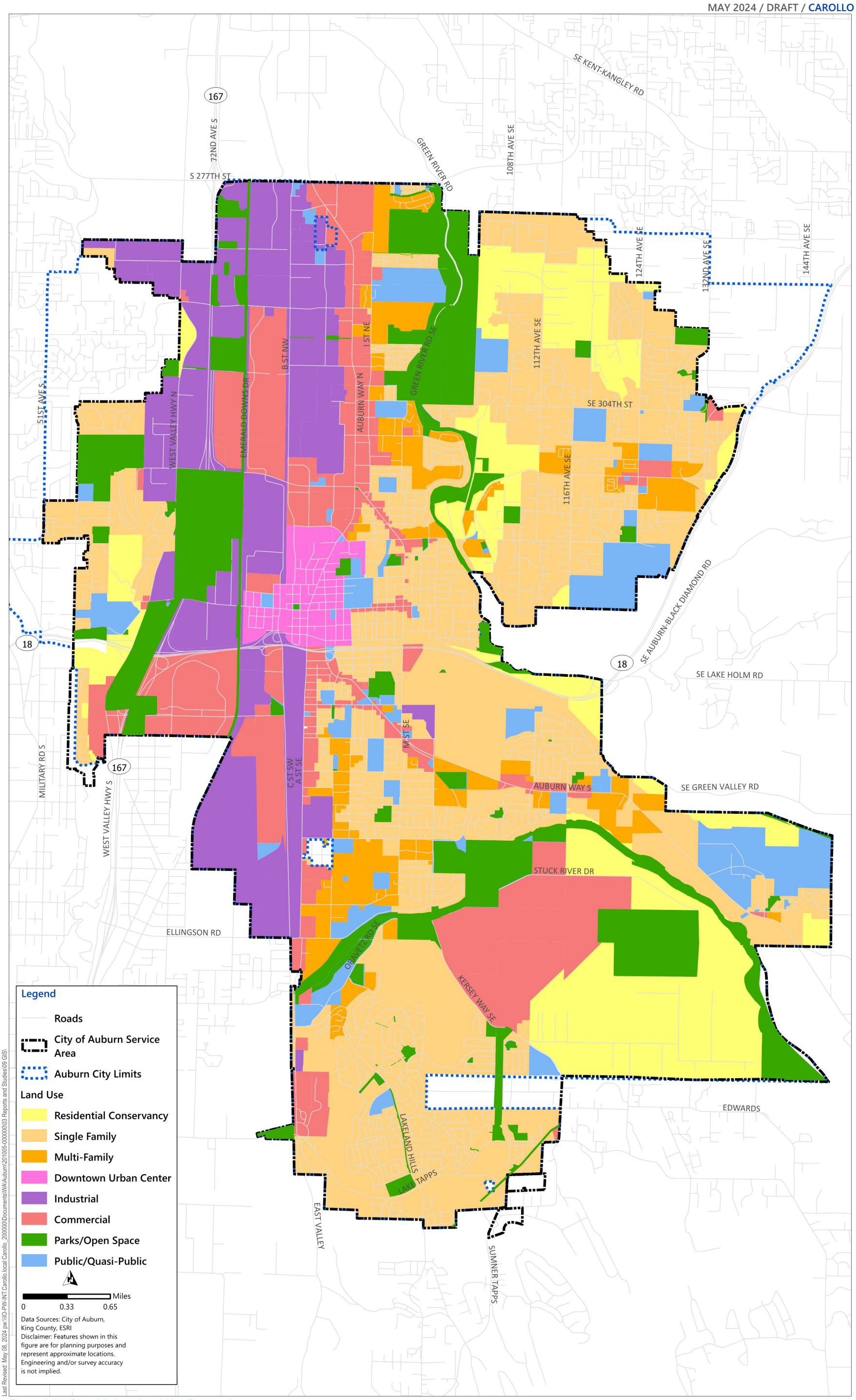


Figure 1.11 City of Auburn Land Use Designations

1.5.2 Future Land Use

Table 1.6 provides land use summary for the existing service area. Open space, parks, unbuildable land, Streets, and Right-of-Way are removed from this analysis and are assumed to contribute zero sanitary sewer flow in the future. The future land use within the existing service area is shown in Figure 1.12. The Land Use elements of the Comprehensive Plan can be found in Attachment 1C.

Table 1.6 Future Land Use Summary

Land Use Designation	Area (acres)	Percent of Total Area
Downtown Urban Center	213	1.2%
Heavy Commercial	1,529	8.5%
Heavy Industrial	753	4.2%
Institutional	2,167	12.1%
Light Commercial	335	1.9%
Light Industrial	1,325	7.4%
Moderate Density Residential	449	2.5%
Multi-family	1,096	6.1%
Neighborhood Commercial	82	0.5%
Neighborhood Commercial Overlay	53	0.3%
Open Space/Parks	1,438	8.0%
Residential Conservancy	1,297	7.2%
Single Family	6,977	38.8%
Unknown(1)	254	1.4%
Total	**17,968**	**100.0%**

Notes:
(1) Land Use was provided from City's GIS. Note it does not cover the entire wastewater service area. The unknown portion is unincorporated areas including the area in Kent, Bonney Lake Areas and unincorporated King County Area.

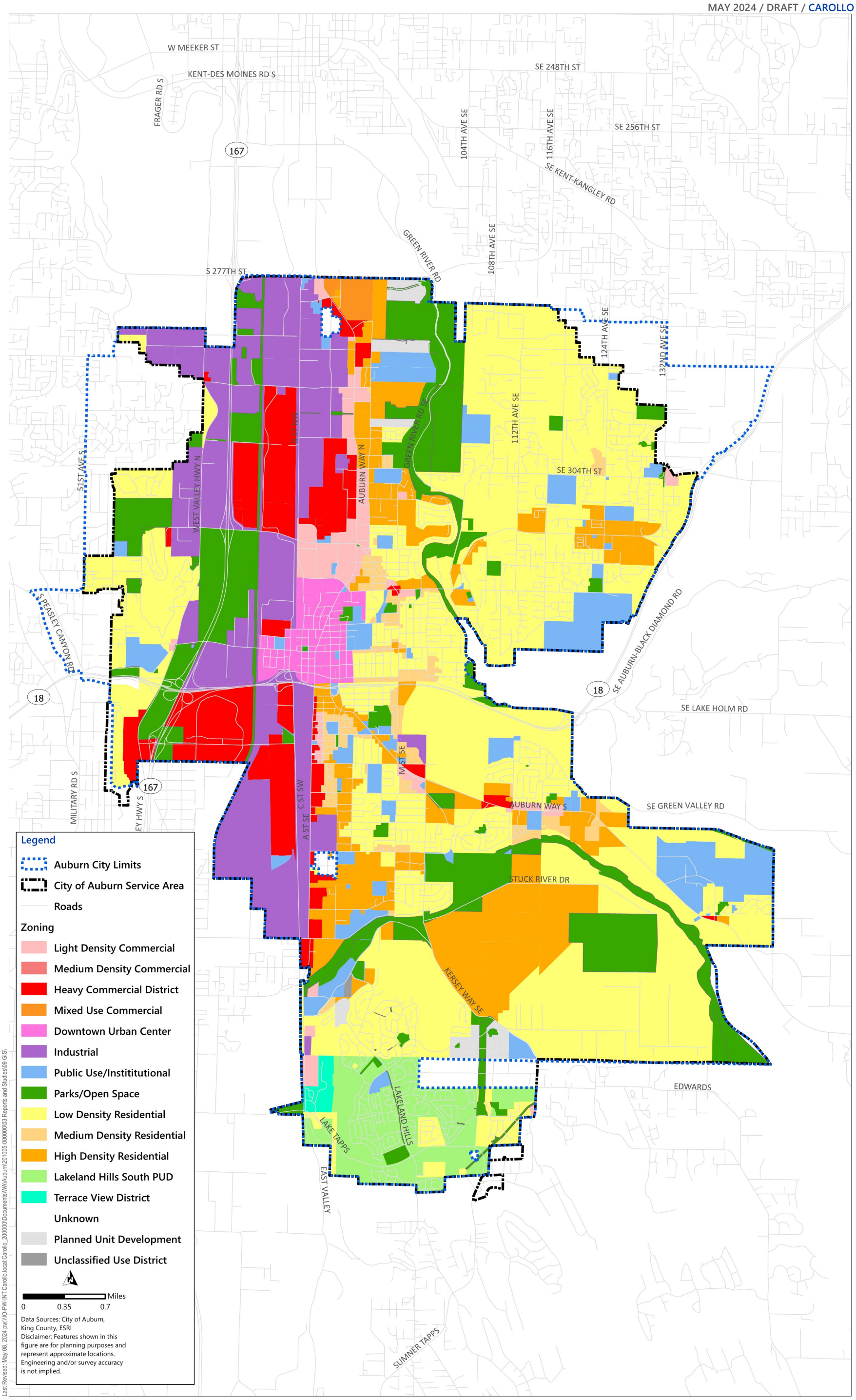


Figure 1.12 Future Land Use
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

1.6 Wastewater Flow Factors

In order to develop wastewater flow projections and allocate future flows to the collection system, relationships between land use and wastewater generation were developed. These relationships, called wastewater flow factors are established based on the average wastewater flow generated for each existing land use type. The land use flow factors were established to project the estimated ADWF through future development of the City's wastewater collection system and project future flows within the existing service area boundary.

Average wastewater flow coefficients are volume rates, usually expressed in gallons per day per acre (gpda), applied to either gross or net acres to calculate average day flow generated from a particular land use type. A flow coefficient was developed for each of the land use classifications that were discussed previously. The flow coefficient provides a means to transform a land use category from acreage into wastewater flow. The resulting flow is then inputted into the appropriate sewer area in the sewer system model. Wastewater flow coefficients for residential areas typically range between 500 to 3,000 gpda, and commercial and industrial areas might range from 1,000 to 4,000 gpda, with typical values averaging approximately 1,500 gpda. Land uses designated as open space and parks are assumed to generate negligible amounts of sewage flow, and as a result have a flow coefficient of zero.

Figure 1.13 outlines the portion of the system that is currently considered sewered and contributing flows to the collection system. This acreage is assigned to each catchment in the system and used for rainfall runoff routing.

Flow monitoring basins were developed to define the upstream tributary area for each meter selected for calibration, using only connected and developed parcels. Flow factors are applied across these flow monitoring basins to allocate ADWF. Figure 1.14 outlines the flow monitoring basins used for this process.

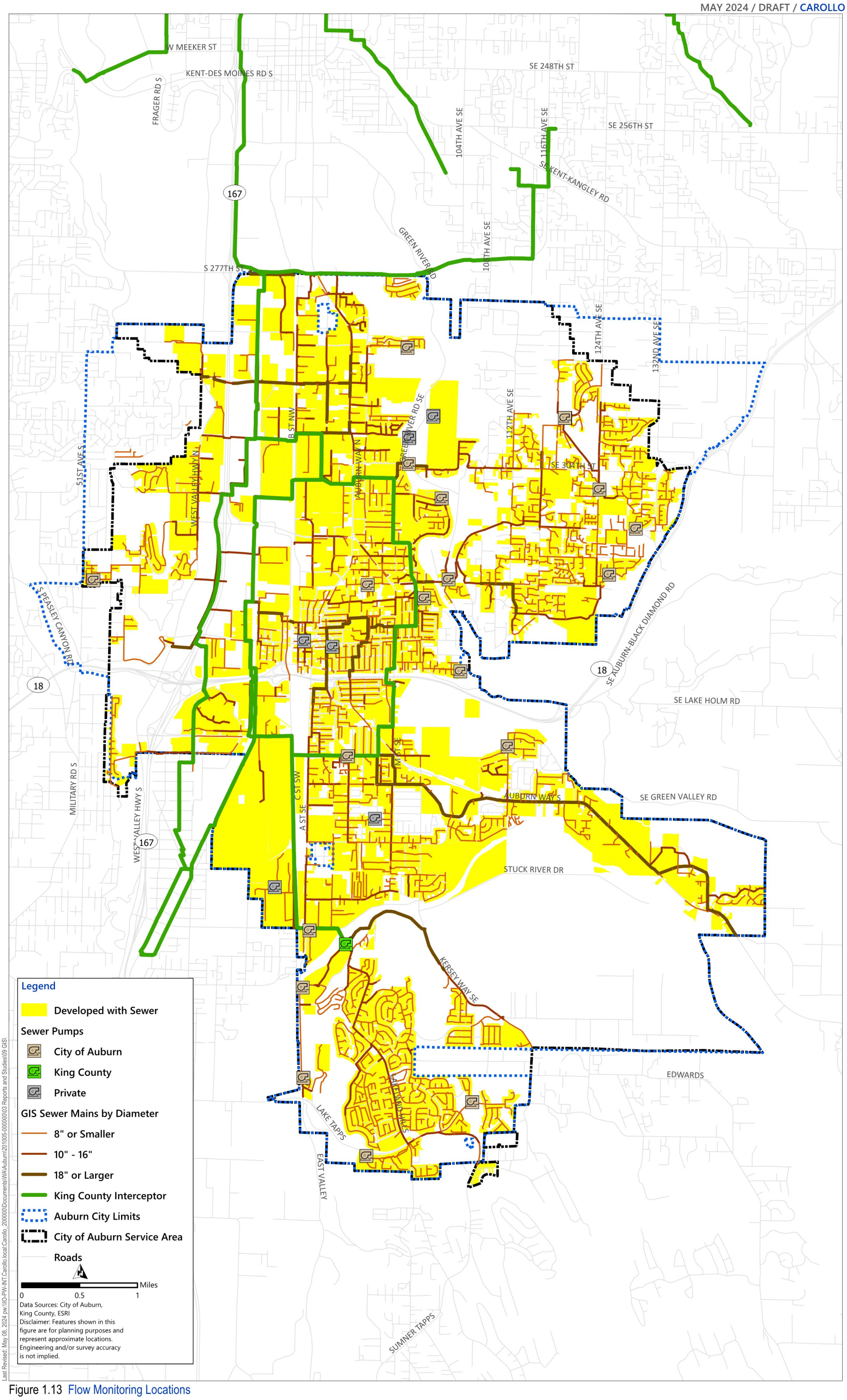


Figure 1.13 Flow Monitoring Locations

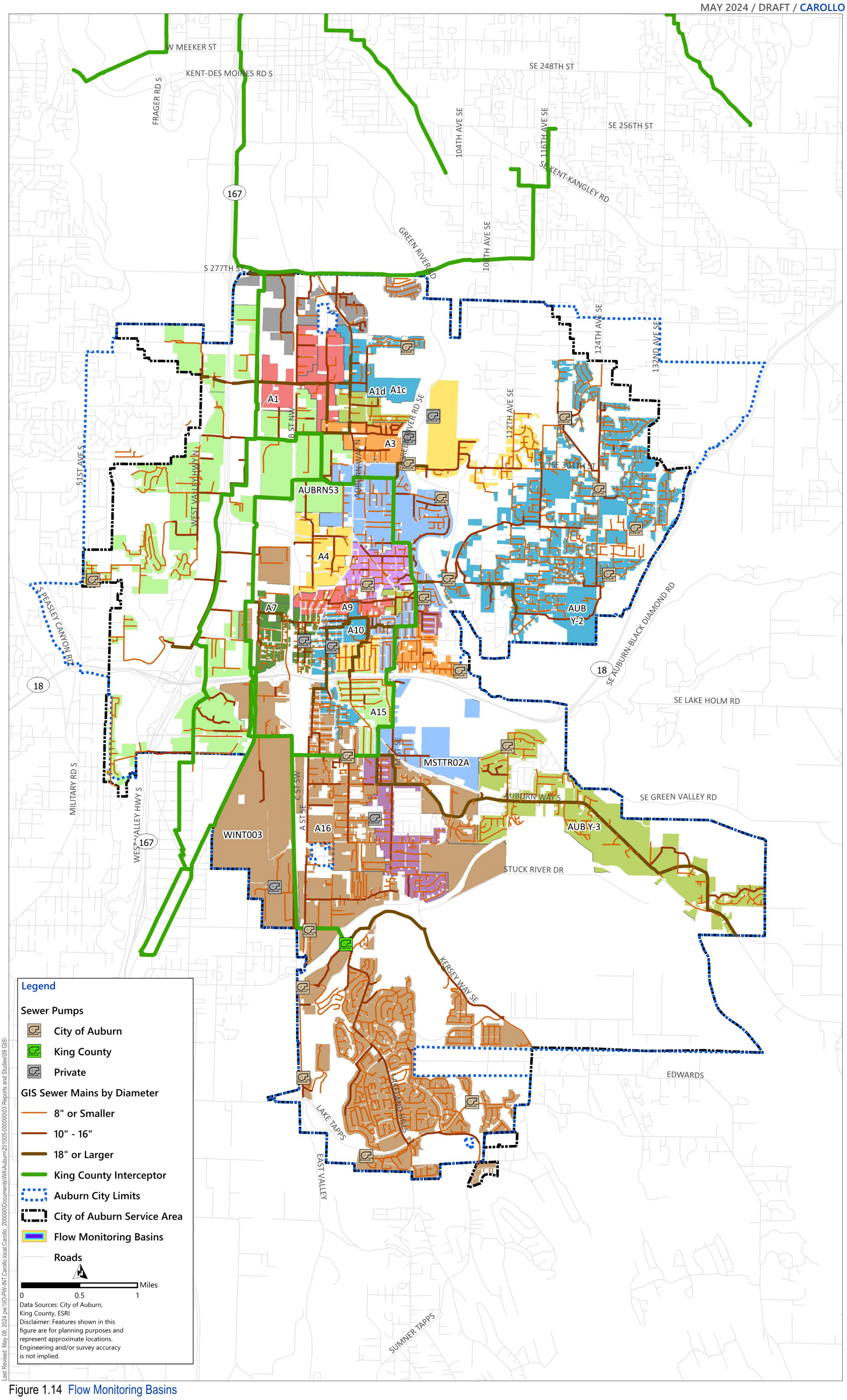


Figure 1.14 Flow Monitoring Basins
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

1.6.1 Flow Factor Development

The coefficients are developed using the following procedure:

- Average flows for each flow metering tributary area were extracted from the flow-monitoring data (see Section 1.4).
- The acres for each land use type contained in each flow-monitoring tributary area were calculated using GIS data.
- Preliminary coefficients for each land use type were assumed based on typical values, which can be estimated from the approximate number of dwelling units per acre, the assumed per capita wastewater generation rates, and/or the typical number of people per dwelling unit for each land use type.
- The coefficients for each flow metering tributary area are adjusted up or down (balanced) within a reasonable range (based on engineering judgment) until the calculated average flows from each tributary matched flow monitoring period measurements. If the flow coefficients produced average flows that were significantly different from the field measured flows, further investigation was conducted to verify that the tributary basins were delineated correctly and if the collection system configuration was correct.
- Once the coefficients for the 22 flow meter tributary areas are balanced, the weighted average of the coefficients for each land use type is calculated based on the acreage contribution from each metering tributary area.
- The flow coefficients were then adjusted to balance the calculated flows for the overall developed sewer service area, where flow-monitoring data was available.

The weighted wastewater flow coefficients and land use areas that represent existing ADWF are summarized in Table 1.7. The land use coefficients generate an ADWF to the modeled collection system of 7.77 mgd, a -0.5 percent difference from the measured ADWF of 7.81 mgd.

Wastewater flow factors were compared to the Comprehensive Plan, Attachment 1C, to confirm they correspond to the densities and allowable dwelling unit per acre for each land use type. This was done at a flow monitoring basin level such that the flow factors matched the relative densities, however when averaged out across the system some flow factors are smaller or larger than the expected density based on the flow monitoring basin the majority of the land use acreage is within. The detailed flow factors at a flow monitoring basin level are shown in Attachment 1D.

Table 1.7 Flow Factor Development Summary

Land Use Type	Developed Area (acres)	Wastewater Flow Factor (gpda)	Existing ADWF (mgd)
Single Family	2,778	920	2.56
Moderate Density Residential	147	950	0.14
Residential Conservancy	11	800	0.01
Open Space	1	0	0.00
Neighborhood Commercial	64	1,020	0.07
Multi-Family	335	2,440	0.82
Light Industrial	721	530	0.38
Light Commercial	165	640	0.11
Institutional	953	1,230	1.17
Heavy Commercial	861	1,920	1.65
Heavy Industrial	414	1,890	0.78
Downtown Urban Center	58	1,500	0.09
Undeveloped Acreage	3,928		
Total	17,968		
		Total Estimated ADWF	**7.77**
		Measured ADWF	**7.81**
		Percent Difference	**-0.5%**

1.7 Hydraulic Model Overview

A wastewater collection system model is a simplified representation of the real sewer system. Wastewater system models can assess the conveyance capacity of the collection system. The model can be used to size new infrastructure. In addition, sewer system models can perform "what if" scenarios to assess the impacts of future developments and land use changes. The City's collection system hydraulic model was updated and expanded using a multi-step process utilizing data from a variety of sources. This section summarizes the hydraulic model development process, including a description of the modeled collection system, the hydraulic model elements, and the model creation process.

1.7.1 Selected Hydraulic Modeling Software

The City's previous collection system hydraulic model was developed using the Mike Urban hydraulic modeling software package, developed by DHI. This project converted the model from Mike Urban to Mike+, the current DHI collection system product. The hydraulic modeling engine for the Mike+ software package is now 1D, it was previously MOUSE. The model was updated to use the 1D engine, which is widely used throughout the world for planning, analysis, and design related to stormwater runoff, combined sewers, sanitary sewers, and other free surface drainage systems such as streams and rivers.

The latest version (2022) of Mike+ was used for the hydraulic model update. More information about the modeling software can be found in the Mike+ Collection Systems Guide[1].

1.7.2 Modeled Collection System and Skeletonization

The City provided Carollo Engineers, Inc. with an initial skeletonized model. Skeletonization is the process of identifying the key system conveyance components to include in the model. Smaller pipelines not considered essential for the intended analysis purpose are removed from the modeled set. The purpose of skeletonizing a system is to develop a model that accurately simulates the hydraulics of a collection system, while at the same time reducing the complexity as well as computational run times and to simplify data management.

It is common practice in sewer system master planning to exclude small diameter sewers when developing a hydraulic computer model. Key sewers are included in the City's hydraulic model where needed for connectivity, or where it was determined that the pipes in question were considered as primary collectors. The collection system remains skeletonized for this project, with no increase in modeled system coverage. Pipes were updated to reflect projects and changes that occurred since the last plan.

1.7.3 Elements of a Hydraulic Model

The following provides a brief overview of the various elements of the hydraulic model and the required input parameters associated with each:

- **Nodes (Manhole):** Sewer manholes, cleanouts, and other locations where pipes begin, pipe sizes change, or pipelines intersect are represented by junctions in the hydraulic model. Required inputs for junctions include rim elevation, invert elevation, diameter, and surcharge depth (used to represent pressurized systems). Nodes are also used to represent locations where flows are split or divided between two or more downstream links.
- **Pipes:** Gravity sewers and force mains are represented as pipes in the hydraulic model. Input parameters for pipes include length, friction factor (e.g., Manning's n for gravity mains, Hazen Williams C for force mains), invert elevations, diameter, shape, and whether or not the pipe is a force main.
- **Nodes (Basin):** For collection system modeling, basins are typically used to represent pump station wet wells (although other storage basins, etc., can be modeled as basin). Input parameters for basins include invert elevation, wet well depth, and wet well cross section or a depth-area relationship.
- **Pumps:** Pumps are included in the hydraulic model as links. Input parameters for pumps include pump curves and operational controls.
- **Nodes (Outfalls):** Outfalls represent areas where flow can leave the system. For sewer system modeling, an outfall typically represents an overflow point or the connection to the wastewater treatment plant.
- **Boundary Conditions (Rainfall):** Rain gauges are locations where rainfall is input to the hydraulic model for simulation of WWF. The rain can be historical, projected, or theoretical hourly rainfall events.

[1] Mike+ Collection System User Guide, DHI 2022.

- **Catchments:** Catchments represent areas of land whose topography and drainage characteristics direct flow to a single discharge point into the sewer system. Catchments can be used to define sanitary flows or to route a portion of the rainfall runoff into the system. Inflow conditions for the catchments are defined model inputs. Figure 1.15 outlines all the modeled catchments in the collection system model.
- **Inflows:** There are two primary flow sources that enter into the collection system, which are input through individual junctions (and storage nodes) in the model:
  - *Dry Weather. Dry weather inflows simulate base sanitary wastewater flows and represent the average flow. The DWF can be multiplied by up to four patterns that vary the flow by month, day, hour, and day of the week (e.g., weekday or weekend). The dry weather diurnal patterns are adjusted during the dry weather calibration process to match the known typical daily flow fluctuations. Two diurnal patterns were developed for each basin, respectively representing weekday and weekend days (see Section 1.4.2.1).*
  - *Rainfall derived infiltration and inflow (RDII). RDII are flows into the collection system originating from rainfall. Several models are available in Mike Urban to capture these effects. The models have a number of parameters that are adjusted during the wet weather calibration process to model the flows into the collection during different storm events.*

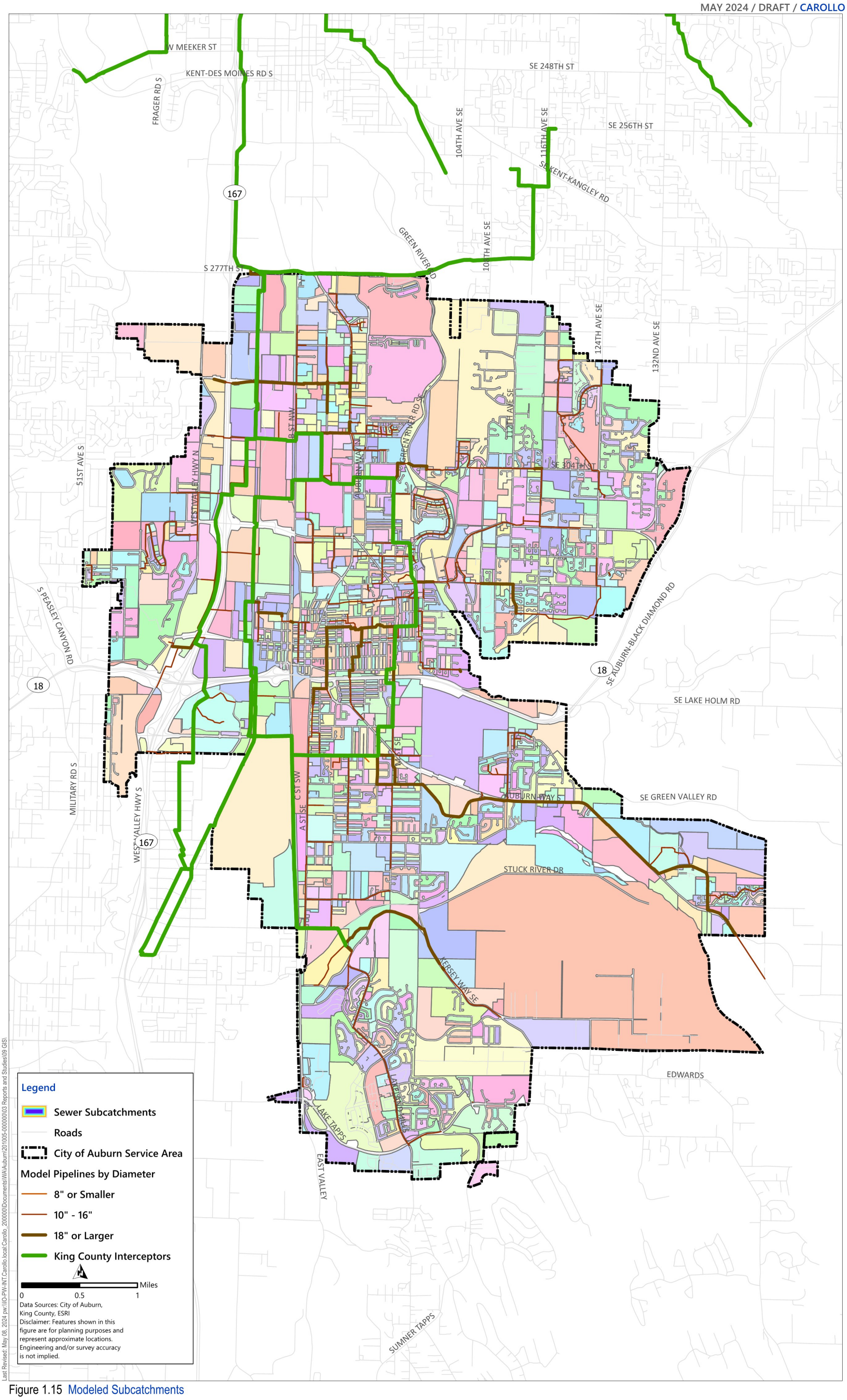


Figure 1.15 Modeled Subcatchments
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2024 COMPREHENSIVE SEWER PLAN

1.8 Hydraulic Model Calibration

Hydraulic model calibration is a crucial component of the hydraulic modeling effort. Calibrating the model to match data collected during the flow monitoring program ensures the most accurate results possible. The calibration process consists of calibrating to both dry and wet weather conditions.

For this project, both dry and wet weather calibration were conducted at the 22 metering sites presented and discussed in Section 1.4:

- DWF calibration ensures an accurate depiction of ADWF generated within the existing service area, and diurnal fluctuations.
- WWF calibration consists of calibrating the hydraulic model to a specific storm event or events to accurately simulate the peak flow and volume of I/I into the sewer system. The amount of I/I is essentially the difference between the WWF and DWF components.

1.8.1 Calibration Standards

The hydraulic model was calibrated in accordance with international modeling recommendations. The Urban Drainage Group (UDG), formerly known as Wastewater Planning Users Group, a section of the Chartered Institution of Water and Environmental Management (CIWEM), has established generally agreed upon principles for model verification. The dry weather and wet weather calibration focused on meeting the recommendations on model verification contained in the "Code of Practice for the Hydraulic Modeling of Urban Drainage Systems," published by the CIWEM UDG[2], as summarized below.

1.8.1.1 Dry Weather Calibration Standards

Dry weather calibration should be carried out for two dry weather days and the modeled flows and depths should be compared to the field-measured flows and depths. Both the modeled and field-measured flow hydrographs should closely follow each other in both shape and magnitude. In addition to the shape, the flow hydrographs should also meet the following criteria as a general guide:

- The timing of flow peaks and troughs should be within 1 hour.
- The peak flow rate should be within the range of ±10 percent.
- The volume of flow (or the average rate of flow) should be within the range of ±10 percent. If applicable, care should be taken to exclude periods of missing or inaccurate data.
- The unsurcharged depth should be within ±10 percent or ±4 inches, whichever is greater.

[2] UDG, Code of Practice for the Hydraulic Modelling of Urban Drainage Systems, 1st Edition CIWEM 2017 www.ciwem.org.

1.8.1.2 Wet Weather Calibration Standards

For each meter, three separate storms should be simulated with the model. For at least two storms out of the three events from the flow monitoring period, the model-simulated flows and depths should match the field-measured flows and depths within the accepted criteria. The modeled and field flow hydrographs for the calibration storms should closely follow each other in both shape and magnitude, until the flow has substantially returned to DWF rates.

In addition to the shape, the flow hydrographs should also meet the following criteria as a general guide:

- The timing of the peaks and troughs should be similar with regard to the duration of the events.
- The peak flow rates at significant peaks should be in the range of +25 percent to -15 percent and should be generally similar throughout.
- Modeled volume of flow should be within +20 percent to -10 percent of measured volume of flow.
- The depth of surcharge should be in the range of +20-inches to -4-inches.
- The difference between maximum unsurcharged depth should be within the range of ± 4-inches.

The UDG recommends that for wet weather calibration, the use of a single calibration period incorporating a number of rainfall events should be considered whenever possible. In other words, if the flow monitoring program captured several back to back storms, it may be preferable to use the back to back storms events as the calibration storms, as opposed to calibrating to two separate storms that have occurred weeks or months apart. Model calibration simulations should be run for a duration long enough that the RDII response is no longer apparent in the measured data.

1.8.2 DWF Calibration

1.8.2.1 Dry Weather Calibration Process

The DWF calibration process consists of several steps, as outlined below:

- The first step in the calibration process was to divide the City into flowmeter tributary areas. GIS analysis was used to create 22 tributary areas, one for each flowmeter from the flow monitoring program that was selected to be used for calibration. A map showing the locations of each flow monitoring site and their associated tributary area was provided in Section 1.4 and Section 1.6, along with a schematic of the flow meters.
- The next step was to define the flow volumes within each area, which was accomplished by applying the flow factors outlined in Table 1.7 to the catchments proportionally based on the distribution of land use types withing the catchment.

- The last step is to create diurnal patterns to match the temporal distribution of flow. A diurnal curve is a pattern of hourly multipliers that are applied to the base flow to simulate the variation in flow that occurs throughout the day. Two diurnal curves were developed for each flow monitoring tributary area, one representing weekday flow and one representing weekend flow. The diurnal patterns were initially developed based on the flow monitoring data and adjusted as part of the calibration process until the model-simulated flows closely matched the field-measured flows. Figure 1.16 shows the calibrated weekday and weekend diurnal patterns for the area tributary to Meter AUB A1. Similar diurnal curves were developed for each of the meters and its tributary area. These additional curves are available in Attachment 1E.

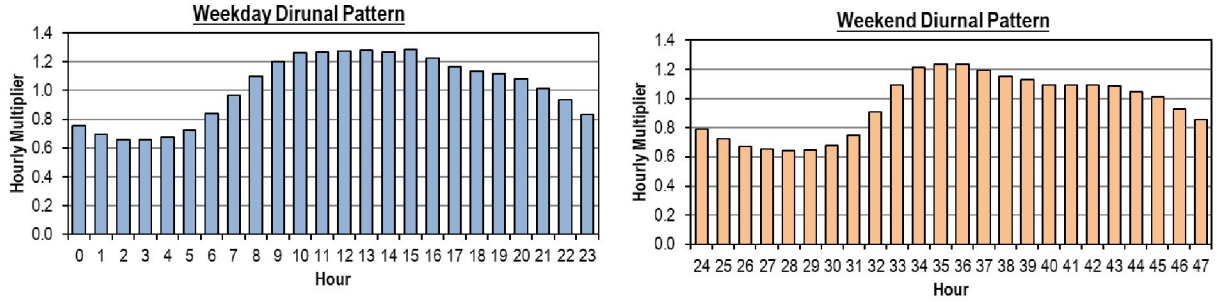


Figure 1.16 Example Diurnal Pattern

1.8.2.2 Dry Weather Calibration Discussion

Table 1.8 provides a summary of the DWF calibration using the average and daily peak flow results for both weekday and weekend conditions. As shown on Table 1.8, the model-simulated average for all sites are within 10 percent. The peak flows for both weekday and weekend DWF were all within 10 percent, except for meters A3, A7, Y-2, and MSTTR02A. Those four meters showed variability between weekday and weekend volume, but still match for the average day DWF.

Attachment 1E contains a detailed DWF calibration summary sheet for each of the 22 metering sites. Each calibration sheet provides plots that compare the model-simulated and field-measured flow data for both weekday and weekend conditions. An example of the dry weather calibration for Meter AUB A1 is shown on Figure 1.17.

There is good overall correlation of the field-measured data to the model output results. A total of 18 of 22 meters meet criteria for both level and velocity, indicating a well calibrated model for DWFs. Manning's n values were adjusted by flow monitoring basin so that modeled levels would better match the measured data. However, even after these changes some levels could not be matched. The Mike 1D engine simulates flow well under these conditions, but level and velocity are less accurate with the Saint-Venant equations meant for free flow conditions.

To account for this, the modeled manhole head losses were adjusted for steep pipes throughout the collection system. For pipes with slopes greater than 0.01 or 1 percent, the head loss was defined as weighted inlet energy with a smaller effective area instead of the default Mouse Classic Engelund. This change ignores inlet expansion losses and assumes the energy level in the manhole equals the inlet pipe. Thus, the manhole level is reduced to better match the field measured data for steep slopes. These

changes moved the levels closer to being in criteria, but the level changes were not significant enough that all these sites could not be moved into calibration criteria.

All 4 meters outside of criteria had higher modeled levels than measured level. Meter A6, A7, Y-2, are all meters located on steep pipe slopes where a hydraulic jump is occurring. These sites are also at points where the pipe size is transitioning. The monitoring at Site A6 was done at a manhole that transitions from a 12-inch to a 30-inch, site A7 was done at a manhole that transitions from an 18-inch to a 36-inch, and Y-2 is where 14-inch transitions to a 24-inch. The modeled levels are exported at the downstream end of the pipe in the monitoring manhole where the hydraulic grade line (HGL) is governed by larger diameter downstream pipe, leading to higher levels than measured. These three sites remained out of criteria for WWF as well.

Site AUBRN53 was also slightly out of criteria but moved into criteria during WWF's so this was deemed less of a concern.

Table 1.8 DWF Calibration Results

Flow Meter ID	Weekday Average Flow Percent Error	Weekday Peak Flow Percent Error	Weekday Max Level Difference (inches)	Weekend Average Flow Percent Error	Weekend Peak Flow Percent Error	Weekday Max Level Difference (inches)	ADWF Percent Error
A1	-3.3%	-4.1%	1.62	2.9%	8.2%	1.55	-1.6%
A1c	4.5%	1.4%	2.50	1.6%	-2.1%	2.69	3.7%
A1d	-5.4%	-5.7%	0.93	-4.7%	-5.2%	0.93	-5.2%
A3	-4.9%	-7.5%	1.56	34.3%	30.9%	1.22	3.7%
A4	-5.4%	-5.6%	0.26	-4.3%	-4.5%	0.29	-5.1%
A6	-3.8%	3.9%	6.67	-7.9%	-0.5%	6.68	-5.0%
A7	-8.7%	-9.6%	11.39	29.0%	28.3%	11.99	-0.4%
A9	-1.8%	-3.2%	0.61	-1.9%	-4.8%	0.71	-1.8%
A10	-1.9%	-9.5%	1.44	-2.0%	-9.7%	1.75	-1.9%
A11	5.9%	4.7%	0.65	4.9%	0.7%	0.78	5.6%
A12	7.2%	2.8%	0.61	-5.7%	-7.6%	0.60	3.2%
A13	-1.1%	-4.0%	0.37	-0.1%	-1.5%	0.30	-0.8%
A14	-6.0%	-3.1%	1.59	-7.4%	-2.0%	1.66	-6.4%
A15	2.0%	1.6%	0.97	-2.4%	-3.1%	1.08	0.7%
A16	-2.0%	-2.7%	1.43	-3.2%	-4.6%	1.45	-2.4%
Y-1	1.6%	0.8%	0.94	-3.0%	-4.0%	1.08	0.2%
Y-2	1.9%	14.1%	5.30	0.1%	15.9%	5.68	1.4%
Y-3	-2.1%	-2.5%	2.83	-1.6%	-4.1%	2.83	-2.0%
Y-4	8.2%	2.7%	3.99	11.1%	1.1%	3.77	9.0%
WINT003	3.6%	-5.3%	3.87	2.9%	-5.1%	3.74	3.4%
MSTTR02A	11.0%	7.5%	2.28	6.3%	6.4%	2.28	9.6%
AUBRN53	6.1%	4.4%	4.29	6.0%	2.9%	4.71	6.0%

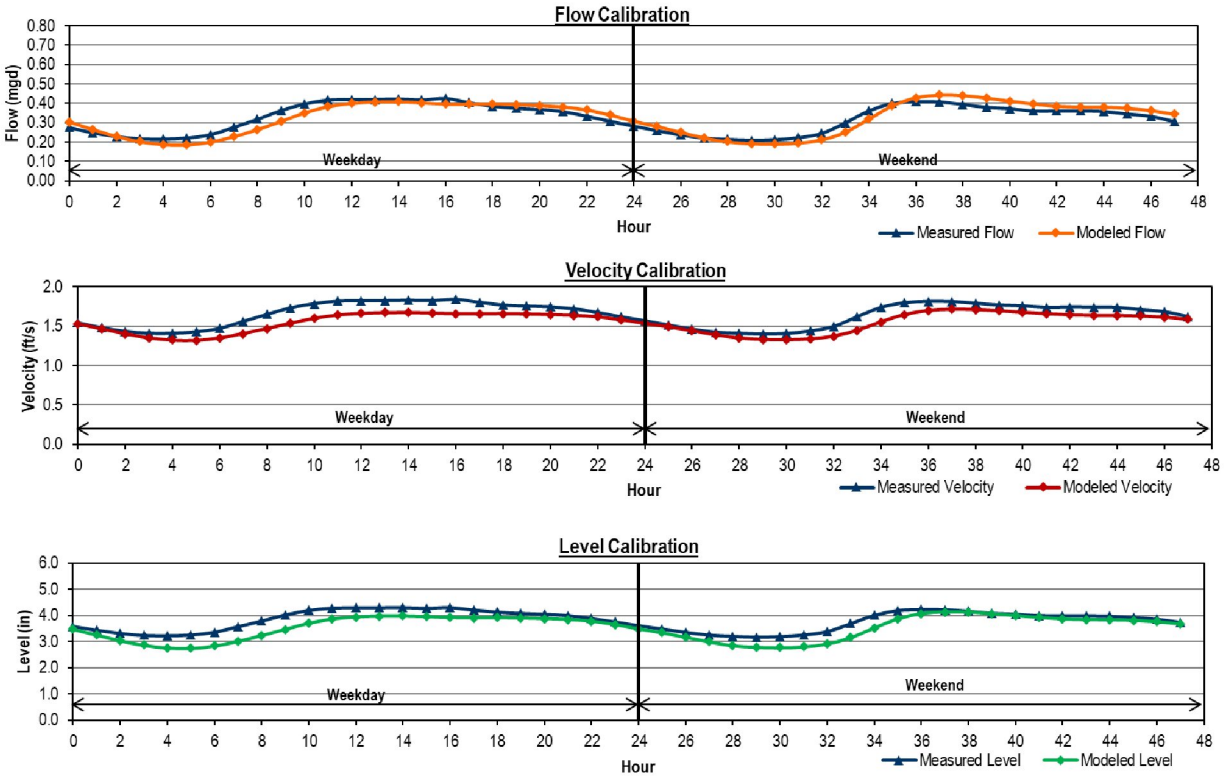


Figure 1.17 Example DWF Calibration (Meter AUB A1)

1.8.3 Wet Weather Flow Calibration

1.8.3.1 Wet Weather Flow Calibration Process

The WWF calibration enables the hydraulic model to accurately simulate RDII entering the collection system during storms. The WWF calibration process consists of running model simulations of historic rainfall events based on data collected as part of a system flow monitoring program. The goal of any WWF monitoring program is to capture and characterize a system's response to a significant rainfall event, preferably during wet antecedent moisture conditions. As outlined below, the WWF calibration process consists of several elements:

- **Identify calibration rainfall events.** The selection of a particular calibration storm or group of storms is based on a review of the flow and rainfall data. There is a good range of different event types available for the different meters. Major rainfall events that were used as calibration rainfall events were identified as part of Section 1.4.2.2. Table 1.3 summarizes the four storms picked for calibration for each of the 2 sites. The use of a single calibration period incorporating a number of rainfall events was considered whenever possible. All meters except for WINT003, MSTR002A, and AUBRN53 used the first three storms, those three used the 4th event due to meter availability. Figure 1.9 illustrated the storms used in the model calibration process.

- **Define RDII tributary areas.** For the WWF calibration, RDII flows are added on top of the DWF. The model calculates two types of response: a slow response corresponding mainly to infiltration, or slow response curve (SRC), and a fast response corresponding mainly to direct inflow, or fast response curve (FRC). Imperviousness is the fraction of the catchment area that is impervious and connected to the collections system, generating the FRC runoff, and rainfall derived infiltration (RDI) Area, which is the fraction of the total catchment area that contributes to the SRC. The imperviousness and RDI runoff component are two major model-specific data in the model calculation of WWFs, and each have a number of subparameter components that are adjusted to tune to response timing. These area values were initially set based on engineering judgment, as well as the previously used values, and then adjusted until the model-simulated wet weather flow volume roughly matched the field-measured flows.
- **Create I/I parameter database and modify to match field-measured flows.** The main step in the WWF calibration process involves adjusting both Model A and RDI parameters for each flow monitoring tributary area. Figure 1.18 provides a schematic of the RDI model used. Attachment 1F summarizes all calibrated parameters by flow monitoring site, for current conditions. As with the dry weather calibration, the wet weather calibration process compared the meter data with the model output. Comparisons were made for average and peak flows as well as the temporal distribution of flow until flows returned to their baseline levels. According to the CIWEM UDG, a hydraulic model is generally considered calibrated to WWF conditions if the modeled peak flows are within +25 percent to -15 percent of the field-measured data, and if the average modeled volumes are within +20 percent to -10 percent of the field-measured data. Calibration was performed for the depth of flow as well, this is considered calibrated when peak depths are with ± 4-inches when unsurcharged, and +20-inches to -4 inches when surcharged.
- **Adjust model variables to match field-measured velocity and flow depths.** Once the model-simulated flows matched the field-measured flows within the acceptable limits, the model-simulated velocity and flow depth were compared to the field-measured velocity and flow depth. Adjustments were made to various model parameters until the modeled and measured velocity and depth closely matched one another. The primary varied parameters for this process are node head losses and pipeline roughness (Manning's n), although other parameters can also be adjusted as calibration results are generated. Sediment buildup and movement in the pipe will also influence the level and depth, but these are very difficult to quantify and can change frequently, therefore they are not included in the calibration.

  Manning's roughness coefficients, or n values, have industry accepted ranges based on a number of variables. Roughness coefficients increase over time depending on the construction methods, installation quality, system maintenance, and other environmental factors. There can be certain factors within the City's collection system that can result in roughness coefficients that differ from the typical range. These could include joint misalignment, cracks, and debris (e.g., root intrusion, etc.) that lead to increased turbulence in a pipe and an increase in the apparent Manning's n factor.

  If the model is unable to reasonably match the field-measured flow depth and velocity within the acceptable range of Manning's roughness coefficients, further investigation should be conducted to help determine the cause of the discrepancy. Some issues that could cause such a discrepancy can include errors in the slope or diameter of a pipeline, downstream blockages, pipeline sags, and, in some cases, influences from downstream pump station operations.

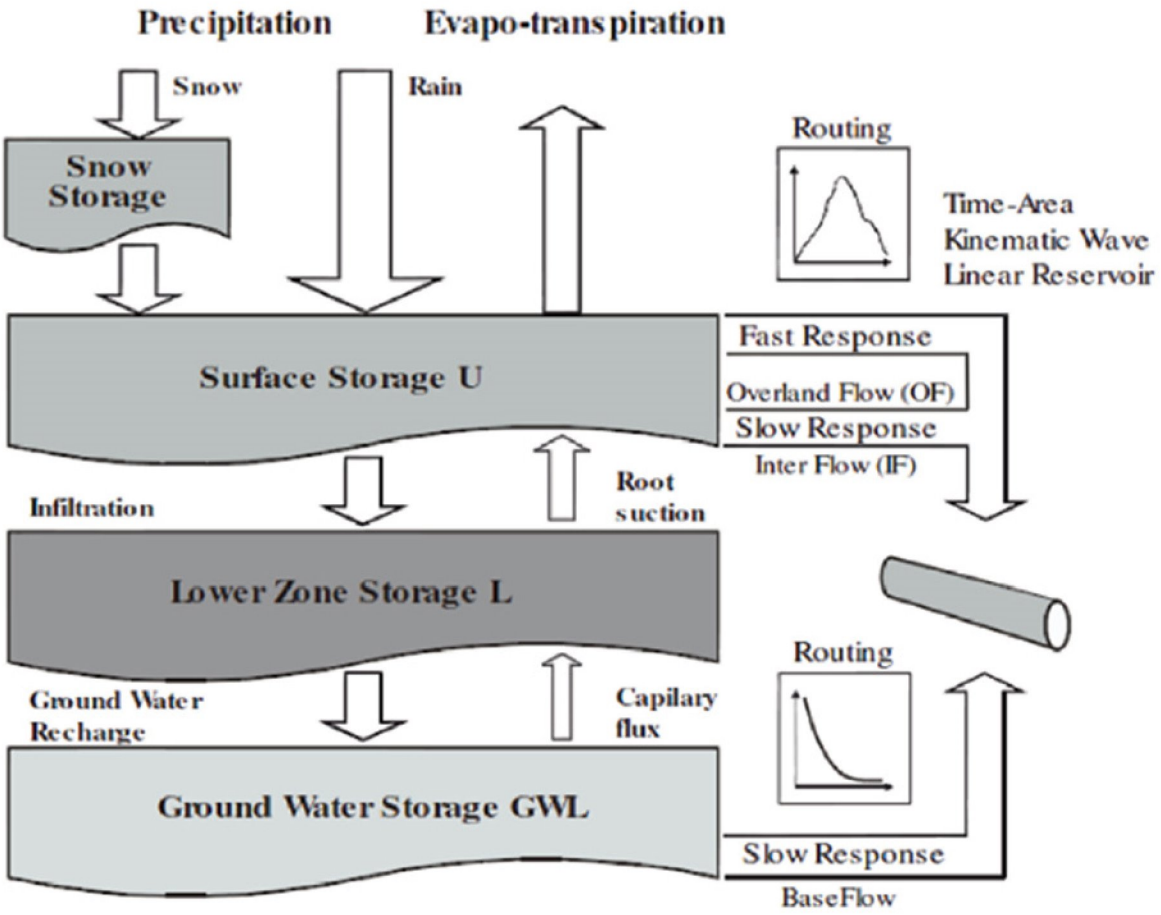


Figure 1.18 RDI Model Schematic

1.8.3.2 Wet Weather Calibration Results

Attachment 1G contains a detailed WWF calibration summary sheet for each of the 22-meter sites. The modeled outputs at each flow meter were compared to the data from three storms recorded during the flow monitoring period for calibration. Each calibration sheet provides plots that compare the model-simulated and field-measured flow, velocity, and level data for the calibration storms. An example of the wet weather calibration for Meter AUB 1A is shown on Figure 1.19.

Table 1.9 provides a summary of the WWF calibration using the total volume and peak flow results. Of the 22 meters, 21 had two or more storm event responses within calibration standards for volume and peak flows. Meter A12 was the only site outside of criteria for volume, peak still matched, and this was due to abnormal DWF data during the WWF calibration period. As shown on Table 1.9, the model-simulated average and peak flows at all other meter sites were within the acceptable tolerances for the calibration storms, and therefore the model was considered calibrated and ready to use for capacity analysis purposes.

As discussed in Section 1.8.1, it is critical that the hydraulic model is not only calibration to volume and peak flow, but also level data. This will ensure accuracy and trust in modeled results when evaluating capacity deficiencies; which are based on a HGL criteria in the collection system.

Modeled data at almost all meters closely matched the recorded level information, of the 22 meters with level data, 18 met the level calibration standard. Meters A6, A7, and Y-2 did not meet the level criteria during DWF either and are discussed in Section 1.8.2. Meter Y-1 fell out of level criteria for WWF. The measured data indicated backwatering and surcharging effects during the latter two storm events, and this surcharging was not replicated in the model. This meter is located right upstream of the Green River Siphon, indicating potential sediment buildup constricting flows in the field, and not replicated in the model.

1.8.3.3 Hydraulic Model Calibration Summary

Calibration of the City's hydraulic model was a multi-step process that involved comparing model-simulated flow to the actual field-measured data for both dry and wet weather conditions. The model met all flow CIWEM standards for ADWF and most standards for level. Results showed the model met CIWEM standards for calculation of flows during peak wet weather flow. The CIWEM level standards were met at 18 of the 22 sites used for model calibration. For the meters outside of level criteria, 3 of the 4 meters were over predicting levels, offering a conservative approach for system analysis. These calibration results provide a high level of confidence in the model's accuracy such that the model can be considered calibrated and ready to use for subsequent capacity analysis.



Figure 1.19 Example WWF Calibration

Table 1.9 WWF Calibration Results

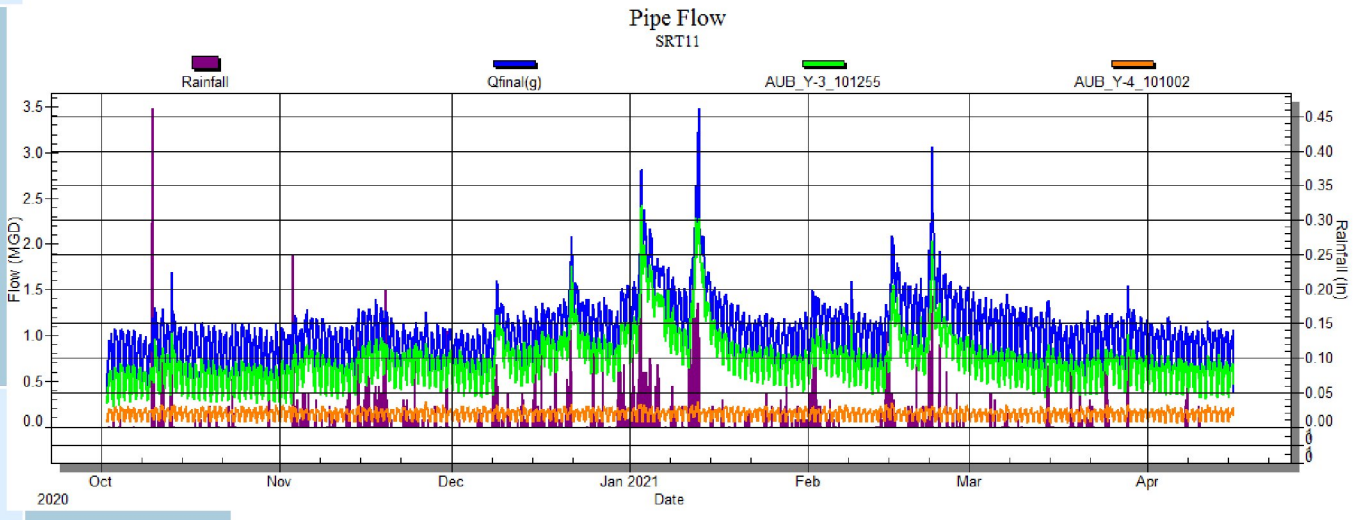
Flow Meter ID	Storm 1 Total Volume Percent Err	Storm 1 Peak Flow Percent Error	Storm 1 Max Level Difference (inches)	Storm 2 Total Volume Percent Error	Storm 2 Peak Flow Percent Error	Storm 2 Max Level Difference (inches)	Storm 3 Total Volume Percent Error	Storm 3 Peak Flow Percent Error	Storm 3 Max Level Difference (inches)
A1	-7.0%	2.2%	1.2	-4.5%	-4.4%	0.9	-13.6%	-10.0%	1.1
A1c	-4.2%	0.8%	2.2	-2.8%	-24.6%	2.7	-7.5%	-10.7%	2.1
A1d	26.4%	7.3%	-0.8	-7.4%	-10.4%	-0.9	-0.8%	9.8%	-1.2
A3	-12.2%	2.9%	0.0	-2.5%	-11.5%	0.1	-6.5%	-5.7%	0.0
A4	1.2%	-3.7%	0.3	-9.0%	-10.6%	0.6	-9.2%	-20.8%	1.2
A6	8.3%	0.3%	-8.5	25.4%	5.0%	-8.4	-1.1%	3.1%	-8.0
A7	10.8%	-10.1%	-16.6	9.2%	-14.9%	-14.7	8.9%	-13.7%	-14.0
A9	-5.3%	-6.9%	-1.7	0.3%	-13.9%	0.7	2.7%	-11.6%	0.7
A10	10.8%	-9.4%	1.9	10.0%	-22.0%	2.2	-0.3%	-10.3%	1.7
A11	2.2%	1.8%	-1.8	7.3%	-2.1%	-0.5	9.3%	-4.2%	-0.2
A12	23.3%	-4.2%	0.7	-22.1%	-46.7%	-0.1	20.3%	-20.7%	0.0
A13	-34.8%	-43.7%	-0.6	15.5%	-7.2%	-0.6	15.3%	3.9%	-0.4
A14	-1.7%	-22.0%	1.3	-2.8%	-0.3%	1.5	-8.4%	-14.7%	1.1
A15	-12.7%	-15.7%	1.5	-2.4%	-13.3%	1.2	-6.9%	-6.0%	1.2
A16	-5.7%	-4.4%	-1.6	-1.5%	-23.4%	-1.4	-1.6%	-14.2%	-1.5
Y-1	-3.2%	-5.1%	-1.0	-11.6%	8.2%	11.2	-9.4%	2.6%	15.1
Y-2	18.8%	29.2%	-7.0	-5.1%	-13.8%	-5.9	-6.4%	15.7%	-7.6
Y-3	29.9%	96.9%	-1.0	-8.1%	-4.2%	0.5	-7.7%	14.7%	-0.1
Y-4	2.5%	-4.9%	-0.9	3.8%	-2.9%	0.0	2.0%	-10.2%	1.0
WINT003	4.4%	11.9%	-4.2	7.7%	14.7%	-5.1	10.9%	-4.1%	-3.9
MSTTR02A	-8.9%	11.4%	0.6	0.1%	14.2%	0.9	-11.0%	4.8%	2.2
AUBRN53	-8.8%	0.9%	-3.0	-7.2%	-11.5%	-3.3	-11.9%	-18.8%	-1.2

ATTACHMENT 1A

AUBURN WA 2020-21 DRAFT I/I REPORT V1

RDII Analysis
Auburn, Washington

Draft - 8 June 2021



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1.0 – Overview

ADS Environmental Services (ADS) was retained by the City of Auburn to conduct a Rainfall Dependent Infiltration Inflow (RDII) analysis of its sanitary sewer system. The scope of the study was to characterize dry weather and wet weather flow conditions at twenty-four (24) temporary flow metering locations and six (6) King County permanent flow meters. One temporary rain gauge and two King County rain gauges were used for rain data.

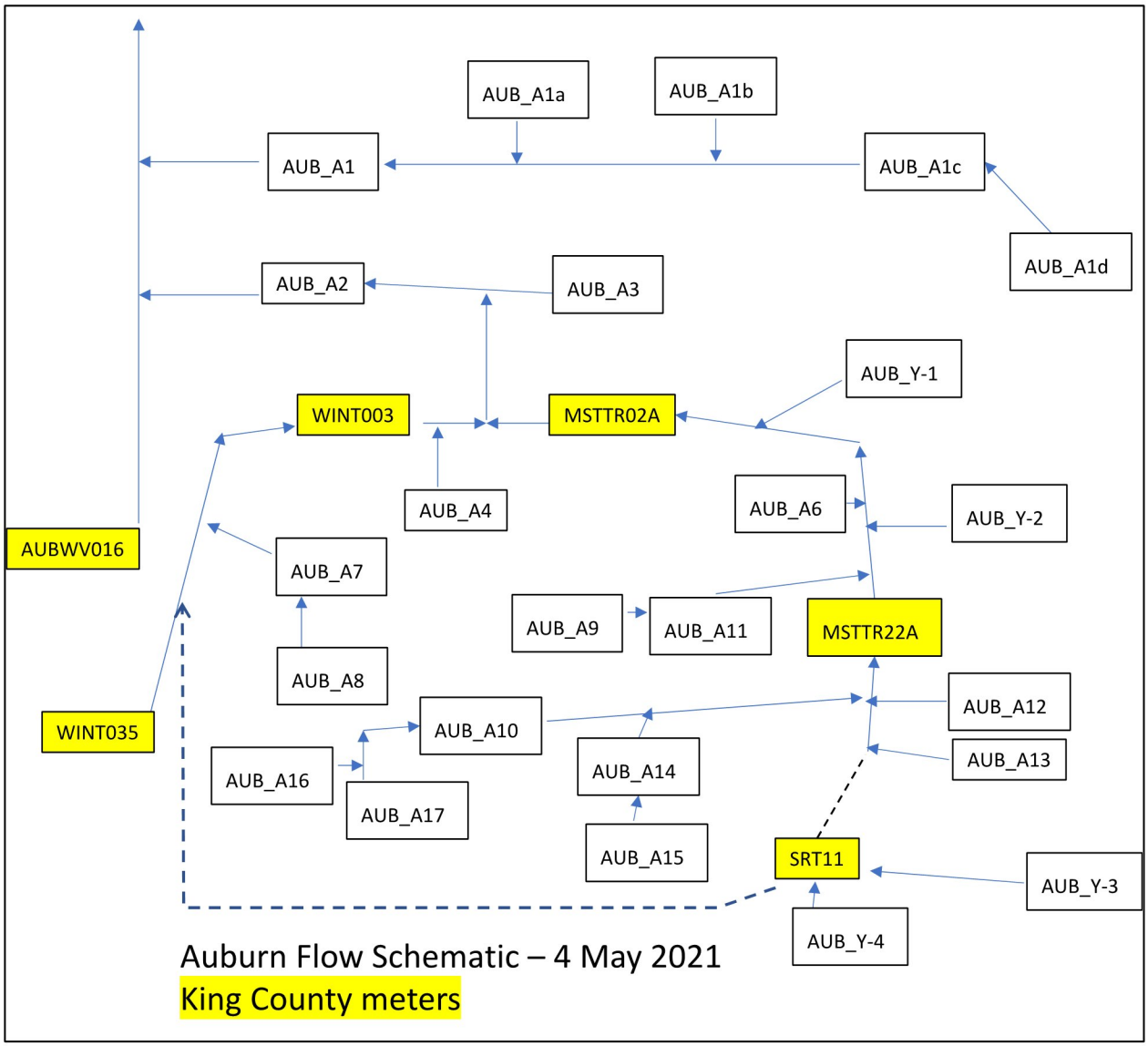
The metering period was from 2 October 2020 through 15 April 2021. This metering period is characterized as a generally dry October following by a rainy winter. A total of 13 storms were analyzed. Two storms on 2 January and 11 January exceeded 3 inches of rainfall, but only one sewer surcharged (Y-1) and the rest of the sewers barely reached half full. It appears that snow melt affected the 14 February storm. Section 2.3 discusses the rainfall in more detail.

When the two sets of flow data were first integrated, there was large flow imbalance between the most downstream Auburn meter (A2) and the four upstream meters, two of which were King County meters. ADS discovered nearly a half-inch difference in the pipe size and King County found a depth sensor offset of over one inch at meter MSTTR02A. After both corrections were made, a small positive balance exists, but it is suspected that the King County meter WINT003 is still reading a bit high.

RDII volumes are normalized two ways in this report; Capture Coefficient (Percent rainfall entering sewers) and Gallons per LF of sewer per inch of rainfall. In a third method basins are ranked by RDII volume expected from a 2.4 -inch storm applied to the Q vs. i relationship generated at each sewershed. Historic King County DDF (Depth Duration Frequency) data indicate that a 5-year, 24-hour storm is 2.4 inches.

Figure 1 is a schematic layout of the metering network including the six King County meters. A diversion exists at SRT11 that conveys all flows to the west and it is believed that all the flow occurring during this metering period followed that path.

FIGURE 1. Meter Schematic for Seventeen Meters.



2.0 – Steps of a Wet Weather RDII Analysis

The following sections address the steps followed to conduct the dry-day and the RDII analyses. These steps include determining the basin size and performing a quality check on the wastewater produced by each basin. Rainfall data are examined and RDII is calculated.

2.1 - Basin Size

The size of each basin in Acres and length (LF) of public sewer was determined using the City's GIS information and the sizes are listed in Table 1. Appendix A is a map showing the basin boundaries used to determine basin sizes. There are two reasons to keep track of basin size. The first use is to 'normalize' the flow measurements by basin size to produce an apples-to-apples comparison of RDII severity. Secondly, the basin size has value in interpreting RDII severity. Large basins will exhibit RDII severity close to the system wide average and small basins will exhibit RDII severity much higher and much lower than the system average. If there are upstream meters, the basin size is the area between the meters, also called the Net basin size.

GIS information was not complete for the King County basins of AUBWV016 and WINT035 and those basin sizes are estimates.

Table 1 Basin Sizes in Linear Feet and Acres

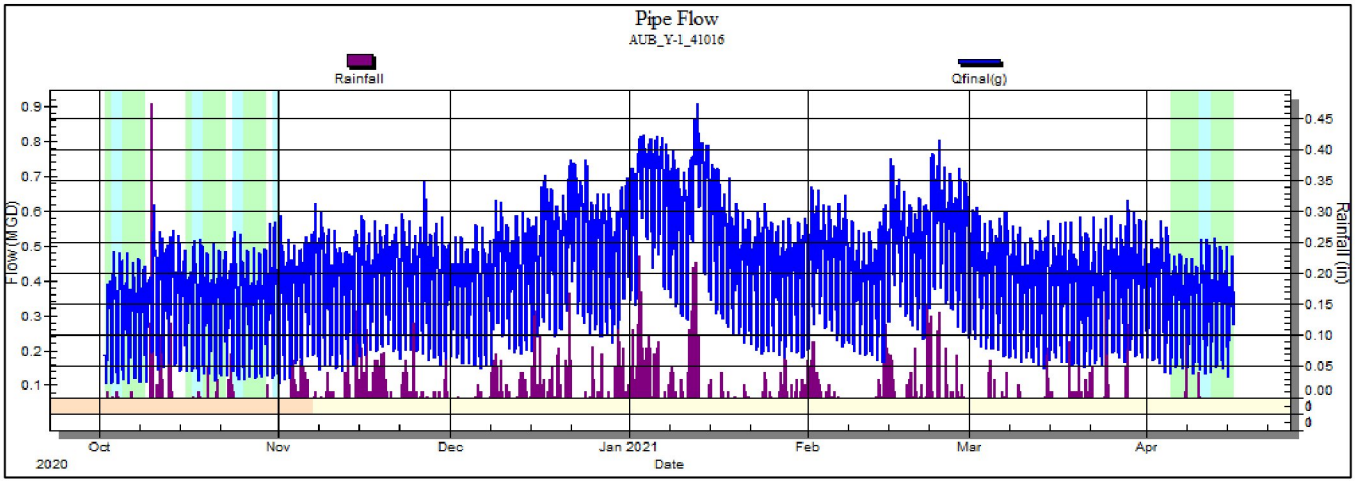
Basin	Area lac)	Length (LF)
AUB_A1_30820	107	6,711
AUB_A10_710151	87	14,315
AUB_A11_710142	28	3,924
AUB_A12_71043	27	5,241
AUB_A13_71085	85	14,999
AUB_A14_710149	84	14,306
AUB_A15_80930	108	19,043
AUB_A16_80956	365	53,970
AUB_A17_80957	68	7,168
AUB_A1a_30822	50	5,248
AUB_A1b_30968	63	4,217
AUB_A1c_30906	174	17,330
AUB_A1d_30910	70	9,130
AUB_A2_40805K	247	22,232
AUB_A3_40834	110	14,345
AUB_A4_50817	152	13,085
AUB_A6_61009K	114	18,987
AUB_A7_70807	94	12,359
AUB_A8_70829	60	11,910
AUB_A9_71031	95	10,851
AUB_Y-1_41016	270	26,267
AUB_Y-2_61102	1,925	205,886
AUB_Y-3_101255	631	84,525
AUB_Y-4_101002	312	33,677
AUBWV016	539	69,999
MSTTR02A	401	51,714
MSTTR22A	223	38,240
SRT11	218	16,918
WINT003	145	22,140
WINT035	1,846	239,999

2.2 – Average Dry Day Flow (ADDF)

A first step in conducting an RDII analysis is to determine Average Dry Day Flow (ADDF) at each metering location and this information is used in two ways. The first is that the ADDF is subtracted from the flow measured during a storm and the difference is RDII. The second is that the shape of the ADDF hydrograph is used to estimate what portion of the ADDF is wastewater production (WWP) and what portion is base infiltration (BI).

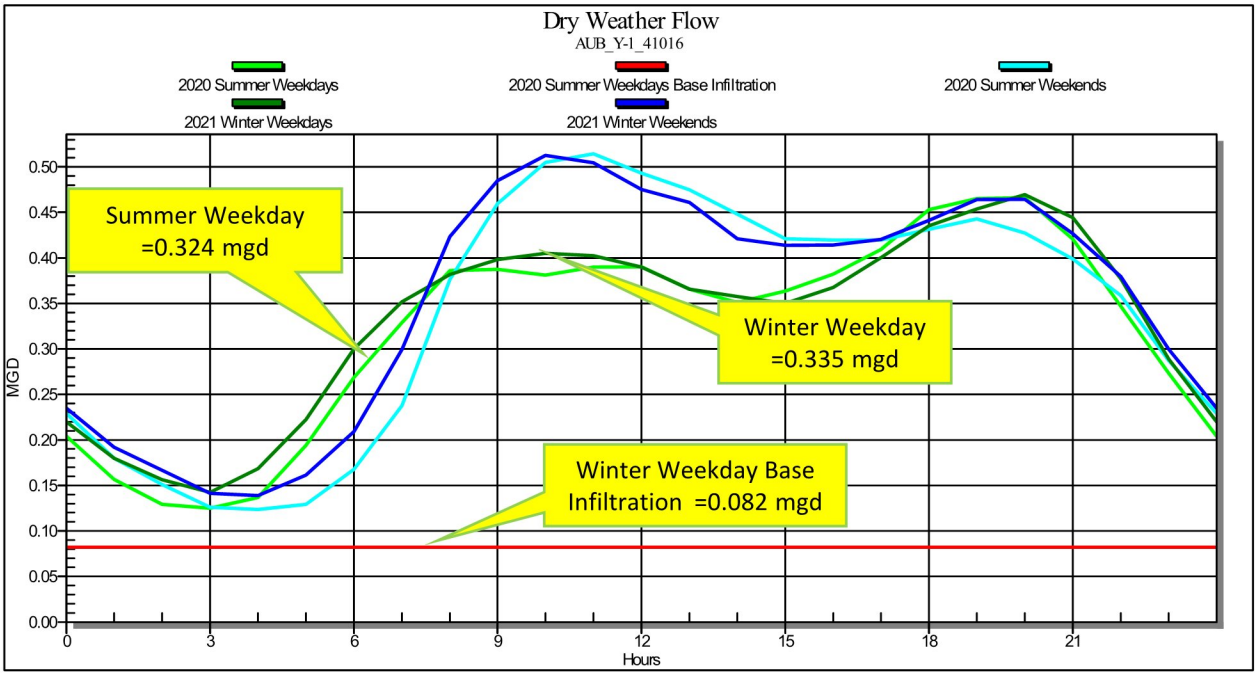
Early in the analysis of RDII data it was observed that there were two distinctly different rain-to-RDII relationships; a Summer season ending 6 November and Winter which is the rest of the metering period. This distinction is common and is a function of vegetation; either actively growing or dormant. Figure 2 shows the hydrograph for the AUB_Y-1 meters with selected dry days shown by the vertical shaded green (weekday) and blue (weekend) bars. Summer days are in October and winter days are in April.

Figure 2 Selected Dry Days are shaded in green (weekday) and blue (weekend).



For each meter the ADDF is decomposed into the two components of wastewater production (WWP) and base infiltration (BI) as shown in Figure 3. In this case the summer weekday value is 0.324 mgd (324,000 gallons per day) and winter weekday is 0.335 mgd. The estimated base infiltration (BI) is based on the shape of the weekday ADDF hydrograph and is shown as the red horizontal line at 0.082 mgd. The percent of base infiltration at this site is 0.082 mgd/0.324 mgd or 25% base infiltration.

Figure 3 Average Dry Day Diurnal Curves for Weekdays and Weekends



Calculating Base Infiltration

Base Infiltration (BI) is a component of I/I that is related to ground water and that could include leaking water lines, leaking plumbing fixtures and springs. It may be a seasonal phenomenon as rainfall affects ground water levels, but generally remains relatively steady over weeks and months. The most rigorous method for determining the quantity of base infiltration originating in a basin is to determine the quantity of potable water flowing into each building within the basin and subtract it from the measured sewer flow coming out of the basin. This is an expensive and sometimes difficult exercise and usually is not done for a short-term flow metering study.

For this analysis an empirical method for estimating base infiltration was used. The method is borrowed from the potable water industry, which has estimated that the rate of residential water usage during the overnight hours is approximately 12% of the daily average use. This empirical method provides an estimate of the average wastewater production (WWP) in a Basin based on the average flow ($Q_{avg\text{-}D}$) and minimum flow ($Q_{min\text{-}D}$) of the average dry day hydrograph.

Subtracting WWP from $Q_{avg\text{-}D}$ provides an estimate of base infiltration (BI). The equations to estimate WWP and BI are listed in Equations BI 1 and BI 2.

Equation BI 1

$$WWP = \frac{(Q_{avg-D} - \mathrm{Q_{min-D}})}{X}$$

Where; X = .88 (from potable water use records)

Equation BI 2

$$Q_{BI} = Q_{avg-D} - WWP$$

In concept, this method generates an estimate of WWP based on the difference between average flow and minimum flow. As base infiltration varies over the year the difference between average and minimum flow (and WWP) is expected to remain constant. This method of estimating is reliable for residential neighborhoods with sewer basin sizes on the order of 20,000 LF.

A refinement to this empirical method, the Stevens/Schutzbach equation, uses a curve fitting technique to increase the reliability of the BI estimation at meters with higher flows. As sewer sheds become larger with longer travel times, the normal dry day hydrograph flattens, which in turn affect the minimum to average relationships. Equation BI 3 is the Stevens/Schutzbach equation that was used to estimate base infiltration in all Basins. $Q_{avg\text{-}D}$ is the average flow and MDF is the minimum flow of the dry day hydrograph.

Equation BI 3

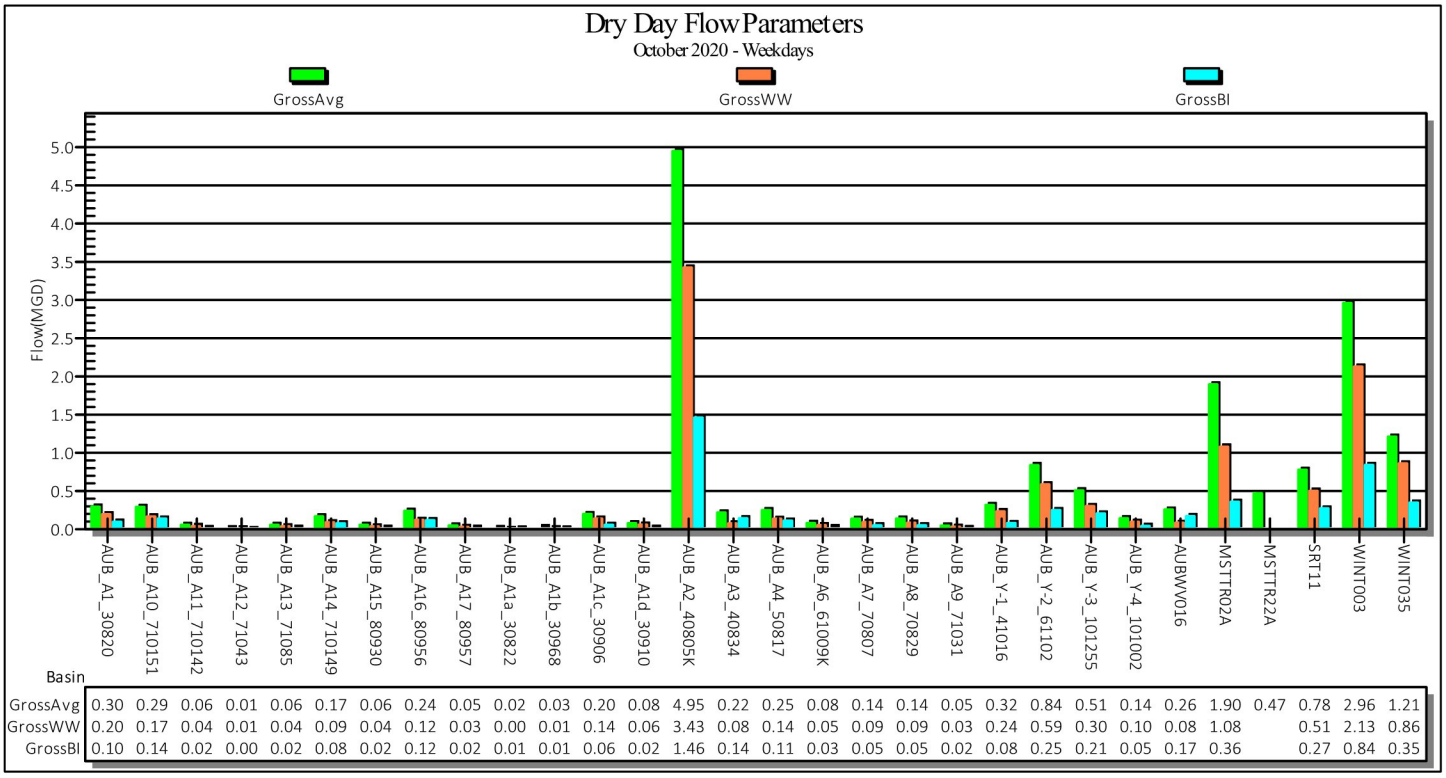
Stevens/Schutzbach Equation

$$\mathrm{Q_{BI}} = \frac{0.4 * \mathrm{Q_{min-D}}}{1 - 0.60(\frac{\mathrm{Q_{min-D}}}{\mathrm{Q_{avg-D}}})^{\mathrm{Q_{avg-D}}^{0.70}}}$$

Equation BI 3 is also dependent on average and minimum flows that occur in traditional residential flow patterns. Reliability decreases in non-residential basins and in basins where the flow meter measures flow from cycling pump stations. Although there are several limitations, this method is considered the best for estimating BI in residential areas using only flow data. In commercial or industrial areas this method can produce unreliable results.

Figure 4 is a graph of the gross average dry day flow (ADDF), the wastewater production and base infiltration at each meter. The term, "gross," refers to the meter measurement prior to any upstream meter subtraction.

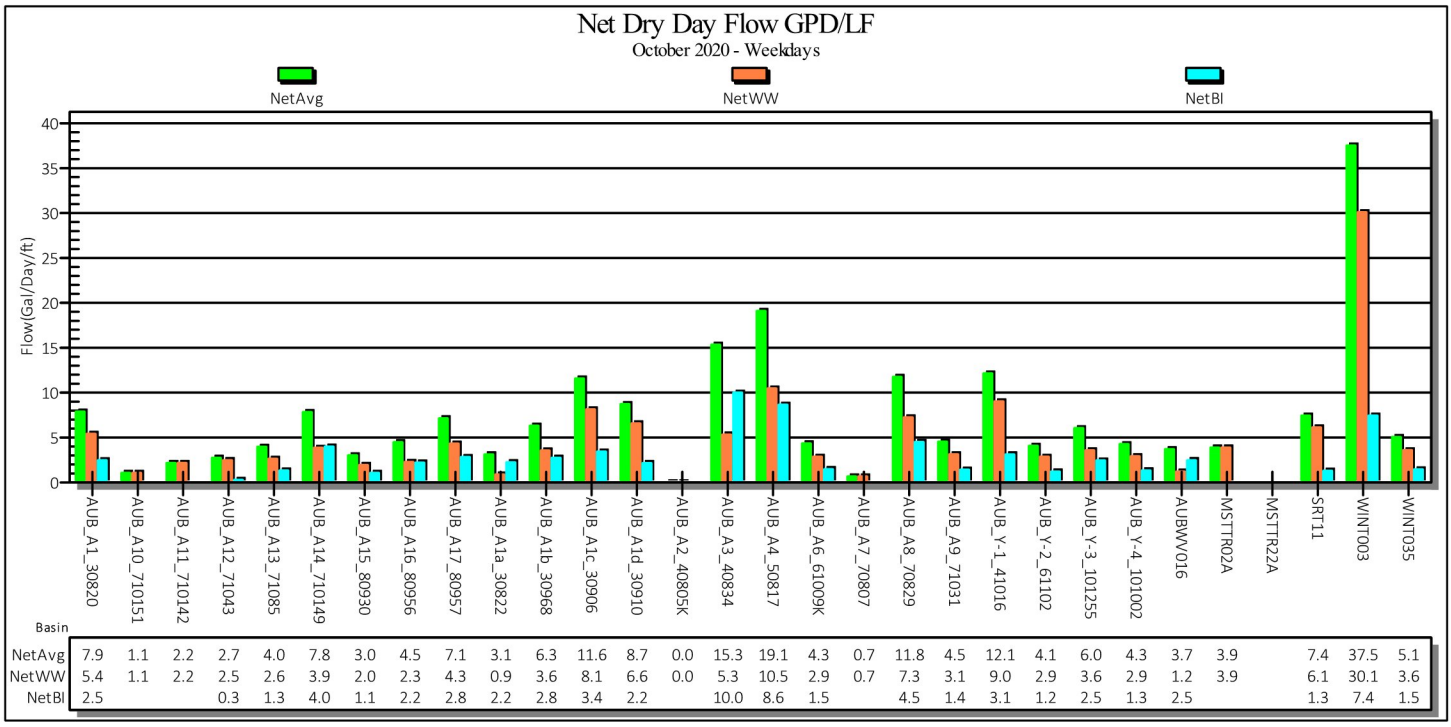
Figure 4 ADDF Wastewater Production and Base Infiltration



Basin	AUB_A1_30820	AUB_A10_710151	AUB_A11_710142	AUB_A12_71043	AUB_A13_71085	AUB_A14_710149	AUB_A15_80930	AUB_A16_80956	AUB_A17_80957	AUB_A1a_30822	AUB_A1b_30968	AUB_A1c_30906	AUB_A1d_30910	AUB_A2_40805K	AUB_A3_40834	AUB_A4_50817	AUB_A6_61009K	AUB_A7_70807	AUB_A8_70829	AUB_A9_71031	AUB_Y-1_41016	AUB_Y-2_61102	AUB_Y-3_101255	AUB_Y-4_101002	AUBWV016	MSTTR02A	MSTTR22A	SRT11	WINT003	WINT035
GrossAvg	0.30	0.29	0.06	0.01	0.06	0.17	0.06	0.24	0.05	0.02	0.03	0.20	0.08	4.95	0.22	0.25	0.08	0.14	0.14	0.05	0.32	0.84	0.51	0.14	0.26	1.90	0.47	0.78	2.96	1.21
GrossWW	0.20	0.17	0.04	0.01	0.04	0.09	0.04	0.12	0.03	0.00	0.01	0.14	0.06	3.43	0.08	0.14	0.05	0.09	0.09	0.03	0.24	0.59	0.30	0.10	0.08	1.08		0.51	2.13	0.86
GrossBI	0.10	0.14	0.02	0.00	0.02	0.08	0.02	0.12	0.02	0.01	0.01	0.06	0.02	1.46	0.14	0.11	0.03	0.05	0.05	0.02	0.08	0.25	0.21	0.05	0.17	0.36		0.27	0.84	0.35

The Net ADDF, Net WWP, and Net BI are normalized by the length of sewer in each basin to obtain an apples-to-apples comparison expressed in GPD/LF of public sewer as shown in Figure 5. The WWP values are a function of land use with WWP in medium-density residential sewer sheds typically being in the range of 2 - 5 gpd/LF. Low density residential areas can produce less than 2 gpd/LF and high density residential (apartments) and business districts can be 5 to 10 gpd/LF range. Basins that have wastewater productions that appear to be outliers are AUB_A2 (imbalance), MSTTR22A and WINT035.

Figure 5 Net ADDF, Wastewater Production and Base Infiltration values in GPD/LF.



2.3 - Rainfall Analysis

This rainfall analysis looks at the total rainfall recorded by each rain gauge for each storm and looks at the maximum return frequency for each rain gauge and each storm. There were thirteen storms that were analyzed. Selecting a storm in King County during the winter is subjective because of the frequent but small amounts of rainfall. Selecting a storm is a balance between seeing a significant flow response to rain followed by a return to normal before the following rain. Table 2 lists the measured rainfall for each of the three rain gauges and thirteen storms. The right side of this table displays the maximum return frequency corresponding duration for each storm. Yellow shaded storms exceeded a one-year return frequency.

Table 2 Rainfall totals and Maximum Return Frequency

	Rainfall (In.)				Maximum Return Frequency		
Storm	AUB_RG	RG41Y	RGAUB		AUB_RG	RG41Y	RGAUB
10/9/2020	1.69	1.84	1.53		16.9-yr;6-hr;1.3-in	12.5-yr;6-hr;1.2-in	10.6-yr;6-hr;1.2-in
10/13/2020	0.6	0.6	0.59		1.1-yr;30-min;0.2-in	8.8-mo;30-min;0.1-in	10.7-mo;30-min;0.2-in
11/3/2020	0.89	0.86	0.83		11.1-mo;1-hr;0.3-in	9.9-mo;1-hr;0.2-in	10.7-mo;1-hr;0.3-in
11/14/2020	1.08	1.08	0.99		6.7-mo;3-hr;0.3-in	6.5-mo;3-hr;0.3-in	5.9-mo;3-hr;0.3-in
12/8/2020	1.03	0.93	0.99		7.2-mo;24-hr;1.0-in	5.9-mo;24-hr;0.8-in	7.0-mo;24-hr;1.0-in
12/15/2020	1.05	0.97	0.9		7.4-mo;15-min;0.1-in	7.6-mo;30-min;0.1-in	8.3-mo;15-min;0.1-in
12/20/2020	1.1	1.15	1.1		11.4-mo;30-min;0.2-in	10.7-mo;30-min;0.2-in	11.4-mo;30-min;0.2-in
1/2/2021	3.54	3.33	2.94		8.7-yr;6-hr;1.2-in	6.5-yr;12-hr;1.6-in	4.0-yr;6-hr;1.0-in
1/11/2021	3.35	3.23	3.09		3.9-yr;24-hr;2.2-in	3.5-yr;24-hr;2.1-in	3.4-yr;24-hr;2.1-in
1/31/2021	1.22	1.2	1.09		6.0-mo;24-hr;0.8-in	5.7-mo;24-hr;0.8-in	5.7-mo;24-hr;0.8-in
2/14/2021	1.56	1.37	0.82		8.6-mo;24-hr;1.2-in	7.7-mo;24-hr;1.1-in	4.5-mo;24-hr;0.6-in
2/21/2021	1.83	1.62	1.63		10.5-mo;18-hr;1.4-in	7.8-mo;18-hr;1.0-in	9.9-mo;18-hr;1.3-in
3/24/2021	0.6	0.69	0.56		6.3-mo;30-min;0.1-in	1.0-yr;15-min;0.1-in	5.1-mo;6-hr;0.4-in

2.4 - RDII Volumes

The rainfall dependent infiltration and inflow (RDII) is determined on both a gross and net flow basis. Figure 6 shows the process for the storm of 2 January 2021 at meter AUB_A8. The blue hydrograph is the gross flow measured by the meter and the gold hydrograph is the gross RDII calculated at the meter. If there is an upstream meter, net RDII is calculated by subtracting two gross RDII hydrographs.

A key observation here is how reflective the RDII hydrograph is to the rainfall. The fact that flow increases are timed almost exactly with the rainfall suggest the RDII sources are likely traditional inflow sources. The hydrographs for the 8 largest storms for all meters are included in Appendix B.

Figure 6 Storm hydrograph showing calculated RDII

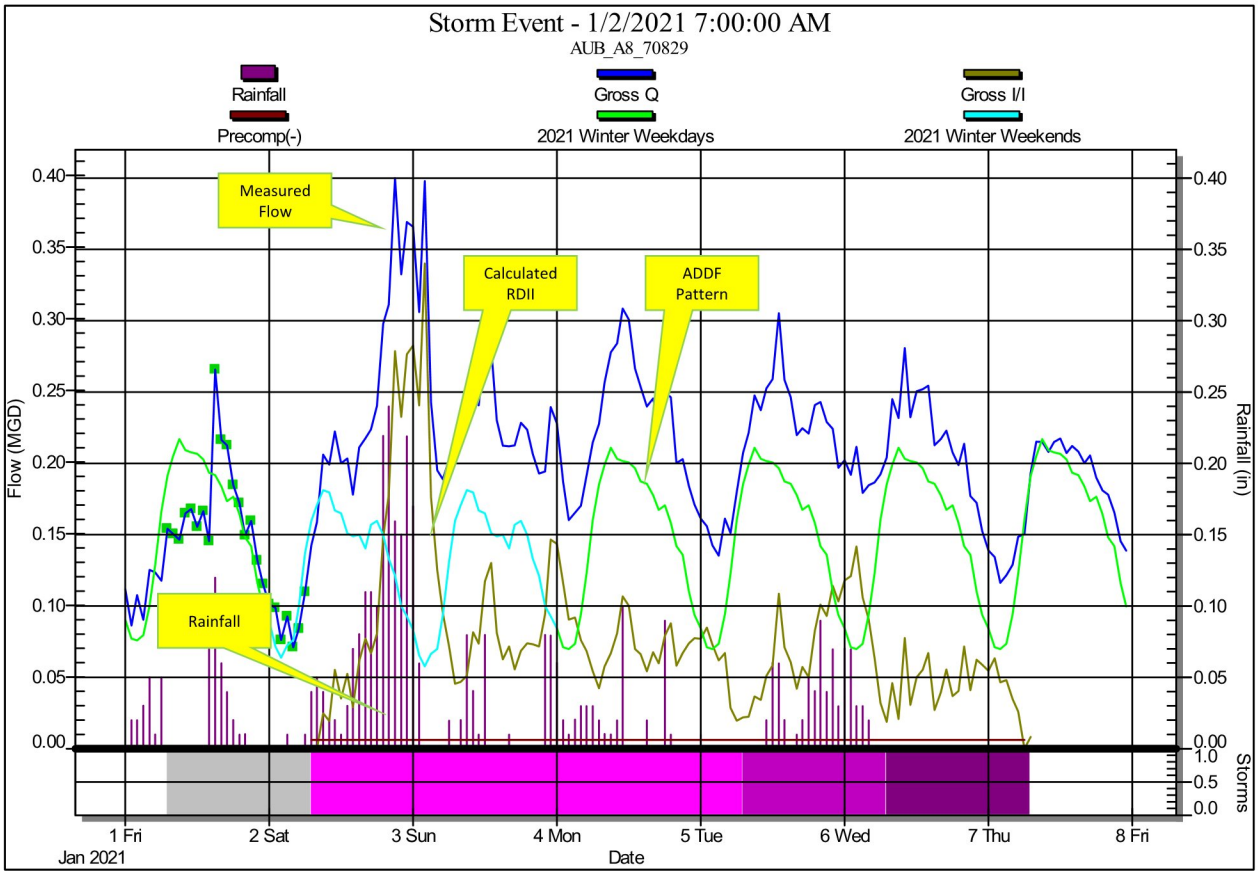


Figure 7 shows the RDII volumes in million gallons from the 6 largest storms. These values are total RDII volume measured during the storm and recovery period.

Figure 7 Gross RDII volume for each meter for the 6 largest storms.

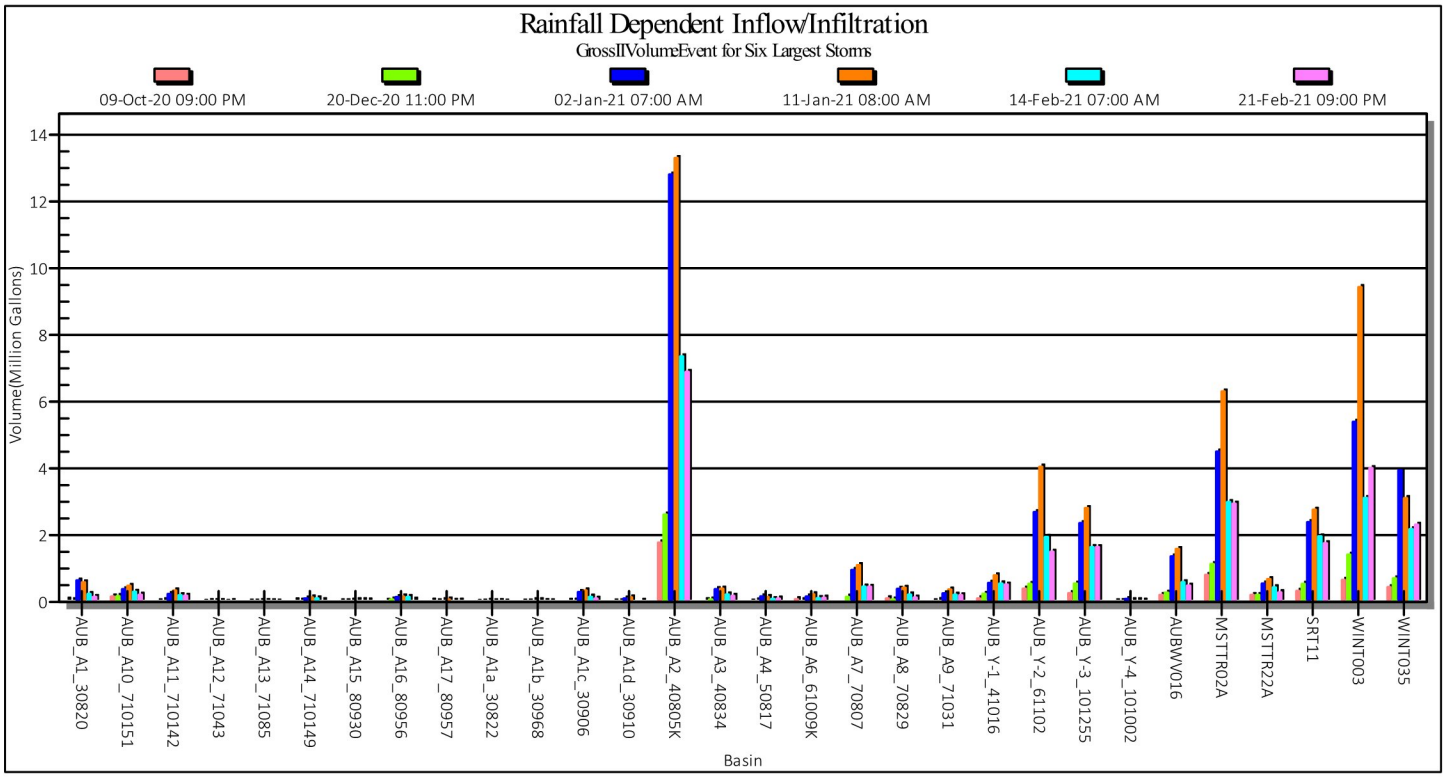
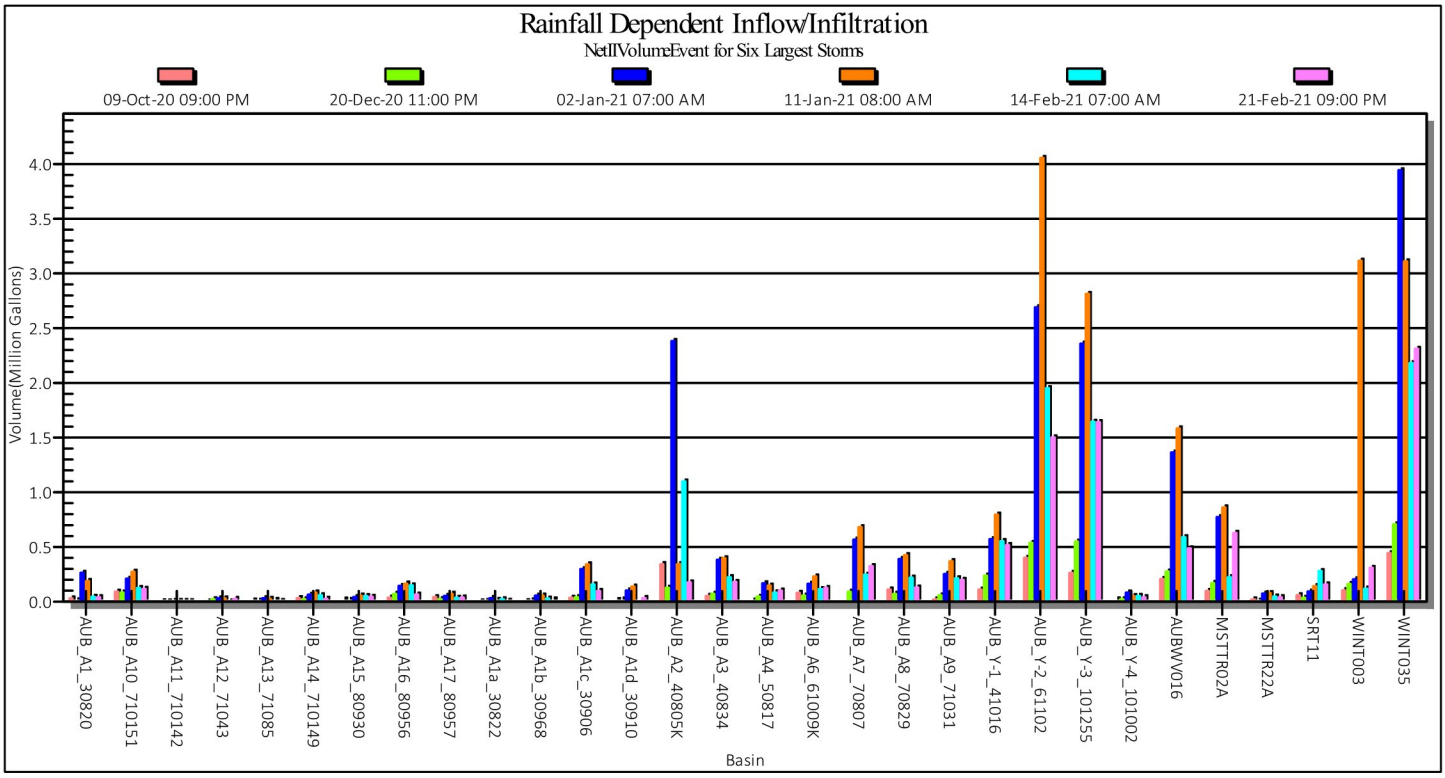


Figure 8 shows the Net Volume of RDII from the 6 largest storms. Net RDII is the volume generated within each sewer shed. Upstream RDII is subtracted from the downstream RDII.

Figure 8 Net RDII volumes from the 6 largest storms.



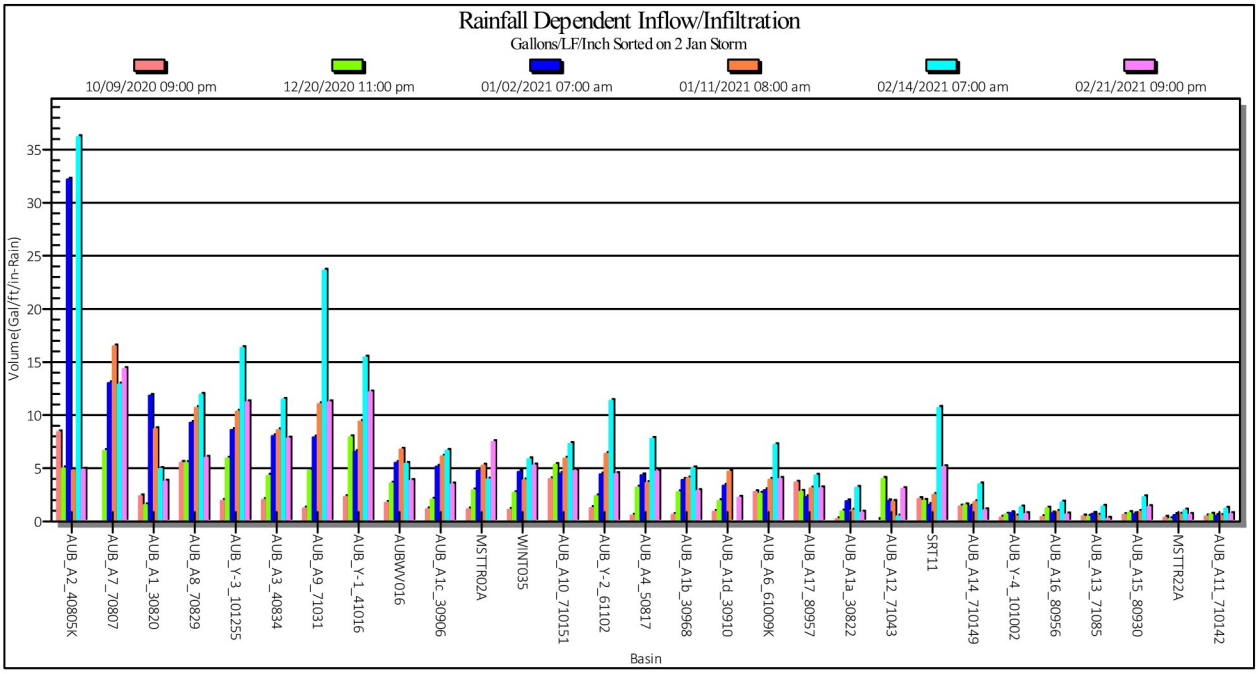
2.5 - RDII Severity

RDII volumes in Sections 2.4 are 'normalized' by dividing the RDII values by both the basin size and inches of rainfall to get an apples-to-apples comparison of RDII severity. The most reliable normalization is by length of sewer (Gallons/LF/Inch of rainfall) in a sewershed and the second method is by acreage (Capture Coefficient or Percent Rainfall entering sewer). Normalizing by LF is more reliable because it better reflects the possible connections on the 'sewer frontage' and does not include non-sewered areas such as parks, school athletic fields, cemeteries etc. Capture coefficient values tend to be biased low because of the unsewered areas.

There is not a published set of standards for RDII severity expressed by either method because the measured value is affected by the antecedent moisture condition of the soil. These threshold levels will be higher in the winter when vegetation is dormant or after a series of rainfall with saturated soil conditions. The threshold values with be lower in the summer and fall when vegetation is actively taking up moisture and after a long dry period with low soil moisture. This study was conducted in both low antecedent moisture conditions in October and November and higher moisture condition later in the metering period.

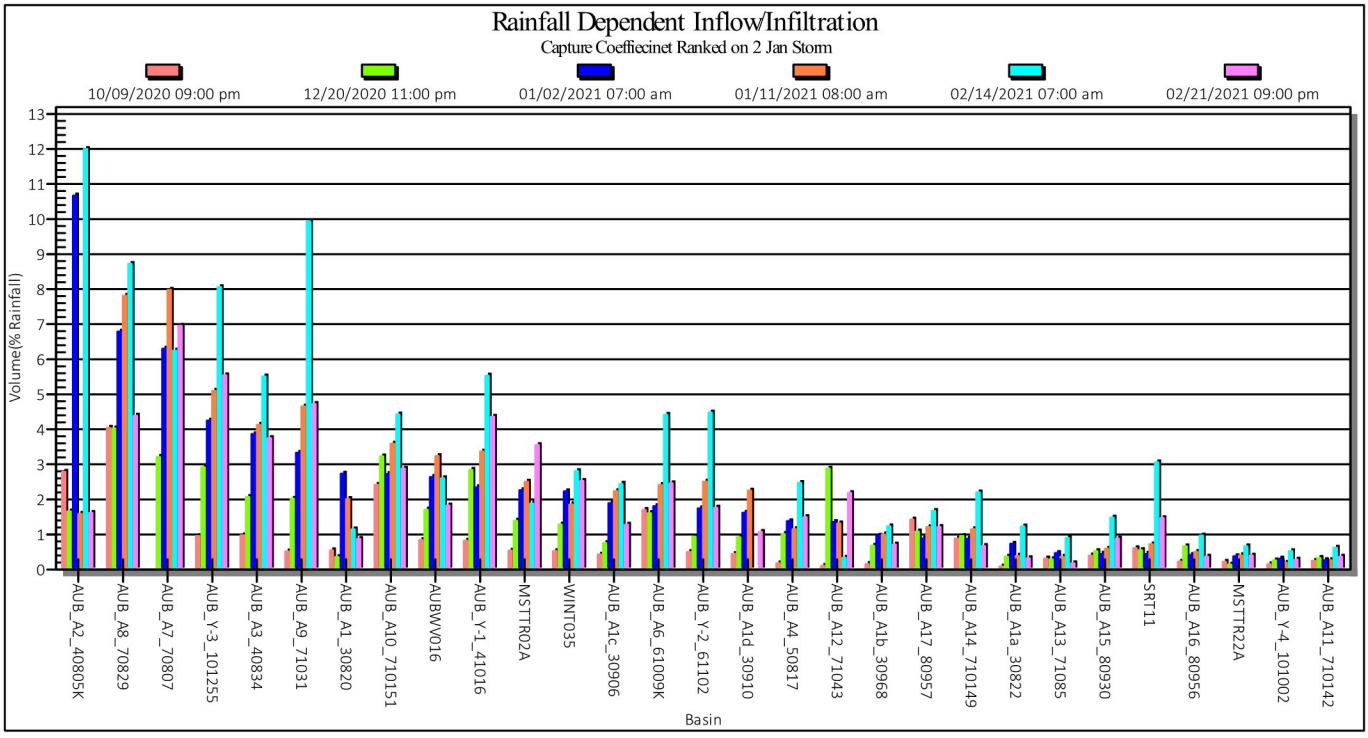
Figure 9 shows RDII normalized by sewer length (Gal/LF/inch) and sorted on the 2 January storm. For severity normalized by length, a general rule of thumb is that sewersheds in the winter/spring with values less than ~10 to 12 Gal/LF/Inch do not have excessive RDII, values up to 20 Gal/LF/Inch are marginal and values over 20 Gal/LF/Inch are considered excessive. In low moisture conditions values greater than 10 Gal/LF/inch may be considered to fall within the 'marginal' range. The AUB_A2 basin should be discounted because of the balancing problem and the 2 Feb storm should be discounted because of the snow melt.

Figure 9 RDII Severity in Gallons/LF/Inch



Although there are no fixed standards for the Capture Coefficient, it is generally considered that values of less than 5% do not have excessive RDII, between 5% and 7% are marginal and values greater than 7% to 10% are severe. These threshold values can be lower in low moisture conditions. Figure 10 shows the Capture Coefficient (percent rainfall entering sewer) for the six largest storms sorted on the 2 January storm. The Capture Coefficient tends to be biased low because it includes non-sewered areas such as parks and athletic fields.

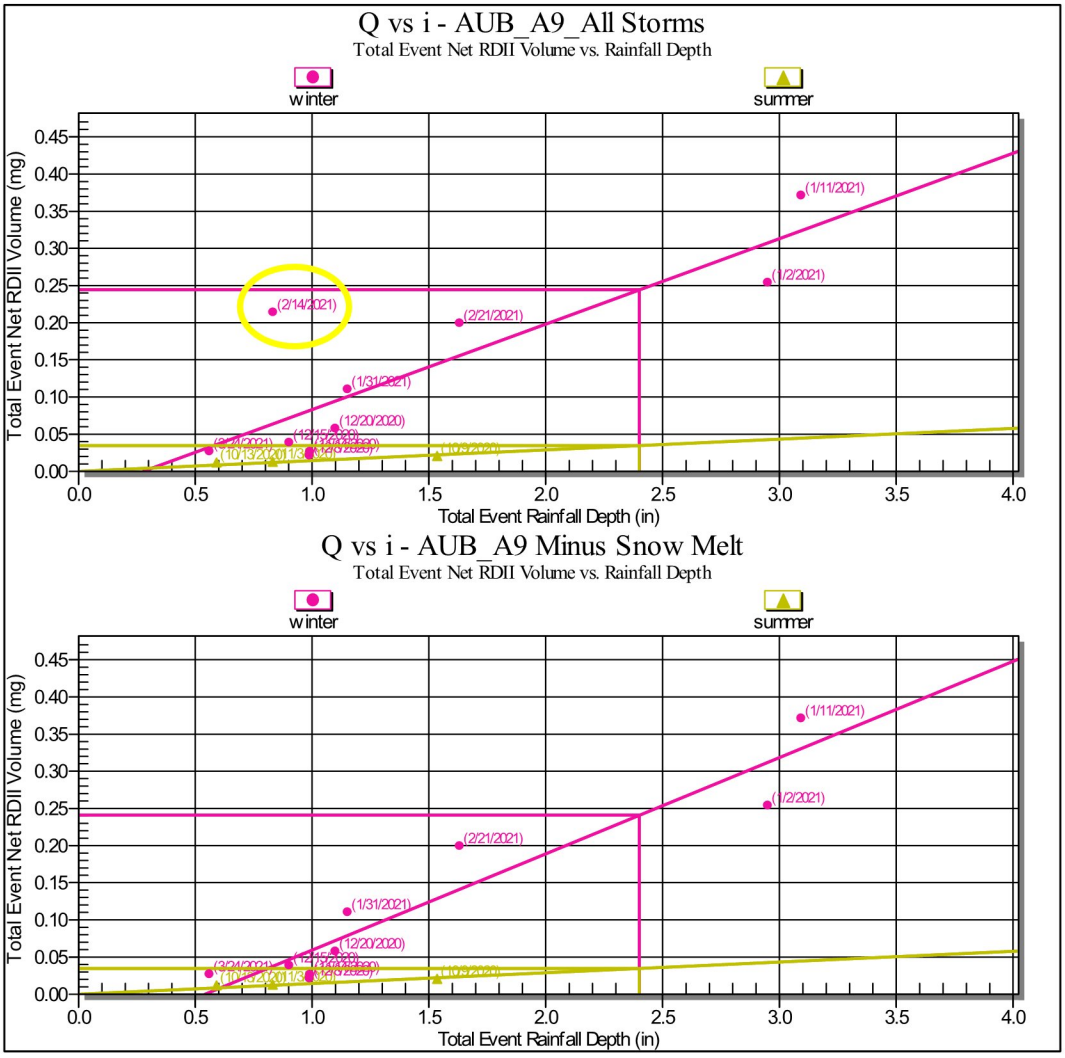
Figure 10 RDII as Capture Coefficient



2.6 - Projected RDII Volumes

A third method is to apply a design storm to the Q vs i plots for each basin. Figure 11 displays the Q vs. i plots of RDII volume vs. rainfall for AUB_A9 for each storm separated into seasons. Each data point on this plot is composed of the RDII volume measured during each storm and the rainfall that fell during the storm. In the top plot a 2.4-inch (5-yr., 24-Hr) storm is applied to the regression line resulting in a predicted RDII volume of just over 0.24 MG. Because the snow melt storm of 14 Feb should not be included here, it was removed to generate the bottom plot. The results did not change much, and the projected RDII volume is 0.24 MG. Appendix C includes this plot minus the 14 Feb snow melt storm for each basin.

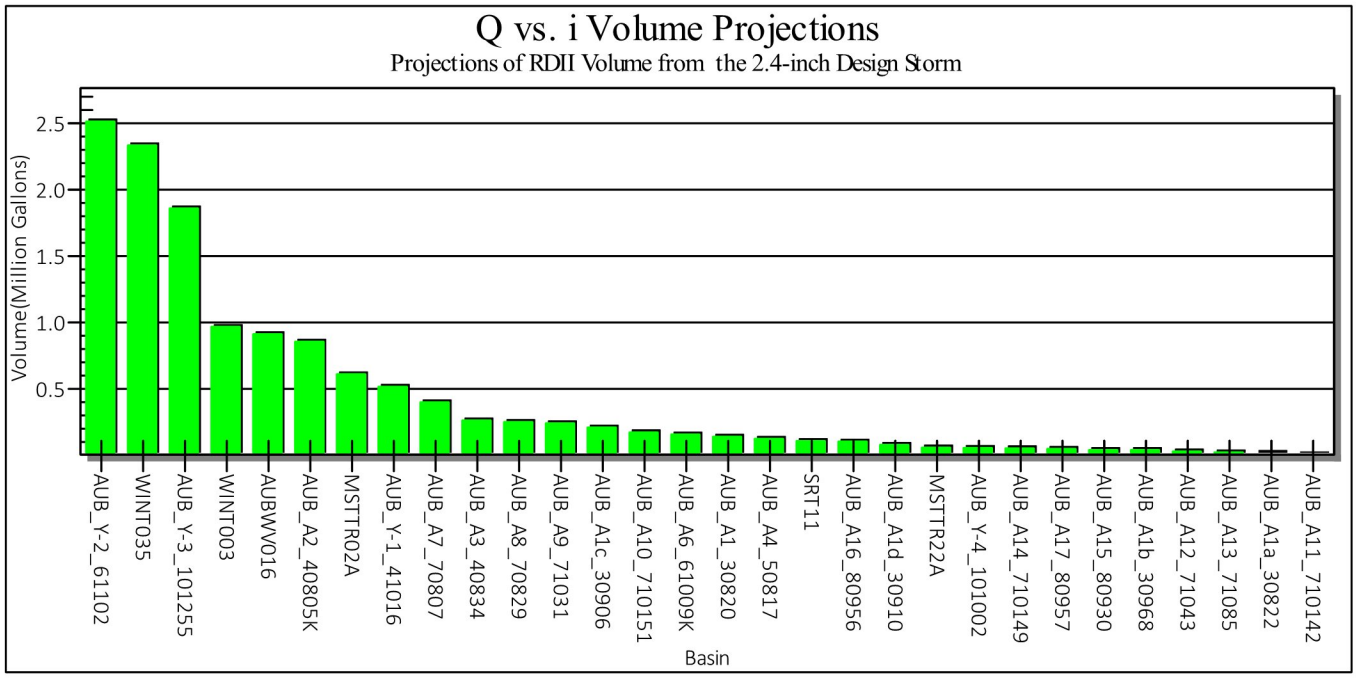
Figure 11 Q vs. i Plots of RDII Volume vs. Rainfall, with and without the snowmelt of 14 Feb 2021.



a) Which sewersheds generate the most RDII volumes?

Figure 12 shows the projected net volumes from each of the sewersheds based on the Q vs i projections. It is not surprising the larger sewersheds produce the greatest volume of RDII. The values from WINT003 and AUB_A2 are treated with less confidence because of the flow balance issues described earlier. Also, WINT035 and AUBWV016 and not considered part of the Auburn system and are included here just for completeness of the data set.

Figure 12 Plot of Net Projected RDII volumes from each sewershed.



b) Sewersheds ranked on projected RDII - in Gal/LF/Inch

The projected RDII volumes from a 2.4-inch design storm are converted to Gallons/LF/Inch in the last column on Table 3 and are ranked. The R^2 column is the correlation coefficient and values less than 0.7 are less reliable and the user should be cautious about using the projected values. Poor correlations can be due to non-uniform rainfall or some data issue. For example, the flow from AUB_A11 was shallow and erratic and the RDII was low.

There is not a definitive way to determine when RDII is 'too much', but a rule of thumb is that values greater that 10 gal/LF/Inch or so are probably in the range that deserves attention. But Keep in mind that larger basins appear to have lower severity than many smaller basins. Basins Y-2 and Y-3 are two largest sewersheds in the Auburn system and generated the most RDII of all the Auburn sewersheds but fall below the rule of thumb for severity.

Table 3 Projected RDII Volume in Millions of Gallons from a 2.4-inch storm.

Net Volume Projected from a 2.4-inch storm applied to Winter Season Q vs I Plot							
Meter	# Storms	R^2	X Intercept	Slope	MG	Gal/LF	Gal/LF/Inch
WINT003	9	0.36	0.6	0.54	0.97	43.7	18.2
AUB_A2_40805K	9	0.53	0.83	0.54	0.86	38.5	16.0
AUB_A7_70807	9	0.95	0.6	0.22	0.4	32.3	13.4
AUB_A9_71031	9	0.9	0.54	0.13	0.24	22.2	9.3
AUB_Y-3_101255	9	0.94	0.42	0.94	1.86	22.0	9.2
AUB_A8_70829	9	0.97	0.63	0.14	0.25	21.0	8.8
AUB_A1_30820	9	0.93	0.84	0.09	0.14	20.9	8.7
AUB_Y-1_41016	9	0.84	0.02	0.22	0.52	19.6	8.2
AUB_A3_40834	9	0.99	0.64	0.15	0.26	18.3	7.6
AUBWV016	9	0.96	0.59	0.5	0.91	13.0	5.4
AUB_Y-2_61102	9	0.93	0.58	1.38	2.51	12.2	5.1
AUB_A10_710151	9	0.94	0.27	0.08	0.17	12.1	5.0
AUB_A1c_30906	9	0.97	0.65	0.12	0.21	12.0	5.0
MSTTR02A	9	0.89	0.5	0.32	0.61	11.8	4.9
WINT035	9	0.94	0.51	1.24	2.33	9.7	4.1
AUB_A4_50817	9	0.87	0.2	0.06	0.12	9.6	4.0
AUB_A1b_30968	9	0.92	0.08	0.02	0.04	9.3	3.9
AUB_A1d_30910	9	0.94	0.63	0.04	0.08	8.6	3.6
AUB_A6_61009K	9	0.94	0.29	0.07	0.16	8.3	3.4
AUB_A17_80957	9	0.88	0	0.02	0.05	6.7	2.8
SRT11	9	0.32	0	0.04	0.11	6.3	2.6
AUB_A12_71043	9	0.31	0	0.01	0.03	5.6	2.3
AUB_A14_710149	9	0.85	0.02	0.02	0.05	3.7	1.5
AUB_A1a_30822	8	0.59	0	0.01	0.02	3.5	1.5
AUB_A15_80930	9	0.8	0	0.02	0.04	2.1	0.9
AUB_A11_710142	9	0.02	0	0	0.01	2.0	0.8
AUB_A16_80956	9	0.92	0.2	0.05	0.1	1.9	0.8
AUB_Y-4_101002	9	0.62	0	0.02	0.06	1.7	0.7
MSTTR22A	9	0.81	0	0.02	0.06	1.5	0.6
AUB_A13_71085	9	0.71	0.13	0.01	0.02	1.5	0.6

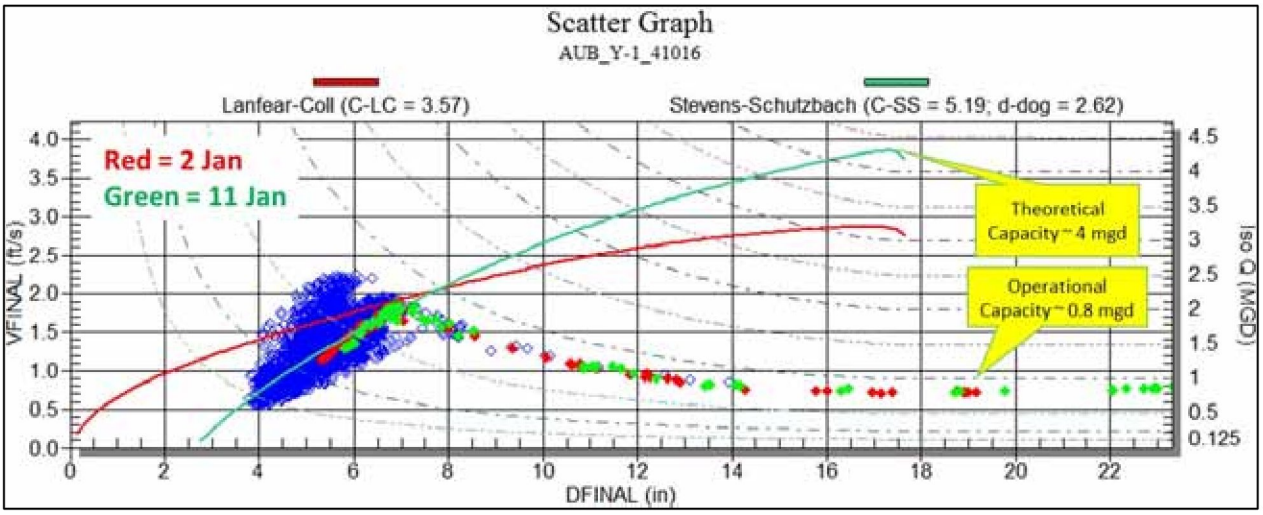
3.0 – Operational Capacities

Operational capacity is the actual flow that a pipe can carry as opposed to the theoretical capacity based on pipe slope and roughness of the pipe section in which the meter is installed. The technique for this analysis is to plot a depth-velocity scattergraph of the meter data upon which are also plotted a pipe curve (Lanfear-Coll [Manning] or Stevens-Schutzbach) and Iso-Q lines. The technique requires that the pipe fill to around 80% full so that hydraulic behavior can be observed. As it turns out only one pipe reached more than 60% full and that was AUB_Y-1 at the Green River siphon and it surcharged to 24 inches. Figure 13 is a scattergraph of meter AUB_Y-1 it shows a Theoretical Capacity of approximately 4 mgd and the Operational Capacity of 0.8 mgd circled in red. It surcharged during the 2 Jan and 11 Jan storms.

In this case both the Lanfear-Coll and the Stevens-Schutzbach curves are plotted. What is observed here is that the theoretical capacity, as established by the Stevens-Schutzbach curve is around 4 mgd in this 17.5-inch pipe. However, the actual data show that the sewer enters backwater at around 7 inches of depth and carries around 0.8 mgd throughout the surcharge to around 24 inches. There is a distinction in hydraulic conditions based on how data behave relative to the Iso-Q lines. Data will adhere to an Iso-Q line if there is a 'Hard restriction' downstream such as an under-sized pipe or a siphon.

GIS data indicated there is a double barrel siphon downstream of this meter with 8-inch and 12-inch barrels. However, the scattergraph pattern reveals that only one barrel is active. Scattergraphs for all sites are included in Appendix B.

Figure 13 Scattergraph reveals both Theoretical and Operation Capacity of the sewer.



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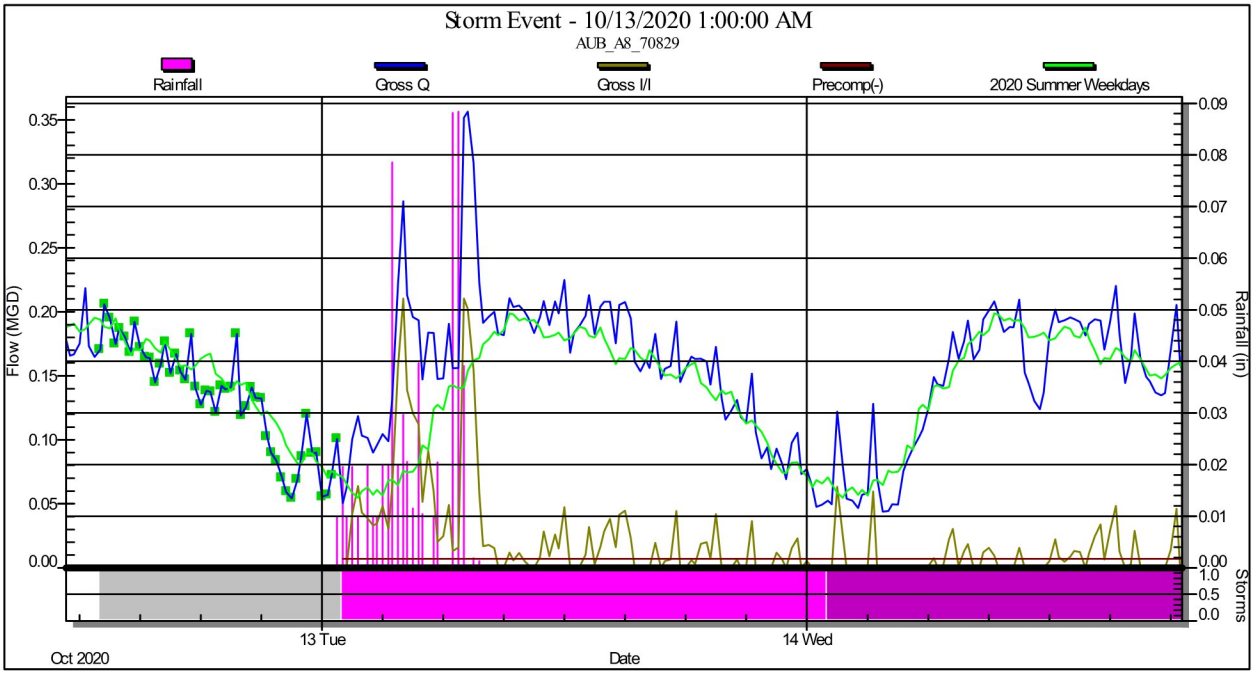
4.0 – Subjective Views of Hydrographs

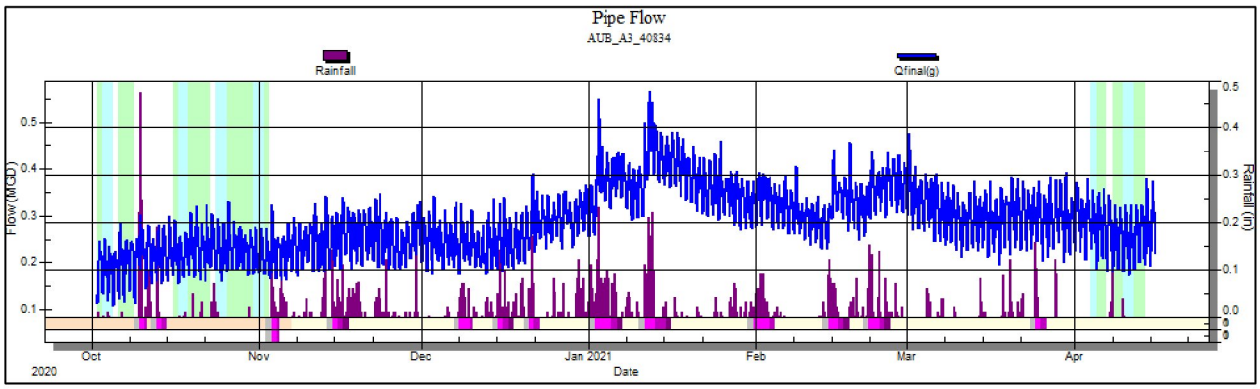
In addition to the numerical analysis in this report we have plotted storm hydrographs for the eight largest storms at each meter in Appendix B. It is noticeable that there appear to be minor sources of Inflow during high intensity storms of October as shown in Figure 14. The gold RDII hydrograph follows the rainfall hyetograph very closely indicating that the RDII is the direct result of rainfall, a classic inflow source such as a roof drain. This hydrograph is in 15-minute time steps, but the observations can easily be made in the 60-minute plots in Appendix B.

Figure 14 Hydrographs in 15-minute time steps showing what appears to be source(s) of Inflow.



On the other hand, the hydrograph from AUB_A2 in Figure 15 reveals a sewershed that does not include many 'spikes' from sources of Inflow, but does reflect dramatic influence of base infiltration as the soil moisture increases and declines slowly over the wet season.

Figure 15 Sewershed AUB_A3 experiences RDII more similar to infiltration rather than inflow.



5.0 – Conclusions

1. By design this metering period captured the traditional dry weather period in October and the wet season beginning in November. Five storms recorded a return frequency of at least one year in at least one rain gauge. Two January storms exceeded 3 inches of rainfall.
2. The sewer system handled these storms readily with only one sewer surcharging and that was due to the restricted flow at a downstream siphon. The Green River siphon at AUB_Y1 is shown to have an 8-inch barrel and a 12-inch barrel, but the scattergraph indicates that only one barrel was functioning.
3. The wide range of basin sizes between the larger 'Y' basins and the smaller 'A' basins is what would have been expected. The 'Y' basin generated the most RDII, but RDII severity of the smaller basins was both higher and lower than the 'Y' basin. The intuitive observation about severity should be avoided; "The large basins don't look so bad".
4. Many of the 'A' basins performed well with small RDII contributions, but some 'A' basins experience minor sources of Inflow.
5. The RDII severity calculations are low compared to what is often experienced in other collection systems.

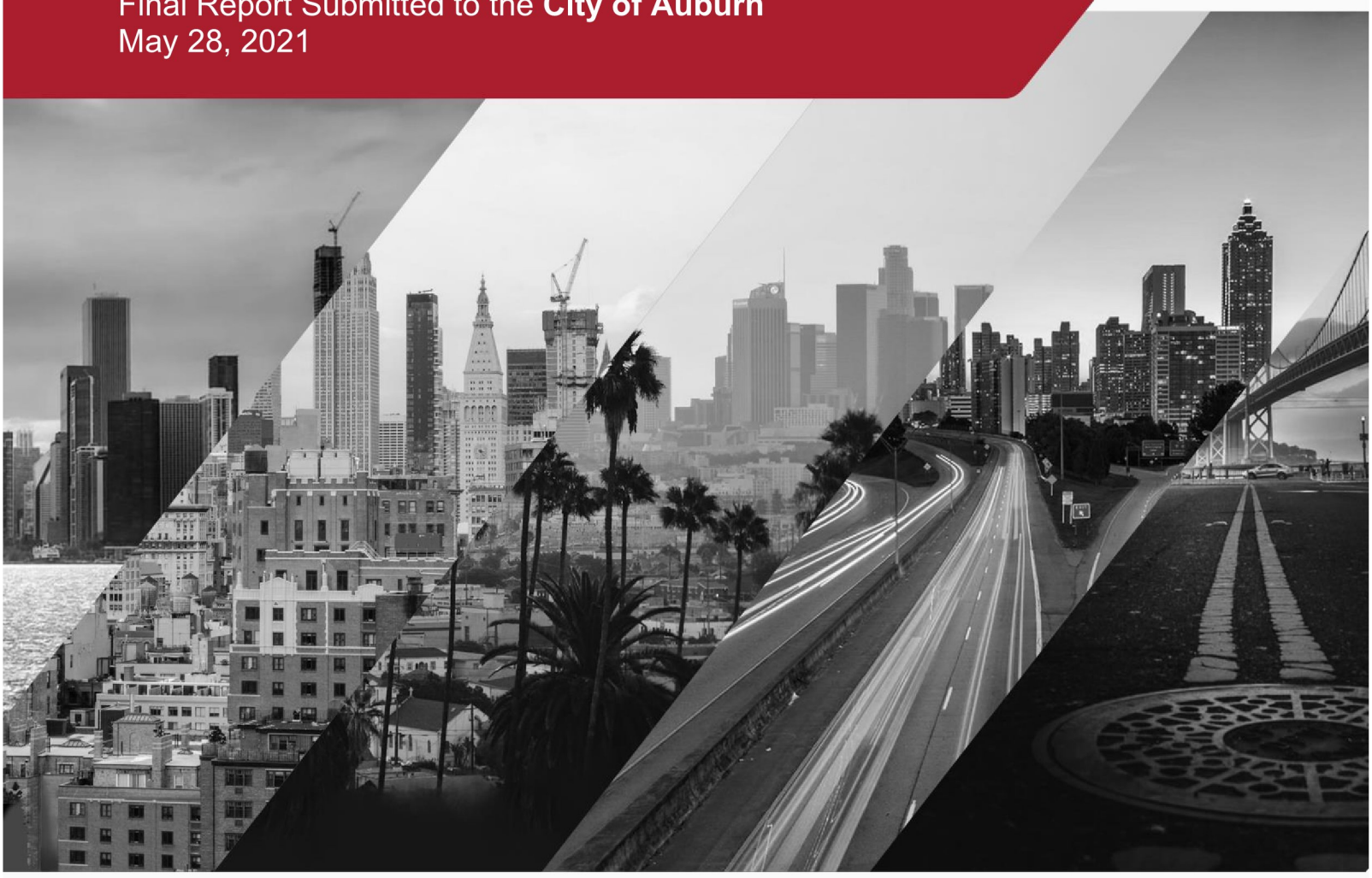
Appendix A – Sewershed Map

Appendix B - Sliicer Graphics

Appendix C – Q vs i Plots

City of Auburn

Final Report Submitted to the **City of Auburn**
May 28, 2021



ADS ENVIRONMENTAL SERVICES

4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
www.adsenv.com

May 28, 2021

Bob Elwell
City of Auburn Sewer Utility Engineer
25 West Main Street
Auburn, WA 98001

SUBJECT: Auburn Temporary Flow Monitoring Report

Dear Bob,

ADS is pleased to submit this temporary flow monitoring report for the city of Auburn. The metering was conducted at twenty-four (24) locations. The study was conducted during the period of Tuesday, September 22, 2020 to Wednesday, April 14, 2021.

The report contains depth, velocity, and quantity hydrographs based on an hourly average as well as daily long tables for the metering period. All data can easily be exported from the PRISM data hosting website.

In addition, we would be happy to further explain any details about the report that may seem unclear. Should you have any questions or comments, you may contact the Project Manager, Shawn Hoglan at 206-571-0130.

It has been our pleasure to be of service to you in the performance of this project. Thank you for choosing ADS products and services to meet your flow monitoring needs.

Sincerely,
ADS ENVIRONMENTAL SERVICES

Tony Locke
Data Analyst III, ADS LLC Huntsville, AL

The City of Auburn
Temporary Flow Monitoring Project

Prepared For:

Bob Elwell
City of Auburn Sewer Utility Engineer
25 West Main Street
Auburn, WA 98001

Prepared By:

ADS, LLC
4455 S. 134th Place
Tukwila, WA 98168

AUB_A1_30820

Site Commentary

SITE INFORMATION

Pipe	Elliptical (21 in H x 21 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.87	1.68	0.337
Minimum	2.53	1.08	0.121
Maximum	5.41	2.25	0.713
Min Time	10/03/2020 3:00:00 AM	10/31/2020 5:00:00 AM	10/03/2020 5:00:00 AM
Max Time	01/12/2021 10:00:00 AM	01/12/2021 10:00:00 AM	01/12/2021 10:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

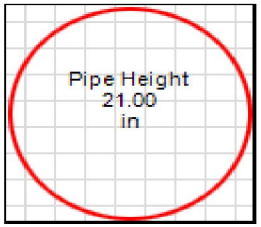
Percent Uptime	
DFINAL (in)	94.934
VFINAL (ft/s)	94.934
QFINAL (MGD - Total MG)	94.934

Hydrograph Report

AUB_A1_30820

Flow Monitor

AUB_A1_30820



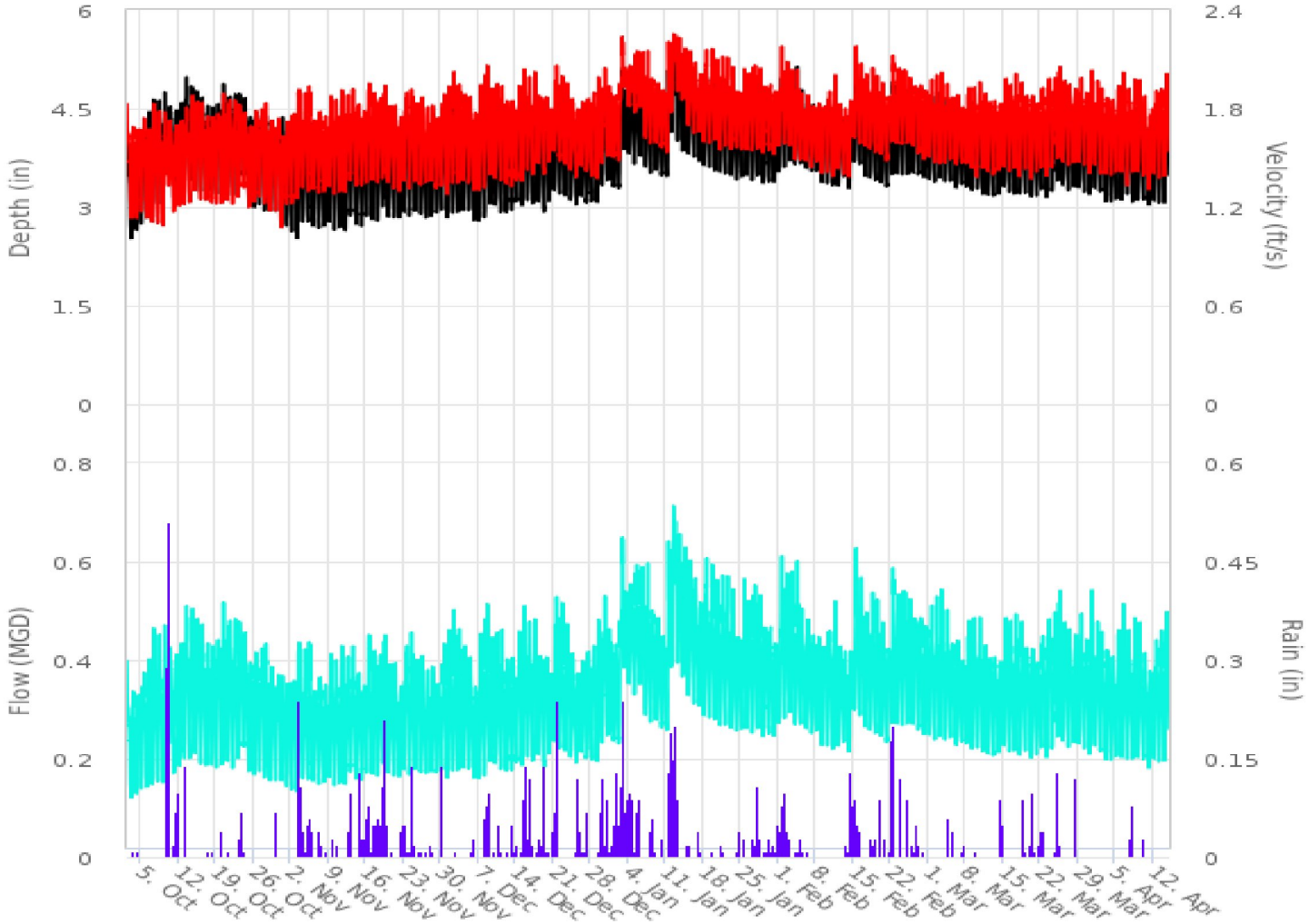
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
www.adsenv.com

Scattergraph Report

AUB_A1_30820

Flow Monitor

AUB_A1_30820

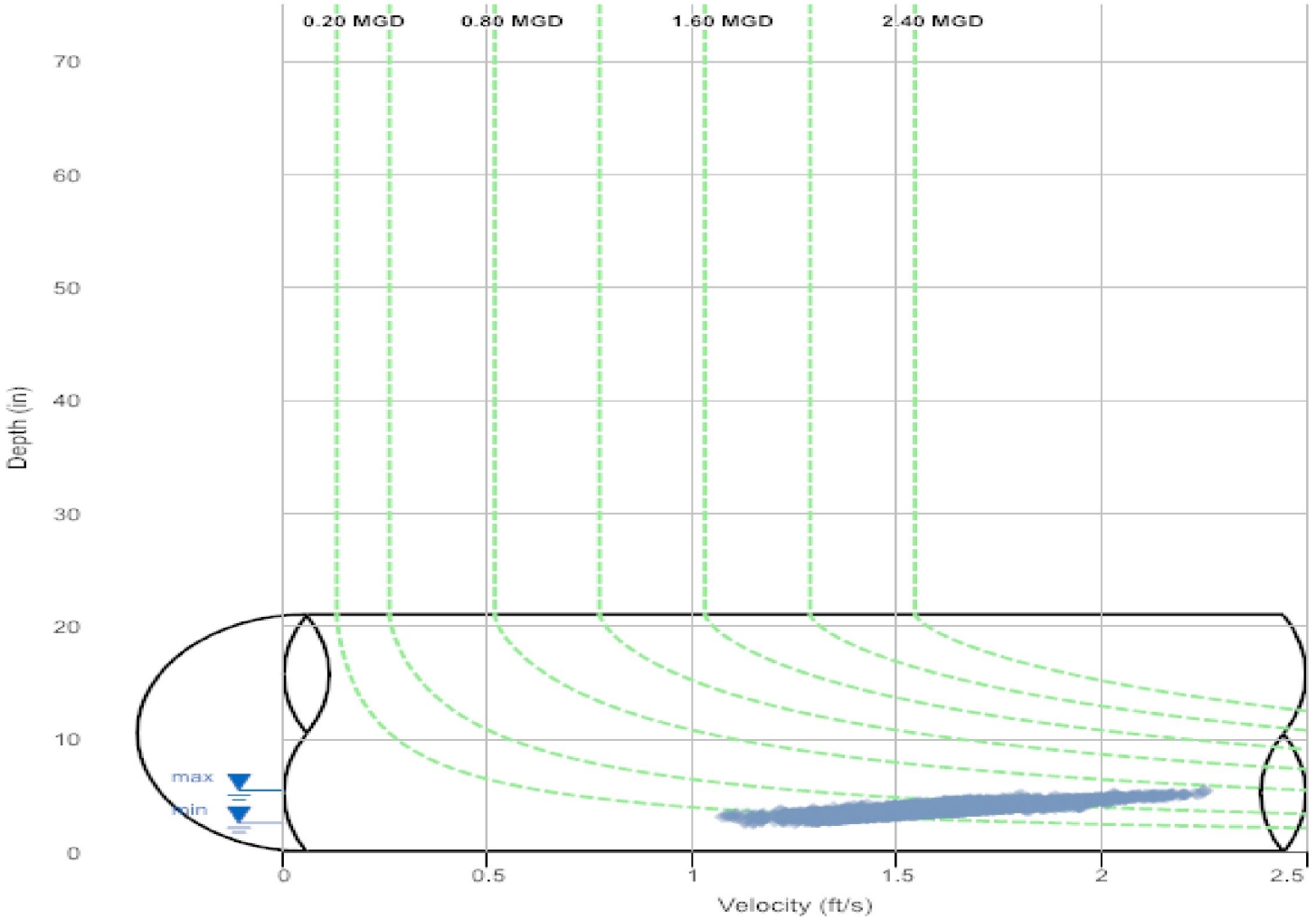
Pipe Height
21.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A1_30820Pipe: Elliptical (21 in H x 21 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	04:25	3.27	16:05	4.54	3.80	04:30	1.47	10:50	2.02	1.70	04:30	0.228	16:05	0.486	0.330	0.330	0.51
01/02/2021	04:35	3.24	21:25	5.25	4.12	04:35	1.45	21:45	2.31	1.81	04:35	0.220	21:35	0.698	0.403	0.403	1.69
01/03/2021	05:05	3.77	01:05	5.17	4.43	05:10	1.80	00:30	2.25	2.00	05:10	0.347	00:25	0.663	0.480	0.480	0.65
01/04/2021	03:50	3.64	12:35	5.03	4.38	03:55	1.74	12:35	2.17	1.96	04:10	0.322	12:35	0.622	0.464	0.464	0.48
01/05/2021	03:35	3.54	14:35	5.03	4.30	02:15	1.67	14:35	2.22	1.95	03:55	0.310	14:35	0.635	0.450	0.450	0.52
01/06/2021	05:30	3.65	15:50	5.17	4.31	04:10	1.74	16:05	2.27	1.92	06:20	0.326	15:50	0.667	0.444	0.444	0.22
01/07/2021	04:30	3.54	16:25	5.01	4.22	04:05	1.58	16:20	2.24	1.83	04:25	0.277	16:25	0.634	0.414	0.414	-
01/08/2021	04:35	3.46	12:50	4.68	4.16	03:30	1.54	15:55	2.05	1.81	04:45	0.259	14:05	0.521	0.400	0.400	0.22
01/09/2021	04:25	3.52	14:55	4.62	4.06	03:30	1.52	14:20	2.02	1.78	03:30	0.264	14:30	0.508	0.379	0.379	-
01/10/2021	04:30	3.43	12:20	4.42	3.96	02:55	1.42	12:25	1.97	1.75	02:55	0.238	12:25	0.469	0.360	0.360	0.07
01/11/2021	04:00	3.40	11:35	5.14	4.29	04:00	1.47	11:40	2.30	1.87	04:00	0.241	11:40	0.677	0.437	0.437	1.06
01/12/2021	00:30	4.09	09:55	5.56	4.83	00:30	1.70	10:35	2.33	2.09	00:30	0.362	09:55	0.750	0.570	0.570	2.10
01/13/2021	06:05	3.82	15:50	5.28	4.62	22:35	1.78	11:15	2.33	2.04	05:05	0.367	15:50	0.700	0.520	0.520	0.09
01/14/2021	04:40	3.65	16:00	5.47	4.49	01:35	1.75	16:05	2.24	1.98	04:45	0.334	16:00	0.708	0.485	0.485	0.01
01/15/2021	02:40	3.67	12:15	5.04	4.43	04:35	1.65	12:05	2.27	1.91	04:50	0.309	12:15	0.649	0.461	0.461	0.09
01/16/2021	04:20	3.71	12:15	4.87	4.33	05:05	1.61	12:45	2.14	1.86	04:20	0.302	12:45	0.583	0.434	0.434	-
01/17/2021	05:30	3.63	11:40	4.78	4.25	07:15	1.62	18:00	2.08	1.84	06:30	0.296	11:45	0.544	0.417	0.417	0.10
01/18/2021	03:45	3.54	16:15	5.03	4.31	02:45	1.56	15:55	2.19	1.86	03:50	0.274	16:40	0.619	0.433	0.433	-
01/19/2021	03:50	3.51	16:35	4.99	4.24	03:35	1.55	16:30	2.27	1.85	03:50	0.264	16:35	0.641	0.420	0.420	0.01
01/20/2021	03:15	3.47	12:55	4.97	4.18	04:05	1.55	12:45	2.26	1.83	03:10	0.266	12:45	0.630	0.407	0.407	-
01/21/2021	03:05	3.48	16:10	4.97	4.18	05:00	1.49	16:15	2.18	1.81	05:00	0.255	16:10	0.609	0.404	0.404	0.11
01/22/2021	04:45	3.46	14:05	4.95	4.14	03:05	1.50	13:55	2.20	1.82	03:05	0.255	14:05	0.607	0.400	0.400	-
01/23/2021	06:10	3.43	13:00	4.91	4.06	06:10	1.51	13:05	2.17	1.79	06:10	0.249	13:05	0.599	0.383	0.383	-
01/24/2021	05:25	3.35	11:35	4.46	4.00	04:05	1.50	15:15	2.02	1.77	05:20	0.245	10:35	0.471	0.370	0.370	0.16
01/25/2021	04:10	3.39	16:15	5.02	4.15	05:10	1.51	16:05	2.14	1.76	04:10	0.249	16:15	0.609	0.387	0.387	0.04
01/26/2021	03:30	3.42	13:40	4.93	4.10	03:20	1.52	13:40	2.16	1.79	03:35	0.251	13:40	0.600	0.387	0.387	-
01/27/2021	04:05	3.33	09:50	4.86	4.08	02:50	1.46	09:50	2.16	1.80	02:50	0.236	09:50	0.589	0.389	0.389	0.14
01/28/2021	02:25	3.41	15:40	4.96	4.12	04:35	1.52	15:45	2.14	1.82	03:15	0.251	15:35	0.592	0.398	0.398	0.24
01/29/2021	05:55	3.32	11:40	4.54	3.99	03:35	1.48	11:25	1.97	1.78	03:35	0.236	11:40	0.484	0.372	0.372	0.03
01/30/2021	04:40	3.33	13:55	4.51	3.93	06:40	1.50	13:10	2.01	1.77	06:40	0.238	13:10	0.489	0.361	0.361	0.07
01/31/2021	05:15	3.33	11:10	4.33	3.89	05:20	1.47	13:00	1.95	1.75	05:15	0.235	11:10	0.449	0.351	0.351	0.12
02/01/2021	01:55	3.46	15:45	5.11	4.18	01:55	1.51	16:20	2.22	1.81	01:55	0.253	15:45	0.646	0.405	0.405	0.82
02/02/2021	03:45	3.52	15:55	5.02	4.33	03:50	1.55	15:55	2.16	1.83	03:50	0.267	15:55	0.615	0.430	0.430	0.31
02/03/2021	04:00	3.65	14:20	5.16	4.29	03:30	1.53	14:20	2.11	1.77	04:00	0.280	14:20	0.625	0.408	0.408	0.06
02/04/2021	02:50	3.58	14:05	5.42	4.26	02:50	1.46	14:05	2.21	1.71	04:05	0.256	14:05	0.701	0.393	0.393	0.07
02/05/2021	04:10	3.58	11:25	4.87	4.19	02:50	1.45	11:20	2.00	1.69	04:05	0.258	11:20	0.544	0.376	0.376	0.01
02/06/2021	05:15	3.56	13:10	4.79	4.11	02:55	1.45	13:10	1.98	1.68	02:55	0.254	13:10	0.527	0.364	0.364	0.01
02/07/2021	06:05	3.43	10:35	4.63	4.05	04:35	1.41	10:30	1.88	1.66	06:00	0.239	10:35	0.477	0.353	0.353	-
02/08/2021	04:20	3.48	13:55	4.60	4.11	04:00	1.44	13:10	1.92	1.69	04:20	0.244	13:50	0.474	0.366	0.366	-
02/09/2021	04:55	3.32	13:00	4.53	4.04	03:20	1.36	09:50	1.86	1.68	03:20	0.216	13:00	0.456	0.356	0.356	-
02/10/2021	04:30	3.32	11:25	4.67	4.01	04:25	1.26	14:55	2.00	1.70	04:25	0.199	09:05	0.501	0.358	0.358	-
02/11/2021	04:45	3.30	14:50	4.86	4.00	03:15	1.36	14:40	2.10	1.70	03:15	0.216	14:40	0.568	0.356	0.356	-
02/12/2021	04:55	3.28	13:25	4.45	3.93	02:15	1.40	13:20	1.90	1.64	05:00	0.216	13:20	0.452	0.335	0.335	-
02/13/2021	06:05	3.37	13:40	4.40	3.84	04:50	1.34	13:45	1.89	1.61	05:00	0.217	13:40	0.445	0.317	0.317	0.08
02/14/2021	05:40	3.20	12:05	4.32	3.87	05:25	1.34	11:50	1.88	1.66	05:30	0.205	11:50	0.431	0.334	0.334	0.71
02/15/2021	05:20	3.63	12:35	5.18	4.33	02:55	1.58	14:05	2.22	1.86	03:00	0.286	12:40	0.657	0.437	0.437	0.78
02/16/2021	04:00	3.60	11:15	4.94	4.21	04:05	1.55	11:25	2.15	1.82	04:05	0.275	11:25	0.594	0.407	0.407	0.07
02/17/2021	03:00	3.42	11:55	4.63	4.08	04:10	1.53	10:30	2.07	1.81	04:20	0.253	11:50	0.520	0.389	0.389	-
02/18/2021	04:45	3.40	16:00	4.85	4.05	03:00	1.52	16:00	2.17	1.78	04:45	0.249	16:00	0.588	0.378	0.378	0.09
02/19/2021	05:15	3.31	12:30	5.08	4.04	04:10	1.48	12:30	2.21	1.76	04:10	0.238	12:30	0.642	0.373	0.373	0.17
02/20/2021	03:40	3.31	12:25	4.55	3.92	05:05	1.48	12:15	2.04	1.72	03:40	0.234	12:20	0.498	0.350	0.350	0.07
02/21/2021	06:05	3.24	12:20	4.31	3.87	04:20	1.45	18:05	1.93	1.72	06:05	0.222	12:20	0.441	0.344	0.344	0.42
02/22/2021	04:00	3.45	10:20	5.00	4.19	02:55	1.56	10:25	2.20	1.84	02:55	0.262	10:25	0.624	0.412	0.412	0.98
02/23/2021	02:45	3.46	15:05	5.12	4.16	04:00	1.55	15:00	2.27	1.82	05:05	0.260	15:00	0.666	0.402	0.402	0.27
02/24/2021	04:10	3.44	16:25	4.92	4.16	02:45	1.55	16:20	2.10	1.80	04:05	0.259	16:20	0.577	0.400	0.400	-
02/25/2021	03:35	3.44	14:45	4.90	4.19	03:40	1.53	14:50	2.06	1.80	03:40	0.256	14:45	0.564	0.402	0.402	0.18
02/26/2021	02:25	3.49	11:15	4.67	4.14	04:00	1.53	14:55	1.98	1.79	04:00	0.259	11:20	0.499	0.393	0.393	0.10
02/27/2021	04:55	3.47	15:25	4.85	4.04	07:10	1.48	15:20	2.05	1.73	06:15	0.251	15:25	0.557	0.367	0.367	0.02
02/28/2021	06:10	3.35	13:15	4.73	4.00	05:40	1.41	13:15	2.02	1.72	05:40	0.235	13:15	0.528	0.360	0.360	0.02
03/01/2021	04:00	3.33	15:45	4.85	4.08	03:45	1.46	15:40	2.04	1.74	04:00	0.233	15:45	0.551	0.374	0.374	-
03/02/2021	04:20	3.32	14:10	4.89	4.03	03:45	1.42	14:20	2.07	1.71	04:30	0.227	14:15	0.564	0.362	0.362	-
03/03/2021	04:40	3.36	13:05	4.93	4.04	03:25	1.39	13:00	2.10	1.72	04:40	0.229	13:00	0.582	0.365	0.365	-
03/04/2021	04:40	3.34	14:40	4.85	4.00	02:55	1.42	14:30	2.04	1.71	03:55	0.227	14:35	0.551	0.358	0.358	0.20
03/05/2021	02:50	3.34	13:15	4.45	3.93	04:10	1.44	13:40	1.92	1.70	02:50	0.231	13:15	0.455	0.347	0.347	0.05
03/06/2021	05:45	3.27	11:05	4.40	3.86	05:50	1.43	11:05	1.92	1.69	05:50	0.220	11:05	0.455	0.336	0.336	-
03/07/2021	05:00	3.21	12:45	4.27	3.82	06:10	1.43	12:40	1.87	1.67	04:55	0.217	12:45	0.423	0.326	0.326	0.04
03/08/2021	04:15	3.19	16:00	4.79	3.96	03:10	1.41	16:05	2.05	1.70	04:15	0.212	16:05	0.540	0.351	0.351	-
03/09/2021	04:25	3.15	14:55	4.70	3.96	05:20	1.40	16:10	1.99	1.68	03:10	0.208	14:45	0.511	0.346	0.346	0.01
03/10/2021	03:30	3.18	15:40	4.76	3.92	02:45	1.34	15:25	2.07	1.68	03:30	0.209	15:40	0.541	0.343	0.343	-
03/11/2021	03:20	3.15	15:40	4.52	3.81	03:00	1.38	15:40	2.00	1.70	05:30	0.204	15:40	0.491	0.332	0.332	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	03:10	3.14	12:35	4.24	3.77	01:40	1.37	12:25	1.90	1.67	02:55	0.204	12:25	0.420	0.320	0.320	-
03/13/2021	05:10	3.10	11:20	4.27	3.72	03:20	1.36	11:15	1.90	1.65	05:05	0.197	11:15	0.430	0.312	0.312	-
03/14/2021	04:50	3.14	15:40	4.26	3.75	04:10	1.39	13:10	1.89	1.66	04:50	0.205	15:35	0.421	0.316	0.316	0.30
03/15/2021	03:25	3.25	12:40	4.74	3.90	01:50	1.40	13:00	2.06	1.71	03:25	0.217	12:35	0.532	0.346	0.346	-
03/16/2021	04:20	3.14	09:50	4.63	3.81	03:05	1.38	10:20	2.05	1.70	03:05	0.203	10:20	0.517	0.332	0.332	-
03/17/2021	02:45	3.14	09:30	4.65	3.85	03:45	1.37	09:30	2.05	1.72	03:45	0.202	09:30	0.524	0.342	0.342	-
03/18/2021	03:00	3.14	10:45	4.68	3.87	04:20	1.33	10:40	2.04	1.70	02:45	0.201	10:45	0.528	0.340	0.340	0.11
03/19/2021	03:30	3.15	10:20	4.33	3.81	03:45	1.39	10:25	1.92	1.69	03:45	0.205	10:25	0.440	0.329	0.329	0.03
03/20/2021	04:50	3.15	11:45	4.35	3.78	04:55	1.35	11:45	1.93	1.66	04:55	0.198	11:45	0.449	0.321	0.321	0.17
03/21/2021	05:25	3.15	11:20	4.18	3.73	03:40	1.38	11:20	1.88	1.65	03:40	0.205	11:20	0.414	0.312	0.312	0.07
03/22/2021	02:50	3.17	11:20	4.41	3.87	02:50	1.37	07:40	1.99	1.71	02:50	0.203	10:50	0.467	0.341	0.341	0.11
03/23/2021	02:20	3.11	15:25	4.57	3.88	02:10	1.36	15:30	2.03	1.71	02:10	0.198	15:30	0.506	0.344	0.344	-
03/24/2021	03:55	3.17	15:15	4.76	3.89	01:25	1.38	15:10	2.07	1.72	03:55	0.204	15:10	0.546	0.347	0.347	0.34
03/25/2021	04:05	3.35	15:35	4.89	3.99	04:05	1.45	15:35	2.12	1.77	04:05	0.232	15:35	0.583	0.370	0.370	0.27
03/26/2021	02:40	3.28	13:55	4.71	3.95	04:00	1.43	13:55	2.08	1.76	02:40	0.227	13:55	0.543	0.361	0.361	-
03/27/2021	04:40	3.20	10:20	4.45	3.84	03:25	1.41	10:10	1.97	1.72	03:25	0.214	10:20	0.472	0.340	0.340	-
03/28/2021	05:10	3.21	13:40	4.46	3.87	03:40	1.43	13:30	1.98	1.72	05:05	0.216	13:30	0.474	0.345	0.345	0.37
03/29/2021	02:40	3.23	14:45	4.73	3.93	03:45	1.45	14:45	2.09	1.75	02:40	0.223	14:45	0.548	0.358	0.358	-
03/30/2021	03:30	3.18	15:00	4.46	3.84	03:25	1.42	15:00	1.93	1.71	03:25	0.212	15:00	0.467	0.338	0.338	-
03/31/2021	03:40	3.14	14:15	4.90	3.90	03:25	1.38	14:15	2.09	1.71	03:40	0.204	14:15	0.575	0.346	0.346	-
04/01/2021	04:15	3.20	15:40	4.65	3.87	03:05	1.42	15:30	2.08	1.71	03:05	0.215	15:30	0.527	0.342	0.342	-
04/02/2021	03:55	3.21	10:20	4.47	3.83	02:40	1.36	10:25	1.98	1.69	02:40	0.206	12:15	0.478	0.332	0.332	-
04/03/2021	02:35	3.00	11:30	4.30	3.69	02:35	1.37	11:45	1.89	1.66	02:35	0.187	11:30	0.428	0.310	0.310	-
04/04/2021	02:50	3.05	12:25	4.28	3.63	04:25	1.37	12:25	1.91	1.64	03:50	0.194	12:25	0.433	0.298	0.298	-
04/05/2021	03:55	3.02	15:30	4.54	3.78	02:25	1.37	15:25	2.02	1.70	02:25	0.193	15:25	0.498	0.330	0.330	-
04/06/2021	02:55	3.05	10:55	4.66	3.84	02:40	1.38	11:35	2.04	1.69	03:55	0.194	10:50	0.521	0.336	0.336	-
04/07/2021	03:35	3.16	11:00	4.61	3.79	03:25	1.30	11:15	1.95	1.65	03:25	0.192	10:55	0.486	0.320	0.320	0.22
04/08/2021	02:10	3.05	14:00	4.73	3.78	04:00	1.37	13:50	2.07	1.69	03:30	0.196	14:00	0.537	0.328	0.328	-
04/09/2021	02:40	3.04	12:05	4.62	3.75	04:00	1.39	12:00	2.02	1.68	04:05	0.194	12:10	0.513	0.323	0.323	0.03
04/10/2021	03:00	3.03	10:50	4.32	3.70	04:45	1.36	11:35	1.91	1.61	03:05	0.192	10:50	0.433	0.302	0.302	0.02
04/11/2021	04:00	3.00	10:55	4.25	3.67	04:00	1.28	10:50	1.83	1.59	04:00	0.174	10:50	0.411	0.295	0.295	-
04/12/2021	04:50	3.03	16:00	4.59	3.75	03:30	1.36	16:00	2.04	1.68	04:50	0.192	16:00	0.513	0.321	0.321	-
04/13/2021	02:40	2.99	14:45	4.65	3.76	03:15	1.35	14:45	2.00	1.67	02:40	0.184	14:45	0.511	0.321	0.321	-
04/14/2021	03:35	2.99	14:25	4.63	3.80	04:25	1.36	14:15	2.04	1.69	03:35	0.186	14:25	0.520	0.331	0.330	-
10/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/02/2020	23:55	3.06	09:55	4.25	3.57	23:25	1.30	09:45	1.90	1.60	23:55	0.191	09:50	0.426	0.281	0.172	-
10/03/2020	05:35	2.49	13:15	3.94	3.27	03:35	1.10	13:05	1.72	1.44	03:35	0.115	13:05	0.346	0.229	0.229	0.01
10/04/2020	02:50	2.60	14:35	3.97	3.37	04:00	1.09	14:30	1.73	1.45	04:05	0.121	14:30	0.352	0.241	0.241	0.01
10/05/2020	03:05	2.67	15:55	4.40	3.59	03:05	1.13	15:35	1.86	1.50	03:05	0.130	15:40	0.438	0.271	0.271	-
10/06/2020	03:15	2.77	15:05	4.54	3.73	01:40	1.06	15:00	1.74	1.42	03:10	0.131	15:00	0.427	0.272	0.272	-
10/07/2020	02:35	2.85	09:45	4.72	3.80	02:30	1.07	09:40	1.86	1.45	02:30	0.137	09:45	0.484	0.287	0.287	-
10/08/2020	03:35	3.00	10:35	4.71	3.87	02:15	1.08	10:25	1.83	1.44	03:40	0.147	10:30	0.471	0.292	0.292	-
10/09/2020	04:50	3.02	10:25	4.96	3.86	04:40	1.05	10:20	1.86	1.45	04:40	0.146	10:25	0.522	0.292	0.292	0.64
10/10/2020	05:10	3.47	13:05	4.65	4.08	05:10	1.27	13:00	1.77	1.54	05:15	0.213	13:10	0.451	0.331	0.331	1.04
10/11/2020	03:40	3.10	12:05	4.55	3.96	03:40	1.13	17:05	1.74	1.49	03:40	0.162	17:05	0.429	0.310	0.310	0.53
10/12/2020	03:10	3.20	15:30	4.80	4.11	03:00	1.16	15:35	1.82	1.53	03:00	0.175	15:35	0.486	0.335	0.335	-
10/13/2020	02:30	3.35	13:25	5.02	4.25	00:45	1.14	13:20	1.85	1.54	02:25	0.194	13:20	0.527	0.353	0.353	0.61
10/14/2020	03:45	3.38	10:35	5.08	4.17	04:45	1.21	15:50	1.98	1.56	03:45	0.197	10:40	0.557	0.349	0.349	-
10/15/2020	03:10	3.24	10:25	5.08	4.06	01:30	1.26	14:00	2.01	1.57	03:05	0.194	14:05	0.579	0.337	0.337	-
10/16/2020	03:25	3.19	11:00	4.80	3.95	03:25	1.20	11:00	1.91	1.54	03:25	0.179	11:00	0.512	0.319	0.319	-
10/17/2020	03:35	3.17	11:20	4.63	3.92	04:45	1.16	11:15	1.82	1.52	04:45	0.171	11:15	0.461	0.310	0.310	0.01
10/18/2020	04:25	3.17	12:25	4.58	3.91	04:20	1.17	12:20	1.80	1.50	04:20	0.174	12:30	0.451	0.305	0.305	0.03
10/19/2020	03:25	3.14	11:40	4.67	4.01	01:45	1.13	15:20	1.85	1.55	01:45	0.170	11:40	0.470	0.327	0.327	0.05
10/20/2020	02:55	3.17	10:10	5.05	4.03	03:00	1.19	10:10	2.00	1.53	02:55	0.177	10:10	0.577	0.326	0.326	-
10/21/2020	01:55	3.25	15:20	4.86	4.03	02:45	1.19	15:15	1.97	1.55	02:45	0.185	15:20	0.532	0.330	0.330	0.01
10/22/2020	04:00	3.06	14:25	4.88	4.01	00:50	1.16	15:00	1.93	1.54	03:55	0.168	14:30	0.511	0.328	0.328	-
10/23/2020	03:10	3.28	10:40	4.94	4.11	01:45	1.21	10:40	1.94	1.56	03:00	0.191	10:40	0.542	0.342	0.342	0.20
10/24/2020	03:05	3.40	11:20	4.70	4.02	06:20	1.26	11:15	1.82	1.52	06:20	0.207	11:20	0.473	0.321	0.321	0.02
10/25/2020	04:50	3.09	10:30	4.42	3.80	04:55	1.16	11:10	1.75	1.48	04:55	0.166	11:10	0.412	0.289	0.289	-
10/26/2020	03:35	2.98	11:25	4.46	3.76	00:45	1.20	11:30	1.90	1.54	03:45	0.163	11:30	0.455	0.297	0.297	-
10/27/2020	03:00	2.98	15:10	4.54	3.79	01:40	1.23	15:05	1.87	1.56	03:00	0.165	15:05	0.461	0.303	0.303	-
10/28/2020	02:50	2.89	09:30	4.50	3.70	02:35	1.19	09:20	1.86	1.52	02:35	0.156	09:25	0.452	0.287	0.287	-
10/29/2020	04:55	2.88	09:10	4.43	3.73	03:35	1.16	08:55	1.83	1.50	03:45	0.152	09:10	0.431	0.287	0.287	-
10/30/2020	03:15	2.93	17:10	4.23	3.74	03:50	1.16	10:20	1.78	1.49	03:50	0.153	15:55	0.385	0.283	0.283	0.10
10/31/2020	05:05	3.09	10:55	4.51	3.66	05:05	1.06	12:05	1.72	1.42	05:10	0.150	10:55	0.386	0.262	0.262	-
11/01/2020	05:20	2.69	12:50	4.06	3.41	05:35	1.18	12:55	1.79	1.49	05:35	0.137	12:55	0.375	0.250	0.250	-
11/02/2020	04:55	2.56	16:00	4.03	3.45	04:50	1.19	16:10	1.82	1.55	04:50	0.130	16:10	0.381	0.265	0.265	-
11/03/2020	04:35	2.47	13:25	4.47	3.49	04:25	1.21	13:25	2.02	1.61	04:35	0.125	13:25	0.488	0.283	0.283	0.83
11/04/2020	03:10	2.72	15:30	4.35	3.46	03:05	1.28	15:30	1.98	1.57	03:05	0.152	15:30	0.460	0.269	0.269	0.09
11/05/2020	03:45	2.69	16:30	4.47	3.56	03:50	1.26	10:00	2.01	1.62	03:55	0.146	10:15	0.476	0.291	0.291	0.34
11/06/2020	04:50	2.63	15:00	4.01	3.41	03:25	1.27	10:35	1.80	1.56	04:55	0.142	15:05	0.370	0.261	0.261	0.10
11/07/2020	04:05	2.64	15:55	4.15	3.36	02:25	1.27	15:50	1.85	1.54	04:10	0.144	16:00	0.403	0.252	0.252	0.07
11/08/2020	06:10	2.61	10:50	3.95	3.37	06:05	1.25	11:30	1.82	1.55	06:05	0.141	11:30	0.366	0.255	0.255	0.01
11/09/2020	03:55	2.67	11:50	4.35	3.50	05:00	1.26	13:05	1.95	1.59	03:55	0.147	12:00	0.449	0.277	0.277	0.04

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	03:45	2.57	13:05	4.35	3.41	04:00	1.25	12:25	1.97	1.57	03:45	0.138	13:05	0.456	0.265	0.265	0.03
11/11/2020	03:55	2.59	13:35	4.60	3.42	03:30	1.27	13:40	2.14	1.58	03:55	0.140	13:40	0.530	0.269	0.269	-
11/12/2020	04:30	2.57	15:45	4.37	3.42	03:55	1.25	15:45	1.97	1.59	03:55	0.138	15:45	0.461	0.269	0.269	0.16
11/13/2020	02:50	2.78	14:10	4.48	3.56	02:35	1.33	13:45	2.08	1.64	02:50	0.162	14:10	0.500	0.291	0.291	0.38
11/14/2020	04:55	2.68	10:50	4.20	3.47	04:35	1.31	10:45	1.92	1.61	05:05	0.151	10:50	0.421	0.277	0.277	0.47
11/15/2020	05:35	2.69	18:45	4.13	3.43	05:10	1.31	18:40	1.94	1.59	05:20	0.153	18:45	0.419	0.267	0.267	0.19
11/16/2020	04:55	2.74	14:10	4.44	3.59	02:25	1.22	16:30	2.01	1.65	02:25	0.158	16:30	0.479	0.299	0.299	0.31
11/17/2020	04:15	2.75	15:55	4.35	3.57	04:35	1.33	15:55	2.00	1.64	04:35	0.160	15:55	0.465	0.295	0.295	0.20
11/18/2020	03:35	2.72	15:45	4.51	3.57	04:55	1.29	15:50	2.04	1.63	04:55	0.154	15:45	0.497	0.292	0.292	0.30
11/19/2020	03:30	2.90	11:00	4.53	3.65	02:10	1.32	16:10	2.05	1.64	03:30	0.177	16:10	0.501	0.303	0.303	0.50
11/20/2020	03:55	2.72	13:25	4.29	3.52	05:15	1.28	13:25	1.93	1.60	03:55	0.153	13:25	0.441	0.279	0.279	0.01
11/21/2020	05:50	2.74	12:15	4.24	3.48	05:55	1.27	12:15	1.88	1.58	05:55	0.152	12:15	0.422	0.273	0.273	-
11/22/2020	06:00	2.72	17:45	3.94	3.48	05:40	1.25	12:50	1.79	1.58	05:50	0.149	17:45	0.360	0.273	0.273	0.21
11/23/2020	05:00	2.86	16:45	4.46	3.68	03:10	1.32	16:25	1.99	1.67	05:05	0.167	16:50	0.475	0.313	0.313	0.14
11/24/2020	03:25	2.83	13:15	4.54	3.66	03:20	1.27	12:45	1.98	1.63	03:25	0.159	13:15	0.487	0.304	0.304	0.21
11/25/2020	05:05	2.84	15:45	4.32	3.64	04:45	1.31	09:00	1.92	1.63	04:55	0.167	15:45	0.435	0.301	0.301	0.05
11/26/2020	04:55	2.77	12:50	4.26	3.48	04:45	1.27	12:40	1.91	1.58	05:00	0.154	13:00	0.431	0.273	0.273	0.02
11/27/2020	04:50	2.71	12:25	4.12	3.47	04:45	1.31	12:25	1.85	1.58	04:50	0.155	12:25	0.397	0.271	0.271	-
11/28/2020	04:40	2.76	11:10	4.13	3.52	04:30	1.33	11:10	1.88	1.59	04:45	0.161	11:10	0.406	0.278	0.278	0.05
11/29/2020	05:55	2.81	12:20	4.04	3.47	06:35	1.28	12:10	1.81	1.55	05:45	0.161	12:15	0.377	0.266	0.266	-
11/30/2020	04:00	2.90	16:30	4.42	3.71	04:05	1.30	16:35	1.96	1.64	04:05	0.169	16:35	0.466	0.310	0.310	0.36
12/01/2020	04:45	2.80	12:45	4.61	3.59	04:10	1.26	12:40	2.03	1.61	04:30	0.157	12:40	0.512	0.292	0.292	-
12/02/2020	04:05	2.81	11:10	4.66	3.65	06:00	1.29	11:10	2.11	1.66	04:05	0.161	11:10	0.540	0.310	0.310	0.01
12/03/2020	04:50	2.86	11:35	4.49	3.62	01:35	1.31	11:45	2.00	1.66	04:55	0.167	11:45	0.487	0.304	0.304	-
12/04/2020	03:15	2.89	13:45	4.48	3.61	03:10	1.31	13:45	1.99	1.64	03:15	0.170	13:45	0.483	0.298	0.298	-
12/05/2020	04:05	2.89	10:55	4.39	3.54	03:50	1.29	10:55	1.92	1.61	06:15	0.167	10:55	0.452	0.284	0.284	0.03
12/06/2020	07:10	2.74	10:50	3.91	3.42	04:55	1.26	11:55	1.84	1.58	05:10	0.154	11:55	0.362	0.265	0.265	0.03
12/07/2020	03:50	2.73	13:25	4.46	3.56	03:45	1.28	13:20	1.98	1.63	03:45	0.153	13:20	0.476	0.292	0.292	-
12/08/2020	05:00	2.77	16:35	4.76	3.71	03:20	1.24	16:20	2.17	1.69	03:20	0.153	16:35	0.566	0.324	0.324	0.87
12/09/2020	05:10	2.98	14:50	4.55	3.68	05:50	1.34	14:50	2.03	1.67	05:10	0.186	14:50	0.503	0.311	0.311	0.17
12/10/2020	03:45	2.96	12:55	4.49	3.64	03:30	1.33	12:50	2.07	1.67	03:35	0.178	12:55	0.497	0.306	0.306	0.07
12/11/2020	04:40	2.86	10:40	4.56	3.60	04:35	1.29	10:35	2.03	1.65	04:40	0.165	11:10	0.507	0.300	0.300	0.02
12/12/2020	05:05	2.87	11:40	4.26	3.56	05:05	1.32	11:50	1.94	1.61	05:05	0.169	11:50	0.437	0.287	0.287	0.01
12/13/2020	05:40	2.93	12:00	4.27	3.62	05:45	1.31	12:00	1.89	1.61	05:40	0.174	12:00	0.428	0.294	0.294	0.24
12/14/2020	03:10	2.97	16:25	4.49	3.73	02:45	1.32	18:30	2.01	1.67	03:10	0.178	16:20	0.477	0.317	0.317	0.05
12/15/2020	03:40	2.98	14:00	4.71	3.77	03:35	1.34	14:05	2.11	1.70	03:35	0.181	14:00	0.548	0.330	0.330	0.58
12/16/2020	04:10	2.98	13:45	4.74	3.80	04:00	1.35	13:50	2.08	1.70	04:00	0.184	13:50	0.540	0.333	0.333	0.39
12/17/2020	04:30	2.99	14:30	4.58	3.75	03:10	1.35	14:40	2.11	1.71	03:10	0.187	14:30	0.525	0.328	0.328	0.08
12/18/2020	02:55	3.02	08:40	4.30	3.70	02:50	1.42	08:25	1.93	1.70	02:50	0.196	08:40	0.443	0.319	0.319	0.25
12/19/2020	06:35	2.90	17:20	4.25	3.68	04:50	1.39	13:55	1.94	1.69	06:30	0.180	17:20	0.427	0.317	0.317	0.37
12/20/2020	05:25	3.03	12:15	4.08	3.63	04:10	1.44	10:30	1.83	1.67	05:25	0.202	12:15	0.387	0.303	0.303	0.04
12/21/2020	05:05	3.19	17:00	4.76	3.94	05:00	1.49	17:00	2.18	1.77	05:10	0.223	17:00	0.577	0.365	0.365	1.07
12/22/2020	04:05	3.18	16:10	4.90	3.88	05:35	1.44	16:05	2.10	1.71	05:35	0.214	16:05	0.577	0.343	0.343	-
12/23/2020	04:05	3.09	13:40	4.76	3.80	02:30	1.38	13:30	2.06	1.68	04:00	0.202	13:35	0.543	0.329	0.329	-
12/24/2020	04:50	3.05	12:35	4.37	3.70	03:00	1.37	12:25	1.92	1.65	04:45	0.198	12:35	0.442	0.309	0.309	-
12/25/2020	06:25	2.99	15:45	4.15	3.64	05:45	1.34	13:05	1.85	1.63	06:30	0.184	15:40	0.400	0.299	0.299	0.49
12/26/2020	06:45	3.15	12:50	4.20	3.65	03:55	1.40	12:55	1.93	1.65	03:55	0.209	12:55	0.423	0.302	0.302	0.02
12/27/2020	05:00	3.00	13:15	4.41	3.67	03:25	1.37	13:05	1.92	1.65	03:25	0.189	13:15	0.455	0.306	0.306	0.13
12/28/2020	04:10	2.98	13:50	4.34	3.79	03:50	1.33	14:10	1.95	1.70	03:55	0.182	13:50	0.447	0.331	0.331	-
12/29/2020	04:35	3.01	10:20	4.61	3.83	04:55	1.34	10:30	2.06	1.70	04:50	0.184	10:20	0.516	0.336	0.336	0.14
12/30/2020	03:50	3.29	16:10	4.78	3.99	03:50	1.42	16:10	2.08	1.75	03:50	0.222	16:10	0.554	0.366	0.366	0.78
12/31/2020	04:30	3.36	11:20	4.57	3.93	04:20	1.49	11:25	1.99	1.74	04:30	0.240	11:25	0.494	0.355	0.355	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			65.672	30.65
Average	3.87	1.68	0.337	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES	AUB_A1_30820

Site Address /Location:	Opposite 627 - 637 37th St NW		
Site Access Details:	Park by kerb	Latitude:	47.340149
		Longitude:	-122.238708

Monitor Series	Location Type
TRITON+	Temporary
Pipe Size (H x W)	Pipe Shape
21.00 X 21.00	Circular
Manhole #	System Characteristics
A130820	Commercial
Access	Traffic
Drive	None









ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Friday, October 2, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
10:41:00 AM	
Depth of Flow (Wet DOF) (in)	
3.88	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.02	N/A
Silt (in)	Silt Type
0	

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
8	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A10_710151

Site Commentary

SITE INFORMATION

Pipe	Elliptical (23.88 in H x 23.75 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	5.60	0.80	0.297
Minimum	3.67	0.37	0.093
Maximum	10.47	1.32	1.093
Min Time	04/04/2021 5:00:00 AM	11/24/2020 5:00:00 AM	04/04/2021 5:00:00 AM
Max Time	01/02/2021 9:00:00 PM	01/03/2021 12:00:00 AM	01/02/2021 9:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

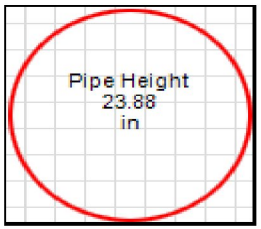
Percent Uptime	
DFINAL (in)	98.75
VFINAL (ft/s)	98.75
QFINAL (MGD - Total MG)	98.75

Hydrograph Report

AUB_A10_710151

Flow Monitor

AUB_A10_710151



Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



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Tukwila, WA 98168

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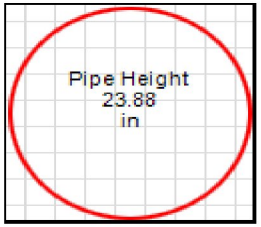
Scattergraph Report

AUB_A10_710151

Flow Monitor

AUB_A10_710151



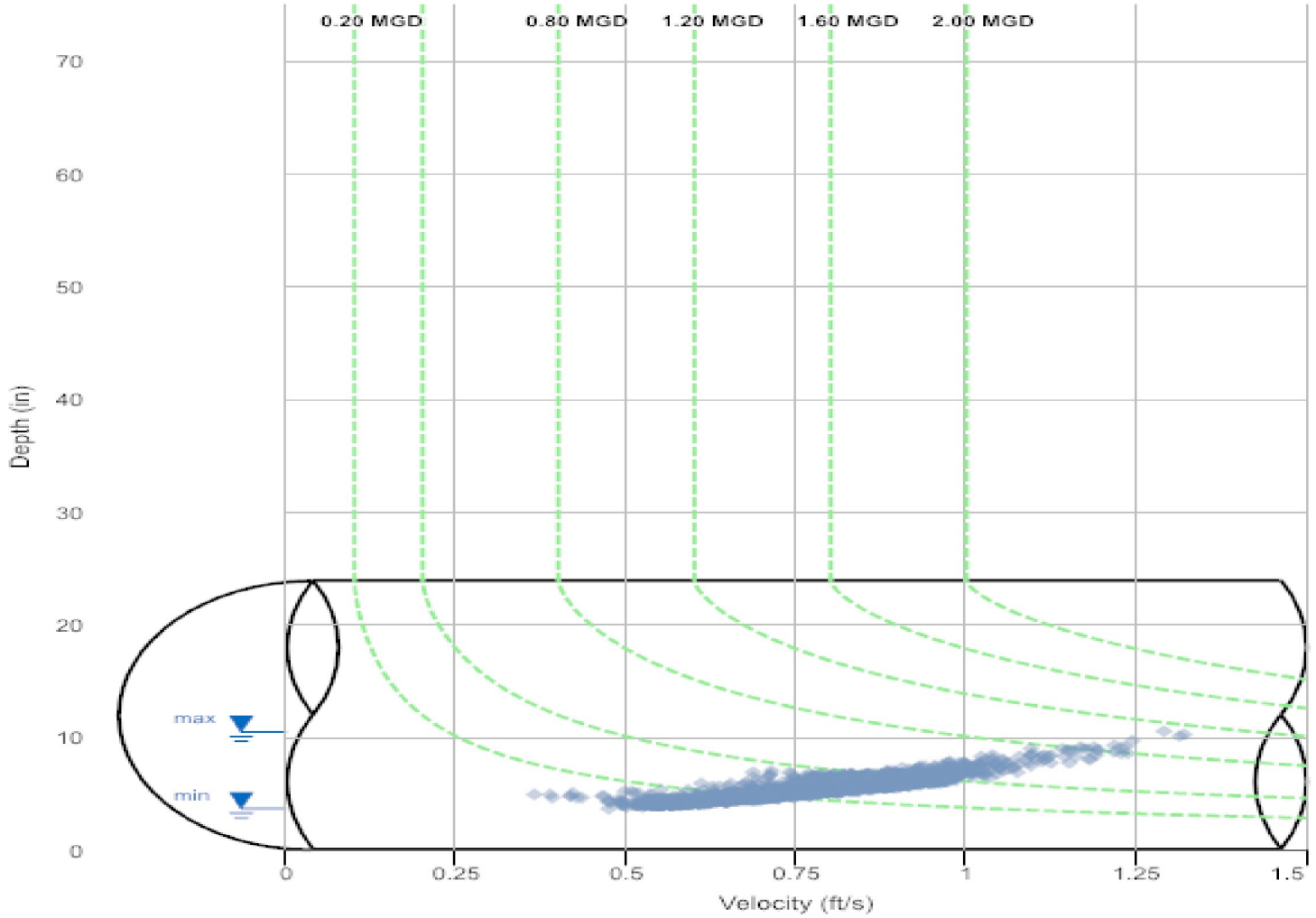
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth

ADS ENVIRONMENTAL SERVICES



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A10_710151Pipe: Elliptical (23.88 in H x 23.75 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	06:40	4.69	15:45	8.64	5.80	04:10	0.66	15:40	1.16	0.84	06:40	0.184	15:40	0.753	0.323	0.323	0.51
01/02/2021	06:15	4.28	21:10	11.06	6.65	06:30	0.56	21:25	1.42	0.89	06:30	0.137	21:10	1.246	0.451	0.451	1.69
01/03/2021	06:35	4.39	00:05	10.65	6.44	07:20	0.52	00:15	1.39	0.88	07:20	0.133	00:15	1.193	0.409	0.409	0.65
01/04/2021	03:55	4.75	19:15	7.82	6.14	06:20	0.63	19:10	1.12	0.84	04:00	0.185	19:10	0.629	0.349	0.349	0.48
01/05/2021	04:25	4.41	21:10	7.75	5.97	05:45	0.48	20:55	1.07	0.81	05:45	0.124	20:55	0.600	0.330	0.330	0.52
01/06/2021	06:00	4.97	20:05	6.73	5.96	07:05	0.58	21:25	0.93	0.78	07:05	0.177	20:15	0.401	0.309	0.309	0.22
01/07/2021	04:55	4.26	19:55	6.69	5.78	04:15	0.50	19:55	1.00	0.80	04:15	0.123	19:55	0.458	0.307	0.307	-
01/08/2021	04:05	4.67	17:35	6.92	5.93	06:20	0.60	18:35	1.02	0.83	05:40	0.169	18:35	0.478	0.329	0.329	0.22
01/09/2021	05:30	4.50	13:10	6.83	5.75	06:20	0.58	20:55	1.06	0.84	06:20	0.154	13:35	0.468	0.319	0.319	-
01/10/2021	06:20	4.52	14:15	6.94	5.83	06:25	0.57	14:15	1.03	0.85	06:25	0.149	14:15	0.500	0.327	0.327	0.07
01/11/2021	03:45	4.47	10:55	8.25	6.47	04:40	0.60	12:40	1.14	0.90	04:40	0.157	10:55	0.676	0.414	0.414	1.06
01/12/2021	00:00	6.18	19:05	9.95	7.71	15:35	0.84	18:45	1.33	1.07	00:40	0.362	19:15	0.978	0.605	0.605	2.10
01/13/2021	04:55	4.70	00:35	9.42	6.13	06:15	0.61	00:40	1.27	0.88	06:15	0.177	00:40	0.929	0.369	0.369	0.09
01/14/2021	05:05	4.62	13:10	6.80	5.85	05:00	0.58	21:15	1.04	0.82	05:00	0.158	20:40	0.476	0.320	0.320	0.01
01/15/2021	04:35	4.77	15:50	6.90	5.72	04:15	0.60	15:45	1.07	0.82	04:15	0.174	15:50	0.512	0.306	0.306	0.09
01/16/2021	06:10	3.96	12:20	6.68	5.49	06:10	0.52	19:50	0.96	0.78	06:10	0.114	16:10	0.431	0.281	0.281	-
01/17/2021	07:10	4.02	12:25	6.50	5.49	06:40	0.53	21:20	0.99	0.80	06:15	0.120	12:25	0.413	0.285	0.285	0.10
01/18/2021	04:30	4.04	18:45	6.61	5.53	04:20	0.53	22:05	0.95	0.78	04:20	0.120	18:45	0.424	0.281	0.281	-
01/19/2021	05:05	3.89	17:45	6.42	5.42	04:00	0.52	19:00	0.96	0.77	05:05	0.112	19:50	0.397	0.273	0.273	0.01
01/20/2021	05:15	3.99	18:20	6.37	5.38	04:40	0.50	20:55	1.00	0.77	04:40	0.111	20:10	0.406	0.270	0.270	-
01/21/2021	03:30	3.99	18:40	6.42	5.45	03:35	0.54	16:15	0.97	0.79	03:35	0.120	18:45	0.413	0.278	0.278	0.11
01/22/2021	05:25	4.01	18:55	6.42	5.40	04:35	0.54	16:05	0.98	0.78	04:35	0.123	16:15	0.417	0.273	0.273	-
01/23/2021	05:15	4.13	14:40	6.80	5.54	05:25	0.53	20:10	0.95	0.75	05:25	0.123	14:40	0.429	0.274	0.274	-
01/24/2021	06:50	4.05	18:05	7.08	5.62	07:30	0.50	18:45	1.07	0.80	07:05	0.117	18:45	0.511	0.299	0.299	0.16
01/25/2021	04:25	4.40	13:20	6.39	5.62	03:15	0.56	20:50	0.98	0.80	05:10	0.148	21:35	0.415	0.294	0.294	0.04
01/26/2021	04:05	3.91	13:55	6.29	5.41	05:35	0.47	13:40	0.99	0.77	05:35	0.108	13:40	0.412	0.271	0.271	-
01/27/2021	04:35	3.93	18:55	6.61	5.46	04:35	0.52	18:40	0.99	0.79	04:35	0.111	18:40	0.435	0.279	0.279	0.14
01/28/2021	03:40	4.15	19:30	6.26	5.58	03:45	0.58	12:30	0.97	0.81	03:45	0.136	12:30	0.401	0.292	0.292	0.24
01/29/2021	05:40	3.96	18:40	6.50	5.43	05:25	0.53	18:40	1.00	0.78	05:50	0.116	18:40	0.441	0.276	0.276	0.03
01/30/2021	06:05	4.18	13:00	6.50	5.51	06:05	0.54	17:10	0.98	0.79	06:05	0.128	13:05	0.417	0.286	0.286	0.07
01/31/2021	06:30	4.29	12:15	6.57	5.61	06:25	0.58	14:30	1.00	0.81	06:25	0.144	14:30	0.433	0.296	0.296	0.12
02/01/2021	07:05	4.86	18:50	7.60	6.01	00:40	0.66	19:50	1.05	0.84	07:05	0.196	18:55	0.550	0.340	0.340	0.82
02/02/2021	05:10	4.06	00:00	7.28	5.75	05:00	0.47	13:15	1.03	0.81	05:00	0.108	00:00	0.518	0.310	0.310	0.31
02/03/2021	04:10	4.31	19:15	6.40	5.49	05:55	0.55	19:10	0.96	0.79	05:55	0.140	19:10	0.409	0.279	0.279	0.06
02/04/2021	05:15	3.96	15:40	6.35	5.35	05:15	0.47	15:45	0.97	0.77	05:15	0.102	15:45	0.411	0.267	0.267	0.07
02/05/2021	04:40	3.99	13:40	6.53	5.36	06:25	0.48	22:20	0.98	0.78	06:25	0.108	22:20	0.397	0.270	0.270	0.01
02/06/2021	05:55	3.90	14:50	6.57	5.42	06:05	0.54	14:35	0.97	0.79	05:55	0.118	14:40	0.431	0.279	0.279	0.01
02/07/2021	06:25	3.84	12:10	6.60	5.42	06:20	0.51	15:20	1.05	0.80	06:20	0.107	15:20	0.459	0.285	0.285	-
02/08/2021	04:40	3.87	19:05	6.25	5.35	04:20	0.54	22:00	0.97	0.77	04:35	0.114	19:05	0.386	0.266	0.266	-
02/09/2021	04:20	3.87	20:35	6.36	5.34	04:55	0.53	22:10	0.98	0.78	04:20	0.114	20:30	0.412	0.271	0.271	-
02/10/2021	04:00	4.00	18:45	6.34	5.38	04:50	0.57	18:10	0.97	0.79	04:00	0.127	18:10	0.407	0.276	0.276	-
02/11/2021	05:40	4.02	12:20	6.18	5.37	05:35	0.49	21:40	1.02	0.81	05:35	0.109	18:05	0.414	0.280	0.280	-
02/12/2021	05:40	3.85	13:05	6.53	5.30	06:15	0.50	12:50	1.05	0.79	06:15	0.105	13:00	0.459	0.272	0.272	-
02/13/2021	05:05	3.95	16:55	6.20	5.28	04:55	0.52	15:05	0.97	0.79	04:55	0.115	16:55	0.387	0.269	0.269	0.08
02/14/2021	05:45	3.92	15:15	6.56	5.47	06:10	0.50	14:10	0.97	0.79	06:10	0.109	14:20	0.426	0.283	0.283	0.71
02/15/2021	06:50	5.37	14:05	9.19	6.91	07:10	0.68	14:10	1.23	0.97	07:10	0.234	14:10	0.869	0.477	0.477	0.78
02/16/2021	05:55	4.95	19:25	6.62	5.74	09:15	0.69	19:30	0.97	0.83	06:35	0.220	19:25	0.433	0.309	0.309	0.07
02/17/2021	04:35	3.89	16:25	6.50	5.51	04:30	0.50	19:35	0.94	0.75	04:30	0.106	19:35	0.406	0.270	0.270	-
02/18/2021	03:40	4.11	19:05	6.46	5.51	05:55	0.53	13:30	0.96	0.77	03:35	0.125	13:40	0.414	0.278	0.278	0.09
02/19/2021	05:15	3.99	19:35	7.03	5.51	05:25	0.56	19:55	0.98	0.77	05:25	0.123	19:40	0.479	0.277	0.277	0.17
02/20/2021	05:05	4.11	13:25	6.84	5.56	05:25	0.56	13:20	0.94	0.77	06:40	0.129	13:20	0.439	0.282	0.282	0.07
02/21/2021	06:25	3.94	23:50	8.91	5.76	06:30	0.53	23:50	1.25	0.78	06:30	0.115	23:50	0.847	0.304	0.304	0.42
02/22/2021	05:20	4.93	13:10	9.64	6.61	06:00	0.67	12:55	1.17	0.89	05:35	0.211	13:10	0.888	0.413	0.413	0.98
02/23/2021	05:00	3.93	22:00	8.22	5.68	04:05	0.51	21:55	1.12	0.77	05:00	0.111	21:55	0.682	0.292	0.292	0.27
02/24/2021	05:10	4.00	17:05	6.46	5.54	04:25	0.51	23:50	0.97	0.74	04:25	0.113	17:05	0.403	0.268	0.268	-
02/25/2021	03:00	4.26	18:20	6.52	5.66	03:20	0.59	14:10	0.91	0.78	03:05	0.146	19:25	0.393	0.287	0.287	0.18
02/26/2021	04:00	4.01	18:30	6.57	5.58	04:30	0.50	17:20	0.93	0.77	04:30	0.112	19:55	0.406	0.281	0.281	0.10
02/27/2021	06:25	4.02	12:15	6.75	5.61	06:20	0.54	19:05	0.92	0.77	06:20	0.122	12:15	0.404	0.283	0.283	0.02
02/28/2021	06:40	3.99	14:35	6.82	5.60	07:15	0.49	14:45	0.93	0.75	04:30	0.113	14:45	0.434	0.278	0.278	0.02
03/01/2021	05:10	4.02	18:45	6.34	5.51	05:05	0.45	18:45	0.99	0.77	05:05	0.100	18:45	0.419	0.277	0.277	-
03/02/2021	05:05	3.96	13:35	6.37	5.41	04:55	0.50	20:40	0.99	0.77	05:05	0.111	18:15	0.401	0.271	0.271	-
03/03/2021	04:45	3.90	18:45	6.42	5.40	05:00	0.51	18:05	0.98	0.78	05:00	0.109	18:05	0.421	0.273	0.273	-
03/04/2021	05:20	3.95	19:55	7.23	5.47	05:40	0.49	19:45	1.07	0.77	05:40	0.108	19:55	0.538	0.277	0.277	0.20
03/05/2021	05:10	3.94	13:30	6.34	5.40	04:40	0.47	11:35	0.99	0.78	04:40	0.103	13:20	0.405	0.275	0.275	0.05
03/06/2021	05:10	3.97	12:45	6.51	5.46	04:15	0.46	17:15	1.00	0.78	06:40	0.104	10:55	0.422	0.279	0.279	-
03/07/2021	06:00	3.77	13:00	6.62	5.44	05:55	0.50	12:55	1.04	0.80	05:55	0.102	12:55	0.464	0.286	0.286	0.04
03/08/2021	04:30	3.97	20:15	6.47	5.45	05:00	0.53	19:35	1.01	0.80	05:00	0.118	20:10	0.429	0.283	0.283	-
03/09/2021	05:00	3.80	20:50	6.31	5.37	04:55	0.46	16:20	0.97	0.77	05:10	0.094	20:45	0.406	0.270	0.270	0.01
03/10/2021	05:00	3.97	19:00	6.47	5.47	04:55	0.48	21:45	1.01	0.78	04:55	0.105	19:00	0.418	0.277	0.277	-
03/11/2021	05:15	3.89	12:35	6.30	5.42	05:05	0.49	18:10	1.00	0.77	05:10	0.104	18:10	0.410	0.273	0.273	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:35	3.79	18:35	7.48	5.39	04:25	0.50	18:30	1.11	0.77	04:25	0.103	18:40	0.594	0.270	0.270	-
03/13/2021	05:40	3.95	13:50	6.76	5.45	05:00	0.52	13:50	1.00	0.78	05:00	0.114	13:50	0.464	0.277	0.277	-
03/14/2021	05:25	3.94	15:35	7.15	5.63	05:15	0.50	20:05	1.07	0.81	05:30	0.107	20:05	0.518	0.304	0.304	0.30
03/15/2021	04:10	4.04	11:40	6.25	5.40	03:45	0.51	20:55	1.00	0.78	04:05	0.116	20:55	0.410	0.272	0.272	-
03/16/2021	03:50	4.02	19:00	6.42	5.47	03:25	0.54	21:55	1.03	0.78	03:50	0.119	19:00	0.437	0.280	0.280	-
03/17/2021	03:10	3.98	11:35	6.25	5.42	03:10	0.47	21:35	0.98	0.78	03:10	0.103	21:35	0.385	0.275	0.275	-
03/18/2021	03:40	3.95	16:30	7.03	5.47	02:20	0.53	16:35	1.15	0.81	03:40	0.117	16:35	0.566	0.287	0.287	0.11
03/19/2021	03:30	3.94	13:00	6.31	5.35	04:40	0.53	21:20	1.01	0.79	04:40	0.119	13:00	0.408	0.274	0.274	0.03
03/20/2021	05:15	3.85	14:30	6.44	5.47	05:20	0.53	11:00	1.06	0.81	05:20	0.112	11:00	0.440	0.288	0.288	0.17
03/21/2021	05:25	3.90	11:15	6.73	5.42	02:00	0.51	13:55	1.02	0.79	05:05	0.115	11:20	0.448	0.283	0.283	0.07
03/22/2021	02:55	3.93	10:50	6.96	5.52	03:10	0.53	10:45	1.03	0.80	02:50	0.117	10:45	0.495	0.290	0.290	0.11
03/23/2021	05:00	3.94	11:15	6.33	5.42	05:55	0.53	15:50	1.02	0.79	04:55	0.119	15:50	0.428	0.280	0.280	-
03/24/2021	04:00	3.86	20:10	7.09	5.46	03:05	0.49	20:10	1.07	0.79	03:05	0.105	20:10	0.533	0.284	0.284	0.34
03/25/2021	03:10	4.61	18:20	6.55	5.74	02:50	0.63	18:30	0.99	0.82	02:50	0.175	18:30	0.438	0.309	0.309	0.27
03/26/2021	04:35	4.05	11:20	6.27	5.47	03:30	0.53	21:00	0.98	0.80	03:30	0.123	21:00	0.397	0.284	0.284	-
03/27/2021	05:10	3.95	14:15	6.38	5.47	05:50	0.52	12:35	1.01	0.76	05:15	0.116	12:35	0.429	0.271	0.271	-
03/28/2021	06:05	3.80	14:55	8.62	5.62	06:10	0.46	15:00	1.19	0.80	06:10	0.094	15:00	0.769	0.304	0.304	0.37
03/29/2021	04:10	3.85	20:40	6.46	5.44	04:10	0.47	20:45	1.04	0.78	04:10	0.098	20:45	0.452	0.276	0.276	-
03/30/2021	02:50	3.87	12:40	6.24	5.39	02:55	0.51	12:40	0.98	0.77	02:55	0.108	12:40	0.409	0.271	0.271	-
03/31/2021	04:00	4.04	21:10	6.27	5.48	03:35	0.55	19:40	0.94	0.78	03:45	0.123	18:05	0.382	0.276	0.276	-
04/01/2021	03:35	4.25	10:30	6.34	5.57	05:20	0.55	20:40	0.99	0.78	03:55	0.138	20:40	0.412	0.283	0.283	-
04/02/2021	03:30	3.93	15:50	6.24	5.44	03:20	0.54	16:35	0.98	0.78	03:25	0.117	16:35	0.407	0.278	0.278	-
04/03/2021	04:20	4.05	11:40	6.69	5.47	04:00	0.53	13:10	0.98	0.78	04:00	0.120	11:45	0.437	0.279	0.279	-
04/04/2021	05:05	3.64	11:30	6.62	5.37	04:55	0.44	16:20	0.95	0.76	04:55	0.085	11:25	0.422	0.266	0.266	-
04/05/2021	03:20	3.93	12:00	6.41	5.48	03:00	0.50	12:05	0.97	0.79	03:00	0.111	12:05	0.418	0.282	0.282	-
04/06/2021	03:40	4.03	12:35	6.56	5.51	04:20	0.55	21:15	0.98	0.78	04:25	0.126	12:20	0.422	0.280	0.280	-
04/07/2021	03:30	3.97	21:25	6.45	5.52	03:55	0.52	11:25	0.98	0.79	03:55	0.116	21:05	0.417	0.286	0.286	0.22
04/08/2021	03:20	4.14	12:50	6.26	5.51	02:40	0.51	21:15	0.96	0.80	02:40	0.120	16:55	0.389	0.285	0.285	-
04/09/2021	04:25	3.97	13:30	6.20	5.36	03:20	0.55	13:35	0.97	0.78	04:30	0.121	13:35	0.402	0.270	0.270	0.03
04/10/2021	06:10	3.98	12:00	6.62	5.47	06:00	0.55	11:20	0.97	0.80	06:05	0.121	11:25	0.425	0.287	0.287	0.02
04/11/2021	05:10	3.81	09:15	6.75	5.49	04:20	0.48	09:10	1.07	0.79	04:20	0.102	09:10	0.495	0.288	0.288	-
04/12/2021	03:45	3.92	11:35	6.45	5.47	03:55	0.52	20:10	0.96	0.77	03:55	0.112	20:15	0.410	0.273	0.273	-
04/13/2021	02:40	3.97	19:05	6.29	5.42	02:35	0.51	19:20	0.96	0.77	02:35	0.111	20:00	0.398	0.271	0.271	-
04/14/2021	03:40	3.88	18:50	6.39	5.46	03:05	0.53	20:40	0.96	0.78	03:10	0.114	18:45	0.406	0.278	0.277	-
09/24/2020	23:55	5.34	18:40	6.86	6.37	23:25	0.68	18:45	0.97	0.85	23:55	0.233	18:45	0.461	0.365	0.158	-
09/25/2020	03:45	4.57	12:25	7.63	6.04	04:55	0.53	12:10	1.06	0.82	03:50	0.148	12:10	0.565	0.334	0.334	-
09/26/2020	04:45	4.33	15:10	7.40	5.78	06:40	0.49	15:05	1.00	0.78	06:40	0.130	15:15	0.516	0.303	0.303	-
09/27/2020	05:05	4.36	11:30	6.86	5.65	04:55	0.48	14:55	0.98	0.79	04:55	0.121	11:45	0.449	0.297	0.297	-
09/28/2020	03:10	4.07	18:20	6.55	5.52	03:35	0.48	21:00	1.00	0.81	03:35	0.110	18:15	0.441	0.292	0.292	-
09/29/2020	03:10	3.95	17:25	6.35	5.47	03:50	0.45	21:10	1.00	0.80	03:50	0.101	21:10	0.410	0.288	0.288	-
09/30/2020	04:15	3.93	19:10	6.52	5.47	05:15	0.47	20:30	1.01	0.80	05:15	0.114	20:30	0.438	0.285	0.285	-
10/01/2020	04:20	3.92	19:20	6.47	5.50	04:00	0.50	11:10	1.05	0.83	04:00	0.109	19:15	0.433	0.299	0.299	-
10/02/2020	02:50	4.05	11:05	6.43	5.57	04:55	0.48	11:00	1.06	0.80	04:00	0.113	11:00	0.458	0.293	0.293	-
10/03/2020	04:30	4.13	11:35	6.57	5.58	05:25	0.50	12:35	1.03	0.84	05:25	0.121	12:35	0.454	0.310	0.310	0.01
10/04/2020	04:45	4.23	11:25	6.52	5.53	07:20	0.56	12:10	1.02	0.82	06:25	0.140	12:10	0.441	0.297	0.297	0.01
10/05/2020	04:15	4.09	12:25	6.36	5.49	04:05	0.58	21:20	1.02	0.82	04:15	0.132	18:30	0.423	0.294	0.294	-
10/06/2020	04:00	3.86	17:45	6.40	5.47	04:00	0.49	11:05	1.01	0.81	04:00	0.103	20:25	0.426	0.290	0.290	-
10/07/2020	03:20	4.11	18:45	6.45	5.51	04:45	0.54	19:35	1.01	0.81	04:45	0.128	19:35	0.431	0.292	0.292	-
10/08/2020	03:30	4.17	18:35	6.46	5.58	03:20	0.54	18:30	1.02	0.83	03:35	0.127	18:30	0.443	0.306	0.306	-
10/09/2020	03:20	4.22	23:55	10.07	5.76	04:45	0.55	23:55	1.40	0.84	02:35	0.136	23:55	1.125	0.329	0.329	0.64
10/10/2020	05:30	5.24	01:40	11.29	6.46	23:30	0.76	01:30	1.42	0.95	23:30	0.253	01:30	1.291	0.428	0.428	1.04
10/11/2020	05:45	3.98	18:15	7.57	5.74	07:15	0.50	18:10	1.10	0.83	05:40	0.113	18:10	0.596	0.325	0.325	0.53
10/12/2020	02:45	4.29	19:50	6.58	5.58	03:00	0.59	19:40	1.05	0.84	03:00	0.144	19:50	0.466	0.306	0.306	-
10/13/2020	01:30	4.60	07:35	8.80	5.98	00:50	0.68	07:25	1.30	0.89	01:35	0.189	07:25	0.854	0.359	0.359	0.61
10/14/2020	02:35	4.17	20:05	6.42	5.49	04:35	0.50	17:40	1.01	0.80	04:35	0.121	17:40	0.426	0.285	0.285	-
10/15/2020	04:05	3.98	12:15	6.48	5.46	05:25	0.49	20:00	1.02	0.80	04:00	0.113	18:05	0.429	0.287	0.287	-
10/16/2020	03:40	3.96	12:55	6.21	5.40	03:40	0.52	13:05	1.00	0.82	03:40	0.113	13:05	0.408	0.289	0.289	-
10/17/2020	05:25	4.08	12:00	6.41	5.44	03:40	0.58	20:40	1.03	0.83	03:40	0.134	12:05	0.431	0.294	0.294	0.01
10/18/2020	04:35	3.86	13:10	6.60	5.44	05:55	0.47	12:50	1.02	0.82	05:15	0.105	12:50	0.451	0.295	0.295	0.03
10/19/2020	04:20	4.06	19:00	6.46	5.51	05:40	0.56	19:00	0.99	0.81	04:20	0.129	19:00	0.432	0.292	0.292	0.05
10/20/2020	04:05	4.16	19:30	6.44	5.54	04:15	0.54	13:15	1.07	0.81	04:20	0.126	13:15	0.443	0.296	0.296	-
10/21/2020	03:15	4.01	19:35	6.43	5.47	04:25	0.51	18:00	1.05	0.82	04:10	0.117	18:00	0.450	0.294	0.294	0.01
10/22/2020	04:20	4.07	12:05	6.28	5.49	04:25	0.48	18:00	1.05	0.82	04:25	0.109	18:00	0.436	0.295	0.295	-
10/23/2020	03:00	4.03	19:30	6.69	5.50	03:10	0.51	19:30	1.08	0.82	03:10	0.113	19:30	0.493	0.297	0.297	0.20
10/24/2020	05:35	3.86	11:10	6.61	5.49	05:25	0.53	20:40	1.04	0.81	05:35	0.112	11:05	0.453	0.293	0.293	0.02
10/25/2020	04:50	3.94	11:40	6.47	5.46	04:20	0.54	20:10	1.01	0.81	04:25	0.118	12:10	0.433	0.291	0.291	-
10/26/2020	03:10	3.91	19:30	6.51	5.41	04:15	0.54	11:15	1.01	0.81	03:15	0.119	19:30	0.446	0.285	0.285	-
10/27/2020	02:45	4.18	18:50	6.56	5.52	03:30	0.53	16:55	1.02	0.81	03:55	0.126	18:20	0.445	0.293	0.293	-
10/28/2020	03:30	3.96	19:05	6.34	5.42	04:50	0.53	21:45	1.02	0.80	03:35	0.118	19:10	0.408	0.280	0.280	-
10/29/2020	03:25	4.03	13:40	7.39	6.04	03:30	0.53	15:05	1.15	0.89	03:30	0.118	10:45	0.589	0.377	0.377	-
10/30/2020	03:35	4.09	17:10	7.07	5.75	03:25	0.51	17:50	1.10	0.84	03:35	0.116	17:50	0.545	0.325	0.325	0.10
10/31/2020	04:40	3.87	11:15	6.71	5.39	04:50	0.47	10:55	1.02	0.78	04:50	0.100	13:45	0.465	0.276	0.276	-
11/01/2020	05:30	3.93	12:55	6.57	5.40	06:50	0.52	15:30	0.98	0.77	05:35	0.114	15:30	0.420	0.273	0.273	-
11/02/2020	03:35	4.03	19:00	6.31	5.41	04:05	0.52	19:00	0.99	0.79	03:45	0.117	19:00	0.420	0.277	0.277	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/03/2020	05:30	4.19	10:20	8.75	5.92	05:25	0.53	10:20	1.19	0.83	05:25	0.126	10:20	0.792	0.339	0.339	0.83
11/04/2020	04:10	4.11	20:10	6.29	5.46	03:35	0.58	20:05	1.02	0.80	03:35	0.135	20:05	0.428	0.283	0.283	0.09
11/05/2020	05:10	4.13	13:00	6.67	5.68	04:55	0.53	12:55	1.03	0.82	04:55	0.124	12:55	0.467	0.307	0.307	0.34
11/06/2020	05:30	4.31	20:10	6.37	5.56	05:30	0.60	19:55	1.01	0.82	05:30	0.149	20:10	0.430	0.294	0.294	0.10
11/07/2020	05:25	4.19	16:15	6.51	5.49	04:55	0.44	12:45	1.00	0.77	04:55	0.107	12:45	0.432	0.278	0.278	0.07
11/08/2020	06:25	4.11	13:10	6.76	5.57	06:20	0.41	13:05	1.07	0.79	06:20	0.095	13:05	0.497	0.293	0.293	0.01
11/09/2020	04:25	3.96	19:40	6.38	5.41	04:05	0.47	21:05	0.99	0.77	04:05	0.105	21:25	0.422	0.274	0.274	0.04
11/10/2020	04:25	4.11	17:55	6.56	5.46	04:30	0.49	17:55	1.04	0.79	04:30	0.114	17:55	0.463	0.282	0.282	0.03
11/11/2020	05:30	4.00	15:00	6.33	5.41	05:00	0.48	20:00	1.00	0.78	05:15	0.109	20:00	0.409	0.276	0.276	-
11/12/2020	05:05	4.05	20:45	6.64	5.51	05:00	0.46	11:15	1.04	0.80	05:00	0.105	19:55	0.445	0.290	0.290	0.16
11/13/2020	02:05	4.94	06:45	6.85	5.76	02:40	0.66	06:50	1.07	0.83	02:40	0.198	06:50	0.506	0.311	0.311	0.38
11/14/2020	05:55	4.01	18:25	7.82	5.68	08:00	0.52	18:55	1.06	0.76	06:10	0.120	18:30	0.559	0.292	0.292	0.47
11/15/2020	07:05	4.37	13:35	6.60	5.66	07:30	0.43	23:10	1.02	0.76	07:30	0.110	19:45	0.437	0.287	0.287	0.19
11/16/2020	04:25	4.33	13:45	7.46	5.71	05:05	0.51	13:45	1.09	0.78	05:05	0.128	13:45	0.581	0.296	0.296	0.31
11/17/2020	04:55	4.10	19:50	7.31	5.56	04:35	0.48	19:45	1.09	0.76	04:35	0.110	19:45	0.564	0.281	0.281	0.20
11/18/2020	04:30	3.95	18:00	6.90	5.60	05:15	0.45	17:45	1.01	0.76	04:35	0.100	17:45	0.464	0.281	0.281	0.30
11/19/2020	03:05	4.45	13:00	8.23	5.80	07:40	0.52	12:55	1.14	0.80	03:10	0.147	12:55	0.696	0.308	0.308	0.50
11/20/2020	04:35	4.21	12:25	6.22	5.45	04:50	0.45	22:30	0.96	0.73	04:50	0.108	22:30	0.384	0.261	0.261	0.01
11/21/2020	05:55	4.27	13:30	6.80	5.65	05:55	0.45	14:30	0.88	0.70	05:55	0.108	13:35	0.395	0.262	0.262	-
11/22/2020	06:30	4.47	17:55	7.14	5.94	06:25	0.34	19:25	0.86	0.64	06:25	0.090	19:25	0.403	0.261	0.261	0.21
11/23/2020	04:15	4.47	13:25	6.72	5.95	04:00	0.36	12:50	0.91	0.69	04:00	0.094	12:50	0.415	0.275	0.275	0.14
11/24/2020	05:00	4.83	16:15	7.34	5.72	05:15	0.33	16:05	1.10	0.74	05:10	0.097	16:05	0.564	0.281	0.281	0.21
11/25/2020	04:15	4.32	22:10	6.54	5.57	04:50	0.48	22:10	1.09	0.81	04:50	0.120	22:10	0.483	0.294	0.294	0.05
11/26/2020	06:25	4.07	13:05	6.92	5.58	06:50	0.52	14:05	1.10	0.84	06:55	0.119	14:10	0.523	0.309	0.309	0.02
11/27/2020	04:25	3.82	13:55	6.38	5.37	06:05	0.45	16:35	1.01	0.78	04:25	0.095	13:55	0.419	0.271	0.271	-
11/28/2020	06:15	4.00	13:30	6.50	5.46	05:35	0.48	18:35	0.96	0.77	06:05	0.110	13:25	0.404	0.273	0.273	0.05
11/29/2020	06:20	4.04	13:35	6.75	5.50	04:35	0.49	17:55	1.01	0.78	04:35	0.113	13:35	0.435	0.283	0.283	-
11/30/2020	03:40	4.34	04:50	6.69	5.79	03:55	0.54	04:30	1.02	0.80	03:55	0.145	04:50	0.450	0.305	0.305	0.36
12/01/2020	04:25	4.23	19:10	6.37	5.53	04:10	0.48	18:15	0.97	0.76	06:15	0.119	18:15	0.410	0.273	0.273	-
12/02/2020	04:30	4.09	19:30	6.47	5.60	04:25	0.49	19:10	1.02	0.80	04:25	0.115	19:10	0.438	0.295	0.295	0.01
12/03/2020	04:55	4.16	13:20	6.39	5.52	05:40	0.52	18:40	1.04	0.83	05:20	0.125	18:40	0.436	0.297	0.297	-
12/04/2020	04:35	4.04	13:00	6.44	5.54	05:00	0.49	14:15	1.02	0.82	05:00	0.109	14:15	0.441	0.297	0.297	-
12/05/2020	06:20	4.15	15:35	6.67	5.57	06:20	0.54	12:35	1.07	0.82	06:20	0.126	12:35	0.484	0.301	0.301	0.03
12/06/2020	05:45	4.19	17:45	6.72	5.71	05:45	0.53	21:05	1.04	0.85	05:45	0.125	17:45	0.457	0.319	0.319	0.03
12/07/2020	05:10	4.26	18:30	6.52	5.63	04:10	0.50	11:35	1.04	0.83	04:40	0.131	19:40	0.443	0.306	0.306	-
12/08/2020	04:55	4.32	21:35	7.68	6.14	05:15	0.58	21:30	1.20	0.88	05:15	0.150	21:30	0.659	0.370	0.370	0.87
12/09/2020	05:50	4.63	19:10	6.38	5.68	04:55	0.60	16:00	1.00	0.86	04:55	0.171	18:30	0.421	0.315	0.315	0.17
12/10/2020	05:35	4.00	20:45	6.55	5.41	05:35	0.56	20:40	1.04	0.82	05:35	0.124	20:45	0.465	0.286	0.286	0.07
12/11/2020	04:30	3.99	12:45	6.44	5.38	04:50	0.54	12:45	0.99	0.80	05:05	0.120	12:45	0.430	0.278	0.278	0.02
12/12/2020	05:50	3.99	12:35	6.60	5.41	05:00	0.50	13:25	1.04	0.80	05:00	0.112	13:25	0.459	0.282	0.282	0.01
12/13/2020	06:50	3.96	11:50	6.92	5.54	06:25	0.46	11:45	1.03	0.81	06:50	0.106	11:50	0.494	0.294	0.294	0.24
12/14/2020	03:30	4.14	19:30	6.40	5.45	03:30	0.57	20:25	1.02	0.81	03:30	0.133	17:50	0.434	0.286	0.286	0.05
12/15/2020	04:35	3.84	16:10	8.83	5.79	04:30	0.43	16:00	1.34	0.84	04:30	0.090	16:05	0.876	0.330	0.330	0.58
12/16/2020	05:20	4.20	14:50	7.62	5.70	05:15	0.49	14:55	1.10	0.83	05:15	0.116	14:55	0.601	0.316	0.316	0.39
12/17/2020	04:10	4.14	13:00	6.26	5.39	05:10	0.53	19:10	1.01	0.81	05:10	0.123	19:10	0.420	0.279	0.279	0.08
12/18/2020	04:25	4.09	19:25	6.46	5.45	04:25	0.56	19:10	1.01	0.80	04:25	0.128	19:10	0.435	0.281	0.281	0.25
12/19/2020	06:10	3.96	21:25	7.11	5.64	07:20	0.51	21:45	1.09	0.81	06:10	0.112	21:45	0.538	0.309	0.309	0.37
12/20/2020	06:50	3.97	13:25	6.37	5.36	07:20	0.50	13:25	1.01	0.79	07:10	0.114	13:25	0.433	0.275	0.275	0.04
12/21/2020	04:55	4.97	16:40	9.65	6.44	04:50	0.66	16:45	1.37	0.93	04:50	0.203	16:45	1.029	0.427	0.427	1.07
12/22/2020	05:10	4.20	18:55	6.20	5.47	05:20	0.49	19:00	0.97	0.79	05:20	0.116	19:00	0.399	0.282	0.282	-
12/23/2020	05:10	4.22	14:20	6.32	5.41	03:15	0.56	18:30	0.99	0.79	05:45	0.135	18:30	0.414	0.275	0.275	-
12/24/2020	05:50	3.99	14:05	6.49	5.45	05:45	0.56	19:00	1.01	0.81	05:45	0.124	15:55	0.421	0.289	0.289	-
12/25/2020	06:10	3.96	16:50	6.90	5.36	07:15	0.52	16:55	1.13	0.80	07:15	0.114	16:55	0.537	0.279	0.279	0.49
12/26/2020	06:00	4.10	12:55	6.54	5.41	05:35	0.57	12:15	1.04	0.81	05:35	0.132	12:30	0.450	0.284	0.284	0.02
12/27/2020	05:35	4.01	09:35	6.62	5.51	05:35	0.53	15:45	1.07	0.81	05:35	0.118	15:45	0.480	0.293	0.293	0.13
12/28/2020	05:10	4.15	14:35	6.51	5.48	06:40	0.56	22:00	1.01	0.82	05:10	0.144	14:40	0.443	0.290	0.290	-
12/29/2020	04:15	4.14	19:50	7.07	5.46	04:15	0.57	19:55	1.10	0.81	04:20	0.132	19:55	0.541	0.287	0.287	0.14
12/30/2020	01:35	5.00	06:35	6.99	6.06	01:40	0.63	06:30	1.05	0.88	01:40	0.193	06:30	0.510	0.354	0.354	0.78
12/31/2020	06:50	4.45	00:05	6.59	5.64	06:25	0.59	00:05	1.06	0.83	06:25	0.154	00:05	0.475	0.305	0.305	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			60.203	30.65
Average	5.60	0.80	0.297	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES	AUB_A10_710151

Site Address /Location:	1498 Henry Rd			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Located within roadway	Latitude:	47.314373°	Pipe Size (H x W): 14.13 x 14.13	Pipe Shape: Circular
		Longitude:	-122.209694°		



Manhole #	System Characteristics
710-142	Residential
Access	Traffic
Drive	Light







Installation Information	
Installation Date: Wednesday, September 23, 2020	Installation Type: Doppler Standard Ring and Crank
Monitoring Location (Sensors): Upstream 0-5 FT	Monitor Location: Manhole
Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5)	Pressure Sensor Range (psi): 0 - 5 psi
Installation Confirmation:	
Time: 8:49:00 AM	Pipe Size (HxW): 14.13 x 14.13
Depth of Flow (Wet DOF) (in): 2.63	
CS5 Physical Offset (in): 1.64	Measurement Confidence (in): 0.25"
Peak Velocity (fps): 1.44	Velocity Sensor Offset (in): N/A
Silt (in): 0	Silt Type:
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT): 9	Manhole Configuration: Common Trench
Manhole Material: Concrete	Manhole Condition: Good
Manhole Opening Diameter (in): 24	Manhole Diameter (Approx.): 26
Manhole Cover: Steel	Manhole Frame: Normal
Active Connections: No	Air Quality: Normal
Pipe Material: PVC	Pipe Condition: Good
Communication Information:	
Communication Type: Wireless	Antenna Location: Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

AUB_A11_710142

Site Commentary

SITE INFORMATION

Pipe	Round (14.13 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.41	0.84	0.071
Minimum	1.30	0.37	0.012
Maximum	4.84	1.55	0.330
Min Time	10/23/2020 4:00:00 AM	10/27/2020 4:00:00 AM	10/27/2020 4:00:00 AM
Max Time	01/03/2021 1:00:00 AM	01/03/2021 1:00:00 AM	01/03/2021 1:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

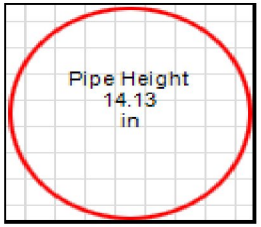
Percent Uptime	
DFINAL (in)	99.217
VFINAL (ft/s)	99.217
QFINAL (MGD - Total MG)	99.217

Hydrograph Report

AUB_A11_710142

Flow Monitor

AUB_A11_710142



Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



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Tukwila, WA 98168

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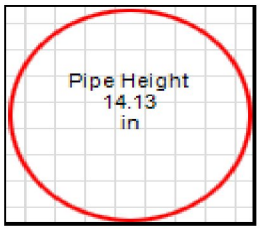
Scattergraph Report

AUB_A11_710142

Flow Monitor

AUB_A11_710142

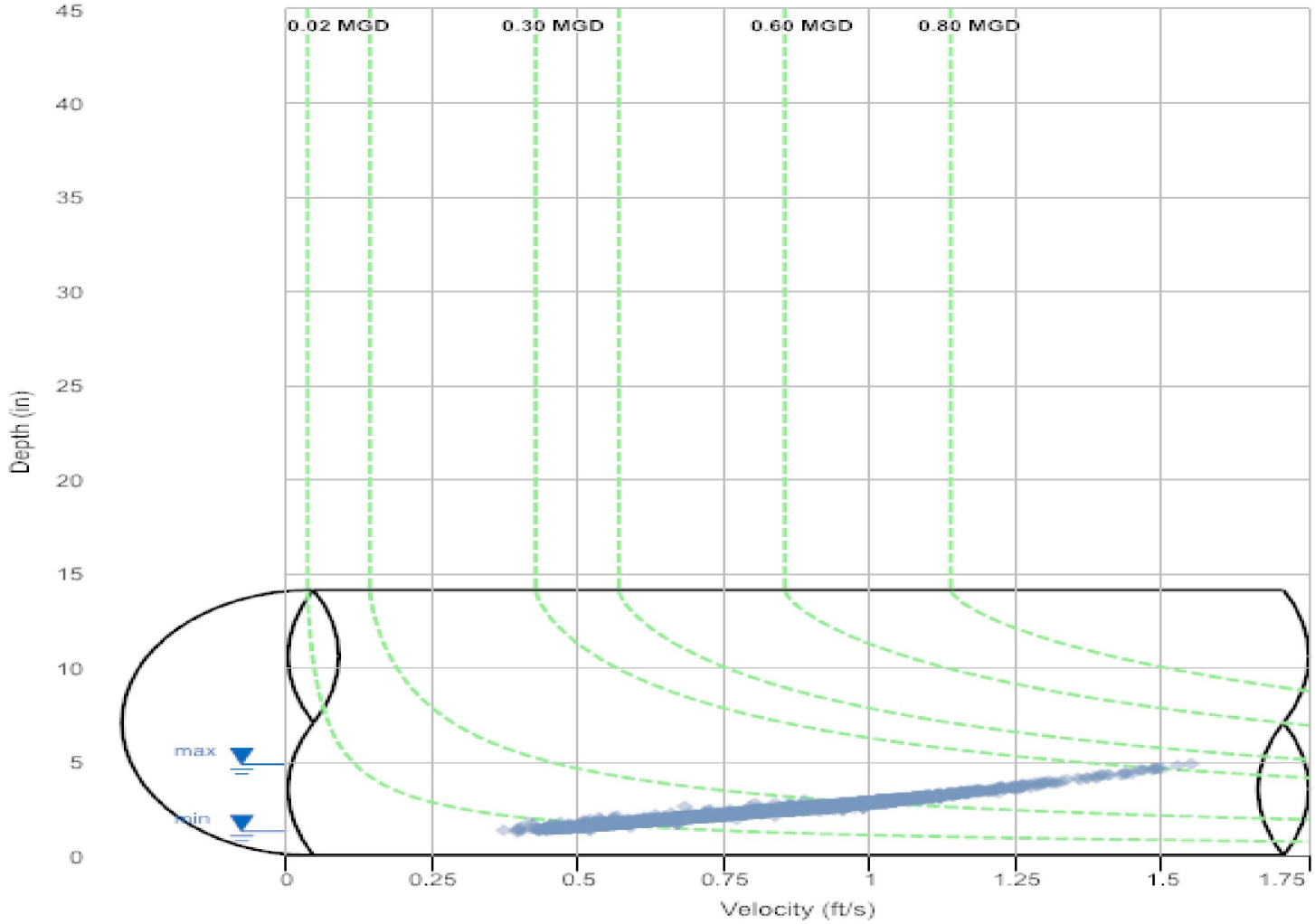


Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A11_710142Pipe: Round (14.13 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	04:15	2.04	16:15	3.18	2.66	04:15	0.69	16:15	1.14	0.95	04:15	0.043	16:15	0.135	0.090	0.090	0.51
01/02/2021	05:35	2.09	22:05	4.66	3.06	05:35	0.71	22:10	1.52	1.06	05:35	0.046	22:10	0.308	0.130	0.130	1.69
01/03/2021	23:05	3.12	01:05	4.87	3.71	23:05	1.08	01:10	1.56	1.26	23:05	0.125	01:20	0.336	0.190	0.190	0.65
01/04/2021	04:15	2.83	12:35	3.62	3.23	04:15	0.98	12:35	1.26	1.13	04:15	0.099	12:35	0.179	0.137	0.137	0.48
01/05/2021	03:15	2.45	21:40	3.55	2.99	03:10	0.83	21:35	1.23	1.04	03:10	0.068	21:35	0.170	0.114	0.114	0.52
01/06/2021	23:30	2.68	10:35	3.36	3.12	23:30	0.93	10:40	1.17	1.09	23:30	0.087	10:40	0.150	0.126	0.126	0.22
01/07/2021	05:20	2.20	21:00	3.09	2.71	04:10	0.74	20:55	1.10	0.94	05:20	0.052	20:55	0.124	0.090	0.090	-
01/08/2021	03:35	2.07	13:50	2.99	2.62	03:40	0.69	12:55	1.08	0.91	03:40	0.044	18:10	0.116	0.084	0.084	0.22
01/09/2021	05:15	1.93	12:55	3.25	2.51	07:20	0.63	12:45	1.14	0.87	07:20	0.036	12:50	0.139	0.076	0.076	-
01/10/2021	05:20	1.77	13:45	2.99	2.45	03:30	0.53	13:15	1.08	0.85	03:30	0.028	13:45	0.117	0.073	0.073	0.07
01/11/2021	04:20	1.74	22:05	3.72	2.78	04:05	0.57	21:55	1.26	0.96	04:05	0.029	22:00	0.186	0.103	0.103	1.06
01/12/2021	00:25	3.14	19:40	4.69	4.14	00:15	1.06	19:30	1.52	1.37	01:35	0.124	19:30	0.310	0.238	0.238	2.10
01/13/2021	23:55	2.95	01:10	4.36	3.46	23:50	1.02	01:10	1.44	1.19	23:50	0.109	01:10	0.266	0.160	0.160	0.09
01/14/2021	04:10	2.47	20:50	3.27	2.88	04:15	0.84	16:05	1.13	1.00	04:05	0.070	20:50	0.138	0.104	0.104	0.01
01/15/2021	04:40	2.16	12:55	3.09	2.69	04:35	0.71	10:50	1.09	0.93	04:35	0.048	12:50	0.123	0.088	0.088	0.09
01/16/2021	04:15	2.04	12:30	3.26	2.68	05:00	0.68	12:30	1.14	0.93	04:20	0.043	12:30	0.140	0.088	0.088	-
01/17/2021	04:35	1.99	11:45	3.10	2.61	04:35	0.64	14:25	1.10	0.90	04:35	0.039	11:40	0.124	0.083	0.083	0.10
01/18/2021	04:45	1.86	19:55	2.99	2.55	04:40	0.62	19:55	1.07	0.88	04:45	0.034	19:55	0.116	0.078	0.078	-
01/19/2021	04:15	1.63	21:20	3.16	2.50	04:10	0.48	21:30	1.10	0.86	04:10	0.022	21:25	0.129	0.076	0.076	0.01
01/20/2021	05:05	1.75	18:45	3.03	2.54	05:00	0.57	18:45	1.07	0.88	05:05	0.028	18:45	0.118	0.078	0.078	-
01/21/2021	03:35	1.83	18:45	2.97	2.50	03:25	0.60	18:45	1.06	0.87	03:35	0.032	18:50	0.114	0.075	0.075	0.11
01/22/2021	04:00	1.80	12:45	2.89	2.46	06:10	0.59	19:50	1.05	0.85	04:00	0.031	19:55	0.109	0.072	0.072	-
01/23/2021	04:30	1.70	12:25	3.10	2.45	04:30	0.54	12:20	1.10	0.85	04:30	0.026	12:20	0.126	0.072	0.072	-
01/24/2021	02:50	1.75	12:20	3.13	2.52	02:30	0.57	12:10	1.17	0.87	02:45	0.029	12:15	0.135	0.077	0.077	0.16
01/25/2021	04:55	1.70	14:10	2.93	2.47	04:50	0.57	14:10	1.06	0.85	04:55	0.027	14:10	0.111	0.073	0.073	0.04
01/26/2021	05:35	1.71	14:40	2.84	2.43	05:35	0.55	14:45	1.02	0.85	05:30	0.027	14:45	0.103	0.071	0.071	-
01/27/2021	02:50	1.79	13:10	2.91	2.45	02:55	0.57	10:15	1.03	0.85	02:55	0.030	13:05	0.107	0.072	0.072	0.14
01/28/2021	02:30	1.79	20:25	2.97	2.52	02:30	0.59	20:35	1.07	0.88	02:30	0.031	20:35	0.115	0.077	0.077	0.24
01/29/2021	05:20	1.75	11:45	2.90	2.43	05:10	0.57	11:45	1.03	0.84	05:10	0.029	11:50	0.107	0.070	0.070	0.03
01/30/2021	06:55	1.72	13:30	2.91	2.35	06:30	0.57	13:25	1.05	0.82	06:40	0.028	13:25	0.109	0.065	0.065	0.07
01/31/2021	06:20	1.66	12:55	3.19	2.40	07:00	0.54	12:45	1.15	0.84	06:20	0.025	12:55	0.137	0.070	0.070	0.12
02/01/2021	03:50	1.88	21:05	3.42	2.65	04:00	0.61	19:05	1.19	0.93	04:00	0.034	21:05	0.157	0.089	0.089	0.82
02/02/2021	05:45	2.49	09:00	3.30	2.98	03:15	0.82	13:45	1.17	1.04	03:15	0.070	08:55	0.145	0.114	0.114	0.31
02/03/2021	05:05	2.32	19:15	3.23	2.77	05:10	0.79	19:10	1.13	0.96	05:00	0.060	19:15	0.137	0.095	0.095	0.06
02/04/2021	02:45	2.04	14:50	2.99	2.58	02:45	0.67	14:50	1.07	0.90	02:45	0.042	14:50	0.116	0.081	0.081	0.07
02/05/2021	05:20	1.93	12:25	2.85	2.49	05:15	0.65	12:25	1.02	0.87	05:55	0.037	12:25	0.103	0.074	0.074	0.01
02/06/2021	03:35	1.79	15:20	3.04	2.45	07:10	0.59	15:20	1.11	0.86	03:40	0.031	15:20	0.124	0.072	0.072	0.01
02/07/2021	05:30	1.82	12:00	2.98	2.44	05:00	0.60	12:00	1.07	0.85	05:30	0.032	12:00	0.116	0.072	0.072	-
02/08/2021	05:25	1.65	17:30	2.78	2.35	05:30	0.54	17:20	1.00	0.82	05:25	0.025	17:20	0.097	0.065	0.065	-
02/09/2021	03:15	1.60	11:55	2.80	2.31	03:30	0.50	11:55	1.03	0.80	03:30	0.022	11:55	0.101	0.063	0.063	-
02/10/2021	04:40	1.53	12:00	2.76	2.27	04:20	0.50	12:05	1.01	0.79	04:25	0.021	11:55	0.097	0.060	0.060	-
02/11/2021	03:05	1.55	19:45	2.76	2.30	03:00	0.49	19:40	0.99	0.80	03:00	0.021	19:50	0.096	0.062	0.062	-
02/12/2021	03:50	1.50	16:00	2.75	2.27	03:50	0.48	15:55	1.00	0.78	03:50	0.019	16:00	0.096	0.060	0.060	-
02/13/2021	05:55	1.53	21:30	2.81	2.27	03:35	0.49	21:35	1.00	0.77	03:35	0.021	21:35	0.100	0.059	0.059	0.08
02/14/2021	05:30	1.57	13:15	2.83	2.31	04:25	0.51	13:20	1.02	0.80	05:25	0.022	13:15	0.102	0.063	0.063	0.71
02/15/2021	00:30	2.28	15:30	3.87	3.18	00:30	0.77	15:25	1.34	1.10	00:35	0.056	15:25	0.209	0.136	0.136	0.78
02/16/2021	05:05	2.89	14:15	4.24	3.13	03:10	1.01	14:10	1.40	1.09	03:25	0.105	14:15	0.249	0.128	0.128	0.07
02/17/2021	04:15	2.31	20:35	3.13	2.79	04:20	0.75	20:30	1.10	0.97	04:20	0.057	20:30	0.127	0.096	0.096	-
02/18/2021	05:20	2.03	18:35	3.07	2.65	04:50	0.69	18:35	1.08	0.92	05:00	0.043	18:35	0.121	0.086	0.086	0.09
02/19/2021	02:20	2.19	15:10	3.13	2.65	02:20	0.74	10:35	1.09	0.92	02:30	0.051	15:05	0.126	0.085	0.085	0.17
02/20/2021	05:50	1.89	14:15	3.09	2.55	05:15	0.59	14:20	1.10	0.88	05:15	0.035	14:15	0.125	0.078	0.078	0.07
02/21/2021	05:10	1.86	12:20	3.00	2.51	04:45	0.62	23:55	1.07	0.88	04:55	0.034	12:25	0.116	0.077	0.077	0.42
02/22/2021	05:35	2.66	14:15	4.18	3.36	05:35	0.94	14:20	1.40	1.16	05:35	0.086	14:20	0.244	0.152	0.152	0.98
02/23/2021	04:25	2.61	21:50	3.49	3.06	04:20	0.88	21:50	1.19	1.06	04:25	0.078	21:55	0.162	0.120	0.120	0.27
02/24/2021	04:15	2.39	19:10	3.27	2.91	04:10	0.78	19:05	1.16	1.01	04:10	0.062	19:05	0.142	0.106	0.106	-
02/25/2021	02:50	2.28	19:35	3.18	2.85	02:50	0.73	19:25	1.13	0.99	02:50	0.054	19:25	0.133	0.101	0.101	0.18
02/26/2021	02:05	2.35	19:25	3.11	2.75	02:05	0.78	16:25	1.09	0.96	02:05	0.060	16:30	0.124	0.094	0.094	0.10
02/27/2021	06:20	2.08	13:50	3.11	2.66	06:20	0.69	13:45	1.09	0.93	06:20	0.044	13:50	0.125	0.086	0.086	0.02
02/28/2021	04:55	2.00	13:10	3.12	2.62	02:50	0.65	12:30	1.11	0.91	02:50	0.040	13:10	0.127	0.084	0.084	0.02
03/01/2021	04:40	1.85	18:30	2.96	2.54	04:35	0.61	19:45	1.07	0.89	04:40	0.033	12:40	0.113	0.079	0.079	-
03/02/2021	02:35	1.84	20:35	2.91	2.49	02:35	0.60	20:35	1.06	0.87	02:35	0.032	20:45	0.111	0.075	0.075	-
03/03/2021	04:45	1.74	19:30	2.94	2.50	04:55	0.58	19:20	1.09	0.88	04:45	0.029	19:20	0.115	0.076	0.076	-
03/04/2021	05:45	1.82	19:15	3.01	2.46	05:40	0.60	19:10	1.10	0.86	05:40	0.032	19:15	0.121	0.073	0.073	0.20
03/05/2021	03:45	1.74	19:45	2.89	2.45	05:10	0.56	19:45	1.04	0.85	03:45	0.028	19:45	0.107	0.072	0.072	0.05
03/06/2021	06:15	1.66	12:10	3.00	2.40	06:15	0.53	12:05	1.08	0.84	06:10	0.025	12:10	0.118	0.069	0.069	-
03/07/2021	06:00	1.53	11:30	2.82	2.38	06:20	0.49	12:45	1.03	0.83	06:00	0.020	12:35	0.102	0.068	0.068	0.04
03/08/2021	05:55	1.65	12:00	2.85	2.35	05:55	0.53	12:00	1.03	0.82	05:50	0.025	12:05	0.105	0.066	0.066	-
03/09/2021	05:35	1.68	20:35	2.86	2.34	04:05	0.50	20:35	1.04	0.80	05:35	0.024	20:35	0.106	0.064	0.064	0.01
03/10/2021	03:30	1.66	20:35	2.72	2.34	02:50	0.50	19:00	0.98	0.81	03:00	0.023	20:35	0.093	0.063	0.063	-
03/11/2021	04:40	1.50	19:40	2.80	2.30	04:40	0.48	19:30	1.01	0.80	04:40	0.019	19:35	0.100	0.062	0.062	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	05:00	1.61	09:50	2.73	2.28	05:00	0.53	09:45	0.98	0.79	04:50	0.024	09:50	0.094	0.060	0.060	-
03/13/2021	04:25	1.54	15:00	3.00	2.29	04:20	0.50	15:00	1.08	0.79	04:15	0.021	15:00	0.118	0.061	0.061	-
03/14/2021	05:55	1.69	20:15	2.88	2.39	05:25	0.51	20:10	1.03	0.81	05:30	0.024	20:20	0.107	0.067	0.067	0.30
03/15/2021	04:25	1.55	19:30	2.78	2.31	04:15	0.48	19:20	1.01	0.80	04:25	0.020	19:30	0.099	0.063	0.063	-
03/16/2021	03:35	1.56	19:45	3.02	2.29	03:40	0.50	19:50	1.10	0.81	03:40	0.021	19:50	0.122	0.063	0.063	-
03/17/2021	03:15	1.49	11:55	2.76	2.26	03:25	0.49	12:00	1.02	0.79	03:00	0.020	12:00	0.099	0.060	0.060	-
03/18/2021	02:45	1.48	17:00	2.73	2.26	02:30	0.49	17:05	1.00	0.79	02:40	0.019	17:00	0.095	0.060	0.060	0.11
03/19/2021	03:45	1.43	11:45	2.66	2.22	03:45	0.46	11:35	0.96	0.78	03:45	0.017	11:40	0.088	0.057	0.057	0.03
03/20/2021	03:40	1.43	10:20	2.75	2.27	03:05	0.45	10:20	1.00	0.80	03:25	0.017	10:20	0.096	0.061	0.061	0.17
03/21/2021	04:20	1.37	13:10	2.86	2.23	04:15	0.43	13:10	1.03	0.78	04:00	0.015	13:10	0.105	0.060	0.060	0.07
03/22/2021	03:45	1.54	11:10	2.86	2.35	03:40	0.51	11:10	1.04	0.83	03:40	0.021	11:10	0.106	0.066	0.066	0.11
03/23/2021	03:05	1.50	19:10	2.81	2.28	03:05	0.48	19:10	1.01	0.80	03:05	0.019	19:10	0.100	0.061	0.061	-
03/24/2021	02:35	1.48	19:55	2.89	2.28	02:00	0.48	20:00	1.05	0.80	02:25	0.019	20:00	0.109	0.062	0.062	0.34
03/25/2021	03:10	2.00	20:15	2.97	2.56	03:15	0.69	13:35	1.06	0.90	03:15	0.042	20:20	0.114	0.080	0.080	0.27
03/26/2021	03:10	1.70	11:25	2.76	2.36	02:05	0.56	11:20	0.99	0.83	02:05	0.028	11:25	0.096	0.066	0.066	-
03/27/2021	05:15	1.62	13:25	2.83	2.29	05:05	0.52	13:20	1.03	0.80	05:10	0.023	13:25	0.103	0.062	0.062	-
03/28/2021	04:05	1.49	15:40	3.19	2.39	04:45	0.46	15:35	1.15	0.83	03:20	0.019	15:40	0.137	0.070	0.070	0.37
03/29/2021	04:00	1.70	20:00	2.82	2.35	02:00	0.55	20:00	1.00	0.81	02:15	0.027	19:55	0.099	0.065	0.065	-
03/30/2021	03:55	1.60	20:35	2.80	2.30	03:55	0.52	20:30	1.02	0.80	03:55	0.023	20:35	0.101	0.062	0.062	-
03/31/2021	02:55	1.57	19:00	2.82	2.32	04:25	0.53	18:55	0.98	0.79	02:55	0.023	19:00	0.098	0.062	0.062	-
04/01/2021	03:45	1.52	18:55	2.73	2.26	03:35	0.49	19:00	0.98	0.78	03:35	0.020	18:55	0.093	0.059	0.059	-
04/02/2021	04:05	1.42	18:50	2.62	2.21	04:25	0.44	18:50	0.94	0.77	04:05	0.017	18:50	0.084	0.057	0.057	-
04/03/2021	03:20	1.33	11:55	2.93	2.25	03:15	0.39	12:00	1.06	0.78	03:15	0.013	12:00	0.113	0.060	0.060	-
04/04/2021	04:50	1.51	10:25	2.79	2.25	04:55	0.47	13:10	1.00	0.79	04:50	0.019	10:20	0.096	0.060	0.060	-
04/05/2021	03:35	1.48	20:40	2.79	2.23	03:45	0.47	20:35	1.01	0.78	03:35	0.019	20:35	0.099	0.059	0.059	-
04/06/2021	03:35	1.48	19:55	2.83	2.21	03:45	0.45	20:00	1.02	0.77	02:05	0.019	20:00	0.102	0.057	0.057	-
04/07/2021	02:55	1.46	18:10	2.94	2.30	02:20	0.49	18:05	0.92	0.75	02:55	0.019	18:05	0.097	0.058	0.058	0.22
04/08/2021	04:40	1.57	20:55	2.79	2.34	02:45	0.39	15:00	1.02	0.79	02:15	0.021	15:00	0.099	0.063	0.063	-
04/09/2021	03:50	1.45	20:15	2.81	2.32	03:40	0.45	20:20	1.01	0.81	03:50	0.017	20:15	0.100	0.064	0.064	0.03
04/10/2021	03:40	1.63	12:00	2.79	2.36	03:40	0.54	11:55	1.00	0.83	03:45	0.024	12:00	0.098	0.066	0.066	0.02
04/11/2021	03:25	1.63	11:35	2.98	2.37	03:05	0.52	11:25	1.07	0.83	02:50	0.024	11:25	0.115	0.068	0.068	-
04/12/2021	04:00	1.70	20:35	2.82	2.38	03:45	0.56	20:20	1.01	0.84	03:50	0.027	20:35	0.101	0.068	0.068	-
04/13/2021	03:05	1.54	19:35	2.87	2.35	02:35	0.52	19:35	1.05	0.83	02:55	0.022	19:35	0.108	0.067	0.067	-
04/14/2021	04:20	1.64	21:15	2.83	2.33	04:25	0.55	19:25	1.03	0.82	04:20	0.025	19:30	0.103	0.065	0.065	-
09/23/2020	23:05	2.06	17:45	2.99	2.63	23:05	0.71	17:30	1.08	0.94	23:05	0.045	17:35	0.116	0.086	0.054	-
09/24/2020	03:30	1.39	10:55	2.79	2.26	03:25	0.43	10:50	1.02	0.79	03:10	0.016	10:55	0.100	0.061	0.061	-
09/25/2020	04:15	1.44	12:50	2.86	2.30	03:00	0.45	12:45	1.06	0.81	02:45	0.018	12:50	0.108	0.064	0.064	-
09/26/2020	03:00	1.48	10:35	3.01	2.26	02:55	0.48	10:35	1.10	0.80	02:55	0.019	10:35	0.121	0.061	0.061	-
09/27/2020	03:05	1.70	14:15	2.95	2.32	03:05	0.58	14:10	1.10	0.83	03:00	0.028	14:15	0.117	0.066	0.066	-
09/28/2020	03:55	1.38	20:35	2.78	2.23	03:10	0.45	20:35	1.00	0.78	03:50	0.016	20:35	0.098	0.059	0.059	-
09/29/2020	04:05	1.38	21:05	2.89	2.28	04:10	0.47	11:50	1.02	0.80	03:45	0.017	11:50	0.098	0.062	0.062	-
09/30/2020	04:30	1.54	19:30	2.89	2.32	04:25	0.45	19:20	1.08	0.79	04:25	0.019	19:35	0.112	0.063	0.063	-
10/01/2020	03:45	1.34	20:25	2.74	2.24	04:05	0.39	19:20	1.00	0.79	03:50	0.014	20:15	0.095	0.060	0.060	-
10/02/2020	04:05	1.42	19:15	2.72	2.24	03:45	0.44	19:05	0.98	0.79	03:50	0.016	19:15	0.093	0.059	0.059	-
10/03/2020	04:40	1.53	11:35	2.71	2.25	04:25	0.50	11:30	0.98	0.79	04:35	0.021	11:35	0.093	0.060	0.060	0.01
10/04/2020	04:35	1.36	15:30	2.74	2.25	04:20	0.43	15:30	1.02	0.80	04:20	0.015	15:30	0.097	0.062	0.062	0.01
10/05/2020	03:00	1.43	20:10	2.78	2.27	02:35	0.46	20:10	1.04	0.81	02:45	0.018	20:10	0.102	0.062	0.062	-
10/06/2020	03:10	1.37	20:15	2.67	2.25	03:00	0.41	20:05	0.99	0.80	03:00	0.015	20:05	0.091	0.061	0.061	-
10/07/2020	04:45	1.46	19:30	2.72	2.26	04:30	0.47	19:35	1.01	0.81	04:40	0.018	19:35	0.096	0.062	0.062	-
10/08/2020	02:40	1.39	19:50	2.83	2.23	02:45	0.44	19:50	1.08	0.79	02:30	0.016	19:50	0.108	0.060	0.060	-
10/09/2020	04:30	1.44	23:45	3.10	2.26	03:25	0.39	23:40	1.16	0.78	04:25	0.017	23:45	0.132	0.060	0.060	0.64
10/10/2020	04:30	1.93	02:25	3.09	2.49	04:30	0.64	00:00	1.14	0.88	04:30	0.037	02:20	0.130	0.075	0.075	1.04
10/11/2020	05:15	1.43	14:55	3.07	2.30	05:50	0.47	14:55	1.15	0.82	04:35	0.018	14:55	0.130	0.066	0.066	0.53
10/12/2020	04:30	1.38	20:35	2.82	2.22	04:35	0.43	20:35	1.03	0.79	04:35	0.015	20:35	0.103	0.059	0.059	-
10/13/2020	03:25	1.56	08:05	2.92	2.33	01:55	0.52	07:55	1.10	0.83	03:30	0.022	08:00	0.115	0.066	0.066	0.61
10/14/2020	04:25	1.37	08:35	2.80	2.20	04:35	0.41	08:35	1.04	0.78	04:20	0.015	08:35	0.103	0.058	0.058	-
10/15/2020	03:45	1.47	20:55	2.74	2.28	03:45	0.46	20:55	1.00	0.81	03:45	0.018	20:55	0.096	0.062	0.062	-
10/16/2020	04:15	1.34	16:10	2.62	2.19	02:55	0.44	16:10	0.96	0.77	04:05	0.015	16:10	0.086	0.057	0.057	-
10/17/2020	04:40	1.47	13:00	2.74	2.21	04:30	0.46	13:00	1.00	0.78	04:30	0.018	13:00	0.096	0.058	0.058	0.01
10/18/2020	04:55	1.33	12:25	2.79	2.20	04:35	0.42	12:25	1.02	0.78	04:35	0.014	12:25	0.100	0.059	0.059	0.03
10/19/2020	04:15	1.46	12:15	2.75	2.23	04:20	0.41	11:25	1.00	0.78	04:20	0.016	11:25	0.095	0.058	0.058	0.05
10/20/2020	04:15	1.32	20:00	2.78	2.17	03:10	0.43	20:00	1.03	0.76	04:20	0.014	20:00	0.100	0.056	0.056	-
10/21/2020	04:25	1.34	19:15	2.71	2.17	04:15	0.40	20:50	0.95	0.75	04:10	0.014	19:15	0.088	0.055	0.055	0.01
10/22/2020	02:35	1.45	11:45	2.67	2.18	02:10	0.38	18:20	0.98	0.74	02:10	0.015	18:25	0.090	0.055	0.055	-
10/23/2020	04:00	1.28	20:05	2.68	2.16	02:50	0.38	20:10	0.97	0.76	03:55	0.012	20:10	0.090	0.056	0.056	0.20
10/24/2020	04:30	1.61	10:40	2.75	2.18	04:15	0.53	09:15	1.00	0.77	04:10	0.024	10:45	0.096	0.055	0.055	0.02
10/25/2020	06:15	1.37	14:20	2.73	2.16	06:00	0.43	14:25	0.99	0.76	06:15	0.015	14:20	0.094	0.056	0.056	-
10/26/2020	04:00	1.58	20:30	2.65	2.22	04:15	0.52	20:25	0.98	0.79	04:15	0.022	20:25	0.089	0.059	0.059	-
10/27/2020	04:35	1.30	19:25	2.74	2.15	04:20	0.35	19:25	1.04	0.76	04:10	0.012	19:25	0.100	0.055	0.055	-
10/28/2020	04:20	1.34	18:40	2.67	2.17	04:35	0.35	16:40	0.97	0.76	03:40	0.014	18:40	0.090	0.056	0.056	-
10/29/2020	02:20	1.46	19:50	2.81	2.19	02:40	0.43	19:50	1.05	0.77	02:40	0.017	19:50	0.104	0.057	0.057	-
10/30/2020	04:45	1.45	10:30	2.62	2.22	05:15	0.41	10:30	0.95	0.78	05:15	0.016	10:30	0.085	0.058	0.058	0.10
10/31/2020	03:00	1.44	13:40	2.95	2.26	03:05	0.45	13:35	1.05	0.78	02:55	0.017	13:40	0.112	0.060	0.060	-
11/01/2020	03:45	1.46	10:20	2.87	2.26	03:30	0.44	10:20	1.04	0.78	03:30	0.017	10:20	0.106	0.061	0.061	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/02/2020	05:15	1.38	16:40	2.63	2.19	04:15	0.40	16:50	0.95	0.76	04:40	0.015	16:40	0.085	0.056	0.056	-
11/03/2020	04:15	1.35	10:50	3.05	2.30	03:55	0.41	10:45	1.13	0.80	03:40	0.014	10:45	0.126	0.065	0.065	0.83
11/04/2020	04:15	1.36	18:50	2.71	2.20	04:00	0.42	18:45	0.99	0.77	04:00	0.015	18:50	0.093	0.057	0.057	0.09
11/05/2020	04:55	1.42	20:55	2.82	2.28	04:45	0.44	20:55	1.04	0.80	04:40	0.017	20:55	0.104	0.063	0.063	0.34
11/06/2020	06:05	1.67	11:00	2.69	2.25	06:10	0.53	10:55	1.00	0.78	06:00	0.025	10:55	0.092	0.058	0.058	0.10
11/07/2020	04:00	1.39	15:40	2.78	2.22	03:20	0.44	15:45	1.03	0.78	04:00	0.016	15:45	0.101	0.058	0.058	0.07
11/08/2020	05:50	1.31	12:50	2.75	2.23	05:40	0.36	21:25	1.01	0.78	05:40	0.012	21:25	0.097	0.060	0.060	0.01
11/09/2020	05:35	1.38	20:05	2.74	2.19	05:25	0.41	20:00	1.01	0.76	05:25	0.015	20:00	0.096	0.056	0.056	0.04
11/10/2020	02:50	1.41	21:15	2.67	2.18	02:40	0.43	17:00	0.98	0.77	02:40	0.016	21:15	0.091	0.056	0.056	0.03
11/11/2020	04:05	1.30	16:05	2.60	2.15	03:50	0.38	14:10	1.03	0.79	04:00	0.012	16:05	0.091	0.057	0.057	-
11/12/2020	04:50	1.30	19:40	2.77	2.14	05:10	0.45	19:40	1.01	0.78	05:10	0.015	19:40	0.098	0.056	0.056	0.16
11/13/2020	02:15	1.65	13:25	2.79	2.28	02:10	0.54	13:20	1.10	0.80	02:10	0.025	13:20	0.108	0.060	0.060	0.38
11/14/2020	04:40	1.45	18:55	3.02	2.24	04:40	0.48	18:50	1.13	0.79	04:40	0.018	18:55	0.124	0.060	0.060	0.47
11/15/2020	04:55	1.38	13:15	2.92	2.22	05:05	0.42	13:20	1.08	0.78	04:55	0.015	13:15	0.113	0.059	0.059	0.19
11/16/2020	02:50	1.53	13:55	2.95	2.25	02:50	0.49	13:50	1.10	0.79	02:50	0.020	13:55	0.117	0.061	0.061	0.31
11/17/2020	05:30	1.37	19:25	2.78	2.22	05:35	0.41	19:25	1.01	0.77	05:25	0.015	19:25	0.099	0.058	0.058	0.20
11/18/2020	04:15	1.35	20:10	2.86	2.25	04:30	0.42	18:15	1.05	0.79	03:55	0.015	18:20	0.107	0.061	0.061	0.30
11/19/2020	02:50	1.62	13:25	2.96	2.32	02:50	0.53	13:20	1.09	0.82	02:50	0.024	13:25	0.117	0.064	0.064	0.50
11/20/2020	05:50	1.60	13:20	2.69	2.28	05:05	0.52	13:15	0.98	0.79	05:20	0.023	13:15	0.091	0.060	0.060	0.01
11/21/2020	04:35	1.54	15:05	2.88	2.25	06:20	0.49	14:50	1.06	0.79	06:20	0.021	15:00	0.109	0.060	0.060	-
11/22/2020	06:05	1.35	12:15	2.81	2.26	01:15	0.37	12:10	1.02	0.78	05:55	0.014	12:25	0.102	0.061	0.061	0.21
11/23/2020	05:05	1.52	17:50	2.74	2.30	05:00	0.46	17:50	0.97	0.78	03:40	0.019	17:50	0.093	0.061	0.061	0.14
11/24/2020	05:20	1.49	16:40	2.82	2.25	03:25	0.43	16:30	1.01	0.76	03:25	0.018	16:35	0.101	0.059	0.059	0.21
11/25/2020	05:25	1.48	18:20	2.82	2.28	04:55	0.44	18:20	1.03	0.78	05:25	0.018	18:20	0.103	0.061	0.061	0.05
11/26/2020	06:25	1.60	12:15	2.88	2.24	06:15	0.52	12:20	1.06	0.78	06:20	0.023	12:20	0.109	0.059	0.059	0.02
11/27/2020	05:30	1.41	13:55	2.76	2.22	05:10	0.45	13:50	1.01	0.77	05:05	0.017	13:50	0.097	0.059	0.059	-
11/28/2020	04:50	1.61	12:50	2.87	2.25	04:40	0.51	12:45	1.06	0.78	04:50	0.022	12:50	0.109	0.060	0.060	0.05
11/29/2020	06:00	1.39	13:30	2.79	2.22	06:20	0.44	13:25	1.02	0.78	06:00	0.016	13:30	0.101	0.059	0.059	-
11/30/2020	03:45	1.48	22:05	2.70	2.29	03:35	0.48	19:15	0.99	0.81	03:35	0.019	19:20	0.093	0.062	0.062	0.36
12/01/2020	04:10	1.48	18:00	2.73	2.20	04:00	0.44	18:00	1.02	0.76	04:05	0.017	18:00	0.097	0.056	0.056	-
12/02/2020	04:00	1.31	21:10	2.75	2.19	04:05	0.38	21:15	1.01	0.77	04:00	0.013	21:15	0.097	0.056	0.056	0.01
12/03/2020	04:10	1.41	14:15	2.72	2.17	04:15	0.46	14:15	1.02	0.76	04:10	0.017	14:15	0.097	0.054	0.054	-
12/04/2020	03:20	1.49	19:40	2.62	2.16	03:30	0.45	18:15	0.96	0.76	03:25	0.018	21:25	0.087	0.054	0.054	-
12/05/2020	05:15	1.42	12:45	2.71	2.19	05:20	0.42	12:30	0.99	0.76	05:15	0.016	12:30	0.093	0.056	0.056	0.03
12/06/2020	05:20	1.49	13:20	2.86	2.23	03:30	0.48	13:25	1.06	0.78	03:35	0.019	13:25	0.108	0.059	0.059	0.03
12/07/2020	03:55	1.35	17:45	2.76	2.19	04:00	0.36	17:50	1.00	0.76	04:00	0.012	17:50	0.096	0.055	0.055	-
12/08/2020	04:30	1.42	15:35	2.95	2.35	04:40	0.41	19:00	1.09	0.82	04:35	0.015	15:35	0.114	0.067	0.067	0.87
12/09/2020	04:50	1.67	11:25	2.74	2.34	03:30	0.54	15:40	0.96	0.79	03:30	0.025	11:25	0.091	0.062	0.062	0.17
12/10/2020	02:25	1.40	11:10	2.86	2.21	02:35	0.43	11:15	0.98	0.75	02:15	0.016	11:10	0.099	0.055	0.055	0.07
12/11/2020	01:05	1.38	14:10	2.73	2.21	02:15	0.42	14:10	0.98	0.76	02:15	0.015	14:10	0.093	0.056	0.056	0.02
12/12/2020	03:20	1.43	17:50	2.67	2.18	03:20	0.46	17:55	0.98	0.76	03:20	0.017	17:50	0.090	0.055	0.055	0.01
12/13/2020	23:30	1.52	09:25	2.90	2.29	23:50	0.44	09:15	1.06	0.81	23:45	0.020	09:25	0.110	0.063	0.063	0.24
12/14/2020	02:25	1.57	13:00	2.72	2.28	00:45	0.42	13:00	1.00	0.80	00:25	0.019	13:00	0.095	0.061	0.051	0.05
12/15/2020	04:55	1.45	16:50	3.07	2.37	05:05	0.38	16:45	1.13	0.82	05:05	0.016	16:55	0.128	0.069	0.069	0.58
12/16/2020	04:55	1.80	18:10	2.89	2.43	05:00	0.53	15:25	1.05	0.84	04:55	0.028	15:30	0.108	0.071	0.071	0.39
12/17/2020	04:15	1.73	13:35	2.82	2.35	04:00	0.58	13:35	1.04	0.83	04:00	0.029	13:35	0.104	0.066	0.066	0.08
12/18/2020	03:15	1.73	15:40	2.85	2.33	04:45	0.51	15:40	1.09	0.80	03:40	0.026	15:40	0.111	0.064	0.064	0.25
12/19/2020	07:10	1.64	21:00	2.97	2.39	07:10	0.49	20:55	1.06	0.81	07:15	0.022	21:05	0.114	0.067	0.067	0.37
12/20/2020	05:40	2.01	12:05	2.89	2.48	05:30	0.61	11:50	1.01	0.83	05:40	0.038	12:00	0.104	0.071	0.071	0.04
12/21/2020	02:35	1.92	19:05	3.76	2.76	02:35	0.64	19:05	1.32	0.98	02:35	0.037	19:05	0.199	0.100	0.100	1.07
12/22/2020	05:05	2.36	00:00	3.12	2.73	05:10	0.80	00:00	1.13	0.97	05:10	0.062	00:00	0.130	0.093	0.093	-
12/23/2020	04:00	1.91	13:05	2.89	2.47	03:55	0.63	13:05	1.06	0.86	03:55	0.036	13:05	0.110	0.073	0.073	-
12/24/2020	05:15	1.64	12:50	2.85	2.34	05:15	0.55	12:50	1.04	0.82	05:15	0.025	12:50	0.105	0.065	0.065	-
12/25/2020	04:30	1.61	19:05	2.79	2.28	04:40	0.53	19:00	1.03	0.80	04:25	0.024	19:05	0.102	0.061	0.061	0.49
12/26/2020	06:45	1.68	13:35	2.75	2.29	04:55	0.50	13:00	1.00	0.81	04:55	0.024	13:35	0.096	0.062	0.062	0.02
12/27/2020	05:45	1.44	12:55	2.88	2.32	05:45	0.47	13:00	1.09	0.82	05:40	0.018	12:55	0.112	0.065	0.065	0.13
12/28/2020	05:25	1.64	13:30	2.79	2.29	05:25	0.53	13:25	1.01	0.81	05:25	0.024	13:25	0.099	0.062	0.062	-
12/29/2020	05:45	1.53	20:10	2.85	2.34	05:25	0.50	18:40	1.03	0.82	05:45	0.020	18:40	0.104	0.066	0.066	0.14
12/30/2020	04:35	1.99	14:10	3.14	2.69	04:35	0.68	14:00	1.16	0.96	04:35	0.041	14:00	0.133	0.092	0.092	0.78
12/31/2020	04:20	2.36	14:10	3.16	2.73	04:10	0.81	12:10	1.11	0.96	04:10	0.063	14:10	0.130	0.093	0.093	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			14.520	30.65
Average	2.41	0.84	0.071	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A11_710142

Site Address /Location:	1498 Henry Rd			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Located within roadway	Latitude:	47.314373°	Pipe Size (H x W): 14.13 x 14.13	Pipe Shape: Circular
		Longitude:	-122.209694°		



Manhole #	System Characteristics
710-142	Residential
Access	Traffic
Drive	Light







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

Installation Information	
Installation Date:	Installation Type:
Wednesday, September 23, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi
Installation Confirmation:	
Time	Pipe Size (HxW)
8:49:00 AM	14.13 x 14.13
Depth of Flow (Wet DOF) (in)	
2.63	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.64	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.44	N/A
Silt (in)	Silt Type
0	
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
9	Common Trench
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

AUB_A12_71043

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.5 in H x 12 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	0.78	1.07	0.018
Minimum	0.10	0.21	0.000
Maximum	1.90	2.60	0.088
Min Time	09/27/2020 2:00:00 AM	11/18/2020 4:00:00 AM	10/14/2020 3:00:00 AM
Max Time	11/14/2020 6:00:00 PM	11/30/2020 11:00:00 AM	02/07/2021 10:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

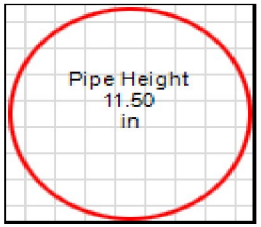
Percent Uptime	
DFINAL (in)	99.319
VFINAL (ft/s)	99.319
QFINAL (MGD - Total MG)	99.319

Hydrograph Report

AUB_A12_71043

Flow Monitor

AUB_A12_71043



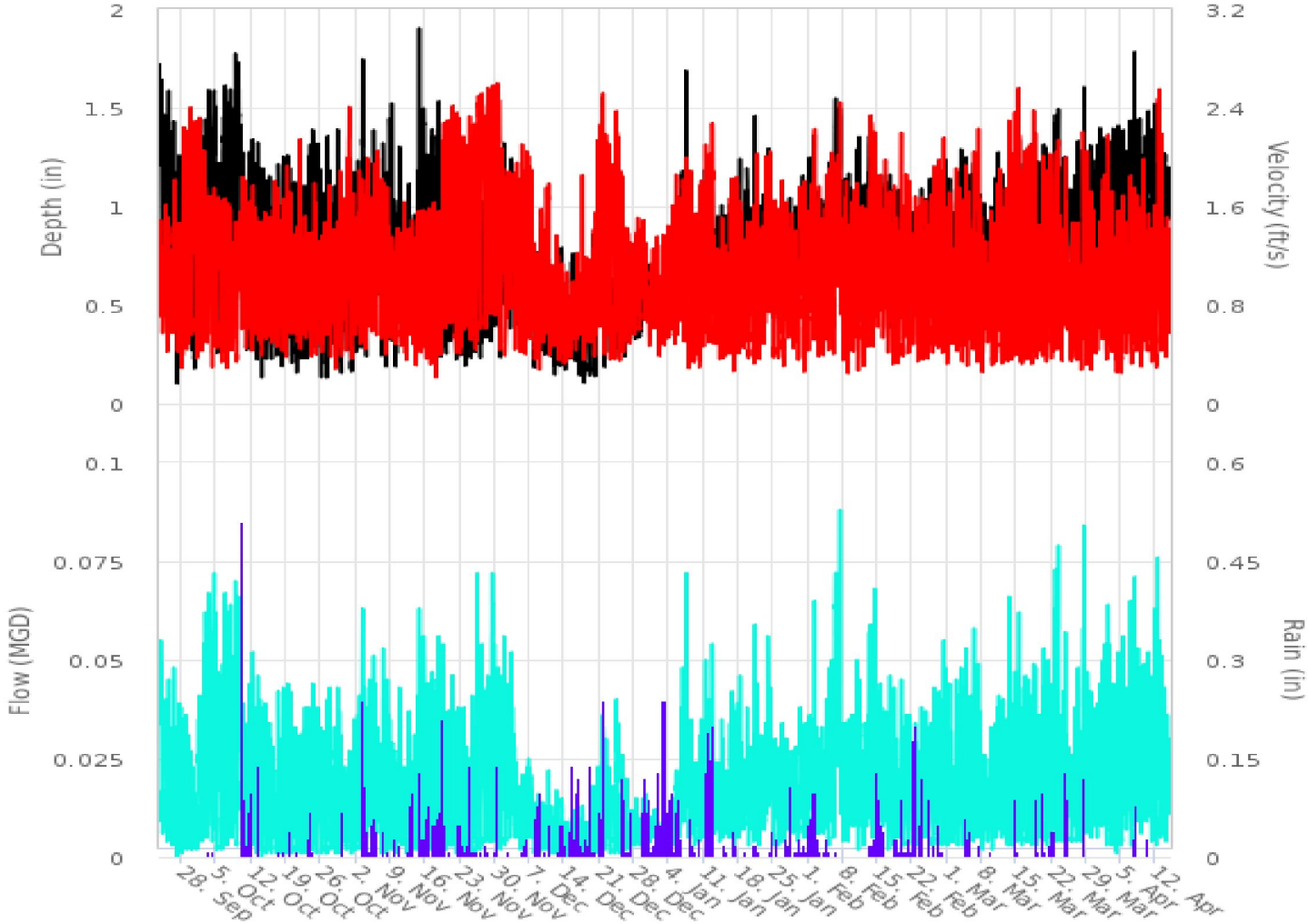
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



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Scattergraph Report

AUB_A12_71043

Flow Monitor

AUB_A12_71043

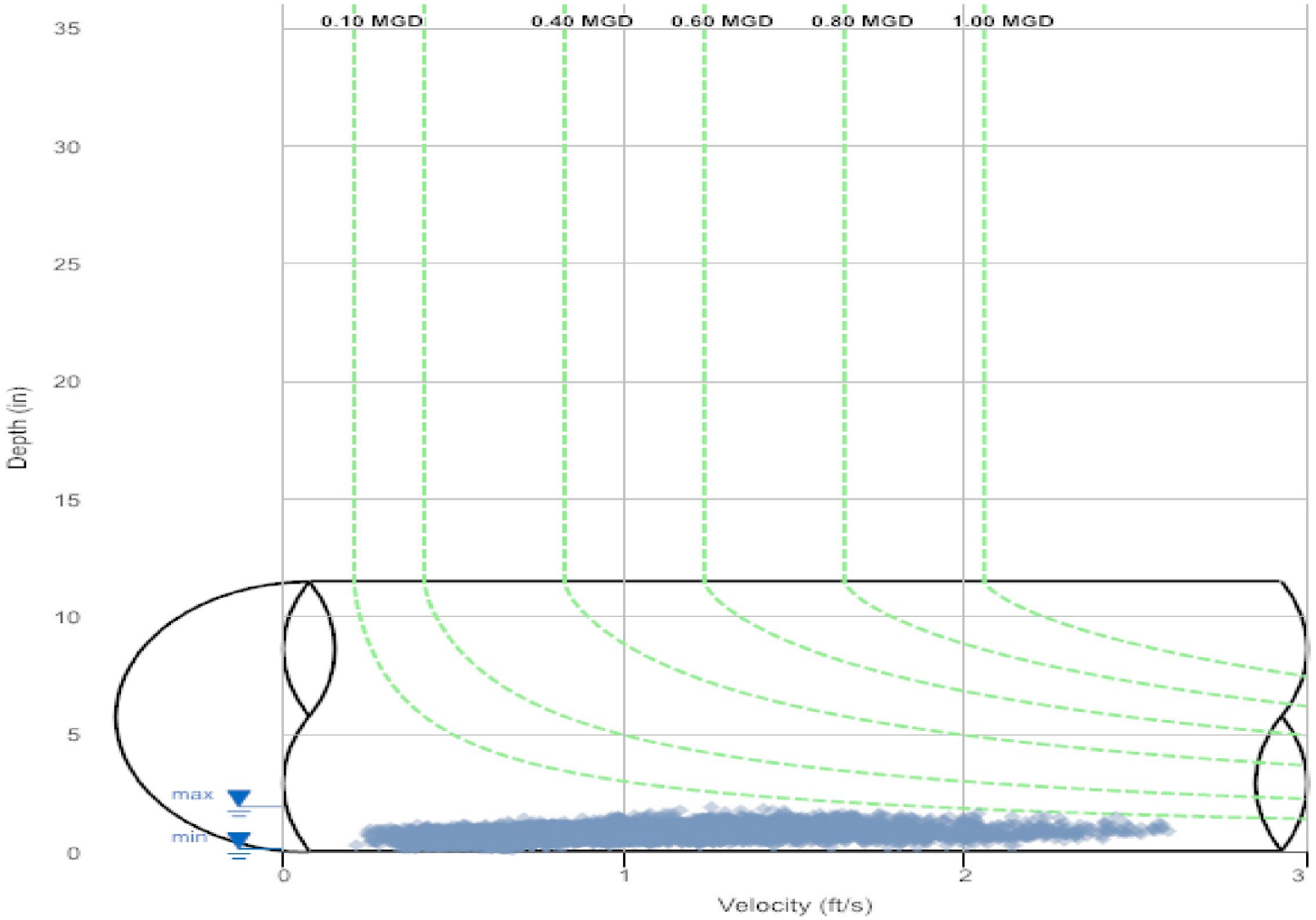
Pipe Height
11.50
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A12_71043Pipe: Elliptical (11.5 in H x 12 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	22:20	0.33	09:45	0.72	0.53	08:30	0.25	15:45	2.83	0.95	22:55	0.002	15:55	0.033	0.008	0.008	0.51
01/02/2021	07:00	0.30	23:25	0.81	0.46	01:00	0.33	21:20	2.31	0.78	07:00	0.001	15:55	0.022	0.005	0.005	1.69
01/03/2021	14:05	0.32	17:10	0.93	0.48	04:50	0.23	09:10	2.31	0.81	06:05	0.001	16:05	0.019	0.006	0.006	0.65
01/04/2021	00:30	0.43	16:10	0.99	0.59	07:05	0.26	18:35	2.35	0.85	00:15	0.002	21:40	0.029	0.008	0.008	0.48
01/05/2021	03:10	0.38	16:10	1.07	0.64	01:30	0.34	12:10	2.49	1.03	00:00	0.003	09:35	0.048	0.012	0.012	0.52
01/06/2021	23:35	0.40	17:05	1.28	0.81	11:35	0.36	21:15	2.57	1.15	04:05	0.004	16:20	0.058	0.019	0.019	0.22
01/07/2021	00:25	0.46	10:05	2.94	0.95	03:50	0.37	16:25	3.67	1.17	00:05	0.005	13:35	0.122	0.024	0.024	-
01/08/2021	04:15	0.39	01:55	1.15	0.78	02:00	0.22	16:55	2.62	0.92	04:15	0.003	16:55	0.046	0.013	0.013	0.22
01/09/2021	04:45	0.39	08:00	1.07	0.73	04:30	0.19	09:15	2.30	0.92	03:40	0.001	09:20	0.045	0.013	0.013	-
01/10/2021	02:05	0.40	22:50	1.21	0.80	04:10	0.20	13:55	2.71	1.09	04:10	0.001	13:55	0.057	0.018	0.018	0.07
01/11/2021	04:50	0.41	09:50	1.46	0.92	01:20	0.23	11:05	2.92	1.21	01:20	0.003	10:00	0.079	0.024	0.024	1.06
01/12/2021	14:40	0.65	16:25	1.39	0.95	14:00	0.33	17:40	2.59	1.42	00:55	0.004	16:25	0.065	0.028	0.028	2.10
01/13/2021	03:30	0.58	19:25	1.16	0.78	14:50	0.12	17:50	2.34	0.89	14:50	0.002	18:30	0.044	0.013	0.013	0.09
01/14/2021	02:00	0.59	15:20	1.30	0.79	04:15	0.12	16:10	3.06	0.94	04:15	0.001	15:25	0.064	0.015	0.015	0.01
01/15/2021	03:05	0.59	09:40	1.34	0.82	02:20	0.20	10:30	2.19	0.83	03:00	0.002	08:50	0.064	0.013	0.013	0.09
01/16/2021	04:20	0.42	17:25	1.32	0.85	04:20	0.21	09:45	2.53	1.09	04:20	0.001	17:25	0.059	0.020	0.020	-
01/17/2021	05:20	0.48	08:20	1.37	0.82	01:15	0.24	19:15	2.66	1.04	04:35	0.002	08:20	0.069	0.018	0.018	0.10
01/18/2021	05:55	0.51	07:15	1.36	0.81	01:40	0.24	07:55	2.34	1.05	01:40	0.003	07:20	0.065	0.018	0.018	-
01/19/2021	06:40	0.58	16:25	1.37	0.88	05:50	0.26	18:10	2.30	0.94	05:50	0.003	17:15	0.065	0.017	0.017	0.01
01/20/2021	02:10	0.38	07:00	1.22	0.80	03:50	0.23	16:00	2.48	0.97	03:45	0.001	07:05	0.055	0.016	0.016	-
01/21/2021	03:35	0.40	09:00	1.73	0.87	04:20	0.20	18:25	2.47	0.96	03:10	0.002	09:00	0.095	0.018	0.018	0.11
01/22/2021	05:05	0.40	07:25	1.31	0.82	03:55	0.26	12:20	2.54	0.97	03:05	0.002	12:20	0.073	0.016	0.016	-
01/23/2021	03:25	0.40	20:05	1.54	0.84	04:50	0.22	20:00	2.61	1.18	04:50	0.003	20:05	0.095	0.021	0.021	-
01/24/2021	03:20	0.47	00:05	1.39	0.88	06:00	0.27	09:50	2.90	1.25	03:15	0.004	00:05	0.072	0.023	0.023	0.16
01/25/2021	03:45	0.38	09:40	1.14	0.77	04:55	0.12	17:25	2.77	1.03	04:55	0.001	17:25	0.046	0.016	0.016	0.04
01/26/2021	03:05	0.42	06:00	1.39	0.76	00:55	0.34	11:55	2.49	0.96	02:25	0.002	06:00	0.051	0.015	0.015	-
01/27/2021	04:45	0.59	17:30	1.19	0.83	02:55	0.25	11:20	2.29	1.02	01:55	0.003	22:20	0.046	0.017	0.017	0.14
01/28/2021	03:45	0.65	08:30	1.17	0.84	02:35	0.34	11:55	2.61	1.07	02:35	0.004	11:55	0.052	0.018	0.018	0.24
01/29/2021	04:50	0.57	10:15	1.27	0.80	05:15	0.23	09:45	2.50	1.00	05:15	0.002	10:15	0.062	0.016	0.016	0.03
01/30/2021	02:05	0.62	10:35	1.21	0.85	02:25	0.19	12:00	2.64	1.06	02:05	0.002	12:00	0.070	0.018	0.018	0.07
01/31/2021	04:30	0.59	00:30	1.30	0.90	02:50	0.24	14:50	2.50	1.04	07:30	0.003	13:15	0.050	0.019	0.019	0.12
02/01/2021	03:35	0.72	07:30	1.37	0.92	01:15	0.38	13:45	3.09	1.08	01:05	0.005	13:45	0.066	0.021	0.021	0.82
02/02/2021	16:20	0.70	06:50	1.53	0.95	03:25	0.24	08:05	2.57	1.20	03:25	0.004	11:00	0.074	0.025	0.025	0.31
02/03/2021	02:30	0.69	08:55	1.48	0.88	04:10	0.28	17:25	2.29	0.97	02:30	0.004	08:55	0.077	0.017	0.017	0.06
02/04/2021	04:15	0.60	17:50	1.32	0.86	02:50	0.10	12:40	2.61	0.94	02:50	0.001	17:50	0.061	0.017	0.017	0.07
02/05/2021	04:00	0.41	18:15	1.38	0.95	04:45	0.22	20:00	2.31	1.19	03:35	0.001	08:30	0.065	0.027	0.027	0.01
02/06/2021	00:30	0.66	09:40	1.88	1.19	07:15	0.33	22:55	2.31	1.42	00:30	0.005	13:20	0.091	0.042	0.042	0.01
02/07/2021	19:35	0.63	11:10	1.78	1.05	19:40	0.25	13:20	2.54	1.27	19:40	0.003	11:10	0.111	0.031	0.031	-
02/08/2021	02:25	0.63	11:15	1.44	0.90	02:55	0.29	13:45	2.69	1.00	02:15	0.003	11:15	0.072	0.019	0.019	-
02/09/2021	23:35	0.59	06:50	1.37	0.93	03:30	0.20	09:35	2.29	0.93	03:20	0.003	12:30	0.060	0.018	0.018	-
02/10/2021	05:10	0.54	20:45	1.50	0.92	02:15	0.22	10:10	2.98	1.04	03:05	0.003	20:45	0.083	0.020	0.020	-
02/11/2021	02:40	0.39	07:00	1.53	0.83	03:00	0.24	08:40	2.38	0.92	02:25	0.001	07:00	0.078	0.017	0.017	-
02/12/2021	04:30	0.49	08:25	1.37	0.85	04:55	0.27	10:10	2.34	0.91	03:20	0.002	12:05	0.063	0.017	0.017	-
02/13/2021	21:35	0.71	11:30	1.61	1.09	03:30	0.22	19:30	2.67	1.59	03:15	0.003	08:45	0.084	0.038	0.038	0.08
02/14/2021	04:00	0.43	10:25	1.62	0.93	06:10	0.41	10:05	2.47	1.28	02:35	0.003	10:25	0.098	0.027	0.027	0.71
02/15/2021	00:00	0.65	19:00	1.38	0.98	23:20	0.46	11:00	3.09	1.21	00:00	0.006	11:00	0.078	0.025	0.025	0.78
02/16/2021	03:20	0.54	20:20	1.50	0.83	02:50	0.24	13:25	2.36	1.10	04:00	0.003	20:20	0.077	0.018	0.018	0.07
02/17/2021	02:10	0.38	11:10	1.56	0.81	04:25	0.10	18:25	2.43	0.93	04:25	0.001	11:10	0.088	0.016	0.016	-
02/18/2021	02:30	0.42	09:30	1.25	0.79	02:15	0.20	10:25	2.55	1.00	02:15	0.001	09:25	0.068	0.017	0.017	0.09
02/19/2021	05:55	0.53	07:30	1.23	0.83	02:40	0.28	11:00	2.97	1.00	05:50	0.003	18:50	0.063	0.017	0.017	0.17
02/20/2021	03:40	0.44	15:45	1.41	0.76	06:10	0.30	10:30	2.57	1.03	02:35	0.002	15:45	0.073	0.016	0.016	0.07
02/21/2021	03:20	0.38	08:35	1.14	0.77	06:25	0.22	09:40	2.42	0.99	02:40	0.001	09:40	0.056	0.015	0.015	0.42
02/22/2021	05:40	0.67	06:15	1.30	0.85	02:55	0.41	12:55	2.70	0.98	01:30	0.005	16:55	0.064	0.017	0.017	0.98
02/23/2021	03:35	0.43	21:35	1.30	0.79	05:30	0.21	20:20	2.66	0.92	01:25	0.002	21:45	0.061	0.015	0.015	0.27
02/24/2021	02:25	0.41	18:15	1.45	0.83	03:50	0.24	20:05	2.55	0.91	02:10	0.003	18:15	0.082	0.015	0.015	-
02/25/2021	23:35	0.67	12:00	1.49	0.87	02:40	0.32	18:30	3.33	0.94	03:50	0.004	12:00	0.089	0.017	0.017	0.18
02/26/2021	04:55	0.39	09:35	1.10	0.79	10:35	0.25	09:30	2.55	1.00	03:05	0.002	09:30	0.060	0.017	0.017	0.10
02/27/2021	04:05	0.38	10:10	1.11	0.81	03:15	0.19	12:10	2.33	1.07	03:15	0.001	10:10	0.053	0.019	0.019	0.02
02/28/2021	04:25	0.39	14:55	1.52	0.82	03:55	0.15	09:40	3.21	0.97	03:55	0.001	09:40	0.095	0.018	0.018	0.02
03/01/2021	02:45	0.41	10:45	1.35	0.80	03:00	0.21	18:30	2.44	0.93	03:00	0.001	11:10	0.072	0.016	0.016	-
03/02/2021	03:40	0.40	19:00	1.31	0.83	04:30	0.27	08:50	2.23	0.94	01:30	0.002	19:00	0.065	0.016	0.016	-
03/03/2021	02:55	0.39	18:15	1.53	0.90	03:25	0.13	10:00	2.46	0.93	03:15	0.001	18:15	0.079	0.019	0.019	-
03/04/2021	01:20	0.40	20:05	1.54	0.89	06:00	0.11	09:05	2.48	0.99	01:20	0.001	19:45	0.088	0.021	0.021	0.20
03/05/2021	03:50	0.38	19:40	1.51	0.79	02:35	0.26	08:10	2.80	0.93	01:00	0.002	19:40	0.082	0.016	0.016	0.05
03/06/2021	02:40	0.53	10:25	1.39	0.90	02:55	0.24	10:40	2.76	1.03	02:55	0.002	10:40	0.084	0.021	0.021	-
03/07/2021	17:00	0.54	08:55	1.39	0.92	05:20	0.22	10:00	2.58	1.11	00:00	0.003	10:00	0.071	0.022	0.022	0.04
03/08/2021	03:25	0.39	10:05	1.11	0.77	03:05	0.22	21:45	2.54	0.82	03:05	0.001	10:05	0.052	0.012	0.012	-
03/09/2021	03:15	0.40	12:30	1.19	0.80	03:20	0.20	11:50	3.40	0.88	03:05	0.001	11:50	0.061	0.014	0.014	0.01
03/10/2021	03:25	0.40	20:30	1.34	0.76	03:25	0.22	11:30	3.16	0.80	03:05	0.001	20:30	0.075	0.013	0.013	-
03/11/2021	14:05	0.53	10:05	1.36	0.91	04:00	0.08	08:10	2.72	1.06	04:00	0.001	10:05	0.069	0.020	0.020	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	05:15	0.44	07:45	1.40	0.87	02:45	0.20	07:45	2.42	0.88	05:10	0.001	07:45	0.082	0.016	0.016	-
03/13/2021	02:55	0.45	10:35	1.57	0.77	01:50	0.28	11:00	2.49	1.01	01:50	0.002	10:35	0.098	0.016	0.016	-
03/14/2021	04:10	0.42	20:10	1.47	0.77	06:15	0.22	20:05	2.73	1.21	01:30	0.002	20:10	0.087	0.020	0.020	0.30
03/15/2021	02:35	0.44	12:10	1.57	0.84	02:35	0.20	18:00	2.78	1.29	02:35	0.001	12:10	0.086	0.023	0.023	-
03/16/2021	02:20	0.46	08:30	1.41	0.83	00:35	0.24	19:05	2.77	0.99	00:00	0.002	08:30	0.075	0.018	0.018	-
03/17/2021	02:10	0.53	19:55	1.14	0.80	01:05	0.19	19:55	3.05	1.00	00:50	0.002	19:55	0.076	0.017	0.017	-
03/18/2021	02:20	0.43	19:40	1.82	0.82	00:55	0.16	07:10	2.77	1.17	00:55	0.001	19:40	0.118	0.021	0.021	0.11
03/19/2021	02:25	0.40	07:25	1.37	0.92	03:25	0.27	10:00	2.64	0.86	01:35	0.002	20:15	0.076	0.018	0.018	0.03
03/20/2021	01:35	0.49	12:05	1.40	0.99	04:00	0.25	21:25	2.77	0.98	01:15	0.002	07:30	0.077	0.023	0.023	0.17
03/21/2021	02:30	0.42	10:20	1.39	0.94	03:15	0.22	15:45	2.63	0.96	03:15	0.001	08:45	0.072	0.021	0.021	0.07
03/22/2021	02:25	0.58	10:55	1.67	1.04	01:20	0.24	08:55	2.42	1.01	00:25	0.004	19:30	0.092	0.026	0.026	0.11
03/23/2021	01:30	0.38	09:35	2.23	0.99	00:55	0.23	09:30	2.38	1.01	00:55	0.001	09:35	0.147	0.025	0.025	-
03/24/2021	00:45	0.41	07:50	1.55	0.95	01:20	0.26	05:50	2.49	1.04	00:25	0.002	07:50	0.072	0.022	0.022	0.34
03/25/2021	02:50	0.64	07:40	1.31	0.95	23:45	0.29	09:40	2.60	0.86	23:40	0.004	07:50	0.072	0.017	0.017	0.27
03/26/2021	01:55	0.47	19:00	1.33	0.87	04:05	0.12	14:35	2.56	0.79	04:05	0.001	18:25	0.063	0.015	0.015	-
03/27/2021	05:40	0.65	08:00	1.74	0.99	23:10	0.22	07:55	2.53	0.83	02:10	0.004	08:00	0.112	0.019	0.019	-
03/28/2021	03:35	0.49	13:45	1.71	1.05	01:25	0.18	08:55	2.52	1.17	00:20	0.003	13:45	0.098	0.031	0.031	0.37
03/29/2021	02:30	0.66	15:00	1.82	1.04	01:05	0.23	07:45	2.57	1.01	02:00	0.003	15:00	0.076	0.024	0.024	-
03/30/2021	02:40	0.64	07:30	1.39	1.00	23:20	0.20	07:50	2.52	0.87	01:00	0.003	07:50	0.084	0.019	0.019	-
03/31/2021	00:25	0.38	09:45	1.64	1.04	05:15	0.29	17:50	2.20	0.82	02:15	0.002	09:45	0.093	0.020	0.020	-
04/01/2021	03:25	0.54	14:00	1.80	1.06	03:30	0.13	08:00	2.35	1.16	03:30	0.001	14:25	0.084	0.029	0.029	-
04/02/2021	00:55	0.48	14:10	1.40	1.06	03:20	0.28	15:00	2.47	1.09	00:55	0.002	15:00	0.072	0.028	0.028	-
04/03/2021	02:05	0.44	05:15	1.96	1.01	03:40	0.25	10:55	2.37	0.84	03:05	0.002	11:00	0.102	0.020	0.020	-
04/04/2021	02:30	0.39	11:40	1.96	0.96	03:50	0.24	09:05	2.47	0.81	02:10	0.001	11:45	0.102	0.020	0.020	-
04/05/2021	04:20	0.51	04:05	1.69	1.08	01:35	0.22	20:00	2.34	0.92	01:25	0.002	23:00	0.079	0.025	0.025	-
04/06/2021	23:55	0.44	20:55	1.52	1.06	04:20	0.30	10:00	2.33	0.84	04:20	0.002	21:00	0.079	0.021	0.021	-
04/07/2021	00:45	0.38	17:10	2.67	1.00	03:05	0.19	17:45	2.39	0.87	04:00	0.001	18:10	0.121	0.023	0.023	0.22
04/08/2021	05:45	0.60	09:55	2.44	1.08	03:45	0.20	09:45	2.63	0.94	02:30	0.004	10:00	0.133	0.023	0.023	-
04/09/2021	03:30	0.52	11:55	2.06	1.06	02:25	0.19	06:05	2.37	0.94	05:05	0.003	11:55	0.096	0.023	0.023	0.03
04/10/2021	02:40	0.57	11:25	2.14	1.17	02:15	0.19	12:50	2.86	1.00	02:30	0.002	08:10	0.130	0.028	0.028	0.02
04/11/2021	03:50	0.68	09:55	1.89	1.12	04:05	0.28	11:10	2.47	0.85	04:00	0.003	09:55	0.115	0.024	0.024	-
04/12/2021	02:05	0.50	08:55	2.00	1.02	02:45	0.21	10:35	2.60	1.52	01:45	0.002	08:55	0.120	0.036	0.036	-
04/13/2021	03:20	0.41	11:55	1.39	1.00	13:30	0.23	17:00	3.48	0.88	03:10	0.002	17:00	0.112	0.020	0.020	-
04/14/2021	02:55	0.49	07:50	1.61	0.98	03:40	0.23	09:00	2.59	0.79	02:55	0.002	07:50	0.074	0.018	0.018	-
09/23/2020	23:45	0.69	11:30	1.90	1.39	21:45	0.36	14:05	1.83	1.05	21:45	0.006	16:45	0.068	0.037	0.022	-
09/24/2020	02:50	0.46	11:20	1.53	1.06	04:05	0.28	03:15	1.97	1.08	02:45	0.002	18:10	0.050	0.025	0.025	-
09/25/2020	01:55	0.43	09:20	1.65	1.10	02:45	0.18	17:15	1.93	0.96	01:35	0.001	09:20	0.054	0.025	0.025	-
09/26/2020	04:30	0.21	05:30	1.96	0.90	00:35	0.22	05:40	1.97	1.18	01:45	0.001	09:15	0.066	0.023	0.023	-
09/27/2020	02:40	0.07	10:15	1.66	0.83	04:40	0.25	20:40	1.81	1.09	02:10	0.000	10:15	0.067	0.021	0.021	-
09/28/2020	04:20	0.15	17:50	1.08	0.58	23:35	0.17	10:05	2.35	1.46	00:20	0.001	17:55	0.049	0.017	0.017	-
09/29/2020	02:10	0.14	08:00	1.41	0.49	00:05	0.12	18:55	2.56	1.51	00:05	0.001	08:00	0.069	0.013	0.013	-
09/30/2020	17:40	0.06	08:55	1.20	0.38	00:40	0.15	19:15	2.73	1.56	10:10	0.000	08:55	0.066	0.008	0.008	-
10/01/2020	01:20	0.28	18:50	1.22	0.69	01:30	0.27	10:55	2.60	1.61	00:45	0.001	18:55	0.062	0.022	0.022	-
10/02/2020	01:25	0.41	11:55	1.55	0.98	01:25	0.29	11:05	2.46	1.40	00:55	0.002	11:55	0.072	0.031	0.031	-
10/03/2020	05:00	0.34	12:15	1.75	1.14	00:00	0.28	19:50	1.85	1.30	00:00	0.002	12:15	0.085	0.037	0.037	0.01
10/04/2020	22:45	0.49	10:40	1.81	1.16	02:50	0.25	10:35	1.93	1.17	22:40	0.002	10:40	0.094	0.037	0.037	0.01
10/05/2020	01:30	0.21	08:10	1.36	0.86	03:20	0.23	08:00	1.91	1.25	00:50	0.001	08:00	0.060	0.025	0.025	-
10/06/2020	00:45	0.28	18:00	1.89	1.06	02:00	0.29	17:05	1.98	1.14	00:45	0.001	18:00	0.097	0.030	0.030	-
10/07/2020	03:45	0.22	10:45	1.67	1.11	23:50	0.21	13:45	1.91	1.13	03:30	0.001	10:45	0.079	0.033	0.033	-
10/08/2020	03:20	0.41	13:40	1.98	1.17	01:05	0.14	13:35	1.83	1.02	01:05	0.001	13:35	0.101	0.031	0.031	-
10/09/2020	01:25	0.33	22:55	1.93	1.19	02:45	0.12	23:00	1.86	1.08	01:25	0.001	22:55	0.093	0.034	0.034	0.64
10/10/2020	01:10	0.32	08:25	1.49	0.84	23:40	0.26	08:05	2.33	1.22	00:55	0.002	01:55	0.054	0.021	0.021	1.04
10/11/2020	05:40	0.20	18:15	1.42	0.76	05:15	0.23	08:00	2.77	1.10	05:15	0.001	18:15	0.052	0.020	0.020	0.53
10/12/2020	23:25	0.24	05:20	1.74	0.81	21:20	0.11	05:15	2.60	1.19	21:20	0.001	05:15	0.084	0.022	0.022	-
10/13/2020	02:25	0.11	07:30	1.55	0.72	03:50	0.29	04:10	2.11	0.96	02:10	0.001	07:30	0.064	0.016	0.016	0.61
10/14/2020	04:35	0.08	10:25	1.56	0.67	06:30	0.26	07:55	2.30	0.95	03:00	0.000	08:45	0.062	0.015	0.015	-
10/15/2020	23:00	0.16	14:50	2.06	0.66	22:05	0.22	18:50	1.93	0.94	01:10	0.001	14:50	0.100	0.014	0.014	-
10/16/2020	01:15	0.21	07:10	1.20	0.58	03:35	0.11	07:00	2.43	1.04	01:00	0.001	08:40	0.041	0.011	0.011	-
10/17/2020	04:50	0.21	10:40	1.75	0.71	19:15	0.28	08:25	2.12	1.04	00:05	0.001	10:40	0.067	0.017	0.017	0.01
10/18/2020	04:10	0.11	11:55	2.01	0.67	05:50	0.31	15:30	2.28	1.07	00:35	0.001	11:55	0.086	0.016	0.016	0.03
10/19/2020	03:45	0.19	08:15	1.81	0.70	13:25	0.31	07:15	2.39	1.09	00:10	0.001	08:15	0.082	0.017	0.017	0.05
10/20/2020	04:00	0.20	23:00	1.45	0.71	01:20	0.18	08:55	1.99	0.91	05:00	0.000	09:00	0.063	0.014	0.014	-
10/21/2020	03:00	0.15	07:00	1.31	0.52	09:45	0.26	17:40	2.29	0.98	00:20	0.001	14:35	0.048	0.011	0.011	0.01
10/22/2020	00:45	0.21	09:10	2.04	0.61	04:30	0.31	15:45	2.42	0.94	00:45	0.001	09:10	0.086	0.013	0.013	-
10/23/2020	04:30	0.13	12:30	1.81	0.73	23:40	0.24	09:45	1.96	0.97	00:15	0.001	12:25	0.076	0.016	0.016	0.20
10/24/2020	01:15	0.26	09:00	1.89	0.80	04:40	0.26	21:20	2.01	1.07	01:35	0.001	08:55	0.069	0.019	0.019	0.02
10/25/2020	04:15	0.20	07:50	1.85	0.77	23:50	0.12	06:55	1.83	0.93	02:00	0.001	17:25	0.061	0.016	0.016	-
10/26/2020	02:05	0.05	07:50	1.44	0.65	04:40	0.20	09:00	2.21	0.93	01:45	0.000	07:55	0.052	0.014	0.014	-
10/27/2020	03:25	0.05	08:45	1.78	0.68	23:50	0.26	10:00	1.98	1.11	00:30	0.000	08:45	0.069	0.015	0.015	-
10/28/2020	01:30	0.20	18:55	1.56	0.70	00:10	0.29	16:50	1.97	1.01	01:30	0.001	07:00	0.062	0.015	0.015	-
10/29/2020	02:15	0.20	09:00	2.04	0.68	03:25	0.23	11:55	2.48	1.01	00:05	0.001	09:00	0.080	0.015	0.015	-
10/30/2020	00:25	0.12	22:40	1.10	0.45	07:10	0.28	13:30	2.70	1.02	00:25	0.000	13:30	0.051	0.008	0.008	0.10
10/31/2020	03:55	0.22	07:55	0.82	0.49	03:50	0.27	16:40	2.44	1.27	00:10	0.001	16:35	0.033	0.011	0.011	-
11/01/2020	00:50	0.11	14:20	1.54	0.60	22:30	0.30	12:00	2.40	1.01	00:50	0.000	15:55	0.047	0.014	0.014	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/02/2020	02:15	0.21	10:10	1.62	0.78	04:15	0.21	15:15	2.00	1.14	02:15	0.001	10:05	0.054	0.020	0.020	-
11/03/2020	03:20	0.27	10:05	1.97	0.88	20:15	0.10	21:30	2.01	1.13	00:35	0.001	10:05	0.077	0.024	0.024	0.83
11/04/2020	04:15	0.18	08:55	1.60	0.78	00:20	0.21	08:50	2.13	1.17	00:20	0.001	18:25	0.067	0.020	0.020	0.09
11/05/2020	06:45	0.37	14:45	1.48	0.98	06:20	0.28	01:45	2.16	1.32	04:45	0.002	20:00	0.059	0.029	0.029	0.34
11/06/2020	23:35	0.28	14:55	1.66	0.73	06:00	0.29	14:50	2.46	1.34	21:05	0.002	14:55	0.066	0.018	0.018	0.10
11/07/2020	05:10	0.12	12:30	1.70	0.77	23:55	0.28	14:25	2.50	1.35	03:55	0.001	12:35	0.074	0.021	0.021	0.07
11/08/2020	02:35	0.13	18:55	1.97	0.81	07:05	0.25	09:15	2.29	0.96	02:25	0.000	18:40	0.060	0.019	0.019	0.01
11/09/2020	04:45	0.22	06:55	2.94	0.74	05:35	0.23	19:45	2.27	0.89	04:40	0.001	19:45	0.066	0.014	0.014	0.04
11/10/2020	01:05	0.13	18:40	1.92	0.68	00:20	0.29	11:50	2.26	0.88	00:55	0.001	18:40	0.078	0.013	0.013	0.03
11/11/2020	23:25	0.34	09:40	1.18	0.62	23:45	0.29	18:00	2.35	0.88	23:25	0.001	09:40	0.055	0.010	0.010	-
11/12/2020	05:00	0.26	19:45	1.89	0.63	04:55	0.30	10:00	2.19	0.87	04:05	0.001	19:45	0.085	0.011	0.011	0.16
11/13/2020	14:05	0.35	20:20	1.82	0.70	23:25	0.27	06:55	2.16	0.90	02:50	0.002	20:20	0.093	0.013	0.013	0.38
11/14/2020	06:25	0.23	18:55	2.11	0.84	04:05	0.31	15:55	2.73	0.97	05:10	0.001	10:35	0.099	0.020	0.020	0.47
11/15/2020	06:30	0.28	09:10	1.77	1.05	02:25	0.14	20:20	1.93	1.14	06:25	0.001	09:10	0.070	0.030	0.030	0.19
11/16/2020	04:35	0.25	09:35	1.56	0.84	04:55	0.22	09:30	2.11	0.88	04:30	0.001	17:50	0.067	0.017	0.017	0.31
11/17/2020	00:00	0.29	09:45	1.83	0.96	05:05	0.21	21:45	2.69	1.01	00:00	0.002	12:45	0.065	0.023	0.023	0.20
11/18/2020	04:50	0.20	17:20	1.65	0.88	02:35	0.19	16:20	2.69	1.01	04:30	0.000	16:20	0.068	0.023	0.023	0.30
11/19/2020	02:20	0.21	11:25	1.38	0.67	23:35	0.25	17:55	2.40	1.21	01:35	0.001	13:10	0.070	0.017	0.017	0.50
11/20/2020	22:50	0.23	10:05	1.42	0.52	11:00	0.13	13:50	2.46	1.37	02:30	0.001	10:05	0.074	0.014	0.014	0.01
11/21/2020	06:15	0.26	09:25	1.47	0.60	02:40	0.24	12:25	2.54	1.63	02:40	0.001	09:25	0.087	0.019	0.019	-
11/22/2020	04:30	0.17	16:20	1.18	0.55	06:45	0.35	11:20	2.67	1.51	03:05	0.001	16:15	0.062	0.017	0.017	0.21
11/23/2020	03:10	0.24	19:20	1.22	0.58	22:30	0.27	09:05	2.43	1.40	01:30	0.001	19:20	0.059	0.016	0.016	0.14
11/24/2020	04:10	0.16	07:10	1.32	0.47	00:05	0.30	08:10	2.57	1.37	00:05	0.001	07:10	0.066	0.011	0.011	0.21
11/25/2020	04:50	0.21	09:25	2.10	0.63	04:55	0.45	09:20	2.78	1.17	01:35	0.001	09:25	0.087	0.014	0.014	0.05
11/26/2020	01:30	0.20	10:55	1.44	0.65	04:15	0.37	15:10	2.66	1.52	01:05	0.001	10:50	0.085	0.023	0.023	0.02
11/27/2020	00:40	0.12	10:20	1.24	0.62	04:55	0.54	10:25	2.67	1.78	00:40	0.001	10:20	0.071	0.022	0.022	-
11/28/2020	22:20	0.21	19:55	1.25	0.65	03:10	0.54	11:35	2.72	1.81	01:50	0.002	11:45	0.063	0.023	0.023	0.05
11/29/2020	01:50	0.19	11:55	1.37	0.74	05:25	0.49	12:40	2.91	1.77	00:25	0.002	11:10	0.082	0.030	0.030	-
11/30/2020	00:05	0.21	22:30	1.97	0.73	23:15	0.37	22:20	2.78	1.82	00:05	0.002	12:05	0.073	0.026	0.026	0.36
12/01/2020	02:45	0.19	20:05	1.46	0.76	03:50	0.34	11:40	2.25	1.52	02:40	0.001	19:15	0.063	0.025	0.025	-
12/02/2020	00:45	0.27	14:55	1.73	0.79	04:50	0.28	20:05	2.10	1.08	00:45	0.001	20:10	0.063	0.018	0.018	0.01
12/03/2020	02:25	0.31	10:10	1.43	0.78	23:10	0.38	18:25	2.05	1.49	00:50	0.003	10:10	0.060	0.023	0.023	-
12/04/2020	08:00	0.32	00:45	0.97	0.59	03:45	0.09	09:25	2.07	1.33	03:45	0.001	07:45	0.034	0.012	0.012	-
12/05/2020	03:30	0.29	01:25	0.96	0.48	03:30	0.33	09:40	2.34	1.39	03:05	0.001	10:20	0.032	0.011	0.011	0.03
12/06/2020	16:00	0.25	18:20	0.90	0.53	06:45	0.36	09:20	2.23	1.41	15:50	0.001	16:40	0.034	0.013	0.013	0.03
12/07/2020	23:55	0.10	01:50	0.92	0.58	16:20	0.29	18:35	2.27	1.14	23:55	0.000	06:05	0.031	0.011	0.011	-
12/08/2020	00:00	0.07	10:00	0.87	0.48	04:30	0.21	06:40	2.36	0.71	00:00	0.000	09:55	0.033	0.006	0.006	0.87
12/09/2020	04:45	0.22	13:15	0.93	0.47	01:40	0.24	13:55	2.19	0.83	01:10	0.001	13:50	0.025	0.006	0.006	0.17
12/10/2020	04:20	0.21	17:05	0.83	0.44	05:45	0.29	20:30	2.58	0.96	02:35	0.001	18:55	0.034	0.007	0.007	0.07
12/11/2020	23:55	0.21	09:15	0.94	0.45	08:50	0.26	11:50	2.08	0.65	00:45	0.001	09:15	0.029	0.005	0.005	0.02
12/12/2020	03:50	0.11	10:10	1.02	0.37	23:30	0.22	10:10	2.42	0.81	00:00	0.001	10:10	0.051	0.005	0.005	0.01
12/13/2020	05:25	0.15	10:30	0.93	0.49	00:00	0.26	11:10	2.36	0.73	00:00	0.001	11:10	0.036	0.006	0.006	0.24
12/14/2020	03:30	0.16	12:30	0.73	0.39	17:35	0.14	12:45	2.09	0.62	03:25	0.000	11:55	0.022	0.004	0.004	0.05
12/15/2020	03:05	0.10	16:45	0.79	0.48	03:50	0.19	09:15	1.89	0.72	03:05	0.000	09:10	0.022	0.006	0.006	0.58
12/16/2020	05:50	0.14	10:40	0.97	0.40	13:45	0.12	08:00	2.01	0.74	00:15	0.001	11:35	0.019	0.005	0.005	0.39
12/17/2020	03:30	0.12	08:15	0.77	0.36	14:20	0.23	15:40	2.43	0.78	00:50	0.000	08:15	0.022	0.004	0.004	0.08
12/18/2020	00:15	0.06	08:45	0.67	0.37	04:10	0.11	07:05	1.97	0.75	00:10	0.000	08:45	0.018	0.004	0.004	0.25
12/19/2020	04:00	0.12	16:55	1.07	0.45	01:05	0.23	22:30	2.39	0.87	00:40	0.001	18:00	0.034	0.007	0.007	0.37
12/20/2020	03:50	0.13	17:30	0.85	0.42	06:20	0.32	17:35	2.48	1.06	00:45	0.001	17:30	0.040	0.007	0.007	0.04
12/21/2020	00:15	0.33	11:30	0.87	0.57	23:10	0.45	16:20	2.75	1.66	00:10	0.002	11:30	0.043	0.017	0.017	1.07
12/22/2020	04:50	0.12	07:00	0.87	0.54	23:25	0.34	19:50	2.48	1.43	03:20	0.000	11:30	0.040	0.013	0.013	-
12/23/2020	03:15	0.19	06:55	0.79	0.52	02:20	0.32	19:50	2.49	1.39	00:25	0.001	19:55	0.031	0.012	0.012	-
12/24/2020	02:55	0.20	17:50	1.77	0.55	23:45	0.22	10:30	2.79	1.29	02:05	0.001	10:40	0.081	0.014	0.014	-
12/25/2020	03:40	0.21	14:55	1.24	0.53	05:25	0.12	16:00	2.34	0.91	00:45	0.001	14:55	0.058	0.009	0.009	0.49
12/26/2020	04:00	0.19	11:55	0.88	0.47	01:45	0.21	12:30	2.32	0.88	00:25	0.001	11:55	0.036	0.007	0.007	0.02
12/27/2020	02:20	0.28	11:10	0.91	0.42	16:15	0.43	09:45	2.18	0.92	00:30	0.002	11:10	0.030	0.006	0.006	0.13
12/28/2020	08:30	0.25	11:20	0.92	0.42	05:20	0.46	19:10	2.09	1.03	00:25	0.002	10:35	0.032	0.006	0.006	-
12/29/2020	02:10	0.33	21:30	0.97	0.45	03:45	0.27	08:45	1.78	0.99	03:40	0.001	21:30	0.029	0.006	0.006	0.14
12/30/2020	15:45	0.39	09:45	1.05	0.58	22:45	0.41	21:35	1.76	0.86	11:30	0.003	09:45	0.035	0.008	0.008	0.78
12/31/2020	10:10	0.37	15:55	0.77	0.54	02:20	0.44	09:55	2.54	0.86	10:10	0.003	11:35	0.018	0.007	0.007	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			3.650	30.65
Average	0.78	1.07	0.018	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A12_71043

Site Address /Location:	510 4th St NE		
Site Access Details:	located on roadway	Latitude:	47.311779°
		Longitude:	-122.209121°

Monitor Series	Location Type
TRITON+	Temporary
Pipe Size (H x W)	Pipe Shape
11.50 x 12.00	Circular
Manhole #	System Characteristics
710-43	Residential
Access	Traffic
Drive	Light









ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

Installation Information

Installation Date:	Installation Type:
Wednesday, September 23, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Downstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	Pipe Size (HxW)
9:33:00 AM	16.25x16.38
Depth of Flow (Wet DOF) (in)	
1.50	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.44	N/A
Silt (in)	Silt Type
0	

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
9	Common Trench
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A13_71085

Site Commentary

SITE INFORMATION

Pipe	Round (8 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced flow changes and backwater conditions during the monitoring period. An ADS field crew removed debris buildup from the sensors during a site visit on October 30th. A confirmation was taken which verified the sensors are working properly.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.05	0.93	0.045
Minimum	0.67	0.22	0.005
Maximum	5.60	1.57	0.129
Min Time	01/23/2021 4:00:00 AM	12/10/2020 4:00:00 AM	01/23/2021 4:00:00 AM
Max Time	12/10/2020 12:00:00 PM	02/11/2021 6:00:00 PM	10/10/2020 11:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.284
VFINAL (ft/s)	99.284
QFINAL (MGD - Total MG)	99.284

Hydrograph Report

AUB_A13_71085

Flow Monitor

AUB_A13_71085

Pipe Height
8.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL



4455 S. 134th Place
Tukwila, WA 98168

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Scattergraph Report

AUB_A13_71085

Flow Monitor

AUB_A13_71085

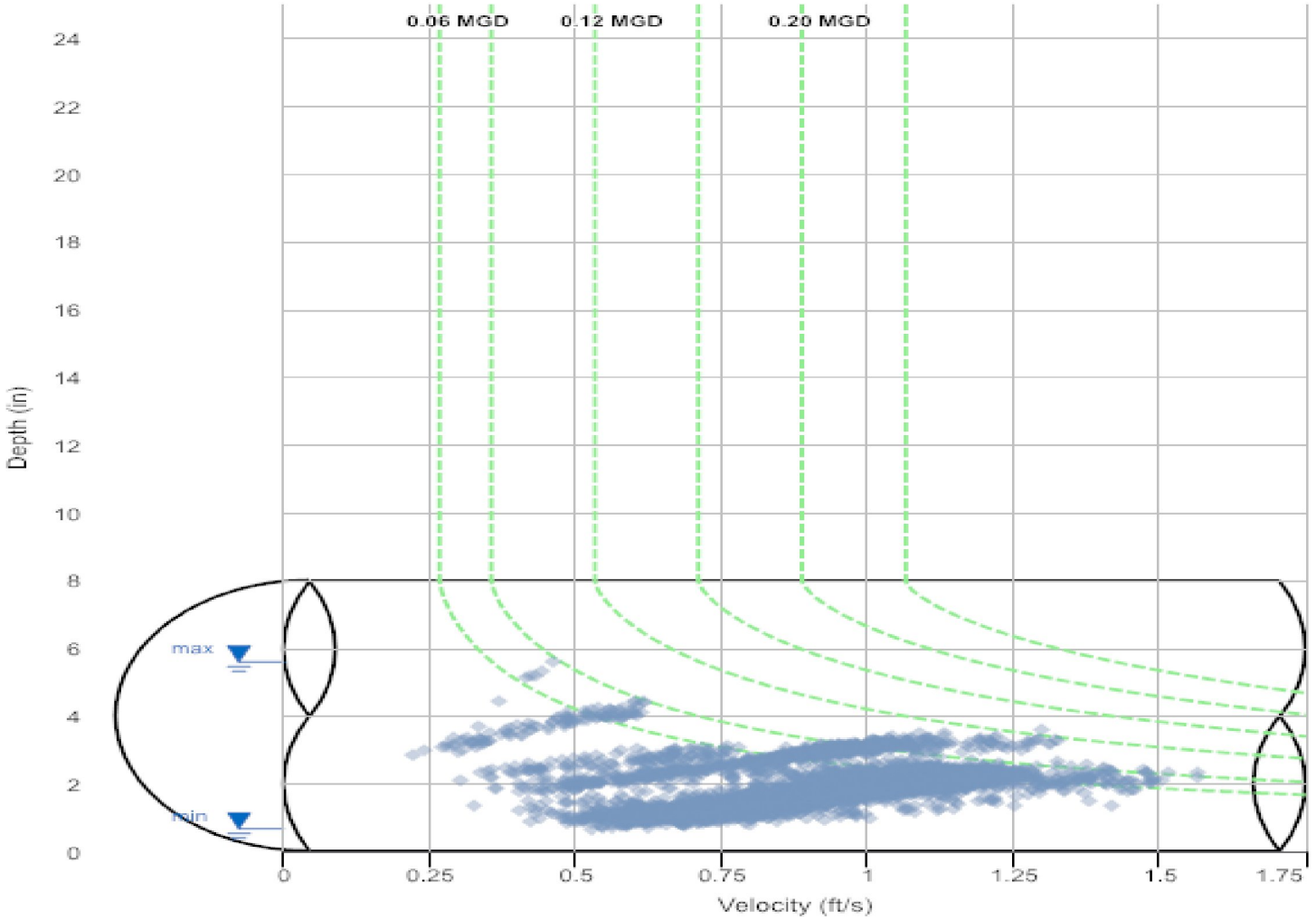
Pipe Height
8.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A13_71085Pipe: Round (8 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	05:50	0.76	15:30	2.68	1.82	03:15	0.56	15:30	1.21	0.90	05:50	0.006	15:30	0.080	0.038	0.038	0.51
01/02/2021	04:45	0.68	11:55	2.79	1.88	05:00	0.53	17:30	1.28	0.97	04:40	0.005	17:30	0.088	0.044	0.044	1.69
01/03/2021	04:30	0.65	13:05	2.94	1.85	04:25	0.55	13:05	1.37	0.99	04:20	0.005	13:05	0.103	0.043	0.043	0.65
01/04/2021	03:00	0.86	18:30	2.73	1.86	02:50	0.61	18:30	1.29	1.01	02:50	0.008	18:30	0.087	0.043	0.043	0.48
01/05/2021	04:35	0.67	18:55	2.71	1.76	04:40	0.49	18:55	1.25	0.96	04:40	0.004	18:55	0.084	0.039	0.039	0.52
01/06/2021	02:55	0.82	21:25	2.57	1.79	03:00	0.57	19:10	1.21	0.95	02:55	0.007	14:00	0.073	0.038	0.038	0.22
01/07/2021	03:50	0.88	15:30	2.79	1.98	03:45	0.57	09:30	1.22	0.87	03:40	0.008	09:30	0.084	0.040	0.040	-
01/08/2021	04:00	1.39	17:25	2.94	2.10	03:55	0.35	19:05	1.15	0.79	03:55	0.009	21:45	0.077	0.039	0.039	0.22
01/09/2021	06:10	0.71	12:10	2.87	1.82	05:10	0.54	12:50	1.25	0.92	06:15	0.005	12:10	0.090	0.039	0.039	-
01/10/2021	04:35	0.73	16:20	2.78	1.84	04:45	0.55	14:40	1.20	0.91	04:30	0.006	16:20	0.082	0.039	0.039	0.07
01/11/2021	04:40	1.05	11:00	2.92	2.06	04:00	0.56	11:00	1.20	0.93	04:00	0.010	11:00	0.089	0.046	0.046	1.06
01/12/2021	04:20	1.22	18:25	2.99	2.09	04:25	0.66	18:30	1.24	0.96	04:15	0.015	18:25	0.095	0.047	0.047	2.10
01/13/2021	03:10	1.01	18:45	2.67	1.90	03:55	0.38	18:45	1.16	0.88	03:55	0.008	18:45	0.076	0.039	0.039	0.09
01/14/2021	04:00	1.08	10:20	3.02	1.95	04:00	0.58	10:20	1.34	0.93	03:55	0.011	10:20	0.105	0.042	0.042	0.01
01/15/2021	03:15	0.95	17:00	2.73	1.91	05:40	0.40	17:00	1.21	0.90	03:15	0.006	17:00	0.082	0.040	0.040	0.09
01/16/2021	06:20	0.91	11:25	2.96	1.94	05:10	0.44	11:30	1.29	0.93	05:10	0.007	11:25	0.096	0.043	0.043	-
01/17/2021	06:55	0.91	15:35	2.78	1.85	05:30	0.47	12:55	1.29	0.93	05:20	0.007	12:50	0.088	0.040	0.040	0.10
01/18/2021	04:55	0.49	14:10	2.58	1.81	04:55	0.24	09:35	1.35	0.92	04:55	0.001	09:35	0.081	0.038	0.038	-
01/19/2021	02:55	0.78	19:35	2.84	1.77	02:55	0.55	10:55	1.30	0.97	02:55	0.006	19:35	0.092	0.040	0.040	0.01
01/20/2021	04:15	0.72	20:05	2.71	1.77	04:10	0.55	20:05	1.30	0.97	04:10	0.006	20:05	0.087	0.039	0.039	-
01/21/2021	03:50	0.87	18:25	4.59	1.74	03:10	0.61	18:20	2.16	0.96	03:10	0.008	18:20	0.284	0.038	0.038	0.11
01/22/2021	03:55	0.77	10:25	2.62	1.73	01:55	0.54	18:45	1.27	0.99	03:20	0.007	18:30	0.081	0.038	0.038	-
01/23/2021	04:55	0.64	11:05	2.73	1.76	04:20	0.50	13:25	1.34	1.00	04:15	0.004	11:05	0.087	0.040	0.040	-
01/24/2021	06:05	0.90	11:20	2.73	1.83	05:55	0.62	10:50	1.31	1.03	05:55	0.009	10:50	0.087	0.043	0.043	0.16
01/25/2021	04:05	0.69	18:05	2.90	1.86	04:35	0.54	10:25	1.32	0.96	04:00	0.005	10:25	0.095	0.042	0.042	0.04
01/26/2021	03:55	1.11	08:45	3.07	1.88	04:00	0.46	08:45	1.32	0.90	03:55	0.009	08:45	0.105	0.039	0.039	-
01/27/2021	05:40	1.07	18:55	2.70	1.87	03:20	0.41	19:20	1.26	0.91	03:10	0.009	19:20	0.079	0.039	0.039	0.14
01/28/2021	03:45	1.01	17:45	2.72	1.87	04:05	0.50	19:15	1.27	0.94	02:35	0.010	17:50	0.081	0.040	0.040	0.24
01/29/2021	03:45	0.81	17:35	2.84	1.81	03:15	0.57	11:25	1.23	0.95	03:40	0.007	17:35	0.087	0.039	0.039	0.03
01/30/2021	02:50	0.83	11:10	2.78	1.88	06:10	0.39	16:20	1.29	0.96	02:45	0.008	11:10	0.088	0.042	0.042	0.07
01/31/2021	04:45	0.83	19:45	2.91	1.79	02:45	0.52	11:45	1.31	0.97	02:45	0.007	19:45	0.094	0.041	0.041	0.12
02/01/2021	04:40	0.78	18:55	2.97	1.82	04:35	0.57	18:55	1.39	1.04	04:40	0.006	18:55	0.106	0.043	0.043	0.82
02/02/2021	04:20	0.67	18:40	2.79	1.81	04:20	0.54	18:40	1.40	1.02	04:05	0.005	18:40	0.098	0.042	0.042	0.31
02/03/2021	04:05	0.82	18:05	2.83	1.73	03:45	0.51	19:55	1.43	1.06	03:35	0.007	18:05	0.095	0.041	0.041	0.06
02/04/2021	03:05	0.73	18:10	2.70	1.83	04:20	0.60	20:20	1.39	1.01	03:05	0.006	18:10	0.084	0.043	0.043	0.07
02/05/2021	04:20	0.93	17:10	2.70	1.80	04:20	0.49	20:20	1.28	0.93	04:20	0.007	18:40	0.075	0.038	0.038	0.01
02/06/2021	04:00	0.80	09:45	2.82	1.75	05:00	0.63	12:20	1.39	1.04	03:55	0.008	09:45	0.092	0.041	0.041	0.01
02/07/2021	04:10	0.54	13:45	2.77	1.73	05:40	0.58	12:05	1.34	1.03	04:10	0.005	12:05	0.091	0.041	0.041	-
02/08/2021	04:35	0.81	10:35	2.54	1.71	04:25	0.60	12:15	1.35	1.08	04:25	0.008	10:35	0.081	0.041	0.041	-
02/09/2021	04:45	0.70	18:05	2.55	1.69	04:00	0.63	18:05	1.32	1.06	04:45	0.006	18:05	0.081	0.040	0.040	-
02/10/2021	02:10	0.77	18:20	2.63	1.68	02:10	0.66	18:25	1.34	1.05	02:10	0.007	18:20	0.086	0.039	0.039	-
02/11/2021	04:15	0.73	17:25	2.61	1.67	04:15	0.61	17:25	1.75	1.11	04:15	0.006	17:25	0.112	0.041	0.041	-
02/12/2021	04:30	0.69	18:25	2.80	1.71	02:55	0.68	09:10	1.52	1.18	04:25	0.007	18:25	0.103	0.045	0.045	-
02/13/2021	04:45	0.75	16:45	2.78	1.74	04:05	0.62	16:45	1.50	1.19	04:40	0.007	16:45	0.104	0.048	0.048	0.08
02/14/2021	04:00	0.78	11:30	2.81	1.77	03:20	0.71	19:10	1.51	1.22	03:55	0.008	11:35	0.105	0.050	0.050	0.71
02/15/2021	04:25	1.00	10:50	2.85	1.88	23:55	0.98	13:10	1.58	1.29	04:25	0.017	10:50	0.111	0.054	0.054	0.78
02/16/2021	02:40	0.88	11:10	2.84	1.73	04:20	0.74	20:15	1.57	1.21	04:20	0.010	11:10	0.098	0.046	0.046	0.07
02/17/2021	03:55	0.65	18:50	2.58	1.71	03:40	0.61	20:15	1.34	1.03	03:55	0.005	18:50	0.083	0.039	0.039	-
02/18/2021	03:15	0.91	18:30	2.52	1.79	04:00	0.72	20:10	1.33	1.09	03:15	0.011	20:35	0.079	0.043	0.043	0.09
02/19/2021	04:10	0.77	12:30	2.41	1.69	03:05	0.61	19:10	1.35	1.05	04:10	0.008	19:10	0.076	0.039	0.039	0.17
02/20/2021	03:50	0.74	10:05	2.70	1.70	05:20	0.61	11:40	1.37	1.06	03:30	0.007	10:05	0.088	0.041	0.041	0.07
02/21/2021	04:00	0.77	19:10	2.68	1.81	06:05	0.61	09:25	1.36	1.05	04:00	0.008	19:10	0.090	0.044	0.044	0.42
02/22/2021	03:45	0.82	21:30	2.59	1.78	03:15	0.59	10:50	1.31	1.00	03:45	0.007	10:50	0.080	0.040	0.040	0.98
02/23/2021	04:35	0.84	18:10	2.63	1.82	04:30	0.48	18:10	1.29	1.00	04:30	0.006	18:10	0.083	0.041	0.041	0.27
02/24/2021	03:30	0.73	12:30	2.49	1.72	03:25	0.55	12:30	1.27	1.03	03:25	0.006	12:30	0.076	0.039	0.039	-
02/25/2021	02:05	0.80	19:10	2.47	1.68	02:55	0.57	19:45	1.45	1.05	02:00	0.007	19:10	0.085	0.039	0.039	0.18
02/26/2021	04:00	0.77	17:35	2.48	1.68	04:05	0.59	10:25	1.31	1.03	04:05	0.006	10:25	0.077	0.038	0.038	0.10
02/27/2021	05:25	0.79	20:10	2.92	1.82	03:05	0.56	11:15	1.45	1.01	05:25	0.007	11:15	0.092	0.042	0.042	0.02
02/28/2021	03:40	0.56	20:05	2.68	1.75	04:00	0.53	18:25	1.28	0.98	03:35	0.004	20:05	0.085	0.040	0.040	0.02
03/01/2021	03:30	0.76	19:25	2.57	1.68	04:45	0.49	20:05	1.32	0.98	02:45	0.006	20:10	0.080	0.037	0.037	-
03/02/2021	03:15	0.82	20:15	2.73	1.75	03:20	0.48	19:35	1.32	0.97	03:10	0.006	20:15	0.090	0.038	0.038	-
03/03/2021	01:45	0.85	19:25	2.72	1.79	01:45	0.43	09:35	1.28	0.99	01:45	0.005	19:25	0.086	0.040	0.040	-
03/04/2021	03:10	0.84	20:55	2.97	1.99	05:00	0.52	07:30	1.16	0.87	03:00	0.007	20:55	0.087	0.042	0.042	0.20
03/05/2021	04:10	1.04	11:50	2.66	1.80	03:20	0.43	11:00	1.22	0.89	03:20	0.008	12:20	0.077	0.036	0.036	0.05
03/06/2021	04:40	0.78	11:30	2.77	1.82	04:45	0.40	11:35	1.24	0.95	04:30	0.005	11:30	0.085	0.040	0.040	-
03/07/2021	04:15	0.94	11:55	2.89	1.87	04:30	0.47	12:00	1.31	0.95	04:25	0.007	11:55	0.096	0.042	0.042	0.04
03/08/2021	03:15	0.84	10:50	2.70	1.79	02:30	0.43	18:25	1.27	0.92	03:20	0.005	10:50	0.082	0.038	0.038	-
03/09/2021	04:05	0.89	18:25	3.09	1.85	04:00	0.48	18:25	1.34	0.94	03:25	0.007	18:25	0.108	0.041	0.041	0.01
03/10/2021	04:05	0.96	20:15	2.77	1.89	03:45	0.40	20:15	1.29	0.94	03:20	0.007	20:15	0.090	0.041	0.041	-
03/11/2021	03:35	0.89	18:30	2.80	1.91	03:20	0.45	21:00	1.42	0.96	03:25	0.006	21:00	0.086	0.043	0.043	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:20	0.98	12:25	2.76	1.93	04:05	0.52	17:00	1.20	0.91	04:05	0.008	16:55	0.080	0.041	0.041	-
03/13/2021	05:55	0.86	10:40	2.80	1.89	04:05	0.49	10:40	1.22	0.90	06:00	0.006	10:40	0.086	0.040	0.040	-
03/14/2021	06:20	0.98	11:15	2.84	1.96	05:45	0.45	17:05	1.18	0.89	03:10	0.008	11:15	0.082	0.042	0.042	0.30
03/15/2021	02:05	1.06	09:45	2.70	1.91	03:20	0.38	20:15	1.22	0.88	03:20	0.007	09:45	0.079	0.039	0.039	-
03/16/2021	03:10	0.82	19:10	2.94	1.88	03:15	0.46	15:10	1.22	0.90	03:05	0.006	19:10	0.091	0.039	0.039	-
03/17/2021	02:30	0.88	09:15	2.73	1.87	02:20	0.45	17:25	1.17	0.88	02:20	0.007	09:15	0.078	0.038	0.038	-
03/18/2021	03:20	0.84	20:50	2.69	1.86	02:55	0.47	16:30	1.16	0.85	02:55	0.006	16:30	0.076	0.037	0.037	0.11
03/19/2021	03:35	0.92	14:00	2.87	1.96	03:35	0.52	14:00	1.21	0.87	03:30	0.008	14:00	0.088	0.040	0.040	0.03
03/20/2021	05:45	1.20	16:35	2.75	1.94	04:10	0.29	10:05	1.23	0.89	03:10	0.007	10:05	0.083	0.041	0.041	0.17
03/21/2021	04:10	0.84	12:35	2.99	1.93	04:15	0.44	12:35	1.24	0.90	03:55	0.006	12:35	0.096	0.042	0.042	0.07
03/22/2021	02:25	0.90	19:25	2.82	1.90	00:15	0.48	10:55	1.21	0.90	01:40	0.007	19:25	0.086	0.040	0.040	0.11
03/23/2021	02:30	0.93	19:50	2.91	1.94	03:00	0.38	19:50	1.25	0.90	03:05	0.006	19:50	0.093	0.041	0.041	-
03/24/2021	03:20	1.13	19:20	2.81	1.93	03:15	0.53	19:20	1.20	0.90	01:50	0.011	19:20	0.085	0.040	0.040	0.34
03/25/2021	03:00	0.94	09:10	2.73	1.90	03:05	0.56	16:50	1.22	0.90	03:00	0.008	19:40	0.082	0.039	0.039	0.27
03/26/2021	01:55	0.93	10:00	2.59	1.85	01:55	0.51	17:10	1.28	0.89	00:25	0.008	18:30	0.075	0.038	0.038	-
03/27/2021	03:00	0.86	11:20	2.82	1.94	03:05	0.67	12:00	1.34	1.01	02:55	0.009	11:20	0.092	0.046	0.046	-
03/28/2021	03:35	1.00	11:25	2.89	1.96	03:30	0.50	13:40	1.52	1.04	03:30	0.008	13:40	0.110	0.049	0.049	0.37
03/29/2021	02:10	0.81	18:05	2.79	1.84	02:20	0.61	07:25	1.57	1.24	02:15	0.007	18:05	0.110	0.053	0.053	-
03/30/2021	03:30	1.14	17:20	2.83	2.03	02:30	0.64	20:25	1.48	1.03	03:00	0.013	17:20	0.094	0.049	0.049	-
03/31/2021	03:10	1.04	19:30	2.93	2.00	03:15	0.43	19:30	1.27	0.88	03:15	0.007	19:30	0.095	0.042	0.042	-
04/01/2021	03:05	0.92	20:30	2.79	1.94	03:05	0.41	20:30	1.30	0.89	02:40	0.006	20:30	0.091	0.041	0.041	-
04/02/2021	02:20	0.97	13:05	2.61	1.85	03:15	0.47	18:00	1.23	0.91	02:10	0.008	18:00	0.076	0.039	0.039	-
04/03/2021	02:10	0.99	08:35	2.76	1.87	01:10	0.51	08:35	1.33	0.95	03:30	0.008	08:35	0.092	0.041	0.041	-
04/04/2021	04:05	0.96	20:45	2.67	1.84	04:05	0.54	20:45	1.36	0.93	04:05	0.008	20:45	0.089	0.040	0.040	-
04/05/2021	03:15	0.90	19:25	2.94	1.85	03:20	0.47	19:25	1.35	0.94	03:10	0.007	19:25	0.101	0.040	0.040	-
04/06/2021	02:45	0.92	09:00	2.69	1.77	01:05	0.47	09:00	1.25	0.89	01:05	0.008	09:00	0.083	0.036	0.036	-
04/07/2021	02:30	0.90	19:25	2.85	1.81	02:55	0.48	19:25	1.33	0.91	02:25	0.007	19:25	0.096	0.038	0.038	0.22
04/08/2021	03:00	0.89	18:15	2.82	1.79	03:00	0.48	18:15	1.33	0.92	02:55	0.007	18:15	0.094	0.037	0.037	-
04/09/2021	02:00	0.88	13:40	2.54	1.79	02:00	0.50	18:40	1.19	0.90	01:55	0.007	13:40	0.073	0.036	0.036	0.03
04/10/2021	02:25	0.95	08:30	2.81	1.83	02:25	0.42	15:10	1.24	0.91	02:25	0.006	08:30	0.086	0.039	0.039	0.02
04/11/2021	03:40	0.86	10:05	2.95	1.83	03:40	0.46	10:05	1.36	0.93	03:30	0.006	10:05	0.103	0.040	0.040	-
04/12/2021	01:55	0.88	09:40	3.11	1.83	02:00	0.48	09:40	1.22	0.92	01:40	0.007	09:40	0.099	0.039	0.039	-
04/13/2021	02:25	0.94	20:10	2.95	1.85	02:25	0.49	20:15	1.26	0.90	02:25	0.007	20:10	0.094	0.038	0.038	-
04/14/2021	03:00	0.94	19:50	2.72	1.89	02:45	0.45	11:30	1.23	0.91	02:40	0.007	11:30	0.082	0.040	0.040	-
09/23/2020	23:20	2.04	12:35	3.49	2.84	23:20	0.64	12:30	1.27	1.02	23:20	0.029	12:35	0.120	0.075	0.039	-
09/24/2020	03:25	1.61	19:40	3.51	2.71	03:15	0.37	08:55	1.14	0.84	03:15	0.012	08:55	0.104	0.059	0.059	-
09/25/2020	02:55	1.86	13:55	4.30	2.74	03:10	0.33	13:55	1.35	0.82	03:10	0.013	13:55	0.167	0.059	0.059	-
09/26/2020	03:00	1.79	09:40	3.66	2.77	03:05	0.37	09:05	1.09	0.83	03:00	0.014	09:40	0.110	0.060	0.060	-
09/27/2020	04:35	1.89	09:10	3.79	2.83	03:40	0.40	09:55	1.18	0.85	04:35	0.018	09:15	0.123	0.064	0.064	-
09/28/2020	03:05	2.02	19:30	3.66	2.84	01:55	0.49	19:30	1.18	0.87	01:55	0.022	19:30	0.119	0.065	0.065	-
09/29/2020	03:20	1.79	18:30	3.75	2.73	02:20	0.39	18:30	1.21	0.84	02:20	0.015	18:30	0.126	0.060	0.060	-
09/30/2020	02:40	1.70	18:45	3.54	2.71	02:40	0.36	18:45	1.12	0.81	02:40	0.013	18:45	0.108	0.058	0.058	-
10/01/2020	04:00	1.88	18:55	3.62	2.73	02:30	0.34	18:50	1.24	0.84	02:35	0.015	18:50	0.123	0.060	0.060	-
10/02/2020	01:15	1.96	12:15	3.43	2.80	01:15	0.56	12:15	1.17	0.88	01:15	0.024	12:15	0.108	0.063	0.063	-
10/03/2020	05:15	2.12	10:00	3.30	2.76	02:35	0.39	13:30	1.18	0.86	02:35	0.022	17:00	0.104	0.061	0.061	0.01
10/04/2020	04:05	2.06	18:45	3.71	2.84	04:05	0.37	10:50	1.21	0.88	04:05	0.017	18:45	0.122	0.066	0.066	0.01
10/05/2020	02:50	2.02	09:30	3.60	2.76	02:55	0.49	09:30	1.16	0.88	02:55	0.022	09:30	0.114	0.063	0.063	-
10/06/2020	02:05	1.81	19:00	3.69	2.72	01:55	0.31	19:00	1.18	0.83	02:10	0.012	19:00	0.119	0.060	0.060	-
10/07/2020	02:50	1.82	11:35	3.54	2.66	03:10	0.27	10:55	1.10	0.83	03:10	0.011	11:35	0.106	0.057	0.057	-
10/08/2020	01:40	1.73	19:15	3.40	2.62	03:30	0.34	08:45	1.07	0.78	01:30	0.014	19:15	0.096	0.053	0.053	-
10/09/2020	00:50	2.02	14:45	3.68	2.92	00:30	0.40	17:05	1.40	0.98	00:30	0.019	17:05	0.141	0.076	0.076	0.64
10/10/2020	01:05	2.26	11:55	3.92	3.02	01:00	0.68	11:30	1.40	1.04	01:00	0.036	11:50	0.152	0.083	0.083	1.04
10/11/2020	03:25	1.98	10:50	3.72	2.85	03:55	0.45	08:45	1.41	1.00	03:25	0.021	08:45	0.135	0.076	0.076	0.53
10/12/2020	00:55	1.95	20:15	3.63	2.82	02:20	0.48	13:15	1.48	1.04	01:10	0.023	15:20	0.146	0.077	0.077	-
10/13/2020	01:15	1.90	17:00	3.94	2.78	02:35	0.63	17:05	1.49	1.02	01:15	0.029	16:35	0.147	0.073	0.073	0.61
10/14/2020	01:40	1.84	19:15	3.51	2.77	01:25	0.41	19:10	1.13	0.82	01:20	0.017	19:15	0.108	0.059	0.059	-
10/15/2020	03:20	1.83	19:05	3.71	2.79	03:20	0.37	19:05	1.18	0.84	03:20	0.014	19:05	0.121	0.062	0.062	-
10/16/2020	02:55	1.84	10:15	3.44	2.70	02:50	0.40	10:15	1.10	0.80	02:50	0.016	10:15	0.101	0.056	0.056	-
10/17/2020	02:45	1.94	10:40	3.51	2.76	02:40	0.48	09:40	1.22	0.88	02:40	0.020	09:40	0.116	0.064	0.064	0.01
10/18/2020	03:15	1.72	11:50	3.77	2.78	03:10	0.40	11:55	1.26	0.86	03:10	0.014	11:55	0.132	0.064	0.064	0.03
10/19/2020	03:40	1.73	19:00	3.67	2.73	03:35	0.41	19:00	1.22	0.85	03:35	0.015	19:00	0.123	0.061	0.061	0.05
10/20/2020	03:40	1.70	18:00	3.64	2.79	02:45	0.40	18:00	1.11	0.83	02:45	0.014	18:00	0.110	0.061	0.061	-
10/21/2020	02:30	1.75	15:20	3.50	2.72	02:00	0.44	20:10	1.08	0.81	02:00	0.016	15:20	0.100	0.057	0.057	0.01
10/22/2020	03:15	1.89	19:55	3.55	2.76	01:25	0.41	19:55	1.18	0.86	01:25	0.017	19:55	0.114	0.062	0.062	-
10/23/2020	02:25	1.74	20:35	3.52	2.74	03:55	0.37	20:35	1.11	0.82	03:50	0.014	20:35	0.106	0.059	0.059	0.20
10/24/2020	03:35	1.88	13:10	3.73	2.80	04:25	0.45	13:10	1.22	0.85	03:35	0.018	13:10	0.126	0.063	0.063	0.02
10/25/2020	03:10	1.81	14:35	3.14	2.58	05:40	0.37	17:05	0.87	0.63	03:15	0.016	09:30	0.070	0.041	0.041	-
10/26/2020	02:00	2.17	11:25	3.58	2.75	01:50	0.25	20:15	0.89	0.61	01:50	0.013	11:25	0.086	0.043	0.043	-
10/27/2020	02:15	2.28	09:35	3.34	2.70	02:20	0.24	09:35	0.85	0.59	02:20	0.013	09:35	0.076	0.040	0.040	-
10/28/2020	02:50	2.17	05:45	3.32	2.62	02:45	0.24	09:15	0.86	0.58	02:45	0.012	20:00	0.075	0.038	0.038	-
10/29/2020	03:10	1.95	20:40	3.19	2.73	04:00	0.19	11:30	0.80	0.58	03:10	0.009	09:00	0.063	0.040	0.040	-
10/30/2020	23:20	1.14	09:45	3.18	2.26	03:15	0.31	19:55	1.28	0.82	23:20	0.014	09:45	0.091	0.041	0.041	0.10
10/31/2020	04:00	0.69	09:45	2.81	1.76	04:05	0.51	10:20	1.32	0.95	03:55	0.005	11:30	0.092	0.039	0.039	-
11/01/2020	04:45	0.55	09:55	2.88	1.90	04:00	0.45	11:35	1.23	0.92	03:50	0.004	10:40	0.087	0.042	0.042	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/02/2020	03:45	1.00	20:20	2.88	1.93	04:00	0.52	20:25	1.19	0.90	03:15	0.009	20:25	0.087	0.041	0.041	-
11/03/2020	03:40	0.87	10:30	2.90	1.92	04:20	0.35	10:30	1.25	0.89	03:40	0.005	10:30	0.093	0.041	0.041	0.83
11/04/2020	02:45	1.14	09:10	2.81	1.88	02:30	0.60	19:55	1.24	0.93	02:25	0.012	09:10	0.086	0.040	0.040	0.09
11/05/2020	03:35	0.74	12:30	2.81	1.77	02:30	0.54	12:30	1.32	0.93	03:30	0.006	12:30	0.093	0.037	0.037	0.34
11/06/2020	01:45	0.97	19:10	2.72	1.84	01:45	0.60	19:15	1.24	0.95	01:45	0.009	19:10	0.083	0.039	0.039	0.10
11/07/2020	03:00	1.03	11:20	2.95	1.85	03:05	0.51	08:50	1.44	1.03	02:55	0.009	11:20	0.103	0.044	0.044	0.07
11/08/2020	04:00	0.84	13:55	2.89	1.91	05:15	0.35	17:45	1.37	1.03	05:00	0.007	13:55	0.100	0.046	0.046	0.01
11/09/2020	03:50	0.72	11:30	2.80	1.87	03:35	0.47	11:30	1.22	0.91	03:35	0.005	11:30	0.086	0.040	0.040	0.04
11/10/2020	03:35	0.75	09:05	2.61	1.86	03:40	0.50	16:55	1.49	0.95	03:35	0.005	16:55	0.081	0.041	0.041	0.03
11/11/2020	04:10	0.83	20:25	2.79	1.88	04:10	0.52	10:50	1.21	0.88	03:10	0.007	20:25	0.077	0.038	0.038	-
11/12/2020	03:50	1.17	10:05	2.95	2.02	03:50	0.34	19:05	1.63	0.85	03:50	0.007	10:05	0.082	0.040	0.040	0.16
11/13/2020	04:05	0.90	19:00	2.56	1.80	01:35	0.58	18:55	1.28	0.97	04:10	0.008	19:00	0.080	0.039	0.039	0.38
11/14/2020	04:20	0.78	11:20	2.74	1.82	05:05	0.54	17:25	1.30	0.96	04:15	0.006	17:25	0.084	0.041	0.041	0.47
11/15/2020	05:20	0.73	11:05	2.70	1.85	04:00	0.55	11:05	1.34	1.00	04:40	0.006	11:05	0.089	0.044	0.044	0.19
11/16/2020	04:45	0.81	15:45	2.58	1.78	04:45	0.58	12:55	1.26	0.97	04:35	0.007	15:45	0.076	0.039	0.039	0.31
11/17/2020	03:15	0.76	19:05	2.63	1.82	02:50	0.56	16:00	1.32	1.00	02:55	0.006	16:00	0.084	0.042	0.042	0.20
11/18/2020	03:35	0.87	21:00	2.62	1.80	02:15	0.59	17:25	1.35	0.98	02:15	0.008	17:25	0.084	0.041	0.041	0.30
11/19/2020	02:30	1.23	12:35	2.73	1.90	02:30	0.74	21:20	1.26	1.00	02:30	0.016	12:35	0.084	0.043	0.043	0.50
11/20/2020	04:30	0.87	19:40	2.82	1.77	04:25	0.59	19:40	1.35	1.00	04:25	0.008	19:40	0.096	0.040	0.040	0.01
11/21/2020	05:35	0.84	12:45	2.88	1.81	07:35	0.53	10:30	1.42	1.03	03:35	0.008	10:30	0.102	0.043	0.043	-
11/22/2020	05:45	0.69	11:55	2.87	1.87	02:45	0.54	11:55	1.36	0.99	05:45	0.005	11:55	0.099	0.043	0.043	0.21
11/23/2020	04:25	0.68	15:25	2.60	1.82	04:25	0.51	12:55	1.28	0.94	04:20	0.005	15:25	0.075	0.040	0.040	0.14
11/24/2020	04:50	0.67	17:00	2.76	1.81	04:50	0.51	17:50	1.25	0.98	04:40	0.005	17:00	0.085	0.041	0.041	0.21
11/25/2020	03:35	0.71	18:30	2.65	1.82	03:35	0.61	18:30	1.40	1.01	03:35	0.006	18:30	0.091	0.042	0.042	0.05
11/26/2020	05:05	0.84	11:05	2.83	1.82	04:35	0.69	11:10	1.47	1.05	04:25	0.009	11:10	0.105	0.045	0.045	0.02
11/27/2020	04:20	0.63	18:20	2.58	1.74	04:05	0.60	11:30	1.28	1.00	04:05	0.005	18:20	0.078	0.040	0.040	-
11/28/2020	04:45	0.84	12:10	2.63	1.79	02:25	0.64	12:10	1.28	1.00	04:40	0.008	12:10	0.083	0.041	0.041	0.05
11/29/2020	05:00	0.68	14:20	2.79	1.86	05:00	0.50	14:20	1.35	1.02	05:00	0.005	14:20	0.095	0.045	0.045	-
11/30/2020	02:45	0.89	13:35	2.66	1.83	02:40	0.72	13:35	1.30	1.02	02:35	0.010	13:35	0.086	0.042	0.042	0.36
12/01/2020	03:20	0.88	19:10	2.61	1.77	03:05	0.59	19:10	1.28	0.99	03:05	0.008	19:10	0.082	0.039	0.039	-
12/02/2020	04:15	0.73	14:55	2.82	1.74	04:15	0.63	14:55	1.34	1.01	04:20	0.006	14:55	0.095	0.039	0.039	0.01
12/03/2020	04:15	0.72	17:35	2.53	1.77	03:40	0.62	17:35	1.31	1.02	03:40	0.006	17:35	0.080	0.041	0.041	-
12/04/2020	02:50	0.74	11:35	2.62	1.79	04:25	0.53	11:35	1.28	1.00	02:45	0.007	11:35	0.082	0.040	0.040	-
12/05/2020	04:40	0.65	21:40	4.43	2.01	23:40	0.38	11:40	1.32	0.92	04:50	0.004	11:40	0.084	0.041	0.041	0.03
12/06/2020	04:35	2.96	14:35	4.82	3.85	05:05	0.28	14:40	0.71	0.49	02:15	0.022	14:40	0.101	0.054	0.054	0.03
12/07/2020	02:30	2.97	18:35	4.61	3.75	02:30	0.19	18:35	0.75	0.49	02:30	0.014	18:35	0.101	0.053	0.053	-
12/08/2020	03:55	2.93	19:15	4.53	3.77	03:15	0.20	13:05	0.63	0.45	03:15	0.015	13:05	0.079	0.048	0.048	0.87
12/09/2020	04:30	2.88	10:30	4.53	3.72	04:40	0.27	10:30	0.69	0.46	04:40	0.020	10:30	0.091	0.048	0.048	0.17
12/10/2020	23:30	1.40	13:55	6.19	3.30	04:35	0.20	18:55	1.30	0.66	04:35	0.014	11:55	0.097	0.048	0.048	0.07
12/11/2020	03:35	0.70	19:05	2.59	1.73	03:35	0.57	09:25	1.26	0.97	03:35	0.006	09:25	0.076	0.038	0.038	0.02
12/12/2020	05:10	0.92	13:15	2.97	1.95	05:00	0.44	13:15	1.20	0.89	05:10	0.006	13:15	0.091	0.041	0.041	0.01
12/13/2020	04:55	0.96	10:40	2.90	2.03	04:50	0.35	10:40	1.21	0.89	04:50	0.005	10:40	0.089	0.044	0.044	0.24
12/14/2020	02:30	1.31	18:25	2.84	2.09	02:35	0.54	12:55	1.14	0.87	02:30	0.013	12:55	0.079	0.043	0.043	0.05
12/15/2020	03:10	1.08	08:55	2.80	1.97	03:15	0.43	14:25	1.28	0.92	03:10	0.008	10:35	0.084	0.043	0.043	0.58
12/16/2020	05:35	1.05	18:25	2.66	1.88	04:40	0.36	11:35	1.30	0.97	03:25	0.008	11:35	0.082	0.041	0.041	0.39
12/17/2020	04:00	0.77	11:15	2.64	1.81	03:05	0.39	08:00	1.19	0.95	03:05	0.005	11:15	0.075	0.039	0.039	0.08
12/18/2020	03:50	0.74	18:05	2.80	1.81	03:50	0.56	18:05	1.26	0.92	03:50	0.006	18:05	0.088	0.038	0.038	0.25
12/19/2020	03:35	0.91	09:55	2.77	1.93	03:35	0.62	09:10	1.22	0.96	02:40	0.009	09:55	0.084	0.043	0.043	0.37
12/20/2020	04:50	0.70	14:15	2.78	1.88	04:45	0.56	19:55	1.25	0.96	04:30	0.006	14:15	0.086	0.042	0.042	0.04
12/21/2020	04:10	0.86	19:30	2.79	1.93	04:00	0.65	18:05	1.26	0.98	04:00	0.009	19:30	0.085	0.044	0.044	1.07
12/22/2020	04:05	0.88	18:40	2.61	1.84	04:35	0.41	20:35	1.18	0.89	04:30	0.006	20:30	0.074	0.038	0.038	-
12/23/2020	04:25	0.69	13:25	2.72	1.84	04:05	0.57	11:05	1.15	0.90	04:25	0.006	13:25	0.077	0.038	0.038	-
12/24/2020	05:25	0.99	11:35	2.94	1.95	04:55	0.55	18:20	1.46	0.96	04:25	0.009	11:35	0.095	0.044	0.044	-
12/25/2020	04:55	0.71	11:20	2.64	1.84	07:35	0.52	00:10	1.23	0.93	04:55	0.005	12:00	0.076	0.039	0.039	0.49
12/26/2020	06:45	0.80	14:55	2.67	1.78	04:35	0.50	12:15	1.19	0.90	04:35	0.006	12:15	0.077	0.037	0.037	0.02
12/27/2020	02:50	0.95	10:15	2.97	1.88	02:55	0.61	13:10	1.31	0.93	02:50	0.009	10:15	0.097	0.041	0.041	0.13
12/28/2020	03:45	0.77	13:00	2.72	1.81	04:40	0.57	18:40	1.27	0.97	03:45	0.006	13:00	0.085	0.040	0.040	-
12/29/2020	03:45	0.77	12:40	2.74	1.76	03:45	0.54	12:40	1.22	0.92	03:45	0.006	12:40	0.083	0.037	0.037	0.14
12/30/2020	03:10	0.99	12:35	2.64	1.88	03:05	0.56	23:30	1.67	1.12	03:05	0.009	20:25	0.101	0.048	0.048	0.78
12/31/2020	04:50	0.97	17:55	2.79	1.83	07:10	0.67	00:50	1.49	1.04	04:50	0.013	18:30	0.086	0.041	0.041	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			9.089	30.65
Average	2.05	0.93	0.045	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES	AUB_A13_71085

Site Address /Location:	Adjacent 1546 2nd St NE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Inbetween Pike St NE and RSt NE	Latitude:	47.310005	Pipe Size (H x W): 8.00 x 8.00	Pipe Shape: Circular
		Longitude:	-122.209035		



Manhole #	System Characteristics
A13 710-85	Residential
Access	Traffic
Drive	Light







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

Installation Information

Installation Date:	Installation Type:
Wednesday, September 23, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors): Upstream 0-5 FT	Monitor Location: Manhole
Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5)	Pressure Sensor Range (psi): 0 - 5 psi

Installation Confirmation:

Time	Pipe Size (HxW)
11:24:00 AM	16.25x16.38
Depth of Flow (Wet DOF) (in): 2.50	
CS5 Physical Offset (in): 1.38	Measurement Confidence (in): 0.25"
Peak Velocity (fps): 0.97	Velocity Sensor Offset (in): N/A
Silt (in): 0	Silt Type

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
9	Common Trench
Manhole Material: Concrete	Manhole Condition: Good
Manhole Opening Diameter (in): 24	Manhole Diameter (Approx.): 26
Manhole Cover: Steel	Manhole Frame: Normal
Active Connections: No	Air Quality: Normal
Pipe Material: PVC	Pipe Condition: Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A14_710149

Site Commentary

SITE INFORMATION

Pipe	Elliptical (18 in H x 18 in W)
Silt	0.38 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced some backwater conditions during the monitoring period.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	4.68	0.79	0.182
Minimum	2.63	0.40	0.068
Maximum	9.24	1.42	0.357
Min Time	11/08/2020 6:00:00 AM	01/03/2021 3:00:00 AM	11/02/2020 3:00:00 AM
Max Time	01/02/2021 9:00:00 PM	11/23/2020 8:00:00 AM	10/09/2020 11:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

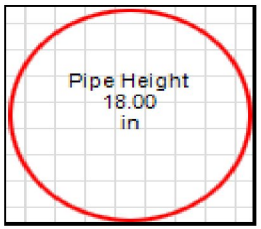
Percent Uptime	
DFINAL (in)	98.74
VFINAL (ft/s)	98.74
QFINAL (MGD - Total MG)	98.74

Hydrograph Report

AUB_A14_710149

Flow Monitor

AUB_A14_710149



Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

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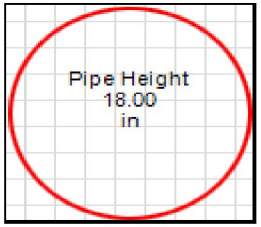
Scattergraph Report

AUB_A14_710149

Flow Monitor

AUB_A14_710149

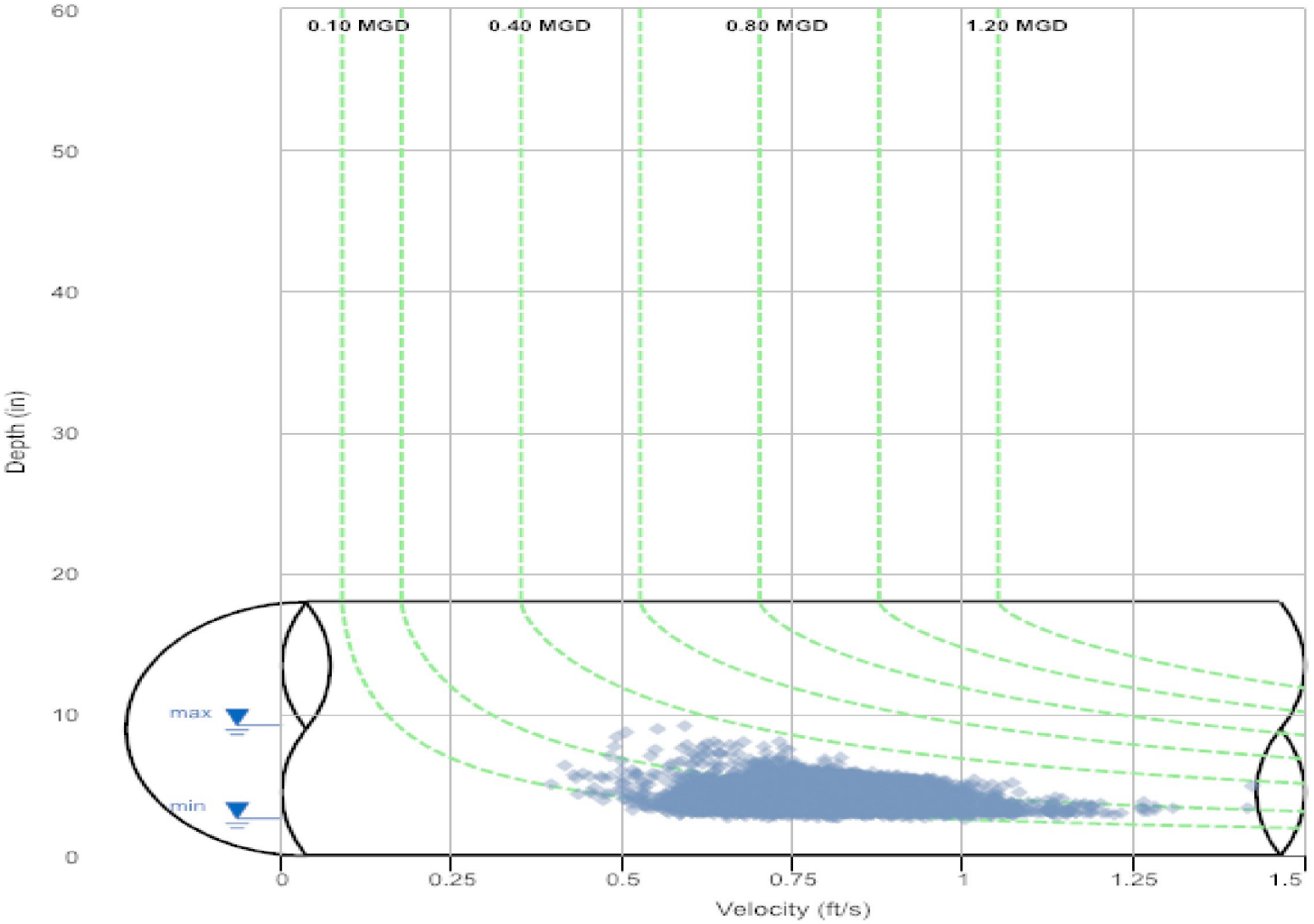


Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A14_710149Pipe: Elliptical (18 in H x 18 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	02:50	3.70	15:45	7.42	4.86	01:00	0.51	09:45	1.00	0.75	03:30	0.088	15:25	0.302	0.183	0.183	0.51
01/02/2021	03:50	2.94	21:15	9.88	5.58	22:05	0.43	07:05	0.95	0.72	04:45	0.077	21:20	0.385	0.209	0.209	1.69
01/03/2021	06:35	2.95	00:05	9.37	5.36	03:10	0.36	08:50	0.94	0.70	06:45	0.079	00:05	0.327	0.194	0.194	0.65
01/04/2021	03:20	3.67	19:15	6.69	5.12	03:30	0.52	10:10	0.97	0.73	03:30	0.089	11:55	0.280	0.190	0.190	0.48
01/05/2021	04:25	3.14	21:00	6.58	4.93	00:15	0.51	06:15	0.97	0.71	02:50	0.089	19:50	0.289	0.177	0.177	0.52
01/06/2021	05:55	3.96	19:55	5.69	4.98	18:50	0.49	07:20	0.86	0.69	04:00	0.118	11:40	0.233	0.174	0.174	0.22
01/07/2021	04:00	2.87	19:55	5.63	4.69	08:15	0.54	05:30	1.01	0.73	03:10	0.087	21:00	0.248	0.168	0.168	-
01/08/2021	04:05	3.36	17:35	5.73	4.87	01:50	0.55	16:45	0.98	0.76	02:45	0.091	17:05	0.288	0.188	0.188	0.22
01/09/2021	04:35	3.28	13:30	5.67	4.78	04:20	0.50	08:30	0.99	0.74	04:30	0.076	12:10	0.268	0.178	0.178	-
01/10/2021	05:40	3.46	14:25	5.77	4.84	02:30	0.46	17:55	0.96	0.74	03:45	0.085	17:55	0.270	0.181	0.181	0.07
01/11/2021	04:05	3.07	13:05	6.88	5.37	01:15	0.48	07:20	0.99	0.70	04:10	0.075	13:20	0.305	0.200	0.200	1.06
01/12/2021	00:40	5.11	19:05	8.91	6.60	05:55	0.45	17:15	0.88	0.62	00:45	0.147	19:10	0.376	0.231	0.231	2.10
01/13/2021	05:05	3.44	00:35	8.27	5.10	02:40	0.48	13:20	1.07	0.82	05:05	0.107	13:25	0.298	0.213	0.213	0.09
01/14/2021	03:50	3.49	13:00	5.70	4.80	02:50	0.54	06:20	0.92	0.78	02:50	0.083	18:45	0.266	0.188	0.188	0.01
01/15/2021	04:05	3.68	15:55	5.59	4.77	02:40	0.60	07:30	1.01	0.82	02:35	0.100	16:05	0.256	0.197	0.197	0.09
01/16/2021	03:35	2.83	12:35	5.63	4.54	00:50	0.64	08:20	1.27	0.87	03:45	0.092	10:50	0.280	0.192	0.192	-
01/17/2021	06:05	3.10	12:25	5.53	4.61	00:15	0.67	08:40	0.99	0.82	06:05	0.094	14:05	0.270	0.187	0.187	0.10
01/18/2021	04:35	2.80	14:50	5.64	4.57	01:30	0.64	06:25	1.19	0.85	02:45	0.083	13:20	0.278	0.190	0.190	-
01/19/2021	03:35	2.86	19:55	5.41	4.51	00:50	0.56	06:00	1.11	0.80	04:30	0.097	15:50	0.237	0.173	0.173	0.01
01/20/2021	04:35	2.89	18:15	5.34	4.43	00:00	0.55	06:25	1.42	0.82	02:45	0.083	14:25	0.256	0.174	0.174	-
01/21/2021	03:40	2.90	18:40	5.31	4.50	00:35	0.63	06:25	1.26	0.84	01:25	0.105	18:55	0.241	0.180	0.180	0.11
01/22/2021	05:25	2.88	19:10	5.38	4.44	23:55	0.57	05:10	1.25	0.86	03:40	0.091	17:35	0.259	0.182	0.182	-
01/23/2021	05:10	2.86	12:05	5.56	4.50	00:00	0.56	06:10	1.18	0.84	03:50	0.090	12:00	0.279	0.181	0.181	-
01/24/2021	05:25	2.88	18:05	5.92	4.53	23:50	0.56	07:05	1.37	0.87	03:00	0.094	18:05	0.289	0.188	0.188	0.16
01/25/2021	05:05	3.15	17:55	5.28	4.55	01:05	0.54	11:55	1.07	0.79	02:40	0.086	11:55	0.269	0.177	0.177	0.04
01/26/2021	04:05	2.74	18:05	5.22	4.37	00:20	0.63	03:50	1.13	0.86	02:00	0.101	21:10	0.257	0.176	0.176	-
01/27/2021	04:30	2.83	18:55	5.38	4.45	01:10	0.53	06:35	1.46	0.89	01:20	0.088	16:20	0.257	0.186	0.186	0.14
01/28/2021	03:20	2.84	12:45	5.25	4.59	17:50	0.65	15:30	1.03	0.84	04:00	0.094	12:55	0.271	0.190	0.190	0.24
01/29/2021	05:35	2.84	18:40	5.37	4.43	22:25	0.58	05:45	1.23	0.86	02:50	0.102	14:05	0.254	0.181	0.181	0.03
01/30/2021	04:40	3.09	12:40	5.43	4.52	23:45	0.65	05:10	1.18	0.86	02:45	0.104	14:20	0.274	0.189	0.189	0.07
01/31/2021	06:35	2.98	12:15	5.55	4.62	02:30	0.61	08:15	1.21	0.87	06:50	0.106	18:05	0.275	0.197	0.197	0.12
02/01/2021	05:10	3.93	18:45	6.52	5.00	23:50	0.63	07:10	1.13	0.85	00:40	0.132	18:55	0.297	0.214	0.214	0.82
02/02/2021	04:55	2.90	00:00	6.00	4.71	00:20	0.60	05:50	1.23	0.82	02:40	0.105	12:10	0.255	0.187	0.187	0.31
02/03/2021	04:10	3.06	19:15	5.38	4.59	01:00	0.54	06:30	1.24	0.82	04:25	0.105	16:05	0.253	0.185	0.185	0.06
02/04/2021	05:10	2.82	15:35	5.35	4.44	00:50	0.58	05:30	1.10	0.82	04:00	0.070	11:10	0.247	0.177	0.177	0.07
02/05/2021	04:20	2.87	13:40	5.54	4.47	23:40	0.51	06:20	1.24	0.83	04:10	0.092	13:40	0.296	0.178	0.178	0.01
02/06/2021	05:05	2.85	15:25	5.61	4.50	00:00	0.58	07:30	1.25	0.85	03:05	0.085	11:25	0.288	0.185	0.185	0.01
02/07/2021	05:25	2.86	13:20	5.63	4.45	02:05	0.49	06:25	1.14	0.80	03:00	0.085	12:35	0.261	0.172	0.172	-
02/08/2021	03:55	2.85	19:10	5.39	4.46	00:00	0.61	06:15	1.15	0.88	02:10	0.093	12:10	0.279	0.190	0.190	-
02/09/2021	04:30	2.77	17:10	5.37	4.46	00:40	0.56	05:10	1.25	0.88	03:55	0.106	11:45	0.272	0.186	0.186	-
02/10/2021	04:05	2.93	17:25	5.32	4.48	00:25	0.58	08:20	1.02	0.82	04:10	0.071	20:30	0.260	0.180	0.180	-
02/11/2021	03:05	3.00	18:05	5.33	4.47	01:00	0.55	06:05	1.39	0.79	02:40	0.077	09:15	0.244	0.169	0.169	-
02/12/2021	04:35	2.96	13:05	5.48	4.43	00:00	0.60	06:10	1.60	0.86	04:10	0.095	21:20	0.239	0.179	0.179	-
02/13/2021	05:50	2.96	12:20	5.29	4.44	01:35	0.60	08:15	1.10	0.81	05:30	0.092	12:05	0.266	0.175	0.175	0.08
02/14/2021	05:20	2.81	14:30	5.57	4.53	03:10	0.45	06:45	1.15	0.82	04:25	0.061	16:25	0.279	0.184	0.184	0.71
02/15/2021	05:55	4.45	14:05	8.03	5.89	14:40	0.56	09:00	0.88	0.72	06:10	0.151	13:25	0.328	0.229	0.229	0.78
02/16/2021	04:00	3.95	19:25	5.65	4.86	03:05	0.57	16:20	1.00	0.77	03:05	0.108	16:20	0.275	0.189	0.189	0.07
02/17/2021	04:05	2.74	16:20	5.62	4.59	14:25	0.63	07:00	1.14	0.83	02:30	0.100	18:55	0.248	0.183	0.183	-
02/18/2021	04:05	2.91	13:45	5.43	4.57	01:20	0.55	06:15	1.20	0.82	03:20	0.103	16:20	0.240	0.181	0.181	0.09
02/19/2021	05:00	2.99	19:35	5.91	4.61	23:55	0.58	07:20	1.16	0.84	05:00	0.104	15:40	0.263	0.189	0.189	0.17
02/20/2021	05:30	2.86	13:35	5.72	4.59	00:00	0.59	07:25	1.19	0.80	04:20	0.082	12:00	0.264	0.179	0.179	0.07
02/21/2021	06:25	2.87	23:50	7.87	4.79	23:50	0.53	07:30	1.21	0.80	05:05	0.086	23:35	0.310	0.189	0.189	0.42
02/22/2021	05:25	4.01	13:10	8.43	5.61	03:45	0.47	06:00	0.91	0.70	03:55	0.114	13:25	0.340	0.209	0.209	0.98
02/23/2021	05:05	2.82	22:00	6.87	4.73	01:30	0.55	08:00	1.06	0.77	05:15	0.086	09:10	0.296	0.182	0.182	0.27
02/24/2021	03:40	2.92	18:10	5.45	4.62	00:10	0.57	05:10	1.12	0.83	03:40	0.099	18:30	0.258	0.187	0.187	-
02/25/2021	02:50	3.05	20:05	5.51	4.76	01:35	0.62	02:00	1.06	0.80	02:50	0.097	19:00	0.261	0.190	0.190	0.18
02/26/2021	04:05	2.58	18:35	5.59	4.63	23:05	0.61	05:55	1.16	0.82	04:05	0.094	13:20	0.258	0.183	0.183	0.10
02/27/2021	04:35	2.94	12:20	5.72	4.66	00:20	0.61	08:00	1.35	0.86	03:30	0.101	11:30	0.274	0.195	0.195	0.02
02/28/2021	03:50	2.77	12:45	5.76	4.67	23:55	0.59	07:00	1.36	0.83	03:40	0.082	20:55	0.272	0.189	0.189	0.02
03/01/2021	05:05	2.92	13:45	5.37	4.61	01:00	0.58	11:20	1.07	0.82	02:45	0.087	11:20	0.294	0.186	0.186	-
03/02/2021	03:55	2.88	18:20	5.39	4.48	00:30	0.63	05:15	1.16	0.84	04:05	0.085	18:40	0.276	0.182	0.182	-
03/03/2021	03:45	2.79	17:50	5.45	4.50	00:05	0.63	06:35	1.25	0.87	02:35	0.089	19:00	0.252	0.188	0.188	-
03/04/2021	04:55	2.92	19:55	6.16	4.54	01:25	0.51	06:20	1.39	0.85	04:10	0.091	13:00	0.289	0.186	0.186	0.20
03/05/2021	04:15	2.53	13:30	5.38	4.48	02:15	0.55	05:25	1.28	0.84	04:15	0.083	14:45	0.266	0.179	0.179	0.05
03/06/2021	06:20	2.90	14:25	5.47	4.51	01:55	0.59	07:00	1.32	0.90	01:55	0.108	12:05	0.284	0.195	0.195	-
03/07/2021	06:35	2.67	13:00	5.55	4.49	23:05	0.64	07:05	1.36	0.90	03:25	0.093	10:30	0.298	0.194	0.194	0.04
03/08/2021	04:40	2.75	20:15	5.45	4.54	23:30	0.53	07:00	1.27	0.82	04:15	0.082	10:30	0.266	0.177	0.177	-
03/09/2021	05:50	2.88	20:55	5.38	4.48	01:20	0.50	07:05	1.36	0.85	01:35	0.077	11:35	0.267	0.183	0.183	0.01
03/10/2021	03:30	2.85	16:50	5.47	4.56	00:25	0.48	05:10	1.28	0.83	02:35	0.089	18:15	0.262	0.181	0.181	-
03/11/2021	04:30	2.78	12:35	5.47	4.53	00:50	0.53	06:10	1.23	0.82	03:25	0.074	09:30	0.249	0.179	0.179	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:40	2.40	18:40	6.24	4.46	18:35	0.53	06:15	1.34	0.82	03:40	0.078	17:00	0.250	0.175	0.175	-
03/13/2021	05:20	2.75	13:55	5.64	4.52	04:40	0.52	08:00	1.27	0.81	04:40	0.066	10:35	0.292	0.181	0.181	-
03/14/2021	06:05	2.81	15:40	5.98	4.61	02:30	0.46	06:00	1.11	0.79	04:55	0.064	15:05	0.289	0.182	0.182	0.30
03/15/2021	03:20	2.90	11:40	5.45	4.48	00:55	0.55	04:35	1.22	0.81	02:05	0.082	12:10	0.246	0.172	0.172	-
03/16/2021	04:00	2.83	18:45	5.44	4.54	00:00	0.59	05:20	1.16	0.81	05:05	0.084	16:20	0.266	0.179	0.179	-
03/17/2021	03:05	2.73	11:35	5.43	4.56	00:05	0.56	05:50	1.17	0.78	02:15	0.072	10:15	0.256	0.173	0.173	-
03/18/2021	04:30	2.95	16:35	5.78	4.55	01:25	0.53	05:45	1.10	0.78	02:00	0.067	11:55	0.258	0.172	0.172	0.11
03/19/2021	03:10	2.75	13:00	5.41	4.44	01:15	0.53	05:40	1.36	0.85	01:15	0.083	09:10	0.259	0.176	0.176	0.03
03/20/2021	04:05	2.75	14:45	5.46	4.54	23:05	0.55	05:30	1.22	0.78	04:15	0.063	13:45	0.252	0.172	0.172	0.17
03/21/2021	04:35	2.79	11:15	5.71	4.47	01:10	0.54	06:30	1.11	0.87	04:30	0.082	11:15	0.291	0.190	0.190	0.07
03/22/2021	02:30	2.93	10:45	5.81	4.63	22:45	0.54	04:20	1.22	0.86	23:50	0.111	11:55	0.278	0.192	0.192	0.11
03/23/2021	04:00	3.26	18:45	5.48	4.65	02:55	0.49	07:10	0.92	0.72	02:55	0.072	12:10	0.247	0.168	0.168	-
03/24/2021	03:15	3.05	20:10	5.98	4.63	01:45	0.51	07:10	1.02	0.75	01:45	0.073	20:20	0.245	0.171	0.171	0.34
03/25/2021	03:05	3.60	18:20	5.52	4.88	01:10	0.48	07:40	1.06	0.72	03:50	0.103	07:40	0.245	0.175	0.175	0.27
03/26/2021	04:35	2.95	11:25	5.42	4.59	00:00	0.52	06:05	0.95	0.80	03:40	0.075	11:10	0.267	0.181	0.181	-
03/27/2021	05:00	3.03	10:45	5.46	4.60	01:15	0.61	05:55	0.97	0.78	02:10	0.087	11:00	0.241	0.178	0.178	-
03/28/2021	05:05	2.78	14:55	7.39	4.67	16:25	0.59	08:20	1.03	0.74	04:15	0.073	14:35	0.339	0.172	0.172	0.37
03/29/2021	03:20	2.83	10:45	5.44	4.56	00:50	0.64	05:10	1.42	0.93	03:20	0.076	10:05	0.301	0.206	0.206	-
03/30/2021	05:15	2.84	12:30	5.43	4.51	23:40	0.64	06:20	1.26	0.92	01:35	0.098	17:15	0.282	0.199	0.199	-
03/31/2021	02:50	2.72	11:55	5.40	4.57	23:20	0.57	05:45	1.29	0.84	02:50	0.081	13:15	0.262	0.188	0.188	-
04/01/2021	03:15	2.72	11:40	5.41	4.58	02:00	0.52	10:55	0.89	0.73	02:25	0.066	10:55	0.247	0.165	0.165	-
04/02/2021	03:55	2.91	11:40	5.41	4.56	01:05	0.57	12:10	0.94	0.74	04:50	0.069	17:15	0.251	0.167	0.167	-
04/03/2021	03:15	2.91	11:10	5.59	4.51	05:15	0.52	07:50	1.03	0.76	05:15	0.062	08:50	0.270	0.170	0.170	-
04/04/2021	03:15	2.78	11:20	5.59	4.48	23:40	0.46	07:25	1.07	0.78	05:05	0.077	11:40	0.251	0.167	0.167	-
04/05/2021	02:55	2.86	11:55	5.53	4.59	00:50	0.46	15:35	0.92	0.71	01:50	0.059	15:35	0.246	0.163	0.163	-
04/06/2021	03:45	2.83	13:05	5.47	4.62	02:55	0.50	06:50	1.04	0.76	03:15	0.063	11:15	0.255	0.176	0.176	-
04/07/2021	03:10	2.81	19:05	5.45	4.62	01:15	0.54	04:45	1.03	0.80	03:05	0.077	19:05	0.253	0.182	0.182	0.22
04/08/2021	03:15	2.90	12:30	5.42	4.61	23:35	0.57	10:00	1.06	0.82	04:40	0.085	10:00	0.275	0.187	0.187	-
04/09/2021	02:50	2.67	19:00	5.42	4.47	22:35	0.63	05:50	1.10	0.81	02:10	0.082	13:00	0.255	0.174	0.174	0.03
04/10/2021	03:35	2.93	12:05	5.60	4.53	02:10	0.56	06:25	1.11	0.78	04:10	0.074	09:50	0.271	0.172	0.172	0.02
04/11/2021	03:20	2.89	09:15	5.72	4.56	06:20	0.54	16:30	0.98	0.74	03:25	0.065	16:30	0.262	0.169	0.169	-
04/12/2021	02:25	2.88	11:45	5.50	4.57	23:50	0.51	06:00	1.18	0.80	03:00	0.076	11:40	0.280	0.180	0.180	-
04/13/2021	02:20	2.80	12:05	5.42	4.53	00:00	0.55	06:30	1.14	0.80	02:15	0.072	11:25	0.256	0.179	0.179	-
04/14/2021	03:30	2.66	12:50	5.41	4.58	01:20	0.57	06:35	1.09	0.81	02:25	0.063	15:05	0.273	0.185	0.185	-
09/24/2020	23:45	4.98	18:35	6.21	5.91	22:45	0.52	14:55	0.81	0.69	23:45	0.139	19:25	0.276	0.222	0.091	-
09/25/2020	03:00	4.24	12:25	7.13	5.57	01:55	0.43	15:15	0.82	0.65	03:00	0.086	12:25	0.282	0.197	0.197	-
09/26/2020	04:45	3.74	15:15	6.41	5.34	03:15	0.38	12:30	0.94	0.66	04:25	0.071	12:30	0.300	0.188	0.188	-
09/27/2020	03:55	3.84	11:20	6.18	5.20	01:30	0.40	09:50	0.92	0.70	01:30	0.075	11:45	0.300	0.194	0.194	-
09/28/2020	03:10	3.18	18:15	5.98	5.02	02:50	0.49	06:20	0.91	0.76	03:00	0.077	12:30	0.280	0.196	0.196	-
09/29/2020	04:05	3.38	17:30	5.87	5.01	01:55	0.60	03:45	1.12	0.81	01:50	0.091	14:15	0.284	0.205	0.205	-
09/30/2020	02:55	3.21	19:05	5.98	5.01	23:45	0.58	04:20	1.13	0.82	01:00	0.109	14:50	0.303	0.206	0.206	-
10/01/2020	02:55	3.31	19:20	5.90	5.01	00:20	0.58	05:00	1.10	0.77	02:45	0.097	16:55	0.280	0.195	0.195	-
10/02/2020	02:45	3.21	10:55	5.89	5.01	00:20	0.55	04:30	1.01	0.78	01:45	0.101	16:40	0.288	0.198	0.198	-
10/03/2020	03:25	3.06	11:55	6.01	4.97	00:25	0.53	08:45	1.02	0.76	03:50	0.075	09:00	0.300	0.193	0.193	0.01
10/04/2020	03:10	3.32	11:25	6.01	4.99	04:05	0.47	15:20	1.03	0.73	04:05	0.068	15:20	0.322	0.190	0.190	0.01
10/05/2020	04:10	3.31	12:25	5.70	4.79	21:15	0.58	05:15	1.07	0.79	02:55	0.089	09:05	0.260	0.190	0.190	-
10/06/2020	04:05	2.82	12:40	5.31	4.42	01:10	0.59	04:00	1.12	0.79	01:15	0.089	17:20	0.239	0.167	0.167	-
10/07/2020	02:50	2.85	18:45	5.42	4.39	23:45	0.50	05:10	0.95	0.77	01:30	0.080	19:00	0.234	0.163	0.163	-
10/08/2020	03:30	2.90	18:35	5.40	4.47	00:00	0.55	04:30	0.98	0.72	02:45	0.077	20:05	0.257	0.157	0.157	-
10/09/2020	03:15	2.99	23:55	8.95	4.70	00:40	0.55	15:25	0.96	0.76	02:15	0.078	23:20	0.373	0.180	0.180	0.64
10/10/2020	23:55	4.01	01:40	10.26	5.35	03:15	0.51	10:30	0.97	0.73	23:55	0.110	01:45	0.382	0.201	0.201	1.04
10/11/2020	05:30	2.74	18:15	6.46	4.51	02:35	0.49	07:10	1.15	0.80	02:35	0.061	18:00	0.307	0.178	0.178	0.53
10/12/2020	02:50	3.01	17:55	5.52	4.59	23:10	0.56	05:50	1.03	0.77	03:05	0.077	11:30	0.263	0.174	0.174	-
10/13/2020	01:20	3.21	07:35	7.75	5.03	08:45	0.53	03:50	1.08	0.75	00:55	0.077	07:10	0.361	0.193	0.193	0.61
10/14/2020	01:35	2.83	20:05	5.58	4.64	11:00	0.60	04:35	1.14	0.78	01:20	0.072	19:20	0.287	0.178	0.178	-
10/15/2020	02:40	2.96	18:05	5.66	4.64	23:10	0.54	05:25	1.19	0.80	01:35	0.082	19:55	0.271	0.182	0.182	-
10/16/2020	03:05	2.41	11:45	5.53	4.56	00:40	0.47	04:50	1.08	0.79	01:00	0.071	15:40	0.266	0.175	0.175	-
10/17/2020	03:40	2.86	13:40	5.58	4.58	00:25	0.57	06:55	1.21	0.79	02:45	0.084	13:30	0.268	0.178	0.178	0.01
10/18/2020	04:40	2.66	13:00	5.60	4.48	00:50	0.49	07:10	1.22	0.78	02:15	0.060	13:10	0.264	0.173	0.173	0.03
10/19/2020	03:20	2.81	20:05	5.53	4.58	20:30	0.58	05:35	1.19	0.78	02:55	0.075	14:00	0.251	0.174	0.174	0.05
10/20/2020	04:05	2.82	19:25	5.52	4.60	23:20	0.56	05:15	0.98	0.75	03:05	0.067	20:20	0.268	0.170	0.170	-
10/21/2020	02:30	2.83	19:35	5.53	4.54	01:10	0.53	04:15	1.19	0.74	02:00	0.065	19:25	0.229	0.163	0.163	0.01
10/22/2020	04:00	2.77	12:15	5.46	4.59	22:40	0.53	04:20	1.11	0.76	01:35	0.080	12:15	0.242	0.169	0.169	-
10/23/2020	03:35	2.61	20:10	5.68	4.62	01:15	0.47	04:15	1.08	0.78	01:15	0.066	20:00	0.283	0.179	0.179	0.20
10/24/2020	04:50	2.72	11:30	5.68	4.59	20:35	0.56	08:05	1.03	0.81	04:50	0.081	12:05	0.286	0.182	0.182	0.02
10/25/2020	04:55	2.80	11:55	5.49	4.55	01:10	0.57	06:05	1.10	0.80	02:40	0.078	17:10	0.257	0.179	0.179	-
10/26/2020	03:55	2.89	17:40	5.50	4.55	23:55	0.56	04:30	1.25	0.82	01:15	0.086	09:25	0.269	0.180	0.180	-
10/27/2020	03:40	2.93	18:55	5.68	4.60	01:35	0.56	06:00	0.94	0.76	01:30	0.073	18:55	0.273	0.173	0.173	-
10/28/2020	03:35	2.95	13:10	5.42	4.52	02:10	0.56	04:30	1.04	0.81	01:40	0.077	13:00	0.278	0.180	0.180	-
10/29/2020	02:55	2.90	10:40	6.24	4.90	14:45	0.38	06:20	1.05	0.60	03:45	0.075	11:55	0.199	0.138	0.138	-
10/30/2020	04:35	2.93	16:55	5.80	4.74	23:15	0.50	05:30	1.00	0.67	04:05	0.071	19:35	0.216	0.157	0.157	0.10
10/31/2020	03:45	2.54	11:15	5.67	4.47	01:40	0.52	06:20	1.15	0.76	02:10	0.064	09:20	0.249	0.164	0.164	-
11/01/2020	04:40	2.61	12:50	5.64	4.37	01:20	0.55	06:55	1.09	0.78	03:00	0.061	13:20	0.270	0.166	0.166	-
11/02/2020	03:25	2.70	18:30	5.42	4.44	01:15	0.46	06:05	0.99	0.73	04:10	0.059	18:50	0.233	0.158	0.158	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/03/2020	05:25	2.74	10:20	7.67	4.87	04:00	0.48	06:40	1.02	0.72	04:10	0.056	10:05	0.348	0.178	0.178	0.83
11/04/2020	03:30	2.84	20:10	5.36	4.50	00:15	0.55	05:45	1.12	0.77	02:45	0.077	16:25	0.238	0.167	0.167	0.09
11/05/2020	05:10	2.93	13:40	5.55	4.71	23:55	0.56	04:40	0.98	0.78	04:10	0.103	18:15	0.275	0.180	0.180	0.34
11/06/2020	04:35	3.23	13:20	5.32	4.66	00:00	0.56	06:15	1.07	0.75	04:35	0.086	12:25	0.238	0.171	0.171	0.10
11/07/2020	06:15	2.76	16:20	5.45	4.43	01:40	0.47	08:20	1.08	0.75	01:55	0.067	11:35	0.251	0.161	0.161	0.07
11/08/2020	06:25	2.55	13:10	5.64	4.48	01:00	0.51	06:45	1.08	0.76	02:55	0.073	11:20	0.253	0.166	0.166	0.01
11/09/2020	04:15	2.36	21:30	5.43	4.50	00:35	0.56	06:00	1.10	0.77	03:05	0.066	13:35	0.240	0.166	0.166	0.04
11/10/2020	04:10	2.59	19:15	5.47	4.56	04:50	0.40	08:15	0.97	0.73	04:55	0.061	16:45	0.231	0.165	0.165	0.03
11/11/2020	05:50	2.77	14:50	5.41	4.54	01:15	0.49	08:35	1.18	0.75	04:05	0.057	11:00	0.244	0.167	0.167	-
11/12/2020	04:00	2.50	20:40	5.65	4.56	00:45	0.60	07:25	1.08	0.81	01:40	0.070	21:25	0.274	0.182	0.182	0.16
11/13/2020	02:05	3.87	06:50	5.69	4.91	21:10	0.68	06:25	1.18	0.83	23:55	0.139	06:25	0.310	0.204	0.204	0.38
11/14/2020	03:55	2.72	18:25	6.83	4.68	02:20	0.65	08:05	1.24	0.85	03:55	0.094	18:00	0.325	0.193	0.193	0.47
11/15/2020	07:20	2.94	13:35	5.53	4.71	12:00	0.64	10:30	1.07	0.83	07:30	0.109	10:30	0.271	0.191	0.191	0.19
11/16/2020	05:15	2.91	13:30	6.34	4.74	00:25	0.58	12:25	1.12	0.80	05:15	0.088	12:25	0.382	0.188	0.188	0.31
11/17/2020	04:50	2.87	19:50	6.08	4.59	00:50	0.50	06:45	1.21	0.82	00:50	0.094	19:15	0.257	0.182	0.182	0.20
11/18/2020	04:20	2.84	18:00	5.68	4.67	22:10	0.61	06:50	1.18	0.84	02:45	0.096	10:15	0.257	0.191	0.191	0.30
11/19/2020	02:50	3.10	13:05	6.93	4.87	03:40	0.55	03:10	1.26	0.82	02:50	0.101	12:35	0.291	0.198	0.198	0.50
11/20/2020	04:05	3.04	12:30	5.34	4.53	22:25	0.61	05:45	1.39	0.88	03:05	0.109	13:55	0.258	0.190	0.190	0.01
11/21/2020	02:40	2.90	13:25	5.62	4.52	01:00	0.62	09:10	1.24	0.88	02:40	0.079	13:30	0.293	0.196	0.196	-
11/22/2020	03:55	2.86	18:15	5.83	4.61	01:25	0.57	06:30	1.19	0.82	03:10	0.084	11:10	0.265	0.182	0.182	0.21
11/23/2020	05:05	2.88	13:10	5.48	4.75	23:55	0.60	08:35	1.68	0.89	02:40	0.108	08:35	0.450	0.209	0.209	0.14
11/24/2020	05:00	2.81	16:15	6.22	4.62	23:50	0.56	06:45	1.40	0.86	03:10	0.090	08:55	0.296	0.194	0.194	0.21
11/25/2020	03:35	3.03	22:10	5.46	4.70	00:05	0.53	05:15	1.34	0.83	02:50	0.099	14:05	0.244	0.188	0.188	0.05
11/26/2020	05:05	2.76	11:55	5.80	4.63	01:20	0.51	06:50	1.34	0.82	05:05	0.082	14:50	0.298	0.184	0.184	0.02
11/27/2020	04:55	2.87	12:15	5.49	4.53	03:25	0.52	08:15	1.05	0.78	04:45	0.070	12:30	0.263	0.175	0.175	-
11/28/2020	05:40	2.91	13:25	5.51	4.59	01:20	0.48	03:25	1.06	0.76	05:50	0.076	15:10	0.270	0.172	0.172	0.05
11/29/2020	05:45	2.90	13:35	5.66	4.59	02:35	0.42	08:50	1.11	0.76	02:35	0.067	12:30	0.271	0.174	0.174	-
11/30/2020	03:35	3.06	04:55	5.60	4.92	03:10	0.48	11:25	1.06	0.77	03:10	0.072	11:25	0.286	0.192	0.192	0.36
12/01/2020	04:00	3.08	19:05	5.39	4.65	01:15	0.52	08:15	1.04	0.73	04:35	0.086	12:40	0.241	0.169	0.169	-
12/02/2020	04:30	2.94	19:30	5.43	4.68	01:25	0.45	06:40	1.08	0.76	02:05	0.073	13:30	0.249	0.178	0.178	0.01
12/03/2020	04:55	2.87	13:20	5.40	4.60	01:40	0.42	06:30	1.11	0.75	01:40	0.069	20:15	0.255	0.173	0.173	-
12/04/2020	04:10	3.00	12:55	5.46	4.63	03:05	0.49	04:55	1.07	0.79	03:55	0.076	16:05	0.282	0.180	0.180	-
12/05/2020	03:50	2.90	15:35	5.62	4.60	01:25	0.53	06:15	1.01	0.75	04:20	0.074	10:40	0.259	0.171	0.171	0.03
12/06/2020	03:35	3.08	13:00	5.68	4.73	03:45	0.48	15:50	0.89	0.68	03:35	0.068	12:55	0.267	0.162	0.162	0.03
12/07/2020	05:05	2.99	17:35	5.47	4.67	00:50	0.47	09:40	0.98	0.74	04:35	0.065	13:10	0.262	0.174	0.174	-
12/08/2020	03:15	3.05	21:35	6.68	5.16	03:55	0.55	06:10	1.02	0.72	03:55	0.074	19:40	0.296	0.195	0.195	0.87
12/09/2020	05:50	3.60	18:30	5.56	4.82	04:35	0.53	15:15	0.99	0.76	04:35	0.089	19:00	0.259	0.183	0.183	0.17
12/10/2020	04:20	2.92	20:50	5.51	4.54	02:00	0.55	05:25	1.01	0.80	03:10	0.073	16:20	0.259	0.180	0.180	0.07
12/11/2020	05:00	2.91	12:55	5.42	4.50	01:55	0.58	07:10	1.12	0.84	02:30	0.090	18:50	0.266	0.181	0.181	0.02
12/12/2020	05:25	2.56	12:35	5.62	4.51	01:35	0.55	06:50	1.25	0.83	04:20	0.084	16:20	0.283	0.181	0.181	0.01
12/13/2020	07:05	3.10	11:45	5.79	4.66	00:40	0.58	05:00	1.07	0.84	02:10	0.097	10:30	0.298	0.194	0.194	0.24
12/14/2020	03:25	2.87	17:40	5.45	4.57	01:50	0.57	06:00	1.14	0.81	02:45	0.085	19:40	0.276	0.180	0.180	0.05
12/15/2020	03:40	2.85	16:10	7.63	4.85	01:55	0.48	08:10	1.04	0.78	03:45	0.077	15:50	0.320	0.191	0.191	0.58
12/16/2020	04:30	3.13	14:50	6.58	4.80	02:50	0.42	06:55	0.99	0.75	02:50	0.069	15:30	0.318	0.181	0.181	0.39
12/17/2020	04:25	2.86	13:00	5.36	4.52	01:25	0.61	07:00	1.01	0.79	03:15	0.079	18:05	0.233	0.174	0.174	0.08
12/18/2020	04:15	2.88	19:10	5.40	4.59	00:55	0.63	07:30	1.08	0.85	04:00	0.090	14:30	0.269	0.191	0.191	0.25
12/19/2020	05:45	2.35	21:20	6.08	4.64	02:20	0.62	08:15	1.21	0.82	05:45	0.072	17:20	0.271	0.186	0.186	0.37
12/20/2020	06:55	2.78	14:00	5.45	4.49	22:10	0.58	05:00	1.06	0.82	03:40	0.079	15:45	0.255	0.177	0.177	0.04
12/21/2020	04:50	4.13	16:40	8.47	5.51	20:20	0.54	16:10	0.99	0.73	04:10	0.131	16:50	0.387	0.211	0.211	1.07
12/22/2020	04:50	2.91	12:40	5.40	4.61	22:55	0.57	06:05	1.12	0.77	04:50	0.086	17:00	0.266	0.175	0.175	-
12/23/2020	05:45	3.02	14:25	5.44	4.52	01:10	0.55	11:45	1.02	0.78	02:55	0.084	11:45	0.277	0.173	0.173	-
12/24/2020	05:50	2.87	14:00	5.64	4.52	20:35	0.54	07:40	1.39	0.82	03:55	0.080	14:00	0.306	0.177	0.177	-
12/25/2020	04:45	2.72	17:15	5.79	4.45	01:15	0.57	16:00	1.04	0.80	04:45	0.079	16:10	0.318	0.174	0.174	0.49
12/26/2020	05:10	3.01	12:55	5.57	4.48	02:25	0.56	10:00	1.01	0.78	03:55	0.075	16:50	0.270	0.172	0.172	0.02
12/27/2020	06:50	2.88	12:30	5.75	4.57	02:35	0.59	07:05	1.10	0.81	03:45	0.075	14:15	0.297	0.183	0.183	0.13
12/28/2020	04:50	3.01	14:25	5.58	4.53	01:30	0.50	06:15	1.27	0.79	03:45	0.076	15:45	0.261	0.175	0.175	-
12/29/2020	03:45	2.98	19:45	6.07	4.55	00:15	0.58	06:50	1.12	0.79	03:00	0.094	19:40	0.271	0.174	0.174	0.14
12/30/2020	01:40	4.03	06:35	5.91	5.14	20:15	0.54	10:30	0.92	0.75	03:45	0.132	21:35	0.254	0.197	0.197	0.78
12/31/2020	06:50	3.38	18:15	5.57	4.73	01:20	0.58	11:10	1.03	0.78	03:20	0.115	18:00	0.286	0.183	0.183	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			36.893	30.65
Average	4.68	0.79	0.182	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A14_710149

Site Address /Location:	Auburn High School - I St NE			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	Keys Required	Latitude:	47.309599°	Pipe Size (H x W)	Pipe Shape
		Longitude:	-122.218373°	18.00 x 18.00	Circular

Manhole #	System Characteristics
710-149	Residential
Access	Traffic
Drive	Medium









Installation Information	
Installation Date:	Installation Type:
Thursday, September 24, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi
Installation Confirmation:	
Time	Pipe Size (HxW)
2:10:00 PM	18.00 x 18.00
Depth of Flow (Wet DOF) (in)	
5.63	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.88	N/A
Silt (in)	Silt Type
0.38	Soft / Loose
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
6	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
Yes, Inside	Normal
Pipe Material	Pipe Condition:
PVC	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	
710-149 / 710 -151 In Same M/H (710-150)	

ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

AUB_A15_80930

Site Commentary

SITE INFORMATION

Pipe	Round (21 in H)
Silt	0.38 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.89	0.45	0.058
Minimum	1.84	0.19	0.013
Maximum	3.95	0.72	0.135
Min Time	01/07/2021 3:00:00 AM	03/31/2021 2:00:00 AM	01/07/2021 3:00:00 AM
Max Time	11/23/2020 8:00:00 AM	02/22/2021 1:00:00 PM	11/23/2020 8:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.263
VFINAL (ft/s)	99.263
QFINAL (MGD - Total MG)	99.263

Hydrograph Report

AUB_A15_80930

Flow Monitor

AUB_A15_80930

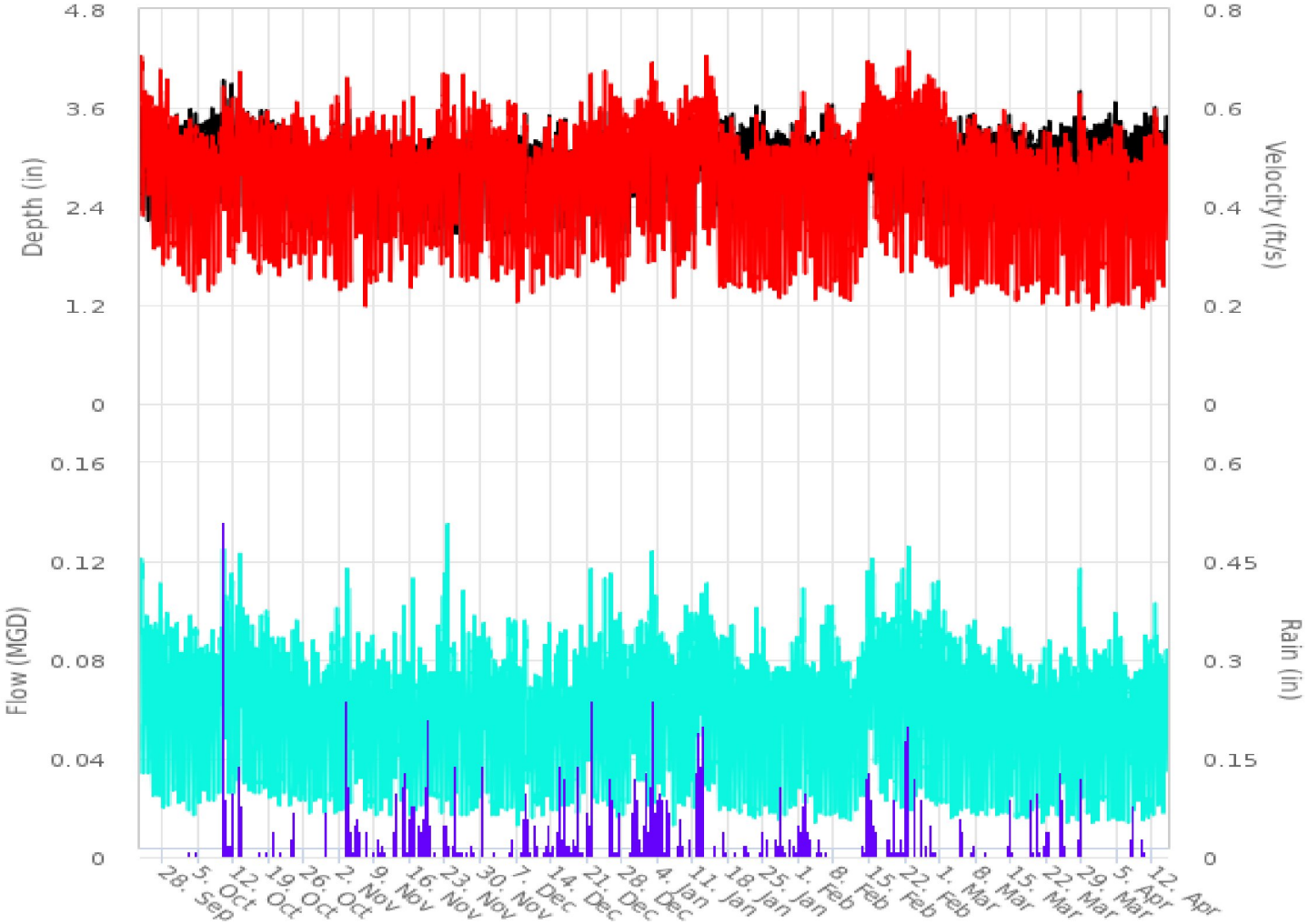
Pipe Height
21.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Scattergraph Report

AUB_A15_80930

Flow Monitor

AUB_A15_80930

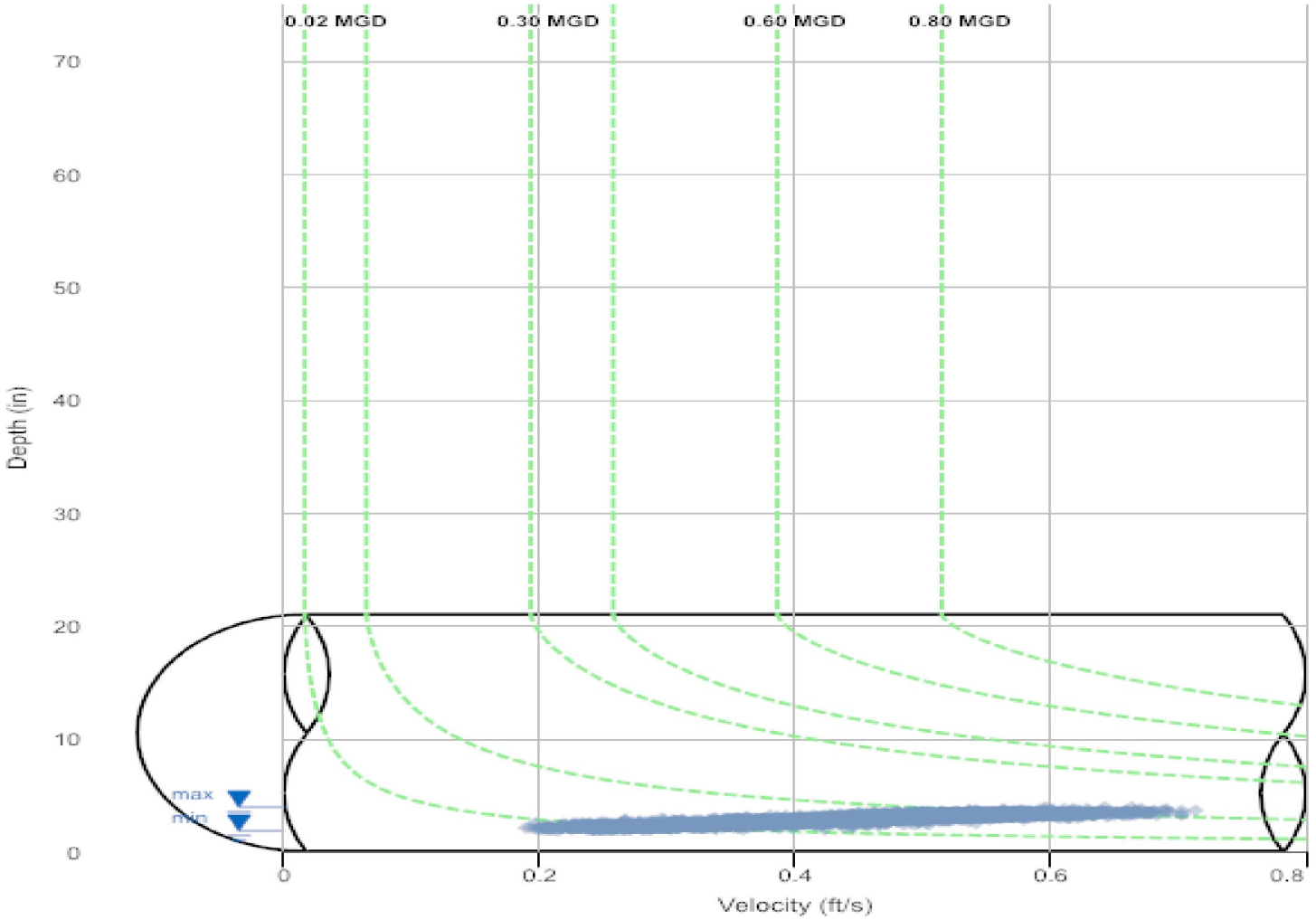
Pipe Height
21.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A15_80930Pipe: Round (21 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	03:05	2.23	15:40	3.57	2.89	03:00	0.31	16:10	0.67	0.49	03:00	0.026	15:45	0.112	0.062	0.062	0.51
01/02/2021	04:30	2.06	19:50	3.84	3.01	03:35	0.27	19:50	0.74	0.52	03:35	0.020	19:50	0.139	0.074	0.074	1.69
01/03/2021	06:10	2.07	13:25	3.52	2.91	06:15	0.27	12:55	0.69	0.51	06:10	0.020	13:00	0.113	0.067	0.067	0.65
01/04/2021	03:50	2.28	12:00	3.41	2.93	04:10	0.33	11:55	0.66	0.51	03:40	0.029	11:55	0.103	0.066	0.066	0.48
01/05/2021	03:10	2.16	19:05	3.38	2.82	03:15	0.30	13:25	0.62	0.48	03:10	0.024	19:05	0.096	0.058	0.058	0.52
01/06/2021	04:10	2.40	20:00	3.23	2.82	04:10	0.36	19:55	0.63	0.48	04:20	0.033	20:00	0.091	0.058	0.058	0.22
01/07/2021	03:15	1.78	14:50	3.20	2.67	03:10	0.20	18:10	0.59	0.44	03:15	0.011	18:05	0.083	0.051	0.051	-
01/08/2021	02:50	2.08	16:15	3.40	2.84	03:15	0.27	09:10	0.71	0.48	03:15	0.020	09:10	0.105	0.060	0.060	0.22
01/09/2021	03:40	2.07	22:15	3.90	2.79	03:35	0.28	13:25	0.66	0.47	03:40	0.020	22:15	0.127	0.059	0.059	-
01/10/2021	02:00	2.14	14:10	3.57	2.89	02:00	0.30	11:10	0.63	0.49	02:00	0.023	14:10	0.102	0.064	0.064	0.07
01/11/2021	03:35	2.03	13:00	3.67	2.93	02:50	0.27	11:10	0.63	0.50	02:50	0.019	13:00	0.110	0.067	0.067	1.06
01/12/2021	00:10	2.66	18:50	3.81	3.13	00:10	0.44	18:50	0.65	0.55	00:10	0.047	18:50	0.120	0.078	0.078	2.10
01/13/2021	05:00	2.15	00:25	3.56	2.93	04:55	0.33	16:55	0.73	0.56	05:00	0.025	17:25	0.117	0.073	0.073	0.09
01/14/2021	04:05	2.17	11:05	3.43	2.94	03:00	0.30	11:45	0.71	0.52	03:00	0.026	11:45	0.111	0.068	0.068	0.01
01/15/2021	02:30	2.23	13:25	3.40	2.93	01:55	0.32	10:25	0.66	0.50	01:55	0.027	10:25	0.099	0.065	0.065	0.09
01/16/2021	03:50	2.06	11:40	3.53	2.89	03:55	0.22	15:30	0.58	0.42	03:55	0.016	17:25	0.095	0.056	0.056	-
01/17/2021	06:35	2.13	13:50	3.59	2.96	01:50	0.22	19:00	0.58	0.42	06:30	0.019	13:50	0.096	0.056	0.056	0.10
01/18/2021	03:05	2.10	12:55	3.68	2.89	02:20	0.24	12:50	0.65	0.45	02:20	0.018	12:55	0.115	0.058	0.058	-
01/19/2021	05:05	2.11	17:25	3.40	2.84	02:35	0.23	17:10	0.59	0.41	03:00	0.018	17:25	0.092	0.051	0.051	0.01
01/20/2021	04:15	2.05	20:10	3.46	2.89	02:00	0.21	12:25	0.54	0.40	04:20	0.015	12:25	0.087	0.052	0.052	-
01/21/2021	02:55	2.16	18:05	3.39	2.94	02:55	0.25	14:00	0.52	0.41	02:50	0.020	18:05	0.080	0.053	0.053	0.11
01/22/2021	04:10	2.01	12:00	3.56	2.90	04:10	0.21	17:10	0.56	0.40	04:10	0.015	17:10	0.093	0.053	0.053	-
01/23/2021	03:15	2.02	11:40	3.89	2.86	03:10	0.19	11:45	0.64	0.40	03:10	0.014	11:45	0.122	0.053	0.053	-
01/24/2021	03:05	2.04	17:55	3.75	2.87	02:20	0.22	17:35	0.63	0.40	02:55	0.016	17:40	0.113	0.053	0.053	0.16
01/25/2021	05:15	2.09	11:35	3.38	2.87	03:15	0.23	11:30	0.55	0.41	05:10	0.017	11:30	0.085	0.052	0.052	0.04
01/26/2021	02:55	2.06	19:30	3.29	2.80	02:45	0.22	19:20	0.55	0.40	02:40	0.016	19:20	0.082	0.049	0.049	-
01/27/2021	02:15	2.09	19:00	3.49	2.93	01:55	0.21	21:40	0.62	0.41	01:55	0.016	21:40	0.088	0.054	0.054	0.14
01/28/2021	03:00	1.95	12:45	3.35	2.92	04:00	0.17	12:40	0.56	0.42	04:00	0.012	12:40	0.085	0.055	0.055	0.24
01/29/2021	03:25	2.03	16:15	3.32	2.83	03:15	0.19	16:10	0.58	0.40	03:15	0.014	16:10	0.088	0.050	0.050	0.03
01/30/2021	03:30	2.14	12:25	3.47	2.88	02:30	0.22	12:30	0.58	0.42	03:10	0.018	12:30	0.094	0.054	0.054	0.07
01/31/2021	06:00	2.12	17:40	3.53	2.90	05:25	0.25	11:15	0.60	0.44	05:55	0.019	11:55	0.098	0.058	0.058	0.12
02/01/2021	03:20	2.35	18:50	3.72	3.05	03:10	0.30	18:45	0.67	0.48	03:15	0.027	18:45	0.118	0.066	0.066	0.82
02/02/2021	03:50	2.17	18:05	3.32	2.88	04:00	0.25	10:25	0.58	0.44	04:00	0.020	18:05	0.084	0.056	0.056	0.31
02/03/2021	03:55	2.17	18:45	3.36	2.85	04:05	0.27	11:50	0.57	0.43	04:10	0.021	12:10	0.084	0.054	0.054	0.06
02/04/2021	03:00	1.95	17:45	3.25	2.79	03:05	0.20	10:35	0.55	0.41	03:05	0.013	10:35	0.081	0.051	0.051	0.07
02/05/2021	03:35	2.06	13:15	4.89	2.85	04:00	0.21	13:15	0.67	0.42	03:35	0.016	13:15	0.179	0.054	0.054	0.01
02/06/2021	05:50	2.01	15:00	3.74	2.90	03:30	0.23	14:55	0.65	0.43	05:45	0.016	14:55	0.117	0.057	0.057	0.01
02/07/2021	04:40	2.03	12:45	3.68	2.88	04:10	0.22	11:15	0.62	0.43	04:10	0.016	12:45	0.108	0.057	0.057	-
02/08/2021	02:45	2.07	12:00	3.51	2.87	02:10	0.23	11:55	0.65	0.44	02:10	0.017	12:00	0.105	0.058	0.058	-
02/09/2021	03:40	1.98	11:20	3.40	2.81	03:35	0.20	11:20	0.58	0.43	03:35	0.014	11:20	0.091	0.053	0.053	-
02/10/2021	03:35	2.05	20:10	3.35	2.77	04:05	0.20	20:00	0.62	0.42	03:35	0.015	20:00	0.093	0.051	0.051	-
02/11/2021	03:55	1.92	08:50	3.29	2.74	03:50	0.19	09:00	0.59	0.41	03:55	0.012	09:00	0.085	0.049	0.049	-
02/12/2021	03:55	2.06	17:15	3.27	2.77	04:00	0.22	17:15	0.60	0.44	04:00	0.016	17:15	0.088	0.052	0.052	-
02/13/2021	05:10	2.22	13:05	3.39	2.85	02:05	0.29	21:15	0.65	0.47	02:15	0.024	11:55	0.095	0.059	0.059	0.08
02/14/2021	04:15	1.95	15:55	3.64	2.93	02:35	0.30	15:10	0.73	0.55	02:35	0.022	15:10	0.125	0.073	0.073	0.71
02/15/2021	05:05	2.67	11:35	3.69	3.19	04:00	0.46	11:00	0.71	0.58	04:45	0.050	11:10	0.126	0.084	0.084	0.78
02/16/2021	05:10	2.47	16:45	3.40	2.95	02:50	0.33	15:45	0.76	0.52	02:50	0.035	15:45	0.113	0.067	0.067	0.07
02/17/2021	03:35	2.14	17:25	3.48	2.91	02:00	0.31	17:40	0.66	0.49	04:05	0.024	17:40	0.107	0.064	0.064	-
02/18/2021	03:55	2.06	15:55	3.45	2.86	04:10	0.27	16:05	0.64	0.48	04:10	0.020	15:55	0.102	0.061	0.061	0.09
02/19/2021	04:40	2.32	13:30	3.47	2.95	01:20	0.34	15:35	0.65	0.50	01:20	0.030	13:30	0.103	0.065	0.065	0.17
02/20/2021	03:35	2.07	11:35	3.54	2.92	03:40	0.27	13:45	0.74	0.49	03:35	0.020	13:45	0.120	0.065	0.065	0.07
02/21/2021	04:50	1.97	12:45	3.67	2.97	05:55	0.23	11:40	0.72	0.50	04:50	0.017	11:40	0.124	0.069	0.069	0.42
02/22/2021	04:25	2.39	13:00	3.85	3.10	05:15	0.35	13:25	0.77	0.55	05:15	0.033	13:05	0.142	0.077	0.077	0.98
02/23/2021	04:00	1.99	08:45	3.84	2.90	03:50	0.23	08:45	0.80	0.49	03:50	0.016	08:45	0.150	0.064	0.064	0.27
02/24/2021	03:35	2.21	17:50	3.44	2.93	05:25	0.29	13:40	0.67	0.51	03:05	0.024	17:45	0.106	0.067	0.067	-
02/25/2021	02:25	2.24	18:55	3.34	2.91	02:50	0.32	17:10	0.71	0.52	02:20	0.027	17:10	0.104	0.066	0.066	0.18
02/26/2021	03:20	2.13	14:25	3.38	2.91	04:15	0.27	12:30	0.69	0.51	03:15	0.022	12:55	0.104	0.067	0.067	0.10
02/27/2021	04:35	2.11	11:00	3.66	3.00	04:25	0.28	10:35	0.68	0.51	04:30	0.021	10:35	0.117	0.070	0.070	0.02
02/28/2021	05:55	2.09	13:45	3.73	2.97	04:25	0.27	13:20	0.67	0.48	04:30	0.020	13:35	0.119	0.066	0.066	0.02
03/01/2021	13:05	1.62	13:10	5.17	2.92	13:05	0.10	13:30	1.03	0.48	13:05	0.005	13:30	0.245	0.064	0.064	-
03/02/2021	03:55	2.09	18:20	3.48	2.87	03:15	0.26	16:10	0.64	0.47	03:00	0.020	18:00	0.097	0.059	0.059	-
03/03/2021	04:05	2.07	18:30	3.42	2.89	03:50	0.19	18:25	0.60	0.43	03:50	0.014	18:25	0.094	0.057	0.057	-
03/04/2021	12:15	1.89	12:25	5.64	2.84	12:15	0.19	12:25	0.86	0.43	12:15	0.012	12:25	0.282	0.054	0.054	0.20
03/05/2021	04:05	2.01	11:30	3.40	2.87	03:40	0.22	11:35	0.57	0.41	04:05	0.015	11:35	0.089	0.052	0.052	0.05
03/06/2021	04:25	2.22	14:50	3.64	3.02	04:25	0.21	13:55	0.62	0.43	04:25	0.017	11:45	0.105	0.061	0.061	-
03/07/2021	05:10	2.03	10:00	3.62	2.96	04:40	0.21	15:15	0.63	0.43	05:10	0.015	15:15	0.109	0.059	0.059	0.04
03/08/2021	03:45	1.98	11:00	3.60	2.94	03:15	0.23	11:00	0.60	0.45	03:20	0.016	11:00	0.103	0.060	0.060	-
03/09/2021	03:25	2.06	11:10	3.38	2.85	03:25	0.24	18:40	0.59	0.43	03:25	0.017	18:40	0.091	0.054	0.054	0.01
03/10/2021	03:10	1.99	16:05	3.45	2.86	02:55	0.24	14:20	0.58	0.42	03:10	0.016	14:20	0.090	0.054	0.054	-
03/11/2021	02:30	2.12	13:40	3.37	2.90	03:30	0.23	12:30	0.57	0.42	02:30	0.019	12:30	0.085	0.054	0.054	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:00	1.96	13:30	3.50	2.87	04:05	0.20	13:25	0.60	0.42	04:00	0.014	13:25	0.097	0.054	0.054	-
03/13/2021	05:25	2.05	12:40	3.50	2.93	03:50	0.21	09:40	0.62	0.43	05:25	0.015	09:40	0.100	0.057	0.057	-
03/14/2021	05:35	2.13	15:25	3.61	2.91	04:15	0.20	19:45	0.60	0.42	03:55	0.016	15:25	0.101	0.056	0.056	0.30
03/15/2021	01:55	2.30	11:05	3.39	2.91	01:40	0.26	11:00	0.57	0.41	01:40	0.023	11:00	0.088	0.053	0.053	-
03/16/2021	01:30	2.07	19:10	3.37	2.87	03:05	0.19	17:50	0.57	0.41	03:05	0.014	19:10	0.087	0.053	0.053	-
03/17/2021	03:10	1.94	15:50	3.30	2.79	02:55	0.20	10:05	0.61	0.44	03:00	0.013	20:10	0.084	0.053	0.053	-
03/18/2021	01:25	1.99	16:25	3.43	2.79	01:20	0.21	16:25	0.56	0.41	01:25	0.014	16:25	0.089	0.051	0.051	0.11
03/19/2021	03:10	2.07	15:50	3.28	2.77	01:45	0.21	17:25	0.55	0.40	01:45	0.016	15:50	0.079	0.048	0.048	0.03
03/20/2021	04:05	2.02	16:10	3.44	2.84	04:00	0.22	16:10	0.57	0.42	04:00	0.016	16:10	0.091	0.052	0.052	0.17
03/21/2021	04:10	1.91	12:00	3.43	2.81	04:00	0.17	12:05	0.59	0.39	04:00	0.011	12:00	0.093	0.050	0.050	0.07
03/22/2021	02:45	2.05	10:40	3.53	2.90	02:30	0.19	10:45	0.57	0.42	01:55	0.015	10:45	0.094	0.055	0.055	0.11
03/23/2021	02:15	2.17	12:00	3.35	2.86	04:10	0.20	14:25	0.57	0.41	04:05	0.018	14:30	0.084	0.052	0.052	-
03/24/2021	03:25	2.00	20:05	3.50	2.87	00:50	0.20	20:05	0.55	0.39	03:25	0.014	20:05	0.091	0.050	0.050	0.34
03/25/2021	23:45	2.41	15:15	3.43	2.97	03:05	0.27	18:10	0.58	0.43	03:10	0.026	17:40	0.090	0.056	0.056	0.27
03/26/2021	02:10	1.99	10:40	3.45	2.86	02:50	0.18	10:55	0.56	0.39	02:05	0.013	10:45	0.089	0.050	0.050	-
03/27/2021	04:20	1.96	12:40	3.54	2.91	02:20	0.18	08:55	0.56	0.38	04:10	0.013	08:55	0.089	0.051	0.051	-
03/28/2021	04:20	1.95	14:35	3.91	2.95	02:05	0.18	12:30	0.65	0.42	04:15	0.012	14:35	0.125	0.059	0.059	0.37
03/29/2021	04:10	2.33	10:30	3.55	3.03	02:35	0.23	10:15	0.59	0.42	04:05	0.020	10:20	0.099	0.058	0.058	-
03/30/2021	04:15	2.11	16:40	3.41	2.91	01:50	0.21	11:55	0.54	0.40	01:50	0.016	11:55	0.083	0.053	0.053	-
03/31/2021	02:30	2.06	13:40	3.44	2.87	03:05	0.14	13:25	0.56	0.41	03:05	0.010	13:40	0.090	0.053	0.053	-
04/01/2021	02:10	2.07	13:40	3.51	2.91	02:05	0.18	10:25	0.55	0.41	02:05	0.013	13:40	0.088	0.054	0.054	-
04/02/2021	02:15	2.17	16:50	3.53	2.96	04:00	0.24	11:00	0.57	0.42	04:00	0.019	11:00	0.094	0.057	0.057	-
04/03/2021	03:55	2.03	12:05	3.65	2.98	02:50	0.18	12:05	0.57	0.40	03:55	0.013	12:05	0.100	0.055	0.055	-
04/04/2021	04:10	2.15	13:30	3.75	2.96	02:35	0.18	13:15	0.59	0.40	02:35	0.015	13:15	0.106	0.054	0.054	-
04/05/2021	01:25	2.03	10:30	3.55	2.92	01:40	0.19	09:30	0.59	0.42	01:25	0.014	14:50	0.095	0.056	0.056	-
04/06/2021	02:20	2.03	13:55	3.45	2.91	02:15	0.18	17:15	0.53	0.41	02:15	0.013	13:55	0.083	0.054	0.054	-
04/07/2021	02:20	2.01	21:55	3.46	2.87	02:20	0.17	22:05	0.54	0.38	02:20	0.012	22:05	0.086	0.049	0.049	0.22
04/08/2021	04:20	2.10	17:10	3.48	2.94	04:05	0.20	18:55	0.54	0.40	04:05	0.015	17:30	0.085	0.052	0.052	-
04/09/2021	04:00	2.39	12:30	3.48	2.97	01:20	0.21	12:30	0.54	0.37	03:40	0.020	12:30	0.087	0.049	0.049	0.03
04/10/2021	02:55	2.02	10:35	3.64	2.96	03:00	0.17	10:55	0.57	0.40	03:00	0.012	10:40	0.095	0.055	0.055	0.02
04/11/2021	05:05	2.11	13:55	3.58	2.93	04:30	0.19	11:35	0.58	0.42	02:20	0.015	13:50	0.096	0.056	0.056	-
04/12/2021	03:05	2.11	11:10	3.68	2.97	02:55	0.19	11:00	0.62	0.43	02:55	0.014	11:10	0.110	0.059	0.059	-
04/13/2021	02:10	2.13	17:55	3.42	2.90	02:50	0.24	10:55	0.57	0.43	02:15	0.019	17:55	0.090	0.056	0.056	-
04/14/2021	02:10	2.08	17:20	3.57	2.95	02:15	0.22	10:00	0.56	0.42	02:15	0.016	17:20	0.089	0.057	0.057	-
09/23/2020	23:55	2.60	16:55	3.71	3.32	22:30	0.44	17:50	0.74	0.62	23:25	0.048	16:55	0.129	0.095	0.046	-
09/24/2020	03:00	2.30	17:25	3.44	2.96	03:35	0.35	13:50	0.68	0.54	03:35	0.030	15:30	0.102	0.070	0.070	-
09/25/2020	02:10	2.19	12:05	3.46	2.92	23:55	0.31	12:15	0.66	0.53	23:55	0.028	12:15	0.104	0.068	0.068	-
09/26/2020	03:35	1.95	13:30	3.54	2.88	06:00	0.28	13:15	0.69	0.47	02:15	0.023	13:25	0.112	0.060	0.060	-
09/27/2020	03:45	2.03	11:20	3.59	2.92	01:30	0.25	11:55	0.72	0.52	03:40	0.018	11:55	0.121	0.069	0.069	-
09/28/2020	03:35	2.03	18:50	3.47	2.92	03:20	0.26	14:35	0.70	0.52	03:35	0.018	19:40	0.110	0.069	0.069	-
09/29/2020	02:25	2.01	17:15	3.54	2.92	03:35	0.25	16:50	0.63	0.47	01:15	0.019	17:15	0.104	0.061	0.061	-
09/30/2020	02:45	2.23	19:35	3.62	2.97	00:50	0.29	18:30	0.63	0.47	02:55	0.024	18:40	0.105	0.062	0.062	-
10/01/2020	03:30	2.14	19:55	3.90	2.93	03:00	0.27	08:20	0.62	0.44	03:30	0.020	19:55	0.119	0.058	0.058	-
10/02/2020	01:20	2.29	11:00	3.59	3.02	01:15	0.25	11:00	0.62	0.44	01:15	0.021	11:00	0.105	0.060	0.060	-
10/03/2020	03:30	2.14	11:50	3.68	3.01	03:40	0.22	14:00	0.62	0.45	03:40	0.017	12:50	0.104	0.062	0.062	0.01
10/04/2020	03:35	2.05	12:55	3.65	2.97	03:35	0.19	11:35	0.60	0.43	03:35	0.014	12:55	0.104	0.058	0.058	0.01
10/05/2020	02:10	2.14	19:15	3.51	3.01	01:55	0.20	14:40	0.58	0.44	01:55	0.016	14:45	0.093	0.060	0.060	-
10/06/2020	02:55	2.24	16:55	3.56	3.04	03:00	0.28	14:00	0.60	0.43	02:50	0.024	16:55	0.097	0.060	0.060	-
10/07/2020	02:00	2.47	17:10	3.66	3.12	02:15	0.21	20:30	0.62	0.43	02:05	0.021	14:15	0.101	0.061	0.061	-
10/08/2020	01:55	2.40	16:50	3.61	3.13	02:50	0.20	11:15	0.58	0.43	02:50	0.018	11:15	0.092	0.061	0.061	-
10/09/2020	02:05	2.37	23:50	3.98	3.17	02:05	0.20	23:50	0.66	0.46	02:05	0.018	23:50	0.131	0.069	0.069	0.64
10/10/2020	23:40	2.73	00:00	3.94	3.33	23:30	0.36	02:05	0.67	0.52	23:30	0.041	01:35	0.127	0.080	0.080	1.04
10/11/2020	05:10	2.31	13:25	3.96	3.21	03:15	0.28	16:25	0.64	0.48	03:15	0.025	13:05	0.122	0.074	0.074	0.53
10/12/2020	02:45	2.34	16:35	3.59	3.05	02:45	0.27	16:35	0.63	0.46	02:45	0.024	16:35	0.107	0.065	0.065	-
10/13/2020	01:35	2.23	07:15	4.05	3.14	01:35	0.28	07:15	0.75	0.50	01:35	0.023	07:20	0.153	0.072	0.072	0.61
10/14/2020	02:55	2.22	19:15	3.65	3.06	03:10	0.31	17:25	0.62	0.47	03:10	0.025	17:25	0.105	0.065	0.065	-
10/15/2020	03:05	2.29	17:40	3.57	3.02	01:00	0.29	16:25	0.62	0.46	03:10	0.025	17:40	0.103	0.063	0.063	-
10/16/2020	03:30	2.27	15:20	3.43	2.98	01:10	0.24	12:15	0.62	0.45	03:30	0.021	12:15	0.092	0.060	0.060	-
10/17/2020	03:40	2.45	12:00	3.66	3.13	01:15	0.25	12:00	0.63	0.45	03:35	0.025	12:00	0.110	0.065	0.065	0.01
10/18/2020	01:40	2.36	12:45	3.69	3.07	03:40	0.27	12:45	0.63	0.46	01:35	0.026	12:45	0.111	0.064	0.064	0.03
10/19/2020	02:00	2.22	16:30	3.50	3.00	01:55	0.26	16:25	0.60	0.44	01:55	0.021	16:25	0.098	0.059	0.059	0.05
10/20/2020	01:15	2.30	11:15	3.50	2.98	01:10	0.25	10:35	0.62	0.44	01:10	0.022	11:20	0.093	0.059	0.059	-
10/21/2020	02:20	2.08	10:40	3.43	2.94	02:15	0.23	18:25	0.61	0.45	02:15	0.017	18:25	0.096	0.059	0.059	0.01
10/22/2020	01:05	2.29	18:05	3.48	2.91	01:10	0.28	18:00	0.62	0.46	01:10	0.024	18:05	0.101	0.058	0.058	-
10/23/2020	02:25	2.04	19:30	3.51	2.86	02:10	0.24	19:25	0.64	0.45	02:15	0.017	19:25	0.106	0.057	0.057	0.20
10/24/2020	04:05	2.13	13:50	3.59	2.85	03:25	0.29	13:50	0.66	0.47	03:35	0.022	13:50	0.113	0.059	0.059	0.02
10/25/2020	03:30	2.13	10:30	3.42	2.84	04:15	0.27	10:35	0.61	0.46	03:20	0.021	10:30	0.096	0.058	0.058	-
10/26/2020	02:55	2.11	10:35	3.32	2.75	00:30	0.29	10:25	0.59	0.44	02:20	0.022	10:35	0.089	0.052	0.052	-
10/27/2020	01:55	2.00	18:35	3.42	2.76	02:00	0.24	17:35	0.63	0.45	01:55	0.017	18:30	0.097	0.054	0.054	-
10/28/2020	02:35	2.04	12:35	3.57	2.76	04:10	0.26	12:35	0.63	0.45	02:30	0.019	12:35	0.106	0.054	0.054	-
10/29/2020	03:20	2.06	18:20	3.24	2.76	01:50	0.30	18:15	0.57	0.45	03:20	0.023	18:20	0.083	0.053	0.053	-
10/30/2020	02:25	1.99	08:25	3.34	2.83	02:20	0.24	08:25	0.60	0.45	02:25	0.016	08:25	0.092	0.055	0.055	0.10
10/31/2020	02:15	1.99	13:10	3.41	2.76	02:00	0.28	15:30	0.64	0.46	02:00	0.020	11:55	0.096	0.056	0.056	-
11/01/2020	02:25	1.97	11:15	3.57	2.80	03:30	0.24	11:30	0.66	0.46	03:30	0.016	11:30	0.112	0.058	0.058	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/02/2020	03:30	2.14	18:20	3.63	2.85	03:30	0.21	12:00	0.69	0.44	03:30	0.016	12:00	0.117	0.055	0.055	-
11/03/2020	02:50	2.10	10:05	3.79	2.97	03:05	0.23	10:05	0.71	0.47	03:05	0.017	10:05	0.130	0.064	0.064	0.83
11/04/2020	03:25	2.27	17:00	3.31	2.88	02:50	0.21	20:10	0.61	0.44	02:50	0.018	20:10	0.087	0.055	0.055	0.09
11/05/2020	04:40	2.32	17:10	3.51	2.96	04:20	0.33	17:05	0.62	0.47	04:25	0.029	17:10	0.102	0.062	0.062	0.34
11/06/2020	04:25	2.38	16:55	3.28	2.87	04:00	0.32	17:00	0.60	0.46	04:00	0.030	17:00	0.088	0.056	0.056	0.10
11/07/2020	01:00	2.21	11:10	3.42	2.86	03:20	0.18	11:10	0.62	0.42	03:25	0.017	11:15	0.098	0.053	0.053	0.07
11/08/2020	03:10	2.23	14:00	3.44	2.86	03:10	0.24	13:45	0.63	0.44	03:05	0.020	13:45	0.100	0.056	0.056	0.01
11/09/2020	04:00	1.96	16:40	3.30	2.75	04:05	0.22	07:15	0.60	0.46	04:00	0.015	16:40	0.086	0.055	0.055	0.04
11/10/2020	04:00	1.95	18:50	3.25	2.72	03:15	0.25	18:45	0.61	0.45	03:55	0.017	18:45	0.088	0.052	0.052	0.03
11/11/2020	02:40	2.00	14:50	3.25	2.74	01:50	0.29	13:55	0.59	0.46	02:40	0.021	14:55	0.086	0.054	0.054	-
11/12/2020	02:50	1.89	20:50	3.52	2.84	02:50	0.22	20:45	0.61	0.44	02:50	0.014	20:45	0.099	0.055	0.055	0.16
11/13/2020	01:30	2.38	18:20	3.20	2.88	01:25	0.32	09:30	0.64	0.46	01:30	0.029	09:30	0.082	0.057	0.057	0.38
11/14/2020	02:40	2.01	18:05	3.62	2.82	03:05	0.27	17:25	0.66	0.46	02:40	0.020	18:10	0.114	0.058	0.058	0.47
11/15/2020	05:15	2.26	13:45	3.30	2.81	04:15	0.30	13:15	0.58	0.44	05:25	0.025	13:15	0.085	0.053	0.053	0.19
11/16/2020	03:55	2.04	12:05	4.62	2.80	03:15	0.22	12:05	0.90	0.42	03:15	0.016	12:05	0.223	0.052	0.052	0.31
11/17/2020	04:30	2.05	19:55	3.40	2.77	02:50	0.24	19:30	0.57	0.41	02:10	0.018	19:45	0.089	0.050	0.050	0.20
11/18/2020	03:45	2.04	18:35	3.33	2.81	02:50	0.28	18:30	0.57	0.44	02:50	0.020	18:30	0.087	0.054	0.054	0.30
11/19/2020	02:25	2.22	14:10	3.37	2.84	01:50	0.30	14:10	0.57	0.44	01:55	0.024	14:10	0.088	0.054	0.054	0.50
11/20/2020	02:50	2.09	13:25	3.31	2.77	03:15	0.29	13:25	0.59	0.44	02:50	0.023	13:25	0.088	0.053	0.053	0.01
11/21/2020	03:50	2.04	16:00	3.51	2.81	03:05	0.29	12:55	0.64	0.47	03:20	0.021	12:55	0.103	0.059	0.059	-
11/22/2020	03:25	1.90	18:25	3.71	2.85	03:10	0.28	13:30	0.69	0.51	03:10	0.018	18:25	0.120	0.067	0.067	0.21
11/23/2020	04:10	2.08	08:15	4.46	2.92	02:55	0.29	08:05	0.74	0.49	04:10	0.021	08:25	0.174	0.064	0.064	0.14
11/24/2020	03:05	1.92	08:25	3.58	2.78	03:05	0.24	22:00	0.64	0.46	02:55	0.016	16:55	0.090	0.056	0.056	0.21
11/25/2020	02:40	2.02	13:35	3.26	2.81	02:10	0.34	14:20	0.63	0.50	02:15	0.024	14:20	0.084	0.059	0.059	0.05
11/26/2020	04:50	1.91	11:10	3.54	2.77	04:40	0.25	11:10	0.70	0.46	04:45	0.016	11:10	0.116	0.057	0.057	0.02
11/27/2020	03:55	1.93	13:30	3.35	2.73	03:50	0.23	13:15	0.62	0.44	03:50	0.015	13:30	0.095	0.052	0.052	-
11/28/2020	05:50	2.05	14:50	3.45	2.78	05:50	0.25	14:45	0.67	0.46	05:50	0.018	14:45	0.106	0.056	0.056	0.05
11/29/2020	03:15	2.07	12:50	3.41	2.80	04:25	0.24	20:35	0.65	0.47	03:05	0.018	16:10	0.099	0.059	0.059	-
11/30/2020	02:45	2.06	13:05	3.48	2.92	02:40	0.26	09:35	0.68	0.51	02:40	0.019	13:05	0.105	0.065	0.065	0.36
12/01/2020	04:15	2.10	13:50	3.40	2.79	04:05	0.29	13:55	0.66	0.48	04:10	0.022	13:50	0.103	0.058	0.058	-
12/02/2020	04:15	1.94	18:05	3.30	2.76	04:15	0.23	13:40	0.60	0.46	04:15	0.015	13:40	0.089	0.055	0.055	0.01
12/03/2020	02:40	1.90	19:45	3.29	2.69	02:30	0.23	15:05	0.59	0.45	02:40	0.014	19:45	0.089	0.052	0.052	-
12/04/2020	03:55	1.95	11:55	3.30	2.75	03:50	0.25	10:25	0.60	0.45	03:50	0.016	16:00	0.087	0.054	0.054	-
12/05/2020	03:25	1.99	13:35	3.45	2.80	03:35	0.24	13:30	0.67	0.46	03:25	0.017	13:30	0.106	0.057	0.057	0.03
12/06/2020	03:00	2.01	12:30	3.53	2.83	02:55	0.25	12:20	0.67	0.46	02:55	0.017	12:20	0.111	0.058	0.058	0.03
12/07/2020	04:30	1.90	12:00	3.33	2.77	03:05	0.20	12:05	0.58	0.42	03:05	0.013	12:05	0.087	0.051	0.051	-
12/08/2020	02:40	1.98	19:25	3.59	3.07	02:40	0.22	16:15	0.61	0.47	02:40	0.015	19:05	0.102	0.067	0.067	0.87
12/09/2020	05:15	2.35	17:05	3.25	2.84	04:05	0.29	17:30	0.57	0.41	05:10	0.026	17:30	0.077	0.049	0.049	0.17
12/10/2020	03:55	2.00	19:25	3.29	2.75	03:55	0.20	21:20	0.55	0.40	03:55	0.014	17:15	0.078	0.049	0.049	0.07
12/11/2020	05:00	2.08	12:45	3.29	2.73	05:05	0.25	19:05	0.54	0.41	03:20	0.019	13:00	0.079	0.048	0.048	0.02
12/12/2020	04:05	1.94	15:45	3.57	2.73	03:50	0.22	15:45	0.62	0.42	04:05	0.014	15:45	0.104	0.051	0.051	0.01
12/13/2020	06:35	2.18	11:35	3.57	2.87	03:00	0.27	09:10	0.66	0.45	02:55	0.022	11:35	0.100	0.058	0.058	0.24
12/14/2020	03:10	2.06	19:05	3.64	2.80	02:40	0.25	19:10	0.60	0.43	02:45	0.018	19:05	0.101	0.052	0.052	0.05
12/15/2020	03:35	2.07	10:35	3.70	2.90	03:35	0.24	16:00	0.64	0.44	03:15	0.018	16:00	0.108	0.058	0.058	0.58
12/16/2020	02:05	1.95	14:05	3.55	2.81	01:55	0.22	14:05	0.61	0.45	01:55	0.015	14:05	0.103	0.055	0.055	0.39
12/17/2020	04:00	2.06	22:55	3.31	2.75	03:50	0.26	11:15	0.60	0.43	03:40	0.019	22:55	0.082	0.050	0.050	0.08
12/18/2020	03:15	2.03	14:00	3.50	2.84	03:05	0.24	14:00	0.63	0.46	03:05	0.017	14:00	0.104	0.057	0.057	0.25
12/19/2020	05:15	1.89	22:10	3.42	2.80	03:40	0.23	17:05	0.67	0.46	05:15	0.014	17:05	0.105	0.058	0.058	0.37
12/20/2020	03:10	2.12	13:40	3.39	2.84	03:05	0.26	13:35	0.60	0.45	03:05	0.020	13:35	0.094	0.056	0.056	0.04
12/21/2020	03:15	2.51	16:35	3.93	3.04	03:10	0.37	16:35	0.72	0.50	03:15	0.036	16:35	0.140	0.068	0.068	1.07
12/22/2020	04:30	2.21	16:25	3.43	2.82	02:55	0.27	13:50	0.64	0.45	03:00	0.022	16:25	0.098	0.056	0.056	-
12/23/2020	02:10	2.10	11:20	3.78	2.78	02:05	0.27	11:15	0.69	0.46	02:05	0.020	11:20	0.127	0.056	0.056	-
12/24/2020	04:40	2.14	13:40	3.69	2.84	03:10	0.28	13:10	0.72	0.46	04:40	0.022	13:40	0.124	0.058	0.058	-
12/25/2020	05:40	2.05	15:35	4.57	2.86	04:30	0.26	15:35	0.97	0.47	04:40	0.019	15:35	0.236	0.061	0.061	0.49
12/26/2020	03:35	2.24	16:20	3.64	2.87	04:30	0.22	16:20	0.73	0.46	04:30	0.018	16:20	0.126	0.059	0.059	0.02
12/27/2020	05:50	1.91	13:45	3.85	2.85	04:35	0.23	13:45	0.69	0.47	04:30	0.015	13:45	0.131	0.061	0.061	0.13
12/28/2020	03:00	1.95	10:20	4.11	2.75	03:00	0.24	10:20	0.80	0.46	03:00	0.016	10:20	0.167	0.056	0.056	-
12/29/2020	03:10	2.04	19:45	3.35	2.76	02:30	0.28	11:40	0.65	0.47	02:30	0.020	11:40	0.097	0.056	0.056	0.14
12/30/2020	03:20	2.47	21:00	3.53	2.95	03:30	0.40	21:00	0.69	0.53	03:30	0.039	21:00	0.114	0.068	0.068	0.78
12/31/2020	03:35	2.27	16:30	3.47	2.86	03:35	0.35	17:55	0.67	0.50	03:35	0.029	16:30	0.104	0.062	0.062	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			11.870	30.65
Average	2.89	0.45	0.058	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A15_80930

Site Address /Location:	641 4th St SE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Park on 4th St SE	Latitude:	47.304257	Pipe Size (H x W): 21.00 x 21.00	Pipe Shape: Circular
		Longitude:	-122.220984		



Manhole #	System Characteristics
809-30	Residential
Access	Traffic
Drive	Medium







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

Installation Information

Installation Date:	Installation Type:
Wednesday, September 23, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	Pipe Size (HxW)
12:23:00 PM	16.25x16.38
Depth of Flow (Wet DOF) (in)	
3.50	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.61	N/A
Silt (in)	Silt Type
0.38	Soft / Loose

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
6	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

Alternate location for A15 809-02

AUB_A16_80956

Site Commentary

SITE INFORMATION

Pipe	Round (18 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.07	3.29	0.243
Minimum	1.56	0.87	0.042
Maximum	3.04	4.51	0.575
Min Time	12/17/2020 3:00:00 AM	12/17/2020 4:00:00 AM	12/17/2020 4:00:00 AM
Max Time	01/02/2021 10:00:00 PM	01/02/2021 10:00:00 PM	01/02/2021 10:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

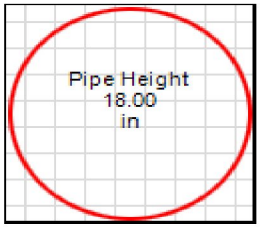
Percent Uptime	
DFINAL (in)	99.761
VFINAL (ft/s)	99.761
QFINAL (MGD - Total MG)	99.761

Hydrograph Report

AUB_A16_80956

Flow Monitor

AUB_A16_80956



Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



Scattergraph Report

AUB_A16_80956

Flow Monitor

AUB_A16_80956

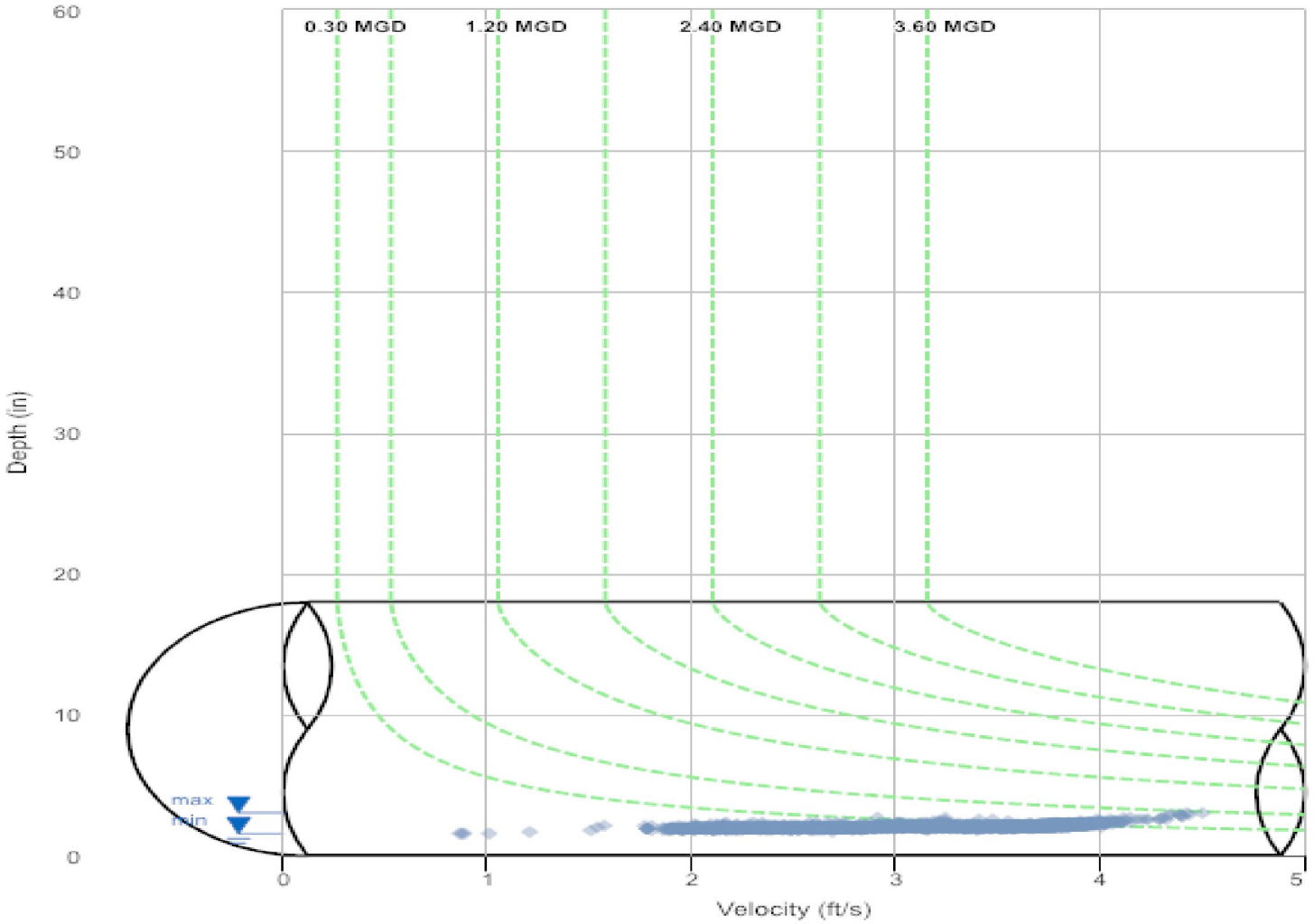
Pipe Height
18.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A16_80956Pipe: Round (18 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	05:35	1.87	16:10	2.36	2.10	07:25	2.15	16:05	4.14	3.33	05:50	0.154	16:05	0.364	0.250	0.250	0.51
01/02/2021	02:15	1.82	22:10	3.09	2.22	06:20	2.27	22:00	4.62	3.52	06:00	0.150	22:10	0.594	0.296	0.296	1.69
01/03/2021	08:00	1.89	00:25	3.04	2.24	06:15	1.86	00:25	4.50	3.52	06:15	0.131	00:25	0.574	0.296	0.296	0.65
01/04/2021	05:15	1.82	21:05	2.34	2.10	04:05	1.96	19:10	4.01	3.44	04:05	0.141	21:05	0.348	0.258	0.258	0.48
01/05/2021	02:10	1.83	19:00	2.27	2.09	03:25	2.24	19:00	4.15	3.37	04:05	0.150	19:00	0.347	0.252	0.252	0.52
01/06/2021	05:15	1.87	07:20	2.21	2.06	03:50	2.37	20:10	3.88	3.39	03:50	0.157	20:10	0.301	0.247	0.247	0.22
01/07/2021	05:20	1.77	00:00	2.23	2.03	04:15	2.13	19:05	3.95	3.30	04:15	0.136	19:05	0.319	0.236	0.236	-
01/08/2021	02:00	1.78	16:45	2.24	2.04	02:40	2.08	16:40	4.00	3.33	02:40	0.136	16:45	0.328	0.240	0.240	0.22
01/09/2021	00:40	1.79	10:00	2.59	2.18	03:30	1.97	12:20	4.11	3.24	06:50	0.154	10:20	0.348	0.254	0.254	-
01/10/2021	07:15	1.78	13:30	2.32	2.05	05:40	2.02	16:05	4.07	3.38	05:40	0.127	16:05	0.348	0.247	0.247	0.07
01/11/2021	01:30	1.76	21:45	2.40	2.09	02:20	1.91	14:25	4.09	3.37	02:20	0.124	21:45	0.363	0.253	0.253	1.06
01/12/2021	02:45	1.97	19:25	2.68	2.31	01:35	2.71	19:30	4.40	3.84	01:40	0.192	19:30	0.467	0.332	0.332	2.10
01/13/2021	06:25	1.90	00:55	2.73	2.12	03:55	2.19	00:50	4.46	3.44	03:55	0.156	00:50	0.485	0.263	0.263	0.09
01/14/2021	05:55	1.83	23:55	2.21	2.05	02:35	2.04	20:05	4.11	3.32	02:35	0.145	20:05	0.326	0.241	0.241	0.01
01/15/2021	01:25	1.79	07:35	2.26	2.03	02:20	2.22	18:05	3.88	3.29	04:00	0.143	18:05	0.297	0.235	0.235	0.09
01/16/2021	05:00	1.78	15:20	2.31	2.03	04:55	1.87	15:20	4.05	3.27	05:00	0.110	15:20	0.347	0.236	0.236	-
01/17/2021	07:20	1.72	12:40	2.24	2.02	04:50	1.77	12:05	3.93	3.26	06:05	0.107	12:40	0.321	0.234	0.234	0.10
01/18/2021	01:50	1.80	18:00	2.24	2.03	03:15	1.72	18:05	3.96	3.32	03:15	0.108	18:00	0.322	0.239	0.239	-
01/19/2021	03:55	1.82	19:15	2.19	2.02	03:20	1.53	19:10	3.95	3.20	03:20	0.097	19:15	0.311	0.227	0.227	0.01
01/20/2021	02:20	1.82	09:10	2.32	2.07	05:05	1.50	15:25	3.91	3.18	05:05	0.112	19:35	0.314	0.232	0.232	-
01/21/2021	01:05	1.79	15:20	2.27	2.03	03:15	1.76	15:20	4.19	3.23	04:45	0.113	15:20	0.350	0.231	0.231	0.11
01/22/2021	03:00	1.76	09:50	2.34	2.05	04:20	1.86	15:20	3.94	3.20	04:15	0.112	15:25	0.329	0.234	0.234	-
01/23/2021	02:45	1.88	07:40	2.31	2.12	05:15	1.86	13:35	3.99	3.16	05:15	0.124	13:40	0.334	0.240	0.240	-
01/24/2021	05:30	1.84	18:50	2.46	2.13	05:35	1.86	18:45	4.06	3.30	05:35	0.116	18:50	0.380	0.254	0.254	0.16
01/25/2021	03:00	1.91	04:55	2.32	2.11	03:40	2.29	21:00	4.02	3.40	03:40	0.161	21:00	0.343	0.255	0.255	0.04
01/26/2021	03:00	1.83	08:05	2.25	2.06	04:10	1.70	13:00	3.95	3.18	04:10	0.108	17:45	0.320	0.233	0.233	-
01/27/2021	01:15	1.81	18:10	2.42	2.04	03:25	1.67	18:05	4.13	3.24	03:25	0.104	18:10	0.379	0.234	0.234	0.14
01/28/2021	01:05	1.83	10:05	2.29	2.08	03:50	2.13	11:40	3.84	3.25	02:35	0.140	16:35	0.302	0.241	0.241	0.24
01/29/2021	04:45	1.79	23:40	2.31	2.09	03:15	1.67	17:55	4.00	3.17	04:40	0.100	17:50	0.339	0.237	0.237	0.03
01/30/2021	05:45	1.88	22:10	2.33	2.09	03:30	2.05	12:35	3.97	3.27	03:45	0.137	17:55	0.323	0.244	0.244	0.07
01/31/2021	06:45	1.75	18:00	2.27	2.07	05:40	1.96	11:00	4.06	3.32	05:40	0.130	11:00	0.335	0.244	0.244	0.12
02/01/2021	06:00	1.76	20:00	2.31	2.06	02:55	2.07	20:00	4.09	3.36	03:05	0.133	20:00	0.351	0.246	0.246	0.82
02/02/2021	02:05	1.84	18:45	2.27	2.05	04:10	1.75	18:45	4.06	3.36	04:10	0.116	18:45	0.339	0.243	0.243	0.31
02/03/2021	01:20	1.86	05:55	2.23	2.03	05:35	2.27	18:40	3.95	3.34	04:35	0.152	18:45	0.313	0.239	0.239	0.06
02/04/2021	08:55	1.79	14:55	2.48	2.07	04:10	2.04	14:55	4.11	3.20	04:05	0.134	14:55	0.389	0.235	0.235	0.07
02/05/2021	06:50	1.90	00:00	2.28	2.08	03:35	1.80	13:05	4.02	3.16	03:35	0.124	22:45	0.330	0.235	0.235	0.01
02/06/2021	02:35	1.90	08:50	2.35	2.11	05:55	1.80	11:05	3.99	3.14	05:55	0.120	11:05	0.349	0.239	0.239	0.01
02/07/2021	06:45	1.70	11:20	2.41	2.08	05:25	1.61	11:20	4.07	3.23	05:25	0.095	11:20	0.370	0.241	0.241	-
02/08/2021	01:40	1.78	18:25	2.30	2.03	05:05	1.60	18:25	3.96	3.18	03:20	0.103	18:25	0.338	0.229	0.229	-
02/09/2021	00:45	1.81	19:50	2.29	2.03	02:30	1.78	19:55	3.98	3.22	02:30	0.118	19:55	0.334	0.231	0.231	-
02/10/2021	00:55	1.84	23:50	2.36	2.08	02:50	1.73	18:00	3.99	3.24	02:50	0.116	18:00	0.326	0.239	0.239	-
02/11/2021	01:25	1.90	09:10	2.32	2.09	04:45	1.85	11:30	3.98	3.26	04:45	0.125	17:15	0.326	0.243	0.243	-
02/12/2021	05:00	1.80	09:15	2.36	2.08	05:10	1.82	12:10	4.10	3.20	04:55	0.110	12:10	0.351	0.238	0.238	-
02/13/2021	01:25	1.92	08:45	2.29	2.08	04:40	1.97	11:30	3.94	3.24	04:40	0.133	11:30	0.305	0.240	0.240	0.08
02/14/2021	03:15	1.88	00:05	2.30	2.11	05:05	1.97	10:20	4.06	3.30	05:05	0.133	14:35	0.338	0.250	0.250	0.71
02/15/2021	01:00	2.06	14:35	2.96	2.35	04:40	2.87	14:45	4.49	3.73	04:45	0.210	14:40	0.548	0.334	0.334	0.78
02/16/2021	23:10	2.02	06:25	2.44	2.15	04:00	2.83	18:40	4.12	3.44	04:00	0.200	18:40	0.366	0.264	0.264	0.07
02/17/2021	05:45	1.71	00:00	2.24	2.05	03:45	1.95	20:10	3.96	3.24	03:45	0.126	20:20	0.314	0.236	0.236	-
02/18/2021	05:30	1.83	23:35	2.27	2.06	03:25	1.70	18:25	4.06	3.23	03:25	0.114	18:25	0.338	0.236	0.236	0.09
02/19/2021	05:40	1.77	19:50	2.21	2.05	02:45	1.79	19:55	4.02	3.24	02:50	0.120	19:55	0.323	0.234	0.234	0.17
02/20/2021	04:10	1.82	12:40	2.36	2.07	05:10	1.77	12:40	4.13	3.29	05:10	0.120	12:40	0.366	0.242	0.242	0.07
02/21/2021	02:20	1.78	19:05	2.33	2.09	05:10	1.92	19:05	4.11	3.37	05:10	0.127	19:05	0.357	0.253	0.253	0.42
02/22/2021	04:50	1.95	13:50	2.67	2.20	05:25	2.32	13:45	4.38	3.61	05:20	0.174	13:50	0.461	0.291	0.291	0.98
02/23/2021	04:45	1.85	19:15	2.24	2.05	03:00	1.95	19:15	4.05	3.30	03:00	0.126	19:15	0.332	0.240	0.240	0.27
02/24/2021	03:40	1.82	01:10	2.23	2.04	03:40	1.68	20:50	4.00	3.26	03:40	0.102	20:50	0.325	0.235	0.235	-
02/25/2021	05:25	1.77	23:30	2.31	2.05	03:45	1.82	13:20	3.98	3.27	03:45	0.123	13:20	0.319	0.237	0.237	0.18
02/26/2021	01:55	1.75	19:15	2.21	2.04	03:40	1.81	16:05	4.01	3.30	03:40	0.118	16:05	0.315	0.238	0.238	0.10
02/27/2021	06:45	1.76	23:10	2.27	2.03	05:00	1.89	10:10	3.95	3.31	05:00	0.115	11:35	0.317	0.237	0.237	0.02
02/28/2021	07:50	1.76	13:45	2.32	2.03	05:40	1.79	13:50	4.07	3.31	05:45	0.108	13:50	0.351	0.239	0.239	0.02
03/01/2021	04:55	1.80	21:35	2.25	2.03	02:50	1.84	17:55	4.02	3.31	02:50	0.126	21:35	0.328	0.237	0.237	-
03/02/2021	04:00	1.77	12:50	2.20	2.02	04:05	1.71	20:45	3.93	3.26	04:05	0.099	12:50	0.313	0.231	0.231	-
03/03/2021	01:45	1.78	23:55	2.34	2.04	03:20	1.55	17:35	4.00	3.22	03:20	0.102	17:35	0.326	0.233	0.233	-
03/04/2021	01:20	1.81	00:00	2.37	2.05	04:30	1.78	19:15	4.01	3.26	04:30	0.112	19:15	0.344	0.237	0.237	0.20
03/05/2021	04:10	1.82	23:55	2.31	2.05	04:10	1.79	21:05	3.95	3.29	04:10	0.109	21:05	0.310	0.239	0.239	0.05
03/06/2021	07:10	1.83	10:20	2.32	2.07	03:50	2.04	12:15	4.12	3.33	05:35	0.131	11:55	0.351	0.246	0.246	-
03/07/2021	06:40	1.80	15:50	2.42	2.08	06:05	1.85	12:20	4.12	3.31	06:05	0.116	15:50	0.372	0.248	0.248	0.04
03/08/2021	02:25	1.86	13:10	2.42	2.08	03:20	1.85	19:35	4.05	3.32	03:20	0.125	19:35	0.340	0.247	0.247	-
03/09/2021	01:15	1.81	08:20	2.34	2.07	03:35	1.84	20:05	4.03	3.26	04:05	0.112	20:05	0.336	0.241	0.241	0.01
03/10/2021	01:40	1.85	08:15	2.26	2.08	03:40	1.93	16:00	4.02	3.31	04:10	0.125	16:00	0.328	0.245	0.245	-
03/11/2021	01:10	1.86	07:50	2.32	2.07	04:05	1.86	17:15	3.99	3.23	04:05	0.118	17:20	0.320	0.237	0.237	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	03:25	1.81	18:00	3.12	2.08	03:25	1.80	18:00	4.69	3.19	03:25	0.108	18:00	0.621	0.239	0.239	-
03/13/2021	04:50	1.83	13:00	2.34	2.07	04:05	1.92	13:05	4.19	3.27	04:25	0.123	13:05	0.366	0.242	0.242	-
03/14/2021	04:15	1.86	11:05	2.32	2.09	05:05	1.76	11:05	4.10	3.29	05:05	0.113	11:05	0.354	0.246	0.246	0.30
03/15/2021	02:10	1.85	20:15	2.23	2.04	03:15	1.81	20:10	4.02	3.25	03:15	0.115	20:10	0.326	0.234	0.234	-
03/16/2021	00:10	1.81	21:00	2.33	2.06	02:45	2.01	21:00	4.08	3.31	02:45	0.137	21:00	0.355	0.242	0.242	-
03/17/2021	02:40	1.86	23:55	2.25	2.04	03:20	2.10	10:50	4.08	3.31	03:20	0.137	10:50	0.320	0.238	0.238	-
03/18/2021	04:30	1.75	06:55	2.31	2.05	02:00	2.07	16:30	4.03	3.35	02:40	0.131	16:40	0.334	0.244	0.244	0.11
03/19/2021	03:35	1.73	20:35	3.13	2.03	02:30	1.89	12:00	4.11	3.28	02:30	0.121	20:35	0.435	0.235	0.235	0.03
03/20/2021	05:50	1.77	13:45	2.34	2.03	04:15	2.02	13:40	4.06	3.34	04:15	0.120	13:45	0.355	0.241	0.241	0.17
03/21/2021	01:00	1.77	10:25	2.40	2.05	04:30	1.97	10:30	4.22	3.31	03:55	0.121	10:30	0.381	0.242	0.242	0.07
03/22/2021	03:40	1.77	08:40	2.20	2.02	02:05	2.13	13:20	3.97	3.36	02:05	0.132	13:20	0.311	0.240	0.240	0.11
03/23/2021	02:55	1.75	09:00	2.59	2.04	03:20	1.74	15:05	4.05	3.30	03:20	0.107	15:05	0.341	0.239	0.239	-
03/24/2021	03:30	1.64	19:30	2.29	2.04	02:50	1.99	16:00	4.08	3.28	02:50	0.125	16:00	0.343	0.238	0.238	0.34
03/25/2021	03:25	1.74	17:45	2.36	2.05	02:25	2.13	17:40	4.15	3.41	02:15	0.143	17:45	0.367	0.248	0.248	0.27
03/26/2021	02:55	1.84	11:45	2.22	2.05	03:35	2.16	11:45	3.97	3.34	03:35	0.136	11:45	0.322	0.243	0.243	-
03/27/2021	05:40	1.82	06:45	2.27	2.06	04:00	2.05	12:00	3.95	3.31	04:00	0.133	13:30	0.313	0.242	0.242	-
03/28/2021	04:55	1.80	18:50	2.43	2.08	04:30	1.79	18:45	4.20	3.32	04:30	0.108	18:50	0.385	0.250	0.250	0.37
03/29/2021	23:45	1.81	12:05	2.39	2.10	03:00	1.78	20:00	4.10	3.27	03:00	0.112	12:05	0.365	0.246	0.246	-
03/30/2021	02:05	1.78	08:10	2.19	2.04	04:20	2.06	09:25	3.94	3.32	01:45	0.126	20:30	0.307	0.239	0.239	-
03/31/2021	04:50	1.79	06:45	2.24	2.08	02:55	2.15	10:55	4.14	3.36	02:55	0.144	10:55	0.331	0.249	0.249	-
04/01/2021	03:30	1.83	19:50	2.26	2.04	02:35	1.84	19:50	4.06	3.29	02:35	0.118	19:50	0.337	0.237	0.237	-
04/02/2021	02:25	1.80	18:25	2.25	2.04	02:20	1.84	18:15	3.95	3.28	02:20	0.112	18:25	0.325	0.237	0.237	-
04/03/2021	04:20	1.73	11:00	2.39	2.06	03:25	2.09	10:55	4.20	3.36	03:25	0.137	10:55	0.375	0.247	0.247	-
04/04/2021	03:55	1.74	10:45	2.30	2.02	04:20	1.67	10:45	4.07	3.31	04:20	0.096	10:45	0.345	0.237	0.237	-
04/05/2021	03:20	1.79	11:10	2.25	2.04	02:05	2.01	11:15	4.14	3.40	02:05	0.123	11:10	0.341	0.246	0.246	-
04/06/2021	02:20	1.71	20:25	2.41	2.04	03:20	1.91	20:20	4.17	3.43	03:20	0.128	20:20	0.377	0.248	0.248	-
04/07/2021	01:05	1.78	22:55	2.30	2.05	02:35	2.04	20:25	4.21	3.40	02:35	0.129	20:15	0.329	0.246	0.246	0.22
04/08/2021	07:45	1.82	07:05	2.25	2.08	01:35	2.21	20:45	3.89	3.31	02:05	0.146	20:45	0.317	0.245	0.245	-
04/09/2021	04:40	1.82	06:40	2.30	2.08	02:30	1.93	12:40	3.92	3.24	02:30	0.127	18:05	0.314	0.240	0.240	0.03
04/10/2021	05:05	1.84	12:40	2.34	2.10	02:15	1.75	11:05	4.02	3.26	05:05	0.115	12:45	0.351	0.247	0.247	0.02
04/11/2021	05:25	1.75	08:30	2.49	2.11	02:45	1.67	08:30	4.28	3.30	05:15	0.101	08:30	0.409	0.252	0.252	-
04/12/2021	04:10	1.82	19:45	2.29	2.07	02:45	1.92	19:30	4.23	3.32	02:45	0.123	19:30	0.351	0.244	0.244	-
04/13/2021	01:30	1.58	06:30	2.29	2.06	02:40	2.14	18:15	3.95	3.32	01:40	0.134	18:20	0.323	0.243	0.243	-
04/14/2021	04:10	1.81	23:20	2.23	2.06	02:30	1.83	20:25	3.98	3.35	02:30	0.113	20:25	0.320	0.245	0.244	-
09/22/2020	23:55	1.94	19:20	2.29	2.14	22:40	2.75	19:20	4.08	3.68	23:55	0.185	19:20	0.346	0.283	0.143	-
09/23/2020	23:35	1.77	19:40	2.58	2.15	02:50	1.91	20:15	4.15	3.50	02:25	0.133	16:30	0.392	0.274	0.274	-
09/24/2020	00:20	1.86	23:15	2.33	2.14	03:25	2.08	10:50	4.02	3.40	03:25	0.154	18:20	0.348	0.261	0.261	-
09/25/2020	00:10	1.92	01:40	2.34	2.13	03:30	2.33	16:30	3.99	3.42	03:15	0.173	10:25	0.320	0.261	0.261	-
09/26/2020	00:40	1.90	13:20	2.41	2.13	04:05	2.04	10:55	4.14	3.40	03:20	0.140	13:20	0.374	0.261	0.261	-
09/27/2020	23:55	1.87	12:00	2.39	2.14	04:05	2.07	08:35	4.15	3.34	04:05	0.146	08:45	0.365	0.259	0.259	-
09/28/2020	23:45	1.91	17:40	2.41	2.13	00:30	2.10	11:00	4.15	3.29	01:20	0.143	17:40	0.375	0.252	0.252	-
09/29/2020	05:05	1.89	22:55	2.38	2.13	00:45	2.11	10:10	4.03	3.29	02:25	0.148	10:10	0.328	0.252	0.252	-
09/30/2020	03:00	1.92	07:20	2.34	2.12	00:55	2.12	18:35	4.00	3.26	03:00	0.148	19:40	0.338	0.249	0.249	-
10/01/2020	00:10	1.87	08:30	2.34	2.12	01:45	2.10	19:45	4.08	3.28	03:20	0.140	19:05	0.346	0.250	0.250	-
10/02/2020	00:15	1.87	22:45	2.41	2.11	00:35	2.10	10:20	3.99	3.30	03:35	0.136	10:10	0.326	0.250	0.250	-
10/03/2020	00:35	1.89	23:20	2.33	2.13	03:25	2.12	12:20	4.02	3.36	03:25	0.146	12:20	0.339	0.256	0.256	0.01
10/04/2020	01:45	1.85	10:50	2.32	2.14	03:40	2.11	08:40	4.18	3.36	03:40	0.147	10:50	0.347	0.259	0.259	0.01
10/05/2020	23:25	1.95	05:20	2.38	2.15	01:50	2.13	11:45	3.91	3.27	01:50	0.157	11:45	0.318	0.252	0.252	-
10/06/2020	05:25	1.91	05:05	2.51	2.16	01:25	2.10	17:05	3.96	3.23	00:30	0.157	17:10	0.328	0.250	0.250	-
10/07/2020	00:35	1.85	19:05	2.25	2.11	02:50	2.11	19:10	3.92	3.27	01:55	0.146	19:05	0.323	0.247	0.247	-
10/08/2020	01:15	1.87	23:00	2.26	2.11	02:35	2.20	12:05	3.97	3.37	03:25	0.153	12:05	0.322	0.256	0.256	-
10/09/2020	00:15	1.90	23:45	2.49	2.13	01:35	2.14	23:45	4.16	3.38	04:00	0.146	23:45	0.397	0.258	0.258	0.64
10/10/2020	04:45	1.89	00:00	2.39	2.16	05:45	2.40	10:50	4.07	3.59	04:45	0.165	10:55	0.355	0.280	0.280	1.04
10/11/2020	01:25	1.83	11:50	2.34	2.12	06:00	2.11	08:05	4.14	3.34	04:55	0.136	11:50	0.347	0.256	0.256	0.53
10/12/2020	05:30	1.89	11:55	2.36	2.12	04:25	2.12	18:55	4.04	3.32	04:25	0.155	11:55	0.353	0.253	0.253	-
10/13/2020	02:05	1.81	08:30	2.68	2.10	02:40	2.35	08:10	4.45	3.46	02:45	0.163	08:30	0.467	0.261	0.261	0.61
10/14/2020	04:40	1.83	19:25	2.33	2.06	04:05	2.15	19:30	4.01	3.28	03:30	0.142	19:25	0.347	0.240	0.240	-
10/15/2020	05:40	1.80	07:30	2.29	2.07	04:05	2.16	11:05	4.06	3.24	02:25	0.141	11:05	0.344	0.240	0.240	-
10/16/2020	03:00	1.86	07:05	2.19	2.04	01:00	2.17	17:50	3.96	3.26	03:00	0.137	17:50	0.300	0.235	0.235	-
10/17/2020	01:20	1.79	03:25	2.28	2.06	03:10	2.16	19:45	4.14	3.29	04:00	0.139	19:45	0.325	0.240	0.240	0.01
10/18/2020	00:45	1.81	12:20	2.33	2.06	06:00	2.10	12:35	4.08	3.28	01:25	0.136	12:35	0.352	0.240	0.240	0.03
10/19/2020	00:50	1.81	11:45	2.27	2.05	02:40	2.16	19:15	3.95	3.29	02:20	0.137	11:45	0.328	0.238	0.238	0.05
10/20/2020	02:40	1.82	18:20	2.31	2.06	02:35	2.10	18:20	4.03	3.30	02:30	0.136	18:20	0.345	0.242	0.242	-
10/21/2020	23:20	1.89	23:55	2.27	2.10	04:35	2.11	09:30	4.04	3.22	03:20	0.145	09:30	0.330	0.241	0.241	0.01
10/22/2020	06:35	1.94	06:05	2.45	2.13	04:30	2.10	16:35	3.88	3.22	04:20	0.154	16:35	0.312	0.246	0.246	-
10/23/2020	05:40	1.89	19:50	2.28	2.08	02:50	1.85	19:45	4.06	3.25	01:40	0.129	19:45	0.340	0.240	0.240	0.20
10/24/2020	04:30	1.84	10:30	2.26	2.08	04:25	1.77	15:55	3.96	3.25	04:25	0.110	10:30	0.325	0.242	0.242	0.02
10/25/2020	23:55	1.87	12:45	2.24	2.09	03:35	1.84	18:20	4.06	3.20	03:35	0.120	12:45	0.322	0.238	0.238	-
10/26/2020	05:35	1.86	17:05	2.23	2.07	00:50	1.83	10:20	3.98	3.18	00:50	0.125	17:05	0.320	0.234	0.234	-
10/27/2020	05:55	1.82	17:20	2.26	2.08	02:00	1.85	15:55	3.92	3.24	02:00	0.128	17:20	0.324	0.241	0.241	-
10/28/2020	23:55	1.86	01:10	2.27	2.05	02:15	1.85	16:35	3.89	3.24	03:20	0.122	16:40	0.303	0.234	0.234	-
10/29/2020	00:05	1.80	14:25	2.23	2.07	01:10	1.84	17:35	3.90	3.24	02:30	0.120	18:45	0.315	0.238	0.238	-
10/30/2020	23:25	1.87	06:50	2.28	2.07	01:40	1.82	10:05	3.95	3.27	02:40	0.123	10:05	0.321	0.240	0.240	0.10
10/31/2020	01:10	1.78	10:30	2.42	2.06	02:30	1.83	10:25	4.13	3.20	02:40	0.121	10:30	0.379	0.236	0.236	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	06:55	1.76	13:05	2.27	2.05	05:05	1.83	14:45	4.00	3.19	04:45	0.117	14:45	0.332	0.232	0.232	-
11/02/2020	01:10	1.79	23:40	2.21	2.04	02:30	1.83	13:35	3.93	3.22	04:20	0.113	13:35	0.307	0.232	0.232	-
11/03/2020	01:40	1.84	10:35	2.31	2.07	02:25	1.80	10:25	4.03	3.33	03:55	0.118	10:30	0.344	0.246	0.246	0.83
11/04/2020	06:05	1.83	07:50	2.22	2.04	01:55	1.77	12:15	3.92	3.19	02:00	0.121	21:00	0.303	0.229	0.229	0.09
11/05/2020	01:15	1.84	09:25	2.31	2.09	04:05	1.84	16:25	3.94	3.29	03:50	0.123	16:25	0.336	0.244	0.244	0.34
11/06/2020	02:05	1.86	09:00	2.30	2.07	04:20	2.15	20:00	4.03	3.28	04:20	0.152	12:45	0.314	0.241	0.241	0.10
11/07/2020	06:55	1.83	15:20	2.29	2.07	04:30	1.96	15:20	3.98	3.25	04:35	0.132	15:20	0.336	0.238	0.238	0.07
11/08/2020	01:30	1.84	12:25	2.39	2.11	04:45	2.02	12:20	4.04	3.31	04:45	0.137	12:25	0.362	0.251	0.251	0.01
11/09/2020	00:50	1.84	23:30	2.30	2.04	02:35	1.99	20:45	3.98	3.25	04:15	0.132	20:50	0.328	0.234	0.234	0.04
11/10/2020	01:20	1.84	17:10	2.34	2.07	02:30	1.99	17:05	4.07	3.24	02:30	0.133	17:05	0.350	0.239	0.239	0.03
11/11/2020	06:25	1.81	23:50	2.32	2.05	04:15	2.10	14:05	3.99	3.23	04:15	0.135	14:10	0.320	0.234	0.234	-
11/12/2020	01:05	1.84	00:00	2.33	2.07	03:35	2.10	08:50	3.98	3.27	04:35	0.141	10:40	0.318	0.240	0.240	0.16
11/13/2020	01:45	1.87	00:30	2.28	2.08	03:05	2.23	13:50	4.13	3.34	03:05	0.155	18:55	0.333	0.246	0.246	0.38
11/14/2020	01:25	1.90	08:05	2.53	2.11	04:20	1.94	11:30	4.01	3.18	04:25	0.129	16:15	0.345	0.241	0.241	0.47
11/15/2020	04:00	1.75	15:05	2.34	2.06	03:15	2.11	11:10	4.07	3.35	05:00	0.134	15:05	0.354	0.245	0.245	0.19
11/16/2020	05:05	1.82	14:35	2.31	2.04	03:40	2.09	11:25	3.95	3.28	04:00	0.137	14:25	0.329	0.237	0.237	0.31
11/17/2020	00:45	1.88	18:55	2.29	2.05	03:35	2.04	19:00	4.01	3.28	03:35	0.135	18:55	0.337	0.237	0.237	0.20
11/18/2020	03:20	1.83	15:45	2.27	2.04	04:05	1.96	17:45	3.98	3.22	04:00	0.128	15:45	0.330	0.232	0.232	0.30
11/19/2020	00:35	1.84	19:20	2.20	2.05	03:45	2.10	13:10	3.93	3.27	03:45	0.133	19:25	0.311	0.237	0.237	0.50
11/20/2020	00:50	1.81	01:50	2.29	2.01	02:40	2.07	21:45	4.07	3.23	02:40	0.136	21:45	0.340	0.228	0.228	0.01
11/21/2020	01:55	1.76	23:15	2.31	2.04	04:00	1.98	12:35	3.97	3.23	05:25	0.130	12:35	0.329	0.233	0.233	-
11/22/2020	05:30	1.78	13:00	2.29	2.04	03:50	1.97	12:50	3.99	3.23	05:30	0.120	12:45	0.335	0.234	0.234	0.21
11/23/2020	03:15	1.80	08:45	2.18	2.03	02:20	1.86	19:40	3.88	3.19	03:25	0.112	19:45	0.299	0.229	0.229	0.14
11/24/2020	02:30	1.74	00:10	2.19	2.03	03:30	1.86	16:45	3.90	3.17	03:30	0.121	17:50	0.304	0.226	0.226	0.21
11/25/2020	01:40	1.81	21:25	2.43	2.04	02:45	1.86	21:25	4.22	3.24	02:45	0.126	21:25	0.389	0.233	0.233	0.05
11/26/2020	07:15	1.76	13:30	2.39	2.07	05:30	1.95	13:30	4.20	3.35	05:20	0.131	13:30	0.378	0.247	0.247	0.02
11/27/2020	01:20	1.79	00:35	2.19	1.99	05:30	1.86	11:25	3.88	3.18	03:25	0.112	11:35	0.284	0.221	0.221	-
11/28/2020	01:40	1.82	08:40	2.35	2.06	04:50	1.86	19:00	4.03	3.16	04:50	0.126	19:05	0.333	0.230	0.230	0.05
11/29/2020	08:05	1.82	12:40	2.35	2.05	04:55	1.88	12:40	4.13	3.22	04:55	0.122	12:40	0.363	0.235	0.235	-
11/30/2020	02:00	1.80	23:50	2.24	2.03	02:45	1.93	11:35	4.03	3.33	02:50	0.125	11:40	0.321	0.237	0.237	0.36
12/01/2020	01:55	1.78	23:10	2.31	2.03	04:40	1.86	18:40	3.96	3.21	03:20	0.127	18:40	0.301	0.229	0.229	-
12/02/2020	06:05	1.78	08:30	2.33	2.04	01:05	1.86	18:30	3.94	3.19	03:30	0.116	18:30	0.324	0.230	0.230	0.01
12/03/2020	02:25	1.77	17:35	2.35	2.02	03:05	1.81	19:25	3.87	3.17	03:35	0.119	17:35	0.317	0.225	0.225	-
12/04/2020	00:55	1.84	23:20	2.24	2.02	04:05	1.55	20:55	3.92	3.17	04:00	0.099	20:55	0.312	0.226	0.226	-
12/05/2020	01:20	1.83	21:00	2.83	2.16	04:05	1.93	11:45	3.99	3.11	04:05	0.123	19:15	0.383	0.245	0.245	0.03
12/06/2020	01:50	1.86	17:00	2.33	2.07	06:45	2.12	12:55	3.98	3.28	06:35	0.140	17:00	0.344	0.242	0.242	0.03
12/07/2020	01:20	1.88	00:15	2.32	2.04	04:50	1.86	17:45	3.91	3.25	04:50	0.120	17:45	0.321	0.234	0.234	-
12/08/2020	03:35	1.78	17:25	2.29	2.06	04:25	1.79	19:30	4.01	3.31	03:55	0.108	19:35	0.334	0.244	0.244	0.87
12/09/2020	03:10	1.79	07:55	2.23	2.04	02:20	2.40	22:20	3.95	3.32	03:00	0.155	22:20	0.311	0.238	0.238	0.17
12/10/2020	06:35	1.82	23:35	2.23	2.04	03:20	1.64	17:15	3.88	3.15	03:20	0.111	18:25	0.298	0.226	0.226	0.07
12/11/2020	06:20	1.84	08:40	2.22	2.02	02:50	1.86	12:00	3.90	3.14	02:30	0.122	12:10	0.315	0.223	0.223	0.02
12/12/2020	08:50	1.82	23:30	2.30	2.05	02:10	1.87	08:50	3.90	3.08	04:10	0.122	12:40	0.324	0.225	0.225	0.01
12/13/2020	00:50	1.84	08:25	2.26	2.05	05:45	1.69	09:10	3.98	3.08	05:45	0.105	15:30	0.320	0.224	0.224	0.24
12/14/2020	06:15	1.77	18:20	2.20	2.02	03:45	1.85	10:45	3.92	3.18	03:45	0.115	17:05	0.308	0.226	0.226	0.05
12/15/2020	01:00	1.83	16:30	2.22	2.04	02:30	1.82	16:30	3.91	3.21	03:20	0.113	16:30	0.315	0.232	0.232	0.58
12/16/2020	01:35	1.85	18:50	2.68	2.24	04:20	1.99	07:40	3.59	2.87	04:20	0.135	18:50	0.357	0.238	0.238	0.39
12/17/2020	01:55	1.48	12:25	2.41	1.93	03:15	0.77	12:15	3.92	2.55	03:15	0.037	12:20	0.343	0.180	0.180	0.08
12/18/2020	01:05	1.84	11:30	2.31	2.11	03:40	1.34	14:10	4.06	3.11	03:40	0.104	12:50	0.301	0.233	0.233	0.25
12/19/2020	02:00	1.87	22:05	2.28	2.06	04:45	1.66	12:10	3.96	3.27	04:45	0.109	22:05	0.332	0.238	0.238	0.37
12/20/2020	02:25	1.78	12:55	2.24	2.03	06:25	1.90	12:55	3.98	3.24	06:25	0.122	12:55	0.326	0.233	0.233	0.04
12/21/2020	01:10	1.76	19:15	2.99	2.21	04:15	2.18	19:10	4.51	3.51	03:35	0.145	19:05	0.556	0.289	0.289	1.07
12/22/2020	05:55	1.89	09:45	2.25	2.08	04:10	1.88	19:05	3.91	3.25	04:10	0.135	14:50	0.309	0.239	0.239	-
12/23/2020	01:55	1.81	13:30	2.26	2.05	04:10	2.28	13:20	4.00	3.29	04:25	0.144	13:30	0.329	0.238	0.238	-
12/24/2020	05:50	1.74	00:35	2.32	2.07	04:55	2.01	14:20	4.07	3.34	04:55	0.132	14:25	0.347	0.246	0.246	-
12/25/2020	03:05	1.78	00:35	2.24	2.00	04:50	1.87	16:10	4.05	3.28	04:50	0.119	16:10	0.329	0.231	0.231	0.49
12/26/2020	03:05	1.79	11:45	2.29	2.04	06:05	2.18	11:40	4.09	3.37	06:05	0.143	11:40	0.345	0.242	0.242	0.02
12/27/2020	05:25	1.75	15:05	2.39	2.04	06:55	2.18	15:00	4.17	3.32	04:55	0.135	15:00	0.371	0.241	0.241	0.13
12/28/2020	05:25	1.76	13:45	2.36	2.05	03:45	2.18	13:45	4.24	3.39	03:45	0.136	13:45	0.374	0.246	0.246	-
12/29/2020	07:25	1.84	02:15	2.22	2.06	03:15	2.15	20:00	4.15	3.26	03:50	0.146	20:00	0.329	0.238	0.238	0.14
12/30/2020	05:00	1.78	17:20	2.28	2.10	03:35	2.32	17:20	4.03	3.43	03:10	0.153	17:20	0.338	0.257	0.257	0.78
12/31/2020	02:35	1.83	22:45	2.36	2.08	04:10	2.12	17:35	3.94	3.28	06:45	0.144	17:40	0.325	0.244	0.244	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			49.698	30.65
Average	2.07	3.29	0.243	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A16_80956

Site Address /Location:	Opposite 225 6th St SE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Park in Eastbound lane	Latitude:	47.3019	Pipe Size (H x W): 21.00 X 21.00	Pipe Shape: Circular
		Longitude:	-122.226958		



Manhole #	System Characteristics
A130820	Commercial
Access	Traffic
Drive	Heavy







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Monday, September 28, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
14:26:00 AM	
Depth of Flow (Wet DOF) (in)	
2.50	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.58	N/A
Silt (in)	Silt Type
0	

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
8	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A17_80957

Site Commentary

SITE INFORMATION

Pipe	Elliptical (9.5 in H x 9.25 in W)
Silt	1.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced a flow change on October 25th and backwater conditions April 13th through April 14th. An ADS field crew performed a confirmation on January 27th which verified the sensors are working properly.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.07	0.48	0.041
Minimum	1.92	0.15	0.010
Maximum	5.56	1.61	0.218
Min Time	12/10/2020 3:00:00 AM	04/14/2021 4:00:00 AM	04/06/2021 3:00:00 AM
Max Time	04/14/2021 11:00:00 AM	10/09/2020 11:00:00 PM	10/09/2020 11:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

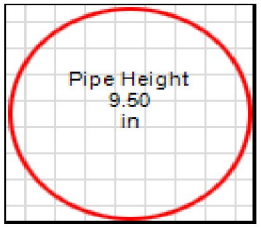
Percent Uptime	
DFINAL (in)	96.773
VFINAL (ft/s)	96.773
QFINAL (MGD - Total MG)	96.773

Hydrograph Report

AUB_A17_80957

Flow Monitor

AUB_A17_80957



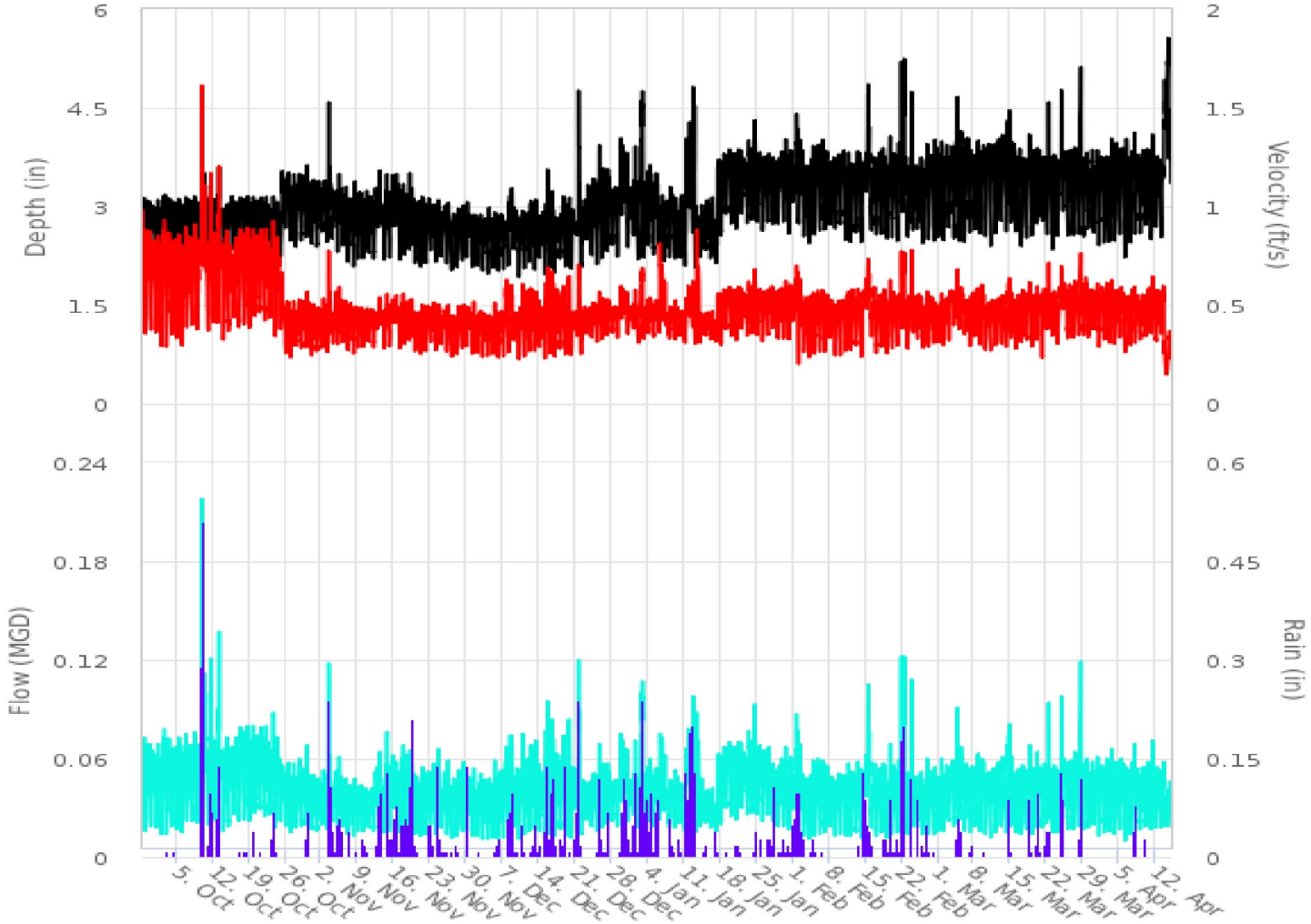
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

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Scattergraph Report

AUB_A17_80957

Flow Monitor

AUB_A17_80957

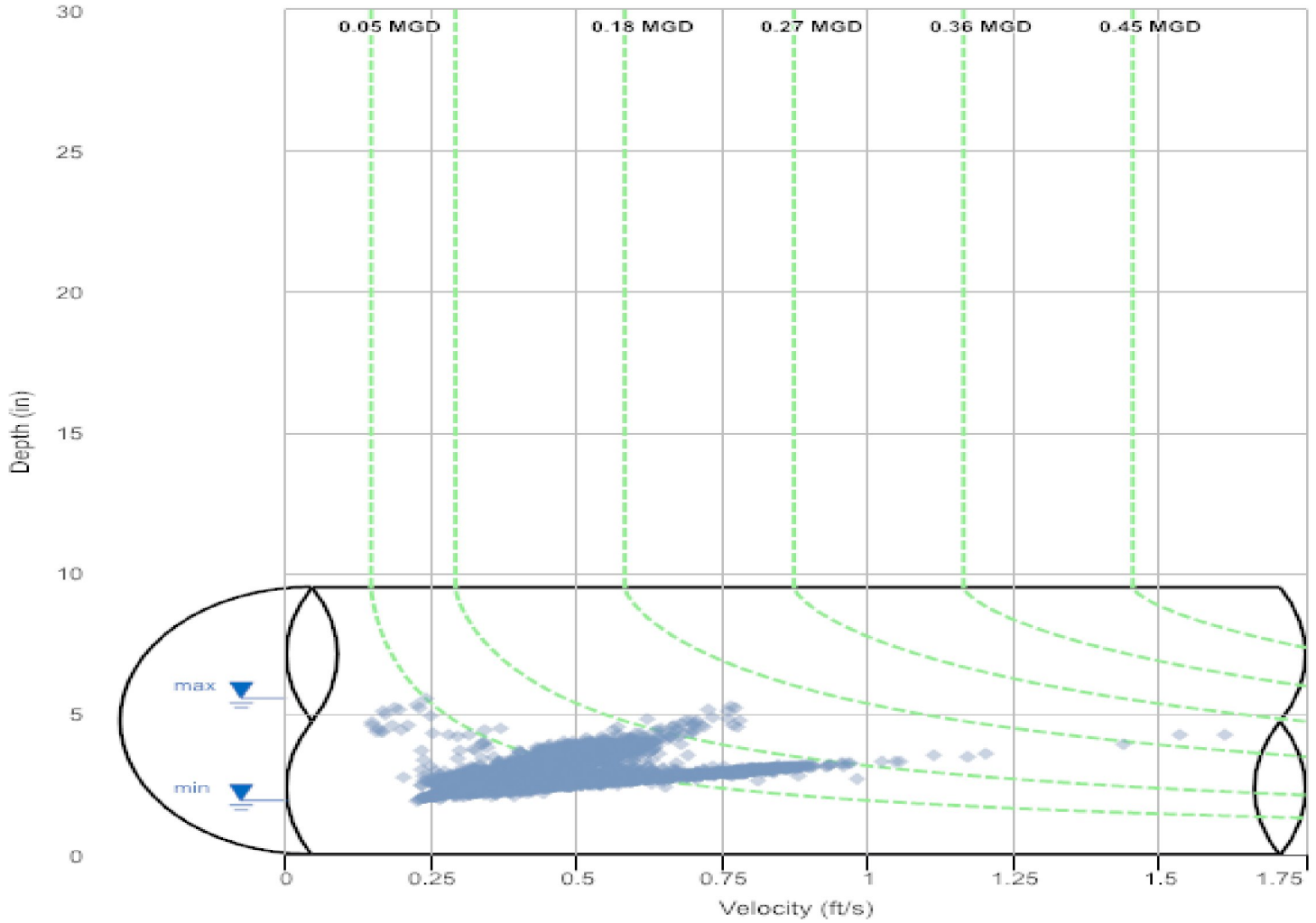
Pipe Height
9.50
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A17_80957Pipe: Elliptical (9.5 in H x 9.25 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	05:35	2.33	15:15	4.91	3.00	21:20	0.25	15:15	0.71	0.45	05:35	0.020	15:15	0.114	0.039	0.039	0.51
01/02/2021	04:10	2.11	20:55	6.19	3.34	06:30	0.26	20:55	0.83	0.49	06:30	0.014	20:55	0.178	0.052	0.052	1.69
01/03/2021	06:15	2.07	00:00	4.95	3.00	06:10	0.30	00:00	0.71	0.45	04:40	0.015	00:00	0.116	0.039	0.039	0.65
01/04/2021	05:40	2.27	11:25	4.20	2.93	03:05	0.34	11:25	0.62	0.44	05:40	0.019	11:25	0.082	0.036	0.036	0.48
01/05/2021	04:15	2.13	20:35	3.87	2.92	04:15	0.32	20:35	0.57	0.44	04:15	0.016	20:35	0.068	0.036	0.036	0.52
01/06/2021	05:50	2.21	00:10	3.51	2.84	05:40	0.33	09:20	0.87	0.57	05:40	0.018	09:20	0.092	0.053	0.053	0.22
01/07/2021	03:05	2.07	09:00	3.56	2.80	12:10	0.30	08:55	0.78	0.46	03:50	0.016	08:55	0.113	0.038	0.038	-
01/08/2021	04:35	1.94	08:50	3.57	2.82	04:35	0.28	08:50	0.53	0.42	04:35	0.013	08:50	0.057	0.033	0.033	0.22
01/09/2021	06:25	2.09	12:45	3.43	2.74	08:10	0.20	22:55	0.60	0.42	03:25	0.015	10:50	0.067	0.037	0.037	-
01/10/2021	06:20	1.99	16:45	3.47	2.74	08:35	0.24	11:10	0.64	0.41	06:15	0.014	11:10	0.070	0.032	0.032	0.07
01/11/2021	05:25	2.04	10:10	4.28	2.96	01:45	0.30	18:35	0.64	0.45	01:45	0.015	20:10	0.088	0.043	0.043	1.06
01/12/2021	15:55	2.45	18:35	5.92	3.53	11:05	0.37	18:40	0.78	0.50	15:55	0.023	18:40	0.147	0.055	0.055	2.10
01/13/2021	04:55	1.99	00:00	7.83	2.71	03:25	0.29	10:40	1.04	0.55	03:20	0.014	00:00	0.173	0.050	0.050	0.09
01/14/2021	04:20	2.03	10:10	4.03	2.66	03:20	0.21	10:10	0.58	0.40	03:20	0.014	10:05	0.072	0.031	0.031	0.01
01/15/2021	06:15	2.09	17:50	3.35	2.73	05:35	0.26	17:50	0.50	0.41	03:50	0.016	17:50	0.049	0.031	0.031	0.09
01/16/2021	03:15	2.10	18:05	3.39	2.67	06:05	0.20	18:05	0.51	0.40	06:05	0.015	18:05	0.050	0.029	0.029	-
01/17/2021	04:15	2.07	20:15	5.62	3.02	04:10	0.30	11:30	0.68	0.45	04:10	0.015	20:15	0.106	0.040	0.040	0.10
01/18/2021	05:35	2.37	20:00	4.23	3.27	05:30	0.25	20:00	0.67	0.46	05:30	0.015	20:00	0.089	0.045	0.045	-
01/19/2021	02:20	2.71	19:15	4.10	3.44	02:20	0.33	19:15	0.64	0.50	02:20	0.024	19:15	0.082	0.051	0.051	0.01
01/20/2021	04:10	2.67	15:10	4.05	3.39	02:55	0.33	15:10	0.63	0.49	04:10	0.023	15:10	0.079	0.050	0.050	-
01/21/2021	03:00	2.58	21:30	4.38	3.42	03:00	0.30	21:30	0.68	0.50	03:00	0.020	21:30	0.094	0.051	0.051	0.11
01/22/2021	02:50	2.76	10:55	4.24	3.38	02:45	0.35	10:55	0.67	0.49	02:45	0.026	10:50	0.089	0.049	0.049	-
01/23/2021	06:55	2.60	15:45	4.23	3.43	04:25	0.31	15:45	0.66	0.50	04:25	0.021	15:45	0.089	0.052	0.052	-
01/24/2021	04:40	2.58	17:15	4.44	3.47	04:40	0.30	17:15	0.71	0.51	04:40	0.021	17:15	0.101	0.054	0.054	0.16
01/25/2021	02:25	2.60	16:35	4.34	3.38	02:25	0.31	16:35	0.69	0.49	02:25	0.021	16:35	0.095	0.049	0.049	0.04
01/26/2021	04:20	2.48	21:15	3.98	3.36	04:20	0.28	21:15	0.62	0.48	04:20	0.018	21:15	0.076	0.049	0.049	-
01/27/2021	05:15	2.60	08:15	4.06	3.30	05:10	0.31	22:55	0.65	0.49	05:15	0.021	08:15	0.080	0.044	0.044	0.14
01/28/2021	03:35	2.61	17:25	4.36	3.41	03:35	0.34	04:50	0.66	0.49	03:35	0.017	17:25	0.080	0.042	0.042	0.24
01/29/2021	03:45	2.69	19:10	4.38	3.41	03:50	0.30	19:10	0.70	0.48	03:40	0.017	19:10	0.085	0.041	0.041	0.03
01/30/2021	05:20	2.65	14:55	4.18	3.41	04:55	0.30	14:35	0.71	0.49	04:55	0.016	14:55	0.076	0.042	0.042	0.07
01/31/2021	05:25	2.50	14:35	4.28	3.36	04:55	0.30	11:40	0.65	0.47	05:25	0.014	14:35	0.074	0.039	0.039	0.12
02/01/2021	00:55	2.92	18:15	4.77	3.63	00:45	0.39	18:15	0.74	0.56	00:50	0.025	18:15	0.102	0.053	0.053	0.82
02/02/2021	02:45	2.55	08:05	4.82	3.38	04:35	0.15	07:55	0.73	0.46	04:35	0.008	08:05	0.103	0.039	0.039	0.31
02/03/2021	03:20	2.48	22:50	3.97	3.24	03:15	0.23	19:15	0.61	0.44	03:15	0.011	22:50	0.063	0.034	0.034	0.06
02/04/2021	04:00	2.39	22:10	4.45	3.28	03:55	0.21	22:05	0.65	0.43	03:55	0.009	22:05	0.081	0.035	0.035	0.07
02/05/2021	03:40	2.51	19:25	4.24	3.36	03:35	0.23	19:20	0.65	0.42	03:35	0.011	19:25	0.075	0.036	0.036	0.01
02/06/2021	03:05	2.54	11:50	4.26	3.45	04:15	0.23	19:10	0.67	0.45	04:15	0.013	20:25	0.076	0.040	0.040	0.01
02/07/2021	04:10	2.58	14:25	4.26	3.31	05:05	0.20	14:25	0.62	0.43	04:05	0.013	14:25	0.073	0.035	0.035	-
02/08/2021	04:55	2.60	20:05	4.06	3.34	03:20	0.29	10:10	0.58	0.45	04:50	0.015	20:05	0.064	0.036	0.036	-
02/09/2021	05:05	2.50	22:15	4.39	3.33	03:40	0.20	22:10	0.62	0.43	03:40	0.010	22:15	0.076	0.035	0.035	-
02/10/2021	03:05	2.51	09:50	4.22	3.38	03:35	0.20	09:50	0.62	0.43	03:35	0.012	09:50	0.072	0.036	0.036	-
02/11/2021	04:30	2.30	11:05	4.06	3.27	04:25	0.23	11:05	0.63	0.45	04:30	0.009	11:05	0.069	0.036	0.036	-
02/12/2021	04:20	2.28	10:10	4.00	3.19	03:20	0.24	12:15	0.64	0.45	04:15	0.010	12:15	0.064	0.035	0.035	-
02/13/2021	04:05	2.41	13:45	4.16	3.28	03:55	0.26	13:45	0.66	0.45	03:55	0.012	13:45	0.074	0.037	0.037	0.08
02/14/2021	04:50	2.36	21:50	3.96	3.28	05:00	0.22	14:40	0.61	0.45	04:20	0.011	17:30	0.061	0.037	0.037	0.71
02/15/2021	05:55	3.04	13:25	5.07	3.92	05:50	0.45	12:50	0.75	0.61	05:50	0.031	13:25	0.113	0.065	0.065	0.78
02/16/2021	05:20	2.52	20:00	4.04	3.24	06:15	0.27	19:30	0.64	0.46	06:10	0.014	19:30	0.067	0.036	0.036	0.07
02/17/2021	03:40	2.27	21:15	4.30	3.24	03:00	0.19	19:10	0.61	0.42	03:35	0.010	21:15	0.071	0.033	0.033	-
02/18/2021	03:10	2.49	10:15	4.04	3.34	05:00	0.24	14:40	0.63	0.45	01:40	0.013	14:40	0.067	0.038	0.038	0.09
02/19/2021	04:30	2.45	19:00	4.62	3.32	03:30	0.21	19:00	0.72	0.44	04:30	0.011	19:00	0.095	0.037	0.037	0.17
02/20/2021	04:15	2.43	16:20	4.16	3.32	05:35	0.22	12:40	0.64	0.45	04:10	0.012	16:20	0.070	0.037	0.037	0.07
02/21/2021	05:25	2.38	22:50	5.83	3.51	06:50	0.24	23:25	0.81	0.47	04:50	0.012	23:35	0.146	0.044	0.044	0.42
02/22/2021	04:15	2.84	12:50	6.66	3.76	05:05	0.34	12:50	0.87	0.55	04:15	0.022	12:50	0.186	0.057	0.057	0.98
02/23/2021	04:10	2.38	21:05	5.43	3.20	04:55	0.24	21:10	0.85	0.47	04:05	0.011	21:10	0.141	0.037	0.037	0.27
02/24/2021	04:15	2.52	20:20	4.27	3.18	03:05	0.30	20:20	0.62	0.45	04:05	0.016	20:20	0.073	0.033	0.033	-
02/25/2021	02:50	2.50	20:45	4.03	3.31	01:55	0.29	04:25	0.62	0.47	01:35	0.014	20:45	0.067	0.038	0.038	0.18
02/26/2021	03:50	2.36	22:30	4.47	3.27	04:15	0.20	22:35	0.62	0.42	04:15	0.011	22:30	0.077	0.034	0.034	0.10
02/27/2021	04:25	2.38	13:00	4.19	3.34	01:25	0.24	15:55	0.59	0.44	04:25	0.011	12:55	0.063	0.037	0.037	0.02
02/28/2021	06:30	2.32	17:55	4.50	3.35	06:25	0.27	11:45	0.58	0.42	06:25	0.011	11:45	0.067	0.035	0.035	0.02
03/01/2021	02:25	2.42	19:00	4.37	3.41	01:30	0.27	22:50	0.63	0.45	01:30	0.013	19:00	0.073	0.038	0.038	-
03/02/2021	04:30	2.37	02:25	4.50	3.39	02:15	0.17	11:10	0.58	0.46	03:20	0.012	19:40	0.068	0.039	0.039	-
03/03/2021	03:05	2.48	18:30	4.13	3.37	05:10	0.18	11:40	0.61	0.51	05:05	0.014	18:30	0.067	0.042	0.042	-
03/04/2021	02:20	2.44	19:20	4.88	3.53	02:15	0.34	19:25	0.73	0.52	02:15	0.016	19:25	0.104	0.047	0.047	0.20
03/05/2021	04:30	2.38	09:40	4.59	3.48	02:30	0.33	10:55	0.64	0.50	02:30	0.018	11:10	0.080	0.043	0.043	0.05
03/06/2021	05:00	2.28	21:45	4.71	3.47	22:30	0.31	13:45	0.59	0.45	04:45	0.013	21:45	0.074	0.040	0.040	-
03/07/2021	05:00	2.52	10:05	4.74	3.40	04:45	0.28	18:20	0.65	0.46	04:50	0.014	18:25	0.082	0.040	0.040	0.04
03/08/2021	03:55	2.54	19:25	4.45	3.41	03:30	0.28	19:25	0.68	0.47	03:50	0.015	19:25	0.085	0.040	0.040	-
03/09/2021	04:05	2.50	12:20	4.65	3.44	03:25	0.25	11:55	0.70	0.45	03:20	0.013	11:15	0.073	0.039	0.039	0.01
03/10/2021	04:00	2.46	18:15	4.30	3.49	03:55	0.23	19:35	0.57	0.42	03:55	0.011	13:55	0.063	0.037	0.037	-
03/11/2021	04:20	2.35	11:45	4.47	3.42	04:20	0.24	15:55	0.60	0.43	04:20	0.010	11:45	0.070	0.038	0.038	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	02:55	2.40	20:45	4.54	3.53	02:50	0.26	20:45	0.61	0.46	02:55	0.011	20:45	0.078	0.041	0.041	-
03/13/2021	05:05	2.63	11:20	4.68	3.53	06:55	0.25	10:05	0.68	0.44	04:20	0.016	11:20	0.088	0.039	0.039	-
03/14/2021	04:20	2.52	19:20	5.45	3.60	04:05	0.24	19:20	0.71	0.46	04:05	0.013	19:20	0.119	0.044	0.044	0.30
03/15/2021	02:50	2.58	19:40	5.49	3.48	05:15	0.26	09:10	0.71	0.45	02:45	0.014	09:10	0.119	0.040	0.040	-
03/16/2021	03:35	2.47	20:25	4.17	3.39	04:30	0.23	18:20	0.63	0.46	02:35	0.012	18:20	0.066	0.039	0.039	-
03/17/2021	03:30	2.21	08:00	4.90	3.23	02:50	0.20	08:00	0.75	0.45	02:50	0.008	08:00	0.108	0.036	0.036	-
03/18/2021	03:15	2.39	15:50	5.95	3.43	04:30	0.25	06:35	0.79	0.49	03:20	0.011	15:50	0.143	0.043	0.043	0.11
03/19/2021	02:40	2.42	17:40	4.45	3.38	02:45	0.20	17:40	0.63	0.46	02:45	0.009	17:40	0.078	0.039	0.039	0.03
03/20/2021	03:05	2.58	05:25	4.79	3.47	03:15	0.26	05:25	0.73	0.48	03:15	0.016	05:25	0.102	0.042	0.042	0.17
03/21/2021	05:20	2.61	04:30	4.49	3.40	04:30	0.16	23:05	0.66	0.47	03:20	0.012	21:30	0.081	0.040	0.040	0.07
03/22/2021	02:45	2.12	10:00	5.61	3.38	02:45	0.29	10:00	0.77	0.50	02:45	0.010	10:00	0.134	0.043	0.043	0.11
03/23/2021	03:20	2.31	08:15	5.37	3.33	02:25	0.30	08:05	0.78	0.47	02:25	0.013	08:15	0.094	0.039	0.039	-
03/24/2021	02:20	2.47	19:20	5.79	3.46	03:40	0.25	19:20	0.77	0.51	02:05	0.014	19:20	0.139	0.046	0.046	0.34
03/25/2021	04:25	2.84	21:25	4.40	3.50	23:50	0.31	12:25	0.68	0.54	23:30	0.020	19:55	0.073	0.047	0.047	0.27
03/26/2021	03:25	2.45	20:00	4.19	3.38	02:30	0.31	10:25	0.67	0.50	02:55	0.015	20:00	0.077	0.042	0.042	-
03/27/2021	03:45	2.42	16:40	4.21	3.35	03:55	0.23	11:50	0.66	0.50	03:55	0.010	11:50	0.075	0.041	0.041	-
03/28/2021	03:05	2.41	14:20	7.36	3.52	04:30	0.28	14:20	0.94	0.53	03:05	0.016	14:20	0.226	0.049	0.049	0.37
03/29/2021	03:00	2.37	17:40	4.46	3.28	01:00	0.26	12:45	0.76	0.51	01:00	0.012	17:40	0.084	0.041	0.041	-
03/30/2021	01:35	2.53	17:30	4.29	3.33	01:50	0.27	10:10	0.75	0.49	01:50	0.014	10:10	0.072	0.040	0.040	-
03/31/2021	03:00	2.48	18:00	4.15	3.32	04:55	0.31	17:55	0.66	0.49	01:50	0.017	18:00	0.073	0.040	0.040	-
04/01/2021	03:30	2.31	07:25	4.15	3.27	01:50	0.24	07:25	0.65	0.48	01:50	0.011	07:25	0.073	0.038	0.038	-
04/02/2021	02:25	2.40	19:15	4.64	3.28	00:50	0.30	19:15	0.66	0.48	02:20	0.013	19:15	0.088	0.039	0.039	-
04/03/2021	01:10	2.35	12:25	4.34	3.33	03:10	0.24	14:00	0.67	0.49	03:10	0.012	12:25	0.079	0.041	0.041	-
04/04/2021	03:45	2.36	12:30	4.48	3.26	02:35	0.26	12:30	0.64	0.46	03:40	0.012	12:30	0.080	0.036	0.036	-
04/05/2021	03:05	2.50	16:40	4.34	3.44	03:00	0.31	12:30	0.66	0.49	03:00	0.015	10:30	0.073	0.043	0.043	-
04/06/2021	02:50	2.13	09:10	4.44	3.29	02:45	0.23	12:30	0.60	0.45	02:45	0.008	10:20	0.070	0.037	0.037	-
04/07/2021	04:05	2.34	23:25	5.48	3.46	04:05	0.27	23:30	0.73	0.48	04:05	0.011	23:25	0.121	0.043	0.043	0.22
04/08/2021	03:00	2.50	17:10	4.28	3.35	02:10	0.23	13:20	0.59	0.46	02:10	0.011	10:35	0.062	0.038	0.038	-
04/09/2021	03:10	2.50	10:15	4.51	3.37	03:00	0.25	10:15	0.66	0.46	03:00	0.012	10:15	0.084	0.039	0.039	0.03
04/10/2021	02:30	2.60	15:10	4.69	3.41	02:40	0.29	11:30	0.70	0.48	02:40	0.015	18:35	0.077	0.041	0.041	0.02
04/11/2021	05:00	2.40	10:50	4.45	3.31	23:35	0.27	10:50	0.70	0.48	03:15	0.016	10:50	0.088	0.040	0.040	-
04/12/2021	02:50	2.44	17:35	4.29	3.33	04:25	0.27	09:40	0.68	0.48	01:50	0.014	09:40	0.080	0.039	0.039	-
04/13/2021	03:00	2.41	20:50	5.25	3.63	23:55	0.16	11:45	0.71	0.41	02:55	0.015	11:50	0.076	0.036	0.036	-
04/14/2021	23:25	3.26	10:50	5.81	4.45	04:45	0.14	18:25	0.44	0.25	23:55	0.015	18:25	0.060	0.030	0.030	-
09/28/2020	23:45	2.33	20:40	3.32	2.91	23:50	0.46	20:40	1.00	0.76	23:50	0.025	19:40	0.087	0.058	0.022	-
09/29/2020	01:55	2.06	20:25	3.41	2.71	02:50	0.33	19:25	1.02	0.67	02:10	0.015	19:25	0.092	0.045	0.045	-
09/30/2020	03:00	2.19	08:25	3.56	2.74	03:15	0.35	08:25	1.11	0.68	03:15	0.017	08:25	0.091	0.046	0.046	-
10/01/2020	01:50	2.07	10:05	3.38	2.72	01:50	0.28	11:50	0.97	0.66	01:50	0.013	21:10	0.083	0.045	0.045	-
10/02/2020	02:45	1.96	15:10	3.58	2.78	02:10	0.26	15:10	1.17	0.69	02:10	0.012	18:20	0.104	0.051	0.051	-
10/03/2020	04:00	2.06	16:05	3.39	2.73	03:15	0.28	10:50	1.04	0.64	03:15	0.013	10:50	0.100	0.047	0.047	0.01
10/04/2020	05:20	2.09	11:25	3.42	2.71	06:50	0.30	11:25	1.03	0.62	06:50	0.015	16:15	0.099	0.045	0.045	0.01
10/05/2020	03:05	2.02	11:30	3.38	2.75	00:55	0.26	11:30	1.11	0.64	01:05	0.013	11:30	0.109	0.048	0.048	-
10/06/2020	03:00	1.93	20:20	3.36	2.73	02:55	0.24	19:10	1.01	0.65	02:50	0.011	19:10	0.099	0.047	0.047	-
10/07/2020	02:10	2.21	12:30	3.45	2.79	02:10	0.29	12:30	1.03	0.66	02:10	0.015	12:30	0.090	0.048	0.048	-
10/08/2020	03:05	2.26	13:05	3.36	2.83	02:10	0.34	20:05	1.00	0.68	02:10	0.018	20:05	0.087	0.051	0.051	-
10/09/2020	02:25	2.27	23:45	5.09	2.92	01:25	0.32	23:45	1.89	0.74	03:00	0.017	23:45	0.319	0.063	0.063	0.64
10/10/2020	04:50	2.48	01:10	4.94	3.09	16:05	0.50	01:10	1.88	0.83	23:30	0.031	01:10	0.306	0.071	0.071	1.04
10/11/2020	04:35	2.26	22:40	3.85	2.90	04:20	0.33	22:40	1.46	0.75	03:15	0.018	22:40	0.172	0.060	0.060	0.53
10/12/2020	04:15	2.26	11:00	3.35	2.76	01:40	0.33	11:00	1.06	0.66	01:40	0.020	11:00	0.103	0.047	0.047	-
10/13/2020	00:45	2.29	07:05	4.90	2.88	00:25	0.37	07:05	1.84	0.75	00:30	0.020	07:05	0.296	0.059	0.059	0.61
10/14/2020	00:30	2.08	17:50	3.18	2.69	03:10	0.26	17:50	0.97	0.64	03:10	0.012	14:45	0.082	0.045	0.045	-
10/15/2020	03:00	2.14	12:00	3.36	2.78	03:20	0.32	12:00	1.03	0.62	02:55	0.016	12:00	0.101	0.047	0.047	-
10/16/2020	02:35	2.21	18:15	3.30	2.82	02:35	0.36	18:15	0.98	0.70	02:35	0.020	18:15	0.094	0.055	0.055	-
10/17/2020	02:00	2.20	11:05	3.42	2.83	02:00	0.36	11:05	1.05	0.71	02:00	0.019	11:05	0.106	0.057	0.057	0.01
10/18/2020	03:00	2.17	10:50	3.32	2.81	04:50	0.30	10:50	0.99	0.70	04:50	0.017	10:50	0.095	0.056	0.056	0.03
10/19/2020	02:55	2.09	20:10	3.28	2.78	02:55	0.29	20:10	0.96	0.68	02:55	0.015	20:10	0.091	0.052	0.052	0.05
10/20/2020	04:15	2.17	13:25	3.25	2.79	04:15	0.29	13:25	0.95	0.69	04:15	0.017	13:25	0.089	0.054	0.054	-
10/21/2020	02:15	2.19	10:35	3.28	2.78	02:15	0.35	10:35	0.96	0.68	02:15	0.019	10:35	0.091	0.053	0.053	0.01
10/22/2020	03:25	2.16	10:35	3.38	2.78	03:25	0.34	10:35	1.03	0.68	03:25	0.018	10:35	0.102	0.052	0.052	-
10/23/2020	02:20	2.15	23:00	4.04	2.73	04:45	0.33	23:00	1.56	0.66	04:45	0.018	23:00	0.204	0.051	0.051	0.20
10/24/2020	04:05	2.03	14:50	3.40	2.70	04:05	0.26	14:50	1.04	0.63	04:05	0.012	14:50	0.103	0.048	0.048	0.02
10/25/2020	01:20	2.12	10:30	3.73	3.01	23:55	0.27	07:20	0.75	0.47	01:20	0.016	11:40	0.070	0.041	0.041	-
10/26/2020	01:55	2.51	18:40	3.75	3.14	05:15	0.19	10:30	0.66	0.40	00:55	0.014	10:30	0.075	0.039	0.039	-
10/27/2020	02:50	2.34	17:55	3.73	3.09	03:55	0.14	19:20	0.61	0.40	02:35	0.011	18:00	0.072	0.038	0.038	-
10/28/2020	02:15	2.22	18:55	3.73	3.04	04:10	0.16	18:55	0.62	0.39	02:35	0.011	18:55	0.074	0.037	0.037	-
10/29/2020	03:10	2.32	15:20	3.67	3.06	02:15	0.19	15:20	0.60	0.41	02:15	0.013	15:20	0.066	0.038	0.038	-
10/30/2020	02:30	2.47	05:20	5.06	3.04	00:45	0.22	05:15	0.91	0.42	03:15	0.015	05:15	0.142	0.037	0.037	0.10
10/31/2020	03:25	2.36	13:30	3.62	2.99	04:15	0.17	12:20	0.56	0.39	04:15	0.011	12:20	0.060	0.034	0.034	-
11/01/2020	03:00	2.31	14:30	4.21	2.98	03:05	0.18	01:50	0.62	0.40	03:05	0.011	14:30	0.075	0.034	0.034	-
11/02/2020	04:20	2.39	17:20	3.78	3.06	02:00	0.22	10:15	0.58	0.41	03:50	0.015	17:20	0.060	0.036	0.036	-
11/03/2020	02:45	2.33	09:45	5.85	3.24	04:25	0.17	09:45	0.94	0.45	04:25	0.010	09:45	0.187	0.045	0.045	0.83
11/04/2020	02:45	2.37	10:40	3.51	2.95	01:40	0.18	19:25	0.69	0.42	01:40	0.013	19:25	0.070	0.035	0.035	0.09
11/05/2020	03:55	2.17	12:20	3.72	2.95	04:40	0.23	01:35	0.78	0.44	03:55	0.015	01:35	0.079	0.038	0.038	0.34
11/06/2020	04:25	2.31	18:30	3.49	2.92	00:05	0.23	02:00	0.61	0.45	00:05	0.015	19:20	0.060	0.037	0.037	0.10

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/07/2020	03:30	1.96	09:15	3.54	2.77	03:30	0.22	09:15	0.64	0.40	03:30	0.010	09:15	0.067	0.031	0.031	0.07
11/08/2020	05:55	1.97	12:15	3.54	2.77	04:10	0.23	18:10	0.57	0.40	04:05	0.011	18:10	0.060	0.031	0.031	0.01
11/09/2020	03:10	2.02	12:10	3.50	2.81	04:20	0.21	11:40	0.52	0.39	03:10	0.011	11:40	0.053	0.031	0.031	0.04
11/10/2020	03:25	1.99	19:30	3.36	2.79	03:25	0.23	11:10	0.58	0.40	03:15	0.011	11:10	0.053	0.031	0.031	0.03
11/11/2020	04:15	2.14	20:45	3.48	2.78	04:15	0.27	20:45	0.56	0.41	04:15	0.014	20:45	0.058	0.032	0.032	-
11/12/2020	04:25	2.06	11:40	3.49	2.84	01:30	0.24	10:35	0.55	0.40	02:15	0.012	17:30	0.066	0.036	0.036	0.16
11/13/2020	21:50	2.52	06:25	4.37	2.92	12:55	0.28	06:25	0.64	0.44	21:50	0.024	06:25	0.089	0.040	0.040	0.38
11/14/2020	03:45	2.05	17:50	4.26	2.85	06:50	0.22	17:45	0.65	0.41	03:45	0.012	17:50	0.087	0.040	0.040	0.47
11/15/2020	06:20	2.05	22:35	4.12	2.92	06:20	0.24	18:20	0.62	0.43	06:20	0.012	18:20	0.083	0.040	0.040	0.19
11/16/2020	23:50	2.51	13:05	4.00	3.02	22:20	0.35	12:30	0.61	0.46	01:45	0.024	08:55	0.086	0.041	0.041	0.31
11/17/2020	04:10	1.98	19:05	4.64	2.78	04:00	0.23	19:05	0.78	0.41	04:00	0.011	19:05	0.116	0.037	0.037	0.20
11/18/2020	03:50	2.13	10:10	3.44	2.80	03:50	0.26	09:55	0.59	0.41	03:50	0.014	10:00	0.080	0.038	0.038	0.30
11/19/2020	02:50	2.15	03:05	4.20	2.83	04:45	0.24	12:35	0.67	0.42	02:50	0.014	12:45	0.090	0.038	0.038	0.50
11/20/2020	02:15	2.06	15:50	3.27	2.66	02:15	0.24	00:25	0.53	0.38	02:15	0.012	11:15	0.066	0.032	0.032	0.01
11/21/2020	03:25	2.01	11:15	3.78	2.67	03:25	0.23	11:25	0.60	0.39	03:25	0.011	11:25	0.074	0.033	0.033	-
11/22/2020	01:25	2.01	17:40	3.43	2.73	01:25	0.23	08:55	0.67	0.41	01:20	0.011	13:10	0.077	0.036	0.036	0.21
11/23/2020	03:55	2.20	13:00	3.29	2.74	04:10	0.21	05:10	0.63	0.41	04:10	0.015	05:10	0.080	0.037	0.037	0.14
11/24/2020	05:40	2.02	15:30	3.58	2.63	05:40	0.23	15:30	0.68	0.39	05:40	0.011	15:30	0.139	0.034	0.034	0.21
11/25/2020	03:05	2.11	18:30	3.22	2.67	02:40	0.25	10:25	0.52	0.40	03:05	0.013	18:25	0.063	0.034	0.034	0.05
11/26/2020	03:50	1.99	11:55	3.22	2.63	03:50	0.23	11:50	0.54	0.39	03:50	0.011	12:20	0.067	0.034	0.034	0.02
11/27/2020	04:20	1.90	19:05	3.08	2.53	02:20	0.21	18:55	0.55	0.36	02:20	0.009	18:55	0.064	0.031	0.031	-
11/28/2020	05:10	1.88	11:30	3.20	2.62	05:10	0.20	11:30	0.63	0.40	05:10	0.009	11:30	0.077	0.037	0.037	0.05
11/29/2020	05:30	2.01	13:50	3.51	2.60	08:40	0.22	13:45	0.70	0.38	05:30	0.011	13:45	0.084	0.032	0.032	-
11/30/2020	02:20	1.95	05:10	3.38	2.66	02:20	0.22	03:40	0.64	0.41	02:20	0.010	03:40	0.089	0.034	0.034	0.36
12/01/2020	02:20	1.96	21:30	3.26	2.58	02:20	0.22	10:35	0.64	0.39	02:20	0.010	10:35	0.076	0.032	0.032	-
12/02/2020	04:00	1.90	10:35	3.18	2.53	04:00	0.20	17:40	0.58	0.38	04:00	0.009	17:50	0.068	0.030	0.030	0.01
12/03/2020	04:05	1.91	18:35	3.17	2.52	02:30	0.21	20:50	0.61	0.38	02:35	0.009	20:50	0.070	0.032	0.032	-
12/04/2020	04:10	1.78	10:05	3.18	2.56	03:05	0.21	15:40	0.65	0.38	03:05	0.009	15:40	0.067	0.031	0.031	-
12/05/2020	02:10	1.89	13:30	3.28	2.54	07:45	0.18	11:00	0.59	0.38	02:10	0.009	11:35	0.073	0.034	0.034	0.03
12/06/2020	04:00	1.91	20:15	3.13	2.56	04:00	0.21	18:45	0.57	0.38	04:00	0.009	18:25	0.069	0.033	0.033	0.03
12/07/2020	03:45	1.86	21:10	3.03	2.52	02:20	0.20	20:20	0.70	0.44	02:15	0.009	21:10	0.080	0.038	0.038	-
12/08/2020	02:30	1.91	19:00	4.01	2.82	03:15	0.24	15:30	0.66	0.49	03:30	0.017	11:45	0.093	0.053	0.053	0.87
12/09/2020	05:50	2.06	02:25	3.59	2.71	05:50	0.25	23:15	0.72	0.40	05:50	0.012	19:40	0.075	0.037	0.037	0.17
12/10/2020	03:35	1.75	17:55	3.23	2.52	02:45	0.20	20:20	0.68	0.41	02:45	0.009	20:15	0.097	0.038	0.038	0.07
12/11/2020	05:15	1.86	12:50	3.21	2.57	05:10	0.20	19:25	0.64	0.44	05:10	0.009	19:25	0.075	0.041	0.041	0.02
12/12/2020	04:55	2.05	12:35	3.43	2.64	04:35	0.19	14:50	0.68	0.46	04:55	0.012	14:50	0.092	0.045	0.045	0.01
12/13/2020	05:15	1.89	08:50	3.62	2.64	05:15	0.20	16:10	0.63	0.45	05:00	0.009	10:55	0.091	0.045	0.045	0.24
12/14/2020	00:20	2.10	13:35	3.17	2.59	01:05	0.23	10:40	0.59	0.40	00:15	0.014	13:35	0.077	0.037	0.037	0.05
12/15/2020	02:35	1.83	15:45	6.49	2.68	02:30	0.21	15:40	1.17	0.46	02:30	0.009	15:45	0.237	0.047	0.047	0.58
12/16/2020	02:55	1.91	14:10	3.56	2.62	02:55	0.21	13:40	0.69	0.45	02:55	0.009	14:10	0.100	0.046	0.046	0.39
12/17/2020	03:30	1.92	12:45	3.30	2.58	03:30	0.21	12:45	0.71	0.45	03:30	0.009	12:45	0.092	0.043	0.043	0.08
12/18/2020	01:20	2.01	18:30	3.40	2.65	04:45	0.20	18:45	0.70	0.42	01:20	0.011	18:50	0.101	0.041	0.041	0.25
12/19/2020	03:25	1.97	21:05	3.51	2.66	03:25	0.22	20:55	0.72	0.46	03:30	0.011	20:55	0.107	0.048	0.048	0.37
12/20/2020	04:55	1.89	10:50	3.20	2.53	03:30	0.16	18:40	0.54	0.38	04:55	0.009	10:50	0.065	0.035	0.035	0.04
12/21/2020	04:05	2.05	16:05	6.72	2.98	04:05	0.24	16:00	0.85	0.46	04:05	0.012	16:05	0.223	0.052	0.052	1.07
12/22/2020	04:00	1.96	21:20	3.33	2.67	03:15	0.22	21:20	0.54	0.39	04:00	0.010	11:15	0.056	0.033	0.033	-
12/23/2020	05:05	2.25	11:35	3.60	2.95	04:00	0.30	09:30	0.60	0.43	05:05	0.017	11:35	0.058	0.036	0.036	-
12/24/2020	05:30	2.18	15:40	3.99	2.99	05:30	0.32	15:40	0.59	0.45	05:30	0.017	15:40	0.073	0.038	0.038	-
12/25/2020	04:45	2.03	15:10	4.31	2.97	04:40	0.30	15:10	0.63	0.44	04:45	0.014	15:10	0.086	0.038	0.038	0.49
12/26/2020	03:15	2.17	17:45	4.09	2.93	03:15	0.32	17:45	0.60	0.44	03:15	0.017	17:45	0.077	0.037	0.037	0.02
12/27/2020	05:55	2.22	08:55	3.97	2.99	05:05	0.33	08:55	0.59	0.45	05:55	0.018	08:55	0.072	0.039	0.039	0.13
12/28/2020	04:05	2.16	12:00	3.75	2.95	03:30	0.32	12:00	0.56	0.44	03:30	0.017	12:00	0.063	0.037	0.037	-
12/29/2020	02:50	2.19	19:25	4.45	2.99	02:50	0.32	19:25	0.65	0.45	02:55	0.017	19:25	0.093	0.038	0.038	0.14
12/30/2020	00:00	2.69	05:50	4.37	3.31	00:00	0.40	05:45	0.64	0.49	00:00	0.029	05:45	0.089	0.048	0.048	0.78
12/31/2020	05:45	2.18	01:45	3.82	2.99	05:45	0.32	01:45	0.57	0.45	05:45	0.017	01:45	0.066	0.038	0.038	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			8.143	30.65
Average	3.07	0.48	0.041	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A17_80957

Site Address /Location:	619 Auburn Way S			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Drive	Latitude:	47.301528	Pipe Size (H x W): 9.50 X 9.50	Pipe Shape: Circular
		Longitude:	-122.225463		



Manhole #	System Characteristics
A1780957	Commercial
Access	**Traffic**
Drive	Light



Site Sketch Profile View or Photo

Installation Information	
Installation Date:	Installation Type:
Thursday, September 24, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi
Installation Confirmation:	
Time	
14:59:00 AM	
Depth of Flow (Wet DOF) (in)	
2.63	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.94	N/A
Silt (in)	Silt Type
0	

Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
6	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

AUB_A1a_30822

Site Commentary

SITE INFORMATION

Pipe	Elliptical (10 in H x 9.88 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	1.73	0.71	0.029
Minimum	1.14	0.25	0.008
Maximum	3.27	2.37	0.113
Min Time	12/31/2020 4:00:00 AM	01/20/2021 9:00:00 PM	11/03/2020 2:00:00 AM
Max Time	04/02/2021 7:00:00 PM	12/11/2020 12:00:00 PM	12/10/2020 6:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

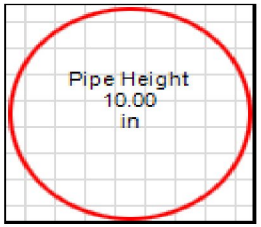
Percent Uptime	
DFINAL (in)	99.842
VFINAL (ft/s)	99.842
QFINAL (MGD - Total MG)	99.842

Hydrograph Report

AUB_A1a_30822

Flow Monitor

AUB_A1a_30822



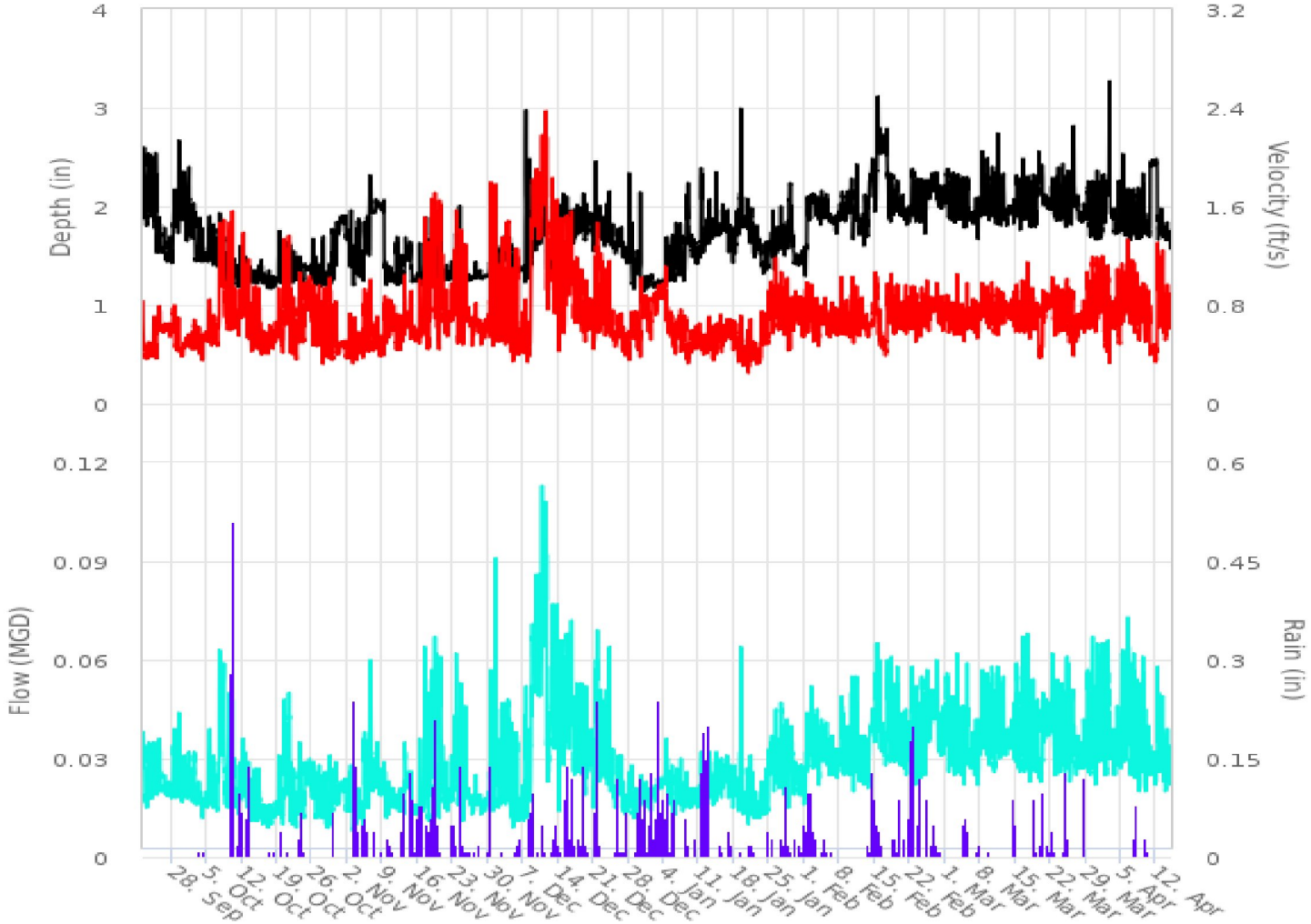
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL





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Tukwila, WA 98168

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Scattergraph Report

AUB_A1a_30822

Flow Monitor

AUB_A1a_30822

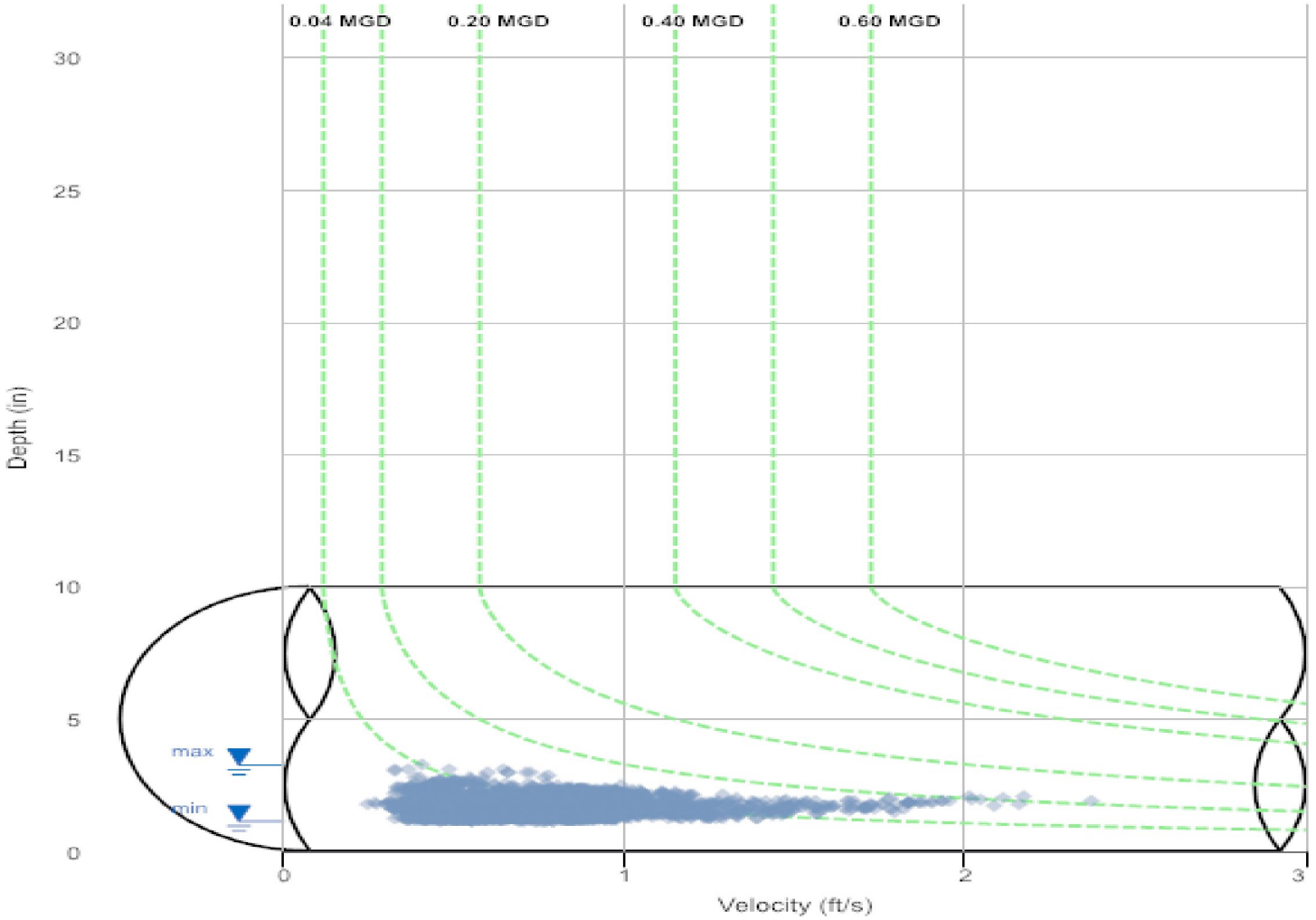
Pipe Height
10.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A1a_30822Pipe: Elliptical (10 in H x 9.88 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	18:55	1.17	10:45	1.35	1.25	11:30	0.48	20:20	0.92	0.70	11:20	0.013	18:10	0.023	0.018	0.018	0.51
01/02/2021	00:20	1.16	04:25	1.33	1.21	10:55	0.70	21:05	0.99	0.84	11:00	0.017	20:40	0.025	0.020	0.020	1.69
01/03/2021	07:55	1.19	19:45	1.30	1.23	13:50	0.78	00:00	1.00	0.91	13:50	0.019	19:45	0.026	0.022	0.022	0.65
01/04/2021	00:40	1.24	22:00	1.78	1.46	19:05	0.52	08:30	1.25	0.81	19:05	0.015	12:05	0.043	0.025	0.025	0.48
01/05/2021	00:45	1.12	16:50	1.83	1.45	23:10	0.42	09:25	0.97	0.61	21:20	0.011	09:25	0.033	0.019	0.019	0.52
01/06/2021	05:20	1.18	11:50	2.18	1.49	11:20	0.31	16:50	0.79	0.55	04:25	0.012	14:05	0.031	0.018	0.018	0.22
01/07/2021	23:20	1.21	08:30	1.94	1.47	12:20	0.33	10:30	1.04	0.61	19:30	0.013	10:30	0.042	0.019	0.019	-
01/08/2021	00:05	1.24	18:05	2.82	1.71	15:20	0.30	07:15	0.81	0.53	00:05	0.014	18:55	0.033	0.020	0.020	0.22
01/09/2021	16:25	1.44	00:40	1.95	1.62	00:15	0.36	12:25	0.66	0.47	07:00	0.013	13:00	0.026	0.017	0.017	-
01/10/2021	18:00	1.34	08:25	1.77	1.54	17:05	0.34	12:20	0.70	0.53	17:05	0.012	07:55	0.023	0.018	0.018	0.07
01/11/2021	03:05	1.42	11:55	2.55	1.72	20:25	0.38	02:15	0.68	0.52	23:10	0.012	11:00	0.042	0.021	0.021	1.06
01/12/2021	22:15	1.48	23:20	1.94	1.69	11:00	0.30	23:00	0.84	0.50	00:25	0.012	23:20	0.040	0.019	0.019	2.10
01/13/2021	07:05	1.52	04:35	2.36	1.80	18:10	0.30	12:50	0.81	0.52	18:10	0.013	03:10	0.038	0.022	0.022	0.09
01/14/2021	05:45	1.63	08:25	2.49	1.82	13:55	0.28	10:25	0.82	0.54	07:15	0.013	10:25	0.052	0.023	0.023	0.01
01/15/2021	09:05	1.64	17:05	2.35	1.82	14:25	0.25	14:30	0.82	0.56	01:15	0.013	14:30	0.046	0.024	0.024	0.09
01/16/2021	22:30	1.52	19:40	2.30	1.79	11:05	0.37	20:00	0.96	0.60	22:25	0.016	20:00	0.041	0.025	0.025	-
01/17/2021	19:30	1.39	10:35	2.10	1.67	19:40	0.38	13:20	0.90	0.58	19:40	0.012	10:35	0.034	0.022	0.022	0.10
01/18/2021	01:25	1.46	19:25	2.41	1.77	23:35	0.30	06:30	0.81	0.50	19:45	0.012	02:40	0.035	0.021	0.021	-
01/19/2021	16:20	1.61	07:50	3.38	1.99	23:25	0.24	07:50	0.81	0.47	19:10	0.011	07:50	0.084	0.024	0.024	0.01
01/20/2021	14:00	1.64	16:25	2.43	1.86	20:55	0.22	15:05	1.01	0.37	03:20	0.010	15:05	0.048	0.017	0.017	-
01/21/2021	20:45	1.47	13:10	2.26	1.76	04:50	0.19	16:15	0.94	0.43	04:50	0.007	08:45	0.043	0.018	0.018	0.11
01/22/2021	07:20	1.46	13:45	2.08	1.64	21:30	0.22	11:00	1.03	0.39	01:10	0.008	11:00	0.038	0.015	0.015	-
01/23/2021	19:30	1.30	03:25	1.70	1.48	02:40	0.20	12:00	0.83	0.49	02:40	0.007	12:00	0.026	0.016	0.016	-
01/24/2021	06:25	1.33	11:25	2.01	1.45	19:10	0.32	11:35	1.15	0.57	19:10	0.009	11:35	0.042	0.018	0.018	0.16
01/25/2021	12:25	1.35	18:35	2.28	1.61	18:20	0.44	13:45	1.22	0.82	17:45	0.016	20:20	0.053	0.030	0.030	0.04
01/26/2021	06:25	1.36	01:25	1.93	1.65	17:00	0.53	08:10	1.32	0.82	18:50	0.020	09:15	0.053	0.031	0.031	-
01/27/2021	01:50	1.52	08:30	2.38	1.70	23:50	0.53	11:30	1.37	0.83	01:50	0.018	12:45	0.060	0.033	0.033	0.14
01/28/2021	01:55	1.49	23:15	2.11	1.72	18:30	0.38	15:00	1.29	0.73	18:25	0.013	15:00	0.055	0.029	0.029	0.24
01/29/2021	23:10	1.41	08:35	2.41	1.81	19:00	0.35	12:05	1.27	0.72	19:00	0.012	08:40	0.051	0.030	0.030	0.03
01/30/2021	10:50	1.36	14:20	1.64	1.45	14:45	0.54	14:00	1.10	0.80	21:30	0.016	14:00	0.035	0.025	0.025	0.07
01/31/2021	18:50	1.32	18:25	1.69	1.48	15:20	0.39	20:35	1.03	0.73	22:05	0.012	20:35	0.034	0.024	0.024	0.12
02/01/2021	05:40	1.28	09:00	2.23	1.71	01:15	0.48	12:10	1.30	0.73	05:00	0.015	12:10	0.056	0.029	0.029	0.82
02/02/2021	01:45	1.85	09:35	2.26	2.03	19:50	0.40	10:30	1.23	0.74	19:50	0.021	10:30	0.066	0.037	0.037	0.31
02/03/2021	05:10	1.76	12:30	2.14	2.00	19:25	0.36	08:30	1.05	0.69	19:25	0.017	08:30	0.053	0.034	0.034	0.06
02/04/2021	05:55	1.75	11:20	2.22	1.95	00:10	0.38	07:55	0.99	0.71	00:10	0.017	07:55	0.051	0.034	0.034	0.07
02/05/2021	08:10	1.84	10:25	2.16	1.94	17:25	0.46	07:15	0.98	0.69	12:35	0.022	10:35	0.050	0.033	0.033	0.01
02/06/2021	15:25	1.81	02:20	2.18	1.86	02:05	0.48	13:25	0.85	0.64	02:05	0.021	13:30	0.039	0.028	0.028	0.01
02/07/2021	09:00	1.72	14:15	2.09	1.85	12:55	0.41	15:55	1.06	0.66	12:55	0.017	15:55	0.050	0.029	0.029	-
02/08/2021	21:35	1.73	17:45	2.30	1.98	13:40	0.42	07:55	1.16	0.71	21:35	0.019	08:00	0.057	0.035	0.035	-
02/09/2021	02:05	1.81	17:45	2.28	1.99	21:05	0.42	12:40	0.99	0.66	23:20	0.020	12:40	0.055	0.033	0.033	-
02/10/2021	16:55	1.59	10:05	2.62	1.99	03:50	0.42	13:10	1.21	0.67	18:20	0.018	13:10	0.066	0.034	0.034	-
02/11/2021	22:30	1.69	12:25	2.51	1.91	19:50	0.46	12:50	1.10	0.69	19:50	0.020	08:55	0.069	0.032	0.032	-
02/12/2021	19:10	1.54	09:30	2.10	1.77	01:15	0.49	10:00	1.19	0.69	18:35	0.019	09:55	0.052	0.029	0.029	-
02/13/2021	05:25	1.69	18:15	2.70	1.93	12:45	0.45	18:25	0.92	0.61	12:10	0.018	18:15	0.055	0.029	0.029	0.08
02/14/2021	19:30	1.81	13:55	2.63	2.29	11:00	0.57	19:15	1.13	0.66	18:55	0.031	19:15	0.080	0.040	0.040	0.71
02/15/2021	01:50	1.80	17:00	3.23	2.48	18:15	0.49	09:40	1.21	0.77	05:55	0.031	09:40	0.087	0.051	0.051	0.78
02/16/2021	14:15	2.50	16:40	2.91	2.61	17:30	0.35	01:50	0.67	0.50	17:30	0.024	06:10	0.047	0.036	0.036	0.07
02/17/2021	20:20	1.76	10:10	3.10	2.36	03:40	0.35	11:25	1.33	0.65	03:40	0.025	11:25	0.085	0.040	0.040	-
02/18/2021	01:00	1.80	10:05	2.52	2.08	20:40	0.48	09:10	1.39	0.78	20:40	0.024	08:45	0.088	0.041	0.041	0.09
02/19/2021	20:35	1.77	12:30	2.40	2.06	04:20	0.47	12:05	1.41	0.74	21:55	0.023	12:05	0.088	0.039	0.039	0.17
02/20/2021	13:55	1.75	16:00	2.37	1.95	04:50	0.49	14:05	1.20	0.71	04:50	0.022	14:05	0.063	0.034	0.034	0.07
02/21/2021	13:05	1.56	13:40	2.17	1.90	00:25	0.44	05:05	1.07	0.77	00:25	0.019	13:40	0.055	0.035	0.035	0.42
02/22/2021	22:35	1.84	14:20	2.65	2.12	02:45	0.47	09:20	1.43	0.77	02:45	0.023	09:20	0.088	0.042	0.042	0.98
02/23/2021	04:45	1.82	11:35	2.39	2.07	03:25	0.38	08:05	1.18	0.70	04:45	0.016	08:05	0.071	0.037	0.037	0.27
02/24/2021	23:05	1.69	11:10	2.57	2.05	18:35	0.50	11:10	1.31	0.73	22:15	0.021	11:10	0.092	0.038	0.038	-
02/25/2021	00:05	1.62	07:25	2.41	2.10	01:20	0.43	10:10	1.22	0.76	01:45	0.016	10:10	0.070	0.041	0.041	0.18
02/26/2021	11:05	2.05	11:20	2.62	2.21	15:40	0.58	07:05	1.26	0.77	00:05	0.032	07:05	0.069	0.044	0.044	0.10
02/27/2021	19:20	1.98	10:50	2.65	2.14	17:45	0.64	08:15	1.01	0.78	19:20	0.031	10:50	0.075	0.043	0.043	0.02
02/28/2021	09:30	1.96	16:00	2.69	2.06	14:55	0.48	16:00	1.10	0.70	14:05	0.025	16:00	0.083	0.037	0.037	0.02
03/01/2021	19:15	1.86	11:00	2.75	2.13	19:15	0.56	14:10	1.43	0.73	18:55	0.025	14:10	0.100	0.040	0.040	-
03/02/2021	21:20	1.75	15:25	2.61	2.04	21:20	0.48	15:20	1.06	0.68	19:55	0.020	15:20	0.066	0.035	0.035	-
03/03/2021	20:30	1.59	16:10	2.51	2.05	20:30	0.37	09:20	1.40	0.73	20:30	0.013	09:20	0.085	0.038	0.038	-
03/04/2021	21:00	1.63	15:40	2.46	2.04	21:00	0.39	08:30	1.05	0.66	21:00	0.015	08:30	0.063	0.034	0.034	0.20
03/05/2021	18:50	1.66	13:15	2.39	2.03	18:50	0.41	10:35	1.13	0.71	18:50	0.016	10:35	0.070	0.036	0.036	0.05
03/06/2021	15:20	1.65	14:35	2.20	1.90	03:05	0.42	15:55	0.93	0.68	03:05	0.016	14:35	0.050	0.031	0.031	-
03/07/2021	10:15	1.63	05:40	2.65	1.91	14:30	0.40	05:20	1.15	0.66	14:30	0.015	05:20	0.063	0.031	0.031	0.04
03/08/2021	00:05	1.77	09:45	3.04	2.09	09:40	0.46	08:25	1.11	0.81	23:30	0.030	09:15	0.083	0.043	0.043	-
03/09/2021	21:05	1.82	10:30	2.74	2.09	10:20	0.45	13:30	1.15	0.76	23:20	0.024	13:30	0.073	0.041	0.041	0.01
03/10/2021	22:05	1.74	16:55	2.59	2.09	22:05	0.49	08:55	1.14	0.74	22:05	0.020	08:55	0.069	0.040	0.040	-
03/11/2021	06:40	1.76	12:40	2.93	2.10	12:30	0.47	07:55	1.16	0.76	01:00	0.024	07:55	0.067	0.041	0.041	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	23:40	1.67	15:10	2.97	2.03	18:05	0.56	15:10	1.09	0.78	23:40	0.025	15:10	0.094	0.040	0.040	-
03/13/2021	00:00	1.65	20:10	2.02	1.91	22:20	0.64	13:25	0.88	0.76	00:00	0.026	10:15	0.040	0.035	0.035	-
03/14/2021	16:00	1.78	17:20	2.22	1.96	14:05	0.56	17:25	1.31	0.75	22:30	0.026	17:20	0.070	0.036	0.036	0.30
03/15/2021	23:50	1.64	07:25	2.47	2.05	22:30	0.50	07:20	1.26	0.74	23:00	0.020	07:20	0.080	0.039	0.039	-
03/16/2021	05:10	1.67	13:00	2.70	2.07	22:00	0.48	13:30	1.24	0.77	22:00	0.020	12:50	0.082	0.041	0.041	-
03/17/2021	23:15	1.75	12:00	2.43	2.04	21:30	0.48	09:35	1.25	0.75	00:30	0.021	09:35	0.075	0.039	0.039	-
03/18/2021	22:15	1.64	13:45	2.74	2.00	23:15	0.50	07:55	1.05	0.71	00:05	0.022	13:45	0.078	0.036	0.036	0.11
03/19/2021	06:30	1.76	15:25	2.67	2.19	19:50	0.32	11:45	0.94	0.60	19:50	0.021	11:45	0.058	0.033	0.033	0.03
03/20/2021	12:10	1.81	08:50	2.52	2.20	00:10	0.33	13:05	1.15	0.60	00:05	0.020	13:10	0.067	0.033	0.033	0.17
03/21/2021	15:45	1.95	16:35	2.18	2.04	00:55	0.69	12:15	1.05	0.83	00:55	0.034	12:15	0.058	0.043	0.043	0.07
03/22/2021	18:00	1.69	08:35	2.54	2.08	21:25	0.43	08:05	1.21	0.78	20:10	0.019	08:05	0.078	0.041	0.041	0.11
03/23/2021	22:45	1.69	09:50	2.50	2.05	10:00	0.44	09:30	1.24	0.71	22:50	0.020	09:30	0.080	0.037	0.037	-
03/24/2021	20:50	1.81	11:55	2.67	2.05	11:55	0.43	07:10	1.12	0.72	21:25	0.020	09:50	0.072	0.038	0.038	0.34
03/25/2021	03:55	1.78	14:00	2.54	2.05	20:35	0.33	08:05	1.24	0.75	20:35	0.016	08:05	0.079	0.039	0.039	0.27
03/26/2021	02:20	1.80	14:00	2.89	2.13	14:25	0.36	11:25	1.20	0.70	02:15	0.023	11:25	0.067	0.037	0.037	-
03/27/2021	16:25	1.85	09:50	2.34	1.95	07:20	0.42	09:50	0.96	0.61	10:20	0.020	09:50	0.059	0.029	0.029	-
03/28/2021	05:15	1.83	16:40	2.20	1.90	17:45	0.43	08:45	1.02	0.70	17:45	0.020	08:45	0.052	0.032	0.032	0.37
03/29/2021	22:30	1.69	13:45	2.44	1.97	18:20	0.45	07:35	1.22	0.80	19:50	0.018	13:40	0.072	0.040	0.040	-
03/30/2021	23:50	1.66	12:25	2.37	1.92	22:45	0.51	10:05	1.48	0.84	22:45	0.020	10:05	0.090	0.040	0.040	-
03/31/2021	01:00	1.66	07:55	2.63	1.91	07:50	0.52	09:05	1.36	0.85	00:00	0.020	09:05	0.085	0.040	0.040	-
04/01/2021	00:00	1.66	14:10	2.61	2.03	17:05	0.38	07:10	1.58	0.83	18:15	0.020	14:10	0.107	0.042	0.042	-
04/02/2021	06:45	1.85	20:30	3.37	2.38	16:20	0.30	11:20	1.47	0.68	04:25	0.023	13:25	0.085	0.041	0.041	-
04/03/2021	22:10	1.69	17:40	2.13	1.87	17:45	0.45	17:50	1.12	0.74	19:05	0.019	17:50	0.061	0.033	0.033	-
04/04/2021	10:10	1.67	20:55	2.38	1.94	19:45	0.42	12:25	1.33	0.74	19:45	0.024	12:25	0.060	0.034	0.034	-
04/05/2021	18:25	1.63	14:10	2.79	1.97	00:35	0.53	09:50	1.56	0.87	18:15	0.021	09:50	0.112	0.043	0.043	-
04/06/2021	05:40	1.64	10:10	2.39	1.91	17:10	0.52	10:10	1.55	0.95	21:05	0.021	10:10	0.099	0.045	0.045	-
04/07/2021	02:15	1.66	08:25	2.42	1.90	19:15	0.44	14:20	1.63	0.85	19:15	0.017	10:35	0.100	0.040	0.040	0.22
04/08/2021	17:35	1.63	11:30	2.36	1.88	19:30	0.38	15:30	1.39	0.78	19:30	0.015	13:35	0.081	0.036	0.036	-
04/09/2021	04:15	1.67	10:20	2.54	1.91	22:05	0.39	14:30	1.31	0.79	22:05	0.015	10:20	0.083	0.037	0.037	0.03
04/10/2021	17:15	1.66	23:05	2.48	1.87	20:05	0.36	15:40	1.15	0.69	15:45	0.018	12:35	0.049	0.030	0.030	0.02
04/11/2021	12:40	2.28	02:45	2.55	2.44	20:50	0.31	02:45	0.60	0.43	20:50	0.020	02:45	0.042	0.028	0.028	-
04/12/2021	11:35	1.62	01:30	2.56	1.98	00:40	0.33	08:05	1.69	0.76	18:40	0.019	08:05	0.079	0.035	0.035	-
04/13/2021	23:50	1.63	02:10	2.00	1.78	21:40	0.41	08:25	1.51	0.77	21:40	0.016	08:25	0.065	0.032	0.032	-
04/14/2021	21:40	1.55	05:20	1.88	1.68	00:20	0.44	07:15	1.11	0.73	00:20	0.017	07:15	0.047	0.028	0.028	-
09/22/2020	22:50	1.79	13:40	2.79	2.19	18:30	0.35	08:05	0.86	0.45	22:40	0.015	08:05	0.041	0.026	0.017	-
09/23/2020	01:05	1.80	10:00	2.73	2.15	00:45	0.36	09:55	0.55	0.42	00:45	0.015	09:55	0.042	0.024	0.024	-
09/24/2020	23:20	1.53	19:50	2.78	2.04	23:00	0.26	10:25	0.94	0.50	23:00	0.015	20:35	0.068	0.025	0.025	-
09/25/2020	00:05	1.52	10:25	2.17	1.68	18:10	0.50	14:55	0.90	0.65	00:00	0.019	08:10	0.048	0.025	0.025	-
09/26/2020	21:45	1.44	15:45	2.62	1.54	15:40	0.47	15:55	0.84	0.60	06:50	0.018	15:55	0.041	0.020	0.020	-
09/27/2020	23:25	1.43	12:45	1.98	1.53	15:20	0.46	11:25	0.75	0.60	23:40	0.017	12:45	0.032	0.020	0.020	-
09/28/2020	05:10	1.39	15:55	2.25	1.76	22:25	0.43	13:50	0.85	0.61	03:25	0.017	13:50	0.044	0.025	0.025	-
09/29/2020	07:15	1.63	10:10	2.77	2.04	13:10	0.38	09:30	0.81	0.47	23:55	0.017	10:05	0.050	0.024	0.024	-
09/30/2020	22:35	1.64	08:40	2.64	2.01	07:40	0.37	17:25	0.60	0.46	00:00	0.017	08:40	0.040	0.023	0.023	-
10/01/2020	01:35	1.64	12:25	2.65	1.87	11:50	0.30	10:15	0.81	0.51	01:40	0.017	12:40	0.047	0.023	0.023	-
10/02/2020	16:10	1.33	13:45	2.55	1.73	17:05	0.26	13:45	1.04	0.53	17:05	0.008	13:45	0.073	0.022	0.022	-
10/03/2020	21:00	1.43	23:20	2.07	1.58	23:50	0.32	10:30	0.69	0.51	23:45	0.014	15:40	0.028	0.018	0.018	0.01
10/04/2020	16:45	1.38	06:15	1.89	1.51	16:45	0.30	17:35	0.68	0.49	16:45	0.009	06:20	0.030	0.016	0.016	0.01
10/05/2020	07:05	1.29	11:10	2.05	1.59	10:40	0.23	07:10	0.97	0.61	07:25	0.009	11:10	0.046	0.023	0.023	-
10/06/2020	03:50	1.39	07:45	1.93	1.59	12:05	0.32	07:45	0.85	0.59	12:05	0.009	07:45	0.040	0.021	0.021	-
10/07/2020	01:15	1.39	13:15	2.19	1.59	03:45	0.45	13:45	1.61	0.85	02:30	0.013	13:15	0.081	0.031	0.031	-
10/08/2020	17:25	1.15	07:25	1.86	1.43	17:25	0.57	11:00	1.83	1.05	17:25	0.013	10:25	0.073	0.033	0.033	-
10/09/2020	23:50	1.16	14:55	1.61	1.32	05:05	0.53	15:00	1.91	0.92	05:05	0.013	15:00	0.069	0.026	0.026	0.64
10/10/2020	19:55	1.21	01:55	1.68	1.35	00:45	0.57	02:50	1.80	0.79	20:20	0.014	01:55	0.064	0.022	0.022	1.04
10/11/2020	06:50	1.18	22:10	1.82	1.29	08:35	0.48	11:25	1.38	0.72	08:35	0.011	22:15	0.045	0.019	0.019	0.53
10/12/2020	09:20	1.21	06:10	1.74	1.30	16:40	0.52	08:05	1.87	0.90	16:40	0.014	07:55	0.051	0.024	0.024	-
10/13/2020	11:00	1.18	16:15	1.93	1.28	23:05	0.41	08:30	1.66	0.71	22:20	0.010	16:15	0.073	0.019	0.019	0.61
10/14/2020	07:00	1.20	09:10	1.47	1.27	00:10	0.43	10:45	1.08	0.63	00:00	0.011	12:00	0.031	0.016	0.016	-
10/15/2020	02:35	1.19	14:15	1.62	1.33	23:10	0.36	09:05	1.07	0.59	02:25	0.010	09:05	0.034	0.016	0.016	-
10/16/2020	13:45	1.19	10:20	1.44	1.27	01:05	0.38	10:20	1.00	0.50	03:00	0.010	10:20	0.031	0.013	0.013	-
10/17/2020	07:35	1.14	08:10	1.51	1.23	04:30	0.39	14:25	0.85	0.50	03:10	0.009	10:15	0.023	0.012	0.012	0.01
10/18/2020	10:35	1.16	15:50	1.49	1.25	05:05	0.43	15:50	0.99	0.54	04:50	0.011	15:50	0.032	0.014	0.014	0.03
10/19/2020	05:55	1.20	11:35	2.72	1.31	11:25	0.38	11:20	1.16	0.62	01:20	0.011	11:20	0.051	0.017	0.017	0.05
10/20/2020	04:10	1.18	10:35	1.72	1.35	02:50	0.39	10:35	1.91	0.74	03:05	0.009	10:35	0.076	0.022	0.022	-
10/21/2020	20:30	1.22	10:20	1.74	1.42	20:45	0.34	06:40	1.64	0.87	20:30	0.008	09:50	0.060	0.027	0.027	0.01
10/22/2020	03:20	1.21	09:15	1.67	1.34	19:55	0.29	10:20	1.01	0.55	18:45	0.008	10:20	0.035	0.016	0.016	-
10/23/2020	21:35	1.15	12:15	1.75	1.30	00:00	0.36	11:05	1.54	0.68	00:00	0.009	11:05	0.053	0.019	0.019	0.20
10/24/2020	06:55	1.16	14:55	1.50	1.31	02:15	0.46	09:25	1.18	0.73	02:10	0.011	14:50	0.035	0.020	0.020	0.02
10/25/2020	16:20	1.30	19:05	1.43	1.36	20:55	0.52	15:15	1.19	0.85	20:55	0.015	12:45	0.036	0.024	0.024	-
10/26/2020	16:45	1.19	14:50	1.80	1.36	03:10	0.44	13:20	1.46	0.69	17:40	0.011	08:25	0.046	0.020	0.020	-
10/27/2020	16:10	1.18	05:55	1.92	1.27	01:50	0.42	09:20	1.33	0.62	00:10	0.011	09:20	0.045	0.016	0.016	-
10/28/2020	10:35	1.19	06:30	1.78	1.35	01:50	0.30	11:10	1.37	0.56	18:10	0.009	11:15	0.045	0.015	0.015	-
10/29/2020	02:40	1.18	21:35	1.83	1.35	07:45	0.33	11:55	1.32	0.58	00:50	0.008	12:00	0.042	0.016	0.016	-
10/30/2020	08:30	1.22	11:25	2.10	1.56	17:55	0.31	17:40	1.36	0.62	17:55	0.012	17:40	0.069	0.021	0.021	0.10
10/31/2020	00:10	1.30	20:05	1.93	1.80	00:10	0.38	20:05	0.52	0.45	00:10	0.010	20:00	0.024	0.019	0.019	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	22:50	1.65	15:35	2.04	1.80	22:40	0.36	15:30	0.61	0.44	17:55	0.014	15:30	0.031	0.019	0.019	-
11/02/2020	17:50	1.23	16:25	2.50	1.63	08:55	0.24	13:20	1.00	0.48	08:55	0.007	16:30	0.049	0.018	0.018	-
11/03/2020	19:10	1.18	19:50	1.85	1.42	01:40	0.27	09:55	1.36	0.43	01:35	0.007	10:10	0.047	0.013	0.013	0.83
11/04/2020	10:40	1.23	01:20	2.11	1.51	00:05	0.35	14:50	0.96	0.46	09:00	0.009	10:30	0.036	0.015	0.015	0.09
11/05/2020	00:50	1.21	09:15	2.56	1.55	03:35	0.35	11:25	1.44	0.63	01:10	0.009	11:25	0.061	0.023	0.023	0.34
11/06/2020	08:30	1.28	10:00	2.88	1.91	09:20	0.26	08:55	1.54	0.66	01:00	0.013	13:00	0.090	0.032	0.032	0.10
11/07/2020	03:35	1.93	15:35	2.14	1.98	14:35	0.37	14:05	0.77	0.52	02:35	0.018	14:05	0.039	0.025	0.025	0.07
11/08/2020	20:55	1.95	16:55	2.11	1.99	14:00	0.32	17:15	0.83	0.48	11:05	0.016	17:15	0.042	0.024	0.024	0.01
11/09/2020	19:05	1.20	08:00	2.53	1.55	05:15	0.36	08:25	1.52	0.57	08:10	0.011	07:50	0.076	0.019	0.019	0.04
11/10/2020	07:50	1.19	14:00	1.65	1.29	10:50	0.42	07:00	1.27	0.65	08:20	0.011	07:20	0.036	0.017	0.017	0.03
11/11/2020	07:35	1.17	20:50	2.14	1.35	20:00	0.34	06:55	1.19	0.64	19:55	0.012	06:55	0.030	0.018	0.018	-
11/12/2020	17:25	1.16	12:50	2.00	1.31	12:10	0.35	20:45	0.96	0.59	07:55	0.011	12:50	0.038	0.016	0.016	0.16
11/13/2020	04:55	1.15	10:30	1.84	1.42	01:25	0.46	10:40	1.47	0.72	06:05	0.012	10:40	0.057	0.022	0.022	0.38
11/14/2020	21:05	1.22	05:10	1.77	1.45	14:55	0.50	16:40	1.26	0.70	22:00	0.012	16:40	0.038	0.022	0.022	0.47
11/15/2020	16:50	1.21	16:00	1.37	1.26	12:10	0.47	00:45	0.88	0.57	11:40	0.012	00:45	0.023	0.015	0.015	0.19
11/16/2020	21:15	1.16	09:25	1.84	1.30	07:25	0.43	10:00	2.38	0.62	07:25	0.011	10:00	0.074	0.017	0.017	0.31
11/17/2020	00:45	1.13	16:55	2.62	1.52	18:40	0.39	09:45	1.99	0.90	00:45	0.012	09:35	0.092	0.032	0.032	0.20
11/18/2020	02:00	1.22	08:05	1.67	1.38	00:15	0.41	17:00	1.84	0.89	02:20	0.010	16:15	0.066	0.027	0.027	0.30
11/19/2020	06:55	1.21	11:20	1.77	1.37	16:30	0.47	11:20	1.94	1.10	22:20	0.014	11:20	0.081	0.032	0.032	0.50
11/20/2020	20:40	1.25	14:20	2.88	1.40	06:40	0.41	09:35	1.99	1.00	06:40	0.011	09:35	0.079	0.031	0.031	0.01
11/21/2020	02:25	1.24	17:45	1.66	1.28	09:05	0.42	17:40	1.71	0.67	09:05	0.011	17:40	0.063	0.018	0.018	-
11/22/2020	21:40	1.23	17:10	1.60	1.31	02:25	0.50	16:30	1.61	0.73	02:25	0.013	17:10	0.056	0.020	0.020	0.21
11/23/2020	02:45	1.31	14:20	1.90	1.49	23:25	0.41	07:25	1.81	0.93	23:20	0.014	14:50	0.078	0.031	0.031	0.14
11/24/2020	21:50	1.20	11:05	2.25	1.45	02:55	0.39	12:40	2.31	0.83	20:50	0.011	14:25	0.082	0.027	0.027	0.21
11/25/2020	05:40	1.18	08:20	1.77	1.34	00:10	0.46	12:10	2.34	0.78	00:05	0.011	12:10	0.087	0.022	0.022	0.05
11/26/2020	06:40	1.24	00:00	1.31	1.27	19:15	0.39	00:40	0.80	0.66	19:15	0.010	00:40	0.021	0.017	0.017	0.02
11/27/2020	18:20	1.26	12:15	1.47	1.32	10:15	0.48	12:40	1.06	0.68	03:10	0.013	12:40	0.033	0.018	0.018	-
11/28/2020	19:00	1.25	11:35	1.36	1.31	15:45	0.40	13:45	0.76	0.60	15:35	0.011	13:45	0.021	0.016	0.016	0.05
11/29/2020	00:00	1.26	12:40	1.32	1.29	11:10	0.44	17:50	0.77	0.63	11:10	0.012	17:50	0.020	0.016	0.016	-
11/30/2020	00:00	1.29	17:25	2.40	1.41	20:40	0.40	13:25	2.46	0.80	07:15	0.012	17:25	0.120	0.024	0.024	0.36
12/01/2020	22:45	1.39	14:10	2.47	1.57	14:50	0.38	08:40	2.58	0.95	14:50	0.013	12:50	0.112	0.036	0.036	-
12/02/2020	05:05	1.38	09:10	1.85	1.50	23:55	0.37	11:25	2.52	0.86	01:10	0.012	11:20	0.089	0.029	0.029	0.01
12/03/2020	22:10	1.43	10:55	2.21	1.54	08:55	0.35	15:15	2.12	0.94	09:55	0.012	11:00	0.077	0.032	0.032	-
12/04/2020	23:55	1.29	08:30	1.88	1.48	23:45	0.32	16:25	1.89	0.86	22:30	0.009	08:30	0.085	0.028	0.028	-
12/05/2020	00:00	1.30	18:10	1.61	1.38	00:05	0.32	19:55	1.66	0.75	00:05	0.008	11:35	0.050	0.022	0.022	0.03
12/06/2020	00:00	1.34	13:05	1.41	1.36	01:10	0.37	21:40	0.94	0.50	01:10	0.010	21:40	0.027	0.014	0.014	0.03
12/07/2020	07:45	1.18	14:20	3.18	1.76	21:05	0.23	10:40	1.34	0.53	07:35	0.009	10:40	0.094	0.022	0.022	-
12/08/2020	17:40	1.22	08:30	2.67	1.86	05:20	0.24	23:25	2.13	0.91	12:10	0.011	22:20	0.086	0.039	0.039	0.87
12/09/2020	10:35	1.50	13:45	2.58	1.67	10:35	1.31	13:40	2.50	1.63	10:35	0.043	13:45	0.167	0.063	0.063	0.17
12/10/2020	03:25	1.60	18:25	2.22	1.77	09:10	1.29	18:25	2.25	1.67	09:10	0.046	18:25	0.130	0.071	0.071	0.07
12/11/2020	18:45	1.31	10:25	2.37	1.72	21:20	0.53	12:35	2.56	1.63	21:20	0.015	13:40	0.139	0.068	0.068	0.02
12/12/2020	12:10	1.32	23:35	2.26	1.51	04:00	0.79	19:25	2.11	1.33	01:45	0.023	19:10	0.093	0.045	0.045	0.01
12/13/2020	14:50	1.53	06:15	2.09	1.81	08:25	0.66	18:35	1.90	1.12	08:25	0.024	18:35	0.096	0.048	0.048	0.24
12/14/2020	04:15	1.41	20:00	2.30	1.83	04:05	0.38	14:55	1.73	1.02	04:05	0.012	14:55	0.079	0.045	0.045	0.05
12/15/2020	20:35	1.57	00:50	2.25	1.86	03:30	0.48	15:40	2.06	1.00	01:25	0.023	10:25	0.092	0.044	0.044	0.58
12/16/2020	02:15	1.59	13:05	2.15	1.78	03:15	0.72	10:40	2.31	1.12	03:15	0.026	10:40	0.104	0.047	0.047	0.39
12/17/2020	00:05	1.61	18:10	2.35	1.81	15:50	0.55	13:00	1.88	0.80	01:15	0.023	13:00	0.089	0.035	0.035	0.08
12/18/2020	18:00	1.68	12:00	2.29	1.87	18:00	0.41	10:15	1.51	0.77	18:00	0.016	13:40	0.065	0.035	0.035	0.25
12/19/2020	06:30	1.63	00:25	2.15	1.82	10:25	0.37	15:30	1.13	0.68	10:25	0.014	15:30	0.061	0.030	0.030	0.37
12/20/2020	22:20	1.51	17:05	2.13	1.83	23:40	0.42	21:25	1.35	0.71	22:20	0.014	21:25	0.064	0.031	0.031	0.04
12/21/2020	01:00	1.51	10:05	2.56	1.79	00:15	0.40	13:45	1.80	0.81	00:15	0.013	17:15	0.092	0.035	0.035	1.07
12/22/2020	12:45	1.63	07:00	2.17	1.76	00:20	0.38	17:25	1.68	0.84	00:20	0.015	07:00	0.065	0.035	0.035	-
12/23/2020	07:00	1.42	08:15	2.17	1.80	09:35	0.37	14:05	1.36	0.83	09:05	0.015	19:05	0.061	0.036	0.036	-
12/24/2020	22:40	1.46	05:30	2.20	1.78	08:25	0.33	05:30	1.22	0.72	08:25	0.012	05:30	0.069	0.031	0.031	-
12/25/2020	07:25	1.51	16:30	1.78	1.59	07:25	0.45	16:30	0.73	0.53	03:40	0.015	16:30	0.031	0.019	0.019	0.49
12/26/2020	19:00	1.35	00:10	2.03	1.63	18:00	0.29	01:10	1.00	0.57	18:00	0.008	01:10	0.051	0.022	0.022	0.02
12/27/2020	17:45	1.39	00:10	1.90	1.50	08:10	0.37	00:10	0.87	0.48	06:30	0.013	00:10	0.040	0.016	0.016	0.13
12/28/2020	18:25	1.18	13:45	2.50	1.62	06:10	0.24	14:50	1.06	0.55	19:15	0.012	13:45	0.044	0.020	0.020	-
12/29/2020	01:40	1.14	08:05	1.71	1.35	23:40	0.39	11:10	0.96	0.56	05:45	0.011	10:55	0.028	0.016	0.016	0.14
12/30/2020	22:35	1.12	08:05	2.64	1.30	07:55	0.25	13:05	1.13	0.72	00:00	0.012	08:05	0.043	0.018	0.018	0.78
12/31/2020	00:40	1.13	16:15	1.80	1.21	16:15	0.47	08:35	0.98	0.79	17:50	0.014	11:05	0.026	0.019	0.019	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			5.890	30.65
Average	1.73	0.71	0.029	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A1a_30822

Site Address /Location:	3802 B St NW			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	located in road	Latitude:	47.341163	Pipe Size (H x W): 10.00 X 9.88	Pipe Shape: Circular
		Longitude:	-122.232272		



Manhole #	System Characteristics
A1a30822	Commercial
Access:	Traffic:
Drive	Medium







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information	
Installation Date:	Installation Type:
Tuesday, September 22, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi
Installation Confirmation:	
Time	
7:57:00 AM	
Depth of Flow (Wet DOF) (in)	
1.88	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.97	N/A
Silt (in)	Silt Type
0	
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
9	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

AUB_A1b_30968

Site Commentary

SITE INFORMATION

Pipe	Round (11.88 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced flow changes during the monitoring period.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.62	0.32	0.029
Minimum	1.44	0.05	0.003
Maximum	5.65	1.57	0.214
Min Time	11/08/2020 10:00:00 PM	04/13/2021 12:00:00 AM	04/13/2021 12:00:00 AM
Max Time	03/01/2021 12:00:00 PM	11/13/2020 1:00:00 PM	11/13/2020 1:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.827
VFINAL (ft/s)	99.827
QFINAL (MGD - Total MG)	99.827

Hydrograph Report

AUB_A1b_30968

Flow Monitor

AUB_A1b_30968

Pipe Height
11.88
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Scattergraph Report

AUB_A1b_30968

Flow Monitor

AUB_A1b_30968

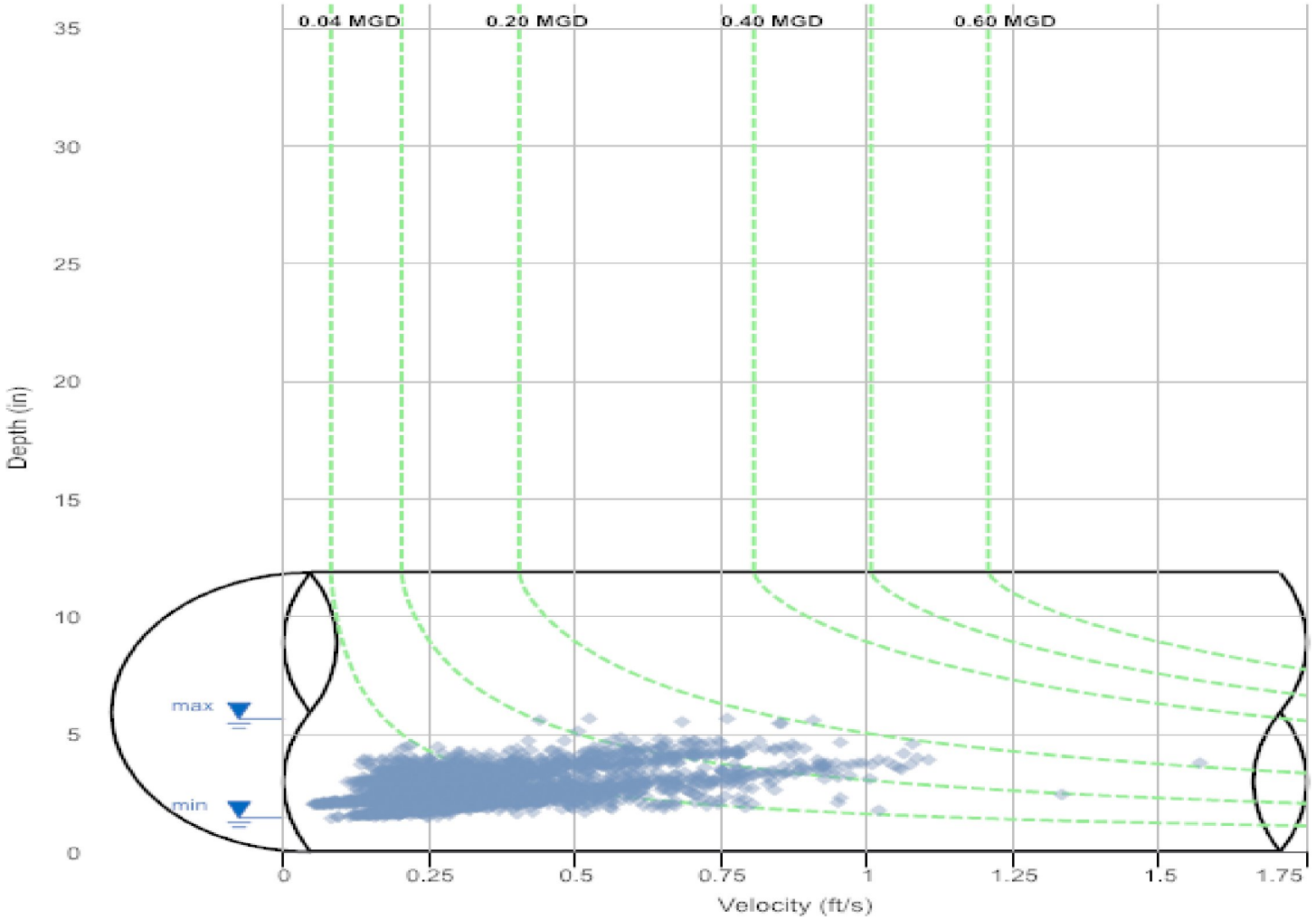
Pipe Height
11.88
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A1b_30968Pipe: Round (11.88 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	12:45	2.19	10:20	4.21	2.77	13:00	0.10	10:20	0.73	0.21	12:35	0.007	10:20	0.115	0.020	0.020	0.51
01/02/2021	12:40	2.23	08:55	3.62	2.73	07:35	0.09	06:30	0.61	0.23	00:00	0.010	05:00	0.059	0.020	0.020	1.69
01/03/2021	19:25	2.34	04:50	3.97	2.72	07:15	0.11	04:40	0.51	0.20	18:30	0.011	04:40	0.070	0.017	0.017	0.65
01/04/2021	05:00	2.31	07:50	4.51	2.95	06:00	0.10	08:00	1.15	0.30	03:15	0.011	08:00	0.183	0.032	0.032	0.48
01/05/2021	01:35	2.32	15:40	4.75	2.92	04:50	0.16	10:45	0.93	0.32	00:00	0.012	10:45	0.161	0.036	0.036	0.52
01/06/2021	23:50	2.37	15:25	4.95	2.87	06:15	0.16	15:25	1.05	0.28	22:20	0.012	15:25	0.206	0.029	0.029	0.22
01/07/2021	01:50	2.27	15:35	4.48	3.02	10:50	0.10	15:45	0.92	0.29	00:55	0.013	15:45	0.151	0.032	0.032	-
01/08/2021	04:35	2.36	14:50	4.17	2.93	02:40	0.09	16:50	0.98	0.27	02:40	0.010	16:50	0.109	0.026	0.026	0.22
01/09/2021	21:25	2.25	17:50	4.25	2.82	17:50	0.10	09:30	0.64	0.27	18:25	0.009	08:10	0.076	0.025	0.025	-
01/10/2021	00:55	2.26	04:50	3.20	2.74	15:40	0.08	18:10	0.95	0.21	15:40	0.008	18:10	0.093	0.019	0.019	0.07
01/11/2021	05:40	2.41	11:05	4.77	3.20	05:10	0.13	09:25	1.01	0.33	05:35	0.012	10:35	0.171	0.041	0.041	1.06
01/12/2021	00:00	2.72	10:20	4.59	3.12	08:00	0.15	10:20	1.98	0.33	00:00	0.015	10:20	0.351	0.039	0.039	2.10
01/13/2021	02:10	2.53	15:25	4.80	3.17	06:50	0.15	08:10	1.24	0.34	20:50	0.014	15:20	0.178	0.040	0.040	0.09
01/14/2021	03:00	2.51	15:35	5.02	3.13	04:10	0.14	15:35	0.94	0.33	17:50	0.014	15:35	0.187	0.040	0.040	0.01
01/15/2021	05:40	2.52	11:45	4.20	3.00	23:55	0.12	12:05	0.86	0.30	21:10	0.013	12:05	0.130	0.032	0.032	0.09
01/16/2021	07:30	2.76	07:20	4.26	3.17	00:00	0.13	17:25	0.70	0.35	00:00	0.013	07:20	0.098	0.038	0.038	-
01/17/2021	09:20	2.36	06:25	4.19	3.01	09:30	0.12	06:05	0.84	0.34	09:30	0.010	06:25	0.093	0.034	0.034	0.10
01/18/2021	22:10	2.25	14:30	4.55	3.03	07:00	0.11	16:15	1.93	0.33	21:50	0.010	16:15	0.301	0.037	0.037	-
01/19/2021	05:15	2.30	16:10	4.50	2.92	19:40	0.10	16:20	1.09	0.28	19:40	0.010	16:20	0.188	0.030	0.030	0.01
01/20/2021	03:25	2.21	12:35	4.54	2.92	04:05	0.10	12:20	0.91	0.29	04:05	0.009	12:30	0.159	0.030	0.030	-
01/21/2021	05:25	2.31	15:20	4.65	2.96	12:30	0.14	15:10	1.00	0.31	00:05	0.010	15:20	0.163	0.033	0.033	0.11
01/22/2021	19:20	2.48	13:30	4.57	3.20	02:00	0.15	13:35	0.90	0.29	15:15	0.014	13:35	0.158	0.033	0.033	-
01/23/2021	11:20	2.55	04:55	4.20	2.93	00:40	0.18	04:55	0.60	0.24	22:55	0.017	04:55	0.094	0.023	0.023	-
01/24/2021	20:30	2.62	08:15	4.00	2.87	14:35	0.14	14:25	0.71	0.23	10:55	0.017	08:20	0.078	0.021	0.021	0.16
01/25/2021	20:50	2.42	15:20	4.64	3.07	21:05	0.11	15:20	0.86	0.27	21:05	0.010	15:20	0.155	0.030	0.030	0.04
01/26/2021	19:55	2.28	13:10	4.47	2.93	00:55	0.12	13:20	0.89	0.27	23:45	0.009	13:10	0.148	0.028	0.028	-
01/27/2021	02:15	2.21	15:45	4.86	2.95	01:30	0.12	15:45	0.99	0.30	01:30	0.008	15:45	0.190	0.034	0.034	0.14
01/28/2021	02:05	2.31	15:00	4.91	3.06	18:45	0.11	15:25	1.40	0.32	23:25	0.010	15:25	0.243	0.039	0.039	0.24
01/29/2021	04:55	2.36	12:55	3.64	2.84	23:05	0.13	13:30	0.49	0.25	04:40	0.012	13:25	0.056	0.023	0.023	0.03
01/30/2021	18:20	2.26	10:55	3.68	2.67	01:25	0.10	10:45	1.03	0.23	12:00	0.009	10:45	0.113	0.019	0.019	0.07
01/31/2021	01:05	2.36	08:30	3.78	3.01	00:50	0.11	08:25	0.45	0.21	00:10	0.008	08:25	0.056	0.022	0.022	0.12
02/01/2021	07:05	2.52	15:35	4.72	3.16	04:20	0.12	16:00	1.23	0.28	21:45	0.013	16:00	0.216	0.032	0.032	0.82
02/02/2021	23:35	2.55	15:25	4.72	3.20	04:40	0.16	15:40	0.88	0.30	23:15	0.014	15:25	0.153	0.036	0.036	0.31
02/03/2021	02:10	2.46	14:00	4.73	3.17	22:10	0.13	14:10	2.13	0.32	03:15	0.013	14:10	0.392	0.038	0.038	0.06
02/04/2021	02:10	2.67	13:40	6.61	3.28	23:20	0.13	10:20	1.91	0.30	02:10	0.014	13:40	0.539	0.037	0.037	0.07
02/05/2021	23:25	2.44	06:25	4.18	2.97	18:15	0.12	06:25	0.59	0.24	23:15	0.011	06:25	0.092	0.024	0.024	0.01
02/06/2021	05:10	2.29	15:55	4.33	2.91	08:45	0.08	15:55	0.62	0.23	19:35	0.008	15:55	0.102	0.024	0.024	0.01
02/07/2021	22:15	2.36	08:10	3.53	2.47	07:00	0.12	19:40	0.51	0.18	19:55	0.008	07:50	0.056	0.014	0.014	-
02/08/2021	00:35	2.37	07:25	4.32	2.80	22:00	0.10	07:25	0.87	0.26	22:00	0.008	07:25	0.142	0.025	0.025	-
02/09/2021	01:15	2.36	07:10	4.57	3.06	06:50	0.11	09:35	0.95	0.28	00:15	0.010	07:10	0.137	0.032	0.032	-
02/10/2021	22:00	2.41	08:05	4.57	3.07	19:15	0.10	08:00	1.54	0.30	19:15	0.009	08:00	0.270	0.034	0.034	-
02/11/2021	23:55	2.41	07:45	4.96	3.31	09:55	0.09	14:05	0.85	0.31	21:30	0.011	14:05	0.142	0.037	0.037	-
02/12/2021	23:25	2.29	22:15	3.89	2.79	02:20	0.11	22:10	0.51	0.23	02:20	0.009	22:10	0.070	0.021	0.021	-
02/13/2021	16:35	2.21	13:20	3.66	2.44	15:45	0.11	20:35	0.54	0.18	15:45	0.007	13:20	0.062	0.013	0.013	0.08
02/14/2021	08:45	2.30	08:15	2.88	2.44	07:30	0.14	08:25	0.65	0.19	08:40	0.009	08:25	0.049	0.014	0.014	0.71
02/15/2021	19:40	2.36	12:05	4.66	2.93	08:20	0.11	12:15	0.91	0.29	19:55	0.014	12:15	0.156	0.031	0.031	0.78
02/16/2021	03:20	2.28	10:40	4.62	2.86	21:45	0.14	10:45	0.90	0.28	02:20	0.013	10:55	0.162	0.028	0.028	0.07
02/17/2021	20:45	2.27	04:20	5.14	2.97	01:30	0.12	10:15	0.99	0.29	18:55	0.009	04:20	0.177	0.031	0.031	-
02/18/2021	20:55	2.30	15:35	4.45	3.12	06:35	0.14	15:25	0.82	0.28	19:00	0.014	15:25	0.134	0.031	0.031	0.09
02/19/2021	23:15	2.23	15:55	4.13	2.83	22:20	0.09	15:50	0.56	0.23	23:15	0.008	15:50	0.084	0.021	0.021	0.17
02/20/2021	02:10	2.15	09:20	3.73	2.75	09:10	0.10	06:00	0.48	0.23	02:25	0.007	05:55	0.062	0.021	0.021	0.07
02/21/2021	18:20	2.17	08:10	4.12	2.69	19:40	0.10	07:10	0.47	0.22	19:40	0.006	07:10	0.062	0.019	0.019	0.42
02/22/2021	05:55	2.14	09:50	4.42	2.95	05:55	0.09	10:00	0.88	0.29	05:55	0.005	10:05	0.148	0.030	0.030	0.98
02/23/2021	03:25	2.25	13:45	4.64	2.98	09:10	0.11	13:40	0.91	0.29	03:20	0.008	13:45	0.162	0.031	0.031	0.27
02/24/2021	04:10	2.21	09:25	4.60	2.90	05:15	0.12	09:20	0.92	0.30	22:35	0.010	09:20	0.163	0.033	0.033	-
02/25/2021	23:35	2.24	14:05	4.50	2.75	23:30	0.12	14:00	1.15	0.26	23:30	0.008	14:00	0.198	0.026	0.026	0.18
02/26/2021	01:45	2.23	11:15	4.51	2.92	01:00	0.12	11:10	0.64	0.26	01:00	0.008	11:10	0.106	0.027	0.027	0.10
02/27/2021	03:20	2.17	20:05	4.93	3.35	08:25	0.11	20:05	0.81	0.26	00:30	0.012	20:05	0.159	0.032	0.032	0.02
02/28/2021	06:25	2.14	23:35	4.23	3.34	18:40	0.11	23:25	0.60	0.26	00:05	0.012	23:45	0.096	0.031	0.031	0.02
03/01/2021	03:30	2.23	08:30	6.06	3.98	04:40	0.13	15:15	1.11	0.47	03:55	0.013	08:25	0.257	0.081	0.081	-
03/02/2021	23:55	2.29	05:35	5.41	3.21	01:20	0.12	05:35	0.91	0.31	23:50	0.009	05:35	0.200	0.039	0.039	-
03/03/2021	04:30	2.12	12:45	5.15	2.73	07:50	0.12	12:45	0.80	0.26	00:00	0.009	12:45	0.165	0.026	0.026	-
03/04/2021	23:35	2.21	14:00	5.01	2.73	01:05	0.12	14:00	0.77	0.26	00:55	0.008	14:00	0.153	0.026	0.026	0.20
03/05/2021	02:10	2.11	08:05	3.74	2.78	02:10	0.08	17:45	0.56	0.26	02:10	0.005	21:45	0.065	0.024	0.024	0.05
03/06/2021	03:45	2.21	02:55	4.48	3.17	18:10	0.12	02:55	0.66	0.34	05:20	0.009	02:55	0.113	0.038	0.038	-
03/07/2021	10:25	2.08	05:25	4.18	2.97	10:25	0.07	05:25	0.59	0.21	10:25	0.004	05:25	0.092	0.022	0.022	0.04
03/08/2021	04:35	2.21	15:30	4.81	2.87	00:45	0.11	15:25	0.74	0.26	20:30	0.010	15:30	0.140	0.027	0.027	-
03/09/2021	04:05	2.21	14:25	4.86	2.74	07:05	0.08	14:15	0.76	0.27	04:05	0.007	14:25	0.144	0.027	0.027	0.01
03/10/2021	04:30	2.10	14:55	4.94	2.74	01:20	0.09	15:25	1.30	0.27	04:25	0.005	15:25	0.239	0.027	0.027	-
03/11/2021	02:05	2.08	15:10	5.32	2.76	23:50	0.11	17:20	0.97	0.29	20:35	0.010	15:10	0.200	0.028	0.028	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	20:15	2.09	10:40	3.97	2.81	20:15	0.08	04:55	0.67	0.26	20:15	0.004	04:55	0.066	0.024	0.024	-
03/13/2021	04:40	2.02	12:00	4.12	3.34	02:25	0.10	12:30	0.58	0.37	03:35	0.006	12:35	0.089	0.046	0.046	-
03/14/2021	16:05	2.11	03:20	3.89	2.66	23:00	0.09	14:55	0.54	0.27	10:30	0.006	03:25	0.075	0.028	0.028	0.30
03/15/2021	02:00	2.11	12:00	5.25	2.69	20:55	0.09	12:00	0.93	0.28	20:55	0.006	12:00	0.197	0.027	0.027	-
03/16/2021	00:35	2.08	09:05	5.17	2.78	00:45	0.08	09:20	1.43	0.29	00:45	0.004	09:20	0.283	0.031	0.031	-
03/17/2021	19:20	1.95	08:50	4.79	2.73	02:45	0.09	08:50	0.83	0.28	02:40	0.006	08:50	0.157	0.028	0.028	-
03/18/2021	00:45	2.09	10:10	4.81	2.74	00:45	0.08	12:10	0.84	0.29	00:40	0.005	11:05	0.149	0.029	0.029	0.11
03/19/2021	03:05	2.04	10:30	3.56	2.50	00:05	0.08	04:30	0.48	0.24	00:10	0.004	10:30	0.057	0.019	0.019	0.03
03/20/2021	04:30	2.01	10:40	3.68	2.55	09:10	0.11	08:50	0.45	0.22	01:20	0.009	08:50	0.056	0.018	0.018	0.17
03/21/2021	00:10	2.06	14:55	3.46	2.55	06:45	0.08	10:55	0.44	0.22	06:45	0.009	14:55	0.052	0.017	0.017	0.07
03/22/2021	18:50	2.10	06:50	4.91	2.67	18:50	0.08	07:00	0.84	0.27	18:45	0.005	06:50	0.162	0.026	0.026	0.11
03/23/2021	20:40	2.02	05:35	4.72	2.73	20:35	0.06	06:25	1.63	0.30	20:35	0.004	06:25	0.279	0.031	0.031	-
03/24/2021	20:55	2.07	14:10	4.75	2.91	01:25	0.10	07:15	2.21	0.33	01:25	0.006	07:15	0.281	0.036	0.036	0.34
03/25/2021	22:40	2.17	08:35	4.64	2.71	20:05	0.13	08:35	1.62	0.32	20:05	0.008	08:35	0.292	0.032	0.032	0.27
03/26/2021	03:10	2.09	13:20	4.44	2.83	01:05	0.08	08:45	1.27	0.28	01:05	0.005	08:45	0.136	0.026	0.026	-
03/27/2021	11:50	2.03	14:15	3.95	2.36	11:50	0.06	06:10	0.54	0.19	11:50	0.003	01:25	0.063	0.014	0.014	-
03/28/2021	02:15	2.02	14:45	4.57	3.66	02:15	0.06	21:30	0.66	0.38	02:15	0.003	18:40	0.112	0.056	0.056	0.37
03/29/2021	23:40	2.09	14:25	4.88	3.02	23:55	0.08	04:45	1.26	0.34	23:30	0.005	14:25	0.152	0.040	0.040	-
03/30/2021	00:25	2.04	14:30	4.65	2.67	03:20	0.09	14:35	0.68	0.28	02:30	0.006	14:30	0.119	0.025	0.025	-
03/31/2021	02:15	2.07	13:50	5.18	2.69	03:20	0.10	14:55	1.17	0.29	03:20	0.006	14:55	0.191	0.029	0.029	-
04/01/2021	03:35	2.06	15:05	4.76	2.83	10:00	0.08	15:05	0.91	0.27	00:00	0.006	15:05	0.169	0.027	0.027	-
04/02/2021	22:35	2.02	11:50	5.23	2.46	01:15	0.11	11:45	0.96	0.28	01:15	0.007	11:50	0.193	0.022	0.022	-
04/03/2021	06:30	1.84	13:25	3.96	2.17	05:50	0.05	20:30	0.62	0.29	05:50	0.003	13:25	0.079	0.019	0.019	-
04/04/2021	11:55	1.99	07:10	2.42	2.06	09:45	0.05	07:10	0.34	0.12	08:55	0.003	07:10	0.024	0.007	0.007	-
04/05/2021	00:50	2.02	05:40	4.46	2.44	00:45	0.06	14:45	0.76	0.23	00:45	0.003	14:45	0.130	0.020	0.020	-
04/06/2021	23:55	1.99	10:20	4.55	2.50	23:45	0.05	10:25	0.82	0.30	02:50	0.003	10:25	0.143	0.027	0.027	-
04/07/2021	19:40	1.84	10:25	4.75	2.57	00:05	0.05	13:45	0.93	0.30	00:05	0.003	10:25	0.163	0.027	0.027	0.22
04/08/2021	01:15	1.95	13:35	4.58	2.58	01:00	0.06	00:40	1.26	0.36	01:00	0.003	13:35	0.145	0.031	0.031	-
04/09/2021	15:50	1.91	16:15	4.67	2.49	22:35	0.05	16:15	0.70	0.28	22:35	0.003	16:15	0.127	0.023	0.023	0.03
04/10/2021	14:40	1.90	06:05	3.34	2.20	13:30	0.05	19:05	0.48	0.23	14:50	0.002	06:05	0.046	0.015	0.015	0.02
04/11/2021	09:30	1.89	08:10	3.28	2.41	09:00	0.05	08:10	0.54	0.21	08:45	0.003	08:10	0.061	0.016	0.016	-
04/12/2021	22:10	1.99	15:05	4.73	2.52	22:00	0.05	15:20	0.88	0.28	20:20	0.003	15:10	0.154	0.025	0.025	-
04/13/2021	00:35	1.99	14:20	5.04	2.54	00:10	0.05	14:25	1.05	0.34	00:00	0.003	14:25	0.209	0.031	0.031	-
04/14/2021	02:25	1.85	10:05	4.62	2.64	20:20	0.08	13:25	1.12	0.40	20:20	0.005	14:00	0.161	0.038	0.038	-
09/22/2020	11:00	1.65	12:30	3.74	2.28	23:05	0.10	12:40	1.03	0.40	23:15	0.006	12:35	0.136	0.031	0.020	-
09/23/2020	03:30	1.65	06:00	3.98	2.25	02:50	0.10	14:40	1.89	0.35	03:30	0.005	14:40	0.273	0.028	0.028	-
09/24/2020	21:55	1.48	11:50	4.33	2.11	20:20	0.08	11:55	1.16	0.33	19:30	0.004	11:55	0.188	0.025	0.025	-
09/25/2020	01:40	1.47	09:35	3.90	2.05	01:10	0.10	09:45	1.06	0.34	01:20	0.003	09:45	0.150	0.025	0.025	-
09/26/2020	22:45	1.65	14:00	3.10	2.05	02:45	0.09	13:30	0.76	0.30	02:45	0.005	14:00	0.075	0.019	0.019	-
09/27/2020	00:20	1.58	11:10	2.81	2.13	23:30	0.08	17:15	1.14	0.33	01:40	0.005	17:15	0.077	0.021	0.021	-
09/28/2020	09:30	1.82	14:20	4.02	2.29	02:20	0.08	14:25	1.05	0.32	02:20	0.005	14:20	0.155	0.024	0.024	-
09/29/2020	20:45	1.43	14:50	4.05	2.08	06:40	0.09	14:45	1.03	0.30	21:50	0.004	14:45	0.150	0.021	0.021	-
09/30/2020	05:15	1.52	12:30	3.84	2.15	00:55	0.10	12:20	1.05	0.32	00:55	0.004	12:25	0.141	0.023	0.023	-
10/01/2020	23:30	1.44	11:45	3.98	2.12	23:25	0.08	11:40	1.08	0.32	18:50	0.003	11:40	0.155	0.023	0.023	-
10/02/2020	03:40	1.44	09:00	4.03	2.13	03:35	0.08	09:05	1.03	0.30	03:30	0.003	09:00	0.149	0.022	0.022	-
10/03/2020	11:05	1.32	13:40	3.51	1.87	11:55	0.09	13:40	0.82	0.24	11:55	0.003	13:40	0.101	0.015	0.015	0.01
10/04/2020	07:30	1.55	07:00	3.61	1.93	07:30	0.13	07:00	0.85	0.28	07:30	0.005	07:00	0.109	0.015	0.015	0.01
10/05/2020	18:55	1.47	06:05	3.95	2.28	21:55	0.08	15:15	1.02	0.37	18:55	0.003	06:05	0.142	0.029	0.029	-
10/06/2020	02:40	1.58	14:35	3.81	2.17	16:25	0.08	09:45	1.18	0.31	02:40	0.005	14:35	0.144	0.022	0.022	-
10/07/2020	16:40	1.58	06:35	4.10	2.35	00:40	0.10	08:45	1.03	0.35	00:40	0.005	08:40	0.154	0.028	0.028	-
10/08/2020	19:15	1.45	09:05	3.88	2.07	03:30	0.09	14:40	1.26	0.33	19:10	0.003	09:05	0.149	0.023	0.023	-
10/09/2020	20:15	1.49	09:50	3.77	2.10	00:05	0.09	10:10	1.01	0.31	00:05	0.004	09:50	0.134	0.021	0.021	0.64
10/10/2020	18:45	1.41	17:20	2.68	1.82	18:35	0.08	11:15	1.15	0.22	18:35	0.003	11:15	0.056	0.011	0.011	1.04
10/11/2020	21:50	1.55	17:50	3.14	2.06	01:30	0.11	00:05	0.84	0.23	01:30	0.005	17:55	0.062	0.014	0.014	0.53
10/12/2020	00:10	1.55	06:20	4.02	2.35	19:55	0.08	06:20	1.03	0.36	00:10	0.005	06:25	0.153	0.030	0.030	-
10/13/2020	02:25	1.59	12:30	3.89	2.25	21:40	0.08	02:00	1.30	0.35	02:30	0.006	12:30	0.150	0.026	0.026	0.61
10/14/2020	13:10	1.64	10:15	4.13	2.31	01:00	0.13	15:40	2.80	0.40	23:55	0.007	15:40	0.372	0.033	0.033	-
10/15/2020	22:25	1.48	13:40	4.37	2.10	00:50	0.12	13:40	1.20	0.34	03:05	0.005	13:40	0.200	0.025	0.025	-
10/16/2020	04:15	1.54	10:20	3.75	2.07	14:05	0.09	10:25	0.96	0.31	01:00	0.006	10:25	0.128	0.020	0.020	-
10/17/2020	11:35	1.47	07:00	3.06	2.10	04:55	0.10	06:20	0.62	0.32	11:30	0.003	06:20	0.057	0.020	0.020	0.01
10/18/2020	22:20	1.47	08:35	2.75	1.84	08:50	0.09	08:35	0.58	0.25	00:00	0.004	08:35	0.051	0.013	0.013	0.03
10/19/2020	13:35	1.64	14:45	4.15	2.43	16:40	0.10	14:45	1.28	0.39	18:55	0.007	14:45	0.198	0.034	0.034	0.05
10/20/2020	22:35	1.67	10:05	4.13	2.72	01:30	0.07	03:10	0.89	0.41	21:40	0.005	10:05	0.137	0.040	0.040	-
10/21/2020	23:55	1.49	07:40	3.82	2.32	06:40	0.09	14:45	1.23	0.35	20:30	0.004	14:45	0.168	0.031	0.031	0.01
10/22/2020	01:30	1.46	14:00	3.82	2.04	01:25	0.09	14:00	1.05	0.30	01:25	0.003	14:00	0.145	0.021	0.021	-
10/23/2020	16:50	1.62	10:05	3.92	2.07	01:30	0.12	09:55	1.00	0.28	01:30	0.005	09:55	0.142	0.019	0.019	0.20
10/24/2020	17:15	1.59	14:45	3.12	2.06	15:10	0.09	14:45	0.70	0.27	20:20	0.005	14:45	0.073	0.016	0.016	0.02
10/25/2020	16:20	1.62	11:45	3.56	2.11	08:35	0.08	11:45	0.84	0.31	14:35	0.004	11:45	0.105	0.022	0.022	-
10/26/2020	16:55	1.68	06:45	4.00	2.31	01:20	0.11	06:45	1.06	0.32	01:45	0.006	06:45	0.157	0.025	0.025	-
10/27/2020	01:50	1.84	05:55	4.16	2.55	16:45	0.10	05:55	1.02	0.40	16:45	0.006	05:55	0.159	0.035	0.035	-
10/28/2020	22:55	1.60	08:45	4.09	2.48	01:20	0.12	08:40	1.03	0.35	23:45	0.005	08:45	0.155	0.030	0.030	-
10/29/2020	20:05	1.56	08:25	4.05	2.14	05:05	0.09	08:40	1.03	0.32	19:00	0.005	08:25	0.153	0.023	0.023	-
10/30/2020	18:15	1.52	05:45	4.05	2.23	21:50	0.08	05:45	1.07	0.33	17:00	0.005	05:45	0.161	0.025	0.025	0.10
10/31/2020	04:05	1.57	08:45	3.35	2.48	04:00	0.10	07:50	1.10	0.35	04:00	0.004	07:50	0.098	0.028	0.028	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	08:45	1.91	08:25	4.00	2.48	03:55	0.11	08:25	0.97	0.41	09:25	0.008	08:25	0.142	0.034	0.034	-
11/02/2020	23:15	1.58	07:30	4.24	2.29	04:10	0.09	07:30	1.18	0.37	21:40	0.005	07:30	0.188	0.030	0.030	-
11/03/2020	21:35	1.58	12:55	3.98	2.14	03:45	0.08	22:30	1.24	0.35	20:45	0.005	12:55	0.151	0.025	0.025	0.83
11/04/2020	01:15	1.56	14:50	3.94	2.33	23:40	0.11	21:55	1.13	0.32	00:00	0.005	15:10	0.143	0.024	0.024	0.09
11/05/2020	06:05	1.56	15:55	3.94	2.48	02:15	0.11	01:20	1.17	0.41	06:00	0.005	09:30	0.139	0.035	0.035	0.34
11/06/2020	23:30	1.67	15:00	4.38	2.20	00:40	0.12	01:55	1.32	0.28	20:10	0.006	15:00	0.178	0.019	0.019	0.10
11/07/2020	03:45	1.69	10:05	3.00	1.96	06:15	0.15	16:25	1.31	0.36	02:45	0.008	15:50	0.071	0.020	0.020	0.07
11/08/2020	15:45	1.41	08:25	2.95	1.78	22:45	0.07	10:00	0.63	0.22	22:45	0.002	10:00	0.059	0.012	0.012	0.01
11/09/2020	00:35	1.46	11:10	4.02	2.35	00:35	0.09	11:30	1.43	0.44	00:30	0.003	11:30	0.198	0.035	0.035	0.04
11/10/2020	17:55	1.63	12:05	4.51	2.32	08:55	0.15	12:05	1.21	0.45	17:45	0.007	12:05	0.210	0.036	0.036	0.03
11/11/2020	23:25	1.36	13:15	4.45	2.28	23:20	0.13	13:15	1.29	0.42	23:20	0.005	13:15	0.220	0.032	0.032	-
11/12/2020	01:20	1.41	14:10	4.92	2.43	01:15	0.12	16:35	1.83	0.43	01:15	0.005	15:25	0.259	0.034	0.034	0.16
11/13/2020	04:00	1.61	13:00	3.99	2.26	00:55	0.17	13:05	2.49	0.49	00:55	0.007	13:05	0.362	0.036	0.036	0.38
11/14/2020	20:10	1.61	04:45	3.25	2.12	19:30	0.09	17:15	1.03	0.36	19:30	0.004	04:45	0.081	0.023	0.023	0.47
11/15/2020	11:25	1.59	09:40	2.79	1.85	08:45	0.13	22:40	0.74	0.25	11:00	0.006	08:50	0.051	0.013	0.013	0.19
11/16/2020	10:55	1.73	07:10	4.02	2.34	04:50	0.08	16:30	1.89	0.47	04:50	0.007	07:10	0.273	0.039	0.039	0.31
11/17/2020	23:35	1.19	15:25	3.90	2.20	17:35	0.09	15:30	1.37	0.42	17:35	0.003	15:30	0.192	0.032	0.032	0.20
11/18/2020	07:05	1.43	15:00	4.00	2.18	07:10	0.09	05:20	1.79	0.43	07:00	0.003	15:10	0.176	0.031	0.031	0.30
11/19/2020	13:50	1.90	15:35	3.97	2.44	08:30	0.15	18:10	1.20	0.49	19:15	0.009	15:35	0.144	0.039	0.039	0.50
11/20/2020	00:35	1.45	12:45	3.75	2.39	00:35	0.08	12:50	0.89	0.38	00:35	0.003	12:45	0.116	0.029	0.029	0.01
11/21/2020	23:45	1.79	05:45	2.56	1.98	23:45	0.21	05:45	0.52	0.32	23:45	0.010	05:45	0.041	0.017	0.017	-
11/22/2020	14:30	1.73	08:50	3.17	1.89	07:25	0.21	17:15	1.71	0.35	01:40	0.010	17:15	0.088	0.018	0.018	0.21
11/23/2020	15:20	1.62	06:35	4.05	2.25	03:45	0.10	08:10	2.34	0.49	03:45	0.006	08:00	0.202	0.036	0.036	0.14
11/24/2020	19:40	1.60	12:25	4.16	2.24	06:05	0.14	14:45	1.24	0.43	19:35	0.006	12:20	0.152	0.031	0.031	0.21
11/25/2020	04:35	1.67	15:10	3.90	2.30	06:55	0.13	07:50	0.96	0.38	04:35	0.007	07:50	0.135	0.030	0.030	0.05
11/26/2020	01:15	1.80	07:15	2.88	2.04	08:15	0.13	07:05	0.62	0.33	08:15	0.008	07:15	0.058	0.019	0.019	0.02
11/27/2020	15:55	1.49	12:30	3.72	2.20	15:55	0.10	12:25	1.49	0.38	15:55	0.004	12:25	0.153	0.025	0.025	-
11/28/2020	07:40	1.29	06:05	3.28	2.42	15:30	0.17	06:05	0.75	0.45	15:30	0.007	06:05	0.084	0.034	0.034	0.05
11/29/2020	04:35	1.59	09:00	3.37	2.23	04:35	0.14	09:00	0.78	0.40	04:35	0.006	09:00	0.090	0.028	0.028	-
11/30/2020	14:15	1.70	07:20	3.85	2.34	09:45	0.15	07:30	1.41	0.46	14:15	0.008	07:30	0.190	0.036	0.036	0.36
12/01/2020	18:15	1.88	12:20	4.09	2.60	09:05	0.21	06:40	1.33	0.56	12:05	0.012	12:20	0.156	0.048	0.048	-
12/02/2020	03:45	1.69	10:30	4.24	2.41	18:45	0.09	10:45	1.14	0.44	18:45	0.005	10:45	0.176	0.037	0.037	0.01
12/03/2020	02:35	1.64	10:45	4.19	2.31	03:15	0.13	22:40	1.26	0.45	02:35	0.007	10:45	0.150	0.034	0.034	-
12/04/2020	01:10	1.78	13:00	4.07	2.39	04:40	0.11	08:50	1.08	0.43	04:40	0.008	13:00	0.147	0.033	0.033	-
12/05/2020	18:30	1.56	10:15	3.70	2.18	08:45	0.11	10:15	0.88	0.35	18:30	0.005	10:15	0.116	0.024	0.024	0.03
12/06/2020	00:00	1.80	08:15	3.19	2.00	06:55	0.09	08:20	0.69	0.30	06:35	0.008	08:20	0.071	0.018	0.018	0.03
12/07/2020	19:00	1.76	06:45	4.16	2.63	08:10	0.11	12:05	1.60	0.50	18:20	0.010	12:55	0.162	0.046	0.046	-
12/08/2020	06:25	1.94	15:40	4.57	2.69	23:15	0.12	15:55	1.63	0.57	14:15	0.011	15:55	0.264	0.052	0.052	0.87
12/09/2020	04:10	1.73	14:20	4.08	2.37	06:05	0.14	02:20	1.34	0.46	06:05	0.007	14:25	0.171	0.037	0.037	0.17
12/10/2020	23:15	1.83	12:20	4.18	2.39	06:10	0.10	12:25	2.04	0.47	06:10	0.010	12:25	0.314	0.038	0.038	0.07
12/11/2020	04:00	1.73	02:35	3.34	2.14	02:55	0.11	12:50	1.20	0.49	04:55	0.006	02:35	0.088	0.030	0.030	0.02
12/12/2020	15:40	1.78	04:40	3.19	2.28	20:40	0.10	16:00	1.66	0.39	04:47	0.007	16:00	0.145	0.028	0.028	0.01
12/13/2020	06:40	2.18	02:40	2.93	2.37	23:50	0.17	06:15	1.00	0.42	23:50	0.013	06:15	0.085	0.030	0.030	0.24
12/14/2020	19:40	2.25	04:50	4.72	3.17	23:00	0.10	15:35	0.92	0.35	01:10	0.010	15:35	0.168	0.043	0.043	0.05
12/15/2020	06:15	2.20	13:35	4.59	2.95	01:35	0.09	13:40	1.12	0.30	06:20	0.010	13:40	0.197	0.033	0.033	0.58
12/16/2020	03:00	2.05	13:10	4.59	3.37	03:00	0.07	07:30	1.31	0.31	02:55	0.004	07:30	0.195	0.038	0.038	0.39
12/17/2020	01:10	2.07	07:10	4.77	3.11	01:05	0.08	07:10	1.01	0.33	01:05	0.004	07:10	0.188	0.040	0.040	0.08
12/18/2020	22:50	2.01	18:35	4.61	2.99	22:50	0.05	07:45	0.90	0.30	22:45	0.003	07:45	0.152	0.033	0.033	0.25
12/19/2020	05:20	2.13	08:40	4.48	3.12	11:40	0.08	08:40	0.94	0.29	05:20	0.005	08:40	0.161	0.032	0.032	0.37
12/20/2020	07:05	2.55	08:25	4.46	3.10	08:05	0.08	08:25	0.66	0.30	00:00	0.009	08:25	0.112	0.033	0.033	0.04
12/21/2020	19:40	2.44	07:50	4.68	3.21	00:00	0.12	06:45	1.09	0.31	00:00	0.010	08:40	0.161	0.038	0.038	1.07
12/22/2020	19:15	2.40	15:45	5.12	3.35	04:35	0.12	15:45	1.10	0.33	18:45	0.011	15:45	0.226	0.043	0.043	-
12/23/2020	20:55	2.22	05:25	4.68	3.00	04:35	0.09	13:05	0.90	0.27	20:55	0.007	13:15	0.156	0.030	0.030	-
12/24/2020	22:00	2.10	15:20	3.87	2.70	03:00	0.08	15:50	0.71	0.25	21:50	0.005	15:20	0.073	0.022	0.022	-
12/25/2020	02:20	1.97	21:50	4.22	2.52	02:00	0.06	22:05	0.57	0.20	02:00	0.003	22:05	0.085	0.021	0.021	0.49
12/26/2020	18:00	2.97	06:45	5.08	4.01	09:45	0.07	06:45	0.84	0.46	09:45	0.009	06:45	0.171	0.071	0.071	0.02
12/27/2020	15:55	2.14	09:00	5.03	3.09	12:30	0.09	09:00	0.83	0.32	15:55	0.005	09:00	0.167	0.041	0.041	0.13
12/28/2020	05:25	2.15	07:05	4.44	2.95	04:40	0.11	06:55	0.90	0.30	22:45	0.008	07:05	0.152	0.032	0.032	-
12/29/2020	06:10	2.23	09:40	4.55	3.16	04:15	0.10	09:00	1.15	0.33	03:40	0.009	09:00	0.164	0.038	0.038	0.14
12/30/2020	20:05	2.30	03:25	4.62	3.19	04:50	0.08	08:55	1.52	0.33	18:55	0.009	06:55	0.255	0.040	0.040	0.78
12/31/2020	19:35	2.21	08:10	4.47	2.97	19:25	0.11	08:20	0.90	0.30	19:25	0.007	08:20	0.154	0.032	0.032	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			5.885	30.65
Average	2.62	0.32	0.029	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A1b_30968

Site Address /Location:	Cnr 37th St and C St NE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Located on road edge	Latitude:	47.340252	Pipe Size (H x W): 11.88 X 11.88	Pipe Shape: Circular
		Longitude:	-122.226663		



Manhole #	System Characteristics
A1b30968	Commercial
Access	Traffic
Drive	Light







Installation Information	
Installation Date: Tuesday, September 22, 2020	Installation Type: Doppler Standard Ring and Crank
Monitoring Location (Sensors): Upstream 0-5 FT	Monitor Location: Manhole
Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5)	Pressure Sensor Range (psi): 0 - 5 psi
Installation Confirmation:	
Time: 8:35:00 AM	
Depth of Flow (Wet DOF) (in): 1.75	
CS5 Physical Offset (in): 1.38	Measurement Confidence (in): 0.25"
Peak Velocity (fps): 0.35	Velocity Sensor Offset (in): N/A
Silt (in): 0	Silt Type

Manhole / Pipe Information:	
Manhole Depth (Approx. FT): 7	Manhole Configuration: Single
Manhole Material: Concrete	Manhole Condition: Good
Manhole Opening Diameter (in): 24	Manhole Diameter (Approx.): 26
Manhole Cover: Steel	Manhole Frame: Normal
Active Connections: No	Air Quality: Normal
Pipe Material: PVC	Pipe Condition: Good
Communication Information:	
Communication Type: Wireless	Antenna Location: Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

AUB_A1c_30906

Site Commentary

SITE INFORMATION

Pipe	Round (18 in H)
Silt	2.50 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	7.27	0.67	0.234
Minimum	5.45	0.31	0.064
Maximum	9.70	1.04	0.555
Min Time	10/01/2020 2:00:00 AM	10/19/2020 2:00:00 AM	10/09/2020 2:00:00 AM
Max Time	01/02/2021 9:00:00 PM	01/02/2021 9:00:00 PM	01/02/2021 9:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

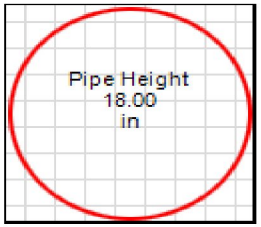
Percent Uptime	
DFINAL (in)	99.334
VFINAL (ft/s)	99.324
QFINAL (MGD - Total MG)	99.324

Hydrograph Report

AUB_A1c_30906

Flow Monitor

AUB_A1c_30906



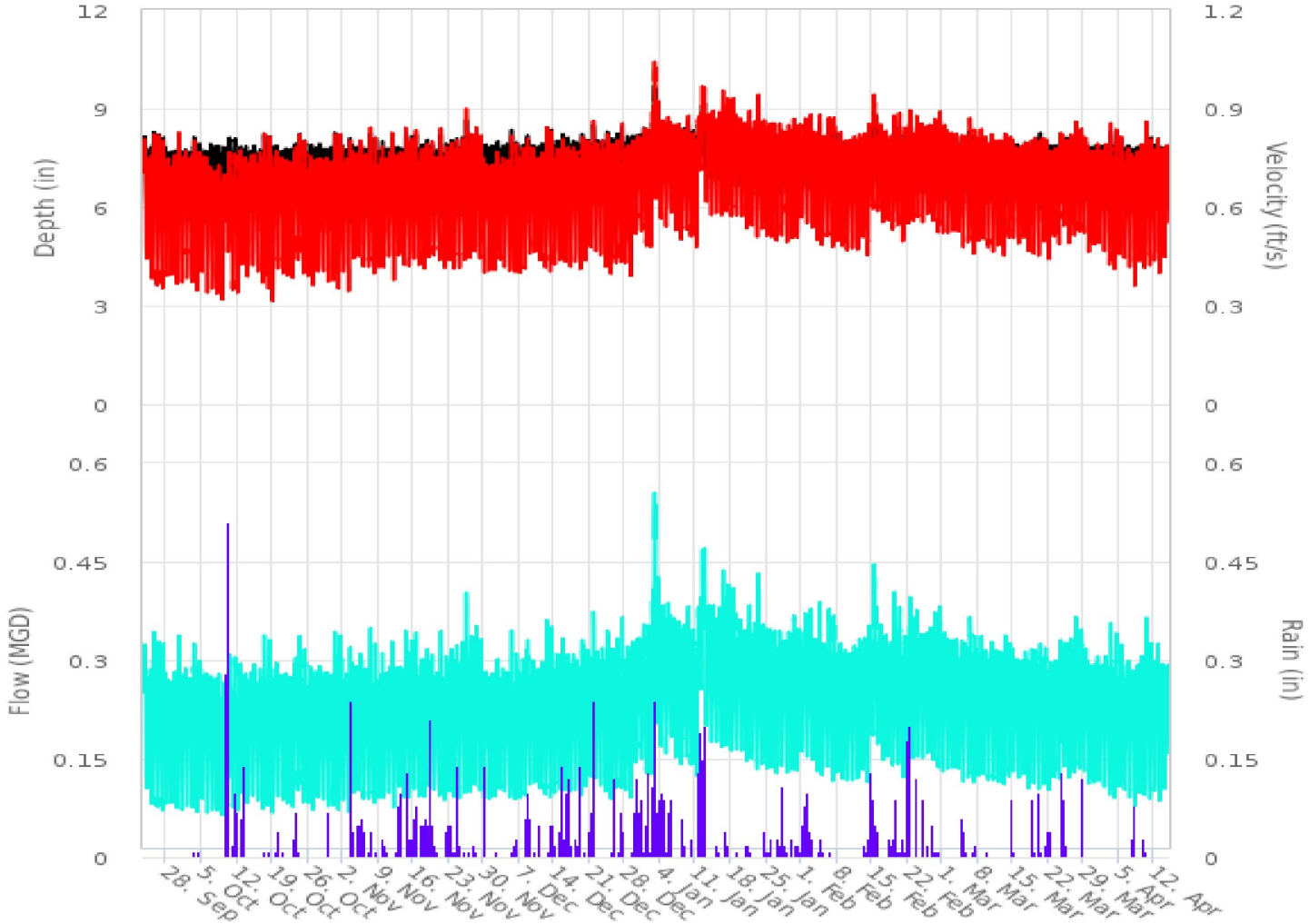
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL





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Tukwila, WA 98168

206-762-5070
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Scattergraph Report

AUB_A1c_30906

Flow Monitor

AUB_A1c_30906

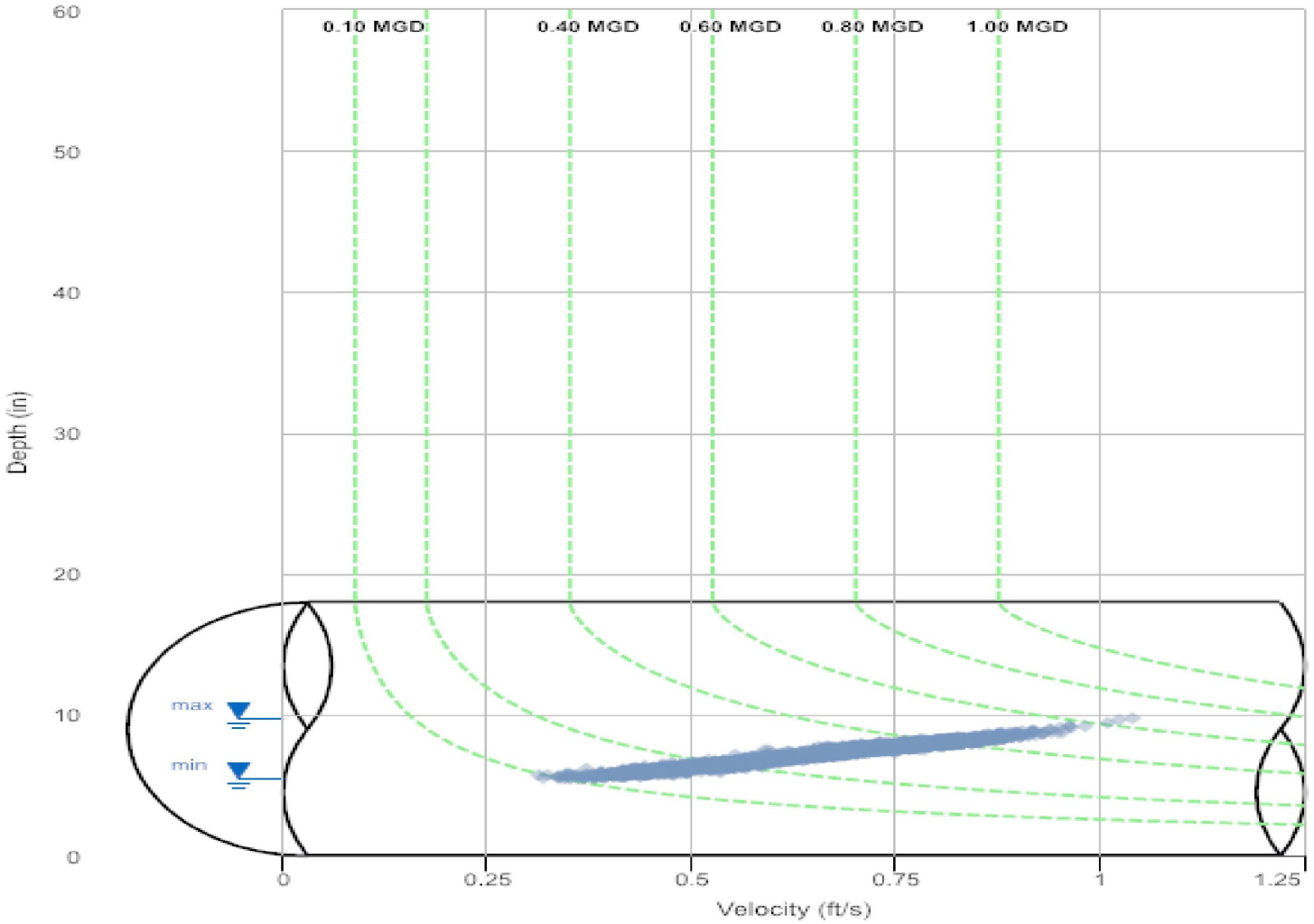
Pipe Height
18.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A1c_30906Pipe: Round (18 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	05:10	6.23	15:40	8.53	7.36	07:55	0.44	15:35	0.87	0.67	06:05	0.115	15:40	0.382	0.238	0.238	0.51
01/02/2021	04:15	6.08	21:15	9.98	7.94	04:10	0.42	21:05	1.07	0.77	04:15	0.103	21:10	0.593	0.317	0.317	1.69
01/03/2021	04:55	7.00	00:00	9.77	8.17	04:35	0.60	00:05	1.05	0.80	04:45	0.189	00:00	0.560	0.332	0.332	0.65
01/04/2021	03:40	6.70	10:35	8.78	7.84	03:20	0.55	10:35	0.89	0.74	03:25	0.160	10:35	0.405	0.288	0.288	0.48
01/05/2021	03:20	6.52	13:40	9.20	7.76	02:55	0.51	13:40	1.00	0.73	03:25	0.140	13:40	0.489	0.280	0.280	0.52
01/06/2021	05:00	6.80	17:35	8.60	7.76	05:00	0.54	17:30	0.89	0.74	05:00	0.161	17:35	0.394	0.280	0.280	0.22
01/07/2021	04:05	6.47	16:00	8.48	7.60	03:05	0.49	16:00	0.87	0.71	03:05	0.136	16:00	0.375	0.262	0.262	-
01/08/2021	04:10	6.31	17:40	8.59	7.57	01:40	0.47	13:30	0.86	0.70	04:15	0.123	17:45	0.378	0.257	0.257	0.22
01/09/2021	03:55	6.42	14:10	8.62	7.60	03:40	0.49	14:00	0.90	0.71	03:55	0.132	13:55	0.396	0.265	0.265	-
01/10/2021	05:25	6.32	12:00	8.40	7.50	02:20	0.45	10:45	0.85	0.70	05:25	0.119	10:45	0.355	0.253	0.253	0.07
01/11/2021	03:30	6.10	15:00	8.80	7.74	03:25	0.41	11:10	0.92	0.74	03:25	0.102	11:10	0.422	0.286	0.286	1.06
01/12/2021	01:15	7.40	19:00	9.37	8.46	00:05	0.68	18:55	1.00	0.86	00:05	0.236	19:00	0.506	0.375	0.375	2.10
01/13/2021	04:45	6.90	00:35	8.76	7.98	03:45	0.59	00:35	0.92	0.79	04:40	0.181	00:35	0.419	0.313	0.313	0.09
01/14/2021	04:10	6.66	12:55	8.91	7.82	03:10	0.53	12:55	1.00	0.76	03:15	0.155	12:55	0.466	0.294	0.294	0.01
01/15/2021	04:20	6.63	17:15	8.54	7.79	03:10	0.51	17:15	0.92	0.77	03:10	0.149	17:15	0.401	0.297	0.297	0.09
01/16/2021	03:55	6.55	12:00	8.87	7.80	03:30	0.52	12:00	0.97	0.78	04:50	0.148	12:00	0.449	0.303	0.303	-
01/17/2021	05:00	6.52	11:10	8.86	7.72	05:00	0.55	11:10	0.98	0.78	05:00	0.152	11:10	0.456	0.295	0.295	0.10
01/18/2021	03:25	6.42	13:05	8.79	7.70	03:25	0.52	13:25	1.02	0.78	03:25	0.140	13:25	0.446	0.295	0.295	-
01/19/2021	03:15	6.49	18:50	8.46	7.62	01:20	0.54	18:50	0.91	0.76	03:20	0.151	18:50	0.391	0.279	0.279	0.01
01/20/2021	03:35	6.38	18:15	8.25	7.57	03:30	0.52	15:30	0.91	0.76	03:30	0.139	15:30	0.378	0.277	0.277	-
01/21/2021	03:40	6.31	18:05	8.77	7.55	03:30	0.48	18:00	0.95	0.75	03:30	0.126	18:05	0.434	0.274	0.274	0.11
01/22/2021	04:10	6.27	18:30	8.39	7.52	01:45	0.50	18:30	0.88	0.74	04:00	0.129	18:30	0.374	0.268	0.268	-
01/23/2021	03:35	6.22	12:30	9.37	7.54	05:45	0.44	12:30	1.06	0.74	05:45	0.112	12:30	0.535	0.272	0.272	-
01/24/2021	05:00	6.13	11:00	8.36	7.48	04:45	0.49	14:30	0.93	0.73	04:45	0.122	14:30	0.375	0.263	0.263	0.16
01/25/2021	03:40	6.13	17:50	8.51	7.46	03:30	0.47	17:45	0.91	0.73	03:30	0.118	17:50	0.395	0.262	0.262	0.04
01/26/2021	03:05	6.09	18:15	8.48	7.42	02:30	0.43	18:05	0.90	0.73	03:05	0.110	18:10	0.391	0.259	0.259	-
01/27/2021	03:35	6.10	17:45	8.23	7.39	03:15	0.46	17:45	0.89	0.72	03:35	0.112	17:45	0.367	0.254	0.254	0.14
01/28/2021	04:05	6.22	09:50	8.32	7.47	02:45	0.43	09:45	0.88	0.73	02:45	0.113	09:50	0.369	0.261	0.261	0.24
01/29/2021	03:05	6.12	11:10	8.29	7.43	04:05	0.45	11:10	0.88	0.72	04:05	0.113	11:10	0.369	0.257	0.257	0.03
01/30/2021	05:15	6.13	13:30	8.47	7.46	04:00	0.47	11:40	0.89	0.72	05:10	0.117	12:35	0.381	0.262	0.262	0.07
01/31/2021	04:55	6.09	10:40	8.36	7.44	05:45	0.47	18:00	0.89	0.72	05:50	0.118	10:55	0.370	0.258	0.258	0.12
02/01/2021	03:05	6.36	18:55	8.49	7.57	03:05	0.51	14:25	0.89	0.74	03:05	0.134	18:55	0.387	0.273	0.273	0.82
02/02/2021	03:25	6.32	20:15	8.78	7.65	03:15	0.51	20:10	0.92	0.75	03:25	0.136	20:10	0.422	0.281	0.281	0.31
02/03/2021	03:40	6.39	13:55	8.27	7.54	03:35	0.51	13:55	0.86	0.73	03:35	0.137	13:55	0.359	0.266	0.266	0.06
02/04/2021	03:35	6.12	17:10	9.07	7.41	02:20	0.45	17:05	0.95	0.70	03:35	0.114	17:10	0.459	0.250	0.250	0.07
02/05/2021	03:45	6.15	10:50	8.35	7.40	03:25	0.46	10:45	0.87	0.70	03:30	0.116	10:50	0.369	0.248	0.248	0.01
02/06/2021	06:00	6.20	12:45	9.01	7.44	05:45	0.46	12:45	0.95	0.71	05:45	0.118	12:45	0.451	0.256	0.256	0.01
02/07/2021	05:35	5.94	10:10	8.56	7.35	03:05	0.44	10:05	0.91	0.70	04:15	0.105	10:10	0.398	0.247	0.247	-
02/08/2021	03:55	6.01	15:55	8.17	7.36	03:45	0.43	18:25	0.91	0.70	03:55	0.103	18:25	0.365	0.246	0.246	-
02/09/2021	03:15	5.95	12:25	8.15	7.28	04:20	0.44	18:25	0.84	0.68	04:20	0.104	18:25	0.337	0.236	0.236	-
02/10/2021	04:05	5.92	12:10	8.11	7.27	04:00	0.42	11:25	0.84	0.68	04:00	0.098	12:10	0.337	0.237	0.237	-
02/11/2021	03:15	5.89	12:15	8.16	7.32	02:55	0.43	12:15	0.84	0.68	03:20	0.098	12:15	0.341	0.238	0.238	-
02/12/2021	04:30	5.98	12:55	8.69	7.30	02:35	0.43	13:05	0.88	0.68	03:25	0.102	12:55	0.388	0.237	0.237	-
02/13/2021	04:30	6.11	13:15	8.43	7.28	05:35	0.45	13:10	0.87	0.68	05:35	0.110	13:15	0.374	0.235	0.235	0.08
02/14/2021	05:20	5.94	11:40	8.34	7.42	04:55	0.40	11:35	0.88	0.69	04:55	0.097	11:40	0.369	0.249	0.249	0.71
02/15/2021	02:35	6.73	13:45	9.08	7.89	06:00	0.52	13:40	0.98	0.77	06:10	0.157	13:45	0.469	0.305	0.305	0.78
02/16/2021	03:35	6.52	17:05	8.40	7.58	01:50	0.55	15:45	0.90	0.73	03:15	0.158	17:05	0.371	0.267	0.267	0.07
02/17/2021	03:55	6.16	16:00	8.40	7.48	06:35	0.49	20:00	0.91	0.71	03:55	0.129	16:00	0.373	0.257	0.257	-
02/18/2021	04:20	6.21	17:30	8.57	7.44	02:35	0.45	17:20	0.89	0.71	02:35	0.116	17:30	0.386	0.252	0.252	0.09
02/19/2021	02:55	6.18	12:05	9.76	7.47	03:20	0.46	12:00	1.08	0.71	03:20	0.123	12:05	0.580	0.257	0.257	0.17
02/20/2021	04:35	6.06	12:00	8.56	7.40	04:30	0.50	13:05	0.93	0.72	04:35	0.121	13:05	0.406	0.256	0.256	0.07
02/21/2021	05:30	5.95	13:35	8.20	7.37	07:00	0.46	13:35	0.89	0.71	07:00	0.111	13:35	0.364	0.252	0.252	0.42
02/22/2021	04:30	6.32	12:30	8.78	7.60	03:20	0.51	13:00	0.94	0.74	03:20	0.135	13:00	0.426	0.273	0.273	0.98
02/23/2021	03:35	6.21	14:35	10.04	7.51	02:05	0.47	14:40	0.93	0.73	02:05	0.129	14:40	0.507	0.267	0.267	0.27
02/24/2021	02:30	6.27	20:00	8.20	7.49	02:00	0.49	19:55	0.88	0.74	04:50	0.136	19:55	0.360	0.265	0.265	-
02/25/2021	03:15	6.18	20:25	8.26	7.49	03:10	0.52	11:55	0.90	0.74	03:15	0.130	12:05	0.363	0.268	0.268	0.18
02/26/2021	03:45	6.24	10:55	8.44	7.54	03:45	0.53	17:45	0.90	0.75	03:45	0.135	10:55	0.378	0.273	0.273	0.10
02/27/2021	03:20	6.17	15:00	9.22	7.47	02:35	0.49	14:55	0.98	0.73	02:35	0.130	14:55	0.483	0.265	0.265	0.02
02/28/2021	05:35	6.04	12:55	8.68	7.42	02:20	0.46	12:50	0.95	0.73	04:05	0.122	12:50	0.424	0.261	0.261	0.02
03/01/2021	03:35	6.02	12:55	8.24	7.41	01:50	0.47	17:05	0.89	0.72	03:35	0.116	17:05	0.359	0.256	0.255	-
03/02/2021	04:05	6.04	17:55	8.26	7.39	02:15	0.46	13:50	0.88	0.71	02:15	0.120	13:50	0.362	0.252	0.252	-
03/03/2021	03:50	5.94	17:25	8.22	7.37	04:00	0.47	12:15	0.88	0.70	04:00	0.112	12:15	0.361	0.247	0.247	-
03/04/2021	03:25	6.01	18:00	8.22	7.33	03:25	0.47	17:25	0.87	0.70	03:25	0.113	18:05	0.346	0.243	0.243	0.20
03/05/2021	03:50	5.94	16:00	8.17	7.30	03:10	0.43	12:00	0.86	0.69	03:15	0.105	12:00	0.348	0.239	0.239	0.05
03/06/2021	05:25	5.97	15:55	8.57	7.36	03:35	0.47	11:40	0.89	0.71	05:25	0.109	12:40	0.375	0.250	0.250	-
03/07/2021	04:25	5.95	12:20	8.28	7.30	05:15	0.42	11:05	0.87	0.69	05:20	0.102	11:05	0.357	0.242	0.242	0.04
03/08/2021	03:40	5.96	17:15	8.22	7.29	03:20	0.46	16:50	0.85	0.70	03:45	0.108	17:15	0.352	0.243	0.243	-
03/09/2021	02:45	5.93	18:00	8.09	7.26	02:40	0.46	12:45	0.84	0.69	02:45	0.106	17:55	0.327	0.236	0.236	0.01
03/10/2021	02:55	5.88	19:20	8.15	7.29	02:35	0.44	19:20	0.85	0.69	02:50	0.102	19:20	0.344	0.238	0.238	-
03/11/2021	04:05	5.84	17:30	8.24	7.23	02:40	0.43	17:30	0.86	0.68	04:05	0.097	17:30	0.354	0.231	0.231	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	03:05	5.87	12:15	8.07	7.19	05:20	0.43	12:00	0.82	0.67	03:05	0.103	12:15	0.326	0.228	0.228	-
03/13/2021	04:40	5.81	10:50	8.39	7.25	05:50	0.39	09:25	0.90	0.68	05:50	0.089	11:55	0.369	0.236	0.236	-
03/14/2021	06:10	5.88	15:10	8.32	7.28	04:35	0.46	20:15	0.84	0.69	04:35	0.106	15:10	0.347	0.239	0.239	0.30
03/15/2021	02:55	6.11	20:35	8.11	7.31	02:35	0.45	10:15	0.82	0.69	02:35	0.114	20:35	0.330	0.240	0.240	-
03/16/2021	02:35	5.89	19:25	8.04	7.18	02:30	0.41	19:15	0.85	0.66	02:30	0.095	19:20	0.332	0.223	0.223	-
03/17/2021	02:05	5.80	10:25	8.32	7.21	03:20	0.46	16:25	0.88	0.67	02:05	0.105	10:25	0.361	0.229	0.229	-
03/18/2021	02:50	5.82	16:10	8.17	7.19	02:00	0.45	12:00	0.84	0.67	02:30	0.100	12:00	0.341	0.228	0.228	0.11
03/19/2021	03:15	5.84	10:50	8.10	7.23	01:35	0.40	11:05	0.85	0.68	01:35	0.095	10:45	0.338	0.233	0.233	0.03
03/20/2021	04:10	5.75	11:20	8.41	7.23	04:00	0.41	09:50	0.85	0.67	04:00	0.090	09:55	0.351	0.232	0.232	0.17
03/21/2021	03:20	5.72	15:05	8.19	7.15	03:05	0.45	09:15	0.85	0.67	05:15	0.098	11:35	0.336	0.227	0.227	0.07
03/22/2021	02:40	5.78	11:20	8.08	7.20	02:35	0.38	11:15	0.81	0.66	02:35	0.085	11:20	0.325	0.224	0.224	0.11
03/23/2021	01:45	5.74	11:15	8.06	7.16	01:40	0.47	13:10	0.81	0.68	01:40	0.103	11:15	0.319	0.227	0.227	-
03/24/2021	02:15	5.91	11:15	8.52	7.27	03:00	0.40	11:15	0.90	0.69	03:00	0.097	11:15	0.394	0.238	0.238	0.34
03/25/2021	03:15	6.07	15:10	8.32	7.35	03:15	0.49	15:05	0.83	0.69	03:20	0.118	15:10	0.350	0.240	0.240	0.27
03/26/2021	02:15	5.98	16:50	8.35	7.34	03:35	0.47	11:50	0.85	0.70	03:35	0.115	16:45	0.353	0.245	0.245	-
03/27/2021	04:35	5.90	11:10	8.51	7.34	04:30	0.46	11:10	0.89	0.71	04:30	0.106	11:10	0.387	0.249	0.249	-
03/28/2021	04:45	5.99	13:00	8.47	7.37	01:50	0.43	16:35	0.90	0.71	01:50	0.110	12:55	0.374	0.252	0.252	0.37
03/29/2021	02:05	6.02	12:55	8.10	7.30	03:15	0.48	12:25	0.83	0.70	03:25	0.117	12:25	0.329	0.241	0.241	-
03/30/2021	03:10	5.86	19:20	8.19	7.18	01:30	0.43	15:50	0.84	0.67	01:35	0.100	15:55	0.332	0.226	0.226	-
03/31/2021	01:25	5.67	13:50	8.02	7.19	01:15	0.44	12:00	0.82	0.68	03:10	0.098	19:40	0.321	0.228	0.228	-
04/01/2021	02:45	5.78	16:10	7.97	7.20	02:20	0.46	09:55	0.83	0.67	02:40	0.102	15:45	0.310	0.228	0.228	-
04/02/2021	02:35	5.75	09:55	8.08	7.17	02:05	0.41	09:30	0.82	0.66	02:05	0.092	09:55	0.329	0.224	0.224	-
04/03/2021	03:45	5.64	11:05	8.45	7.19	01:55	0.37	11:05	0.89	0.65	01:55	0.082	11:05	0.385	0.226	0.226	-
04/04/2021	03:55	5.62	11:05	8.71	7.11	03:55	0.37	11:50	0.88	0.64	03:55	0.077	11:55	0.388	0.217	0.217	-
04/05/2021	02:05	5.78	11:45	8.22	7.19	00:05	0.42	11:45	0.86	0.67	02:00	0.092	11:45	0.355	0.227	0.226	-
04/06/2021	02:00	5.72	20:20	7.95	7.16	01:00	0.36	09:20	0.80	0.64	02:00	0.078	20:40	0.308	0.217	0.217	-
04/07/2021	02:40	5.68	12:45	8.06	7.11	02:50	0.35	12:45	0.83	0.64	02:55	0.074	12:45	0.330	0.215	0.215	0.22
04/08/2021	02:10	5.66	13:25	7.99	7.14	03:35	0.35	15:10	0.83	0.65	03:40	0.075	13:30	0.318	0.219	0.219	-
04/09/2021	03:05	5.73	16:20	8.16	7.16	02:00	0.40	16:15	0.84	0.67	03:15	0.091	16:15	0.342	0.225	0.225	0.03
04/10/2021	04:25	5.67	10:25	8.58	7.15	02:20	0.39	10:25	0.89	0.66	02:25	0.087	10:25	0.392	0.225	0.225	0.02
04/11/2021	04:30	5.61	10:20	8.33	7.13	02:10	0.38	10:20	0.85	0.65	04:30	0.080	10:20	0.356	0.220	0.220	-
04/12/2021	03:00	5.73	20:10	8.31	7.15	01:35	0.41	20:00	0.84	0.66	03:15	0.090	20:10	0.354	0.222	0.222	-
04/13/2021	02:40	5.62	11:40	7.94	7.11	02:00	0.39	18:25	0.81	0.65	02:45	0.080	18:30	0.315	0.218	0.218	-
04/14/2021	03:00	5.66	12:40	7.99	7.16	02:50	0.40	15:40	0.84	0.67	02:55	0.085	15:40	0.321	0.225	0.225	-
09/23/2020	23:40	6.25	16:50	8.47	7.68	23:40	0.48	16:50	0.85	0.74	23:40	0.124	16:55	0.369	0.274	0.185	-
09/24/2020	02:15	5.84	19:35	7.86	7.06	02:15	0.39	19:15	0.79	0.63	02:15	0.088	19:40	0.300	0.207	0.207	-
09/25/2020	03:50	5.54	12:10	8.56	7.11	03:40	0.35	12:05	0.86	0.64	03:40	0.073	12:10	0.380	0.216	0.216	-
09/26/2020	03:45	5.60	11:15	8.29	7.07	03:50	0.33	11:10	0.86	0.63	03:50	0.068	11:15	0.353	0.211	0.211	-
09/27/2020	04:10	5.33	11:20	8.22	7.03	04:00	0.31	10:25	0.82	0.62	04:00	0.059	11:15	0.338	0.207	0.207	-
09/28/2020	02:40	5.38	19:00	7.95	6.92	02:35	0.32	10:40	0.78	0.61	02:35	0.062	10:40	0.293	0.195	0.195	-
09/29/2020	03:15	5.43	13:15	8.06	6.95	02:00	0.34	17:25	0.79	0.63	02:00	0.068	13:15	0.308	0.202	0.202	-
09/30/2020	03:15	5.31	11:10	8.63	7.01	01:35	0.33	11:05	0.91	0.64	03:10	0.062	11:10	0.404	0.210	0.210	-
10/01/2020	03:05	5.34	11:10	7.91	6.96	02:25	0.33	19:05	0.80	0.63	02:35	0.062	11:10	0.301	0.204	0.204	-
10/02/2020	03:05	5.35	20:10	7.78	6.98	02:40	0.31	12:45	0.80	0.64	02:45	0.059	12:55	0.295	0.207	0.207	-
10/03/2020	03:00	5.43	11:45	8.32	6.99	02:55	0.34	11:40	0.84	0.62	03:00	0.066	11:40	0.351	0.204	0.204	0.01
10/04/2020	03:40	5.39	12:50	8.13	7.02	02:10	0.33	13:55	0.82	0.63	03:40	0.064	14:05	0.331	0.209	0.209	0.01
10/05/2020	02:30	5.50	11:05	7.75	6.98	02:15	0.35	13:40	0.78	0.63	02:20	0.071	10:05	0.287	0.203	0.203	-
10/06/2020	02:40	5.40	16:00	8.09	6.95	02:25	0.32	15:55	0.77	0.59	02:25	0.062	19:15	0.309	0.192	0.192	-
10/07/2020	02:10	5.43	19:25	8.01	6.99	02:05	0.30	10:35	0.75	0.58	02:05	0.059	19:20	0.293	0.188	0.188	-
10/08/2020	01:40	5.45	10:15	7.98	6.92	01:40	0.30	10:20	0.77	0.56	01:40	0.059	10:20	0.301	0.181	0.181	-
10/09/2020	04:15	5.44	23:25	8.05	7.04	02:15	0.28	09:50	0.74	0.58	02:10	0.057	23:20	0.293	0.194	0.194	0.64
10/10/2020	04:40	6.14	12:30	8.27	7.34	04:35	0.44	10:35	0.80	0.63	04:40	0.110	10:35	0.330	0.220	0.220	1.04
10/11/2020	03:00	5.47	13:20	8.29	7.16	05:00	0.29	09:40	0.79	0.61	03:05	0.061	13:20	0.325	0.211	0.211	0.53
10/12/2020	02:35	5.48	18:40	8.00	7.01	02:25	0.31	19:10	0.81	0.61	02:25	0.061	19:10	0.314	0.199	0.199	-
10/13/2020	02:55	5.63	19:05	7.98	7.15	02:00	0.37	19:00	0.80	0.65	02:00	0.078	19:00	0.311	0.220	0.220	0.61
10/14/2020	03:10	5.56	15:50	7.93	7.04	01:20	0.36	12:45	0.78	0.63	02:35	0.075	14:20	0.303	0.209	0.209	-
10/15/2020	02:35	5.72	09:55	8.95	7.06	02:25	0.39	09:55	0.90	0.63	02:30	0.084	09:55	0.425	0.209	0.209	-
10/16/2020	02:55	5.45	12:45	7.96	6.98	02:55	0.33	13:00	0.82	0.63	02:55	0.064	13:00	0.313	0.203	0.203	-
10/17/2020	04:00	5.38	10:55	8.35	7.02	02:50	0.33	10:40	0.87	0.63	02:55	0.065	10:40	0.362	0.208	0.208	0.01
10/18/2020	03:50	5.38	11:45	8.32	7.06	06:40	0.31	11:45	0.86	0.63	03:35	0.068	11:55	0.362	0.211	0.211	0.03
10/19/2020	02:55	5.46	11:10	8.14	7.06	02:55	0.27	18:15	0.80	0.59	02:55	0.053	18:15	0.309	0.198	0.198	0.05
10/20/2020	04:05	5.55	18:35	7.80	7.01	03:15	0.36	11:30	0.77	0.64	03:15	0.073	18:30	0.291	0.207	0.207	-
10/21/2020	03:55	5.55	10:50	8.07	7.01	02:30	0.35	10:45	0.80	0.62	02:30	0.074	10:50	0.322	0.204	0.204	0.01
10/22/2020	03:15	5.36	12:05	7.88	7.01	02:05	0.34	12:00	0.78	0.62	03:10	0.065	12:00	0.296	0.205	0.205	-
10/23/2020	02:50	5.45	11:25	8.32	7.07	02:45	0.34	11:25	0.87	0.64	02:45	0.066	11:25	0.364	0.212	0.212	0.20
10/24/2020	06:50	5.83	11:00	8.28	7.13	02:40	0.40	11:00	0.85	0.65	02:40	0.092	11:00	0.353	0.219	0.219	0.02
10/25/2020	04:15	5.35	10:45	8.11	7.02	04:15	0.33	09:55	0.81	0.63	04:15	0.063	10:45	0.325	0.207	0.207	-
10/26/2020	03:05	5.51	12:25	8.09	7.04	02:50	0.35	12:20	0.81	0.62	03:05	0.069	12:25	0.325	0.205	0.205	-
10/27/2020	02:20	5.46	19:15	7.93	7.03	01:10	0.33	12:45	0.82	0.62	01:10	0.069	19:15	0.303	0.205	0.205	-
10/28/2020	03:20	5.55	10:50	8.60	7.01	02:05	0.35	10:50	0.80	0.61	02:05	0.073	10:50	0.354	0.200	0.200	-
10/29/2020	03:15	5.40	11:45	8.08	7.04	03:10	0.34	16:50	0.79	0.62	03:15	0.065	11:45	0.312	0.204	0.204	-
10/30/2020	03:00	5.45	19:00	8.00	7.02	02:30	0.33	18:40	0.79	0.62	02:35	0.066	19:00	0.310	0.203	0.203	0.10
10/31/2020	04:25	5.62	10:25	8.47	7.11	04:10	0.37	10:35	0.87	0.64	04:30	0.076	10:25	0.370	0.216	0.216	-
11/01/2020	05:00	5.42	12:20	8.26	7.05	04:55	0.32	12:15	0.84	0.63	04:55	0.063	12:15	0.349	0.211	0.211	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/02/2020	04:15	5.31	12:35	7.81	6.99	04:10	0.32	12:35	0.78	0.62	04:10	0.060	12:35	0.295	0.201	0.201	-
11/03/2020	04:00	5.36	16:30	8.46	7.10	04:00	0.31	20:00	0.89	0.64	04:00	0.059	16:30	0.360	0.215	0.215	0.83
11/04/2020	02:40	5.61	18:00	7.99	7.02	02:15	0.39	20:30	0.83	0.64	02:15	0.084	20:30	0.308	0.209	0.209	0.09
11/05/2020	03:15	5.65	12:40	8.12	7.13	03:20	0.40	12:35	0.86	0.67	03:20	0.085	12:40	0.348	0.223	0.223	0.34
11/06/2020	02:50	5.50	14:25	8.19	6.99	00:40	0.38	14:20	0.84	0.63	03:55	0.077	14:25	0.342	0.205	0.205	0.10
11/07/2020	03:15	5.59	12:05	8.49	6.98	03:10	0.38	12:05	0.89	0.63	05:20	0.078	12:05	0.385	0.206	0.206	0.07
11/08/2020	05:35	5.41	10:15	8.22	7.01	05:30	0.35	10:15	0.84	0.62	05:30	0.067	10:15	0.347	0.206	0.206	0.01
11/09/2020	03:15	5.48	20:05	8.31	7.01	03:10	0.36	20:05	0.84	0.64	03:10	0.072	20:05	0.352	0.208	0.208	0.04
11/10/2020	03:25	5.52	12:45	7.97	6.96	02:55	0.36	12:40	0.78	0.63	02:55	0.073	12:40	0.306	0.201	0.201	0.03
11/11/2020	03:20	5.56	18:30	8.29	7.03	02:55	0.40	18:15	0.92	0.64	02:55	0.083	18:15	0.371	0.212	0.212	-
11/12/2020	03:20	5.46	21:45	7.95	7.01	03:05	0.33	12:10	0.79	0.64	03:10	0.066	12:15	0.309	0.209	0.209	0.16
11/13/2020	02:20	5.82	10:25	7.96	7.16	01:55	0.40	10:25	0.79	0.66	01:55	0.092	10:25	0.310	0.221	0.221	0.38
11/14/2020	04:30	5.47	10:20	8.68	7.19	04:10	0.39	10:15	0.93	0.66	04:30	0.078	10:20	0.416	0.230	0.230	0.47
11/15/2020	05:00	5.54	18:10	8.68	7.15	04:55	0.37	18:05	0.87	0.66	04:55	0.075	18:10	0.392	0.223	0.223	0.19
11/16/2020	04:20	5.64	13:45	8.37	7.14	04:15	0.37	13:40	0.85	0.65	04:15	0.078	13:45	0.363	0.218	0.218	0.31
11/17/2020	04:00	5.57	12:35	8.14	7.07	01:50	0.40	12:15	0.85	0.64	03:55	0.081	12:15	0.339	0.212	0.212	0.20
11/18/2020	04:25	5.56	18:20	8.15	7.10	04:20	0.37	12:05	0.85	0.64	04:25	0.075	12:05	0.341	0.216	0.216	0.30
11/19/2020	02:55	5.70	10:30	8.19	7.13	01:40	0.39	12:45	0.84	0.66	02:55	0.085	10:30	0.339	0.220	0.220	0.50
11/20/2020	03:25	5.57	17:20	8.01	6.97	03:00	0.41	17:20	0.84	0.64	03:00	0.088	17:20	0.331	0.207	0.207	0.01
11/21/2020	05:10	5.49	11:50	8.38	7.04	05:05	0.40	11:45	0.87	0.66	05:05	0.081	11:45	0.368	0.217	0.217	-
11/22/2020	05:35	5.52	12:15	8.05	7.07	05:30	0.39	12:15	0.81	0.65	05:30	0.078	12:15	0.323	0.217	0.217	0.21
11/23/2020	04:30	5.71	13:45	8.39	7.17	04:15	0.40	13:40	0.86	0.65	04:15	0.088	13:40	0.367	0.222	0.222	0.14
11/24/2020	02:55	5.57	13:40	8.47	7.13	02:40	0.38	09:30	0.88	0.65	02:45	0.078	13:40	0.377	0.218	0.218	0.21
11/25/2020	04:30	5.59	18:25	8.68	7.15	04:30	0.39	18:20	0.90	0.66	04:30	0.081	18:25	0.404	0.224	0.224	0.05
11/26/2020	07:00	5.66	12:25	8.76	7.23	05:05	0.40	12:25	0.93	0.68	06:55	0.086	12:25	0.422	0.237	0.237	0.02
11/27/2020	04:10	5.58	11:50	8.39	7.16	01:50	0.40	13:40	0.86	0.66	04:10	0.081	13:45	0.365	0.223	0.223	-
11/28/2020	04:10	5.61	10:40	8.45	7.23	04:00	0.40	10:45	0.88	0.67	04:00	0.083	10:45	0.378	0.231	0.231	0.05
11/29/2020	05:20	5.70	11:40	8.30	7.12	05:05	0.40	11:50	0.85	0.65	05:20	0.085	11:50	0.354	0.217	0.217	-
11/30/2020	03:35	5.72	13:40	8.15	7.22	03:15	0.38	13:40	0.80	0.63	03:30	0.082	13:40	0.326	0.215	0.215	0.36
12/01/2020	04:15	5.62	15:25	8.51	7.09	04:05	0.35	15:20	0.82	0.60	04:05	0.074	15:20	0.355	0.201	0.201	-
12/02/2020	03:30	5.61	10:45	8.24	7.16	03:25	0.37	13:05	0.81	0.63	03:25	0.077	16:30	0.327	0.214	0.214	0.01
12/03/2020	04:20	5.74	12:05	7.96	7.15	04:10	0.40	19:30	0.77	0.62	04:15	0.086	19:35	0.300	0.210	0.210	-
12/04/2020	02:50	5.85	14:55	8.20	7.15	02:40	0.38	14:50	0.79	0.62	02:50	0.085	14:50	0.324	0.208	0.208	-
12/05/2020	03:35	5.69	12:00	8.57	7.15	03:15	0.37	12:00	0.84	0.64	03:15	0.080	12:00	0.368	0.216	0.216	0.03
12/06/2020	06:30	5.66	10:25	8.05	7.07	06:35	0.35	10:05	0.83	0.63	06:35	0.074	10:05	0.327	0.210	0.210	0.03
12/07/2020	03:20	5.69	17:35	8.05	7.08	03:25	0.34	17:25	0.82	0.63	03:25	0.073	17:30	0.328	0.210	0.210	-
12/08/2020	04:25	5.65	16:10	8.33	7.26	02:40	0.37	16:20	0.86	0.65	04:15	0.078	16:20	0.358	0.228	0.228	0.87
12/09/2020	04:35	5.88	18:55	8.04	7.18	05:05	0.42	18:25	0.82	0.65	04:35	0.100	18:30	0.321	0.220	0.220	0.17
12/10/2020	03:15	5.88	08:35	8.11	7.15	02:50	0.42	08:35	0.79	0.63	03:15	0.095	08:35	0.320	0.213	0.213	0.07
12/11/2020	03:55	5.84	16:20	8.16	7.20	03:55	0.40	12:00	0.80	0.64	03:55	0.091	16:20	0.327	0.218	0.218	0.02
12/12/2020	04:40	5.80	11:15	8.59	7.24	04:40	0.39	11:15	0.87	0.65	04:40	0.087	11:15	0.382	0.225	0.225	0.01
12/13/2020	05:00	5.74	11:30	8.45	7.21	04:50	0.38	11:10	0.86	0.64	05:00	0.083	11:30	0.364	0.221	0.221	0.24
12/14/2020	02:40	5.68	18:00	8.94	7.15	02:40	0.39	17:55	0.98	0.64	02:40	0.084	18:00	0.460	0.215	0.215	0.05
12/15/2020	04:05	5.80	16:10	8.41	7.25	02:45	0.39	16:05	0.83	0.65	02:45	0.088	16:10	0.348	0.225	0.225	0.58
12/16/2020	03:35	5.80	15:15	8.69	7.28	02:00	0.40	09:15	0.82	0.65	03:30	0.092	15:10	0.357	0.228	0.228	0.39
12/17/2020	03:55	5.78	17:45	8.12	7.18	04:45	0.36	17:25	0.82	0.64	04:45	0.083	17:25	0.327	0.218	0.218	0.08
12/18/2020	04:00	5.87	12:50	8.33	7.21	02:30	0.39	12:45	0.83	0.64	02:30	0.089	12:45	0.347	0.217	0.217	0.25
12/19/2020	04:20	5.80	16:50	8.42	7.31	04:40	0.38	16:45	0.90	0.65	04:40	0.087	16:50	0.380	0.232	0.232	0.37
12/20/2020	04:55	5.88	11:45	8.28	7.27	05:00	0.35	12:35	0.86	0.65	05:00	0.081	11:40	0.344	0.226	0.226	0.04
12/21/2020	04:50	6.21	17:00	8.73	7.51	02:50	0.44	17:00	0.91	0.70	03:25	0.114	17:00	0.411	0.256	0.256	1.07
12/22/2020	03:45	6.07	09:35	8.36	7.33	04:55	0.39	15:25	0.86	0.67	04:55	0.096	09:35	0.354	0.234	0.234	-
12/23/2020	03:35	5.92	12:55	8.33	7.29	01:55	0.41	12:55	0.85	0.66	03:25	0.098	13:00	0.359	0.229	0.229	-
12/24/2020	04:15	5.89	12:05	8.63	7.28	04:15	0.39	12:00	0.87	0.65	04:15	0.090	12:05	0.386	0.227	0.227	-
12/25/2020	05:30	5.80	15:10	8.29	7.18	06:00	0.37	11:35	0.83	0.63	06:00	0.082	15:05	0.334	0.214	0.214	0.49
12/26/2020	04:40	5.92	12:20	8.38	7.21	04:40	0.39	12:00	0.85	0.64	04:40	0.091	12:20	0.359	0.219	0.219	0.02
12/27/2020	04:30	5.78	12:40	8.68	7.25	05:40	0.40	12:40	0.91	0.65	04:20	0.097	12:40	0.407	0.228	0.228	0.13
12/28/2020	03:35	5.85	13:05	8.28	7.29	03:30	0.37	13:00	0.83	0.64	03:30	0.084	13:05	0.344	0.224	0.224	-
12/29/2020	04:45	5.89	14:25	8.78	7.32	04:25	0.37	14:25	0.89	0.65	04:10	0.086	14:25	0.406	0.231	0.231	0.14
12/30/2020	03:15	6.24	14:25	8.37	7.51	04:15	0.46	14:20	0.85	0.70	03:15	0.123	14:20	0.357	0.255	0.255	0.78
12/31/2020	04:05	6.42	17:35	8.53	7.51	05:10	0.48	10:45	0.87	0.70	05:10	0.133	18:20	0.380	0.254	0.254	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			47.749	30.65
Average	7.27	0.67	0.234	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A1c_30906

Site Address /Location:	184 37th St NE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	located in middle lane on yellow lines	Latitude:	47.340141	Pipe Size (H x W): 18.00 X 18.00	Pipe Shape: Circular
		Longitude:	-122.224548		



Manhole #	System Characteristics
A1c30906	Residential
Access	Traffic
Drive	Medium







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Wednesday, September 23, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
7:50:00 AM	
Depth of Flow (Wet DOF) (in)	
7.00	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.81	N/A
Silt (in)	Silt Type
2.5	

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
8	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A1d_30910

Site Commentary

SITE INFORMATION

Pipe	Elliptical (18.13 in H x 18 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Data are not available from February 15th through February 19th due to a monitor problem. The monitor was replaced on February 19th to resolve the problem.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	1.81	1.41	0.087
Minimum	0.63	0.55	0.012
Maximum	2.94	2.27	0.190
Min Time	11/02/2020 3:00:00 AM	12/20/2020 3:00:00 AM	11/01/2020 4:00:00 AM
Max Time	01/02/2021 1:00:00 PM	11/01/2020 11:00:00 AM	01/03/2021 12:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

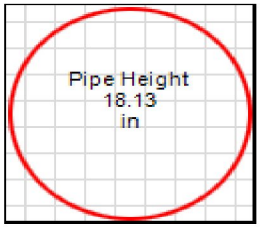
Percent Uptime	
DFINAL (in)	97.749
VFINAL (ft/s)	97.749
QFINAL (MGD - Total MG)	97.749

Hydrograph Report

AUB_A1d_30910

Flow Monitor

AUB_A1d_30910



Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Scattergraph Report

AUB_A1d_30910

Flow Monitor

AUB_A1d_30910

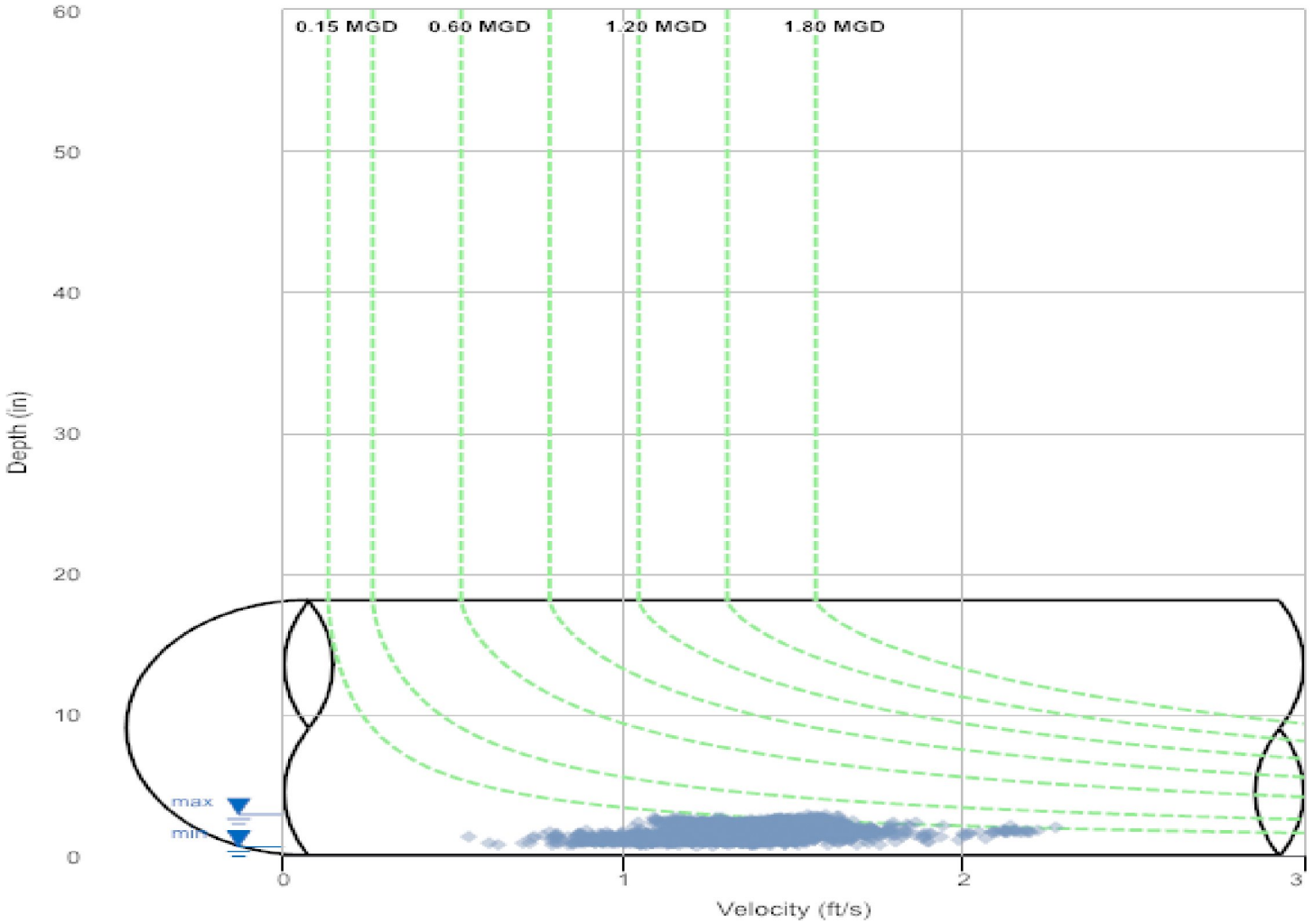
Pipe Height
18.13
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A1d_30910Pipe: Elliptical (18.13 in H x 18 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	07:40	1.17	16:55	2.50	1.93	03:45	1.29	08:20	1.87	1.50	05:00	0.045	16:55	0.150	0.100	0.100	0.51
01/02/2021	01:50	1.43	13:20	3.01	2.32	02:50	1.25	20:45	1.70	1.51	01:50	0.059	13:15	0.200	0.132	0.132	1.69
01/03/2021	23:50	1.92	13:40	3.04	2.45	21:30	1.42	10:55	1.79	1.55	23:55	0.100	12:20	0.211	0.145	0.145	0.65
01/04/2021	03:40	1.71	12:00	2.88	2.30	22:45	1.26	12:45	1.79	1.53	03:10	0.085	12:45	0.202	0.130	0.130	0.48
01/05/2021	03:25	1.44	14:45	2.84	2.14	04:35	1.17	12:45	1.87	1.48	03:25	0.064	13:30	0.186	0.114	0.114	0.52
01/06/2021	04:30	1.48	13:20	2.52	1.98	07:30	1.21	13:15	1.76	1.48	04:25	0.068	13:15	0.163	0.102	0.102	0.22
01/07/2021	03:25	1.04	16:55	2.76	2.03	05:55	1.35	05:35	1.96	1.52	03:25	0.043	16:55	0.167	0.108	0.108	-
01/08/2021	03:50	1.15	16:10	2.61	2.00	05:50	1.30	04:35	1.64	1.46	04:15	0.044	16:05	0.153	0.103	0.103	0.22
01/09/2021	03:45	1.16	12:35	2.70	2.00	07:55	1.30	08:25	1.74	1.47	03:45	0.047	12:35	0.160	0.104	0.104	-
01/10/2021	04:25	1.13	11:40	2.48	1.85	07:25	1.15	15:35	1.65	1.45	04:35	0.042	14:05	0.148	0.092	0.092	0.07
01/11/2021	04:45	0.97	20:20	2.63	2.04	05:50	1.21	07:20	1.82	1.44	04:45	0.037	20:20	0.157	0.105	0.105	1.06
01/12/2021	01:40	1.85	09:50	2.84	2.36	01:50	1.37	18:25	1.72	1.50	01:35	0.090	09:45	0.172	0.133	0.133	2.10
01/13/2021	23:25	1.62	09:30	2.70	2.16	11:30	1.44	19:55	1.99	1.65	04:25	0.085	17:15	0.186	0.128	0.128	0.09
01/14/2021	04:10	1.41	12:35	2.68	2.04	11:55	1.38	08:35	1.92	1.61	04:10	0.068	15:15	0.163	0.114	0.114	0.01
01/15/2021	03:45	1.39	12:25	2.55	2.07	10:20	1.37	20:10	1.74	1.50	04:05	0.062	17:30	0.147	0.110	0.110	0.09
01/16/2021	02:40	1.41	11:55	2.79	2.07	08:15	1.26	19:35	1.79	1.48	02:40	0.058	11:55	0.166	0.109	0.109	-
01/17/2021	06:30	1.37	17:15	2.44	1.91	02:35	1.40	03:45	1.94	1.62	01:45	0.062	17:30	0.141	0.104	0.104	0.10
01/18/2021	03:50	1.32	13:25	2.67	2.01	17:15	1.36	19:05	1.75	1.53	05:05	0.055	15:35	0.157	0.107	0.107	-
01/19/2021	03:55	1.23	08:20	2.44	1.81	14:50	1.31	16:30	1.96	1.59	03:45	0.049	16:40	0.146	0.095	0.095	0.01
01/20/2021	03:50	1.09	11:35	2.52	1.95	16:45	1.35	05:35	1.91	1.54	03:50	0.046	11:30	0.144	0.102	0.102	-
01/21/2021	03:45	1.15	13:45	2.55	1.96	05:05	1.34	06:20	1.78	1.50	03:40	0.047	12:55	0.143	0.101	0.101	0.11
01/22/2021	03:30	1.09	14:45	2.50	1.94	04:35	1.33	23:20	1.68	1.47	03:30	0.040	17:25	0.142	0.099	0.099	-
01/23/2021	03:40	0.98	10:55	2.68	1.90	06:45	1.31	00:25	1.69	1.47	03:40	0.035	10:55	0.155	0.096	0.096	-
01/24/2021	05:05	1.04	13:10	2.42	1.82	07:35	1.26	08:10	1.68	1.48	05:05	0.039	19:15	0.136	0.091	0.091	0.16
01/25/2021	03:10	1.06	13:25	2.57	1.90	09:00	1.28	22:45	1.83	1.51	03:20	0.040	14:20	0.150	0.098	0.098	0.04
01/26/2021	03:45	1.01	08:45	2.41	1.75	02:55	0.96	15:25	1.86	1.58	02:55	0.030	08:40	0.144	0.093	0.093	-
01/27/2021	04:30	0.92	17:25	2.53	1.74	23:50	1.06	15:45	1.89	1.60	02:55	0.026	17:30	0.149	0.092	0.092	0.14
01/28/2021	03:40	0.92	09:25	3.09	1.87	02:15	0.94	09:20	2.14	1.47	02:15	0.026	09:20	0.228	0.095	0.095	0.24
01/29/2021	02:50	1.07	17:00	2.52	1.88	22:50	1.35	10:15	1.70	1.50	02:50	0.041	10:20	0.148	0.097	0.097	0.03
01/30/2021	04:15	1.09	10:30	2.57	1.89	06:35	1.18	00:00	1.65	1.44	04:00	0.040	09:55	0.144	0.094	0.094	0.07
01/31/2021	03:45	1.09	10:30	2.51	1.82	06:30	1.28	09:55	1.66	1.45	03:45	0.039	10:25	0.145	0.090	0.090	0.12
02/01/2021	03:45	1.14	15:00	2.48	1.93	08:10	1.26	01:15	1.71	1.43	02:30	0.045	13:25	0.137	0.095	0.095	0.82
02/02/2021	02:00	1.19	10:10	2.61	2.01	04:00	1.19	18:45	1.57	1.38	02:00	0.043	18:50	0.146	0.098	0.098	0.31
02/03/2021	03:15	1.08	12:25	2.54	1.90	12:25	1.19	05:35	1.76	1.44	03:15	0.039	08:40	0.129	0.093	0.093	0.06
02/04/2021	02:55	1.08	12:05	2.50	1.85	06:00	1.25	22:35	1.65	1.43	02:55	0.038	17:40	0.138	0.090	0.090	0.07
02/05/2021	02:50	1.00	09:35	2.52	1.90	05:55	1.25	22:15	1.72	1.49	02:50	0.036	17:35	0.141	0.096	0.096	0.01
02/06/2021	03:05	0.97	10:50	2.91	1.87	03:15	1.26	00:00	1.72	1.50	03:05	0.034	10:50	0.174	0.096	0.096	0.01
02/07/2021	02:30	1.01	10:00	2.69	1.76	01:55	1.29	05:00	1.70	1.46	01:25	0.036	10:00	0.157	0.084	0.084	-
02/08/2021	04:05	0.87	09:55	2.42	1.80	01:40	1.20	05:55	1.89	1.45	04:05	0.028	09:50	0.134	0.087	0.087	-
02/09/2021	03:20	0.96	16:20	2.32	1.78	01:15	1.21	18:10	1.70	1.42	03:20	0.034	18:25	0.130	0.084	0.084	-
02/10/2021	03:35	0.75	15:35	2.55	1.76	05:45	1.22	05:35	1.76	1.47	03:35	0.025	15:35	0.154	0.086	0.086	-
02/11/2021	03:45	0.96	14:55	2.42	1.80	03:55	1.08	06:40	1.63	1.41	03:55	0.029	19:25	0.138	0.086	0.086	-
02/12/2021	02:20	1.01	12:35	2.43	1.74	05:15	0.73	15:00	1.74	1.42	05:15	0.025	16:50	0.135	0.083	0.083	-
02/13/2021	03:00	1.00	11:25	2.32	1.67	01:40	1.03	08:45	2.07	1.45	05:20	0.031	11:25	0.135	0.078	0.078	0.08
02/14/2021	04:10	0.94	14:30	2.38	1.74	02:20	0.88	09:10	1.65	1.43	02:20	0.027	11:15	0.135	0.084	0.084	0.71
02/15/2021	03:30	1.14	00:35	1.75	1.49	02:50	1.35	03:55	1.57	1.48	03:35	0.044	04:00	0.087	0.067	0.012	0.78
02/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07
02/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
02/19/2021	23:15	1.33	15:50	2.52	2.11	21:05	1.31	11:15	1.65	1.43	23:15	0.058	15:50	0.140	0.107	0.062	0.17
02/20/2021	04:45	0.85	11:40	2.64	1.80	00:40	1.24	07:30	1.80	1.51	04:45	0.034	11:40	0.147	0.091	0.091	0.07
02/21/2021	01:30	1.32	11:15	2.48	1.86	03:45	0.97	11:35	1.71	1.38	03:05	0.040	11:15	0.152	0.088	0.088	0.42
02/22/2021	02:25	0.98	16:30	2.55	1.94	05:25	1.17	18:35	1.72	1.40	02:25	0.033	18:35	0.151	0.094	0.094	0.98
02/23/2021	03:35	1.08	10:05	2.60	1.97	08:05	1.13	10:30	1.64	1.36	03:35	0.037	10:05	0.142	0.094	0.094	0.27
02/24/2021	02:45	1.00	17:20	2.71	1.95	10:30	1.25	05:10	1.79	1.45	02:45	0.038	17:25	0.153	0.097	0.097	-
02/25/2021	02:15	0.80	17:20	2.53	1.88	11:20	1.34	11:05	1.91	1.51	02:15	0.026	08:20	0.148	0.097	0.097	0.18
02/26/2021	03:35	1.00	17:40	2.61	1.91	02:00	1.27	23:35	1.77	1.48	03:35	0.037	17:40	0.148	0.097	0.097	0.10
02/27/2021	02:50	0.96	12:20	2.68	1.84	06:00	1.18	07:50	1.76	1.48	02:50	0.031	11:30	0.154	0.093	0.093	0.02
02/28/2021	02:20	0.92	11:40	2.47	1.69	06:05	1.20	08:40	1.86	1.52	02:20	0.031	10:45	0.146	0.085	0.085	0.02
03/01/2021	01:20	0.89	16:45	2.70	1.82	08:50	1.21	04:40	1.69	1.45	01:40	0.028	16:45	0.153	0.089	0.089	-
03/02/2021	02:45	0.76	17:40	2.44	1.74	00:35	1.24	05:40	1.67	1.48	02:45	0.023	17:40	0.135	0.085	0.085	-
03/03/2021	03:25	0.84	17:15	2.62	1.76	05:30	1.18	20:05	1.70	1.47	03:25	0.024	17:10	0.149	0.086	0.086	-
03/04/2021	04:35	0.88	12:35	2.57	1.73	04:25	1.19	05:35	1.83	1.48	03:05	0.028	12:35	0.143	0.085	0.085	0.20
03/05/2021	02:00	0.73	14:40	2.53	1.73	03:40	1.16	05:40	1.75	1.43	02:00	0.021	14:40	0.134	0.082	0.082	0.05
03/06/2021	02:40	1.22	11:45	2.65	1.85	05:15	0.68	19:55	1.65	1.34	05:15	0.032	11:40	0.152	0.085	0.085	-
03/07/2021	04:10	0.90	10:55	2.55	1.85	19:40	1.08	11:25	1.57	1.30	02:45	0.027	10:50	0.141	0.083	0.083	0.04
03/08/2021	04:35	1.02	16:40	2.93	1.93	02:45	1.07	19:45	1.68	1.30	04:35	0.031	16:40	0.163	0.087	0.087	-
03/09/2021	02:35	0.80	17:45	2.59	1.73	01:40	1.11	08:25	1.59	1.40	02:35	0.024	17:25	0.132	0.079	0.079	0.01
03/10/2021	03:10	0.72	11:45	2.57	1.86	16:15	1.11	04:45	1.56	1.33	03:10	0.021	12:50	0.141	0.085	0.085	-
03/11/2021	04:20	1.07	16:35	2.78	2.01	02:50	1.00	22:55	1.41	1.21	04:20	0.032	16:30	0.136	0.086	0.086	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	02:35	1.02	17:30	2.65	1.89	04:10	0.98	19:55	1.52	1.26	02:35	0.030	17:35	0.133	0.083	0.083	-
03/13/2021	04:10	0.86	10:10	2.88	1.85	06:05	1.06	05:40	1.54	1.32	04:10	0.027	10:10	0.160	0.084	0.084	-
03/14/2021	03:10	1.08	11:10	2.45	1.81	05:45	1.02	12:20	1.50	1.32	04:20	0.034	20:05	0.133	0.081	0.081	0.30
03/15/2021	03:20	0.91	15:15	2.69	1.84	04:30	1.12	18:55	1.50	1.32	03:20	0.028	15:15	0.142	0.083	0.083	-
03/16/2021	01:15	0.84	10:55	2.50	1.77	03:00	1.07	14:50	1.67	1.34	01:15	0.024	14:55	0.138	0.080	0.080	-
03/17/2021	01:50	0.84	08:40	2.48	1.78	23:15	1.09	18:55	1.52	1.34	01:45	0.025	12:35	0.130	0.080	0.080	-
03/18/2021	02:45	0.95	11:45	2.59	1.83	22:20	0.90	12:05	1.57	1.32	01:45	0.031	11:45	0.144	0.082	0.082	0.11
03/19/2021	02:35	1.08	10:35	2.77	2.04	23:45	0.96	07:30	1.43	1.17	02:35	0.030	08:35	0.128	0.085	0.085	0.03
03/20/2021	01:05	1.24	10:55	2.80	2.03	03:05	0.79	09:15	1.46	1.12	01:50	0.029	10:55	0.143	0.083	0.083	0.17
03/21/2021	23:25	1.09	11:20	2.79	2.01	00:30	0.88	08:20	1.42	1.16	23:25	0.032	08:25	0.139	0.083	0.083	0.07
03/22/2021	01:55	1.16	12:55	2.65	1.98	03:20	0.97	07:25	1.41	1.17	01:50	0.035	19:05	0.133	0.081	0.081	0.11
03/23/2021	01:30	0.92	11:05	3.04	1.79	07:50	0.99	19:00	1.69	1.34	03:05	0.030	11:05	0.146	0.080	0.080	-
03/24/2021	00:50	0.90	11:35	2.66	1.80	21:25	0.97	15:30	1.76	1.41	00:05	0.028	14:30	0.151	0.086	0.086	0.34
03/25/2021	03:20	0.81	12:15	2.31	1.65	22:50	1.00	13:20	1.76	1.48	03:25	0.026	12:10	0.146	0.081	0.081	0.27
03/26/2021	02:10	0.73	07:55	2.50	1.74	19:50	1.04	07:20	1.69	1.48	02:10	0.021	07:55	0.152	0.088	0.088	-
03/27/2021	04:30	0.79	11:00	2.39	1.65	21:35	0.92	14:45	1.72	1.43	04:30	0.024	11:00	0.145	0.078	0.078	-
03/28/2021	02:55	0.96	12:20	2.33	1.67	06:35	0.89	14:10	1.74	1.44	02:55	0.028	12:20	0.137	0.080	0.080	0.37
03/29/2021	02:30	0.70	12:15	2.48	1.71	21:45	1.14	19:15	1.66	1.47	02:30	0.018	12:15	0.142	0.084	0.084	-
03/30/2021	02:30	0.71	09:30	2.33	1.71	22:20	1.10	17:15	1.74	1.45	02:30	0.019	09:20	0.129	0.083	0.083	-
03/31/2021	01:30	0.85	11:55	2.26	1.70	23:55	1.03	19:10	1.77	1.45	01:25	0.027	19:10	0.136	0.082	0.082	-
04/01/2021	23:55	1.05	11:55	2.53	1.85	00:10	1.00	18:50	1.71	1.35	23:55	0.035	15:45	0.131	0.085	0.085	-
04/02/2021	01:00	0.56	07:20	2.35	1.65	23:05	1.13	03:35	1.72	1.46	01:00	0.014	07:20	0.129	0.078	0.078	-
04/03/2021	02:40	0.67	10:55	2.54	1.62	00:20	1.06	16:50	1.76	1.43	02:40	0.021	10:55	0.150	0.076	0.076	-
04/04/2021	02:00	0.66	21:25	2.13	1.56	23:25	0.90	09:20	1.68	1.37	02:00	0.017	11:10	0.123	0.068	0.068	-
04/05/2021	23:50	1.01	13:15	2.31	1.73	02:50	0.82	16:10	1.72	1.36	23:55	0.021	13:25	0.143	0.080	0.080	-
04/06/2021	01:40	0.82	12:15	2.36	1.70	01:15	0.70	10:55	1.88	1.36	00:45	0.016	11:10	0.136	0.077	0.077	-
04/07/2021	02:40	0.75	09:35	2.49	1.68	01:10	0.53	20:35	1.72	1.31	01:10	0.012	16:20	0.114	0.072	0.072	0.22
04/08/2021	02:45	0.71	15:00	2.33	1.70	03:10	0.73	18:40	1.60	1.31	02:45	0.018	13:20	0.125	0.074	0.074	-
04/09/2021	01:45	0.66	10:10	2.33	1.67	00:00	1.14	03:20	1.72	1.42	01:45	0.019	13:45	0.117	0.077	0.077	0.03
04/10/2021	02:45	0.86	09:50	2.57	1.70	05:15	0.97	06:10	1.69	1.39	05:15	0.022	09:50	0.135	0.078	0.078	0.02
04/11/2021	02:50	0.80	11:25	2.18	1.53	01:45	0.81	06:15	1.69	1.44	01:10	0.017	09:50	0.114	0.071	0.071	-
04/12/2021	01:45	0.84	10:50	2.35	1.70	01:50	0.97	22:55	1.57	1.38	01:50	0.020	19:30	0.121	0.077	0.077	-
04/13/2021	01:50	0.77	11:25	2.43	1.73	00:55	0.86	06:55	1.63	1.30	03:05	0.017	17:45	0.122	0.076	0.076	-
04/14/2021	02:00	0.72	12:00	2.44	1.71	23:20	0.87	04:45	1.65	1.34	01:30	0.021	12:00	0.125	0.075	0.075	-
09/22/2020	23:55	1.21	20:10	2.23	1.91	23:15	0.97	16:10	1.76	1.45	23:15	0.047	20:10	0.127	0.094	0.057	-
09/23/2020	03:00	0.88	10:55	2.52	1.87	02:40	1.01	00:30	1.76	1.34	02:20	0.026	18:45	0.138	0.086	0.086	-
09/24/2020	03:55	0.85	08:40	2.38	1.74	05:25	1.05	15:00	1.87	1.41	01:35	0.025	12:55	0.138	0.082	0.082	-
09/25/2020	02:30	0.85	11:55	2.89	1.85	09:55	0.98	07:25	1.91	1.37	03:35	0.025	07:25	0.196	0.086	0.086	-
09/26/2020	02:35	0.95	11:25	2.52	1.80	02:30	0.76	18:10	1.96	1.38	02:35	0.020	18:10	0.182	0.087	0.087	-
09/27/2020	03:50	0.79	10:30	2.43	1.78	23:40	0.79	10:25	1.75	1.37	03:50	0.023	10:30	0.158	0.083	0.083	-
09/28/2020	02:10	1.06	10:25	2.36	1.84	02:55	0.65	10:05	1.58	1.26	02:55	0.018	10:20	0.130	0.080	0.080	-
09/29/2020	02:25	0.69	15:50	2.48	1.80	02:20	0.72	04:40	1.83	1.32	02:20	0.012	19:05	0.137	0.080	0.080	-
09/30/2020	02:35	0.91	10:50	3.47	1.82	23:45	0.92	13:55	1.72	1.41	02:25	0.029	10:50	0.247	0.088	0.088	-
10/01/2020	02:05	0.82	18:55	2.31	1.74	02:05	0.64	10:25	1.74	1.35	02:05	0.012	10:30	0.133	0.079	0.079	-
10/02/2020	02:20	0.79	09:10	2.40	1.78	02:15	0.77	03:35	1.65	1.31	02:15	0.014	15:55	0.129	0.081	0.081	-
10/03/2020	04:20	0.70	11:05	2.57	1.72	06:40	0.70	05:05	1.76	1.40	00:40	0.016	11:30	0.142	0.081	0.081	0.01
10/04/2020	02:30	0.91	13:00	2.30	1.76	02:15	0.54	11:35	1.72	1.35	02:15	0.013	13:00	0.143	0.082	0.082	0.01
10/05/2020	01:20	1.08	09:55	2.56	1.84	00:10	0.67	16:30	1.70	1.27	00:25	0.021	16:40	0.135	0.080	0.080	-
10/06/2020	23:15	0.84	15:40	2.57	1.75	01:20	0.55	06:15	1.72	1.30	01:25	0.012	18:50	0.151	0.079	0.079	-
10/07/2020	01:25	0.89	15:40	2.60	1.83	00:10	0.61	13:25	1.85	1.28	01:35	0.016	19:05	0.139	0.082	0.082	-
10/08/2020	03:40	0.57	10:10	2.61	1.72	01:35	0.56	14:40	1.80	1.36	01:35	0.007	10:05	0.130	0.079	0.079	-
10/09/2020	04:10	0.58	09:15	2.40	1.69	01:35	0.37	13:25	1.74	1.37	01:30	0.007	09:35	0.131	0.079	0.079	0.64
10/10/2020	04:00	1.05	11:10	2.52	1.78	23:10	0.84	00:40	1.89	1.45	23:10	0.028	10:45	0.144	0.087	0.087	1.04
10/11/2020	02:40	0.73	16:25	2.52	1.81	02:30	0.53	08:35	1.66	1.33	02:35	0.009	11:15	0.149	0.085	0.085	0.53
10/12/2020	23:55	0.95	12:20	2.48	1.79	04:55	0.67	07:30	1.76	1.27	00:50	0.019	18:20	0.144	0.079	0.079	-
10/13/2020	03:10	0.85	10:05	2.37	1.79	01:50	0.82	03:40	1.73	1.42	01:35	0.019	18:45	0.139	0.087	0.087	0.61
10/14/2020	02:00	0.74	12:20	2.29	1.70	03:20	0.84	15:05	1.68	1.37	03:30	0.017	20:05	0.125	0.078	0.078	-
10/15/2020	03:40	0.79	09:45	2.34	1.70	00:10	0.69	11:40	1.74	1.40	01:10	0.017	11:40	0.127	0.079	0.079	-
10/16/2020	03:00	0.85	08:50	2.41	1.70	03:00	0.83	04:25	1.77	1.39	03:00	0.016	16:25	0.132	0.079	0.079	-
10/17/2020	04:50	0.71	10:15	2.50	1.70	05:50	0.58	03:50	1.66	1.35	04:50	0.011	10:10	0.139	0.078	0.078	0.01
10/18/2020	02:05	0.83	12:00	2.35	1.71	02:00	0.59	12:00	1.74	1.35	02:05	0.011	12:00	0.152	0.079	0.079	0.03
10/19/2020	01:15	0.62	09:15	2.30	1.69	02:20	0.60	04:15	1.83	1.41	01:15	0.009	18:50	0.144	0.079	0.079	0.05
10/20/2020	03:35	0.57	09:05	2.28	1.70	01:40	0.48	19:40	1.71	1.37	03:35	0.007	19:05	0.135	0.079	0.079	-
10/21/2020	01:50	0.77	15:45	2.27	1.67	01:45	0.60	12:15	1.67	1.36	01:50	0.010	15:40	0.131	0.076	0.076	0.01
10/22/2020	02:05	0.66	11:55	2.28	1.67	02:00	0.49	18:15	1.78	1.38	02:00	0.007	16:10	0.134	0.077	0.077	-
10/23/2020	02:05	0.79	11:10	3.29	1.69	02:20	0.86	11:05	1.98	1.41	02:05	0.015	11:10	0.228	0.080	0.080	0.20
10/24/2020	00:20	0.88	10:35	2.47	1.73	00:15	0.63	14:20	1.89	1.37	00:15	0.013	10:30	0.151	0.082	0.082	0.02
10/25/2020	03:00	0.67	09:35	2.66	1.71	03:10	0.84	07:55	1.86	1.41	03:00	0.012	09:35	0.180	0.081	0.081	-
10/26/2020	01:35	0.66	10:10	2.65	1.74	01:35	0.44	18:25	1.91	1.39	01:35	0.006	18:30	0.142	0.082	0.082	-
10/27/2020	01:50	0.64	11:10	2.36	1.67	04:10	0.49	10:00	1.92	1.38	01:35	0.011	11:10	0.128	0.077	0.077	-
10/28/2020	04:15	0.73	19:20	2.20	1.65	03:10	0.60	04:20	1.77	1.39	03:15	0.010	19:15	0.125	0.076	0.076	-
10/29/2020	03:50	0.78	12:20	2.39	1.67	03:20	0.82	05:25	2.05	1.45	04:00	0.015	19:10	0.154	0.080	0.080	-
10/30/2020	03:35	0.90	16:05	2.32	1.71	00:25	0.79	06:55	1.83	1.39	03:30	0.018	06:55	0.139	0.080	0.080	0.10
10/31/2020	05:25	0.84	09:20	2.50	1.69	04:15	0.61	20:30	1.84	1.36	04:10	0.015	09:15	0.140	0.078	0.078	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	05:20	0.66	10:15	2.30	1.53	04:35	0.48	11:45	2.38	1.67	04:35	0.007	10:45	0.172	0.087	0.087	-
11/02/2020	04:00	0.54	08:35	2.13	1.43	04:10	0.94	08:30	2.39	2.00	03:55	0.010	08:35	0.170	0.091	0.091	-
11/03/2020	03:00	0.61	06:55	2.51	1.71	03:15	0.52	06:40	2.16	1.47	03:15	0.006	17:15	0.136	0.082	0.082	0.83
11/04/2020	03:30	0.97	06:55	2.43	1.74	02:50	0.67	18:50	1.89	1.33	03:20	0.018	06:55	0.141	0.079	0.079	0.09
11/05/2020	03:45	0.87	14:30	2.32	1.75	03:30	0.55	05:40	1.79	1.38	03:30	0.012	14:25	0.121	0.082	0.082	0.34
11/06/2020	02:40	0.78	08:40	2.40	1.68	03:45	0.52	04:50	1.72	1.38	03:20	0.010	17:00	0.138	0.077	0.077	0.10
11/07/2020	03:50	1.05	11:50	2.52	1.68	02:50	0.78	15:10	1.76	1.35	02:50	0.022	11:50	0.145	0.076	0.076	0.07
11/08/2020	06:30	0.89	10:45	2.47	1.67	02:45	0.86	06:45	1.67	1.39	06:25	0.020	10:45	0.153	0.077	0.077	0.01
11/09/2020	04:00	0.67	13:35	2.19	1.59	02:45	0.81	18:00	1.95	1.46	02:45	0.016	14:10	0.117	0.074	0.074	0.04
11/10/2020	03:10	0.69	12:35	2.27	1.60	04:10	0.59	14:00	1.85	1.42	03:10	0.014	19:20	0.144	0.075	0.075	0.03
11/11/2020	03:45	0.59	12:50	2.62	1.65	03:55	0.73	08:40	1.80	1.38	03:55	0.008	18:15	0.164	0.076	0.076	-
11/12/2020	04:50	0.58	21:40	2.29	1.62	04:40	0.52	07:40	1.82	1.33	04:45	0.006	21:40	0.132	0.072	0.072	0.16
11/13/2020	03:00	0.81	15:10	2.93	1.70	03:05	0.57	12:55	1.73	1.38	03:05	0.011	15:10	0.174	0.079	0.079	0.38
11/14/2020	04:10	0.62	12:35	2.68	1.63	04:20	0.60	07:45	1.95	1.45	04:10	0.008	12:30	0.169	0.078	0.078	0.47
11/15/2020	04:10	0.74	17:55	3.70	1.69	04:25	0.38	17:50	2.48	1.36	04:20	0.006	17:55	0.351	0.080	0.080	0.19
11/16/2020	04:05	0.83	11:05	2.46	1.68	04:00	0.80	17:55	1.70	1.39	04:00	0.016	11:05	0.151	0.078	0.078	0.31
11/17/2020	03:55	0.86	12:25	2.34	1.69	04:00	0.71	08:15	1.84	1.42	04:00	0.015	19:55	0.134	0.080	0.080	0.20
11/18/2020	03:05	0.85	12:50	2.20	1.58	03:05	0.60	15:50	2.20	1.53	03:05	0.012	12:15	0.140	0.080	0.080	0.30
11/19/2020	04:30	0.62	15:25	2.71	1.63	04:25	0.79	15:20	2.35	1.50	04:30	0.010	15:25	0.138	0.079	0.079	0.50
11/20/2020	04:10	0.78	12:50	2.38	1.67	04:10	0.48	08:20	2.03	1.33	04:10	0.008	12:45	0.140	0.075	0.075	0.01
11/21/2020	03:00	0.74	10:50	2.55	1.70	04:45	0.52	08:35	1.74	1.31	03:00	0.010	10:40	0.156	0.078	0.078	-
11/22/2020	07:10	0.75	12:30	2.31	1.66	05:30	0.79	07:10	1.80	1.35	05:30	0.014	12:20	0.134	0.075	0.075	0.21
11/23/2020	02:25	0.92	13:40	2.33	1.75	02:20	0.75	15:25	1.70	1.40	02:25	0.017	13:30	0.128	0.083	0.083	0.14
11/24/2020	04:35	0.79	13:30	4.03	1.73	02:30	0.64	12:15	2.17	1.36	02:30	0.012	13:30	0.286	0.081	0.081	0.21
11/25/2020	03:45	0.84	09:20	2.18	1.64	03:40	0.60	13:50	1.86	1.42	03:40	0.013	17:15	0.132	0.078	0.078	0.05
11/26/2020	06:35	1.03	13:45	2.51	1.72	06:40	0.41	07:45	1.86	1.36	06:40	0.011	13:45	0.168	0.080	0.080	0.02
11/27/2020	05:50	0.80	11:35	2.51	1.68	03:55	0.62	07:55	1.86	1.39	05:45	0.013	11:25	0.151	0.079	0.079	-
11/28/2020	01:45	0.79	11:40	2.38	1.69	01:35	0.66	11:10	1.66	1.38	01:40	0.014	11:30	0.143	0.079	0.079	0.05
11/29/2020	05:05	0.70	19:05	2.19	1.58	02:35	0.65	05:40	1.84	1.40	02:30	0.012	19:05	0.123	0.072	0.072	-
11/30/2020	03:35	0.63	11:25	2.32	1.73	02:15	0.69	00:55	1.98	1.38	02:35	0.010	11:25	0.129	0.081	0.081	0.36
12/01/2020	03:15	0.84	16:45	2.39	1.72	04:30	0.61	17:35	1.64	1.35	04:30	0.013	16:45	0.144	0.079	0.079	-
12/02/2020	02:25	0.87	16:20	2.47	1.75	06:45	0.73	08:15	1.67	1.38	06:45	0.018	16:15	0.147	0.083	0.083	0.01
12/03/2020	03:00	0.97	18:30	2.42	1.80	03:00	0.73	22:30	1.93	1.38	03:00	0.017	18:25	0.148	0.085	0.085	-
12/04/2020	04:55	1.10	15:15	2.34	1.86	01:30	0.79	07:25	1.88	1.35	03:25	0.028	15:10	0.131	0.087	0.087	-
12/05/2020	01:30	1.10	11:00	2.82	1.92	04:45	0.64	18:45	1.62	1.29	04:50	0.020	12:25	0.150	0.088	0.088	0.03
12/06/2020	04:15	0.87	19:00	2.32	1.75	06:55	0.69	11:10	1.76	1.34	02:25	0.021	11:10	0.146	0.080	0.080	0.03
12/07/2020	03:30	1.11	17:25	2.46	1.84	03:00	0.74	19:50	1.71	1.34	02:35	0.027	17:20	0.140	0.085	0.085	-
12/08/2020	04:10	0.95	16:05	2.53	1.90	01:45	0.93	06:35	1.70	1.39	04:00	0.026	16:05	0.147	0.093	0.093	0.87
12/09/2020	02:55	1.01	18:35	2.61	1.93	02:45	0.92	09:40	1.59	1.30	02:45	0.024	18:30	0.155	0.088	0.088	0.17
12/10/2020	01:35	1.06	12:00	2.73	1.84	03:05	0.57	18:20	1.74	1.29	03:05	0.019	12:00	0.145	0.083	0.083	0.07
12/11/2020	03:35	0.85	13:50	2.36	1.80	03:25	0.62	08:15	1.59	1.35	03:25	0.014	13:45	0.131	0.084	0.084	0.02
12/12/2020	05:55	1.12	10:45	2.54	1.75	04:45	0.60	21:45	2.01	1.40	02:45	0.019	10:40	0.148	0.084	0.084	0.01
12/13/2020	04:50	0.90	09:50	2.36	1.75	00:35	0.69	09:45	2.37	1.44	00:35	0.023	10:35	0.141	0.085	0.085	0.24
12/14/2020	04:15	0.87	16:15	2.34	1.80	04:15	0.77	12:00	1.61	1.38	04:15	0.015	16:40	0.130	0.085	0.085	0.05
12/15/2020	03:50	1.08	16:20	2.41	1.84	23:35	1.17	07:35	1.76	1.46	02:40	0.043	16:45	0.142	0.091	0.091	0.58
12/16/2020	03:25	1.10	18:35	2.41	1.85	03:20	0.72	18:25	1.68	1.35	03:20	0.021	18:40	0.144	0.087	0.087	0.39
12/17/2020	02:30	1.11	17:30	2.55	1.85	23:30	0.89	12:55	1.80	1.41	01:25	0.038	17:30	0.151	0.089	0.089	0.08
12/18/2020	03:25	1.04	10:40	2.35	1.81	03:00	0.64	09:10	1.65	1.38	03:00	0.021	13:50	0.136	0.086	0.086	0.25
12/19/2020	02:20	1.07	13:10	2.49	1.85	03:10	0.59	09:40	1.63	1.30	03:10	0.019	13:05	0.146	0.085	0.085	0.37
12/20/2020	04:10	1.07	20:25	2.43	1.86	03:35	0.45	20:20	1.75	1.23	04:05	0.013	20:20	0.155	0.082	0.082	0.04
12/21/2020	04:20	1.04	16:20	2.48	1.87	03:30	0.95	17:25	1.72	1.41	03:35	0.030	16:20	0.142	0.091	0.091	1.07
12/22/2020	03:55	0.98	10:05	2.36	1.84	04:35	1.24	07:25	1.67	1.45	03:55	0.035	10:05	0.136	0.090	0.090	-
12/23/2020	02:50	0.94	14:25	2.44	1.82	05:25	1.19	07:00	1.64	1.43	02:50	0.032	12:50	0.141	0.088	0.088	-
12/24/2020	02:35	1.00	09:50	2.50	1.78	06:50	1.10	05:55	1.77	1.43	03:10	0.035	09:45	0.139	0.085	0.085	-
12/25/2020	06:15	1.06	11:10	2.27	1.74	02:35	0.99	18:50	1.70	1.34	03:40	0.037	12:10	0.130	0.076	0.076	0.49
12/26/2020	04:55	1.12	12:20	2.62	1.88	23:55	1.08	17:15	1.64	1.34	04:55	0.041	12:20	0.150	0.087	0.087	0.02
12/27/2020	04:55	0.98	11:50	2.55	1.83	07:55	1.04	05:00	1.98	1.38	05:50	0.037	12:00	0.140	0.085	0.085	0.13
12/28/2020	03:25	1.25	11:35	2.58	1.91	01:05	0.92	18:00	1.64	1.37	00:50	0.039	11:35	0.151	0.092	0.092	-
12/29/2020	03:15	0.79	11:25	2.59	1.89	06:00	1.10	18:10	1.71	1.48	03:15	0.025	13:25	0.160	0.097	0.097	0.14
12/30/2020	05:10	1.20	12:35	2.86	2.08	01:45	0.99	05:25	1.74	1.49	01:45	0.037	17:10	0.187	0.113	0.113	0.78
12/31/2020	02:05	1.26	11:10	2.85	2.11	11:10	1.24	07:15	1.81	1.51	02:50	0.051	14:20	0.177	0.115	0.115	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			17.381	30.65
Average	1.81	1.41	0.087	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES	AUB_A1D_30910

Site Address /Location:	35th St NE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Right lane closure needed	Latitude:	47°20'19.65"N	Pipe Size (H x W): 18.13 X 18.00	Pipe Shape: Circular
		Longitude:	122°13'20.72"W	Manhole #: A1D30910	System Characteristics: Residential
				Access: Drive	Traffic: Heavy









ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, September 22, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Downstream 5-10 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
9:25:00 AM	
Depth of Flow (Wet DOF) (in)	
2.25	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.57	N/A
Silt (in)	Silt Type
0	

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
10	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A2_40805K

Site Commentary

SITE INFORMATION

Pipe	Elliptical (71.5 in H x 70 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	15.12	2.00	5.587
Minimum	9.17	1.29	1.708
Maximum	25.82	2.57	14.268
Min Time	10/04/2020 5:00:00 AM	10/04/2020 5:00:00 AM	10/04/2020 5:00:00 AM
Max Time	01/12/2021 8:00:00 PM	01/13/2021 2:00:00 AM	01/12/2021 9:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

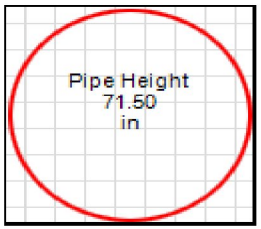
Percent Uptime	
DFINAL (in)	95.015
VFINAL (ft/s)	95.015
QFINAL (MGD - Total MG)	95.015

Hydrograph Report

AUB_A2_40805K

Flow Monitor

AUB_A2_40805K

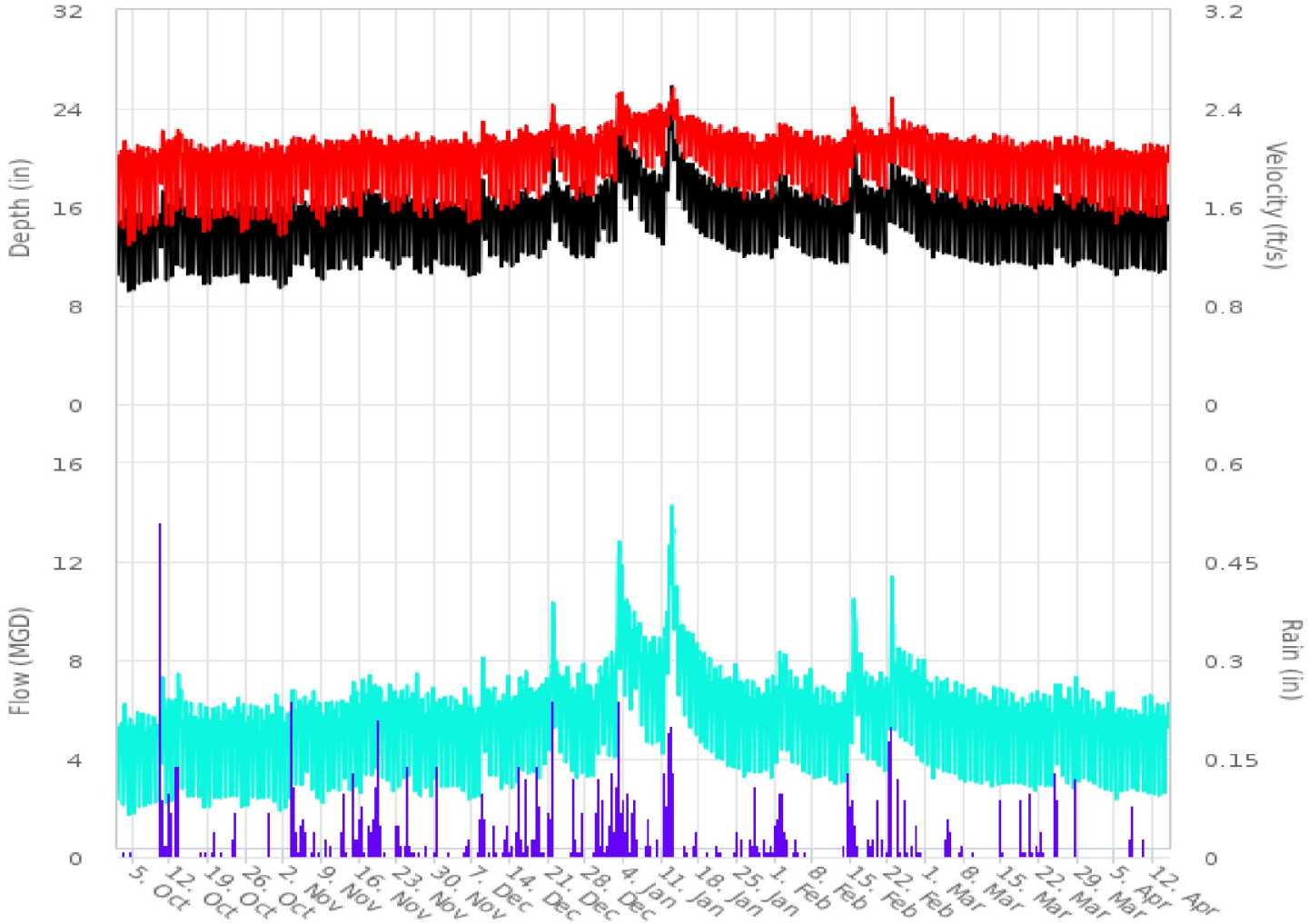


Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Scattergraph Report

AUB_A2_40805K

Flow Monitor

AUB_A2_40805K

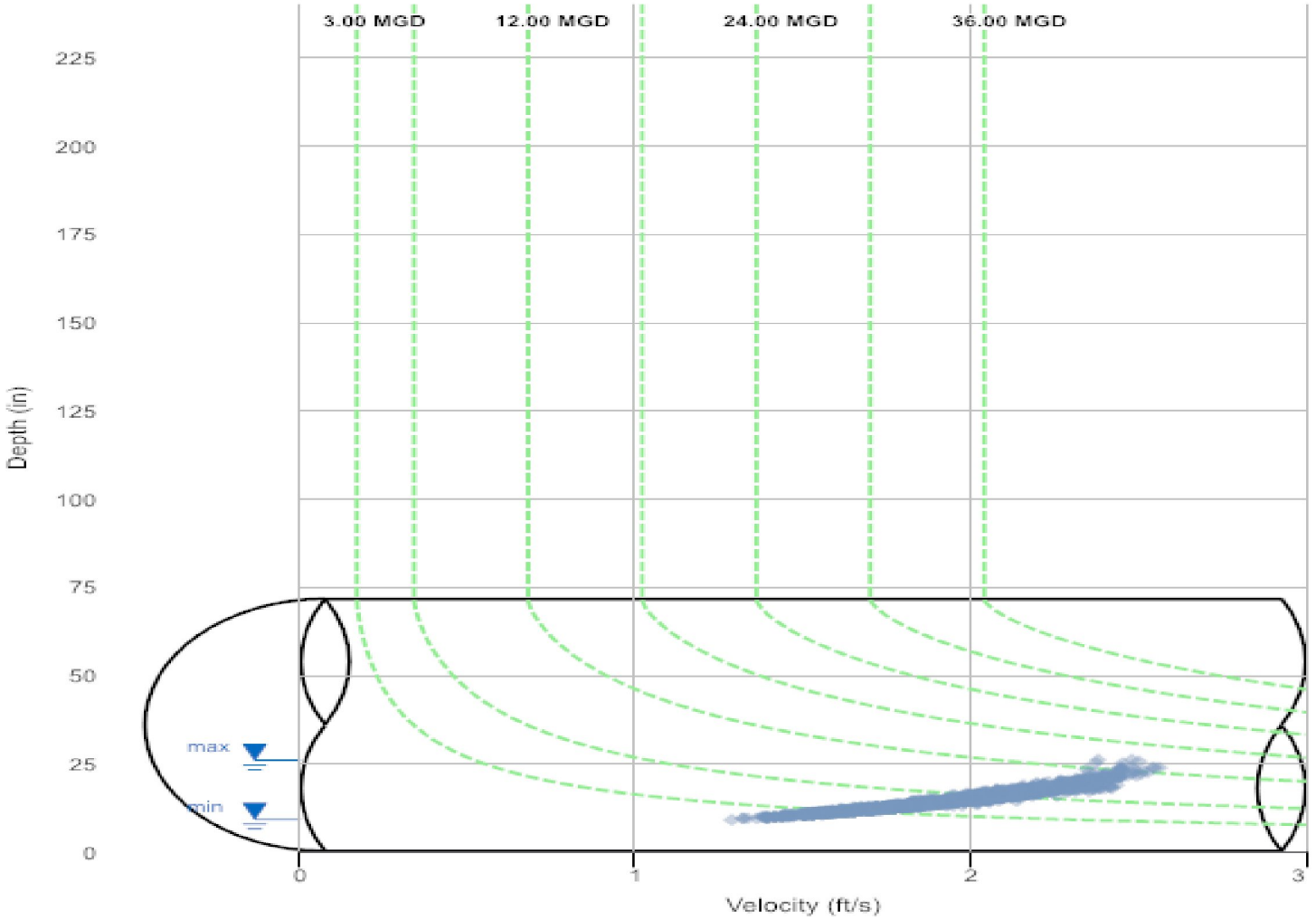
Pipe Height
71.50
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A2_40805KPipe: Elliptical (71.5 in H x 70 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	06:10	13.03	17:35	18.67	15.91	07:10	1.80	16:45	2.34	2.09	07:10	3.987	17:25	8.558	6.223	6.223	0.51
01/02/2021	06:30	13.08	23:55	22.98	17.22	05:40	1.77	22:00	2.57	2.14	07:20	3.968	23:55	12.470	7.234	7.234	1.69
01/03/2021	08:40	17.90	01:50	24.01	20.81	06:35	2.12	14:45	2.58	2.36	08:35	7.539	01:50	13.050	10.145	10.145	0.65
01/04/2021	05:05	16.56	13:45	21.20	19.33	04:30	2.04	13:35	2.45	2.29	05:05	6.416	13:50	10.710	8.884	8.884	0.48
01/05/2021	05:20	15.64	22:15	20.81	18.39	03:30	2.02	22:05	2.42	2.24	04:45	5.784	22:05	10.300	8.089	8.089	0.52
01/06/2021	05:45	16.92	20:00	20.06	18.87	05:15	2.10	13:15	2.40	2.28	05:15	6.725	19:55	9.718	8.512	8.512	0.22
01/07/2021	05:40	14.84	20:20	19.20	17.45	05:00	1.96	19:55	2.41	2.21	05:00	5.245	19:55	9.089	7.410	7.410	-
01/08/2021	06:00	13.87	19:40	18.78	16.98	04:30	1.90	19:50	2.42	2.20	05:55	4.584	19:50	8.928	7.124	7.124	0.22
01/09/2021	06:10	13.72	14:15	18.94	16.66	05:55	1.86	20:20	2.43	2.22	06:00	4.446	14:15	9.000	7.024	7.024	-
01/10/2021	06:55	13.42	14:45	18.73	16.43	06:50	1.95	12:10	2.48	2.26	06:55	4.467	14:45	9.088	7.013	7.013	0.07
01/11/2021	05:50	12.78	22:10	20.54	17.20	05:35	1.87	21:45	2.40	2.22	05:45	4.081	22:10	10.050	7.404	7.404	1.06
01/12/2021	02:35	17.23	20:55	25.96	22.11	02:15	2.25	22:50	2.55	2.40	02:35	7.359	21:25	14.490	11.194	11.194	2.10
01/13/2021	06:30	19.73	00:00	24.52	21.20	04:30	2.23	02:05	2.62	2.42	07:10	9.008	02:05	13.850	10.623	10.623	0.09
01/14/2021	05:50	16.52	20:00	20.39	18.82	03:50	2.07	15:15	2.37	2.25	03:50	6.481	19:35	9.614	8.370	8.370	0.01
01/15/2021	05:10	15.71	19:20	19.61	18.22	04:35	1.97	20:05	2.38	2.21	04:35	5.693	15:20	9.284	7.883	7.883	0.09
01/16/2021	06:00	14.58	13:55	19.74	17.41	06:40	1.95	13:15	2.38	2.21	06:40	5.103	14:00	9.304	7.398	7.398	-
01/17/2021	07:30	14.19	15:00	19.11	17.06	04:15	1.90	14:20	2.36	2.18	08:15	4.824	14:20	8.878	7.111	7.111	0.10
01/18/2021	05:55	13.84	20:35	18.62	16.73	05:55	1.90	21:30	2.32	2.14	05:55	4.554	21:30	8.460	6.806	6.806	-
01/19/2021	05:15	13.43	21:30	18.41	16.44	05:00	1.86	20:15	2.30	2.10	05:10	4.290	20:15	8.208	6.509	6.509	0.01
01/20/2021	06:10	13.29	20:30	18.02	16.14	05:05	1.81	21:20	2.27	2.08	06:10	4.100	20:30	7.895	6.285	6.285	-
01/21/2021	05:00	13.14	21:15	17.92	16.12	04:40	1.71	20:50	2.29	2.07	04:40	3.875	21:20	7.922	6.233	6.233	0.11
01/22/2021	05:20	12.92	21:15	17.30	15.83	04:20	1.74	20:05	2.22	2.05	04:20	3.854	20:05	7.304	6.032	6.032	-
01/23/2021	05:55	12.36	13:20	17.64	15.55	05:00	1.70	12:05	2.25	2.04	05:50	3.501	13:10	7.522	5.860	5.860	-
01/24/2021	05:35	12.33	14:10	18.07	15.71	06:25	1.72	13:45	2.28	2.07	06:25	3.535	13:45	7.941	6.062	6.062	0.16
01/25/2021	05:40	12.17	14:15	17.24	15.51	05:25	1.73	19:35	2.24	2.06	05:40	3.469	19:35	7.227	5.887	5.887	0.04
01/26/2021	05:05	11.70	21:35	17.24	15.21	05:05	1.62	21:25	2.23	2.01	05:05	3.051	21:25	7.267	5.615	5.615	-
01/27/2021	05:40	12.02	20:50	17.30	15.28	05:20	1.72	20:40	2.22	2.02	05:35	3.390	20:40	7.315	5.645	5.645	0.14
01/28/2021	05:20	11.99	21:15	17.13	15.38	04:15	1.69	20:40	2.16	1.97	05:20	3.309	20:40	6.997	5.562	5.562	0.24
01/29/2021	05:25	11.98	20:20	16.76	15.12	05:00	1.70	10:50	2.17	2.00	05:25	3.336	20:15	6.746	5.508	5.508	0.03
01/30/2021	07:05	12.01	14:15	17.38	15.12	06:55	1.72	13:55	2.23	2.02	07:00	3.382	14:15	7.397	5.586	5.586	0.07
01/31/2021	06:40	11.65	14:15	17.75	15.19	06:40	1.64	14:00	2.23	2.00	06:40	3.067	14:00	7.595	5.602	5.602	0.12
02/01/2021	05:15	12.51	20:40	18.75	15.78	04:05	1.78	20:35	2.32	2.04	04:15	3.686	20:35	8.545	5.983	5.983	0.82
02/02/2021	05:50	13.45	21:05	18.61	16.71	05:50	1.79	13:55	2.34	2.13	05:50	4.109	21:05	8.484	6.760	6.760	0.31
02/03/2021	05:45	13.41	21:00	17.71	16.13	04:50	1.84	20:45	2.27	2.07	05:10	4.247	21:00	7.711	6.233	6.233	0.06
02/04/2021	05:40	12.72	20:40	17.42	15.61	04:40	1.73	21:40	2.25	2.05	04:40	3.719	21:00	7.422	5.913	5.913	0.07
02/05/2021	05:10	12.56	20:20	16.81	15.39	04:45	1.70	12:35	2.21	2.03	06:05	3.612	19:55	6.892	5.722	5.722	0.01
02/06/2021	06:35	12.04	13:35	17.62	15.39	05:30	1.69	16:35	2.26	2.03	06:35	3.342	13:40	7.479	5.763	5.763	0.01
02/07/2021	07:05	11.88	14:25	17.95	15.30	05:45	1.65	13:00	2.26	2.01	05:45	3.194	13:05	7.785	5.673	5.673	-
02/08/2021	05:20	11.64	20:55	17.01	15.09	05:10	1.62	20:10	2.19	1.97	05:10	3.064	20:55	7.029	5.428	5.428	-
02/09/2021	05:00	11.60	22:05	16.98	14.87	05:00	1.63	21:10	2.22	1.96	05:00	3.039	21:10	7.095	5.297	5.297	-
02/10/2021	04:55	11.72	21:05	16.76	14.79	04:50	1.68	20:25	2.21	1.99	04:55	3.182	21:00	6.887	5.328	5.328	-
02/11/2021	05:20	11.50	21:05	16.68	14.70	05:25	1.63	20:55	2.19	1.98	05:25	2.993	21:00	6.841	5.251	5.251	-
02/12/2021	05:35	11.14	20:50	16.13	14.56	05:30	1.57	15:10	2.17	1.96	05:35	2.769	15:10	6.360	5.143	5.143	-
02/13/2021	05:35	11.33	15:25	16.84	14.54	05:25	1.59	14:55	2.23	1.95	05:30	2.860	14:55	6.882	5.119	5.119	0.08
02/14/2021	07:15	11.14	14:30	17.67	14.91	05:55	1.61	14:45	2.26	1.98	07:10	2.856	14:45	7.605	5.430	5.430	0.71
02/15/2021	06:15	13.82	15:20	21.16	17.71	07:40	1.84	15:05	2.43	2.19	06:00	4.501	15:15	10.610	7.624	7.624	0.78
02/16/2021	05:35	15.50	00:00	19.03	17.50	06:05	1.99	14:25	2.34	2.18	06:05	5.630	00:00	8.677	7.339	7.339	0.07
02/17/2021	05:00	13.19	20:10	17.73	16.16	04:05	1.78	19:40	2.28	2.09	04:50	4.059	21:10	7.691	6.323	6.323	-
02/18/2021	05:30	12.74	21:45	17.62	15.85	03:35	1.76	19:05	2.28	2.07	05:30	3.854	21:50	7.504	6.068	6.068	0.09
02/19/2021	06:10	12.70	20:55	17.40	15.68	05:55	1.79	12:25	2.22	2.06	06:10	3.791	21:00	7.251	5.944	5.944	0.17
02/20/2021	07:10	12.50	13:45	17.67	15.50	06:00	1.72	13:30	2.27	2.05	07:00	3.600	13:40	7.662	5.872	5.872	0.07
02/21/2021	06:40	12.03	13:30	17.49	15.36	05:30	1.72	20:40	2.26	2.03	06:35	3.373	13:40	7.357	5.750	5.750	0.42
02/22/2021	06:05	14.40	14:55	22.12	18.47	06:00	1.89	14:45	2.54	2.22	06:00	4.851	14:45	11.770	8.137	8.137	0.98
02/23/2021	05:50	14.56	23:20	19.53	17.30	03:35	1.92	14:45	2.29	2.14	05:30	5.035	23:20	8.682	7.110	7.110	0.27
02/24/2021	05:30	14.16	00:00	18.88	17.00	05:25	1.90	21:55	2.37	2.15	05:30	4.704	21:55	8.636	6.947	6.947	-
02/25/2021	05:05	13.98	20:50	18.57	16.91	05:00	1.84	21:40	2.32	2.13	05:00	4.484	20:55	8.388	6.856	6.856	0.18
02/26/2021	06:00	13.70	20:35	17.76	16.44	05:20	1.84	21:30	2.30	2.13	05:20	4.422	21:30	7.735	6.568	6.568	0.10
02/27/2021	05:30	13.07	13:05	18.42	16.16	03:45	1.79	12:20	2.33	2.09	05:30	4.046	12:20	8.260	6.344	6.344	0.02
02/28/2021	06:35	12.53	13:40	18.31	15.87	06:25	1.80	13:50	2.32	2.10	06:35	3.740	13:50	8.267	6.207	6.207	0.02
03/01/2021	05:40	12.51	21:40	17.21	15.50	04:15	1.74	19:40	2.22	2.03	05:35	3.647	21:30	7.218	5.796	5.796	-
03/02/2021	05:40	11.69	21:25	17.53	15.13	05:25	1.63	20:55	2.24	2.00	05:40	3.084	21:25	7.434	5.540	5.540	-
03/03/2021	05:20	12.34	20:55	17.16	15.47	05:35	1.72	20:45	2.22	2.05	05:35	3.504	22:35	7.216	5.837	5.837	-
03/04/2021	05:45	12.00	21:30	17.49	15.24	05:45	1.71	21:45	2.22	2.02	05:45	3.345	21:30	7.378	5.639	5.639	0.20
03/05/2021	05:25	12.14	20:30	16.79	15.23	04:30	1.71	13:30	2.17	2.01	05:35	3.408	20:30	6.775	5.589	5.589	0.05
03/06/2021	05:50	11.79	14:10	17.35	15.16	07:15	1.65	13:25	2.21	2.00	07:15	3.158	13:25	7.283	5.540	5.540	-
03/07/2021	06:10	11.77	13:05	17.45	15.13	06:30	1.60	12:00	2.17	1.96	06:30	3.048	13:20	7.177	5.428	5.428	0.04
03/08/2021	05:55	11.64	21:40	16.91	14.94	04:50	1.54	21:00	2.21	1.96	04:50	2.933	21:00	6.918	5.346	5.346	-
03/09/2021	06:10	11.23	21:50	16.83	14.78	04:55	1.62	22:10	2.22	1.99	06:10	2.893	22:10	7.025	5.317	5.317	0.01
03/10/2021	05:35	11.41	21:20	16.62	14.76	05:00	1.59	21:10	2.18	1.99	05:15	2.948	21:10	6.762	5.309	5.309	-
03/11/2021	05:05	11.22	21:10	16.58	14.70	05:00	1.60	22:00	2.16	1.97	05:05	2.831	21:10	6.642	5.229	5.229	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	05:20	11.41	20:40	16.19	14.56	04:00	1.59	20:40	2.18	1.97	05:15	2.994	20:40	6.531	5.156	5.156	-
03/13/2021	05:40	11.03	14:05	16.85	14.56	05:20	1.58	13:25	2.29	1.97	05:40	2.744	13:25	7.181	5.186	5.186	-
03/14/2021	07:25	11.12	21:35	17.07	14.82	07:15	1.58	14:40	2.25	1.97	07:25	2.765	14:40	7.112	5.332	5.332	0.30
03/15/2021	04:05	11.40	21:25	16.75	14.80	04:00	1.53	19:20	2.22	1.95	04:00	2.808	21:25	6.922	5.257	5.257	-
03/16/2021	03:50	11.30	21:40	16.70	14.67	03:30	1.60	20:45	2.20	1.97	03:50	2.864	20:45	6.863	5.210	5.210	-
03/17/2021	05:05	11.18	21:45	16.32	14.56	04:55	1.56	21:45	2.12	1.94	05:05	2.756	21:45	6.419	5.070	5.070	-
03/18/2021	05:00	11.25	20:30	16.44	14.50	03:30	1.58	20:00	2.15	1.93	05:05	2.861	20:40	6.554	5.017	5.017	0.11
03/19/2021	05:10	11.00	19:50	16.06	14.49	05:05	1.55	19:30	2.16	1.94	05:10	2.694	19:30	6.375	5.050	5.050	0.03
03/20/2021	04:45	10.98	13:05	16.71	14.54	04:30	1.55	11:15	2.16	1.95	04:35	2.689	12:15	6.743	5.118	5.118	0.17
03/21/2021	06:10	10.83	12:50	16.92	14.53	06:00	1.52	12:20	2.18	1.94	06:10	2.567	13:55	6.862	5.109	5.109	0.07
03/22/2021	05:05	11.04	21:20	16.60	14.60	05:10	1.54	20:30	2.17	1.96	05:10	2.669	21:20	6.736	5.158	5.158	0.11
03/23/2021	03:45	11.25	21:05	16.62	14.54	04:25	1.55	21:00	2.16	1.94	04:50	2.775	21:05	6.715	5.075	5.075	-
03/24/2021	03:50	11.10	21:40	17.30	14.62	03:50	1.57	21:35	2.22	1.94	03:50	2.740	21:35	7.303	5.122	5.122	0.34
03/25/2021	04:55	12.42	20:55	17.17	15.41	04:50	1.74	11:30	2.19	2.01	04:55	3.573	20:55	7.138	5.675	5.675	0.27
03/26/2021	04:05	11.72	12:40	16.52	14.97	04:05	1.63	13:30	2.15	1.97	04:05	3.079	12:40	6.532	5.347	5.347	-
03/27/2021	05:35	11.29	12:05	17.15	14.76	05:25	1.58	11:30	2.20	1.96	05:30	2.834	11:40	7.086	5.241	5.241	-
03/28/2021	05:15	11.07	16:35	17.63	14.90	05:10	1.55	16:10	2.22	1.94	05:15	2.709	16:10	7.464	5.326	5.326	0.37
03/29/2021	04:25	11.44	21:20	16.96	14.93	04:20	1.62	21:10	2.18	1.96	04:25	2.952	21:20	6.974	5.326	5.326	-
03/30/2021	04:50	11.60	21:40	16.83	14.61	04:30	1.63	21:25	2.18	1.95	04:30	3.059	21:25	6.885	5.128	5.128	-
03/31/2021	04:45	11.60	22:00	16.52	14.76	04:45	1.60	21:00	2.12	1.94	04:45	2.977	21:35	6.510	5.181	5.181	-
04/01/2021	04:10	11.30	22:05	16.36	14.50	04:00	1.56	22:10	2.15	1.93	04:00	2.807	22:10	6.527	5.010	5.010	-
04/02/2021	04:35	11.18	20:45	15.97	14.36	04:10	1.55	20:05	2.10	1.91	04:35	2.731	20:45	6.085	4.894	4.894	-
04/03/2021	05:55	10.77	12:25	16.86	14.40	05:50	1.51	11:10	2.18	1.92	05:50	2.539	11:20	6.824	4.981	4.981	-
04/04/2021	06:20	10.76	13:10	16.87	14.28	06:15	1.53	11:00	2.15	1.91	06:20	2.560	12:55	6.813	4.902	4.902	-
04/05/2021	04:35	10.24	21:40	16.04	14.14	04:45	1.41	20:30	2.09	1.88	04:45	2.208	21:25	6.148	4.761	4.761	-
04/06/2021	04:30	10.92	21:35	15.96	14.26	04:40	1.52	19:35	2.11	1.90	04:40	2.593	12:35	6.099	4.844	4.844	-
04/07/2021	05:00	10.81	19:35	15.90	14.13	05:20	1.53	21:40	2.09	1.89	04:55	2.591	20:30	6.085	4.747	4.747	0.22
04/08/2021	04:55	10.94	22:00	15.88	14.24	04:45	1.50	21:25	2.09	1.88	05:00	2.572	22:00	6.095	4.766	4.766	-
04/09/2021	04:20	10.96	11:55	15.75	14.14	04:25	1.51	11:35	2.07	1.89	04:30	2.588	11:35	5.958	4.742	4.742	0.03
04/10/2021	07:00	10.81	13:15	16.58	14.20	06:50	1.50	12:20	2.16	1.90	06:50	2.531	12:25	6.696	4.815	4.815	0.02
04/11/2021	05:55	10.47	12:25	16.83	14.27	05:45	1.46	11:50	2.18	1.90	05:50	2.353	11:50	6.848	4.882	4.882	-
04/12/2021	04:35	10.70	20:45	16.06	14.16	04:40	1.47	20:35	2.13	1.90	04:40	2.446	20:35	6.291	4.801	4.801	-
04/13/2021	04:25	10.45	21:55	16.21	14.15	04:10	1.47	22:15	2.19	1.89	04:25	2.348	22:15	6.512	4.780	4.780	-
04/14/2021	04:45	10.68	22:20	16.41	14.25	04:50	1.47	22:20	2.17	1.90	04:50	2.430	22:20	6.640	4.842	4.829	-
10/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/02/2020	06:10	10.36	12:20	14.87	13.90	05:45	1.43	20:45	2.08	1.92	06:00	2.308	20:45	5.511	4.692	3.633	-
10/03/2020	05:55	9.55	12:30	15.94	13.30	05:55	1.37	12:45	2.18	1.86	06:00	1.923	13:05	6.362	4.353	4.353	0.01
10/04/2020	06:50	8.86	11:45	15.29	12.91	05:00	1.25	13:20	2.14	1.79	05:30	1.623	13:20	5.804	4.067	4.067	0.01
10/05/2020	04:35	9.06	20:25	15.52	13.25	03:55	1.27	19:55	2.15	1.85	04:35	1.677	20:15	5.954	4.300	4.300	-
10/06/2020	04:40	9.51	21:15	15.69	13.31	04:35	1.38	19:55	2.12	1.85	04:40	1.921	21:05	6.064	4.320	4.320	-
10/07/2020	05:00	9.68	20:40	15.41	13.24	04:25	1.27	21:25	2.13	1.85	04:25	1.921	21:25	5.927	4.269	4.269	-
10/08/2020	05:10	9.84	20:20	15.27	13.38	05:05	1.38	20:20	2.10	1.85	05:05	2.023	20:20	5.793	4.335	4.335	-
10/09/2020	04:10	10.04	20:00	14.98	13.35	05:20	1.41	13:45	2.09	1.84	05:20	2.144	13:45	5.569	4.291	4.291	0.64
10/10/2020	05:25	12.47	13:10	17.36	15.27	06:20	1.75	11:35	2.25	2.04	05:25	3.652	13:00	7.415	5.669	5.669	1.04
10/11/2020	06:50	9.72	14:35	16.32	13.82	06:45	1.39	19:40	2.18	1.89	06:45	2.016	14:20	6.555	4.680	4.680	0.53
10/12/2020	04:40	10.16	11:00	16.74	14.06	04:35	1.40	11:00	2.27	1.92	04:35	2.160	11:00	7.124	4.841	4.841	-
10/13/2020	04:05	10.98	09:20	17.83	14.88	03:40	1.54	09:05	2.28	2.00	04:05	2.710	09:15	7.813	5.426	5.426	0.61
10/14/2020	05:00	10.86	21:05	16.11	14.10	03:35	1.55	21:05	2.19	1.94	04:55	2.646	21:05	6.534	4.856	4.856	-
10/15/2020	04:40	10.36	21:10	16.03	13.96	04:10	1.47	20:20	2.16	1.93	04:40	2.376	21:00	6.381	4.791	4.791	-
10/16/2020	04:40	10.41	14:05	15.32	13.77	04:30	1.47	13:05	2.12	1.89	04:35	2.338	13:05	5.820	4.601	4.601	-
10/17/2020	06:20	10.29	12:55	16.18	13.75	05:05	1.48	13:45	2.17	1.88	06:20	2.306	13:45	6.416	4.591	4.591	0.01
10/18/2020	05:30	9.55	13:00	16.00	13.42	05:05	1.34	11:50	2.13	1.83	05:20	1.908	12:55	6.275	4.349	4.349	0.03
10/19/2020	04:50	9.50	20:20	15.84	13.59	04:50	1.37	20:45	2.12	1.86	04:50	1.909	20:45	6.172	4.481	4.481	0.05
10/20/2020	04:40	10.29	20:50	15.97	13.83	04:05	1.44	19:40	2.15	1.90	04:30	2.316	20:40	6.257	4.664	4.664	-
10/21/2020	05:30	10.14	20:50	15.99	13.79	04:05	1.44	20:35	2.19	1.90	04:05	2.272	20:35	6.385	4.646	4.646	0.01
10/22/2020	05:15	10.21	21:05	15.82	13.59	04:55	1.47	20:40	2.14	1.89	05:00	2.289	21:10	6.204	4.511	4.511	-
10/23/2020	05:05	10.24	21:15	15.91	13.82	05:10	1.45	21:05	2.19	1.91	05:10	2.260	21:05	6.351	4.676	4.676	0.20
10/24/2020	05:55	10.22	12:30	16.44	13.88	05:55	1.46	11:20	2.18	1.90	05:55	2.254	12:25	6.654	4.710	4.710	0.02
10/25/2020	06:00	9.57	13:40	16.00	13.43	05:50	1.34	13:45	2.16	1.84	05:50	1.892	13:45	6.373	4.388	4.388	-
10/26/2020	05:10	9.51	20:50	16.07	13.65	04:55	1.36	19:35	2.13	1.86	04:55	1.908	20:55	6.268	4.525	4.525	-
10/27/2020	04:30	10.39	21:00	16.09	13.84	04:15	1.46	19:20	2.15	1.89	04:25	2.314	20:55	6.316	4.640	4.640	-
10/28/2020	04:20	10.18	20:05	15.82	13.48	04:10	1.44	19:30	2.14	1.85	04:10	2.226	19:50	6.167	4.373	4.373	-
10/29/2020	04:40	10.19	21:10	16.02	13.81	04:45	1.47	21:20	2.16	1.89	04:45	2.279	21:20	6.339	4.630	4.630	-
10/30/2020	04:50	10.23	20:15	15.51	13.82	05:00	1.42	14:25	2.11	1.90	05:00	2.223	19:40	5.947	4.648	4.648	0.10
10/31/2020	05:40	9.99	12:25	16.54	13.57	05:40	1.43	12:35	2.20	1.87	05:40	2.143	12:35	6.774	4.478	4.478	-
11/01/2020	06:05	9.24	13:30	16.03	13.22	06:15	1.23	12:10	2.14	1.81	06:15	1.655	13:40	6.192	4.240	4.240	-
11/02/2020	04:50	9.16	20:20	15.55	13.45	04:45	1.32	20:15	2.11	1.84	04:45	1.754	20:15	5.954	4.371	4.371	-
11/03/2020	06:15	10.06	12:40	16.87	14.32	04:55	1.41	18:00	2.22	1.94	04:55	2.147	12:50	6.964	5.053	5.053	0.83
11/04/2020	05:25	11.11	21:00	16.21	14.44	05:25	1.60	20:30	2.19	1.98	05:25	2.801	21:00	6.521	5.124	5.124	0.09
11/05/2020	05:55	11.15	21:35	16.49	14.36	06:55	1.55	21:20	2.23	1.95	06:55	2.742	21:20	6.828	5.024	5.024	0.34
11/06/2020	06:10	11.93	20:45	16.19	14.68	04:05	1.70	10:45	2.18	1.99	05:10	3.349	20:35	6.492	5.255	5.255	0.10
11/07/2020	05:25	10.91	13:30	16.58	14.28	05:20	1.53	18:00	2.22	1.94	05:20	2.624	13:30	6.871	4.991	4.991	0.07
11/08/2020	07:30	10.11	12:45	16.18	13.89	06:10	1.45	15:10	2.16	1.90	07:25	2.233	12:35	6.444	4.703	4.703	0.01
11/09/2020	05:20	9.92	21:15	16.04	13.85	05:15	1.40	20:20	2.17	1.89	05:20	2.080	21:15	6.404	4.665	4.665	0.04

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	06:00	10.77	20:35	16.09	14.12	04:45	1.47	20:35	2.16	1.93	04:45	2.488	20:35	6.429	4.852	4.852	0.03
11/11/2020	05:10	10.76	21:50	16.04	14.14	04:25	1.53	20:35	2.18	1.95	06:10	2.633	20:40	6.389	4.916	4.916	-
11/12/2020	06:25	10.81	21:35	16.16	14.09	06:05	1.56	21:05	2.18	1.94	06:30	2.653	21:05	6.455	4.867	4.867	0.16
11/13/2020	04:35	11.55	19:55	16.00	14.61	04:30	1.64	12:10	2.17	1.98	04:30	3.035	12:15	6.359	5.205	5.205	0.38
11/14/2020	07:20	10.71	20:15	17.29	14.57	06:00	1.54	19:50	2.25	1.96	07:25	2.575	19:50	7.364	5.187	5.187	0.47
11/15/2020	07:10	11.02	14:05	16.68	14.50	04:45	1.50	14:25	2.20	1.94	07:05	2.727	14:25	6.876	5.070	5.070	0.19
11/16/2020	05:50	10.67	15:05	17.42	14.91	05:10	1.50	14:30	2.31	1.97	05:45	2.491	14:45	7.607	5.391	5.391	0.31
11/17/2020	05:10	11.84	21:30	17.46	15.12	04:50	1.67	21:30	2.25	2.02	05:10	3.199	21:30	7.515	5.588	5.588	0.20
11/18/2020	05:50	11.69	20:55	17.15	15.18	05:50	1.63	18:50	2.23	2.01	05:50	3.067	20:25	7.174	5.585	5.585	0.30
11/19/2020	04:05	12.40	14:50	17.15	15.21	04:50	1.62	13:55	2.19	2.00	04:50	3.372	14:30	7.047	5.554	5.554	0.50
11/20/2020	05:35	11.63	19:50	16.47	14.88	05:35	1.65	13:35	2.14	1.97	05:35	3.087	20:00	6.471	5.296	5.296	0.01
11/21/2020	06:20	11.47	13:10	17.12	14.87	07:25	1.59	13:20	2.21	1.98	06:20	2.937	13:20	7.129	5.381	5.381	-
11/22/2020	07:05	10.67	13:30	16.91	14.44	07:20	1.50	12:40	2.20	1.92	07:20	2.479	13:15	6.862	5.025	5.025	0.21
11/23/2020	05:35	11.20	21:25	16.82	14.88	04:20	1.52	20:20	2.19	1.96	04:25	2.739	21:25	6.946	5.306	5.306	0.14
11/24/2020	05:45	11.73	21:05	17.02	15.05	05:15	1.55	21:00	2.26	1.99	05:25	3.088	21:00	7.247	5.479	5.479	0.21
11/25/2020	05:50	11.73	21:00	16.65	15.02	04:35	1.64	20:05	2.21	2.00	05:50	3.168	20:05	6.856	5.466	5.466	0.05
11/26/2020	06:10	10.77	13:55	17.74	14.44	06:00	1.51	14:50	2.27	1.94	06:00	2.549	14:50	7.671	5.081	5.081	0.02
11/27/2020	06:00	10.44	13:25	16.34	14.03	06:25	1.47	13:55	2.17	1.90	06:00	2.392	13:55	6.531	4.751	4.751	-
11/28/2020	06:50	10.98	14:40	16.69	14.29	05:35	1.53	14:00	2.18	1.92	06:50	2.671	14:40	6.836	4.941	4.941	0.05
11/29/2020	05:55	10.45	14:40	16.95	14.35	05:50	1.48	20:00	2.24	1.93	05:50	2.379	14:40	6.986	5.026	5.026	-
11/30/2020	05:00	11.50	20:35	16.33	14.78	05:00	1.62	19:00	2.17	1.98	05:00	2.979	20:50	6.568	5.275	5.275	0.36
12/01/2020	05:55	11.03	11:45	16.63	14.38	04:35	1.52	20:20	2.21	1.93	04:35	2.683	20:45	6.729	4.976	4.976	-
12/02/2020	05:35	11.03	21:45	16.47	14.49	05:20	1.57	14:00	2.17	1.96	05:35	2.734	21:40	6.654	5.105	5.105	0.01
12/03/2020	05:55	11.10	12:25	17.40	14.44	05:30	1.58	20:05	2.19	1.95	05:55	2.749	20:05	6.499	5.058	5.058	-
12/04/2020	05:50	11.06	21:20	15.98	14.38	05:40	1.58	13:10	2.12	1.96	05:50	2.742	21:20	6.239	5.044	5.044	-
12/05/2020	06:20	10.64	14:30	16.66	14.31	06:15	1.54	14:00	2.25	1.96	06:15	2.551	14:00	6.989	5.062	5.062	0.03
12/06/2020	06:15	10.17	14:05	16.49	13.92	06:05	1.42	13:20	2.20	1.90	06:15	2.199	13:20	6.728	4.736	4.736	0.03
12/07/2020	05:05	10.23	21:00	15.70	13.80	04:55	1.42	15:05	2.15	1.90	05:00	2.231	20:55	6.143	4.633	4.633	-
12/08/2020	05:05	10.45	21:15	18.27	14.69	04:55	1.44	21:00	2.34	1.97	05:05	2.320	21:00	8.274	5.324	5.324	0.87
12/09/2020	06:00	13.19	00:00	16.92	15.67	05:55	1.85	14:05	2.24	2.08	05:55	4.156	21:05	7.047	6.010	6.010	0.17
12/10/2020	04:40	11.79	22:20	16.94	15.10	05:25	1.65	19:45	2.23	2.02	04:40	3.180	19:45	7.103	5.572	5.572	0.07
12/11/2020	06:20	11.83	20:15	16.23	14.78	05:20	1.62	17:30	2.18	1.98	05:20	3.139	19:00	6.488	5.269	5.269	0.02
12/12/2020	06:45	10.99	14:15	16.70	14.43	05:35	1.54	16:05	2.20	1.95	06:45	2.648	14:00	6.820	5.072	5.072	0.01
12/13/2020	07:00	11.36	14:40	17.46	14.70	05:35	1.59	12:40	2.26	1.98	07:00	2.883	14:35	7.472	5.294	5.294	0.24
12/14/2020	05:05	10.98	21:05	16.48	14.61	04:00	1.52	22:05	2.20	1.96	05:00	2.643	20:20	6.687	5.193	5.193	0.05
12/15/2020	05:15	11.34	18:05	17.41	15.17	05:15	1.59	18:05	2.27	2.02	05:15	2.859	18:05	7.559	5.649	5.649	0.58
12/16/2020	05:20	12.13	19:20	17.56	15.43	05:15	1.70	19:20	2.31	2.05	05:15	3.383	19:20	7.757	5.851	5.851	0.39
12/17/2020	05:00	11.97	21:00	16.83	15.23	04:20	1.64	21:20	2.26	2.04	05:00	3.221	21:20	7.025	5.695	5.695	0.08
12/18/2020	05:55	12.07	20:30	16.67	15.10	05:50	1.69	20:25	2.24	2.04	05:50	3.344	20:25	6.966	5.605	5.605	0.25
12/19/2020	06:45	11.75	23:05	16.97	14.97	06:35	1.63	12:15	2.25	2.02	06:35	3.108	22:55	7.177	5.517	5.517	0.37
12/20/2020	07:15	12.35	15:05	17.34	15.39	05:30	1.69	14:50	2.27	2.07	06:05	3.586	15:05	7.497	5.840	5.840	0.04
12/21/2020	05:50	13.24	20:40	20.90	16.91	05:50	1.82	19:50	2.47	2.18	05:50	4.093	20:25	10.510	7.096	7.096	1.07
12/22/2020	06:20	14.63	00:00	19.43	16.91	05:55	1.93	00:00	2.39	2.17	05:55	5.040	00:00	9.283	6.948	6.948	-
12/23/2020	05:20	13.11	13:30	17.30	15.91	05:15	1.83	20:15	2.29	2.11	05:20	4.091	13:30	7.467	6.237	6.237	-
12/24/2020	06:10	12.51	13:50	17.80	15.61	05:05	1.80	13:15	2.32	2.09	06:10	3.770	13:15	7.880	6.040	6.040	-
12/25/2020	07:00	11.89	14:15	16.83	14.97	08:30	1.71	14:10	2.24	2.01	07:05	3.332	14:10	7.078	5.461	5.461	0.49
12/26/2020	07:15	11.74	14:30	17.66	15.18	07:15	1.62	15:40	2.28	2.02	07:15	3.073	13:55	7.676	5.642	5.642	0.02
12/27/2020	07:25	11.99	14:10	18.14	15.40	06:10	1.71	14:00	2.26	2.03	07:25	3.329	14:10	7.975	5.789	5.789	0.13
12/28/2020	06:20	11.70	13:50	17.22	15.08	06:20	1.67	13:35	2.27	2.01	06:20	3.150	13:40	7.327	5.544	5.544	-
12/29/2020	05:50	11.72	21:10	17.06	14.94	05:45	1.64	20:55	2.22	1.99	05:45	3.113	21:00	7.115	5.408	5.408	0.14
12/30/2020	05:20	13.03	15:40	17.85	16.24	03:30	1.80	12:50	2.30	2.11	05:15	3.981	15:15	7.838	6.413	6.413	0.78
12/31/2020	06:35	14.05	19:20	18.26	16.52	04:55	1.80	19:10	2.33	2.08	06:35	4.403	19:10	8.258	6.476	6.476	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			1088.339	30.65
Average	15.13	2.00	5.588	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A2_40805K

Site Address /Location:	29th St Nw and Emerald downs Dr			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Outside of Emerald Downs Racetrack	Latitude:	47.333005	Pipe Size (H x W): 71.50 X 70.00	Pipe Shape: Circular
		Longitude:	-122.237737		



Manhole #	System Characteristics
A240805K	Commercial
Access	Traffic
Drive	Light







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information	
Installation Date:	Installation Type:
Friday, October 2, 2020	Doppler Special Installation
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi
Installation Confirmation:	
Time	
05:24AM	
Depth of Flow (Wet DOF) (in)	
10.50	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.6	N/A
Silt (in)	Silt Type
0	
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
12	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
Yes, Inside	Normal
Pipe Material	Pipe Condition:
Concrete	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

AUB_A3_40834

Site Commentary

SITE INFORMATION

Pipe	Round (18 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.17	3.55	0.282
Minimum	1.43	2.13	0.096
Maximum	3.13	4.25	0.566
Min Time	09/27/2020 2:00:00 AM	10/02/2020 3:00:00 AM	09/25/2020 2:00:00 AM
Max Time	01/12/2021 9:00:00 AM	01/12/2021 9:00:00 AM	01/12/2021 9:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

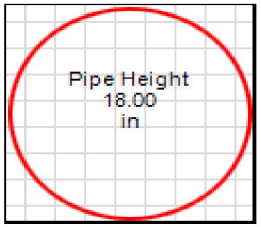
Percent Uptime	
DFINAL (in)	99.782
VFINAL (ft/s)	99.782
QFINAL (MGD - Total MG)	99.782

Hydrograph Report

AUB_A3_40834

Flow Monitor

AUB_A3_40834



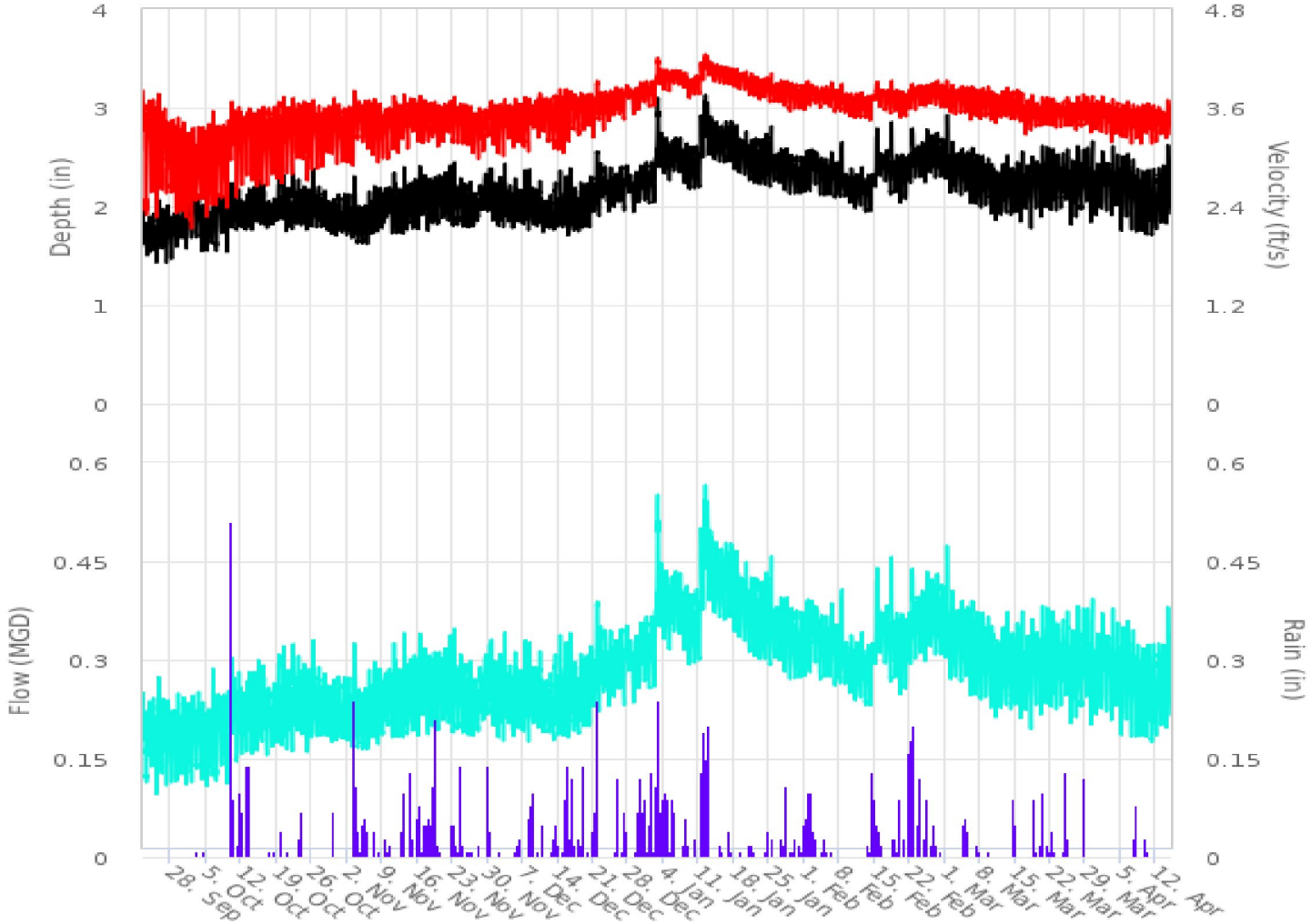
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

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Scattergraph Report

AUB_A3_40834

Flow Monitor

AUB_A3_40834

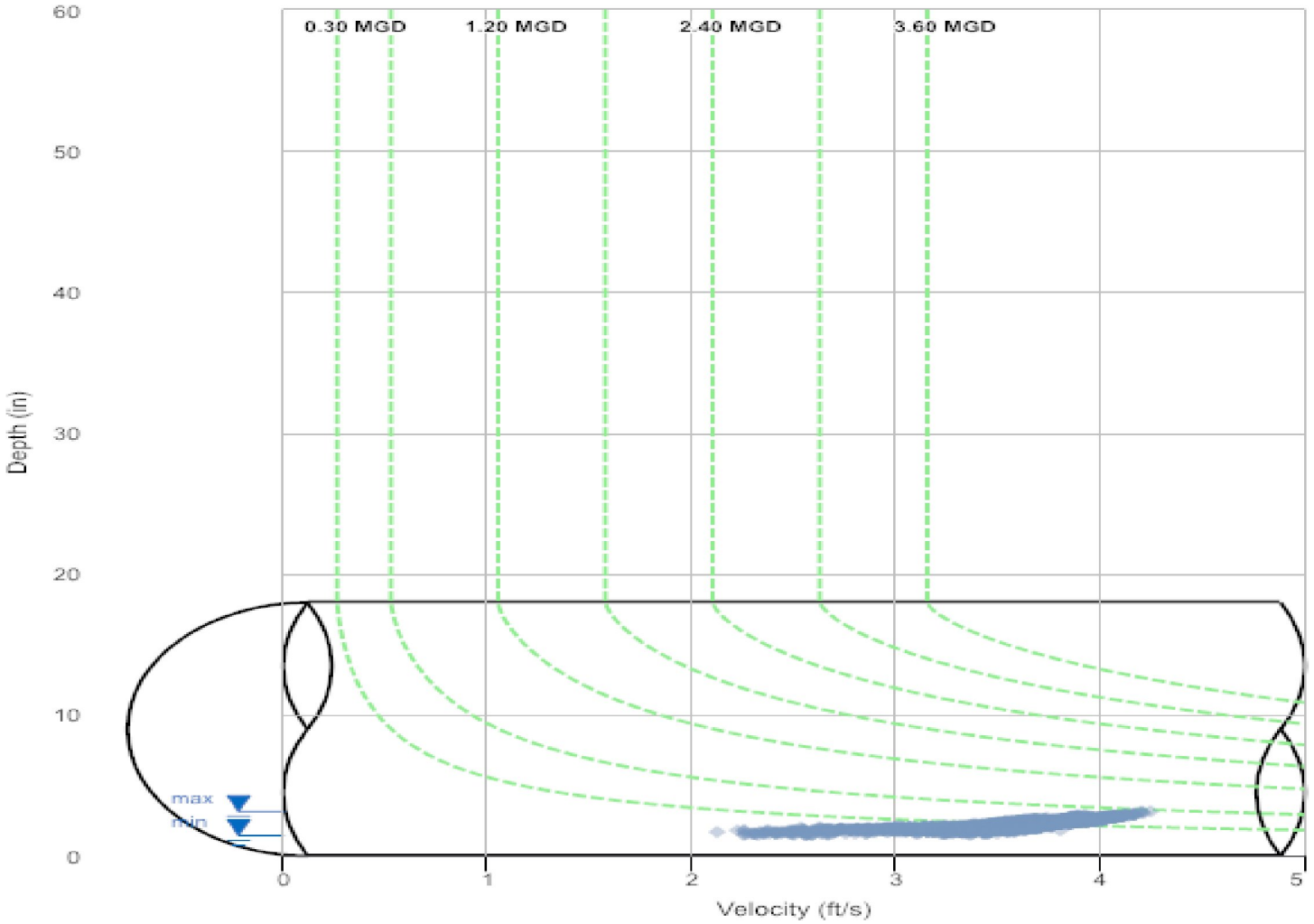
Pipe Height
18.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A3_40834Pipe: Round (18 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	05:35	2.01	15:25	2.56	2.24	02:35	3.60	15:30	3.99	3.77	05:35	0.252	15:30	0.398	0.309	0.309	0.51
01/02/2021	04:35	2.02	20:50	3.21	2.47	04:35	3.60	20:50	4.29	3.89	04:35	0.254	20:50	0.592	0.372	0.372	1.69
01/03/2021	04:45	2.37	00:05	3.01	2.56	23:25	3.82	00:05	4.20	3.98	05:00	0.346	00:05	0.529	0.396	0.396	0.65
01/04/2021	03:05	2.31	11:55	2.74	2.49	02:35	3.79	07:40	4.11	3.96	03:05	0.328	11:55	0.449	0.379	0.379	0.48
01/05/2021	03:00	2.24	14:05	2.69	2.46	04:25	3.77	20:45	4.10	3.95	03:00	0.309	20:45	0.438	0.372	0.372	0.52
01/06/2021	02:50	2.33	18:50	2.74	2.54	03:10	3.82	10:40	4.10	3.99	03:50	0.337	18:50	0.446	0.394	0.394	0.22
01/07/2021	23:45	2.30	09:00	2.75	2.47	23:35	3.77	10:05	4.09	3.96	23:35	0.327	09:00	0.447	0.375	0.375	-
01/08/2021	04:30	2.19	17:20	2.68	2.42	23:10	3.74	09:15	4.09	3.91	23:45	0.300	09:15	0.425	0.360	0.360	0.22
01/09/2021	02:35	2.16	10:40	2.67	2.39	01:10	3.68	11:15	3.98	3.85	02:35	0.287	10:40	0.417	0.347	0.347	-
01/10/2021	04:35	2.17	09:35	2.67	2.41	04:10	3.72	14:05	4.05	3.88	04:10	0.292	14:05	0.425	0.354	0.354	0.07
01/11/2021	00:55	2.19	10:20	2.98	2.53	04:45	3.74	10:15	4.19	3.96	04:35	0.297	10:20	0.518	0.391	0.391	1.06
01/12/2021	00:00	2.49	18:55	3.20	2.86	00:35	3.91	18:55	4.32	4.13	00:00	0.379	18:55	0.593	0.483	0.483	2.10
01/13/2021	04:05	2.51	00:35	2.97	2.75	21:40	3.94	00:30	4.21	4.08	04:55	0.386	00:35	0.519	0.450	0.450	0.09
01/14/2021	03:35	2.46	12:50	2.92	2.65	03:05	3.90	12:55	4.18	4.03	03:45	0.369	12:50	0.500	0.421	0.421	0.01
01/15/2021	04:35	2.43	13:00	2.86	2.65	03:15	3.88	13:05	4.14	4.02	04:35	0.361	13:05	0.484	0.420	0.420	0.09
01/16/2021	03:20	2.43	13:10	2.95	2.65	07:15	3.82	12:10	4.12	4.00	04:40	0.356	13:05	0.502	0.420	0.420	-
01/17/2021	05:15	2.44	12:55	2.92	2.64	04:00	3.79	11:20	4.11	3.98	05:20	0.360	12:50	0.489	0.414	0.414	0.10
01/18/2021	02:15	2.36	13:25	2.85	2.61	02:50	3.83	12:15	4.10	3.98	03:25	0.339	13:30	0.474	0.408	0.408	-
01/19/2021	02:00	2.32	09:50	2.70	2.54	03:05	3.80	15:20	4.04	3.95	03:05	0.331	15:40	0.434	0.390	0.390	0.01
01/20/2021	03:00	2.30	12:25	2.80	2.50	03:15	3.79	12:25	4.08	3.92	02:05	0.325	12:30	0.463	0.378	0.378	-
01/21/2021	03:10	2.25	13:20	2.69	2.46	03:50	3.72	13:45	4.04	3.89	03:10	0.310	13:45	0.430	0.366	0.366	0.11
01/22/2021	01:45	2.23	08:10	2.74	2.47	03:35	3.72	10:45	4.02	3.87	01:45	0.303	08:10	0.436	0.365	0.365	-
01/23/2021	03:05	2.22	14:00	2.78	2.43	03:05	3.67	14:00	3.99	3.84	03:05	0.297	14:00	0.447	0.355	0.355	-
01/24/2021	04:40	2.21	11:45	2.81	2.45	03:20	3.67	12:00	4.02	3.85	03:20	0.299	12:00	0.455	0.359	0.359	0.16
01/25/2021	01:55	2.19	12:50	2.86	2.44	04:40	3.62	12:55	4.11	3.83	04:35	0.288	12:55	0.478	0.357	0.357	0.04
01/26/2021	04:05	2.24	22:30	2.70	2.42	04:20	3.63	22:30	3.95	3.82	04:10	0.298	22:30	0.424	0.350	0.350	-
01/27/2021	02:20	2.23	12:40	2.65	2.40	01:55	3.63	10:35	3.97	3.81	03:15	0.296	12:45	0.412	0.346	0.346	0.14
01/28/2021	04:30	2.13	10:00	2.65	2.38	04:00	3.59	13:30	3.99	3.79	04:30	0.273	13:30	0.412	0.341	0.341	0.24
01/29/2021	03:30	2.10	09:55	2.56	2.35	04:10	3.50	10:25	3.93	3.76	04:10	0.265	10:00	0.390	0.331	0.331	0.03
01/30/2021	05:15	2.10	10:45	2.55	2.33	04:55	3.55	13:50	3.93	3.74	05:10	0.267	10:45	0.388	0.325	0.325	0.07
01/31/2021	05:00	2.11	14:40	2.54	2.31	05:10	3.54	12:40	3.91	3.74	05:10	0.265	12:35	0.381	0.322	0.322	0.12
02/01/2021	03:05	2.12	18:25	2.64	2.38	02:00	3.51	11:30	3.96	3.79	00:30	0.270	18:25	0.411	0.340	0.340	0.82
02/02/2021	04:25	2.14	12:45	2.66	2.43	02:45	3.58	11:00	3.92	3.78	04:20	0.279	12:45	0.411	0.351	0.351	0.31
02/03/2021	04:25	2.21	10:30	2.57	2.41	04:40	3.58	09:45	3.90	3.76	04:40	0.287	11:25	0.389	0.342	0.342	0.06
02/04/2021	02:45	2.10	13:40	2.52	2.34	03:55	3.58	13:55	3.88	3.74	03:45	0.267	13:50	0.376	0.326	0.326	0.07
02/05/2021	03:00	2.08	11:25	2.55	2.31	04:50	3.61	11:20	3.93	3.74	02:55	0.267	11:25	0.387	0.321	0.321	0.01
02/06/2021	05:15	2.08	11:15	2.58	2.33	03:55	3.60	11:20	3.93	3.76	05:15	0.265	11:20	0.395	0.328	0.328	0.01
02/07/2021	02:40	2.08	11:45	2.51	2.29	03:30	3.52	11:50	3.88	3.71	03:30	0.259	11:45	0.374	0.314	0.314	-
02/08/2021	04:15	2.08	12:05	2.75	2.30	04:25	3.52	09:55	3.95	3.72	04:25	0.259	12:10	0.434	0.318	0.318	-
02/09/2021	03:35	2.08	11:45	2.36	2.21	00:55	3.51	11:35	3.82	3.66	03:35	0.260	11:50	0.335	0.295	0.295	-
02/10/2021	01:55	2.02	09:30	2.44	2.22	02:35	3.47	08:00	3.82	3.65	04:25	0.245	09:30	0.352	0.295	0.295	-
02/11/2021	04:25	1.97	12:35	2.38	2.16	02:10	3.43	12:40	3.81	3.63	04:45	0.234	12:35	0.338	0.282	0.282	-
02/12/2021	04:05	2.00	12:10	2.45	2.18	04:05	3.45	09:20	3.82	3.64	04:05	0.240	12:10	0.353	0.288	0.288	-
02/13/2021	05:05	1.91	17:20	2.39	2.15	03:00	3.46	17:20	3.83	3.62	05:05	0.224	17:20	0.345	0.279	0.279	0.08
02/14/2021	04:50	1.92	14:05	2.36	2.19	02:00	3.42	18:00	3.79	3.63	04:50	0.226	14:05	0.330	0.289	0.289	0.71
02/15/2021	02:20	2.17	15:05	2.88	2.47	05:25	3.60	15:10	4.00	3.80	05:25	0.282	15:05	0.472	0.361	0.361	0.78
02/16/2021	02:30	2.28	10:00	2.55	2.43	02:25	3.57	09:40	3.89	3.74	02:30	0.302	09:40	0.381	0.345	0.345	0.07
02/17/2021	02:35	2.24	12:35	2.60	2.40	02:25	3.54	12:35	3.88	3.71	02:25	0.291	12:35	0.395	0.336	0.336	-
02/18/2021	02:35	2.11	10:15	2.93	2.41	00:45	3.45	10:05	3.96	3.73	02:35	0.265	10:15	0.477	0.341	0.341	0.09
02/19/2021	04:45	2.06	12:15	2.56	2.37	05:05	3.49	09:55	3.85	3.71	04:45	0.257	12:20	0.381	0.329	0.329	0.17
02/20/2021	04:05	2.02	13:00	2.57	2.32	01:20	3.44	11:30	3.84	3.65	04:10	0.243	13:00	0.381	0.317	0.317	0.07
02/21/2021	06:20	2.03	23:35	2.59	2.31	03:35	3.45	22:55	3.85	3.65	04:40	0.250	23:35	0.388	0.314	0.314	0.42
02/22/2021	04:30	2.22	12:50	2.89	2.51	03:50	3.56	12:30	3.92	3.76	04:35	0.288	12:50	0.465	0.364	0.364	0.98
02/23/2021	04:55	2.25	15:40	2.70	2.46	02:10	3.53	20:25	3.91	3.75	04:50	0.295	20:30	0.420	0.353	0.353	0.27
02/24/2021	02:45	2.26	12:10	2.70	2.47	01:15	3.59	12:55	3.90	3.77	03:15	0.301	12:15	0.418	0.356	0.356	-
02/25/2021	02:45	2.21	11:10	2.82	2.52	02:40	3.58	10:55	3.96	3.78	02:50	0.288	11:10	0.447	0.370	0.370	0.18
02/26/2021	03:00	2.29	12:15	2.78	2.52	02:00	3.62	14:00	3.99	3.79	03:00	0.312	12:05	0.438	0.370	0.370	0.10
02/27/2021	02:30	2.25	11:07	2.76	2.50	04:45	3.60	13:45	3.96	3.78	02:30	0.299	11:10	0.438	0.363	0.363	0.02
02/28/2021	05:25	2.27	19:50	2.96	2.47	04:15	3.50	19:50	3.93	3.76	04:15	0.301	19:50	0.482	0.356	0.356	0.02
03/01/2021	23:40	2.24	10:30	3.01	2.50	03:10	3.56	10:35	3.96	3.75	23:40	0.296	10:35	0.496	0.361	0.361	-
03/02/2021	02:40	2.11	12:40	2.70	2.40	04:05	3.51	11:50	3.92	3.71	02:40	0.267	12:40	0.418	0.337	0.337	-
03/03/2021	04:05	2.12	18:10	2.60	2.37	03:05	3.50	12:45	3.87	3.71	04:15	0.267	18:10	0.389	0.332	0.332	-
03/04/2021	04:40	2.09	11:05	2.64	2.37	01:05	3.50	11:15	3.90	3.72	04:35	0.260	11:15	0.404	0.332	0.332	0.20
03/05/2021	04:35	2.12	12:35	2.64	2.36	01:10	3.51	11:05	3.89	3.70	03:10	0.269	12:35	0.404	0.328	0.328	0.05
03/06/2021	03:35	2.00	12:15	2.71	2.32	03:35	3.43	11:15	3.89	3.68	03:35	0.238	12:15	0.419	0.318	0.318	-
03/07/2021	03:55	2.00	11:00	2.64	2.28	23:15	3.42	10:35	3.88	3.65	04:05	0.244	11:00	0.401	0.309	0.309	0.04
03/08/2021	03:40	1.97	12:50	2.57	2.25	00:30	3.42	13:00	3.90	3.65	03:40	0.236	13:00	0.388	0.303	0.303	-
03/09/2021	01:25	1.98	14:20	2.53	2.25	02:15	3.44	14:15	3.91	3.67	02:25	0.238	14:30	0.379	0.304	0.304	0.01
03/10/2021	04:05	1.90	10:30	2.47	2.19	03:05	3.38	12:20	3.85	3.61	02:45	0.222	10:25	0.359	0.287	0.287	-
03/11/2021	04:15	1.84	13:50	2.40	2.17	04:15	3.40	10:35	3.88	3.63	04:25	0.208	10:35	0.344	0.286	0.286	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	03:05	1.87	16:15	2.50	2.20	01:35	3.43	15:25	3.85	3.65	03:05	0.219	16:15	0.364	0.294	0.294	-
03/13/2021	04:00	1.89	10:30	2.60	2.22	05:00	3.43	13:55	3.92	3.66	04:00	0.226	10:30	0.393	0.297	0.297	-
03/14/2021	02:40	1.86	09:30	2.44	2.19	23:50	3.42	14:45	3.86	3.63	02:40	0.217	09:30	0.353	0.289	0.289	0.30
03/15/2021	03:15	1.89	10:55	2.60	2.22	00:05	3.40	10:50	3.89	3.65	03:15	0.221	10:50	0.394	0.296	0.296	-
03/16/2021	02:15	1.80	10:30	2.67	2.19	23:30	3.33	10:25	3.85	3.56	01:35	0.206	10:30	0.405	0.284	0.284	-
03/17/2021	02:10	1.95	11:45	2.46	2.20	01:30	3.21	12:10	3.80	3.53	02:10	0.215	11:45	0.351	0.282	0.282	-
03/18/2021	03:25	1.75	12:15	3.08	2.24	02:05	3.23	12:15	3.87	3.55	03:25	0.189	12:15	0.502	0.294	0.294	0.11
03/19/2021	03:30	1.95	09:15	2.48	2.28	02:10	3.31	08:40	3.71	3.53	03:35	0.226	10:25	0.348	0.298	0.298	0.03
03/20/2021	02:55	1.85	11:25	2.67	2.30	22:40	3.30	11:20	3.81	3.55	02:55	0.209	11:20	0.401	0.304	0.304	0.17
03/21/2021	03:35	1.95	10:30	2.66	2.30	00:30	3.36	10:25	3.79	3.55	03:35	0.226	10:25	0.397	0.302	0.302	0.07
03/22/2021	02:10	1.93	11:15	2.64	2.29	01:05	3.31	16:35	3.78	3.54	02:35	0.221	11:15	0.391	0.302	0.302	0.11
03/23/2021	03:30	1.92	12:10	2.60	2.28	03:35	3.26	08:45	3.73	3.53	03:35	0.212	12:10	0.375	0.297	0.297	-
03/24/2021	02:40	1.93	12:00	2.62	2.28	01:05	3.30	11:50	3.78	3.54	02:35	0.219	12:00	0.384	0.299	0.299	0.34
03/25/2021	23:55	1.99	10:20	2.61	2.30	23:55	3.32	10:10	3.80	3.55	23:55	0.228	10:20	0.384	0.303	0.303	0.27
03/26/2021	03:30	1.79	10:35	2.51	2.22	00:50	3.28	10:30	3.71	3.53	03:30	0.199	10:30	0.357	0.286	0.286	-
03/27/2021	03:35	1.86	10:00	2.65	2.27	03:20	3.24	10:45	3.79	3.55	03:20	0.207	10:05	0.390	0.298	0.298	-
03/28/2021	01:40	1.90	13:10	2.66	2.27	05:20	3.31	13:05	3.83	3.56	01:40	0.218	13:10	0.403	0.299	0.299	0.37
03/29/2021	23:45	1.99	10:30	2.62	2.29	23:40	3.27	09:40	3.79	3.56	23:40	0.226	09:40	0.387	0.302	0.302	-
03/30/2021	02:15	1.79	10:25	2.74	2.24	03:40	3.22	10:20	3.82	3.54	02:15	0.191	10:20	0.416	0.292	0.292	-
03/31/2021	03:45	1.88	10:10	2.47	2.23	03:10	3.27	09:50	3.72	3.53	03:00	0.213	10:10	0.346	0.288	0.288	-
04/01/2021	02:20	1.96	07:35	2.59	2.30	02:25	3.24	07:50	3.83	3.55	02:20	0.222	07:50	0.386	0.304	0.304	-
04/02/2021	03:50	1.93	13:55	2.52	2.27	02:05	3.22	11:50	3.72	3.51	03:15	0.218	13:55	0.360	0.296	0.296	-
04/03/2021	04:05	1.85	11:10	2.63	2.26	03:40	3.11	10:25	3.77	3.47	02:40	0.196	11:15	0.384	0.290	0.290	-
04/04/2021	01:50	1.96	10:10	2.57	2.25	01:45	3.22	21:50	3.73	3.48	01:50	0.221	10:10	0.369	0.288	0.288	-
04/05/2021	03:30	1.73	13:35	2.54	2.22	02:55	3.15	10:55	3.72	3.48	02:55	0.180	10:55	0.359	0.284	0.284	-
04/06/2021	03:50	1.81	10:35	2.57	2.21	01:25	3.17	09:15	3.73	3.45	03:50	0.198	10:40	0.373	0.279	0.279	-
04/07/2021	02:55	1.75	11:30	2.53	2.16	01:10	3.11	11:10	3.71	3.44	03:00	0.179	11:30	0.358	0.270	0.270	0.22
04/08/2021	01:50	1.72	11:30	2.49	2.05	02:25	3.18	11:20	3.69	3.43	01:50	0.180	11:25	0.349	0.247	0.247	-
04/09/2021	23:45	1.73	11:35	2.42	2.06	01:05	3.07	11:35	3.73	3.45	01:05	0.178	11:35	0.341	0.252	0.252	0.03
04/10/2021	03:50	1.69	11:00	2.58	2.05	23:05	3.21	10:55	3.73	3.47	01:45	0.178	11:00	0.372	0.251	0.251	0.02
04/11/2021	01:10	1.68	12:15	2.44	2.01	04:10	3.11	13:00	3.81	3.42	04:35	0.171	12:15	0.339	0.241	0.241	-
04/12/2021	00:47	1.74	14:05	2.43	2.09	02:45	3.14	08:40	3.64	3.43	02:45	0.181	14:05	0.333	0.255	0.255	-
04/13/2021	02:30	1.82	12:25	2.45	2.16	02:40	3.18	08:35	3.63	3.45	02:40	0.192	08:35	0.337	0.269	0.269	-
04/14/2021	02:15	1.79	09:45	2.70	2.16	00:35	3.16	09:45	3.78	3.46	02:15	0.189	09:45	0.405	0.270	0.270	-
09/22/2020	20:40	1.52	11:10	2.02	1.74	23:55	2.37	10:55	3.81	3.36	23:55	0.125	11:10	0.266	0.190	0.104	-
09/23/2020	07:50	1.47	16:40	2.01	1.70	01:35	2.15	16:45	3.82	3.27	03:50	0.104	16:45	0.267	0.180	0.180	-
09/24/2020	20:20	1.49	12:25	2.04	1.71	02:45	2.32	12:20	3.79	3.27	23:55	0.119	12:25	0.271	0.182	0.182	-
09/25/2020	02:10	1.40	12:00	2.12	1.72	02:35	2.14	11:55	3.85	3.25	02:20	0.090	12:00	0.291	0.186	0.186	-
09/26/2020	02:25	1.51	10:55	2.03	1.73	04:15	2.44	18:00	3.76	3.23	04:15	0.117	09:35	0.253	0.183	0.183	-
09/27/2020	04:00	1.30	10:15	2.05	1.72	03:25	2.35	16:55	3.59	3.07	04:00	0.095	10:15	0.255	0.173	0.173	-
09/28/2020	02:45	1.41	09:45	1.99	1.76	02:45	2.41	09:40	3.55	3.05	02:45	0.100	09:40	0.242	0.178	0.178	-
09/29/2020	03:45	1.54	10:35	2.11	1.78	01:25	2.25	10:35	3.51	2.99	01:25	0.110	10:40	0.264	0.177	0.177	-
09/30/2020	03:50	1.63	11:40	2.11	1.88	00:40	2.23	11:40	3.48	2.99	02:20	0.120	11:40	0.261	0.191	0.191	-
10/01/2020	02:00	1.54	11:25	2.10	1.86	03:40	2.17	18:05	3.43	2.85	02:15	0.103	11:25	0.252	0.180	0.180	-
10/02/2020	03:30	1.63	10:10	2.13	1.95	03:30	2.08	09:45	3.46	2.81	03:30	0.107	10:10	0.259	0.190	0.190	-
10/03/2020	02:55	1.61	11:10	2.15	1.90	02:50	2.28	11:05	3.43	2.96	02:50	0.119	11:10	0.264	0.192	0.192	0.01
10/04/2020	04:30	1.51	09:00	2.14	1.85	02:05	2.27	08:55	3.48	2.94	04:25	0.114	08:55	0.265	0.184	0.184	0.01
10/05/2020	03:40	1.51	11:25	2.02	1.83	03:00	2.22	12:25	3.51	3.00	03:00	0.105	11:25	0.247	0.184	0.184	-
10/06/2020	02:35	1.59	08:55	2.34	1.89	02:35	2.32	08:45	3.64	3.01	02:35	0.115	08:55	0.309	0.195	0.195	-
10/07/2020	01:20	1.51	11:15	2.17	1.93	00:05	2.27	11:15	3.51	2.99	00:05	0.111	11:15	0.274	0.199	0.199	-
10/08/2020	22:55	1.70	07:50	2.15	1.98	02:00	2.40	07:45	3.50	3.06	03:25	0.136	07:45	0.269	0.211	0.211	-
10/09/2020	02:55	1.50	23:15	2.23	1.94	03:45	2.31	23:25	3.60	3.03	03:05	0.108	23:15	0.288	0.204	0.204	0.64
10/10/2020	18:50	1.70	02:05	2.60	1.98	23:45	2.74	02:05	3.97	3.35	23:45	0.167	02:05	0.404	0.230	0.230	1.04
10/11/2020	01:20	1.71	14:40	2.21	1.93	02:05	2.42	14:40	3.69	3.21	01:20	0.139	14:40	0.296	0.214	0.214	0.53
10/12/2020	15:55	1.73	11:20	2.12	1.90	03:50	2.60	11:20	3.57	3.25	03:50	0.151	11:20	0.270	0.209	0.209	-
10/13/2020	00:20	1.75	14:35	2.23	1.94	01:50	2.74	14:35	3.63	3.31	02:00	0.158	14:35	0.295	0.222	0.222	0.61
10/14/2020	02:55	1.73	13:25	2.22	1.98	02:50	2.66	09:25	3.59	3.23	02:50	0.150	09:25	0.288	0.223	0.223	-
10/15/2020	21:30	1.78	09:10	2.37	1.99	02:20	2.59	09:15	3.69	3.19	02:20	0.156	09:15	0.329	0.221	0.221	-
10/16/2020	21:15	1.77	11:20	2.28	2.00	03:35	2.61	09:55	3.67	3.24	03:35	0.169	10:00	0.306	0.227	0.227	-
10/17/2020	03:40	1.75	12:45	2.08	1.91	01:30	2.58	11:50	3.64	3.23	03:40	0.150	11:35	0.264	0.211	0.211	0.01
10/18/2020	20:40	1.77	12:05	2.10	1.94	02:00	2.68	12:55	3.64	3.27	02:05	0.160	12:00	0.269	0.218	0.218	0.03
10/19/2020	01:35	1.83	11:10	2.42	2.03	03:40	2.67	11:05	3.76	3.29	02:05	0.167	11:10	0.344	0.235	0.235	0.05
10/20/2020	22:45	1.67	11:50	2.43	2.00	01:15	2.59	11:40	3.81	3.33	03:50	0.165	11:50	0.350	0.233	0.233	-
10/21/2020	23:00	1.72	09:25	2.25	1.94	02:25	2.72	08:45	3.67	3.34	02:30	0.158	09:25	0.301	0.222	0.222	0.01
10/22/2020	03:10	1.74	09:35	2.49	1.97	03:30	2.73	09:30	3.83	3.34	03:30	0.154	09:35	0.366	0.229	0.229	-
10/23/2020	21:55	1.76	09:40	2.32	2.01	04:00	2.88	09:45	3.71	3.41	03:10	0.188	09:40	0.318	0.240	0.240	0.20
10/24/2020	21:50	1.70	10:00	2.29	1.97	04:10	2.93	09:55	3.77	3.35	22:05	0.176	10:00	0.317	0.230	0.230	0.02
10/25/2020	02:45	1.77	11:45	2.20	1.97	02:50	2.63	11:50	3.69	3.29	02:50	0.153	11:45	0.292	0.225	0.225	-
10/26/2020	23:25	1.76	09:10	2.53	2.03	02:45	2.72	09:10	3.83	3.34	00:00	0.176	09:10	0.373	0.239	0.239	-
10/27/2020	22:10	1.75	10:30	2.22	1.98	04:05	2.77	11:00	3.66	3.35	23:20	0.179	11:00	0.295	0.231	0.231	-
10/28/2020	23:05	1.75	09:05	2.20	1.98	03:35	2.83	13:40	3.66	3.36	04:00	0.181	14:10	0.290	0.231	0.231	-
10/29/2020	21:45	1.69	10:05	2.07	1.89	03:05	3.04	18:00	3.71	3.43	04:45	0.179	18:00	0.267	0.219	0.219	-
10/30/2020	21:50	1.65	11:40	2.12	1.90	02:25	3.01	11:40	3.77	3.43	02:20	0.168	11:40	0.285	0.223	0.223	0.10
10/31/2020	19:40	1.72	09:25	2.19	1.90	00:30	2.88	09:25	3.71	3.32	00:30	0.176	09:25	0.293	0.215	0.215	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	22:35	1.67	12:30	2.17	1.91	04:20	2.84	13:15	3.72	3.35	22:50	0.173	13:15	0.287	0.219	0.219	-
11/02/2020	23:35	1.65	10:05	2.14	1.87	03:35	2.88	11:30	3.68	3.38	23:35	0.168	10:05	0.280	0.214	0.214	-
11/03/2020	00:10	1.65	10:30	2.36	1.93	04:40	2.82	11:30	3.85	3.44	04:40	0.158	10:30	0.338	0.229	0.229	0.83
11/04/2020	01:35	1.58	09:45	2.11	1.83	03:10	3.13	09:50	3.71	3.50	02:35	0.158	09:45	0.277	0.214	0.214	0.09
11/05/2020	02:40	1.53	15:00	2.11	1.84	04:55	3.13	16:05	3.72	3.49	02:40	0.154	15:00	0.278	0.217	0.217	0.34
11/06/2020	01:20	1.59	11:45	2.21	1.90	04:55	3.05	09:45	3.73	3.46	01:25	0.160	11:45	0.298	0.224	0.224	0.10
11/07/2020	00:25	1.70	11:45	2.32	1.95	04:55	2.99	12:30	3.75	3.41	00:25	0.178	11:45	0.321	0.230	0.230	0.07
11/08/2020	00:35	1.72	11:55	2.28	1.97	04:25	2.89	13:10	3.71	3.36	04:30	0.167	11:50	0.309	0.231	0.231	0.01
11/09/2020	00:15	1.75	09:50	2.30	2.00	04:05	2.92	17:50	3.70	3.36	03:25	0.179	17:50	0.313	0.234	0.234	0.04
11/10/2020	23:55	1.76	11:55	2.25	2.05	04:25	2.88	11:45	3.67	3.40	04:25	0.188	11:55	0.302	0.246	0.246	0.03
11/11/2020	00:30	1.69	11:00	2.47	2.02	04:00	3.05	10:55	3.81	3.46	02:20	0.176	11:00	0.359	0.246	0.246	-
11/12/2020	00:50	1.70	12:30	2.25	1.93	05:05	2.93	12:20	3.69	3.40	05:05	0.173	12:30	0.304	0.225	0.225	0.16
11/13/2020	03:10	1.67	09:45	2.65	2.03	01:50	3.14	09:50	3.90	3.50	03:10	0.172	09:45	0.405	0.250	0.250	0.38
11/14/2020	00:55	1.72	13:35	2.30	2.03	03:15	3.04	17:05	3.77	3.46	00:55	0.180	13:35	0.317	0.248	0.248	0.47
11/15/2020	04:30	1.73	15:05	2.37	2.03	04:55	3.27	11:35	3.74	3.49	04:30	0.185	15:10	0.330	0.249	0.249	0.19
11/16/2020	04:15	1.74	13:20	2.47	2.10	04:40	3.09	12:55	3.81	3.52	04:40	0.180	16:25	0.358	0.266	0.266	0.31
11/17/2020	00:50	1.84	11:35	2.38	2.12	02:15	3.14	11:30	3.74	3.49	06:55	0.204	11:35	0.334	0.264	0.264	0.20
11/18/2020	02:30	1.72	13:05	2.33	2.07	04:40	3.14	17:30	3.74	3.49	02:30	0.182	17:30	0.324	0.257	0.257	0.30
11/19/2020	01:15	1.81	12:25	2.42	2.08	02:25	3.19	13:25	3.76	3.48	01:05	0.196	12:25	0.341	0.258	0.258	0.50
11/20/2020	00:55	1.79	10:35	2.42	2.10	03:10	3.08	10:40	3.70	3.44	03:30	0.189	10:35	0.337	0.258	0.258	0.01
11/21/2020	02:20	1.86	16:10	2.37	2.12	04:30	3.14	11:20	3.70	3.44	02:40	0.204	11:25	0.327	0.262	0.262	-
11/22/2020	04:50	1.82	15:40	2.64	2.11	02:50	3.26	15:40	3.82	3.48	05:40	0.199	15:40	0.396	0.262	0.262	0.21
11/23/2020	02:05	1.77	10:55	2.52	2.10	04:45	3.11	09:45	3.82	3.48	04:45	0.184	11:05	0.367	0.262	0.262	0.14
11/24/2020	00:25	1.79	16:20	2.37	2.05	04:15	3.09	15:45	3.73	3.45	02:15	0.190	16:25	0.328	0.250	0.250	0.21
11/25/2020	03:00	1.76	11:05	2.31	2.04	04:35	3.12	14:30	3.73	3.47	03:25	0.183	12:30	0.311	0.250	0.250	0.05
11/26/2020	04:55	1.76	14:30	2.39	1.96	05:10	3.06	14:40	3.68	3.38	05:35	0.177	14:30	0.329	0.230	0.230	0.02
11/27/2020	00:35	1.76	12:05	2.21	1.97	04:25	2.96	10:30	3.64	3.36	04:25	0.179	10:30	0.283	0.230	0.230	-
11/28/2020	02:45	1.82	13:30	2.29	2.04	04:25	2.84	10:35	3.65	3.35	04:55	0.179	13:30	0.306	0.242	0.242	0.05
11/29/2020	01:00	1.93	14:10	2.37	2.13	05:10	3.01	10:35	3.66	3.39	03:45	0.201	18:45	0.317	0.260	0.260	-
11/30/2020	02:10	1.91	11:55	2.59	2.20	02:15	3.22	19:50	3.78	3.51	02:10	0.210	11:55	0.374	0.281	0.281	0.36
12/01/2020	23:40	1.81	12:20	2.33	2.03	04:30	3.11	12:30	3.71	3.43	04:40	0.195	12:35	0.321	0.244	0.244	-
12/02/2020	02:50	1.77	14:20	2.40	2.04	05:05	2.99	12:20	3.71	3.41	04:45	0.175	12:20	0.332	0.246	0.246	0.01
12/03/2020	04:25	1.76	12:15	2.55	2.04	03:10	2.95	12:25	3.76	3.43	04:25	0.172	12:20	0.369	0.246	0.246	-
12/04/2020	23:35	1.73	12:40	2.25	2.00	05:00	3.18	10:10	3.71	3.46	06:45	0.190	12:40	0.298	0.241	0.241	-
12/05/2020	04:55	1.76	12:55	2.41	1.99	04:35	3.10	12:45	3.77	3.45	04:55	0.180	12:55	0.341	0.239	0.239	0.03
12/06/2020	21:10	1.80	13:10	2.23	1.98	03:15	3.13	13:15	3.71	3.45	03:20	0.192	13:15	0.300	0.237	0.237	0.03
12/07/2020	03:35	1.80	12:10	2.47	1.99	04:50	3.09	10:35	3.80	3.44	01:50	0.188	10:45	0.354	0.238	0.238	-
12/08/2020	03:40	1.73	09:45	2.52	2.03	05:00	2.99	09:45	3.79	3.46	05:00	0.170	09:45	0.368	0.248	0.248	0.87
12/09/2020	21:10	1.77	13:20	2.25	1.94	04:50	3.15	14:05	3.71	3.50	04:50	0.195	13:20	0.305	0.232	0.232	0.17
12/10/2020	23:35	1.72	10:25	2.41	1.99	02:40	3.19	10:25	3.85	3.55	05:00	0.192	10:25	0.350	0.246	0.246	0.07
12/11/2020	01:25	1.72	10:20	2.14	1.90	05:00	3.27	14:05	3.77	3.53	01:30	0.185	10:20	0.288	0.227	0.227	0.02
12/12/2020	07:30	1.75	13:45	2.23	1.88	02:45	3.12	13:40	3.83	3.45	05:40	0.184	13:45	0.308	0.220	0.220	0.01
12/13/2020	03:20	1.74	13:00	2.40	1.94	05:10	2.97	09:50	3.87	3.49	05:10	0.169	13:00	0.348	0.234	0.234	0.24
12/14/2020	23:00	1.75	12:05	2.44	1.94	03:15	2.94	11:30	3.89	3.53	03:15	0.175	12:05	0.355	0.236	0.236	0.05
12/15/2020	23:05	1.70	15:55	2.52	1.98	01:40	2.87	15:55	3.96	3.56	02:00	0.176	15:55	0.385	0.245	0.245	0.58
12/16/2020	00:55	1.67	10:15	2.47	2.02	03:30	3.00	11:35	3.86	3.62	03:30	0.173	10:15	0.363	0.258	0.258	0.39
12/17/2020	04:20	1.73	14:45	2.26	1.94	02:05	3.29	10:50	3.82	3.58	04:45	0.187	11:05	0.313	0.240	0.240	0.08
12/18/2020	01:50	1.71	14:40	2.32	1.96	01:55	3.21	15:35	3.83	3.58	04:25	0.178	14:40	0.326	0.244	0.244	0.25
12/19/2020	00:45	1.72	20:50	2.32	2.02	04:05	3.28	16:25	3.80	3.60	00:50	0.189	20:45	0.323	0.256	0.256	0.37
12/20/2020	08:25	1.73	12:45	2.33	2.00	23:55	3.31	12:35	3.80	3.59	04:50	0.193	12:45	0.327	0.251	0.251	0.04
12/21/2020	04:45	1.87	17:00	2.77	2.20	00:25	3.12	19:05	4.02	3.65	00:25	0.216	17:00	0.445	0.293	0.293	1.07
12/22/2020	01:40	1.88	14:25	2.49	2.16	04:30	3.37	09:55	3.89	3.65	03:55	0.217	14:50	0.363	0.285	0.285	-
12/23/2020	22:20	2.02	12:40	2.43	2.21	03:20	3.25	12:35	3.85	3.61	03:20	0.240	12:40	0.355	0.290	0.290	-
12/24/2020	04:35	1.91	11:10	2.42	2.16	04:25	3.36	12:25	3.88	3.65	04:35	0.222	12:40	0.356	0.284	0.284	-
12/25/2020	03:45	1.93	13:35	2.40	2.16	01:20	3.42	14:00	4.01	3.68	04:50	0.229	13:30	0.347	0.287	0.287	0.49
12/26/2020	22:10	1.98	14:10	2.44	2.19	05:05	3.46	14:05	3.89	3.68	22:10	0.242	14:10	0.361	0.291	0.291	0.02
12/27/2020	04:20	1.91	18:00	2.47	2.23	04:15	3.42	19:25	3.94	3.71	04:15	0.223	17:55	0.368	0.304	0.304	0.13
12/28/2020	23:05	2.05	12:30	2.39	2.20	23:10	3.59	12:30	3.90	3.76	23:05	0.260	12:30	0.350	0.301	0.301	-
12/29/2020	02:50	1.91	15:35	2.41	2.15	04:30	3.44	14:40	3.90	3.71	02:50	0.229	15:30	0.351	0.287	0.287	0.14
12/30/2020	01:20	2.00	23:50	2.54	2.26	00:35	3.48	23:45	3.96	3.78	01:20	0.248	23:50	0.388	0.315	0.315	0.78
12/31/2020	04:40	2.05	14:05	2.49	2.27	03:15	3.54	00:00	3.95	3.80	03:15	0.259	14:15	0.378	0.318	0.318	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			57.723	30.65
Average	2.17	3.55	0.282	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A3_40834

Site Address /Location:	221 30th St NE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	located in middle lane on yellow line. Small traffic diverson	Latitude:	47.333897	Pipe Size (H x W): 18.00 X 18.00	Pipe Shape: Circular
		Longitude:	-122.227492		



Manhole #	System Characteristics
A340834	Industrial
Access	Traffic
Drive	Medium







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, September 22, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
10:58:00 AM	
Depth of Flow (Wet DOF) (in)	
2.00	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
4.48	N/A
	Silt Type
0	

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
9	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A4_50817

Site Commentary

SITE INFORMATION

Pipe	Elliptical (12 in H x 11.75 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced flow changes during the monitoring period.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.65	2.02	0.259
Minimum	1.66	0.71	0.030
Maximum	6.66	2.57	0.593
Min Time	02/13/2021 10:00:00 AM	02/13/2021 10:00:00 AM	02/13/2021 10:00:00 AM
Max Time	02/13/2021 3:00:00 PM	10/09/2020 8:00:00 AM	02/13/2021 3:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

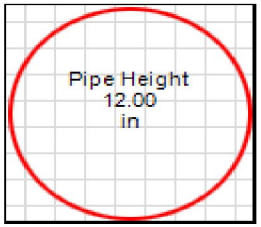
Percent Uptime	
DFINAL (in)	94.975
VFINAL (ft/s)	94.975
QFINAL (MGD - Total MG)	94.975

Hydrograph Report

AUB_A4_50817

Flow Monitor

AUB_A4_50817



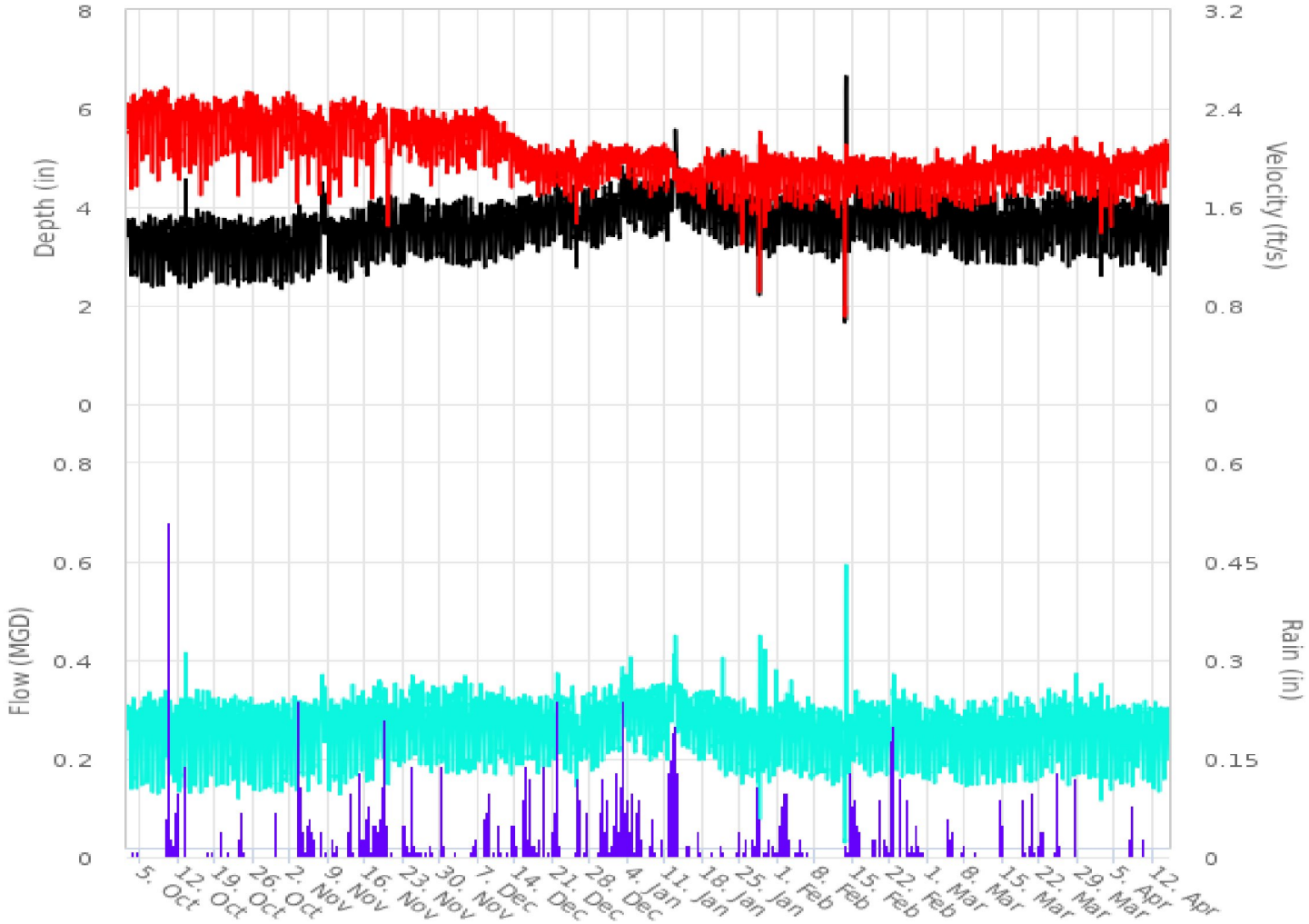
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
www.adsenv.com

Scattergraph Report

AUB_A4_50817

Flow Monitor

AUB_A4_50817

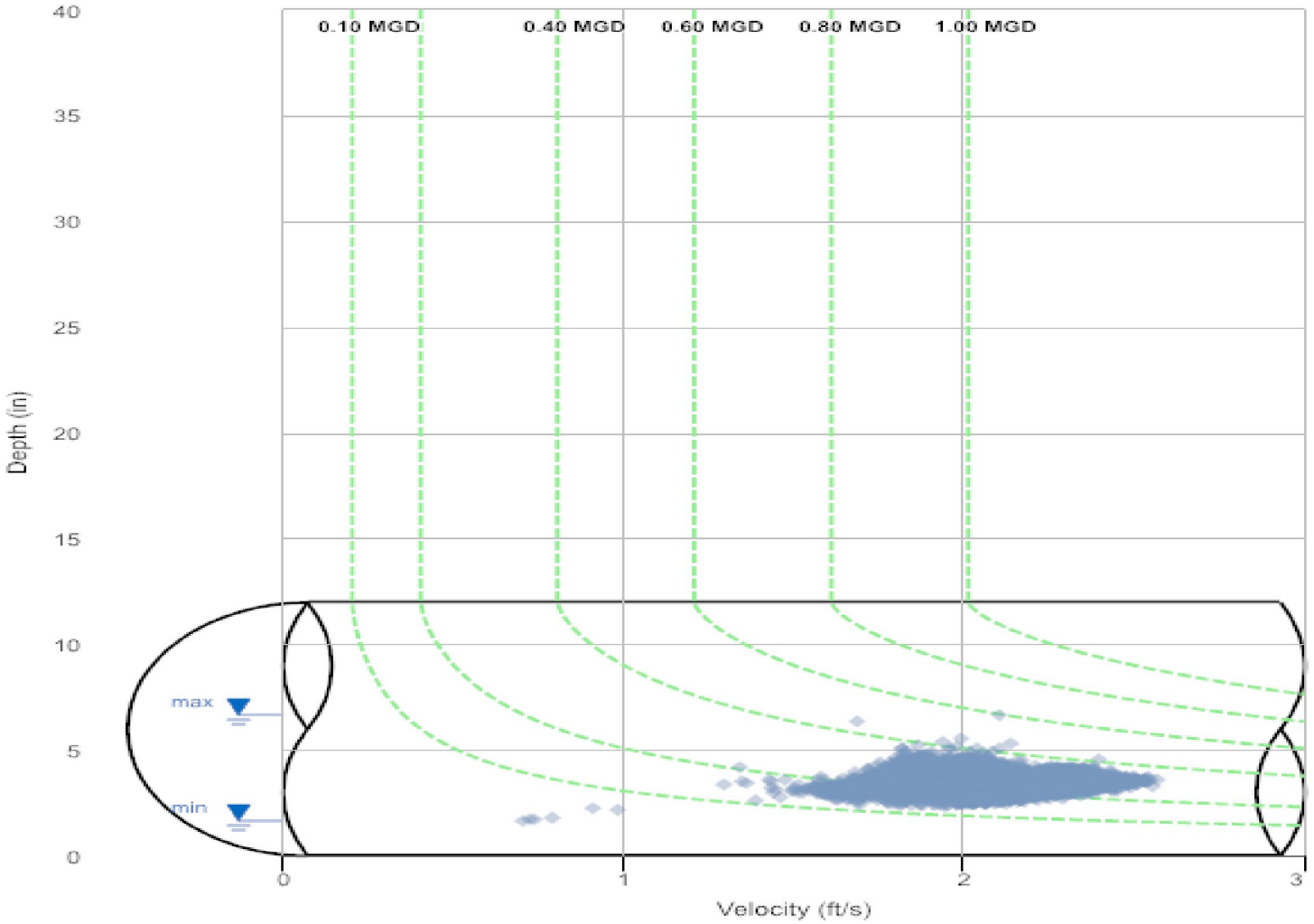
Pipe Height
12.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A4_50817Pipe: Elliptical (12 in H x 11.75 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	03:40	3.32	15:40	4.37	3.89	04:25	1.60	21:50	2.23	1.97	04:25	0.186	13:40	0.356	0.276	0.276	0.51
01/02/2021	05:20	3.29	22:25	4.88	4.07	03:55	1.64	16:15	2.32	1.98	03:55	0.194	18:05	0.409	0.297	0.297	1.69
01/03/2021	06:05	3.74	13:35	4.72	4.33	05:00	1.70	16:25	2.30	2.03	06:05	0.244	12:35	0.389	0.328	0.328	0.65
01/04/2021	06:05	3.59	10:25	5.26	4.20	01:00	1.70	15:10	2.26	1.98	03:15	0.220	10:25	0.447	0.309	0.309	0.48
01/05/2021	03:55	3.38	12:25	4.56	4.10	04:10	1.62	22:10	2.27	1.95	04:10	0.193	17:25	0.372	0.295	0.295	0.52
01/06/2021	03:20	3.64	15:15	4.59	4.15	06:25	1.71	22:15	2.28	1.96	06:25	0.223	15:15	0.377	0.299	0.299	0.22
01/07/2021	04:10	3.36	14:45	4.55	4.05	04:10	1.58	06:50	2.27	1.94	04:10	0.181	15:10	0.365	0.288	0.288	-
01/08/2021	02:40	3.30	15:00	4.52	3.99	02:30	1.56	20:45	2.35	1.96	02:40	0.176	15:00	0.388	0.285	0.285	0.22
01/09/2021	03:40	3.34	12:15	4.57	4.00	03:25	1.56	21:30	2.27	1.97	03:25	0.179	12:15	0.376	0.287	0.287	-
01/10/2021	01:55	3.43	11:15	4.57	4.00	01:30	1.66	15:20	2.31	1.96	01:30	0.198	11:30	0.375	0.285	0.285	0.07
01/11/2021	04:40	3.28	14:00	4.62	4.07	00:40	1.56	10:20	2.23	1.93	00:40	0.184	11:30	0.382	0.289	0.289	1.06
01/12/2021	01:00	3.89	18:30	5.75	4.74	16:25	1.64	00:15	2.19	1.93	02:05	0.251	18:30	0.481	0.352	0.352	2.10
01/13/2021	04:50	3.94	13:20	4.89	4.46	23:00	1.62	13:20	2.08	1.83	05:55	0.233	13:20	0.396	0.310	0.310	0.09
01/14/2021	05:00	3.63	11:50	4.76	4.28	03:25	1.58	13:00	2.08	1.84	03:25	0.213	11:35	0.358	0.293	0.293	0.01
01/15/2021	02:15	3.58	12:05	4.62	4.17	02:45	1.56	14:55	2.08	1.82	02:45	0.198	14:55	0.358	0.280	0.280	0.09
01/16/2021	04:45	3.49	21:05	4.85	4.17	00:50	1.55	21:20	2.08	1.82	04:45	0.192	21:20	0.368	0.280	0.280	-
01/17/2021	05:25	3.39	12:10	4.76	4.11	02:40	1.51	09:20	2.19	1.79	04:50	0.181	10:40	0.361	0.271	0.271	0.10
01/18/2021	03:10	3.55	10:30	4.70	4.09	03:50	1.48	18:05	2.26	1.87	03:50	0.184	18:05	0.370	0.281	0.281	-
01/19/2021	03:45	3.28	12:35	4.64	4.03	08:10	1.65	13:15	2.22	1.92	03:40	0.195	13:15	0.372	0.282	0.282	0.01
01/20/2021	04:05	3.28	12:50	4.53	3.93	00:25	1.67	16:10	2.35	1.90	04:05	0.184	16:10	0.363	0.271	0.271	-
01/21/2021	03:35	3.19	15:20	5.29	3.92	03:45	1.50	13:30	2.34	1.88	03:45	0.161	15:20	0.432	0.268	0.268	0.11
01/22/2021	05:05	3.10	11:40	4.45	3.83	02:55	1.49	21:10	2.26	1.85	02:55	0.155	15:00	0.348	0.257	0.257	-
01/23/2021	04:35	3.08	15:05	4.37	3.82	03:00	1.57	14:30	2.30	1.86	03:40	0.167	14:30	0.356	0.256	0.256	-
01/24/2021	04:40	3.20	12:55	4.33	3.77	03:05	1.40	11:00	2.17	1.85	03:05	0.149	11:00	0.334	0.250	0.250	0.16
01/25/2021	03:40	3.29	11:25	4.62	3.94	03:10	1.17	21:35	2.16	1.72	03:25	0.134	11:25	0.346	0.248	0.248	0.04
01/26/2021	03:20	3.03	19:30	4.32	3.80	04:05	1.53	18:30	2.18	1.85	04:05	0.156	18:30	0.326	0.252	0.252	-
01/27/2021	02:15	3.14	11:15	4.24	3.78	02:20	1.41	21:20	2.13	1.81	02:20	0.146	10:40	0.323	0.245	0.245	0.14
01/28/2021	10:30	1.57	11:35	7.62	3.76	10:35	0.57	13:15	2.34	1.82	10:30	0.022	11:40	0.637	0.254	0.254	0.24
01/29/2021	08:45	2.14	09:50	7.58	3.70	08:45	0.98	13:45	2.29	1.86	08:45	0.059	09:50	0.692	0.248	0.248	0.03
01/30/2021	06:05	2.89	11:05	4.85	3.64	04:05	1.41	12:55	2.18	1.85	06:05	0.134	11:05	0.409	0.240	0.240	0.07
01/31/2021	13:00	2.41	13:25	6.38	3.66	13:00	1.17	13:20	2.40	1.84	13:00	0.083	13:20	0.581	0.241	0.241	0.12
02/01/2021	04:10	3.19	09:30	4.31	3.85	05:30	1.54	12:35	2.15	1.89	04:55	0.171	12:35	0.339	0.263	0.263	0.82
02/02/2021	03:20	3.16	13:50	4.60	3.95	02:40	1.55	21:25	2.20	1.87	03:15	0.168	21:25	0.384	0.269	0.269	0.31
02/03/2021	03:50	3.20	09:05	5.28	3.96	03:25	1.57	18:10	2.25	1.86	03:25	0.172	09:05	0.456	0.269	0.269	0.06
02/04/2021	04:00	3.18	13:45	4.34	3.84	04:05	1.53	10:45	2.20	1.85	04:05	0.161	13:45	0.347	0.256	0.256	0.07
02/05/2021	04:05	3.04	12:45	4.28	3.76	04:30	1.50	09:20	2.13	1.85	04:05	0.153	12:45	0.324	0.250	0.250	0.01
02/06/2021	05:10	3.08	12:40	4.48	3.83	03:25	1.45	19:30	2.11	1.86	03:25	0.156	12:30	0.352	0.257	0.257	0.01
02/07/2021	05:10	2.95	13:30	4.33	3.67	02:45	1.45	14:25	2.14	1.84	03:30	0.146	13:10	0.329	0.240	0.240	-
02/08/2021	03:30	3.04	19:55	4.58	3.72	02:35	1.52	15:45	2.32	1.89	02:35	0.158	19:55	0.378	0.251	0.251	-
02/09/2021	03:20	3.00	09:35	4.48	3.71	06:00	1.40	09:30	2.29	1.89	06:00	0.143	09:30	0.384	0.250	0.250	-
02/10/2021	03:15	2.93	12:25	4.31	3.63	04:05	1.47	17:45	2.23	1.88	04:05	0.139	14:05	0.333	0.242	0.242	-
02/11/2021	04:10	2.80	11:10	4.27	3.66	03:55	1.37	09:05	2.16	1.80	03:55	0.127	11:45	0.318	0.233	0.233	-
02/12/2021	04:35	2.90	11:05	4.14	3.62	00:50	1.39	10:55	2.20	1.81	03:35	0.141	10:55	0.324	0.232	0.232	-
02/13/2021	10:05	1.61	14:20	8.84	3.42	10:00	0.64	22:00	2.28	1.62	10:00	0.026	14:20	0.775	0.215	0.215	0.08
02/14/2021	06:50	3.04	12:40	4.21	3.65	03:10	1.48	12:40	2.28	1.88	03:10	0.151	12:40	0.355	0.242	0.242	0.71
02/15/2021	04:15	3.23	13:35	4.62	3.96	03:50	1.61	13:30	2.24	1.90	03:05	0.181	13:30	0.385	0.275	0.275	0.78
02/16/2021	04:25	3.28	18:20	4.42	3.93	04:00	1.56	11:00	2.26	1.86	04:00	0.181	11:00	0.369	0.265	0.265	0.07
02/17/2021	04:15	3.23	12:45	4.38	3.85	04:25	1.45	21:25	2.18	1.83	04:25	0.156	12:50	0.339	0.255	0.255	-
02/18/2021	04:00	3.04	13:10	4.41	3.83	03:25	1.47	20:55	2.21	1.84	04:00	0.152	20:55	0.345	0.254	0.254	0.09
02/19/2021	04:25	3.10	13:40	4.34	3.77	05:45	1.49	18:55	2.19	1.86	05:45	0.155	13:30	0.334	0.252	0.252	0.17
02/20/2021	04:45	3.09	13:15	4.43	3.73	03:35	1.54	10:20	2.10	1.84	04:50	0.159	13:15	0.344	0.245	0.245	0.07
02/21/2021	04:45	3.04	12:05	4.29	3.69	04:40	1.53	11:20	2.13	1.81	04:45	0.151	11:20	0.330	0.237	0.237	0.42
02/22/2021	03:55	3.29	16:50	4.95	4.06	01:10	1.55	15:10	2.14	1.88	06:15	0.181	13:55	0.400	0.281	0.281	0.98
02/23/2021	03:35	3.24	10:55	4.46	3.94	03:35	1.49	15:10	2.21	1.84	03:35	0.162	15:10	0.366	0.264	0.264	0.27
02/24/2021	03:40	3.07	11:35	4.68	3.92	03:15	1.50	10:35	2.24	1.82	03:35	0.156	10:35	0.379	0.260	0.260	-
02/25/2021	03:40	3.22	11:20	4.45	3.91	03:30	1.44	10:00	2.17	1.83	03:30	0.162	10:00	0.345	0.259	0.259	0.18
02/26/2021	03:55	3.13	13:30	4.49	3.89	03:55	1.38	15:50	2.27	1.81	03:55	0.142	15:50	0.354	0.256	0.256	0.10
02/27/2021	03:05	3.22	11:55	4.44	3.81	03:40	1.49	18:05	2.09	1.80	03:40	0.161	12:05	0.336	0.246	0.246	0.02
02/28/2021	03:55	2.95	11:35	4.32	3.66	02:35	1.45	12:55	2.06	1.78	02:35	0.145	12:55	0.323	0.231	0.231	0.02
03/01/2021	04:10	2.95	11:50	4.44	3.77	03:25	1.29	21:55	2.16	1.81	03:25	0.135	13:00	0.337	0.246	0.246	-
03/02/2021	03:25	2.94	11:30	4.36	3.80	03:25	1.36	13:45	2.38	1.84	03:25	0.128	13:45	0.366	0.252	0.252	-
03/03/2021	04:30	3.10	14:30	4.44	3.80	02:40	1.51	14:30	2.14	1.85	02:55	0.164	14:30	0.357	0.252	0.252	-
03/04/2021	04:55	3.22	11:05	4.31	3.83	03:25	1.48	12:10	2.15	1.86	03:25	0.166	12:10	0.341	0.255	0.255	0.20
03/05/2021	04:00	3.01	12:40	4.51	3.75	01:20	1.52	12:35	2.15	1.83	04:00	0.156	12:35	0.362	0.245	0.245	0.05
03/06/2021	04:55	2.91	12:55	4.28	3.67	06:05	1.39	11:15	2.18	1.79	06:05	0.136	13:00	0.338	0.233	0.233	-
03/07/2021	05:30	2.85	19:30	4.23	3.60	03:10	1.51	10:25	2.36	1.81	05:30	0.140	19:45	0.341	0.230	0.230	0.04
03/08/2021	03:30	2.75	12:05	4.42	3.68	04:15	1.53	11:00	2.18	1.85	03:30	0.132	11:50	0.343	0.242	0.242	-
03/09/2021	03:05	2.87	12:35	4.29	3.63	06:00	1.48	11:35	2.25	1.85	03:10	0.142	11:35	0.335	0.238	0.238	0.01
03/10/2021	04:10	2.80	15:10	4.25	3.64	04:25	1.53	08:30	2.11	1.83	04:15	0.138	16:15	0.323	0.236	0.236	-
03/11/2021	03:45	3.06	10:50	4.51	3.77	02:55	1.55	13:50	2.14	1.86	03:35	0.158	10:35	0.337	0.251	0.251	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	02:40	2.85	15:50	4.32	3.65	04:15	1.53	20:50	2.18	1.85	02:15	0.144	15:20	0.338	0.239	0.239	-
03/13/2021	04:55	2.81	13:00	4.48	3.63	04:05	1.49	13:00	2.26	1.91	04:05	0.137	13:00	0.383	0.245	0.245	-
03/14/2021	06:05	2.80	14:00	4.12	3.50	21:50	1.59	13:10	2.17	1.92	05:25	0.152	14:10	0.315	0.233	0.233	0.30
03/15/2021	02:30	2.73	12:35	4.39	3.57	02:30	1.49	11:25	2.26	1.92	02:30	0.127	11:25	0.341	0.241	0.241	-
03/16/2021	03:55	2.78	11:25	4.47	3.62	01:15	1.52	19:45	2.16	1.91	03:55	0.144	10:45	0.353	0.243	0.243	-
03/17/2021	03:10	2.75	11:40	4.47	3.66	01:40	1.48	11:00	2.32	1.91	01:55	0.138	11:00	0.353	0.249	0.249	-
03/18/2021	23:55	3.00	10:20	4.33	3.65	03:45	1.65	19:35	2.18	1.92	23:55	0.167	10:15	0.337	0.246	0.246	0.11
03/19/2021	02:35	2.83	12:05	4.38	3.68	04:25	1.56	08:25	2.23	1.93	04:25	0.141	11:05	0.349	0.253	0.253	0.03
03/20/2021	02:50	2.80	13:15	4.25	3.59	02:45	1.52	12:00	2.28	1.94	02:45	0.136	09:55	0.341	0.246	0.246	0.17
03/21/2021	02:55	2.68	09:55	4.18	3.52	02:50	1.52	11:15	2.28	1.94	02:50	0.128	09:55	0.328	0.238	0.238	0.07
03/22/2021	03:05	2.87	11:15	4.34	3.69	05:50	1.48	09:20	2.33	1.98	02:30	0.147	14:00	0.360	0.259	0.259	0.11
03/23/2021	03:10	3.02	10:55	4.45	3.72	03:10	1.62	13:35	2.38	1.97	03:10	0.159	13:35	0.379	0.260	0.260	-
03/24/2021	04:05	2.90	14:05	4.47	3.74	04:10	1.56	16:35	2.26	1.93	04:10	0.147	14:10	0.358	0.258	0.258	0.34
03/25/2021	03:50	3.14	11:55	4.36	3.88	03:45	1.53	17:05	2.29	1.95	03:45	0.163	11:50	0.352	0.273	0.273	0.27
03/26/2021	03:05	2.84	10:45	4.49	3.71	02:40	1.49	12:35	2.27	1.97	02:40	0.145	10:40	0.361	0.260	0.260	-
03/27/2021	03:40	2.74	10:30	4.28	3.62	05:20	1.52	06:40	2.31	1.93	04:15	0.135	10:20	0.333	0.247	0.247	-
03/28/2021	02:35	2.86	15:15	5.07	3.67	04:55	1.61	10:10	2.51	1.95	02:25	0.154	15:15	0.446	0.254	0.254	0.37
03/29/2021	02:40	2.94	10:55	4.28	3.70	01:00	1.61	20:35	2.32	1.94	02:45	0.155	07:25	0.348	0.255	0.255	-
03/30/2021	02:35	2.95	10:40	4.34	3.73	02:35	1.59	09:50	2.25	1.93	02:35	0.151	09:50	0.344	0.256	0.256	-
03/31/2021	01:30	2.94	12:05	4.52	3.71	00:45	1.43	09:45	2.29	1.88	02:50	0.143	10:05	0.365	0.249	0.249	-
04/01/2021	03:25	2.93	12:20	4.47	3.74	03:20	1.55	09:35	2.26	1.89	03:20	0.146	11:55	0.346	0.252	0.252	-
04/02/2021	06:50	2.15	07:00	6.24	3.70	06:45	1.08	07:55	2.26	1.87	06:45	0.066	07:00	0.540	0.248	0.248	-
04/03/2021	03:35	3.00	10:35	4.46	3.78	03:20	1.40	19:30	2.19	1.84	03:55	0.140	12:35	0.343	0.249	0.249	-
04/04/2021	04:15	2.89	10:50	4.40	3.62	02:00	1.35	16:25	2.23	1.75	04:10	0.126	16:25	0.346	0.225	0.225	-
04/05/2021	01:45	2.88	09:45	4.40	3.66	04:00	1.54	20:10	2.31	1.89	04:00	0.146	14:15	0.331	0.245	0.245	-
04/06/2021	02:50	2.74	10:05	4.30	3.56	01:10	1.54	10:40	2.19	1.91	01:10	0.136	10:40	0.338	0.239	0.239	-
04/07/2021	03:15	2.78	12:10	4.17	3.57	02:35	1.57	18:10	2.23	1.88	03:10	0.143	12:35	0.327	0.236	0.236	0.22
04/08/2021	02:45	2.64	10:25	4.28	3.65	02:45	1.47	09:35	2.29	1.92	02:45	0.120	10:20	0.348	0.249	0.249	-
04/09/2021	02:15	3.00	10:45	4.48	3.65	02:20	1.54	08:00	2.22	1.94	02:20	0.150	10:45	0.346	0.249	0.249	0.03
04/10/2021	03:55	2.81	12:10	4.40	3.61	02:50	1.50	16:00	2.28	1.95	03:45	0.139	12:10	0.355	0.248	0.248	0.02
04/11/2021	02:35	2.72	10:55	4.25	3.49	03:35	1.59	08:15	2.28	1.96	03:35	0.139	10:45	0.345	0.238	0.238	-
04/12/2021	03:10	2.57	09:25	4.32	3.49	02:30	1.59	20:30	2.29	1.94	01:40	0.128	09:25	0.360	0.238	0.238	-
04/13/2021	03:10	2.55	10:50	4.30	3.52	02:15	1.48	19:45	2.41	1.96	02:15	0.116	10:50	0.337	0.242	0.242	-
04/14/2021	02:20	2.74	14:30	4.16	3.55	03:40	1.58	18:50	2.38	1.99	02:20	0.138	14:30	0.338	0.248	0.247	-
10/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/02/2020	23:50	2.86	16:30	3.91	3.54	23:30	1.89	15:10	2.70	2.29	23:55	0.172	15:10	0.347	0.282	0.195	-
10/03/2020	03:20	2.53	10:45	3.84	3.28	03:05	1.66	12:30	2.69	2.23	03:20	0.131	12:30	0.351	0.251	0.251	0.01
10/04/2020	03:35	2.54	11:05	3.81	3.12	03:35	1.65	14:40	2.68	2.27	03:35	0.127	11:05	0.350	0.237	0.237	0.01
10/05/2020	03:00	2.40	10:20	3.90	3.23	03:05	1.82	18:20	2.70	2.37	03:05	0.130	11:30	0.350	0.259	0.259	-
10/06/2020	03:15	2.39	12:35	3.99	3.25	03:05	1.75	15:30	2.81	2.35	03:05	0.125	11:50	0.361	0.259	0.259	-
10/07/2020	02:50	2.33	13:35	4.00	3.21	02:20	1.73	09:40	2.68	2.32	02:20	0.121	13:35	0.346	0.252	0.252	-
10/08/2020	01:05	2.37	16:35	3.88	3.22	02:25	1.68	08:05	2.71	2.34	02:25	0.117	16:25	0.359	0.257	0.257	-
10/09/2020	02:35	2.38	10:20	3.82	3.20	01:25	1.88	08:05	2.84	2.39	02:45	0.135	10:55	0.352	0.259	0.259	0.64
10/10/2020	05:05	2.60	09:10	4.04	3.33	04:50	1.74	08:15	2.66	2.28	04:50	0.141	09:10	0.357	0.259	0.259	1.04
10/11/2020	03:20	2.59	09:55	3.93	3.24	02:00	1.76	13:05	2.64	2.27	03:00	0.143	09:55	0.369	0.250	0.250	0.53
10/12/2020	02:50	2.41	10:00	4.20	3.21	02:45	1.61	18:30	2.63	2.30	02:50	0.116	10:00	0.376	0.250	0.250	-
10/13/2020	02:40	2.28	07:45	5.09	3.33	03:00	1.59	13:50	2.62	2.30	03:00	0.109	07:45	0.486	0.263	0.263	0.61
10/14/2020	03:10	2.23	10:25	4.07	3.20	03:10	1.69	11:05	2.70	2.33	03:10	0.108	10:25	0.367	0.251	0.251	-
10/15/2020	02:35	2.39	11:20	4.20	3.30	02:00	1.72	10:20	2.74	2.24	02:00	0.129	10:20	0.373	0.252	0.252	-
10/16/2020	03:25	2.37	12:35	3.99	3.31	03:45	1.60	11:15	2.70	2.19	03:25	0.119	12:35	0.361	0.249	0.249	-
10/17/2020	02:40	2.49	10:15	4.12	3.35	02:35	1.70	09:40	2.63	2.24	02:40	0.127	10:15	0.372	0.259	0.259	0.01
10/18/2020	03:20	2.63	10:50	4.05	3.31	02:35	1.82	18:40	2.61	2.28	03:15	0.152	12:55	0.367	0.257	0.257	0.03
10/19/2020	03:00	2.35	10:10	3.93	3.20	02:55	1.75	15:00	2.71	2.33	02:55	0.121	10:10	0.350	0.252	0.252	0.05
10/20/2020	03:15	2.32	17:45	4.11	3.22	02:40	1.85	15:20	2.65	2.30	03:15	0.132	17:40	0.351	0.250	0.250	-
10/21/2020	03:00	2.27	10:45	3.94	3.22	02:50	1.86	09:05	2.79	2.33	03:00	0.124	09:05	0.352	0.255	0.255	0.01
10/22/2020	02:45	2.45	10:05	3.82	3.24	03:10	1.84	13:45	2.83	2.32	03:10	0.135	09:50	0.366	0.253	0.253	-
10/23/2020	03:40	2.32	10:20	3.95	3.24	03:35	1.54	09:20	2.61	2.21	03:40	0.106	10:30	0.347	0.244	0.244	0.20
10/24/2020	03:55	2.47	11:55	3.83	3.21	04:30	1.76	19:40	2.85	2.33	04:30	0.134	19:40	0.364	0.252	0.252	0.02
10/25/2020	03:10	2.41	10:00	3.97	3.15	04:15	1.84	12:45	2.72	2.31	03:15	0.136	10:05	0.357	0.244	0.244	-
10/26/2020	01:40	2.45	10:45	3.81	3.18	04:00	1.61	07:00	2.76	2.23	04:00	0.119	13:05	0.345	0.240	0.240	-
10/27/2020	03:10	2.45	11:55	4.01	3.24	00:00	1.44	14:40	2.57	2.20	02:20	0.128	11:55	0.356	0.243	0.243	-
10/28/2020	03:00	2.42	14:50	4.01	3.30	03:10	1.59	08:25	2.53	2.20	03:10	0.117	14:50	0.359	0.249	0.249	-
10/29/2020	03:10	2.45	11:20	3.94	3.21	00:15	1.51	11:30	2.59	2.25	03:15	0.117	11:30	0.352	0.243	0.243	-
10/30/2020	03:10	2.29	12:20	4.01	3.19	02:20	1.70	14:55	2.56	2.26	03:10	0.117	11:30	0.340	0.242	0.242	0.10
10/31/2020	04:15	2.23	13:00	3.91	3.11	04:10	1.80	09:05	2.77	2.29	04:20	0.117	14:10	0.342	0.239	0.239	-
11/01/2020	03:00	2.41	10:30	3.70	3.08	05:15	1.91	14:10	2.81	2.31	05:15	0.141	14:10	0.330	0.237	0.237	-
11/02/2020	01:50	2.38	11:55	3.89	3.27	04:45	1.83	09:20	2.61	2.28	02:45	0.131	15:20	0.346	0.254	0.254	-
11/03/2020	04:10	2.59	11:20	4.06	3.40	03:45	1.43	16:50	2.63	2.12	03:45	0.120	14:10	0.336	0.250	0.250	0.83
11/04/2020	03:35	2.51	12:50	3.97	3.35	03:30	1.85	16:55	2.50	2.23	03:30	0.142	12:50	0.337	0.256	0.256	0.09
11/05/2020	03:20	2.44	14:55	3.99	3.35	03:15	1.64	21:35	2.55	2.21	03:15	0.123	14:50	0.344	0.254	0.254	0.34
11/06/2020	02:40	2.56	12:30	4.08	3.36	06:20	1.79	22:20	2.50	2.22	02:30	0.148	13:10	0.346	0.255	0.255	0.10
11/07/2020	04:00	2.70	20:30	4.59	3.52	05:50	1.52	10:30	2.68	2.16	05:50	0.135	20:35	0.380	0.267	0.267	0.07
11/08/2020	06:00	2.64	06:05	5.10	3.70	05:50	1.35	20:25	2.47	2.14	05:55	0.111	06:05	0.454	0.280	0.280	0.01
11/09/2020	04:40	2.61	10:20	4.56	3.33	04:00	1.48	10:45	2.75	2.16	04:00	0.120	10:20	0.425	0.247	0.247	0.04

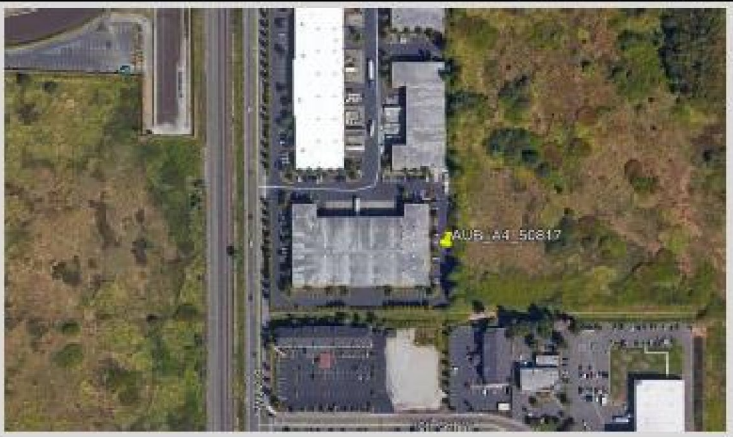
	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	04:20	2.57	20:15	3.89	3.26	03:25	1.60	12:55	2.86	2.25	03:25	0.136	12:55	0.356	0.249	0.249	0.03
11/11/2020	03:30	2.46	11:10	3.92	3.28	04:20	1.50	19:00	2.79	2.21	04:10	0.112	19:00	0.343	0.247	0.247	-
11/12/2020	04:15	2.36	17:35	3.88	3.28	04:10	1.74	14:30	2.78	2.30	04:10	0.121	14:30	0.359	0.257	0.257	0.16
11/13/2020	02:45	2.51	11:05	4.39	3.33	02:25	1.70	17:10	2.59	2.30	02:25	0.142	11:00	0.410	0.262	0.262	0.38
11/14/2020	02:10	2.74	09:50	4.16	3.47	04:50	1.60	20:30	2.56	2.20	04:50	0.148	11:20	0.368	0.264	0.264	0.47
11/15/2020	06:25	2.67	11:40	4.11	3.33	03:50	1.74	21:50	2.65	2.31	04:50	0.157	09:50	0.358	0.262	0.262	0.19
11/16/2020	02:15	2.53	12:10	4.20	3.49	04:10	1.74	14:35	2.47	2.14	04:05	0.137	11:15	0.364	0.260	0.260	0.31
11/17/2020	04:05	2.81	10:45	4.35	3.57	03:50	1.49	15:50	2.63	2.14	03:50	0.138	10:45	0.409	0.269	0.269	0.20
11/18/2020	02:35	2.76	15:55	4.38	3.58	04:25	1.98	08:20	2.65	2.31	02:35	0.181	10:10	0.394	0.289	0.289	0.30
11/19/2020	04:10	2.81	13:15	4.25	3.54	23:40	1.73	09:25	2.59	2.23	04:05	0.175	13:15	0.384	0.274	0.274	0.50
11/20/2020	04:15	2.97	13:50	4.35	3.64	03:45	1.30	22:50	2.52	1.95	04:15	0.129	10:05	0.350	0.252	0.252	0.01
11/21/2020	05:35	2.79	12:45	4.32	3.47	03:40	1.86	09:25	2.56	2.27	03:40	0.172	13:10	0.389	0.272	0.272	-
11/22/2020	03:15	2.73	11:40	4.17	3.40	06:20	1.82	16:15	2.59	2.23	06:20	0.165	12:30	0.369	0.260	0.260	0.21
11/23/2020	03:50	2.72	09:30	4.26	3.58	18:10	1.90	08:00	2.50	2.21	03:50	0.178	09:25	0.379	0.275	0.275	0.14
11/24/2020	03:55	2.99	15:55	5.12	3.75	03:05	1.72	15:40	2.50	2.20	03:05	0.170	15:55	0.480	0.295	0.295	0.21
11/25/2020	03:35	2.97	13:10	4.38	3.65	01:25	1.85	19:35	2.69	2.21	01:25	0.191	15:35	0.378	0.283	0.283	0.05
11/26/2020	03:30	2.90	11:30	4.32	3.50	04:20	1.73	14:25	2.50	2.15	04:20	0.162	11:30	0.384	0.262	0.262	0.02
11/27/2020	05:05	2.83	10:40	4.14	3.50	02:45	1.74	14:30	2.45	2.17	02:45	0.172	10:40	0.368	0.265	0.265	-
11/28/2020	05:10	2.91	17:00	4.14	3.58	01:30	1.57	12:30	2.49	2.10	01:30	0.158	12:35	0.372	0.265	0.265	0.05
11/29/2020	04:55	2.88	11:35	4.40	3.51	04:35	1.78	15:25	2.69	2.19	04:35	0.176	11:35	0.375	0.266	0.266	-
11/30/2020	02:35	2.84	12:00	4.28	3.61	03:00	1.65	11:25	2.51	2.19	03:00	0.168	12:00	0.388	0.278	0.278	0.36
12/01/2020	03:15	2.80	11:50	4.20	3.57	05:00	1.75	14:35	2.47	2.15	03:20	0.158	12:35	0.359	0.269	0.269	-
12/02/2020	03:35	2.74	15:30	4.24	3.58	02:15	1.72	18:25	2.56	2.19	02:15	0.155	18:25	0.393	0.275	0.275	0.01
12/03/2020	02:15	2.81	11:45	4.25	3.54	03:00	1.70	11:25	2.53	2.18	03:00	0.155	11:25	0.380	0.271	0.271	-
12/04/2020	04:00	2.70	11:05	4.27	3.52	00:40	1.74	10:20	2.52	2.22	04:15	0.159	11:30	0.395	0.274	0.274	-
12/05/2020	07:55	2.33	08:20	5.29	3.51	07:55	1.45	10:45	2.55	2.17	07:55	0.098	08:20	0.470	0.267	0.267	0.03
12/06/2020	05:30	2.82	13:00	4.04	3.44	04:15	1.77	12:00	2.55	2.22	05:30	0.158	13:05	0.358	0.263	0.263	0.03
12/07/2020	04:25	2.87	11:55	4.24	3.51	00:50	1.83	21:05	2.64	2.25	04:25	0.177	12:35	0.395	0.275	0.275	-
12/08/2020	04:10	2.73	14:45	4.19	3.50	04:15	1.75	10:40	2.56	2.23	04:15	0.150	14:35	0.371	0.272	0.272	0.87
12/09/2020	04:25	2.88	18:15	4.67	3.61	03:15	1.79	18:25	3.20	2.18	03:15	0.174	18:10	0.404	0.277	0.277	0.17
12/10/2020	04:15	2.81	20:30	4.36	3.61	03:15	1.66	16:25	2.48	2.12	03:15	0.150	20:25	0.380	0.269	0.269	0.07
12/11/2020	04:35	2.97	11:55	4.21	3.63	22:45	1.83	20:15	2.45	2.15	02:10	0.184	12:10	0.364	0.274	0.274	0.02
12/12/2020	03:15	2.88	11:20	4.16	3.61	05:15	1.74	20:30	2.42	2.12	03:15	0.160	11:25	0.344	0.267	0.267	0.01
12/13/2020	03:40	2.81	10:35	4.06	3.61	03:40	1.54	06:15	2.44	2.04	03:40	0.136	12:20	0.333	0.260	0.260	0.24
12/14/2020	04:55	3.02	16:35	4.26	3.70	05:55	1.65	11:20	2.35	2.05	05:55	0.170	11:20	0.362	0.269	0.269	0.05
12/15/2020	03:05	3.05	16:45	4.30	3.81	02:55	1.53	12:00	2.32	2.00	02:55	0.154	13:35	0.353	0.272	0.272	0.58
12/16/2020	08:25	2.97	08:55	4.63	3.83	03:40	1.60	08:40	2.41	1.97	08:30	0.163	08:40	0.397	0.271	0.271	0.39
12/17/2020	03:55	3.13	15:55	4.19	3.75	04:50	1.66	13:10	2.24	1.95	03:50	0.176	13:10	0.336	0.260	0.260	0.08
12/18/2020	03:55	3.02	13:35	4.34	3.75	03:55	1.51	10:45	2.33	1.93	03:55	0.148	10:30	0.354	0.259	0.259	0.25
12/19/2020	03:55	3.13	13:15	4.30	3.79	03:00	1.59	14:40	2.26	1.92	04:00	0.171	14:00	0.353	0.261	0.261	0.37
12/20/2020	03:55	3.10	12:15	4.27	3.79	05:10	1.52	12:35	2.25	1.91	05:10	0.163	12:35	0.354	0.259	0.259	0.04
12/21/2020	03:35	3.23	19:55	4.87	4.07	02:50	1.59	19:30	2.19	1.93	02:50	0.179	20:00	0.408	0.289	0.289	1.07
12/22/2020	03:30	3.37	11:35	4.39	3.95	06:35	1.59	14:15	2.23	1.92	05:40	0.193	14:15	0.356	0.275	0.275	-
12/23/2020	03:25	3.05	13:00	4.31	3.83	05:10	1.54	12:40	2.23	1.90	03:25	0.164	12:45	0.353	0.263	0.263	-
12/24/2020	03:55	3.05	13:05	4.47	3.80	04:35	1.51	10:10	2.31	1.93	04:25	0.157	13:25	0.373	0.264	0.264	-
12/25/2020	07:55	1.59	08:25	4.92	3.60	07:50	0.68	10:45	2.35	1.83	07:55	0.027	08:20	0.426	0.234	0.234	0.49
12/26/2020	04:50	3.21	12:45	4.66	3.79	06:00	1.56	19:25	2.17	1.90	04:45	0.173	12:45	0.376	0.258	0.258	0.02
12/27/2020	03:35	3.25	12:00	4.40	3.84	08:30	1.63	20:35	2.35	1.92	03:35	0.185	12:00	0.347	0.264	0.264	0.13
12/28/2020	03:45	3.05	13:15	4.46	3.85	04:25	1.54	12:50	2.38	1.96	03:50	0.164	13:10	0.383	0.273	0.273	-
12/29/2020	03:45	3.08	11:00	4.25	3.78	02:55	1.64	22:10	2.23	1.97	03:40	0.168	12:40	0.339	0.267	0.267	0.14
12/30/2020	03:30	3.16	11:30	4.50	3.97	03:50	1.71	15:50	2.28	1.98	03:30	0.183	15:50	0.371	0.286	0.286	0.78
12/31/2020	02:55	3.36	15:05	4.56	3.93	04:10	1.66	18:50	2.29	1.97	04:10	0.193	15:10	0.371	0.281	0.281	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			50.442	30.65
Average	3.65	2.02	0.259	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A4_50817

Site Address /Location:	1704 B St, NW			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Back of parking lot	Latitude:	47.324355°	Pipe Size (H x W): 12 X 11.75	Pipe Shape: Circular
		Longitude:	-122.230253		



Manhole #	System Characteristics
A450817	Commercial
Access	Traffic
Walk (Commercial)	None







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information	
Installation Date:	Installation Type:
Friday, October 2, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS3)	0 - 5 psi
Installation Confirmation:	
Time	
7:20:00 AM	
Depth of Flow (Wet DOF) (in)	
3.25	
CS3 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.24	N/A
Silt (in)	Silt Type
0	
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
9	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

AUB_A6_61009K

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.75 in H x 12 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	4.88	0.47	0.096
Minimum	3.28	0.21	0.025
Maximum	10.05	1.32	0.400
Min Time	04/14/2021 2:00:00 AM	12/15/2020 3:00:00 AM	12/15/2020 3:00:00 AM
Max Time	01/12/2021 7:00:00 PM	01/21/2021 1:00:00 PM	01/02/2021 9:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

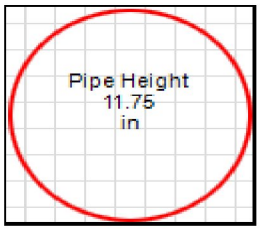
Percent Uptime	
DFINAL (in)	99.741
VFINAL (ft/s)	99.741
QFINAL (MGD - Total MG)	99.741

Hydrograph Report

AUB_A6_61009K

Flow Monitor

AUB_A6_61009K



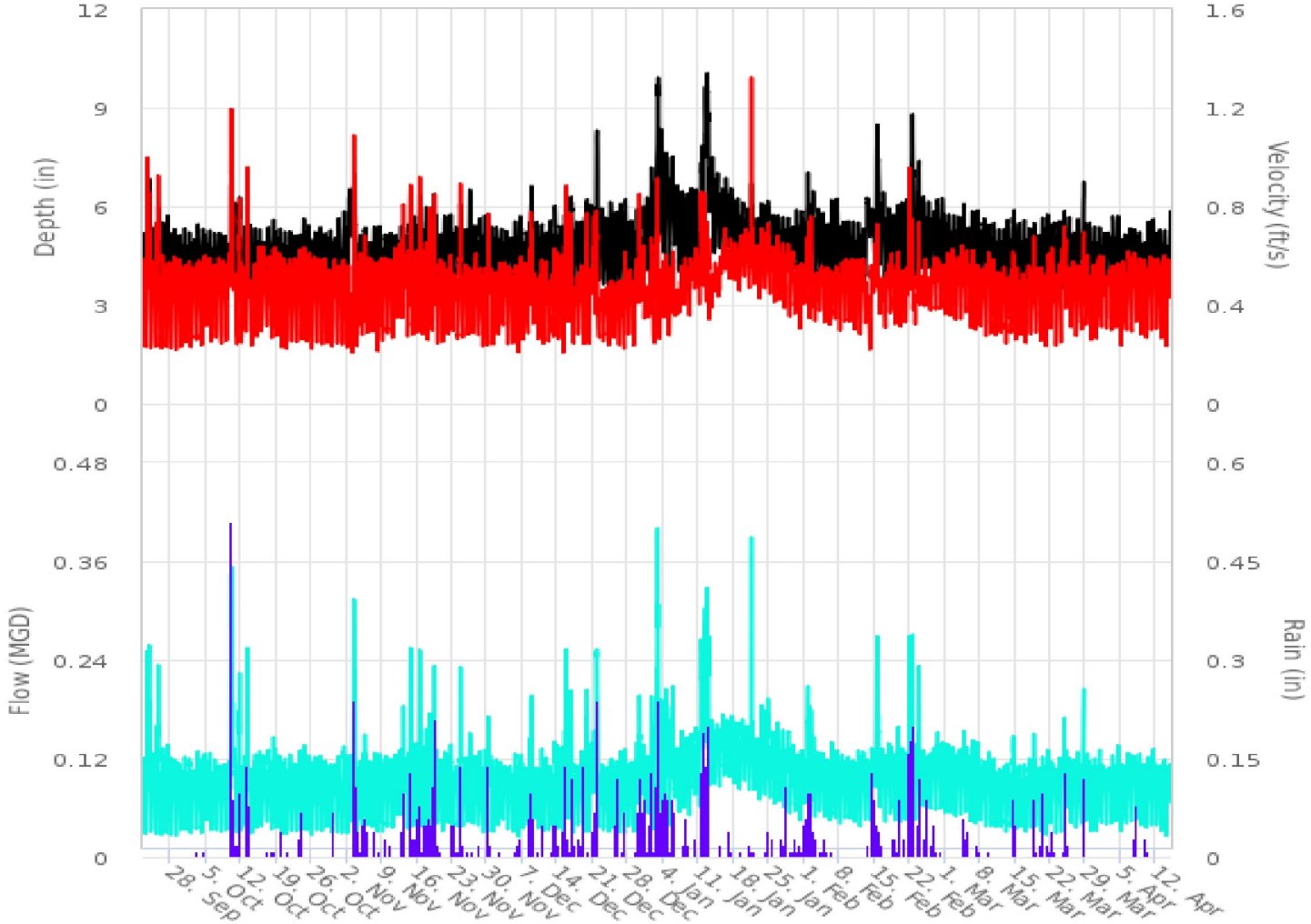
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



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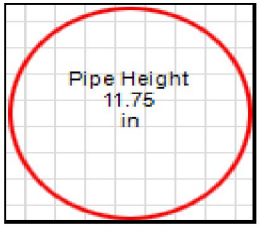
Scattergraph Report

AUB_A6_61009K

Flow Monitor

AUB_A6_61009K

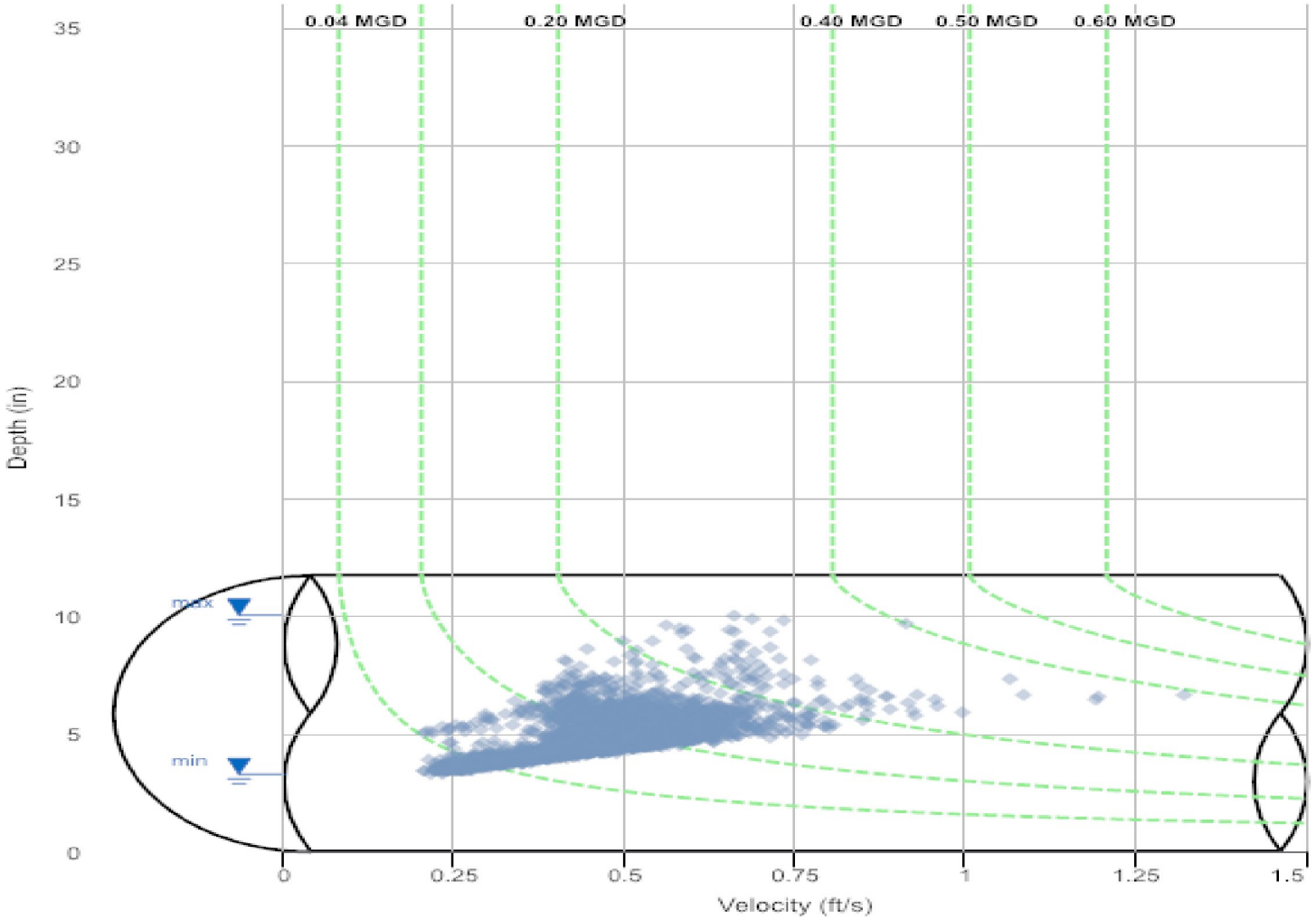


Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A6_61009KPipe: Elliptical (11.75 in H x 12 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	06:40	3.84	16:10	7.40	5.23	01:10	0.30	15:40	0.93	0.46	04:00	0.045	15:40	0.270	0.102	0.102	0.51
01/02/2021	04:35	3.54	21:45	10.03	6.23	07:05	0.18	21:05	1.17	0.50	05:15	0.025	21:05	0.489	0.150	0.150	1.69
01/03/2021	06:25	5.08	00:20	10.00	7.08	05:25	0.23	00:20	0.74	0.42	06:10	0.049	00:20	0.334	0.138	0.138	0.65
01/04/2021	04:15	4.40	12:35	7.81	6.29	03:20	0.29	12:00	0.73	0.45	03:20	0.054	12:10	0.239	0.123	0.123	0.48
01/05/2021	04:45	3.73	21:30	7.66	5.72	02:05	0.23	20:50	0.73	0.43	03:05	0.032	20:50	0.239	0.110	0.110	0.52
01/06/2021	04:20	4.68	18:55	6.76	5.90	11:50	0.29	02:35	0.63	0.43	06:30	0.060	01:05	0.147	0.108	0.108	0.22
01/07/2021	04:50	3.90	19:25	6.59	5.36	05:55	0.34	17:25	0.65	0.45	04:50	0.050	18:50	0.177	0.102	0.102	-
01/08/2021	03:35	3.89	18:00	6.60	5.29	03:40	0.37	09:05	0.67	0.49	03:40	0.053	17:25	0.159	0.108	0.108	0.22
01/09/2021	05:25	3.79	13:35	6.59	5.27	04:20	0.32	08:45	0.66	0.52	05:20	0.046	10:35	0.164	0.113	0.113	-
01/10/2021	05:10	4.20	12:30	6.60	5.34	10:45	0.43	09:40	0.73	0.54	04:00	0.072	12:40	0.170	0.121	0.121	0.07
01/11/2021	04:50	4.05	21:00	7.97	6.04	04:00	0.38	10:30	0.94	0.61	04:55	0.058	11:35	0.278	0.164	0.164	1.06
01/12/2021	01:20	5.63	19:25	10.23	8.21	13:15	0.37	02:35	0.94	0.61	00:00	0.112	19:05	0.386	0.225	0.225	2.10
01/13/2021	04:50	5.71	01:00	9.20	7.01	03:10	0.31	00:20	0.72	0.45	04:40	0.075	00:40	0.288	0.142	0.142	0.09
01/14/2021	04:40	4.51	18:45	7.17	6.03	21:40	0.37	07:35	0.63	0.51	04:55	0.081	09:30	0.176	0.130	0.130	0.01
01/15/2021	04:15	4.67	18:55	6.61	5.72	05:40	0.41	21:45	0.69	0.55	04:00	0.079	18:25	0.182	0.133	0.133	0.09
01/16/2021	04:35	4.57	12:35	7.02	5.67	12:30	0.46	09:25	0.77	0.60	04:25	0.095	18:20	0.185	0.142	0.142	-
01/17/2021	02:45	4.69	12:05	6.66	5.62	05:50	0.47	09:20	0.73	0.60	05:50	0.091	11:05	0.189	0.142	0.142	0.10
01/18/2021	04:25	4.54	19:05	6.28	5.47	19:35	0.47	09:35	0.73	0.57	04:25	0.086	15:05	0.177	0.130	0.130	-
01/19/2021	04:05	4.55	18:30	6.23	5.36	02:55	0.44	13:55	0.74	0.59	03:45	0.079	17:35	0.178	0.131	0.131	0.01
01/20/2021	02:15	4.53	18:50	6.10	5.25	02:10	0.50	15:40	0.77	0.60	02:20	0.088	15:40	0.183	0.130	0.130	-
01/21/2021	03:20	4.41	13:35	7.09	5.25	03:25	0.44	13:35	1.53	0.63	03:25	0.075	13:35	0.479	0.139	0.139	0.11
01/22/2021	03:35	4.35	19:20	5.73	5.02	03:00	0.46	09:55	0.69	0.58	03:00	0.078	12:35	0.159	0.118	0.118	-
01/23/2021	05:20	4.20	12:35	6.21	5.10	04:10	0.40	12:35	0.75	0.57	04:10	0.065	12:35	0.199	0.121	0.121	-
01/24/2021	04:35	4.20	18:30	6.25	5.24	04:25	0.44	18:30	0.76	0.60	04:30	0.070	18:30	0.205	0.131	0.131	0.16
01/25/2021	04:30	4.17	18:40	5.85	5.01	04:30	0.42	18:30	0.65	0.56	04:30	0.067	18:40	0.161	0.114	0.114	0.04
01/26/2021	04:55	4.06	19:10	5.85	4.96	04:40	0.37	19:25	0.75	0.55	04:50	0.056	19:25	0.180	0.111	0.111	-
01/27/2021	04:20	4.18	19:50	5.83	4.96	03:40	0.39	19:25	0.66	0.55	04:20	0.062	19:45	0.163	0.111	0.111	0.14
01/28/2021	03:30	4.10	19:25	5.74	4.99	03:30	0.36	19:25	0.66	0.55	03:30	0.056	18:55	0.158	0.113	0.113	0.24
01/29/2021	04:15	3.95	19:00	5.52	4.81	04:15	0.31	17:25	0.63	0.52	04:15	0.046	19:00	0.146	0.102	0.102	0.03
01/30/2021	05:50	3.96	13:25	5.98	4.93	05:50	0.32	17:20	0.60	0.47	05:50	0.047	17:25	0.138	0.095	0.095	0.07
01/31/2021	05:15	3.92	12:55	5.97	5.01	05:00	0.29	10:10	0.67	0.47	05:05	0.042	11:25	0.153	0.096	0.096	0.12
02/01/2021	03:15	4.05	19:20	7.17	5.33	01:00	0.38	23:55	0.83	0.54	03:15	0.057	19:00	0.233	0.122	0.122	0.82
02/02/2021	04:15	3.87	19:05	6.58	5.44	03:30	0.31	08:30	0.88	0.50	03:30	0.045	00:00	0.226	0.115	0.115	0.31
02/03/2021	04:20	3.85	19:45	6.06	5.04	03:25	0.28	17:05	0.58	0.46	03:25	0.041	19:05	0.141	0.094	0.094	0.06
02/04/2021	03:20	3.91	20:50	5.97	4.89	01:20	0.34	13:15	0.61	0.49	01:20	0.051	20:55	0.145	0.097	0.097	0.07
02/05/2021	04:20	3.83	17:35	5.59	4.78	03:05	0.30	17:45	0.60	0.46	04:15	0.042	17:45	0.139	0.089	0.089	0.01
02/06/2021	03:40	3.74	12:10	6.28	4.96	05:40	0.29	08:45	0.59	0.45	03:30	0.041	12:15	0.156	0.092	0.092	0.01
02/07/2021	06:00	3.71	13:45	6.34	4.92	06:00	0.29	09:10	0.59	0.46	06:00	0.039	11:30	0.148	0.092	0.092	-
02/08/2021	04:05	3.66	19:30	5.64	4.74	03:15	0.26	18:00	0.64	0.46	04:10	0.034	18:00	0.139	0.089	0.089	-
02/09/2021	04:45	3.79	19:35	5.62	4.70	04:55	0.30	13:15	0.66	0.48	04:55	0.042	18:00	0.144	0.092	0.092	-
02/10/2021	02:05	3.73	20:10	5.63	4.66	04:50	0.30	11:35	0.66	0.48	04:50	0.041	14:00	0.135	0.091	0.091	-
02/11/2021	03:15	3.73	19:55	5.58	4.64	03:30	0.26	14:10	0.70	0.47	03:30	0.036	14:10	0.146	0.089	0.089	-
02/12/2021	04:05	3.62	18:35	5.45	4.63	04:05	0.25	09:00	0.73	0.48	04:05	0.033	09:00	0.151	0.089	0.089	-
02/13/2021	04:20	3.77	13:45	6.37	5.31	04:15	0.30	09:30	0.61	0.40	04:35	0.041	13:40	0.126	0.089	0.089	0.08
02/14/2021	23:45	4.66	09:30	6.38	5.47	04:45	0.19	09:35	0.78	0.42	03:25	0.041	09:35	0.163	0.096	0.096	0.71
02/15/2021	05:45	4.36	14:10	8.60	6.35	22:50	0.41	13:05	0.77	0.58	05:45	0.081	14:15	0.284	0.161	0.161	0.78
02/16/2021	04:15	4.10	19:55	6.52	5.48	02:40	0.30	13:55	0.56	0.44	02:40	0.052	13:55	0.147	0.101	0.101	0.07
02/17/2021	04:05	3.75	19:15	6.06	5.00	04:00	0.28	18:10	0.69	0.47	04:00	0.038	18:10	0.164	0.096	0.096	-
02/18/2021	04:20	3.81	18:50	5.90	4.92	02:20	0.34	11:35	0.68	0.49	04:20	0.048	11:35	0.149	0.099	0.099	0.09
02/19/2021	04:25	3.76	19:45	6.15	4.89	04:20	0.30	19:15	0.67	0.47	04:25	0.040	19:20	0.176	0.093	0.093	0.17
02/20/2021	05:35	3.67	12:45	6.21	4.96	05:25	0.29	23:25	0.61	0.45	05:30	0.038	12:10	0.148	0.092	0.092	0.07
02/21/2021	06:30	3.68	23:40	6.77	5.08	02:55	0.29	23:10	1.00	0.47	02:55	0.040	23:40	0.291	0.102	0.102	0.42
02/22/2021	05:35	4.33	13:30	8.93	6.38	22:55	0.31	00:00	0.93	0.56	05:35	0.079	13:05	0.322	0.153	0.153	0.98
02/23/2021	03:55	3.81	22:10	7.57	5.52	02:40	0.28	21:15	0.79	0.46	02:40	0.041	21:25	0.246	0.111	0.111	0.27
02/24/2021	04:00	4.00	20:00	6.40	5.30	04:05	0.37	07:05	0.59	0.47	04:00	0.056	18:40	0.155	0.103	0.103	-
02/25/2021	03:05	4.08	19:45	6.27	5.24	02:00	0.37	05:05	0.64	0.48	03:10	0.056	19:10	0.141	0.103	0.103	0.18
02/26/2021	04:15	4.03	19:20	5.97	5.07	04:10	0.35	22:25	0.66	0.50	04:10	0.054	20:05	0.147	0.105	0.105	0.10
02/27/2021	05:10	3.97	11:45	6.34	5.10	05:10	0.36	08:45	0.69	0.51	05:10	0.053	13:15	0.180	0.108	0.108	0.02
02/28/2021	04:05	3.98	13:05	6.39	5.17	03:35	0.35	18:15	0.64	0.50	03:35	0.053	15:05	0.163	0.107	0.107	0.02
03/01/2021	03:15	3.93	20:25	5.95	4.96	03:10	0.34	12:00	0.66	0.52	03:10	0.050	18:35	0.157	0.105	0.105	-
03/02/2021	04:20	3.99	19:55	6.04	4.87	04:05	0.31	13:10	0.66	0.50	04:05	0.047	13:10	0.143	0.100	0.100	-
03/03/2021	02:40	3.85	19:20	5.87	4.83	02:35	0.31	15:55	0.65	0.50	02:35	0.044	21:20	0.146	0.098	0.098	-
03/04/2021	03:30	3.89	20:25	6.26	4.83	03:35	0.30	10:05	0.69	0.51	03:30	0.044	19:35	0.175	0.100	0.100	0.20
03/05/2021	04:30	3.87	19:20	5.48	4.78	04:30	0.32	11:45	0.70	0.50	04:30	0.046	11:45	0.154	0.096	0.096	0.05
03/06/2021	05:10	3.70	13:20	6.10	4.85	04:55	0.28	15:15	0.67	0.48	05:00	0.038	15:15	0.155	0.096	0.096	-
03/07/2021	04:25	3.68	12:15	5.98	4.90	04:20	0.27	12:20	0.63	0.46	04:20	0.036	12:20	0.157	0.094	0.094	0.04
03/08/2021	03:20	3.76	20:40	5.81	4.74	03:15	0.29	10:20	0.61	0.46	03:15	0.040	20:40	0.136	0.088	0.088	-
03/09/2021	03:55	3.70	21:20	5.54	4.68	03:10	0.26	16:25	0.65	0.48	03:50	0.035	19:10	0.137	0.090	0.090	0.01
03/10/2021	03:00	3.61	19:40	5.58	4.58	03:25	0.27	17:20	0.63	0.46	03:25	0.035	20:45	0.135	0.084	0.084	-
03/11/2021	04:05	3.53	20:20	5.38	4.55	04:00	0.23	12:15	0.61	0.45	04:00	0.029	17:30	0.122	0.082	0.082	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:00	3.52	19:20	5.56	4.51	03:25	0.26	18:55	0.62	0.44	04:00	0.032	18:55	0.127	0.079	0.079	-
03/13/2021	04:40	3.39	11:50	5.71	4.60	04:35	0.21	08:50	0.61	0.43	04:35	0.025	10:50	0.136	0.080	0.080	-
03/14/2021	04:25	3.41	20:00	6.05	4.80	02:25	0.25	13:30	0.83	0.45	02:25	0.030	13:30	0.204	0.090	0.090	0.30
03/15/2021	02:30	3.39	19:45	5.61	4.63	02:30	0.21	10:35	0.59	0.44	02:30	0.025	19:40	0.120	0.083	0.083	-
03/16/2021	01:15	3.55	19:40	5.75	4.59	02:20	0.24	13:00	0.61	0.42	01:15	0.032	19:40	0.131	0.078	0.078	-
03/17/2021	03:35	3.35	20:00	5.44	4.51	03:25	0.21	18:20	0.70	0.44	03:25	0.025	18:20	0.145	0.080	0.080	-
03/18/2021	02:15	3.51	19:20	5.56	4.54	03:15	0.25	16:20	0.89	0.45	03:15	0.031	16:20	0.202	0.082	0.082	0.11
03/19/2021	03:20	3.51	19:50	5.27	4.51	03:15	0.26	13:10	0.69	0.46	03:15	0.032	19:55	0.140	0.083	0.083	0.03
03/20/2021	04:55	3.31	12:40	5.72	4.72	04:55	0.20	06:00	0.66	0.44	04:55	0.023	11:45	0.132	0.085	0.085	0.17
03/21/2021	04:20	3.29	11:40	5.92	4.66	04:50	0.21	16:35	0.76	0.44	04:55	0.024	16:35	0.168	0.084	0.084	0.07
03/22/2021	02:00	3.58	20:15	5.67	4.75	01:55	0.27	07:45	0.68	0.45	02:00	0.034	12:05	0.130	0.087	0.087	0.11
03/23/2021	02:30	3.38	19:10	5.63	4.57	02:15	0.21	15:05	0.65	0.45	02:30	0.024	16:40	0.131	0.083	0.083	-
03/24/2021	03:20	3.32	20:10	6.05	4.60	03:05	0.21	19:35	0.89	0.50	03:05	0.025	19:35	0.219	0.093	0.093	0.34
03/25/2021	03:00	3.96	20:10	5.86	4.87	03:05	0.34	01:00	0.75	0.49	03:05	0.051	01:00	0.154	0.097	0.097	0.27
03/26/2021	03:00	3.55	18:55	5.41	4.59	02:55	0.28	17:15	0.65	0.47	02:55	0.035	17:15	0.136	0.087	0.087	-
03/27/2021	05:00	3.49	11:30	5.83	4.66	02:25	0.24	10:00	0.61	0.45	02:25	0.030	10:30	0.142	0.087	0.087	-
03/28/2021	05:40	3.58	15:25	6.97	4.97	05:40	0.26	14:50	0.87	0.48	05:40	0.034	14:50	0.252	0.102	0.102	0.37
03/29/2021	03:20	3.64	20:10	5.70	4.65	01:45	0.29	10:25	0.64	0.45	01:50	0.038	11:10	0.134	0.085	0.085	-
03/30/2021	03:45	3.32	19:15	5.51	4.49	03:45	0.23	15:30	0.69	0.44	03:45	0.026	15:30	0.141	0.079	0.079	-
03/31/2021	03:40	3.30	19:50	5.48	4.52	03:40	0.23	14:00	0.69	0.48	03:40	0.026	19:15	0.142	0.087	0.087	-
04/01/2021	03:15	3.57	19:50	5.34	4.52	03:15	0.28	09:10	0.68	0.46	03:15	0.036	09:10	0.130	0.083	0.083	-
04/02/2021	03:15	3.50	11:20	5.34	4.60	03:10	0.26	23:35	0.63	0.47	03:10	0.032	21:00	0.122	0.087	0.087	-
04/03/2021	03:55	3.71	10:50	5.91	4.73	03:50	0.27	18:35	0.61	0.46	03:50	0.036	10:45	0.138	0.088	0.088	-
04/04/2021	02:35	3.79	11:55	6.00	4.70	02:35	0.27	10:25	0.63	0.46	02:35	0.037	12:00	0.148	0.089	0.089	-
04/05/2021	02:50	3.63	20:45	5.34	4.56	02:45	0.20	09:15	0.62	0.45	02:50	0.026	19:55	0.120	0.083	0.083	-
04/06/2021	03:05	3.65	19:55	5.43	4.62	01:50	0.27	12:30	0.69	0.49	01:55	0.035	18:25	0.142	0.091	0.091	-
04/07/2021	03:10	3.91	18:35	5.40	4.69	00:35	0.26	23:50	0.72	0.49	03:10	0.037	23:50	0.146	0.092	0.092	0.22
04/08/2021	02:55	3.61	20:05	5.33	4.59	02:45	0.29	00:00	0.69	0.49	02:50	0.038	19:35	0.139	0.089	0.089	-
04/09/2021	04:15	3.66	19:05	5.02	4.47	02:35	0.26	10:20	0.63	0.48	03:00	0.035	10:20	0.124	0.084	0.084	0.03
04/10/2021	04:00	3.55	11:45	5.65	4.60	01:45	0.23	20:00	0.67	0.46	03:55	0.029	12:45	0.138	0.085	0.085	0.02
04/11/2021	03:35	3.53	10:25	5.76	4.66	03:00	0.27	16:30	0.65	0.48	03:00	0.034	11:20	0.146	0.090	0.090	-
04/12/2021	02:05	3.41	19:35	5.47	4.50	02:00	0.27	08:30	0.66	0.47	02:00	0.032	08:30	0.124	0.085	0.085	-
04/13/2021	03:45	3.26	19:40	5.45	4.42	03:50	0.24	08:15	0.66	0.46	03:40	0.028	19:25	0.127	0.082	0.082	-
04/14/2021	02:10	3.13	21:10	6.48	4.41	02:00	0.21	10:40	0.65	0.46	02:05	0.022	10:40	0.127	0.080	0.080	-
09/22/2020	23:35	3.79	19:35	5.29	4.64	23:35	0.32	19:05	0.61	0.52	23:35	0.044	19:35	0.132	0.096	0.045	-
09/23/2020	02:35	3.30	17:30	7.04	4.97	02:30	0.20	11:25	1.19	0.56	02:35	0.023	16:55	0.338	0.121	0.121	-
09/24/2020	01:30	3.66	19:10	5.52	4.55	01:10	0.20	19:00	0.65	0.45	01:15	0.026	19:00	0.141	0.082	0.082	-
09/25/2020	02:40	3.31	12:15	6.07	4.69	02:45	0.19	12:15	1.06	0.51	02:45	0.022	12:15	0.275	0.101	0.101	-
09/26/2020	03:30	3.32	10:45	5.68	4.54	03:10	0.19	09:15	0.69	0.44	03:10	0.024	10:30	0.148	0.082	0.082	-
09/27/2020	05:05	3.37	11:55	5.84	4.58	02:55	0.20	08:55	0.64	0.43	02:55	0.024	10:55	0.149	0.082	0.082	-
09/28/2020	01:55	3.28	19:35	5.43	4.47	01:45	0.20	15:50	0.63	0.44	01:50	0.022	10:10	0.127	0.079	0.079	-
09/29/2020	02:30	3.20	19:50	5.31	4.43	00:45	0.18	11:05	0.68	0.45	02:25	0.021	11:05	0.143	0.080	0.080	-
09/30/2020	03:10	3.78	20:00	5.45	4.53	03:20	0.15	20:05	0.62	0.44	03:20	0.025	20:05	0.136	0.080	0.080	-
10/01/2020	03:20	3.50	20:05	5.40	4.49	02:30	0.22	18:20	0.62	0.45	03:15	0.028	19:55	0.131	0.081	0.081	-
10/02/2020	02:30	3.46	19:30	5.10	4.47	02:25	0.19	10:05	0.65	0.44	02:25	0.024	10:05	0.129	0.079	0.079	-
10/03/2020	05:25	3.38	11:30	5.53	4.48	04:15	0.21	10:50	0.64	0.45	04:15	0.026	10:50	0.143	0.082	0.082	0.01
10/04/2020	04:10	3.27	11:20	5.48	4.49	04:05	0.20	20:20	0.70	0.46	04:05	0.023	20:20	0.150	0.085	0.085	0.01
10/05/2020	23:55	3.64	19:15	5.37	4.51	23:55	0.28	17:40	0.67	0.47	23:55	0.037	19:20	0.140	0.085	0.085	-
10/06/2020	01:45	3.42	19:00	5.28	4.43	01:40	0.22	19:40	0.65	0.45	01:40	0.027	19:40	0.140	0.081	0.081	-
10/07/2020	03:40	3.37	20:25	5.35	4.41	02:05	0.23	12:05	0.62	0.46	02:05	0.027	20:25	0.129	0.082	0.082	-
10/08/2020	03:10	3.32	19:25	5.23	4.37	04:40	0.20	17:30	0.63	0.45	03:10	0.026	19:15	0.127	0.078	0.078	-
10/09/2020	03:10	3.46	23:55	7.00	4.52	02:35	0.22	23:20	1.34	0.50	03:10	0.027	23:20	0.386	0.095	0.095	0.64
10/10/2020	23:55	3.95	02:15	8.04	5.48	23:20	0.33	01:40	1.66	0.61	23:55	0.048	01:40	0.539	0.146	0.146	1.04
10/11/2020	04:15	3.32	15:00	6.40	4.91	04:15	0.20	18:00	0.99	0.48	04:15	0.023	18:00	0.259	0.103	0.103	0.53
10/12/2020	02:10	3.53	18:00	5.44	4.55	01:45	0.23	16:55	0.60	0.43	01:45	0.029	18:00	0.135	0.079	0.079	-
10/13/2020	00:55	3.52	07:55	6.86	4.89	00:50	0.26	07:30	1.16	0.51	00:55	0.032	07:30	0.316	0.104	0.104	0.61
10/14/2020	04:20	3.30	20:05	5.46	4.47	02:10	0.21	17:50	0.64	0.44	02:15	0.025	20:10	0.143	0.080	0.080	-
10/15/2020	03:15	3.45	18:40	5.45	4.52	02:55	0.25	15:20	0.68	0.48	03:05	0.031	18:00	0.138	0.087	0.087	-
10/16/2020	02:35	3.49	11:45	5.03	4.43	02:35	0.27	11:45	0.70	0.48	02:35	0.034	11:45	0.142	0.084	0.084	-
10/17/2020	04:40	3.62	12:05	5.46	4.53	04:15	0.29	12:15	0.67	0.48	04:15	0.038	12:10	0.149	0.088	0.088	0.01
10/18/2020	03:50	3.44	12:25	5.72	4.62	03:50	0.23	18:25	0.68	0.48	03:50	0.028	11:50	0.154	0.092	0.092	0.03
10/19/2020	03:20	3.46	19:00	5.46	4.52	03:15	0.23	16:05	0.68	0.48	03:10	0.029	16:05	0.141	0.087	0.087	0.05
10/20/2020	03:10	3.42	18:35	5.37	4.48	01:55	0.22	18:10	0.63	0.45	03:05	0.026	18:10	0.130	0.082	0.082	-
10/21/2020	01:50	3.41	18:45	5.34	4.47	01:45	0.20	18:00	0.65	0.45	01:50	0.024	18:00	0.138	0.082	0.082	0.01
10/22/2020	02:50	3.39	20:35	5.23	4.39	02:45	0.23	16:20	0.66	0.45	02:40	0.028	20:35	0.129	0.079	0.079	-
10/23/2020	03:15	3.31	20:15	5.27	4.40	02:15	0.20	19:15	0.66	0.46	02:15	0.023	19:50	0.138	0.082	0.082	0.20
10/24/2020	05:00	3.32	11:30	5.71	4.53	05:10	0.21	14:25	0.76	0.45	05:10	0.025	14:30	0.171	0.082	0.082	0.02
10/25/2020	03:25	3.49	12:10	5.53	4.55	03:25	0.22	11:00	0.68	0.46	03:25	0.027	11:00	0.153	0.085	0.085	-
10/26/2020	02:35	3.27	19:30	5.40	4.44	02:35	0.19	16:10	0.67	0.47	02:30	0.022	12:00	0.135	0.083	0.083	-
10/27/2020	03:10	3.54	19:05	5.45	4.47	03:20	0.22	20:00	0.68	0.46	03:20	0.028	20:00	0.152	0.083	0.083	-
10/28/2020	01:45	3.40	18:55	5.36	4.42	02:40	0.20	12:15	0.64	0.46	02:35	0.025	18:55	0.130	0.082	0.082	-
10/29/2020	04:15	3.67	19:35	5.39	4.60	02:05	0.22	16:30	0.61	0.43	02:05	0.032	18:25	0.125	0.079	0.079	-
10/30/2020	02:35	3.52	13:55	5.28	4.49	02:35	0.21	05:50	0.67	0.45	02:20	0.027	05:50	0.136	0.082	0.082	0.10
10/31/2020	03:30	3.38	11:45	5.88	4.44	05:10	0.21	14:00	0.64	0.44	04:30	0.027	10:40	0.140	0.079	0.079	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	04:00	3.25	13:20	6.08	4.68	02:25	0.17	12:55	0.70	0.43	02:25	0.022	12:55	0.167	0.085	0.085	-
11/02/2020	03:40	3.42	17:15	6.64	5.38	02:50	0.20	10:15	0.69	0.38	02:50	0.025	10:15	0.148	0.088	0.088	-
11/03/2020	23:35	4.21	10:35	7.00	5.43	02:35	0.20	10:05	1.23	0.52	04:05	0.039	10:10	0.334	0.119	0.119	0.83
11/04/2020	03:30	3.32	19:25	5.27	4.46	03:00	0.19	16:55	0.67	0.46	03:30	0.024	16:55	0.132	0.083	0.083	0.09
11/05/2020	04:35	3.69	18:10	5.46	4.70	04:40	0.26	15:25	0.77	0.48	04:40	0.035	15:30	0.170	0.092	0.092	0.34
11/06/2020	05:15	3.54	17:30	5.03	4.49	05:05	0.26	12:15	0.66	0.46	05:15	0.032	12:15	0.131	0.083	0.083	0.10
11/07/2020	05:15	3.38	13:30	5.48	4.54	05:10	0.26	10:15	0.64	0.46	05:15	0.031	13:45	0.142	0.085	0.085	0.07
11/08/2020	06:10	3.53	12:30	5.47	4.62	04:10	0.21	19:25	0.65	0.45	04:50	0.029	12:40	0.140	0.086	0.086	0.01
11/09/2020	04:25	3.40	20:05	5.29	4.42	04:25	0.23	13:50	0.69	0.47	04:25	0.027	13:50	0.135	0.084	0.084	0.04
11/10/2020	03:05	3.42	19:00	5.30	4.41	03:10	0.25	17:35	0.66	0.46	03:05	0.031	17:35	0.132	0.080	0.080	0.03
11/11/2020	04:20	3.57	19:30	5.28	4.48	04:10	0.22	16:50	0.68	0.46	04:10	0.029	19:35	0.141	0.084	0.084	-
11/12/2020	02:25	3.77	20:20	5.52	4.66	02:15	0.30	17:20	0.70	0.51	02:15	0.041	17:00	0.142	0.096	0.096	0.16
11/13/2020	01:15	3.84	06:45	5.93	4.78	01:15	0.31	06:45	1.05	0.54	01:15	0.044	06:45	0.263	0.104	0.104	0.38
11/14/2020	04:45	3.55	19:05	6.79	4.90	04:45	0.25	18:10	0.94	0.53	04:45	0.032	18:20	0.266	0.112	0.112	0.47
11/15/2020	05:30	3.58	13:35	5.78	4.81	05:20	0.26	20:15	0.70	0.47	05:30	0.033	20:15	0.160	0.093	0.093	0.19
11/16/2020	04:20	3.58	13:50	6.62	4.86	04:20	0.26	13:35	1.03	0.52	04:20	0.033	13:50	0.292	0.107	0.107	0.31
11/17/2020	03:10	3.55	20:10	6.20	4.70	05:25	0.19	08:55	0.94	0.48	05:25	0.031	08:55	0.225	0.093	0.093	0.20
11/18/2020	03:35	3.42	18:30	6.07	4.73	03:30	0.24	17:35	0.93	0.48	03:35	0.029	17:45	0.225	0.095	0.095	0.30
11/19/2020	02:40	3.49	13:25	6.53	4.94	02:40	0.25	12:55	1.21	0.52	02:40	0.032	13:00	0.329	0.107	0.107	0.50
11/20/2020	01:35	3.85	18:50	5.47	4.73	02:25	0.17	15:20	0.66	0.43	02:25	0.031	16:20	0.144	0.081	0.081	0.01
11/21/2020	04:00	3.45	13:10	5.83	4.71	01:55	0.21	09:25	0.63	0.44	03:50	0.028	15:05	0.146	0.086	0.086	-
11/22/2020	04:05	3.86	12:55	5.85	4.94	04:05	0.24	16:25	0.72	0.45	04:05	0.034	16:25	0.158	0.093	0.093	0.21
11/23/2020	05:00	3.41	20:00	5.58	4.69	05:00	0.24	10:40	0.58	0.44	05:00	0.029	18:15	0.118	0.083	0.083	0.14
11/24/2020	01:55	3.67	16:35	6.30	4.77	01:55	0.22	15:55	1.02	0.49	01:55	0.029	16:10	0.259	0.097	0.097	0.21
11/25/2020	02:05	3.73	20:25	5.44	4.68	02:55	0.25	20:25	0.62	0.46	03:00	0.034	20:25	0.139	0.087	0.087	0.05
11/26/2020	04:25	3.93	12:20	6.67	4.94	04:25	0.25	10:35	0.59	0.44	04:25	0.037	12:55	0.164	0.091	0.091	0.02
11/27/2020	03:35	3.71	13:25	5.56	4.59	03:35	0.25	17:30	0.70	0.45	03:35	0.034	17:30	0.138	0.083	0.083	-
11/28/2020	06:00	3.69	12:20	5.74	4.66	06:00	0.25	18:50	0.58	0.43	06:00	0.033	12:20	0.131	0.081	0.081	0.05
11/29/2020	05:10	3.51	14:00	5.83	4.69	05:15	0.20	09:55	0.58	0.44	05:15	0.025	12:35	0.132	0.086	0.086	-
11/30/2020	03:20	3.48	18:15	5.54	4.83	03:20	0.20	05:00	0.82	0.48	03:20	0.024	05:00	0.188	0.095	0.095	0.36
12/01/2020	03:40	3.45	18:45	5.51	4.60	04:15	0.19	12:55	0.59	0.43	04:15	0.024	18:45	0.134	0.080	0.080	-
12/02/2020	04:15	3.61	20:35	5.41	4.60	05:45	0.23	17:35	0.62	0.42	04:15	0.032	12:50	0.129	0.078	0.078	0.01
12/03/2020	04:15	3.77	19:20	5.39	4.62	04:10	0.29	13:15	0.62	0.47	04:10	0.040	13:15	0.122	0.088	0.088	-
12/04/2020	01:30	3.66	18:20	5.13	4.54	03:45	0.21	22:10	0.65	0.43	03:35	0.029	22:10	0.127	0.079	0.079	-
12/05/2020	05:35	3.32	13:15	5.65	4.60	00:30	0.21	15:50	0.64	0.43	05:40	0.024	12:30	0.146	0.080	0.080	0.03
12/06/2020	05:50	3.37	13:30	5.84	4.67	03:40	0.18	17:25	0.63	0.42	05:50	0.022	17:20	0.130	0.082	0.082	0.03
12/07/2020	04:20	3.45	19:40	5.32	4.53	04:15	0.22	10:00	0.68	0.44	04:20	0.027	10:00	0.127	0.080	0.080	-
12/08/2020	04:20	3.62	20:10	6.68	5.09	03:50	0.26	16:25	0.88	0.52	03:55	0.034	16:20	0.221	0.114	0.114	0.87
12/09/2020	05:05	3.73	19:55	5.65	4.82	05:05	0.28	03:00	0.57	0.45	05:05	0.038	12:35	0.119	0.088	0.088	0.17
12/10/2020	03:25	3.53	21:00	5.63	4.61	03:20	0.23	20:30	0.66	0.44	03:20	0.029	20:30	0.152	0.082	0.082	0.07
12/11/2020	04:00	3.49	18:00	5.38	4.53	03:45	0.23	17:30	0.62	0.43	03:50	0.029	17:55	0.130	0.078	0.078	0.02
12/12/2020	04:25	3.49	13:10	5.72	4.62	03:15	0.22	21:45	0.58	0.41	04:25	0.027	11:45	0.127	0.077	0.077	0.01
12/13/2020	06:10	3.38	12:55	6.14	4.80	06:05	0.21	09:40	0.68	0.47	06:10	0.024	10:40	0.165	0.094	0.094	0.24
12/14/2020	03:05	3.55	19:05	5.55	4.63	04:10	0.23	19:00	0.62	0.47	03:05	0.030	19:00	0.143	0.089	0.089	0.05
12/15/2020	03:40	3.31	16:35	6.96	4.94	03:40	0.17	16:05	1.14	0.44	03:35	0.020	16:10	0.320	0.094	0.094	0.58
12/16/2020	01:30	3.66	15:15	6.41	4.93	01:30	0.28	15:00	0.88	0.47	01:30	0.037	15:00	0.235	0.098	0.098	0.39
12/17/2020	03:30	3.45	19:20	5.65	4.70	03:45	0.22	17:50	0.61	0.42	03:45	0.027	17:50	0.138	0.080	0.080	0.08
12/18/2020	03:10	3.59	19:40	5.64	4.72	03:05	0.24	19:20	0.60	0.44	03:05	0.032	19:25	0.140	0.084	0.084	0.25
12/19/2020	03:45	3.40	18:15	6.29	5.01	03:45	0.21	20:40	0.81	0.48	03:45	0.025	20:40	0.218	0.103	0.103	0.37
12/20/2020	05:15	3.52	14:20	6.23	4.92	05:05	0.21	18:45	0.60	0.44	05:15	0.026	14:15	0.156	0.090	0.090	0.04
12/21/2020	02:05	4.12	18:50	8.58	5.93	10:55	0.31	16:30	1.04	0.54	02:05	0.068	16:35	0.328	0.137	0.137	1.07
12/22/2020	04:20	3.67	20:55	6.12	5.18	02:40	0.23	20:55	0.74	0.38	04:15	0.032	20:55	0.192	0.083	0.083	-
12/23/2020	04:20	3.43	12:30	5.83	4.84	02:55	0.22	19:45	0.51	0.39	03:00	0.027	19:45	0.118	0.078	0.078	-
12/24/2020	04:35	3.48	12:20	6.20	4.91	05:15	0.20	17:15	0.55	0.41	05:15	0.026	12:35	0.133	0.083	0.083	-
12/25/2020	05:35	3.47	17:35	5.96	4.77	05:30	0.23	21:40	0.54	0.41	05:35	0.028	18:35	0.127	0.080	0.080	0.49
12/26/2020	05:25	3.39	13:25	6.17	4.77	05:05	0.21	11:40	0.57	0.40	05:05	0.025	13:35	0.144	0.079	0.079	0.02
12/27/2020	06:30	3.47	13:00	6.33	4.91	05:50	0.19	09:50	0.69	0.40	05:50	0.023	09:50	0.165	0.083	0.083	0.13
12/28/2020	03:35	3.51	14:55	5.70	4.75	03:25	0.24	11:00	0.62	0.44	03:25	0.031	14:40	0.143	0.085	0.085	-
12/29/2020	03:50	3.49	20:25	6.05	4.68	03:50	0.20	19:45	0.72	0.43	03:50	0.025	19:45	0.175	0.083	0.083	0.14
12/30/2020	01:25	4.09	18:05	6.12	5.49	01:00	0.36	06:35	0.88	0.53	01:00	0.057	06:50	0.208	0.120	0.120	0.78
12/31/2020	05:50	3.94	18:55	6.34	5.21	05:50	0.30	00:00	0.71	0.44	05:50	0.044	00:05	0.166	0.095	0.095	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			19.631	30.65
Average	4.88	0.47	0.096	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A6_61009K

Site Address /Location:	12th St NE + Pike St NE			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	located in residental road, light traffic	Latitude:	47.318639	Pipe Size (H x W): 11.75 X 12.00	Pipe Shape: Circular
		Longitude:	-122.210787		



Manhole #	System Characteristics
A661009k	Residential
Access	Traffic
Drive	Light







Installation Information	
Installation Date:	Installation Type:
Tuesday, September 22, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi
Installation Confirmation:	
Time	
12:47:00 PM	
Depth of Flow (Wet DOF) (in)	
4.75	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.9	N/A
Silt (in)	Silt Type
0	

Manhole / Pipe Information:	
Manhole Depth (Approx. FT):	Manhole Configuration
5	Single
6	Manhole Condition:
PVC	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	28
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good
Communication Information:	
Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

AUB_A7_70807

Site Commentary

SITE INFORMATION

Pipe	Elliptical (18 in H x 18 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced some backwater conditions during the monitoring period.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.15	1.15	0.166
Minimum	1.65	0.40	0.030
Maximum	6.64	2.37	0.908
Min Time	11/01/2020 3:00:00 AM	11/29/2020 5:00:00 AM	11/01/2020 4:00:00 AM
Max Time	01/12/2021 9:00:00 AM	01/12/2021 9:00:00 AM	01/12/2021 9:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

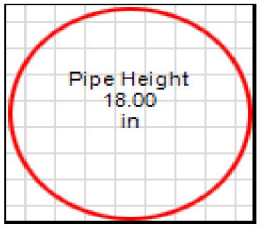
Percent Uptime	
DFINAL (in)	89.609
VFINAL (ft/s)	89.609
QFINAL (MGD - Total MG)	89.609

Hydrograph Report

AUB_A7_70807

Flow Monitor

AUB_A7_70807



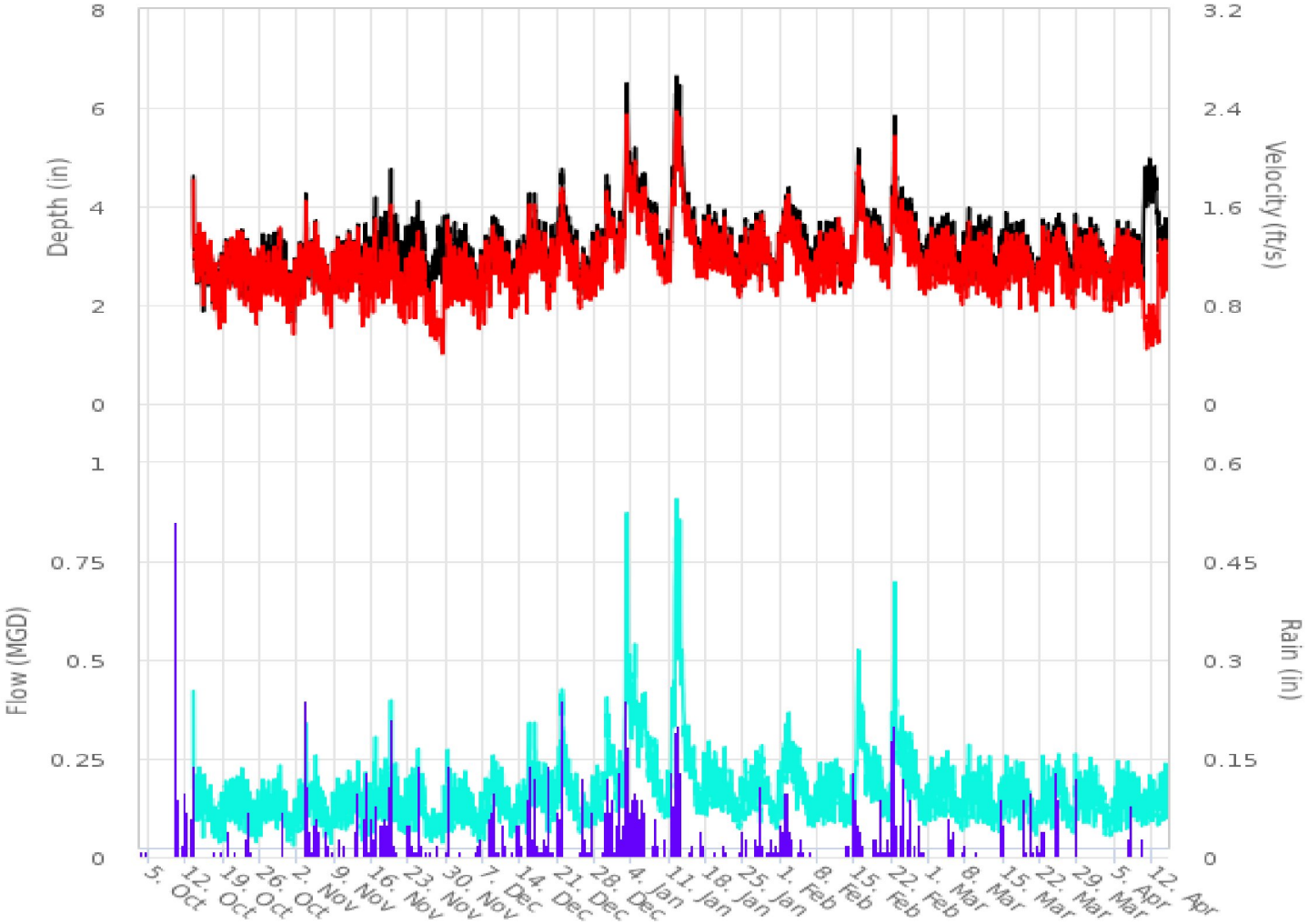
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

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Scattergraph Report

AUB_A7_70807

Flow Monitor

AUB_A7_70807

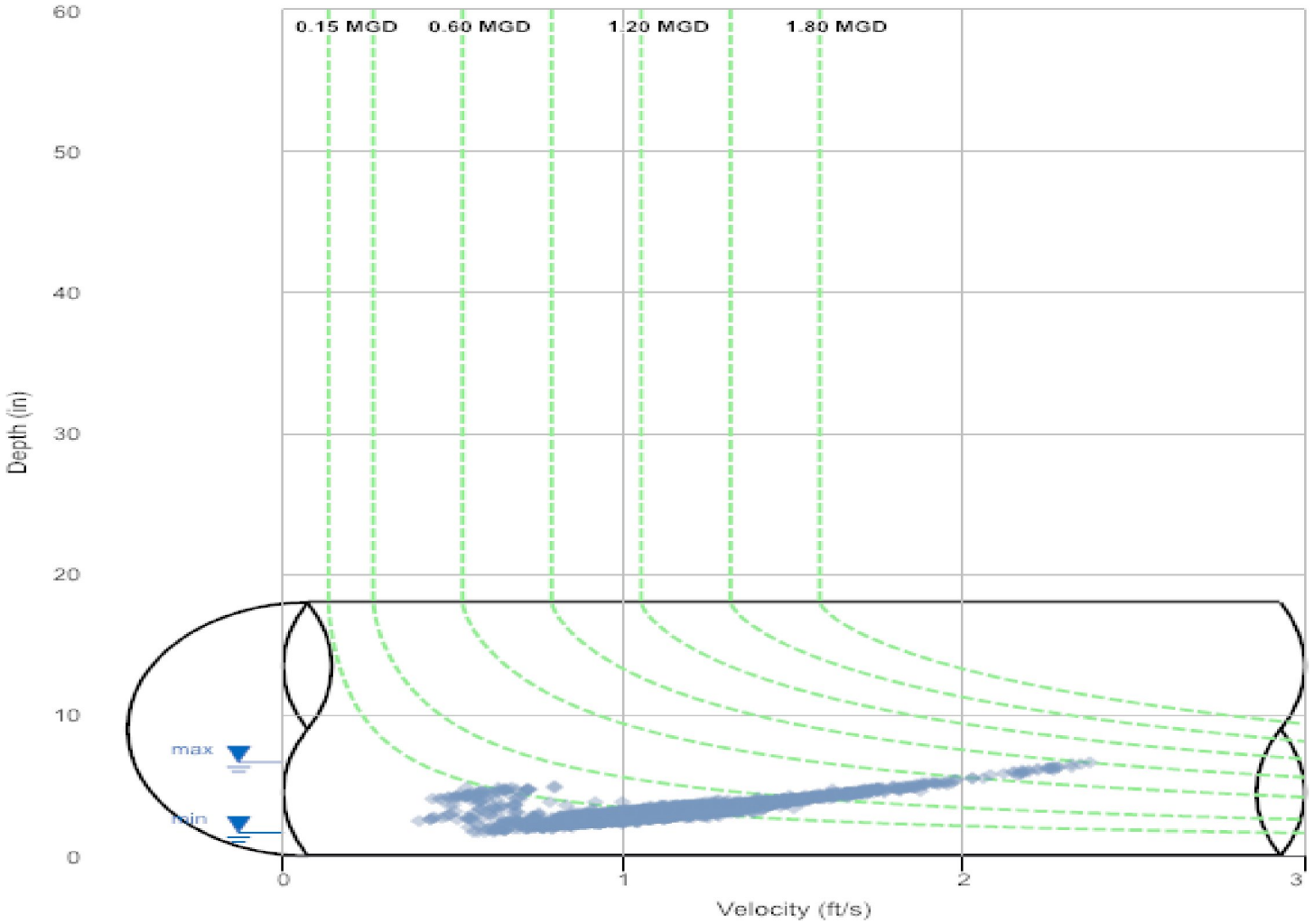
Pipe Height
18.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A7_70807Pipe: Elliptical (18 in H x 18 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	01:50	2.58	15:40	4.63	3.27	01:30	1.00	15:40	1.76	1.25	01:50	0.100	15:40	0.409	0.182	0.182	0.51
01/02/2021	04:40	2.82	21:15	6.82	3.91	04:25	1.08	21:15	2.40	1.48	04:25	0.125	21:15	0.952	0.300	0.300	1.69
01/03/2021	22:25	3.98	00:20	6.62	4.85	22:25	1.50	00:20	2.40	1.85	22:25	0.282	00:20	0.913	0.471	0.471	0.65
01/04/2021	23:45	3.85	08:35	5.98	4.53	23:45	1.42	08:35	2.16	1.72	23:45	0.255	08:35	0.718	0.391	0.391	0.48
01/05/2021	03:35	3.58	21:10	5.14	4.20	06:00	1.34	21:05	1.94	1.57	06:00	0.216	21:05	0.520	0.321	0.321	0.52
01/06/2021	23:30	3.45	12:35	5.49	4.29	23:30	1.31	12:35	2.07	1.61	23:30	0.200	12:35	0.610	0.341	0.341	0.22
01/07/2021	04:35	3.22	11:50	4.96	3.69	03:05	1.20	11:50	1.88	1.40	04:35	0.168	11:50	0.481	0.239	0.239	-
01/08/2021	04:50	2.92	08:40	4.52	3.48	04:50	1.09	08:40	1.70	1.32	04:50	0.131	08:40	0.383	0.208	0.208	0.22
01/09/2021	05:40	2.73	11:15	3.60	3.00	22:55	1.01	11:20	1.35	1.12	22:55	0.110	11:20	0.219	0.142	0.142	-
01/10/2021	02:35	2.55	13:45	4.69	2.96	01:25	0.95	13:45	1.76	1.11	02:35	0.094	13:45	0.418	0.139	0.139	0.07
01/11/2021	04:50	2.47	12:35	5.20	3.94	04:55	0.91	21:15	1.99	1.47	04:50	0.086	21:20	0.538	0.292	0.292	1.06
01/12/2021	00:35	4.30	09:40	7.02	5.83	00:30	1.63	09:40	2.47	2.13	00:35	0.341	09:40	1.019	0.690	0.690	2.10
01/13/2021	23:25	3.69	00:45	6.57	4.83	23:10	1.37	00:40	2.38	1.78	23:10	0.232	00:45	0.893	0.452	0.452	0.09
01/14/2021	21:15	3.33	13:40	4.89	3.90	21:15	1.24	13:40	1.87	1.47	21:15	0.180	13:40	0.468	0.271	0.271	0.01
01/15/2021	23:55	2.94	14:25	4.64	3.58	23:55	1.11	14:25	1.76	1.35	23:55	0.135	14:25	0.411	0.221	0.221	0.09
01/16/2021	05:20	2.71	08:10	3.71	3.08	03:35	1.00	01:00	1.45	1.17	03:35	0.109	01:00	0.245	0.153	0.153	-
01/17/2021	01:20	2.63	16:40	4.62	3.08	01:25	0.99	16:40	1.81	1.19	01:25	0.102	16:40	0.418	0.158	0.158	0.10
01/18/2021	02:25	2.58	06:55	4.58	3.28	04:45	0.98	06:55	1.77	1.26	02:25	0.099	06:55	0.404	0.184	0.184	-
01/19/2021	06:10	2.56	12:55	4.59	3.32	06:10	0.99	12:55	1.68	1.26	06:10	0.098	12:55	0.385	0.187	0.187	0.01
01/20/2021	03:00	2.51	07:40	4.35	3.27	03:00	0.93	07:40	1.66	1.25	03:00	0.090	07:40	0.353	0.181	0.181	-
01/21/2021	02:00	2.49	13:15	4.47	3.26	01:55	0.96	13:15	1.67	1.26	01:55	0.092	13:15	0.370	0.181	0.181	0.11
01/22/2021	03:35	2.52	23:40	4.06	3.09	03:35	0.97	23:40	1.62	1.19	03:35	0.094	23:40	0.312	0.158	0.158	-
01/23/2021	02:50	2.28	03:10	3.64	2.75	02:55	0.85	03:10	1.42	1.06	02:50	0.072	03:10	0.236	0.119	0.119	-
01/24/2021	05:25	2.22	11:40	4.37	2.81	03:30	0.84	11:35	1.69	1.07	05:20	0.068	11:35	0.360	0.126	0.126	0.16
01/25/2021	03:20	2.38	10:40	4.50	3.19	03:25	0.89	10:35	1.71	1.21	03:20	0.080	10:35	0.380	0.172	0.172	0.04
01/26/2021	04:10	2.41	11:45	4.12	3.16	04:05	0.91	12:35	1.60	1.21	04:10	0.083	12:35	0.309	0.167	0.167	-
01/27/2021	00:15	2.52	11:40	4.61	3.27	01:45	0.94	11:40	1.79	1.24	00:20	0.092	11:40	0.415	0.182	0.182	0.14
01/28/2021	04:05	2.29	09:55	4.65	3.26	04:05	0.81	09:55	1.82	1.27	04:05	0.069	09:55	0.426	0.186	0.186	0.24
01/29/2021	01:55	2.43	13:25	4.02	3.08	23:50	0.93	13:25	1.66	1.23	23:55	0.085	13:25	0.315	0.163	0.163	0.03
01/30/2021	02:35	2.32	00:55	3.50	2.73	02:35	0.88	00:50	1.45	1.08	02:35	0.076	00:55	0.227	0.119	0.119	0.07
01/31/2021	05:15	2.23	13:00	4.39	2.76	04:40	0.86	13:00	1.75	1.09	04:50	0.070	13:00	0.378	0.126	0.126	0.12
02/01/2021	01:45	2.42	17:35	4.55	3.54	01:40	0.96	07:25	1.85	1.40	01:50	0.088	07:25	0.416	0.228	0.228	0.82
02/02/2021	04:15	3.06	12:05	5.02	3.87	04:10	1.21	12:05	1.95	1.49	04:15	0.156	12:05	0.508	0.274	0.274	0.31
02/03/2021	23:55	3.04	08:50	4.78	3.65	23:35	1.13	14:25	1.86	1.36	23:55	0.144	14:25	0.445	0.230	0.230	0.06
02/04/2021	02:40	2.64	08:35	4.92	3.47	02:35	0.98	08:35	1.94	1.28	02:40	0.101	08:35	0.490	0.203	0.203	0.07
02/05/2021	03:55	2.69	03:05	4.57	3.29	03:55	0.96	03:05	1.68	1.19	03:55	0.103	03:05	0.383	0.174	0.174	0.01
02/06/2021	05:20	2.41	01:20	3.68	2.90	05:30	0.83	01:20	1.38	1.04	05:25	0.077	01:20	0.231	0.126	0.126	0.01
02/07/2021	05:30	2.37	09:50	4.32	2.91	05:30	0.79	09:50	1.63	1.04	05:30	0.070	09:50	0.344	0.128	0.128	-
02/08/2021	04:15	2.40	08:55	4.82	3.14	04:20	0.83	08:55	1.78	1.17	04:15	0.076	08:55	0.437	0.163	0.163	-
02/09/2021	02:50	2.34	15:10	4.27	3.12	05:55	0.84	13:50	1.62	1.17	02:50	0.075	13:50	0.333	0.159	0.159	-
02/10/2021	04:20	2.28	11:05	4.28	3.21	04:20	0.84	12:20	1.66	1.19	04:20	0.070	11:05	0.341	0.168	0.168	-
02/11/2021	02:55	2.38	11:00	4.72	3.18	02:50	0.84	23:05	1.77	1.24	02:55	0.075	11:00	0.419	0.175	0.175	-
02/12/2021	04:00	2.28	11:45	4.06	2.95	04:00	0.92	11:45	1.68	1.23	04:00	0.077	11:45	0.323	0.155	0.155	-
02/13/2021	03:55	2.28	01:20	3.59	2.71	03:40	0.83	23:55	1.54	1.09	03:40	0.071	01:20	0.249	0.120	0.120	0.08
02/14/2021	04:00	2.26	10:05	4.16	2.83	01:50	0.87	10:00	1.76	1.13	04:00	0.072	10:00	0.349	0.133	0.133	0.71
02/15/2021	00:00	2.92	14:10	5.65	4.26	00:00	1.16	14:10	2.08	1.64	00:00	0.140	14:10	0.639	0.349	0.349	0.78
02/16/2021	23:30	3.47	07:30	5.29	4.12	23:55	1.31	10:45	1.97	1.57	23:30	0.203	07:30	0.542	0.312	0.312	0.07
02/17/2021	03:00	3.07	06:40	5.03	3.62	02:05	1.16	06:40	1.97	1.36	03:05	0.150	06:40	0.514	0.226	0.226	-
02/18/2021	04:50	2.80	15:10	4.85	3.49	03:15	1.05	15:10	1.83	1.30	03:20	0.120	15:10	0.455	0.206	0.206	0.09
02/19/2021	04:30	2.72	13:10	4.37	3.36	04:30	1.00	13:10	1.68	1.27	04:30	0.109	13:10	0.360	0.191	0.191	0.17
02/20/2021	04:50	2.54	00:25	3.86	2.97	04:40	0.95	00:25	1.50	1.13	04:50	0.093	00:25	0.270	0.141	0.141	0.07
02/21/2021	04:35	2.48	23:50	4.95	3.05	04:35	0.91	23:45	1.88	1.14	04:35	0.087	23:50	0.479	0.152	0.152	0.42
02/22/2021	05:15	3.53	13:10	6.13	4.46	05:05	1.34	13:35	2.25	1.67	05:10	0.213	13:10	0.766	0.378	0.378	0.98
02/23/2021	04:50	3.31	21:35	5.27	3.91	04:55	1.25	21:35	1.97	1.47	04:55	0.180	21:35	0.550	0.272	0.272	0.27
02/24/2021	05:55	3.12	12:00	4.76	3.69	05:55	1.18	12:05	1.83	1.38	05:55	0.156	12:05	0.442	0.236	0.236	-
02/25/2021	02:50	2.88	09:15	4.92	3.68	02:40	1.06	17:15	1.87	1.36	02:50	0.125	09:15	0.464	0.234	0.234	0.18
02/26/2021	04:50	2.82	10:45	4.74	3.44	04:35	1.01	10:45	1.85	1.28	04:50	0.116	10:45	0.445	0.198	0.198	0.10
02/27/2021	05:35	2.54	00:00	3.87	2.96	05:00	0.84	00:00	1.50	1.09	05:00	0.085	00:00	0.270	0.135	0.135	0.02
02/28/2021	04:10	2.43	22:20	4.00	2.91	04:05	0.87	12:45	1.54	1.04	04:05	0.080	22:20	0.291	0.128	0.128	0.02
03/01/2021	02:45	2.43	08:20	4.68	3.23	02:40	0.86	08:20	1.79	1.20	02:40	0.080	08:20	0.422	0.173	0.173	-
03/02/2021	05:10	2.42	08:35	4.77	3.22	02:55	0.85	08:35	1.77	1.20	02:55	0.079	08:35	0.428	0.170	0.170	-
03/03/2021	02:20	2.50	09:20	4.58	3.27	03:20	0.89	09:20	1.76	1.19	02:20	0.086	09:20	0.404	0.174	0.174	-
03/04/2021	05:35	2.44	11:10	4.94	3.27	03:00	0.87	11:10	1.85	1.20	05:35	0.080	11:10	0.472	0.176	0.176	0.20
03/05/2021	05:30	2.52	06:05	4.67	3.16	02:45	0.92	06:00	1.79	1.17	05:30	0.090	06:00	0.415	0.162	0.162	0.05
03/06/2021	03:20	2.38	00:55	3.66	2.83	06:20	0.85	00:55	1.35	1.04	03:20	0.077	00:55	0.225	0.121	0.121	-
03/07/2021	04:20	2.23	11:30	4.56	2.79	04:15	0.77	11:30	1.73	1.02	04:15	0.063	11:30	0.393	0.118	0.118	0.04
03/08/2021	04:30	2.33	12:25	4.89	3.20	04:20	0.83	12:25	1.86	1.17	04:25	0.072	12:25	0.466	0.168	0.168	-
03/09/2021	02:50	2.37	11:30	4.44	3.13	03:15	0.84	11:30	1.67	1.15	03:15	0.075	11:30	0.367	0.157	0.157	0.01
03/10/2021	03:05	2.26	12:25	4.69	3.17	03:05	0.79	13:25	1.68	1.17	03:05	0.066	12:30	0.384	0.165	0.165	-
03/11/2021	03:55	2.21	12:45	4.55	3.15	03:55	0.80	12:45	1.68	1.17	03:55	0.064	12:45	0.381	0.163	0.163	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	03:35	2.18	09:05	4.75	3.04	03:35	0.75	09:05	1.82	1.12	03:35	0.059	09:05	0.440	0.148	0.148	-
03/13/2021	03:55	2.16	00:20	3.55	2.73	03:45	0.75	00:20	1.36	0.98	03:45	0.059	00:20	0.217	0.108	0.108	-
03/14/2021	03:55	2.18	09:00	4.39	2.83	03:50	0.76	09:00	1.55	1.02	03:55	0.059	09:00	0.333	0.122	0.122	0.30
03/15/2021	02:55	2.48	10:20	4.79	3.25	02:55	0.84	10:20	1.77	1.16	02:55	0.080	10:20	0.431	0.166	0.166	-
03/16/2021	02:45	2.28	12:30	3.84	3.11	03:25	0.84	12:25	1.46	1.16	02:40	0.072	12:30	0.261	0.157	0.157	-
03/17/2021	02:25	2.43	11:15	4.95	3.20	22:55	0.86	11:15	1.83	1.16	02:25	0.082	11:15	0.468	0.165	0.165	-
03/18/2021	02:55	2.27	08:35	4.77	3.13	02:50	0.71	08:35	1.81	1.14	02:50	0.060	08:35	0.437	0.158	0.158	0.11
03/19/2021	02:10	2.30	10:35	4.22	2.97	02:00	0.86	10:35	1.59	1.12	02:05	0.074	10:35	0.324	0.142	0.142	0.03
03/20/2021	03:50	2.05	06:00	3.38	2.66	03:50	0.70	06:00	1.27	0.99	03:50	0.050	06:00	0.189	0.106	0.106	0.17
03/21/2021	02:45	2.05	21:35	3.57	2.62	02:45	0.71	21:30	1.43	1.00	02:40	0.052	21:30	0.228	0.106	0.106	0.07
03/22/2021	01:50	2.27	02:30	4.56	3.00	01:50	0.85	02:30	1.77	1.16	01:50	0.071	02:30	0.402	0.149	0.149	0.11
03/23/2021	02:45	2.21	11:20	4.61	3.07	01:50	0.79	11:20	1.77	1.14	02:45	0.064	11:20	0.409	0.152	0.152	-
03/24/2021	02:05	2.20	13:15	4.28	3.17	02:00	0.72	13:15	1.62	1.17	02:00	0.058	13:15	0.336	0.164	0.164	0.34
03/25/2021	23:55	2.87	09:30	4.82	3.45	02:35	1.02	09:30	1.82	1.27	23:55	0.120	09:30	0.447	0.198	0.198	0.27
03/26/2021	03:45	2.47	04:05	4.42	3.15	03:45	0.83	04:05	1.67	1.16	03:45	0.079	04:05	0.363	0.159	0.159	-
03/27/2021	04:00	2.28	09:50	3.15	2.68	03:55	0.80	15:00	1.25	0.97	04:00	0.067	15:00	0.160	0.104	0.104	-
03/28/2021	03:40	2.17	14:55	4.58	2.88	04:35	0.76	14:55	1.74	1.07	03:40	0.060	14:55	0.398	0.134	0.134	0.37
03/29/2021	03:05	2.31	13:30	4.17	3.11	03:05	0.85	05:30	1.62	1.16	03:05	0.073	05:30	0.321	0.157	0.157	-
03/30/2021	03:05	2.26	10:45	4.08	3.10	02:50	0.83	10:45	1.60	1.18	02:55	0.069	10:45	0.311	0.159	0.159	-
03/31/2021	02:35	2.37	09:35	4.48	3.13	02:35	0.81	09:35	1.72	1.18	02:35	0.072	09:35	0.382	0.162	0.162	-
04/01/2021	02:05	2.32	10:25	4.53	3.11	02:05	0.79	10:25	1.74	1.17	02:05	0.068	10:25	0.392	0.159	0.159	-
04/02/2021	23:15	2.35	20:00	4.02	2.96	02:25	0.83	19:55	1.63	1.14	02:25	0.073	20:00	0.310	0.143	0.143	-
04/03/2021	03:15	2.02	06:40	3.24	2.53	03:10	0.72	06:40	1.35	0.97	03:20	0.050	06:40	0.189	0.097	0.097	-
04/04/2021	03:15	2.02	12:35	3.30	2.53	03:15	0.72	12:35	1.33	0.99	03:15	0.051	12:35	0.191	0.100	0.100	-
04/05/2021	02:15	2.04	13:45	4.39	3.01	02:10	0.77	13:45	1.71	1.17	02:10	0.055	13:45	0.368	0.153	0.153	-
04/06/2021	03:10	2.11	11:45	4.50	3.03	03:10	0.71	11:45	1.74	1.16	03:05	0.054	11:45	0.388	0.152	0.152	-
04/07/2021	02:20	2.18	10:05	4.65	3.04	02:20	0.74	10:05	1.79	1.16	02:20	0.058	10:05	0.417	0.154	0.154	0.22
04/08/2021	02:55	2.16	12:15	4.34	3.09	02:55	0.76	12:15	1.63	1.17	02:55	0.059	12:15	0.347	0.158	0.158	-
04/09/2021	02:00	2.33	11:50	4.20	3.02	02:00	0.84	06:20	1.65	1.11	02:00	0.073	11:50	0.333	0.145	0.145	0.03
04/10/2021	02:10	2.34	18:30	5.19	3.66	23:15	0.39	00:35	1.24	0.74	02:10	0.070	18:30	0.234	0.119	0.119	0.02
04/11/2021	16:05	3.75	11:20	5.40	4.38	23:15	0.37	11:20	1.13	0.57	23:15	0.066	11:20	0.324	0.124	0.124	-
04/12/2021	23:10	3.63	12:55	5.32	4.41	00:25	0.40	06:15	1.06	0.63	02:10	0.077	04:35	0.261	0.137	0.137	-
04/13/2021	22:40	2.59	05:35	4.55	3.39	04:35	0.45	05:35	1.89	1.02	04:35	0.070	05:35	0.429	0.151	0.151	-
04/14/2021	04:20	2.49	12:10	4.79	3.21	00:55	0.77	12:10	1.72	1.11	04:20	0.074	12:10	0.420	0.159	0.158	-
10/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.64
10/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.04
10/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.53
10/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/13/2020	23:45	2.18	07:45	4.85	3.08	23:40	0.88	07:45	1.88	1.25	23:45	0.069	07:45	0.466	0.169	0.116	0.61
10/14/2020	04:20	2.01	09:55	4.21	2.85	04:20	0.83	09:55	1.74	1.21	04:20	0.058	09:55	0.354	0.147	0.147	-
10/15/2020	02:40	1.83	08:10	4.27	2.80	02:30	0.76	06:15	1.72	1.17	02:30	0.047	08:10	0.358	0.138	0.138	-
10/16/2020	03:05	1.90	03:55	4.18	2.76	03:00	0.74	03:55	1.73	1.14	03:05	0.047	03:55	0.348	0.132	0.132	-
10/17/2020	03:00	1.79	20:25	3.51	2.38	04:10	0.71	20:25	1.44	0.96	03:00	0.043	20:25	0.227	0.088	0.088	0.01
10/18/2020	03:10	1.81	12:30	4.06	2.43	03:20	0.58	12:30	1.60	0.92	03:20	0.035	12:30	0.308	0.091	0.091	0.03
10/19/2020	03:40	1.79	07:55	4.55	2.80	03:25	0.63	07:55	1.72	1.11	03:40	0.037	07:55	0.391	0.132	0.132	0.05
10/20/2020	02:55	1.98	15:15	4.52	2.86	02:50	0.70	15:20	1.73	1.17	02:50	0.050	15:15	0.383	0.142	0.142	-
10/21/2020	01:25	1.94	13:05	4.01	2.88	23:45	0.72	11:20	1.66	1.18	23:45	0.048	11:20	0.313	0.145	0.145	0.01
10/22/2020	02:55	2.01	10:50	4.39	2.90	02:55	0.77	10:15	1.68	1.16	02:55	0.054	10:50	0.354	0.143	0.143	-
10/23/2020	03:05	1.92	06:50	4.34	2.82	02:50	0.70	06:50	1.70	1.11	02:55	0.046	06:50	0.360	0.133	0.133	0.20
10/24/2020	02:55	1.86	20:30	3.55	2.46	02:45	0.66	13:55	1.45	0.99	02:50	0.041	13:55	0.230	0.096	0.096	0.02
10/25/2020	04:30	1.75	09:30	3.78	2.50	04:25	0.60	09:25	1.58	0.97	04:25	0.035	09:25	0.274	0.098	0.098	-
10/26/2020	03:35	1.83	06:30	4.70	2.94	03:35	0.67	06:30	1.73	1.07	03:35	0.041	06:30	0.411	0.137	0.137	-
10/27/2020	02:30	1.94	11:45	4.33	2.98	02:35	0.67	11:45	1.61	1.05	02:30	0.045	11:45	0.339	0.136	0.136	-
10/28/2020	02:20	2.03	10:30	4.12	3.03	02:20	0.71	11:55	1.54	1.08	02:20	0.051	12:00	0.299	0.143	0.143	-
10/29/2020	02:35	1.94	05:05	4.31	3.01	23:25	0.70	14:15	1.73	1.10	02:35	0.047	14:15	0.349	0.145	0.145	-
10/30/2020	03:50	2.07	04:00	4.08	2.92	03:45	0.68	05:45	1.47	1.01	03:45	0.050	04:00	0.281	0.126	0.126	0.10
10/31/2020	04:05	1.69	00:10	3.00	2.31	04:00	0.57	00:10	1.24	0.89	04:00	0.031	00:10	0.155	0.078	0.078	-
11/01/2020	02:55	1.62	12:10	3.80	2.31	04:20	0.55	12:10	1.54	0.89	04:20	0.028	12:10	0.270	0.082	0.082	-
11/02/2020	02:40	1.79	09:40	4.46	2.77	02:30	0.64	14:25	1.72	1.08	02:30	0.038	09:35	0.374	0.127	0.127	-
11/03/2020	03:40	1.81	03:50	4.81	3.07	03:40	0.64	03:50	1.85	1.20	03:35	0.039	03:50	0.453	0.167	0.167	0.83
11/04/2020	02:35	2.22	12:00	4.03	2.97	03:15	0.88	12:00	1.59	1.19	02:35	0.072	12:00	0.304	0.150	0.150	0.09
11/05/2020	04:05	2.14	09:05	4.72	2.91	04:05	0.77	09:05	1.81	1.15	04:05	0.059	09:05	0.432	0.143	0.143	0.34
11/06/2020	06:30	2.16	02:35	4.59	2.85	23:25	0.80	02:30	1.79	1.13	23:25	0.062	02:30	0.398	0.137	0.137	0.10
11/07/2020	04:20	1.92	01:10	3.50	2.41	04:25	0.68	01:10	1.42	0.94	04:20	0.045	01:10	0.222	0.088	0.088	0.07
11/08/2020	03:45	1.70	12:00	3.76	2.41	03:30	0.60	12:00	1.51	0.94	03:40	0.033	12:00	0.262	0.091	0.091	0.01
11/09/2020	03:20	1.89	13:25	4.10	2.86	03:10	0.70	08:40	1.61	1.13	03:10	0.046	13:25	0.315	0.139	0.139	0.04

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	04:10	2.01	08:40	3.99	2.88	02:30	0.74	08:40	1.62	1.12	04:10	0.052	08:40	0.304	0.137	0.137	0.03
11/11/2020	03:05	1.92	13:00	4.17	2.91	03:00	0.65	13:00	1.62	1.12	03:05	0.042	13:00	0.326	0.141	0.141	-
11/12/2020	02:30	2.05	07:55	4.09	2.92	03:20	0.72	15:00	1.67	1.14	02:30	0.052	15:00	0.325	0.143	0.143	0.16
11/13/2020	23:20	2.15	07:00	5.00	2.99	23:20	0.73	07:00	1.96	1.13	23:20	0.056	07:00	0.507	0.147	0.147	0.38
11/14/2020	04:45	1.80	18:30	3.74	2.60	04:45	0.54	18:30	1.34	0.92	04:45	0.032	18:30	0.229	0.099	0.099	0.47
11/15/2020	05:40	2.13	23:30	3.96	2.69	05:25	0.69	23:30	1.49	0.97	05:45	0.052	23:30	0.278	0.107	0.107	0.19
11/16/2020	03:20	2.13	09:05	4.85	3.17	03:20	0.67	09:05	1.81	1.08	03:20	0.051	09:05	0.449	0.157	0.157	0.31
11/17/2020	04:35	2.31	13:25	4.69	3.26	04:35	0.65	13:25	1.64	1.05	04:35	0.055	13:25	0.389	0.153	0.153	0.20
11/18/2020	02:25	2.36	17:50	4.81	3.27	02:25	0.62	17:45	1.72	1.07	02:25	0.055	17:45	0.413	0.158	0.158	0.30
11/19/2020	02:50	2.40	13:00	5.59	3.47	02:50	0.73	13:15	1.91	1.15	02:50	0.066	13:00	0.560	0.184	0.184	0.50
11/20/2020	04:55	2.50	10:40	4.54	3.26	04:50	0.70	10:40	1.61	1.04	04:50	0.068	10:40	0.365	0.152	0.152	0.01
11/21/2020	04:35	2.30	11:00	3.80	2.87	06:45	0.61	01:00	1.32	0.86	04:35	0.054	01:00	0.230	0.103	0.103	-
11/22/2020	04:55	2.32	12:10	4.60	2.90	05:30	0.60	12:10	1.63	0.88	04:55	0.052	12:10	0.376	0.109	0.109	0.21
11/23/2020	03:05	2.26	06:30	4.63	3.25	03:00	0.61	06:30	1.63	1.04	03:05	0.050	06:30	0.378	0.153	0.153	0.14
11/24/2020	03:05	2.28	12:40	4.58	3.26	03:00	0.62	12:40	1.66	1.05	03:05	0.052	12:40	0.380	0.157	0.157	0.21
11/25/2020	05:20	2.34	13:30	4.48	3.15	05:20	0.68	13:25	1.57	1.02	05:20	0.060	13:30	0.348	0.141	0.141	0.05
11/26/2020	01:55	2.15	00:20	3.27	2.56	01:55	0.60	02:05	1.11	0.79	01:55	0.046	00:20	0.156	0.080	0.080	0.02
11/27/2020	04:30	2.01	21:45	3.28	2.64	23:40	0.51	11:15	1.04	0.73	04:30	0.037	11:05	0.136	0.079	0.079	-
11/28/2020	04:00	2.40	12:30	3.71	3.09	23:55	0.45	02:35	0.95	0.60	01:50	0.044	02:40	0.154	0.081	0.081	0.05
11/29/2020	22:50	2.29	11:40	4.45	2.84	05:30	0.39	11:40	1.74	0.77	05:25	0.036	11:40	0.382	0.091	0.091	-
11/30/2020	02:35	2.03	05:25	4.84	3.01	02:40	0.68	05:25	1.88	1.15	02:40	0.048	05:25	0.464	0.152	0.152	0.36
12/01/2020	04:30	1.98	13:00	4.74	2.97	04:30	0.67	12:55	1.73	1.07	04:30	0.046	13:00	0.409	0.139	0.139	-
12/02/2020	04:55	2.07	16:00	4.41	3.05	04:50	0.64	16:00	1.61	1.06	04:50	0.047	16:00	0.349	0.142	0.142	0.01
12/03/2020	04:15	2.03	10:05	4.30	2.96	02:50	0.65	10:05	1.61	1.03	04:20	0.046	10:05	0.336	0.132	0.132	-
12/04/2020	05:10	1.93	02:15	4.51	2.84	05:05	0.61	02:15	1.63	1.02	05:10	0.040	02:15	0.364	0.123	0.123	-
12/05/2020	01:55	2.09	00:10	3.31	2.50	01:00	0.70	00:10	1.28	0.91	01:00	0.052	00:10	0.185	0.089	0.089	0.03
12/06/2020	05:45	1.85	11:45	3.96	2.46	05:45	0.58	11:45	1.57	0.90	05:45	0.036	11:45	0.292	0.089	0.089	0.03
12/07/2020	03:40	1.89	08:55	4.13	2.84	03:40	0.60	08:55	1.66	1.07	03:40	0.038	08:55	0.327	0.129	0.129	-
12/08/2020	03:35	2.11	19:10	4.44	3.24	04:00	0.73	15:05	1.69	1.22	04:00	0.055	19:10	0.370	0.178	0.178	0.87
12/09/2020	23:45	2.52	08:05	5.08	3.30	22:00	0.91	08:05	1.87	1.20	23:45	0.089	08:05	0.494	0.177	0.177	0.17
12/10/2020	03:30	2.24	06:30	4.60	3.11	03:25	0.79	06:30	1.76	1.16	03:25	0.065	06:30	0.404	0.157	0.157	0.07
12/11/2020	05:35	2.15	02:35	3.92	2.96	05:35	0.75	03:20	1.55	1.09	05:35	0.058	02:30	0.276	0.137	0.137	0.02
12/12/2020	04:55	2.01	19:35	3.54	2.54	04:55	0.65	19:35	1.39	0.91	04:45	0.046	19:35	0.221	0.091	0.091	0.01
12/13/2020	06:15	2.12	13:20	4.00	2.71	06:15	0.72	13:20	1.57	1.00	06:15	0.055	13:20	0.297	0.113	0.113	0.24
12/14/2020	02:35	2.16	02:45	4.07	2.99	02:30	0.75	02:45	1.61	1.12	02:30	0.059	02:45	0.312	0.143	0.143	0.05
12/15/2020	04:40	1.99	14:45	4.86	3.25	04:25	0.65	14:45	1.86	1.21	04:35	0.045	14:45	0.464	0.181	0.181	0.58
12/16/2020	04:15	2.49	14:20	4.93	3.39	04:00	0.92	14:20	1.91	1.27	04:05	0.088	14:20	0.486	0.197	0.197	0.39
12/17/2020	02:45	2.57	01:10	4.40	3.26	02:50	0.93	10:50	1.70	1.22	02:50	0.093	10:50	0.362	0.178	0.178	0.08
12/18/2020	04:20	2.36	10:00	4.52	3.11	04:20	0.80	10:00	1.74	1.16	04:20	0.070	10:00	0.391	0.159	0.159	0.25
12/19/2020	04:15	2.17	01:15	3.70	2.83	04:20	0.71	00:15	1.46	1.04	04:20	0.056	00:15	0.244	0.126	0.126	0.37
12/20/2020	04:20	2.57	20:40	4.63	3.01	04:10	0.90	20:35	1.71	1.09	04:20	0.090	20:40	0.394	0.140	0.140	0.04
12/21/2020	00:40	2.78	16:50	5.61	3.90	00:35	1.00	16:45	2.07	1.43	00:40	0.112	16:50	0.620	0.271	0.271	1.07
12/22/2020	23:50	3.11	01:55	5.14	3.68	22:50	1.08	01:55	1.87	1.33	23:50	0.143	01:55	0.504	0.227	0.227	-
12/23/2020	04:20	2.71	00:25	4.60	3.27	04:10	0.93	00:30	1.78	1.19	04:20	0.101	00:30	0.410	0.171	0.171	-
12/24/2020	23:55	2.40	09:55	4.57	2.88	02:40	0.84	09:55	1.75	1.07	02:40	0.077	09:55	0.400	0.129	0.129	-
12/25/2020	04:35	2.17	16:45	3.27	2.65	00:50	0.72	16:40	1.27	0.97	04:35	0.058	16:40	0.179	0.104	0.104	0.49
12/26/2020	04:45	2.37	11:15	3.11	2.69	04:10	0.84	11:15	1.18	0.98	04:45	0.074	11:15	0.155	0.106	0.106	0.02
12/27/2020	04:05	2.28	11:35	3.81	2.89	02:35	0.81	11:35	1.43	1.08	04:00	0.069	11:35	0.252	0.133	0.133	0.13
12/28/2020	01:35	2.41	13:30	4.24	3.08	01:40	0.84	13:30	1.65	1.16	01:35	0.077	13:30	0.339	0.157	0.157	-
12/29/2020	05:35	2.31	10:20	4.37	3.16	02:10	0.80	10:20	1.68	1.20	02:15	0.070	10:20	0.360	0.167	0.167	0.14
12/30/2020	00:25	2.82	10:35	5.29	3.80	01:15	1.07	09:20	1.95	1.45	01:10	0.124	10:35	0.534	0.261	0.261	0.78
12/31/2020	23:30	2.87	07:30	4.84	3.53	23:25	1.08	07:30	1.87	1.36	23:25	0.127	07:30	0.462	0.219	0.219	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			30.413	30.65
Average	3.15	1.15	0.166	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A7_70807

Site Address /Location:	Opposite 420 H St NW			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Located on Interurban trail	Latitude:	47.3125628	Pipe Size (H x W): 18.00 X 18.00	Pipe Shape: Circular
		Longitude:	-122.2394872		



Manhole #	System Characteristics
A770807	Residential
Access	Traffic
Drive	Light







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, October 13, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
7:25:00 PM	
Depth of Flow (Wet DOF) (in)	
4.63	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.13	N/A
Silt (in)	Silt Type
0	

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
5	Single
Pipe Material	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	28
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

King County M/H

AUB_A8_70829

Site Commentary

SITE INFORMATION

Pipe	Elliptical (15 in H x 15 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced backwater conditions from October 9th through October 12th.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	1.77	2.72	0.148
Minimum	1.30	0.47	0.047
Maximum	7.85	4.27	0.458
Min Time	12/06/2020 2:00:00 AM	10/10/2020 12:00:00 AM	11/11/2020 2:00:00 AM
Max Time	10/10/2020 1:00:00 AM	01/12/2021 9:00:00 AM	01/12/2021 9:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

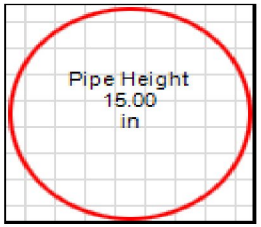
Percent Uptime	
DFINAL (in)	97.749
VFINAL (ft/s)	97.749
QFINAL (MGD - Total MG)	97.749

Hydrograph Report

AUB_A8_70829

Flow Monitor

AUB_A8_70829



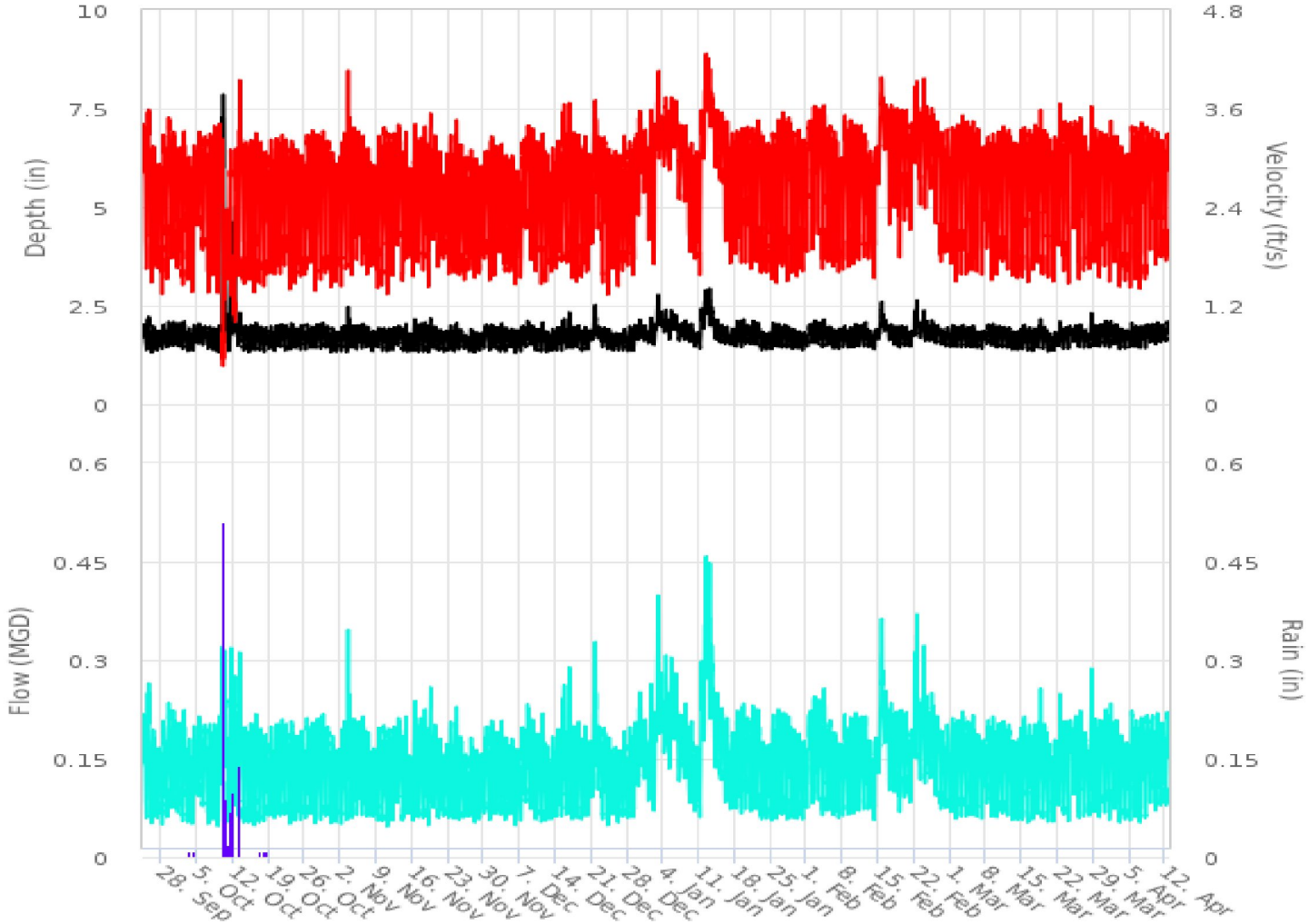
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL





Scattergraph Report

AUB_A8_70829

Flow Monitor

AUB_A8_70829

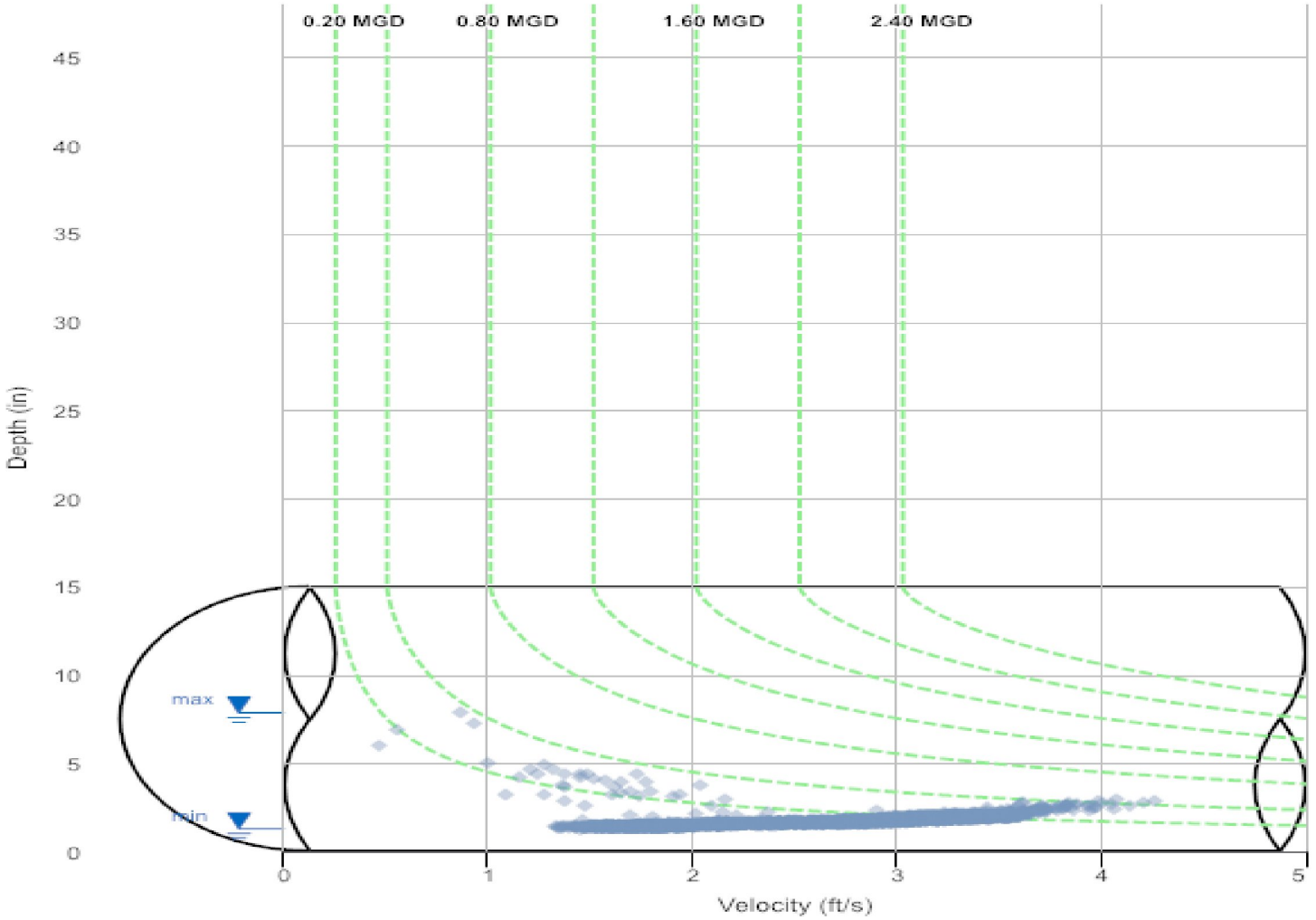
Pipe Height
15.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Tukwila, WA 98168

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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A8_70829Pipe: Elliptical (15 in H x 15 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	01:35	1.50	15:35	2.51	1.75	01:00	1.64	15:30	4.02	2.85	01:00	0.071	15:35	0.348	0.150	0.150	-
01/02/2021	04:45	1.48	23:35	3.02	1.97	04:45	1.51	21:10	4.38	2.99	04:45	0.061	21:10	0.455	0.197	0.197	-
01/03/2021	22:25	1.88	00:05	2.93	2.18	04:55	2.85	02:40	4.53	3.32	22:35	0.169	02:50	0.490	0.239	0.239	-
01/04/2021	02:55	1.72	11:50	2.70	2.07	02:45	2.80	11:45	4.11	3.38	02:55	0.141	11:50	0.398	0.226	0.226	-
01/05/2021	03:30	1.62	13:55	2.61	2.00	01:20	2.71	13:55	3.94	3.33	03:30	0.131	13:55	0.364	0.212	0.212	-
01/06/2021	23:45	1.66	12:00	2.62	1.98	23:15	2.77	10:20	3.90	3.36	23:45	0.135	12:00	0.360	0.210	0.210	-
01/07/2021	03:40	1.59	08:55	2.35	1.87	04:20	2.30	08:55	3.70	3.05	04:20	0.105	08:55	0.294	0.176	0.176	-
01/08/2021	02:55	1.56	08:25	2.33	1.86	01:20	1.87	08:25	3.65	2.86	04:05	0.086	08:25	0.287	0.165	0.165	-
01/09/2021	04:00	1.55	10:55	2.50	1.74	06:15	1.70	10:50	3.76	2.56	06:15	0.076	10:55	0.324	0.134	0.134	-
01/10/2021	02:35	1.43	13:45	1.99	1.68	01:05	1.57	19:40	3.40	2.60	01:05	0.062	13:50	0.211	0.130	0.130	-
01/11/2021	04:20	1.37	11:00	2.63	1.95	02:25	1.37	10:55	3.73	2.94	04:45	0.051	11:00	0.348	0.189	0.189	-
01/12/2021	00:25	1.82	09:15	3.04	2.53	00:25	2.96	18:55	4.53	3.78	00:25	0.163	09:15	0.492	0.337	0.337	-
01/13/2021	22:40	1.73	00:40	3.06	2.18	22:50	2.97	00:35	4.21	3.56	22:40	0.156	00:40	0.488	0.257	0.257	-
01/14/2021	23:45	1.57	09:05	2.49	1.88	02:55	2.72	09:00	3.88	3.29	03:40	0.123	16:05	0.329	0.193	0.193	-
01/15/2021	03:25	1.50	11:10	2.36	1.80	23:25	2.29	11:05	3.91	3.19	23:25	0.099	11:10	0.305	0.175	0.175	-
01/16/2021	02:45	1.48	09:05	2.25	1.70	03:25	1.64	09:05	3.80	2.91	03:25	0.067	09:05	0.284	0.147	0.147	-
01/17/2021	05:20	1.46	17:40	2.23	1.71	04:30	1.53	08:40	3.69	2.76	02:05	0.064	17:40	0.268	0.141	0.141	-
01/18/2021	03:10	1.39	11:05	2.34	1.81	03:00	1.43	11:05	3.60	2.72	03:00	0.054	11:05	0.285	0.155	0.155	-
01/19/2021	04:15	1.42	14:05	2.50	1.82	05:40	1.53	14:05	3.67	2.79	05:40	0.059	14:05	0.319	0.158	0.158	-
01/20/2021	02:50	1.50	11:15	2.32	1.81	02:50	1.60	11:15	3.74	2.86	02:50	0.066	11:15	0.292	0.159	0.159	-
01/21/2021	02:50	1.44	11:00	2.43	1.85	02:55	1.41	10:55	3.76	2.80	02:55	0.055	11:00	0.312	0.163	0.163	-
01/22/2021	02:15	1.47	09:50	2.29	1.79	02:30	1.23	09:50	3.73	2.88	02:30	0.049	09:50	0.286	0.158	0.158	-
01/23/2021	04:35	1.34	13:15	1.93	1.62	02:25	1.28	21:45	3.69	2.64	02:25	0.046	10:00	0.210	0.126	0.126	-
01/24/2021	04:10	1.34	14:35	1.88	1.62	01:30	1.46	08:35	3.49	2.60	01:30	0.053	14:35	0.200	0.125	0.125	-
01/25/2021	02:50	1.37	11:20	2.38	1.75	03:15	1.36	11:20	3.82	2.72	03:00	0.051	11:20	0.309	0.146	0.146	-
01/26/2021	01:35	1.36	11:05	2.28	1.76	02:50	1.25	11:25	3.82	2.80	01:30	0.046	11:05	0.286	0.152	0.152	-
01/27/2021	02:15	1.38	16:35	2.31	1.77	02:10	1.51	08:40	3.84	2.93	02:10	0.056	16:35	0.298	0.160	0.160	-
01/28/2021	02:20	1.35	13:55	2.17	1.73	02:25	1.24	17:40	3.86	2.92	02:25	0.045	13:55	0.270	0.153	0.153	-
01/29/2021	00:35	1.38	11:00	2.08	1.68	01:30	1.30	12:55	3.81	2.71	01:30	0.049	12:55	0.253	0.137	0.137	-
01/30/2021	02:25	1.36	12:50	1.94	1.64	04:45	1.28	12:50	3.66	2.63	04:50	0.048	12:50	0.220	0.127	0.127	-
01/31/2021	03:10	1.34	13:05	1.94	1.62	00:55	1.41	13:05	3.53	2.63	00:55	0.051	13:05	0.212	0.126	0.126	-
02/01/2021	01:30	1.36	17:15	2.23	1.81	01:35	1.43	23:55	3.90	3.04	01:30	0.052	23:55	0.279	0.169	0.169	-
02/02/2021	03:45	1.50	09:40	2.52	1.86	03:40	1.64	12:20	4.11	3.14	03:40	0.068	09:40	0.358	0.183	0.183	-
02/03/2021	04:30	1.48	10:30	2.21	1.80	04:10	1.77	10:30	3.78	3.12	04:35	0.073	10:30	0.275	0.172	0.172	-
02/04/2021	02:35	1.41	09:40	2.39	1.79	02:25	1.58	09:40	3.92	2.95	02:25	0.062	09:40	0.319	0.163	0.163	-
02/05/2021	03:05	1.43	13:25	2.09	1.74	03:05	1.52	13:25	3.62	2.88	03:05	0.059	13:25	0.242	0.151	0.151	-
02/06/2021	04:40	1.38	19:35	2.00	1.67	04:40	1.46	19:35	3.46	2.68	04:40	0.053	19:35	0.218	0.133	0.133	-
02/07/2021	04:50	1.37	11:50	2.01	1.71	05:10	1.48	08:20	3.34	2.53	04:55	0.055	11:50	0.194	0.130	0.130	-
02/08/2021	02:25	1.41	11:35	2.07	1.74	01:50	1.33	11:35	3.72	2.85	01:50	0.054	11:35	0.246	0.150	0.150	-
02/09/2021	02:40	1.37	14:45	2.35	1.71	02:15	1.49	14:45	4.03	2.82	02:40	0.057	14:45	0.321	0.147	0.147	-
02/10/2021	01:35	1.39	13:05	2.26	1.77	03:30	1.43	13:00	3.80	2.87	03:45	0.054	13:00	0.280	0.157	0.157	-
02/11/2021	02:35	1.42	15:05	2.17	1.76	04:15	1.51	15:05	3.60	2.78	02:40	0.058	15:05	0.254	0.149	0.149	-
02/12/2021	04:45	1.42	13:25	2.13	1.77	04:55	1.56	08:40	3.45	2.71	04:45	0.060	13:35	0.230	0.148	0.148	-
02/13/2021	04:40	1.39	11:35	1.97	1.66	01:15	1.35	08:40	3.25	2.57	01:15	0.054	11:35	0.197	0.125	0.125	-
02/14/2021	03:30	1.36	14:20	1.98	1.69	02:25	1.25	13:15	3.34	2.63	02:25	0.048	16:20	0.205	0.133	0.133	-
02/15/2021	00:10	1.63	15:10	2.65	2.10	00:05	2.27	13:00	4.05	3.50	00:10	0.108	15:10	0.375	0.243	0.243	-
02/16/2021	23:55	1.66	10:25	2.19	1.95	23:55	2.82	12:40	3.76	3.40	23:55	0.135	10:25	0.268	0.206	0.206	-
02/17/2021	01:20	1.59	11:45	2.25	1.79	02:10	1.71	11:45	3.85	3.18	02:10	0.078	11:45	0.287	0.173	0.173	-
02/18/2021	04:30	1.47	11:30	2.24	1.77	04:25	1.72	07:30	3.88	3.18	04:25	0.070	13:10	0.282	0.170	0.170	-
02/19/2021	03:55	1.37	11:10	2.33	1.76	03:50	1.61	11:05	3.92	3.11	03:50	0.059	11:10	0.301	0.167	0.167	-
02/20/2021	04:15	1.44	10:40	2.12	1.70	04:25	1.80	10:30	3.80	3.07	04:25	0.070	10:40	0.258	0.154	0.154	-
02/21/2021	04:55	1.42	23:35	2.52	1.74	02:10	1.82	23:40	4.12	3.06	03:40	0.074	23:40	0.361	0.161	0.161	-
02/22/2021	04:30	1.70	13:05	2.76	2.11	23:05	2.77	13:00	4.27	3.34	03:35	0.142	13:05	0.422	0.232	0.232	-
02/23/2021	05:50	1.64	21:45	2.48	1.93	04:15	1.82	21:15	4.06	3.27	04:15	0.088	21:30	0.342	0.198	0.198	-
02/24/2021	05:20	1.57	10:30	2.30	1.84	02:30	1.93	10:30	3.83	3.17	02:30	0.087	10:30	0.295	0.180	0.180	-
02/25/2021	02:25	1.58	12:35	2.32	1.87	02:40	2.42	12:35	3.96	3.21	02:40	0.108	12:35	0.308	0.186	0.186	-
02/26/2021	04:15	1.52	09:30	2.17	1.82	04:15	1.83	09:30	3.71	3.05	04:15	0.077	09:30	0.263	0.169	0.169	-
02/27/2021	06:05	1.46	11:55	1.95	1.72	06:05	1.54	09:15	3.48	2.75	06:05	0.061	09:15	0.209	0.142	0.142	-
02/28/2021	03:45	1.41	10:35	2.11	1.69	04:30	1.47	10:30	3.69	2.69	03:45	0.056	10:30	0.249	0.136	0.136	-
03/01/2021	02:15	1.40	17:15	2.27	1.78	02:00	1.45	07:30	3.72	2.85	02:00	0.055	17:15	0.277	0.156	0.156	-
03/02/2021	02:45	1.41	13:25	2.34	1.73	02:50	1.21	13:25	3.87	2.85	02:50	0.046	13:25	0.304	0.150	0.150	-
03/03/2021	02:25	1.41	15:00	2.26	1.76	02:25	1.34	15:00	3.74	2.91	02:25	0.051	15:00	0.280	0.157	0.157	-
03/04/2021	02:30	1.41	10:55	2.07	1.77	02:20	1.24	14:15	3.61	2.91	02:20	0.047	14:15	0.239	0.158	0.158	-
03/05/2021	02:30	1.40	11:40	2.11	1.73	02:30	1.35	10:35	3.58	2.78	02:30	0.050	11:40	0.243	0.146	0.146	-
03/06/2021	04:20	1.41	11:20	1.96	1.68	02:50	1.42	11:20	3.60	2.77	04:35	0.056	11:20	0.219	0.138	0.138	-
03/07/2021	03:45	1.38	12:25	1.98	1.68	03:30	1.38	16:05	3.41	2.62	03:30	0.052	16:05	0.210	0.131	0.131	-
03/08/2021	04:20	1.48	10:45	2.12	1.81	03:15	1.60	10:40	3.48	2.78	03:15	0.067	10:45	0.237	0.155	0.155	-
03/09/2021	02:55	1.44	09:10	2.16	1.78	04:45	1.23	09:05	3.55	2.72	02:55	0.050	09:10	0.248	0.149	0.149	-
03/10/2021	02:05	1.39	09:10	2.09	1.76	01:45	1.31	09:10	3.61	2.80	01:50	0.050	09:10	0.241	0.152	0.152	-
03/11/2021	02:50	1.40	09:10	2.04	1.75	02:45	1.49	09:10	3.57	2.83	02:45	0.057	09:10	0.230	0.151	0.151	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	02:40	1.37	13:00	2.03	1.71	04:00	1.35	10:45	3.51	2.75	04:00	0.049	13:00	0.224	0.142	0.142	-
03/13/2021	02:25	1.36	09:50	1.91	1.66	02:40	1.48	16:10	3.52	2.66	02:00	0.054	16:10	0.202	0.131	0.131	-
03/14/2021	01:50	1.32	19:40	2.03	1.66	03:05	1.25	19:40	3.60	2.57	03:05	0.044	19:40	0.232	0.128	0.128	-
03/15/2021	01:25	1.33	10:35	2.10	1.73	03:20	1.34	10:30	3.64	2.75	01:30	0.048	10:30	0.245	0.146	0.146	-
03/16/2021	02:55	1.34	09:20	2.07	1.72	02:55	1.25	09:20	3.57	2.78	02:55	0.044	09:20	0.235	0.146	0.146	-
03/17/2021	00:55	1.32	11:50	2.04	1.71	00:40	1.27	11:50	3.68	2.79	00:55	0.044	11:50	0.238	0.145	0.145	-
03/18/2021	01:55	1.37	16:05	2.47	1.76	01:55	1.35	16:10	4.09	2.78	01:55	0.049	16:10	0.345	0.150	0.150	-
03/19/2021	04:30	1.34	08:15	2.05	1.71	03:10	1.18	10:10	3.54	2.72	03:10	0.042	10:10	0.227	0.141	0.141	-
03/20/2021	02:15	1.32	05:40	2.07	1.60	02:05	1.22	05:40	3.73	2.65	02:15	0.042	05:40	0.246	0.125	0.125	-
03/21/2021	02:05	1.33	07:30	1.90	1.62	02:15	1.23	09:30	3.53	2.57	02:15	0.042	09:30	0.206	0.122	0.122	-
03/22/2021	00:35	1.40	10:10	2.33	1.71	00:25	1.44	10:00	4.16	2.77	00:25	0.055	10:05	0.314	0.143	0.143	-
03/23/2021	02:55	1.36	14:55	2.28	1.74	04:15	1.24	14:55	3.79	2.80	04:15	0.048	14:55	0.287	0.149	0.149	-
03/24/2021	01:30	1.35	09:45	2.32	1.75	01:20	1.26	09:45	3.77	2.89	01:20	0.046	09:45	0.294	0.155	0.155	-
03/25/2021	02:55	1.51	10:00	2.16	1.81	02:45	1.72	08:40	3.75	3.03	02:45	0.074	10:00	0.258	0.168	0.168	-
03/26/2021	03:00	1.42	09:55	2.22	1.76	03:10	1.36	09:55	3.71	2.81	03:15	0.052	09:55	0.272	0.152	0.152	-
03/27/2021	02:30	1.40	09:25	2.05	1.67	02:25	1.52	09:25	3.51	2.66	02:25	0.057	09:25	0.229	0.132	0.132	-
03/28/2021	02:05	1.39	14:45	2.67	1.75	01:05	1.39	14:35	4.28	2.64	01:05	0.054	14:40	0.396	0.144	0.144	-
03/29/2021	02:30	1.46	09:35	2.10	1.80	02:45	1.36	09:35	3.52	2.83	02:45	0.055	09:35	0.237	0.156	0.156	-
03/30/2021	02:50	1.43	10:20	2.12	1.81	02:35	1.42	08:15	3.53	2.76	02:35	0.056	08:15	0.238	0.155	0.155	-
03/31/2021	03:00	1.43	09:10	2.22	1.81	03:00	1.40	09:15	3.45	2.74	03:00	0.054	09:10	0.251	0.155	0.155	-
04/01/2021	01:50	1.40	09:50	2.28	1.82	01:55	1.27	09:50	3.58	2.82	01:55	0.047	09:50	0.272	0.160	0.160	-
04/02/2021	01:50	1.48	09:30	2.13	1.79	01:20	1.48	09:25	3.51	2.75	01:20	0.062	09:25	0.235	0.152	0.152	-
04/03/2021	02:55	1.34	08:55	2.00	1.69	03:05	1.18	11:45	3.43	2.59	03:05	0.042	08:25	0.212	0.132	0.132	-
04/04/2021	03:50	1.38	10:25	2.01	1.67	01:05	1.20	18:25	3.38	2.51	01:05	0.045	10:25	0.208	0.125	0.125	-
04/05/2021	02:50	1.39	10:30	2.17	1.79	02:35	1.19	10:30	3.59	2.75	02:55	0.046	10:30	0.255	0.152	0.152	-
04/06/2021	02:50	1.39	08:50	2.08	1.75	03:15	1.25	08:50	3.56	2.76	03:15	0.046	08:50	0.237	0.148	0.148	-
04/07/2021	01:55	1.36	23:30	2.32	1.77	02:00	1.26	23:30	3.77	2.81	01:55	0.045	23:30	0.294	0.153	0.153	-
04/08/2021	02:05	1.38	10:05	2.14	1.79	03:50	1.21	09:20	3.55	2.78	03:50	0.044	10:05	0.240	0.155	0.155	-
04/09/2021	01:30	1.53	12:45	2.27	1.82	00:45	1.59	12:45	3.69	2.91	00:45	0.070	12:45	0.278	0.162	0.162	-
04/10/2021	02:15	1.49	12:45	2.24	1.79	02:15	1.56	15:10	3.49	2.78	02:15	0.064	12:45	0.245	0.153	0.153	-
04/11/2021	03:50	1.53	10:10	2.11	1.80	01:30	1.63	18:40	3.43	2.72	03:50	0.070	18:40	0.228	0.149	0.149	-
04/12/2021	00:40	1.56	09:35	2.23	1.88	00:40	1.56	13:05	3.50	2.82	00:40	0.068	09:35	0.253	0.167	0.120	-
09/24/2020	23:20	1.49	08:30	2.30	1.84	23:50	1.56	09:40	3.74	3.00	23:50	0.066	09:45	0.277	0.170	0.113	-
09/25/2020	01:55	1.36	12:55	2.45	1.77	02:20	1.36	12:00	4.05	2.77	02:20	0.049	12:00	0.337	0.154	0.154	-
09/26/2020	02:30	1.29	09:35	2.02	1.64	01:10	1.26	17:30	3.39	2.46	01:10	0.043	10:35	0.209	0.121	0.121	-
09/27/2020	03:35	1.34	08:25	2.00	1.66	03:10	1.34	16:10	3.37	2.40	03:10	0.049	16:10	0.210	0.119	0.119	-
09/28/2020	02:50	1.35	09:55	2.33	1.74	02:35	1.11	09:55	3.73	2.63	02:35	0.040	09:55	0.292	0.140	0.140	-
09/29/2020	02:55	1.34	10:25	2.33	1.78	02:30	1.14	08:05	3.79	2.81	02:30	0.043	10:25	0.285	0.155	0.155	-
09/30/2020	03:35	1.44	09:40	2.25	1.79	00:55	1.59	09:40	3.66	2.78	00:55	0.064	09:40	0.274	0.154	0.154	-
10/01/2020	02:55	1.34	08:40	2.16	1.78	02:50	1.11	13:50	3.53	2.61	02:50	0.039	13:50	0.247	0.144	0.144	-
10/02/2020	00:55	1.36	09:20	2.33	1.74	02:55	1.13	10:40	3.81	2.57	02:55	0.042	10:40	0.290	0.137	0.137	-
10/03/2020	03:00	1.28	10:20	2.05	1.65	01:00	1.22	10:10	3.44	2.44	03:10	0.042	10:15	0.219	0.120	0.120	0.01
10/04/2020	04:45	1.29	09:55	2.12	1.68	03:00	1.01	09:55	3.52	2.52	03:05	0.037	09:55	0.241	0.127	0.127	0.01
10/05/2020	01:50	1.45	08:55	2.17	1.79	23:45	1.63	08:55	3.58	2.77	02:25	0.070	08:55	0.253	0.151	0.151	-
10/06/2020	02:05	1.43	11:45	2.05	1.75	02:45	1.35	13:50	3.57	2.71	02:45	0.054	11:40	0.228	0.144	0.144	-
10/07/2020	03:05	1.38	10:30	2.07	1.71	02:15	1.23	10:25	3.65	2.65	02:15	0.046	10:25	0.240	0.138	0.138	-
10/08/2020	03:00	1.33	09:20	2.06	1.68	02:40	1.00	13:55	3.64	2.64	02:40	0.038	13:55	0.236	0.134	0.134	-
10/09/2020	02:30	1.29	23:55	9.60	1.93	23:35	0.57	10:20	3.89	2.62	00:25	0.037	23:00	0.584	0.148	0.148	0.64
10/10/2020	22:35	1.45	01:35	10.66	3.53	00:55	0.30	18:15	3.06	1.71	00:55	0.052	01:15	0.446	0.207	0.207	1.04
10/11/2020	02:30	1.33	14:35	5.92	2.68	16:40	0.57	11:55	3.55	1.92	04:50	0.039	13:35	0.445	0.174	0.174	0.53
10/12/2020	02:25	1.40	08:25	5.78	2.45	08:25	0.49	10:00	3.59	2.13	22:20	0.052	09:55	0.413	0.157	0.157	-
10/13/2020	01:10	1.42	07:30	2.48	1.82	01:05	1.18	07:05	4.34	2.83	01:05	0.046	07:10	0.365	0.161	0.161	0.61
10/14/2020	02:50	1.32	15:10	2.25	1.72	03:55	1.04	15:10	3.63	2.53	03:55	0.038	15:10	0.270	0.133	0.133	-
10/15/2020	01:50	1.31	15:20	2.31	1.72	00:45	1.15	15:15	3.73	2.57	00:45	0.042	15:20	0.288	0.137	0.137	-
10/16/2020	02:50	1.34	10:45	2.25	1.72	01:10	1.18	10:45	3.66	2.54	04:15	0.044	10:45	0.273	0.134	0.134	-
10/17/2020	04:05	1.31	10:10	2.04	1.65	02:45	1.19	08:50	3.47	2.48	02:45	0.041	10:10	0.223	0.123	0.123	0.01
10/18/2020	02:20	1.30	09:05	2.05	1.67	00:15	1.17	09:00	3.48	2.44	00:15	0.044	09:05	0.224	0.121	0.121	0.03
10/19/2020	02:55	1.34	10:35	2.13	1.73	01:25	1.30	10:35	3.68	2.61	02:50	0.047	10:35	0.253	0.137	0.137	-
10/20/2020	02:25	1.33	11:45	2.19	1.72	01:25	1.29	14:00	3.62	2.61	01:25	0.049	11:45	0.253	0.138	0.138	-
10/21/2020	00:50	1.40	10:10	2.20	1.76	03:15	1.24	08:00	3.55	2.62	03:15	0.049	10:10	0.253	0.142	0.142	-
10/22/2020	03:55	1.33	10:15	2.06	1.72	01:50	1.16	08:00	3.51	2.62	01:50	0.043	10:15	0.223	0.137	0.137	-
10/23/2020	01:55	1.37	09:15	2.25	1.77	02:15	1.21	10:40	3.60	2.63	02:15	0.045	09:15	0.260	0.144	0.144	-
10/24/2020	04:45	1.36	11:45	2.07	1.68	02:20	1.08	16:30	3.46	2.43	02:20	0.040	11:45	0.221	0.123	0.123	-
10/25/2020	00:30	1.36	09:30	2.10	1.69	03:45	1.24	08:35	3.34	2.39	00:35	0.045	09:30	0.210	0.122	0.122	-
10/26/2020	03:00	1.34	09:50	2.09	1.75	00:45	1.24	13:20	3.55	2.68	02:40	0.048	13:20	0.230	0.144	0.144	-
10/27/2020	03:30	1.40	08:30	2.07	1.74	01:35	1.29	13:45	3.55	2.68	01:35	0.054	18:10	0.231	0.142	0.142	-
10/28/2020	01:20	1.37	12:45	2.14	1.75	01:10	1.23	08:30	3.64	2.66	01:10	0.045	12:45	0.245	0.143	0.143	-
10/29/2020	02:10	1.34	09:45	2.20	1.76	03:40	1.25	09:45	3.56	2.64	02:20	0.046	09:45	0.257	0.144	0.144	-
10/30/2020	23:55	1.34	05:35	2.40	1.73	01:20	1.29	05:30	3.97	2.64	23:40	0.053	05:35	0.318	0.139	0.139	-
10/31/2020	00:20	1.31	10:10	2.06	1.63	00:10	1.23	10:10	3.58	2.39	00:10	0.042	10:10	0.234	0.117	0.117	-
11/01/2020	03:05	1.31	10:45	2.05	1.63	02:15	1.18	10:45	3.45	2.40	02:15	0.042	10:45	0.224	0.115	0.115	-
11/02/2020	03:45	1.32	15:55	2.09	1.71	02:25	1.17	15:55	3.60	2.57	02:25	0.040	15:55	0.242	0.134	0.134	-
11/03/2020	03:15	1.30	16:05	2.57	1.80	02:50	1.13	10:15	4.31	2.76	02:50	0.039	10:15	0.364	0.161	0.161	-
11/04/2020	03:20	1.41	12:30	2.25	1.75	02:30	1.26	12:30	3.85	2.75	02:30	0.049	12:30	0.288	0.147	0.147	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/05/2020	03:20	1.36	08:40	2.24	1.74	05:10	1.28	08:40	3.75	2.70	05:10	0.049	08:40	0.277	0.144	0.144	-
11/06/2020	05:00	1.37	09:05	2.32	1.77	23:55	1.38	09:05	3.84	2.66	04:45	0.052	09:05	0.300	0.144	0.144	-
11/07/2020	03:05	1.42	09:25	2.03	1.68	03:45	1.30	09:20	3.35	2.41	03:45	0.052	09:25	0.216	0.121	0.121	-
11/08/2020	02:50	1.33	10:05	2.01	1.64	00:55	1.27	10:00	3.41	2.42	00:55	0.046	10:05	0.210	0.117	0.117	-
11/09/2020	02:40	1.42	10:50	2.14	1.72	03:55	1.23	10:45	3.75	2.64	01:50	0.049	10:50	0.255	0.138	0.138	-
11/10/2020	03:30	1.33	16:20	2.20	1.68	02:50	1.17	10:10	3.78	2.69	02:50	0.042	16:20	0.270	0.138	0.138	-
11/11/2020	02:40	1.31	10:15	2.09	1.69	02:15	1.25	18:15	3.75	2.67	02:45	0.043	18:15	0.249	0.137	0.137	-
11/12/2020	02:30	1.34	10:05	2.13	1.72	03:35	1.23	10:05	3.66	2.69	03:35	0.044	10:05	0.252	0.140	0.140	-
11/13/2020	23:55	1.40	06:30	2.22	1.78	23:55	1.37	13:55	3.79	2.75	23:55	0.051	06:35	0.273	0.150	0.150	-
11/14/2020	05:55	1.30	18:05	2.12	1.66	01:45	1.12	18:05	3.59	2.46	01:45	0.041	18:05	0.247	0.124	0.124	-
11/15/2020	03:40	1.31	23:00	1.92	1.63	02:30	1.33	23:05	3.43	2.41	02:30	0.050	23:05	0.202	0.115	0.115	-
11/16/2020	03:45	1.28	12:25	2.43	1.74	04:20	1.18	13:25	3.68	2.53	04:20	0.042	12:25	0.304	0.138	0.138	-
11/17/2020	04:20	1.31	14:10	2.17	1.73	01:45	1.15	10:40	3.63	2.63	01:45	0.044	14:10	0.251	0.141	0.141	-
11/18/2020	02:30	1.30	10:40	2.14	1.74	00:35	1.32	18:25	3.54	2.58	00:35	0.050	10:35	0.242	0.138	0.138	-
11/19/2020	02:40	1.30	13:00	2.58	1.78	02:25	1.08	12:45	4.48	2.72	02:25	0.037	12:45	0.388	0.152	0.152	-
11/20/2020	23:50	1.35	10:35	2.07	1.71	03:00	1.41	10:30	3.66	2.61	03:00	0.057	10:30	0.240	0.136	0.136	-
11/21/2020	03:00	1.33	10:10	1.98	1.63	00:40	1.34	10:10	3.43	2.33	02:15	0.051	10:10	0.212	0.112	0.112	-
11/22/2020	04:10	1.32	09:10	1.97	1.64	06:05	1.36	18:45	3.47	2.37	01:55	0.050	18:45	0.211	0.115	0.115	-
11/23/2020	02:40	1.34	09:35	2.08	1.73	01:30	1.31	11:05	3.62	2.58	01:20	0.052	11:05	0.241	0.136	0.136	-
11/24/2020	05:25	1.31	15:45	2.39	1.71	02:15	1.14	15:45	3.92	2.58	02:15	0.042	15:45	0.319	0.136	0.136	-
11/25/2020	03:10	1.33	13:10	2.03	1.68	03:35	1.28	17:35	3.64	2.58	03:35	0.045	13:10	0.223	0.131	0.131	-
11/26/2020	05:00	1.34	10:55	1.84	1.56	03:45	1.33	09:45	3.39	2.30	01:25	0.053	09:45	0.182	0.103	0.103	-
11/27/2020	03:50	1.32	10:40	2.00	1.62	06:40	1.27	10:40	3.42	2.36	00:20	0.046	10:40	0.215	0.113	0.113	-
11/28/2020	05:00	1.30	09:20	2.07	1.58	02:55	1.10	09:20	3.42	2.27	02:55	0.039	09:20	0.226	0.106	0.106	-
11/29/2020	04:50	1.31	09:50	1.95	1.60	03:20	1.32	09:45	3.27	2.28	03:20	0.048	09:45	0.194	0.107	0.107	-
11/30/2020	01:45	1.33	11:15	2.33	1.76	01:00	1.29	14:05	3.50	2.61	03:05	0.048	11:15	0.273	0.141	0.141	-
12/01/2020	02:35	1.33	11:15	2.17	1.73	01:05	1.21	11:15	3.64	2.53	01:35	0.046	11:15	0.258	0.135	0.135	-
12/02/2020	05:10	1.38	11:50	2.07	1.71	01:00	1.17	19:00	3.48	2.56	01:00	0.049	14:35	0.226	0.134	0.134	-
12/03/2020	02:20	1.29	11:55	2.17	1.69	01:25	1.39	13:55	3.53	2.53	01:25	0.053	11:55	0.239	0.130	0.130	-
12/04/2020	04:15	1.31	10:30	2.09	1.70	02:20	1.26	09:05	3.49	2.49	03:35	0.045	09:05	0.230	0.128	0.128	-
12/05/2020	23:50	1.34	11:15	2.12	1.64	02:00	1.26	11:15	3.49	2.35	02:00	0.047	11:15	0.239	0.115	0.115	-
12/06/2020	02:15	1.28	11:30	2.06	1.62	02:20	1.20	11:25	3.33	2.27	02:20	0.039	11:25	0.204	0.108	0.108	-
12/07/2020	03:05	1.31	10:05	2.16	1.70	01:40	1.03	11:25	3.74	2.60	01:40	0.037	11:25	0.263	0.135	0.135	-
12/08/2020	01:45	1.38	11:50	2.41	1.82	02:50	1.62	11:45	3.97	2.92	02:50	0.066	11:45	0.319	0.165	0.165	-
12/09/2020	04:50	1.44	10:55	2.13	1.72	04:20	1.50	13:50	3.59	2.71	04:20	0.061	10:55	0.246	0.140	0.140	-
12/10/2020	02:25	1.34	13:25	2.08	1.69	02:35	1.16	10:20	3.66	2.59	02:35	0.041	10:20	0.240	0.132	0.132	-
12/11/2020	01:25	1.31	10:15	2.32	1.68	03:30	1.24	10:15	3.64	2.54	03:30	0.043	10:15	0.284	0.130	0.130	-
12/12/2020	04:15	1.31	10:55	2.03	1.60	04:05	1.15	12:40	3.40	2.30	04:05	0.039	10:55	0.216	0.108	0.108	-
12/13/2020	05:55	1.31	10:30	2.06	1.60	02:10	1.11	10:30	3.54	2.40	02:10	0.041	10:30	0.232	0.113	0.113	-
12/14/2020	01:35	1.33	12:30	2.10	1.68	23:50	1.28	19:05	3.52	2.54	03:45	0.049	12:30	0.235	0.130	0.130	-
12/15/2020	03:00	1.34	15:55	2.50	1.77	00:25	1.20	15:55	4.49	2.78	04:50	0.048	15:55	0.389	0.154	0.154	-
12/16/2020	03:40	1.37	14:05	2.47	1.76	01:50	1.32	14:00	3.85	2.79	03:40	0.049	14:05	0.323	0.152	0.152	-
12/17/2020	04:10	1.37	12:30	2.17	1.73	02:15	1.18	15:10	3.77	2.67	04:05	0.043	12:30	0.248	0.140	0.140	-
12/18/2020	02:45	1.38	10:20	2.14	1.74	01:50	1.28	10:20	3.57	2.66	01:50	0.048	10:20	0.247	0.141	0.141	-
12/19/2020	03:35	1.33	17:05	2.17	1.67	04:25	1.34	17:05	3.59	2.51	04:55	0.049	17:05	0.254	0.126	0.126	-
12/20/2020	03:45	1.37	16:25	2.10	1.64	00:40	1.38	16:20	3.61	2.39	04:05	0.052	16:20	0.240	0.116	0.116	-
12/21/2020	02:00	1.53	16:35	2.78	1.94	01:40	1.44	16:15	4.08	2.97	01:40	0.062	16:35	0.383	0.184	0.184	-
12/22/2020	23:10	1.58	02:00	2.53	1.82	23:00	1.85	02:00	4.37	2.83	23:00	0.085	02:00	0.387	0.158	0.158	-
12/23/2020	01:45	1.42	13:00	2.12	1.72	02:25	1.14	10:25	3.60	2.65	02:25	0.045	10:25	0.244	0.138	0.138	-
12/24/2020	03:50	1.37	08:45	2.02	1.66	02:10	1.14	08:45	3.54	2.48	02:10	0.042	08:45	0.225	0.123	0.123	-
12/25/2020	04:00	1.34	16:20	1.90	1.58	02:50	1.30	16:15	3.45	2.37	02:50	0.049	16:20	0.199	0.108	0.108	-
12/26/2020	04:10	1.35	10:35	1.90	1.59	03:30	1.26	10:30	3.43	2.39	03:30	0.046	10:35	0.197	0.111	0.111	-
12/27/2020	03:35	1.33	09:05	1.96	1.61	01:05	1.28	09:15	3.41	2.45	01:05	0.051	09:10	0.207	0.116	0.116	-
12/28/2020	03:20	1.33	11:15	2.08	1.68	04:40	1.21	11:15	3.61	2.56	04:40	0.043	11:15	0.241	0.130	0.130	-
12/29/2020	02:25	1.34	09:25	2.14	1.74	01:50	1.19	09:25	3.65	2.65	01:50	0.043	09:25	0.254	0.142	0.142	-
12/30/2020	03:55	1.58	09:15	2.43	1.89	01:25	1.84	09:15	3.88	3.11	03:35	0.085	09:15	0.323	0.183	0.183	-
12/31/2020	02:55	1.60	11:45	2.14	1.78	03:30	2.18	07:50	3.65	3.00	03:30	0.100	12:35	0.247	0.162	0.162	-

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			29.674	2.88
Average	1.77	2.72	0.148	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A8_70829

Site Address /Location:	3rd St NW			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Located in parking area next to driveway	Latitude:	47.310238	Pipe Size (H x W): 15.00 X 15.00	Pipe Shape: Circular
		Longitude:	122.234096		



Manhole #	System Characteristics
AUB_A8_70829	Commercial
Access	Traffic
Walk (Commercial)	Light







ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.11.325

Installation Information

Installation Date:	Installation Type:
Thursday, September 24, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Time	
8:06:00 AM	
Depth of Flow (Wet DOF) (in)	
2.13	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
4.14	N/A
Silt (in)	Silt Type
0	

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
6	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	26
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_A9_71031

Site Commentary

SITE INFORMATION

Pipe	Round (10 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.73	0.76	0.063
Minimum	1.39	0.33	0.011
Maximum	6.15	1.48	0.336
Min Time	12/07/2020 3:00:00 AM	04/03/2021 2:00:00 AM	12/07/2020 3:00:00 AM
Max Time	01/03/2021 12:00:00 AM	01/03/2021 12:00:00 AM	01/03/2021 12:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

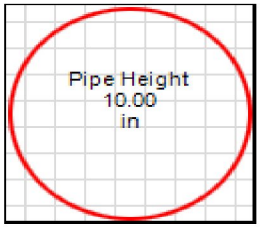
Percent Uptime	
DFINAL (in)	98.801
VFINAL (ft/s)	98.801
QFINAL (MGD - Total MG)	98.801

Hydrograph Report

AUB_A9_71031

Flow Monitor

AUB_A9_71031



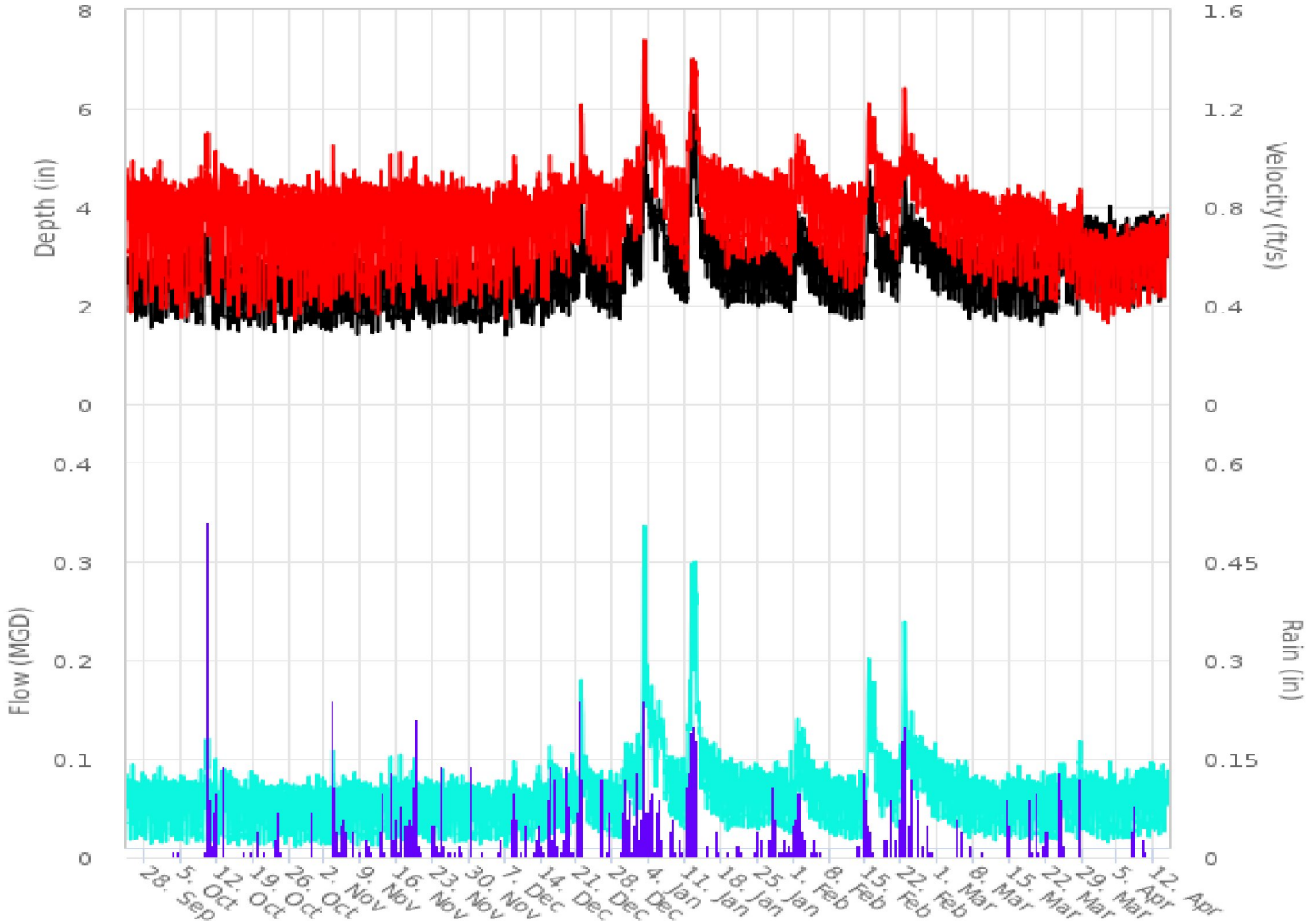
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



Scattergraph Report

AUB_A9_71031

Flow Monitor

AUB_A9_71031

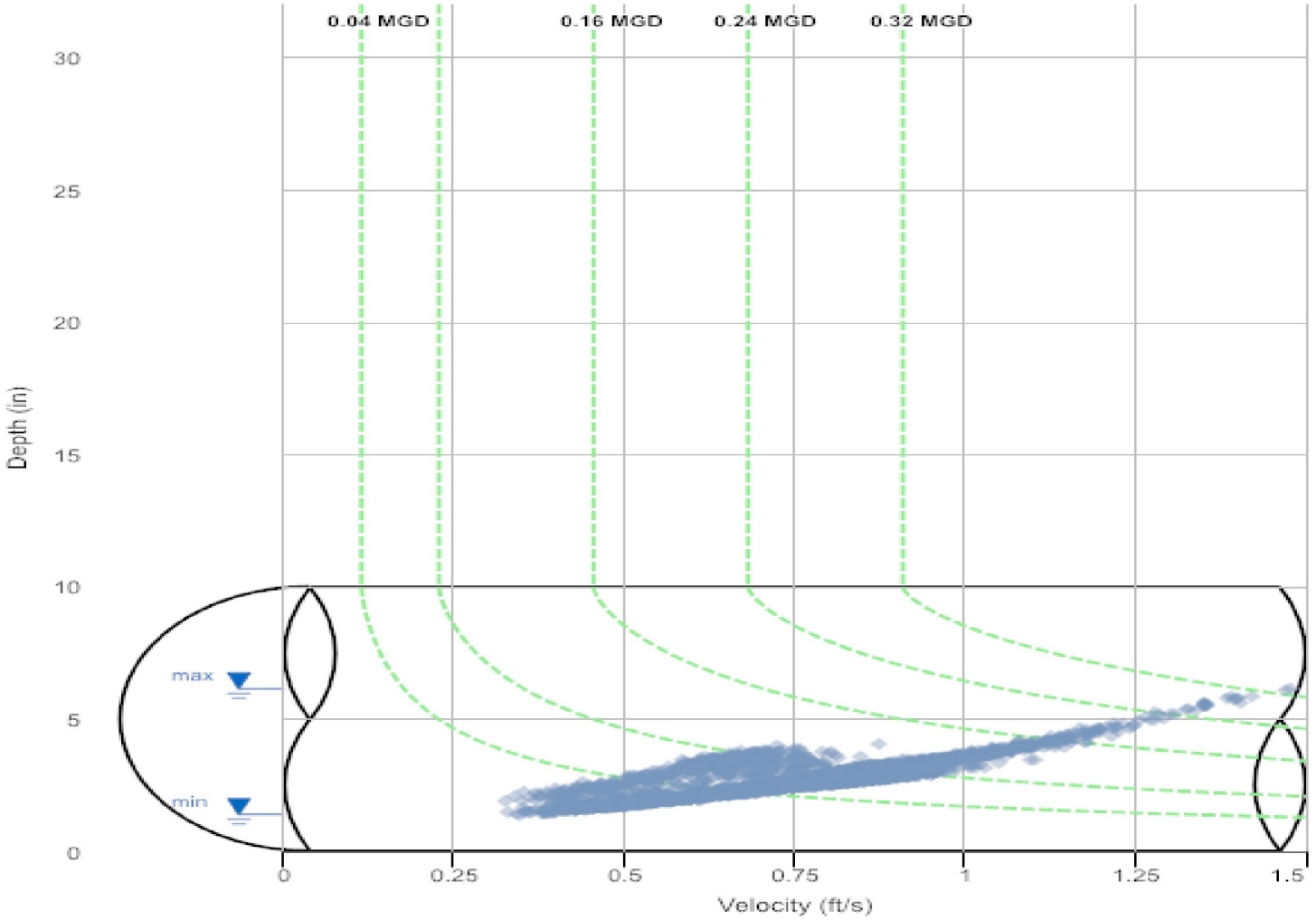
Pipe Height
10.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_A9_71031Pipe: Round (10 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	03:55	2.27	15:55	3.91	3.12	03:50	0.63	15:55	1.08	0.87	03:50	0.038	15:55	0.138	0.085	0.085	0.51
01/02/2021	05:00	2.35	23:55	5.98	3.68	05:05	0.63	23:50	1.45	0.99	05:05	0.040	23:55	0.319	0.127	0.127	1.69
01/03/2021	22:40	3.63	00:55	6.23	4.51	22:40	1.00	00:50	1.50	1.19	22:40	0.116	00:55	0.346	0.187	0.187	0.65
01/04/2021	03:55	3.37	12:15	4.43	3.85	03:50	0.95	12:50	1.21	1.07	03:50	0.100	12:15	0.180	0.134	0.134	0.48
01/05/2021	02:50	2.81	21:20	4.25	3.50	02:35	0.79	21:15	1.18	0.99	02:50	0.064	21:25	0.169	0.111	0.111	0.52
01/06/2021	23:10	2.98	10:10	4.13	3.69	23:10	0.83	10:15	1.17	1.03	23:10	0.073	10:15	0.161	0.123	0.123	0.22
01/07/2021	05:05	2.46	20:35	3.66	3.10	03:45	0.69	20:35	1.03	0.88	05:05	0.046	20:35	0.121	0.083	0.083	-
01/08/2021	03:10	2.30	17:45	3.59	2.99	03:20	0.63	17:55	1.02	0.85	03:10	0.039	17:55	0.116	0.077	0.077	0.22
01/09/2021	04:35	2.12	12:35	3.58	2.83	07:00	0.55	11:05	1.05	0.81	07:00	0.031	12:35	0.116	0.068	0.068	-
01/10/2021	04:50	1.99	11:50	3.47	2.75	04:50	0.55	11:45	0.99	0.78	04:50	0.027	11:45	0.107	0.064	0.064	0.07
01/11/2021	03:55	1.96	21:45	4.60	3.28	05:15	0.49	21:25	1.20	0.89	03:55	0.025	21:45	0.190	0.099	0.099	1.06
01/12/2021	00:05	3.69	09:35	6.03	5.15	00:00	1.00	09:30	1.44	1.29	00:05	0.118	09:30	0.317	0.238	0.238	2.10
01/13/2021	23:55	3.37	01:00	5.60	4.17	23:55	0.88	01:00	1.38	1.11	23:55	0.092	01:00	0.280	0.156	0.156	0.09
01/14/2021	23:55	2.87	20:30	4.00	3.37	23:55	0.77	20:30	1.07	0.92	23:55	0.065	20:30	0.140	0.097	0.097	0.01
01/15/2021	04:15	2.47	12:40	3.86	3.15	04:05	0.66	12:35	1.07	0.86	04:05	0.045	12:35	0.133	0.083	0.083	0.09
01/16/2021	03:55	2.25	12:15	4.01	3.04	01:35	0.43	12:15	1.12	0.87	03:55	0.038	12:15	0.148	0.081	0.081	-
01/17/2021	04:10	2.17	11:35	3.59	2.91	04:00	0.60	15:15	1.04	0.85	03:55	0.035	15:15	0.118	0.074	0.074	0.10
01/18/2021	04:25	1.94	19:35	3.54	2.80	04:25	0.56	19:30	1.02	0.82	04:25	0.027	19:30	0.113	0.068	0.068	-
01/19/2021	03:35	1.75	12:50	3.80	2.79	03:45	0.46	12:50	1.11	0.82	03:45	0.019	12:50	0.136	0.068	0.068	0.01
01/20/2021	04:35	1.89	18:25	3.60	2.76	05:35	0.54	18:20	1.05	0.81	04:35	0.026	18:20	0.119	0.067	0.067	-
01/21/2021	03:05	1.84	14:45	3.50	2.73	03:05	0.51	14:40	1.02	0.80	03:05	0.023	18:25	0.111	0.065	0.065	0.11
01/22/2021	03:35	1.84	19:35	3.48	2.70	03:35	0.52	19:35	1.01	0.80	03:35	0.023	19:35	0.110	0.063	0.063	-
01/23/2021	04:05	1.80	12:05	3.69	2.68	04:00	0.46	12:00	1.05	0.78	04:00	0.020	12:05	0.123	0.062	0.062	-
01/24/2021	02:30	1.88	13:15	3.72	2.78	02:25	0.54	12:05	1.06	0.81	02:25	0.025	13:15	0.126	0.067	0.067	0.16
01/25/2021	04:25	1.79	13:45	3.50	2.69	04:25	0.51	13:40	1.02	0.79	04:25	0.022	13:45	0.112	0.063	0.063	0.04
01/26/2021	02:35	1.81	14:15	3.40	2.68	05:10	0.46	11:50	1.00	0.79	05:10	0.020	14:15	0.105	0.062	0.062	-
01/27/2021	04:45	1.90	12:40	3.48	2.69	04:45	0.54	12:45	1.01	0.79	04:45	0.025	12:45	0.110	0.063	0.063	0.14
01/28/2021	02:05	1.93	18:05	3.54	2.81	02:00	0.55	12:50	1.01	0.83	02:00	0.027	18:05	0.113	0.069	0.069	0.24
01/29/2021	05:00	1.88	16:25	3.37	2.66	04:40	0.54	13:15	0.99	0.79	04:40	0.025	13:15	0.102	0.061	0.061	0.03
01/30/2021	06:30	1.90	13:05	3.43	2.60	05:50	0.52	13:05	0.99	0.76	04:40	0.026	13:05	0.106	0.058	0.058	0.07
01/31/2021	05:40	1.76	12:35	3.72	2.62	05:40	0.49	12:40	1.05	0.77	05:35	0.021	12:35	0.125	0.059	0.059	0.12
02/01/2021	01:15	2.06	19:00	4.14	3.04	01:00	0.59	19:05	1.15	0.87	01:10	0.031	19:05	0.156	0.083	0.083	0.82
02/02/2021	05:15	2.76	08:35	4.03	3.45	05:20	0.79	08:30	1.12	0.98	05:20	0.063	08:35	0.149	0.107	0.107	0.31
02/03/2021	04:45	2.59	18:50	3.89	3.16	04:40	0.74	18:50	1.09	0.92	04:40	0.054	18:50	0.139	0.088	0.088	0.06
02/04/2021	02:30	2.15	17:00	3.60	2.89	02:05	0.60	14:30	1.03	0.85	02:30	0.034	17:00	0.117	0.073	0.073	0.07
02/05/2021	04:55	2.15	18:15	3.39	2.77	04:50	0.59	09:55	1.02	0.81	04:50	0.033	09:55	0.107	0.066	0.066	0.01
02/06/2021	03:10	1.98	15:00	3.65	2.69	03:10	0.56	14:55	1.05	0.79	03:10	0.028	14:55	0.121	0.063	0.063	0.01
02/07/2021	05:10	1.98	11:40	3.53	2.71	04:25	0.53	11:25	1.00	0.77	04:25	0.027	11:30	0.111	0.061	0.061	-
02/08/2021	05:00	1.83	19:55	3.25	2.60	05:45	0.49	20:35	0.93	0.74	05:45	0.022	19:50	0.090	0.056	0.056	-
02/09/2021	02:55	1.74	11:25	3.41	2.58	02:55	0.43	11:30	0.95	0.73	02:50	0.018	11:30	0.101	0.055	0.055	-
02/10/2021	04:15	1.74	11:35	3.38	2.55	04:10	0.47	11:30	0.94	0.72	04:05	0.020	11:30	0.098	0.053	0.053	-
02/11/2021	02:25	1.70	18:10	3.28	2.55	02:40	0.42	19:20	0.92	0.73	02:40	0.016	18:15	0.091	0.054	0.054	-
02/12/2021	03:05	1.68	15:40	3.30	2.48	03:50	0.41	15:35	0.96	0.72	03:50	0.016	15:35	0.097	0.052	0.052	-
02/13/2021	05:05	1.70	21:15	3.38	2.45	05:05	0.44	21:15	0.95	0.71	05:05	0.017	21:15	0.099	0.050	0.050	0.08
02/14/2021	04:00	1.67	12:30	3.14	2.52	03:50	0.47	12:20	0.90	0.73	03:55	0.018	12:30	0.086	0.054	0.054	0.71
02/15/2021	00:05	2.42	17:00	4.86	3.83	00:00	0.71	15:05	1.23	1.04	00:00	0.047	17:00	0.210	0.134	0.134	0.78
02/16/2021	22:45	3.33	13:55	5.69	3.70	03:45	0.92	13:55	1.39	1.03	22:50	0.096	13:55	0.287	0.123	0.123	0.07
02/17/2021	03:45	2.59	00:00	3.74	3.17	03:40	0.75	12:40	1.09	0.92	03:40	0.055	12:40	0.129	0.089	0.089	-
02/18/2021	04:10	2.27	18:05	3.62	2.97	03:40	0.66	17:55	1.01	0.87	03:40	0.041	18:05	0.116	0.078	0.078	0.09
02/19/2021	01:55	2.40	14:45	3.89	2.99	02:05	0.69	14:45	1.11	0.87	01:50	0.046	14:45	0.141	0.078	0.078	0.17
02/20/2021	05:00	2.12	14:05	3.55	2.84	05:15	0.59	13:55	1.02	0.83	05:15	0.032	14:00	0.114	0.070	0.070	0.07
02/21/2021	04:55	2.05	23:50	3.83	2.82	04:40	0.55	23:50	1.08	0.82	04:40	0.029	23:50	0.134	0.069	0.069	0.42
02/22/2021	05:15	3.09	14:10	5.37	4.09	05:10	0.88	14:00	1.31	1.09	05:10	0.082	14:10	0.253	0.151	0.151	0.98
02/23/2021	04:00	2.98	21:30	4.34	3.60	04:00	0.84	21:40	1.15	1.00	04:00	0.074	21:30	0.167	0.115	0.115	0.27
02/24/2021	04:00	2.68	16:15	4.03	3.39	04:05	0.76	18:40	1.09	0.95	04:05	0.058	16:10	0.144	0.101	0.101	-
02/25/2021	02:30	2.43	16:50	3.90	3.33	03:25	0.70	10:50	1.04	0.92	02:30	0.048	16:45	0.131	0.096	0.096	0.18
02/26/2021	00:45	2.62	19:05	3.94	3.21	05:50	0.74	19:05	1.05	0.90	00:40	0.056	19:05	0.135	0.089	0.089	0.10
02/27/2021	06:00	2.23	13:30	3.81	3.05	06:00	0.63	15:30	1.10	0.86	06:00	0.037	13:25	0.128	0.080	0.080	0.02
02/28/2021	02:30	2.14	12:55	3.86	3.01	04:30	0.60	12:15	1.03	0.84	02:30	0.034	12:50	0.129	0.077	0.077	0.02
03/01/2021	05:15	1.95	18:10	3.78	2.94	05:20	0.55	18:10	0.99	0.81	05:15	0.027	18:10	0.121	0.072	0.072	-
03/02/2021	04:05	2.01	19:05	3.62	2.90	02:15	0.54	19:05	0.96	0.78	02:15	0.028	19:05	0.110	0.068	0.068	-
03/03/2021	04:25	1.93	15:25	3.66	2.91	04:20	0.55	18:55	0.97	0.78	04:20	0.027	15:25	0.112	0.069	0.069	-
03/04/2021	05:15	1.99	18:50	3.81	2.80	05:15	0.49	18:50	1.03	0.77	05:15	0.024	18:50	0.127	0.064	0.064	0.20
03/05/2021	03:20	1.93	19:20	3.56	2.78	03:20	0.53	19:15	0.94	0.78	03:20	0.025	19:20	0.106	0.064	0.064	0.05
03/06/2021	04:50	1.76	19:05	3.70	2.73	04:50	0.49	19:05	1.02	0.77	04:50	0.020	19:05	0.120	0.063	0.063	-
03/07/2021	05:45	1.66	11:05	3.32	2.62	05:35	0.45	10:55	0.93	0.74	05:35	0.018	11:00	0.095	0.057	0.057	0.04
03/08/2021	05:15	1.83	11:30	3.31	2.63	05:15	0.49	18:25	0.92	0.74	05:15	0.022	11:35	0.093	0.057	0.057	-
03/09/2021	02:55	1.84	20:05	3.39	2.57	05:10	0.51	20:05	0.93	0.73	02:55	0.023	20:05	0.097	0.054	0.054	0.01
03/10/2021	02:35	1.73	10:50	3.24	2.56	02:50	0.42	18:30	0.92	0.73	02:50	0.017	18:25	0.090	0.054	0.054	-
03/11/2021	04:10	1.65	19:20	3.26	2.55	04:20	0.44	10:20	0.88	0.72	04:05	0.017	19:15	0.087	0.053	0.053	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:45	1.65	09:25	3.16	2.57	04:20	0.41	09:20	0.87	0.68	04:20	0.016	09:30	0.083	0.051	0.051	-
03/13/2021	03:50	1.77	14:40	3.34	2.58	03:45	0.44	14:45	0.93	0.71	03:45	0.019	14:45	0.096	0.053	0.053	-
03/14/2021	05:05	1.79	16:55	3.42	2.63	02:45	0.49	16:40	0.92	0.73	05:40	0.021	16:55	0.097	0.057	0.057	0.30
03/15/2021	04:00	1.69	13:05	3.41	2.62	03:45	0.46	13:05	0.90	0.72	04:00	0.018	13:05	0.095	0.055	0.055	-
03/16/2021	05:10	1.72	19:25	3.65	2.56	01:25	0.49	19:25	0.98	0.72	01:25	0.020	19:25	0.114	0.053	0.053	-
03/17/2021	02:40	1.66	11:30	3.44	2.54	02:50	0.45	11:30	0.93	0.70	02:35	0.018	11:30	0.100	0.052	0.052	-
03/18/2021	02:25	1.69	16:45	3.29	2.55	02:25	0.43	15:50	0.88	0.71	02:25	0.017	16:40	0.089	0.053	0.053	0.11
03/19/2021	03:20	1.63	11:10	3.28	2.53	03:15	0.43	11:10	0.89	0.70	03:15	0.016	11:10	0.090	0.051	0.051	0.03
03/20/2021	02:55	1.56	10:00	3.29	2.56	03:00	0.42	09:55	0.90	0.71	03:00	0.015	09:55	0.090	0.053	0.053	0.17
03/21/2021	03:45	1.55	11:55	3.46	2.53	03:40	0.40	11:55	0.90	0.69	03:40	0.014	11:55	0.098	0.051	0.051	0.07
03/22/2021	03:10	1.72	18:30	3.72	2.79	03:10	0.47	10:55	0.89	0.69	03:10	0.019	18:30	0.100	0.057	0.057	0.11
03/23/2021	02:40	1.80	11:10	3.82	2.86	02:35	0.39	11:10	0.84	0.63	02:35	0.017	11:10	0.104	0.054	0.054	-
03/24/2021	01:30	1.80	19:30	3.82	2.85	01:40	0.40	19:20	0.84	0.63	01:40	0.017	19:25	0.103	0.055	0.055	0.34
03/25/2021	02:45	2.47	14:10	3.98	3.20	02:35	0.53	13:20	0.89	0.71	02:40	0.036	13:20	0.111	0.070	0.070	0.27
03/26/2021	03:00	2.00	11:10	3.60	2.88	02:35	0.45	11:05	0.84	0.68	02:35	0.023	11:10	0.095	0.059	0.059	-
03/27/2021	04:00	1.98	13:05	3.69	2.79	02:00	0.45	13:00	0.89	0.66	02:00	0.023	13:00	0.105	0.055	0.055	-
03/28/2021	04:20	1.74	15:15	4.34	3.04	04:10	0.38	15:15	0.95	0.66	04:05	0.016	15:15	0.139	0.064	0.064	0.37
03/29/2021	02:05	2.35	19:40	3.99	3.24	02:00	0.39	19:40	0.77	0.59	02:00	0.025	19:40	0.101	0.060	0.060	-
03/30/2021	03:40	2.18	20:15	4.12	3.17	03:25	0.38	20:15	0.79	0.57	03:30	0.022	20:15	0.108	0.057	0.057	-
03/31/2021	04:05	2.14	18:35	4.09	3.17	02:35	0.32	18:30	0.78	0.58	02:35	0.018	18:30	0.105	0.058	0.058	-
04/01/2021	03:45	2.02	18:30	3.84	3.07	03:25	0.34	18:25	0.72	0.57	03:25	0.018	18:25	0.090	0.055	0.055	-
04/02/2021	03:40	2.03	20:10	3.85	3.04	03:45	0.31	20:05	0.72	0.55	03:45	0.016	20:10	0.091	0.052	0.052	-
04/03/2021	03:00	1.84	11:35	4.30	3.10	05:20	0.27	11:25	0.82	0.56	02:25	0.014	11:30	0.117	0.055	0.055	-
04/04/2021	04:45	1.94	12:45	3.87	3.03	04:25	0.35	09:55	0.74	0.57	04:35	0.017	12:45	0.092	0.054	0.054	-
04/05/2021	03:15	1.87	20:20	3.89	2.98	01:15	0.34	18:00	0.75	0.58	03:15	0.016	20:20	0.092	0.053	0.053	-
04/06/2021	03:15	1.87	19:30	4.13	2.96	03:05	0.35	19:30	0.81	0.58	03:05	0.016	19:30	0.112	0.053	0.053	-
04/07/2021	01:50	1.93	17:35	3.84	2.98	02:35	0.31	17:30	0.77	0.58	01:45	0.018	17:35	0.096	0.053	0.053	0.22
04/08/2021	02:05	1.87	14:35	3.99	3.06	04:10	0.35	14:35	0.78	0.58	01:50	0.018	14:35	0.103	0.055	0.055	-
04/09/2021	03:00	1.99	12:00	4.03	3.14	03:05	0.37	18:50	0.81	0.61	03:00	0.019	19:50	0.103	0.060	0.060	0.03
04/10/2021	03:10	2.16	11:30	3.92	3.15	03:05	0.44	20:10	0.76	0.62	03:05	0.025	11:25	0.096	0.061	0.061	0.02
04/11/2021	03:20	1.97	20:25	4.19	3.10	02:20	0.38	20:20	0.86	0.62	01:55	0.020	20:25	0.121	0.060	0.060	-
04/12/2021	03:10	2.24	11:50	3.83	3.15	05:20	0.42	12:40	0.76	0.61	03:00	0.026	19:55	0.093	0.060	0.060	-
04/13/2021	02:30	2.03	19:15	4.14	3.13	02:05	0.42	19:15	0.82	0.62	02:30	0.021	19:15	0.113	0.061	0.061	-
04/14/2021	02:30	2.16	17:30	4.43	3.10	02:25	0.38	20:45	0.85	0.62	02:25	0.021	20:50	0.107	0.060	0.060	-
09/24/2020	23:55	2.08	13:05	3.17	2.71	23:55	0.57	13:00	1.02	0.83	23:55	0.030	13:00	0.096	0.065	0.035	-
09/25/2020	02:00	1.81	12:30	3.28	2.55	03:55	0.32	12:25	1.03	0.76	03:45	0.016	12:30	0.104	0.057	0.057	-
09/26/2020	02:40	1.62	21:55	3.01	2.43	02:35	0.43	21:55	0.96	0.75	02:35	0.016	21:55	0.086	0.052	0.052	-
09/27/2020	06:35	1.70	13:50	3.74	2.49	06:35	0.47	13:45	1.19	0.77	06:35	0.019	13:50	0.143	0.056	0.056	-
09/28/2020	04:30	1.70	11:25	3.19	2.43	03:25	0.35	11:20	1.02	0.73	03:35	0.014	11:25	0.099	0.051	0.051	-
09/29/2020	03:30	1.50	20:20	3.10	2.47	03:40	0.40	20:15	1.03	0.76	03:30	0.013	20:15	0.096	0.054	0.054	-
09/30/2020	03:35	1.63	19:05	3.32	2.45	03:25	0.45	19:10	1.06	0.76	03:25	0.017	19:05	0.108	0.054	0.054	-
10/01/2020	02:15	1.60	19:00	3.18	2.52	03:10	0.36	19:00	0.99	0.72	03:25	0.013	19:00	0.095	0.053	0.053	-
10/02/2020	03:05	1.74	17:15	3.15	2.50	03:20	0.37	11:20	0.97	0.71	03:25	0.015	17:15	0.092	0.052	0.052	-
10/03/2020	02:05	1.70	11:15	3.10	2.50	04:10	0.38	11:10	0.96	0.73	04:05	0.016	11:15	0.089	0.052	0.052	0.01
10/04/2020	04:10	1.63	15:00	3.23	2.55	04:05	0.35	08:30	0.97	0.71	04:05	0.013	15:00	0.093	0.054	0.054	0.01
10/05/2020	02:15	1.91	13:40	3.21	2.62	02:25	0.32	19:55	0.99	0.70	02:25	0.015	19:55	0.096	0.054	0.054	-
10/06/2020	02:40	1.61	15:40	3.50	2.56	02:35	0.33	21:45	0.99	0.71	02:35	0.012	21:45	0.090	0.053	0.053	-
10/07/2020	02:10	1.72	16:40	3.10	2.47	04:00	0.37	10:55	1.07	0.74	02:05	0.016	14:55	0.093	0.052	0.052	-
10/08/2020	02:05	1.54	19:25	3.26	2.41	02:00	0.39	19:25	1.02	0.74	02:00	0.013	19:25	0.102	0.052	0.052	-
10/09/2020	04:15	1.47	23:20	3.65	2.44	04:15	0.37	23:20	1.18	0.76	04:15	0.012	23:20	0.137	0.054	0.054	0.64
10/10/2020	04:05	2.03	01:50	3.68	2.68	23:55	0.61	01:45	1.16	0.85	04:00	0.032	01:45	0.136	0.066	0.066	1.04
10/11/2020	04:15	1.59	14:35	3.42	2.47	05:05	0.41	14:30	1.09	0.77	05:00	0.015	14:35	0.116	0.057	0.057	0.53
10/12/2020	05:10	1.45	20:10	3.25	2.40	03:55	0.37	20:15	1.05	0.75	03:55	0.012	20:10	0.104	0.052	0.052	-
10/13/2020	01:20	1.71	07:40	3.48	2.52	01:20	0.47	07:40	1.13	0.79	01:15	0.019	07:40	0.124	0.058	0.058	0.61
10/14/2020	04:10	1.43	10:00	3.71	2.39	04:10	0.35	10:05	1.12	0.74	04:05	0.011	10:05	0.128	0.051	0.051	-
10/15/2020	03:30	1.50	12:30	3.14	2.47	03:25	0.38	20:30	1.01	0.77	03:25	0.013	12:30	0.094	0.055	0.055	-
10/16/2020	03:35	1.45	13:10	2.94	2.36	03:25	0.33	14:40	0.94	0.72	03:30	0.010	13:05	0.080	0.049	0.049	-
10/17/2020	04:10	1.64	12:35	3.11	2.43	04:05	0.43	10:00	0.97	0.72	04:05	0.016	12:35	0.090	0.051	0.051	0.01
10/18/2020	04:10	1.56	18:15	3.23	2.49	04:25	0.30	18:10	1.00	0.71	04:25	0.011	18:10	0.098	0.053	0.053	0.03
10/19/2020	03:50	1.64	12:00	3.17	2.46	03:55	0.39	11:55	1.02	0.72	03:50	0.015	11:55	0.097	0.051	0.051	0.05
10/20/2020	03:35	1.53	19:40	3.14	2.38	04:20	0.34	19:40	1.02	0.71	03:30	0.012	19:40	0.097	0.049	0.049	-
10/21/2020	02:05	1.46	18:55	3.04	2.33	02:10	0.35	18:55	0.97	0.70	02:05	0.011	18:55	0.088	0.047	0.047	0.01
10/22/2020	03:45	1.47	11:25	2.98	2.33	02:05	0.38	11:35	0.94	0.70	03:45	0.012	11:35	0.082	0.046	0.046	-
10/23/2020	03:30	1.44	12:50	3.07	2.36	02:10	0.30	19:50	0.96	0.70	02:05	0.010	19:50	0.086	0.047	0.047	0.20
10/24/2020	06:45	1.73	09:05	3.07	2.36	06:35	0.47	09:10	0.99	0.71	06:45	0.019	09:10	0.091	0.047	0.047	0.02
10/25/2020	05:55	1.45	12:20	3.10	2.35	04:30	0.34	09:00	0.99	0.69	05:25	0.011	09:00	0.090	0.047	0.047	-
10/26/2020	01:20	1.78	12:50	3.06	2.41	00:45	0.49	12:50	1.02	0.74	00:50	0.021	12:50	0.093	0.051	0.051	-
10/27/2020	04:00	1.34	19:05	3.04	2.30	03:45	0.31	19:05	0.98	0.68	03:35	0.009	19:05	0.089	0.045	0.045	-
10/28/2020	03:35	1.50	16:15	3.02	2.33	03:30	0.32	16:15	0.99	0.69	03:30	0.011	16:15	0.089	0.046	0.046	-
10/29/2020	02:15	1.58	19:25	3.19	2.37	02:15	0.37	19:25	1.02	0.70	02:15	0.013	19:25	0.099	0.048	0.048	-
10/30/2020	04:30	1.55	10:10	3.00	2.41	02:35	0.38	18:35	0.96	0.72	04:30	0.013	18:35	0.084	0.049	0.049	0.10
10/31/2020	02:20	1.58	13:10	3.27	2.40	02:30	0.41	13:10	1.01	0.72	02:15	0.015	13:10	0.101	0.050	0.050	-
11/01/2020	03:45	1.45	19:10	3.23	2.38	03:20	0.28	19:10	0.99	0.71	03:50	0.011	19:10	0.097	0.050	0.050	-
11/02/2020	04:05	1.48	17:45	3.00	2.32	03:15	0.36	13:40	0.96	0.70	03:45	0.012	17:45	0.085	0.046	0.046	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/03/2020	03:50	1.44	10:30	3.46	2.47	03:45	0.35	10:30	1.08	0.76	03:45	0.011	10:30	0.117	0.056	0.056	0.83
11/04/2020	03:45	1.47	12:55	3.18	2.34	03:50	0.38	12:50	1.02	0.70	03:50	0.012	12:50	0.097	0.047	0.047	0.09
11/05/2020	04:30	1.53	13:10	3.09	2.42	04:35	0.39	13:10	0.98	0.74	04:35	0.013	13:10	0.091	0.052	0.052	0.34
11/06/2020	05:45	1.65	10:35	3.04	2.35	05:15	0.45	10:35	0.98	0.72	04:50	0.018	10:35	0.089	0.047	0.047	0.10
11/07/2020	03:35	1.49	15:20	3.15	2.38	03:20	0.40	15:10	0.98	0.73	03:15	0.014	15:15	0.093	0.049	0.049	0.07
11/08/2020	05:15	1.36	21:05	3.17	2.38	05:15	0.36	21:00	1.01	0.72	05:20	0.010	21:00	0.096	0.050	0.050	0.01
11/09/2020	05:15	1.39	19:45	3.10	2.32	05:15	0.35	19:45	1.00	0.71	05:15	0.010	19:45	0.093	0.047	0.047	0.04
11/10/2020	03:15	1.41	09:25	3.11	2.34	02:10	0.33	09:20	0.97	0.71	03:15	0.010	09:25	0.091	0.047	0.047	0.03
11/11/2020	03:45	1.41	15:45	3.02	2.32	03:15	0.37	15:45	0.96	0.71	03:25	0.011	15:45	0.086	0.047	0.047	-
11/12/2020	05:35	1.40	11:45	3.13	2.32	04:05	0.31	11:40	1.00	0.71	05:35	0.010	11:45	0.095	0.047	0.047	0.16
11/13/2020	01:55	1.67	13:05	3.38	2.44	01:55	0.47	13:00	1.04	0.75	01:55	0.018	13:00	0.108	0.051	0.051	0.38
11/14/2020	04:10	1.56	18:45	3.47	2.42	04:15	0.40	18:40	1.08	0.73	04:10	0.014	18:40	0.117	0.052	0.052	0.47
11/15/2020	08:20	1.45	12:50	3.39	2.39	06:10	0.36	12:50	1.05	0.73	04:25	0.012	12:50	0.110	0.051	0.051	0.19
11/16/2020	02:30	1.65	13:30	3.43	2.41	03:50	0.46	13:20	1.07	0.74	02:25	0.018	13:25	0.114	0.051	0.051	0.31
11/17/2020	05:05	1.44	16:20	3.18	2.40	04:55	0.41	19:05	1.00	0.73	05:00	0.013	19:05	0.096	0.050	0.050	0.20
11/18/2020	03:45	1.46	17:50	3.23	2.42	03:50	0.37	11:35	1.00	0.73	03:35	0.012	17:50	0.099	0.052	0.052	0.30
11/19/2020	02:30	1.64	13:05	3.49	2.48	02:25	0.44	13:00	1.09	0.75	02:20	0.017	13:00	0.119	0.054	0.054	0.50
11/20/2020	05:10	1.80	16:20	2.98	2.44	05:25	0.50	11:00	0.94	0.74	05:05	0.022	11:00	0.081	0.051	0.051	0.01
11/21/2020	01:55	1.58	12:25	3.13	2.41	01:55	0.45	12:15	0.98	0.73	01:55	0.016	12:20	0.091	0.051	0.051	-
11/22/2020	05:45	1.52	13:05	3.17	2.41	03:30	0.41	13:10	0.99	0.72	05:15	0.014	13:10	0.094	0.050	0.050	0.21
11/23/2020	04:40	1.45	17:30	3.03	2.42	04:40	0.35	17:30	0.93	0.73	04:40	0.011	17:30	0.084	0.050	0.050	0.14
11/24/2020	05:05	1.59	16:15	3.24	2.41	05:00	0.44	16:10	0.99	0.72	04:55	0.016	16:15	0.098	0.050	0.050	0.21
11/25/2020	04:30	1.59	20:15	3.03	2.39	04:25	0.42	20:20	0.93	0.71	04:25	0.015	20:15	0.083	0.048	0.048	0.05
11/26/2020	05:55	1.71	13:15	3.14	2.38	05:45	0.39	13:10	0.98	0.70	05:45	0.016	13:15	0.093	0.048	0.048	0.02
11/27/2020	05:05	1.62	13:30	3.15	2.43	05:05	0.39	13:25	0.97	0.69	05:05	0.014	13:30	0.092	0.048	0.048	-
11/28/2020	05:55	1.63	13:15	3.19	2.40	05:35	0.39	13:10	1.00	0.69	05:30	0.015	13:10	0.096	0.047	0.047	0.05
11/29/2020	05:40	1.59	13:05	3.04	2.42	05:55	0.40	15:20	0.95	0.70	04:30	0.015	15:20	0.085	0.049	0.049	-
11/30/2020	03:05	1.63	14:25	3.01	2.47	03:15	0.43	21:40	0.94	0.74	03:15	0.016	18:55	0.083	0.052	0.052	0.36
12/01/2020	01:35	1.46	17:30	3.05	2.33	01:30	0.36	19:35	0.98	0.70	01:35	0.011	17:35	0.087	0.046	0.046	-
12/02/2020	03:45	1.25	20:50	3.06	2.33	03:40	0.33	20:50	0.96	0.69	03:35	0.009	20:50	0.088	0.046	0.046	0.01
12/03/2020	03:45	1.48	13:50	3.09	2.33	03:45	0.43	13:45	1.00	0.69	03:45	0.014	13:50	0.092	0.045	0.045	-
12/04/2020	03:55	1.59	20:55	2.96	2.30	03:50	0.42	19:25	0.92	0.69	03:50	0.015	20:55	0.080	0.044	0.044	-
12/05/2020	03:50	1.55	12:05	3.03	2.33	03:50	0.41	12:10	0.96	0.70	03:50	0.014	12:10	0.086	0.046	0.046	0.03
12/06/2020	03:15	1.53	13:10	3.50	2.40	03:15	0.41	12:50	1.02	0.72	03:15	0.014	13:10	0.113	0.050	0.050	0.03
12/07/2020	03:25	1.25	19:50	3.12	2.34	03:20	0.25	13:10	1.02	0.70	03:20	0.007	13:10	0.094	0.047	0.047	-
12/08/2020	04:55	1.50	19:55	3.37	2.54	04:55	0.40	19:50	1.06	0.77	04:55	0.013	19:55	0.110	0.058	0.058	0.87
12/09/2020	06:05	1.47	12:50	3.06	2.48	06:05	0.40	12:50	0.97	0.76	06:05	0.013	12:50	0.088	0.053	0.053	0.17
12/10/2020	04:00	1.49	23:25	3.46	2.41	03:55	0.40	13:05	1.05	0.69	04:00	0.013	23:20	0.110	0.048	0.048	0.07
12/11/2020	04:20	1.28	16:30	3.08	2.39	04:15	0.29	11:00	0.92	0.71	04:15	0.008	11:00	0.084	0.048	0.048	0.02
12/12/2020	05:50	1.44	20:40	3.45	2.35	05:50	0.37	20:40	1.02	0.69	05:45	0.012	20:40	0.110	0.046	0.046	0.01
12/13/2020	05:10	1.95	12:20	3.37	2.52	03:30	0.53	12:15	0.99	0.75	03:30	0.027	12:15	0.103	0.054	0.054	0.24
12/14/2020	03:50	1.56	12:40	3.15	2.37	03:25	0.42	12:30	0.95	0.70	03:15	0.015	12:40	0.091	0.047	0.047	0.05
12/15/2020	05:10	1.64	16:30	3.73	2.60	03:25	0.36	16:30	1.07	0.75	03:45	0.016	16:30	0.128	0.058	0.058	0.58
12/16/2020	04:50	1.79	17:35	3.39	2.66	04:30	0.53	17:30	0.98	0.77	04:30	0.023	17:40	0.103	0.061	0.061	0.39
12/17/2020	03:55	1.92	13:05	3.37	2.59	03:45	0.56	13:00	0.99	0.77	03:45	0.027	13:05	0.104	0.058	0.058	0.08
12/18/2020	03:05	1.76	19:40	3.32	2.53	03:20	0.51	19:30	0.97	0.75	03:20	0.021	19:40	0.099	0.054	0.054	0.25
12/19/2020	06:50	1.73	20:35	3.52	2.63	06:55	0.48	20:35	1.00	0.77	06:45	0.020	20:35	0.110	0.060	0.060	0.37
12/20/2020	05:40	2.05	11:30	3.36	2.66	05:45	0.61	12:45	1.02	0.79	05:40	0.032	12:45	0.103	0.061	0.061	0.04
12/21/2020	02:10	2.05	18:45	4.66	3.18	02:10	0.60	18:35	1.26	0.93	02:10	0.031	18:45	0.202	0.095	0.095	1.07
12/22/2020	23:10	2.59	00:00	3.52	3.05	21:45	0.78	13:10	1.05	0.92	23:10	0.056	13:15	0.114	0.084	0.084	-
12/23/2020	05:15	2.11	12:40	3.32	2.71	05:25	0.58	12:40	1.05	0.81	05:10	0.032	12:40	0.107	0.064	0.064	-
12/24/2020	04:45	1.69	12:25	3.22	2.55	04:45	0.41	12:25	1.00	0.76	04:45	0.016	12:25	0.098	0.056	0.056	-
12/25/2020	04:00	1.76	18:35	3.27	2.52	03:45	0.50	18:35	1.00	0.76	03:50	0.021	18:35	0.100	0.055	0.055	0.49
12/26/2020	04:25	1.90	13:10	3.12	2.53	06:30	0.53	12:05	0.97	0.76	06:30	0.025	12:05	0.091	0.055	0.055	0.02
12/27/2020	05:10	1.60	12:30	3.48	2.59	05:10	0.43	12:30	0.98	0.74	05:10	0.015	12:30	0.107	0.057	0.057	0.13
12/28/2020	05:00	1.71	13:05	3.24	2.50	05:00	0.48	12:55	0.95	0.74	05:00	0.019	13:05	0.094	0.053	0.053	-
12/29/2020	05:20	1.54	19:10	3.30	2.54	05:20	0.43	19:10	0.95	0.75	05:20	0.015	19:10	0.096	0.056	0.056	0.14
12/30/2020	01:05	2.20	13:40	3.92	3.15	02:10	0.64	17:25	1.08	0.88	01:05	0.038	13:40	0.136	0.087	0.087	0.78
12/31/2020	07:00	2.71	12:50	3.75	3.18	21:10	0.74	11:55	1.07	0.89	06:25	0.058	11:55	0.128	0.086	0.086	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			12.854	30.65
Average	2.73	0.76	0.063	

Auburn.TFM.WA20-22		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	AUB_A9_71031

Site Address /Location:	Frank Fulmer Park			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Entrance on 5th St NE	Latitude:	47.313160°	Pipe Size (H x W): 10 x 10	Pipe Shape: Circular
		Longitude:	-122.214022°		



Manhole #	System Characteristics
710-31	Residential
Access	Traffic
Drive	None







Installation Information	
Installation Date: Thursday, September 24, 2020	Installation Type: Doppler Standard Ring and Crank
Monitoring Location (Sensors): Upstream 0-5 FT	Monitor Location: Manhole
Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5)	Pressure Sensor Range (psi): 0 - 5 psi
Installation Confirmation:	
Time: 10:46:00 AM	Pipe Size (HxW): 10 x 10
Depth of Flow (Wet DOF) (in): 3.13	
CS5 Physical Offset (in): 1.64	Measurement Confidence (in): 0.25"
Peak Velocity (fps): 1.15	Velocity Sensor Offset (in): N/A
Silt (in): 0	Silt Type:
Hydraulic Comments:	
Manhole / Pipe Information:	
Manhole Depth (Approx. FT): 9	Manhole Configuration: Single
Manhole Material: Concrete	Manhole Condition: Good
Manhole Opening Diameter (in): 24	Manhole Diameter (Approx.): 26
Manhole Cover: Steel	Manhole Frame: Normal
Active Connections: No	Air Quality: Normal
Pipe Material: PVC	Pipe Condition: Good
Communication Information:	
Communication Type: Wireless	Antenna Location: Manhole Pick / Vent Hole
Additional Site Info. / Comments:	

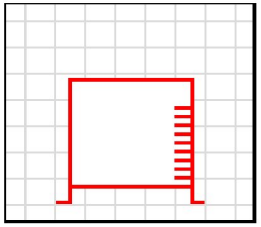
ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519

Hydrograph Report

AUB_RG

Rain Gauge

AUB_RG



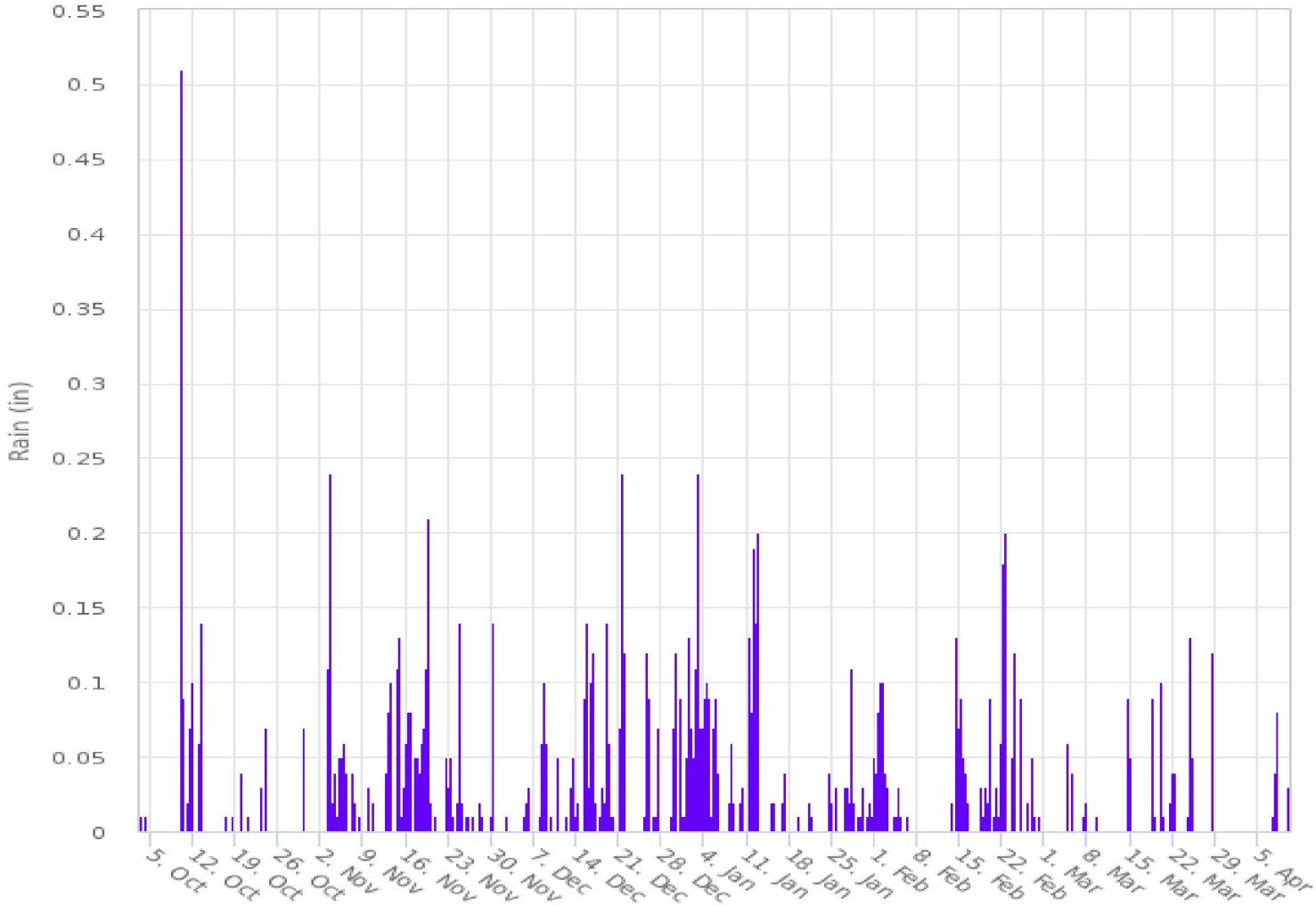
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



AUB_Y-1_41016

Site Commentary

SITE INFORMATION

Pipe	Elliptical (17.63 in H x 18 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced surcharge events during the month of January.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	5.58	1.36	0.421
Minimum	3.79	0.49	0.088
Maximum	23.30	2.25	0.907
Min Time	10/21/2020 3:00:00 AM	09/22/2020 3:00:00 AM	09/22/2020 3:00:00 AM
Max Time	01/12/2021 9:00:00 PM	02/23/2021 10:00:00 PM	01/12/2021 9:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-1_41016

Flow Monitor

AUB_Y-1_41016

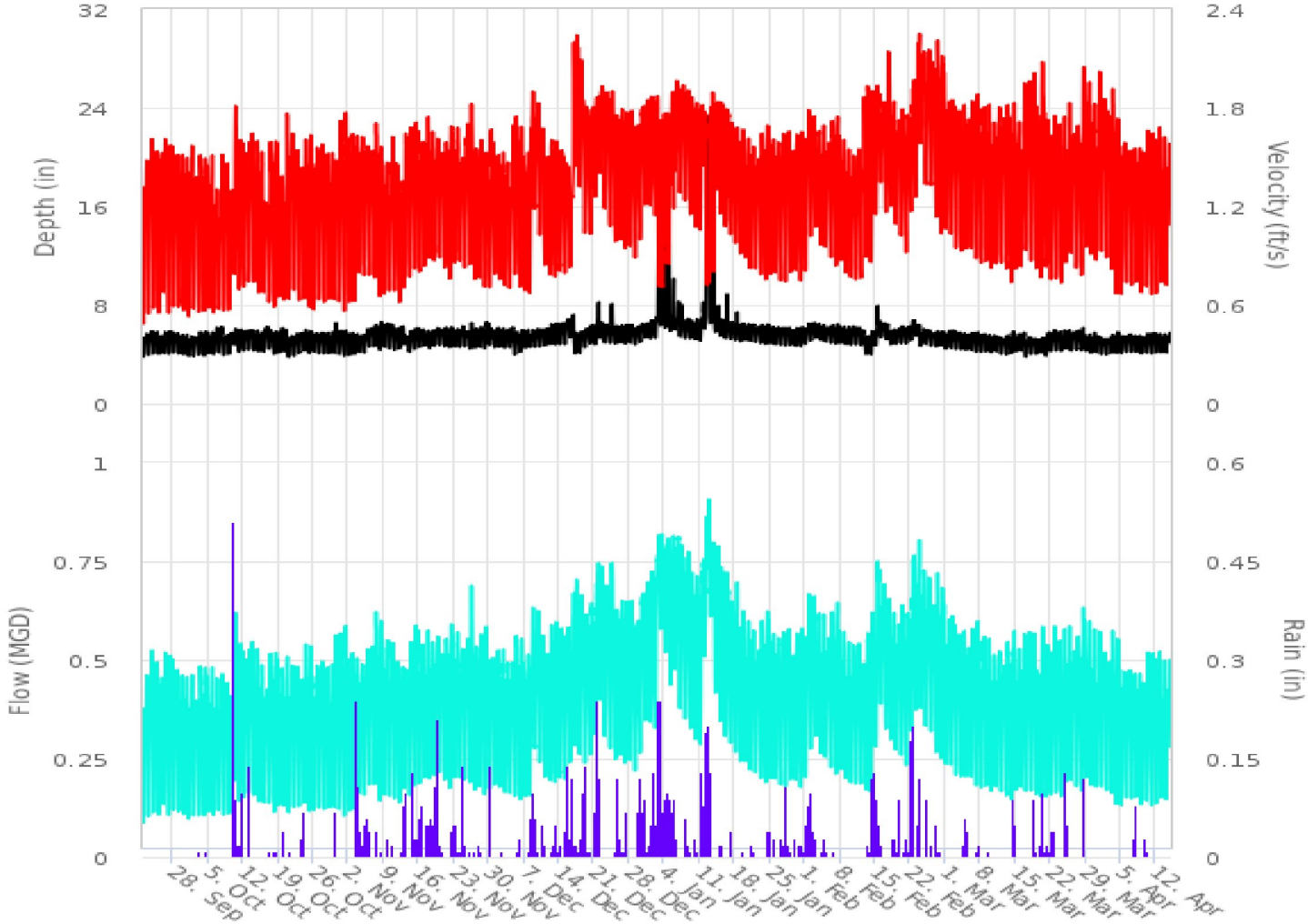
Pipe Height
17.63
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Scattergraph Report

AUB_Y-1_41016

Flow Monitor

AUB_Y-1_41016

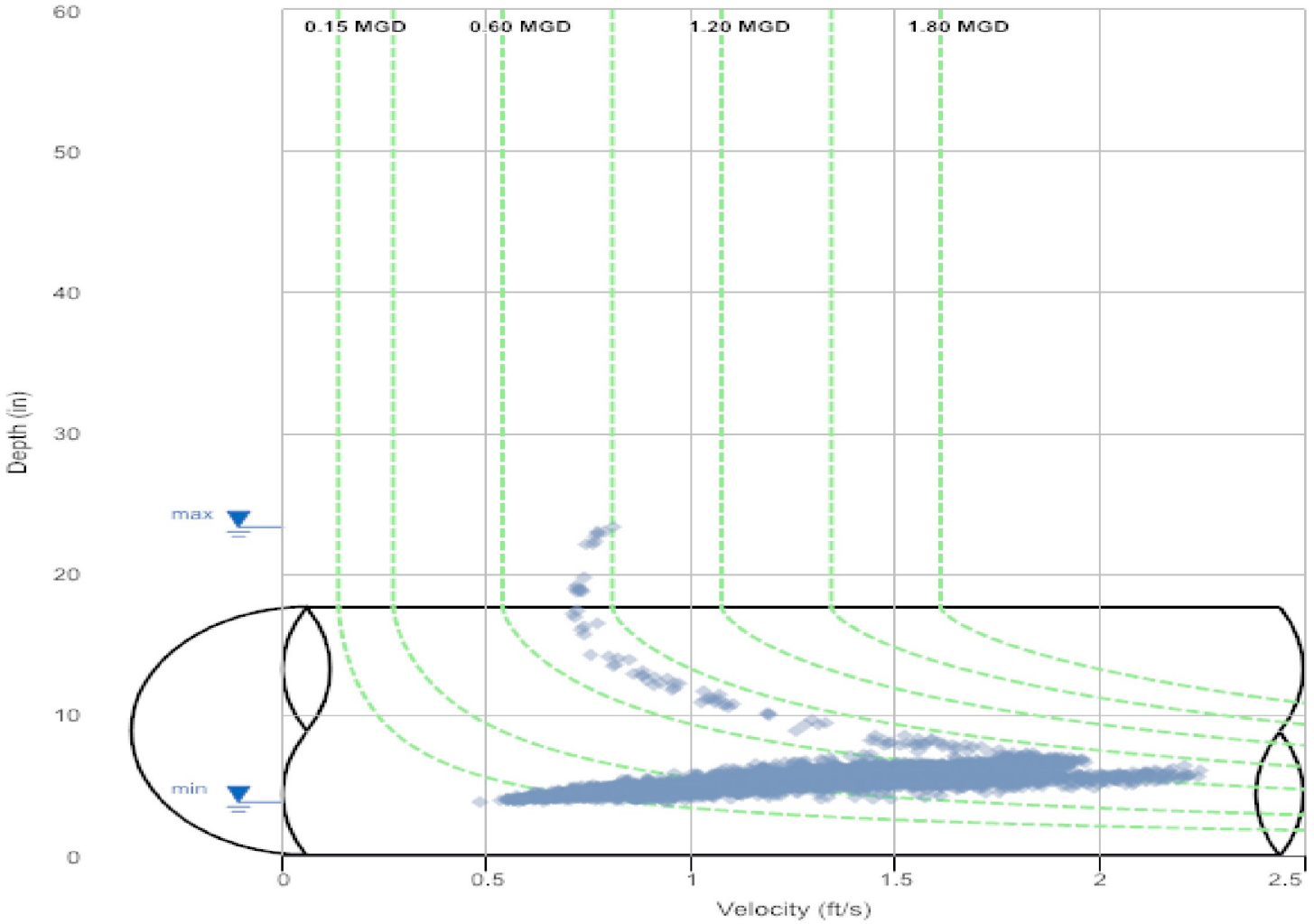
Pipe Height
17.63
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_Y-1_41016Pipe: Elliptical (17.63 in H x 18 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	06:20	5.13	16:20	6.86	6.12	04:50	0.98	12:10	1.92	1.60	04:50	0.269	13:25	0.762	0.563	0.563	0.51
01/02/2021	05:35	5.13	22:35	19.58	8.24	23:30	0.70	15:05	1.92	1.40	05:35	0.265	22:40	0.817	0.615	0.615	1.69
01/03/2021	06:30	6.30	14:15	19.43	12.12	12:05	0.69	08:55	1.86	1.10	06:40	0.550	13:15	0.829	0.738	0.738	0.65
01/04/2021	03:55	5.97	20:50	14.44	9.23	20:50	0.82	00:55	1.86	1.31	03:55	0.461	17:30	0.832	0.719	0.719	0.48
01/05/2021	04:10	5.71	21:10	10.60	6.99	21:10	1.14	17:00	1.97	1.64	04:45	0.376	19:35	0.841	0.674	0.674	0.52
01/06/2021	04:10	5.86	21:10	9.15	6.79	03:45	1.29	12:15	2.04	1.73	03:25	0.427	18:15	0.854	0.688	0.688	0.22
01/07/2021	05:00	5.29	10:50	8.69	6.36	04:45	1.14	18:35	1.97	1.69	05:00	0.321	10:15	0.833	0.621	0.621	-
01/08/2021	04:45	5.13	18:45	7.08	6.14	04:45	1.02	18:25	1.98	1.66	04:45	0.276	18:25	0.808	0.585	0.585	0.22
01/09/2021	04:55	5.05	12:25	6.80	6.08	04:55	0.96	11:10	1.91	1.57	04:55	0.256	11:40	0.755	0.546	0.546	-
01/10/2021	06:00	5.00	12:55	7.21	6.06	04:50	0.91	11:25	1.87	1.53	06:00	0.237	12:35	0.736	0.532	0.532	0.07
01/11/2021	03:30	4.89	19:00	8.74	6.40	03:30	0.88	15:20	1.88	1.53	03:30	0.224	21:40	0.789	0.577	0.577	1.06
01/12/2021	02:20	5.95	20:55	23.57	14.73	14:50	0.70	07:30	1.88	1.08	02:40	0.459	21:00	0.933	0.748	0.748	2.10
01/13/2021	04:05	6.46	00:00	18.48	9.23	00:10	0.72	15:10	1.96	1.42	05:30	0.593	18:05	0.865	0.736	0.736	0.09
01/14/2021	04:40	5.67	19:25	8.79	6.67	04:25	1.17	18:50	1.92	1.63	04:25	0.367	18:50	0.818	0.638	0.638	0.01
01/15/2021	03:50	5.34	19:50	7.13	6.27	04:05	0.98	19:25	1.92	1.57	04:05	0.284	19:45	0.760	0.569	0.569	0.09
01/16/2021	05:50	5.10	13:45	9.14	6.32	05:50	0.93	17:35	1.86	1.44	05:50	0.249	12:25	0.754	0.528	0.528	-
01/17/2021	05:30	5.04	11:45	6.70	6.03	05:30	0.85	11:45	1.80	1.43	05:30	0.225	11:45	0.701	0.492	0.492	0.10
01/18/2021	04:35	4.96	12:30	7.76	6.06	03:55	0.83	11:40	1.80	1.40	04:35	0.214	12:05	0.730	0.488	0.488	-
01/19/2021	04:00	4.83	17:25	6.57	5.98	04:00	0.74	11:25	1.76	1.37	04:00	0.185	17:50	0.655	0.470	0.470	0.01
01/20/2021	05:00	4.93	20:55	6.53	5.91	05:00	0.75	19:55	1.66	1.31	05:00	0.192	20:55	0.623	0.437	0.437	-
01/21/2021	04:20	4.90	21:00	6.49	5.92	03:10	0.67	19:15	1.62	1.29	03:10	0.170	20:55	0.598	0.433	0.433	0.11
01/22/2021	04:15	4.83	20:25	6.40	5.78	04:15	0.68	20:25	1.72	1.26	05:05	0.169	20:25	0.629	0.409	0.409	-
01/23/2021	05:10	4.57	11:25	6.42	5.78	05:10	0.58	11:25	1.70	1.29	05:10	0.135	11:25	0.624	0.423	0.423	-
01/24/2021	04:35	4.59	13:20	6.54	5.81	04:35	0.61	14:00	1.78	1.34	05:25	0.140	13:20	0.666	0.447	0.447	0.16
01/25/2021	04:35	4.65	20:10	6.32	5.72	04:35	0.63	20:10	1.71	1.31	04:35	0.148	20:10	0.617	0.420	0.420	0.04
01/26/2021	04:20	4.46	20:25	6.30	5.65	03:50	0.59	20:25	1.71	1.27	03:50	0.131	20:25	0.613	0.402	0.402	-
01/27/2021	04:30	4.56	18:40	6.45	5.64	04:30	0.61	18:40	1.82	1.29	04:30	0.141	18:40	0.673	0.405	0.405	0.14
01/28/2021	03:55	4.42	20:35	6.29	5.60	03:25	0.56	21:15	1.75	1.30	03:25	0.124	21:15	0.628	0.405	0.405	0.24
01/29/2021	04:10	4.41	11:55	6.06	5.56	04:10	0.61	13:25	1.62	1.28	04:10	0.133	13:25	0.549	0.396	0.396	0.03
01/30/2021	06:20	4.36	12:50	6.23	5.59	05:00	0.59	10:15	1.74	1.31	05:00	0.128	12:35	0.599	0.413	0.413	0.07
01/31/2021	05:35	4.38	11:25	6.32	5.64	05:35	0.58	11:25	1.77	1.32	05:35	0.126	11:25	0.640	0.422	0.422	0.12
02/01/2021	03:10	4.53	19:45	6.55	5.74	03:10	0.65	19:00	1.86	1.38	03:10	0.148	19:00	0.695	0.450	0.450	0.82
02/02/2021	04:10	4.95	21:30	6.64	6.00	04:10	0.88	20:50	1.79	1.48	04:10	0.228	20:50	0.684	0.504	0.504	0.31
02/03/2021	03:15	5.15	21:10	6.54	5.99	04:20	0.89	21:50	1.71	1.42	03:15	0.245	21:50	0.645	0.482	0.482	0.06
02/04/2021	03:20	5.00	20:15	6.50	5.87	03:20	0.80	20:55	1.80	1.38	03:55	0.209	20:55	0.664	0.455	0.455	0.07
02/05/2021	03:55	4.82	18:55	6.30	5.75	03:55	0.70	18:30	1.66	1.36	03:55	0.173	18:55	0.597	0.437	0.437	0.01
02/06/2021	05:40	4.69	11:55	6.42	5.75	04:35	0.72	13:50	1.76	1.39	05:40	0.172	14:00	0.644	0.451	0.451	0.01
02/07/2021	05:20	4.61	12:40	6.51	5.75	05:20	0.65	12:40	1.78	1.37	05:20	0.151	12:40	0.668	0.447	0.447	-
02/08/2021	04:05	4.65	19:35	6.33	5.71	03:25	0.70	20:35	1.64	1.31	03:25	0.166	20:00	0.589	0.419	0.419	-
02/09/2021	03:25	4.52	20:55	6.37	5.63	03:25	0.65	19:40	1.63	1.25	03:25	0.147	20:55	0.595	0.393	0.393	-
02/10/2021	04:10	4.48	19:35	6.33	5.66	04:10	0.59	19:30	1.56	1.22	04:10	0.133	19:35	0.563	0.385	0.385	-
02/11/2021	04:15	4.46	20:45	6.28	5.62	04:15	0.59	20:45	1.65	1.22	04:15	0.131	20:45	0.590	0.381	0.381	-
02/12/2021	04:15	4.40	19:50	6.12	5.40	04:15	0.56	20:15	1.99	1.28	04:15	0.122	19:55	0.541	0.374	0.374	-
02/13/2021	05:05	3.82	19:05	5.75	4.92	04:35	0.72	21:20	2.08	1.54	05:05	0.128	13:35	0.607	0.408	0.408	0.08
02/14/2021	05:55	3.74	13:20	5.96	5.11	06:25	0.65	13:20	1.97	1.49	06:25	0.114	13:20	0.656	0.420	0.420	0.71
02/15/2021	04:00	4.50	14:15	8.37	6.00	04:00	0.88	12:25	2.00	1.61	04:00	0.199	21:45	0.787	0.560	0.560	0.78
02/16/2021	04:00	5.19	20:30	6.64	6.04	03:45	1.16	20:15	1.88	1.65	03:45	0.322	20:30	0.723	0.562	0.562	0.07
02/17/2021	14:45	5.06	13:45	6.53	5.76	03:30	0.98	14:35	2.21	1.62	03:30	0.260	20:50	0.707	0.514	0.514	-
02/18/2021	04:10	4.51	21:05	6.15	5.51	04:10	0.92	21:05	1.97	1.60	04:10	0.208	21:05	0.683	0.484	0.484	0.09
02/19/2021	04:50	4.61	19:55	6.19	5.59	04:50	0.89	19:50	1.82	1.49	04:50	0.208	19:55	0.636	0.462	0.462	0.17
02/20/2021	05:00	4.67	12:40	6.36	5.69	06:00	0.81	10:50	1.85	1.45	06:00	0.193	12:40	0.670	0.463	0.463	0.07
02/21/2021	05:10	4.63	11:25	6.29	5.72	04:05	0.74	11:15	1.82	1.45	05:10	0.175	13:30	0.648	0.469	0.469	0.42
02/22/2021	03:40	4.93	13:55	7.02	6.08	03:20	0.96	19:25	2.01	1.65	03:20	0.252	20:45	0.799	0.578	0.578	0.98
02/23/2021	16:00	5.27	21:15	6.72	5.85	02:40	1.07	20:40	2.32	1.81	02:55	0.306	21:05	0.865	0.589	0.589	0.27
02/24/2021	03:15	4.50	19:50	6.14	5.48	03:15	1.27	10:20	2.24	1.94	03:15	0.286	19:50	0.760	0.582	0.582	-
02/25/2021	03:50	4.65	17:55	6.15	5.53	02:45	1.13	18:45	2.27	1.79	03:50	0.267	19:10	0.753	0.542	0.542	0.18
02/26/2021	04:20	4.49	09:15	5.88	5.34	04:20	1.08	09:35	2.20	1.79	04:20	0.243	09:15	0.698	0.519	0.519	0.10
02/27/2021	04:35	4.49	11:45	6.01	5.38	05:45	0.98	11:40	2.31	1.74	05:45	0.220	11:40	0.772	0.514	0.514	0.02
02/28/2021	05:00	4.50	11:30	6.03	5.40	05:00	0.81	11:30	2.19	1.70	05:00	0.183	11:30	0.740	0.504	0.504	0.02
03/01/2021	03:50	4.19	20:10	6.06	5.27	03:50	0.83	20:10	1.96	1.55	03:50	0.170	20:10	0.667	0.443	0.443	-
03/02/2021	02:45	4.27	10:05	6.28	5.29	02:45	0.83	10:05	1.99	1.51	02:45	0.173	10:05	0.713	0.435	0.435	-
03/03/2021	04:00	4.15	18:45	5.88	5.24	04:00	0.69	21:20	1.89	1.45	04:00	0.139	19:10	0.613	0.411	0.411	-
03/04/2021	04:00	4.15	19:40	6.02	5.17	04:00	0.66	20:00	1.97	1.47	04:00	0.132	19:40	0.662	0.410	0.410	0.20
03/05/2021	03:50	4.12	19:55	5.82	5.17	03:50	0.73	18:55	1.86	1.47	03:50	0.145	20:25	0.580	0.412	0.412	0.05
03/06/2021	06:20	4.10	10:15	5.93	5.17	05:30	0.73	10:15	2.01	1.50	05:30	0.144	10:15	0.665	0.423	0.423	-
03/07/2021	06:00	3.98	10:50	5.88	5.16	04:40	0.67	11:35	2.01	1.50	04:40	0.127	11:35	0.654	0.424	0.424	0.04
03/08/2021	04:25	3.99	19:50	5.87	5.07	04:25	0.68	20:15	1.94	1.43	04:25	0.130	20:40	0.631	0.392	0.392	-
03/09/2021	04:10	3.97	19:45	5.70	5.03	04:10	0.65	09:00	1.96	1.43	04:10	0.122	09:00	0.605	0.385	0.385	0.01
03/10/2021	04:20	3.92	19:40	5.63	4.99	04:20	0.60	19:40	1.91	1.37	04:20	0.110	19:40	0.588	0.365	0.365	-
03/11/2021	04:10	3.96	19:35	5.57	4.95	04:10	0.63	21:30	1.98	1.41	04:10	0.119	21:30	0.589	0.372	0.372	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:20	3.73	20:00	5.55	4.85	04:20	0.59	19:05	1.96	1.44	04:20	0.101	20:00	0.591	0.370	0.370	-
03/13/2021	05:15	3.72	11:10	5.71	4.89	04:40	0.61	14:40	2.02	1.45	04:40	0.105	11:10	0.625	0.381	0.381	-
03/14/2021	04:40	3.85	13:00	6.03	5.22	04:40	0.59	20:00	1.99	1.38	04:40	0.106	19:35	0.643	0.399	0.399	0.30
03/15/2021	03:00	3.98	20:20	5.78	5.09	02:55	0.63	20:20	1.89	1.36	02:55	0.119	20:20	0.601	0.374	0.374	-
03/16/2021	03:05	4.04	20:10	5.94	5.15	03:05	0.62	20:30	2.18	1.37	03:05	0.120	20:30	0.683	0.381	0.381	-
03/17/2021	02:45	3.54	19:45	5.51	4.76	02:15	0.67	20:50	2.09	1.52	02:15	0.110	20:50	0.625	0.382	0.382	-
03/18/2021	03:05	3.80	15:50	5.44	4.83	03:05	0.65	19:05	2.16	1.49	03:05	0.116	19:05	0.634	0.380	0.380	0.11
03/19/2021	02:30	3.79	16:50	5.62	4.79	02:30	0.61	11:30	1.95	1.45	02:30	0.107	16:50	0.553	0.367	0.367	0.03
03/20/2021	03:55	3.84	11:30	5.43	4.86	04:25	0.53	10:35	2.27	1.52	04:25	0.096	10:45	0.648	0.394	0.394	0.17
03/21/2021	03:45	3.65	19:45	5.88	5.07	03:45	0.63	10:25	1.87	1.38	03:45	0.106	13:10	0.606	0.384	0.384	0.07
03/22/2021	03:00	4.00	20:05	6.08	5.22	03:55	0.58	20:05	1.82	1.30	03:55	0.112	20:05	0.621	0.371	0.371	0.11
03/23/2021	03:30	4.01	20:25	5.91	5.13	02:55	0.53	20:00	1.79	1.28	02:55	0.102	20:25	0.589	0.355	0.355	-
03/24/2021	02:25	3.99	20:40	6.05	5.15	02:25	0.54	20:40	1.84	1.29	02:25	0.102	20:40	0.625	0.362	0.362	0.34
03/25/2021	02:35	4.25	19:35	6.10	5.42	03:20	0.65	20:40	1.92	1.37	03:20	0.137	20:40	0.623	0.407	0.407	0.27
03/26/2021	02:25	4.10	18:45	5.96	5.28	02:25	0.74	11:30	1.84	1.40	02:25	0.146	11:30	0.591	0.402	0.402	-
03/27/2021	03:20	4.11	11:40	6.03	5.34	03:20	0.62	11:40	1.80	1.36	03:20	0.122	11:40	0.607	0.400	0.400	-
03/28/2021	04:25	3.98	13:05	6.34	5.26	04:25	0.58	13:30	2.27	1.52	04:25	0.109	13:30	0.753	0.440	0.440	0.37
03/29/2021	03:30	4.04	19:55	5.77	5.00	03:30	0.73	20:45	2.06	1.57	03:30	0.141	19:55	0.649	0.419	0.419	-
03/30/2021	03:35	3.86	20:20	5.87	5.02	03:35	0.67	07:50	1.99	1.45	03:35	0.121	20:20	0.637	0.391	0.391	-
03/31/2021	03:15	3.88	16:55	5.70	4.98	02:45	0.61	19:40	2.16	1.44	02:45	0.113	19:40	0.631	0.383	0.383	-
04/01/2021	03:25	3.73	21:15	5.37	4.81	02:50	0.67	14:55	1.99	1.49	03:25	0.116	21:15	0.568	0.377	0.377	-
04/02/2021	03:15	3.75	20:25	5.46	4.86	02:45	0.66	18:00	1.95	1.46	02:45	0.115	18:00	0.553	0.376	0.376	-
04/03/2021	03:55	3.89	09:35	5.78	5.03	03:00	0.63	10:10	2.03	1.41	03:55	0.116	10:10	0.634	0.385	0.385	-
04/04/2021	03:20	3.81	13:05	5.92	5.12	03:20	0.48	09:55	1.87	1.31	03:20	0.085	10:00	0.609	0.369	0.369	-
04/05/2021	03:55	3.82	21:45	5.60	5.01	03:55	0.51	20:50	1.69	1.25	03:55	0.090	20:50	0.511	0.336	0.336	-
04/06/2021	03:35	3.91	20:25	5.72	5.08	03:35	0.55	08:50	1.66	1.25	03:35	0.102	20:05	0.504	0.341	0.341	-
04/07/2021	02:35	3.93	20:00	5.64	5.01	02:35	0.55	18:10	1.74	1.23	02:35	0.102	18:10	0.534	0.330	0.330	0.22
04/08/2021	02:55	3.93	20:05	5.71	5.01	02:55	0.54	20:05	1.69	1.24	02:55	0.101	20:05	0.530	0.335	0.335	-
04/09/2021	03:10	3.81	11:05	5.50	4.98	03:45	0.51	18:00	1.69	1.25	03:45	0.091	18:00	0.501	0.333	0.333	0.03
04/10/2021	03:55	3.84	11:10	5.83	5.03	04:25	0.54	10:35	1.78	1.28	04:25	0.097	10:35	0.573	0.348	0.348	0.02
04/11/2021	03:15	3.76	09:45	5.84	5.13	04:20	0.49	13:40	1.73	1.29	04:20	0.087	09:45	0.557	0.364	0.364	-
04/12/2021	03:40	3.82	20:35	5.79	5.07	03:05	0.50	20:30	1.79	1.25	03:05	0.090	20:35	0.570	0.342	0.342	-
04/13/2021	03:10	3.79	19:00	5.74	5.01	03:10	0.54	18:30	1.73	1.23	03:10	0.095	19:25	0.542	0.332	0.332	-
04/14/2021	02:40	3.80	20:50	5.85	5.11	02:40	0.51	19:30	1.71	1.22	02:40	0.090	20:25	0.550	0.338	0.337	-
09/22/2020	04:00	3.51	20:00	5.79	4.98	03:55	0.35	20:55	1.56	1.12	04:00	0.055	20:55	0.498	0.304	0.304	-
09/23/2020	02:45	3.57	20:05	6.01	5.09	03:25	0.37	19:15	1.72	1.19	03:25	0.060	19:15	0.573	0.334	0.334	-
09/24/2020	03:00	3.69	20:15	5.94	5.15	03:00	0.41	18:55	1.64	1.16	03:00	0.070	18:55	0.537	0.328	0.328	-
09/25/2020	04:00	3.72	19:55	5.73	5.07	02:40	0.42	19:55	1.66	1.24	02:40	0.073	19:55	0.524	0.340	0.340	-
09/26/2020	04:05	3.86	10:05	5.93	5.13	04:05	0.51	10:05	1.71	1.24	04:35	0.092	10:05	0.566	0.349	0.349	-
09/27/2020	03:45	3.77	11:40	6.02	5.17	03:45	0.42	09:25	1.70	1.20	03:45	0.074	09:25	0.569	0.344	0.344	-
09/28/2020	03:05	3.76	20:10	5.82	5.07	03:05	0.41	20:10	1.60	1.14	03:05	0.071	20:10	0.514	0.314	0.314	-
09/29/2020	02:30	3.76	20:20	5.65	4.96	02:25	0.43	08:00	1.61	1.15	02:30	0.075	21:50	0.495	0.308	0.308	-
09/30/2020	03:00	3.62	20:15	5.71	4.96	03:00	0.39	11:30	1.60	1.16	03:00	0.064	11:30	0.493	0.311	0.311	-
10/01/2020	03:05	3.61	21:00	5.61	4.86	03:50	0.38	20:05	1.69	1.16	03:50	0.063	20:05	0.511	0.302	0.302	-
10/02/2020	02:50	3.44	08:45	5.56	4.92	02:50	0.40	20:00	1.52	1.14	02:50	0.061	20:00	0.458	0.302	0.302	-
10/03/2020	04:35	3.52	10:35	5.89	5.07	04:35	0.37	10:25	1.58	1.13	04:35	0.059	10:35	0.513	0.315	0.315	0.01
10/04/2020	04:45	3.49	11:50	5.92	5.14	04:45	0.37	14:20	1.59	1.15	04:45	0.058	14:20	0.521	0.330	0.330	0.01
10/05/2020	02:30	3.75	20:10	5.86	5.10	02:30	0.41	20:10	1.66	1.12	02:30	0.071	20:10	0.539	0.312	0.312	-
10/06/2020	02:20	3.69	20:00	6.32	5.28	02:20	0.42	19:15	1.39	1.01	02:20	0.071	20:25	0.489	0.296	0.296	-
10/07/2020	02:55	3.71	19:20	6.59	5.34	02:55	0.41	20:15	1.69	1.02	02:55	0.070	20:15	0.552	0.302	0.302	-
10/08/2020	02:55	3.53	20:00	5.72	4.95	02:55	0.38	21:15	1.63	1.12	02:55	0.061	21:15	0.511	0.301	0.301	-
10/09/2020	02:35	3.69	17:50	5.97	5.20	03:45	0.39	17:50	1.46	1.08	03:45	0.067	17:50	0.487	0.308	0.308	0.64
10/10/2020	04:40	4.46	10:50	6.18	5.51	04:40	0.66	10:50	1.91	1.38	04:40	0.147	10:50	0.668	0.421	0.421	1.04
10/11/2020	04:05	3.92	10:55	6.12	5.38	04:35	0.55	10:55	1.75	1.29	04:35	0.103	10:55	0.605	0.388	0.388	0.53
10/12/2020	03:15	4.00	19:05	6.14	5.32	02:45	0.58	19:05	1.66	1.24	02:45	0.111	19:05	0.576	0.364	0.364	-
10/13/2020	01:55	3.95	07:55	6.09	5.39	02:45	0.43	07:55	1.79	1.31	02:45	0.082	07:55	0.612	0.393	0.393	0.61
10/14/2020	03:10	4.00	19:20	6.02	5.28	02:40	0.58	18:55	1.66	1.25	03:10	0.110	18:55	0.561	0.361	0.361	-
10/15/2020	02:50	3.87	19:45	5.88	5.20	02:50	0.50	19:45	1.59	1.21	02:50	0.092	19:55	0.520	0.344	0.344	-
10/16/2020	03:40	3.91	19:30	6.45	5.52	02:05	0.50	08:15	1.33	1.06	02:05	0.093	19:35	0.462	0.327	0.327	-
10/17/2020	03:35	4.07	08:45	6.38	5.32	03:35	0.50	10:25	1.66	1.18	03:35	0.097	10:25	0.543	0.348	0.348	0.01
10/18/2020	04:50	3.75	11:10	5.97	5.17	04:10	0.44	13:00	1.73	1.22	04:10	0.079	11:10	0.571	0.351	0.351	0.03
10/19/2020	02:40	3.80	18:35	6.46	5.38	02:40	0.47	18:35	1.51	1.11	02:40	0.084	18:35	0.561	0.332	0.332	0.05
10/20/2020	03:10	3.79	16:50	6.59	5.23	03:10	0.45	18:20	1.94	1.16	03:10	0.080	18:20	0.558	0.330	0.330	-
10/21/2020	03:15	3.59	20:05	5.76	4.81	03:15	0.49	20:00	1.78	1.29	03:15	0.080	20:00	0.563	0.331	0.331	0.01
10/22/2020	03:40	3.60	20:00	5.82	4.91	02:30	0.47	20:00	1.69	1.22	03:40	0.077	20:00	0.546	0.323	0.323	-
10/23/2020	02:50	3.76	19:35	5.92	5.19	02:50	0.45	19:35	1.61	1.15	02:50	0.079	19:35	0.530	0.327	0.327	0.20
10/24/2020	04:35	3.88	11:15	6.06	5.28	04:35	0.45	10:00	1.69	1.19	04:35	0.082	10:00	0.568	0.351	0.351	0.02
10/25/2020	04:05	3.67	11:35	6.00	5.21	04:05	0.40	11:25	1.72	1.18	04:05	0.067	11:35	0.570	0.344	0.344	-
10/26/2020	04:15	3.88	18:35	5.84	5.11	02:25	0.42	18:35	1.67	1.18	02:25	0.078	18:35	0.539	0.329	0.329	-
10/27/2020	02:40	3.75	20:10	5.91	5.06	02:40	0.48	18:50	1.64	1.18	02:40	0.083	20:10	0.533	0.325	0.325	-
10/28/2020	02:45	3.73	20:05	5.85	5.09	02:45	0.43	20:05	1.59	1.18	02:45	0.074	20:05	0.514	0.328	0.328	-
10/29/2020	03:40	3.74	19:35	5.94	5.09	03:40	0.43	19:35	1.67	1.17	03:40	0.075	19:35	0.553	0.324	0.324	-
10/30/2020	03:15	3.77	13:45	8.61	5.16	03:15	0.46	13:35	1.93	1.21	03:15	0.081	13:35	0.803	0.343	0.343	0.10
10/31/2020	03:50	3.71	11:30	6.03	5.11	03:50	0.44	10:15	1.80	1.27	03:50	0.076	11:30	0.606	0.359	0.359	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	04:55	3.54	10:05	6.05	5.13	04:55	0.38	11:15	1.93	1.29	04:55	0.062	11:15	0.655	0.371	0.371	-
11/02/2020	03:45	3.55	19:45	5.83	5.05	03:45	0.39	19:00	1.71	1.27	03:45	0.063	20:10	0.541	0.351	0.351	-
11/03/2020	03:55	3.70	18:15	5.87	5.08	03:55	0.44	19:20	1.75	1.31	03:55	0.074	18:15	0.559	0.363	0.363	0.83
11/04/2020	03:35	3.91	21:10	5.71	5.05	03:35	0.56	21:10	1.70	1.32	03:35	0.103	21:10	0.533	0.359	0.359	0.09
11/05/2020	04:10	3.76	21:05	6.14	5.23	04:10	0.52	10:15	1.70	1.29	04:10	0.092	21:50	0.571	0.371	0.371	0.34
11/06/2020	04:10	4.36	20:50	6.26	5.60	04:05	0.61	09:45	1.64	1.27	04:05	0.131	09:45	0.581	0.398	0.398	0.10
11/07/2020	05:25	4.24	10:40	6.48	5.66	04:50	0.54	13:15	1.83	1.29	04:50	0.114	13:15	0.681	0.415	0.415	0.07
11/08/2020	05:45	3.95	11:00	6.71	5.84	05:45	0.47	10:55	1.65	1.24	05:45	0.089	10:55	0.637	0.419	0.419	0.01
11/09/2020	05:00	4.14	21:20	6.60	5.82	03:55	0.48	21:00	1.54	1.15	03:55	0.097	21:00	0.586	0.386	0.386	0.04
11/10/2020	04:20	3.92	18:10	6.89	5.70	03:20	0.46	20:15	1.76	1.15	03:20	0.086	20:15	0.602	0.370	0.370	0.03
11/11/2020	04:50	4.07	21:05	6.41	5.45	03:45	0.52	12:45	1.58	1.21	03:45	0.103	21:05	0.568	0.369	0.369	-
11/12/2020	03:20	3.99	09:45	6.39	5.65	03:20	0.44	22:00	1.44	1.08	03:20	0.084	22:00	0.520	0.345	0.345	0.16
11/13/2020	03:15	4.45	07:35	6.46	5.24	03:10	0.57	09:25	1.77	1.32	03:10	0.128	07:35	0.612	0.370	0.370	0.38
11/14/2020	06:50	4.00	10:30	5.99	5.27	06:20	0.60	11:55	1.78	1.35	06:50	0.115	11:55	0.595	0.395	0.395	0.47
11/15/2020	05:40	4.22	12:05	6.21	5.50	05:10	0.66	12:50	1.79	1.37	05:40	0.135	12:50	0.620	0.424	0.424	0.19
11/16/2020	03:50	4.30	20:00	6.11	5.46	03:50	0.61	19:45	1.69	1.28	03:50	0.128	19:45	0.575	0.389	0.389	0.31
11/17/2020	04:05	4.42	20:05	5.99	5.33	04:05	0.63	20:05	1.79	1.37	04:05	0.139	20:05	0.599	0.399	0.399	0.20
11/18/2020	04:10	4.23	19:30	6.06	5.39	04:10	0.69	19:30	1.77	1.38	04:10	0.141	19:30	0.602	0.409	0.409	0.30
11/19/2020	03:55	4.45	22:10	6.20	5.58	02:45	0.73	22:10	1.67	1.32	02:50	0.164	22:10	0.586	0.411	0.411	0.50
11/20/2020	03:40	4.55	18:50	6.10	5.59	03:20	0.75	18:50	1.60	1.31	03:20	0.174	18:50	0.551	0.406	0.406	0.01
11/21/2020	04:35	4.26	11:25	6.24	5.58	04:35	0.62	12:55	1.66	1.31	04:35	0.129	13:20	0.585	0.410	0.410	-
11/22/2020	06:00	4.21	13:25	6.26	5.60	04:15	0.61	14:05	1.75	1.34	06:00	0.125	12:45	0.618	0.426	0.426	0.21
11/23/2020	03:25	4.27	19:30	6.15	5.52	03:25	0.65	19:30	1.76	1.36	03:25	0.137	19:30	0.613	0.417	0.417	0.14
11/24/2020	04:05	4.26	19:40	6.40	5.59	02:40	0.69	21:30	1.57	1.28	04:05	0.143	21:30	0.574	0.401	0.401	0.21
11/25/2020	04:05	4.29	08:55	6.24	5.46	05:15	0.61	11:35	1.78	1.38	05:15	0.130	08:55	0.625	0.416	0.416	0.05
11/26/2020	05:25	4.19	12:35	6.68	5.60	03:25	0.65	12:25	1.89	1.40	05:25	0.132	12:30	0.726	0.446	0.446	0.02
11/27/2020	05:45	4.22	13:15	6.23	5.47	05:45	0.61	12:00	1.62	1.24	05:45	0.125	12:00	0.561	0.378	0.378	-
11/28/2020	04:15	4.21	13:55	6.34	5.54	04:15	0.61	13:55	1.67	1.26	04:15	0.125	13:55	0.606	0.392	0.392	0.05
11/29/2020	05:50	4.13	13:10	6.68	5.82	05:50	0.55	12:55	1.56	1.19	05:50	0.110	12:45	0.601	0.399	0.399	-
11/30/2020	03:25	4.42	08:25	6.35	5.51	03:25	0.59	09:05	1.93	1.29	03:25	0.130	09:05	0.658	0.391	0.391	0.36
12/01/2020	04:15	4.19	20:55	6.25	5.49	04:15	0.59	21:35	1.60	1.24	04:15	0.120	20:55	0.562	0.377	0.377	-
12/02/2020	03:50	4.17	21:25	6.20	5.51	03:50	0.56	21:20	1.57	1.21	03:50	0.113	21:25	0.552	0.369	0.369	0.01
12/03/2020	04:45	4.16	21:15	6.14	5.47	05:10	0.54	21:15	1.62	1.19	05:10	0.112	21:15	0.560	0.361	0.361	-
12/04/2020	04:25	4.10	20:05	6.54	5.50	04:25	0.54	20:35	1.89	1.19	04:25	0.106	13:00	0.555	0.360	0.360	-
12/05/2020	04:15	3.79	11:55	5.90	5.11	04:15	0.60	11:35	1.81	1.38	04:15	0.105	11:55	0.587	0.385	0.385	0.03
12/06/2020	05:55	3.95	14:05	6.07	5.34	05:55	0.54	11:35	1.76	1.30	05:55	0.100	12:25	0.596	0.387	0.387	0.03
12/07/2020	04:10	4.26	20:30	6.11	5.42	03:45	0.52	20:30	1.62	1.19	03:45	0.108	20:30	0.557	0.358	0.358	-
12/08/2020	04:35	4.30	09:10	6.39	5.30	03:10	0.52	20:05	1.99	1.41	03:10	0.110	20:30	0.671	0.410	0.410	0.87
12/09/2020	03:55	4.41	20:30	6.15	5.43	04:25	0.93	20:30	1.90	1.56	04:25	0.208	20:30	0.659	0.464	0.464	0.17
12/10/2020	03:40	4.46	18:30	6.13	5.47	04:40	0.84	20:45	1.77	1.45	04:40	0.189	20:45	0.609	0.438	0.438	0.07
12/11/2020	04:05	4.46	18:20	6.20	5.64	04:05	0.67	20:15	1.59	1.29	04:05	0.149	20:15	0.555	0.404	0.404	0.02
12/12/2020	04:35	4.52	11:00	6.63	5.75	04:35	0.59	10:25	1.66	1.28	04:35	0.134	11:00	0.635	0.418	0.418	0.01
12/13/2020	05:30	4.46	11:40	6.62	5.81	06:10	0.61	11:40	1.67	1.28	05:30	0.138	11:40	0.639	0.424	0.424	0.24
12/14/2020	03:55	4.52	13:40	6.70	5.90	03:30	0.62	11:00	1.66	1.27	03:30	0.142	11:05	0.646	0.429	0.429	0.05
12/15/2020	03:50	4.42	20:10	6.97	6.05	03:50	0.62	09:50	1.52	1.22	03:50	0.135	20:05	0.616	0.428	0.428	0.58
12/16/2020	23:55	4.89	20:35	7.28	6.24	04:00	0.71	21:20	2.36	1.29	04:00	0.187	21:05	0.755	0.457	0.457	0.39
12/17/2020	03:20	3.83	09:45	5.91	5.09	04:35	1.16	12:50	2.32	2.00	04:35	0.211	11:20	0.748	0.546	0.546	0.08
12/18/2020	04:05	3.86	13:20	6.02	5.19	04:25	1.03	09:00	2.14	1.76	04:05	0.190	13:20	0.700	0.493	0.493	0.25
12/19/2020	04:10	4.34	18:20	6.19	5.52	05:10	0.82	11:25	1.89	1.51	05:10	0.175	11:30	0.653	0.465	0.465	0.37
12/20/2020	06:05	4.69	11:10	6.42	5.72	04:50	0.87	21:00	1.88	1.52	04:50	0.210	11:10	0.673	0.489	0.489	0.04
12/21/2020	04:30	4.60	21:20	8.94	6.15	04:30	1.06	22:45	1.98	1.62	04:30	0.246	21:55	0.776	0.571	0.571	1.07
12/22/2020	04:15	5.19	12:05	6.74	6.03	04:15	1.29	12:45	2.05	1.76	04:15	0.356	12:45	0.775	0.601	0.601	-
12/23/2020	04:00	4.83	11:50	6.50	5.86	04:00	1.05	15:45	1.95	1.67	04:00	0.261	11:50	0.715	0.551	0.551	-
12/24/2020	05:05	4.73	13:10	8.31	6.05	05:05	0.90	11:20	1.95	1.55	05:05	0.218	11:40	0.809	0.537	0.537	-
12/25/2020	05:35	4.63	12:35	6.37	5.76	05:35	0.75	11:50	1.83	1.49	05:35	0.175	12:35	0.647	0.484	0.484	0.49
12/26/2020	05:35	4.73	11:55	6.45	5.77	05:55	0.81	13:25	1.88	1.46	05:55	0.197	13:25	0.696	0.474	0.474	0.02
12/27/2020	05:40	4.62	13:25	6.44	5.79	05:40	0.76	15:25	1.89	1.46	05:40	0.178	15:25	0.697	0.480	0.480	0.13
12/28/2020	03:35	4.75	12:05	6.44	5.78	03:15	0.79	12:00	1.84	1.45	03:15	0.193	12:05	0.679	0.472	0.472	-
12/29/2020	04:25	4.59	20:10	6.30	5.64	04:25	0.73	11:35	1.76	1.38	04:25	0.169	20:10	0.618	0.434	0.434	0.14
12/30/2020	03:55	4.67	12:55	6.55	5.93	03:55	0.75	12:55	1.84	1.52	03:55	0.178	12:55	0.697	0.513	0.513	0.78
12/31/2020	03:55	5.15	17:20	6.67	6.06	03:55	1.10	11:45	1.95	1.60	03:55	0.298	17:15	0.744	0.552	0.552	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			86.275	30.65
Average	5.58	1.36	0.421	

Auburn.TFM.WA20-22

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

AUB_Y-1_41016

Site Address /Location:	Green River Rd SE		
Site Access Details:	Park at Pump Station Along Green River	Latitude:	47.330137°
		Longitude:	-122.210973°

Monitor Series	Location Type
TRITON+	Temporary
Pipe Size (H x W)	Pipe Shape
17.63 x 18.00	Circular
Manhole #	System Characteristics
Y-1 (410-16)	Residential
Access	Traffic
Drive	None









ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.22.325

Installation Information

Installation Date:	Installation Type:
Thursday, May 14, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
14:04:00 PM	17.63 x 18.00
Depth of Flow (Wet DOF) (in)	
4.63"	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.69	0"
Silt (in)	Silt Type
0.00"	

Hydraulic Comments:
Screen structure downstream

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
3	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26	
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Fair

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

Green River Siphon Downstream

AUB_Y-2_61102

Site Commentary

SITE INFORMATION

Pipe	Elliptical (14.25 in H x 14.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.10	9.02	1.095
Minimum	1.93	6.02	0.362
Maximum	5.82	11.70	2.995
Min Time	10/03/2020 3:00:00 AM	11/10/2020 4:00:00 AM	11/01/2020 4:00:00 AM
Max Time	01/03/2021 12:00:00 AM	01/12/2021 11:00:00 AM	01/03/2021 12:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

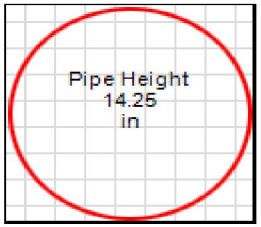
Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-2_61102

Flow Monitor

AUB_Y-2_61102



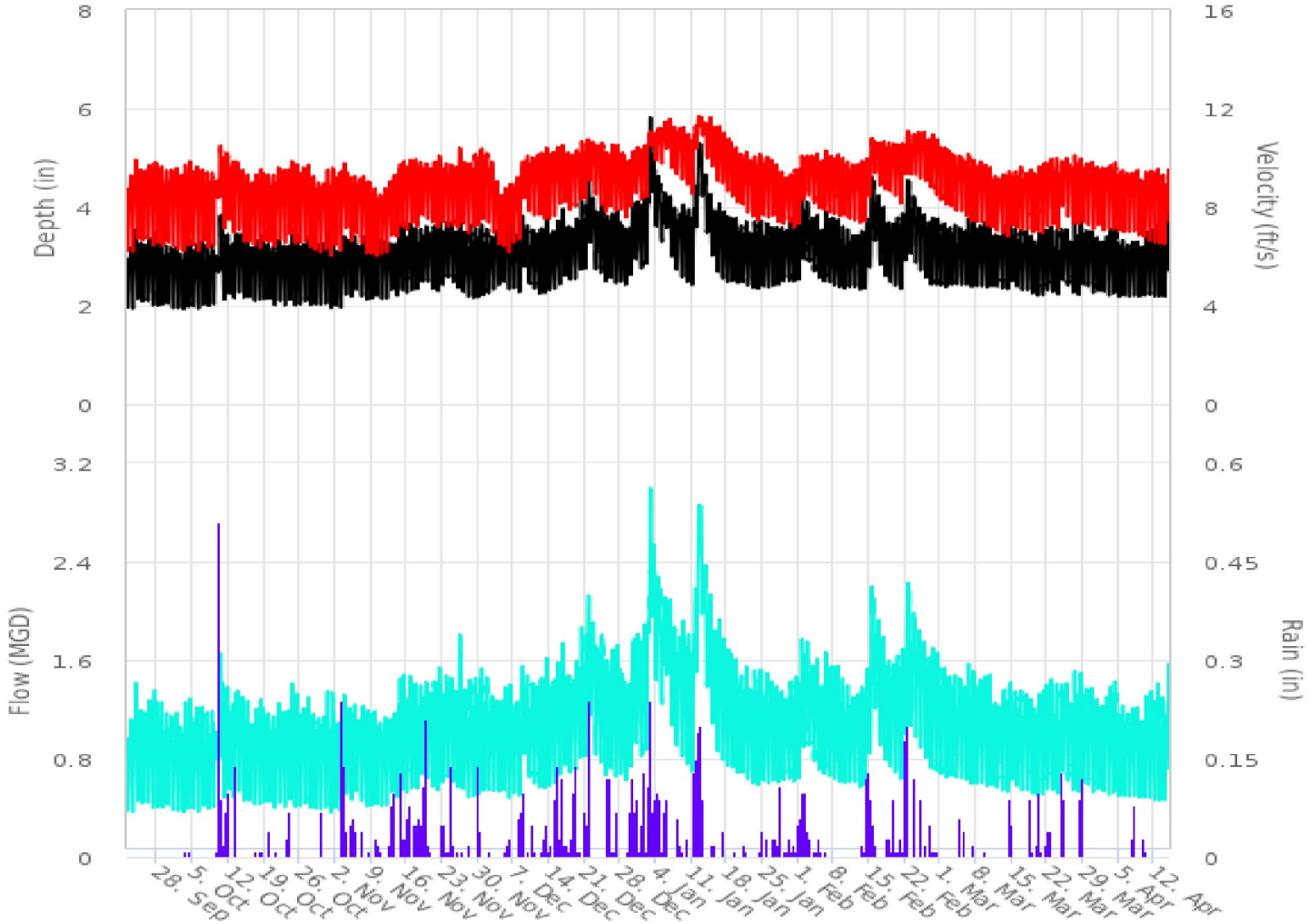
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



Scattergraph Report

AUB_Y-2_61102

Flow Monitor

AUB_Y-2_61102

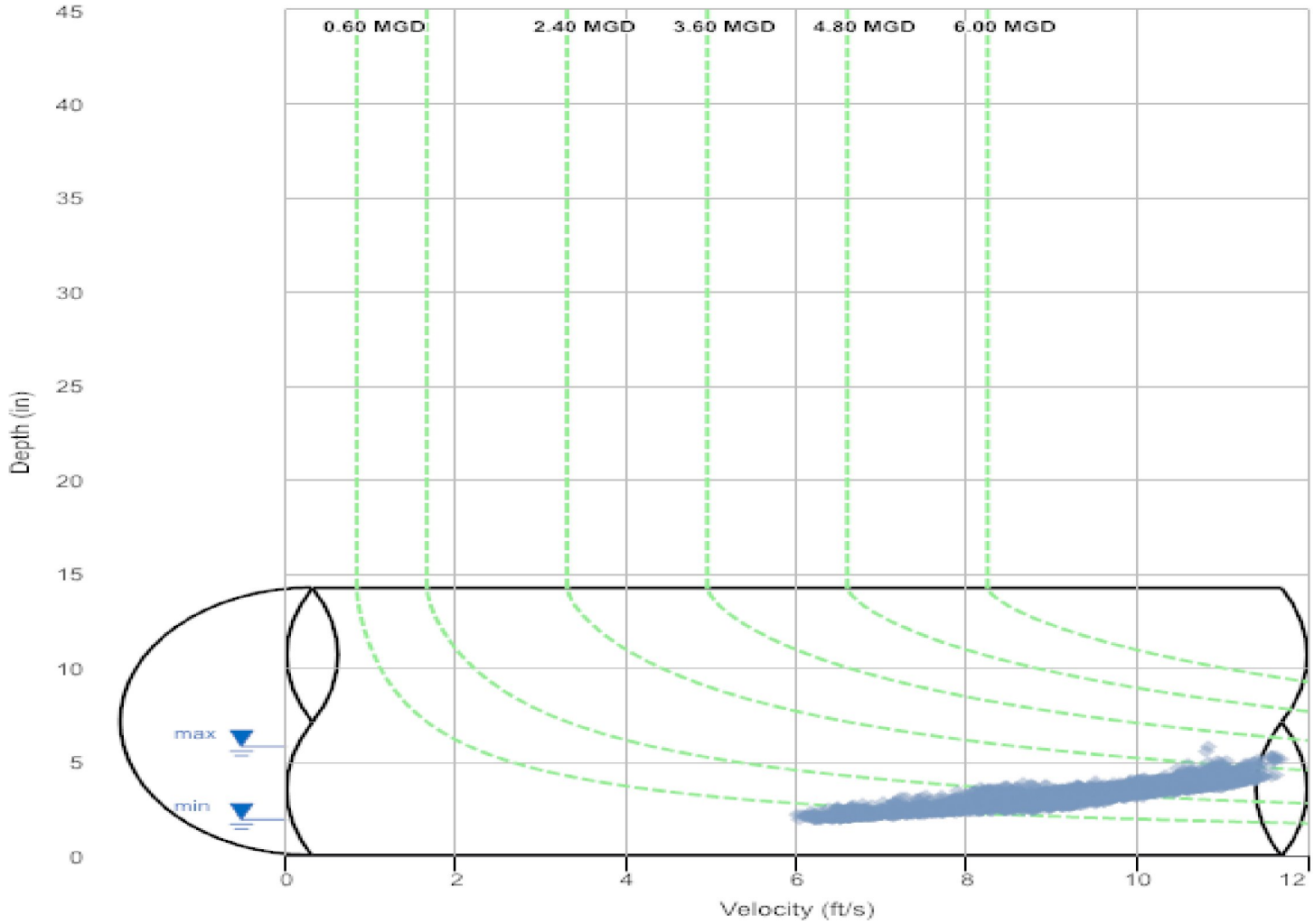
Pipe Height
14.25
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_Y-2_61102Pipe: Elliptical (14.25 in H x 14.5 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	04:30	2.68	18:10	4.76	3.53	04:30	7.91	11:15	11.29	9.61	04:30	0.751	18:10	2.369	1.380	1.380	0.51
01/02/2021	04:05	2.78	23:55	7.63	3.87	04:05	8.11	21:25	11.52	9.97	04:05	0.812	23:55	3.936	1.641	1.641	1.69
01/03/2021	05:15	4.15	00:10	8.06	4.71	00:10	9.89	01:00	11.42	10.83	05:15	1.826	00:10	4.199	2.280	2.280	0.65
01/04/2021	03:50	3.43	17:55	5.11	4.23	03:50	9.69	15:25	11.49	10.75	03:50	1.306	13:35	2.664	1.955	1.955	0.48
01/05/2021	05:05	3.09	13:20	4.59	3.86	05:05	9.30	23:30	11.81	10.74	05:05	1.081	13:20	2.375	1.723	1.723	0.52
01/06/2021	02:05	3.50	19:45	4.61	3.95	02:35	10.10	18:00	11.93	11.10	03:20	1.428	18:00	2.422	1.835	1.835	0.22
01/07/2021	04:20	2.69	20:30	4.53	3.63	04:20	9.31	18:50	11.67	10.68	04:20	0.890	20:30	2.316	1.577	1.577	-
01/08/2021	02:05	2.58	18:15	4.34	3.45	02:05	8.98	14:40	11.64	10.49	02:05	0.810	18:15	2.152	1.444	1.444	0.22
01/09/2021	04:40	2.47	11:55	4.41	3.43	02:25	8.66	11:35	11.70	10.33	04:40	0.756	10:20	2.233	1.421	1.421	-
01/10/2021	04:35	2.42	12:20	4.47	3.32	05:40	8.58	15:35	11.51	10.10	05:40	0.707	12:20	2.248	1.329	1.329	0.07
01/11/2021	03:10	2.30	21:40	4.84	3.51	03:55	8.15	11:15	11.58	10.20	03:10	0.637	20:50	2.474	1.468	1.468	1.06
01/12/2021	02:15	3.51	19:45	6.03	4.71	01:10	10.26	09:05	12.03	11.28	02:15	1.441	19:45	3.461	2.392	2.392	2.10
01/13/2021	23:55	3.99	00:55	5.22	4.54	13:45	10.74	01:20	11.89	11.19	23:55	1.798	00:55	2.781	2.239	2.239	0.09
01/14/2021	03:55	3.15	00:15	4.73	3.92	03:40	9.62	18:45	11.95	10.93	03:55	1.169	00:15	2.395	1.791	1.791	0.01
01/15/2021	03:15	2.91	13:35	4.36	3.60	03:15	9.26	16:10	12.12	10.70	03:15	0.990	13:35	2.277	1.559	1.559	0.09
01/16/2021	04:10	2.48	12:05	4.80	3.48	05:45	8.63	10:00	11.97	10.37	04:10	0.760	12:05	2.578	1.456	1.456	-
01/17/2021	05:50	2.44	11:05	4.47	3.35	04:45	8.58	11:05	11.61	10.11	05:50	0.724	11:05	2.271	1.348	1.348	0.10
01/18/2021	04:40	2.22	12:40	4.42	3.29	04:40	8.10	11:15	11.54	9.89	04:40	0.587	12:40	2.199	1.287	1.287	-
01/19/2021	04:05	2.39	23:00	4.41	3.24	04:45	7.81	20:50	11.11	9.68	04:05	0.640	23:00	2.110	1.227	1.227	0.01
01/20/2021	03:20	2.34	15:55	4.31	3.14	02:55	7.34	17:20	11.49	9.49	03:20	0.604	17:20	2.136	1.148	1.148	-
01/21/2021	02:35	2.36	20:35	4.71	3.14	03:30	7.64	16:50	11.14	9.38	02:30	0.610	20:35	2.308	1.138	1.138	0.11
01/22/2021	03:40	2.28	18:45	4.30	3.07	03:30	7.27	12:15	10.96	9.21	03:40	0.554	18:45	1.956	1.082	1.082	-
01/23/2021	05:15	2.26	14:20	4.22	3.09	06:00	7.16	09:55	10.95	9.09	05:15	0.544	22:25	1.871	1.087	1.087	-
01/24/2021	04:10	2.13	20:20	4.33	3.17	04:10	6.35	10:20	10.94	9.17	04:10	0.432	10:20	2.017	1.144	1.144	0.16
01/25/2021	02:45	2.27	14:15	4.41	3.07	02:05	7.02	15:40	10.82	9.17	02:05	0.528	20:55	1.999	1.080	1.080	0.04
01/26/2021	04:25	2.23	20:55	4.48	3.05	04:25	7.13	20:55	10.83	9.05	04:25	0.520	20:55	2.125	1.054	1.054	-
01/27/2021	04:10	2.30	16:45	4.59	3.05	03:00	6.91	16:45	10.61	8.92	04:10	0.537	16:45	2.152	1.039	1.039	0.14
01/28/2021	04:50	2.34	13:40	4.58	3.15	04:50	6.96	12:20	10.47	8.76	04:50	0.545	13:40	2.092	1.067	1.067	0.24
01/29/2021	03:45	2.34	11:05	4.41	3.16	04:25	6.57	09:05	10.26	8.61	03:45	0.543	11:05	1.905	1.049	1.049	0.03
01/30/2021	05:05	2.43	12:45	4.44	3.18	05:05	6.92	08:40	9.85	8.61	05:05	0.569	12:45	1.892	1.067	1.067	0.07
01/31/2021	04:20	2.26	21:35	4.79	3.21	06:50	6.37	15:05	10.63	8.71	03:15	0.515	15:05	2.259	1.099	1.099	0.12
02/01/2021	03:45	2.46	21:05	5.04	3.34	03:50	7.06	18:20	10.61	8.99	03:50	0.593	21:05	2.388	1.200	1.200	0.82
02/02/2021	03:35	2.90	19:35	4.77	3.61	04:10	8.10	20:50	10.64	9.49	04:50	0.860	20:50	2.269	1.395	1.395	0.31
02/03/2021	05:10	2.76	10:40	4.47	3.46	04:05	8.22	17:15	10.90	9.53	05:10	0.836	17:40	2.059	1.317	1.317	0.06
02/04/2021	02:00	2.64	19:05	4.42	3.28	05:15	7.90	19:05	11.03	9.37	05:15	0.747	19:05	2.121	1.205	1.205	0.07
02/05/2021	01:10	2.48	15:25	4.30	3.19	03:00	7.60	15:25	10.74	9.29	04:00	0.673	15:25	1.987	1.148	1.148	0.01
02/06/2021	05:00	2.18	12:55	4.77	3.25	05:20	7.33	11:05	10.91	9.30	05:00	0.518	12:55	2.256	1.195	1.195	0.01
02/07/2021	05:50	2.32	11:20	4.53	3.19	05:50	7.27	20:35	10.62	9.20	05:50	0.562	11:20	2.081	1.149	1.149	-
02/08/2021	02:30	2.14	21:20	4.51	3.11	04:05	7.19	15:05	11.10	9.22	02:30	0.509	21:20	2.153	1.107	1.107	-
02/09/2021	03:25	2.31	11:25	4.51	3.03	04:05	7.15	22:00	10.94	9.12	03:25	0.551	11:25	2.046	1.054	1.054	-
02/10/2021	04:05	2.27	15:25	4.36	2.99	04:45	7.02	16:40	10.82	9.01	04:45	0.530	15:25	2.033	1.020	1.020	-
02/11/2021	03:30	2.28	15:55	4.42	2.99	03:30	6.97	15:55	10.86	8.93	03:30	0.525	15:55	2.089	1.010	1.010	-
02/12/2021	04:20	2.21	19:35	4.41	2.99	04:20	6.88	17:55	10.81	8.90	04:20	0.496	19:35	1.989	1.010	1.010	-
02/13/2021	05:55	2.21	12:05	4.22	2.99	05:55	6.44	14:55	10.92	8.89	05:55	0.464	12:05	1.899	1.013	1.013	0.08
02/14/2021	03:35	2.19	14:00	4.74	3.14	03:35	6.73	15:55	10.71	8.94	03:35	0.478	14:00	2.234	1.102	1.102	0.71
02/15/2021	04:00	2.69	13:15	5.08	3.80	04:15	8.07	13:15	11.27	9.90	04:00	0.773	13:15	2.626	1.594	1.594	0.78
02/16/2021	05:10	3.20	14:45	4.88	3.85	03:00	9.13	19:45	11.15	10.17	04:05	1.127	14:45	2.392	1.624	1.624	0.07
02/17/2021	04:20	2.79	20:05	4.69	3.46	03:35	8.67	15:20	11.31	9.95	04:20	0.875	20:05	2.331	1.377	1.377	-
02/18/2021	03:35	2.52	14:10	4.50	3.26	04:15	8.14	20:20	11.44	9.87	04:15	0.724	14:10	2.248	1.258	1.258	0.09
02/19/2021	04:10	2.35	19:20	4.42	3.18	03:45	8.21	20:15	11.41	9.84	04:10	0.649	19:20	2.175	1.213	1.213	0.17
02/20/2021	06:05	2.34	13:10	4.53	3.16	06:05	7.96	19:20	11.47	9.75	06:05	0.623	13:10	2.213	1.200	1.200	0.07
02/21/2021	05:10	2.29	19:25	4.48	3.21	04:10	7.80	09:20	11.33	9.72	05:10	0.599	17:15	2.139	1.229	1.229	0.42
02/22/2021	04:25	2.71	14:00	5.07	3.85	03:25	8.85	12:45	11.56	10.40	03:55	0.864	20:35	2.594	1.685	1.685	0.98
02/23/2021	03:15	2.98	13:10	4.70	3.72	03:10	9.20	22:05	11.45	10.30	03:15	1.016	13:10	2.381	1.576	1.576	0.27
02/24/2021	03:30	2.76	19:35	4.63	3.55	03:20	8.97	17:00	11.58	10.38	03:35	0.913	19:35	2.337	1.485	1.485	-
02/25/2021	02:50	2.51	18:00	4.44	3.43	02:00	8.65	15:55	11.69	10.38	02:50	0.758	18:00	2.263	1.416	1.416	0.18
02/26/2021	04:20	2.44	08:55	4.45	3.27	03:45	8.63	19:00	11.70	10.21	03:45	0.724	08:55	2.266	1.304	1.304	0.10
02/27/2021	04:10	2.39	11:20	4.58	3.26	05:30	8.49	11:20	11.73	10.06	04:10	0.693	11:20	2.370	1.290	1.290	0.02
02/28/2021	05:20	2.33	12:05	4.61	3.23	05:00	8.05	12:05	11.61	9.86	05:00	0.628	12:05	2.371	1.253	1.253	0.02
03/01/2021	04:20	2.33	18:50	4.40	3.12	04:20	7.82	21:20	11.49	9.67	04:20	0.609	18:50	2.163	1.165	1.165	-
03/02/2021	03:05	2.29	12:45	4.26	3.07	03:45	7.48	12:45	11.44	9.50	03:05	0.576	12:45	2.093	1.115	1.115	-
03/03/2021	04:05	2.23	15:55	4.26	3.10	04:00	7.38	21:15	11.27	9.41	04:00	0.541	15:55	1.963	1.121	1.121	-
03/04/2021	04:00	2.31	16:50	4.54	3.02	03:15	7.18	19:05	11.08	9.20	02:50	0.556	16:50	2.166	1.055	1.055	0.20
03/05/2021	03:45	2.35	22:05	4.34	3.08	03:25	7.35	22:05	11.15	9.19	03:45	0.577	22:05	2.090	1.085	1.085	0.05
03/06/2021	03:50	2.35	21:05	4.55	3.11	05:05	7.22	08:30	10.93	9.06	05:05	0.567	21:05	2.184	1.089	1.089	-
03/07/2021	05:30	2.22	14:30	4.48	3.15	05:30	6.86	14:30	10.79	8.99	05:30	0.496	14:30	2.115	1.108	1.108	0.04
03/08/2021	04:10	2.33	20:25	4.68	3.08	04:25	7.03	20:25	10.82	8.93	04:25	0.547	20:25	2.251	1.054	1.054	-
03/09/2021	03:45	2.27	21:25	4.49	3.05	02:10	6.65	13:25	10.62	8.83	03:00	0.520	19:20	2.058	1.028	1.028	0.01
03/10/2021	02:55	2.25	19:40	4.42	3.05	04:25	6.84	17:15	10.59	8.66	04:25	0.505	19:40	1.931	1.010	1.010	-
03/11/2021	04:15	2.15	14:15	4.36	3.04	03:20	6.63	18:20	10.27	8.50	04:15	0.478	14:15	1.937	0.987	0.987	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	05:15	2.28	20:30	4.07	3.05	03:50	6.74	08:40	10.25	8.42	05:15	0.514	20:30	1.622	0.975	0.975	-
03/13/2021	05:15	2.21	12:05	4.68	3.11	04:10	6.31	21:05	10.25	8.44	05:15	0.468	12:05	2.114	1.017	1.017	-
03/14/2021	04:10	2.20	20:15	4.82	3.15	04:10	6.39	15:30	10.27	8.49	04:10	0.455	20:15	2.207	1.044	1.044	0.30
03/15/2021	03:00	2.35	16:30	4.45	3.10	03:20	6.77	15:35	10.39	8.55	03:00	0.538	16:30	1.969	1.017	1.017	-
03/16/2021	01:50	2.27	20:15	4.64	3.03	03:10	6.68	17:20	10.75	8.62	03:10	0.502	20:15	2.134	0.998	0.998	-
03/17/2021	03:15	2.22	21:10	4.56	2.99	02:40	6.77	21:25	10.39	8.60	03:15	0.491	21:10	2.036	0.975	0.975	-
03/18/2021	02:15	2.20	18:40	4.46	2.94	03:10	6.70	09:00	10.41	8.62	03:10	0.484	19:20	2.008	0.952	0.952	0.11
03/19/2021	03:25	2.16	10:05	4.43	2.90	03:25	6.47	10:05	10.62	8.63	03:25	0.450	10:05	2.052	0.937	0.937	0.03
03/20/2021	03:05	2.11	19:05	4.52	2.99	03:00	6.76	20:40	10.86	8.78	03:00	0.458	19:05	2.029	1.004	1.004	0.17
03/21/2021	04:20	2.13	19:45	4.62	2.98	03:50	6.65	15:50	10.76	8.83	03:50	0.455	19:45	2.187	1.009	1.009	0.07
03/22/2021	02:30	2.22	20:50	4.44	2.98	03:50	6.76	18:35	11.03	8.94	03:50	0.497	20:50	2.066	1.016	1.016	0.11
03/23/2021	02:25	2.22	19:00	4.47	2.90	02:50	6.77	15:10	11.09	8.87	02:50	0.491	19:00	2.066	0.966	0.966	-
03/24/2021	02:20	2.13	18:55	4.40	2.90	01:35	6.69	18:55	10.71	8.83	02:20	0.461	18:55	2.047	0.961	0.961	0.34
03/25/2021	03:45	2.37	18:10	4.31	3.13	03:45	7.37	13:50	11.08	9.30	03:45	0.586	18:10	2.024	1.124	1.124	0.27
03/26/2021	03:10	2.34	08:30	4.34	2.98	02:50	6.96	08:30	10.75	9.04	02:50	0.548	08:30	2.017	1.014	1.014	-
03/27/2021	04:15	2.13	10:05	4.65	2.98	04:15	6.78	10:05	10.93	9.04	04:15	0.462	10:05	2.257	1.028	1.028	-
03/28/2021	03:55	2.11	18:55	4.59	3.07	02:35	6.70	14:35	10.71	9.00	03:55	0.469	14:35	2.145	1.070	1.070	0.37
03/29/2021	03:05	2.32	19:20	4.36	3.03	03:25	6.90	10:05	10.88	8.88	03:05	0.540	10:05	2.027	1.027	1.027	-
03/30/2021	02:20	2.26	19:40	4.38	2.95	01:25	6.26	21:15	10.89	8.81	01:25	0.476	19:40	2.014	0.982	0.982	-
03/31/2021	02:40	2.17	18:20	4.25	2.92	02:40	6.60	19:50	10.88	8.74	02:40	0.463	19:50	1.944	0.960	0.960	-
04/01/2021	02:55	2.11	17:50	4.20	2.91	02:55	6.71	08:00	10.73	8.74	02:55	0.452	12:05	1.880	0.953	0.953	-
04/02/2021	03:15	2.15	09:20	4.47	2.93	03:15	6.63	06:55	10.77	8.78	03:15	0.459	21:35	2.053	0.967	0.967	-
04/03/2021	04:00	2.13	16:50	4.33	2.95	05:30	6.54	15:05	10.69	8.68	04:25	0.450	16:50	1.930	0.971	0.971	-
04/04/2021	03:50	2.14	13:10	4.36	2.94	05:20	6.63	08:30	10.89	8.66	05:20	0.459	22:40	1.928	0.969	0.969	-
04/05/2021	03:05	2.03	09:25	4.33	2.84	02:40	6.62	18:35	10.75	8.60	03:05	0.423	09:25	1.991	0.906	0.906	-
04/06/2021	02:55	2.12	16:30	4.09	2.81	01:40	6.55	09:00	10.59	8.55	02:55	0.453	09:00	1.778	0.887	0.887	-
04/07/2021	03:10	2.07	19:45	4.27	2.80	03:10	6.46	19:45	10.66	8.55	03:10	0.423	19:45	1.957	0.885	0.885	0.22
04/08/2021	02:50	2.10	10:25	4.34	2.86	03:55	6.63	06:45	10.71	8.57	02:50	0.446	10:25	2.010	0.915	0.915	-
04/09/2021	03:45	2.10	19:45	4.16	2.83	03:10	6.46	18:25	10.48	8.39	03:45	0.436	19:45	1.836	0.881	0.881	0.03
04/10/2021	03:50	2.10	16:45	4.36	2.97	03:50	6.35	13:35	10.30	8.44	03:50	0.424	16:45	1.941	0.956	0.956	0.02
04/11/2021	06:00	1.95	12:40	4.51	2.98	03:20	6.10	12:05	10.62	8.44	06:00	0.400	12:05	2.053	0.966	0.966	-
04/12/2021	00:50	2.00	19:50	4.66	2.94	03:00	6.08	20:15	10.61	8.41	00:50	0.403	19:50	2.126	0.941	0.941	-
04/13/2021	04:30	2.06	18:55	4.50	2.89	03:10	5.96	06:30	10.40	8.31	03:10	0.391	18:55	2.040	0.901	0.901	-
04/14/2021	03:15	2.09	21:00	4.75	2.90	02:35	6.01	18:10	10.37	8.17	03:45	0.400	21:00	2.111	0.893	0.890	-
09/22/2020	02:20	1.87	17:15	4.11	2.70	02:10	5.73	17:15	10.65	8.13	02:20	0.328	17:15	1.850	0.802	0.802	-
09/23/2020	03:20	1.83	18:35	4.48	2.83	03:15	5.65	18:50	11.05	8.42	03:20	0.308	18:50	2.153	0.899	0.899	-
09/24/2020	03:05	2.03	08:40	4.08	2.82	03:05	6.28	16:10	10.84	8.47	03:05	0.399	08:40	1.821	0.884	0.884	-
09/25/2020	03:10	1.99	13:50	4.32	2.83	02:30	5.96	13:50	10.73	8.54	02:30	0.370	13:50	2.001	0.905	0.905	-
09/26/2020	05:30	1.95	13:45	4.23	2.83	05:30	5.80	13:45	10.90	8.56	05:30	0.349	13:45	1.974	0.909	0.909	-
09/27/2020	04:20	1.94	12:10	4.25	2.84	04:20	5.88	19:45	11.11	8.55	04:20	0.349	19:30	1.968	0.918	0.918	-
09/28/2020	03:00	1.93	09:35	4.12	2.74	03:00	5.90	17:50	10.64	8.42	03:00	0.348	09:35	1.846	0.852	0.852	-
09/29/2020	02:30	1.93	08:05	4.06	2.70	03:35	6.05	16:25	10.47	8.31	02:30	0.360	08:05	1.777	0.819	0.819	-
09/30/2020	03:00	1.90	15:10	3.96	2.72	02:20	6.01	13:30	10.81	8.37	02:50	0.350	21:30	1.682	0.834	0.834	-
10/01/2020	03:35	1.86	19:00	4.29	2.67	03:35	5.63	16:45	10.87	8.33	03:35	0.315	19:00	1.989	0.812	0.812	-
10/02/2020	02:50	1.83	11:15	3.86	2.65	02:30	5.42	15:50	10.75	8.35	02:30	0.311	15:50	1.706	0.801	0.801	-
10/03/2020	02:35	1.80	12:45	4.08	2.67	03:45	5.75	10:45	11.22	8.36	02:35	0.310	12:45	1.890	0.821	0.821	0.01
10/04/2020	03:30	1.87	12:30	4.43	2.72	05:25	5.81	13:15	11.01	8.46	03:30	0.330	12:30	2.115	0.854	0.854	0.01
10/05/2020	02:25	1.89	08:35	4.19	2.72	03:05	6.05	19:25	11.09	8.42	02:25	0.349	16:50	1.931	0.843	0.843	-
10/06/2020	02:55	1.87	18:55	4.08	2.69	02:15	5.81	18:55	11.15	8.32	02:55	0.329	18:55	1.918	0.820	0.820	-
10/07/2020	02:55	1.91	17:05	4.18	2.69	02:55	5.89	17:05	10.99	8.27	02:55	0.344	17:05	1.960	0.815	0.815	-
10/08/2020	03:35	1.77	18:40	4.20	2.69	02:50	5.79	11:30	10.69	8.27	03:35	0.317	18:40	1.900	0.814	0.814	-
10/09/2020	02:25	1.87	09:30	3.98	2.67	02:25	6.07	19:10	10.85	8.25	02:25	0.343	21:00	1.749	0.800	0.800	0.64
10/10/2020	01:05	2.55	14:30	4.46	3.18	03:50	7.79	18:05	11.37	9.49	01:05	0.699	14:30	2.183	1.172	1.172	1.04
10/11/2020	05:50	2.02	16:40	4.26	2.93	05:50	6.14	11:25	11.50	9.09	05:50	0.388	16:40	2.027	1.021	1.021	0.53
10/12/2020	02:40	2.18	21:10	4.23	2.85	05:30	6.99	11:20	11.26	8.97	02:40	0.506	21:10	2.017	0.951	0.951	-
10/13/2020	02:45	2.06	18:55	4.34	2.95	02:00	6.25	18:55	11.08	8.89	02:00	0.409	18:55	2.082	0.994	0.994	0.61
10/14/2020	03:05	2.14	19:45	4.19	2.88	03:05	6.67	19:45	10.74	8.48	03:05	0.459	19:45	1.917	0.910	0.910	-
10/15/2020	02:50	1.85	19:20	4.40	2.88	03:35	5.44	09:10	10.51	8.29	02:50	0.329	19:20	1.993	0.895	0.895	-
10/16/2020	03:00	2.09	12:25	4.28	2.85	01:45	5.96	12:25	10.50	8.21	01:45	0.406	12:25	1.930	0.873	0.873	-
10/17/2020	04:00	2.01	16:05	4.17	2.86	04:00	5.98	16:55	10.39	8.28	04:00	0.375	20:50	1.816	0.893	0.893	0.01
10/18/2020	04:10	2.00	14:55	4.39	2.91	04:10	5.87	13:10	10.70	8.37	04:10	0.365	14:55	2.030	0.926	0.926	0.03
10/19/2020	03:15	2.05	15:25	4.44	2.85	05:00	5.96	19:15	10.75	8.35	03:05	0.412	15:25	2.047	0.892	0.892	0.05
10/20/2020	03:10	1.99	20:05	4.15	2.80	03:10	6.20	12:20	10.35	8.29	03:10	0.383	20:05	1.810	0.857	0.857	-
10/21/2020	02:55	1.92	19:00	4.10	2.76	03:00	5.92	19:55	10.73	8.29	03:00	0.349	09:20	1.793	0.846	0.846	0.01
10/22/2020	02:30	1.98	15:15	4.31	2.71	03:40	6.11	20:50	10.70	8.35	03:40	0.376	15:15	1.982	0.829	0.829	-
10/23/2020	02:50	1.90	17:55	4.21	2.71	01:15	5.92	19:45	10.91	8.40	01:15	0.349	17:55	1.897	0.833	0.833	0.20
10/24/2020	03:00	1.98	11:55	4.29	2.77	03:55	6.39	11:55	10.73	8.59	03:00	0.397	11:55	1.985	0.885	0.885	0.02
10/25/2020	05:10	1.84	09:05	4.31	2.78	05:10	5.71	13:50	10.92	8.53	05:10	0.316	09:05	2.023	0.890	0.890	-
10/26/2020	03:00	1.96	18:50	4.21	2.75	02:15	6.22	18:50	10.77	8.44	02:55	0.379	18:50	1.935	0.858	0.858	-
10/27/2020	02:45	1.94	19:45	4.12	2.76	01:40	5.85	19:45	10.82	8.37	02:45	0.353	19:45	1.890	0.855	0.855	-
10/28/2020	02:45	1.87	12:10	4.05	2.78	02:40	5.44	17:50	10.82	8.24	02:45	0.318	17:50	1.757	0.849	0.849	-
10/29/2020	01:45	1.85	18:55	4.35	2.80	02:55	5.75	18:55	10.29	8.03	02:30	0.347	18:55	1.939	0.832	0.832	-
10/30/2020	03:20	1.92	18:50	4.05	2.82	03:20	5.67	18:50	10.23	8.03	03:20	0.333	18:50	1.742	0.846	0.846	0.10
10/31/2020	04:20	1.97	11:45	4.38	2.81	03:40	5.66	12:55	10.50	8.14	03:40	0.353	11:45	1.984	0.860	0.860	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	04:55	1.81	12:20	4.64	2.77	04:55	5.52	11:05	10.87	8.28	04:55	0.297	12:20	2.236	0.862	0.862	-
11/02/2020	03:50	1.94	20:55	4.24	2.69	02:30	6.14	20:55	11.10	8.32	03:50	0.368	20:55	2.014	0.817	0.817	-
11/03/2020	04:00	1.82	18:50	4.27	2.81	04:00	5.55	18:50	11.15	8.56	04:00	0.301	18:50	2.044	0.904	0.904	0.83
11/04/2020	04:40	2.13	23:05	4.25	2.83	03:25	6.83	12:10	10.82	8.61	04:40	0.475	09:55	1.935	0.898	0.898	0.09
11/05/2020	04:10	2.09	18:10	4.32	2.87	03:35	6.22	16:15	10.35	8.29	04:10	0.418	18:10	1.895	0.892	0.892	0.34
11/06/2020	03:00	2.12	17:35	4.19	2.86	03:00	6.07	11:15	10.23	8.34	03:00	0.412	17:35	1.800	0.885	0.885	0.10
11/07/2020	04:05	2.12	14:10	4.31	2.86	05:20	6.10	15:10	10.40	8.23	05:25	0.413	15:10	1.887	0.886	0.886	0.07
11/08/2020	05:50	2.04	20:35	4.31	2.91	05:05	5.67	20:35	10.04	8.07	05:05	0.369	20:35	1.865	0.890	0.890	0.01
11/09/2020	03:25	2.00	16:05	4.03	2.92	04:45	5.52	18:35	9.70	7.76	04:45	0.351	16:05	1.624	0.855	0.855	0.04
11/10/2020	04:25	2.08	13:35	3.79	2.92	04:20	5.10	13:35	9.38	7.61	04:25	0.342	13:35	1.454	0.835	0.835	0.03
11/11/2020	04:25	2.05	22:00	4.31	2.87	03:45	5.63	18:30	9.77	7.74	03:45	0.367	18:30	1.798	0.833	0.833	-
11/12/2020	03:25	2.05	18:20	4.12	2.80	03:20	5.69	21:50	10.11	7.93	03:25	0.367	18:20	1.653	0.823	0.823	0.16
11/13/2020	03:15	2.20	14:00	4.19	2.92	03:15	6.49	14:00	10.45	8.46	03:15	0.465	14:00	1.869	0.925	0.925	0.38
11/14/2020	05:05	2.05	18:55	4.41	2.94	05:05	6.25	18:55	10.79	8.58	05:05	0.404	18:55	2.067	0.963	0.963	0.47
11/15/2020	05:40	2.23	15:50	4.49	3.01	05:40	6.93	15:50	10.93	8.85	05:40	0.505	15:50	2.149	1.022	1.022	0.19
11/16/2020	03:25	2.17	20:45	4.46	3.03	04:35	6.67	20:45	10.71	8.85	04:35	0.479	20:45	2.085	1.028	1.028	0.31
11/17/2020	04:05	2.21	17:25	4.33	2.98	03:10	7.03	20:45	10.75	8.85	04:05	0.515	17:25	1.970	1.001	1.001	0.20
11/18/2020	03:05	2.25	20:00	4.29	3.00	02:15	6.42	14:40	10.84	8.88	02:15	0.489	14:40	1.949	1.013	1.013	0.30
11/19/2020	03:10	2.29	15:35	4.40	3.10	03:30	6.92	10:25	10.71	9.04	03:30	0.530	15:35	2.050	1.078	1.078	0.50
11/20/2020	04:25	2.36	20:40	4.48	3.04	04:25	6.99	10:55	10.74	8.88	04:25	0.553	20:40	2.053	1.026	1.026	0.01
11/21/2020	05:00	2.29	11:15	4.31	3.06	03:50	6.83	18:05	10.93	8.94	03:50	0.525	11:15	1.995	1.054	1.054	-
11/22/2020	05:10	2.21	11:50	4.53	3.06	04:15	6.84	14:10	11.07	8.92	06:05	0.500	11:50	2.135	1.058	1.058	0.21
11/23/2020	03:30	2.36	20:15	4.66	3.13	03:00	7.00	19:20	10.90	8.87	03:00	0.565	20:15	2.236	1.071	1.071	0.14
11/24/2020	03:25	2.35	18:45	4.66	3.15	03:25	6.74	18:05	10.91	8.61	03:25	0.528	18:45	2.178	1.050	1.050	0.21
11/25/2020	05:10	2.35	18:45	4.56	3.10	05:10	6.09	20:45	10.73	8.69	05:10	0.478	18:45	2.071	1.034	1.034	0.05
11/26/2020	04:35	2.28	10:45	4.62	3.14	04:15	6.73	14:25	10.83	8.92	03:30	0.512	12:20	2.177	1.103	1.103	0.02
11/27/2020	04:05	2.19	17:50	4.19	2.89	04:05	6.54	11:00	10.94	8.75	04:05	0.464	11:00	1.888	0.947	0.947	-
11/28/2020	05:00	2.09	12:50	4.48	2.93	05:20	6.32	23:00	10.97	8.73	05:00	0.430	12:50	2.048	0.974	0.974	0.05
11/29/2020	05:55	2.09	16:20	4.33	2.96	05:55	6.75	16:20	11.30	9.06	05:55	0.447	16:20	2.115	1.027	1.027	-
11/30/2020	03:20	2.12	20:00	4.30	3.02	03:05	6.61	20:30	11.75	9.26	03:05	0.449	20:00	2.088	1.073	1.073	0.36
12/01/2020	03:50	2.16	20:15	4.25	2.92	05:00	7.10	18:50	11.58	9.18	03:50	0.499	20:15	2.037	1.012	1.012	-
12/02/2020	03:05	2.10	17:45	4.31	2.93	04:20	6.87	11:30	11.12	8.86	03:05	0.461	17:45	2.022	0.979	0.979	0.01
12/03/2020	04:50	2.26	17:55	4.26	3.04	04:50	6.57	14:40	10.54	8.29	04:50	0.488	17:55	1.852	0.960	0.960	-
12/04/2020	03:55	2.33	19:25	4.37	3.20	03:25	5.96	10:20	9.63	7.78	03:25	0.483	08:25	1.818	0.972	0.972	-
12/05/2020	04:50	2.35	13:35	4.65	3.26	04:50	5.85	12:50	9.57	7.77	04:50	0.461	13:35	1.954	1.003	1.003	0.03
12/06/2020	04:30	2.17	13:20	4.53	3.16	06:00	5.66	13:20	9.97	7.88	04:30	0.401	13:20	1.988	0.978	0.978	0.03
12/07/2020	04:15	2.19	20:30	4.35	3.02	04:15	6.05	20:30	10.52	8.16	04:15	0.428	20:30	1.982	0.937	0.937	-
12/08/2020	03:40	2.18	18:10	4.54	3.07	03:40	6.28	21:50	10.74	8.57	03:40	0.443	18:10	2.117	1.020	1.020	0.87
12/09/2020	02:55	2.73	21:15	4.47	3.22	02:55	8.03	09:55	10.95	9.40	02:55	0.784	21:15	2.111	1.170	1.170	0.17
12/10/2020	04:05	2.35	14:25	4.29	3.01	05:35	7.06	20:45	11.53	9.15	05:35	0.577	14:25	2.052	1.042	1.042	0.07
12/11/2020	04:10	2.26	17:35	4.19	2.99	04:10	7.22	19:50	11.37	9.22	04:10	0.535	17:35	1.993	1.043	1.043	0.02
12/12/2020	03:55	2.15	18:30	4.21	2.98	03:35	6.94	18:30	11.24	9.22	03:55	0.490	18:30	2.025	1.050	1.050	0.01
12/13/2020	04:25	2.18	13:30	4.48	3.05	06:15	6.56	13:30	11.56	9.27	06:15	0.474	13:30	2.267	1.095	1.095	0.24
12/14/2020	04:45	2.19	19:45	4.27	3.01	04:40	6.51	14:50	11.45	9.33	04:40	0.478	19:45	2.028	1.071	1.071	0.05
12/15/2020	04:40	2.06	21:20	4.44	3.10	03:50	7.08	21:20	11.54	9.44	04:40	0.461	21:20	2.235	1.139	1.139	0.58
12/16/2020	04:15	2.32	19:35	4.46	3.22	04:15	7.75	12:10	11.36	9.60	04:15	0.597	17:00	2.197	1.211	1.211	0.39
12/17/2020	04:50	2.52	22:05	4.48	3.26	04:50	7.80	14:20	11.05	9.53	04:50	0.678	22:05	2.134	1.216	1.216	0.08
12/18/2020	03:35	2.42	11:55	4.40	3.18	03:35	7.56	15:20	11.45	9.36	03:35	0.618	15:20	2.151	1.155	1.155	0.25
12/19/2020	03:50	2.39	19:35	4.57	3.29	04:55	7.30	10:10	11.28	9.47	04:55	0.596	19:35	2.227	1.236	1.236	0.37
12/20/2020	03:55	2.63	13:45	4.81	3.43	04:50	8.00	13:45	11.45	9.68	06:50	0.770	13:45	2.478	1.333	1.333	0.04
12/21/2020	03:15	2.71	21:45	5.11	3.72	03:40	8.12	14:30	11.62	9.95	03:25	0.800	21:45	2.592	1.546	1.546	1.07
12/22/2020	04:05	3.12	17:35	4.76	3.77	03:30	8.89	20:10	11.24	10.03	04:05	1.057	17:35	2.279	1.557	1.557	-
12/23/2020	04:40	2.65	11:50	4.63	3.45	03:20	8.29	15:45	11.52	9.82	04:40	0.793	15:45	2.301	1.356	1.356	-
12/24/2020	04:25	2.54	13:10	4.70	3.40	04:20	7.54	09:35	11.36	9.59	04:20	0.670	13:10	2.374	1.309	1.309	-
12/25/2020	05:40	2.36	22:15	4.52	3.25	05:40	7.36	21:40	11.08	9.30	05:40	0.583	22:15	2.197	1.191	1.191	0.49
12/26/2020	04:20	2.47	20:05	4.51	3.24	04:20	7.63	12:25	11.15	9.40	04:20	0.645	20:05	2.154	1.199	1.199	0.02
12/27/2020	04:45	2.32	11:50	4.64	3.24	05:20	7.15	11:50	11.26	9.38	05:20	0.564	11:50	2.318	1.198	1.198	0.13
12/28/2020	03:35	2.42	19:05	4.37	3.16	03:00	7.61	18:25	11.39	9.33	03:35	0.630	21:20	2.041	1.144	1.144	-
12/29/2020	04:35	2.33	21:45	4.37	3.06	05:15	7.20	12:00	10.80	9.00	05:15	0.565	21:45	2.006	1.053	1.053	0.14
12/30/2020	01:20	2.51	23:25	4.70	3.48	02:00	7.03	11:25	10.88	9.45	02:00	0.641	23:25	2.271	1.335	1.335	0.78
12/31/2020	05:10	2.86	13:25	4.67	3.61	05:10	8.37	10:55	11.12	9.68	05:10	0.874	13:25	2.227	1.424	1.424	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			224.444	30.65
Average	3.10	9.02	1.095	

Auburn.TFM.WA20-22

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

AUB_Y-2_61102

Site Address /Location:	1608 8th St NE, Auburn WA			Monitor Series: TRITON+	Location Type: Temporary
Site Access Details:	Site within West bound lane control required	Traffic	Latitude: 47.315348° Longitude: -122.206307°	Pipe Size (H x W): 14.25 x 14.50	Pipe Shape: Circular
				Manhole #: AUB Y-2(611-02)	System Characteristics: Residential
				Access: Drive	Traffic: Heavy









Installation Information

Installation Date: Thursday, May 14, 2020	Installation Type: Doppler Standard Ring and Crank
Monitoring Location (Sensors): Upstream 0-5 FT	Monitor Location: Manhole
Sensors / Devices: Peak Combo (CS4), Smart Depth (CS3)	Pressure Sensor Range (psi): 0 - 5 psi

Installation Confirmation:

Confirmation Time: 7:49:00 PM	Pipe Size (HxW): 14.25 x 14.50
Depth of Flow (Wet DOF) (in): 2.63"	
CS3 Physical Offset (in): 1.38	Measurement Confidence (in): 0.38"
Peak Velocity (fps): 11.15	Velocity Sensor Offset (in): 0"
Silt (in): 0.00"	Silt Type

Hydraulic Comments: Fast Flow, 0.25 Ripples

Manhole / Pipe Information:

Manhole Depth (Approx. FT): 6	Manhole Configuration: Single
Manhole Material: Concrete	Manhole Condition: Good
Manhole Opening Diameter (in): 26	Manhole Diameter (Approx.):
Manhole Cover: Steel	Manhole Frame: Normal
Active Connections: No	Air Quality: Normal
Pipe Material: Vitrified Clay Pipe	Pipe Condition: Fair

Communication Information:

Communication Type: Wireless	Antenna Location: Manhole Pick / Vent Hole

Additional Site Info. / Comments:

Siphon Upstream

ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.22.325

AUB_Y-3_101255

Site Commentary

SITE INFORMATION

Pipe	Elliptical (23 in H x 23.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.79	5.27	0.722
Minimum	1.82	3.21	0.231
Maximum	5.34	7.28	2.420
Min Time	11/01/2020 4:00:00 AM	10/03/2020 3:00:00 AM	10/03/2020 3:00:00 AM
Max Time	01/03/2021 1:00:00 AM	01/12/2021 10:00:00 AM	01/03/2021 1:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

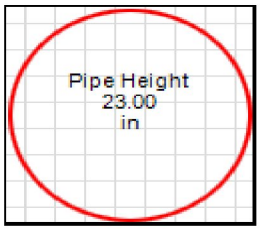
Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-3_101255

Flow Monitor

AUB_Y-3_101255



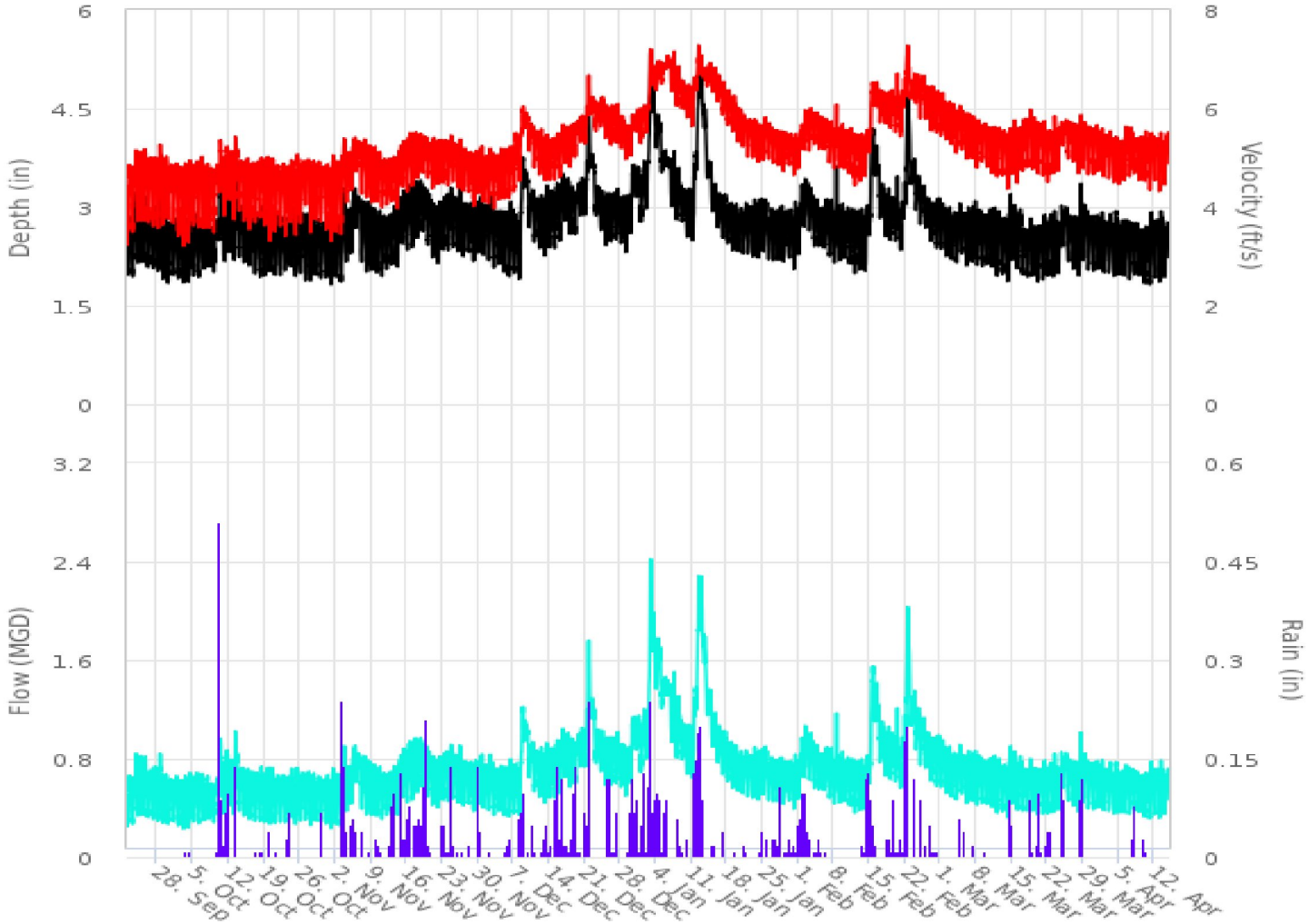
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



Scattergraph Report

AUB_Y-3_101255

Flow Monitor

AUB_Y-3_101255

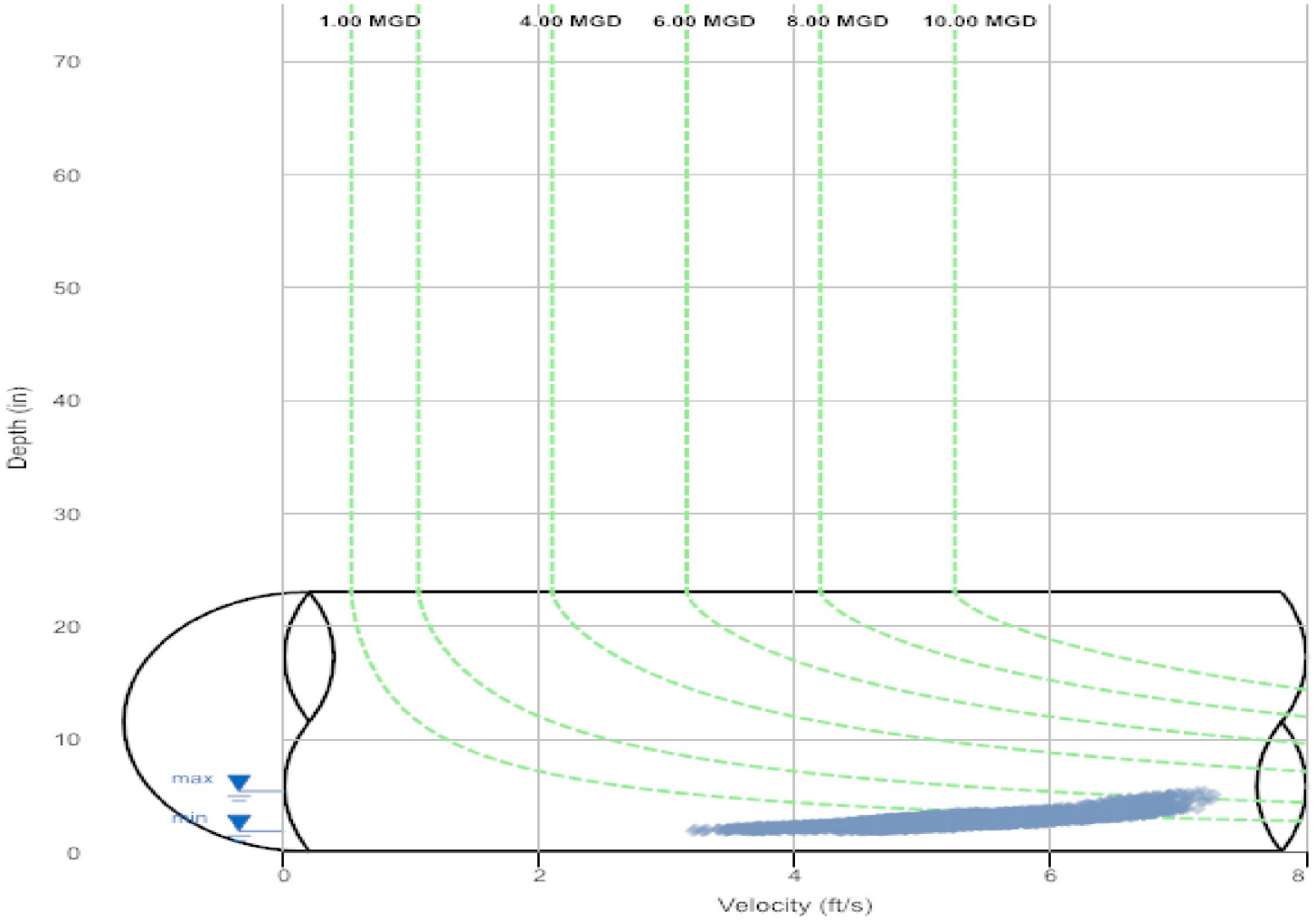
Pipe Height
23.00
in

Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_Y-3_101255Pipe: Elliptical (23 in H x 23.5 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	01:25	2.62	15:20	3.98	3.28	01:20	4.94	17:55	6.50	5.79	01:25	0.599	17:55	1.421	0.974	0.974	0.51
01/02/2021	05:50	2.76	23:40	5.07	3.67	01:45	5.21	23:30	7.14	6.01	05:50	0.678	23:40	2.217	1.203	1.203	1.69
01/03/2021	22:05	4.01	00:45	5.50	4.63	07:35	6.12	01:05	7.37	6.70	22:05	1.393	00:55	2.530	1.843	1.843	0.65
01/04/2021	04:00	3.57	10:55	4.67	4.17	04:00	6.10	18:45	7.18	6.74	04:00	1.150	10:55	1.965	1.590	1.590	0.48
01/05/2021	04:10	3.21	00:10	4.14	3.75	05:30	6.07	19:10	7.21	6.77	04:10	0.990	00:10	1.628	1.371	1.371	0.52
01/06/2021	23:15	3.17	05:55	4.05	3.66	23:15	6.33	21:05	7.33	6.93	23:15	1.003	05:55	1.653	1.358	1.358	0.22
01/07/2021	04:20	2.68	16:45	4.05	3.30	04:20	5.78	16:45	7.30	6.62	04:20	0.718	16:45	1.648	1.118	1.118	-
01/08/2021	02:35	2.50	13:20	3.69	3.16	04:40	5.37	10:15	7.03	6.44	02:35	0.626	13:20	1.383	1.023	1.023	0.22
01/09/2021	04:45	2.39	18:10	3.51	3.05	01:50	5.51	12:35	6.92	6.29	04:45	0.581	18:10	1.267	0.949	0.949	-
01/10/2021	05:15	2.26	14:15	3.49	2.94	06:40	5.33	10:25	6.83	6.14	05:15	0.516	14:15	1.217	0.882	0.882	0.07
01/11/2021	03:05	2.24	21:25	4.16	3.19	04:20	5.04	11:40	6.89	6.25	03:05	0.490	21:25	1.593	1.022	1.022	1.06
01/12/2021	01:05	3.18	19:35	5.21	4.61	00:10	6.07	10:15	7.44	6.87	01:05	0.968	10:15	2.390	1.884	1.884	2.10
01/13/2021	22:10	3.68	00:30	5.32	4.47	21:30	6.37	00:30	7.27	6.72	22:10	1.264	00:30	2.429	1.756	1.756	0.09
01/14/2021	23:40	3.03	00:40	4.06	3.59	01:35	6.14	12:55	7.19	6.70	23:40	0.939	12:55	1.553	1.271	1.271	0.01
01/15/2021	04:25	2.70	11:30	3.61	3.16	04:25	5.88	11:30	7.19	6.62	04:25	0.737	11:30	1.378	1.050	1.050	0.09
01/16/2021	06:35	2.46	16:05	3.40	2.98	05:50	5.63	10:30	7.00	6.39	05:50	0.625	16:05	1.192	0.930	0.930	-
01/17/2021	05:25	2.30	14:05	3.39	2.92	05:25	5.45	11:00	6.77	6.21	05:25	0.540	14:05	1.180	0.879	0.879	0.10
01/18/2021	05:00	2.29	13:30	3.30	2.81	01:45	5.32	08:40	6.71	6.06	05:00	0.529	13:30	1.113	0.810	0.810	-
01/19/2021	03:45	2.18	20:05	3.20	2.76	02:45	5.05	10:55	6.55	5.91	03:45	0.481	20:00	1.018	0.770	0.770	0.01
01/20/2021	04:30	2.20	18:40	3.10	2.69	04:30	4.98	10:30	6.36	5.77	04:30	0.464	18:40	0.942	0.726	0.726	-
01/21/2021	03:45	2.13	19:50	3.23	2.73	02:15	4.77	11:40	6.20	5.63	02:50	0.428	19:50	0.980	0.724	0.724	0.11
01/22/2021	03:50	2.12	17:25	3.25	2.74	03:50	4.55	08:30	6.07	5.50	03:50	0.401	17:25	0.984	0.710	0.710	-
01/23/2021	04:45	2.05	12:00	3.31	2.71	03:20	4.59	12:00	6.29	5.45	03:20	0.396	12:00	1.064	0.696	0.696	-
01/24/2021	05:55	2.07	19:20	3.30	2.76	04:15	4.58	09:25	6.10	5.41	04:15	0.403	19:20	1.014	0.709	0.709	0.16
01/25/2021	04:20	2.17	13:55	3.18	2.75	02:45	4.62	18:55	6.03	5.45	04:20	0.429	18:55	0.958	0.710	0.710	0.04
01/26/2021	03:20	2.10	18:45	3.12	2.66	03:10	4.63	11:25	6.02	5.42	03:20	0.402	18:45	0.901	0.671	0.671	-
01/27/2021	04:25	1.91	17:55	3.13	2.63	03:20	4.43	07:40	6.01	5.32	04:25	0.336	21:30	0.922	0.648	0.648	0.14
01/28/2021	04:20	2.00	20:00	3.18	2.69	02:35	4.47	08:10	5.92	5.28	04:20	0.374	20:00	0.935	0.665	0.665	0.24
01/29/2021	04:45	2.00	19:40	3.11	2.68	04:45	4.09	10:50	5.90	5.24	04:45	0.329	10:50	0.898	0.656	0.656	0.03
01/30/2021	04:40	2.01	13:55	3.17	2.67	05:10	4.26	09:45	5.85	5.22	05:10	0.348	15:50	0.917	0.649	0.649	0.07
01/31/2021	06:30	1.93	12:55	3.21	2.67	04:00	4.33	11:10	5.88	5.19	06:30	0.339	15:40	0.930	0.652	0.652	0.12
02/01/2021	01:25	2.08	20:45	3.47	2.84	01:25	4.26	22:30	5.85	5.33	01:25	0.365	20:45	1.048	0.729	0.729	0.82
02/02/2021	04:40	2.51	11:30	4.28	3.14	04:35	4.78	11:30	6.50	5.57	04:40	0.540	11:30	1.591	0.880	0.880	0.31
02/03/2021	03:55	2.36	17:40	3.43	2.97	03:10	4.69	19:30	6.41	5.64	03:10	0.487	19:30	1.115	0.821	0.821	0.06
02/04/2021	04:20	2.12	18:35	3.45	2.82	04:20	4.74	17:45	6.50	5.67	04:20	0.418	17:45	1.132	0.767	0.767	0.07
02/05/2021	03:35	2.15	17:20	3.41	2.76	03:35	4.78	07:55	6.26	5.57	03:35	0.430	17:20	1.095	0.729	0.729	0.01
02/06/2021	05:45	2.05	19:25	3.38	2.77	03:20	4.72	08:25	6.33	5.49	05:45	0.396	19:25	1.089	0.724	0.724	0.01
02/07/2021	05:10	1.97	13:45	3.39	2.73	02:30	4.42	13:45	6.13	5.38	03:25	0.358	13:45	1.071	0.695	0.695	-
02/08/2021	03:55	1.92	13:05	3.71	2.72	03:00	4.31	13:20	6.33	5.36	03:00	0.335	13:20	1.261	0.694	0.694	-
02/09/2021	04:20	1.90	19:10	3.25	2.67	01:50	4.32	19:05	6.16	5.32	04:20	0.332	19:05	0.996	0.666	0.666	-
02/10/2021	03:55	1.88	18:45	3.22	2.65	03:45	4.29	10:45	6.11	5.27	03:55	0.323	18:45	0.952	0.652	0.652	-
02/11/2021	03:20	1.84	18:15	3.28	2.63	03:20	4.07	12:50	6.18	5.23	03:20	0.291	21:40	1.006	0.642	0.642	-
02/12/2021	04:25	1.77	20:45	3.24	2.56	04:25	4.02	13:05	6.04	5.13	04:25	0.271	17:00	0.973	0.609	0.609	-
02/13/2021	04:55	1.75	12:15	3.25	2.56	04:55	4.01	11:15	5.98	5.12	04:55	0.266	12:15	0.970	0.606	0.606	0.08
02/14/2021	05:50	1.74	15:30	3.32	2.62	03:50	4.11	09:50	6.15	5.20	05:50	0.277	16:10	1.012	0.639	0.639	0.71
02/15/2021	01:20	2.30	20:25	4.39	3.50	01:20	4.61	17:00	6.75	5.99	01:20	0.456	16:00	1.698	1.133	1.133	0.78
02/16/2021	23:55	2.94	13:40	4.15	3.60	02:55	5.57	12:05	6.74	6.27	23:50	0.816	12:05	1.562	1.201	1.201	0.07
02/17/2021	02:15	2.59	13:00	3.69	3.11	04:25	5.33	11:25	6.75	6.13	04:25	0.633	13:00	1.329	0.954	0.954	-
02/18/2021	04:35	2.31	19:40	3.56	2.95	05:25	5.26	16:45	6.67	6.06	04:35	0.528	19:40	1.230	0.873	0.873	0.09
02/19/2021	03:50	2.26	19:25	3.39	2.86	05:15	5.18	08:35	6.70	6.00	03:50	0.504	12:10	1.141	0.829	0.829	0.17
02/20/2021	03:35	2.20	13:30	3.57	2.80	04:20	4.96	13:15	6.96	5.97	04:20	0.464	13:20	1.301	0.800	0.800	0.07
02/21/2021	03:55	2.10	23:20	3.72	2.80	03:55	4.92	23:20	6.90	6.02	03:55	0.428	23:20	1.378	0.808	0.808	0.42
02/22/2021	01:45	2.80	13:10	4.73	3.92	01:45	5.91	13:05	7.35	6.79	01:45	0.780	13:10	2.068	1.484	1.484	0.98
02/23/2021	06:15	2.99	21:25	3.95	3.50	06:15	5.73	21:15	6.96	6.39	06:15	0.835	21:25	1.512	1.175	1.175	0.27
02/24/2021	04:45	2.63	18:30	3.66	3.26	07:20	5.62	17:25	6.89	6.39	04:45	0.697	18:30	1.326	1.061	1.061	-
02/25/2021	03:00	2.47	09:40	3.50	3.12	02:45	4.98	18:05	6.93	6.38	02:15	0.579	09:40	1.261	0.995	0.995	0.18
02/26/2021	05:25	2.40	13:25	3.37	2.96	03:55	5.03	21:05	6.89	6.22	05:25	0.532	22:05	1.166	0.899	0.899	0.10
02/27/2021	06:10	2.26	11:35	3.38	2.83	03:40	4.95	09:10	6.83	6.10	03:40	0.488	11:35	1.187	0.830	0.830	0.02
02/28/2021	05:30	2.12	14:10	3.42	2.80	05:30	4.95	15:40	6.73	6.00	05:30	0.436	14:05	1.158	0.806	0.806	0.02
03/01/2021	04:20	2.05	19:25	3.34	2.74	04:20	4.92	07:40	6.62	5.92	04:20	0.413	19:25	1.102	0.768	0.768	-
03/02/2021	03:30	1.99	19:00	3.32	2.66	03:30	4.85	10:10	6.61	5.83	03:30	0.390	18:55	1.080	0.724	0.724	-
03/03/2021	03:40	1.91	18:05	3.27	2.62	05:15	4.56	07:45	6.56	5.74	05:15	0.354	18:00	1.066	0.698	0.698	-
03/04/2021	02:30	1.91	19:20	3.28	2.60	02:30	4.41	08:00	6.42	5.66	02:30	0.332	19:20	1.034	0.683	0.683	0.20
03/05/2021	04:30	1.92	19:50	3.21	2.65	03:35	4.59	11:55	6.38	5.64	04:30	0.351	19:50	0.997	0.698	0.698	0.05
03/06/2021	05:40	1.87	20:30	3.25	2.61	05:40	4.45	11:20	6.34	5.54	05:40	0.325	20:30	1.038	0.670	0.670	-
03/07/2021	03:25	1.85	13:50	3.29	2.66	05:15	4.36	11:40	6.22	5.45	03:25	0.316	12:20	1.014	0.680	0.680	0.04
03/08/2021	04:45	1.89	13:00	3.29	2.63	04:25	4.30	13:40	6.20	5.39	04:45	0.327	13:00	1.017	0.663	0.663	-
03/09/2021	05:10	1.83	20:40	3.23	2.56	03:30	4.11	11:10	6.17	5.39	03:35	0.301	20:40	0.971	0.637	0.637	0.01
03/10/2021	04:05	1.78	20:30	3.27	2.59	04:05	4.19	08:45	6.18	5.33	04:05	0.285	20:25	0.983	0.640	0.640	-
03/11/2021	03:10	1.78	20:15	3.25	2.61	03:10	3.89	11:50	6.13	5.31	03:10	0.264	20:15	0.974	0.645	0.645	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	03:35	1.75	14:05	3.17	2.53	02:30	4.13	10:00	6.19	5.24	04:20	0.280	14:05	0.944	0.611	0.611	-
03/13/2021	06:15	1.69	15:20	3.16	2.49	05:00	3.99	11:15	6.10	5.17	05:00	0.263	15:20	0.930	0.588	0.588	-
03/14/2021	04:50	1.62	19:15	3.46	2.59	04:50	3.76	12:00	5.96	5.18	04:50	0.222	19:15	1.058	0.629	0.629	0.30
03/15/2021	03:35	1.78	18:55	3.26	2.65	03:20	4.05	15:45	6.05	5.22	03:35	0.275	15:45	0.991	0.649	0.649	-
03/16/2021	04:20	1.76	17:15	3.64	2.56	04:20	3.87	17:15	6.26	5.21	04:20	0.259	17:15	1.210	0.618	0.618	-
03/17/2021	02:45	1.73	20:20	3.02	2.42	04:40	4.10	20:20	6.39	5.44	02:45	0.276	20:20	0.946	0.592	0.592	-
03/18/2021	03:15	1.68	18:05	3.15	2.39	03:15	4.25	18:00	6.36	5.46	03:15	0.267	18:05	0.995	0.585	0.585	0.11
03/19/2021	02:00	1.72	13:55	3.02	2.43	02:00	4.24	17:45	6.37	5.43	02:00	0.273	17:45	0.902	0.593	0.593	0.03
03/20/2021	04:25	1.63	16:05	3.01	2.42	04:20	3.96	12:25	6.16	5.34	04:25	0.244	16:00	0.891	0.582	0.582	0.17
03/21/2021	04:45	1.64	13:20	3.22	2.47	04:45	4.11	08:15	6.27	5.27	04:45	0.249	13:15	0.990	0.594	0.594	0.07
03/22/2021	02:40	1.73	16:55	3.14	2.52	02:40	4.08	13:50	6.04	5.22	02:40	0.267	16:50	0.916	0.604	0.604	0.11
03/23/2021	03:45	1.70	10:35	3.34	2.52	01:25	4.14	10:35	6.29	5.33	03:40	0.265	10:35	1.074	0.617	0.617	-
03/24/2021	03:25	1.72	19:15	3.41	2.50	03:25	4.14	15:00	6.13	5.34	03:25	0.268	19:15	1.077	0.612	0.612	0.34
03/25/2021	01:05	2.12	19:50	3.28	2.75	02:35	4.73	18:55	6.18	5.53	01:05	0.419	19:50	1.008	0.719	0.719	0.27
03/26/2021	02:40	1.89	14:55	3.19	2.62	02:40	4.29	11:45	6.21	5.46	02:40	0.320	10:25	0.978	0.665	0.665	-
03/27/2021	04:50	1.82	10:55	3.17	2.53	03:05	4.42	08:25	6.24	5.39	04:50	0.315	17:50	0.962	0.627	0.627	-
03/28/2021	04:50	1.72	15:30	3.51	2.67	03:40	4.31	13:55	6.20	5.38	03:40	0.284	14:00	1.119	0.682	0.682	0.37
03/29/2021	02:45	1.84	12:55	3.30	2.67	02:40	4.31	06:35	6.15	5.36	02:45	0.311	12:50	0.999	0.674	0.674	-
03/30/2021	02:15	1.79	16:30	3.15	2.58	02:10	4.09	13:20	6.13	5.31	02:15	0.281	16:30	0.962	0.636	0.636	-
03/31/2021	02:00	1.76	19:50	3.26	2.55	01:50	4.24	12:45	6.08	5.30	02:00	0.285	19:50	1.001	0.621	0.621	-
04/01/2021	03:10	1.74	20:40	3.23	2.52	02:20	4.00	15:35	6.10	5.27	02:20	0.267	20:40	0.969	0.609	0.609	-
04/02/2021	02:35	1.72	14:15	3.04	2.48	02:35	3.98	08:20	6.00	5.17	02:35	0.258	14:05	0.877	0.582	0.582	-
04/03/2021	03:05	1.68	12:40	3.22	2.50	04:55	3.87	10:45	5.90	5.09	05:00	0.243	10:50	0.950	0.584	0.584	-
04/04/2021	03:20	1.74	13:20	3.35	2.56	03:10	3.99	09:50	5.93	5.06	04:15	0.263	13:20	0.992	0.601	0.601	-
04/05/2021	02:30	1.69	19:25	3.15	2.48	02:30	3.87	19:20	6.02	5.09	02:30	0.245	19:25	0.939	0.574	0.574	-
04/06/2021	02:50	1.70	10:20	2.98	2.44	02:50	4.06	13:05	6.13	5.20	02:50	0.258	20:10	0.871	0.575	0.575	-
04/07/2021	02:10	1.62	20:30	3.08	2.40	03:55	4.12	07:55	6.15	5.21	02:10	0.247	19:25	0.918	0.564	0.564	0.22
04/08/2021	03:30	1.75	12:10	3.17	2.48	02:25	4.22	21:05	5.96	5.11	03:30	0.283	12:10	0.932	0.576	0.576	-
04/09/2021	04:10	1.67	15:25	3.04	2.40	02:15	3.96	19:00	6.00	5.13	04:10	0.247	19:00	0.874	0.553	0.553	0.03
04/10/2021	05:35	1.63	19:50	3.09	2.41	02:30	3.93	19:50	6.14	5.12	05:35	0.238	19:50	0.939	0.556	0.556	0.02
04/11/2021	04:30	1.57	12:45	3.22	2.46	04:30	3.50	08:00	6.09	5.08	04:30	0.198	12:45	0.952	0.571	0.571	-
04/12/2021	03:30	1.60	13:30	3.15	2.46	03:25	3.73	06:50	5.87	5.06	03:25	0.220	13:30	0.907	0.567	0.567	-
04/13/2021	02:40	1.64	10:10	3.21	2.48	00:35	3.85	10:10	5.82	4.98	02:40	0.235	10:10	0.937	0.568	0.568	-
04/14/2021	02:20	1.61	19:20	3.03	2.42	02:20	3.85	14:35	6.11	5.13	02:20	0.225	19:20	0.877	0.560	0.558	-
09/22/2020	03:30	1.92	10:50	3.23	2.45	02:50	2.80	10:50	5.41	4.34	02:50	0.217	10:50	0.882	0.486	0.486	-
09/23/2020	01:55	1.90	20:00	3.53	2.63	00:55	3.08	20:00	5.80	4.53	01:05	0.235	20:00	1.074	0.565	0.565	-
09/24/2020	03:50	1.96	15:45	3.46	2.74	02:05	3.32	14:15	5.67	4.62	03:45	0.266	15:45	1.009	0.610	0.610	-
09/25/2020	03:05	1.94	14:55	3.50	2.73	03:05	3.12	14:50	5.71	4.62	03:05	0.242	14:50	1.035	0.604	0.604	-
09/26/2020	05:40	1.91	17:55	3.23	2.61	05:35	3.11	16:00	5.47	4.53	05:35	0.238	17:55	0.876	0.555	0.555	-
09/27/2020	04:15	1.90	11:20	3.23	2.60	04:05	3.02	16:45	5.48	4.51	04:05	0.231	11:20	0.887	0.552	0.552	-
09/28/2020	02:15	1.93	12:10	3.43	2.58	02:15	3.02	12:05	5.64	4.57	02:15	0.232	12:10	0.993	0.553	0.553	-
09/29/2020	01:50	1.74	13:20	3.23	2.47	03:05	3.05	13:15	5.58	4.54	03:05	0.206	13:15	0.906	0.513	0.513	-
09/30/2020	04:25	1.63	17:10	3.13	2.42	01:45	3.18	12:35	5.45	4.51	04:20	0.204	12:35	0.845	0.495	0.495	-
10/01/2020	01:10	1.80	18:30	3.10	2.46	02:55	3.17	18:25	5.39	4.44	01:10	0.222	18:25	0.823	0.497	0.497	-
10/02/2020	03:25	1.84	14:40	3.06	2.43	03:50	3.00	14:40	5.34	4.38	03:50	0.220	14:40	0.802	0.483	0.483	-
10/03/2020	03:35	1.83	11:00	3.11	2.44	03:20	2.89	21:10	5.53	4.40	03:45	0.210	21:10	0.818	0.489	0.489	0.01
10/04/2020	03:40	1.81	11:25	3.19	2.48	05:35	2.80	11:25	5.46	4.42	03:50	0.197	11:25	0.876	0.506	0.506	0.01
10/05/2020	01:55	1.87	20:15	3.24	2.52	03:05	3.03	20:15	5.53	4.44	02:00	0.223	20:15	0.907	0.516	0.516	-
10/06/2020	03:25	1.87	18:45	3.13	2.49	01:45	3.12	18:40	5.55	4.47	04:35	0.236	18:45	0.856	0.512	0.512	-
10/07/2020	03:40	1.95	20:05	3.11	2.49	01:50	3.06	20:05	5.43	4.38	02:05	0.258	20:05	0.836	0.496	0.496	-
10/08/2020	03:10	1.90	09:20	3.00	2.45	03:00	3.33	16:35	5.28	4.37	03:10	0.250	09:20	0.766	0.486	0.486	-
10/09/2020	03:35	1.91	12:05	3.00	2.48	03:35	3.17	14:55	5.26	4.35	03:35	0.239	14:55	0.765	0.492	0.492	0.64
10/10/2020	05:10	2.21	10:50	3.70	2.91	04:40	3.82	10:50	5.86	4.83	04:45	0.366	10:50	1.160	0.686	0.686	1.04
10/11/2020	02:10	2.04	19:25	3.72	2.76	03:40	3.36	17:35	5.82	4.68	03:40	0.288	19:25	1.158	0.625	0.625	0.53
10/12/2020	02:30	2.12	13:05	3.44	2.76	04:15	3.54	13:05	5.67	4.72	04:15	0.314	13:05	1.012	0.620	0.620	-
10/13/2020	00:40	2.10	09:40	3.75	2.95	02:45	3.34	17:30	5.78	4.83	02:40	0.293	07:35	1.138	0.708	0.708	0.61
10/14/2020	03:15	2.03	18:40	3.18	2.71	03:10	3.41	18:40	5.25	4.61	03:15	0.287	18:40	0.838	0.589	0.589	-
10/15/2020	04:35	2.06	17:20	3.13	2.64	01:15	3.28	19:40	5.26	4.52	01:15	0.285	17:15	0.797	0.559	0.559	-
10/16/2020	03:25	2.04	11:45	3.17	2.57	03:25	3.22	17:35	5.39	4.45	03:25	0.269	11:45	0.804	0.529	0.529	-
10/17/2020	05:00	1.92	10:40	3.34	2.53	05:05	3.19	10:40	5.37	4.46	05:05	0.242	10:40	0.921	0.521	0.521	0.01
10/18/2020	05:35	1.80	10:55	3.17	2.55	02:45	3.16	11:55	5.52	4.55	02:45	0.224	11:55	0.863	0.540	0.540	0.03
10/19/2020	03:35	1.87	18:00	3.13	2.53	03:50	3.28	17:00	5.38	4.52	03:50	0.239	18:00	0.831	0.528	0.528	0.05
10/20/2020	03:35	1.95	13:55	3.39	2.55	03:45	3.09	18:15	5.53	4.50	03:35	0.245	13:55	0.950	0.535	0.535	-
10/21/2020	05:20	1.90	18:00	3.10	2.50	02:40	2.88	11:55	5.36	4.44	02:40	0.221	09:55	0.816	0.509	0.509	0.01
10/22/2020	03:25	1.84	19:00	3.16	2.50	03:10	3.04	18:55	5.45	4.43	03:25	0.219	19:00	0.851	0.507	0.507	-
10/23/2020	05:30	1.94	18:55	3.06	2.50	03:50	3.03	17:00	5.31	4.37	03:55	0.237	17:00	0.793	0.502	0.502	0.20
10/24/2020	05:20	1.92	10:55	3.30	2.56	05:15	3.00	10:50	5.46	4.48	05:15	0.231	10:55	0.914	0.532	0.532	0.02
10/25/2020	02:50	1.88	12:00	3.21	2.53	03:00	2.81	20:15	5.54	4.46	03:00	0.207	20:15	0.889	0.527	0.527	-
10/26/2020	03:10	1.88	21:00	3.17	2.55	03:20	3.07	20:55	5.51	4.51	03:20	0.232	20:55	0.870	0.532	0.532	-
10/27/2020	03:15	1.61	19:15	3.15	2.49	02:55	3.48	10:05	5.52	4.61	03:10	0.211	10:05	0.861	0.525	0.525	-
10/28/2020	03:15	1.76	10:35	3.25	2.49	03:30	2.88	19:20	5.63	4.49	03:25	0.196	19:20	0.910	0.515	0.515	-
10/29/2020	04:15	1.81	19:10	3.06	2.46	03:00	3.17	19:05	5.47	4.47	03:05	0.226	19:10	0.819	0.499	0.499	-
10/30/2020	04:30	1.75	16:55	3.09	2.43	02:55	3.00	17:50	5.37	4.44	02:55	0.203	16:55	0.813	0.490	0.490	0.10
10/31/2020	05:50	1.79	10:40	3.15	2.42	04:25	2.97	20:10	5.42	4.37	04:25	0.206	10:40	0.828	0.481	0.481	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	03:05	1.75	13:10	3.20	2.42	04:45	2.76	13:05	5.46	4.41	04:45	0.186	13:05	0.872	0.489	0.489	-
11/02/2020	02:30	1.87	12:55	3.13	2.47	01:35	3.17	12:50	5.53	4.47	01:35	0.234	12:55	0.862	0.506	0.506	-
11/03/2020	03:30	1.77	17:25	3.54	2.64	03:30	2.92	20:00	5.81	4.65	03:30	0.198	20:00	1.074	0.594	0.594	0.83
11/04/2020	02:50	1.97	20:20	3.31	2.68	02:50	3.79	20:20	5.74	4.78	02:50	0.299	20:20	0.968	0.603	0.603	0.09
11/05/2020	02:10	2.00	16:10	3.59	2.88	01:10	3.92	16:05	5.95	4.97	03:35	0.316	16:05	1.125	0.700	0.700	0.34
11/06/2020	01:45	2.35	16:55	3.51	2.97	03:05	4.22	12:30	5.83	5.11	01:45	0.437	14:15	1.028	0.746	0.746	0.10
11/07/2020	05:40	1.93	14:35	3.32	2.71	05:40	3.78	19:35	5.75	4.96	05:40	0.289	19:40	0.954	0.637	0.637	0.07
11/08/2020	04:55	1.77	19:15	3.32	2.65	04:50	3.88	19:15	5.75	4.89	04:55	0.261	19:15	0.975	0.610	0.610	0.01
11/09/2020	03:55	1.80	18:55	3.24	2.59	03:55	3.70	18:50	5.74	4.79	03:55	0.255	18:50	0.933	0.579	0.579	0.04
11/10/2020	02:20	1.78	17:10	3.44	2.55	02:15	3.57	17:10	5.72	4.72	02:20	0.246	17:10	1.020	0.557	0.557	0.03
11/11/2020	02:25	1.78	19:00	3.17	2.52	02:25	3.56	14:15	5.50	4.64	02:25	0.242	13:25	0.853	0.539	0.539	-
11/12/2020	04:15	1.76	10:50	3.17	2.54	04:15	3.41	10:50	5.61	4.59	04:15	0.229	10:50	0.889	0.537	0.537	0.16
11/13/2020	02:55	1.90	17:35	3.32	2.66	02:55	3.73	21:00	5.53	4.68	02:55	0.279	17:35	0.915	0.585	0.585	0.38
11/14/2020	04:45	1.86	21:00	3.46	2.71	04:45	3.48	22:30	5.76	4.72	04:45	0.253	22:30	1.024	0.611	0.611	0.47
11/15/2020	05:30	2.11	13:05	3.58	2.93	05:30	3.83	20:40	5.82	4.98	05:30	0.334	13:05	1.086	0.715	0.715	0.19
11/16/2020	03:20	2.07	19:05	3.58	2.91	03:15	3.92	19:00	5.92	5.01	03:20	0.334	19:05	1.093	0.715	0.715	0.31
11/17/2020	03:10	2.17	21:30	3.70	2.99	02:55	3.92	18:05	6.01	5.10	03:00	0.363	21:30	1.157	0.755	0.755	0.20
11/18/2020	04:00	2.29	15:25	3.66	3.05	03:10	4.22	13:55	6.01	5.15	03:10	0.425	13:55	1.147	0.782	0.782	0.30
11/19/2020	03:35	2.28	11:15	3.57	2.99	02:00	4.19	13:55	5.96	5.12	03:35	0.414	11:15	1.099	0.754	0.754	0.50
11/20/2020	03:45	2.17	13:35	3.47	2.84	04:45	4.05	15:55	5.79	5.00	03:45	0.371	12:45	1.024	0.684	0.684	0.01
11/21/2020	03:55	1.96	12:35	3.44	2.71	04:45	3.87	10:40	5.86	4.99	04:50	0.305	12:35	1.033	0.639	0.639	-
11/22/2020	04:05	1.88	13:45	3.36	2.72	05:50	4.08	10:05	5.85	5.02	04:05	0.304	10:05	0.992	0.652	0.652	0.21
11/23/2020	04:15	2.02	13:30	3.46	2.85	04:15	4.08	18:25	5.76	5.04	04:15	0.334	13:30	1.031	0.693	0.693	0.14
11/24/2020	03:20	2.08	17:15	3.62	2.88	03:10	4.01	21:25	5.89	5.01	04:10	0.349	17:15	1.123	0.706	0.706	0.21
11/25/2020	03:20	2.13	17:40	3.57	2.87	03:15	4.01	19:45	5.83	5.01	03:20	0.357	17:40	1.093	0.697	0.697	0.05
11/26/2020	05:45	2.03	13:20	3.65	2.84	05:45	3.90	16:10	5.81	4.96	05:45	0.322	13:20	1.112	0.686	0.686	0.02
11/27/2020	04:45	1.95	14:50	3.31	2.72	04:45	3.84	14:50	5.62	4.84	04:45	0.298	14:50	0.950	0.623	0.623	-
11/28/2020	04:20	2.04	15:25	3.42	2.74	02:45	3.90	15:25	5.63	4.80	04:20	0.325	15:25	0.996	0.627	0.627	0.05
11/29/2020	05:20	1.92	14:35	3.47	2.72	05:15	3.55	14:30	5.87	4.73	05:20	0.270	14:30	1.054	0.614	0.614	-
11/30/2020	02:15	2.03	21:35	3.56	2.83	03:10	3.78	14:35	5.80	4.83	02:15	0.313	21:35	1.061	0.659	0.659	0.36
12/01/2020	04:00	2.00	15:50	3.40	2.73	04:00	3.53	20:30	5.54	4.71	04:00	0.285	15:50	0.960	0.612	0.612	-
12/02/2020	04:20	1.96	16:05	3.87	2.72	04:05	3.55	16:05	5.86	4.70	04:05	0.280	16:05	1.242	0.609	0.609	0.01
12/03/2020	04:55	1.85	19:05	3.25	2.65	04:55	3.51	14:55	5.54	4.74	04:55	0.254	12:50	0.894	0.590	0.590	-
12/04/2020	04:30	1.82	14:45	3.28	2.60	04:30	3.57	13:20	5.64	4.78	04:30	0.251	13:20	0.921	0.580	0.580	-
12/05/2020	06:30	1.81	12:05	3.34	2.60	06:20	3.79	10:30	5.74	4.84	06:30	0.272	12:05	0.963	0.586	0.586	0.03
12/06/2020	05:15	1.76	11:55	3.43	2.60	03:20	3.81	13:15	5.83	4.84	05:15	0.261	11:55	1.024	0.591	0.591	0.03
12/07/2020	05:25	1.71	13:05	3.21	2.51	03:30	3.84	20:20	5.94	5.03	03:30	0.256	13:05	0.927	0.578	0.578	-
12/08/2020	04:05	1.68	19:10	3.99	2.89	04:00	4.06	21:55	6.38	5.40	04:05	0.255	21:55	1.380	0.784	0.784	0.87
12/09/2020	23:30	2.93	07:25	3.78	3.42	23:20	5.07	08:00	6.29	5.78	23:20	0.722	13:10	1.266	1.028	1.028	0.17
12/10/2020	03:55	2.31	18:55	3.54	3.03	03:10	4.76	17:15	6.26	5.49	03:55	0.482	17:15	1.130	0.822	0.822	0.07
12/11/2020	04:00	2.07	13:45	3.37	2.90	04:00	4.14	17:00	6.04	5.28	04:00	0.353	17:00	1.038	0.743	0.743	0.02
12/12/2020	03:30	1.98	15:45	3.43	2.83	03:30	4.12	12:35	5.96	5.17	03:30	0.327	20:45	1.055	0.705	0.705	0.01
12/13/2020	04:35	1.97	14:00	3.61	2.84	02:10	4.01	19:00	5.94	5.07	04:35	0.331	14:00	1.114	0.701	0.701	0.24
12/14/2020	03:00	2.04	20:05	3.54	2.88	03:50	4.08	21:35	5.74	5.07	03:50	0.339	20:05	1.060	0.712	0.712	0.05
12/15/2020	02:35	2.04	18:15	3.64	2.95	03:55	3.95	18:10	5.93	5.11	03:55	0.331	18:10	1.142	0.746	0.746	0.58
12/16/2020	04:05	2.16	19:20	3.73	3.06	02:30	4.17	14:40	6.16	5.21	04:05	0.383	14:40	1.219	0.799	0.799	0.39
12/17/2020	04:25	2.40	16:30	3.68	3.17	04:25	4.48	16:15	6.10	5.36	04:25	0.472	16:30	1.171	0.856	0.856	0.08
12/18/2020	05:30	2.25	11:55	3.61	3.03	01:45	4.44	11:55	6.18	5.38	05:30	0.432	11:55	1.184	0.808	0.808	0.25
12/19/2020	04:00	2.23	20:10	3.64	3.02	05:55	4.59	19:20	6.24	5.49	05:15	0.440	20:10	1.202	0.820	0.820	0.37
12/20/2020	06:30	2.56	17:15	3.72	3.20	06:30	4.92	17:15	6.25	5.61	06:30	0.571	17:15	1.248	0.907	0.907	0.04
12/21/2020	01:30	2.49	18:35	4.67	3.61	01:30	4.78	20:55	6.91	5.93	01:30	0.534	20:55	1.901	1.163	1.163	1.07
12/22/2020	23:05	3.14	00:20	4.19	3.68	05:35	5.44	14:45	6.49	6.07	23:05	0.893	00:25	1.515	1.197	1.197	-
12/23/2020	23:55	2.68	11:30	3.68	3.16	04:30	5.14	20:55	6.47	5.93	03:05	0.644	11:30	1.259	0.943	0.943	-
12/24/2020	05:35	2.36	15:00	3.59	2.96	04:45	5.13	12:10	6.59	5.95	04:45	0.533	14:50	1.225	0.860	0.860	-
12/25/2020	03:55	2.18	16:35	3.53	2.86	04:30	4.90	11:35	6.35	5.77	03:55	0.451	16:35	1.170	0.795	0.795	0.49
12/26/2020	05:45	2.23	14:50	3.46	2.93	05:05	4.83	09:40	6.51	5.73	05:05	0.465	14:50	1.134	0.818	0.818	0.02
12/27/2020	05:00	2.13	12:40	3.54	2.92	05:00	4.84	11:05	6.42	5.72	05:00	0.427	12:40	1.166	0.815	0.815	0.13
12/28/2020	03:20	2.16	18:45	3.46	2.85	03:20	4.70	10:50	6.27	5.58	03:20	0.426	18:45	1.117	0.764	0.764	-
12/29/2020	04:05	2.09	17:35	3.45	2.82	03:20	4.58	11:00	6.13	5.41	03:20	0.399	17:35	1.075	0.731	0.731	0.14
12/30/2020	03:05	2.27	19:10	3.92	3.28	03:00	4.67	17:30	6.22	5.61	03:05	0.458	19:10	1.330	0.946	0.946	0.78
12/31/2020	04:20	2.80	17:00	3.94	3.39	02:35	5.10	16:50	6.34	5.77	04:20	0.681	17:00	1.374	1.013	1.013	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			148.023	30.65
Average	2.79	5.27	0.722	

Auburn.TFM.WA20-22

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

AUB_Y-3_101255

Site Address /Location:	2272 Riverwalk Dr SE		
Site Access Details:	Park next to M/H	Latitude:	47.288431°
		Longitude:	-122.197152°

Monitor Series	Location Type
TRITON+	Temporary
Pipe Size (H x W)	Pipe Shape
23.00 x 23.50	Circular
Manhole #	System Characteristics
Y-3(101-255)	Residential
Access	Traffic
Drive	None









ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.22.325

Installation Information

Installation Date:	Installation Type:
Thursday, May 14, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
12:46:00 PM	23.00 x 23.50
Depth of Flow (Wet DOF) (in)	
2.63"	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.38"
Peak Velocity (fps)	Velocity Sensor Offset (in)
5.4	0"
Silt (in)	Silt Type
0.00"	

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
9	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26	
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Fair

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

AUB_Y-4_101002

Site Commentary

SITE INFORMATION

Pipe	Elliptical (18 in H x 18 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021**, along with observed minimum and maximum data, are provided in the following table.

This site experienced backwater conditions during the month of January.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.77	1.25	0.145
Minimum	1.72	0.48	0.044
Maximum	5.91	1.65	0.274
Min Time	11/10/2020 4:00:00 AM	01/13/2021 4:00:00 AM	04/04/2021 4:00:00 AM
Max Time	01/12/2021 7:00:00 PM	11/26/2020 11:00:00 AM	01/12/2021 7:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the one hour average.

DATA UPTIME

Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-4_101002

Flow Monitor

AUB_Y-4_101002

Pipe Height
18.00
in

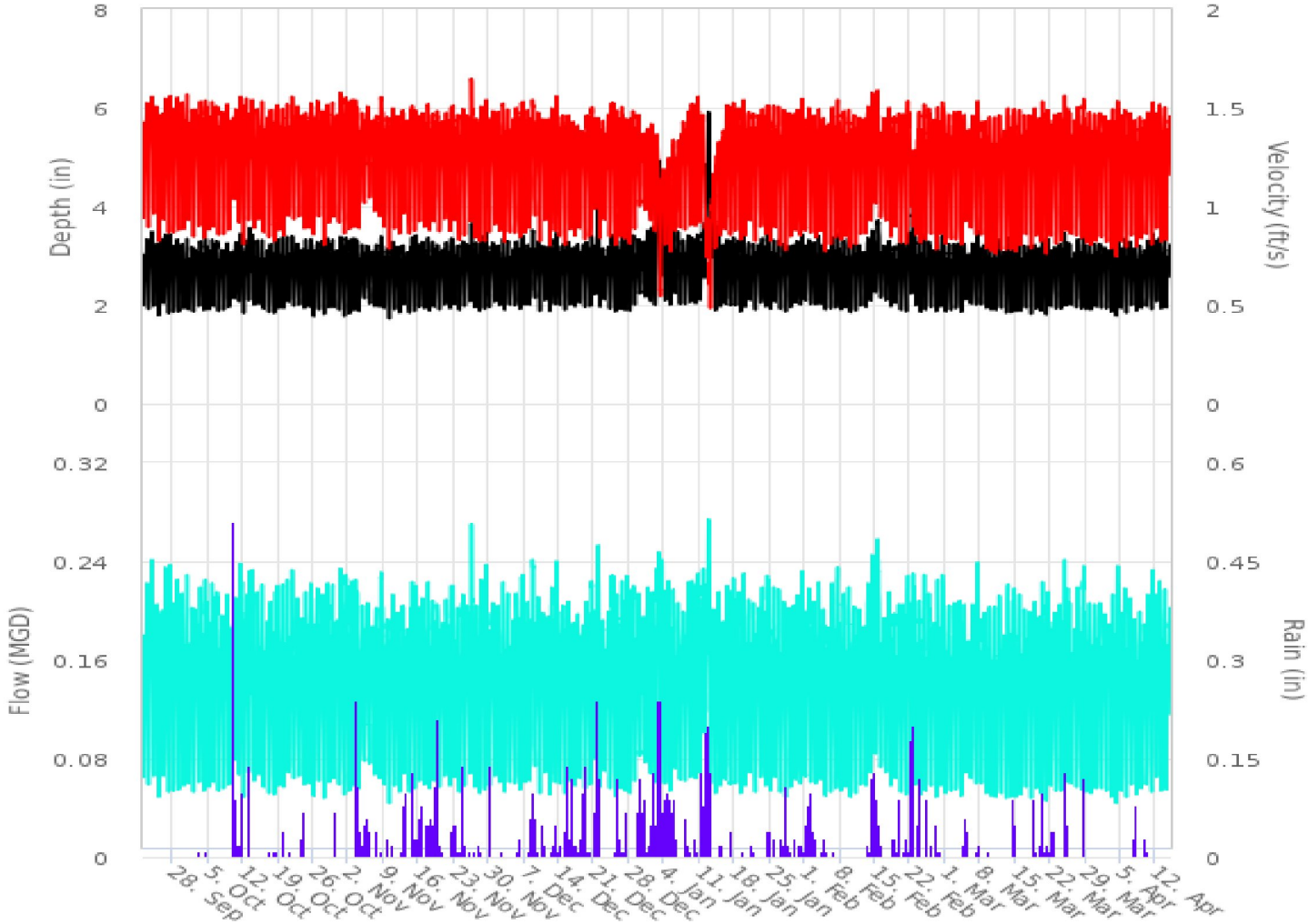
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



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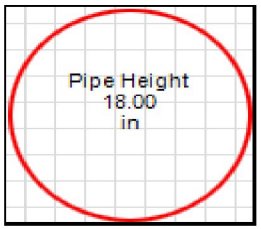
Scattergraph Report

AUB_Y-4_101002

Flow Monitor

AUB_Y-4_101002

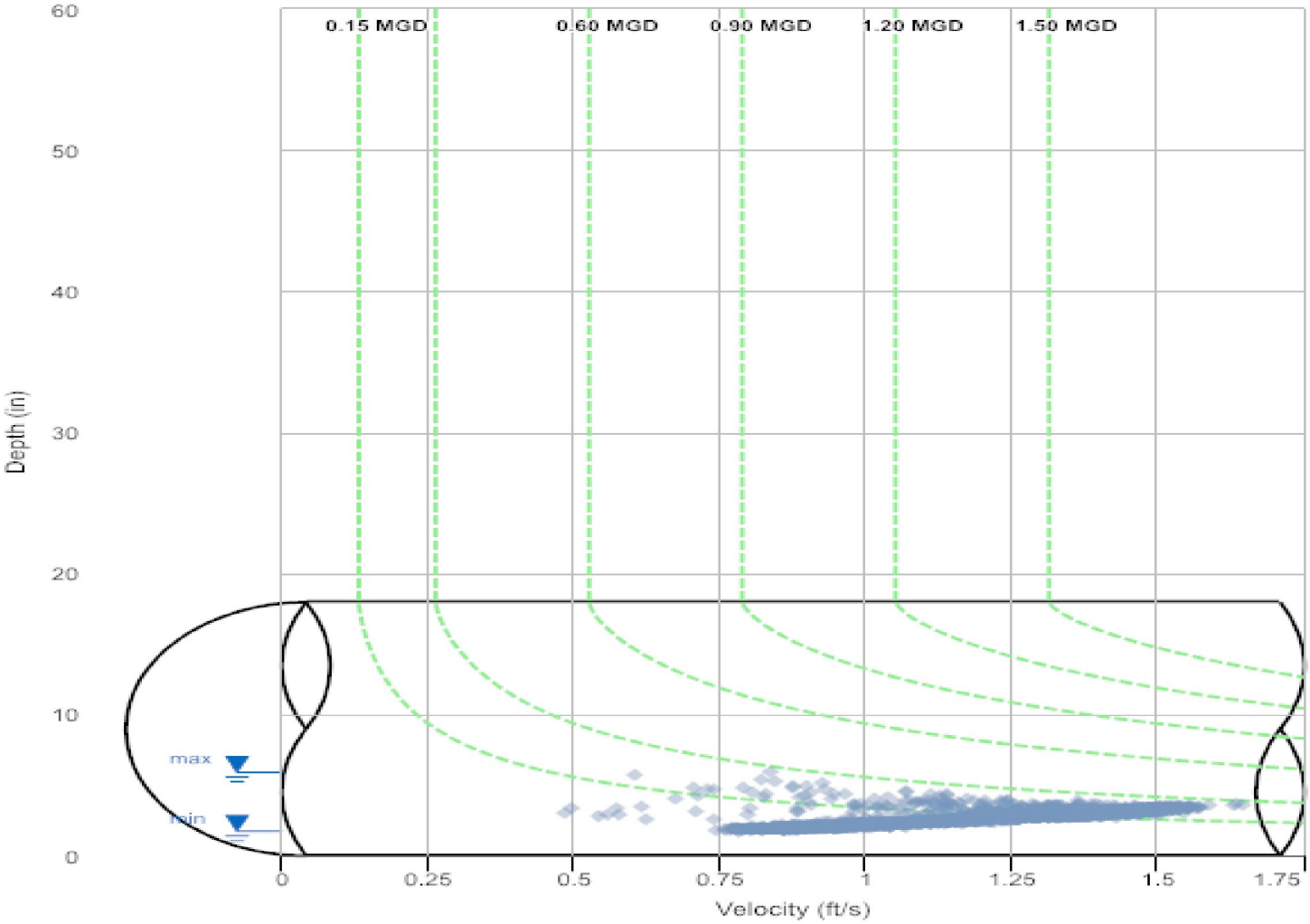


Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
AUB_Y-4_101002Pipe: Elliptical (18 in H x 18 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	07:30	2.01	16:15	3.88	2.85	07:25	0.89	11:40	1.45	1.17	07:25	0.063	16:15	0.254	0.141	0.141	0.51
01/02/2021	03:20	1.98	21:55	4.91	3.25	03:15	0.84	12:20	1.44	1.14	03:20	0.058	21:50	0.295	0.167	0.167	1.69
01/03/2021	07:05	2.44	00:45	5.20	3.71	05:20	0.48	11:55	1.25	0.95	05:20	0.056	12:00	0.269	0.166	0.166	0.65
01/04/2021	04:20	2.06	12:20	4.13	3.19	04:50	0.70	19:50	1.38	1.07	04:50	0.055	19:40	0.239	0.150	0.150	0.48
01/05/2021	03:00	1.95	19:45	3.77	2.93	04:05	0.67	19:15	1.46	1.14	04:15	0.048	19:15	0.229	0.144	0.144	0.52
01/06/2021	05:00	2.15	18:25	3.68	2.91	06:00	0.79	19:50	1.51	1.16	04:55	0.066	18:20	0.222	0.142	0.142	0.22
01/07/2021	04:30	1.99	16:55	3.48	2.77	04:20	0.87	19:00	1.49	1.23	04:25	0.060	19:00	0.220	0.141	0.141	-
01/08/2021	03:50	1.97	18:15	3.55	2.76	03:50	0.84	18:15	1.57	1.25	03:50	0.057	18:15	0.250	0.143	0.143	0.22
01/09/2021	05:45	2.03	11:25	3.43	2.82	04:25	0.89	14:35	1.58	1.29	05:45	0.063	14:35	0.240	0.154	0.154	-
01/10/2021	04:45	2.02	13:30	3.47	2.84	04:45	0.88	18:15	1.60	1.29	04:45	0.062	18:50	0.245	0.157	0.157	0.07
01/11/2021	04:00	2.07	21:05	3.70	2.96	03:15	0.90	18:15	1.53	1.26	03:55	0.066	21:15	0.250	0.161	0.161	1.06
01/12/2021	01:30	2.43	19:10	6.26	4.19	11:40	0.65	00:00	1.19	0.89	02:05	0.093	19:15	0.292	0.178	0.178	2.10
01/13/2021	23:50	2.68	00:35	6.06	3.58	04:10	0.42	19:50	1.27	0.91	04:10	0.056	00:50	0.222	0.146	0.146	0.09
01/14/2021	04:00	1.79	18:35	3.82	2.90	03:50	0.71	18:25	1.47	1.13	03:50	0.042	20:05	0.232	0.141	0.141	0.01
01/15/2021	04:30	1.93	17:50	3.31	2.77	05:05	0.82	20:50	1.43	1.20	04:30	0.054	21:00	0.205	0.139	0.139	0.09
01/16/2021	05:20	1.95	12:55	3.46	2.76	05:20	0.83	17:40	1.59	1.26	05:20	0.056	12:55	0.241	0.146	0.146	-
01/17/2021	04:40	1.97	18:15	3.44	2.79	04:45	0.82	18:05	1.55	1.27	04:40	0.056	18:15	0.236	0.151	0.151	0.10
01/18/2021	05:00	1.90	18:25	3.38	2.78	05:00	0.83	18:20	1.56	1.28	05:00	0.053	18:25	0.232	0.151	0.151	-
01/19/2021	03:55	1.84	20:05	3.49	2.73	03:55	0.82	18:40	1.63	1.27	03:55	0.050	20:05	0.245	0.144	0.144	0.01
01/20/2021	04:30	1.93	21:25	3.36	2.72	04:30	0.83	21:20	1.52	1.25	04:30	0.055	21:20	0.224	0.141	0.141	-
01/21/2021	04:15	2.05	19:25	3.34	2.75	04:05	0.90	19:15	1.51	1.26	04:05	0.065	19:20	0.220	0.143	0.143	0.11
01/22/2021	04:50	1.88	20:05	3.28	2.72	04:25	0.81	20:05	1.50	1.24	04:25	0.052	20:05	0.214	0.140	0.140	-
01/23/2021	04:50	2.02	12:10	3.45	2.76	04:40	0.87	12:10	1.52	1.26	04:40	0.062	12:10	0.233	0.146	0.146	-
01/24/2021	05:30	1.94	11:30	3.49	2.82	05:20	0.84	11:30	1.55	1.27	05:20	0.056	11:30	0.241	0.154	0.154	0.16
01/25/2021	04:45	1.86	20:45	3.44	2.74	04:45	0.78	20:45	1.56	1.25	04:45	0.049	20:45	0.237	0.143	0.143	0.04
01/26/2021	04:10	2.04	20:10	3.42	2.76	04:05	0.87	19:50	1.54	1.26	04:10	0.062	20:00	0.231	0.145	0.145	-
01/27/2021	03:50	1.88	18:20	3.34	2.72	03:50	0.78	18:15	1.54	1.24	03:50	0.050	18:20	0.225	0.139	0.139	0.14
01/28/2021	04:20	1.77	18:55	3.31	2.70	03:50	0.71	18:55	1.50	1.23	04:20	0.041	18:55	0.217	0.138	0.138	0.24
01/29/2021	03:40	1.91	19:45	3.38	2.70	03:30	0.83	19:35	1.53	1.24	03:35	0.054	19:45	0.227	0.138	0.138	0.03
01/30/2021	05:55	1.99	10:55	3.38	2.75	05:55	0.83	10:50	1.52	1.25	05:55	0.057	10:55	0.226	0.144	0.144	0.07
01/31/2021	04:20	1.99	14:05	3.46	2.82	03:45	0.82	12:10	1.60	1.26	03:50	0.057	11:25	0.240	0.152	0.152	0.12
02/01/2021	03:55	2.05	20:05	3.45	2.81	02:15	0.86	18:55	1.55	1.26	04:00	0.062	20:05	0.238	0.149	0.149	0.82
02/02/2021	05:05	1.97	08:25	3.41	2.78	04:05	0.85	08:20	1.55	1.25	05:00	0.058	08:25	0.234	0.144	0.144	0.31
02/03/2021	03:45	1.97	19:45	3.48	2.77	03:45	0.81	20:45	1.54	1.24	03:45	0.055	19:40	0.234	0.144	0.144	0.06
02/04/2021	04:10	1.96	18:40	3.35	2.76	03:30	0.84	14:20	1.50	1.24	04:05	0.057	14:20	0.219	0.142	0.142	0.07
02/05/2021	04:15	1.89	17:30	3.15	2.72	04:10	0.75	17:30	1.46	1.20	04:15	0.048	17:30	0.196	0.135	0.135	0.01
02/06/2021	04:35	1.89	11:40	3.57	2.76	04:20	0.78	11:30	1.60	1.23	04:35	0.050	11:40	0.255	0.144	0.144	0.01
02/07/2021	04:55	1.88	13:50	3.50	2.80	04:45	0.81	12:10	1.59	1.26	04:55	0.051	12:10	0.242	0.152	0.152	-
02/08/2021	04:30	1.88	19:10	3.40	2.74	04:25	0.82	21:05	1.52	1.23	04:30	0.052	19:10	0.226	0.141	0.141	-
02/09/2021	05:05	1.87	19:50	3.42	2.73	04:55	0.81	19:15	1.53	1.24	05:00	0.051	19:50	0.228	0.140	0.140	-
02/10/2021	04:45	1.83	20:10	3.34	2.70	04:05	0.77	20:10	1.52	1.22	04:05	0.047	20:10	0.222	0.137	0.137	-
02/11/2021	04:10	1.88	20:25	3.32	2.70	03:40	0.78	20:30	1.51	1.22	04:20	0.050	20:30	0.219	0.137	0.137	-
02/12/2021	03:35	1.94	18:00	3.24	2.73	03:35	0.82	17:55	1.48	1.25	03:35	0.055	18:00	0.207	0.141	0.141	-
02/13/2021	05:30	1.91	14:25	3.45	2.78	05:30	0.82	14:20	1.56	1.26	05:30	0.053	14:25	0.238	0.148	0.148	0.08
02/14/2021	04:20	2.04	12:10	3.53	2.86	04:15	0.88	11:20	1.63	1.29	04:15	0.063	11:20	0.255	0.158	0.158	0.71
02/15/2021	04:50	2.23	14:10	3.87	3.04	05:00	0.98	10:50	1.64	1.28	05:00	0.079	12:40	0.275	0.169	0.169	0.78
02/16/2021	03:50	2.13	19:05	3.32	2.78	03:50	0.93	20:35	1.55	1.24	03:50	0.071	19:05	0.211	0.143	0.143	0.07
02/17/2021	03:45	2.07	20:15	3.41	2.74	04:15	0.90	20:10	1.56	1.25	04:15	0.066	20:15	0.233	0.141	0.141	-
02/18/2021	05:00	1.92	21:15	3.23	2.74	05:00	0.81	16:55	1.48	1.25	05:00	0.053	21:20	0.204	0.141	0.141	0.09
02/19/2021	04:25	2.00	19:10	3.35	2.70	04:15	0.88	19:00	1.53	1.23	04:25	0.061	19:00	0.223	0.136	0.136	0.17
02/20/2021	05:00	1.82	12:45	3.32	2.73	04:55	0.77	18:25	1.55	1.25	05:00	0.046	13:20	0.217	0.144	0.144	0.07
02/21/2021	05:30	1.85	23:40	3.84	2.81	05:05	0.80	13:20	1.56	1.26	05:20	0.050	12:35	0.233	0.152	0.152	0.42
02/22/2021	04:45	2.18	13:20	5.10	3.34	13:10	0.83	19:35	1.36	1.14	04:45	0.076	19:40	0.246	0.166	0.166	0.98
02/23/2021	04:50	1.96	21:45	3.78	2.76	03:10	0.84	20:50	1.53	1.23	04:50	0.057	20:50	0.221	0.141	0.141	0.27
02/24/2021	04:10	1.85	20:20	3.53	2.73	04:35	0.79	20:20	1.65	1.24	04:35	0.049	20:20	0.260	0.141	0.141	-
02/25/2021	03:30	1.86	18:00	3.38	2.72	03:45	0.80	18:00	1.52	1.24	03:50	0.050	18:00	0.226	0.139	0.139	0.18
02/26/2021	04:00	1.87	16:20	3.16	2.70	04:00	0.81	16:40	1.45	1.24	04:00	0.051	16:20	0.194	0.137	0.137	0.10
02/27/2021	04:25	1.86	11:00	3.45	2.71	05:45	0.76	10:25	1.56	1.23	04:25	0.048	10:55	0.235	0.140	0.140	0.02
02/28/2021	04:30	1.94	11:20	3.47	2.78	04:30	0.83	11:20	1.58	1.27	04:30	0.055	11:20	0.244	0.151	0.151	0.02
03/01/2021	04:00	1.78	20:30	3.35	2.68	03:50	0.77	19:50	1.52	1.23	04:00	0.045	20:30	0.220	0.137	0.137	-
03/02/2021	03:55	1.87	20:50	3.33	2.70	03:45	0.77	21:50	1.54	1.23	03:50	0.049	20:50	0.220	0.137	0.137	-
03/03/2021	03:15	1.88	21:10	3.45	2.69	03:15	0.79	21:05	1.52	1.24	03:15	0.050	21:10	0.233	0.137	0.137	-
03/04/2021	04:35	1.81	20:35	3.36	2.69	04:20	0.79	20:25	1.49	1.23	04:35	0.047	20:30	0.218	0.137	0.137	0.20
03/05/2021	06:00	2.08	13:30	3.14	2.71	03:00	0.91	13:30	1.43	1.23	03:20	0.067	13:30	0.191	0.136	0.136	0.05
03/06/2021	05:25	2.00	12:15	3.37	2.76	03:50	0.87	20:05	1.50	1.25	03:50	0.061	12:10	0.220	0.144	0.144	-
03/07/2021	05:30	1.96	11:15	3.55	2.79	05:30	0.79	10:45	1.59	1.25	05:30	0.053	11:15	0.250	0.149	0.149	0.04
03/08/2021	04:15	1.98	20:05	3.28	2.75	04:15	0.82	19:50	1.46	1.21	04:15	0.056	20:05	0.207	0.139	0.139	-
03/09/2021	04:30	1.91	21:25	3.37	2.73	04:30	0.76	21:15	1.50	1.21	04:30	0.050	21:25	0.221	0.137	0.137	0.01
03/10/2021	04:35	1.87	20:55	3.38	2.72	04:30	0.75	21:00	1.48	1.20	04:35	0.047	20:55	0.219	0.135	0.135	-
03/11/2021	03:30	1.86	19:40	3.40	2.73	03:25	0.74	19:25	1.50	1.20	03:30	0.046	19:45	0.225	0.137	0.137	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/12/2021	04:30	1.90	19:05	3.20	2.71	04:25	0.74	17:50	1.43	1.20	04:25	0.048	19:05	0.195	0.134	0.134	-
03/13/2021	04:05	1.82	11:05	3.42	2.72	04:00	0.76	10:20	1.55	1.22	04:00	0.046	10:20	0.230	0.140	0.140	-
03/14/2021	04:35	1.82	20:25	3.44	2.75	04:30	0.76	20:20	1.54	1.23	04:30	0.046	20:25	0.235	0.145	0.145	0.30
03/15/2021	03:55	1.82	20:05	3.36	2.71	03:35	0.75	20:05	1.52	1.22	03:50	0.046	20:05	0.223	0.137	0.137	-
03/16/2021	02:30	1.83	21:10	3.29	2.69	02:25	0.77	19:45	1.52	1.23	02:25	0.047	21:05	0.213	0.137	0.137	-
03/17/2021	03:40	1.92	20:05	3.33	2.70	02:55	0.84	20:00	1.53	1.24	03:40	0.055	20:05	0.223	0.138	0.138	-
03/18/2021	03:05	1.76	20:40	3.29	2.68	03:05	0.75	20:20	1.56	1.23	03:05	0.043	20:20	0.218	0.137	0.137	0.11
03/19/2021	04:00	1.86	18:15	3.27	2.68	04:05	0.79	18:10	1.49	1.23	04:05	0.049	18:15	0.212	0.136	0.136	0.03
03/20/2021	03:55	1.81	10:10	3.38	2.73	03:50	0.78	10:20	1.62	1.25	03:55	0.046	10:20	0.240	0.143	0.143	0.17
03/21/2021	04:10	1.79	12:45	3.38	2.73	04:05	0.74	10:50	1.55	1.23	04:10	0.044	10:55	0.229	0.143	0.143	0.07
03/22/2021	02:45	1.96	14:20	3.31	2.72	02:20	0.84	14:20	1.51	1.24	02:40	0.057	14:20	0.217	0.140	0.140	0.11
03/23/2021	02:50	1.83	20:40	3.32	2.71	02:50	0.76	18:55	1.51	1.24	02:50	0.046	20:40	0.218	0.139	0.139	-
03/24/2021	02:55	1.87	20:30	3.58	2.75	02:50	0.80	20:25	1.71	1.26	02:55	0.050	20:30	0.275	0.144	0.144	0.34
03/25/2021	03:00	1.88	10:25	4.10	2.76	03:00	0.81	10:25	1.84	1.26	03:00	0.051	10:25	0.360	0.145	0.145	0.27
03/26/2021	03:20	1.98	19:10	3.14	2.68	03:10	0.83	19:15	1.50	1.23	03:15	0.057	19:15	0.199	0.135	0.135	-
03/27/2021	04:40	1.90	10:00	3.39	2.74	04:40	0.79	10:00	1.54	1.24	04:40	0.051	10:00	0.230	0.143	0.143	-
03/28/2021	04:10	1.90	15:05	3.53	2.80	04:05	0.81	14:45	1.57	1.26	04:15	0.052	15:20	0.248	0.152	0.152	0.37
03/29/2021	03:05	1.87	20:15	3.35	2.70	01:35	0.80	20:20	1.55	1.22	03:10	0.050	20:15	0.225	0.138	0.138	-
03/30/2021	02:35	1.85	20:25	3.29	2.69	02:45	0.75	20:25	1.49	1.22	02:45	0.046	20:25	0.213	0.136	0.136	-
03/31/2021	03:55	1.92	10:00	3.30	2.74	03:55	0.79	19:30	1.49	1.24	03:55	0.052	10:00	0.212	0.141	0.141	-
04/01/2021	02:50	1.91	19:45	3.27	2.72	03:25	0.82	18:45	1.51	1.23	03:25	0.053	19:45	0.209	0.138	0.138	-
04/02/2021	03:20	1.91	19:00	3.32	2.74	03:20	0.80	18:55	1.49	1.25	03:20	0.052	19:00	0.216	0.142	0.142	-
04/03/2021	03:10	1.84	11:45	3.43	2.70	03:15	0.77	11:45	1.59	1.22	03:10	0.048	11:45	0.242	0.138	0.138	-
04/04/2021	04:35	1.77	10:45	3.49	2.77	04:35	0.73	10:40	1.57	1.25	04:35	0.042	10:40	0.244	0.148	0.148	-
04/05/2021	02:05	1.91	19:55	3.43	2.76	02:00	0.79	12:05	1.56	1.25	02:05	0.051	12:05	0.236	0.145	0.145	-
04/06/2021	03:25	1.80	19:35	3.40	2.68	03:20	0.77	19:30	1.55	1.21	03:20	0.046	19:30	0.232	0.135	0.135	-
04/07/2021	02:05	1.96	19:45	3.24	2.67	02:05	0.82	17:45	1.46	1.21	02:00	0.056	19:45	0.205	0.132	0.132	0.22
04/08/2021	03:20	1.84	13:10	3.27	2.69	03:20	0.76	13:10	1.49	1.21	03:20	0.047	13:10	0.211	0.134	0.134	-
04/09/2021	03:55	1.90	19:10	3.25	2.71	03:20	0.82	18:40	1.49	1.24	04:00	0.053	18:45	0.207	0.138	0.138	0.03
04/10/2021	03:50	1.92	10:30	3.41	2.76	03:30	0.84	10:35	1.51	1.25	03:45	0.055	10:35	0.226	0.144	0.144	0.02
04/11/2021	04:35	1.89	09:55	3.50	2.83	04:15	0.79	09:50	1.62	1.27	04:45	0.050	09:50	0.252	0.154	0.154	-
04/12/2021	03:05	2.05	20:30	3.46	2.77	03:00	0.87	20:15	1.57	1.25	03:05	0.062	20:30	0.239	0.144	0.144	-
04/13/2021	03:20	1.88	20:10	3.45	2.76	03:20	0.79	20:10	1.55	1.25	03:20	0.050	20:10	0.237	0.144	0.144	-
04/14/2021	03:55	1.90	21:20	3.32	2.74	03:55	0.81	21:20	1.51	1.25	03:55	0.052	21:20	0.219	0.142	0.141	-
09/22/2020	02:55	1.96	19:35	3.42	2.75	02:55	0.89	20:20	1.57	1.29	02:55	0.060	19:35	0.236	0.146	0.146	-
09/23/2020	04:05	1.89	19:30	3.52	2.80	02:05	0.88	19:30	1.61	1.32	03:45	0.057	19:30	0.254	0.155	0.155	-
09/24/2020	04:00	1.95	20:05	3.34	2.73	02:55	0.92	15:35	1.55	1.31	02:45	0.062	19:55	0.217	0.148	0.148	-
09/25/2020	03:30	1.75	16:50	3.41	2.80	03:35	0.79	20:20	1.52	1.27	03:35	0.045	19:45	0.223	0.150	0.150	-
09/26/2020	03:40	2.01	11:20	3.52	2.77	03:40	0.89	11:20	1.61	1.30	03:40	0.063	11:20	0.253	0.150	0.150	-
09/27/2020	04:15	1.79	11:50	3.54	2.74	04:00	0.85	11:20	1.60	1.29	04:15	0.050	11:50	0.254	0.150	0.150	-
09/28/2020	04:00	1.81	20:40	3.38	2.73	04:05	0.83	18:40	1.61	1.31	04:00	0.050	20:35	0.231	0.149	0.149	-
09/29/2020	04:00	1.84	19:45	3.33	2.68	02:30	0.84	19:55	1.57	1.30	03:45	0.053	19:55	0.228	0.144	0.144	-
09/30/2020	03:25	1.91	19:55	3.42	2.70	03:00	0.88	20:00	1.61	1.30	03:25	0.057	19:55	0.242	0.145	0.145	-
10/01/2020	03:25	1.88	19:40	3.22	2.67	03:20	0.90	19:10	1.54	1.29	03:20	0.057	19:10	0.211	0.140	0.140	-
10/02/2020	03:20	1.84	10:40	3.75	2.64	03:20	0.83	10:40	1.76	1.26	03:20	0.051	10:40	0.304	0.136	0.136	-
10/03/2020	04:15	1.95	10:55	3.38	2.74	04:15	0.88	10:55	1.56	1.29	04:10	0.059	10:55	0.232	0.147	0.147	0.01
10/04/2020	04:30	1.87	10:35	3.37	2.75	04:20	0.82	13:30	1.58	1.28	04:20	0.052	13:35	0.228	0.149	0.149	0.01
10/05/2020	04:00	1.85	19:20	3.35	2.70	03:50	0.85	19:25	1.58	1.28	04:05	0.052	19:20	0.231	0.144	0.144	-
10/06/2020	03:15	1.96	19:25	3.34	2.74	03:20	0.88	17:15	1.55	1.30	03:20	0.059	17:20	0.224	0.148	0.148	-
10/07/2020	04:05	1.83	19:15	3.17	2.65	04:10	0.81	19:20	1.50	1.26	04:10	0.049	19:50	0.202	0.137	0.137	-
10/08/2020	04:00	1.82	18:50	3.31	2.71	04:00	0.81	19:55	1.54	1.28	04:00	0.049	18:50	0.220	0.144	0.144	-
10/09/2020	03:50	1.89	19:05	3.24	2.73	03:55	0.85	14:00	1.55	1.29	03:50	0.055	19:05	0.210	0.146	0.146	0.64
10/10/2020	04:25	2.09	13:10	3.31	2.85	04:20	0.98	11:40	1.52	1.33	04:20	0.073	11:40	0.217	0.158	0.158	1.04
10/11/2020	04:45	2.05	12:40	3.52	2.86	03:55	0.90	12:40	1.60	1.30	04:50	0.064	12:40	0.252	0.160	0.160	0.53
10/12/2020	03:25	1.82	19:05	3.41	2.74	03:20	0.78	15:25	1.61	1.28	03:20	0.047	19:05	0.232	0.147	0.147	-
10/13/2020	02:20	2.07	07:30	4.28	2.85	02:15	0.91	07:45	1.71	1.29	02:20	0.066	07:35	0.346	0.155	0.155	0.61
10/14/2020	04:20	1.97	19:10	3.45	2.72	04:20	0.86	18:45	1.55	1.25	04:20	0.059	18:50	0.235	0.141	0.141	-
10/15/2020	03:10	1.99	19:00	3.38	2.73	03:10	0.89	18:55	1.56	1.29	03:10	0.062	19:00	0.231	0.146	0.146	-
10/16/2020	03:15	1.91	18:15	3.18	2.69	03:15	0.85	19:50	1.47	1.25	03:15	0.055	18:20	0.196	0.138	0.138	-
10/17/2020	04:45	1.81	11:35	3.35	2.71	03:35	0.82	11:30	1.55	1.25	04:45	0.049	11:35	0.228	0.140	0.140	0.01
10/18/2020	04:30	1.79	12:15	3.40	2.76	04:30	0.79	19:35	1.54	1.26	04:30	0.047	12:15	0.229	0.148	0.148	0.03
10/19/2020	03:55	1.87	20:00	3.48	2.73	03:55	0.83	20:00	1.56	1.26	03:50	0.053	20:00	0.241	0.143	0.143	0.05
10/20/2020	02:20	1.92	20:00	3.43	2.75	02:15	0.84	19:35	1.54	1.27	02:20	0.055	20:00	0.233	0.146	0.146	-
10/21/2020	02:20	2.00	18:25	3.46	2.73	02:10	0.91	18:20	1.59	1.28	02:15	0.063	18:25	0.245	0.144	0.144	0.01
10/22/2020	03:45	1.91	20:25	3.31	2.70	03:45	0.89	21:05	1.54	1.29	03:45	0.058	20:25	0.220	0.143	0.143	-
10/23/2020	03:10	1.99	19:55	3.24	2.68	03:00	0.89	19:55	1.51	1.27	03:00	0.063	19:55	0.212	0.139	0.139	0.20
10/24/2020	04:25	1.92	10:05	3.43	2.71	04:35	0.87	10:05	1.51	1.26	04:25	0.058	10:05	0.230	0.143	0.143	0.02
10/25/2020	04:50	1.95	11:40	3.40	2.76	04:45	0.86	09:45	1.57	1.28	04:45	0.058	11:40	0.235	0.150	0.150	-
10/26/2020	02:25	1.75	19:15	3.35	2.69	02:20	0.84	19:15	1.59	1.27	02:20	0.048	19:15	0.234	0.143	0.143	-
10/27/2020	03:10	1.88	19:45	3.44	2.73	03:00	0.93	17:10	1.56	1.26	03:05	0.059	19:45	0.233	0.143	0.143	-
10/28/2020	03:35	1.79	19:05	3.42	2.74	02:50	0.79	19:05	1.57	1.26	03:40	0.046	19:05	0.237	0.144	0.144	-
10/29/2020	02:50	1.91	20:35	3.36	2.78	03:20	0.88	20:00	1.57	1.30	03:20	0.057	20:00	0.228	0.151	0.151	-
10/30/2020	02:30	1.92	15:35	3.22	2.74	02:30	0.92	19:45	1.56	1.31	02:30	0.060	15:30	0.206	0.148	0.148	0.10
10/31/2020	04:40	1.87	10:15	3.42	2.74	04:45	0.89	10:20	1.61	1.29	04:40	0.056	10:20	0.242	0.149	0.149	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/01/2020	04:15	1.73	11:25	3.39	2.76	04:10	0.81	13:25	1.60	1.29	04:10	0.046	11:05	0.236	0.154	0.154	-
11/02/2020	04:00	1.79	20:20	3.43	2.72	04:00	0.85	19:35	1.59	1.29	04:00	0.050	19:40	0.240	0.146	0.146	-
11/03/2020	03:25	1.85	10:45	3.37	2.80	03:35	0.86	10:15	1.56	1.30	03:35	0.053	10:15	0.228	0.154	0.154	0.83
11/04/2020	04:10	1.83	19:40	3.29	2.70	04:10	0.84	19:30	1.50	1.26	04:10	0.051	19:40	0.214	0.141	0.141	0.09
11/05/2020	03:55	2.07	19:55	3.25	2.75	03:55	0.98	19:05	1.53	1.30	04:00	0.071	19:55	0.215	0.147	0.147	0.34
11/06/2020	04:50	1.98	18:50	3.23	2.69	04:25	1.02	17:20	1.49	1.31	04:45	0.071	17:25	0.207	0.143	0.143	0.10
11/07/2020	05:40	1.92	13:25	3.29	2.73	05:40	0.92	13:15	1.49	1.29	05:40	0.061	13:15	0.211	0.146	0.146	0.07
11/08/2020	04:35	1.94	12:10	3.43	2.78	04:35	0.93	10:45	1.59	1.31	04:35	0.062	12:20	0.239	0.154	0.154	0.01
11/09/2020	03:45	1.91	19:45	3.18	2.67	03:40	0.87	18:30	1.50	1.26	03:45	0.057	18:30	0.203	0.138	0.138	0.04
11/10/2020	04:20	1.67	20:00	3.35	2.66	03:35	0.75	19:45	1.53	1.24	04:20	0.041	20:00	0.224	0.138	0.138	0.03
11/11/2020	04:20	1.88	19:35	3.29	2.67	04:35	0.86	19:35	1.50	1.26	04:20	0.055	19:35	0.214	0.138	0.138	-
11/12/2020	04:30	1.82	18:45	3.27	2.66	04:30	0.83	18:40	1.53	1.27	04:30	0.050	18:45	0.217	0.139	0.139	0.16
11/13/2020	03:10	1.98	19:40	3.22	2.67	02:45	0.94	19:40	1.49	1.28	03:10	0.064	19:40	0.206	0.139	0.139	0.38
11/14/2020	05:50	1.75	18:55	3.46	2.73	05:50	0.81	18:50	1.61	1.28	05:50	0.046	18:50	0.247	0.147	0.147	0.47
11/15/2020	05:45	1.85	10:55	3.46	2.81	05:35	0.84	10:40	1.53	1.29	05:50	0.052	10:45	0.234	0.153	0.153	0.19
11/16/2020	04:25	1.90	17:50	3.40	2.77	04:25	0.88	17:50	1.56	1.30	04:25	0.057	17:50	0.234	0.150	0.150	0.31
11/17/2020	04:30	1.90	19:55	3.57	2.72	04:30	0.88	19:55	1.64	1.27	04:30	0.057	19:55	0.264	0.144	0.144	0.20
11/18/2020	04:25	1.84	19:00	3.32	2.72	04:30	0.84	18:20	1.49	1.26	04:30	0.051	19:00	0.214	0.143	0.143	0.30
11/19/2020	03:15	1.92	20:05	3.32	2.73	02:15	0.87	17:45	1.52	1.27	03:15	0.058	17:45	0.216	0.144	0.144	0.50
11/20/2020	04:15	1.87	20:15	3.17	2.69	03:25	0.84	10:45	1.46	1.25	03:25	0.053	18:05	0.194	0.139	0.139	0.01
11/21/2020	04:45	1.97	11:15	3.33	2.74	04:35	0.91	11:20	1.49	1.28	04:35	0.062	11:15	0.216	0.145	0.145	-
11/22/2020	05:20	1.88	11:40	3.43	2.81	05:20	0.84	11:40	1.56	1.28	05:20	0.053	11:40	0.236	0.154	0.154	0.21
11/23/2020	05:05	1.90	19:00	3.36	2.72	05:00	0.87	19:00	1.52	1.26	05:00	0.057	19:00	0.225	0.142	0.142	0.14
11/24/2020	05:00	1.84	16:25	3.41	2.75	04:55	0.78	20:20	1.61	1.25	04:55	0.048	16:25	0.231	0.143	0.143	0.21
11/25/2020	03:20	1.94	14:45	3.44	2.76	03:15	0.82	14:45	1.51	1.26	03:15	0.055	14:45	0.230	0.145	0.145	0.05
11/26/2020	06:35	2.05	11:55	3.69	2.89	06:45	0.89	11:30	1.70	1.32	06:45	0.064	11:50	0.283	0.165	0.165	0.02
11/27/2020	05:05	1.90	12:20	3.38	2.68	05:05	0.82	12:35	1.48	1.22	05:05	0.053	12:15	0.217	0.136	0.136	-
11/28/2020	05:55	1.80	12:55	3.49	2.78	05:55	0.78	12:45	1.55	1.26	05:55	0.046	12:55	0.240	0.149	0.149	0.05
11/29/2020	05:15	1.86	12:55	3.53	2.77	06:05	0.78	12:35	1.60	1.25	05:15	0.050	12:35	0.247	0.148	0.148	-
11/30/2020	03:20	1.94	18:45	3.36	2.77	03:10	0.85	19:10	1.52	1.28	03:10	0.056	18:50	0.220	0.147	0.147	0.36
12/01/2020	05:00	1.97	19:55	3.28	2.73	05:00	0.85	19:20	1.52	1.25	05:00	0.058	19:20	0.212	0.141	0.141	-
12/02/2020	03:10	1.96	20:50	3.48	2.74	02:55	0.86	20:45	1.57	1.26	03:00	0.058	20:55	0.244	0.145	0.145	0.01
12/03/2020	04:20	1.88	20:45	3.37	2.74	04:20	0.80	20:40	1.53	1.26	04:20	0.051	20:45	0.226	0.143	0.143	-
12/04/2020	04:30	1.97	19:05	3.26	2.70	04:25	0.85	19:05	1.48	1.25	04:25	0.058	19:05	0.208	0.139	0.139	-
12/05/2020	04:10	1.97	10:55	3.44	2.73	04:25	0.83	10:55	1.55	1.25	04:25	0.057	10:55	0.237	0.144	0.144	0.03
12/06/2020	05:10	1.84	18:25	3.52	2.83	05:05	0.81	18:00	1.57	1.28	05:05	0.050	18:25	0.245	0.156	0.156	0.03
12/07/2020	04:40	1.95	18:45	3.29	2.72	04:35	0.83	18:15	1.50	1.25	04:35	0.056	18:50	0.215	0.141	0.141	-
12/08/2020	04:55	1.96	17:40	3.57	2.88	04:55	0.85	17:50	1.59	1.30	04:55	0.057	17:50	0.254	0.161	0.161	0.87
12/09/2020	05:05	2.05	13:35	3.39	2.78	05:05	0.89	19:20	1.50	1.27	05:05	0.064	13:35	0.221	0.146	0.146	0.17
12/10/2020	04:40	1.86	18:25	3.27	2.72	03:55	0.81	20:55	1.48	1.25	04:40	0.050	18:25	0.208	0.141	0.141	0.07
12/11/2020	04:30	2.04	18:05	3.29	2.76	04:30	0.89	10:00	1.49	1.27	04:30	0.064	18:10	0.211	0.145	0.145	0.02
12/12/2020	04:30	1.85	12:30	3.42	2.74	04:35	0.77	12:20	1.53	1.24	04:30	0.048	12:30	0.230	0.143	0.143	0.01
12/13/2020	06:00	1.99	11:20	3.56	2.80	04:55	0.82	12:20	1.67	1.27	04:55	0.058	12:20	0.262	0.151	0.151	0.24
12/14/2020	04:50	1.95	18:20	3.37	2.74	03:35	0.80	18:15	1.52	1.24	03:35	0.055	18:20	0.225	0.141	0.141	0.05
12/15/2020	04:30	1.89	19:15	3.43	2.77	04:30	0.78	17:50	1.54	1.25	04:30	0.050	19:15	0.230	0.146	0.146	0.58
12/16/2020	05:00	1.98	11:20	3.30	2.77	04:05	0.86	11:20	1.49	1.25	04:05	0.060	11:20	0.214	0.145	0.145	0.39
12/17/2020	04:15	1.91	18:15	3.34	2.75	04:05	0.82	17:20	1.44	1.23	04:15	0.053	18:15	0.210	0.140	0.140	0.08
12/18/2020	05:05	1.98	20:30	3.38	2.78	02:55	0.85	13:00	1.42	1.23	05:05	0.059	20:30	0.202	0.142	0.142	0.25
12/19/2020	06:15	1.93	11:45	3.38	2.76	06:05	0.81	11:50	1.49	1.25	06:15	0.053	11:45	0.219	0.145	0.145	0.37
12/20/2020	05:05	1.89	12:10	3.48	2.79	05:05	0.81	13:05	1.60	1.26	05:00	0.052	11:40	0.239	0.148	0.148	0.04
12/21/2020	04:05	2.16	18:55	4.18	2.98	04:00	0.96	18:30	1.66	1.24	04:05	0.074	18:30	0.295	0.157	0.157	1.07
12/22/2020	04:30	1.90	18:05	3.19	2.75	04:25	0.81	18:10	1.48	1.23	04:25	0.052	18:10	0.201	0.141	0.141	-
12/23/2020	04:10	2.08	20:40	3.26	2.73	03:55	0.92	21:05	1.52	1.25	03:55	0.068	21:05	0.209	0.140	0.140	-
12/24/2020	04:20	1.89	14:40	3.50	2.83	04:30	0.81	14:30	1.58	1.28	04:25	0.052	14:30	0.244	0.155	0.155	-
12/25/2020	06:00	1.80	12:45	3.40	2.70	05:55	0.76	12:35	1.53	1.23	06:00	0.045	12:45	0.225	0.140	0.140	0.49
12/26/2020	06:05	1.91	12:00	3.44	2.76	06:15	0.82	11:50	1.53	1.24	06:15	0.053	11:55	0.232	0.144	0.144	0.02
12/27/2020	04:20	1.84	12:10	3.58	2.81	04:25	0.79	12:40	1.50	1.24	04:25	0.048	12:40	0.238	0.149	0.149	0.13
12/28/2020	04:30	1.86	20:30	3.59	2.77	04:25	0.80	18:20	1.52	1.24	04:30	0.050	20:30	0.242	0.146	0.146	-
12/29/2020	03:50	1.99	20:45	3.46	2.75	03:00	0.88	20:40	1.54	1.25	03:15	0.061	20:45	0.237	0.143	0.143	0.14
12/30/2020	02:00	2.21	18:15	3.38	2.86	02:00	0.96	21:35	1.48	1.25	02:00	0.077	21:35	0.216	0.149	0.149	0.78
12/31/2020	04:55	2.12	17:30	3.63	2.90	04:50	0.94	17:55	1.49	1.24	04:50	0.071	17:55	0.241	0.153	0.153	0.17

09/22/2020 00:00 - 04/14/2021 23:56

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			29.683	30.65
Average	2.77	1.25	0.145	

Auburn.TFM.WA20-22

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

AUB_Y-4_101002

Site Address /Location:	Cnr K St SE and 17th SE, Auburn		
Site Access Details:	Park on K St SE	Latitude:	47.293542°
		Longitude:	-122.216166°

Monitor Series	Location Type
TRITON+	Temporary
Pipe Size (H x W)	Pipe Shape
18.00 x18.00	Circular

Manhole #	System Characteristics
Y-4(1010-02)	Residential
Access	Traffic
Drive	None









ADS Project Name:	Auburn.TFM.WA20-22
ADS Project Number:	22519.22.325

Installation Information

Installation Date:	Installation Type:
Thursday, May 14, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
10:08:00 PM	18.00 x 18.00
Depth of Flow (Wet DOF) (in)	
2.88	
CS5 Physical Offset (in)	Measurement Confidence (in)
1.38	0.38"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.42	0"
Silt (in)	Silt Type
0.00"	

Hydraulic Comments:

Slight bend after monitoring point

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
9	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26	
Manhole Cover	Manhole Frame
Steel	Normal
Active Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Fair

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

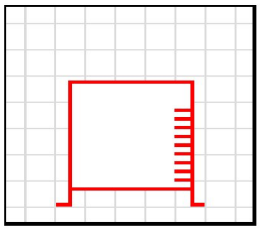
Additional Site Info. / Comments:

Hydrograph Report

RainGage_RG41Y

Rain Gauge

RainGage_RG41Y



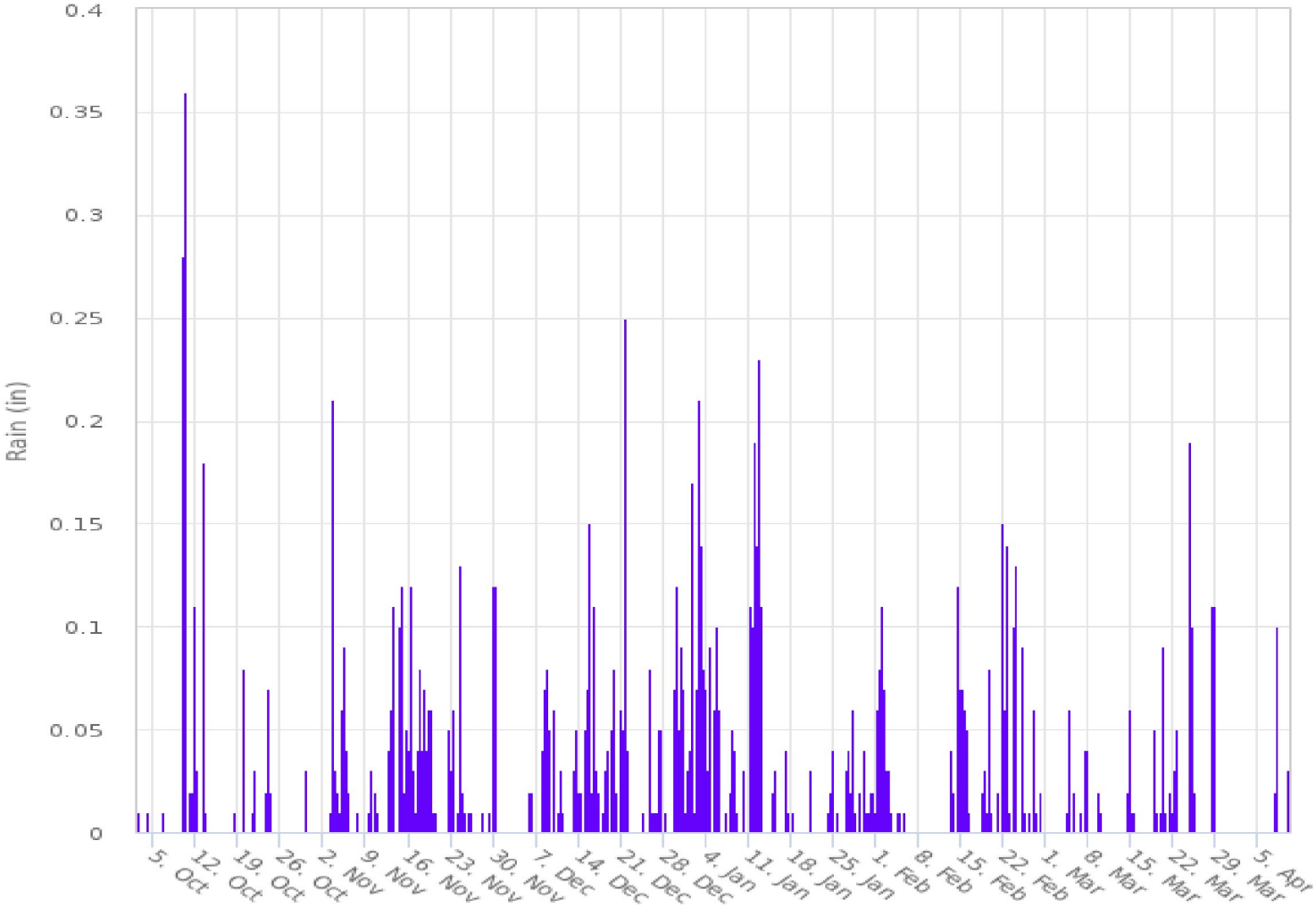
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



4455 S. 134th Place
Tukwila, WA 98168

206-762-5070
www.adsenv.com

Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
RainGage_RG41YRain Gauge: Rain Gauge (0 H x 0 W), Silt0.00

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48
01/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.64
01/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.59
01/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.45
01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47
01/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19
01/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
01/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.23
01/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
01/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07
01/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.99
01/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.04
01/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
01/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
01/15/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
01/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08
01/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
01/19/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/20/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/21/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
01/22/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/23/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/24/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14
01/25/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
01/26/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/27/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
01/28/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
01/29/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
01/30/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
01/31/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13
02/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78
02/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.35
02/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06
02/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
02/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
02/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
02/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68
02/15/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.65
02/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
02/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
02/19/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15
02/20/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
02/21/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.34
02/22/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.71
02/23/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
02/24/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
02/25/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18
02/26/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12
02/27/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
02/28/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
03/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
03/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
03/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
03/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08
03/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
03/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.23
03/15/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
03/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
03/19/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
03/20/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18
03/21/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06
03/22/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
03/23/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/24/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33
03/25/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.36
03/26/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/27/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/28/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40
03/29/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/30/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/31/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
04/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
04/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
04/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.35
10/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.47
10/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.55
10/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.60
10/14/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/15/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/16/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/17/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/18/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/19/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
10/20/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/21/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
10/22/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/23/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.20
10/24/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
10/25/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/26/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/27/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/28/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/30/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
10/31/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.81
11/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
11/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
11/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
11/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
11/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15
11/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.41
11/14/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46
11/15/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21
11/16/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32
11/17/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19
11/18/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.28
11/19/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26
11/20/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
11/21/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/22/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
11/23/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
11/24/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
11/25/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
11/26/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
11/27/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/28/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
11/29/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
11/30/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.34
12/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
12/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
12/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.71
12/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
12/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
12/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
12/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21
12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
12/15/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.52
12/16/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37
12/17/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06
12/18/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18
12/19/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43
12/20/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06
12/21/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.14
12/22/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/23/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/24/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
12/25/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.36
12/26/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
12/27/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13
12/28/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
12/29/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
12/30/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.81
12/31/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18

09/22/2020 00:00 - 04/14/2021 23:56

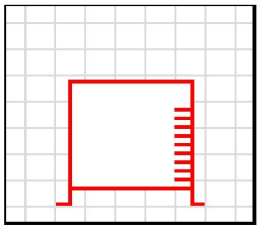
	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total				29.40
Average				

Hydrograph Report

RainGage_RGAUB

Rain Gauge

RainGage_RGAUB



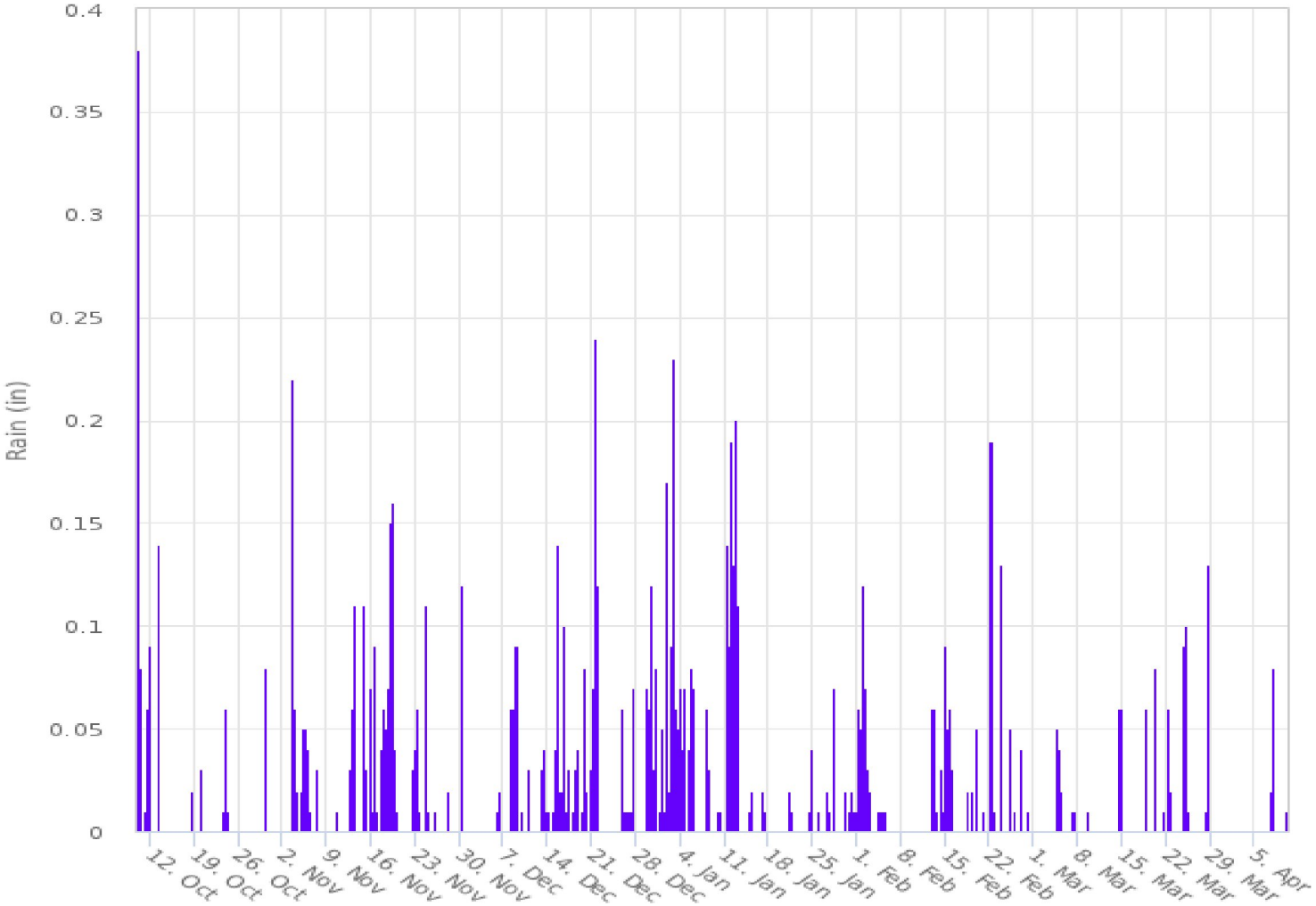
Report Period

09/22/2020
To
04/14/2021

Legend

- DFINAL
- VFINAL
- QFINAL
- RAIN FINAL

ADS ENVIRONMENTAL SERVICES



Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56
RainGage_RGAUBRain Gauge: Rain Gauge (0 H x 0 W), Silt0.00

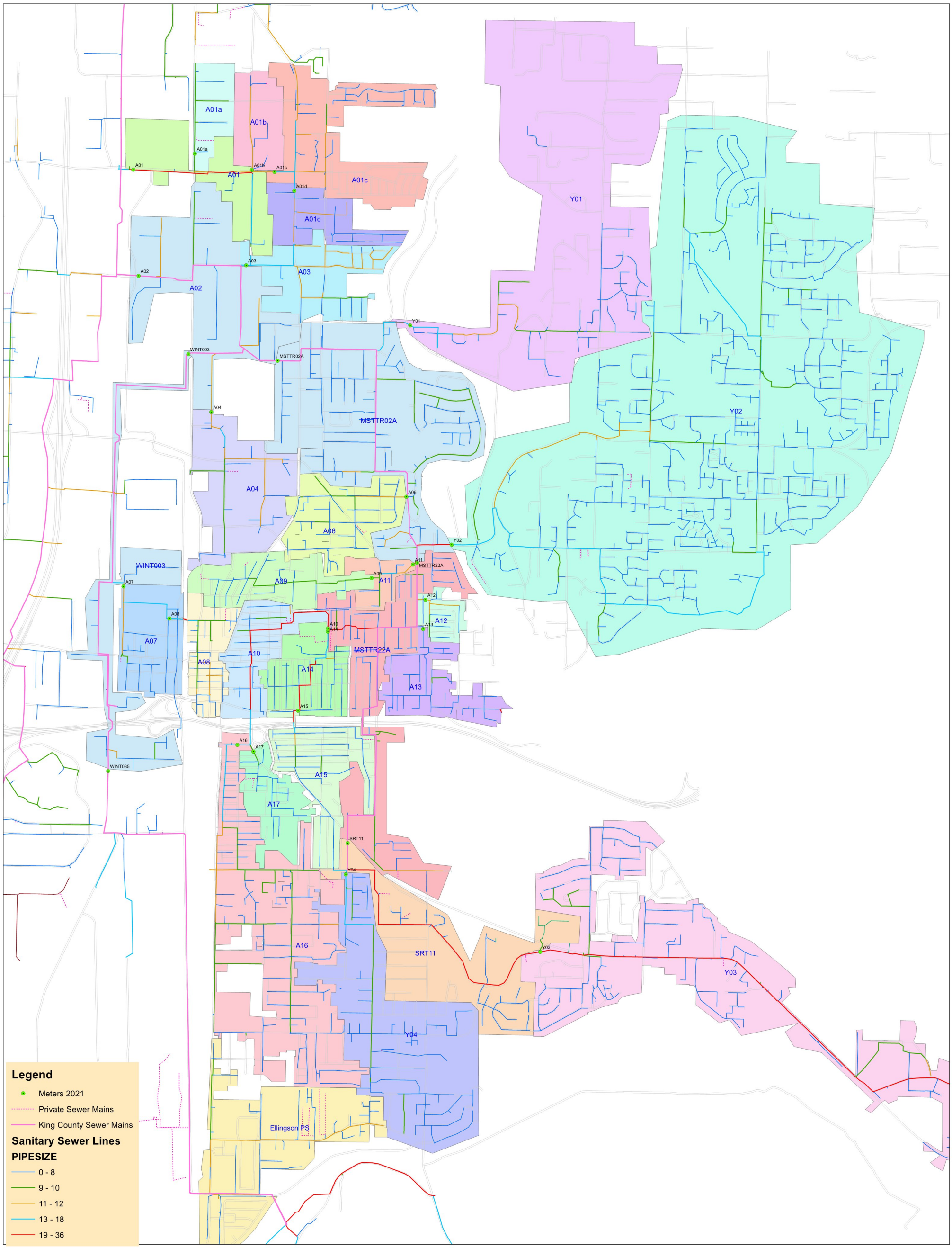
	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
01/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48
01/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.40
01/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51
01/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40
01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.41
01/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
01/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
01/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
01/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.02
01/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.87
01/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11
01/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/15/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
01/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07
01/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/19/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/20/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/21/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
01/22/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/23/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/24/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
01/25/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
01/26/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/27/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08
01/28/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18
01/29/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01/30/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
01/31/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
02/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78
02/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26
02/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
02/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
02/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
02/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14
02/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.36
02/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19
02/15/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.58
02/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
02/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
02/19/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
02/20/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
02/21/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37
02/22/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.94
02/23/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.20
02/24/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/25/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12
02/26/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06
02/27/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02/28/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
03/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
03/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
03/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
03/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
03/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
03/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
03/15/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/16/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/17/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/18/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12
03/19/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/20/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15
03/21/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
03/22/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13
03/23/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/24/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.21
03/25/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.35
03/26/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/27/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/28/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.34
03/29/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/30/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03/31/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/01/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/02/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/03/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/04/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/06/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/07/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
04/08/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08
04/09/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
04/11/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/13/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04/14/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30
10/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.22
10/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46
10/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.59
10/14/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/15/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/16/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/17/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/18/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
10/19/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
10/20/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/21/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/22/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/23/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
10/24/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
10/25/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/26/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/27/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/28/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/29/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/30/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09
10/31/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.79
11/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06
11/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.29
11/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10
11/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
11/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

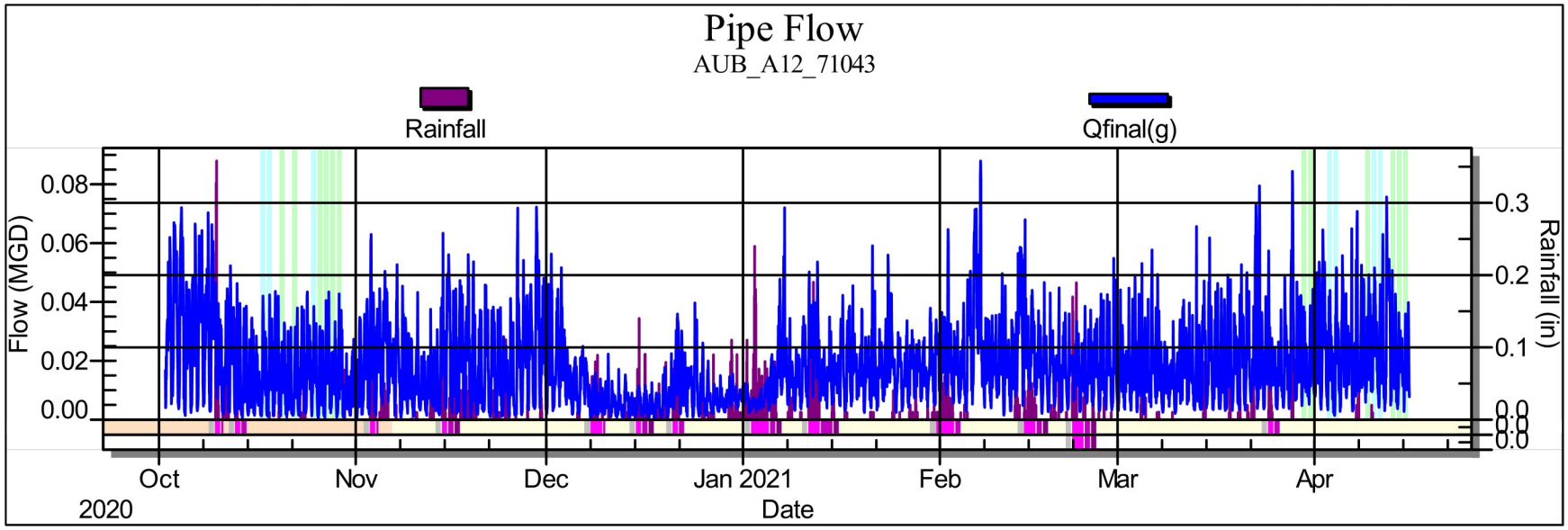
	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11
11/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32
11/14/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40
11/15/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
11/16/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33
11/17/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15
11/18/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25
11/19/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43
11/20/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/21/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/22/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19
11/23/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11
11/24/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
11/25/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
11/26/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
11/27/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/28/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
11/29/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/30/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30
12/01/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/03/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
12/06/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
12/07/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/08/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.81
12/09/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19
12/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
12/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01
12/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
12/14/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
12/15/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51
12/16/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33
12/17/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
12/18/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16
12/19/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.41
12/20/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04
12/21/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.07
12/22/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/23/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/24/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/25/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25
12/26/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
12/27/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13
12/28/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/29/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13
12/30/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.71
12/31/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15

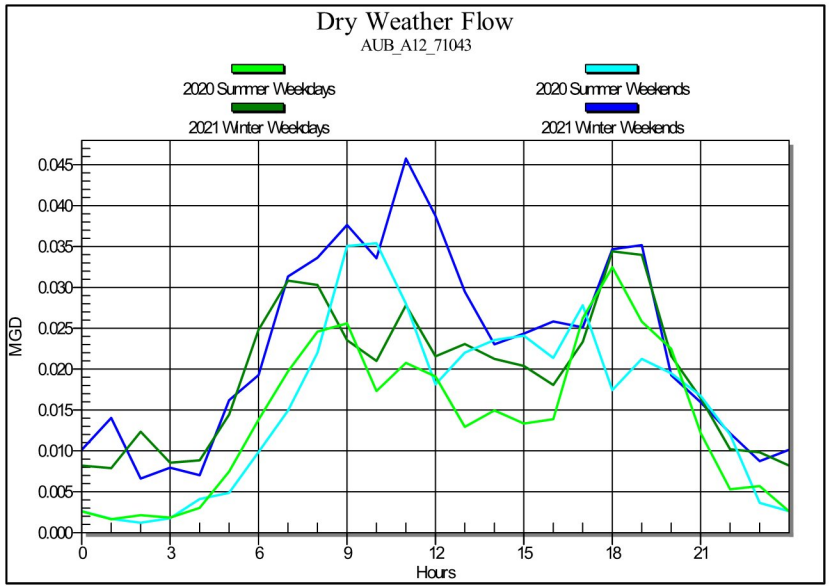
09/22/2020 00:00 - 04/14/2021 23:56

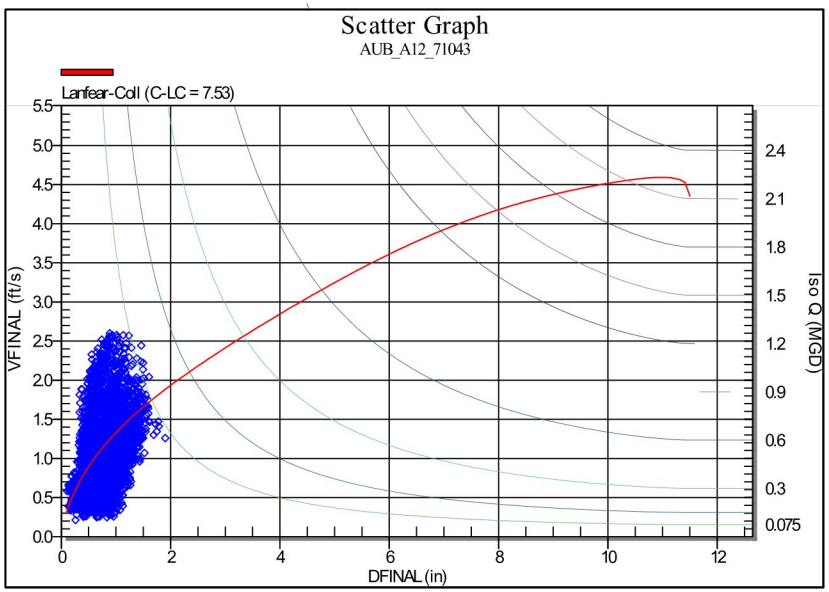
	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total				26.02
Average				

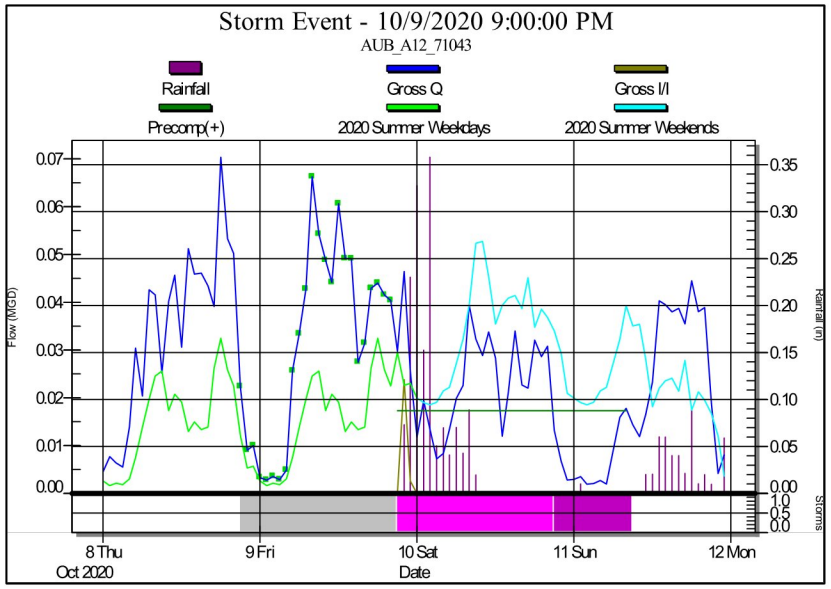


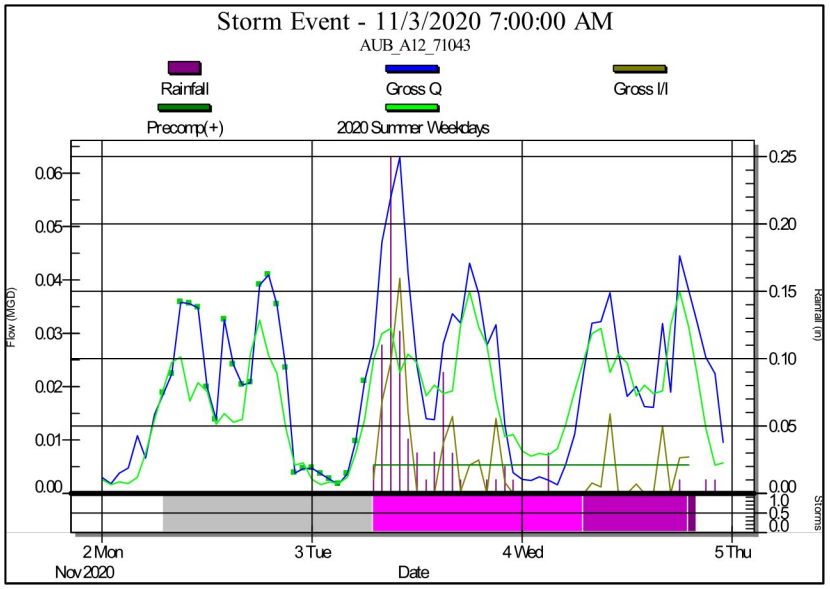
Meter Basins - 29 April 2021

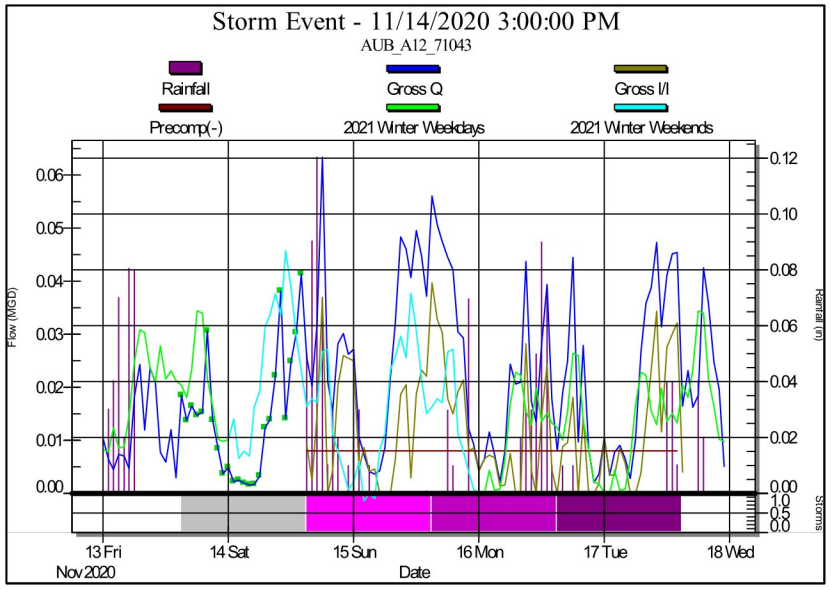

Pipe Flow
AUB_A12_71043
Rainfall
Qfinal(g)
Flow (MGD)
0.08
0.06
0.04
0.02
0.00
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

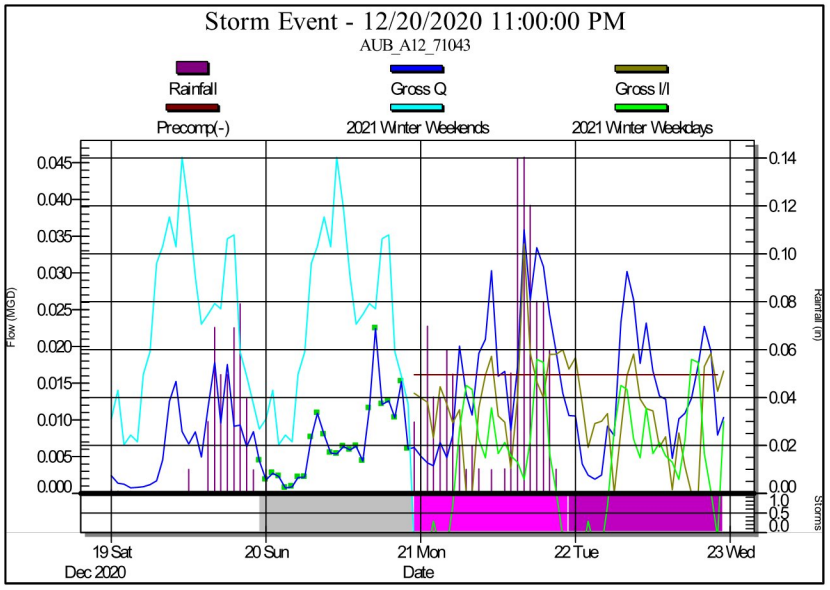

Dry Weather Flow
AUB_A12_71043
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
0
3
6
9
12
15
18
21
Hours

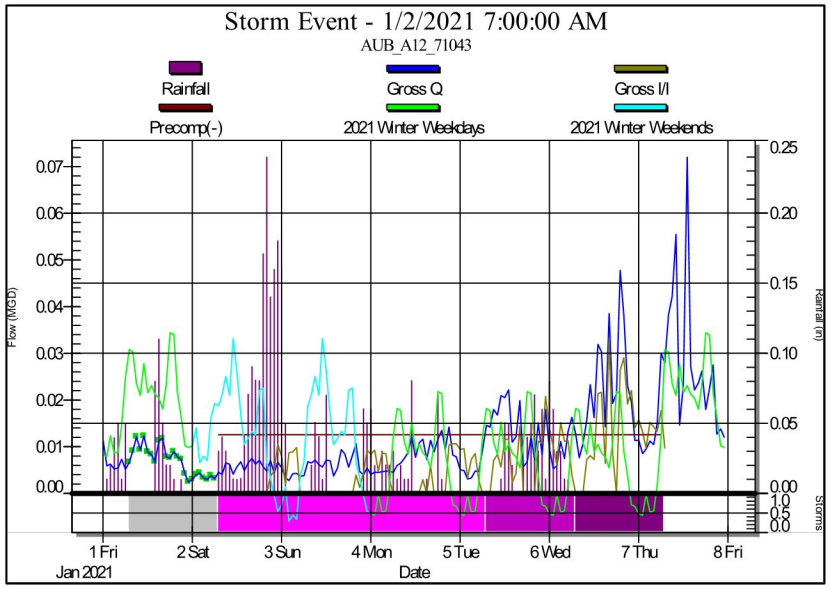

Scatter Graph
AUB_A12_71043
Lanfear-Coll (C-LC = 7.53)
VFINAL (ft/s)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
2
4
6
8
10
12
DFINAL (in)
Iso Q (MGD)
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.075

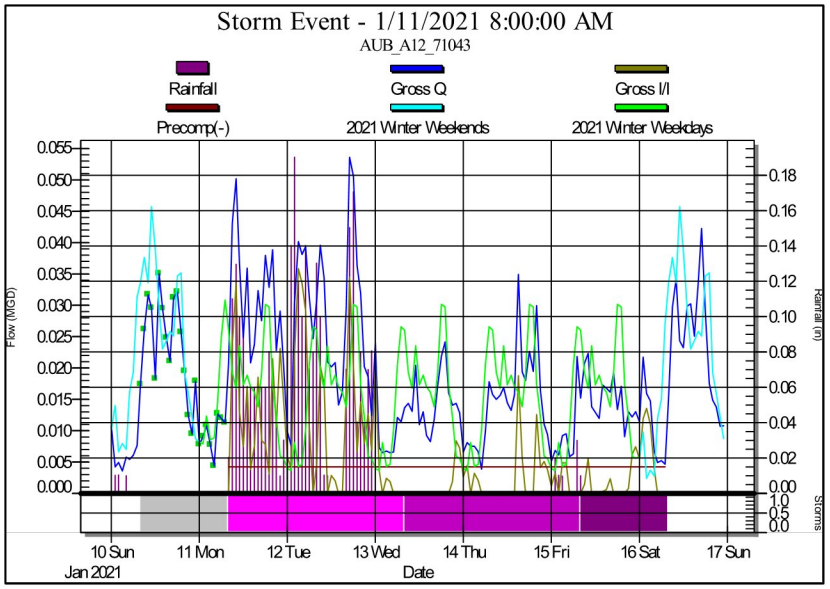

Storm Event - 10/9/2020 9:00:00 PM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

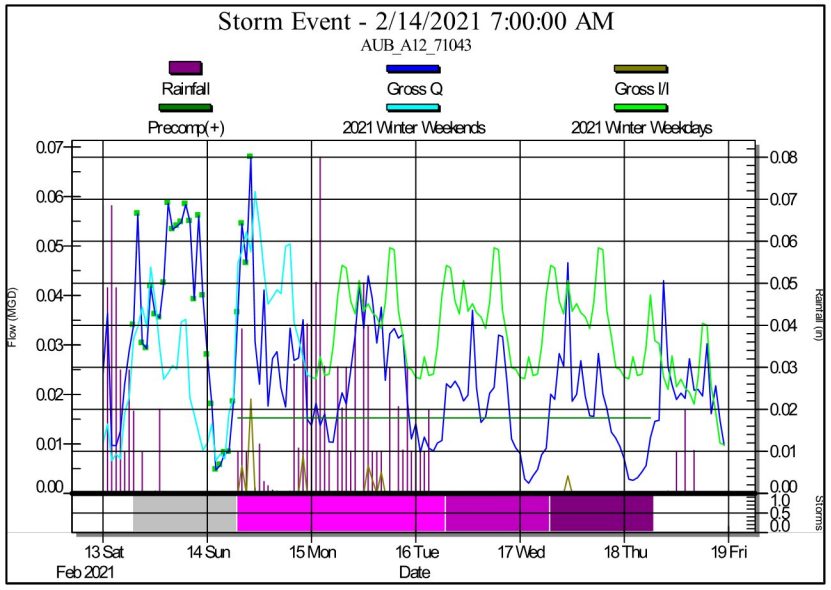

Storm Event - 11/3/2020 7:00:00 AM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

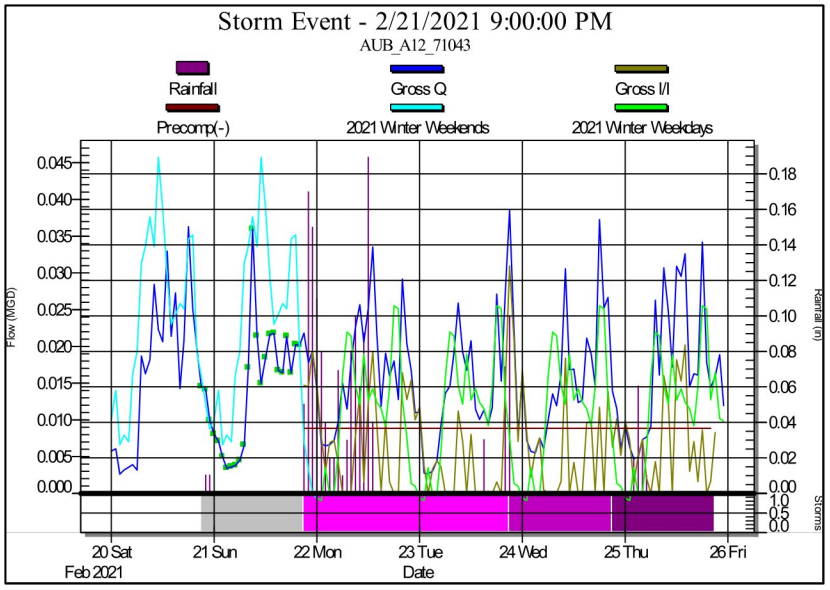

Storm Event - 11/14/2020 3:00:00 PM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

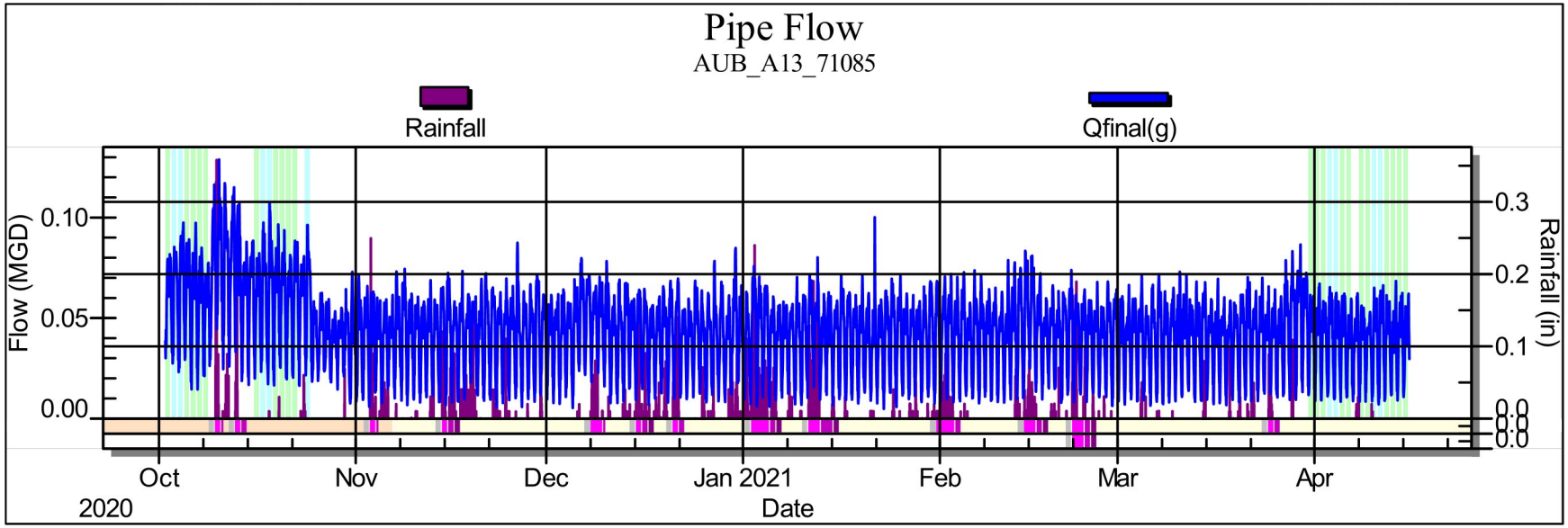

Storm Event - 12/20/2020 11:00:00 PM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

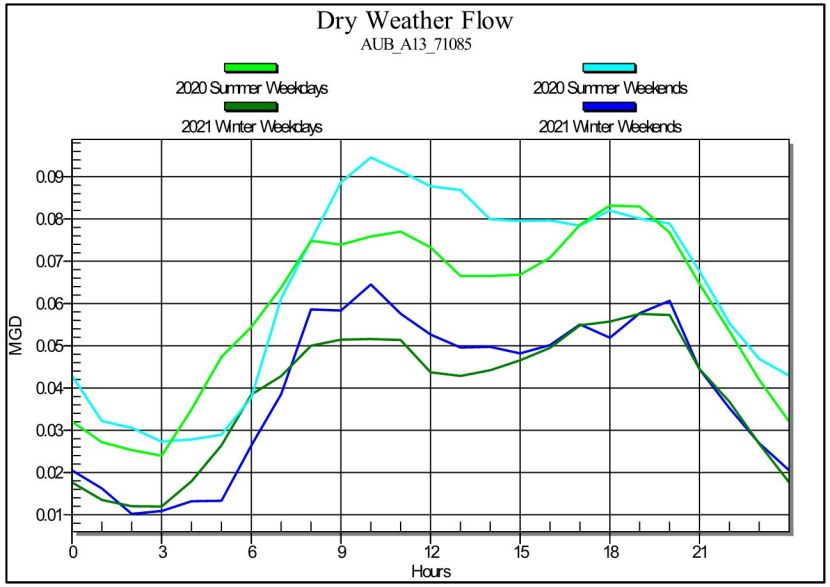

Storm Event - 1/2/2021 7:00:00 AM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

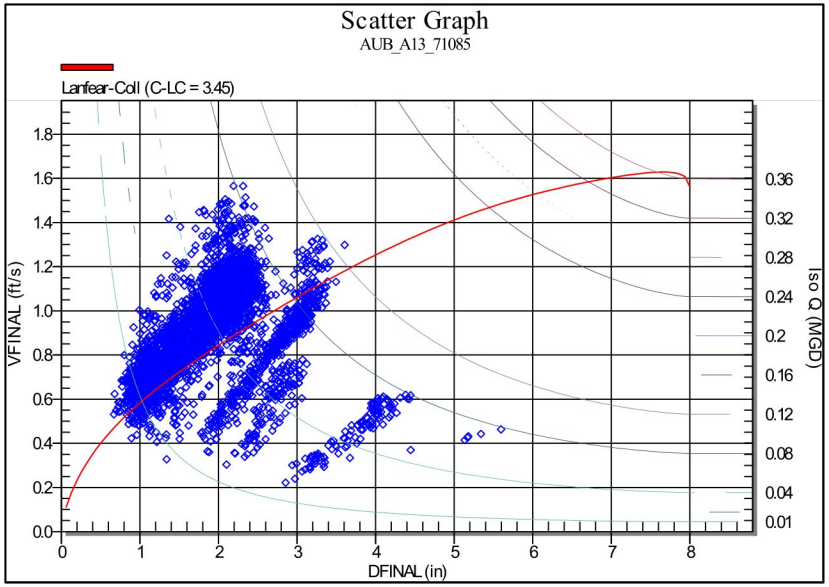

Storm Event - 1/11/2021 8:00:00 AM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

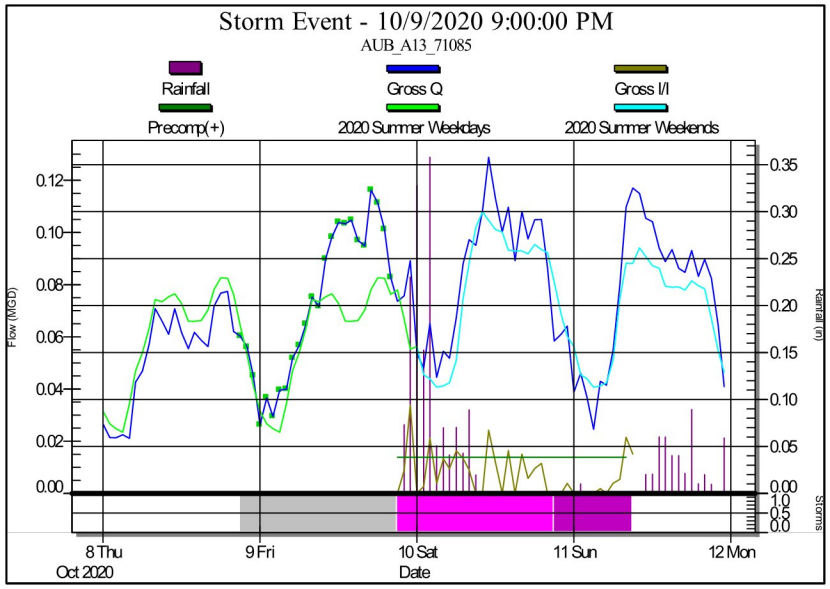

Storm Event - 2/14/2021 7:00:00 AM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

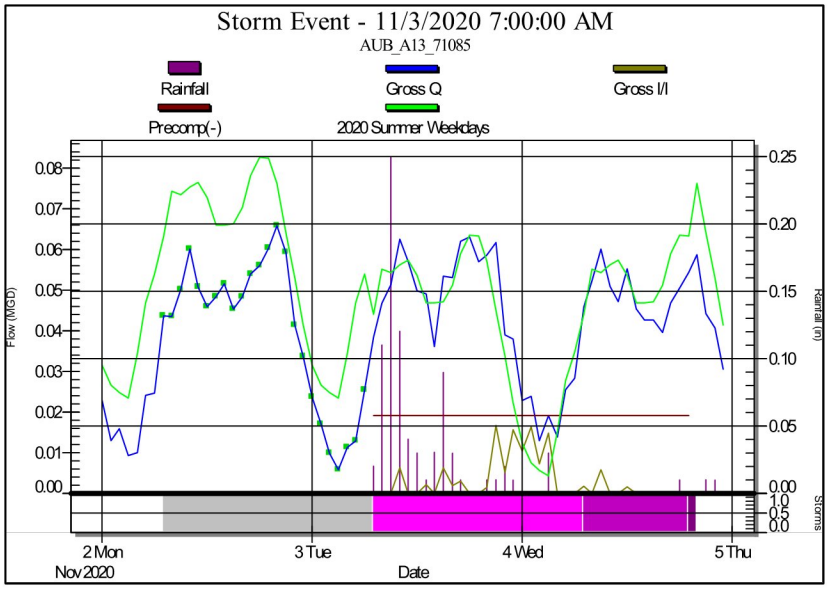

Storm Event - 2/21/2021 9:00:00 PM
AUB_A12_71043
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

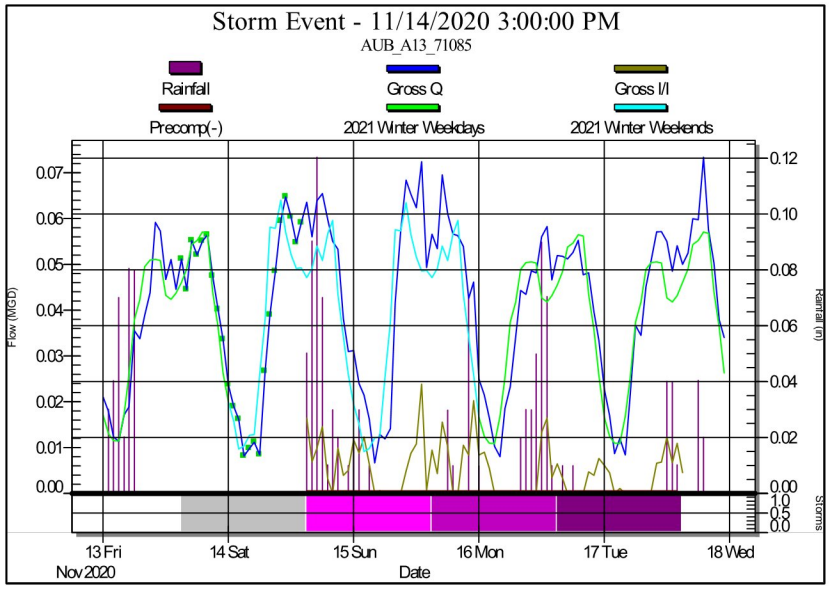

Pipe Flow
AUB_A13_71085
Rainfall
Qfinal(g)
Flow (MGD)
0.10
0.05
0.00
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

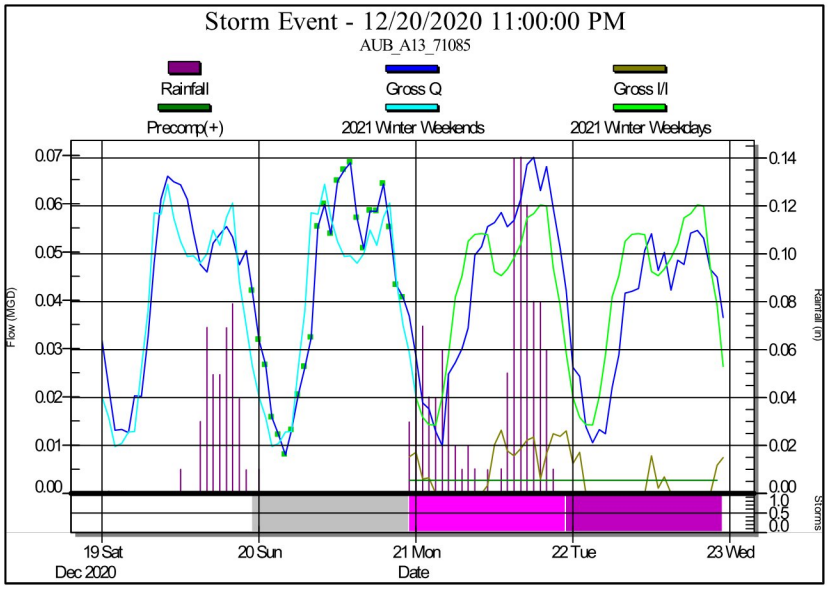

Dry Weather Flow
AUB_A13_71085
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
3
6
9
12
15
18
21
Hours

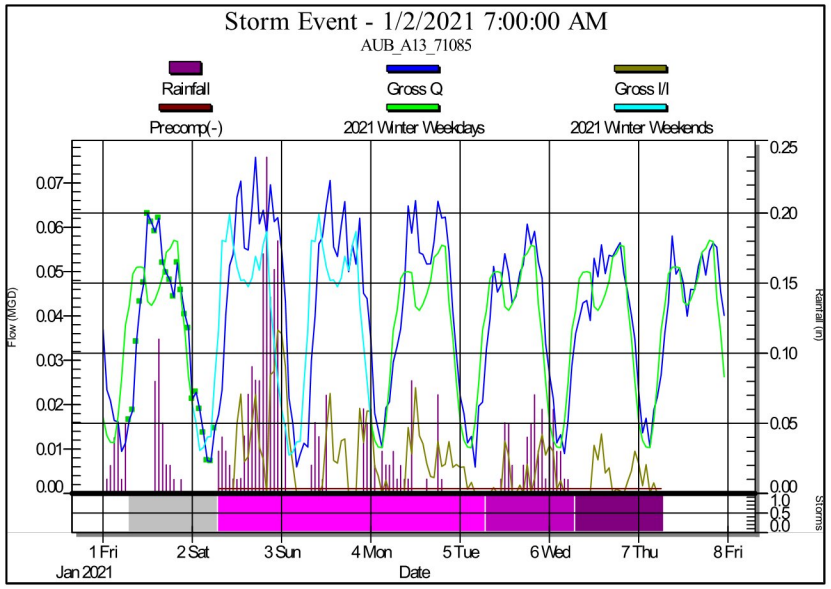

Scatter Graph
AUB_A13_71085
Lanfear-Coll (C-LC = 3.45)
VFINAL (ft/s)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.36
0.32
0.28
0.24
0.2
0.16
0.12
0.08
0.04
0.01
Iso Q (MGD)
0
1
2
3
4
5
6
7
8
DFINAL (in)

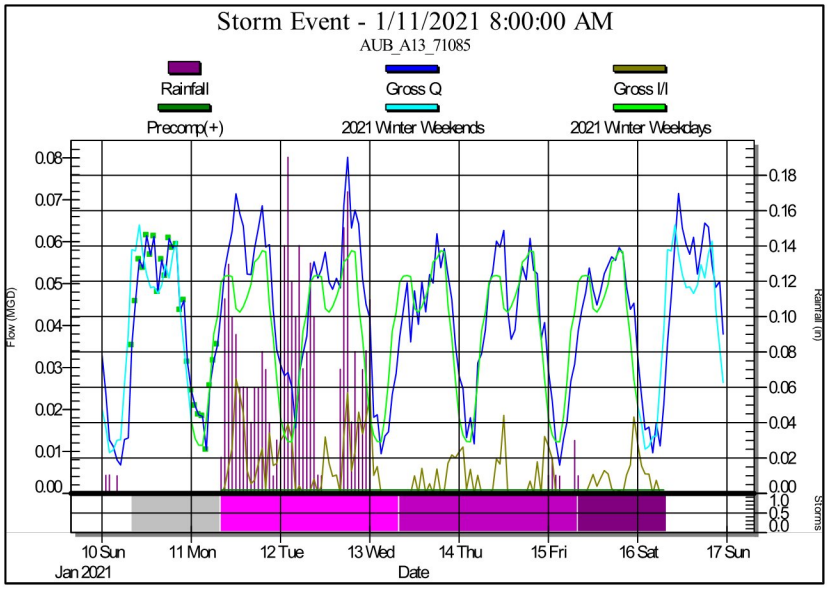

Storm Event - 10/9/2020 9:00:00 PM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

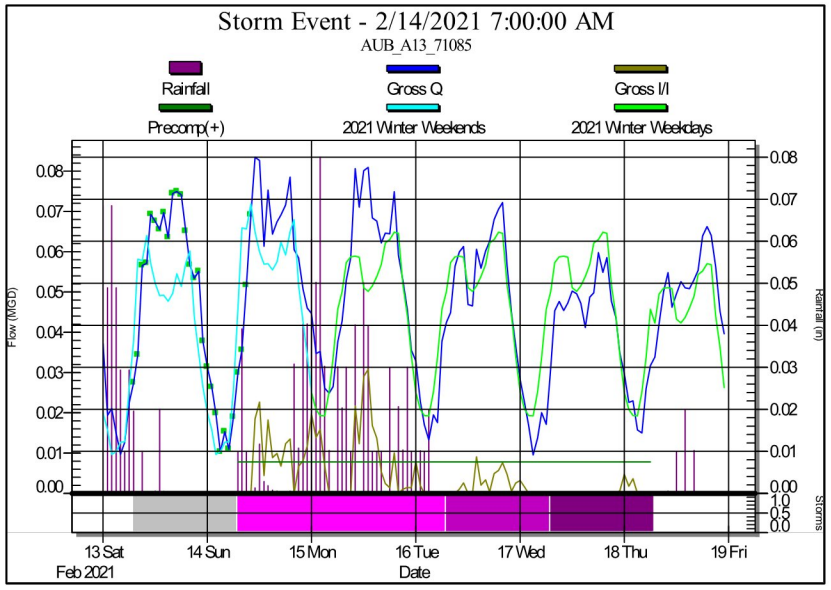

Storm Event - 11/3/2020 7:00:00 AM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

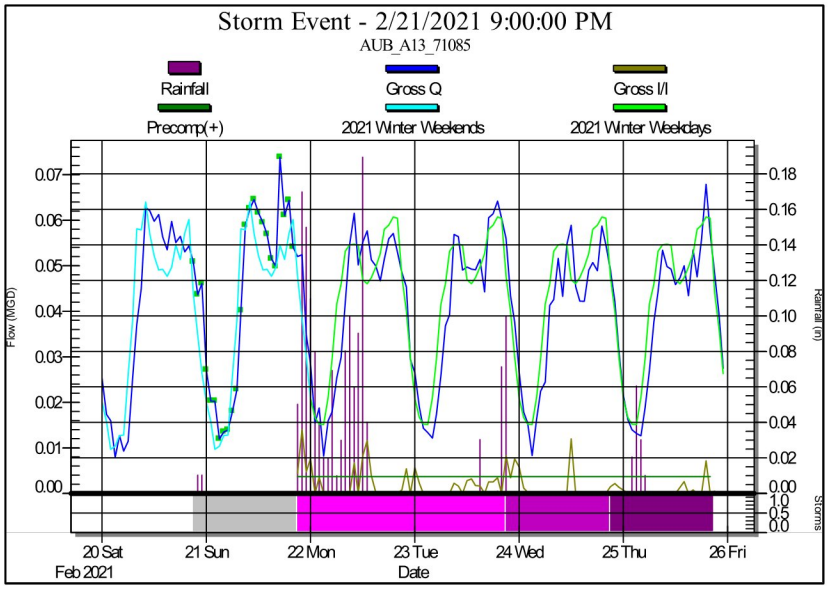

Storm Event - 11/14/2020 3:00:00 PM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

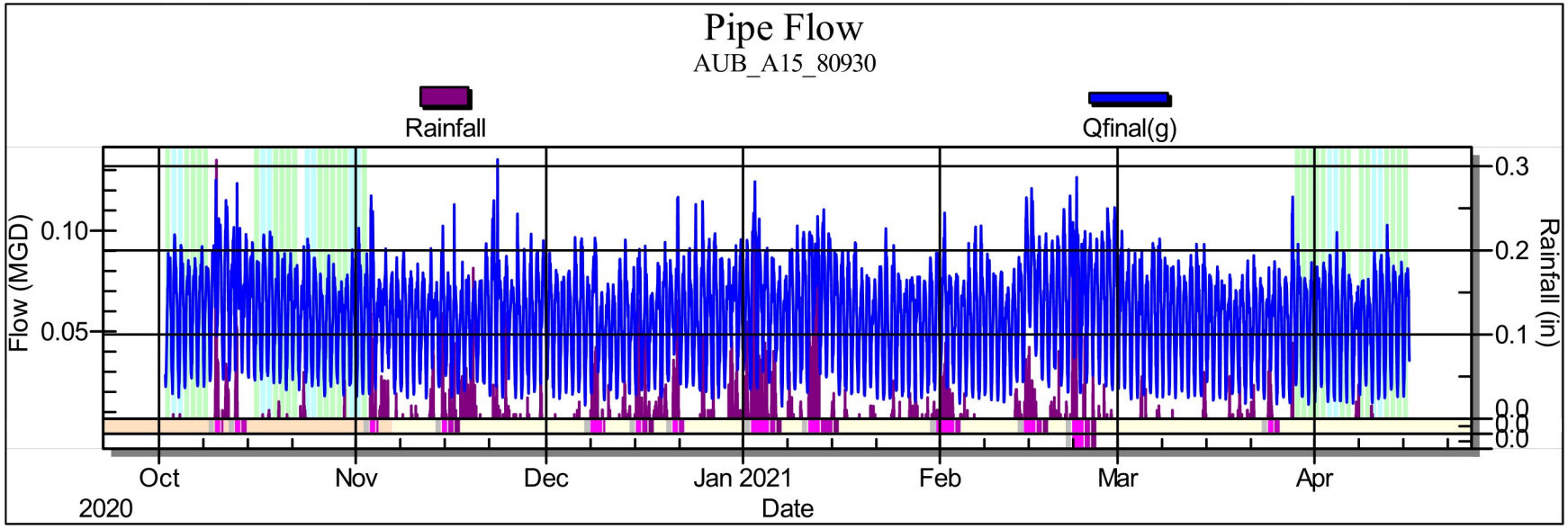

Storm Event - 12/20/2020 11:00:00 PM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

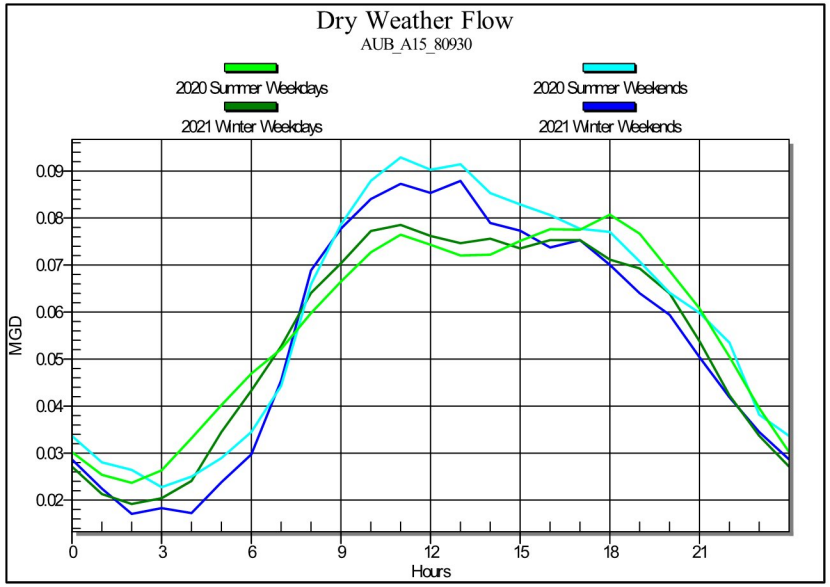

Storm Event - 1/2/2021 7:00:00 AM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

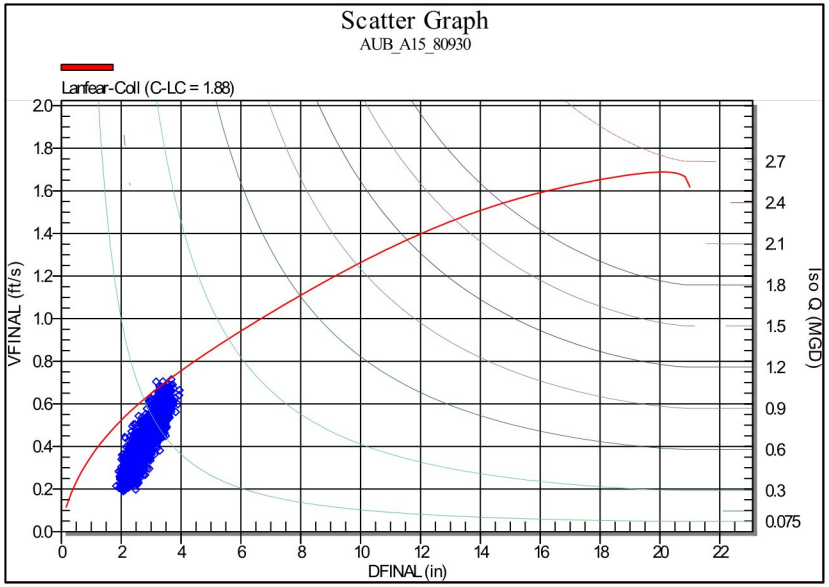

Storm Event - 1/11/2021 8:00:00 AM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

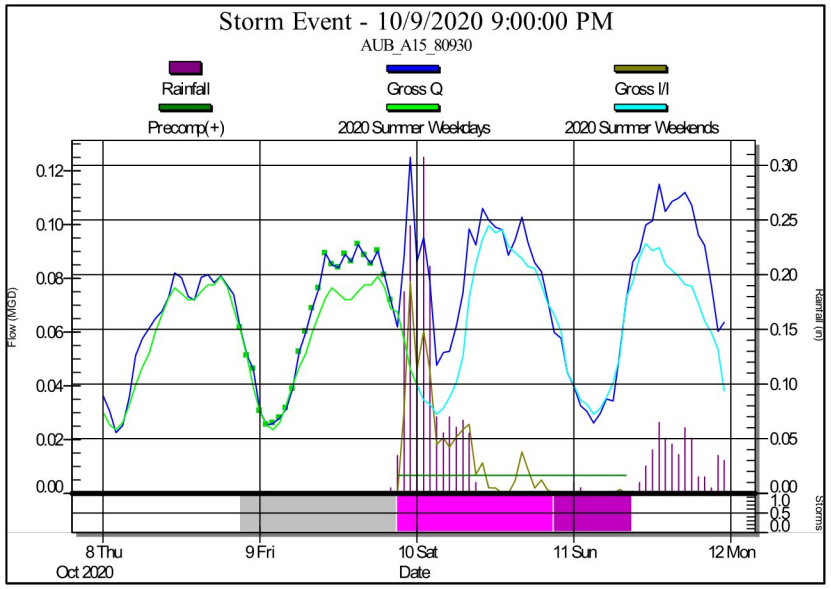

Storm Event - 2/14/2021 7:00:00 AM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

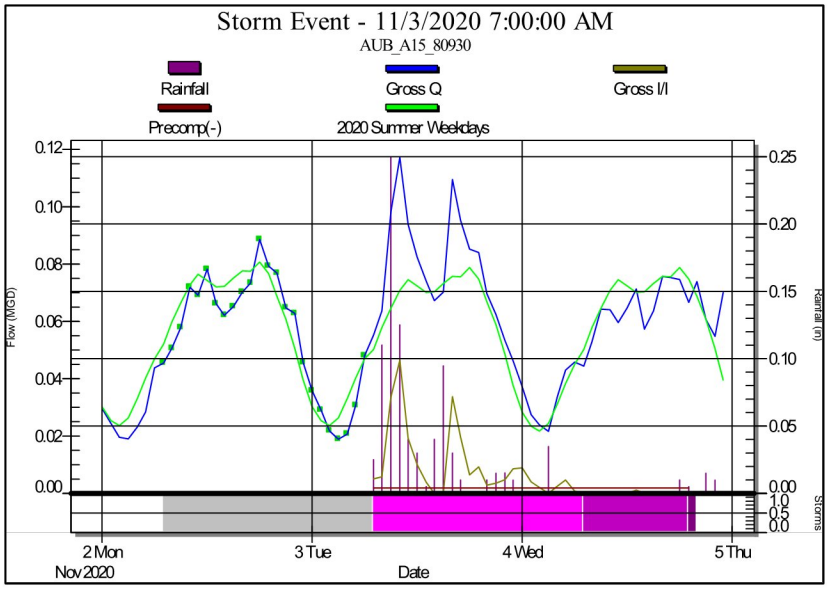

Storm Event - 2/21/2021 9:00:00 PM
AUB_A13_71085
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

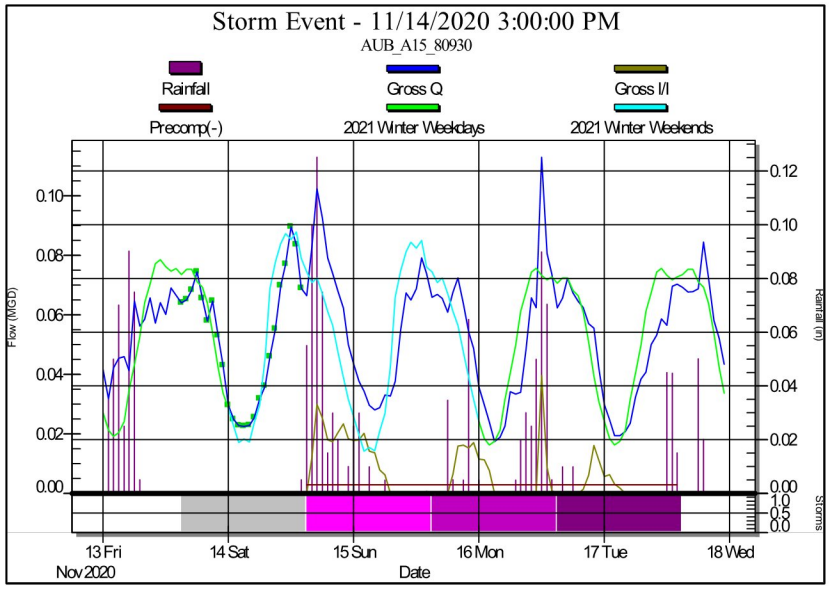

Pipe Flow
AUB_A15_80930
Rainfall
Qfinal(g)
Flow (MGD)
0.10
0.05
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

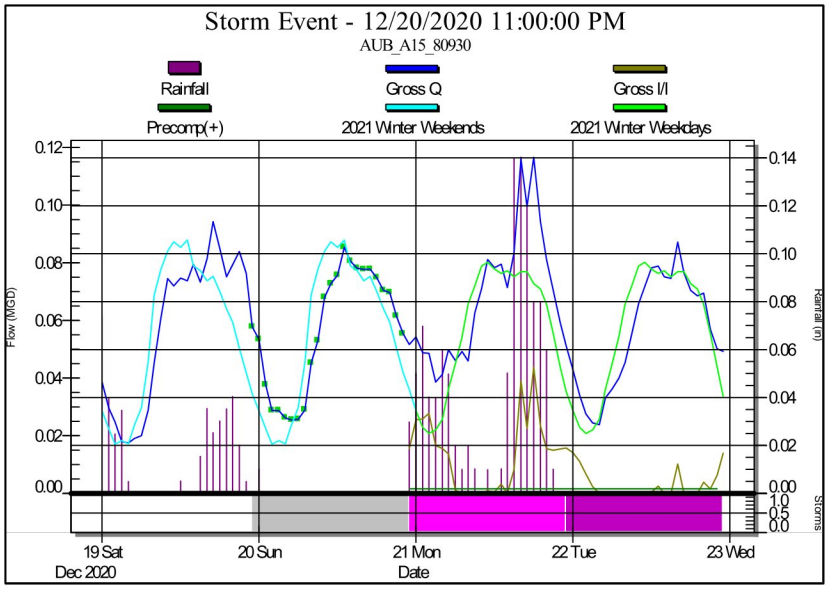

Dry Weather Flow
AUB_A15_80930
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0
3
6
9
12
15
18
21
Hours

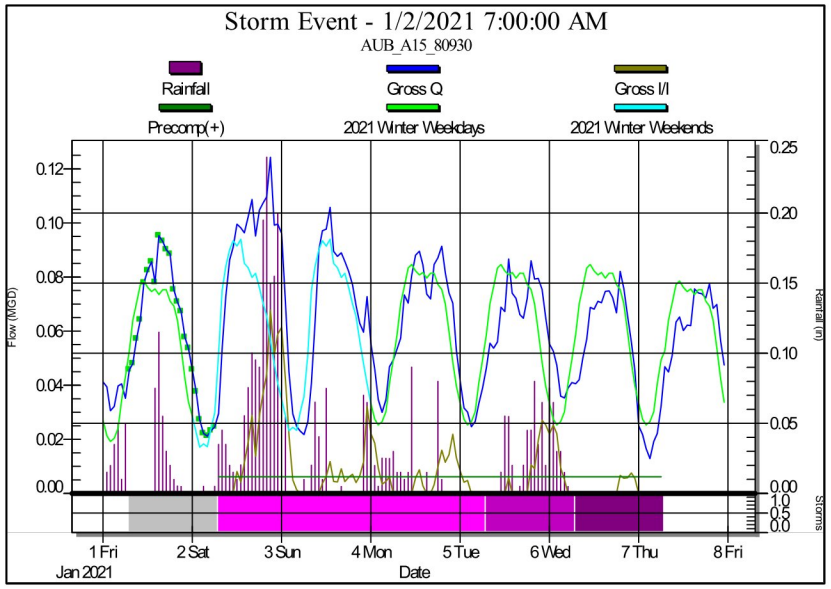

Scatter Graph
AUB_A15_80930
Lanfear-Coll (C-LC = 1.88)
VFINAL (ft/s)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Iso Q (MGD)
2.7
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.075
0
2
4
6
8
10
12
14
16
18
20
22
DFINAL (in)

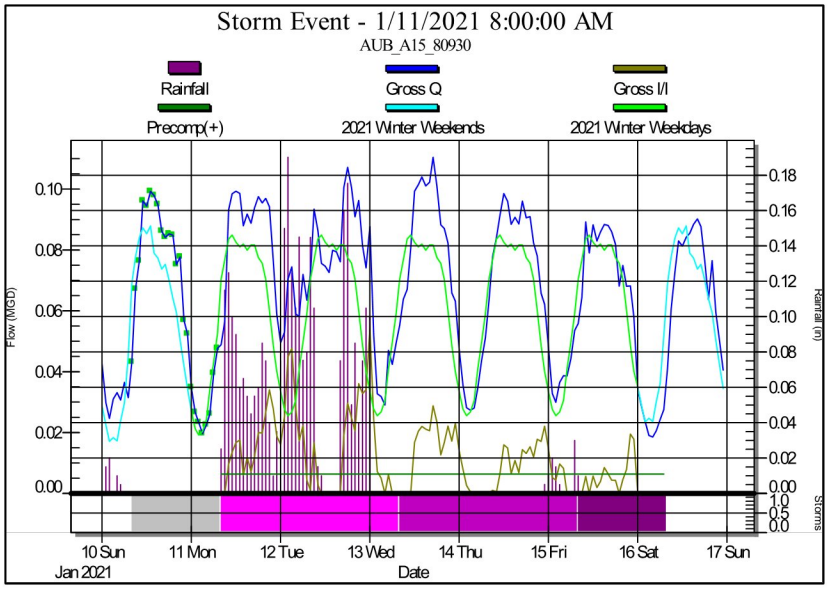

Storm Event - 10/9/2020 9:00:00 PM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

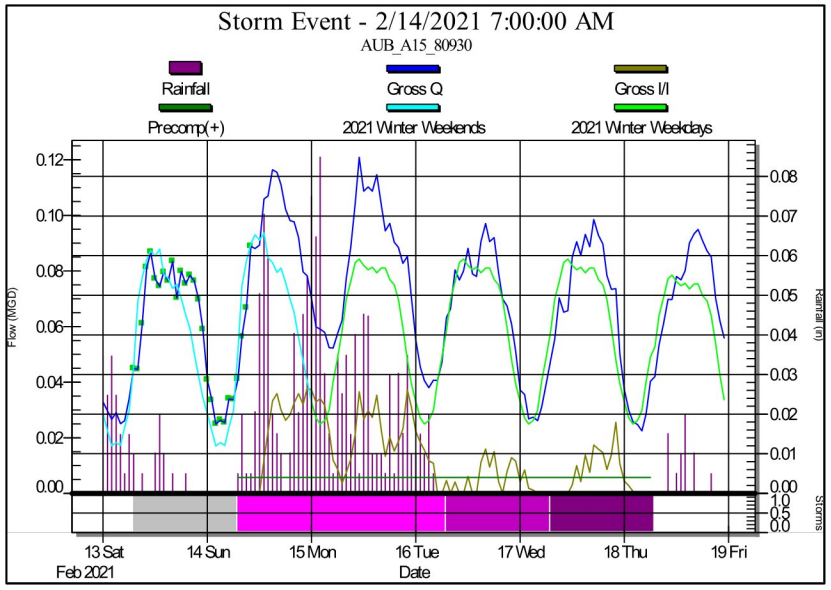

Storm Event - 11/3/2020 7:00:00 AM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

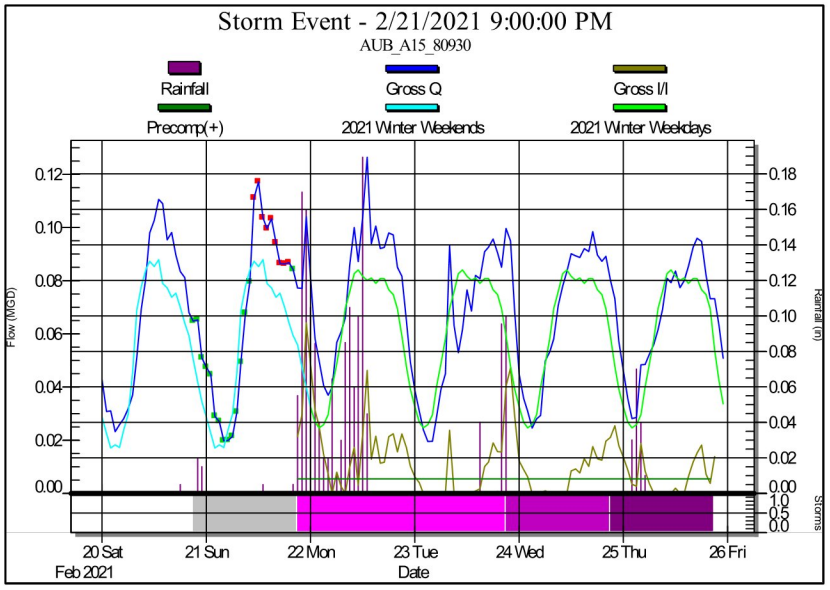

Storm Event - 11/14/2020 3:00:00 PM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

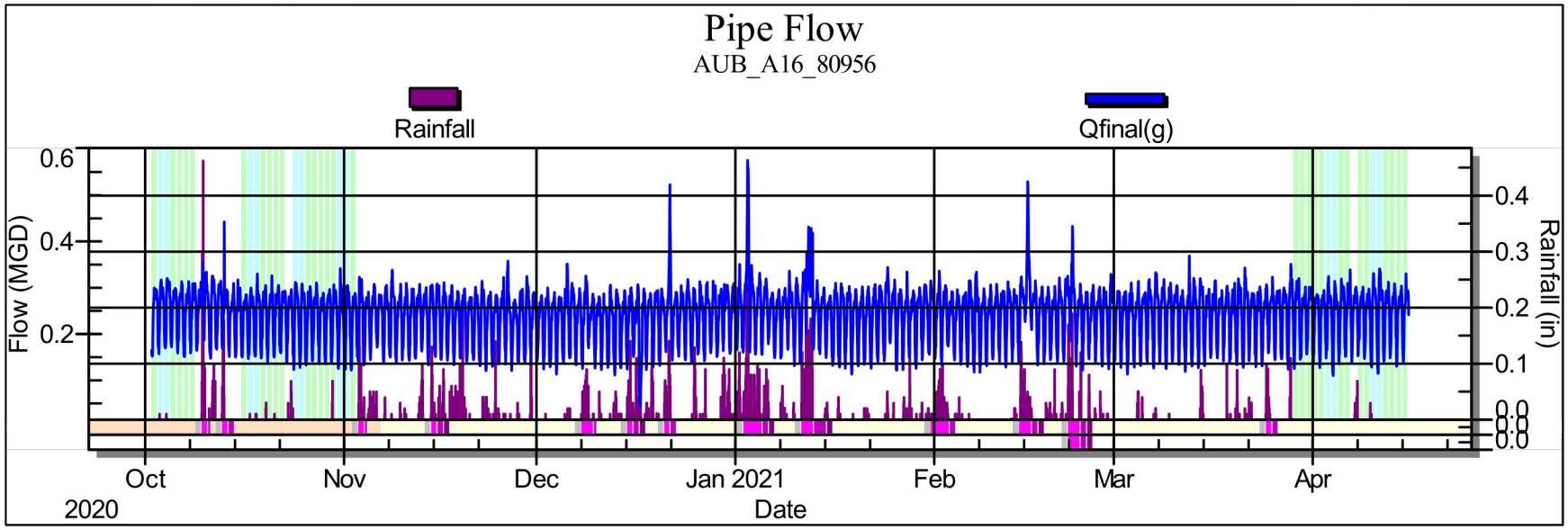

Storm Event - 12/20/2020 11:00:00 PM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

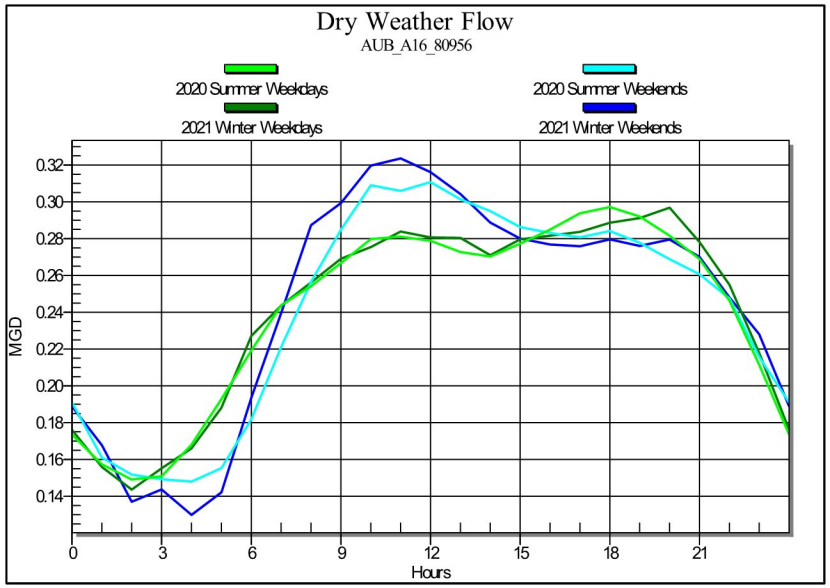

Storm Event - 1/2/2021 7:00:00 AM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

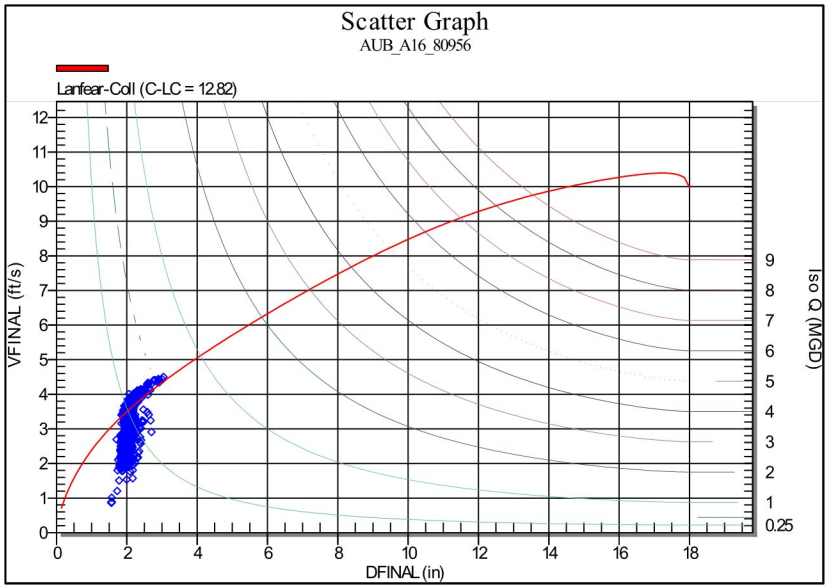

Storm Event - 1/11/2021 8:00:00 AM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

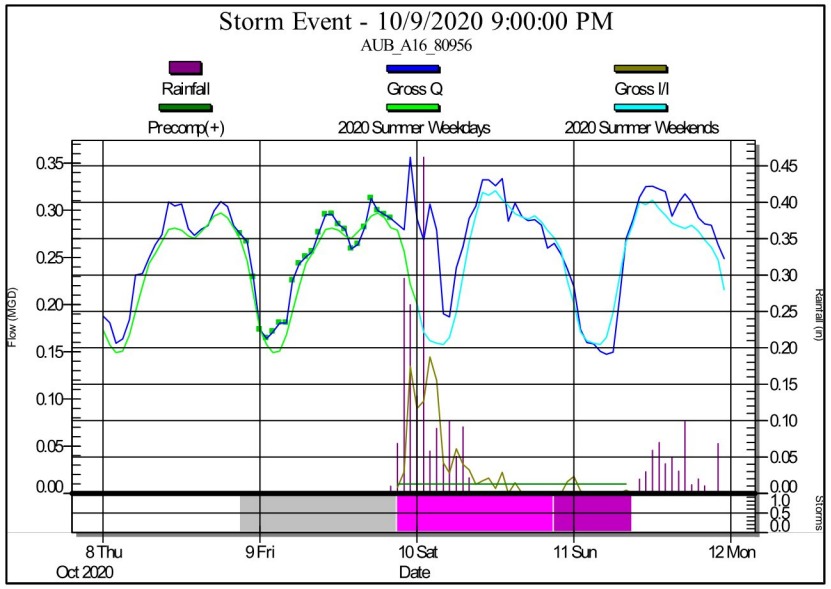

Storm Event - 2/14/2021 7:00:00 AM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

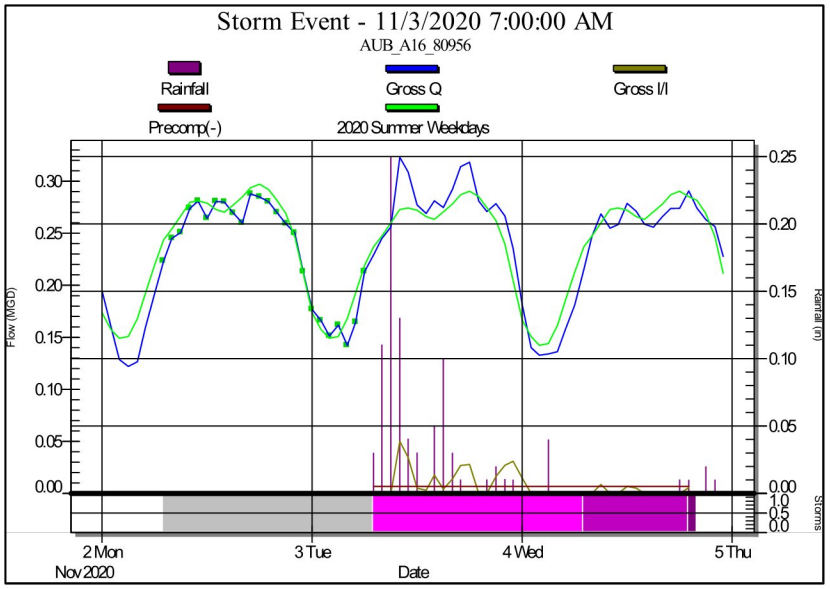

Storm Event - 2/21/2021 9:00:00 PM
AUB_A15_80930
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

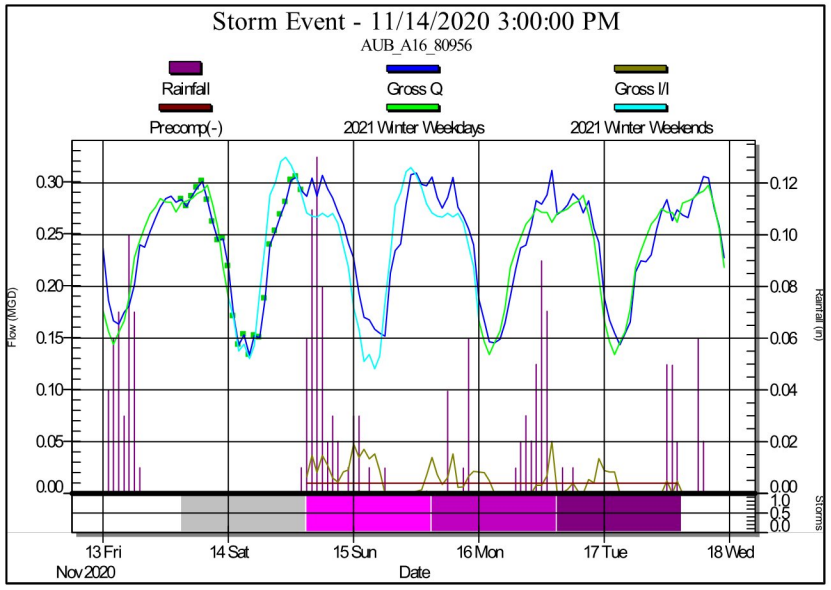

Pipe Flow
AUB_A16_80956
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.6
0.4
0.2
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

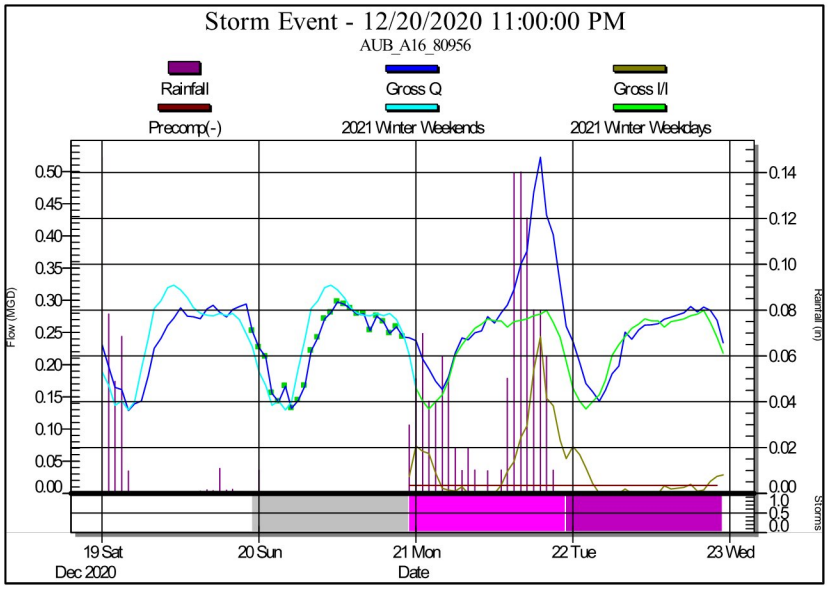

Dry Weather Flow
AUB_A16_80956
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0
3
6
9
12
15
18
21
Hours

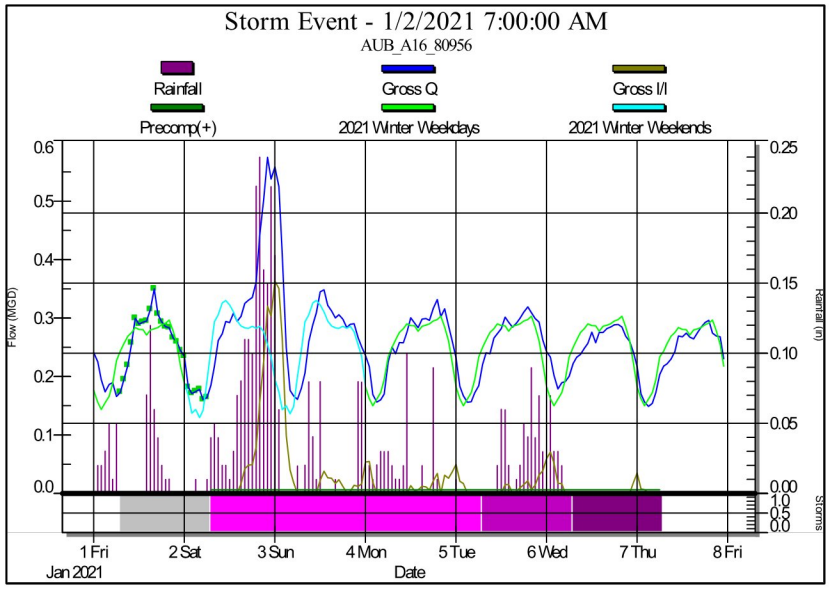

Scatter Graph
AUB_A16_80956
Lanfear-Coll (C-LC = 12.82)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)
0
2
4
6
8
10
12
14
16
18
0.25

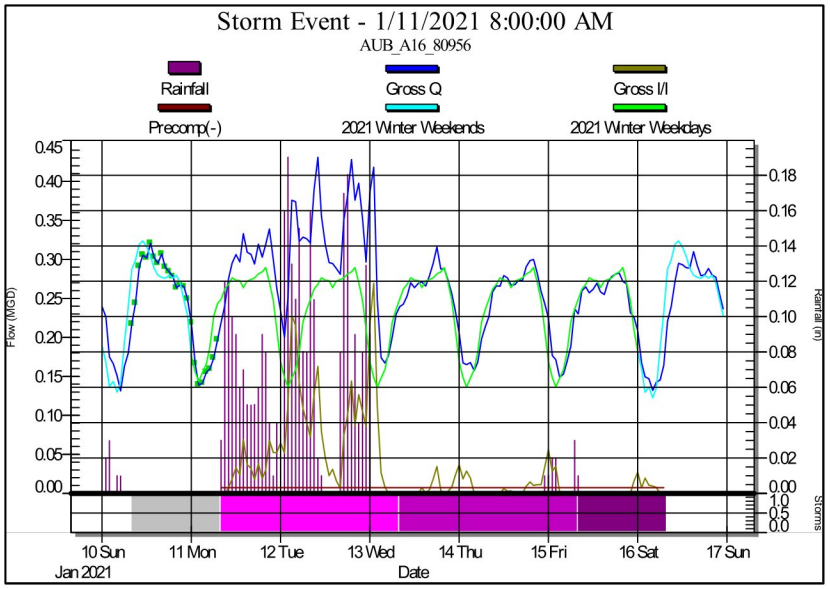

Storm Event - 10/9/2020 9:00:00 PM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

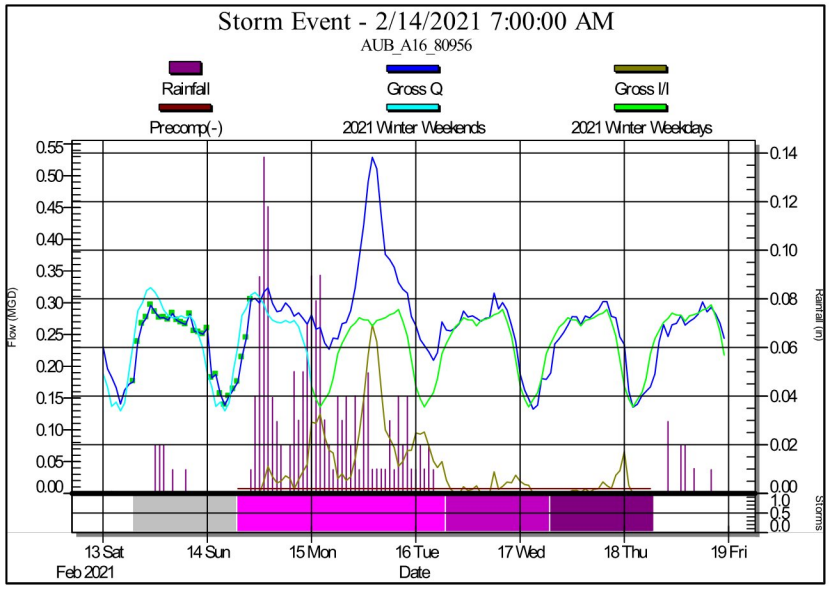

Storm Event - 11/3/2020 7:00:00 AM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

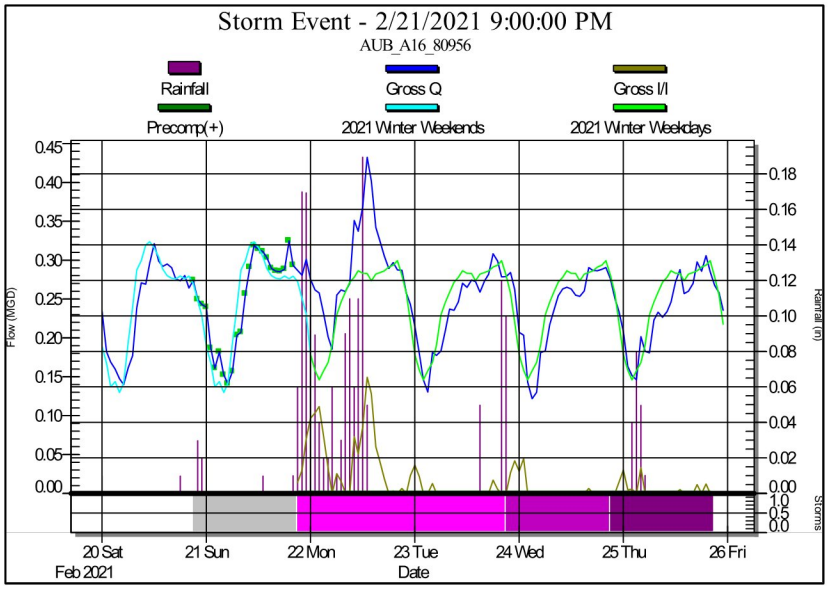

Storm Event - 11/14/2020 3:00:00 PM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

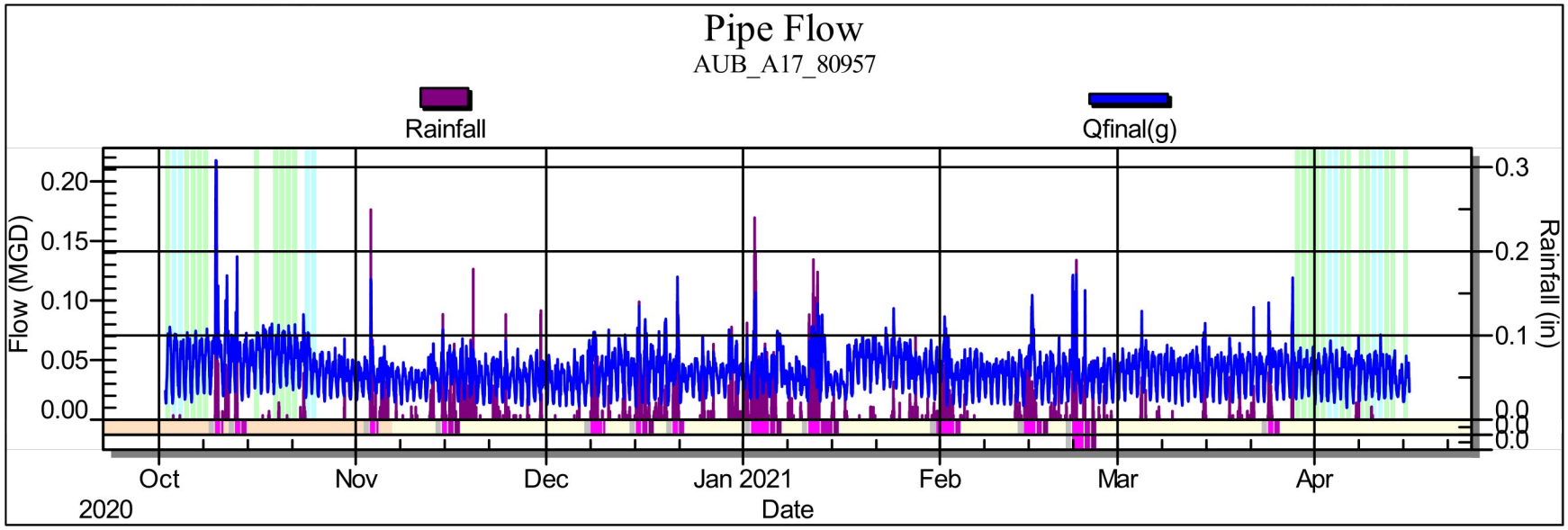

Storm Event - 12/20/2020 11:00:00 PM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

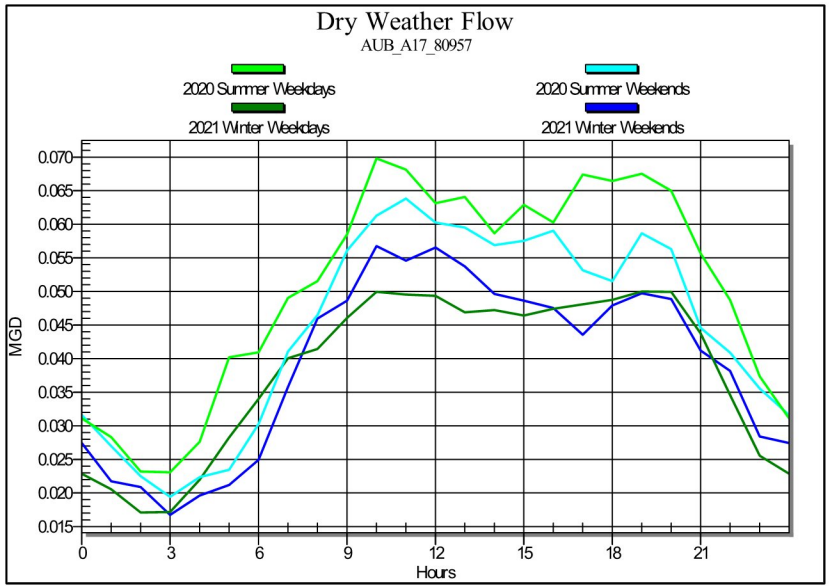

Storm Event - 1/2/2021 7:00:00 AM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

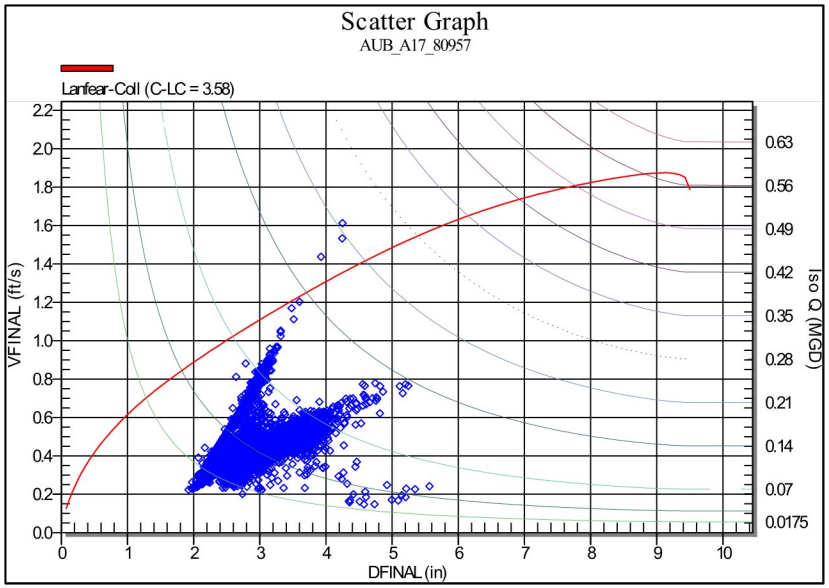

Storm Event - 1/11/2021 8:00:00 AM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

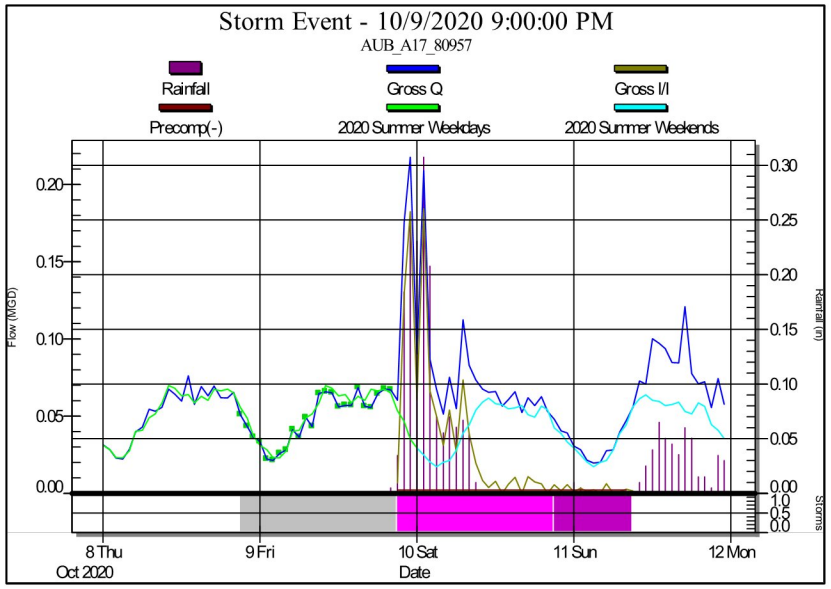

Storm Event - 2/14/2021 7:00:00 AM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

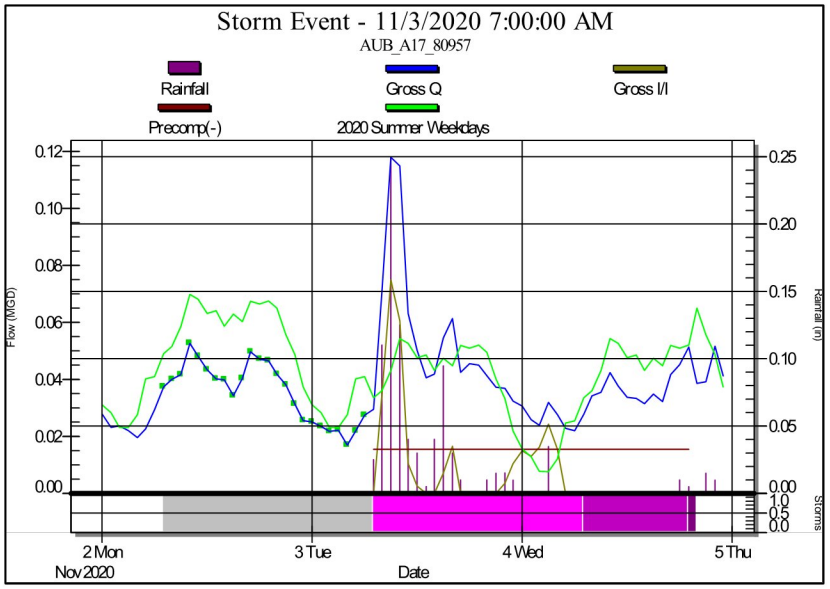

Storm Event - 2/21/2021 9:00:00 PM
AUB_A16_80956
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

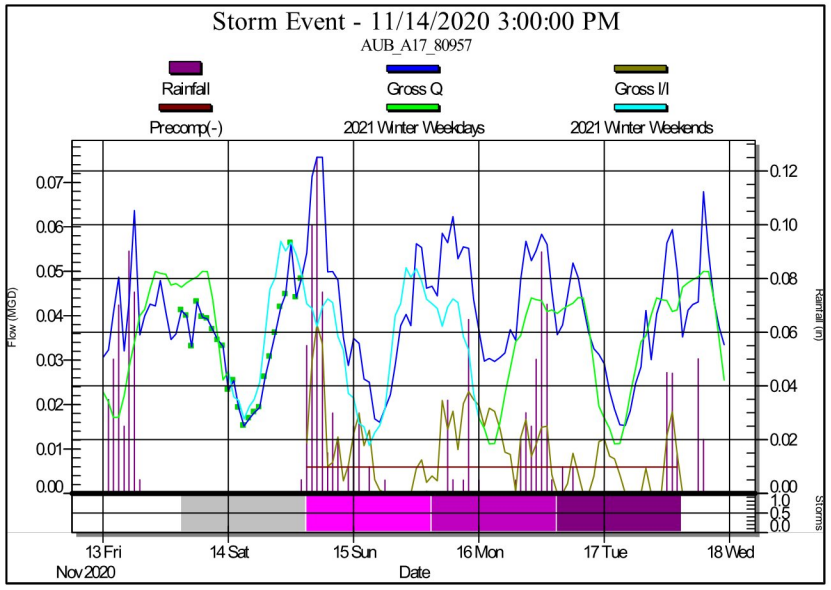

Pipe Flow
AUB_A17_80957
Rainfall
Qfinal(g)
Flow (MGD)
0.20
0.15
0.10
0.05
0.00
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

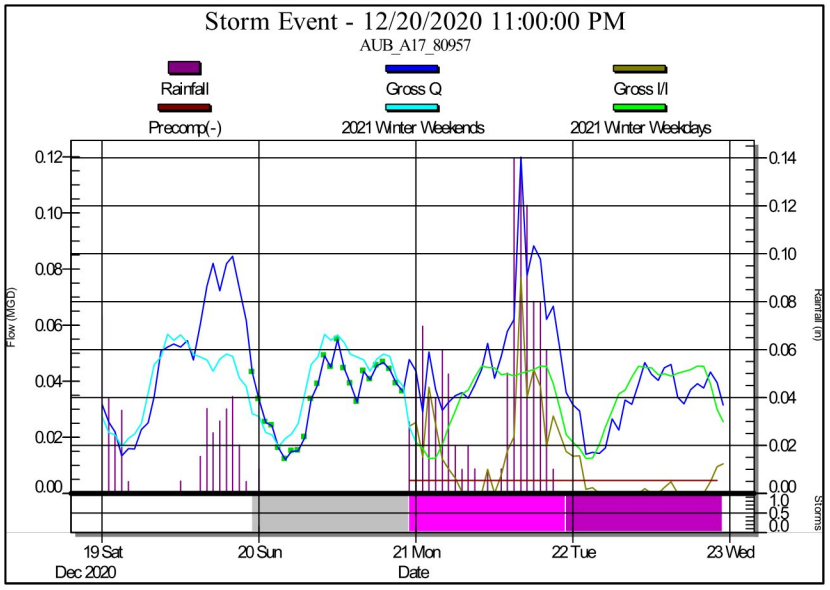

Dry Weather Flow
AUB_A17_80957
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0
3
6
9
12
15
18
21
Hours

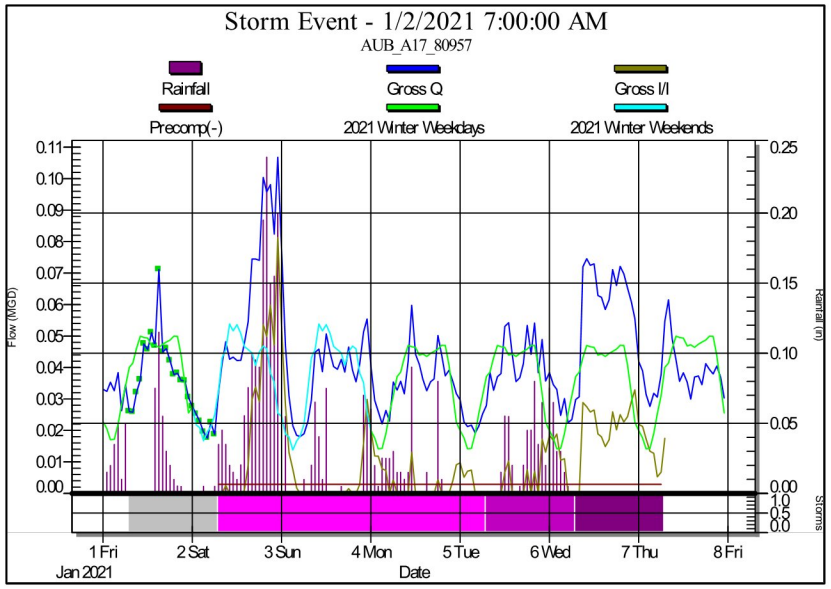

Scatter Graph
AUB_A17_80957
Lanfear-Coll (C-LC = 3.58)
VFINAL (ft/s)
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
1
2
3
4
5
6
7
8
9
10
DFINAL (in)
0.63
0.56
0.49
0.42
0.35
0.28
0.21
0.14
0.07
0.0175
Iso Q (MGD)

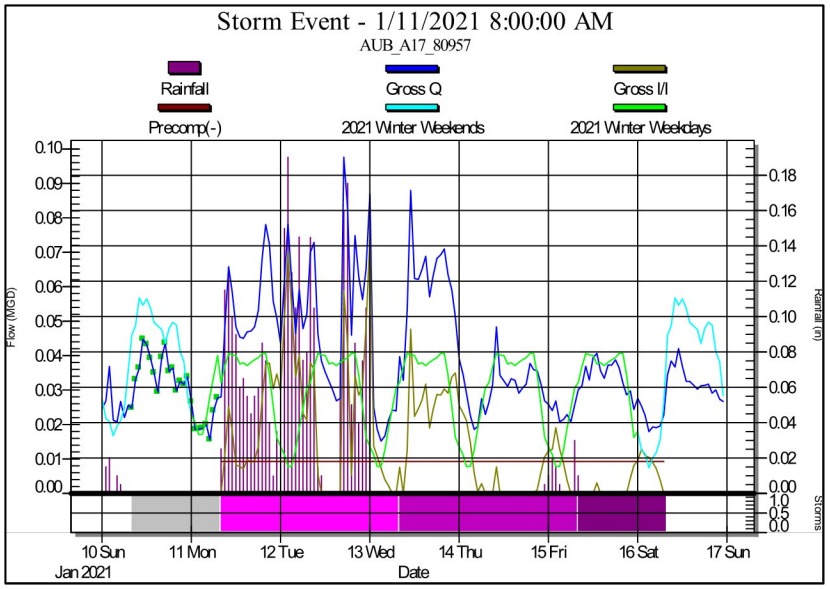

Storm Event - 10/9/2020 9:00:00 PM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

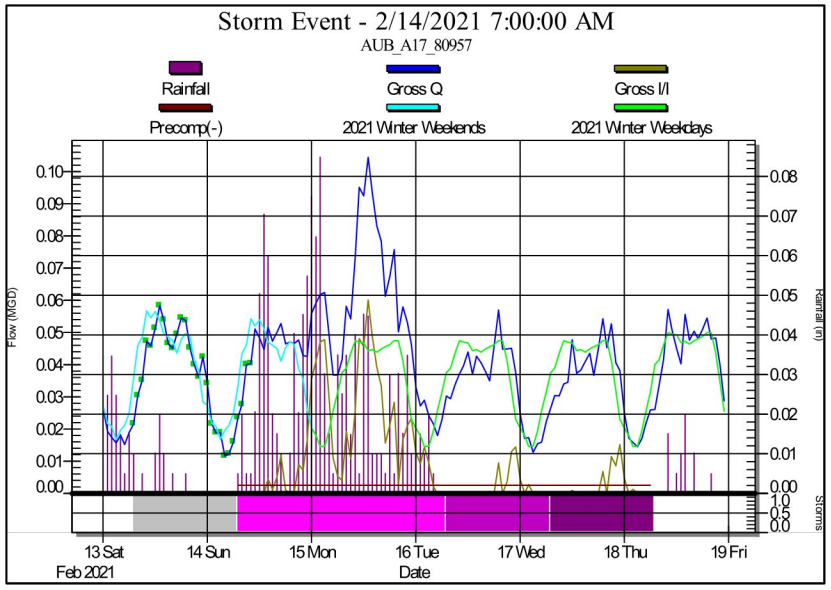

Storm Event - 11/3/2020 7:00:00 AM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

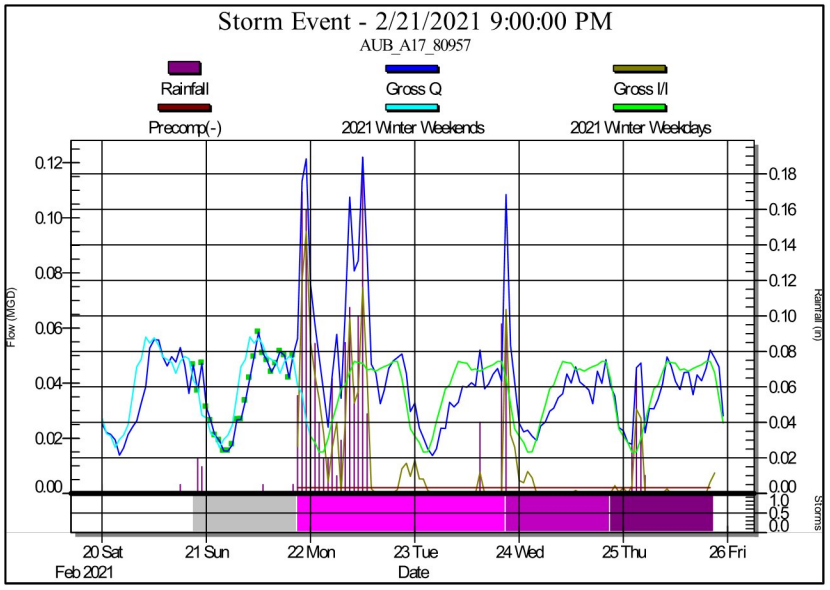

Storm Event - 11/14/2020 3:00:00 PM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

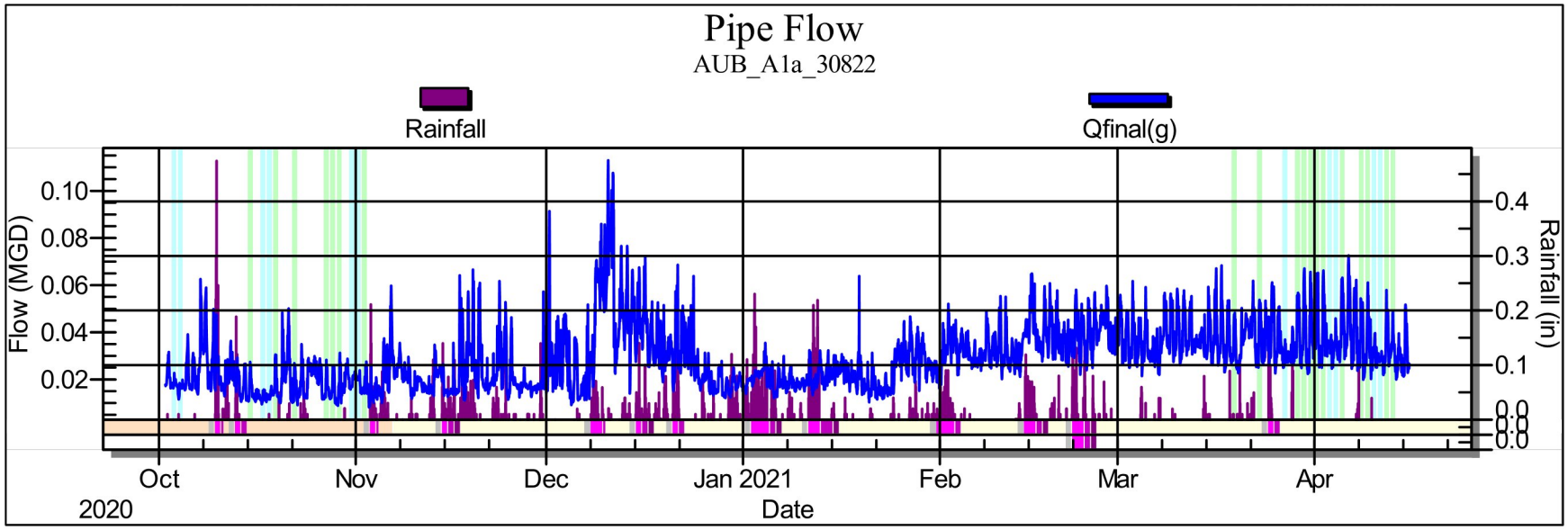

Storm Event - 12/20/2020 11:00:00 PM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

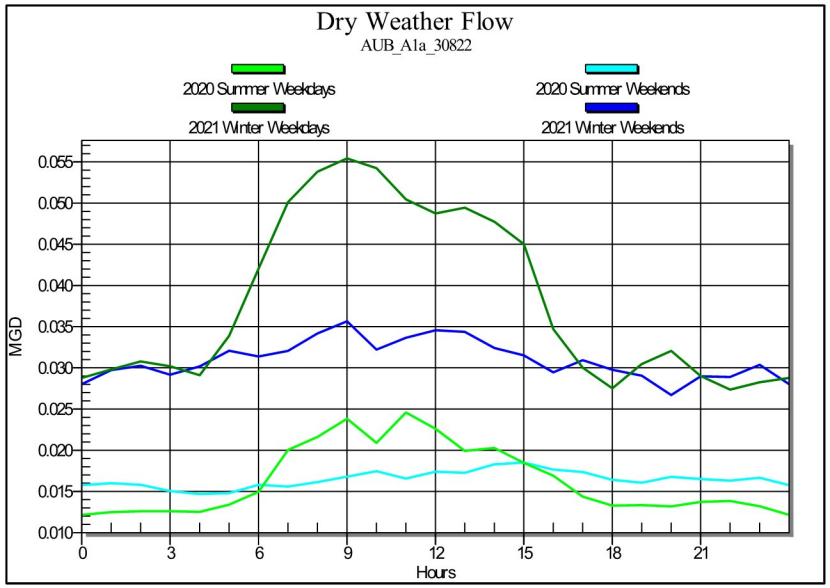

Storm Event - 1/2/2021 7:00:00 AM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

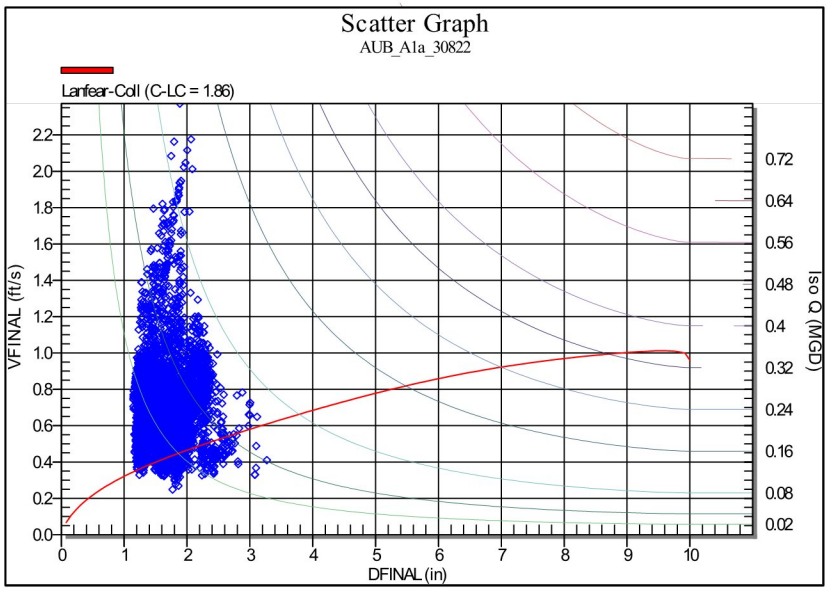

Storm Event - 1/11/2021 8:00:00 AM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

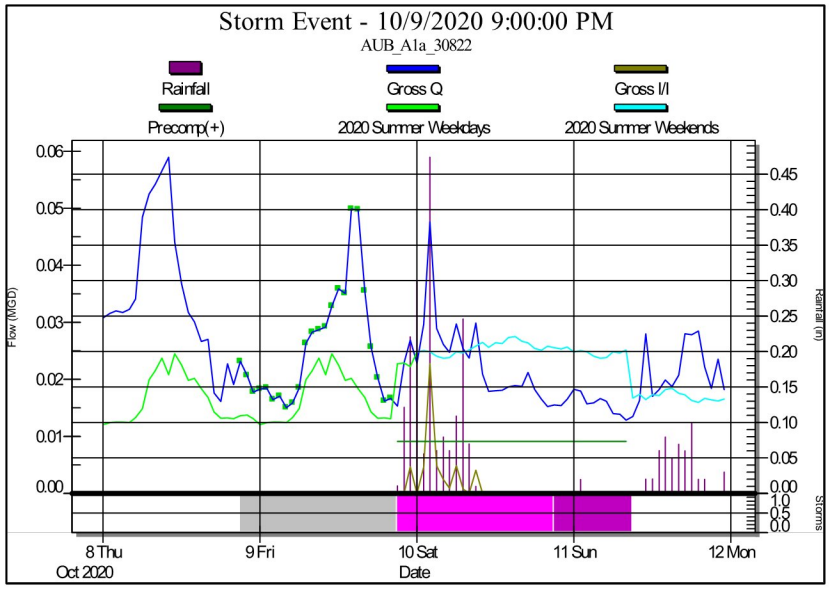

Storm Event - 2/14/2021 7:00:00 AM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

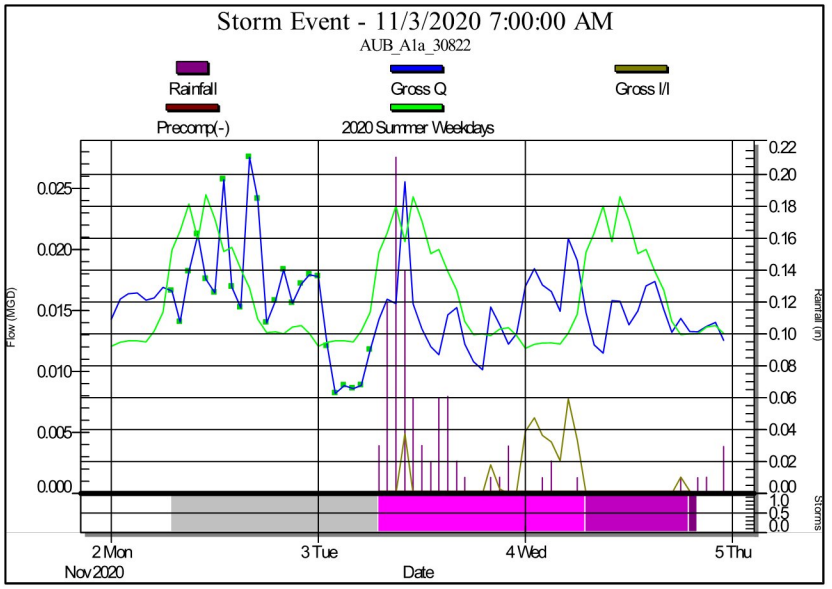

Storm Event - 2/21/2021 9:00:00 PM
AUB_A17_80957
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

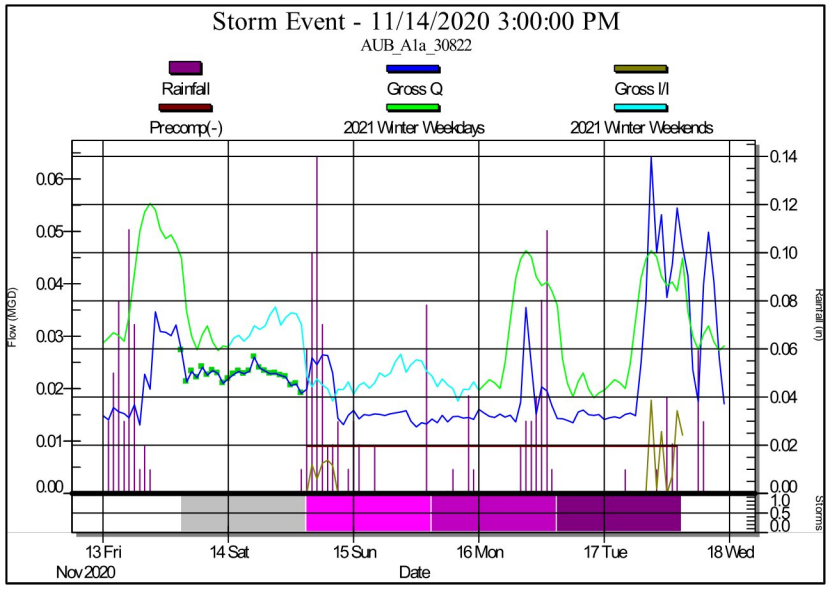

Pipe Flow
AUB_A1a_30822
Rainfall
Qfinal(g)
Flow (MGD)
0.10
0.08
0.06
0.04
0.02
0.4
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

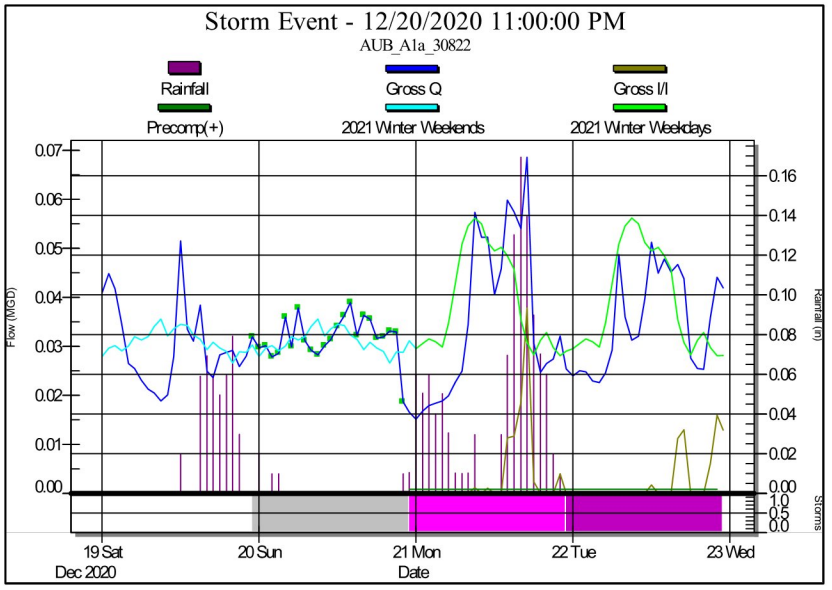

Dry Weather Flow
AUB_A1a_30822
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0
3
6
9
12
15
18
21
Hours

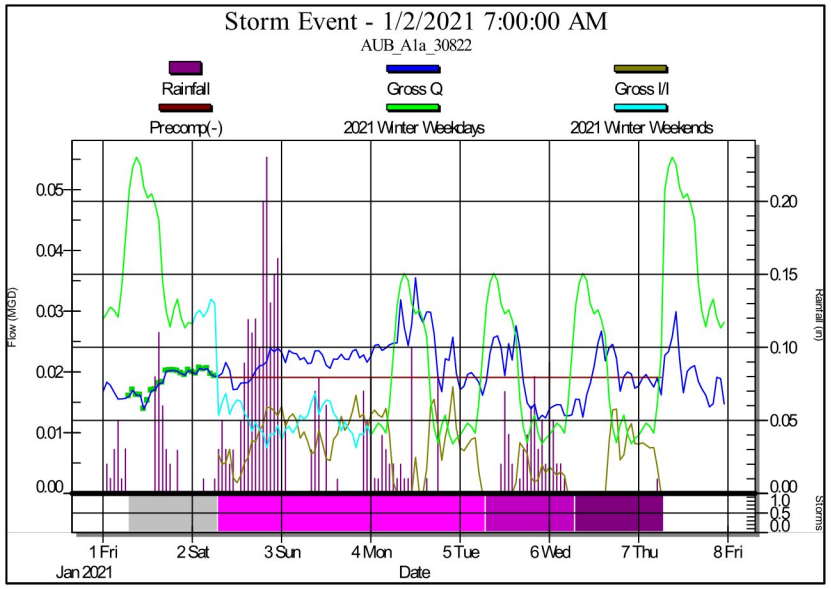

Scatter Graph
AUB_A1a_30822
Lanfear-Coll (C-LC = 1.86)
VFINAL (ft/s)
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
1
2
3
4
5
6
7
8
9
10
DFINAL (in)
0.72
0.64
0.56
0.48
0.4
0.32
0.24
0.16
0.08
0.02
Iso Q (MGD)

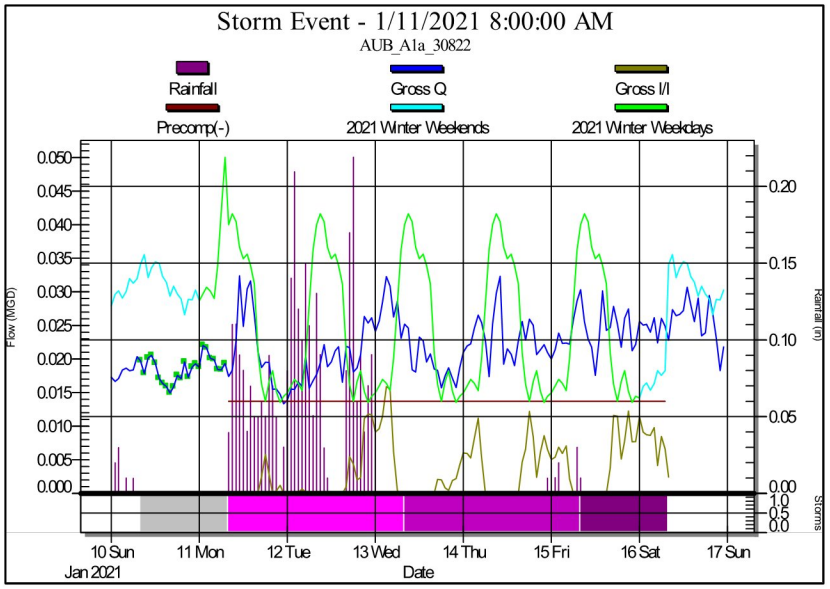

Storm Event - 10/9/2020 9:00:00 PM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

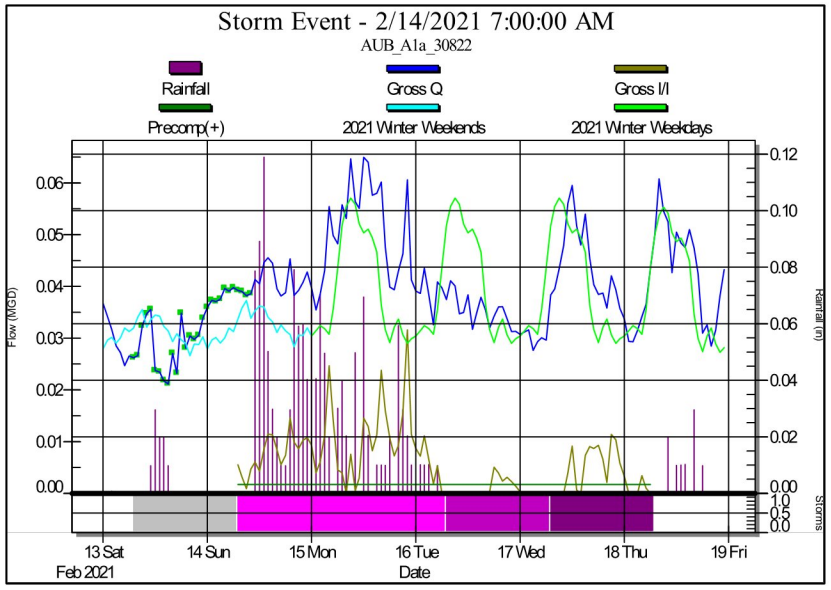

Storm Event - 11/3/2020 7:00:00 AM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

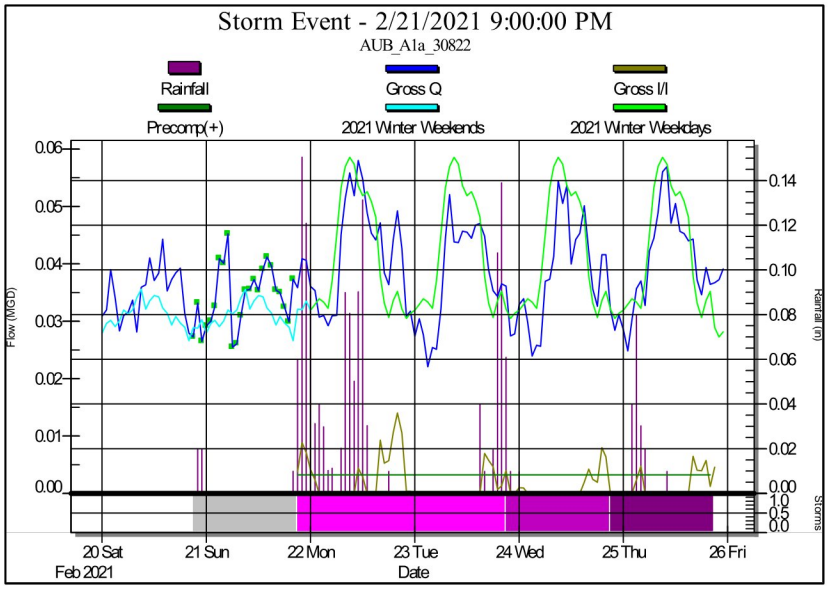

Storm Event - 11/14/2020 3:00:00 PM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

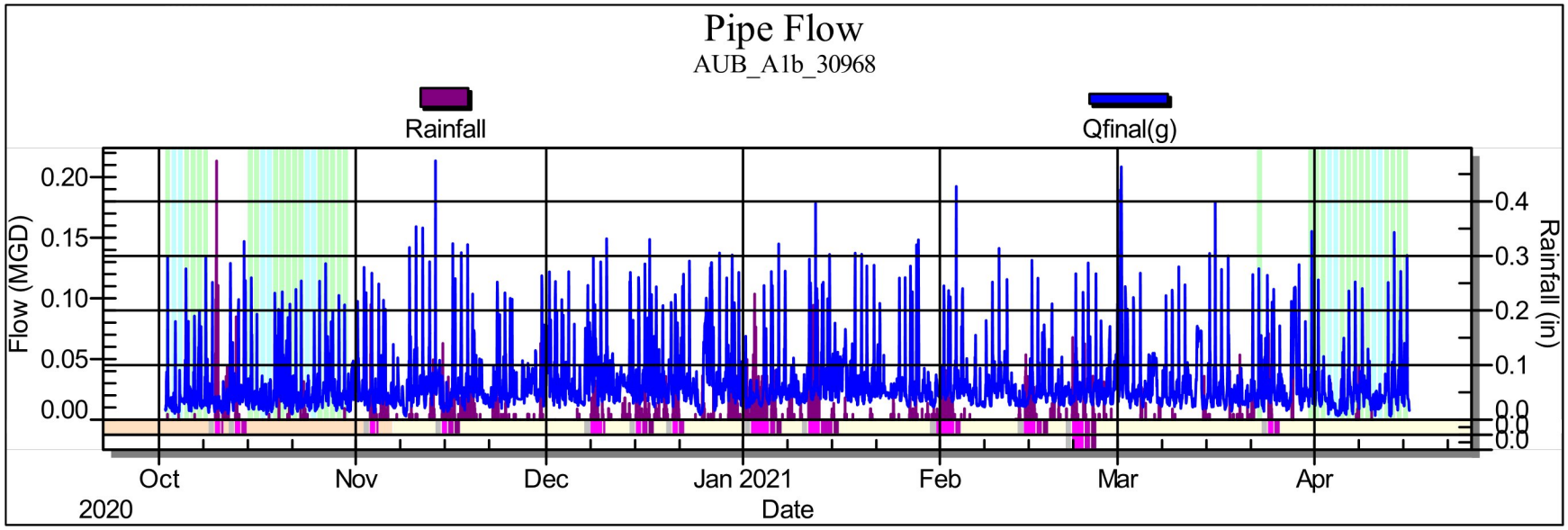

Storm Event - 12/20/2020 11:00:00 PM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

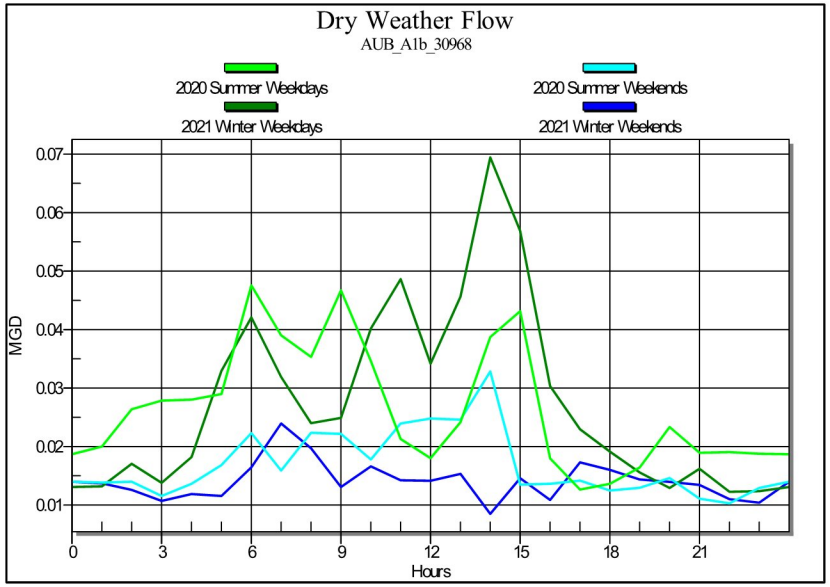

Storm Event - 1/2/2021 7:00:00 AM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

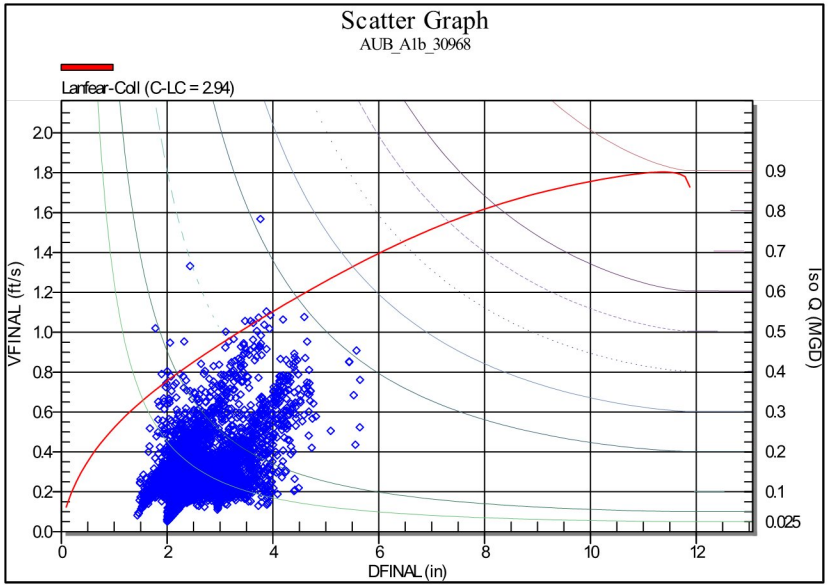

Storm Event - 1/11/2021 8:00:00 AM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

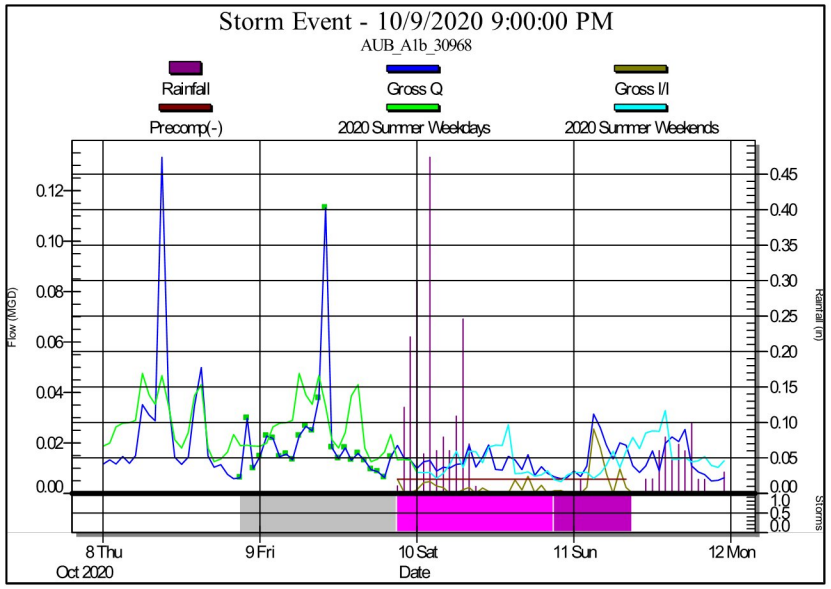

Storm Event - 2/14/2021 7:00:00 AM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

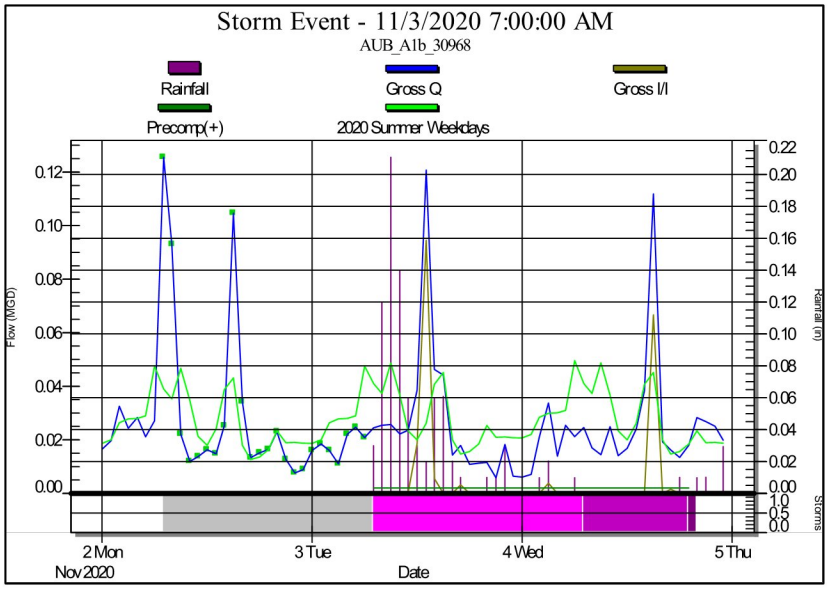

Storm Event - 2/21/2021 9:00:00 PM
AUB_A1a_30822
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

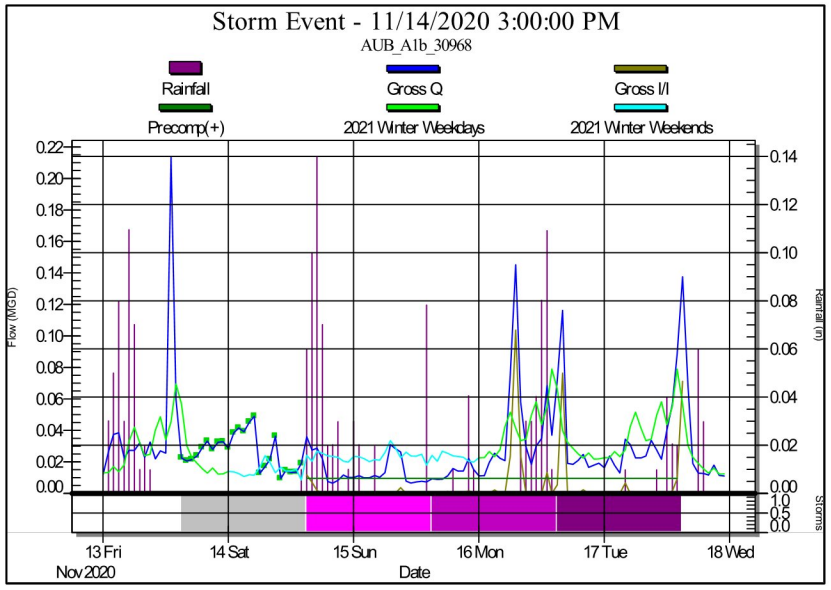

Pipe Flow
AUB_A1b_30968
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.20
0.15
0.10
0.05
0.00
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

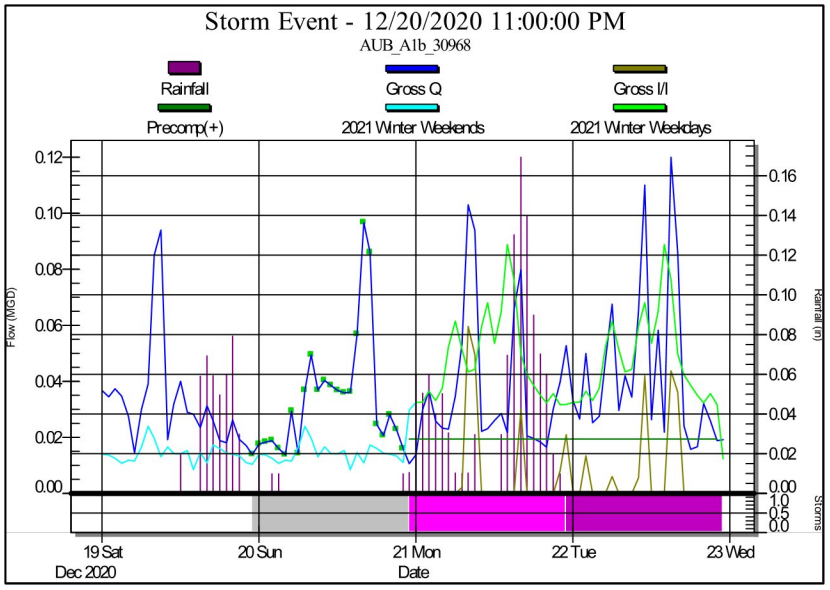

Dry Weather Flow
AUB_A1b_30968
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
3
6
9
12
15
18
21
Hours

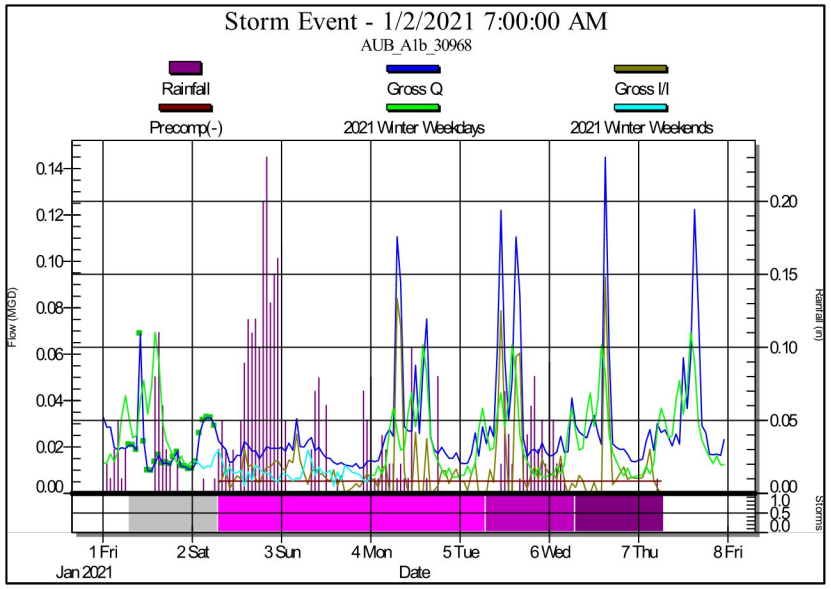

Scatter Graph
AUB_A1b_30968
Lanfear-Coll (C-LC = 2.94)
VFINAL (ft/s)
Iso Q (MGD)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.025
0
2
4
6
8
10
12
DFINAL (in)

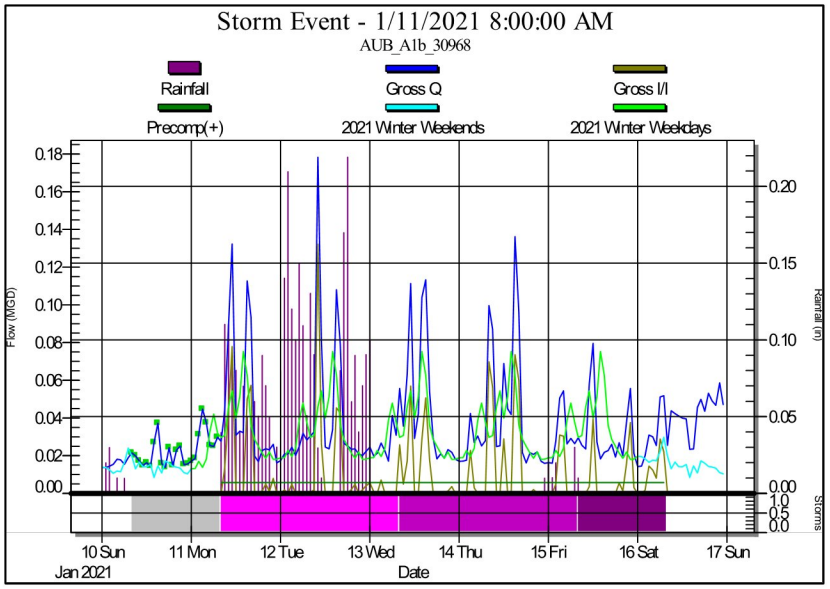

Storm Event - 10/9/2020 9:00:00 PM
AUB_A1b_30968
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

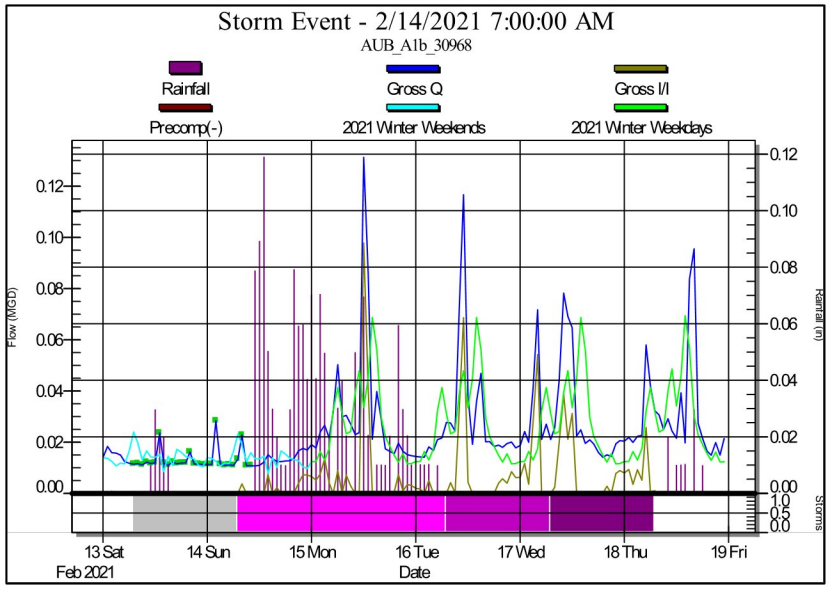

Storm Event - 11/3/2020 7:00:00 AM
AUB_A1b_30968
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

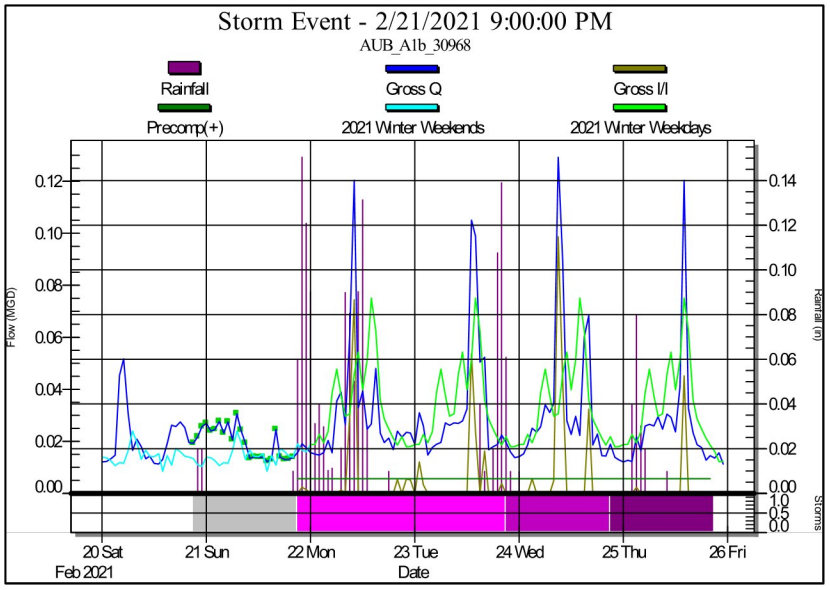

Storm Event - 11/14/2020 3:00:00 PM
AUB_A1b_30968
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

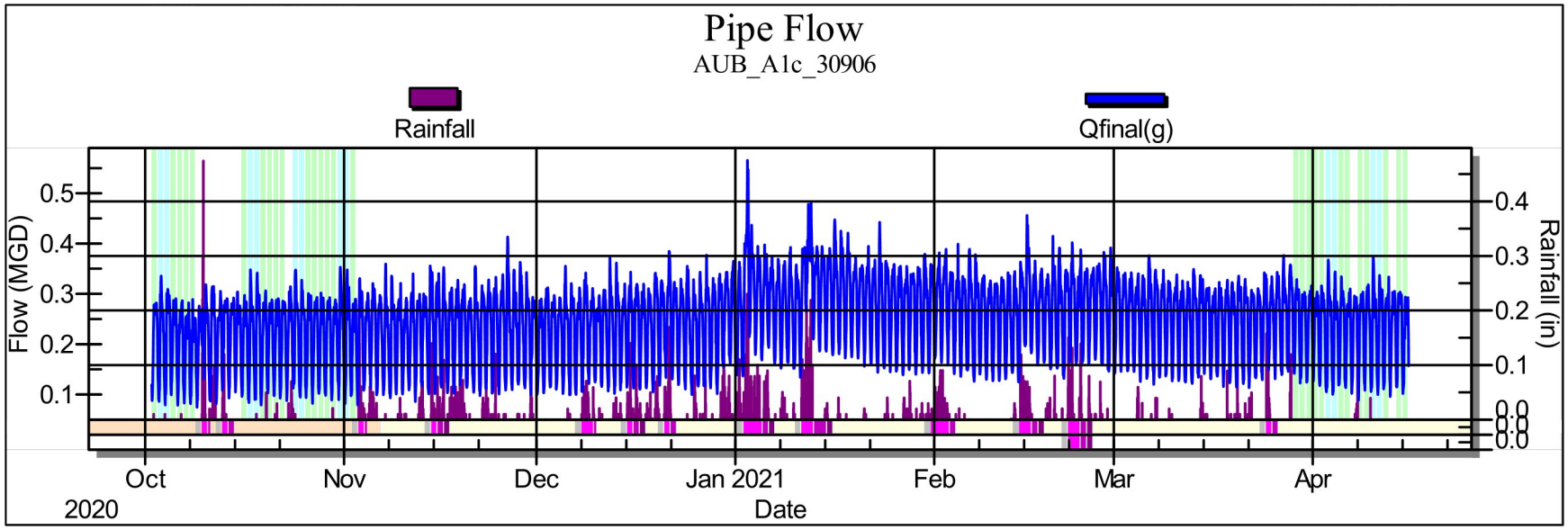

Storm Event - 12/20/2020 11:00:00 PM
AUB_A1b_30968
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

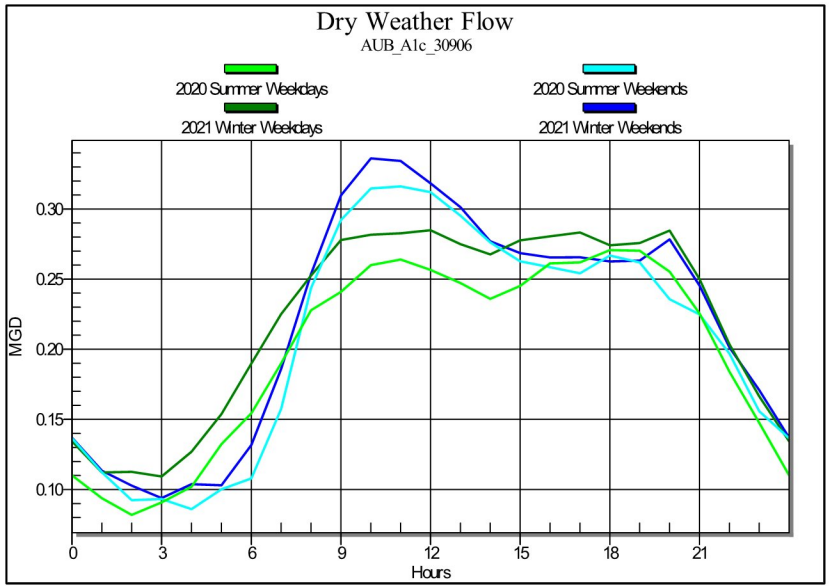

Storm Event - 1/2/2021 7:00:00 AM
AUB_A1b_30968
Rainfall
Precomp(-)
Gross Q
2021 Winter Weekdays
Gross I/I
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

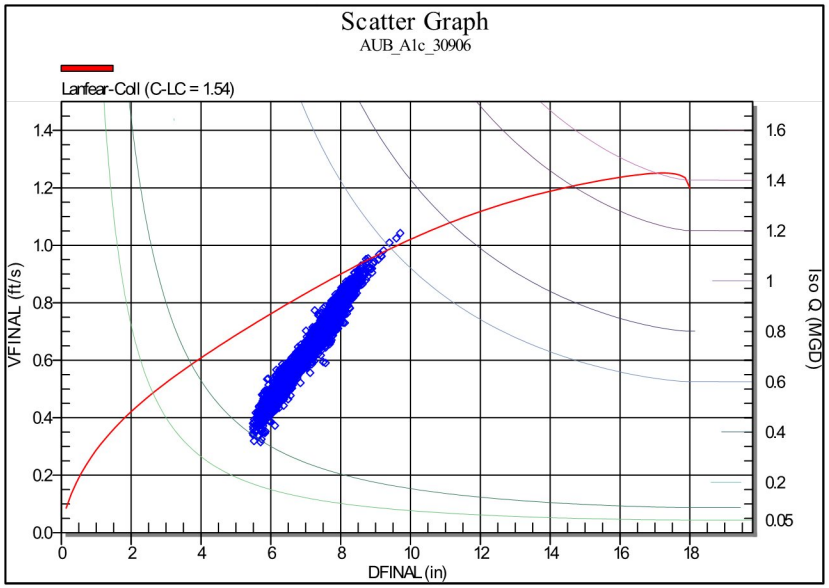

Storm Event - 1/11/2021 8:00:00 AM
AUB_A1b_30968
Rainfall
Precomp(+)
Gross Q
2021 Winter Weekends
Gross I/I
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

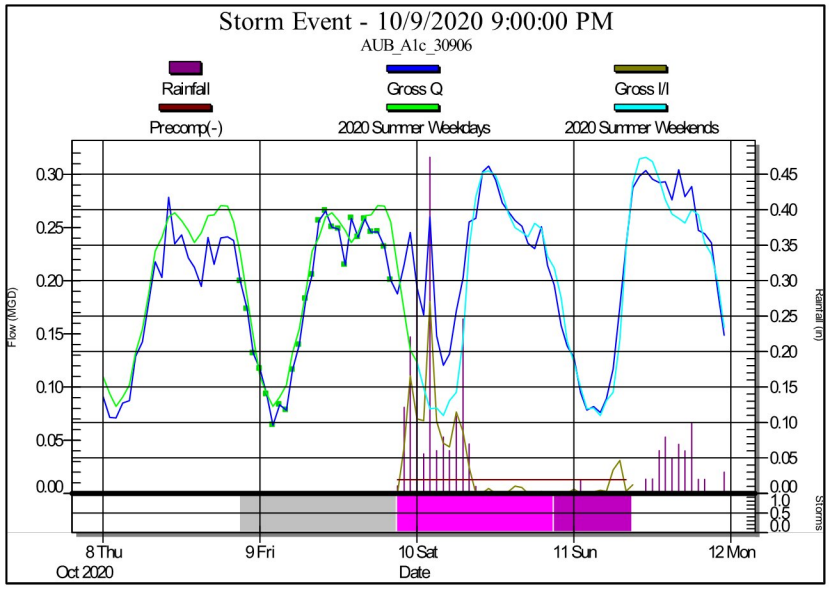

Storm Event - 2/14/2021 7:00:00 AM
AUB_A1b_30968
Rainfall
Precomp(-)
Gross Q
2021 Winter Weekends
Gross I/I
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

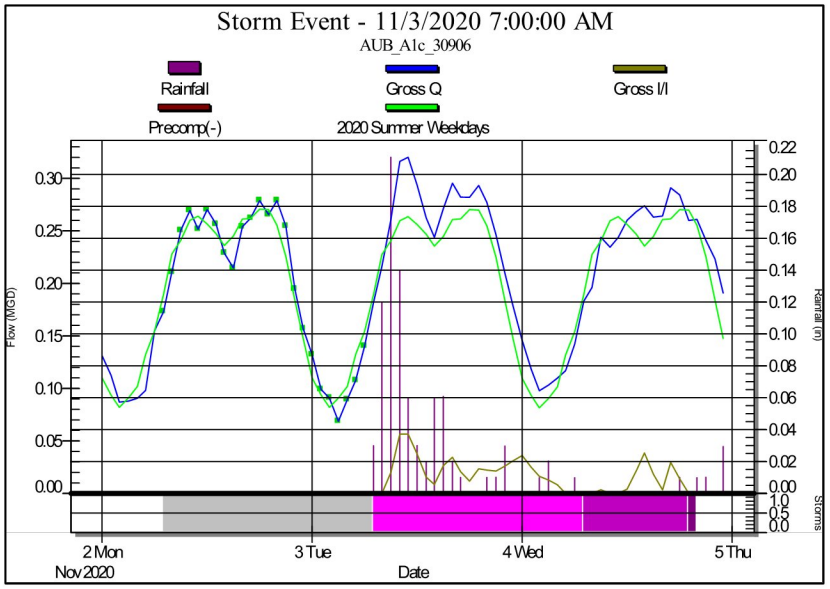

Storm Event - 2/21/2021 9:00:00 PM
AUB_A1b_30968
Rainfall
Precomp(+)
Gross Q
2021 Winter Weekends
Gross I/I
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date


Pipe Flow
AUB_A1c_30906
Rainfall
Qfinal(g)
Flow (MGD)
0.5
0.4
0.3
0.2
0.1
0.4
0.3
0.2
0.1
0.0
0.0
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date


Dry Weather Flow
AUB_A1c_30906
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.30
0.25
0.20
0.15
0.10
0
3
6
9
12
15
18
21
Hours


Scatter Graph
AUB_A1c_30906
Lanfear-Coll (C-LC = 1.54)
VFINAL (ft/s)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
2
4
6
8
10
12
14
16
18
DFINAL (in)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0.05
Iso Q (MGD)


Storm Event - 10/9/2020 9:00:00 PM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date


Storm Event - 11/3/2020 7:00:00 AM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
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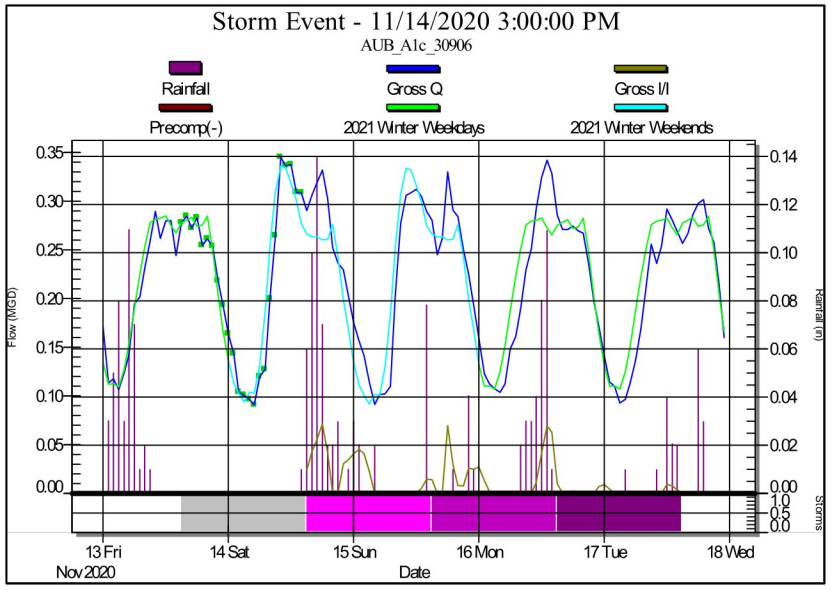
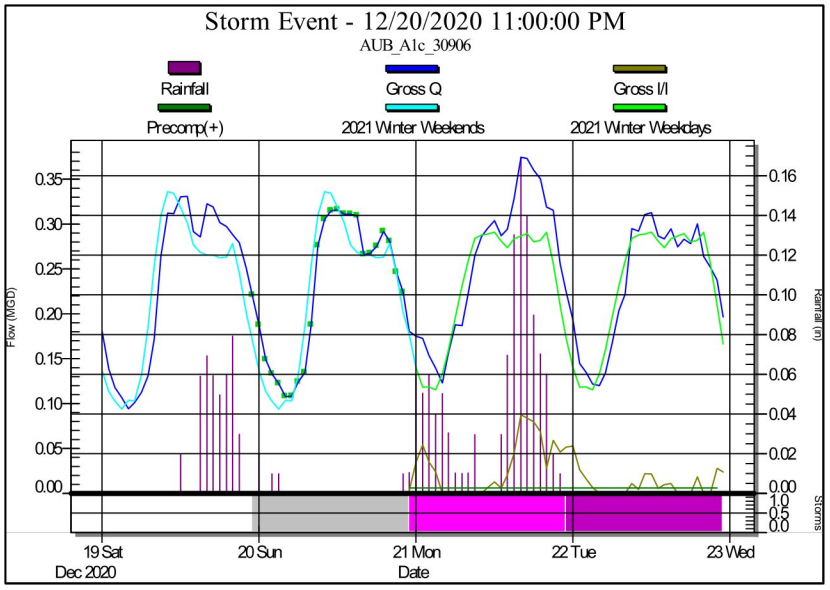
4 Wed
5 Thu
Date


Storm Event - 11/14/2020 3:00:00 PM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date


Storm Event - 12/20/2020 11:00:00 PM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
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Storms
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Dec 2020
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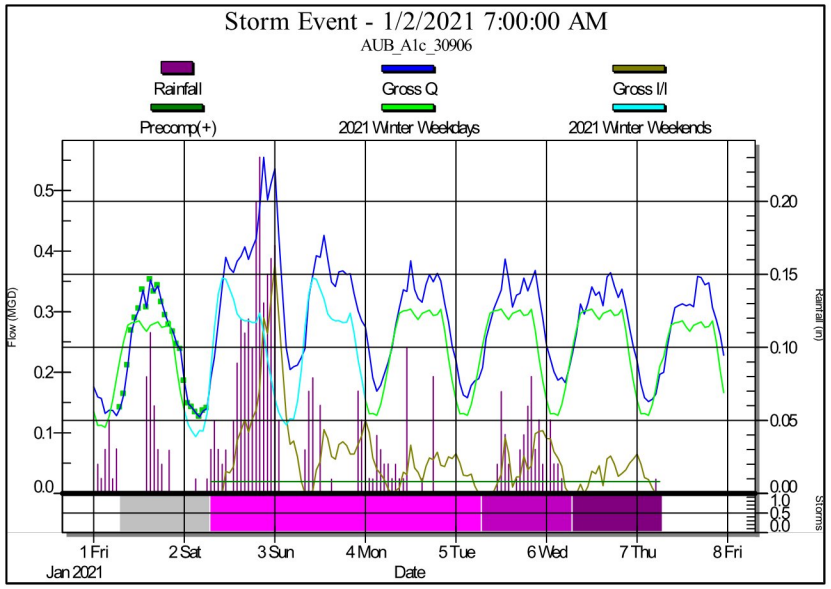
Date


Storm Event - 1/2/2021 7:00:00 AM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
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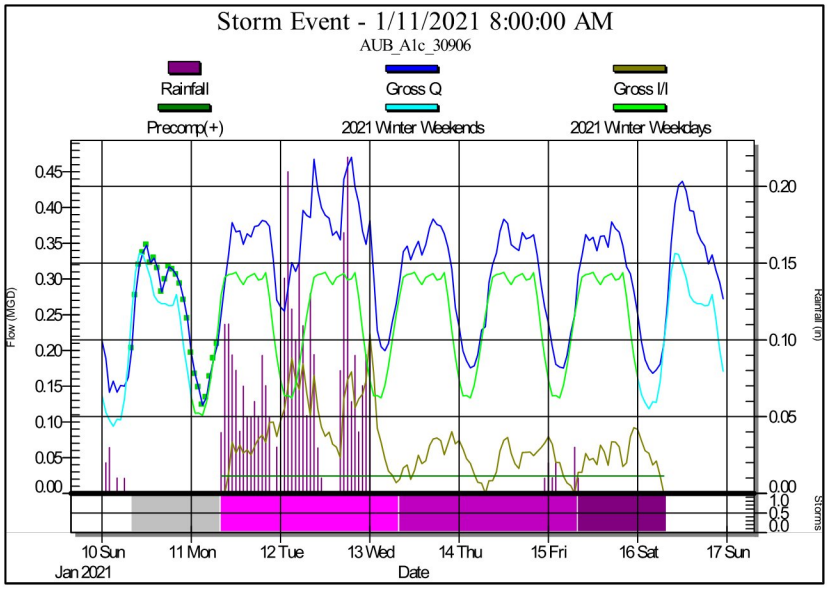
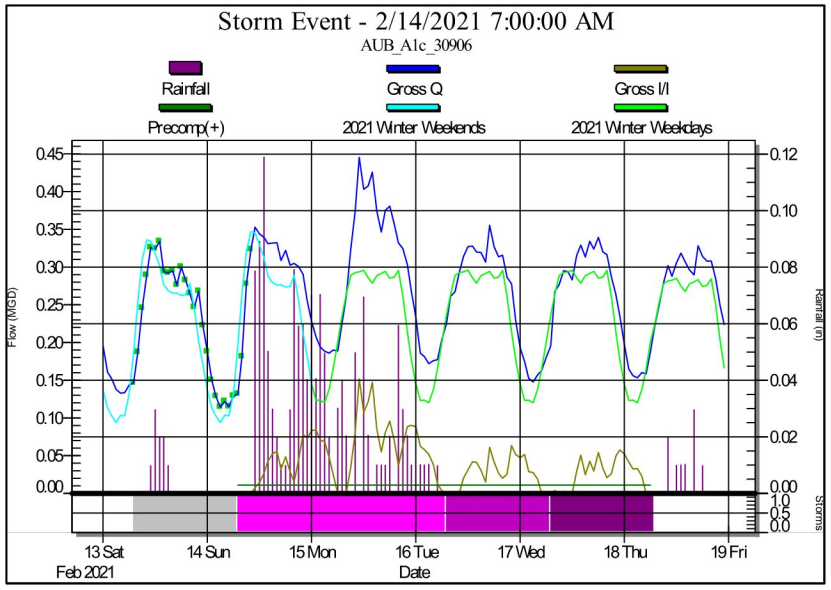
7 Thu
8 Fri
Date


Storm Event - 1/11/2021 8:00:00 AM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date


Storm Event - 2/14/2021 7:00:00 AM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
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13 Sat
Feb 2021
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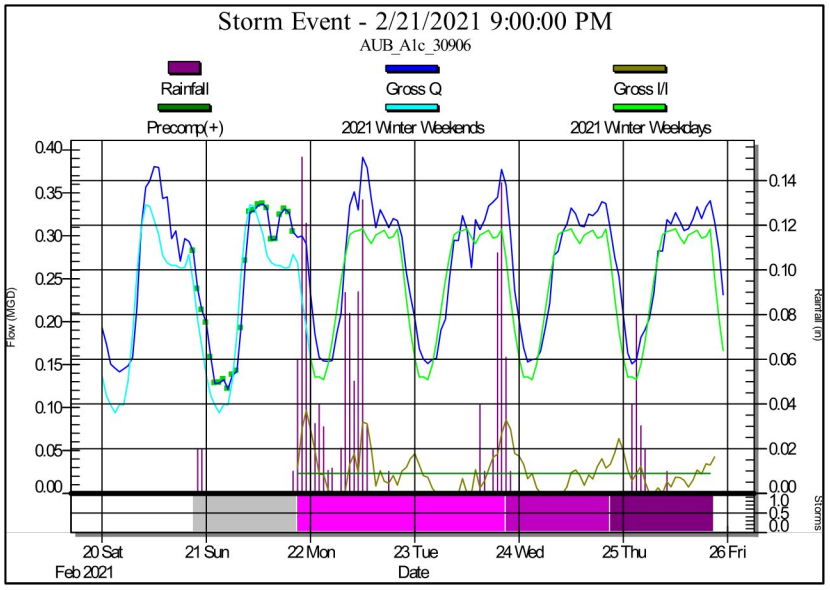
18 Thu
19 Fri
Date


Storm Event - 2/21/2021 9:00:00 PM
AUB_A1c_30906
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
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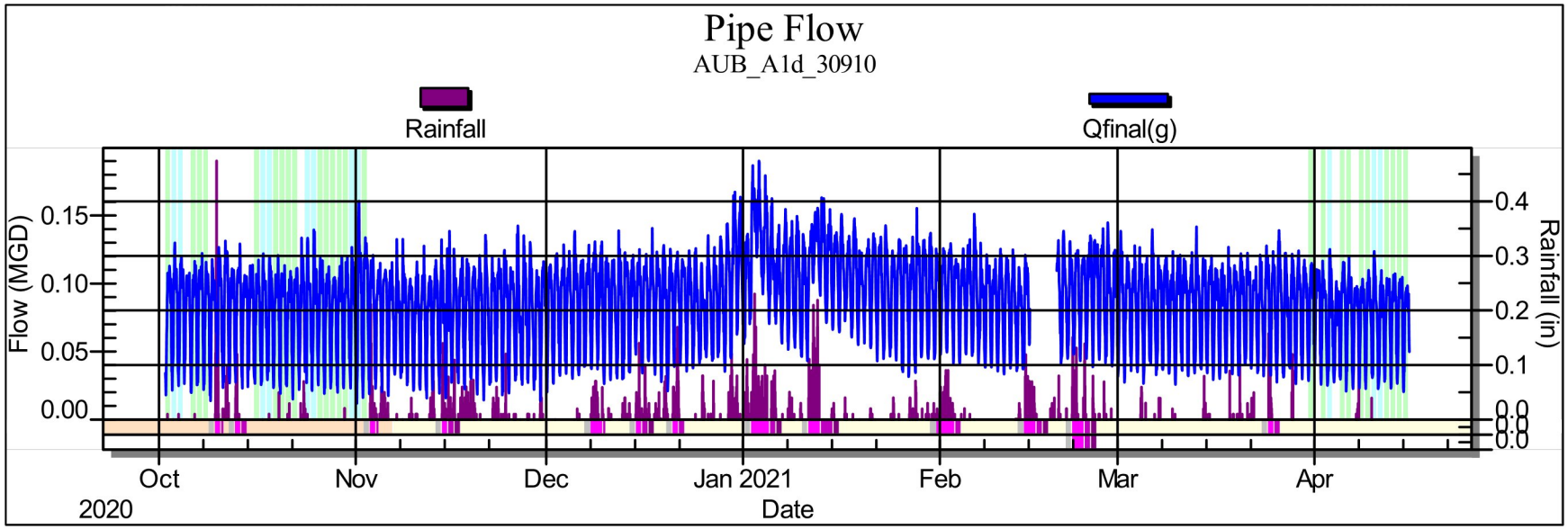
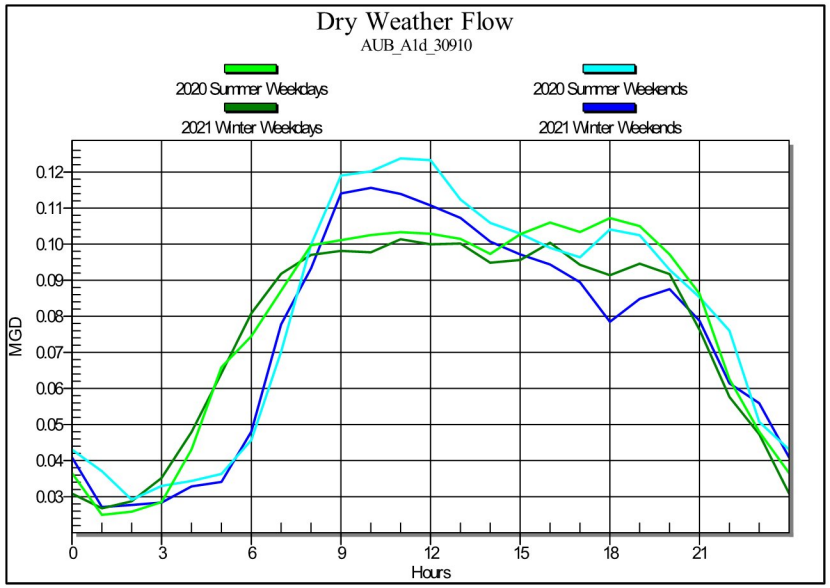
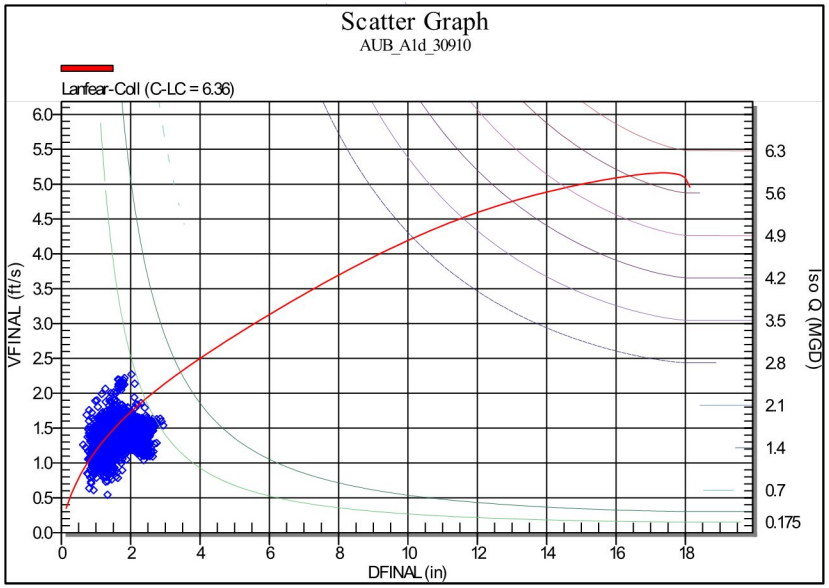
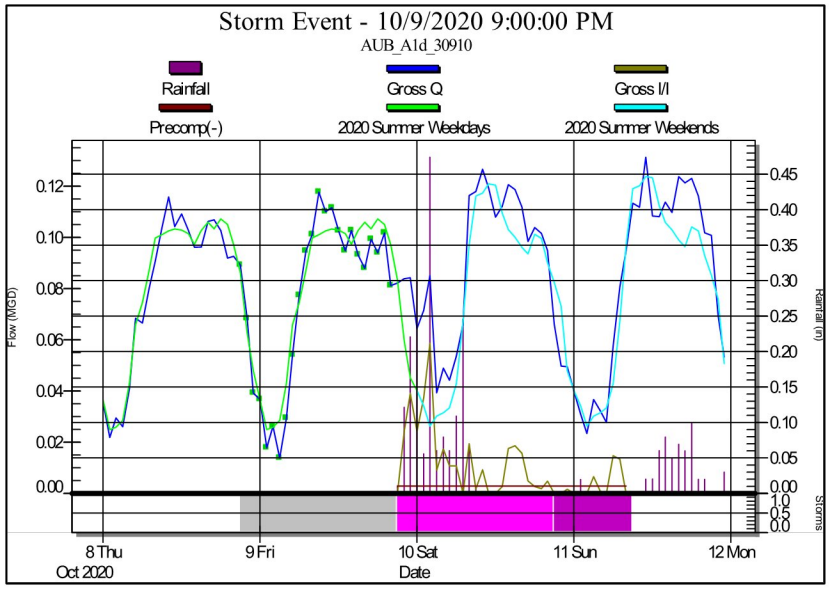
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date


Pipe Flow
AUB_A1d_30910
Rainfall
Qfinal(g)
Flow (MGD)
0.15
0.10
0.05
0.00
0.4
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date


Dry Weather Flow
AUB_A1d_30910
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0
3
6
9
12
15
18
21
Hours


Scatter Graph
AUB_A1d_30910
Lanfear-Coll (C-LC = 6.36)
VFINAL (ft/s)
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Iso Q (MGD)
6.3
5.6
4.9
4.2
3.5
2.8
2.1
1.4
0.7
0.175
0
2
4
6
8
10
12
14
16
18
DFINAL (in)


Storm Event - 10/9/2020 9:00:00 PM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
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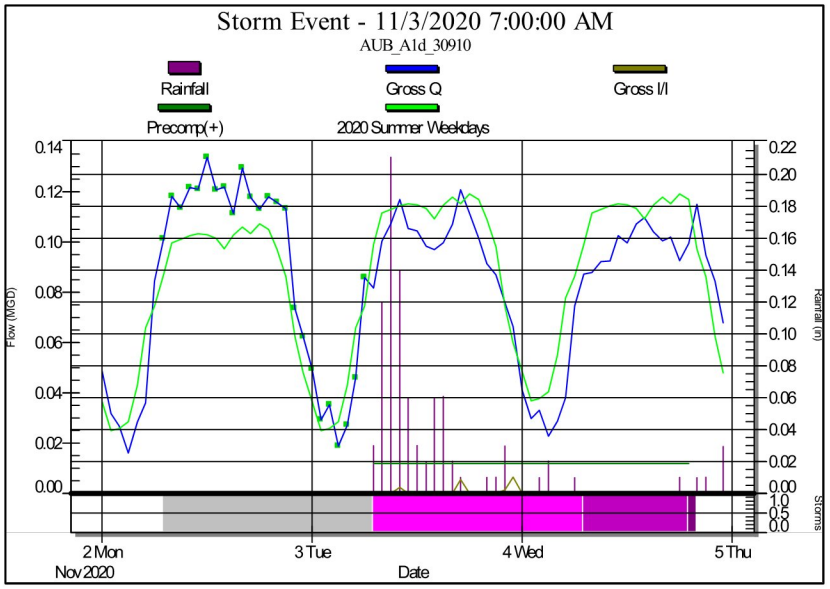
9 Fri
10 Sat
11 Sun
12 Mon
Date


Storm Event - 11/3/2020 7:00:00 AM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
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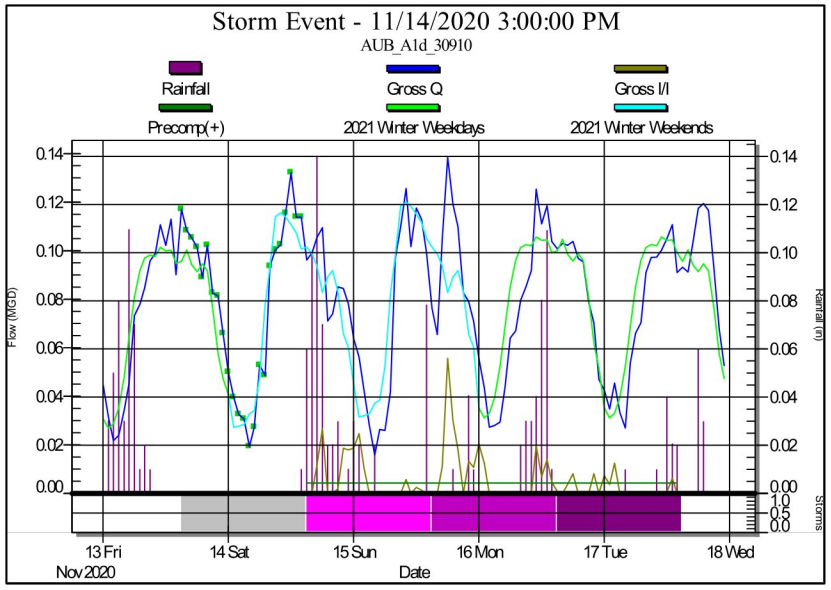
Date


Storm Event - 11/14/2020 3:00:00 PM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
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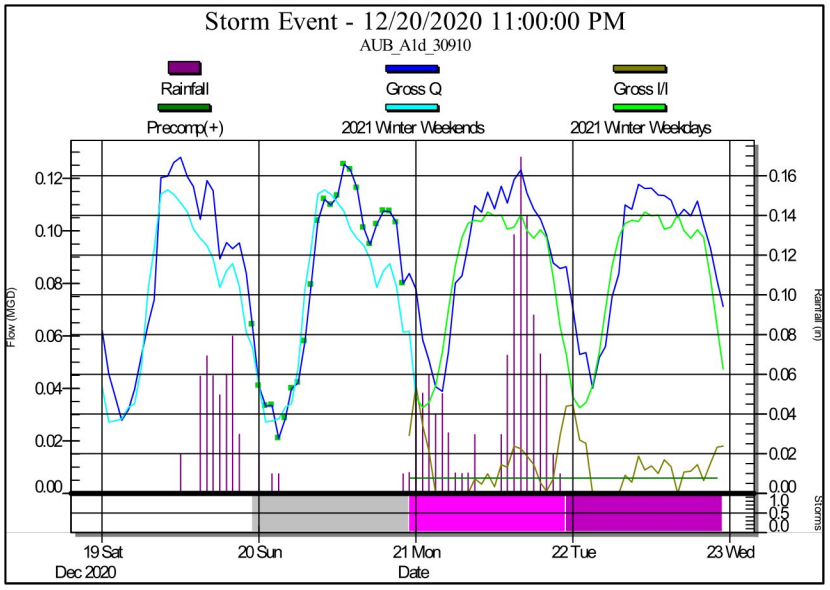
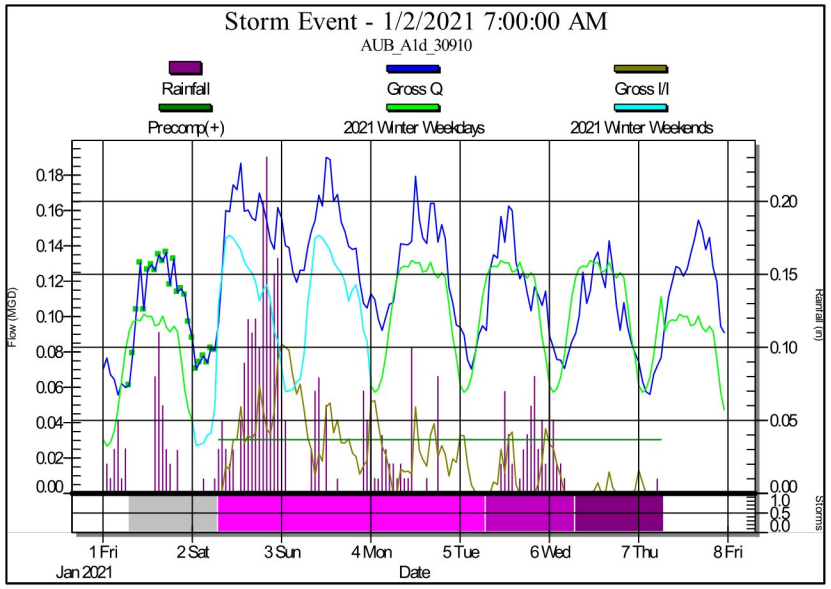
16 Mon
17 Tue
18 Wed
Date


Storm Event - 12/20/2020 11:00:00 PM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date


Storm Event - 1/2/2021 7:00:00 AM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
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4 Mon
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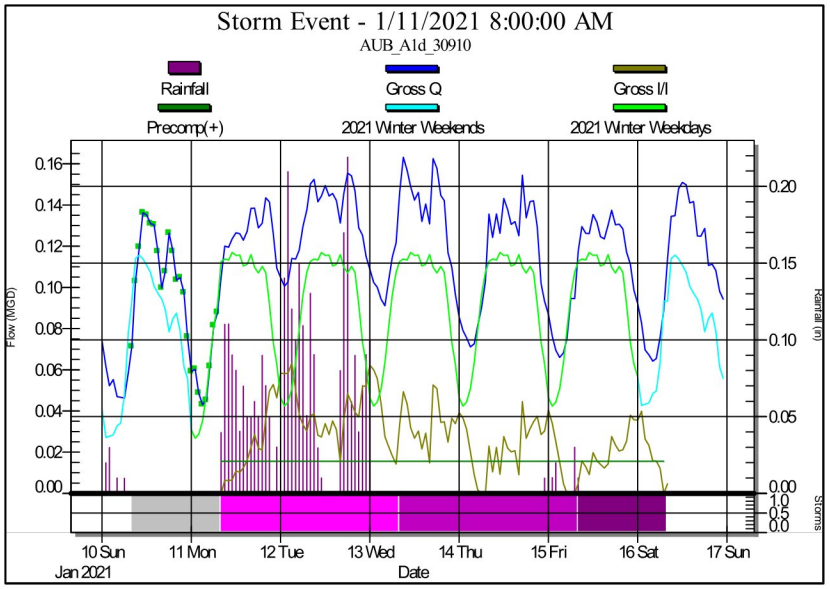
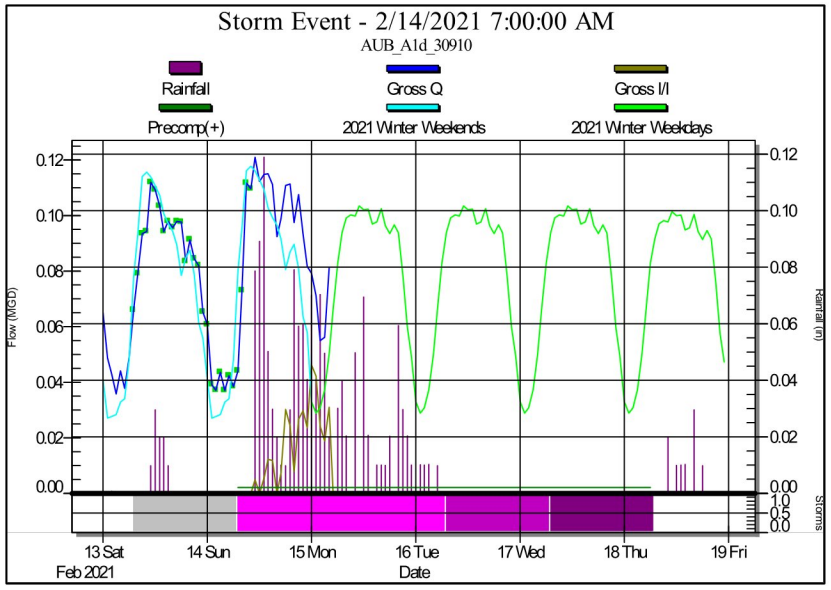
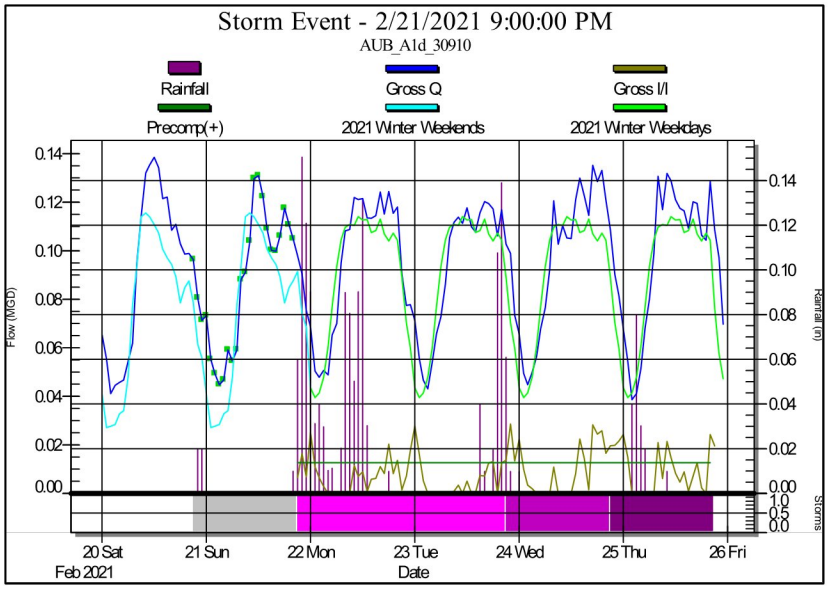
8 Fri
Jan 2021
Date


Storm Event - 1/11/2021 8:00:00 AM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date


Storm Event - 2/14/2021 7:00:00 AM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date


Storm Event - 2/21/2021 9:00:00 PM
AUB_A1d_30910
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
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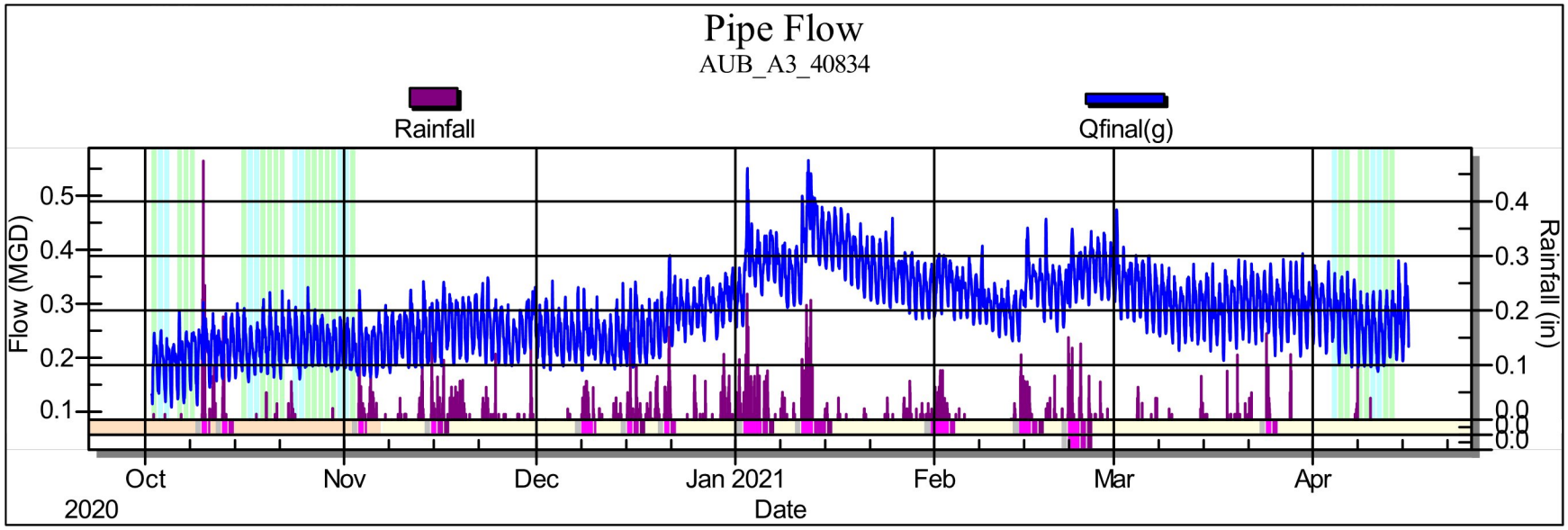
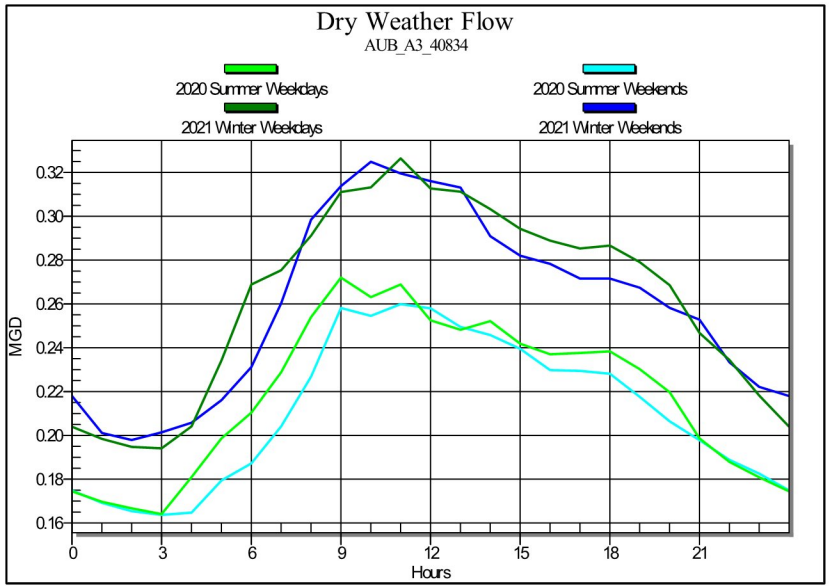
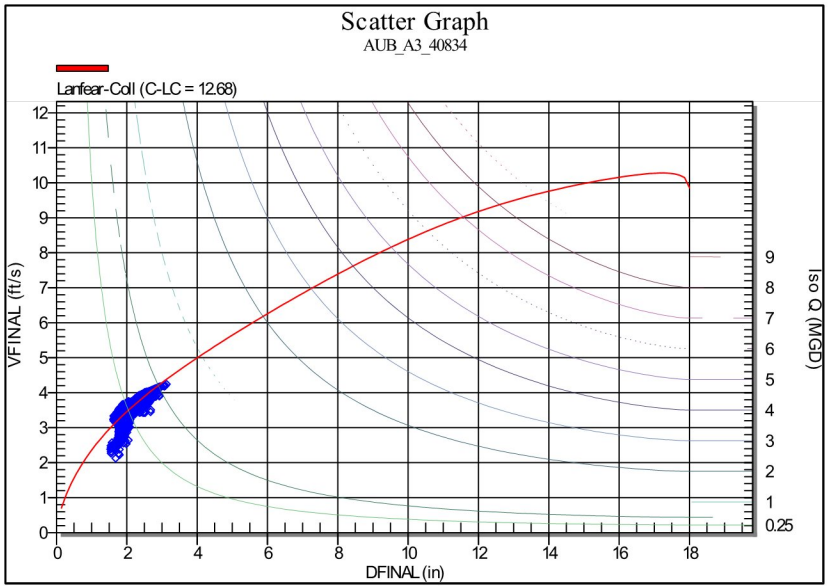
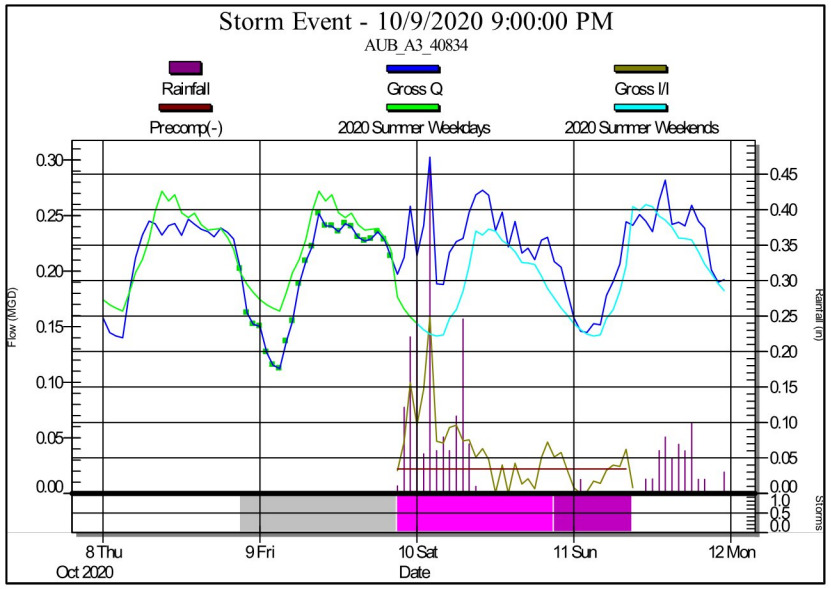
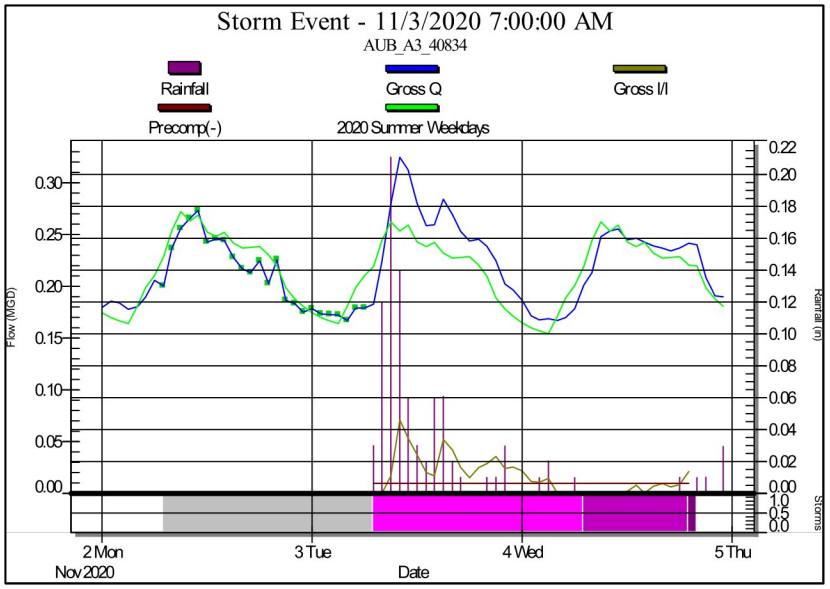
25 Thu
26 Fri
Feb 2021
Date

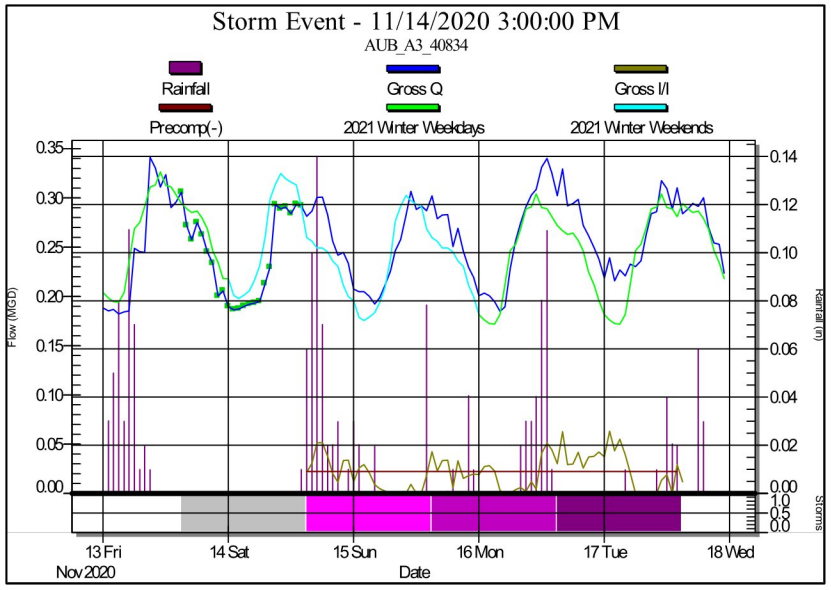

Pipe Flow
AUB_A3_40834
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.5
0.4
0.3
0.2
0.1
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

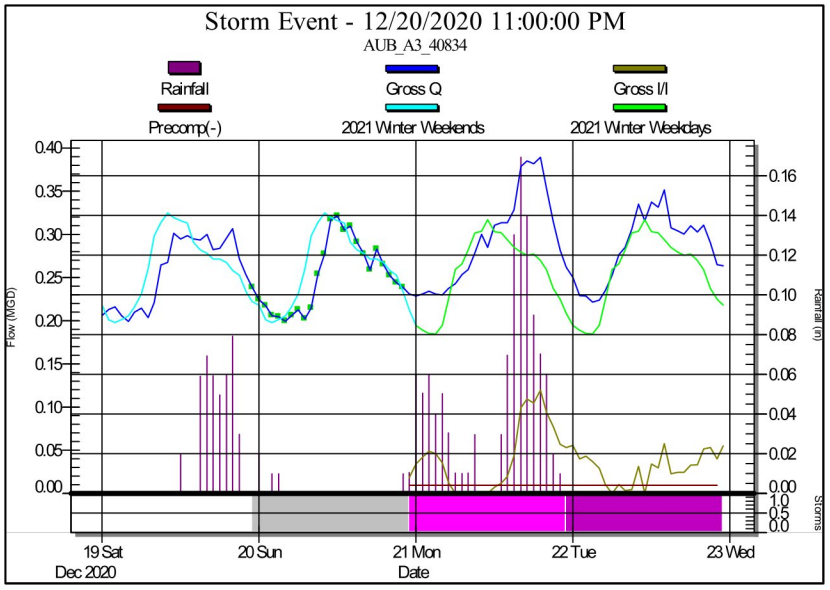

Dry Weather Flow
AUB_A3_40834
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0
3
6
9
12
15
18
21
Hours

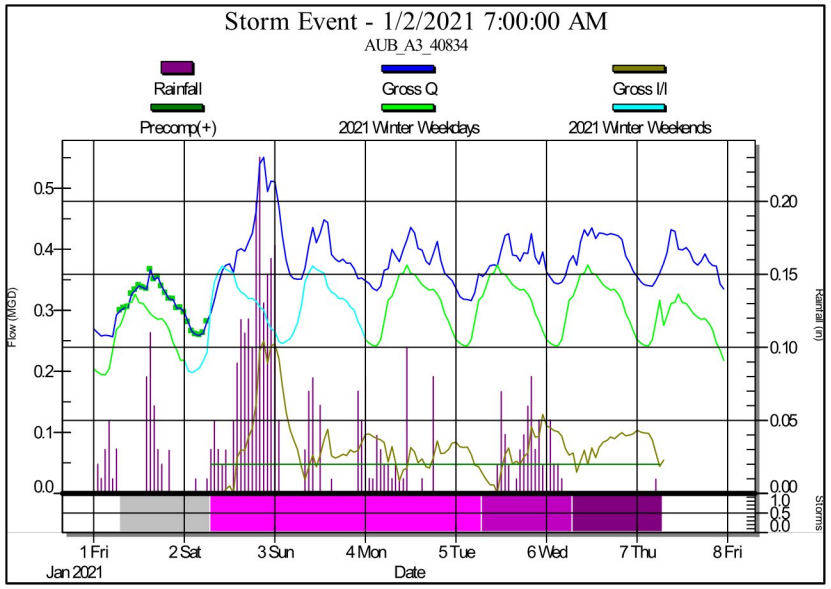

Scatter Graph
AUB_A3_40834
Lanfear-Coll (C-LC = 12.68)
VFINAL (ft/s)
Iso Q (MGD)
12
11
10
9
8
7
6
5
4
3
2
1
0
9
8
7
6
5
4
3
2
1
0.25
0
2
4
6
8
10
12
14
16
18
DFINAL (in)

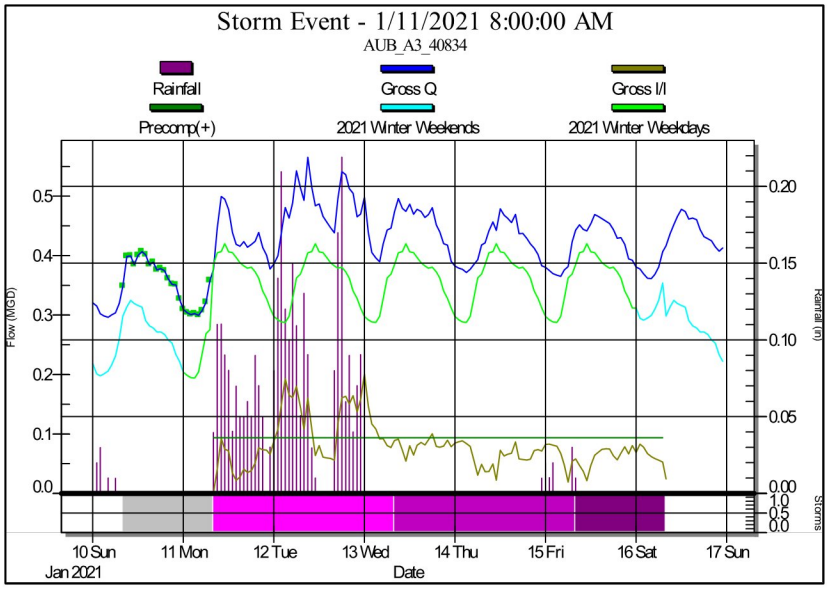

Storm Event - 10/9/2020 9:00:00 PM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

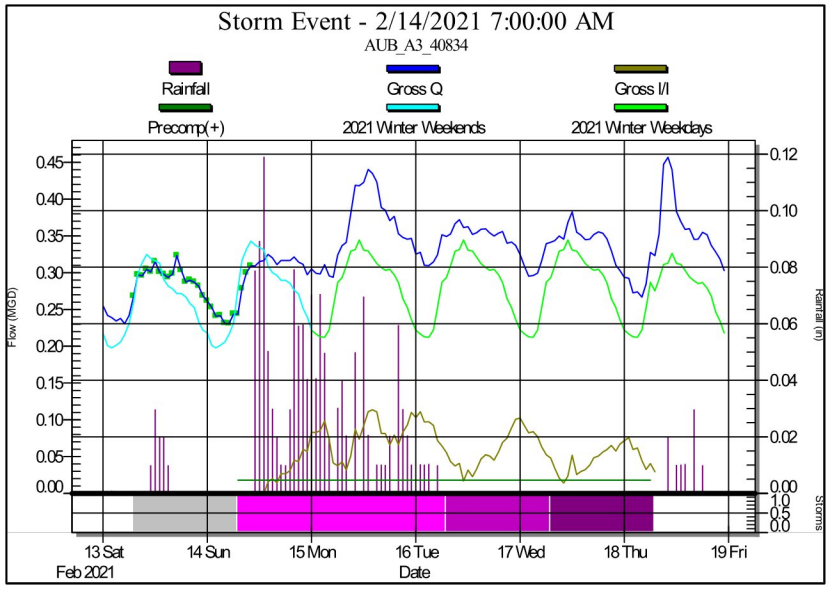

Storm Event - 11/3/2020 7:00:00 AM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

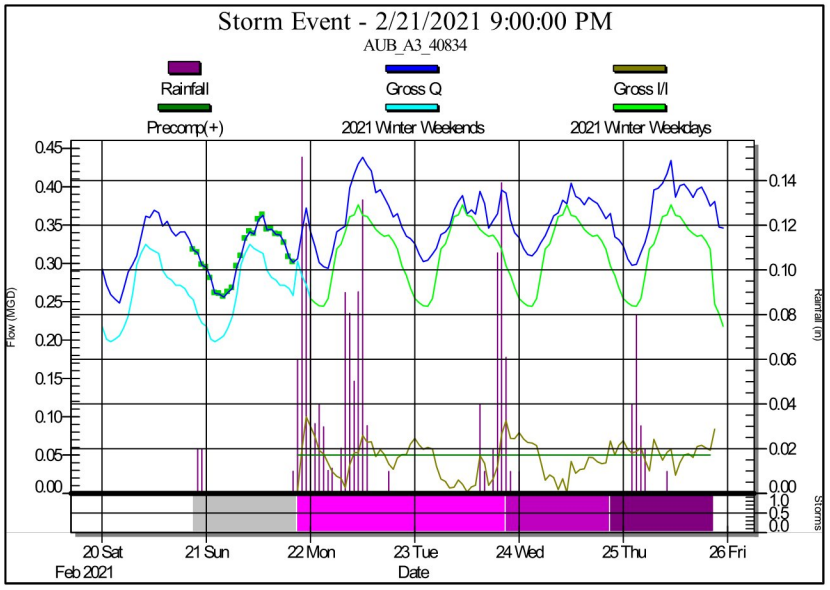

Storm Event - 11/14/2020 3:00:00 PM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

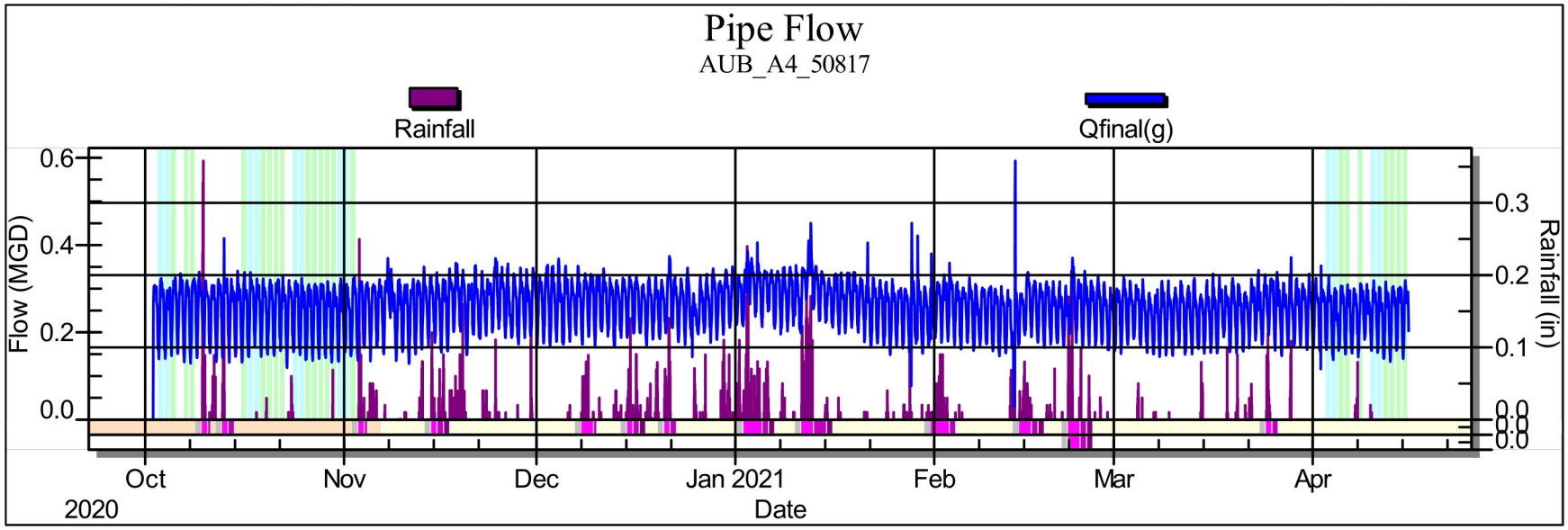

Storm Event - 12/20/2020 11:00:00 PM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

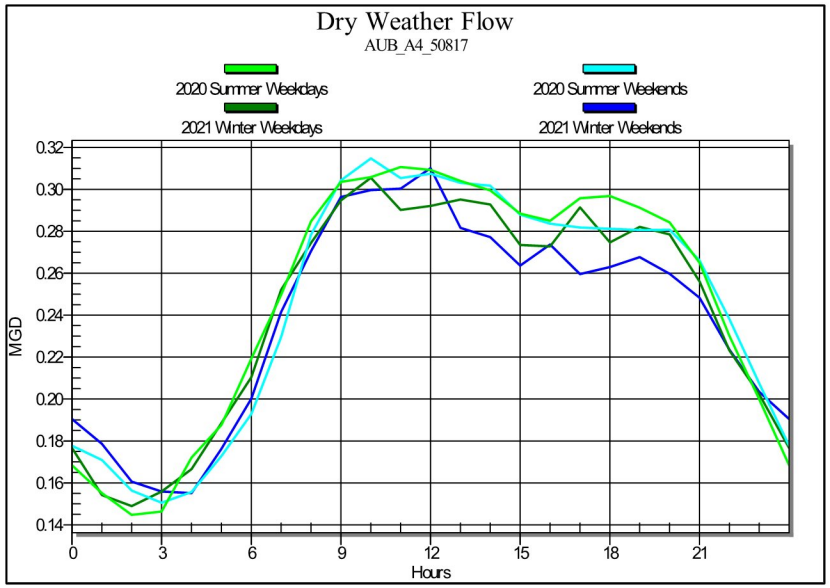

Storm Event - 1/2/2021 7:00:00 AM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

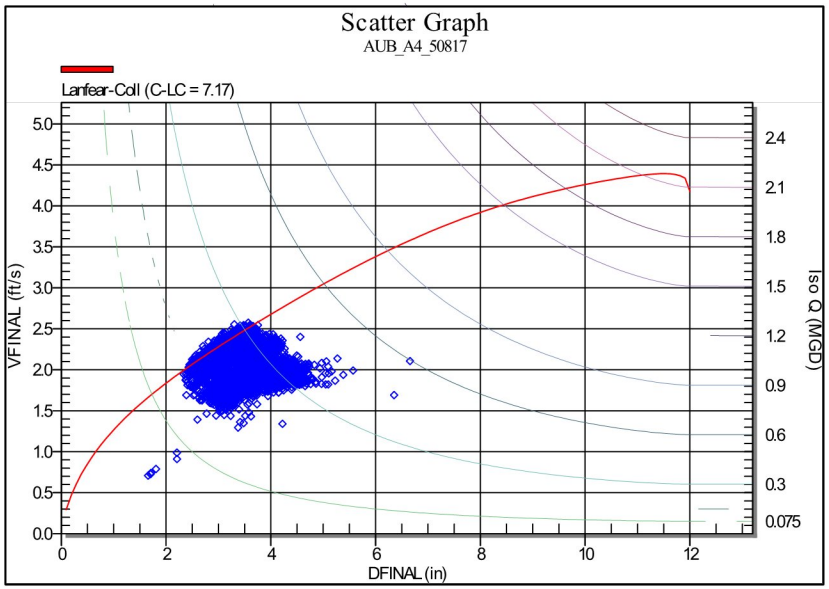

Storm Event - 1/11/2021 8:00:00 AM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

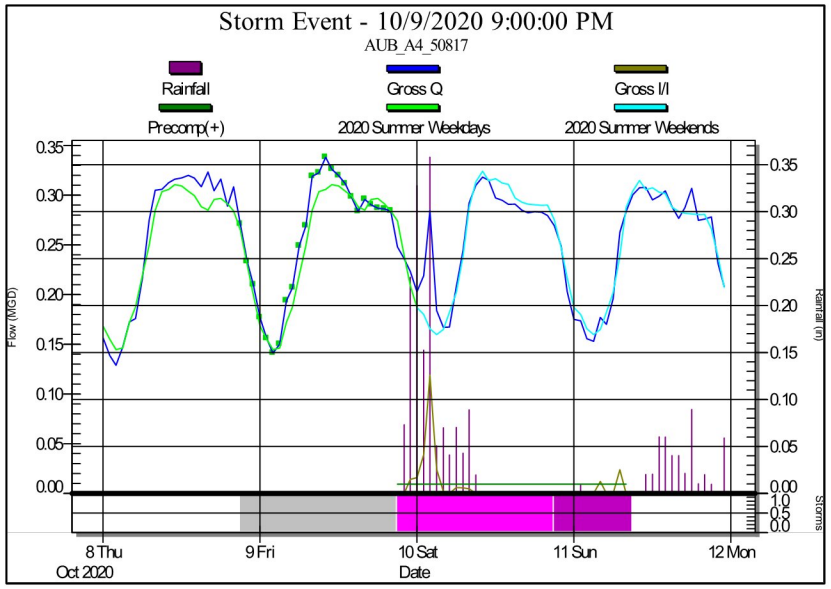

Storm Event - 2/14/2021 7:00:00 AM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

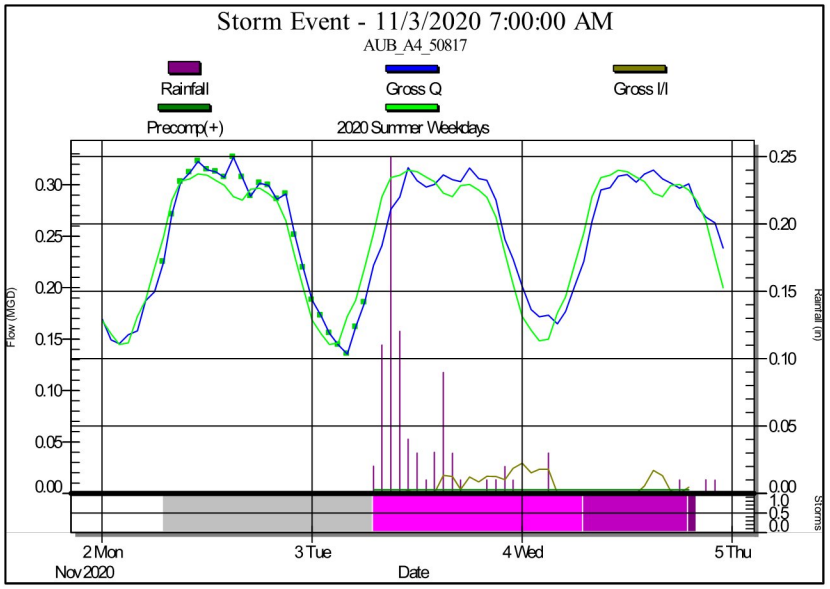

Storm Event - 2/21/2021 9:00:00 PM
AUB_A3_40834
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

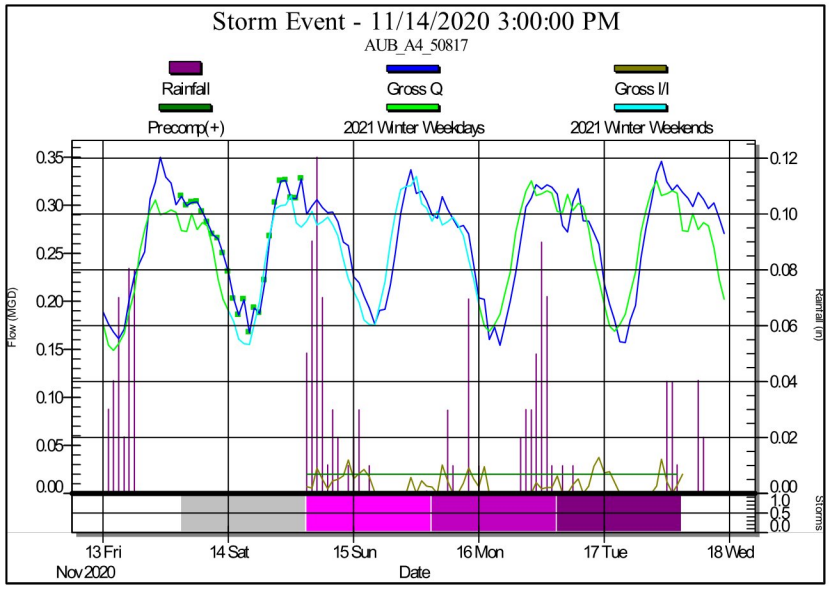

Pipe Flow
AUB_A4_50817
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.6
0.4
0.2
0.0
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

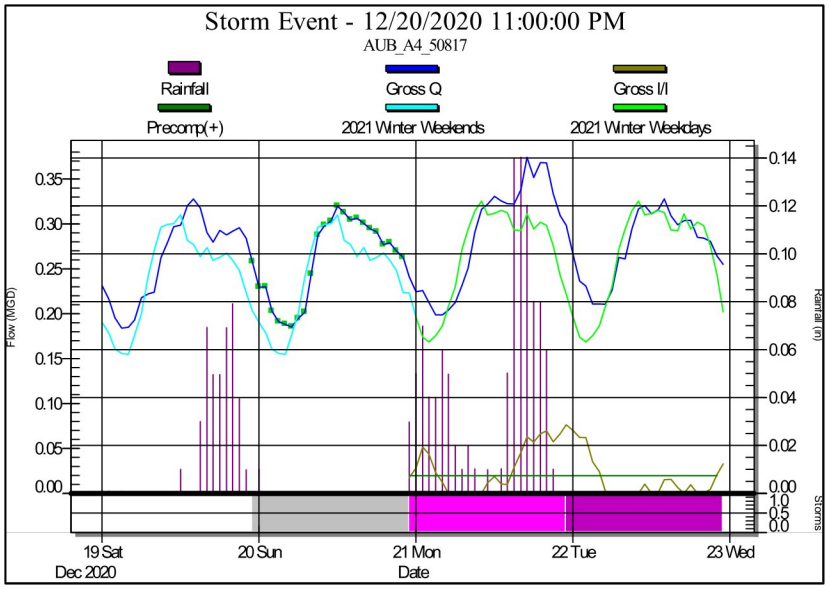

Dry Weather Flow
AUB_A4_50817
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0
3
6
9
12
15
18
21
Hours

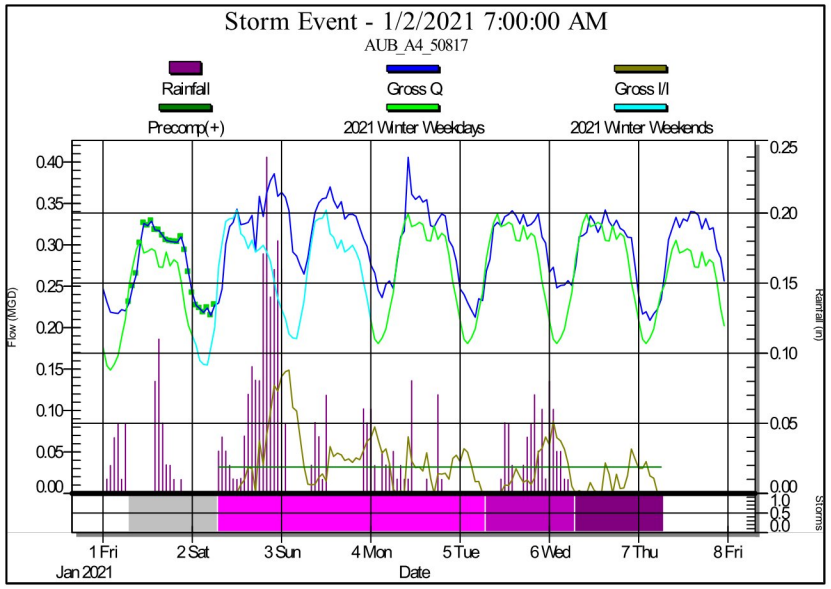

Scatter Graph
AUB_A4_50817
Lanfear-Coll (C-LC = 7.17)
VFINAL (ft/s)
Iso Q (MGD)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2.4
2.1
1.8
1.5
1.2
0.9
0.6
0.3
0.075
0
2
4
6
8
10
12
DFINAL (in)

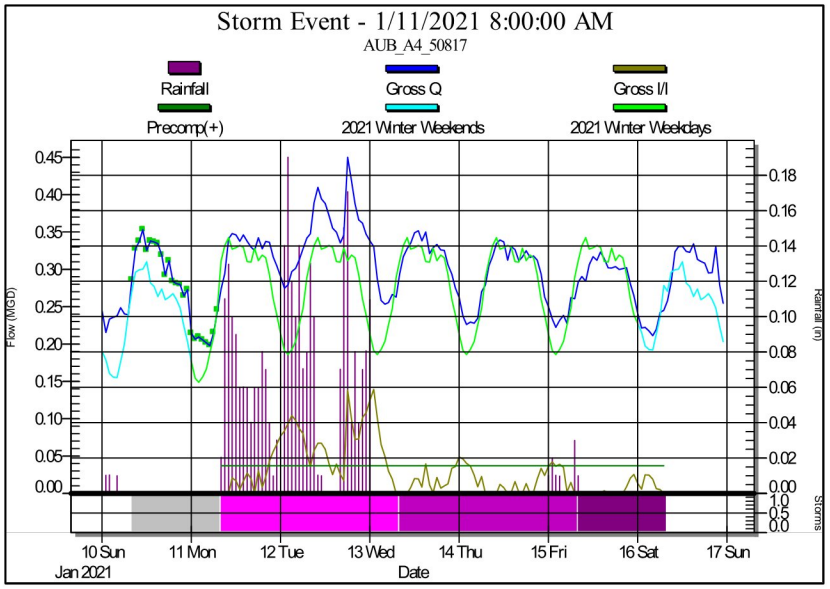

Storm Event - 10/9/2020 9:00:00 PM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

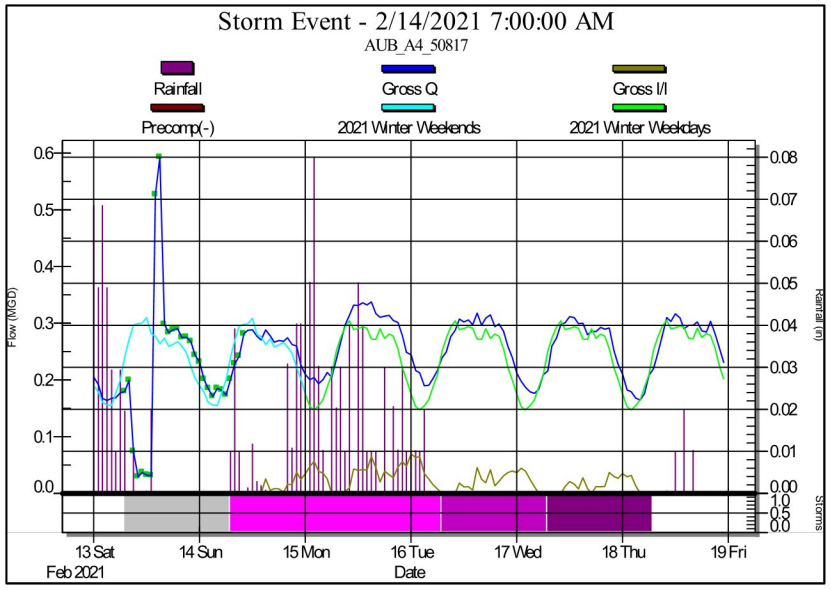

Storm Event - 11/3/2020 7:00:00 AM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

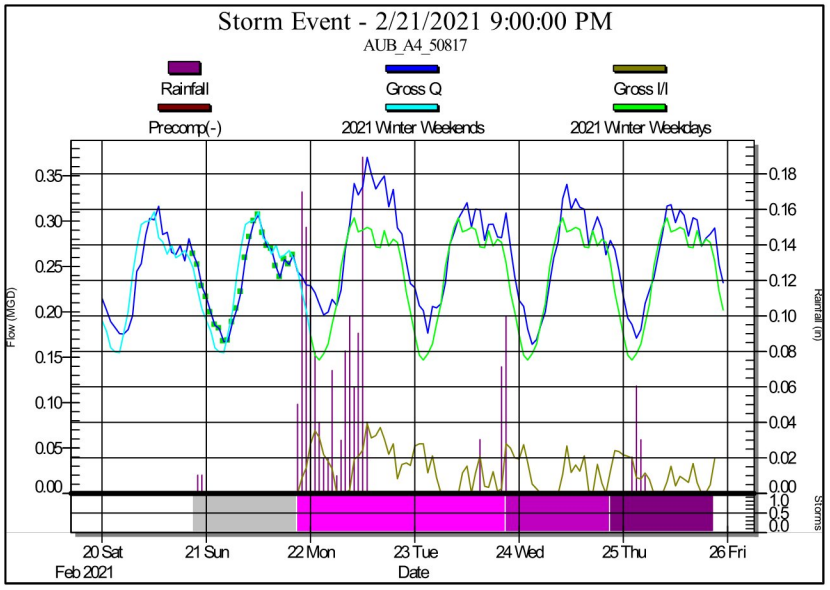

Storm Event - 11/14/2020 3:00:00 PM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

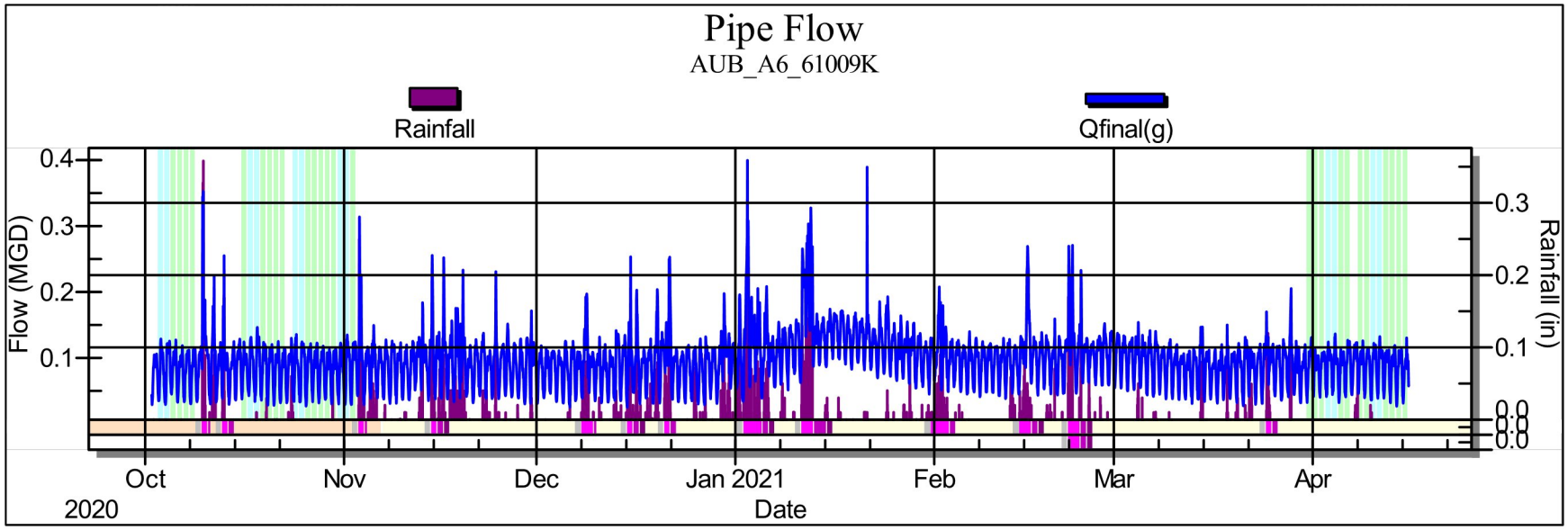

Storm Event - 12/20/2020 11:00:00 PM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

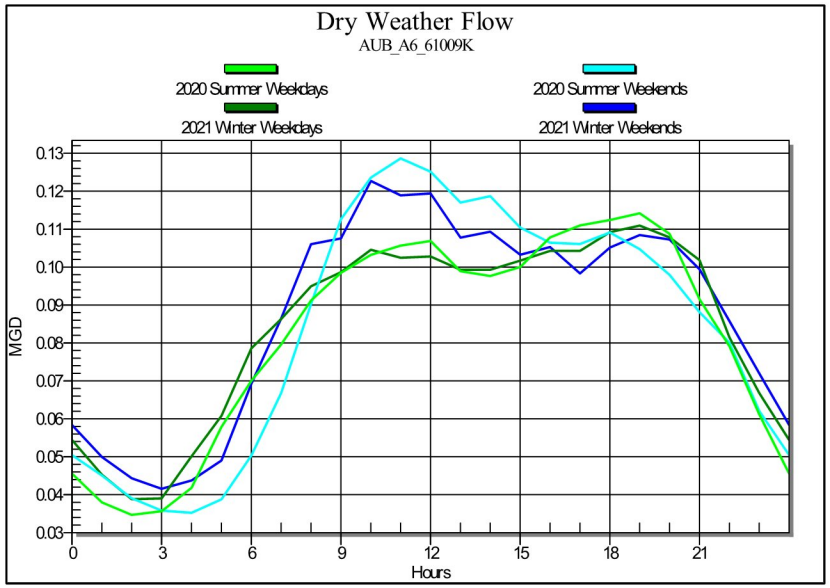

Storm Event - 1/2/2021 7:00:00 AM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

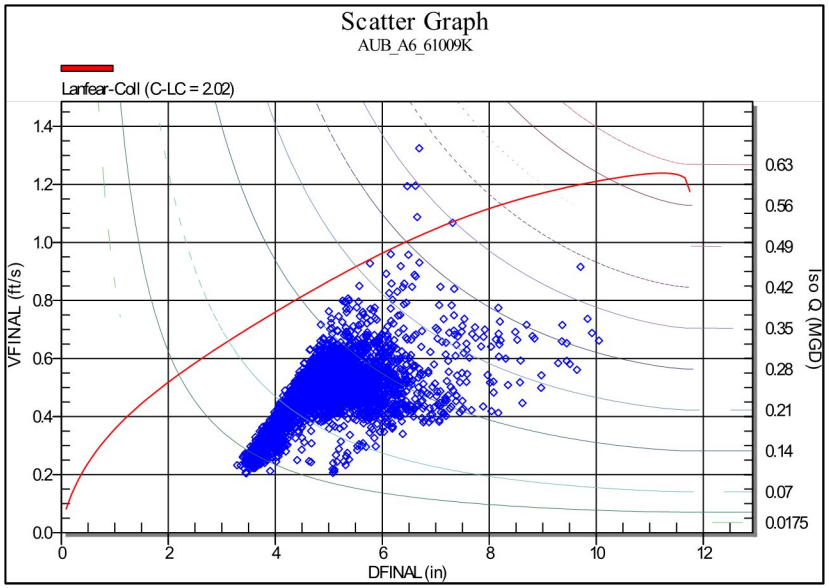

Storm Event - 1/11/2021 8:00:00 AM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

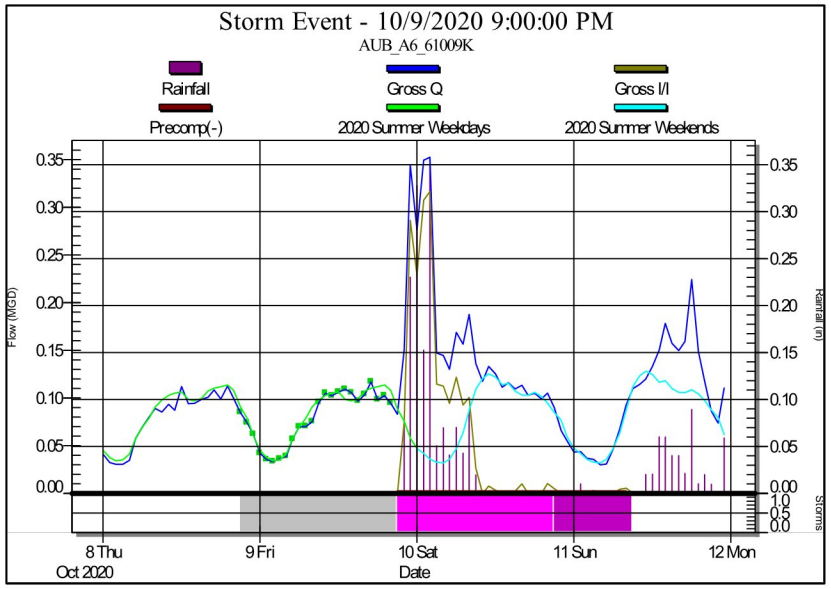

Storm Event - 2/14/2021 7:00:00 AM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

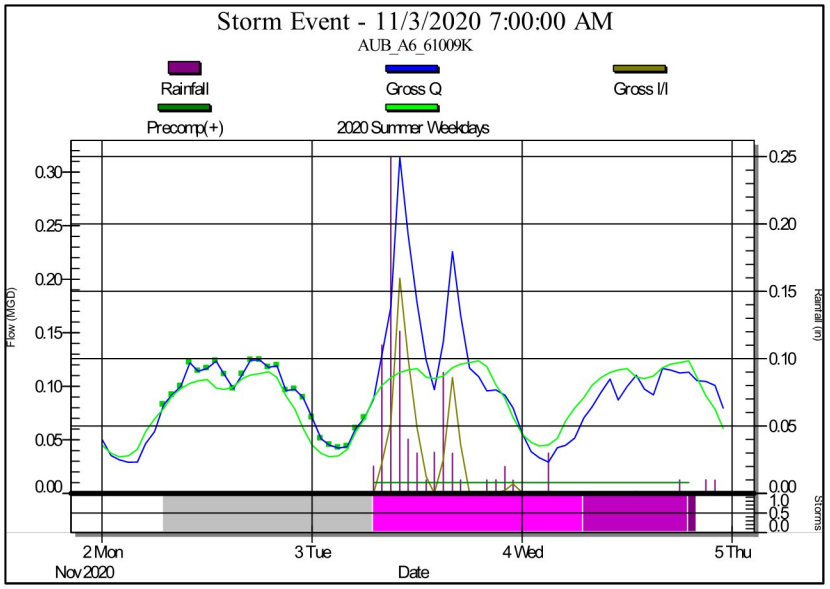

Storm Event - 2/21/2021 9:00:00 PM
AUB_A4_50817
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

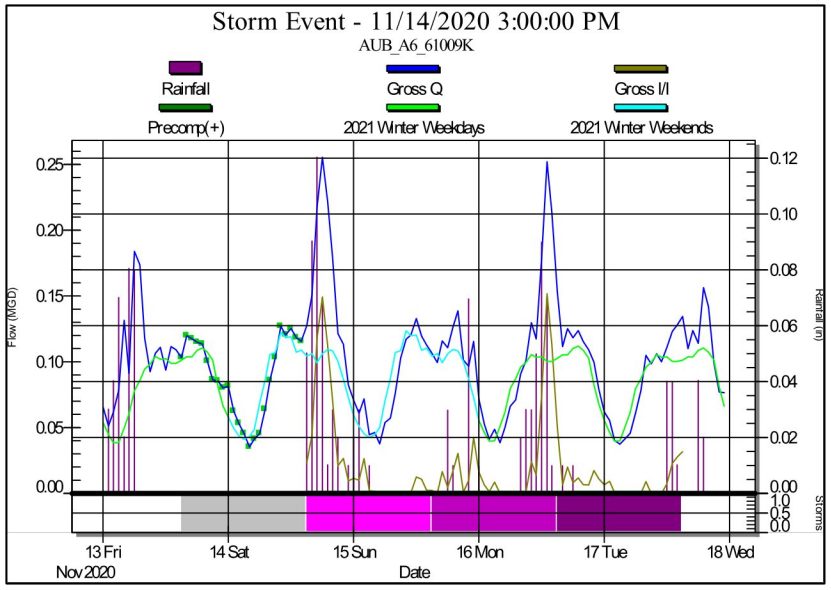

Pipe Flow
AUB_A6_61009K
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

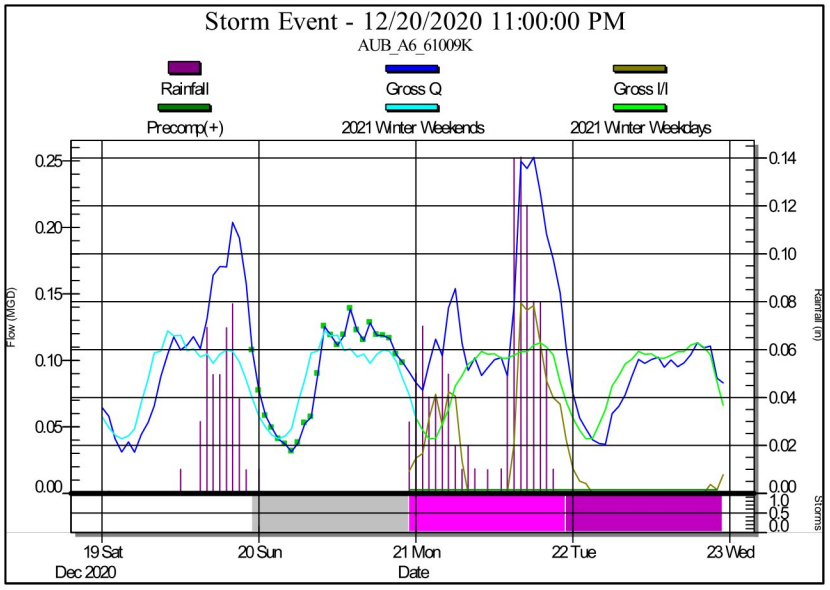

Dry Weather Flow
AUB_A6_61009K
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

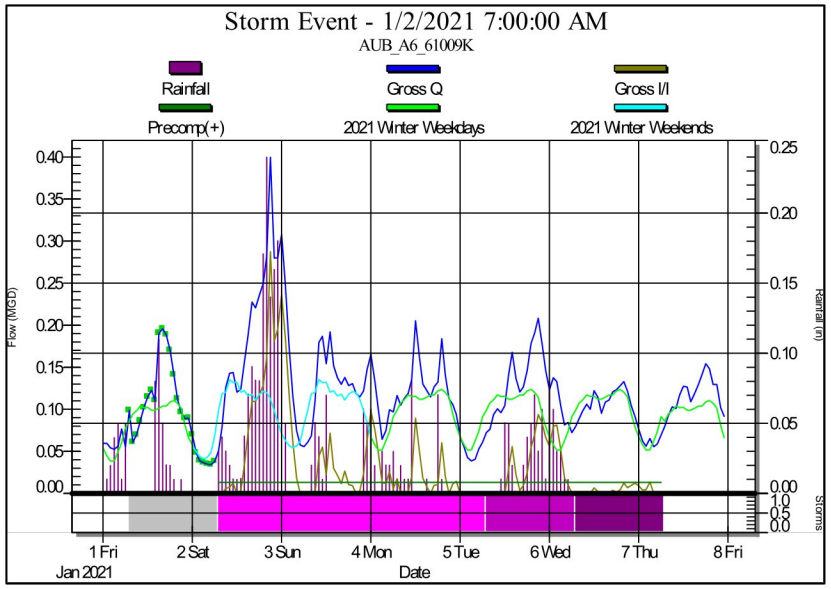

Scatter Graph
AUB_A6_61009K
Lanfear-Coll (C-LC = 2.02)
VFINAL (ft/s)
DFINAL (in)
Iso Q (MGD)

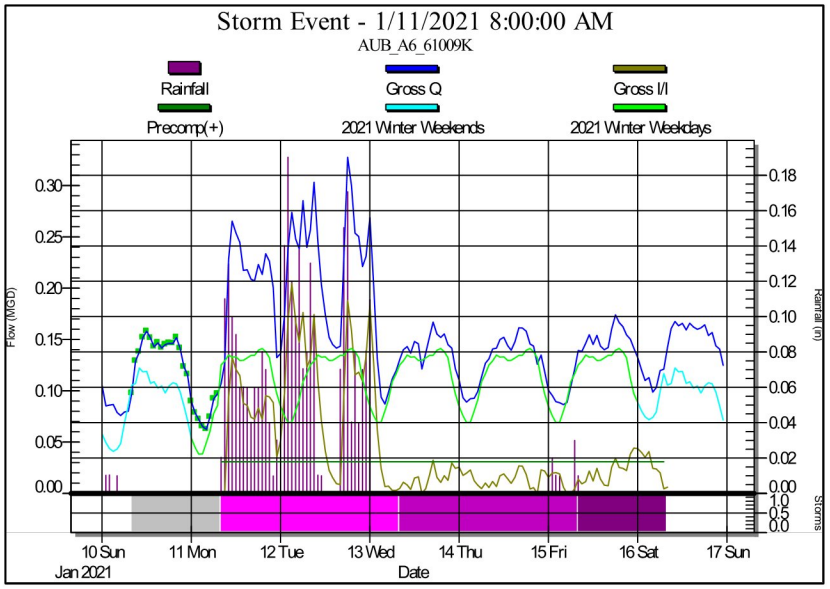

Storm Event - 10/9/2020 9:00:00 PM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

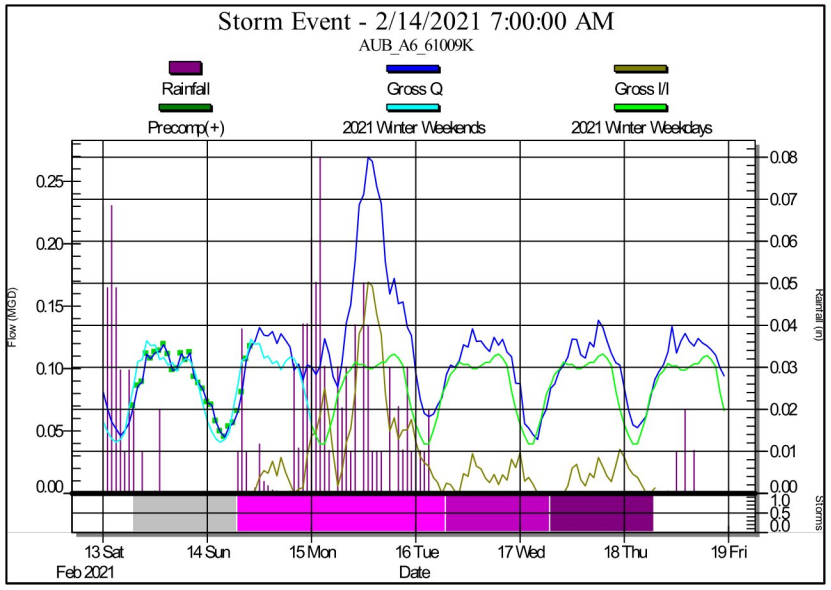

Storm Event - 11/3/2020 7:00:00 AM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

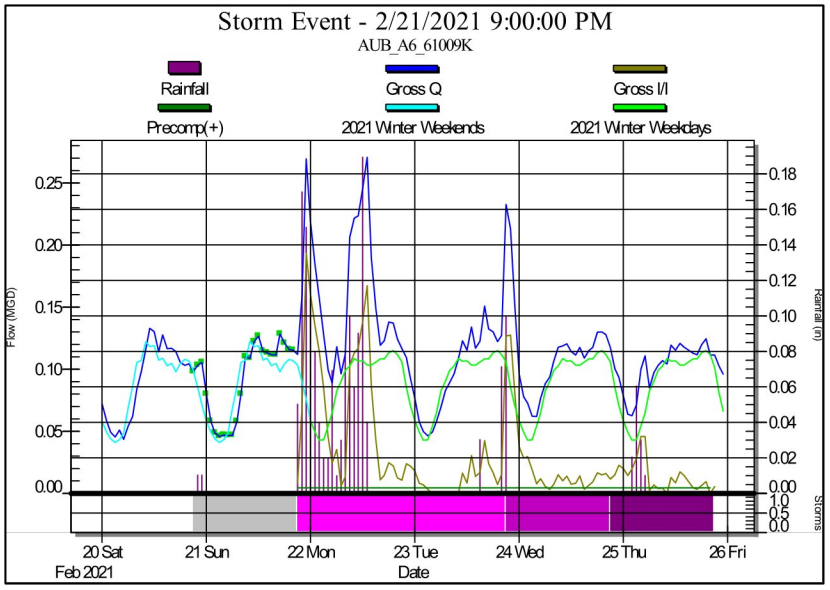

Storm Event - 11/14/2020 3:00:00 PM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

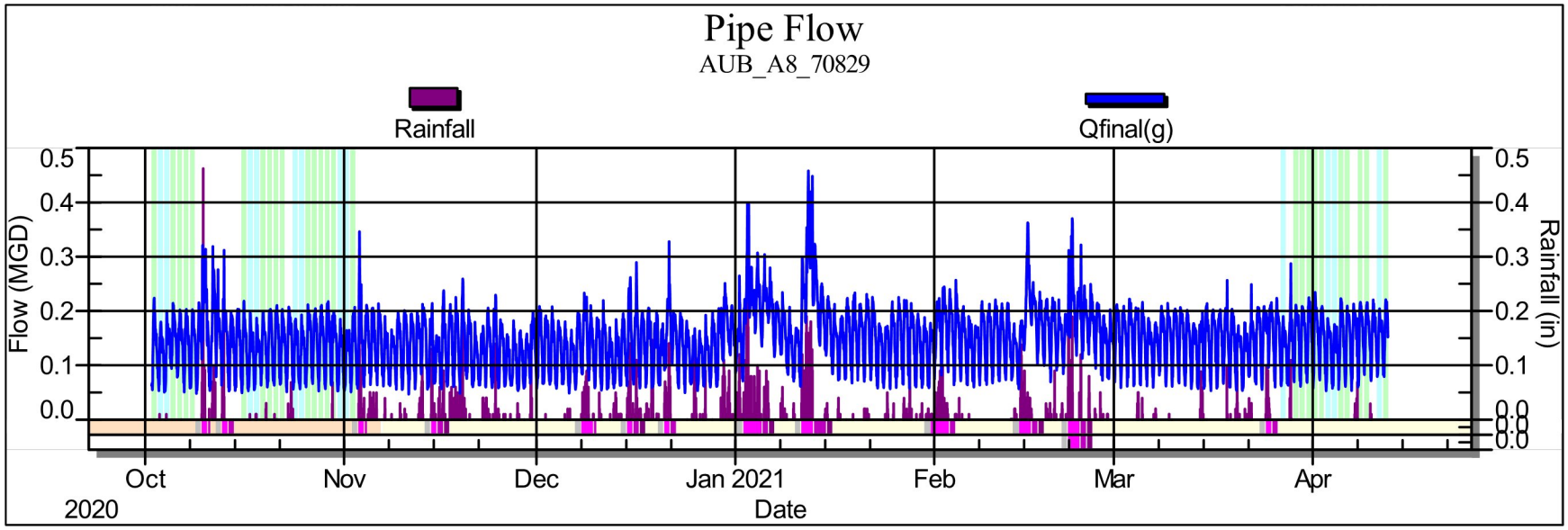

Storm Event - 12/20/2020 11:00:00 PM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

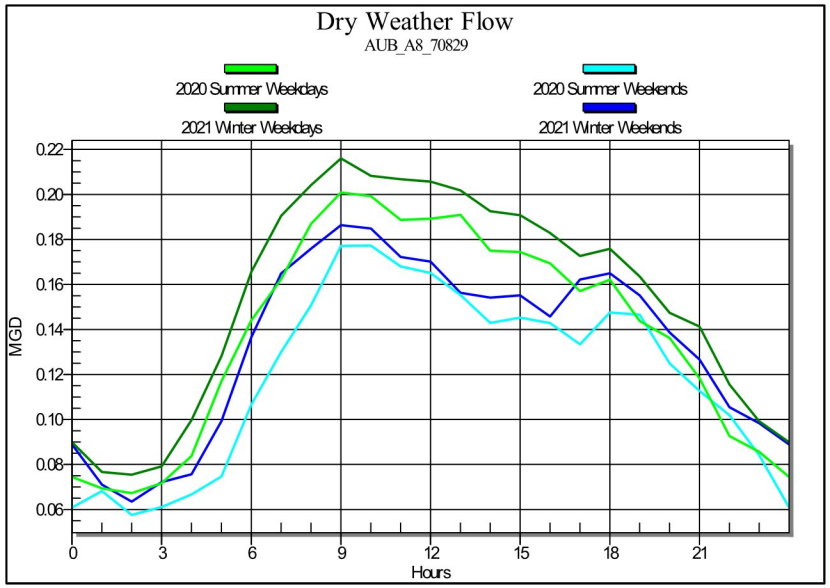

Storm Event - 1/2/2021 7:00:00 AM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

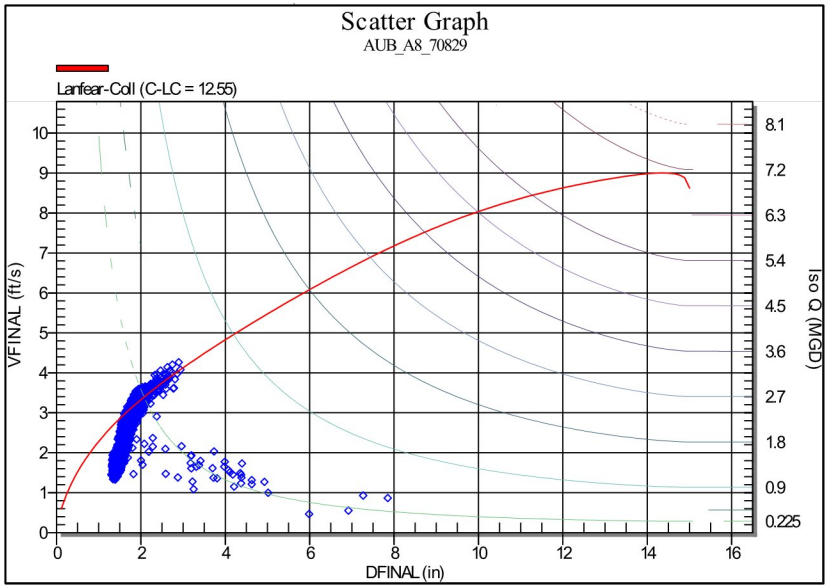

Storm Event - 1/11/2021 8:00:00 AM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

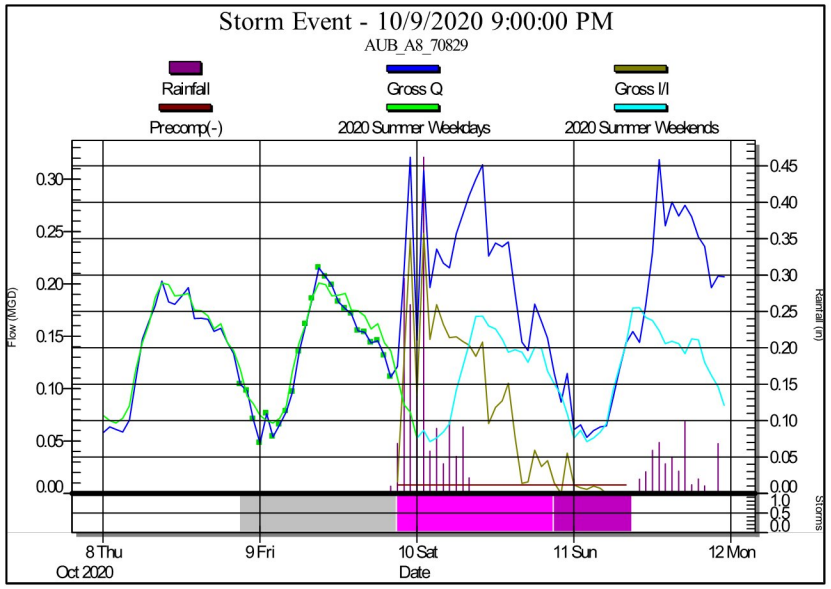

Storm Event - 2/14/2021 7:00:00 AM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

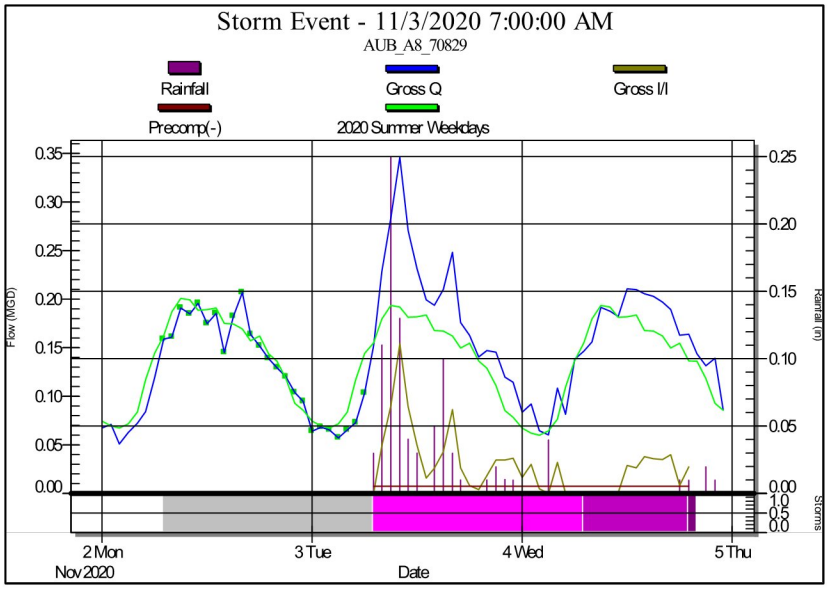

Storm Event - 2/21/2021 9:00:00 PM
AUB_A6_61009K
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

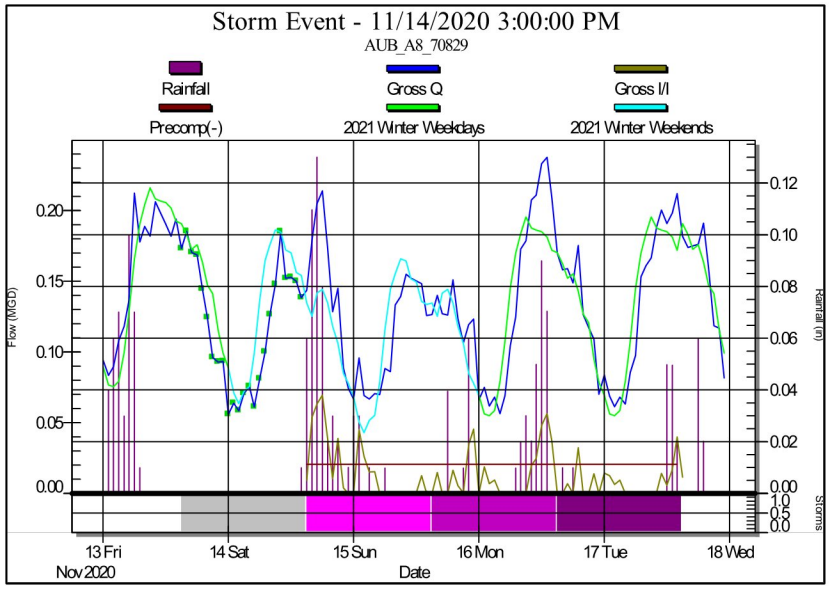

Pipe Flow
AUB_A8_70829
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.5
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

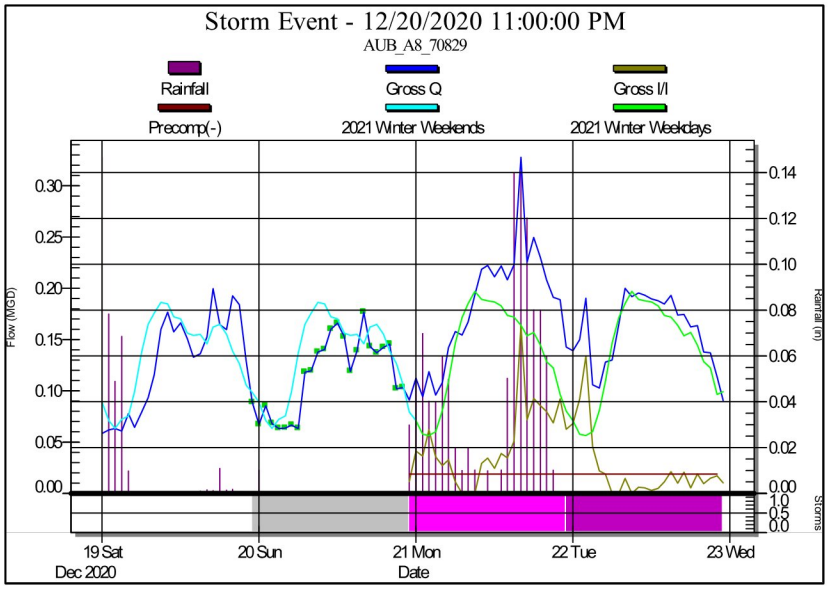

Dry Weather Flow
AUB_A8_70829
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0
3
6
9
12
15
18
21
Hours

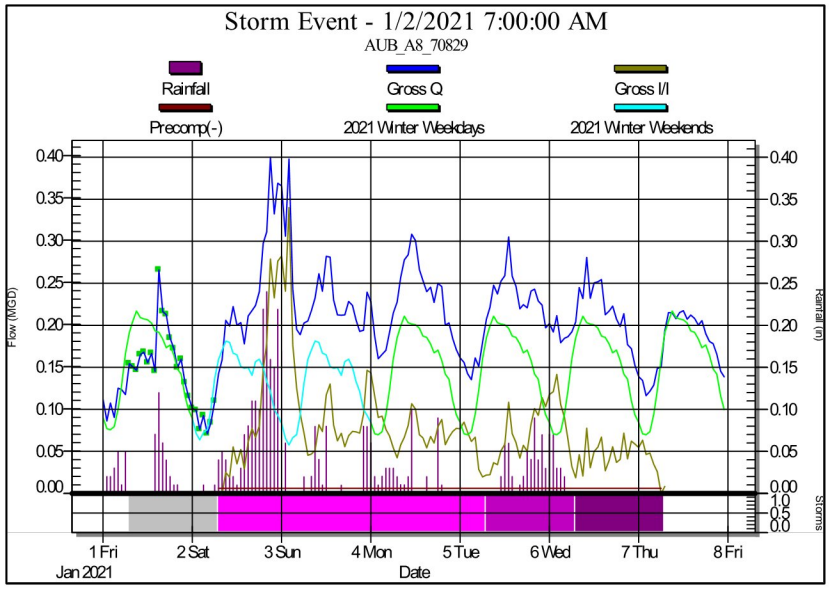

Scatter Graph
AUB_A8_70829
Lanfear-Coll (C-LC = 12.55)
VFINAL (ft/s)
Iso Q (MGD)
10
9
8
7
6
5
4
3
2
1
0
8.1
7.2
6.3
5.4
4.5
3.6
2.7
1.8
0.9
0.225
0
2
4
6
8
10
12
14
16
DFINAL (in)

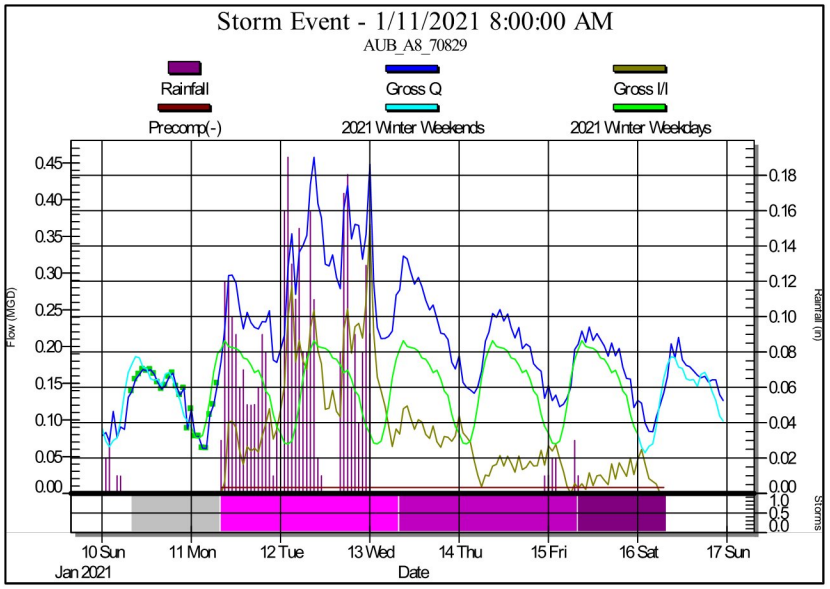

Storm Event - 10/9/2020 9:00:00 PM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

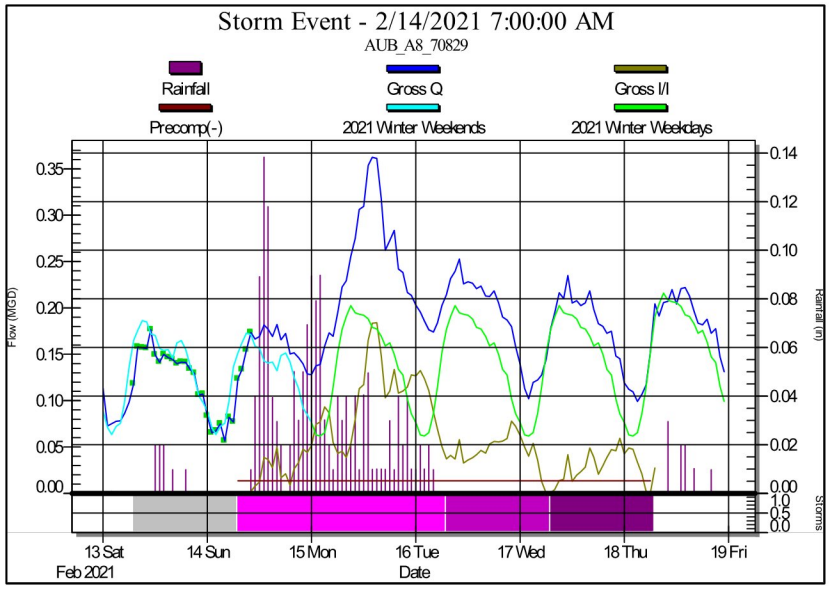

Storm Event - 11/3/2020 7:00:00 AM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

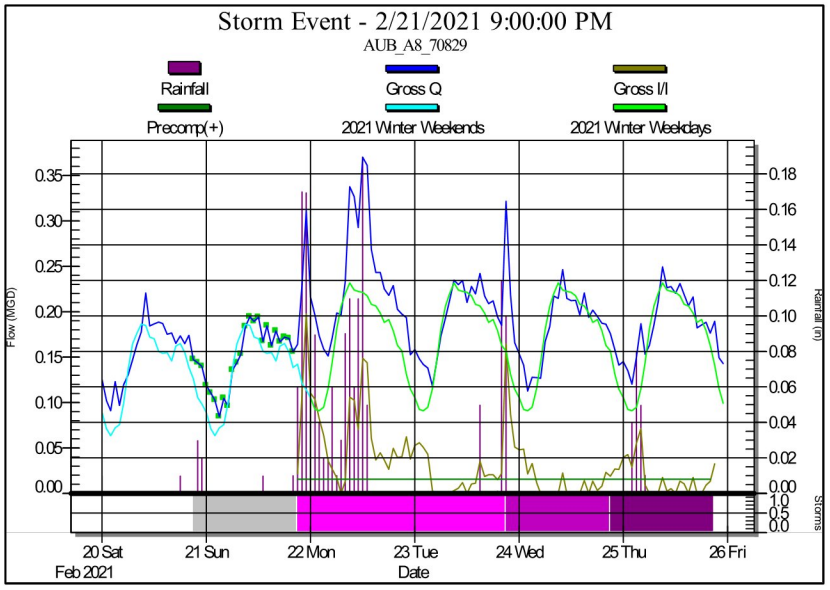

Storm Event - 11/14/2020 3:00:00 PM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

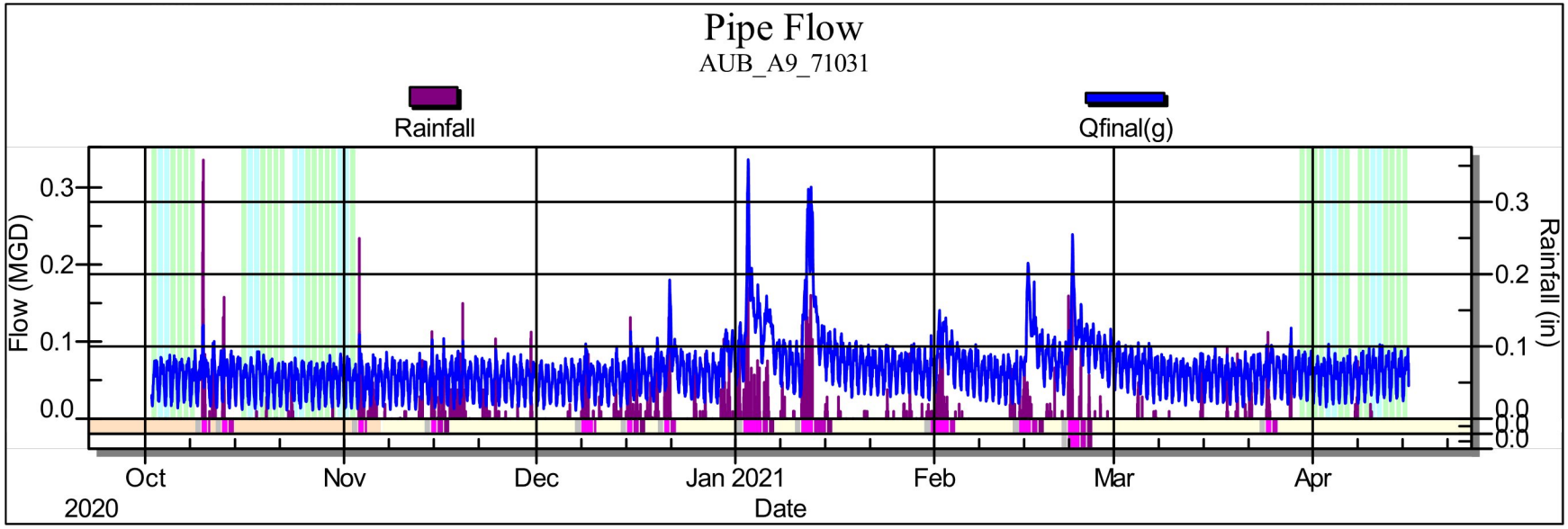

Storm Event - 12/20/2020 11:00:00 PM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

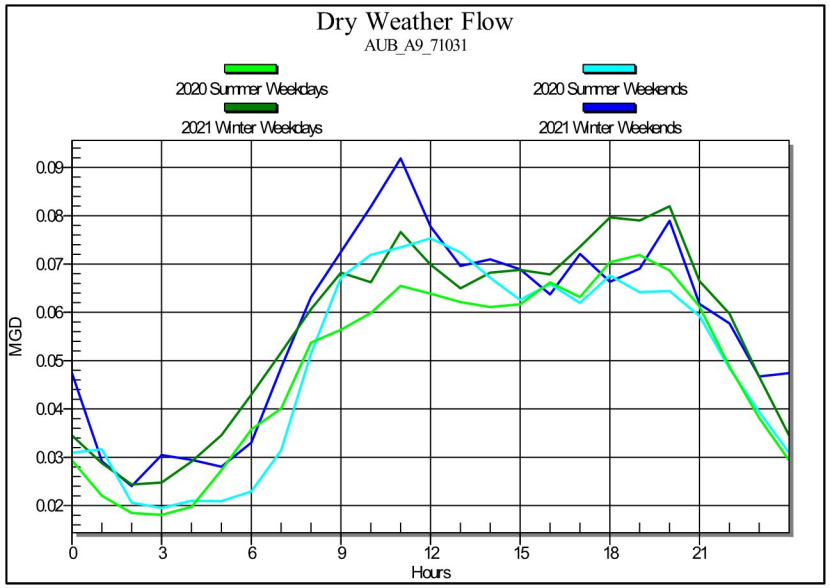

Storm Event - 1/2/2021 7:00:00 AM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

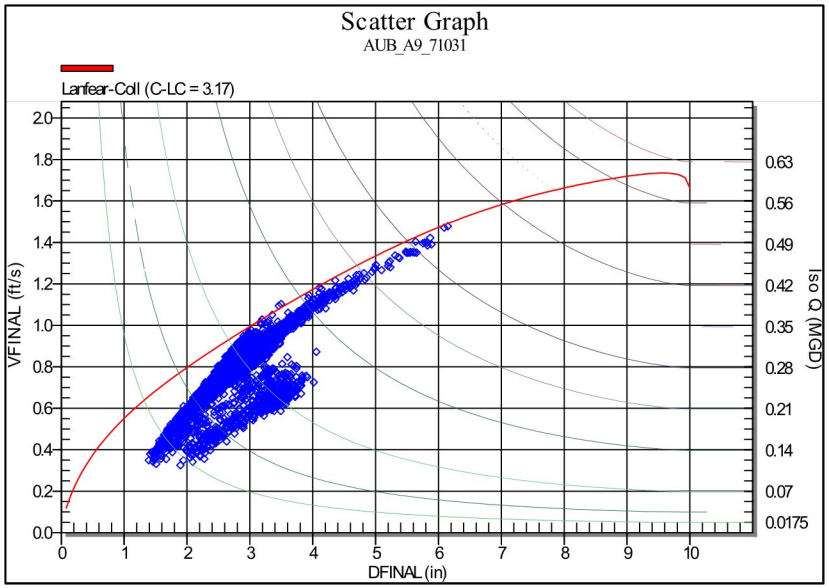

Storm Event - 1/11/2021 8:00:00 AM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

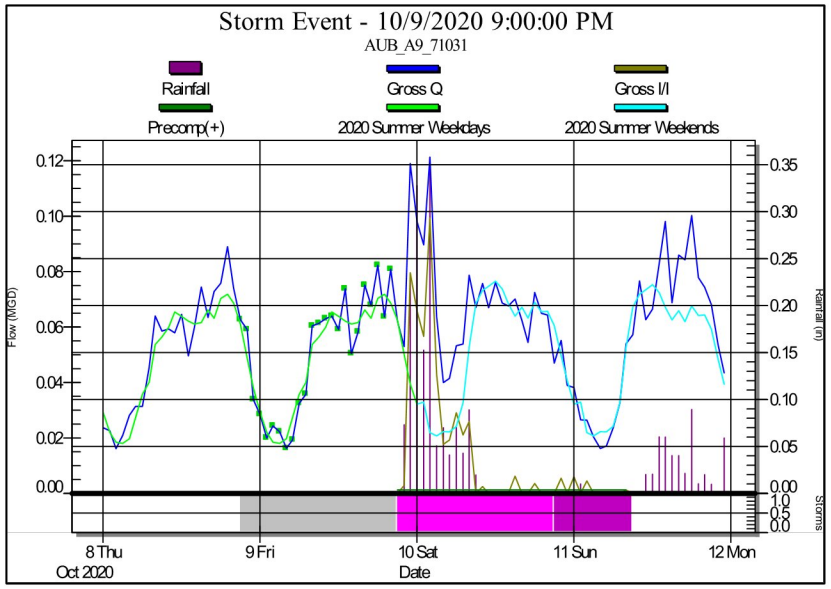

Storm Event - 2/14/2021 7:00:00 AM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

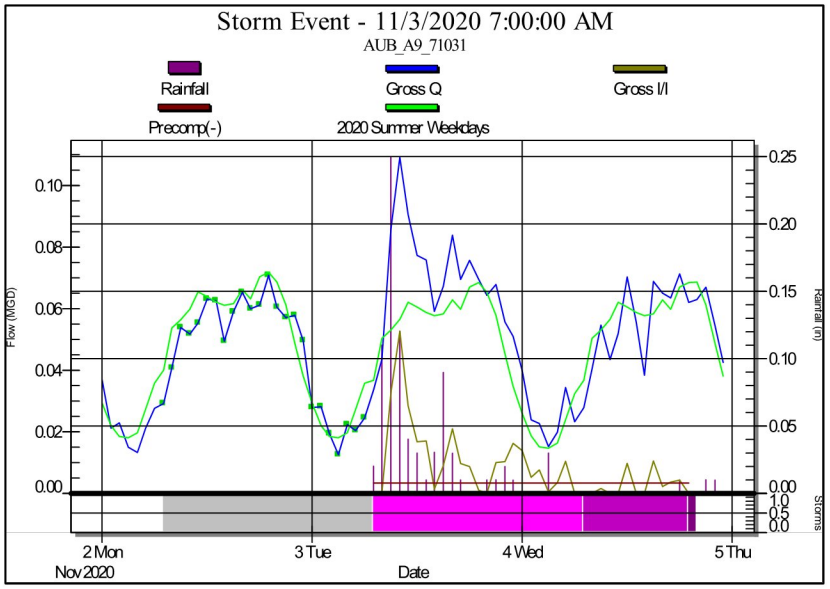

Storm Event - 2/21/2021 9:00:00 PM
AUB_A8_70829
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

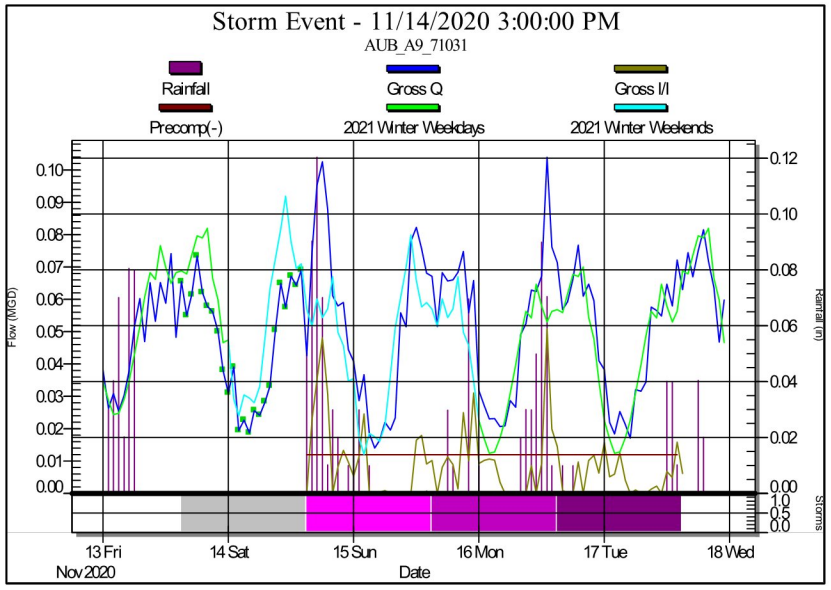

Pipe Flow
AUB_A9_71031
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

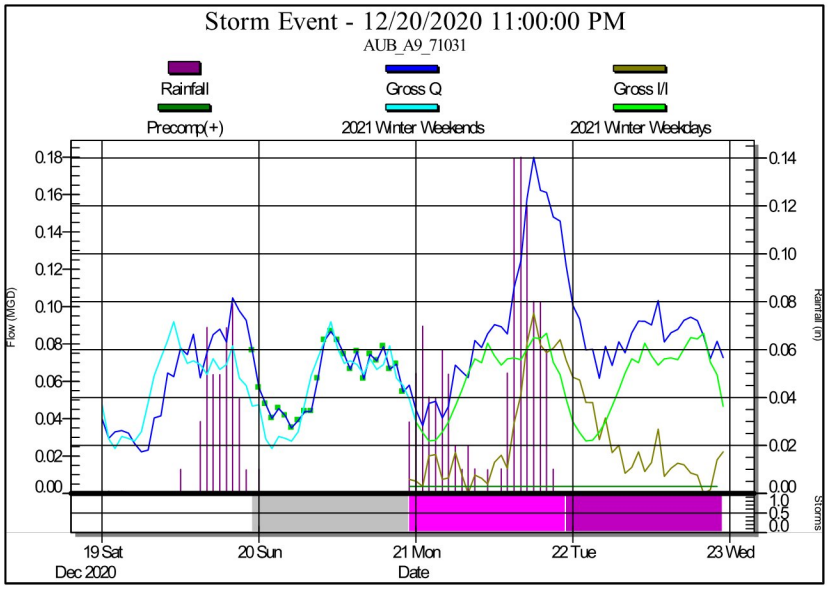

Dry Weather Flow
AUB_A9_71031
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

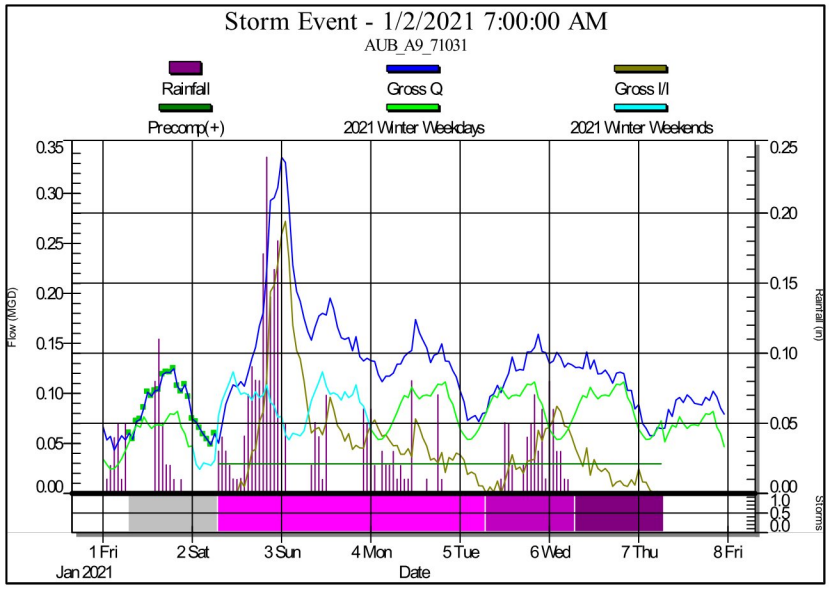

Scatter Graph
AUB_A9_71031
Lanfear-Coll (C-LC = 3.17)
VFINAL (ft/s)
DFINAL (in)
Iso Q (MGD)

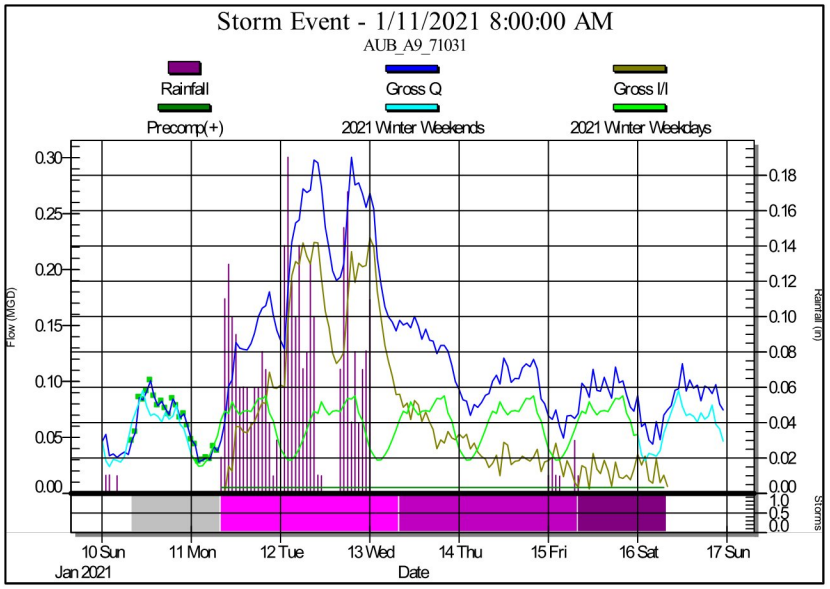

Storm Event - 10/9/2020 9:00:00 PM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

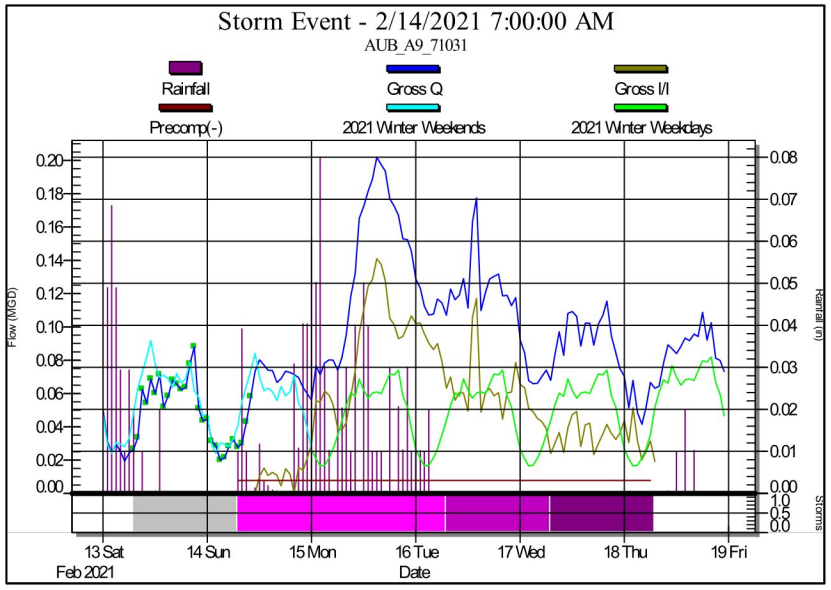

Storm Event - 11/3/2020 7:00:00 AM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

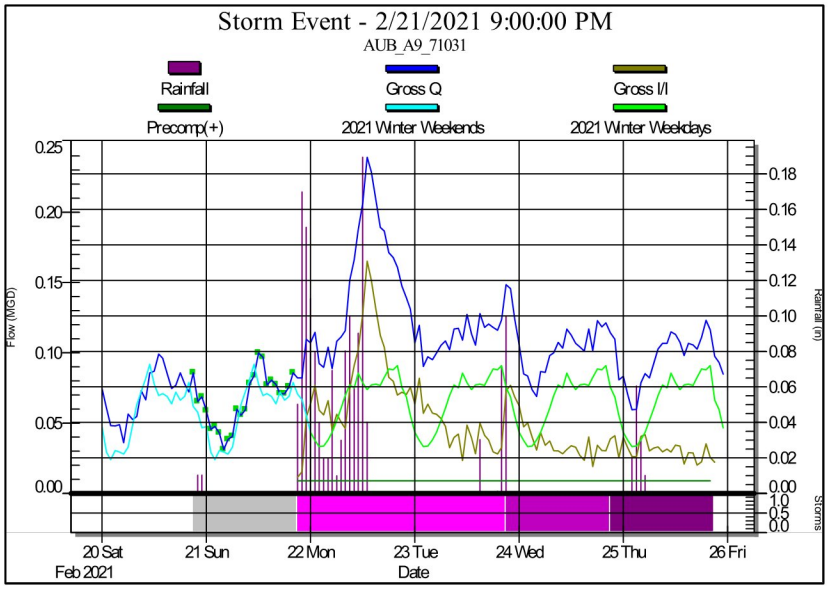

Storm Event - 11/14/2020 3:00:00 PM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

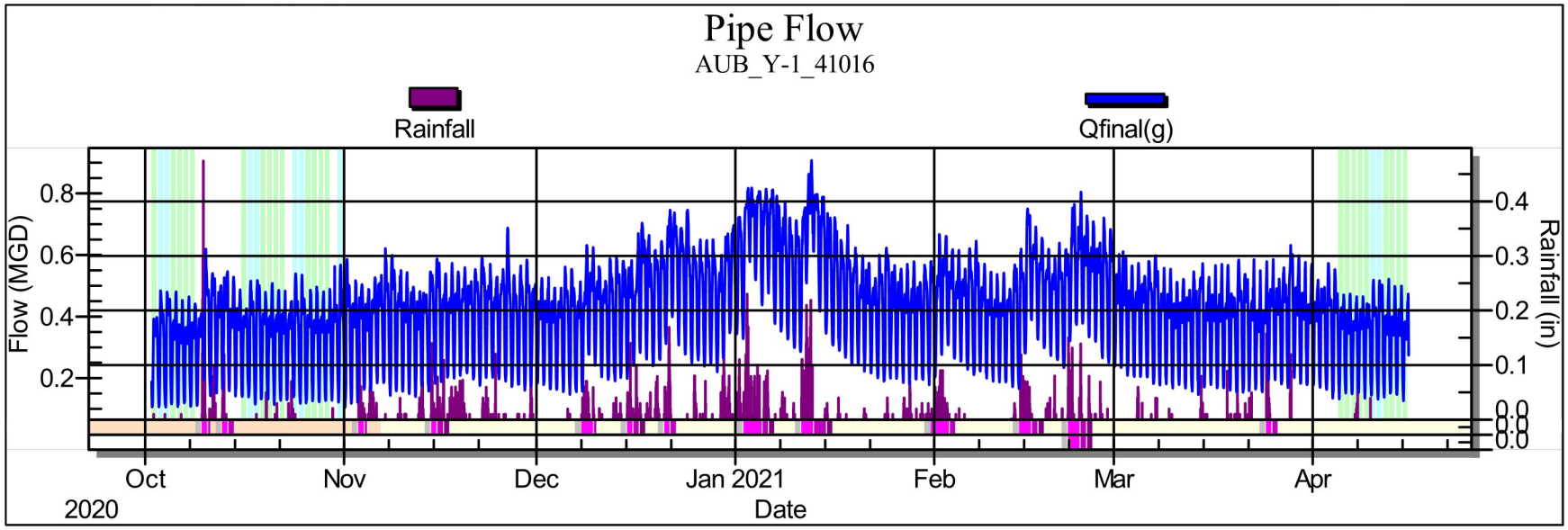

Storm Event - 12/20/2020 11:00:00 PM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

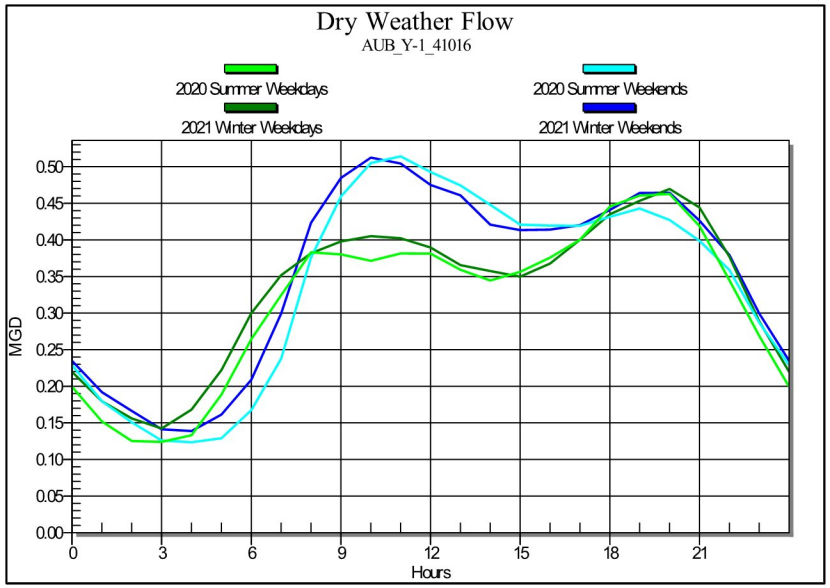

Storm Event - 1/2/2021 7:00:00 AM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

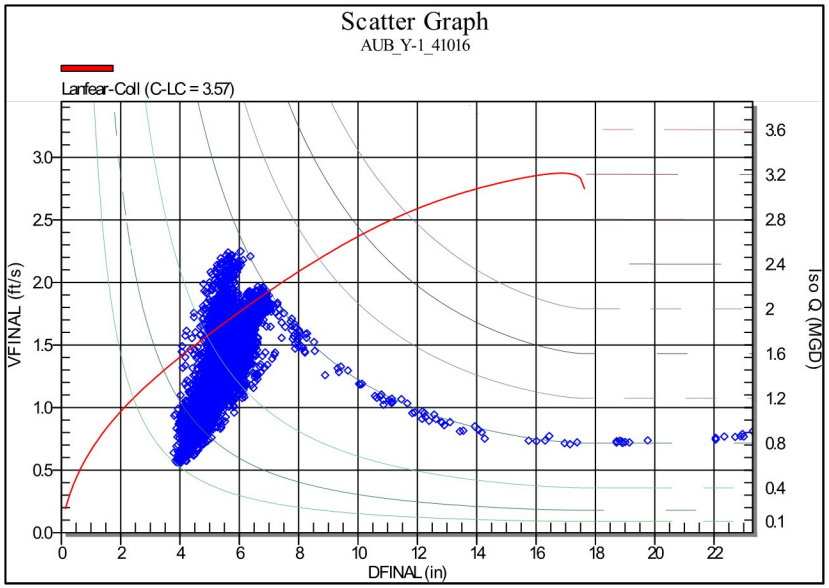

Storm Event - 1/11/2021 8:00:00 AM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

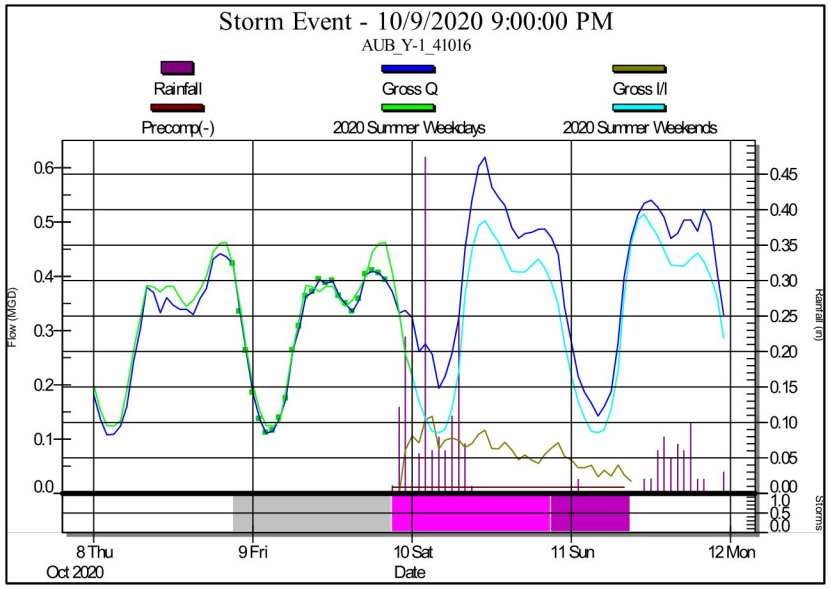

Storm Event - 2/14/2021 7:00:00 AM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

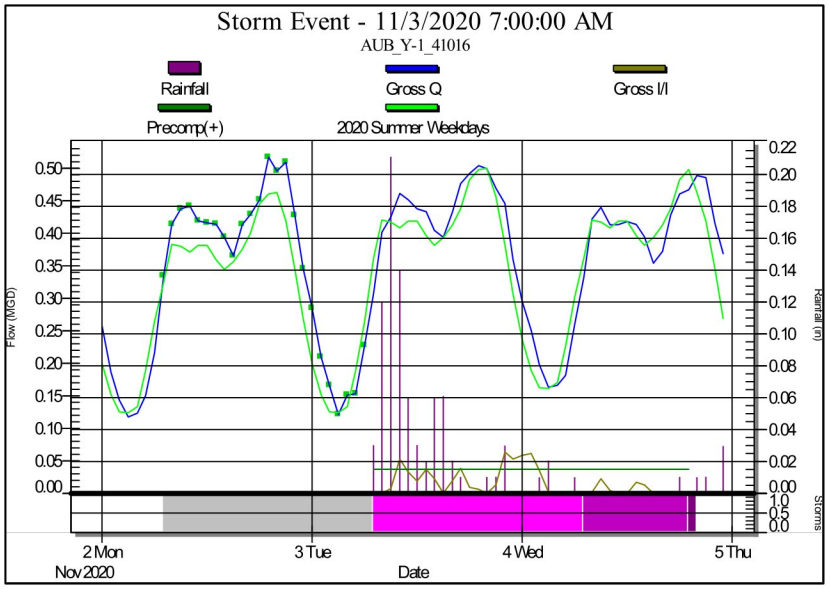

Storm Event - 2/21/2021 9:00:00 PM
AUB_A9_71031
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

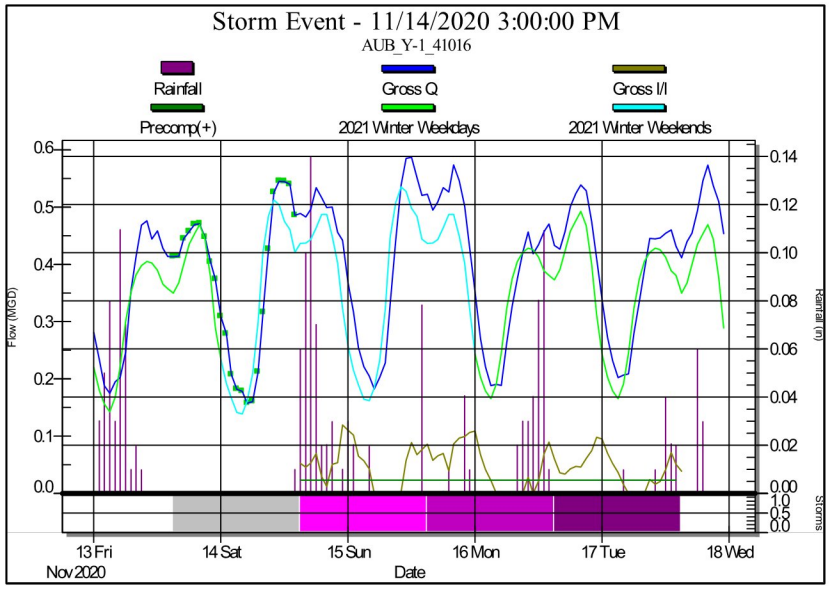

Pipe Flow
AUB_Y-1_41016
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.8
0.6
0.4
0.2
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

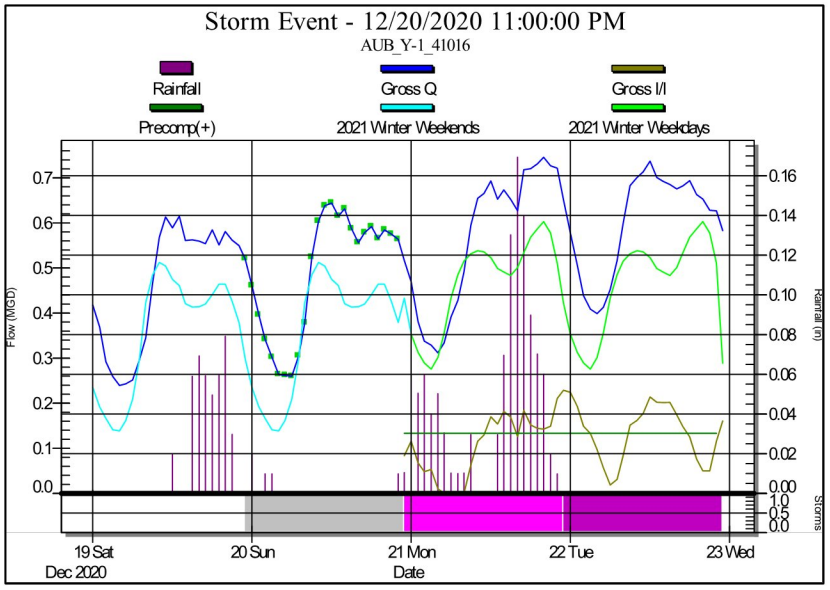

Dry Weather Flow
AUB_Y-1_41016
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
3
6
9
12
15
18
21
Hours

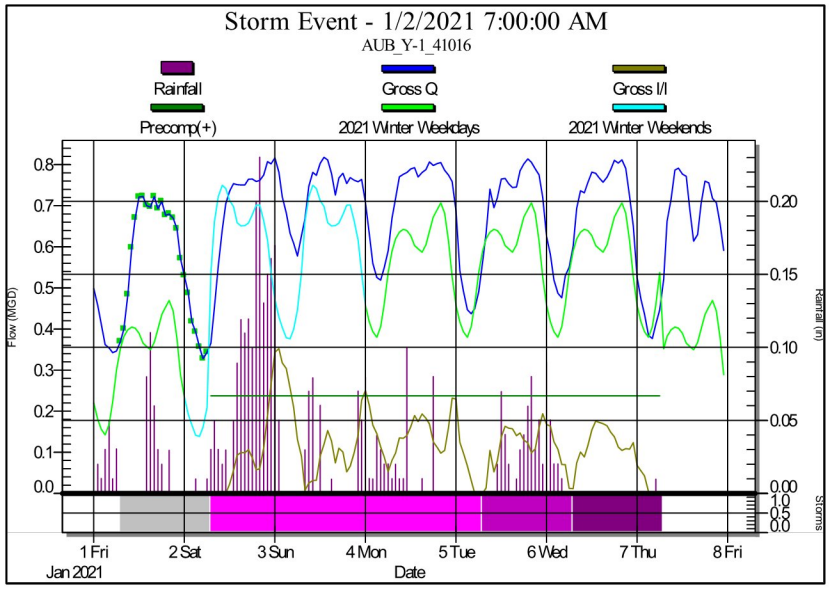

Scatter Graph
AUB_Y-1_41016
Lanfear-Coll (C-LC = 3.57)
VFINAL (ft/s)
Iso Q (MGD)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
3.6
3.2
2.8
2.4
2
1.6
1.2
0.8
0.4
0.1
0
2
4
6
8
10
12
14
16
18
20
22
DFINAL (in)

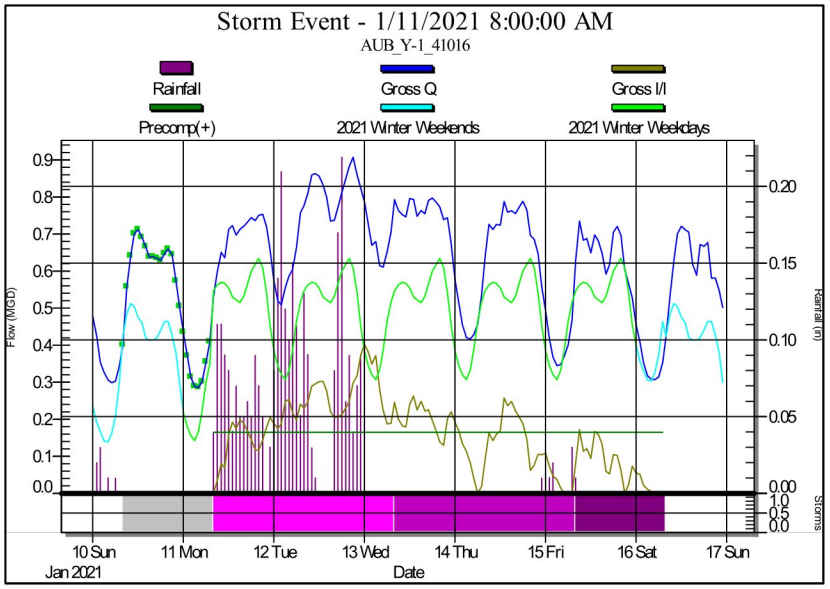

Storm Event - 10/9/2020 9:00:00 PM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

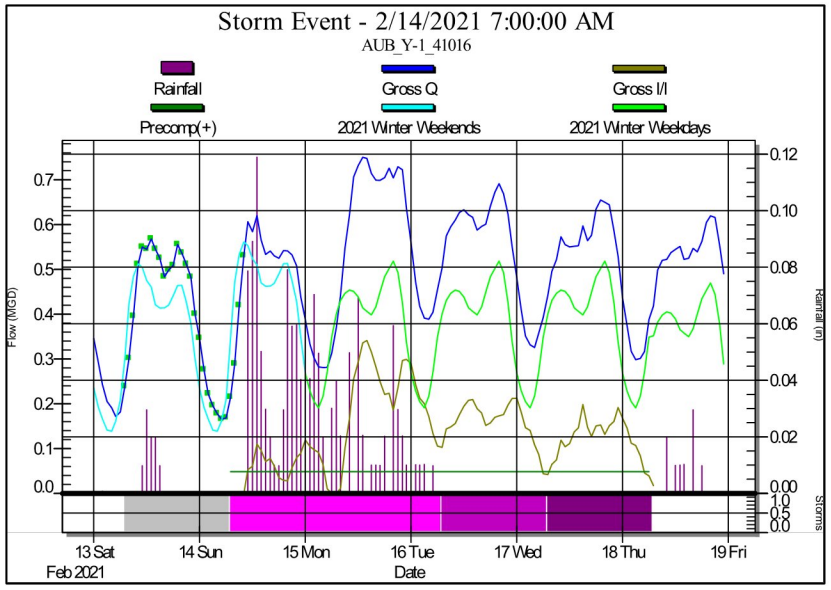

Storm Event - 11/3/2020 7:00:00 AM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

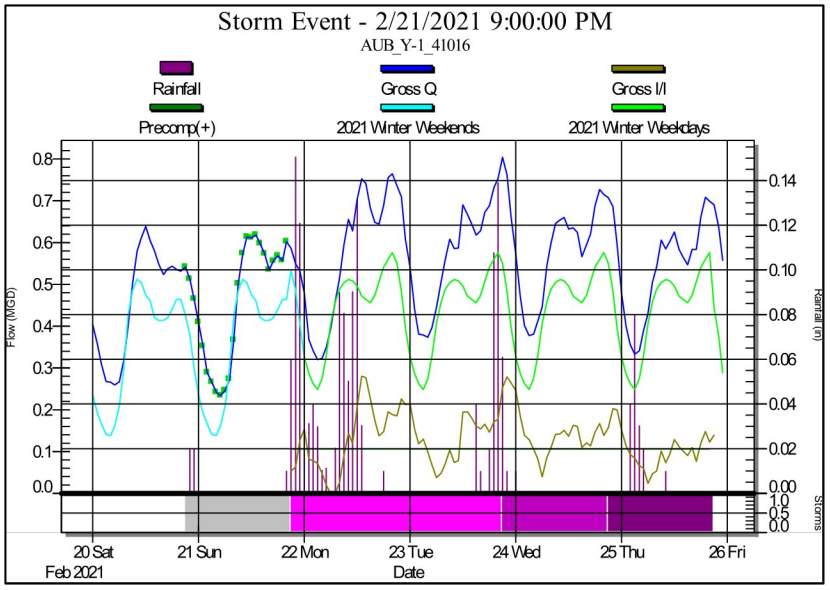

Storm Event - 11/14/2020 3:00:00 PM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

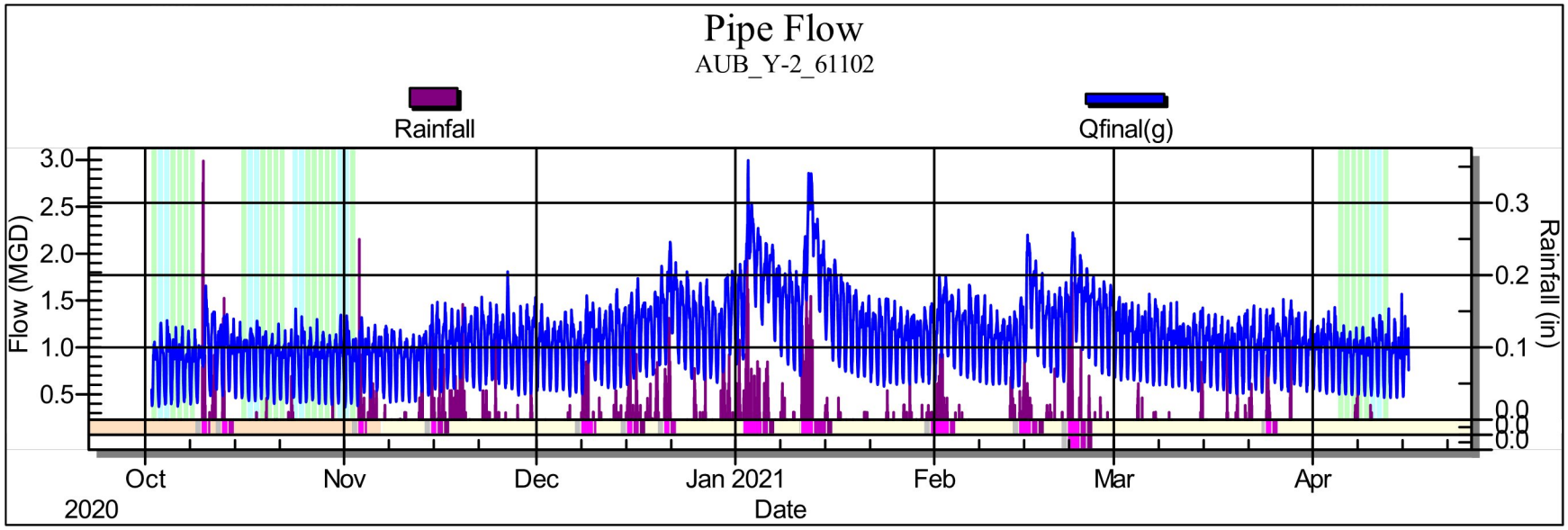

Storm Event - 12/20/2020 11:00:00 PM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

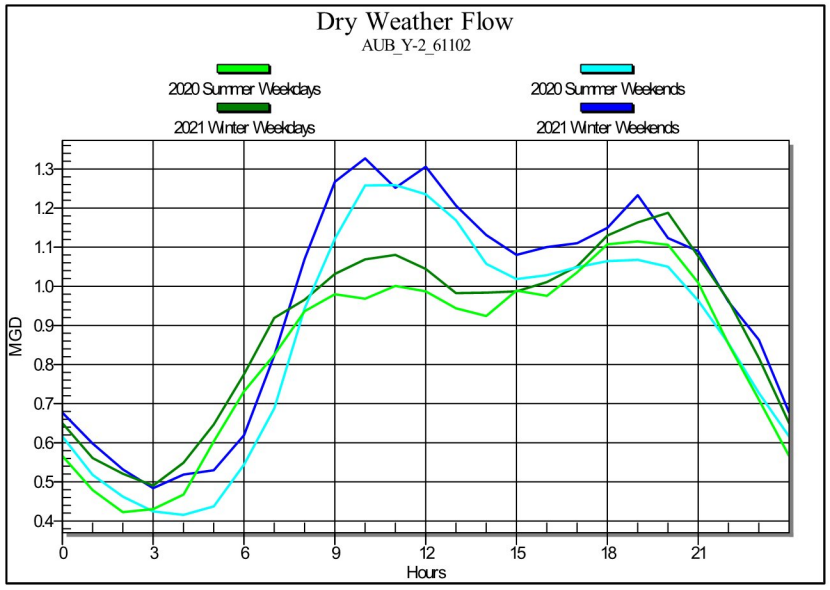

Storm Event - 1/2/2021 7:00:00 AM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

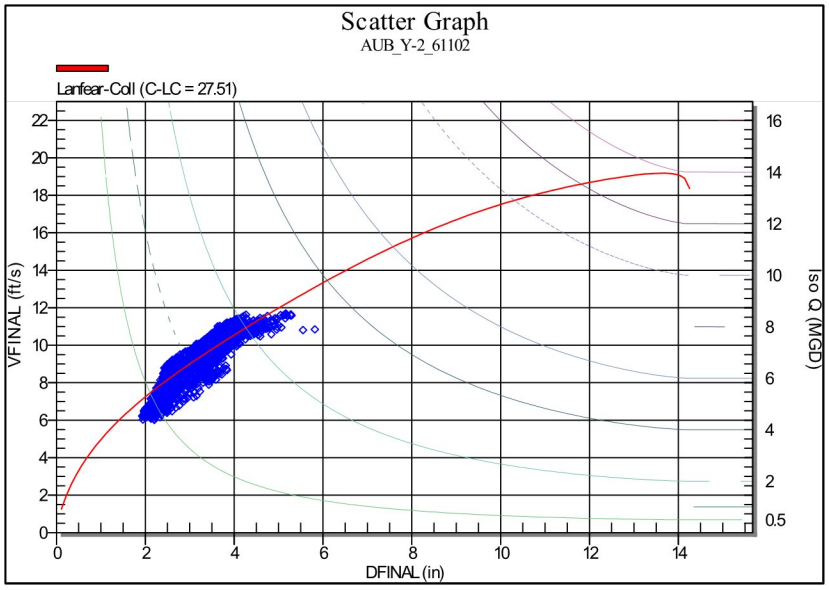

Storm Event - 1/11/2021 8:00:00 AM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

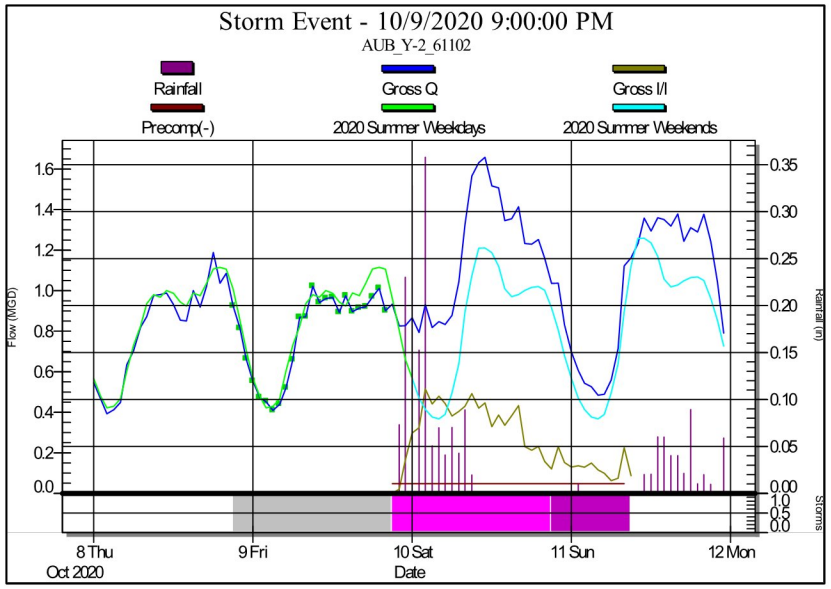

Storm Event - 2/14/2021 7:00:00 AM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

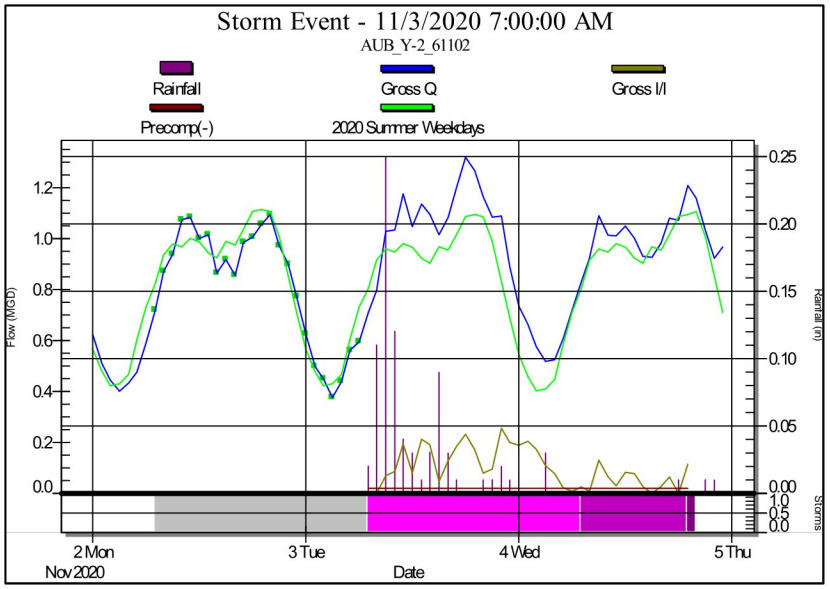

Storm Event - 2/21/2021 9:00:00 PM
AUB_Y-1_41016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

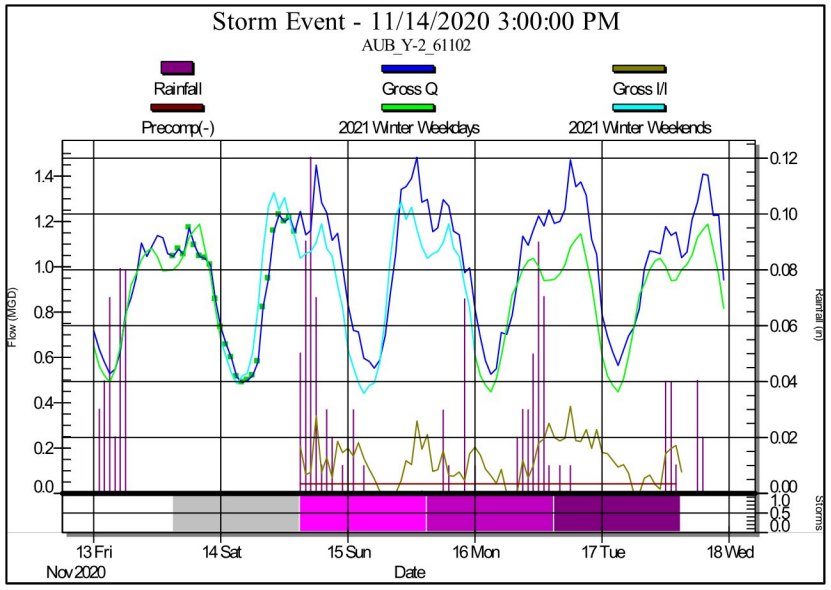

Pipe Flow
AUB_Y-2_61102
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
3.0
2.5
2.0
1.5
1.0
0.5
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

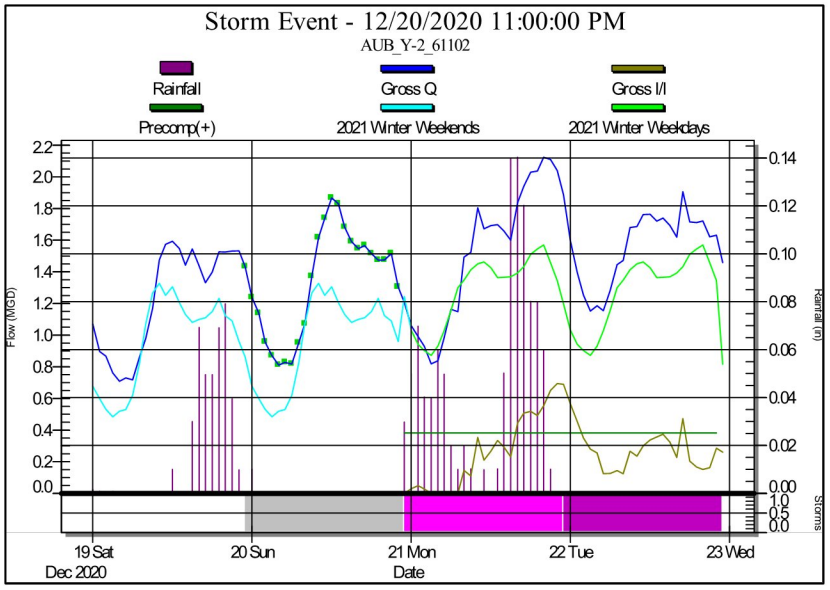

Dry Weather Flow
AUB_Y-2_61102
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

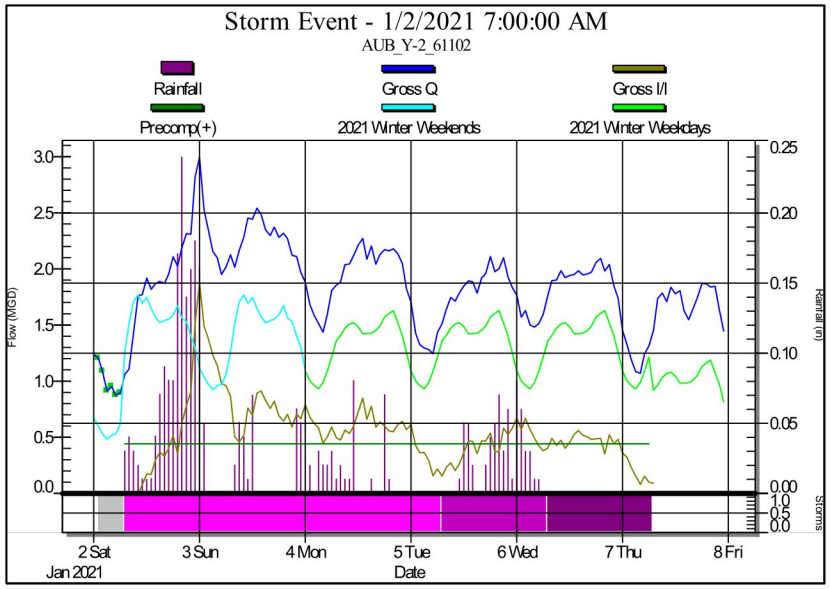

Scatter Graph
AUB_Y-2_61102
Lanfear-Coll (C-LC = 27.51)
VFINAL (ft/s)
DFINAL (in)
Iso Q (MGD)

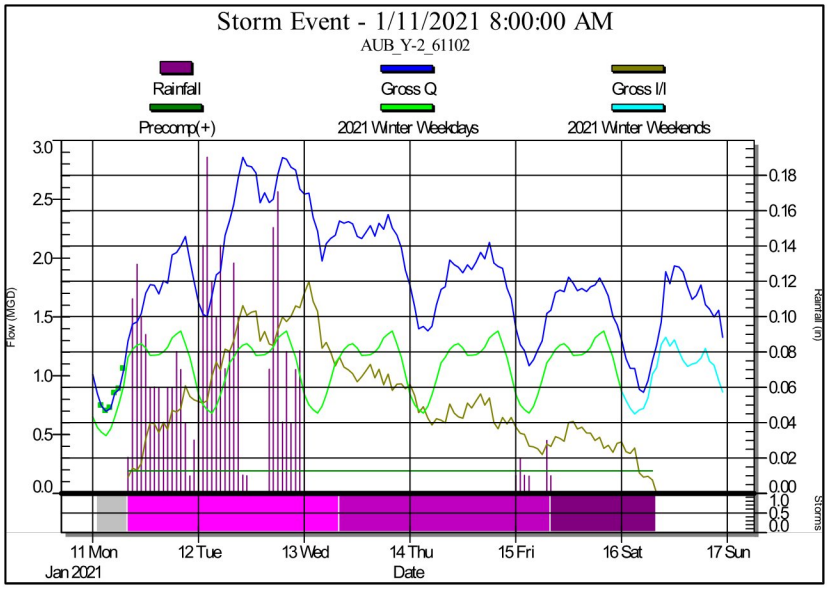

Storm Event - 10/9/2020 9:00:00 PM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

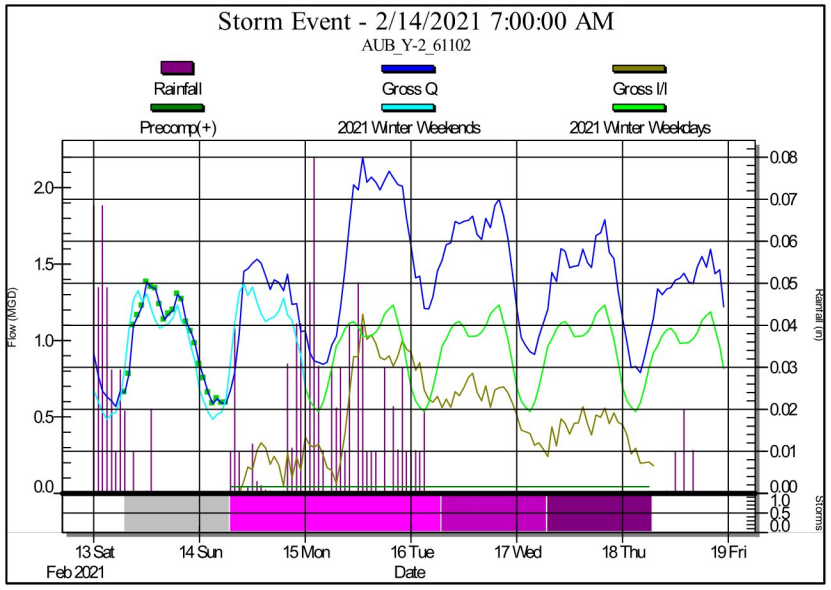

Storm Event - 11/3/2020 7:00:00 AM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

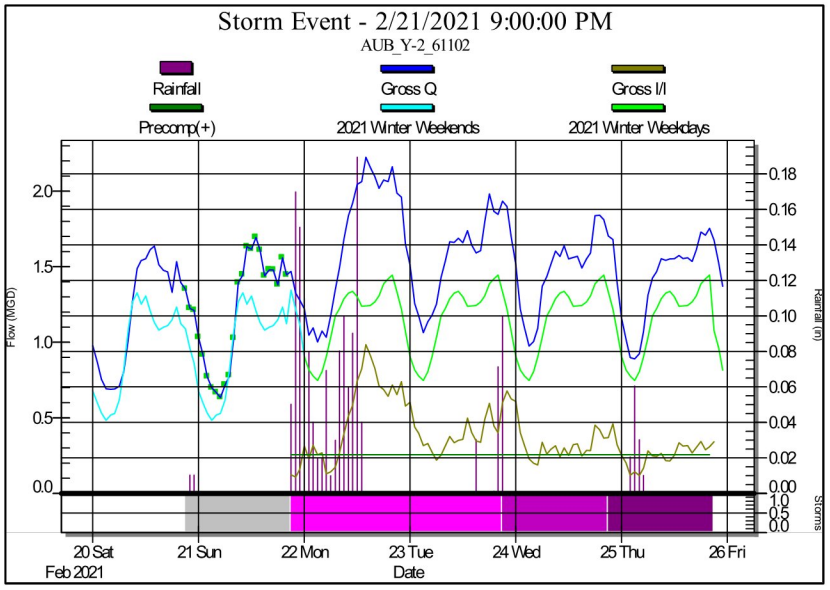

Storm Event - 11/14/2020 3:00:00 PM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

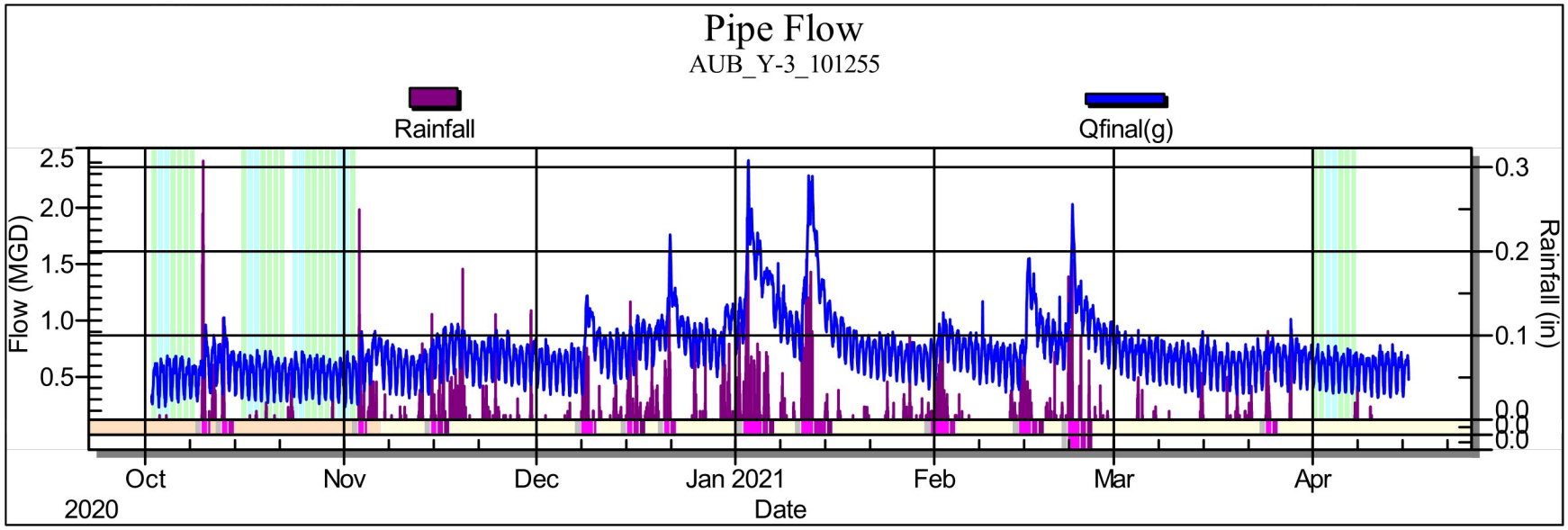

Storm Event - 12/20/2020 11:00:00 PM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

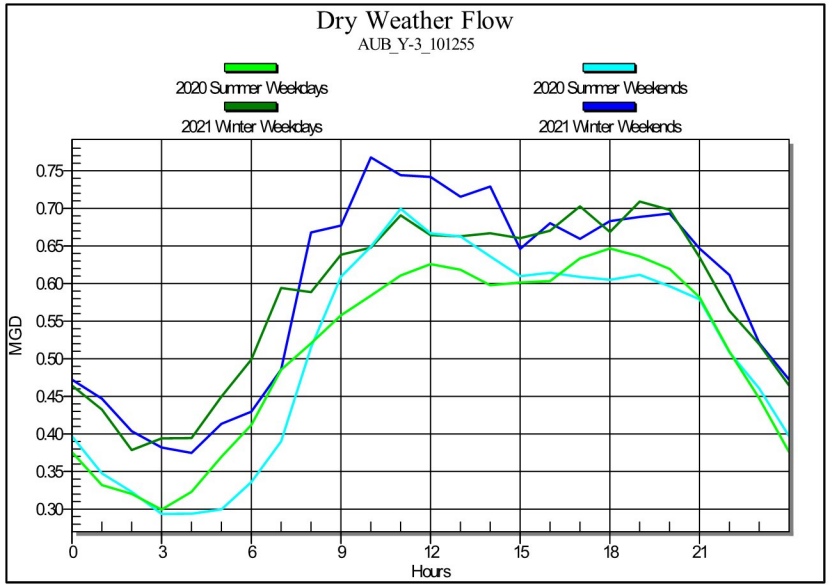

Storm Event - 1/2/2021 7:00:00 AM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Sat
Jan 2021
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

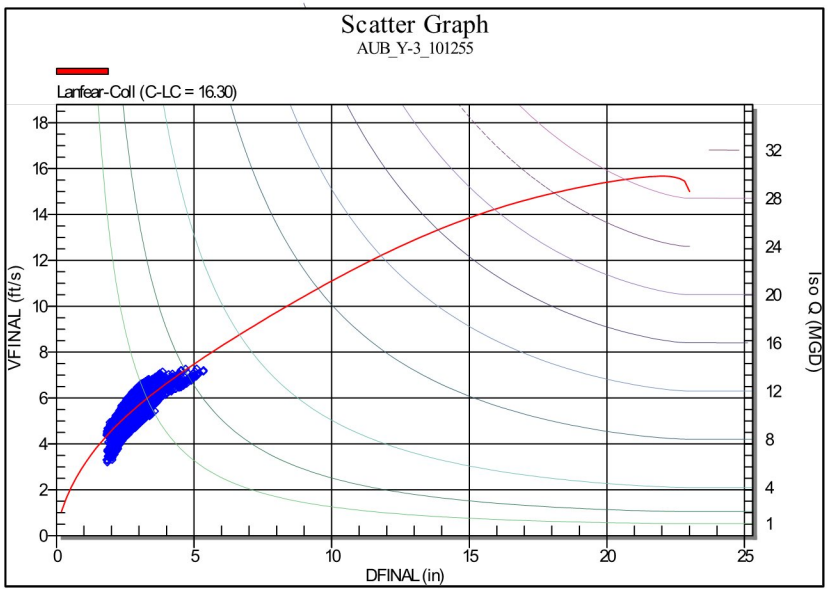

Storm Event - 1/11/2021 8:00:00 AM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
11 Mon
Jan 2021
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

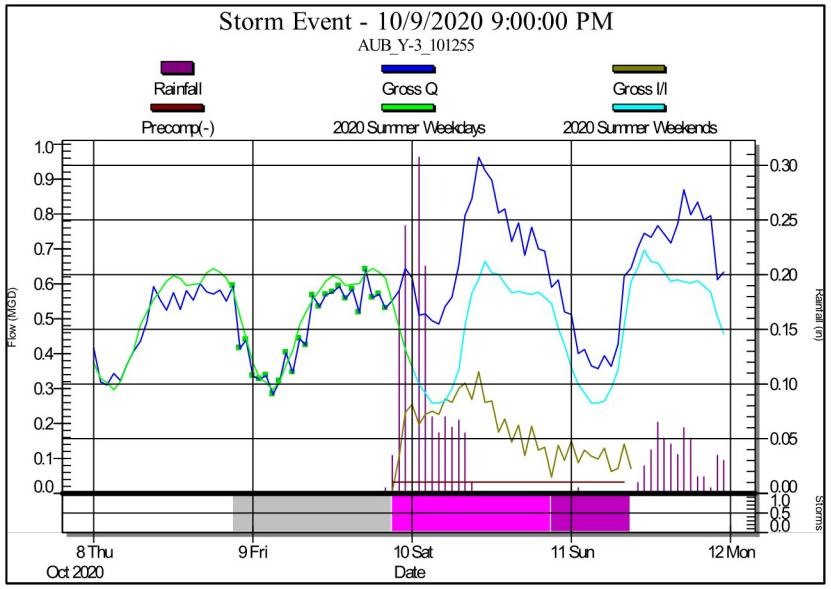

Storm Event - 2/14/2021 7:00:00 AM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

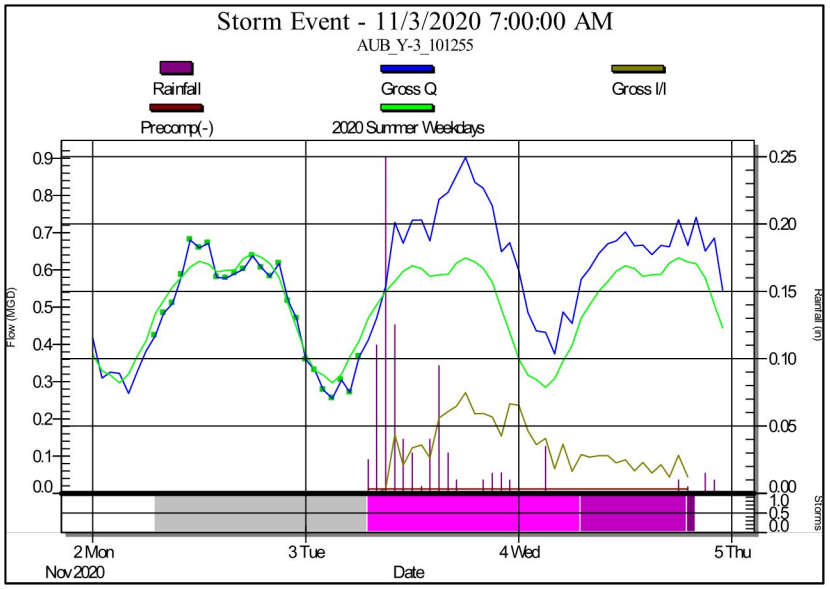

Storm Event - 2/21/2021 9:00:00 PM
AUB_Y-2_61102
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

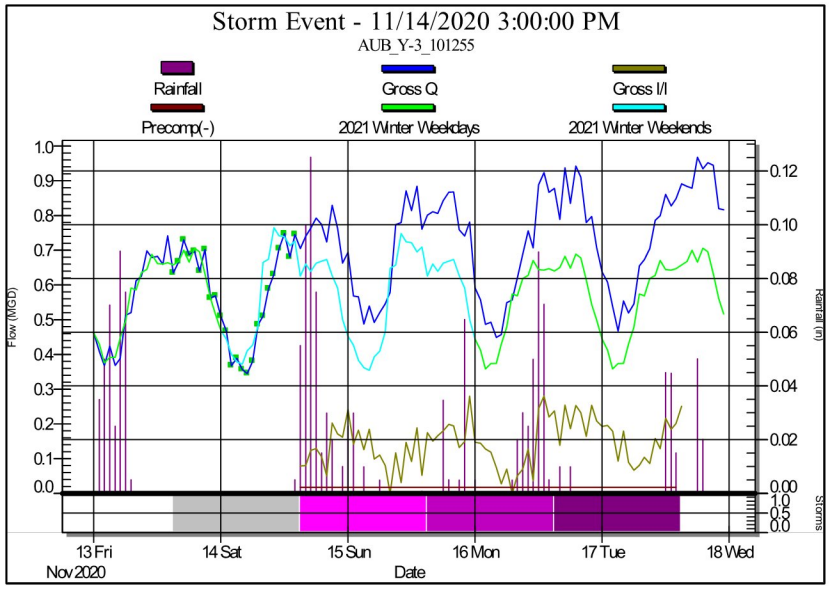

Pipe Flow
AUB_Y-3_101255
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
2.5
2.0
1.5
1.0
0.5
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

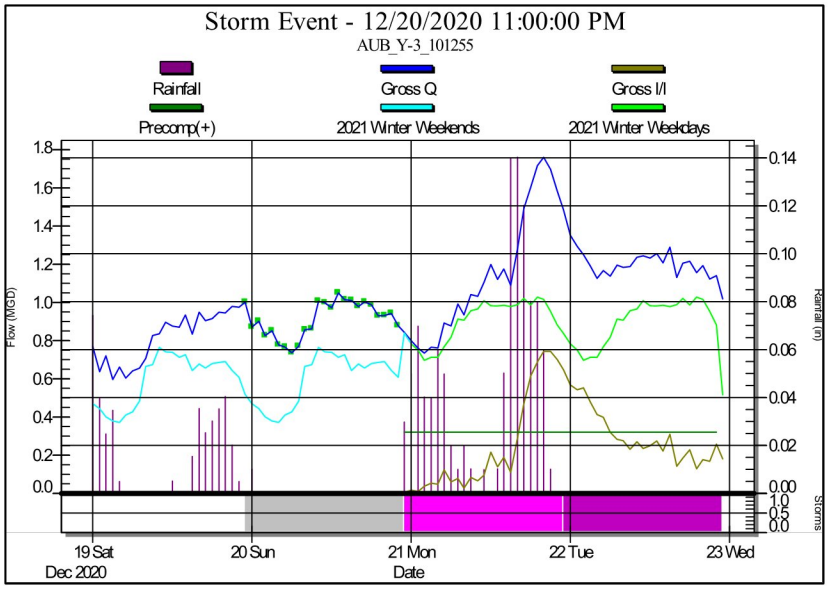

Dry Weather Flow
AUB_Y-3_101255
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0
3
6
9
12
15
18
21
Hours

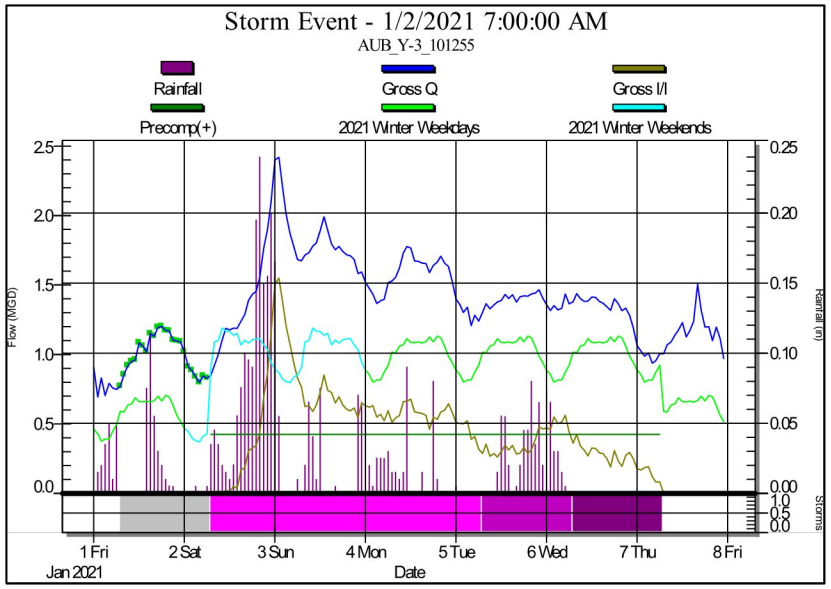

Scatter Graph
AUB_Y-3_101255
Lanfear-Coll (C-LC = 16.30)
VFINAL (ft/s)
Iso Q (MGD)
18
16
14
12
10
8
6
4
2
0
32
28
24
20
16
12
8
4
1
0
5
10
15
20
25
DFINAL (in)

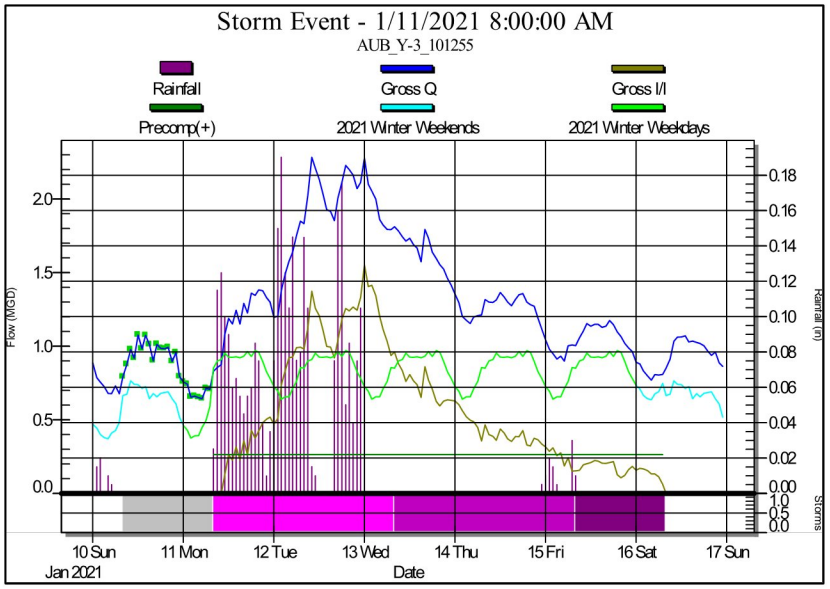

Storm Event - 10/9/2020 9:00:00 PM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

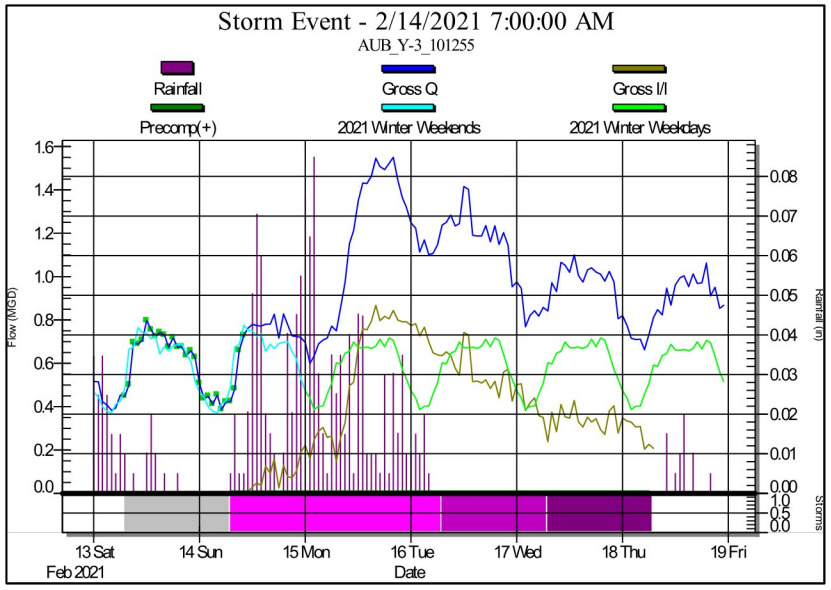

Storm Event - 11/3/2020 7:00:00 AM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

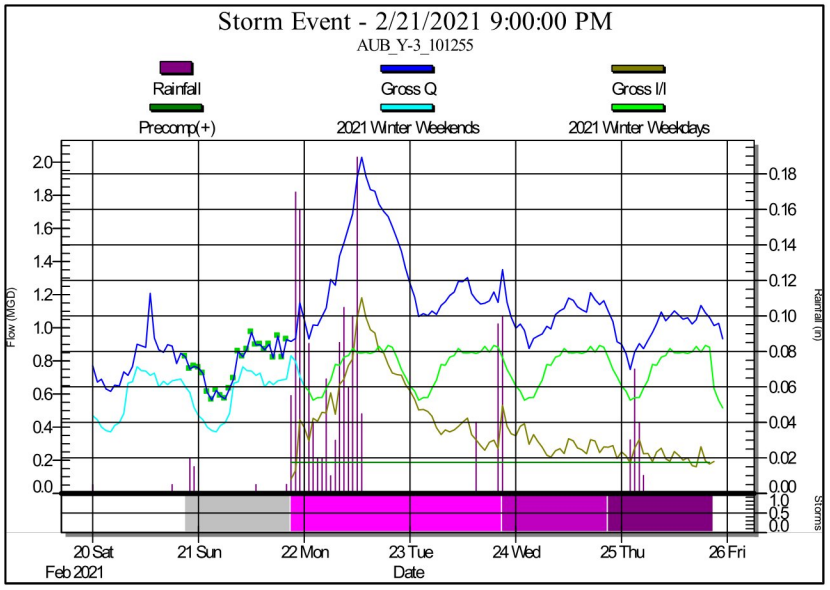

Storm Event - 11/14/2020 3:00:00 PM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

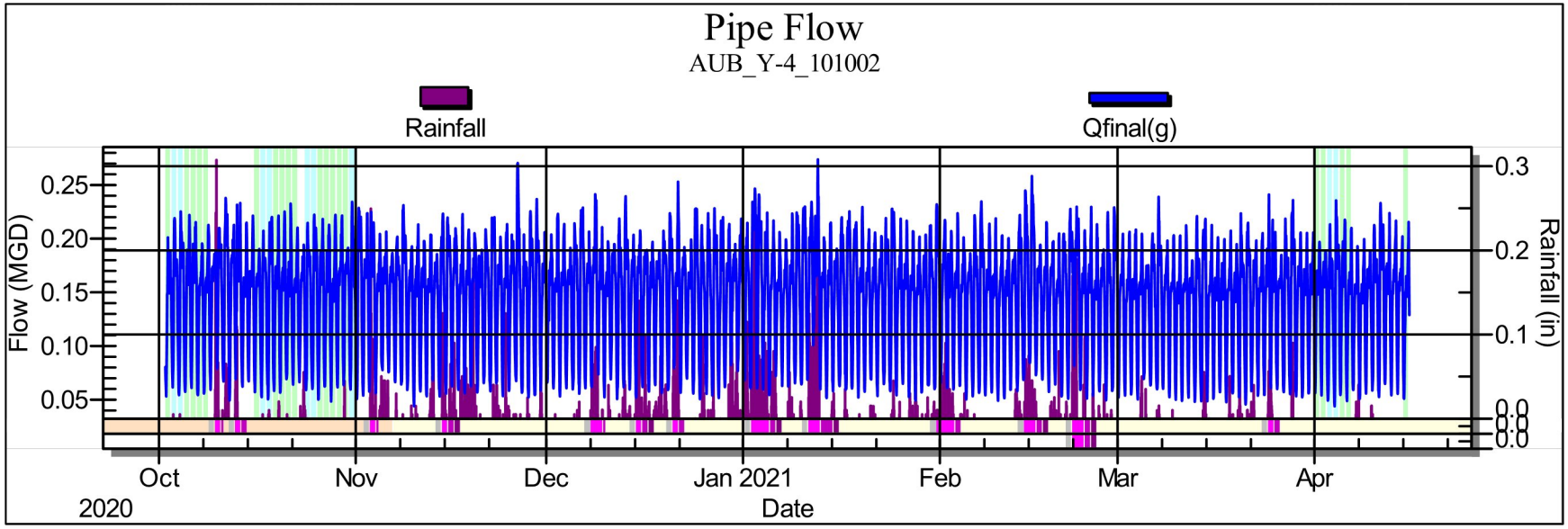

Storm Event - 12/20/2020 11:00:00 PM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

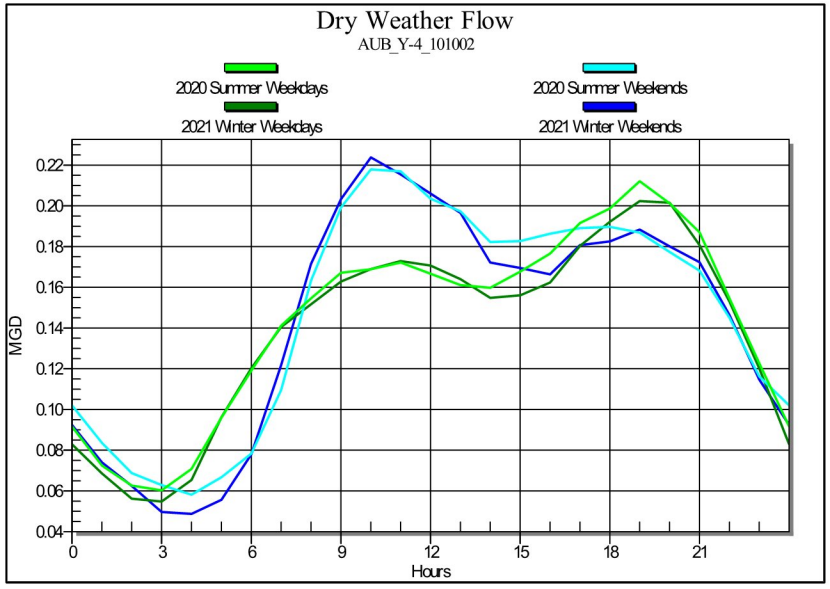

Storm Event - 1/2/2021 7:00:00 AM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

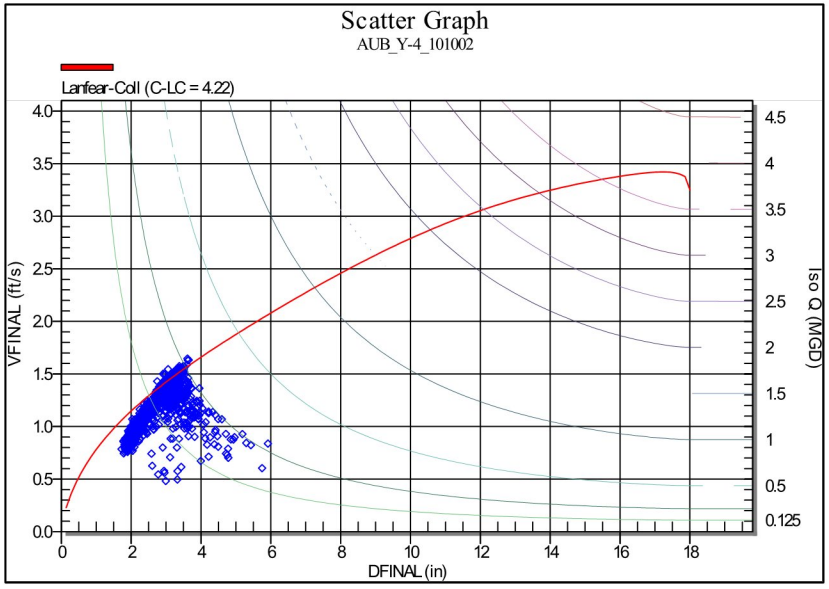

Storm Event - 1/11/2021 8:00:00 AM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

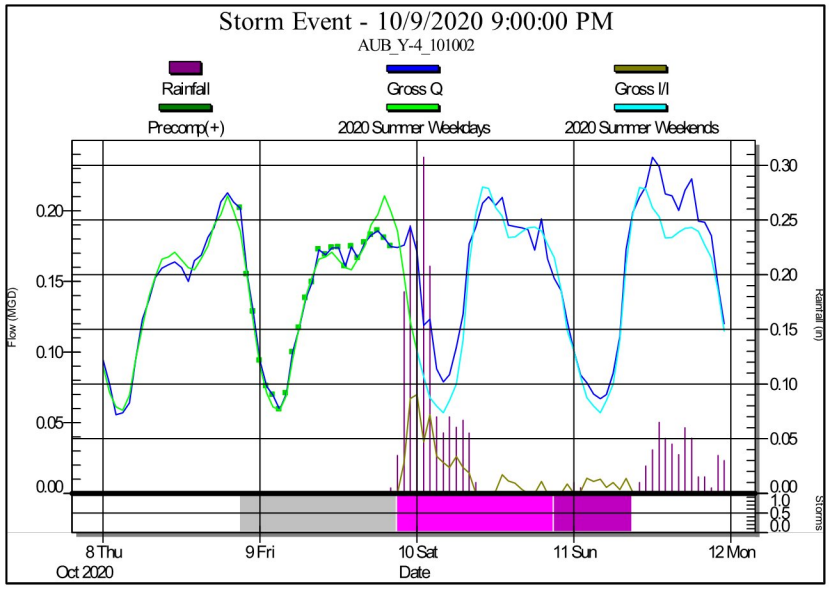

Storm Event - 2/14/2021 7:00:00 AM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

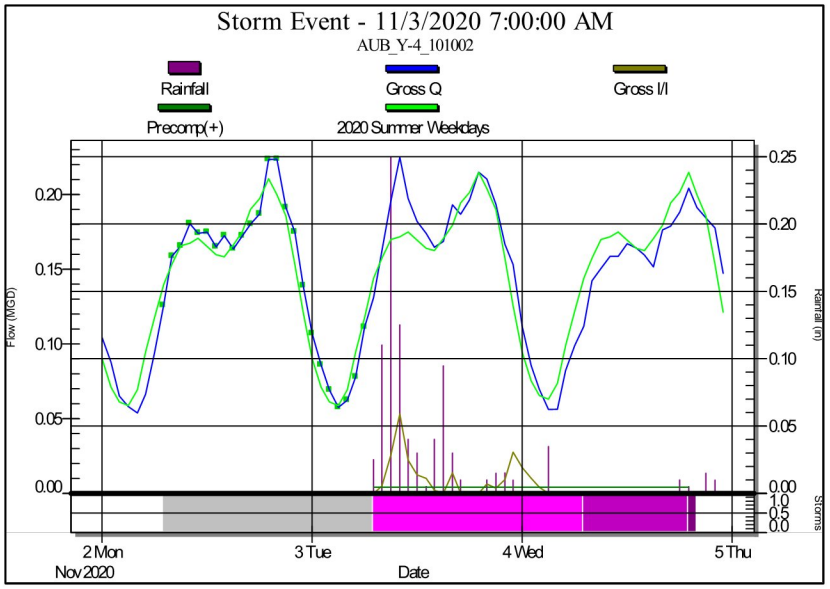

Storm Event - 2/21/2021 9:00:00 PM
AUB_Y-3_101255
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

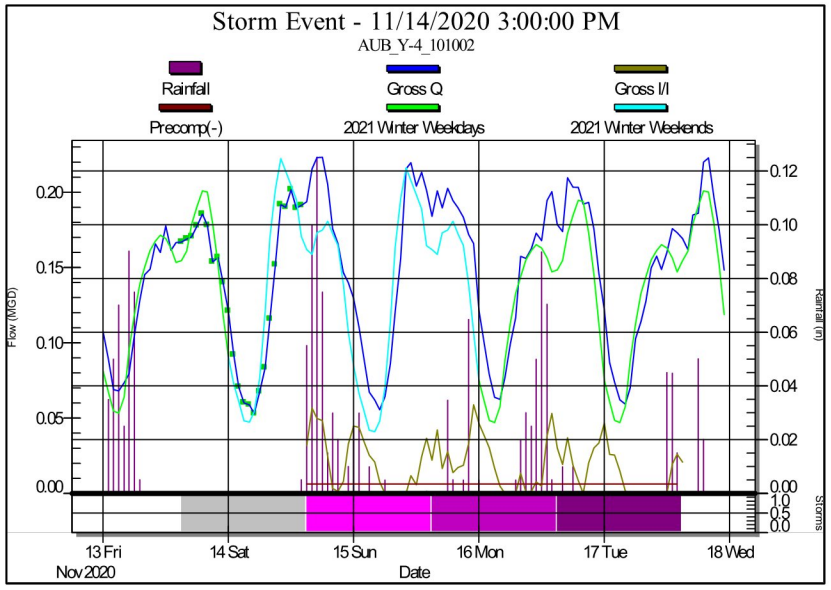

Pipe Flow
AUB_Y-4_101002
Rainfall
Qfinal(g)
Flow (MGD)
0.25
0.20
0.15
0.10
0.05
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

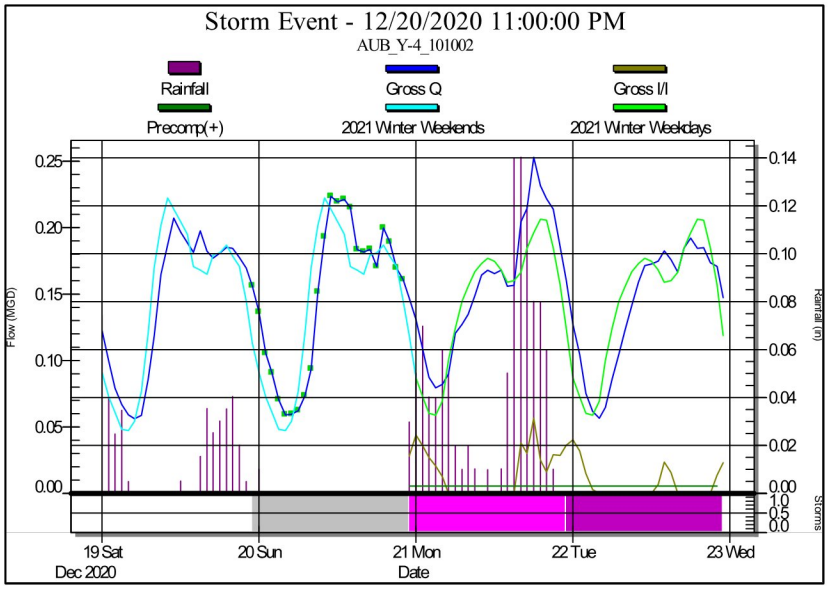

Dry Weather Flow
AUB_Y-4_101002
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0
3
6
9
12
15
18
21
Hours

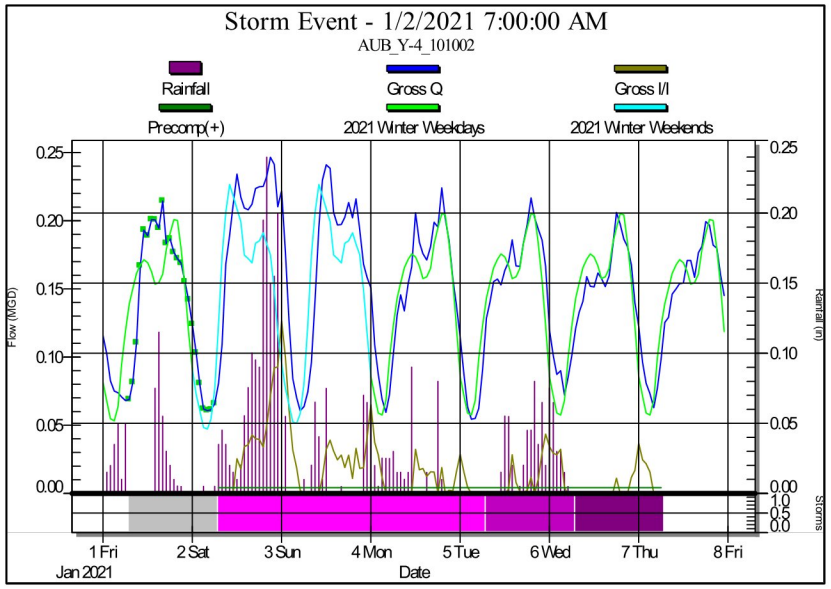

Scatter Graph
AUB_Y-4_101002
Lanfear-Coll (C-LC = 4.22)
VFINAL (ft/s)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0.125
Iso Q (MGD)
0
2
4
6
8
10
12
14
16
18
DFINAL (in)

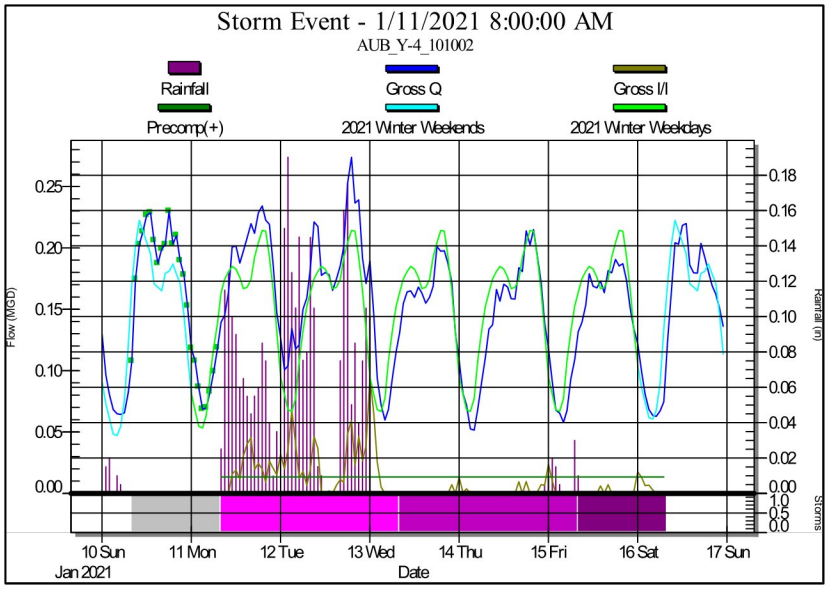

Storm Event - 10/9/2020 9:00:00 PM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

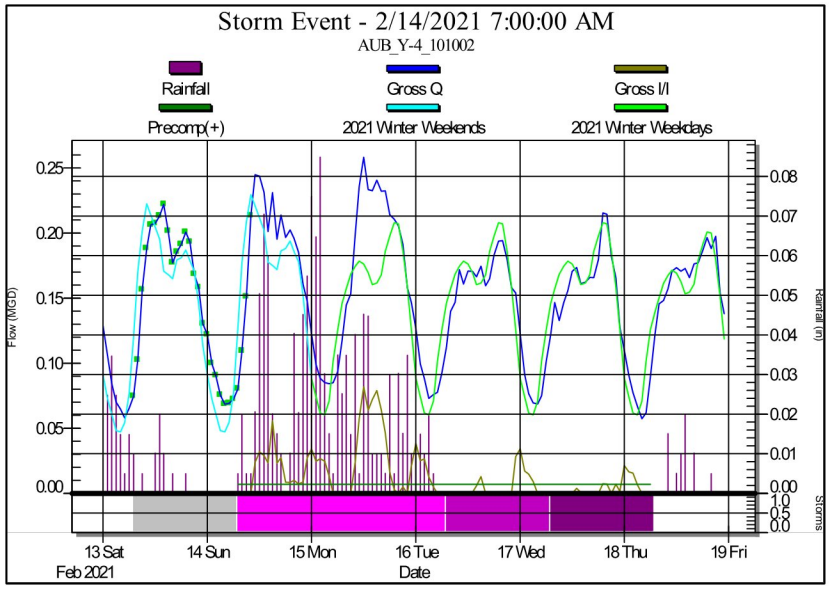

Storm Event - 11/3/2020 7:00:00 AM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

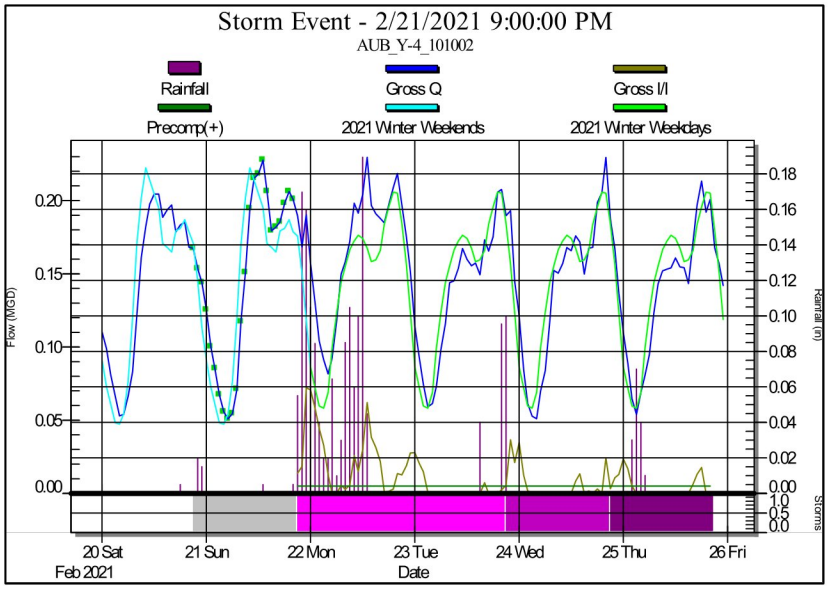

Storm Event - 11/14/2020 3:00:00 PM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

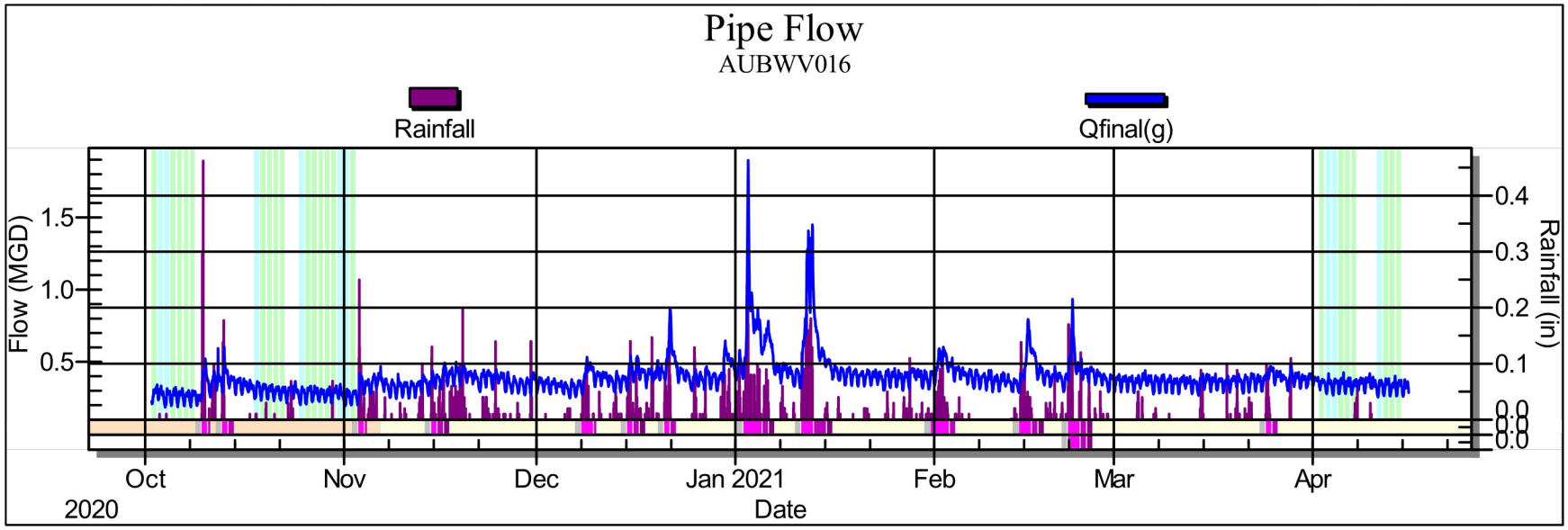

Storm Event - 12/20/2020 11:00:00 PM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

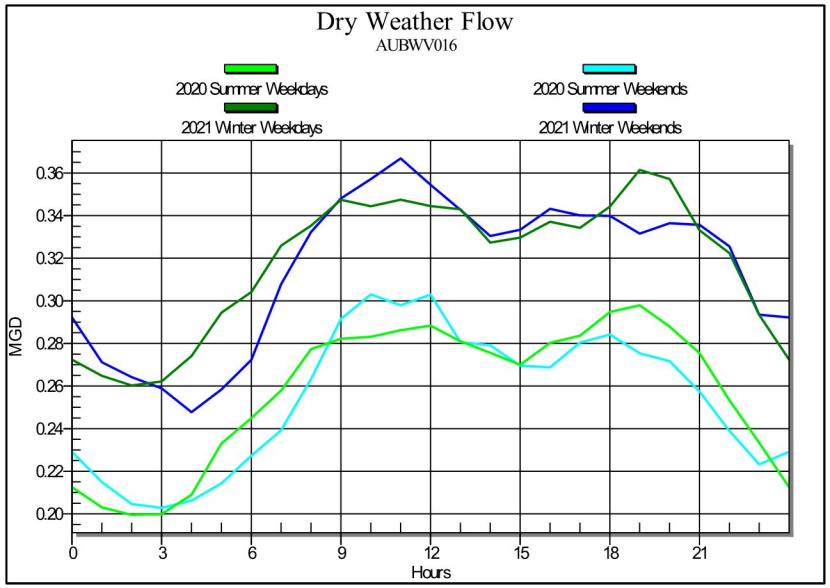

Storm Event - 1/2/2021 7:00:00 AM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

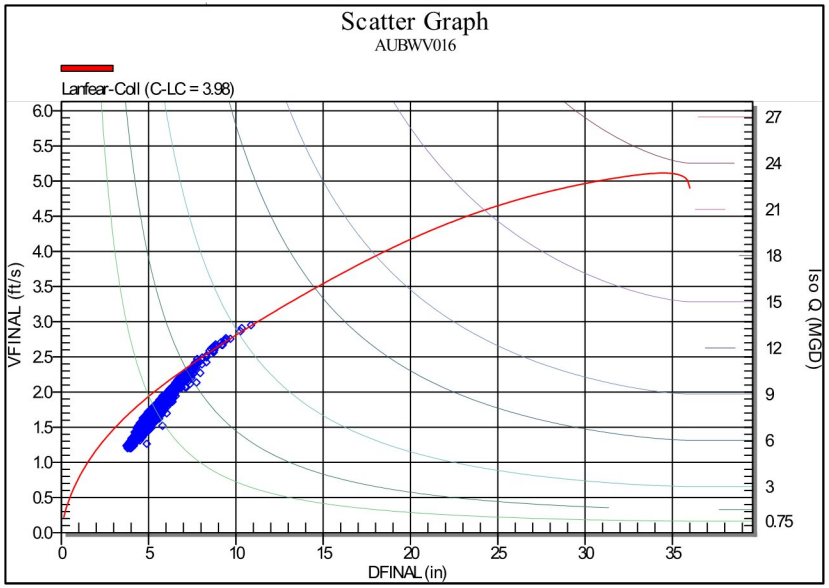

Storm Event - 1/11/2021 8:00:00 AM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

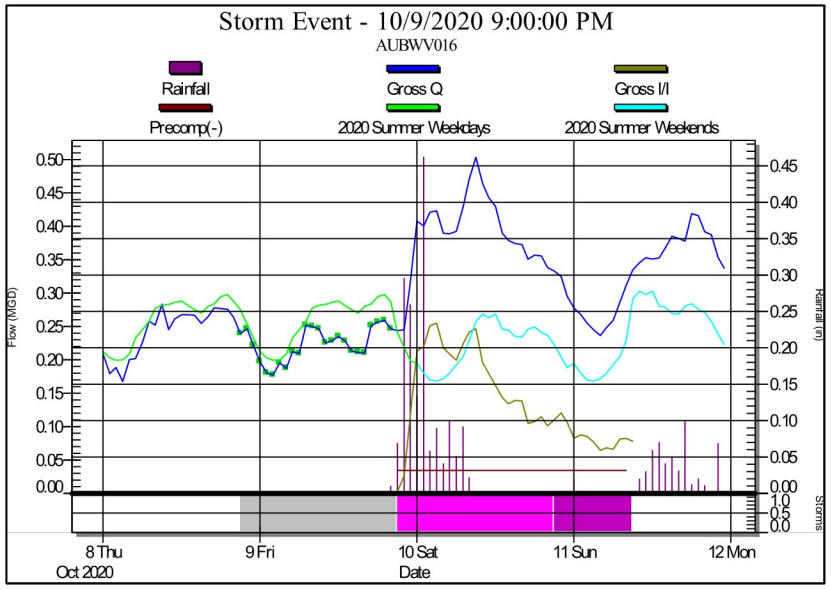

Storm Event - 2/14/2021 7:00:00 AM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

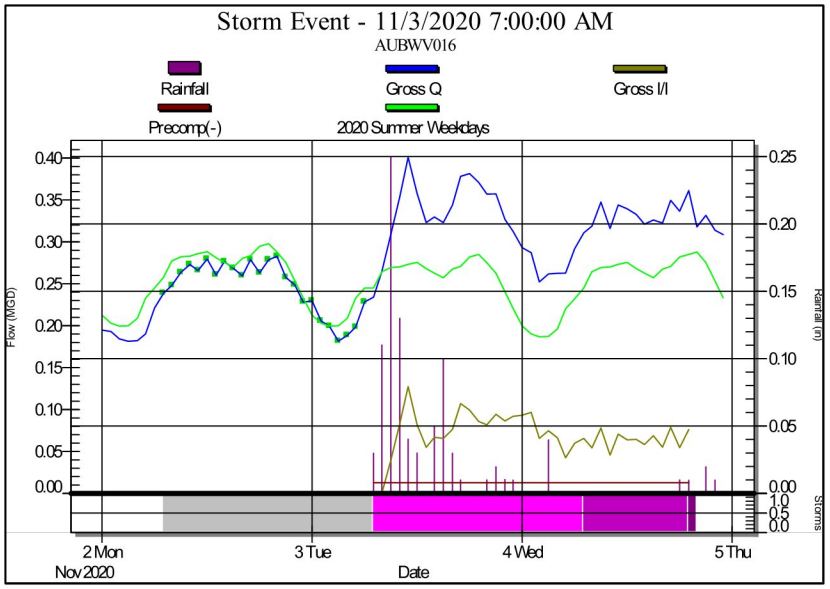

Storm Event - 2/21/2021 9:00:00 PM
AUB_Y-4_101002
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

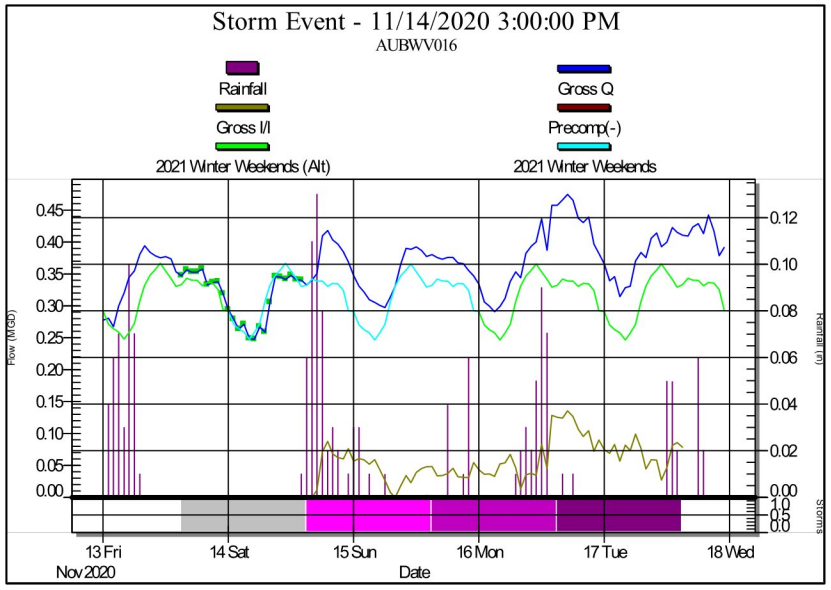

Pipe Flow
AUBWV016
Rainfall
Qfinal(g)
Flow (MGD)
1.5
1.0
0.5
0.4
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

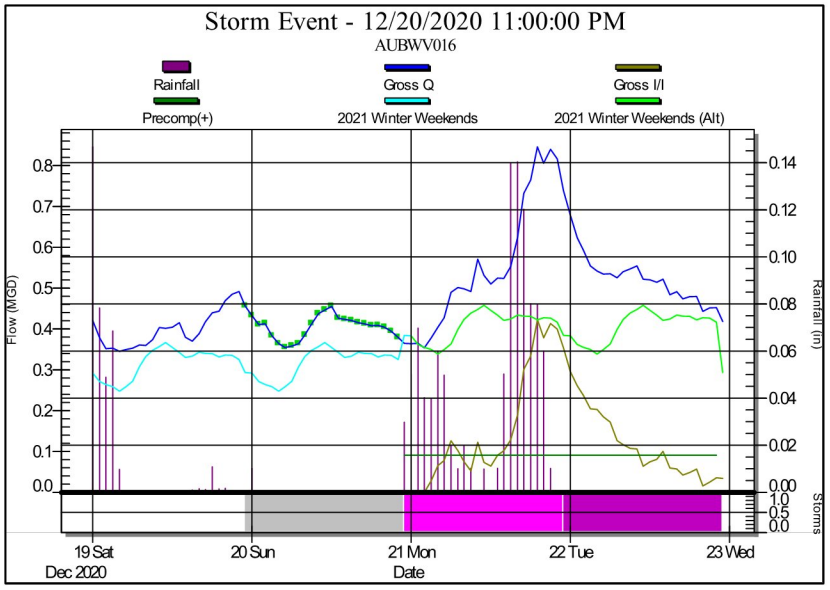

Dry Weather Flow
AUBWV016
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0
3
6
9
12
15
18
21
Hours

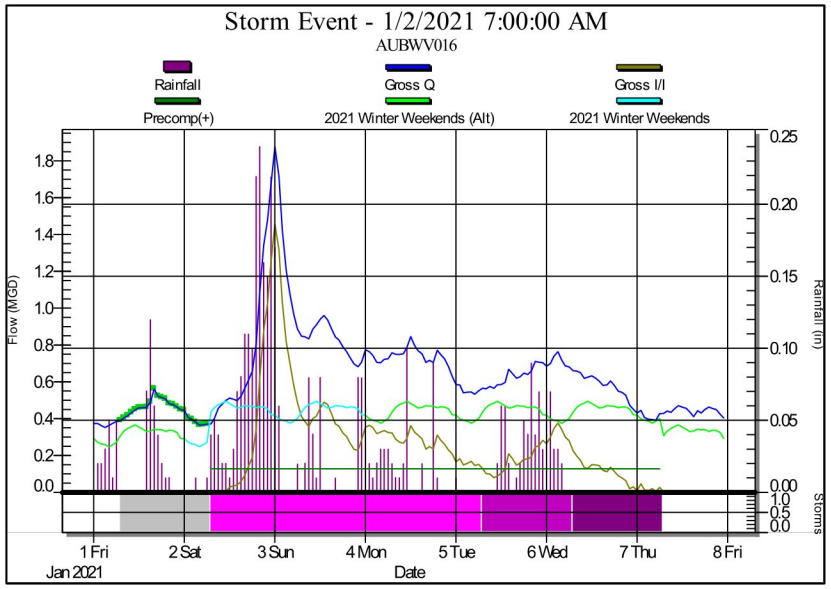

Scatter Graph
AUBWV016
Lanfear-Coll (C-LC = 3.98)
VFINAL (ft/s)
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
25
30
35
DFINAL (in)
Iso Q (MGD)
27
24
21
18
15
12
9
6
3
0.75

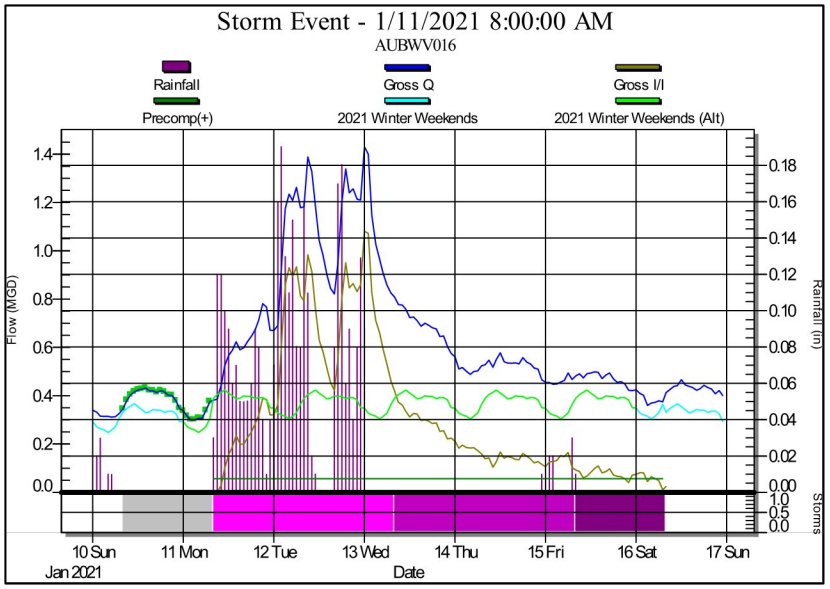

Storm Event - 10/9/2020 9:00:00 PM
AUBWV016
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

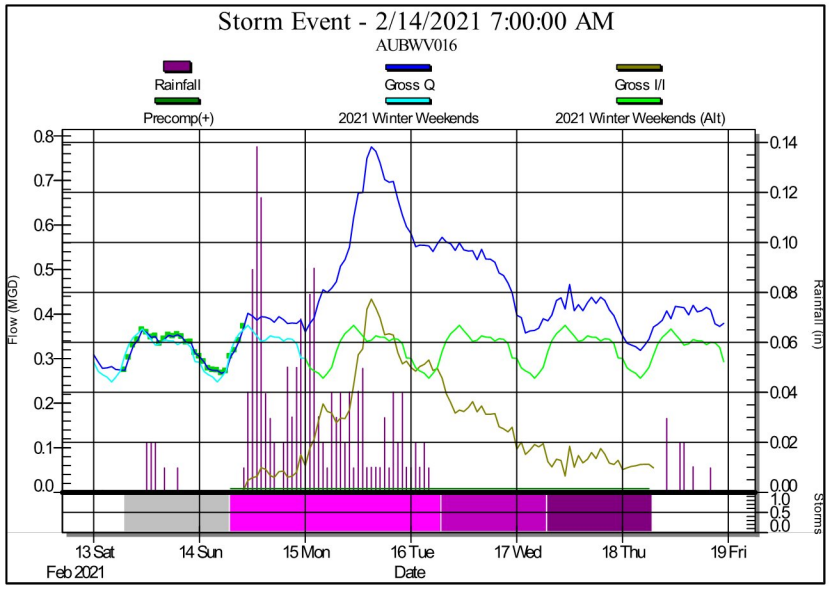

Storm Event - 11/3/2020 7:00:00 AM
AUBWV016
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

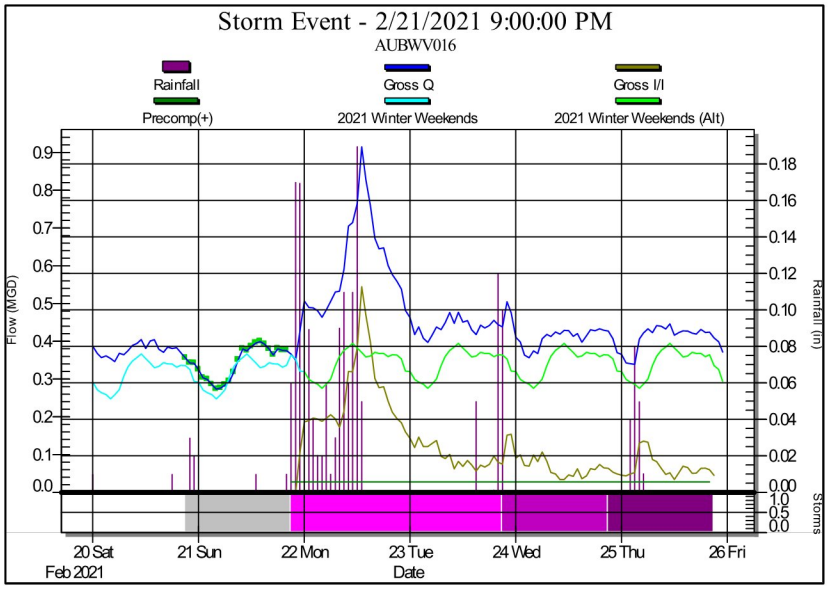

Storm Event - 11/14/2020 3:00:00 PM
AUBWV016
Rainfall
Gross Q
Gross I/I
Precomp(-)
2021 Winter Weekends (Alt)
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

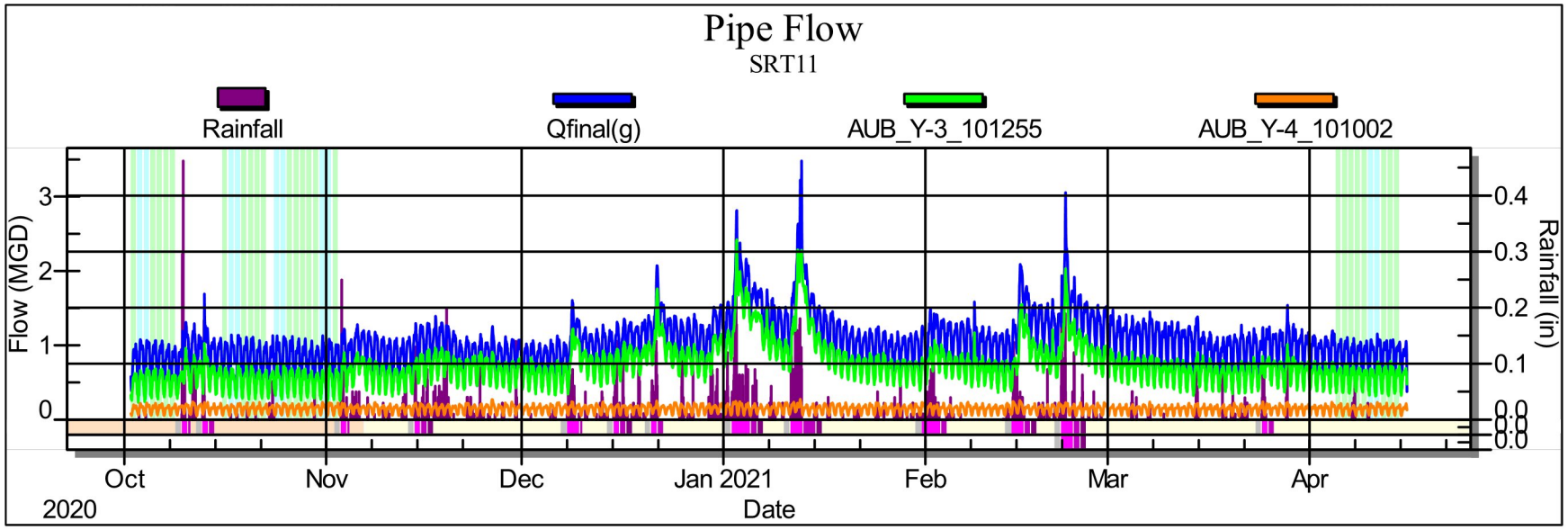

Storm Event - 12/20/2020 11:00:00 PM
AUBWV016
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekends (Alt)
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

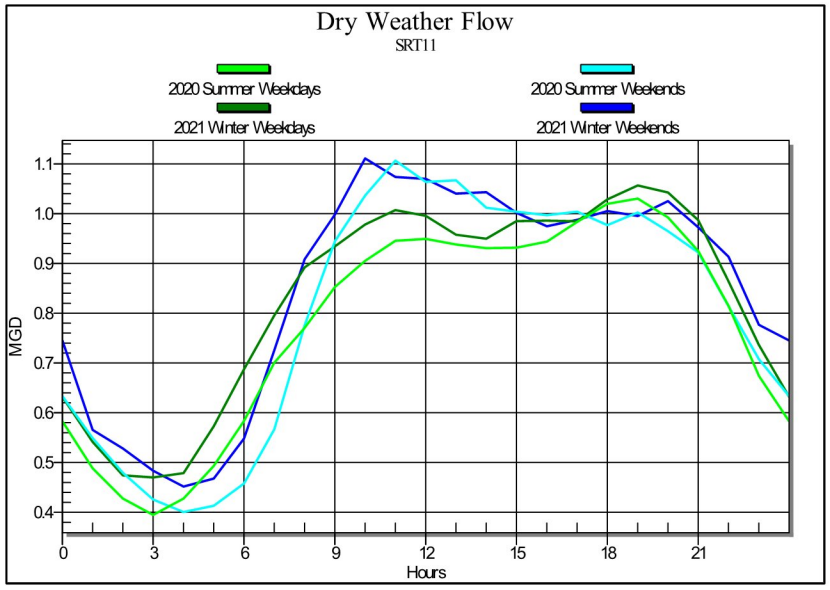

Storm Event - 1/2/2021 7:00:00 AM
AUBWV016
Rainfall
Precomp(+)
Gross Q
2021 Winter Weekends (Alt)
Gross I/I
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

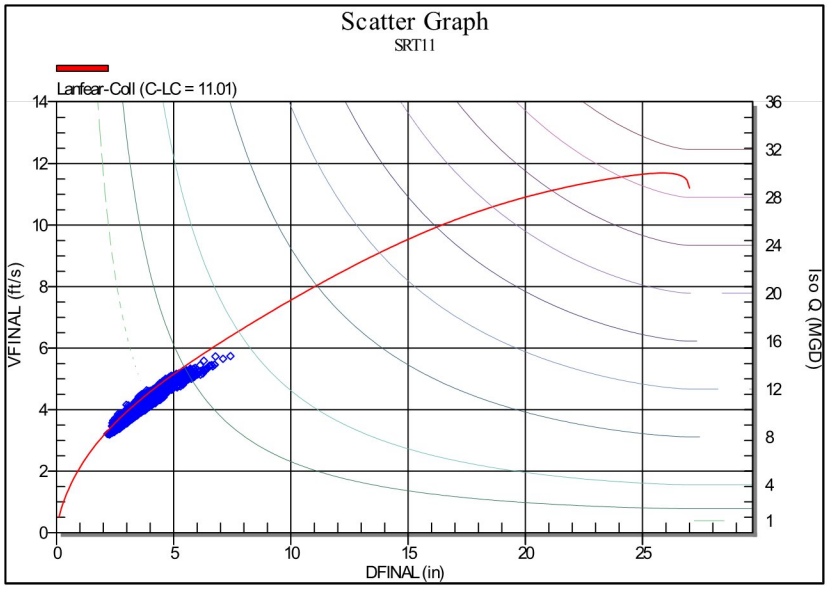

Storm Event - 1/11/2021 8:00:00 AM
AUBWV016
Rainfall
Precomp(+)
Gross Q
2021 Winter Weekends
Gross I/I
2021 Winter Weekends (Alt)
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

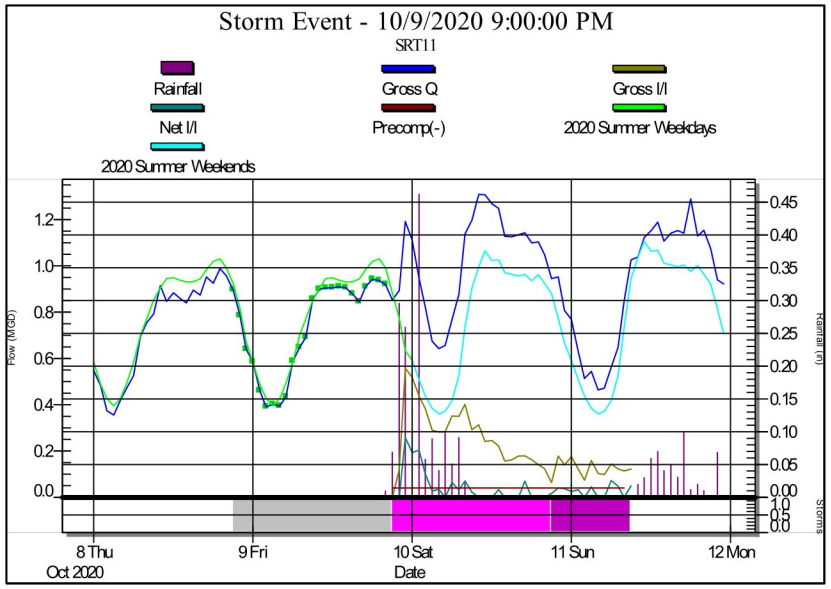

Storm Event - 2/14/2021 7:00:00 AM
AUBWV016
Rainfall
Precomp(+)
Gross Q
2021 Winter Weekends
Gross I/I
2021 Winter Weekends (Alt)
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

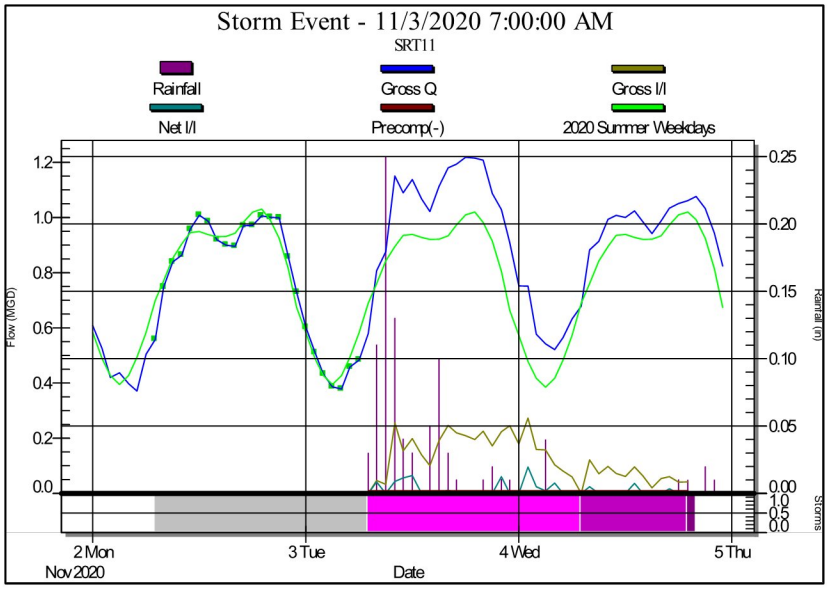

Storm Event - 2/21/2021 9:00:00 PM
AUBWV016
Rainfall
Precomp(+)
Gross Q
2021 Winter Weekends
Gross I/I
2021 Winter Weekends (Alt)
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

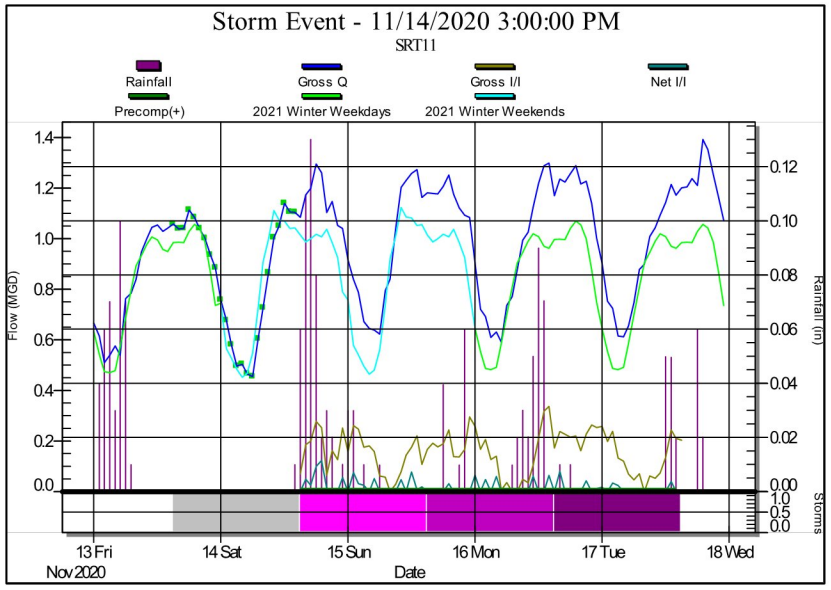

Pipe Flow
SRT11
Rainfall
Qfinal(g)
AUB_Y-3_101255
AUB_Y-4_101002
Flow (MGD)
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

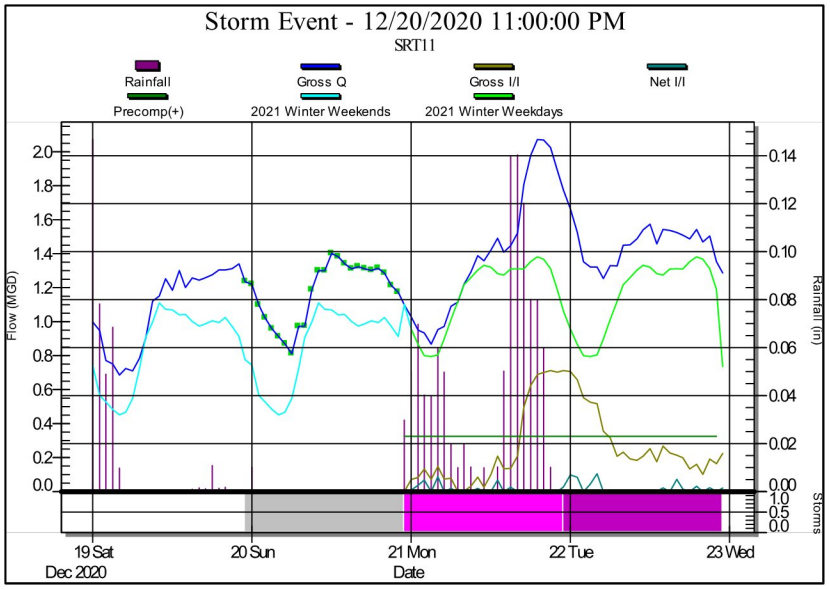

Dry Weather Flow
SRT11
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

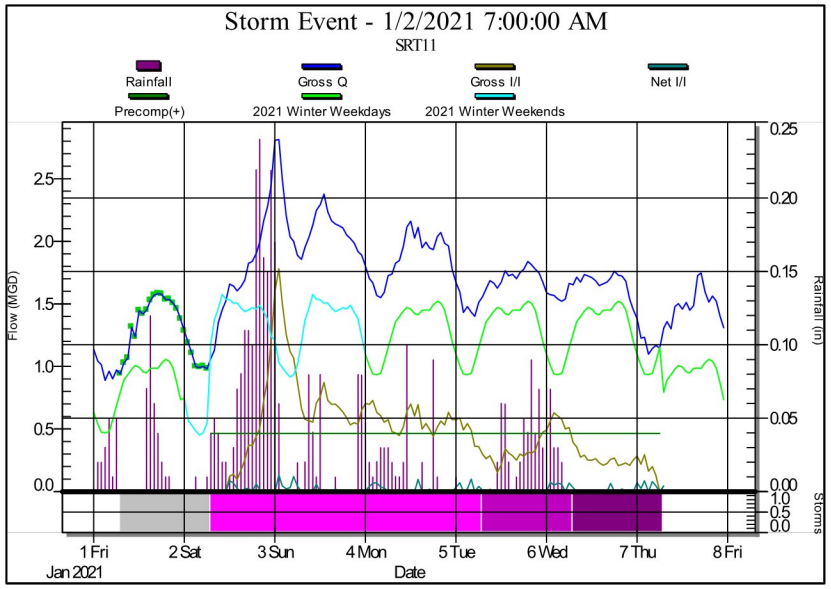

Scatter Graph
SRT11
Lanfear-Coll (C-LC = 11.01)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

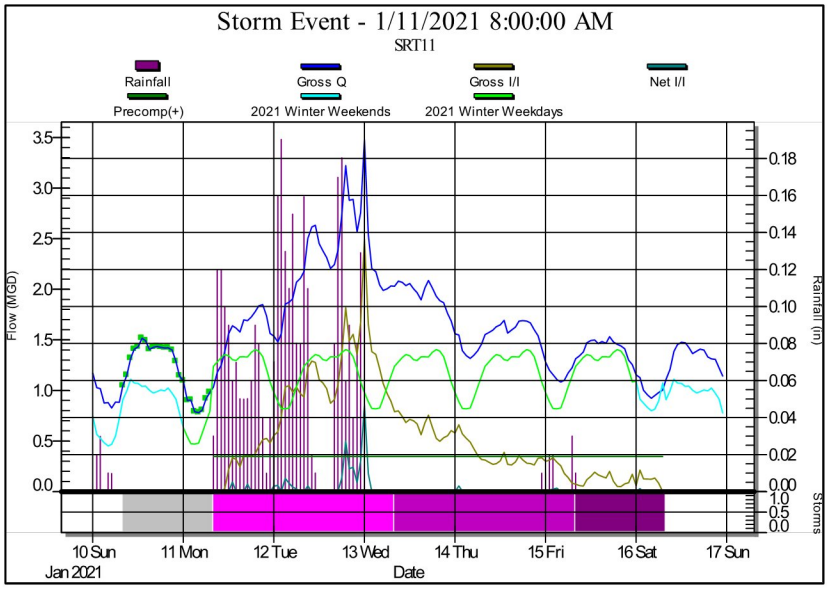

Storm Event - 10/9/2020 9:00:00 PM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
9 Fri
10 Sat
11 Sun
12 Mon
Oct 2020
Date

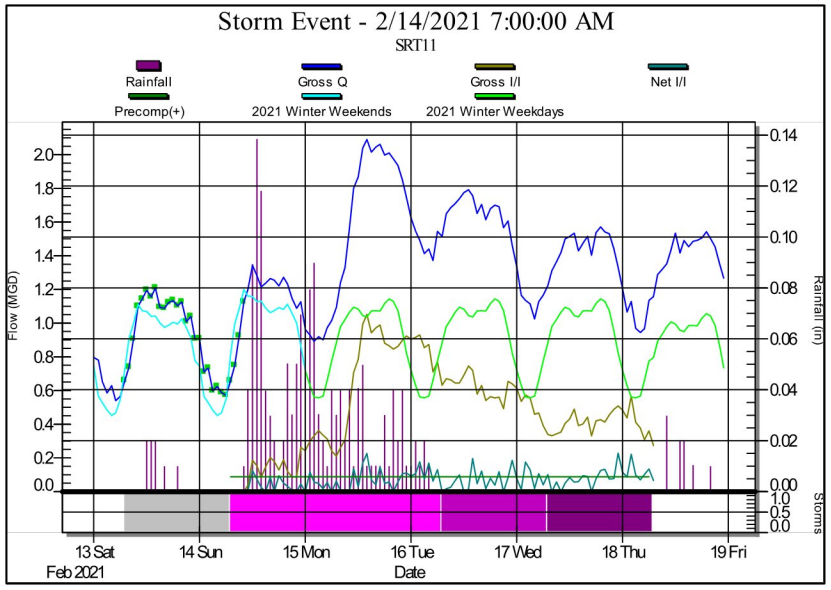

Storm Event - 11/3/2020 7:00:00 AM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
3 Tue
4 Wed
5 Thu
Nov 2020
Date

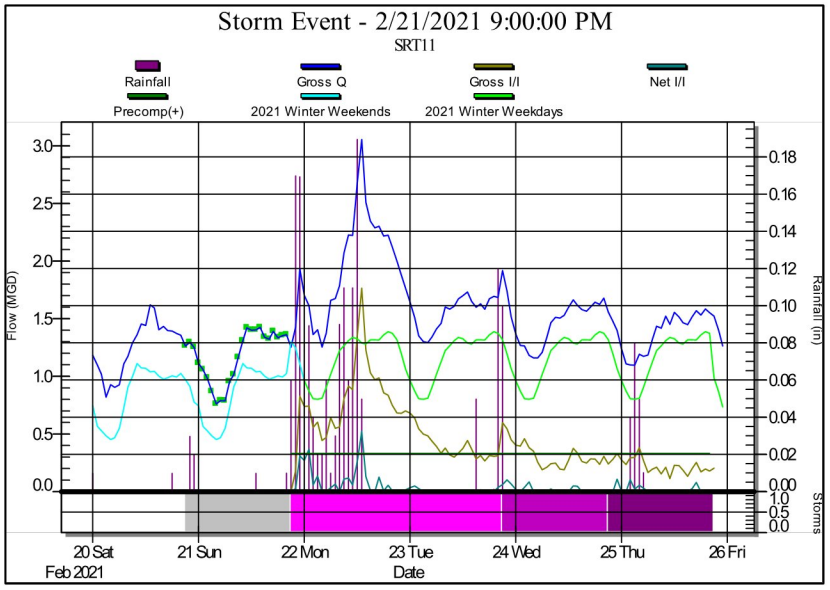

Storm Event - 11/14/2020 3:00:00 PM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Nov 2020
Date

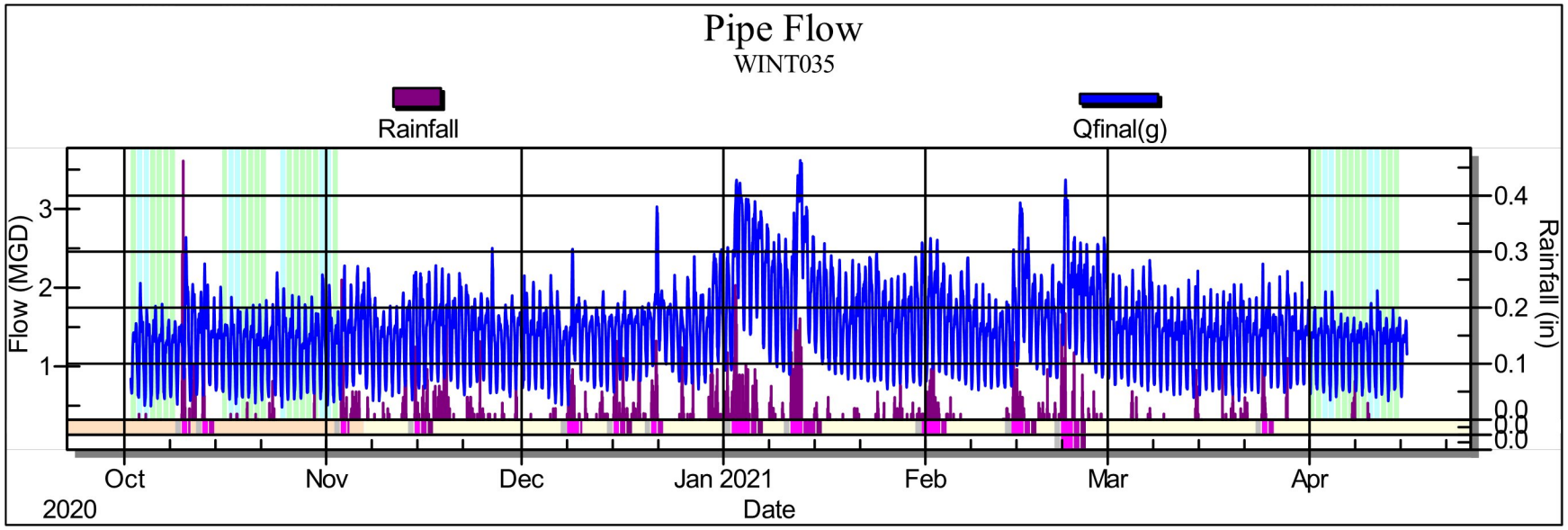

Storm Event - 12/20/2020 11:00:00 PM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
20 Sun
21 Mon
22 Tue
23 Wed
Dec 2020
Date

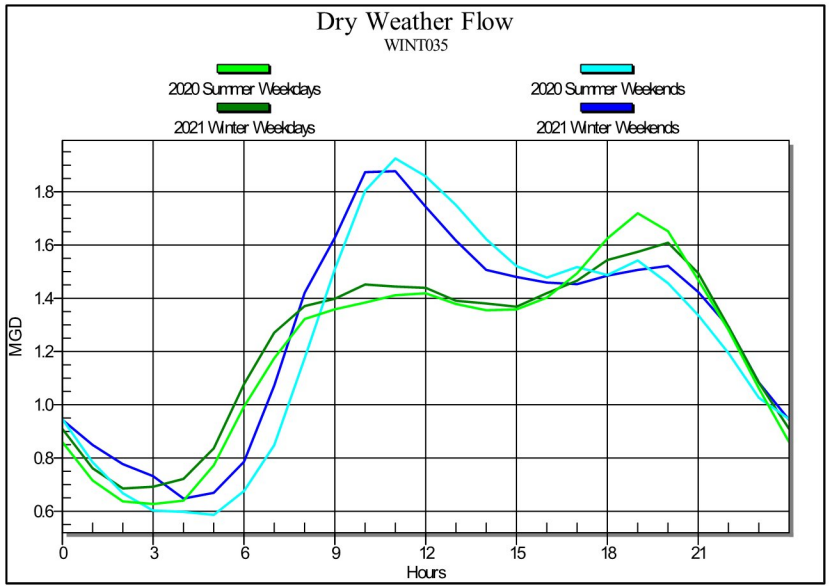

Storm Event - 1/2/2021 7:00:00 AM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

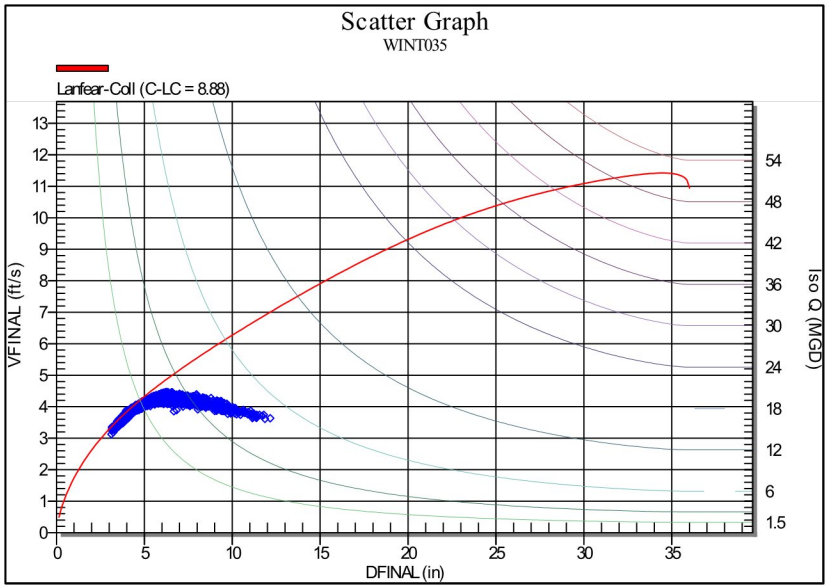

Storm Event - 1/11/2021 8:00:00 AM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

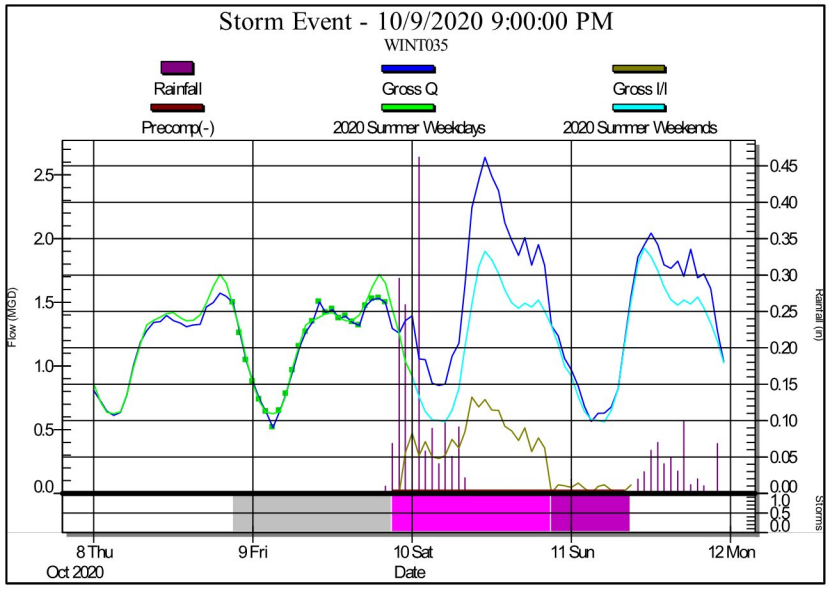

Storm Event - 2/14/2021 7:00:00 AM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

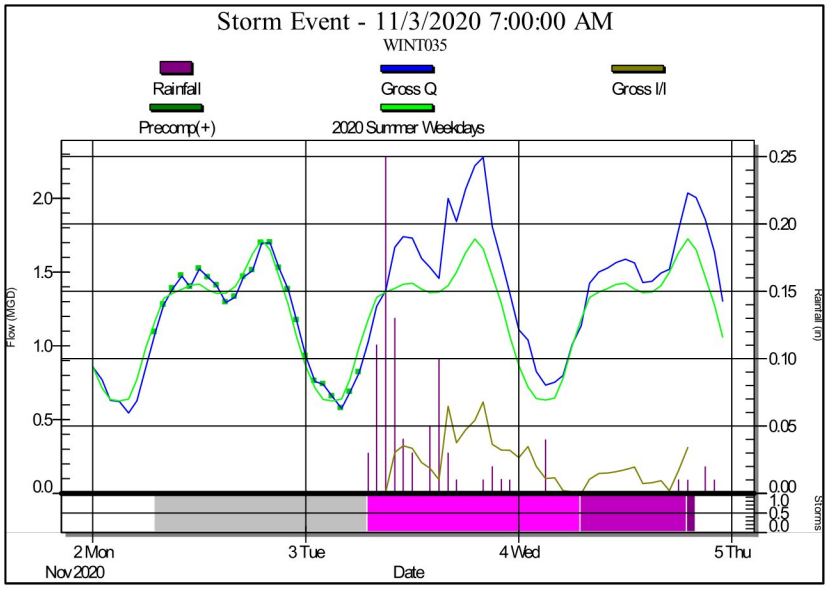

Storm Event - 2/21/2021 9:00:00 PM
SRT11
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

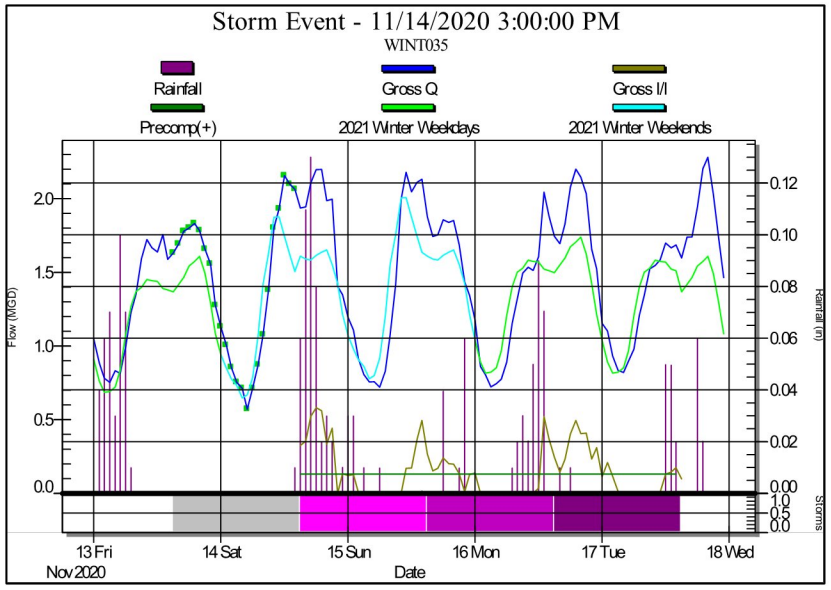

Pipe Flow
WINT035
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

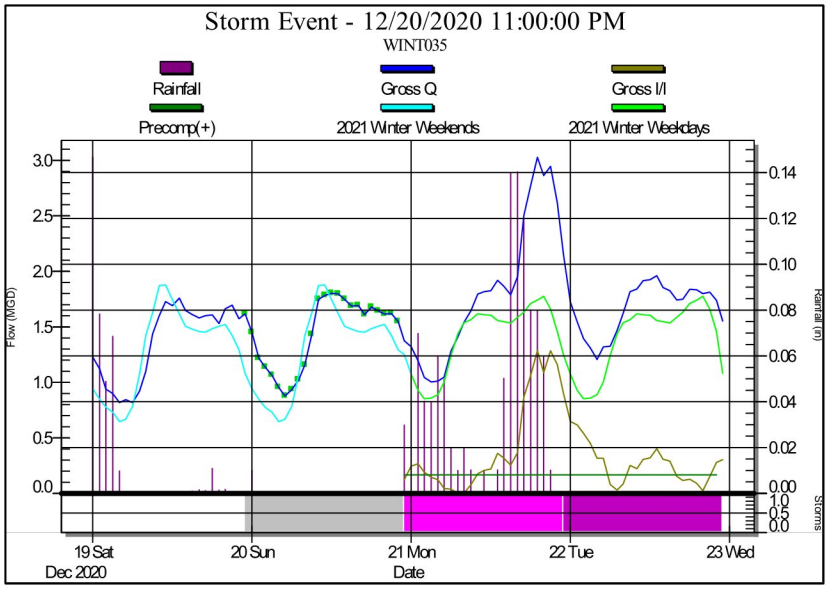

Dry Weather Flow
WINT035
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

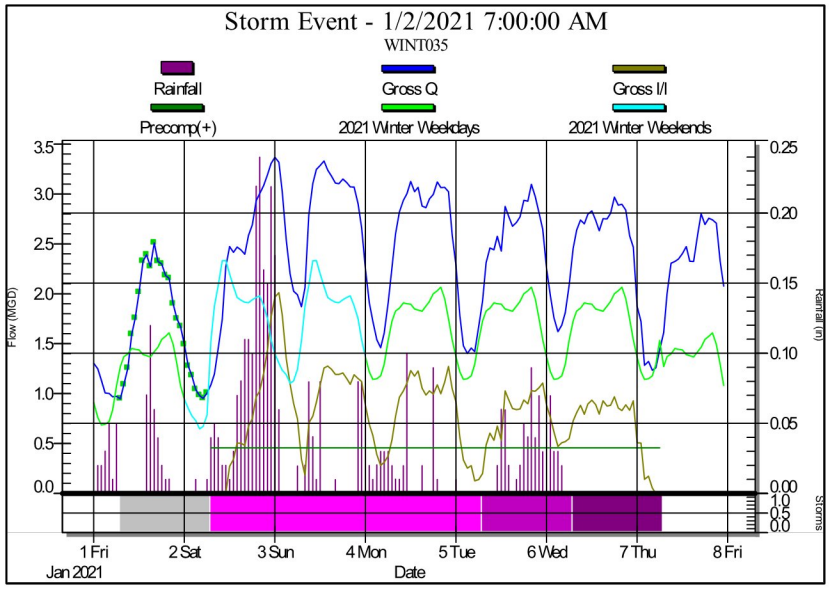

Scatter Graph
WINT035
Lanfear-Coll (C-LC = 8.88)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

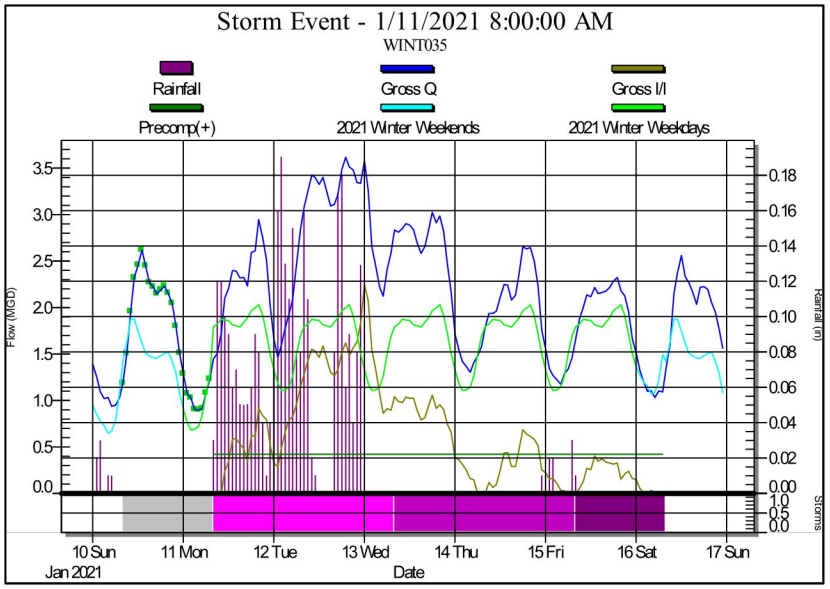

Storm Event - 10/9/2020 9:00:00 PM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

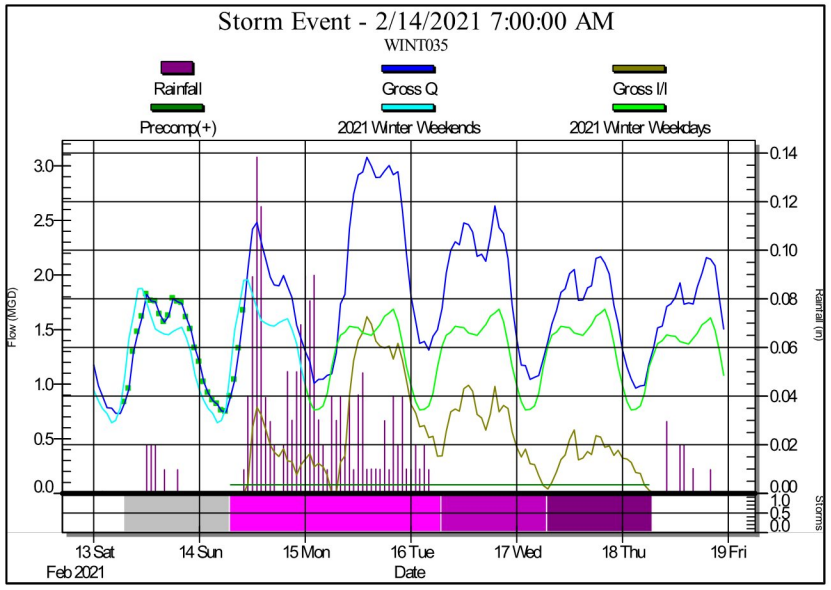

Storm Event - 11/3/2020 7:00:00 AM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

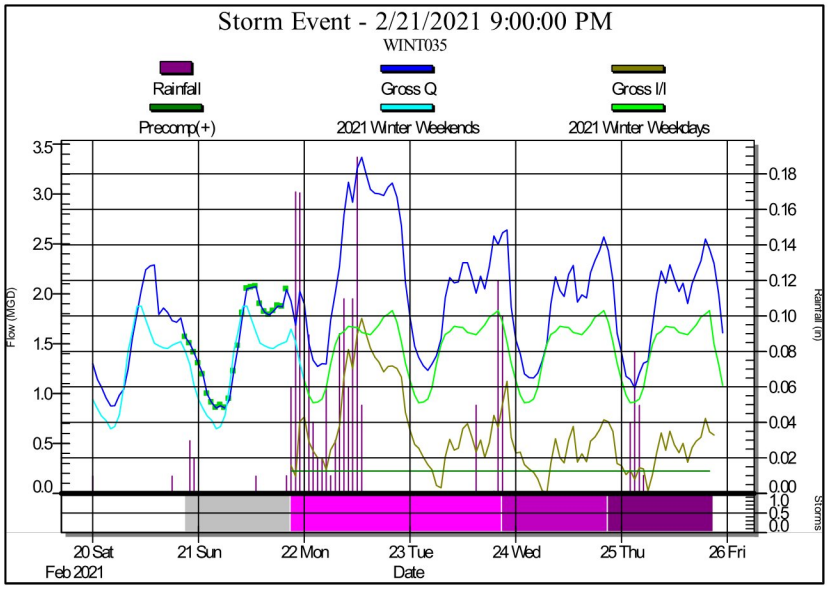

Storm Event - 11/14/2020 3:00:00 PM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

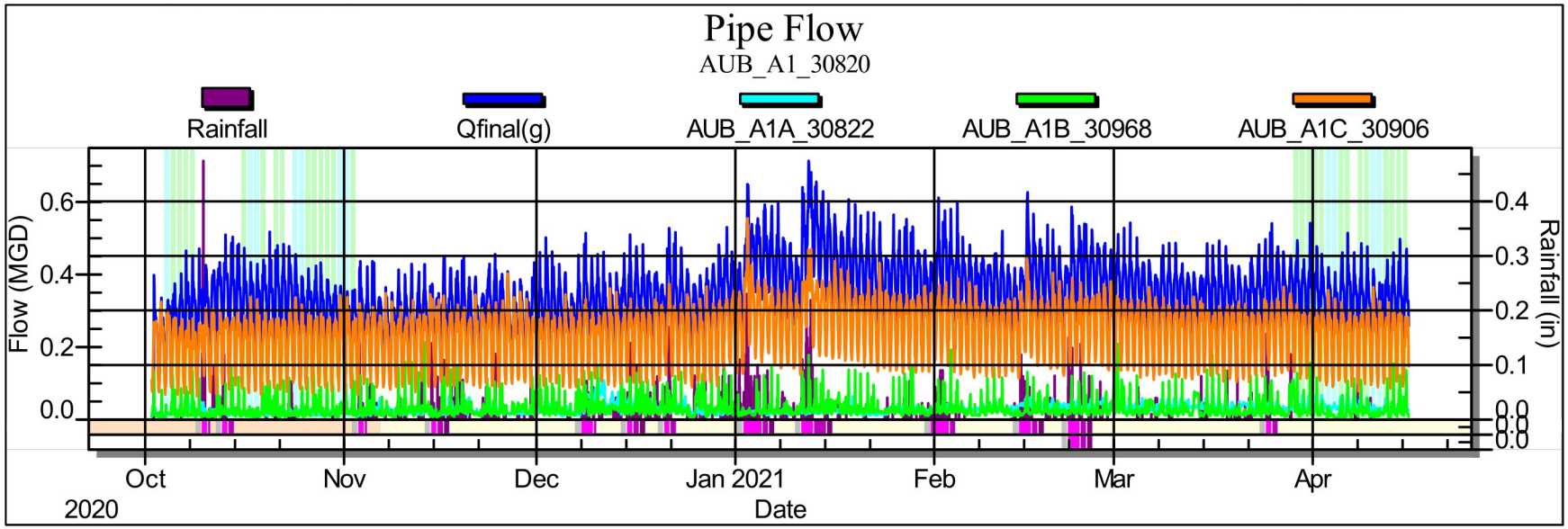

Storm Event - 12/20/2020 11:00:00 PM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

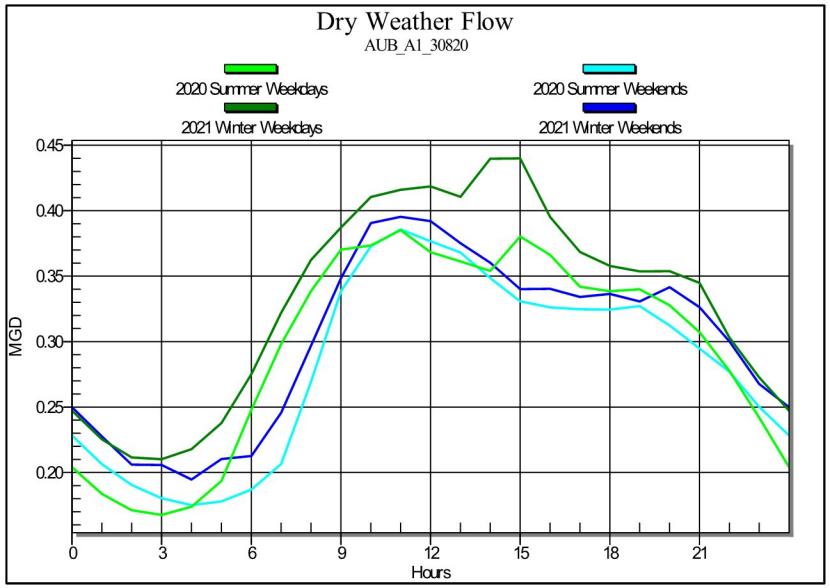

Storm Event - 1/2/2021 7:00:00 AM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

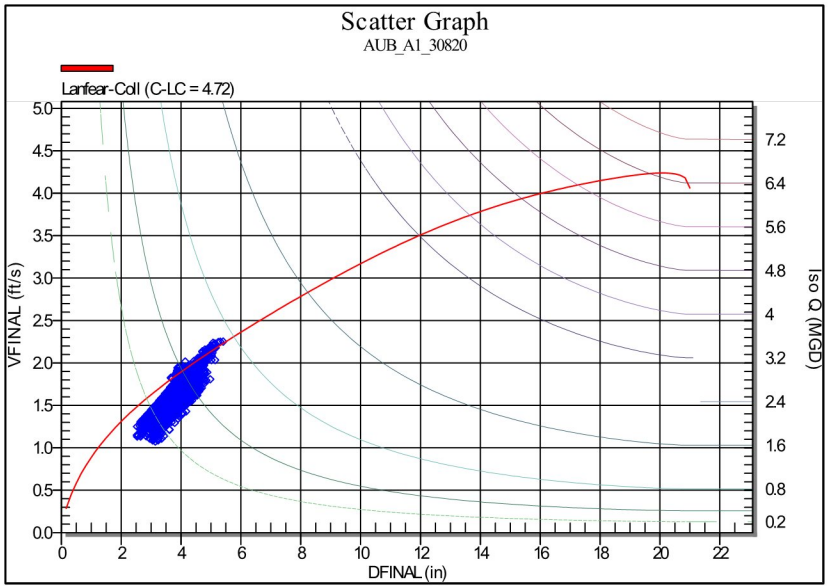

Storm Event - 1/11/2021 8:00:00 AM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

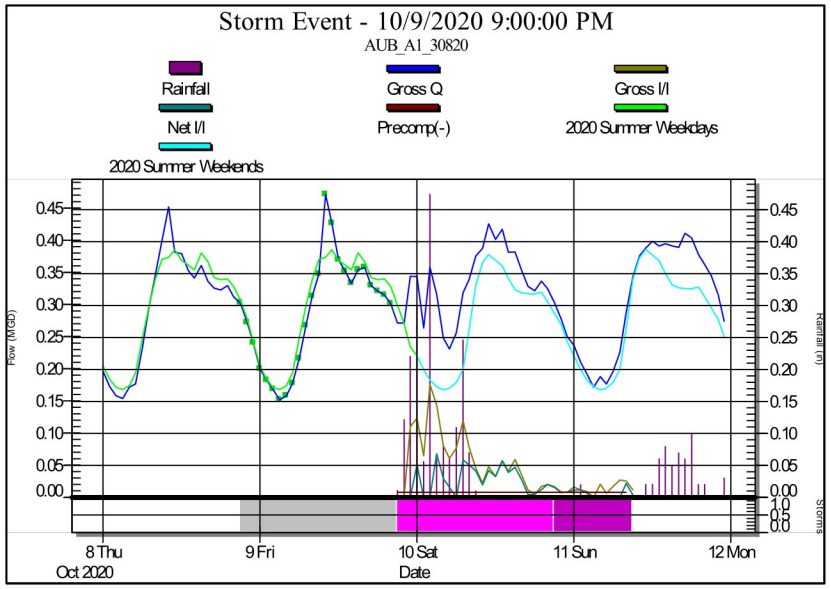

Storm Event - 2/14/2021 7:00:00 AM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

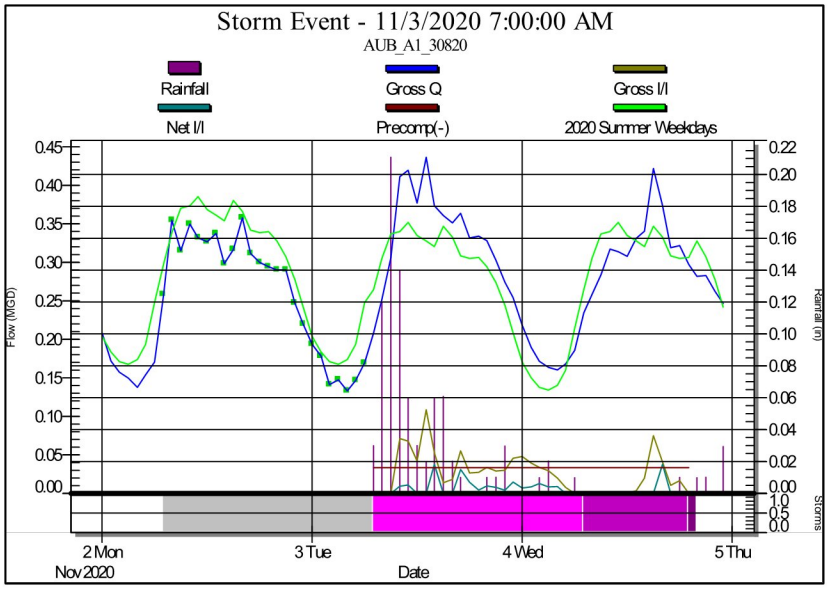

Storm Event - 2/21/2021 9:00:00 PM
WINT035
Rainfall
Gross Q
Gross I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

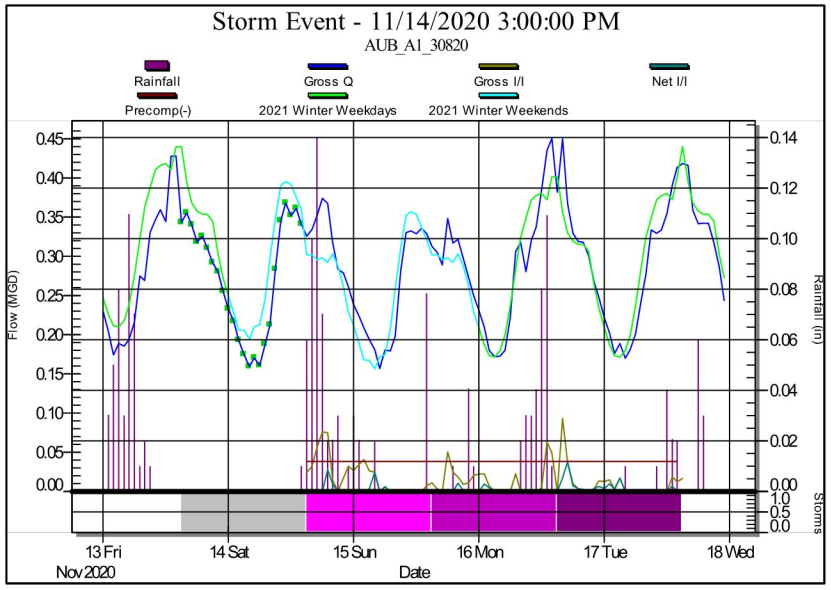

Pipe Flow
AUB_A1_30820
Rainfall
Qfinal(g)
AUB_A1A_30822
AUB_A1B_30968
AUB_A1C_30906
Flow (MGD)
0.6
0.4
0.2
0.0
0.4
0.3
0.2
0.1
0.0
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

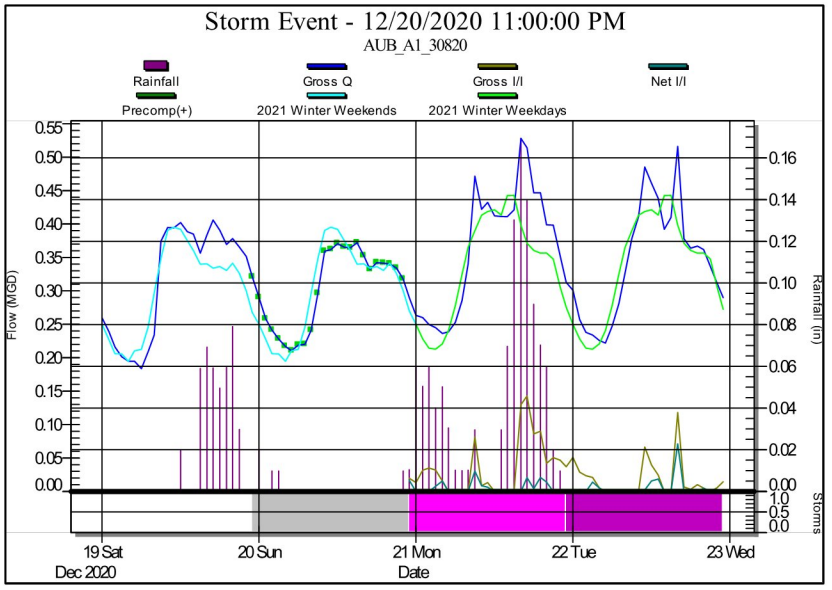

Dry Weather Flow
AUB_A1_30820
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.45
0.40
0.35
0.30
0.25
0.20
0
3
6
9
12
15
18
21
Hours

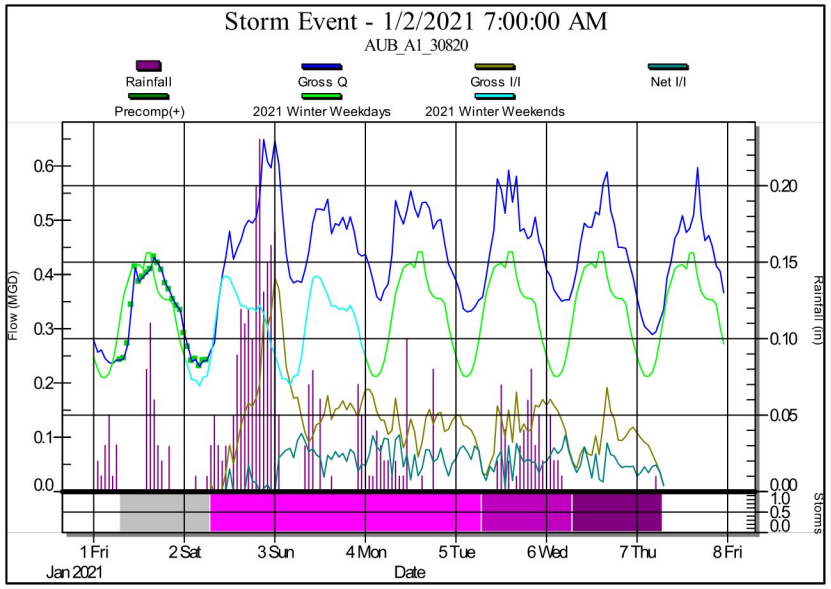

Scatter Graph
AUB_A1_30820
Lanfear-Coll (C-LC = 4.72)
VFINAL (ft/s)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Iso Q (MGD)
7.2
6.4
5.6
4.8
4
3.2
2.4
1.6
0.8
0.2
0
2
4
6
8
10
12
14
16
18
20
22
DFINAL (in)

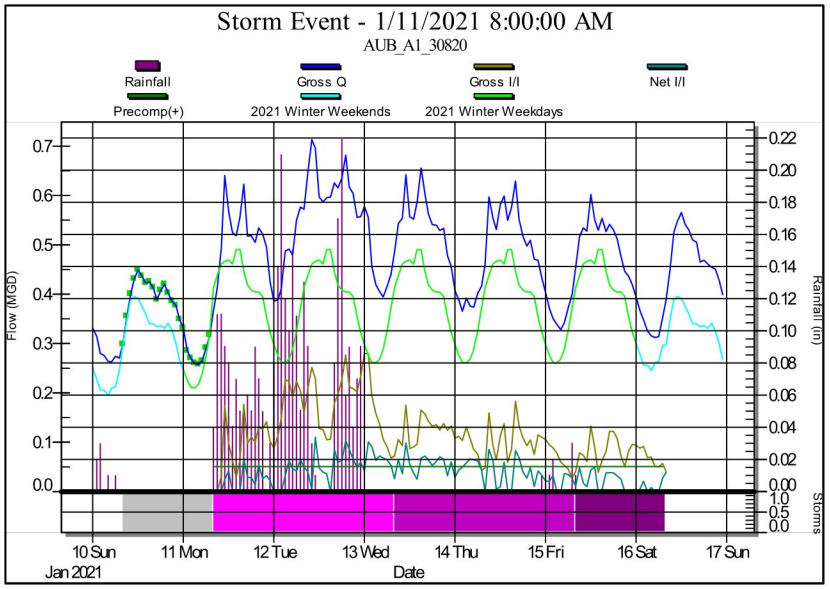

Storm Event - 10/9/2020 9:00:00 PM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

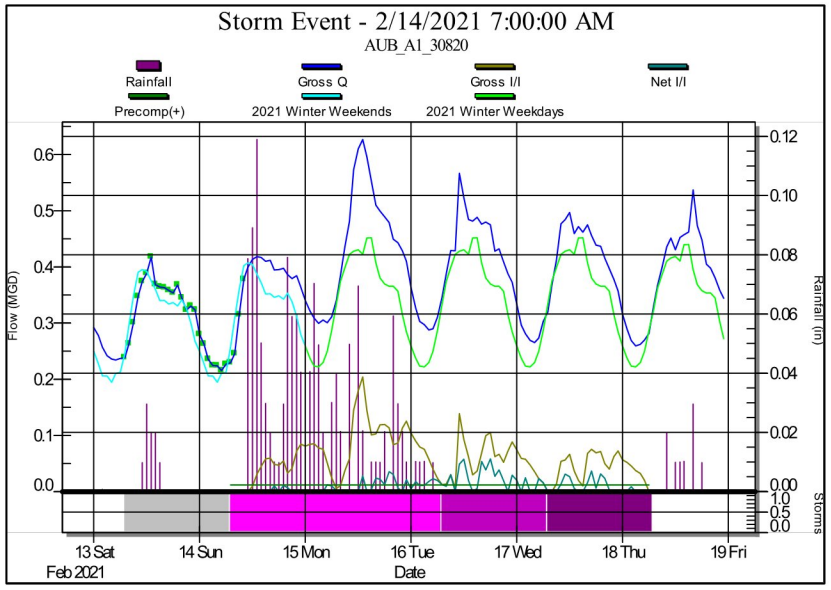

Storm Event - 11/3/2020 7:00:00 AM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

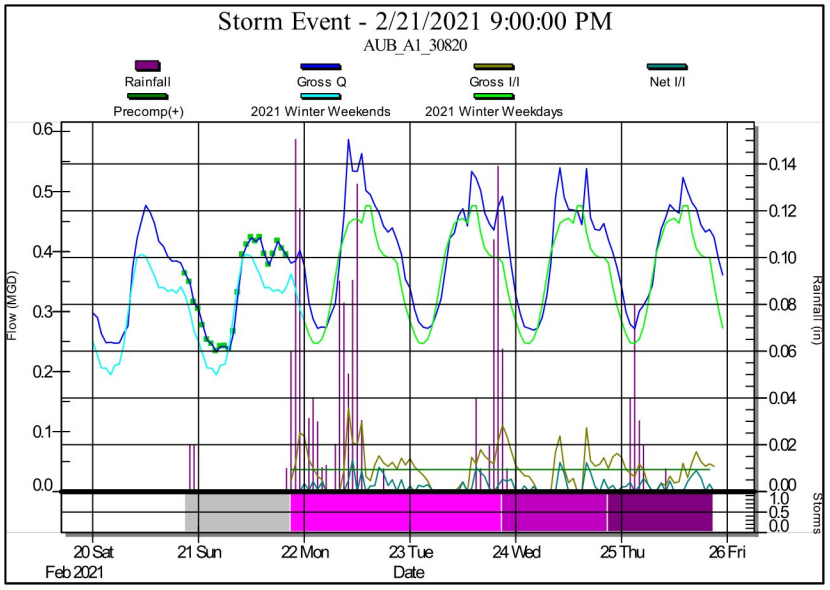

Storm Event - 11/14/2020 3:00:00 PM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

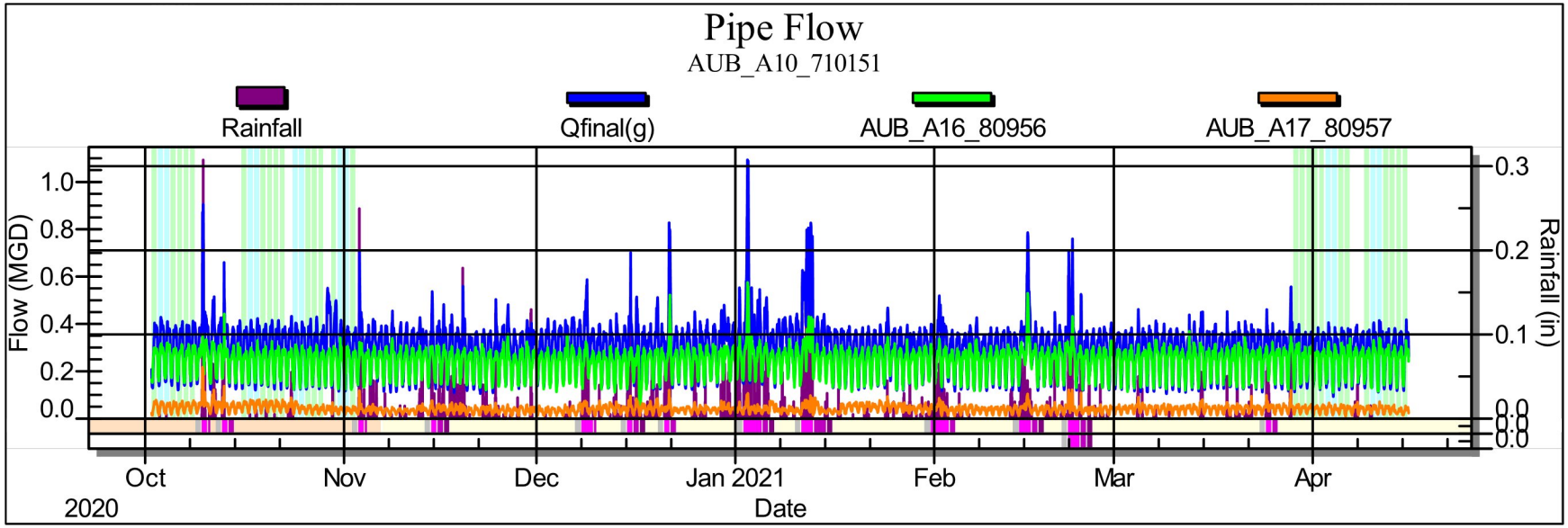

Storm Event - 12/20/2020 11:00:00 PM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

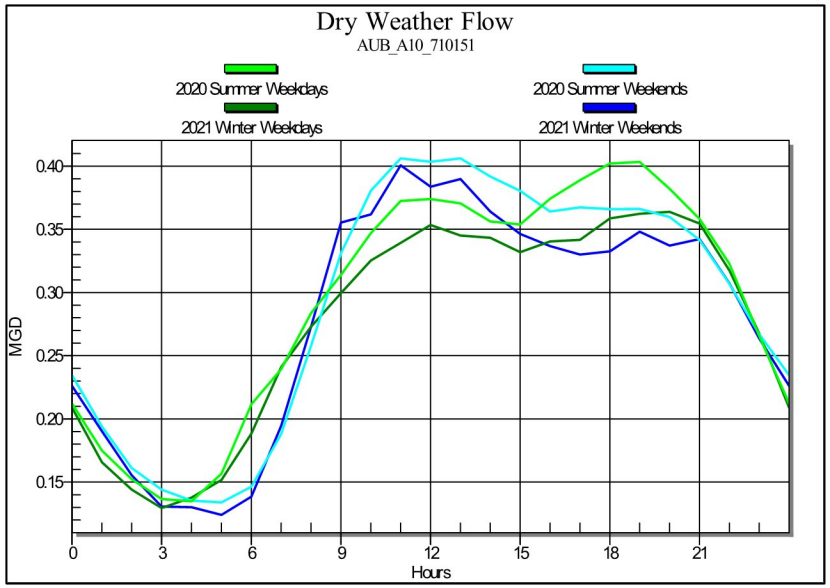

Storm Event - 1/2/2021 7:00:00 AM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

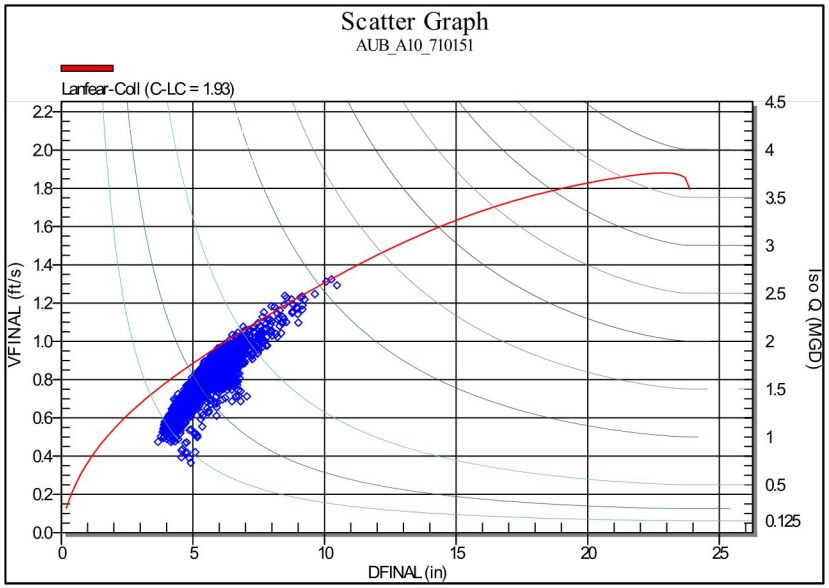

Storm Event - 1/11/2021 8:00:00 AM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

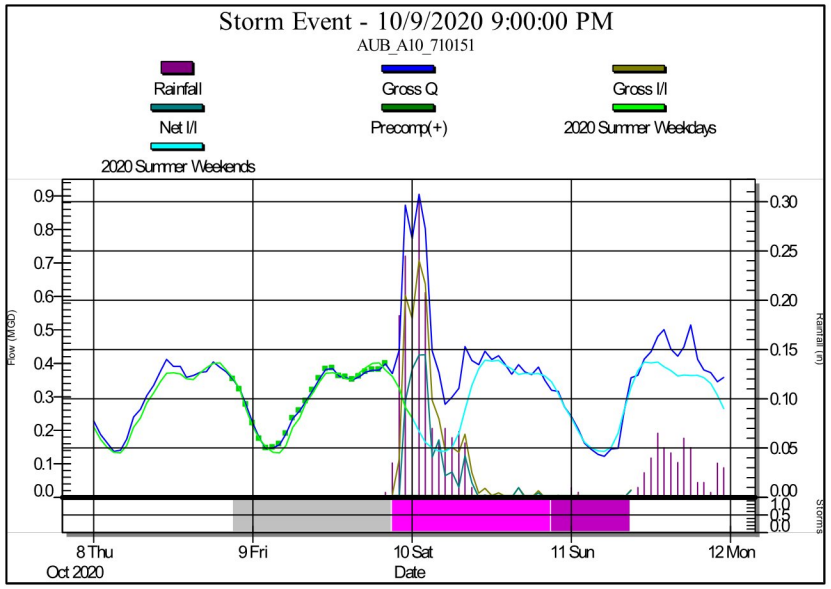

Storm Event - 2/14/2021 7:00:00 AM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

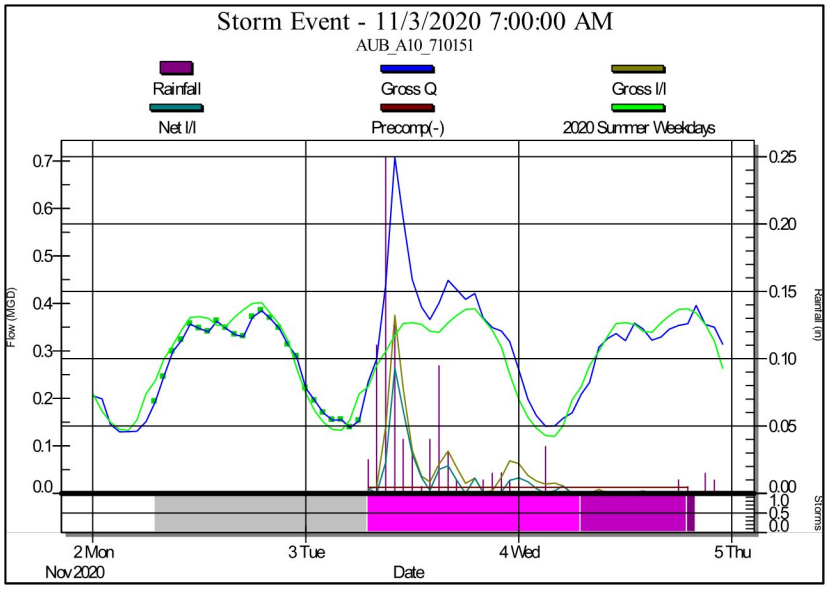

Storm Event - 2/21/2021 9:00:00 PM
AUB_A1_30820
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

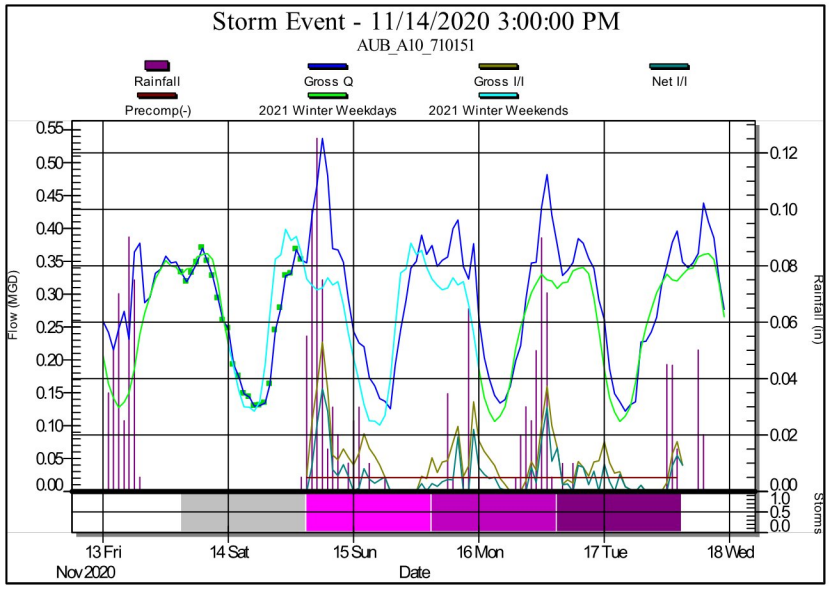

Pipe Flow
AUB_A10_710151
Rainfall
Qfinal(g)
AUB_A16_80956
AUB_A17_80957
Flow (MGD)
Rainfall (in)
1.0
0.8
0.6
0.4
0.2
0.0
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

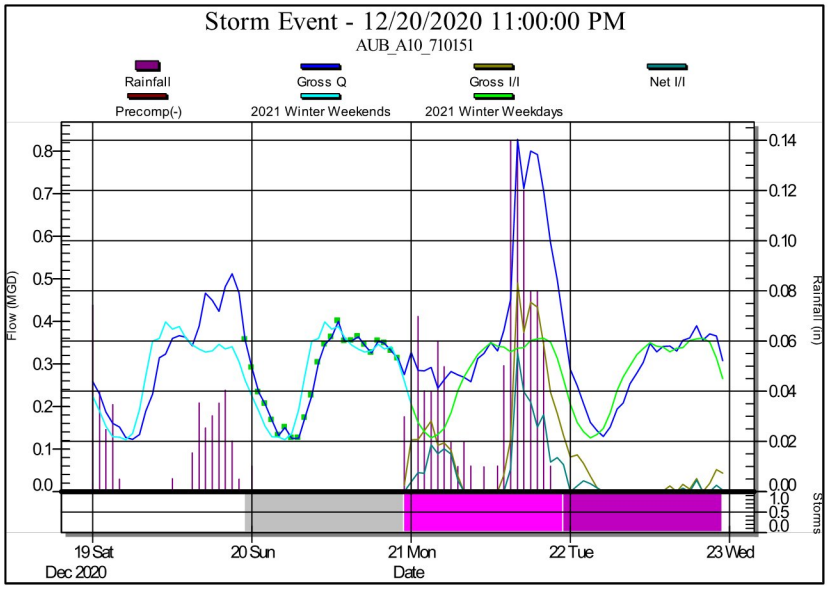

Dry Weather Flow
AUB_A10_710151
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.40
0.35
0.30
0.25
0.20
0.15
0
3
6
9
12
15
18
21
Hours

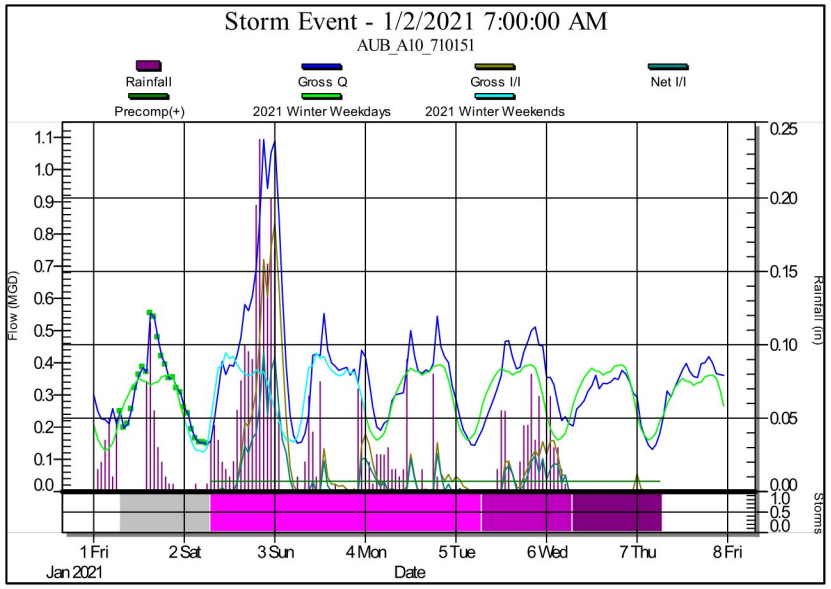

Scatter Graph
AUB_A10_710151
Lanfear-Coll (C-LC = 1.93)
VFINAL (ft/s)
Iso Q (MGD)
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0.125
0
5
10
15
20
25
DFINAL (in)

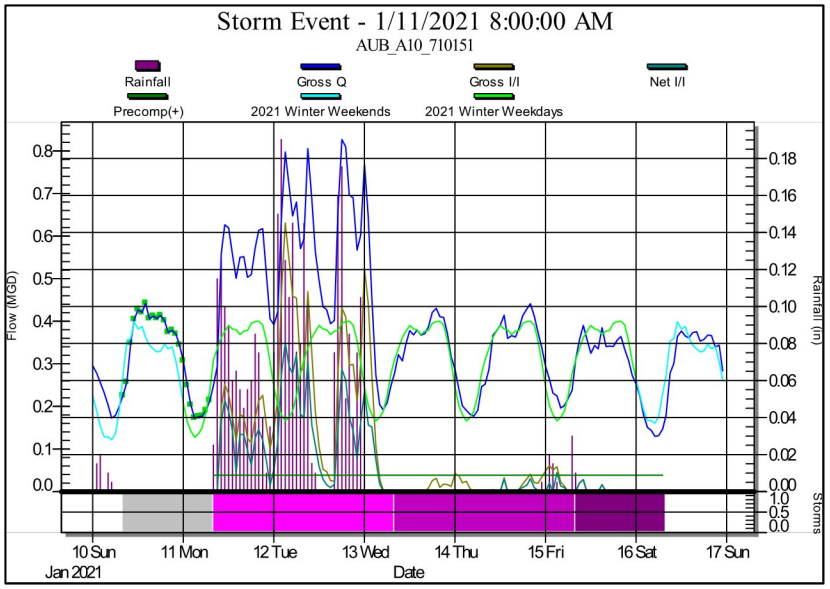

Storm Event - 10/9/2020 9:00:00 PM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

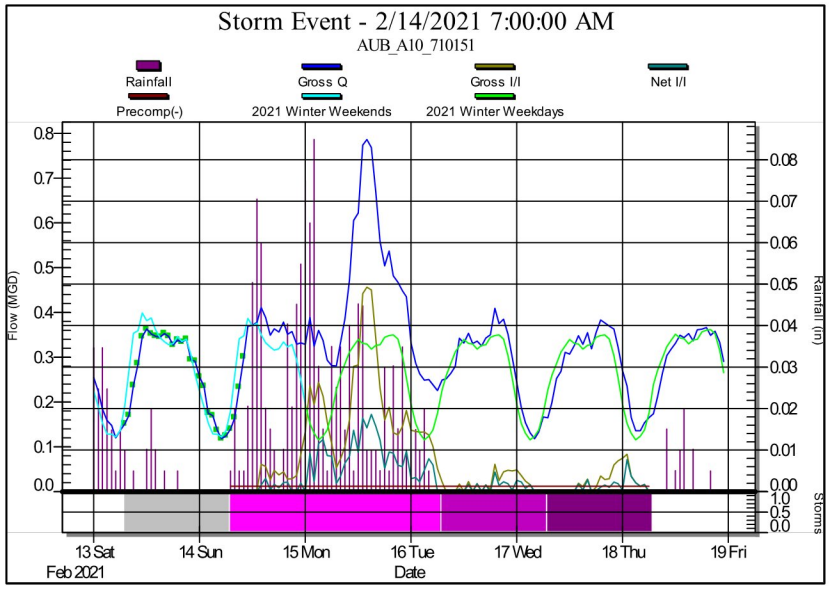

Storm Event - 11/3/2020 7:00:00 AM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

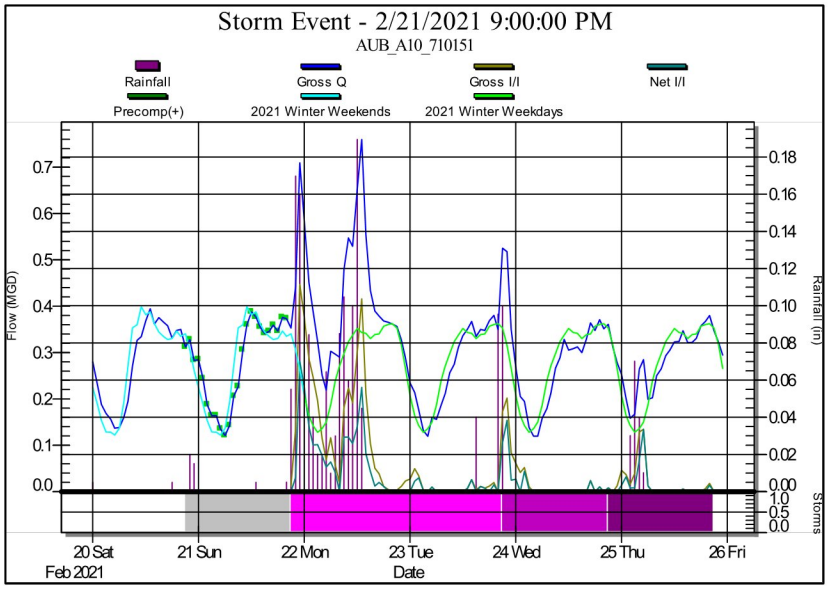

Storm Event - 11/14/2020 3:00:00 PM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

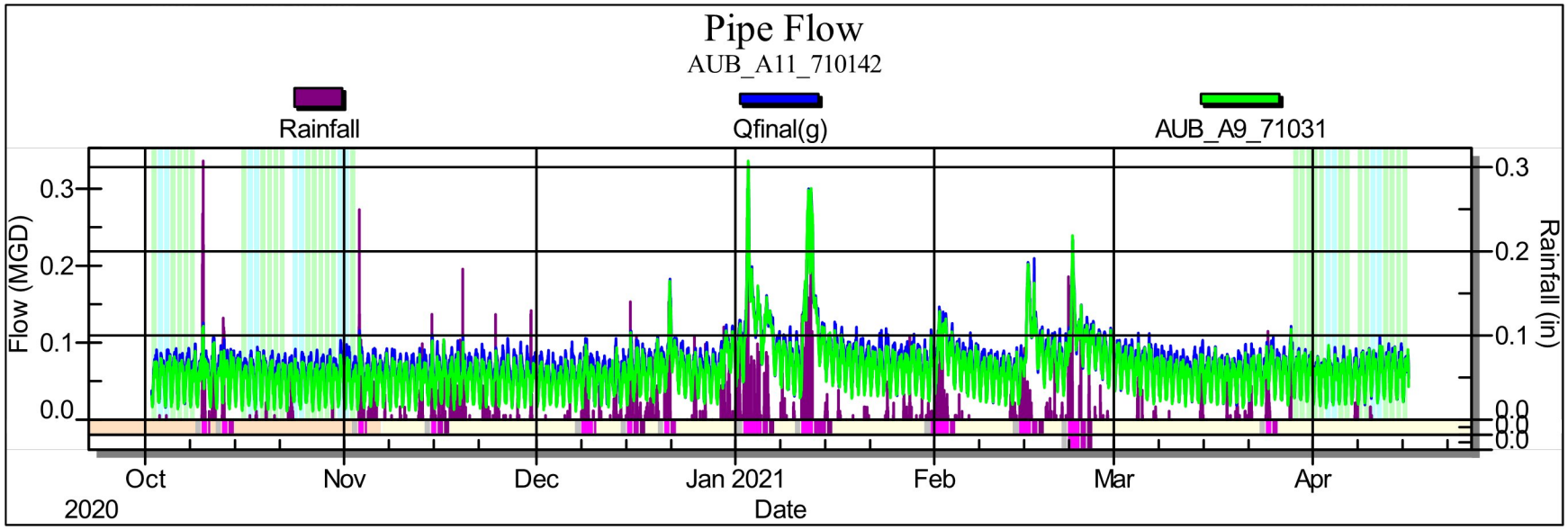

Storm Event - 12/20/2020 11:00:00 PM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

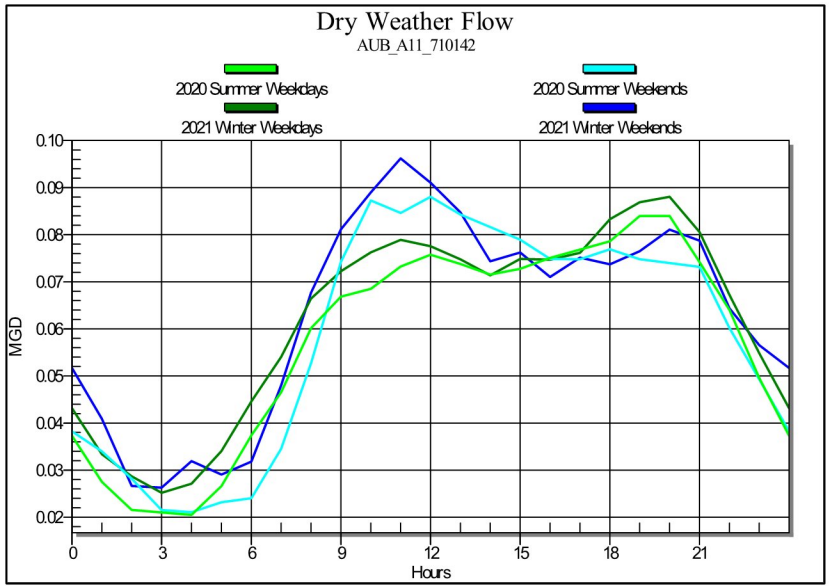

Storm Event - 1/2/2021 7:00:00 AM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

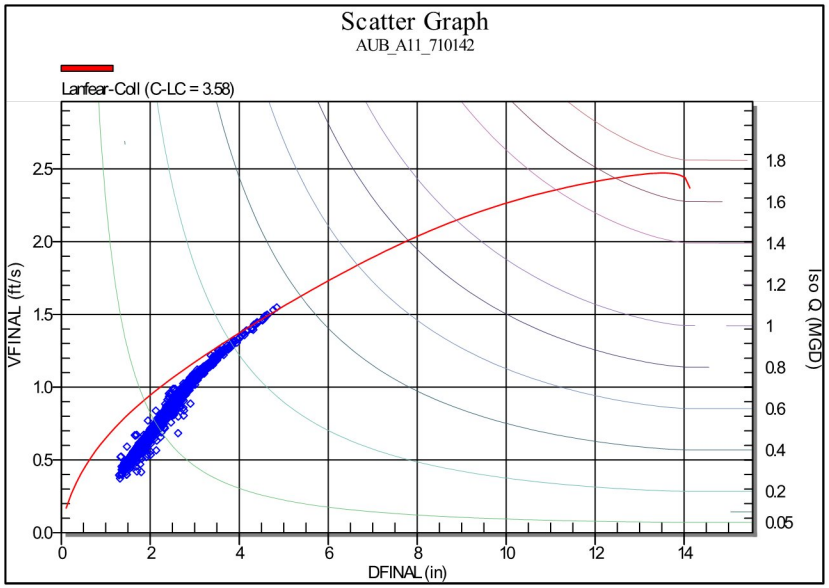

Storm Event - 1/11/2021 8:00:00 AM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

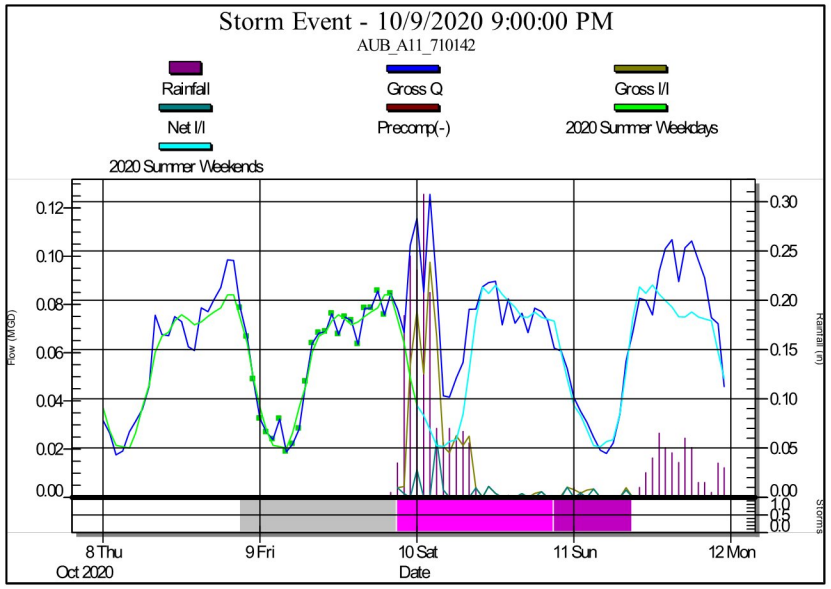

Storm Event - 2/14/2021 7:00:00 AM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

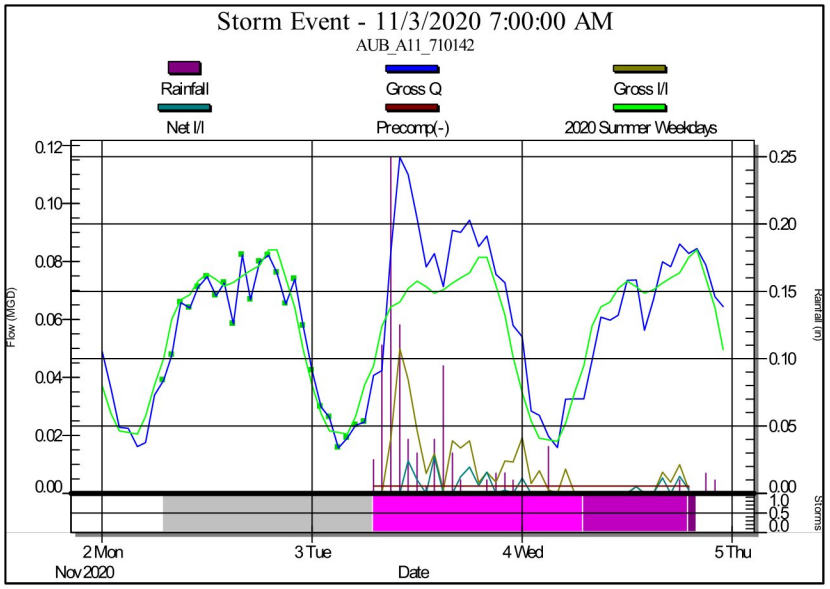

Storm Event - 2/21/2021 9:00:00 PM
AUB_A10_710151
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

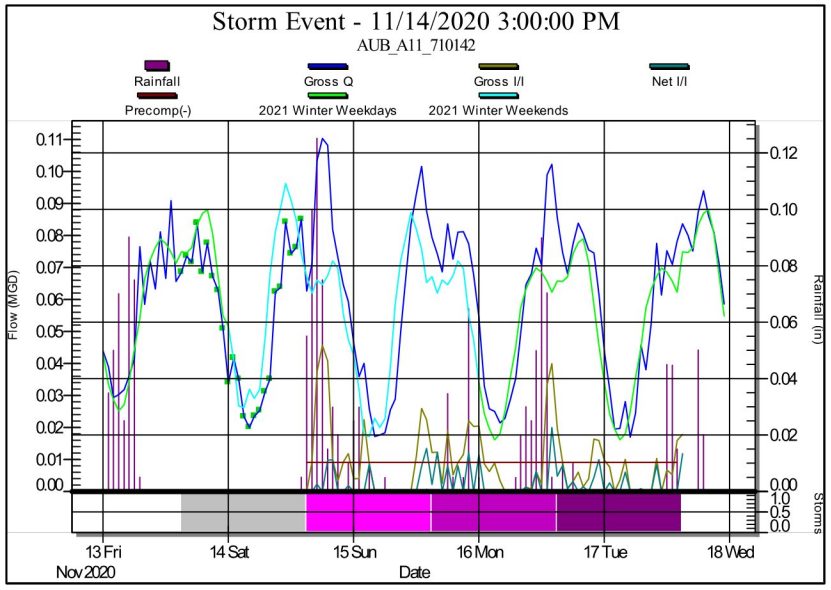

Pipe Flow
AUB_A11_710142
Rainfall
Qfinal(g)
AUB_A9_71031
Flow (MGD)
Rainfall (in)
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

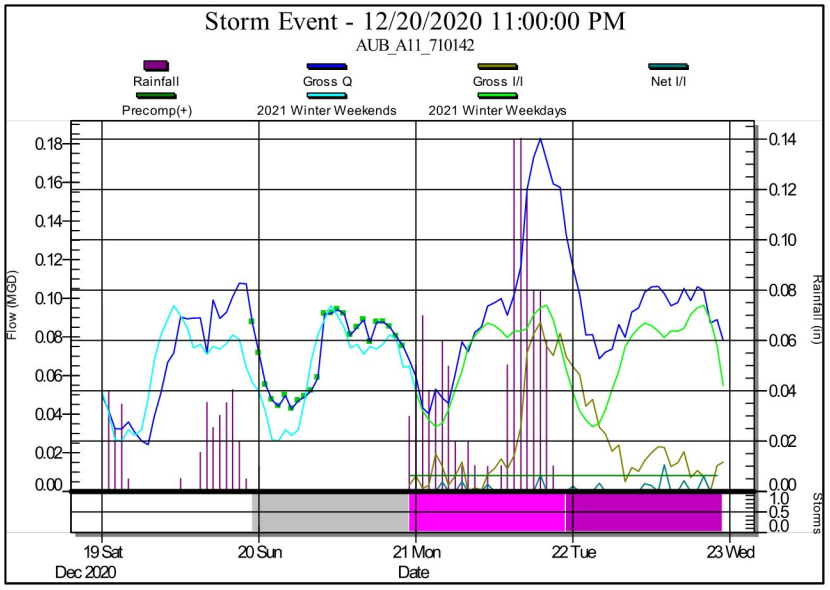

Dry Weather Flow
AUB_A11_710142
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

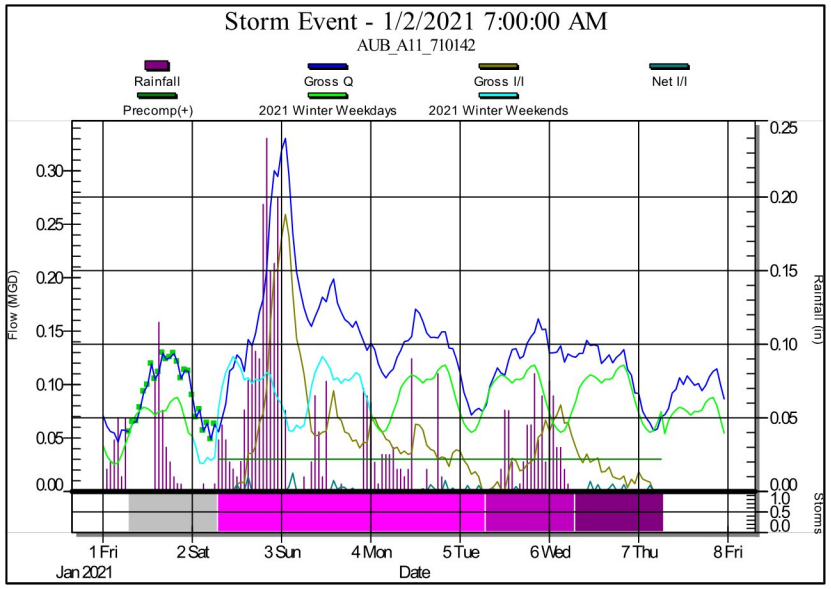

Scatter Graph
AUB_A11_710142
Lanfear-Coll (C-LC = 3.58)
VFINAL (ft/s)
DFINAL (in)
Iso Q (MGD)

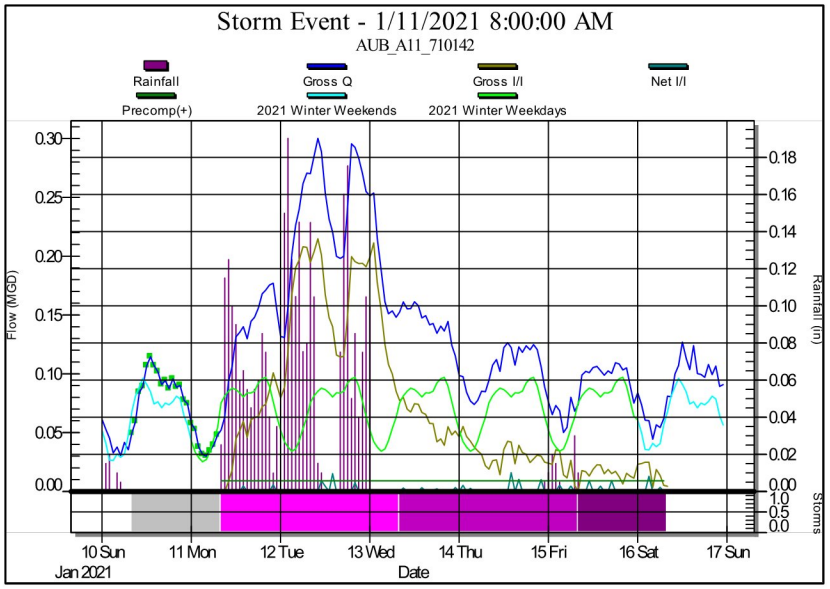

Storm Event - 10/9/2020 9:00:00 PM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

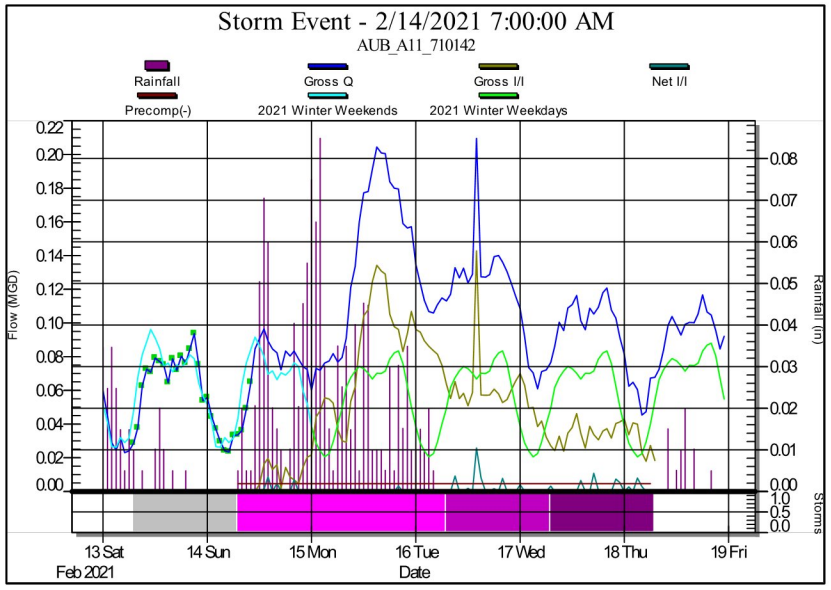

Storm Event - 11/3/2020 7:00:00 AM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

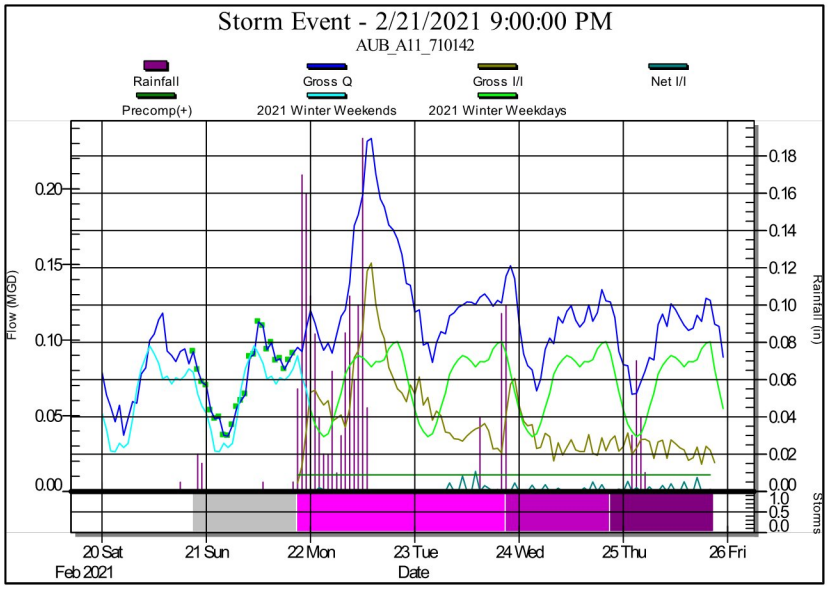

Storm Event - 11/14/2020 3:00:00 PM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

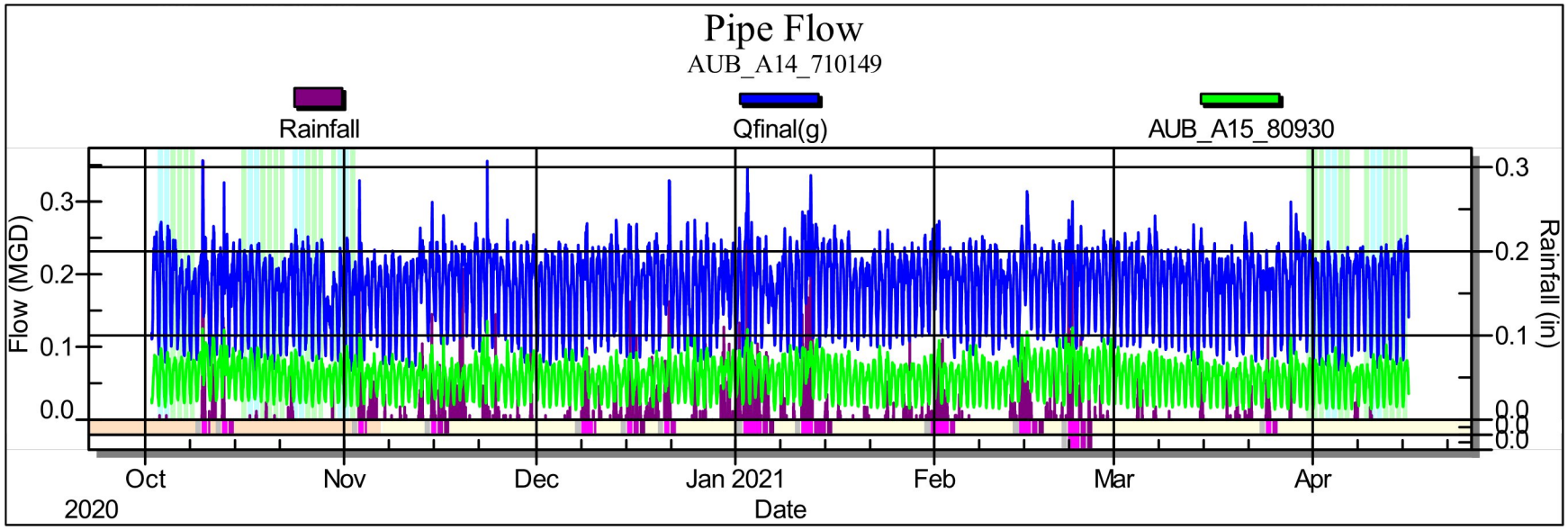

Storm Event - 12/20/2020 11:00:00 PM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

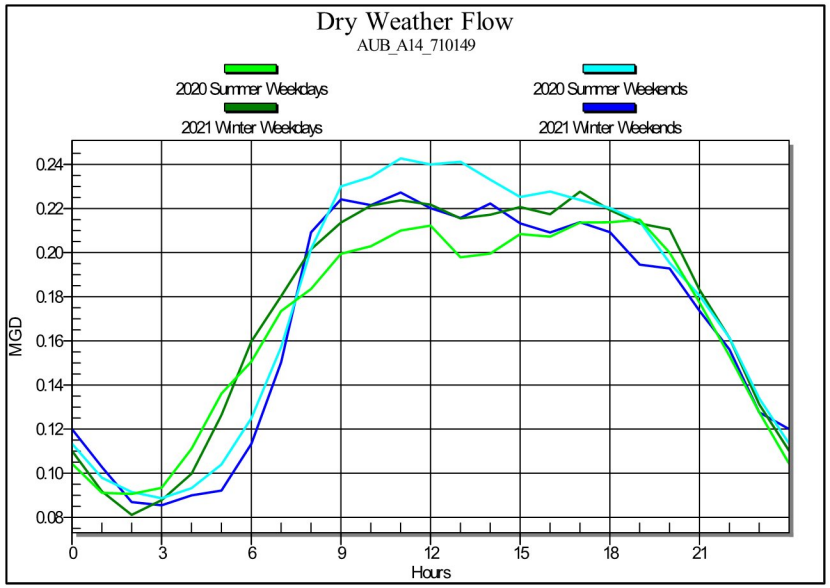

Storm Event - 1/2/2021 7:00:00 AM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

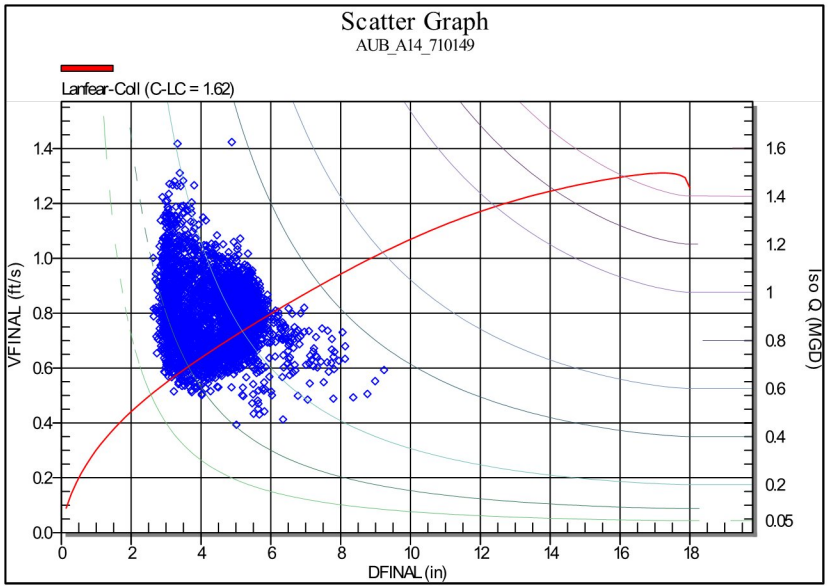

Storm Event - 1/11/2021 8:00:00 AM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

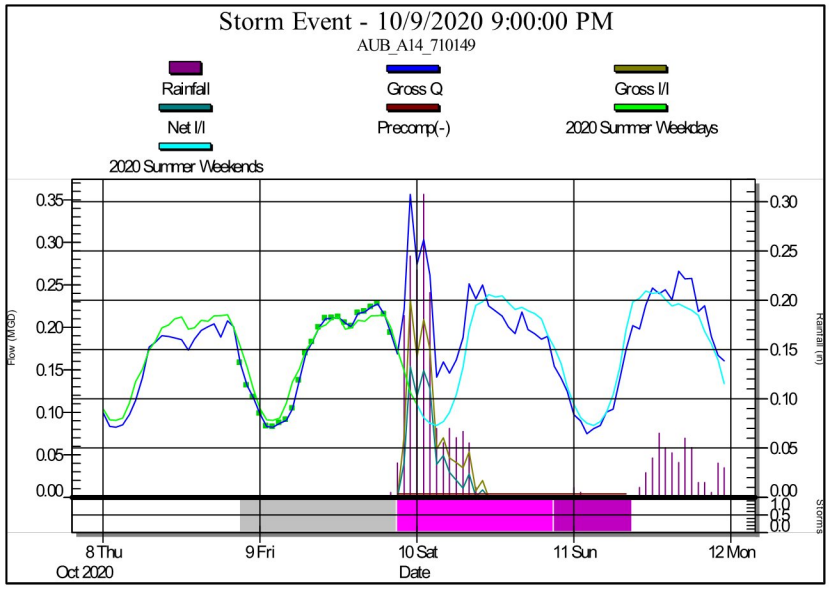

Storm Event - 2/14/2021 7:00:00 AM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

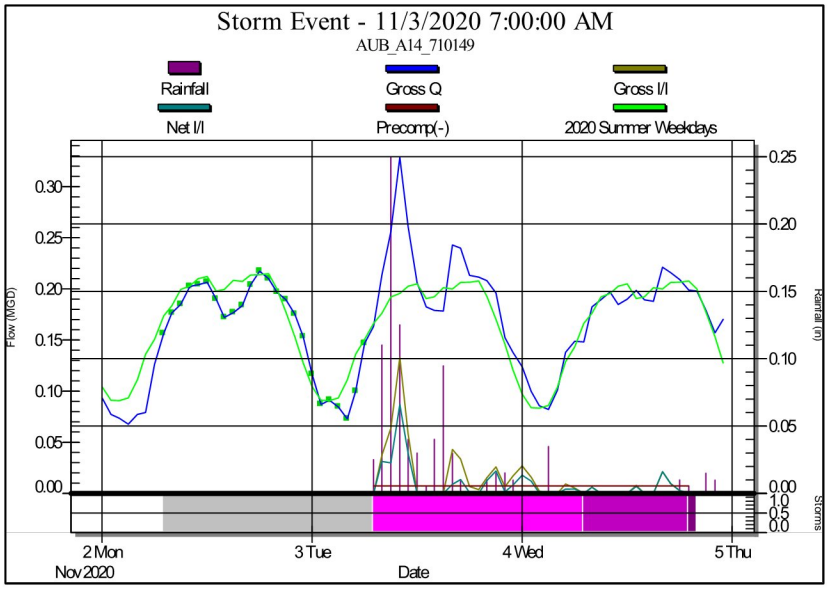

Storm Event - 2/21/2021 9:00:00 PM
AUB_A11_710142
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

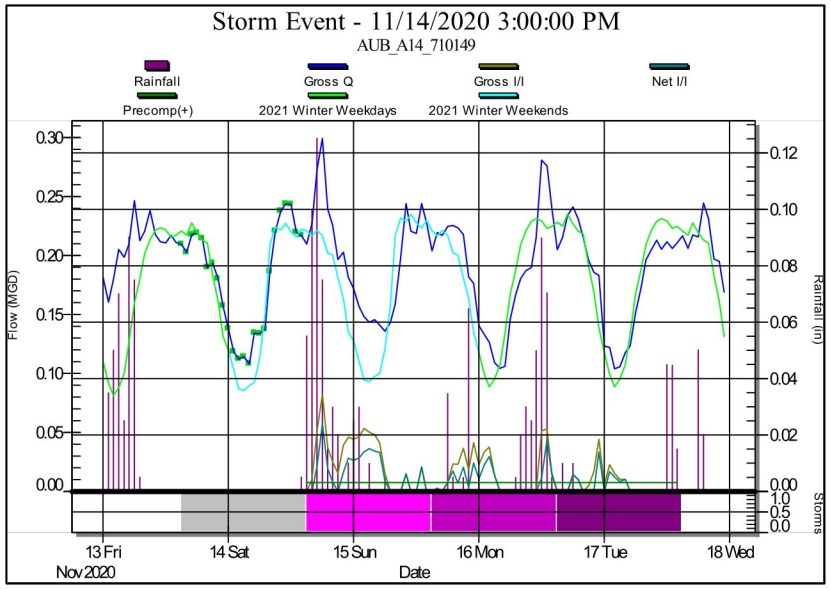

Pipe Flow
AUB_A14_710149
Rainfall
Qfinal(g)
AUB_A15_80930
Flow (MGD)
Rainfall (in)
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

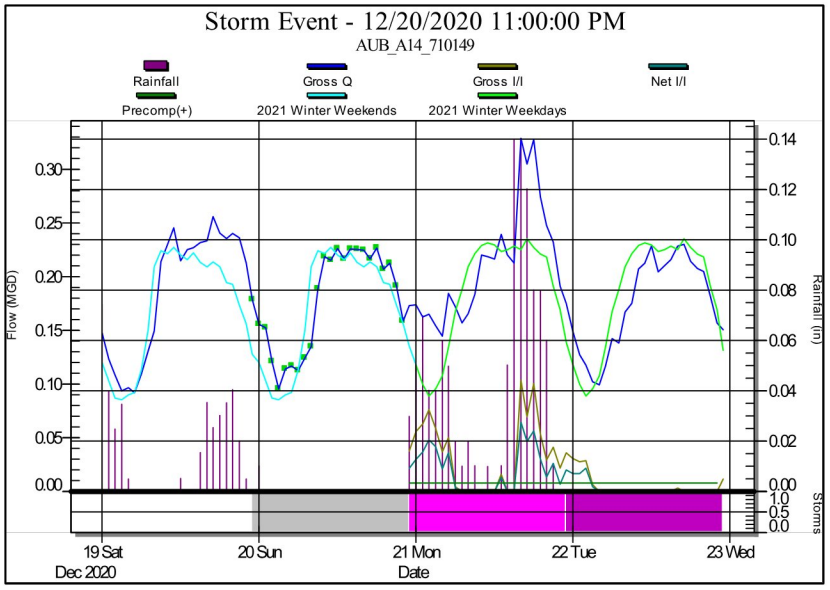

Dry Weather Flow
AUB_A14_710149
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

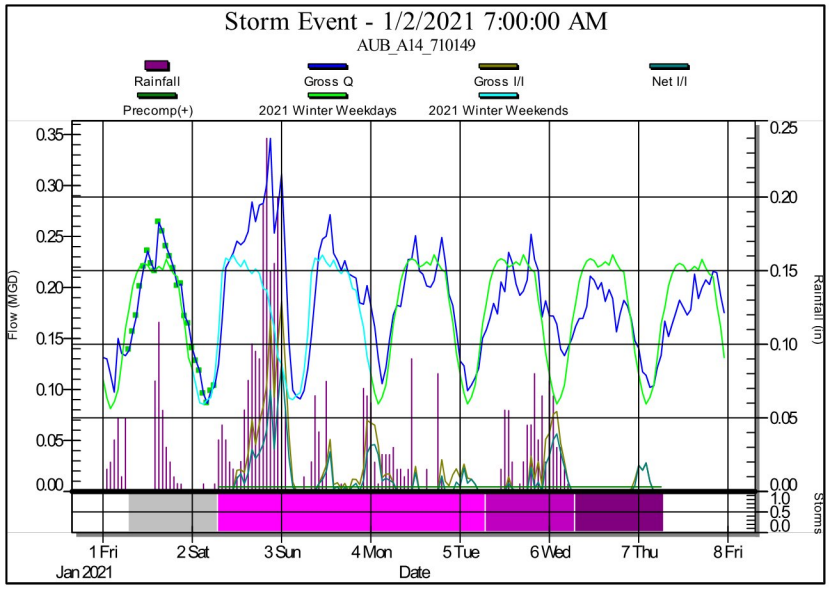

Scatter Graph
AUB_A14_710149
Lanfear-Coll (C-LC = 1.62)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

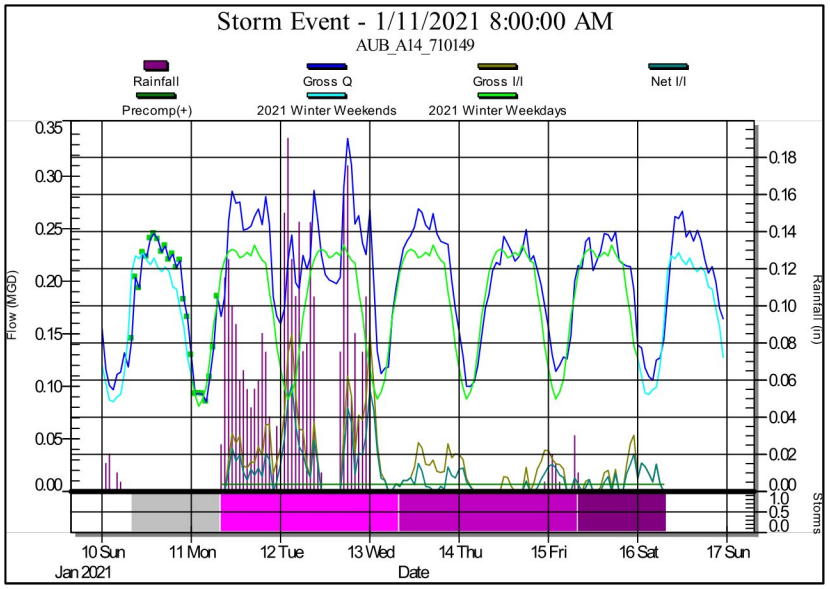

Storm Event - 10/9/2020 9:00:00 PM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

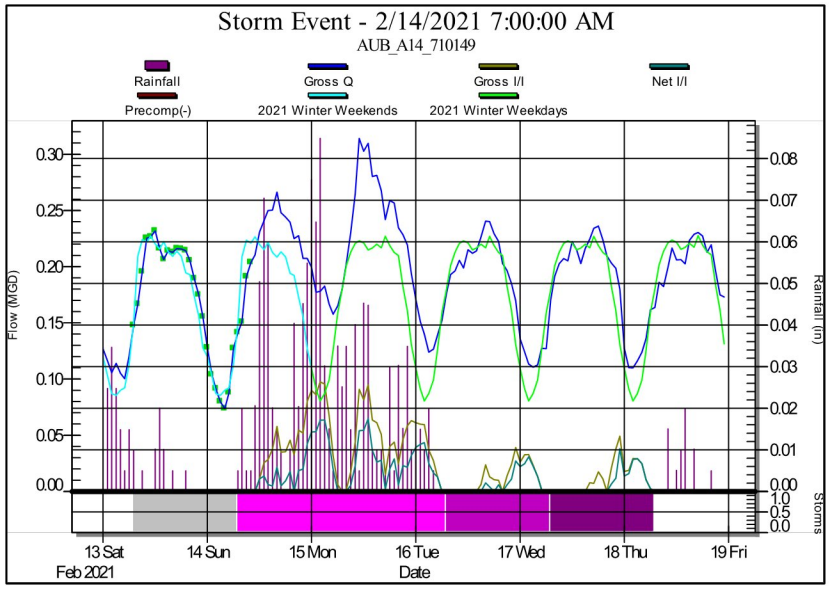

Storm Event - 11/3/2020 7:00:00 AM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

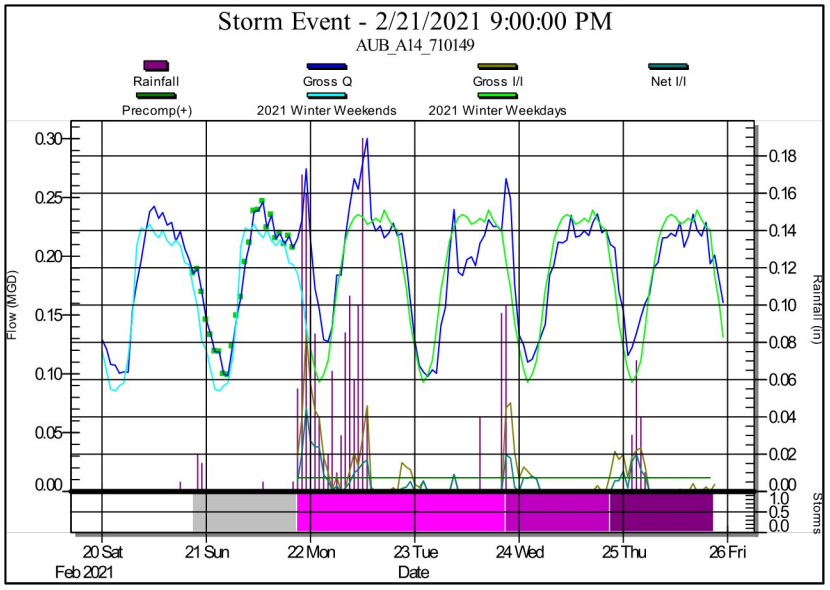

Storm Event - 11/14/2020 3:00:00 PM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

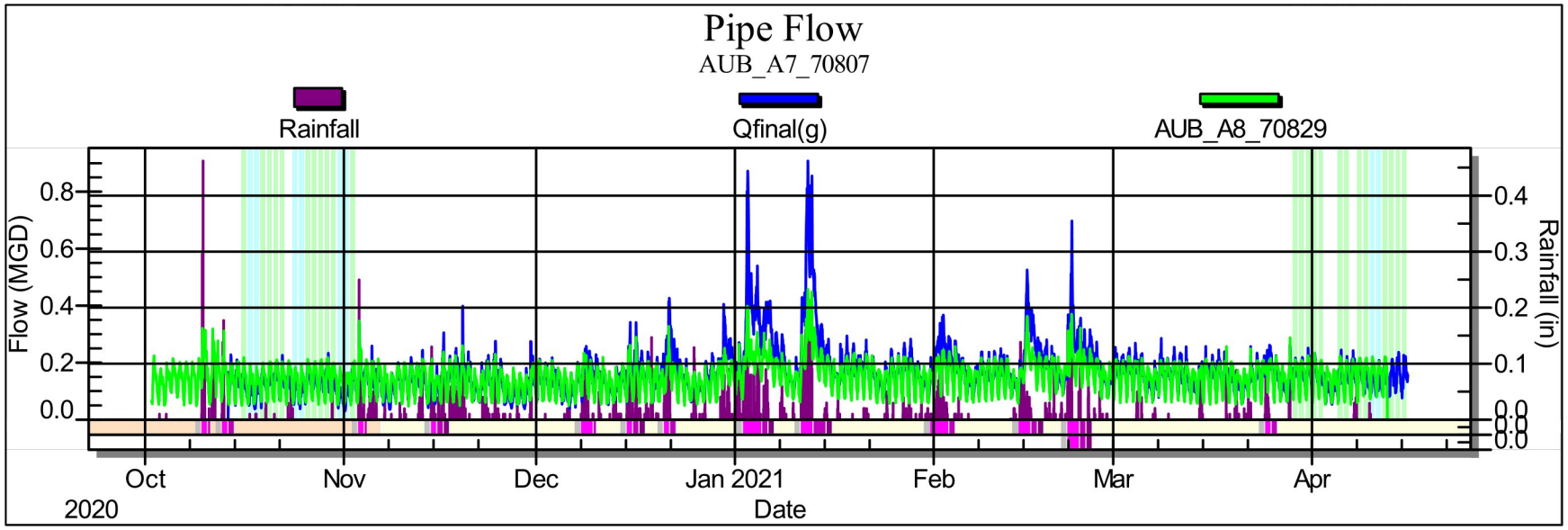

Storm Event - 12/20/2020 11:00:00 PM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

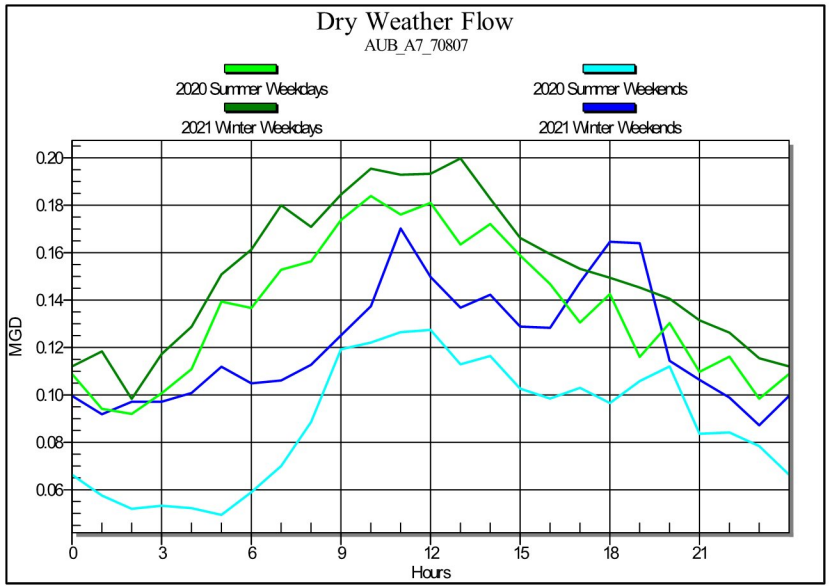

Storm Event - 1/2/2021 7:00:00 AM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

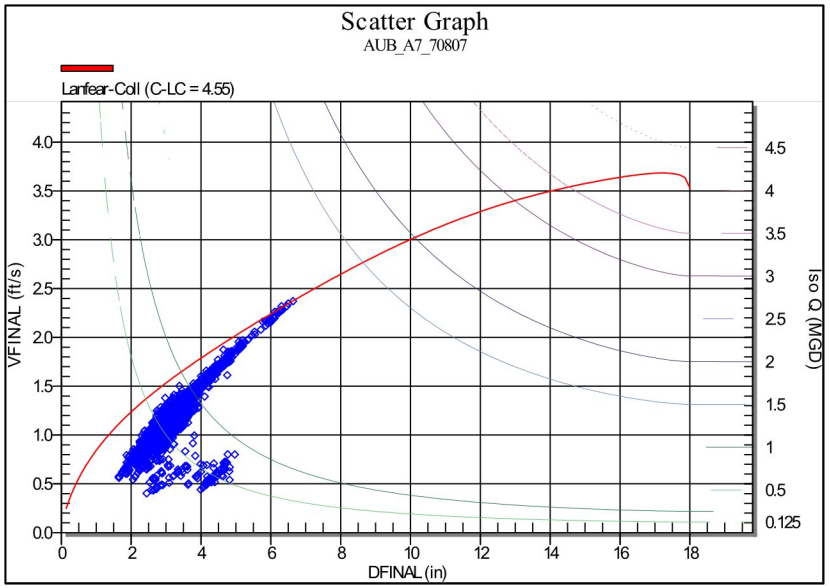

Storm Event - 1/11/2021 8:00:00 AM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

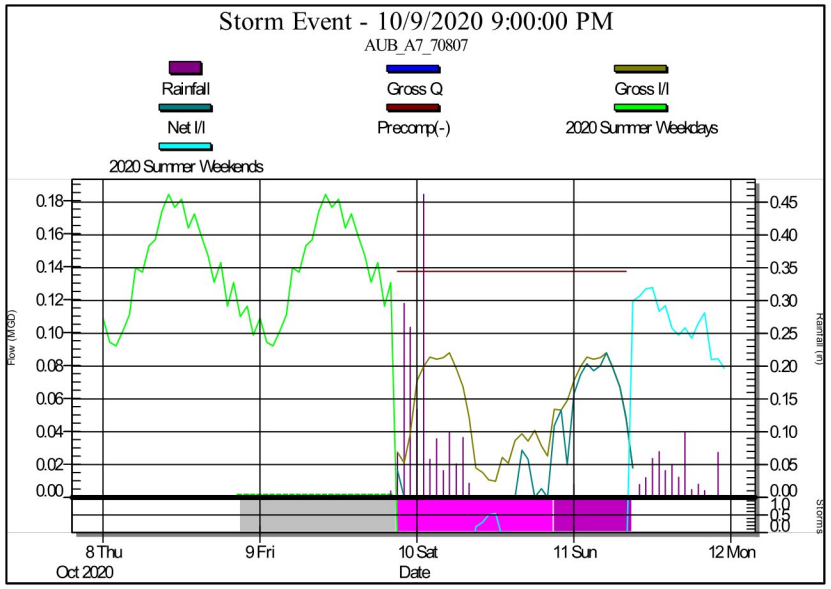

Storm Event - 2/14/2021 7:00:00 AM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

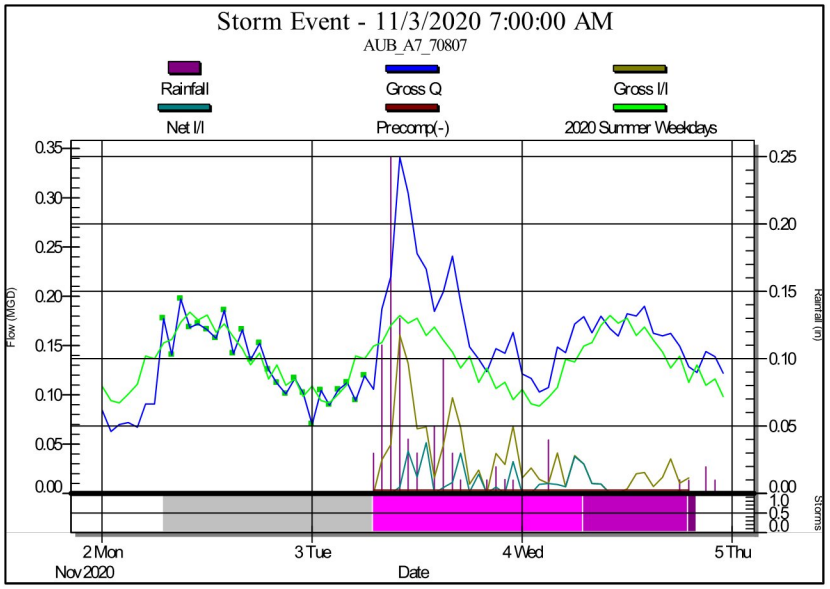

Storm Event - 2/21/2021 9:00:00 PM
AUB_A14_710149
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

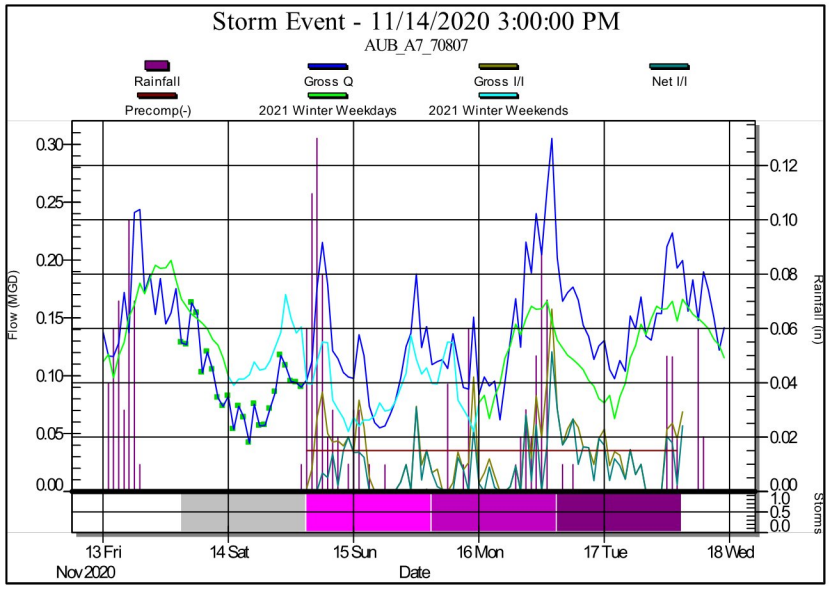

Pipe Flow
AUB_A7_70807
Rainfall
Qfinal(g)
AUB_A8_70829
Flow (MGD)
Rainfall (in)
0.8
0.6
0.4
0.2
0.0
0.4
0.3
0.2
0.1
0.0
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

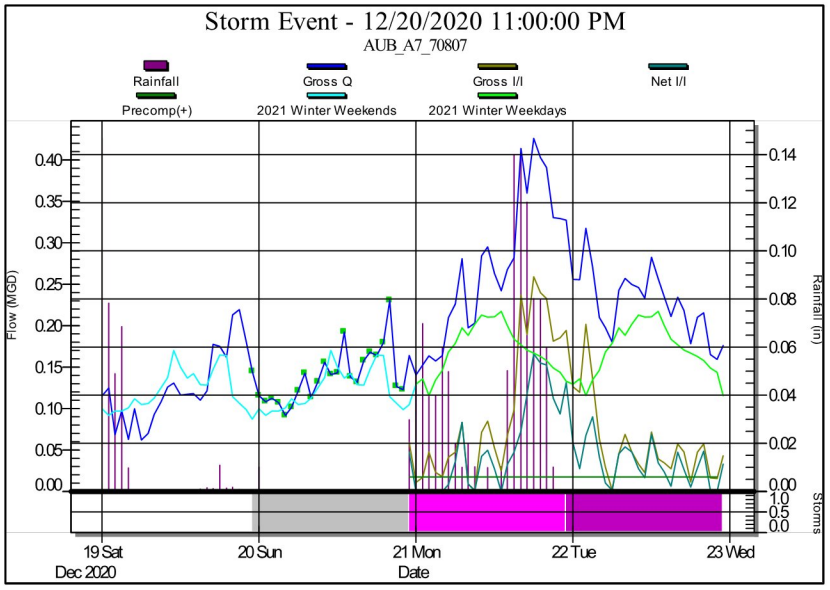

Dry Weather Flow
AUB_A7_70807
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0
3
6
9
12
15
18
21
Hours

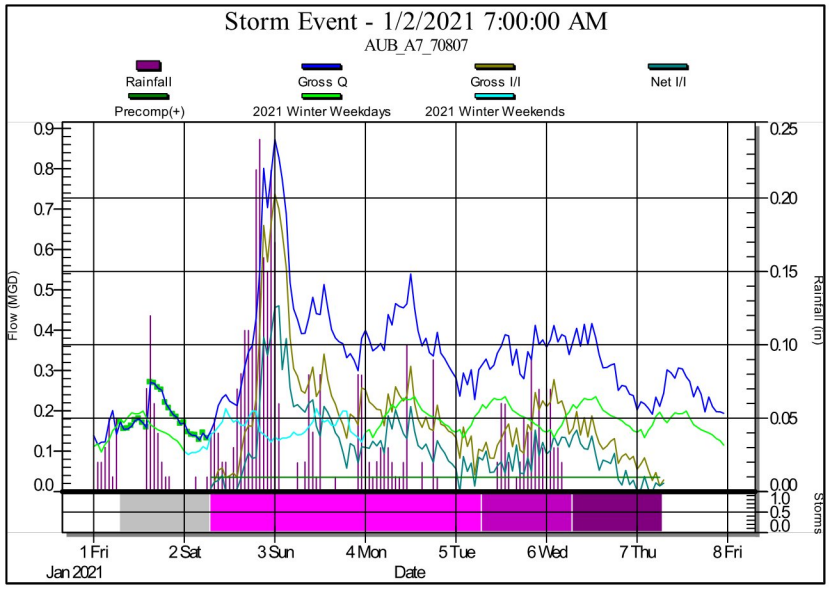

Scatter Graph
AUB_A7_70807
Lanfear-Coll (C-LC = 4.55)
VFINAL (ft/s)
Iso Q (MGD)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0.125
0
2
4
6
8
10
12
14
16
18
DFINAL (in)

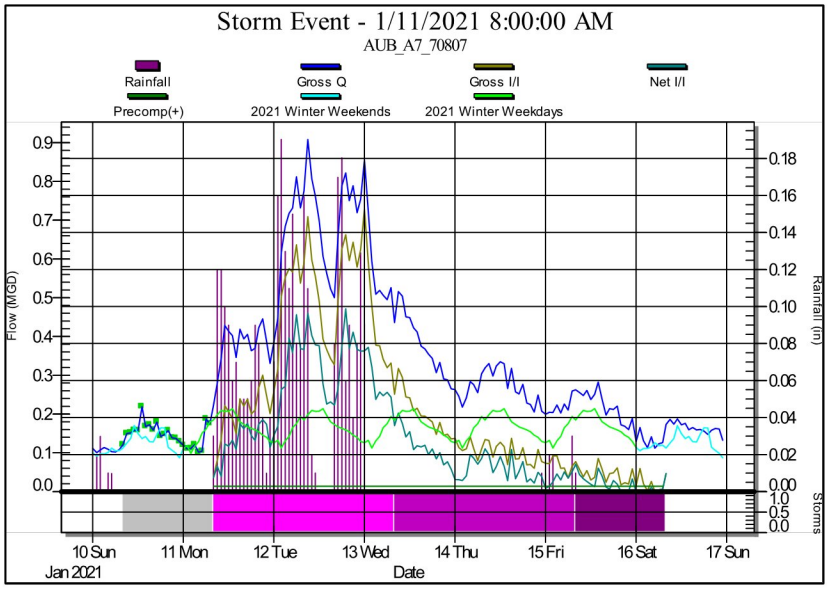

Storm Event - 10/9/2020 9:00:00 PM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

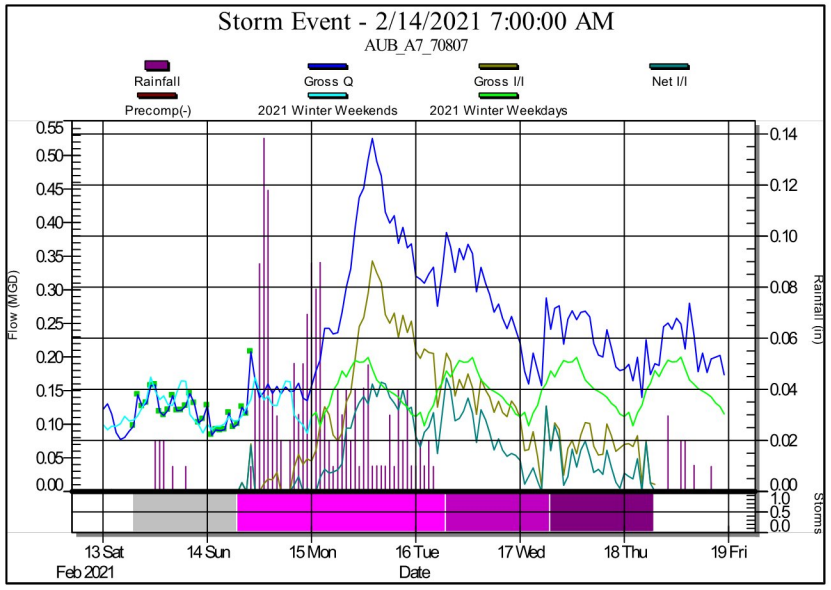

Storm Event - 11/3/2020 7:00:00 AM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

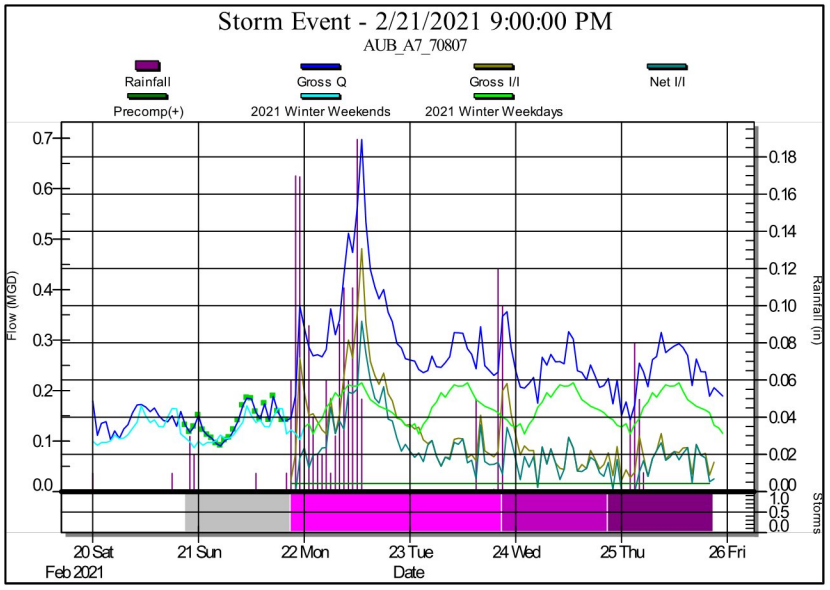

Storm Event - 11/14/2020 3:00:00 PM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

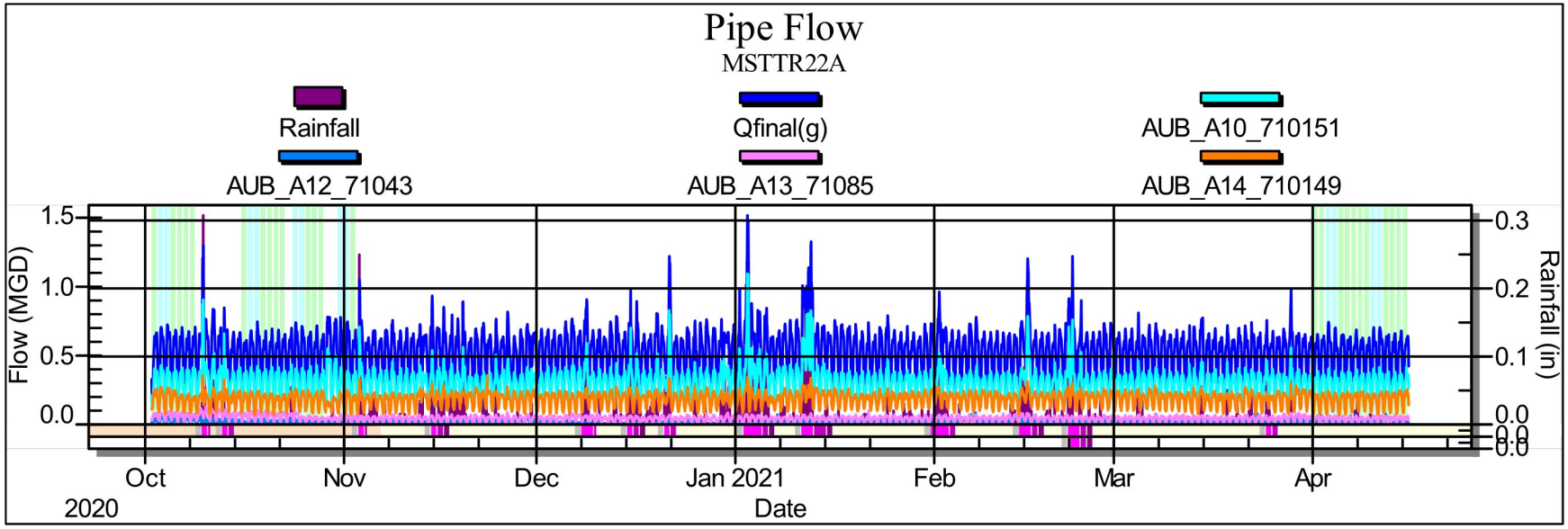

Storm Event - 12/20/2020 11:00:00 PM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

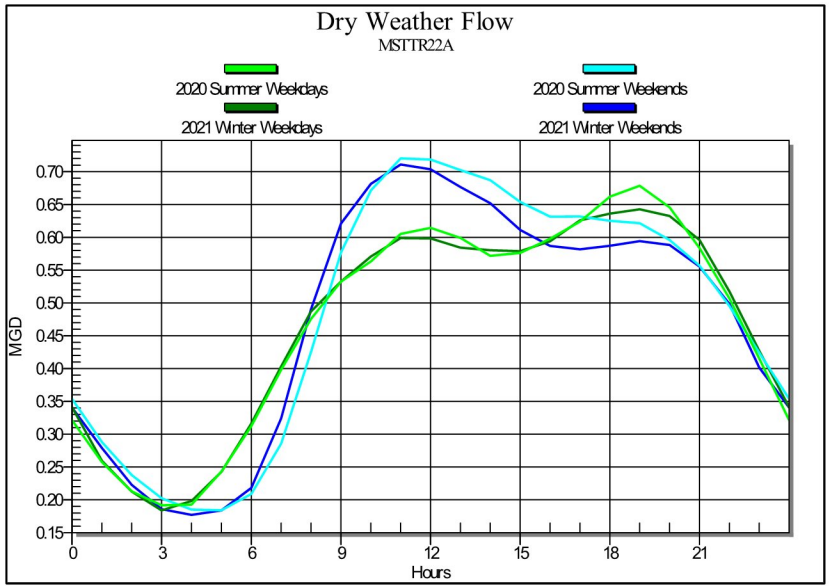

Storm Event - 1/2/2021 7:00:00 AM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
Jan 2021
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Date

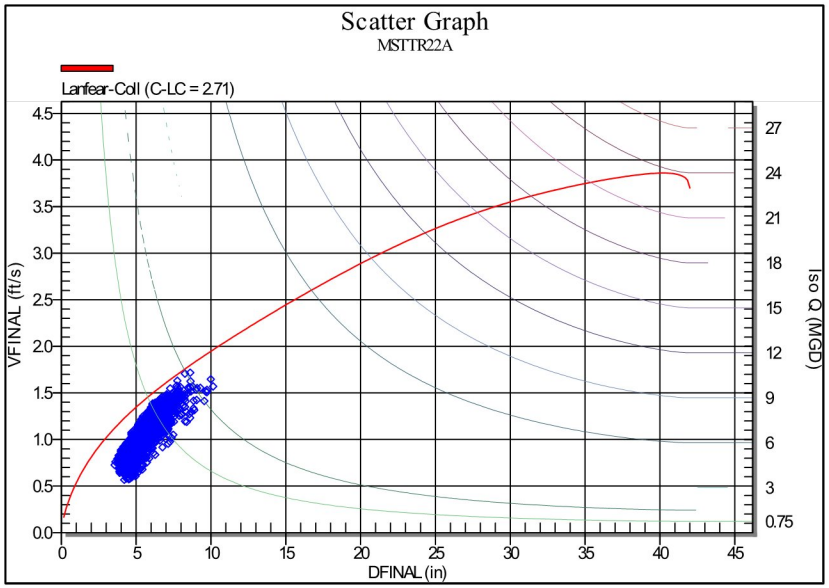

Storm Event - 1/11/2021 8:00:00 AM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
Jan 2021
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Date

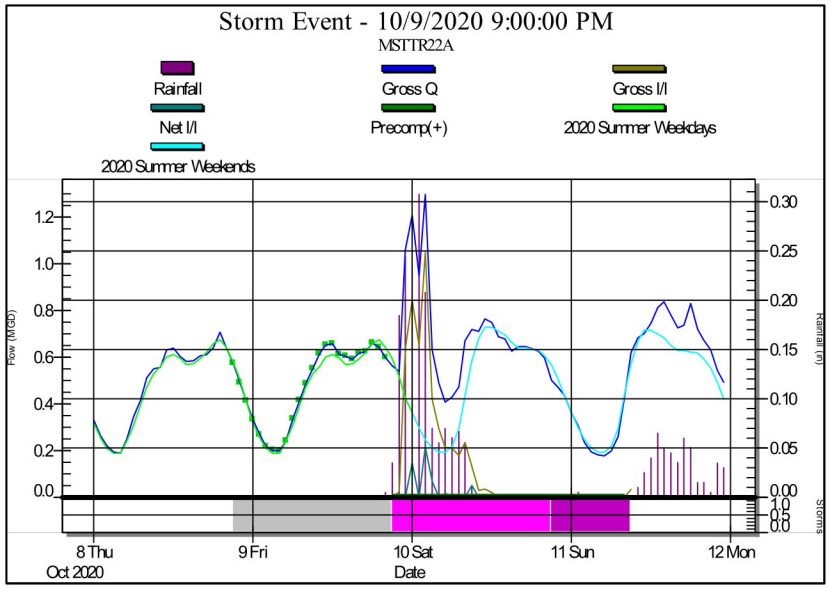

Storm Event - 2/14/2021 7:00:00 AM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
Feb 2021
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

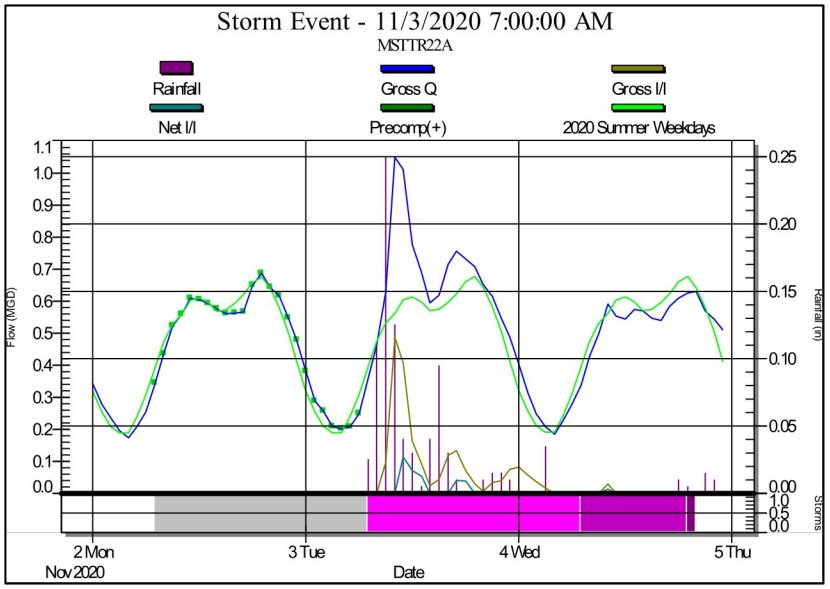

Storm Event - 2/21/2021 9:00:00 PM
AUB_A7_70807
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
Feb 2021
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Date

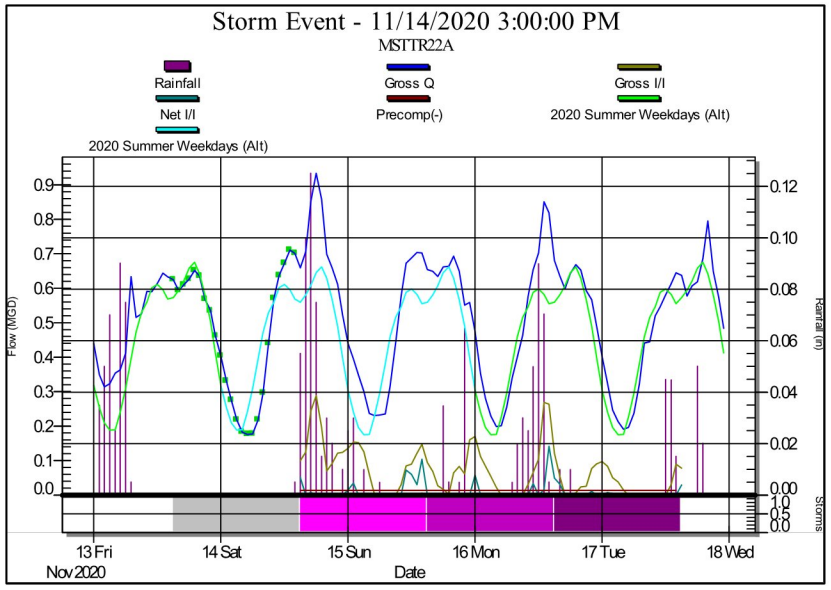

Pipe Flow
MSTTR22A
Rainfall
Qfinal(g)
AUB_A10_710151
AUB_A12_71043
AUB_A13_71085
AUB_A14_710149
Flow (MGD)
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

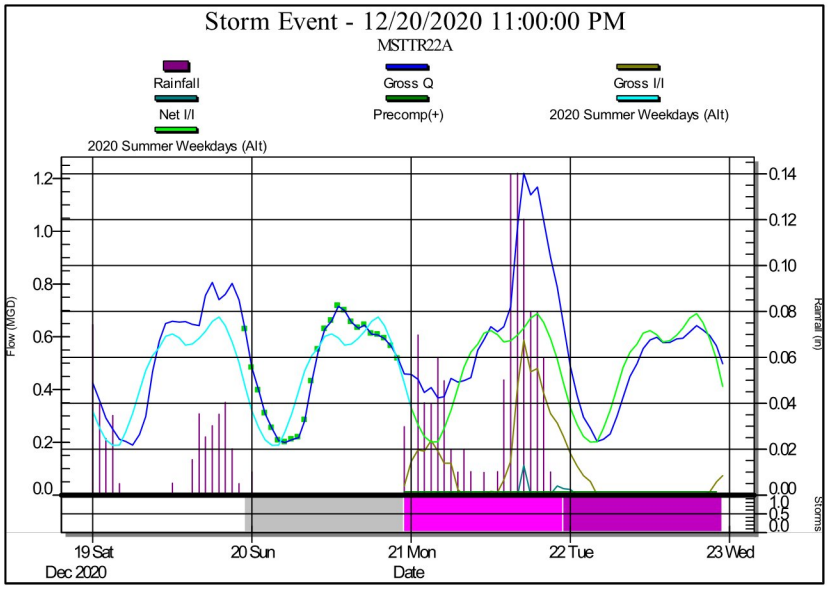

Dry Weather Flow
MSTTR22A
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

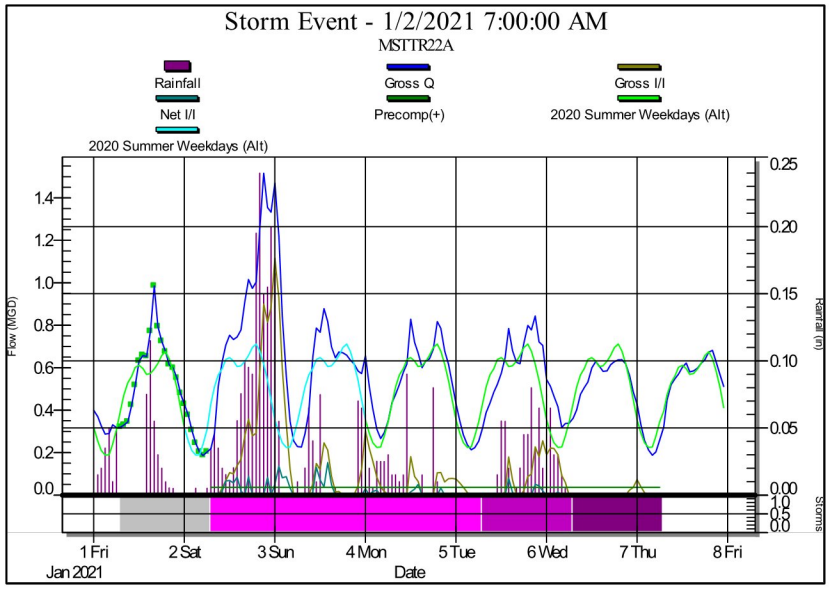

Scatter Graph
MSTTR22A
Lanfear-Coll (C-LC = 2.71)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

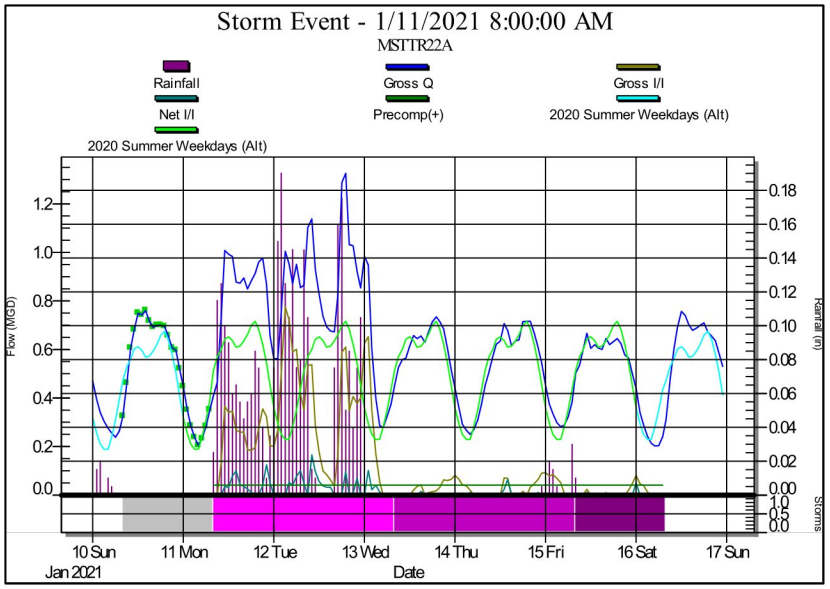

Storm Event - 10/9/2020 9:00:00 PM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
9 Fri
10 Sat
11 Sun
12 Mon
Oct 2020
Date

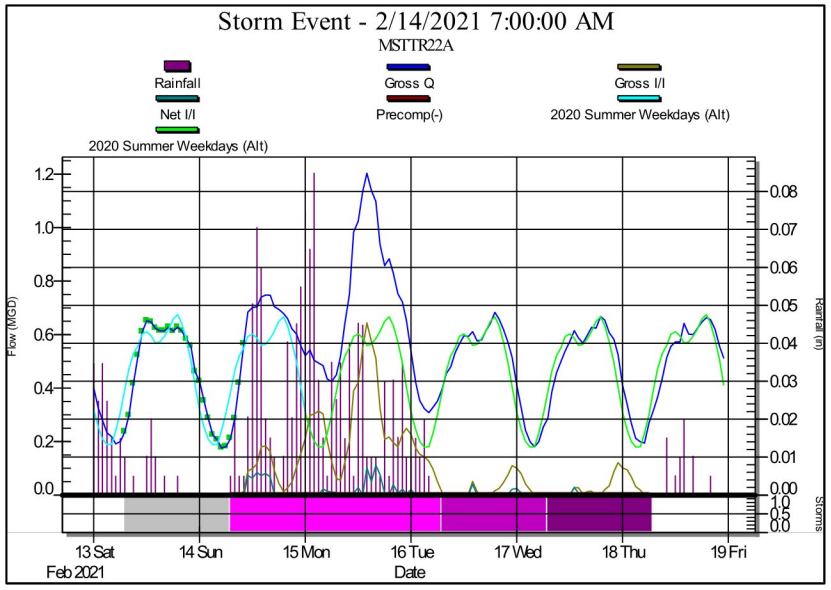

Storm Event - 11/3/2020 7:00:00 AM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
3 Tue
4 Wed
5 Thu
Nov 2020
Date

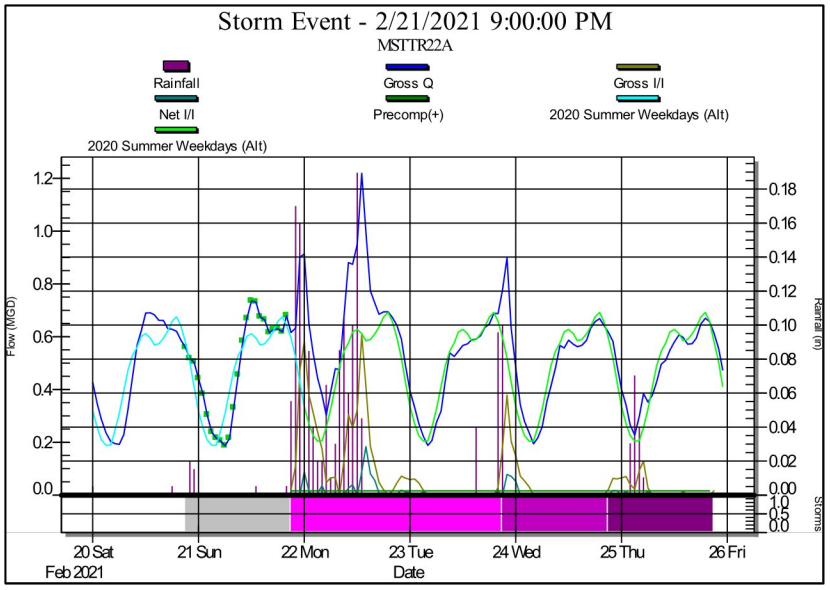

Storm Event - 11/14/2020 3:00:00 PM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays (Alt)
2020 Summer Weekdays (Alt)
Flow (MGD)
Rainfall (in)
Storms
13 Fri
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Nov 2020
Date

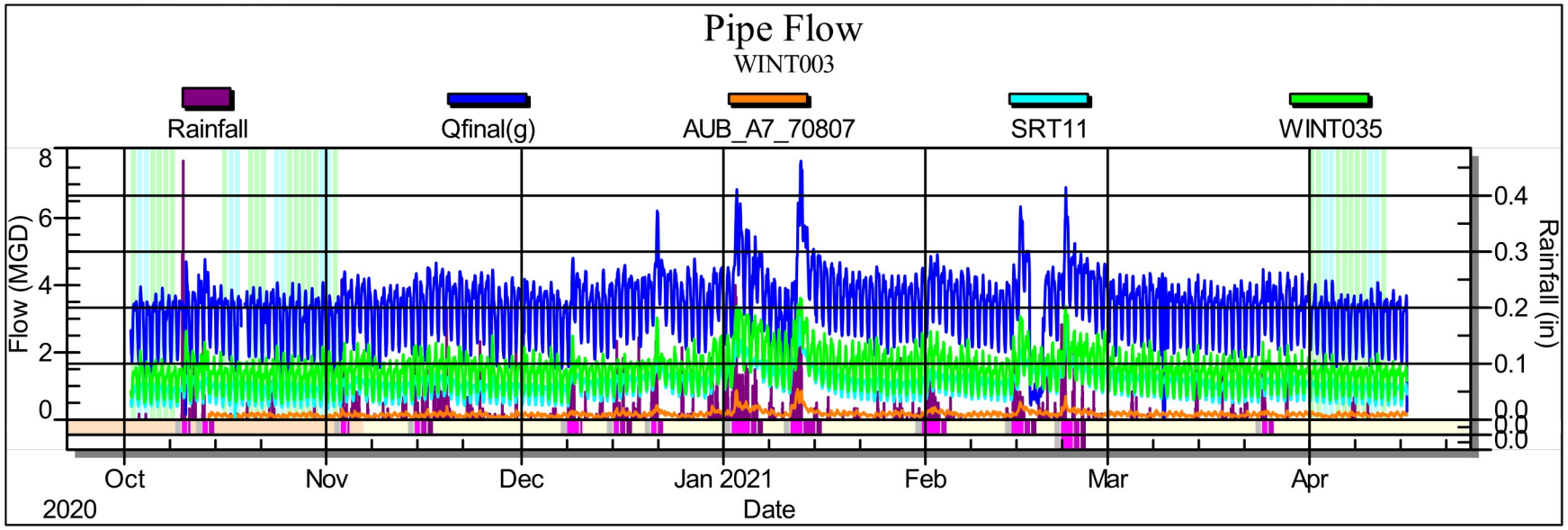

Storm Event - 12/20/2020 11:00:00 PM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays (Alt)
2020 Summer Weekdays (Alt)
Flow (MGD)
Rainfall (in)
Storms
19 Sat
20 Sun
21 Mon
22 Tue
23 Wed
Dec 2020
Date

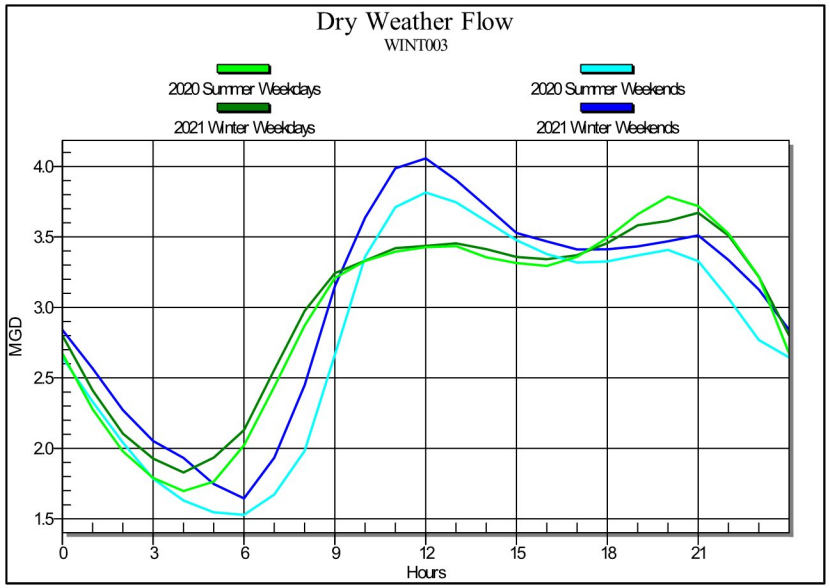

Storm Event - 1/2/2021 7:00:00 AM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays (Alt)
2020 Summer Weekdays (Alt)
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

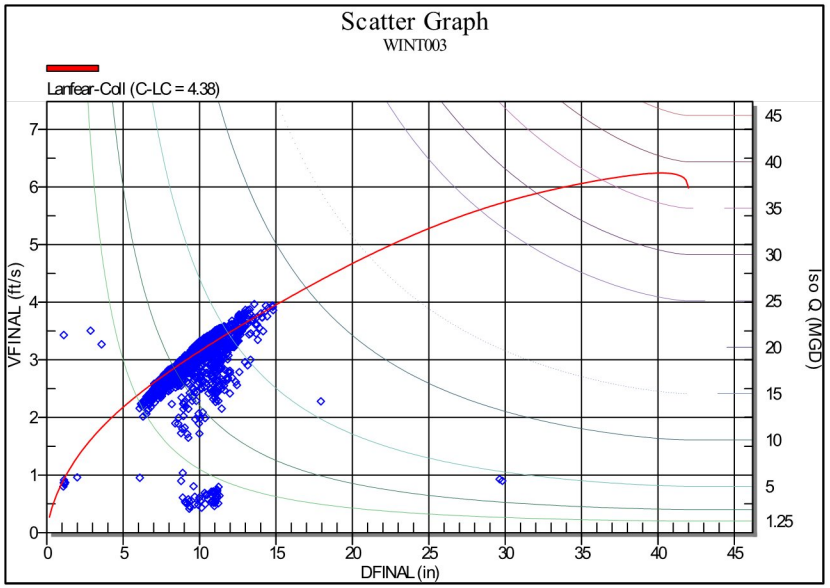

Storm Event - 1/11/2021 8:00:00 AM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays (Alt)
2020 Summer Weekdays (Alt)
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

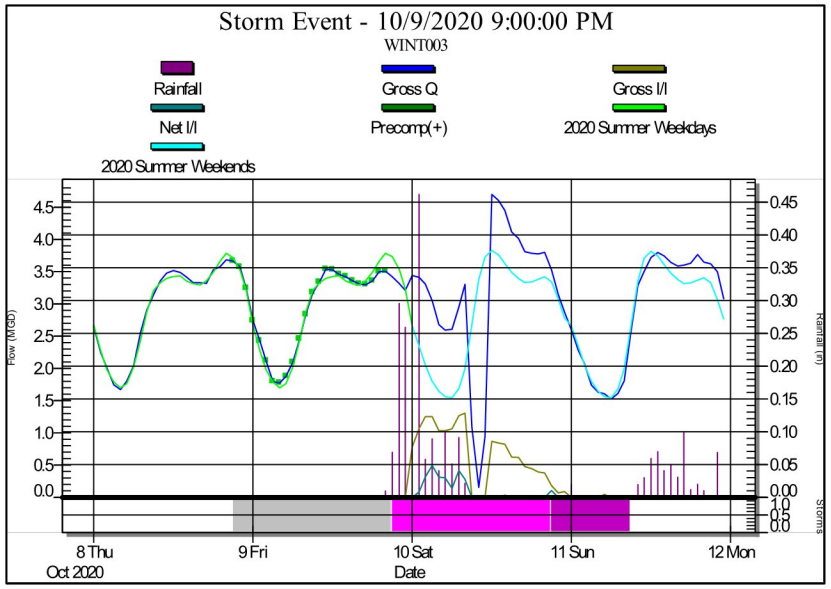

Storm Event - 2/14/2021 7:00:00 AM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays (Alt)
2020 Summer Weekdays (Alt)
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

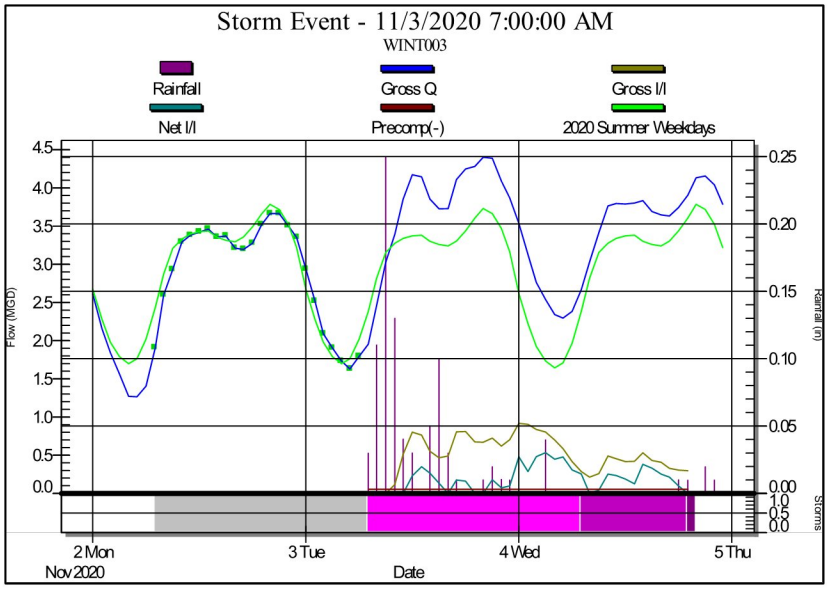

Storm Event - 2/21/2021 9:00:00 PM
MSTTR22A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays (Alt)
2020 Summer Weekdays (Alt)
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

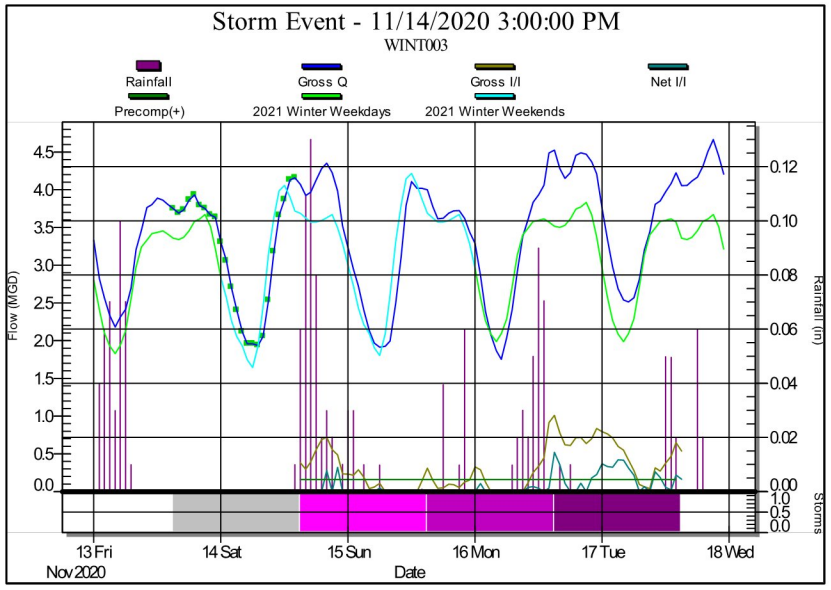

Pipe Flow
WINT003
Rainfall
Qfinal(g)
AUB_A7_70807
SRT11
WINT035
Flow (MGD)
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

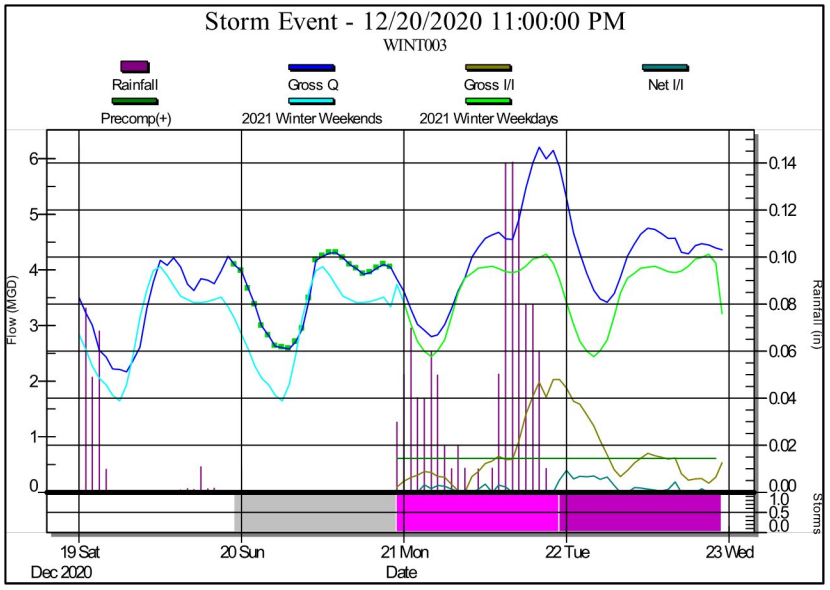

Dry Weather Flow
WINT003
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

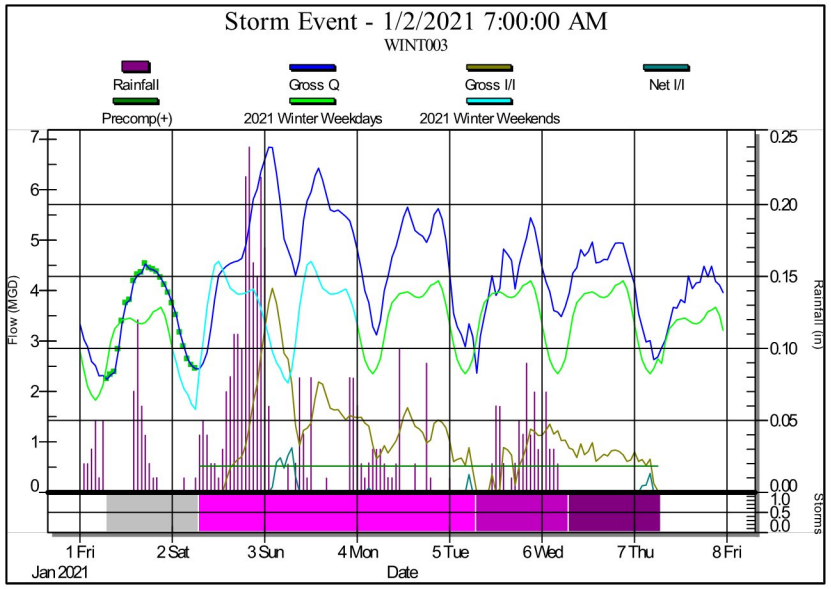

Scatter Graph
WINT003
Lanfear-Coll (C-LC = 4.38)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

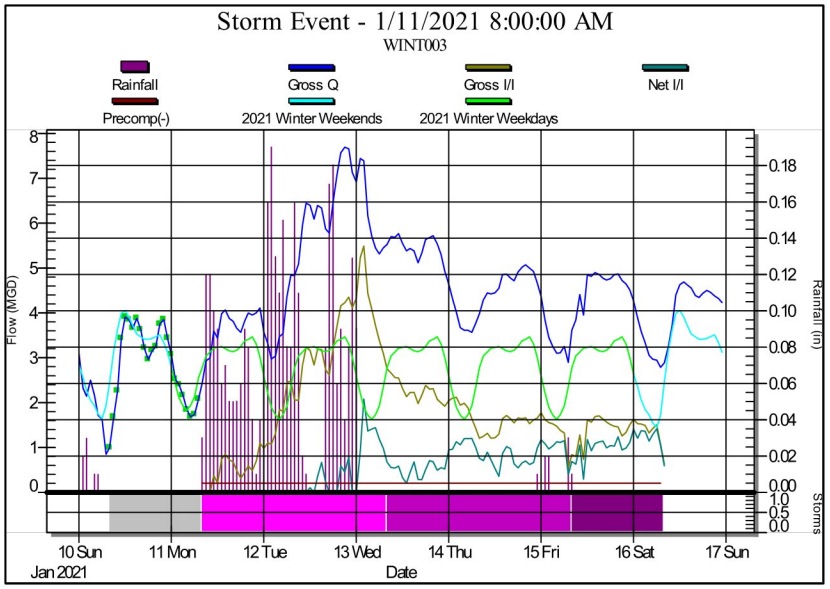

Storm Event - 10/9/2020 9:00:00 PM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
9 Fri
10 Sat
11 Sun
12 Mon
Oct 2020
Date

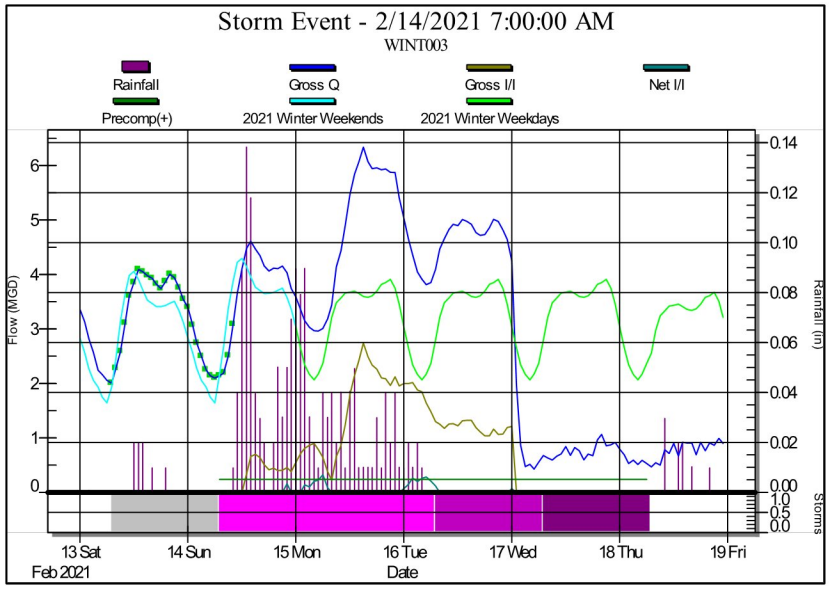

Storm Event - 11/3/2020 7:00:00 AM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
3 Tue
4 Wed
5 Thu
Nov 2020
Date

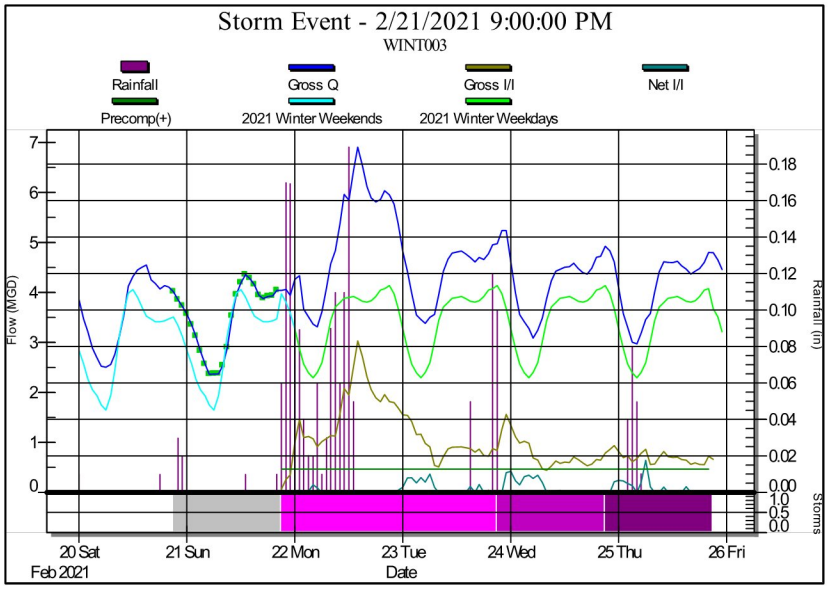

Storm Event - 11/14/2020 3:00:00 PM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Nov 2020
Date

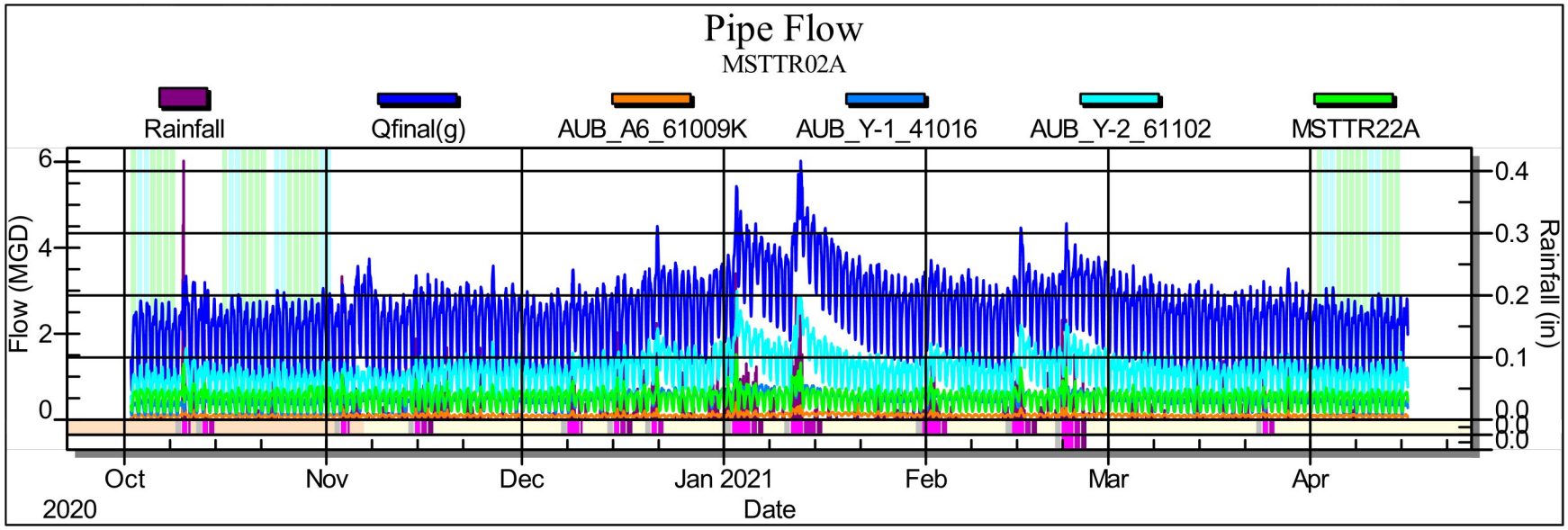

Storm Event - 12/20/2020 11:00:00 PM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
20 Sun
21 Mon
22 Tue
23 Wed
Dec 2020
Date

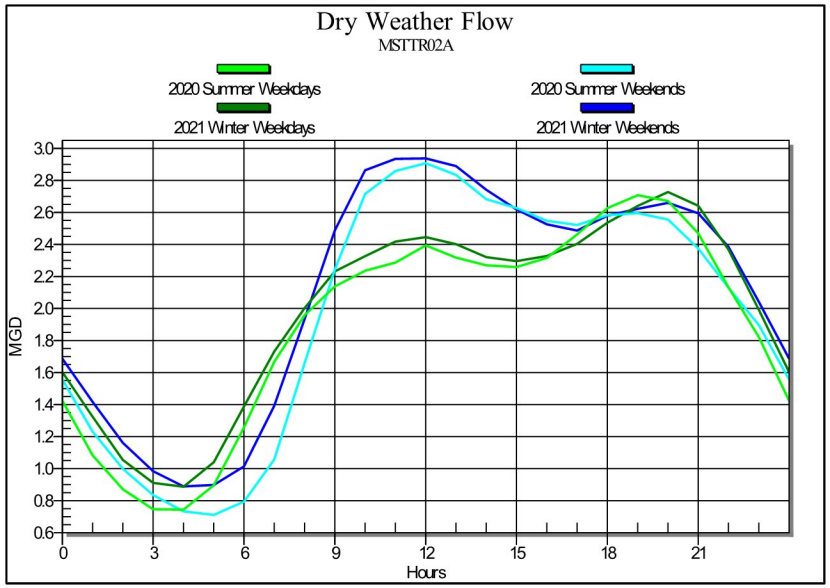

Storm Event - 1/2/2021 7:00:00 AM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

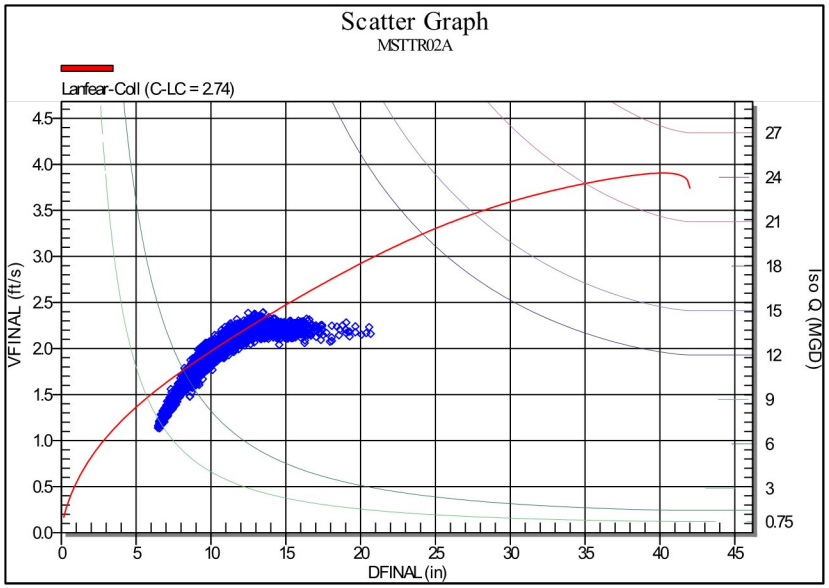

Storm Event - 1/11/2021 8:00:00 AM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

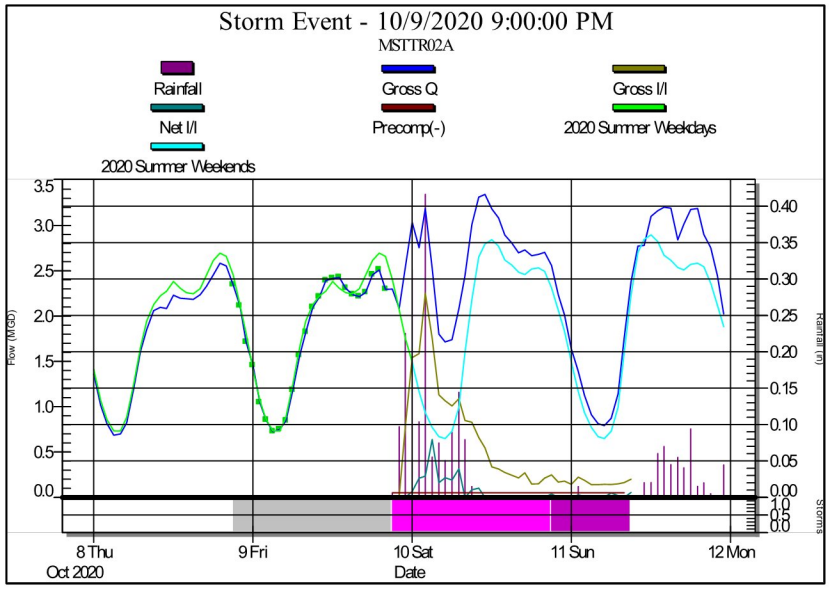

Storm Event - 2/14/2021 7:00:00 AM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

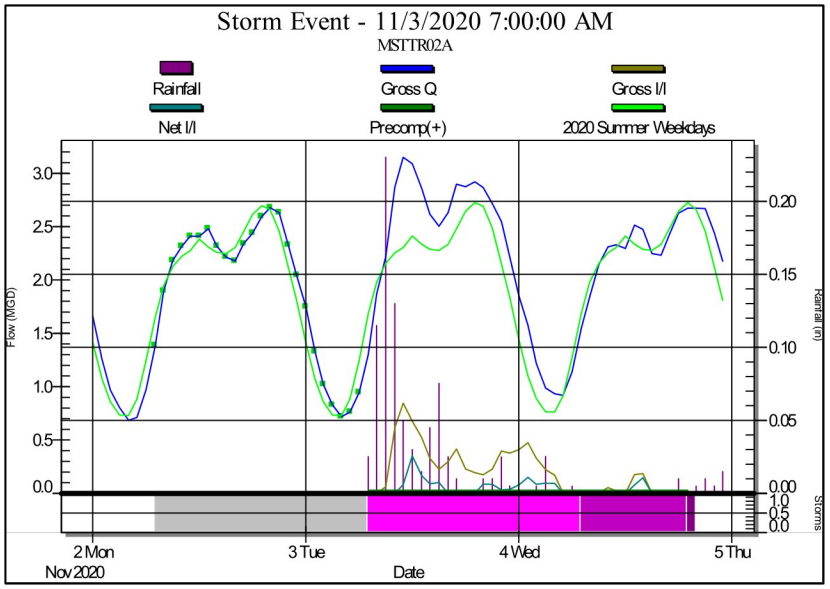

Storm Event - 2/21/2021 9:00:00 PM
WINT003
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

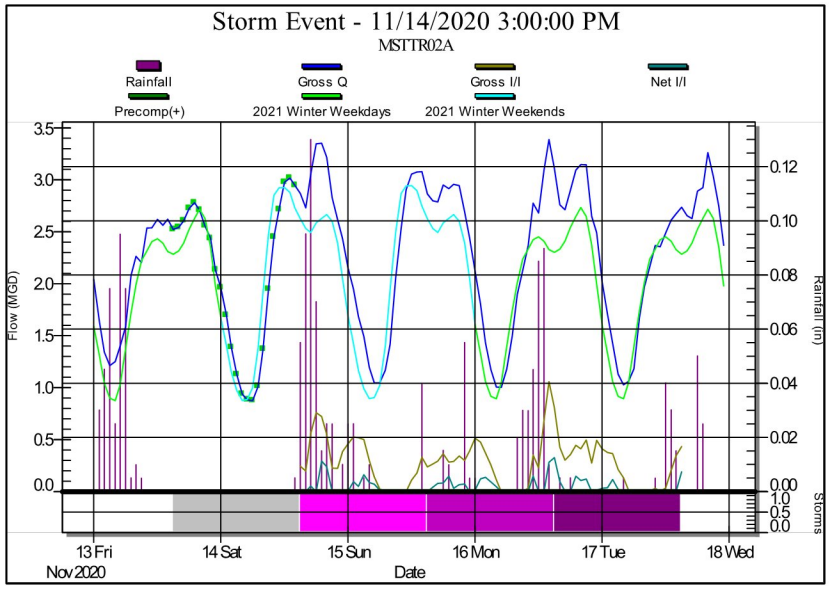

Pipe Flow
MSTTR02A
Rainfall
Qfinal(g)
AUB_A6_61009K
AUB_Y-1_41016
AUB_Y-2_61102
MSTTR22A
Flow (MGD)
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

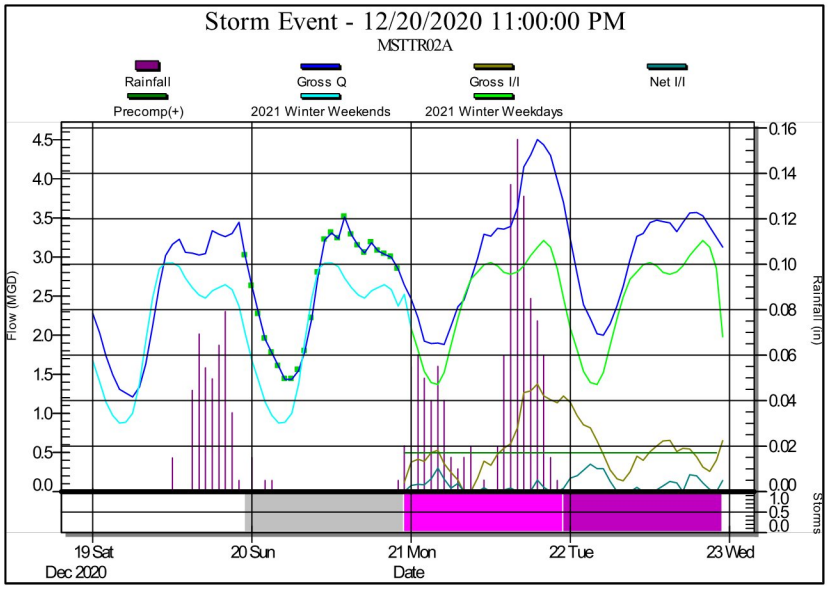

Dry Weather Flow
MSTTR02A
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

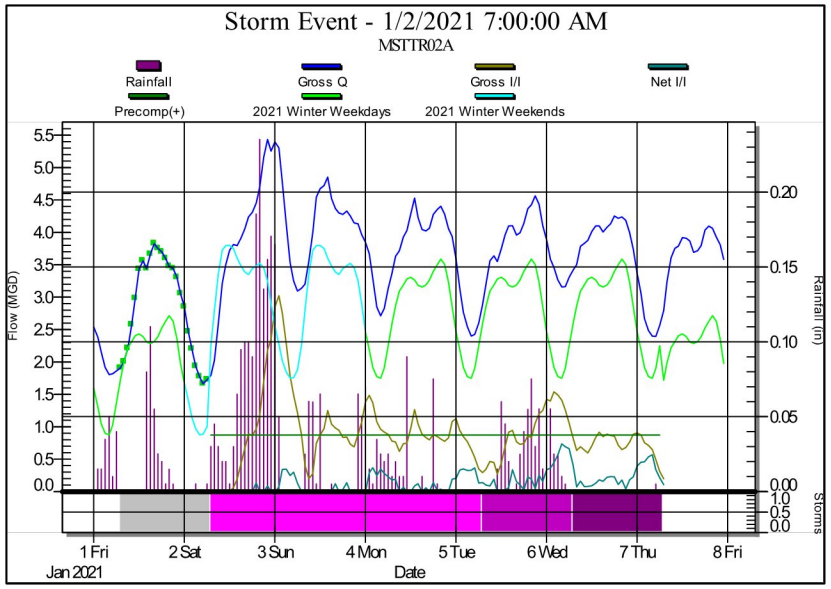

Scatter Graph
MSTTR02A
Lanfear-Coll (C-LC = 2.74)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

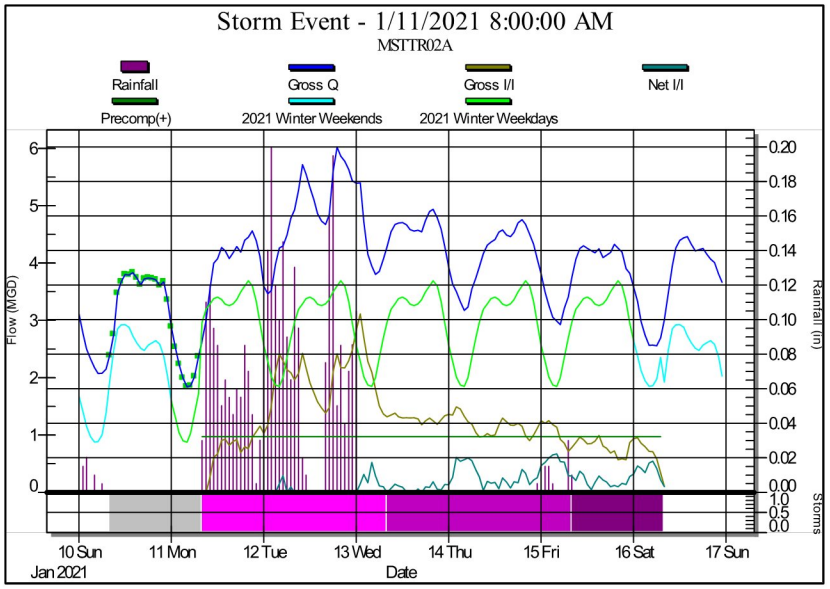

Storm Event - 10/9/2020 9:00:00 PM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
9 Fri
10 Sat
11 Sun
12 Mon
Oct 2020
Date

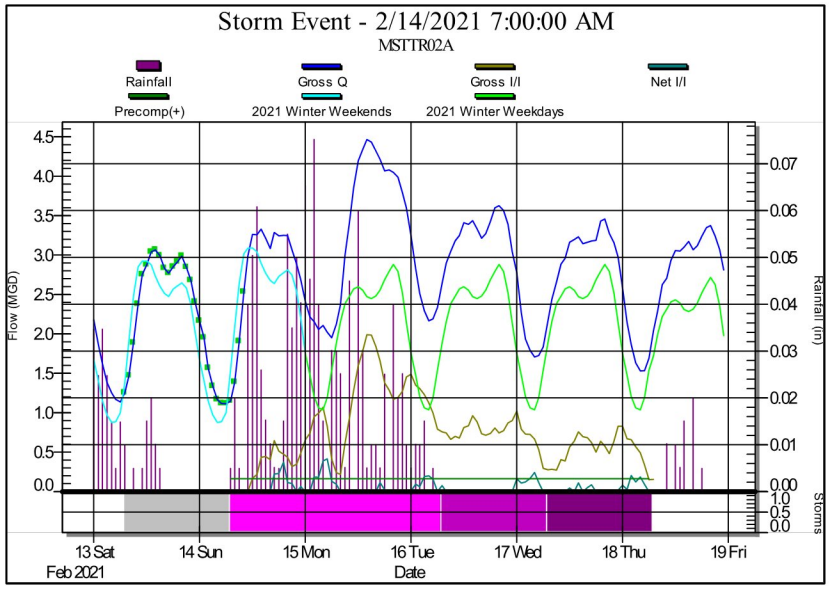

Storm Event - 11/3/2020 7:00:00 AM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
3 Tue
4 Wed
5 Thu
Nov 2020
Date

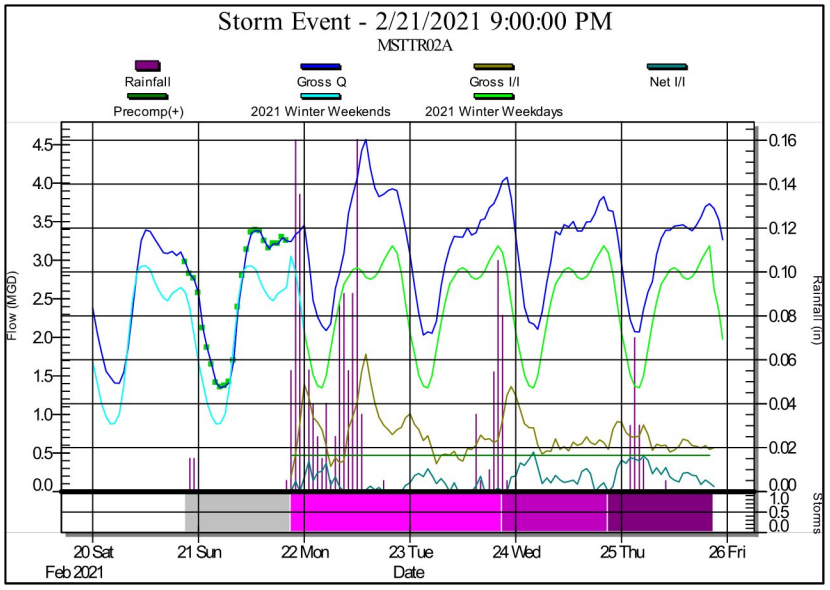

Storm Event - 11/14/2020 3:00:00 PM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Nov 2020
Date

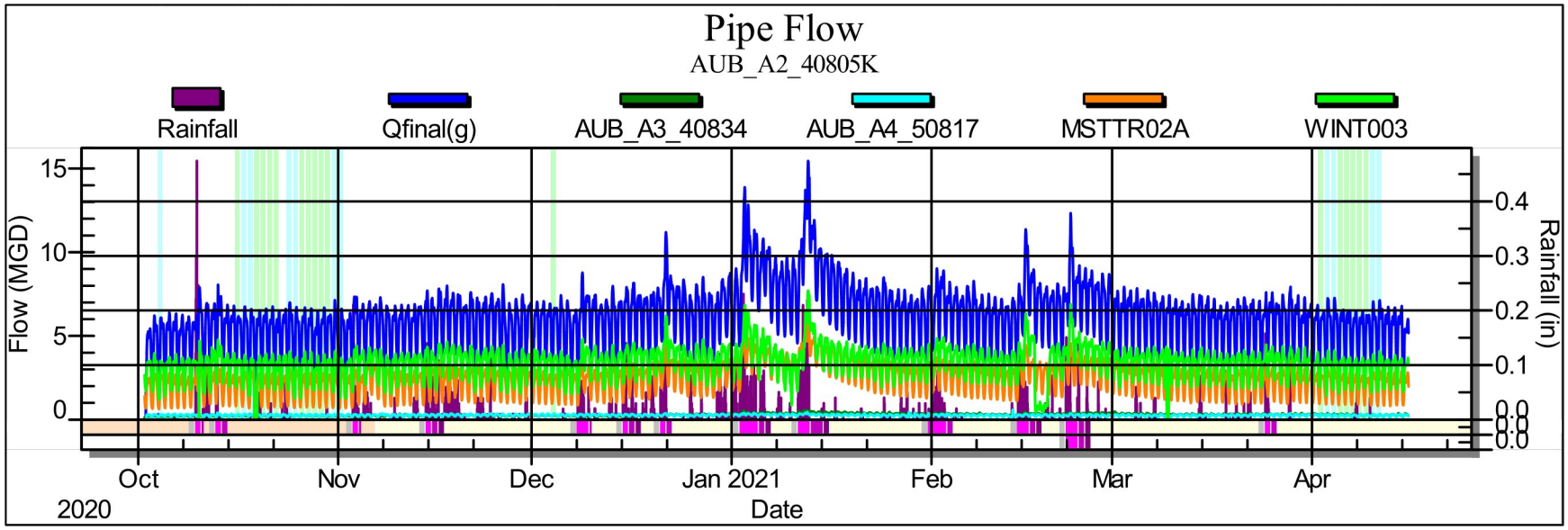

Storm Event - 12/20/2020 11:00:00 PM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
20 Sun
21 Mon
22 Tue
23 Wed
Dec 2020
Date

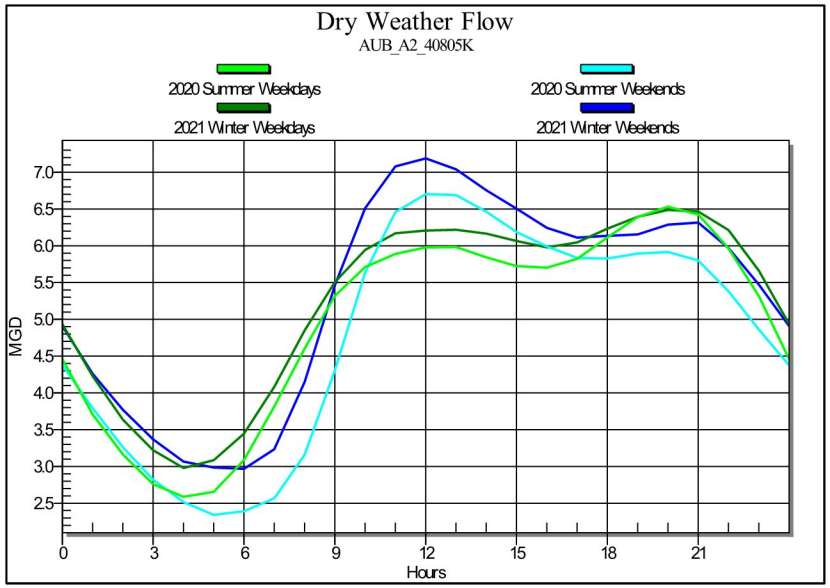

Storm Event - 1/2/2021 7:00:00 AM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

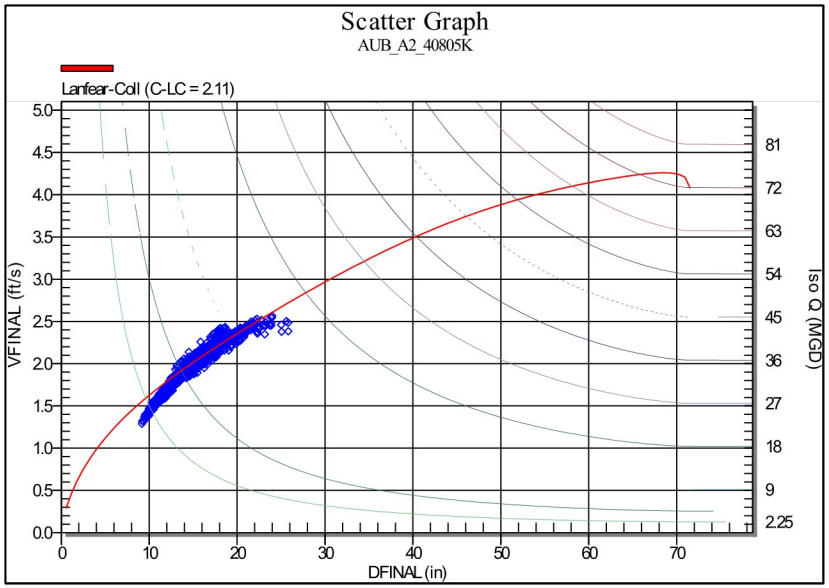

Storm Event - 1/11/2021 8:00:00 AM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

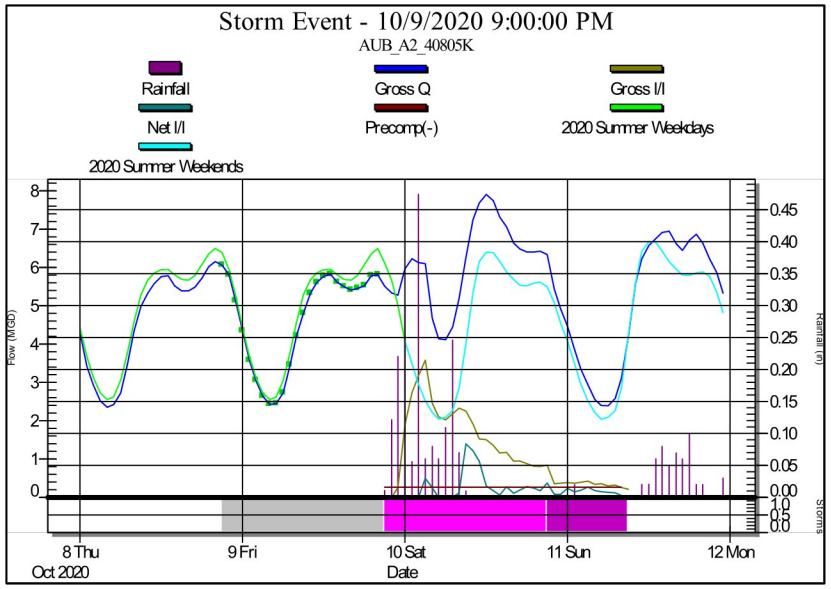

Storm Event - 2/14/2021 7:00:00 AM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

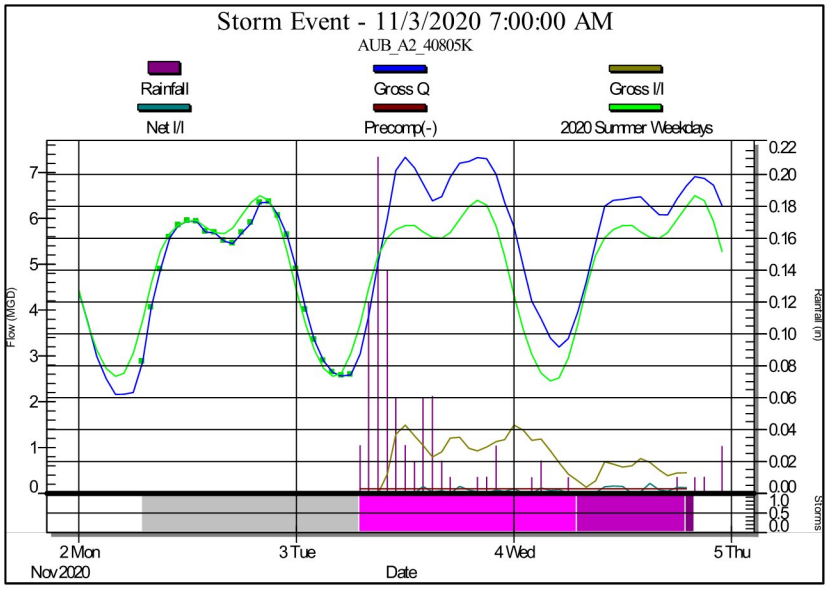

Storm Event - 2/21/2021 9:00:00 PM
MSTTR02A
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

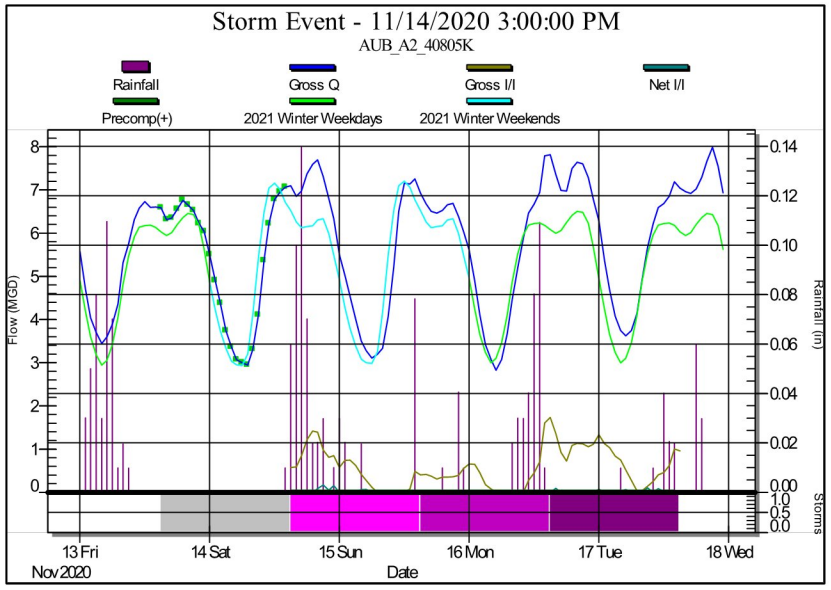

Pipe Flow
AUB_A2_40805K
Rainfall
Qfinal(g)
AUB_A3_40834
AUB_A4_50817
MSTTR02A
WINT003
Flow (MGD)
Rainfall (in)
Oct
2020
Nov
Dec
Jan 2021
Feb
Mar
Apr
Date

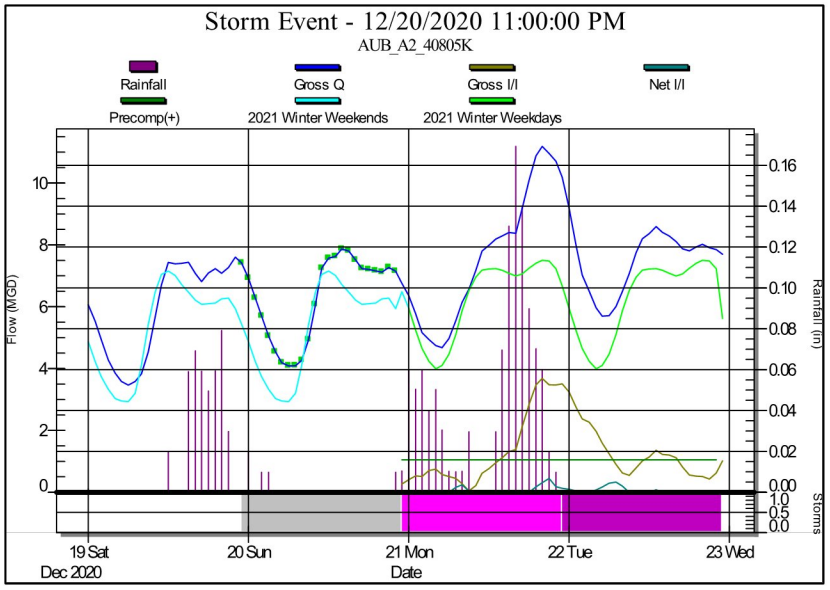

Dry Weather Flow
AUB_A2_40805K
2020 Summer Weekdays
2020 Summer Weekends
2021 Winter Weekdays
2021 Winter Weekends
MGD
Hours

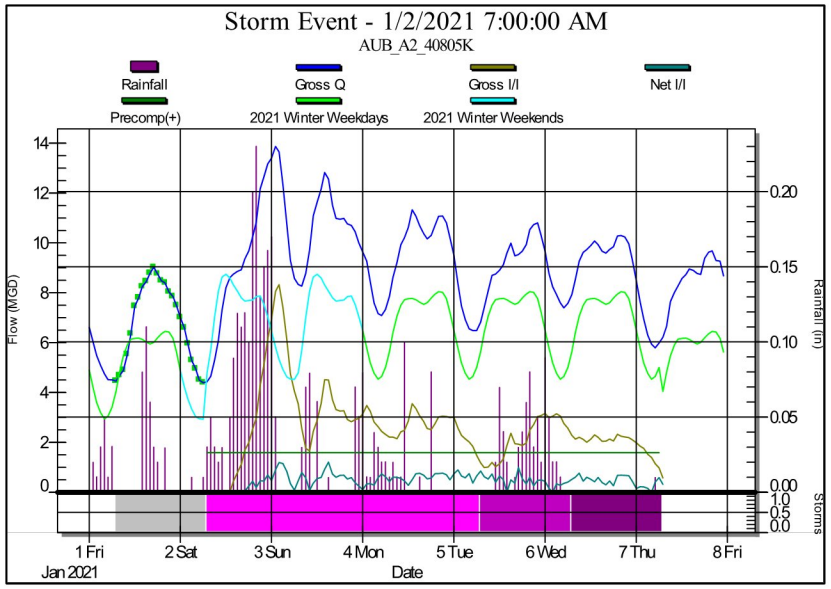

Scatter Graph
AUB_A2_40805K
Lanfear-Coll (C-LC = 2.11)
VFINAL (ft/s)
Iso Q (MGD)
DFINAL (in)

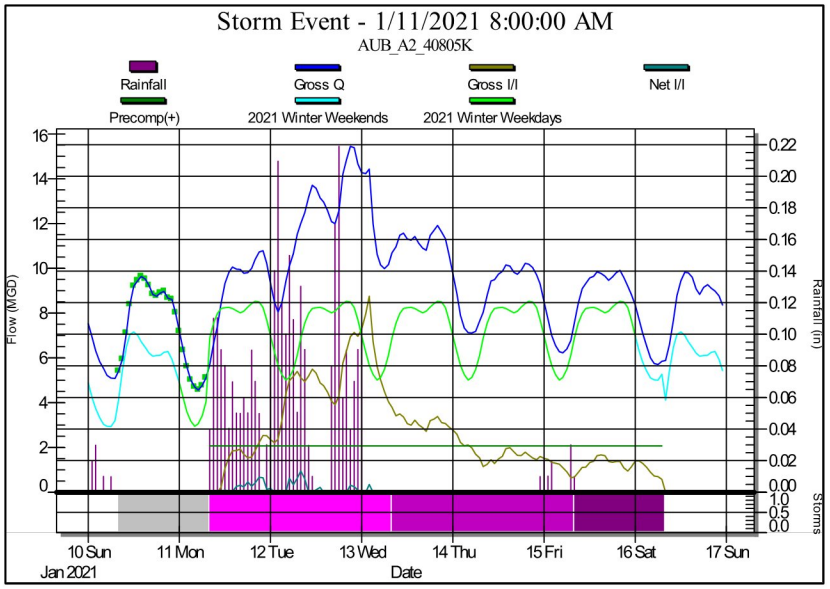

Storm Event - 10/9/2020 9:00:00 PM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
2020 Summer Weekends
Flow (MGD)
Rainfall (in)
Storms
8 Thu
Oct 2020
9 Fri
10 Sat
11 Sun
12 Mon
Date

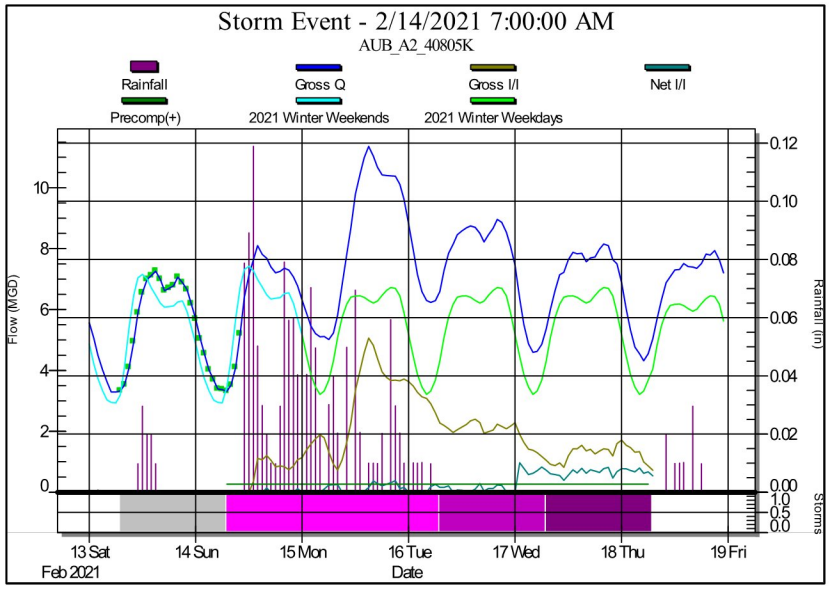

Storm Event - 11/3/2020 7:00:00 AM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(-)
2020 Summer Weekdays
Flow (MGD)
Rainfall (in)
Storms
2 Mon
Nov 2020
3 Tue
4 Wed
5 Thu
Date

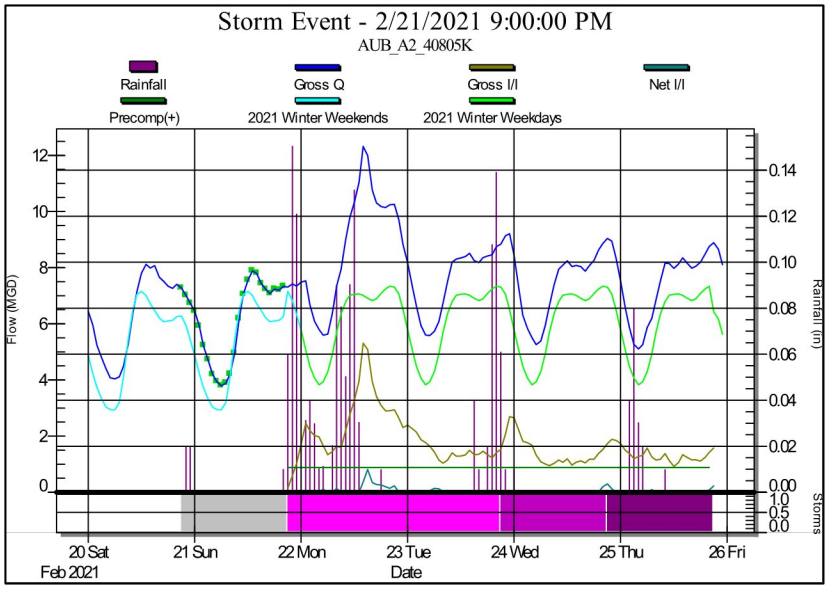

Storm Event - 11/14/2020 3:00:00 PM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
13 Fri
Nov 2020
14 Sat
15 Sun
16 Mon
17 Tue
18 Wed
Date

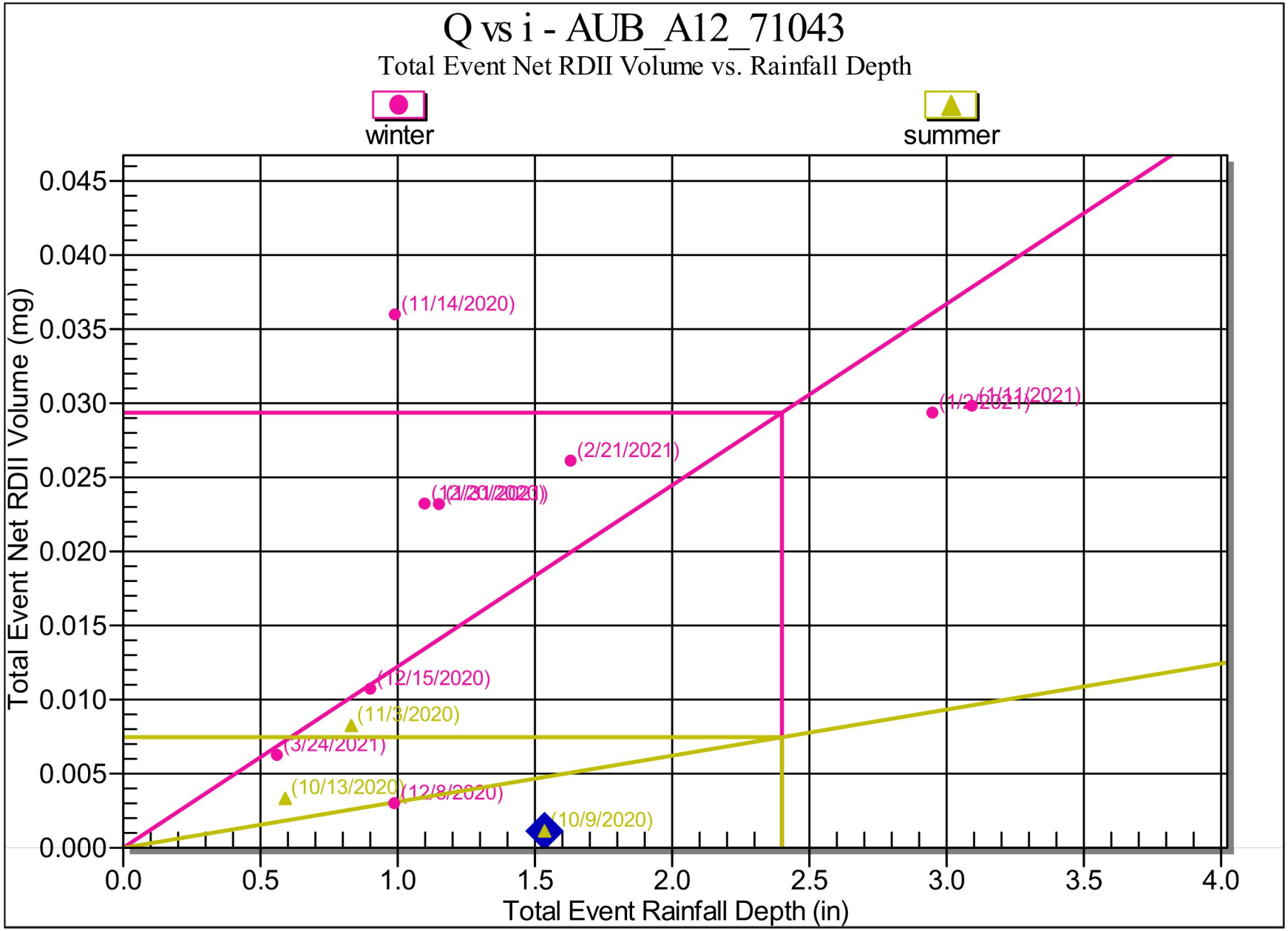

Storm Event - 12/20/2020 11:00:00 PM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
19 Sat
Dec 2020
20 Sun
21 Mon
22 Tue
23 Wed
Date

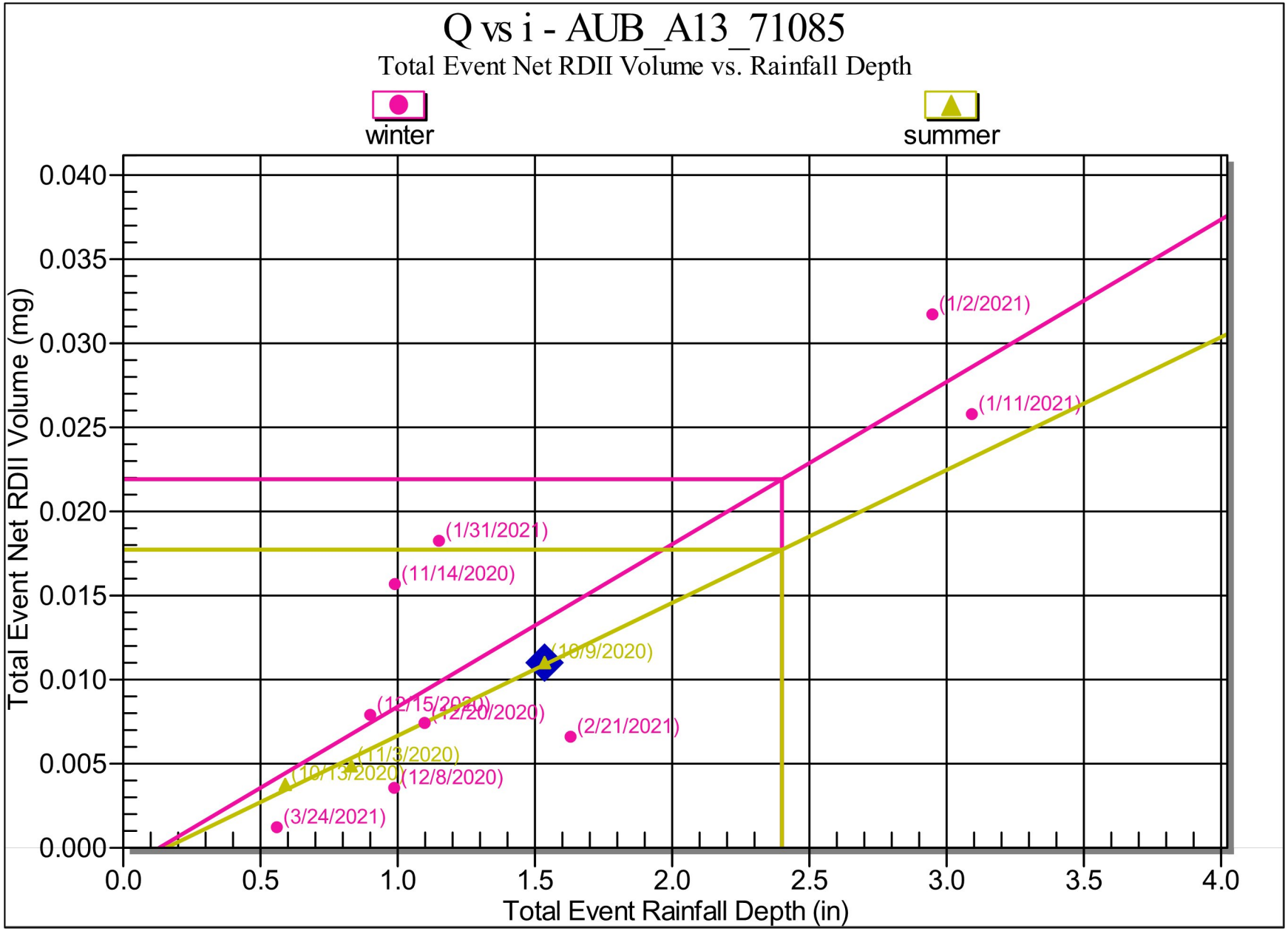

Storm Event - 1/2/2021 7:00:00 AM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekdays
2021 Winter Weekends
Flow (MGD)
Rainfall (in)
Storms
1 Fri
2 Sat
3 Sun
4 Mon
5 Tue
6 Wed
7 Thu
8 Fri
Jan 2021
Date

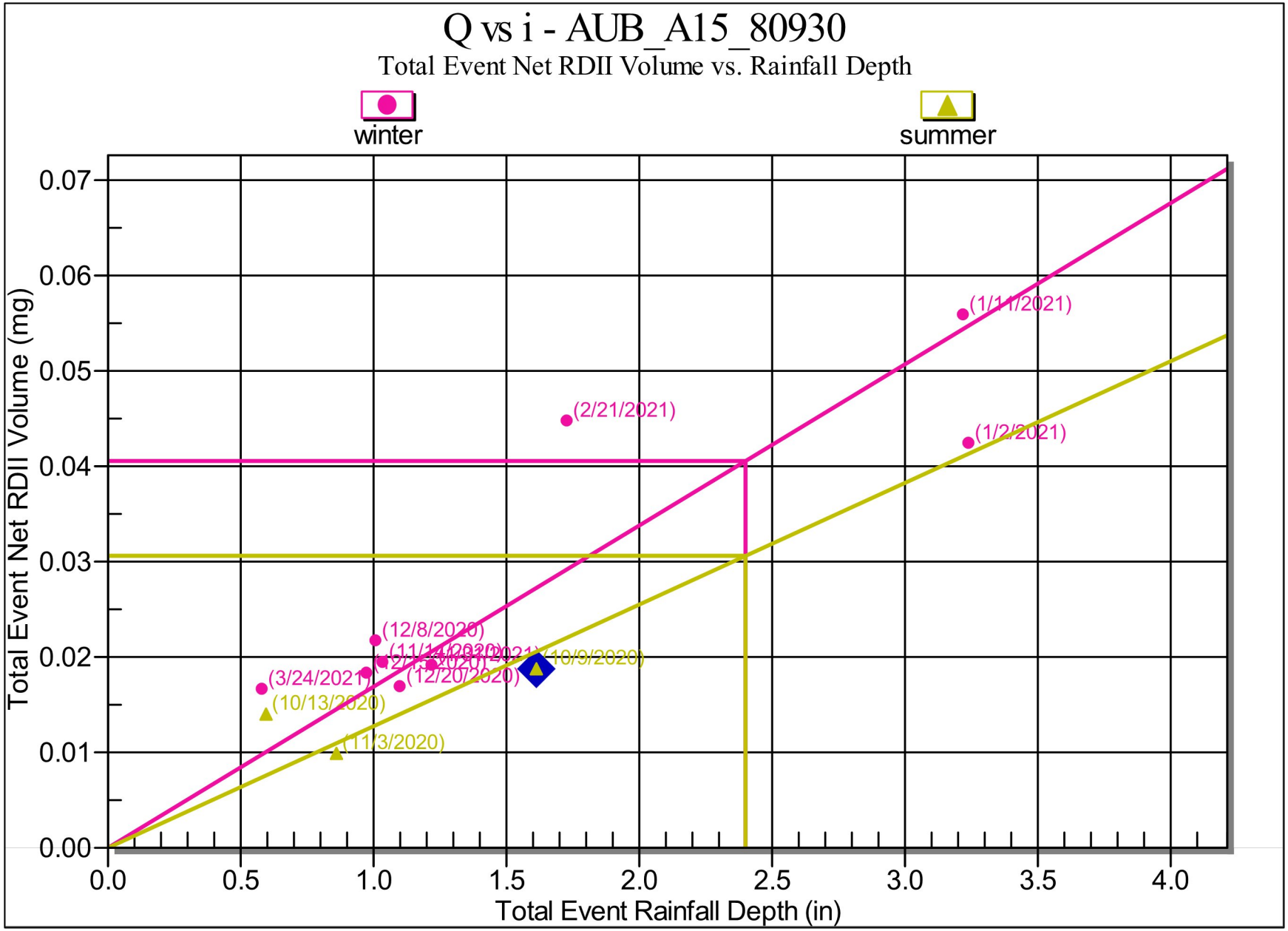

Storm Event - 1/11/2021 8:00:00 AM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
10 Sun
11 Mon
12 Tue
13 Wed
14 Thu
15 Fri
16 Sat
17 Sun
Jan 2021
Date

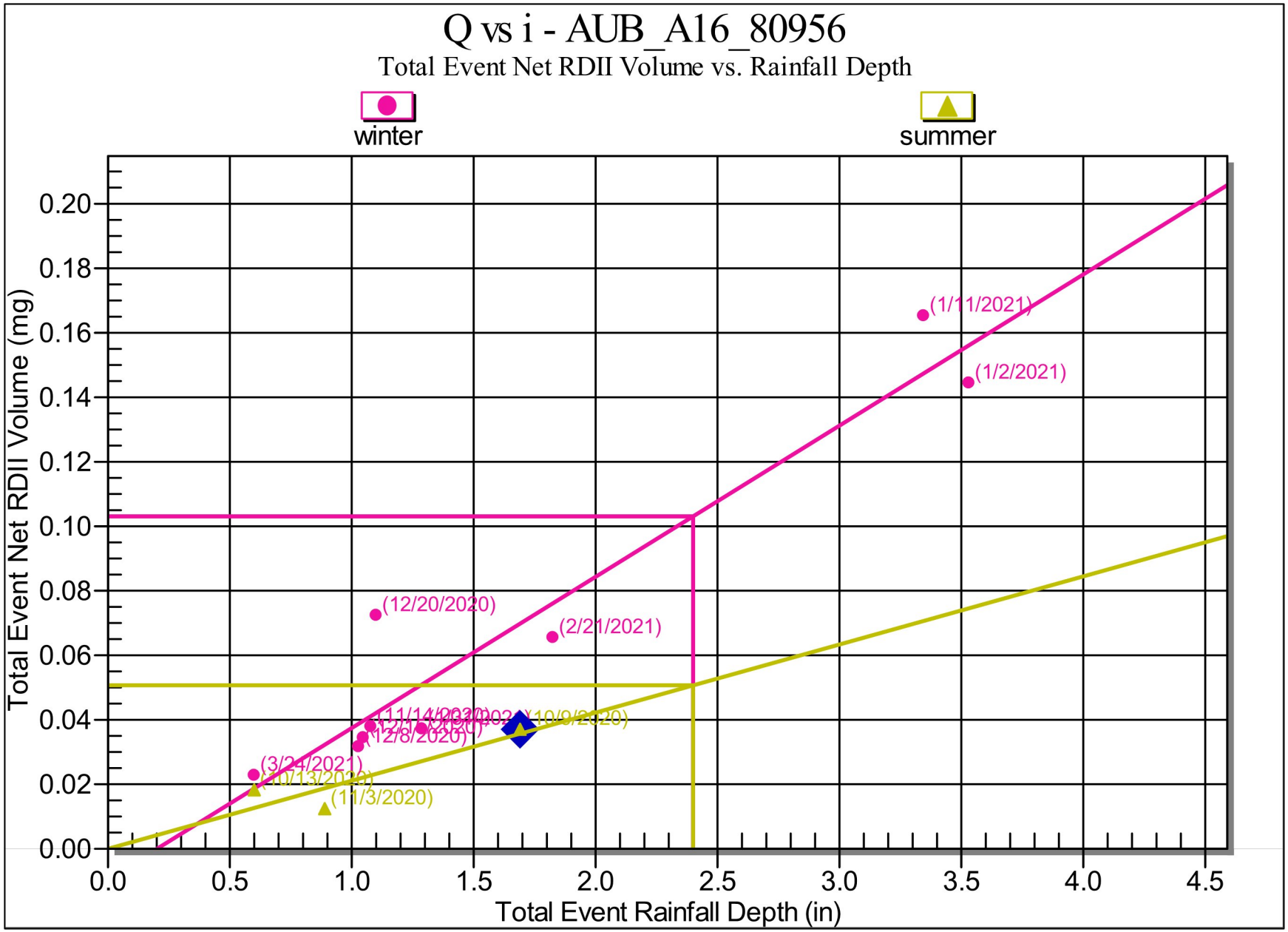

Storm Event - 2/14/2021 7:00:00 AM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
13 Sat
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Feb 2021
Date

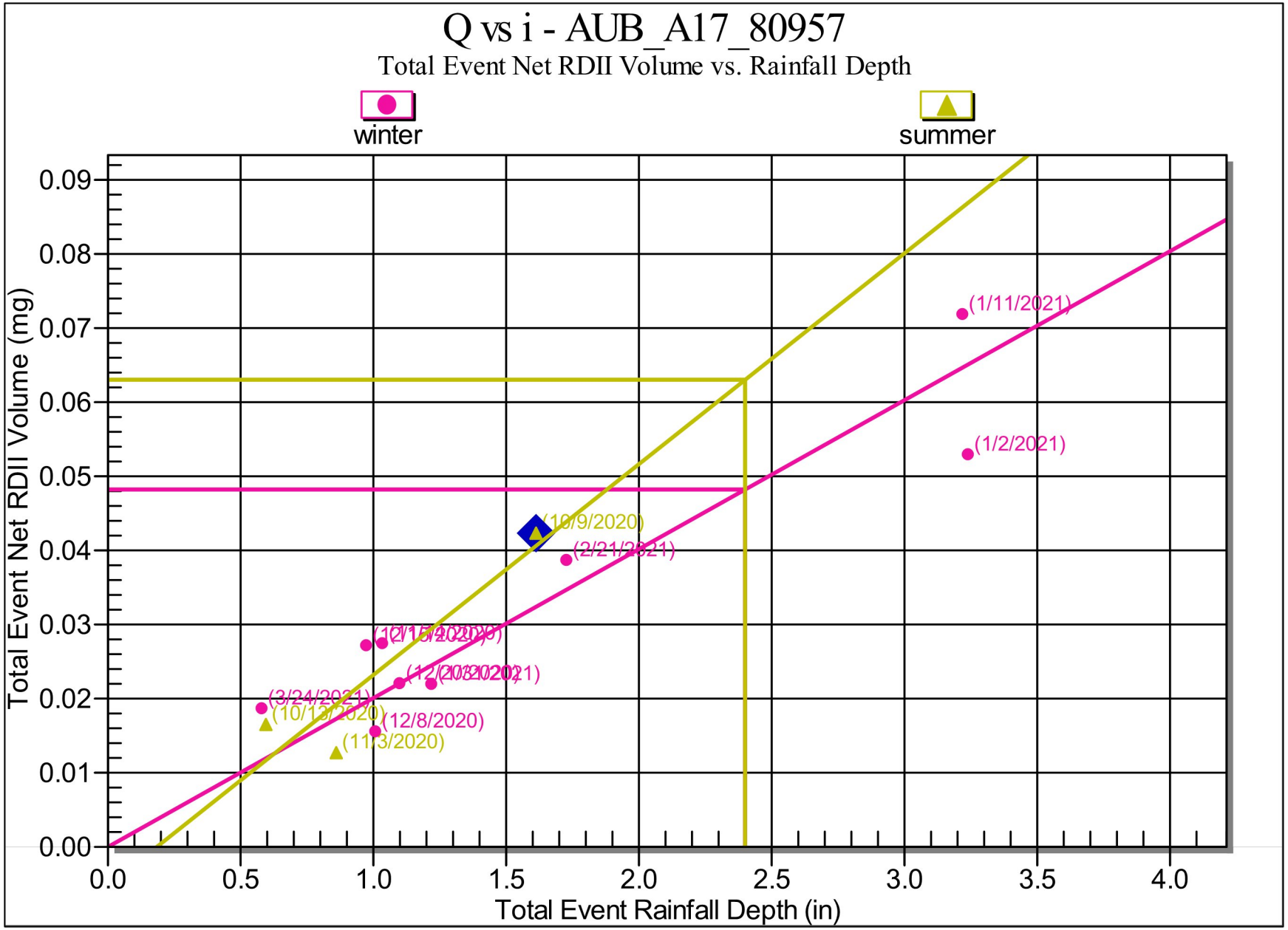

Storm Event - 2/21/2021 9:00:00 PM
AUB_A2_40805K
Rainfall
Gross Q
Gross I/I
Net I/I
Precomp(+)
2021 Winter Weekends
2021 Winter Weekdays
Flow (MGD)
Rainfall (in)
Storms
20 Sat
21 Sun
22 Mon
23 Tue
24 Wed
25 Thu
26 Fri
Feb 2021
Date

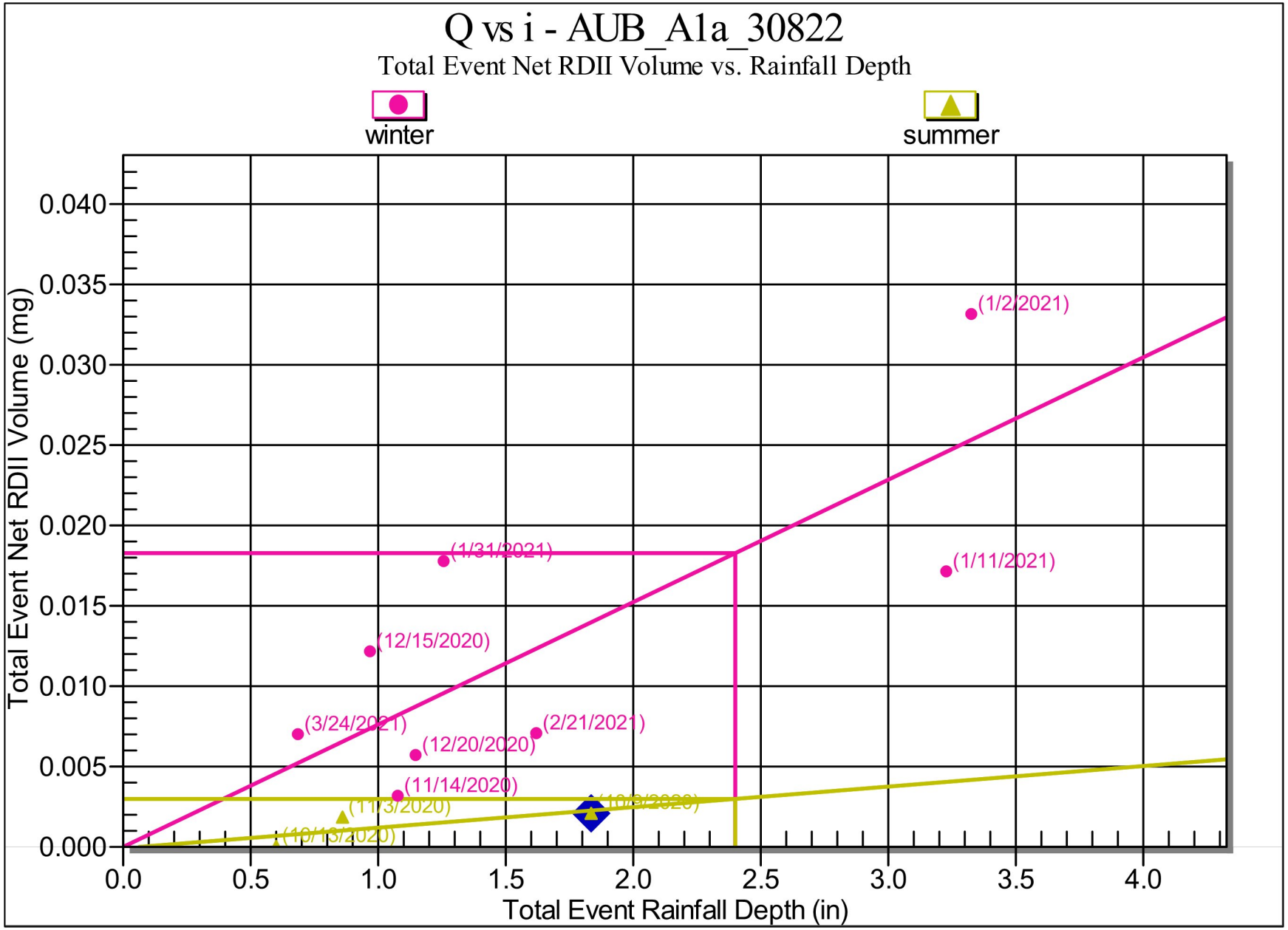

Q vs i - AUB_A12_71043
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
(11/14/2020)
(2/21/2021)
(12/15/2020)
(11/3/2020)
(3/24/2021)
(10/13/2020)
(10/9/2020)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)

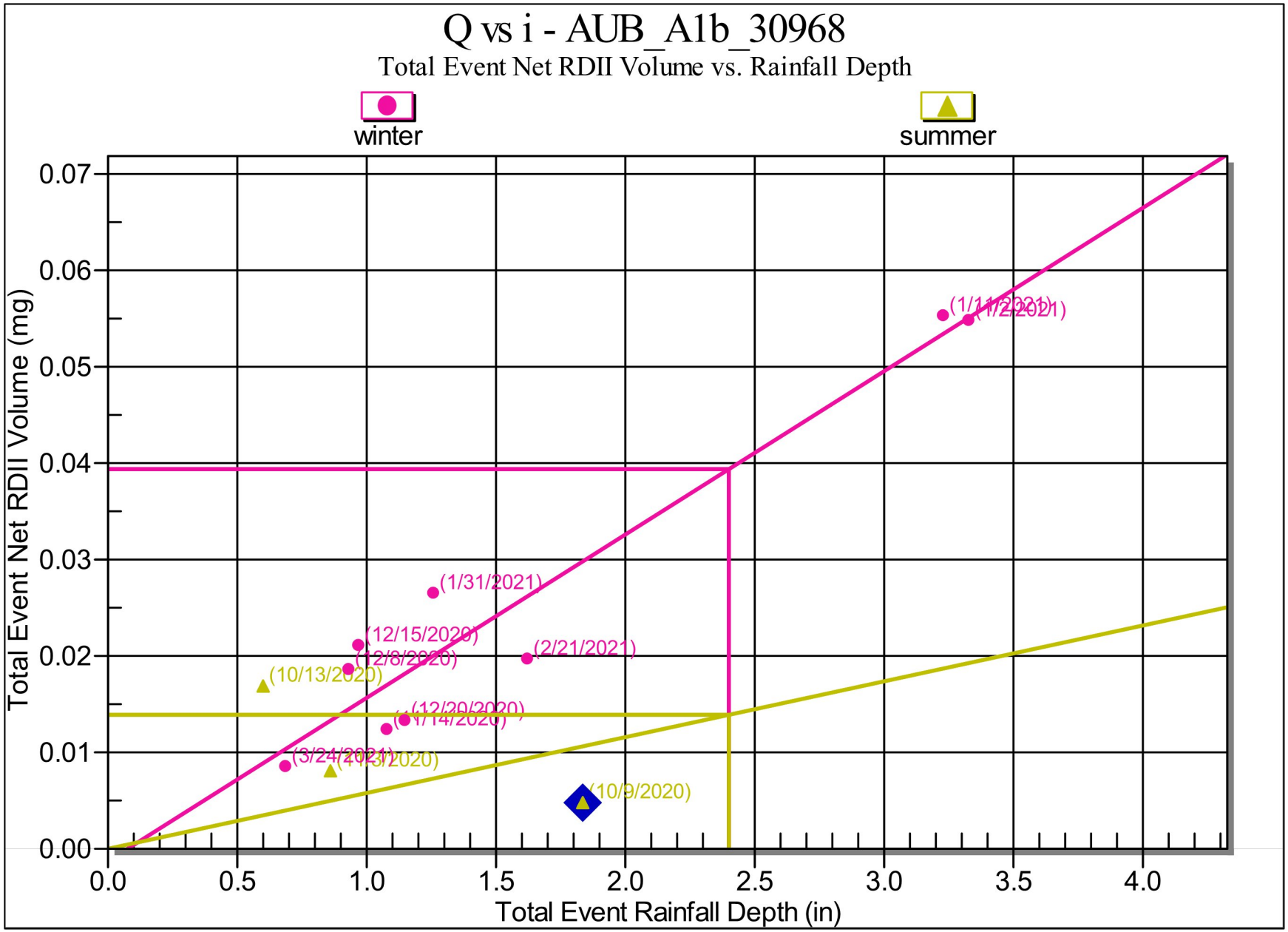

Q vs i - AUB_A13_71085
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/2/2021)
(1/11/2021)
(1/31/2021)
(11/14/2020)
(10/9/2020)
(12/15/2020)
(12/20/2020)
(2/21/2021)
(11/3/2020)
(10/13/2020)
(12/8/2020)
(3/24/2021)

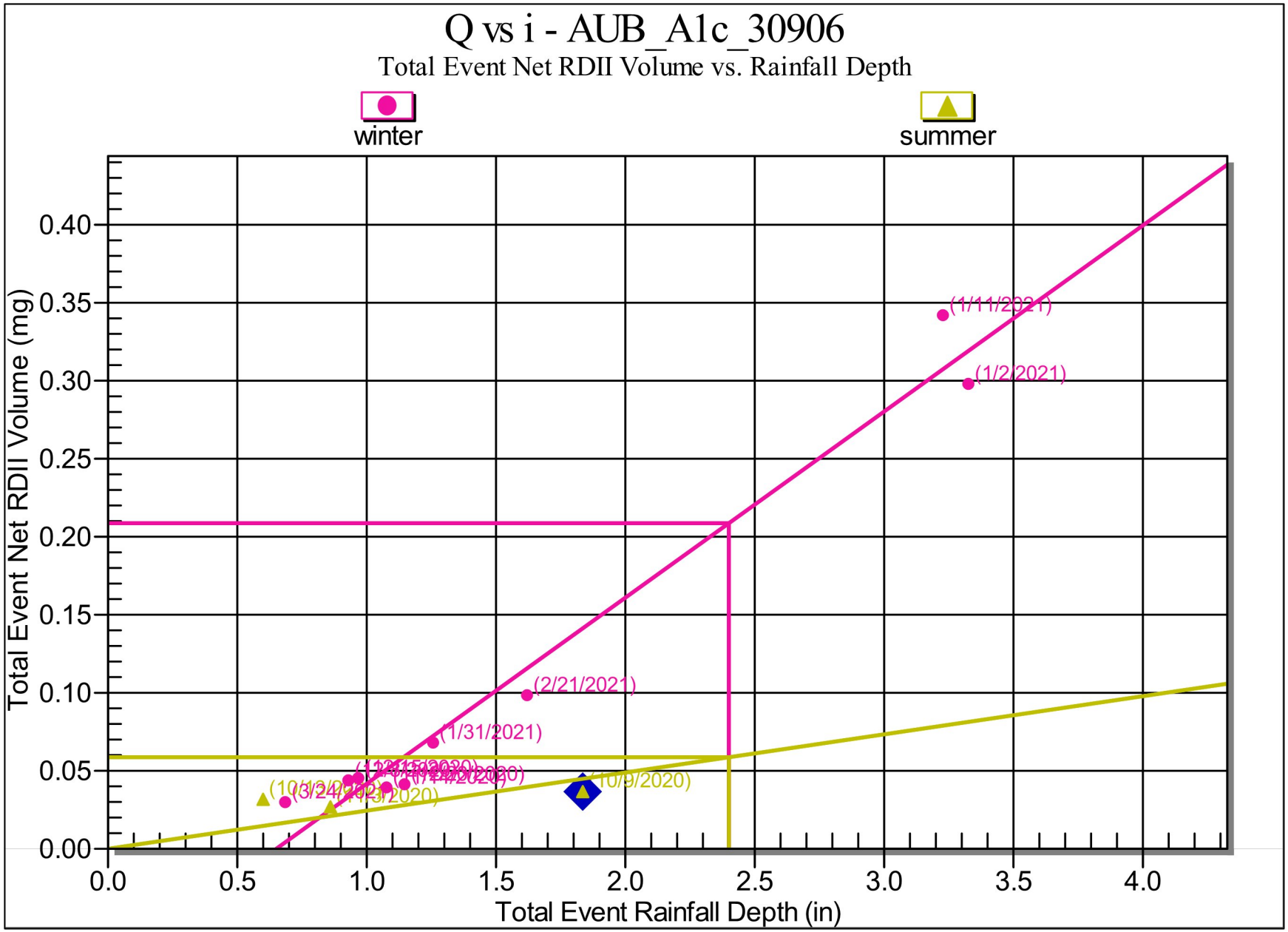

Q vs i - AUB_A15_80930
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
(1/11/2021)
(2/21/2021)
(1/2/2021)
(12/8/2020)
(3/24/2021)
(12/20/2020)
(10/9/2020)
(10/13/2020)
(11/3/2020)

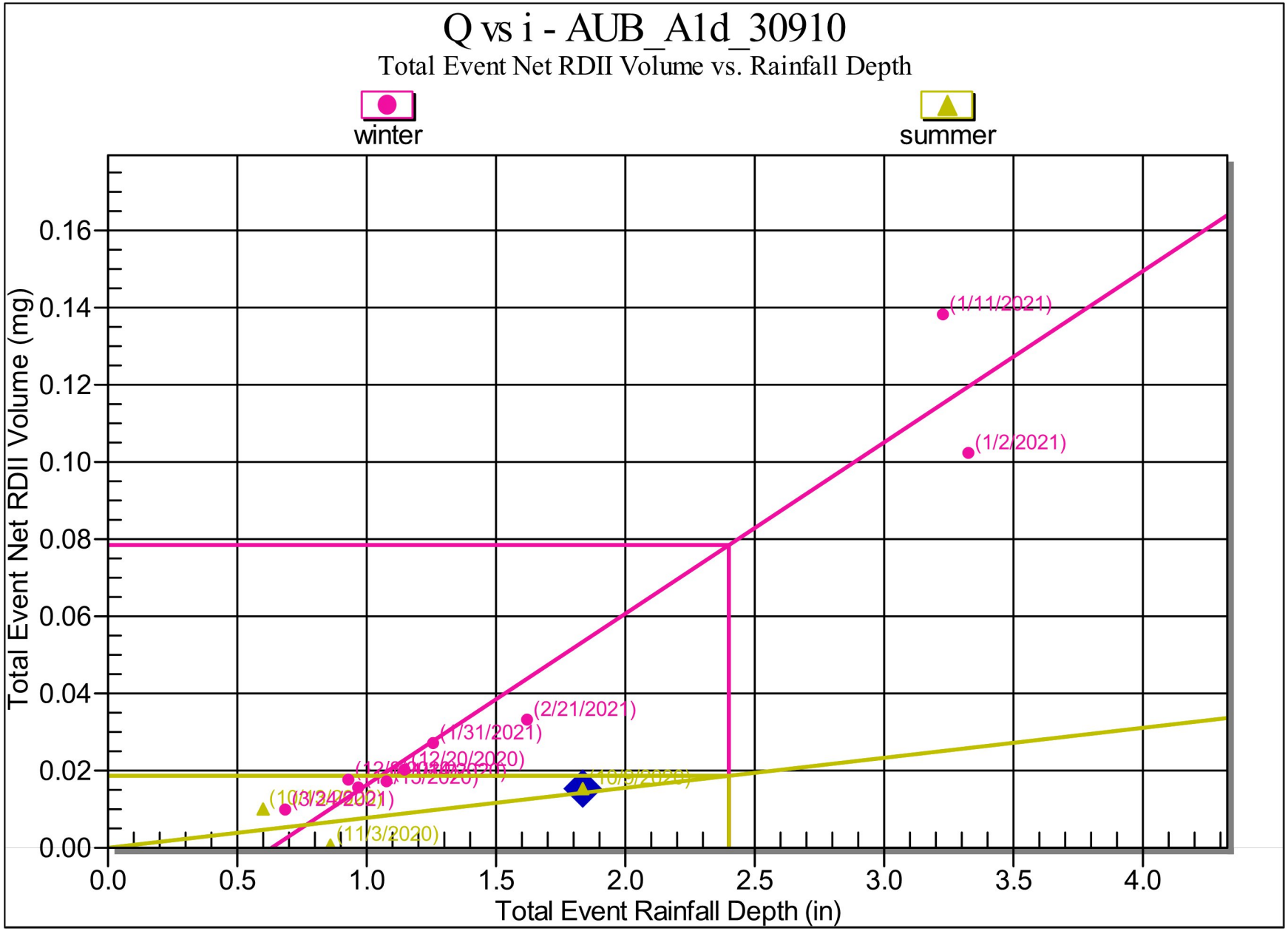

Q vs i - AUB_A16_80956
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(12/20/2020)
(2/21/2021)
(12/8/2020)
(3/24/2021)
(11/3/2020)

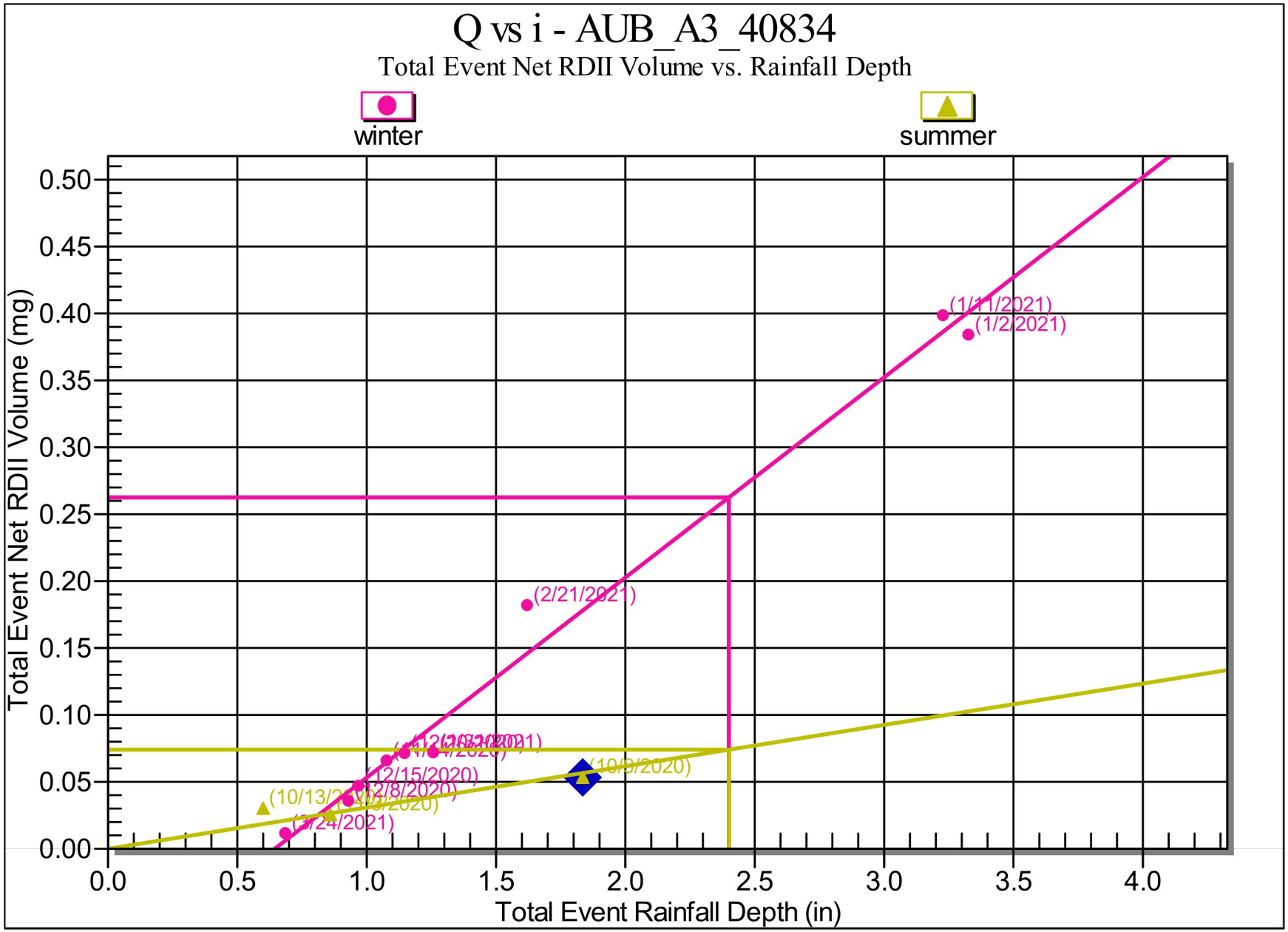

Q vs i - AUB_A17_80957
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(10/9/2020)
(2/21/2021)
(3/24/2021)
(10/13/2020)
(12/8/2020)
(11/3/2020)

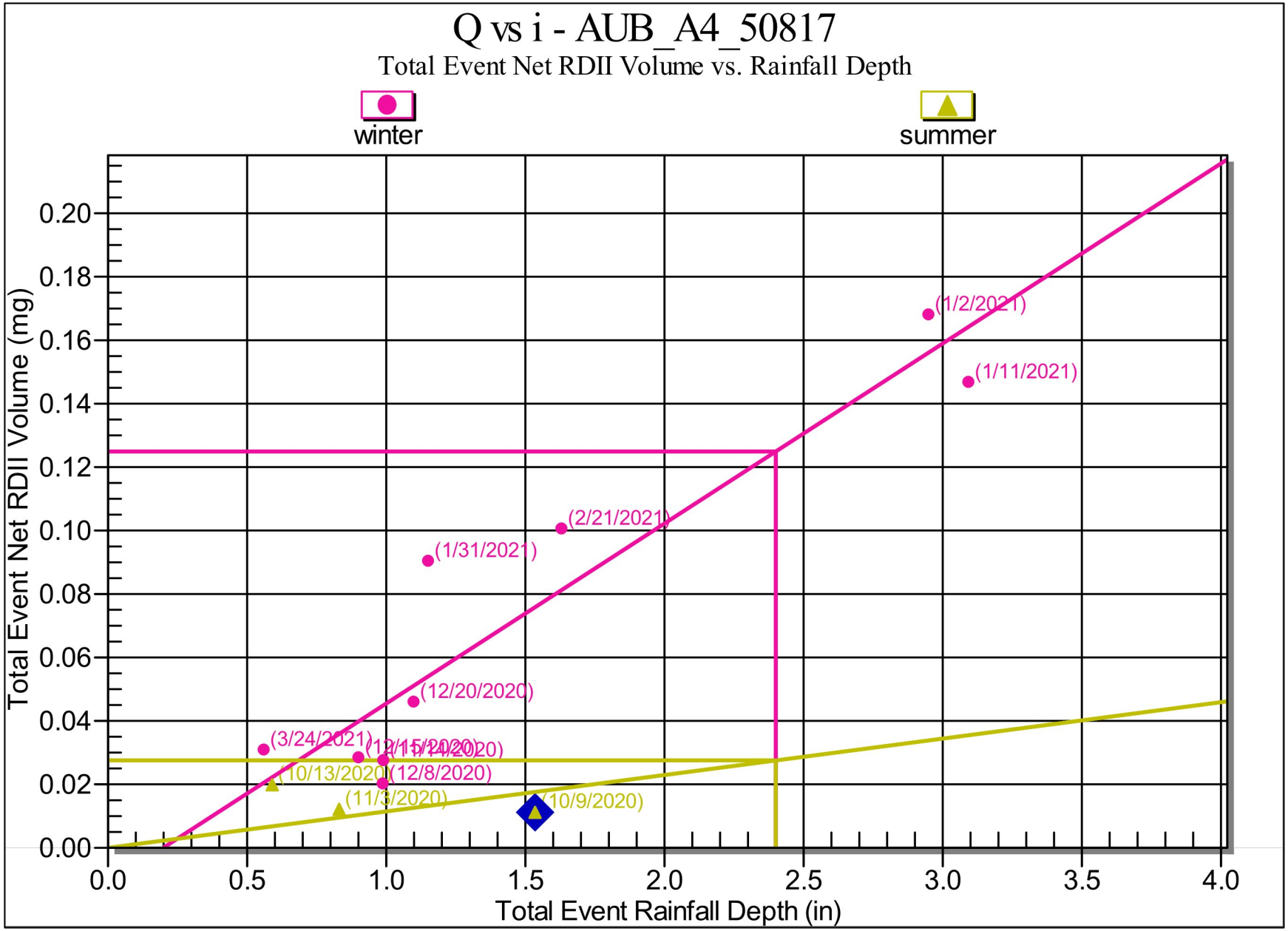

Q vs i - AUB_A1a_30822
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/2/2021)
(1/31/2021)
(1/11/2021)
(12/15/2020)
(3/24/2021)
(2/21/2021)
(12/20/2020)
(11/14/2020)
(11/3/2020)
(10/13/2020)

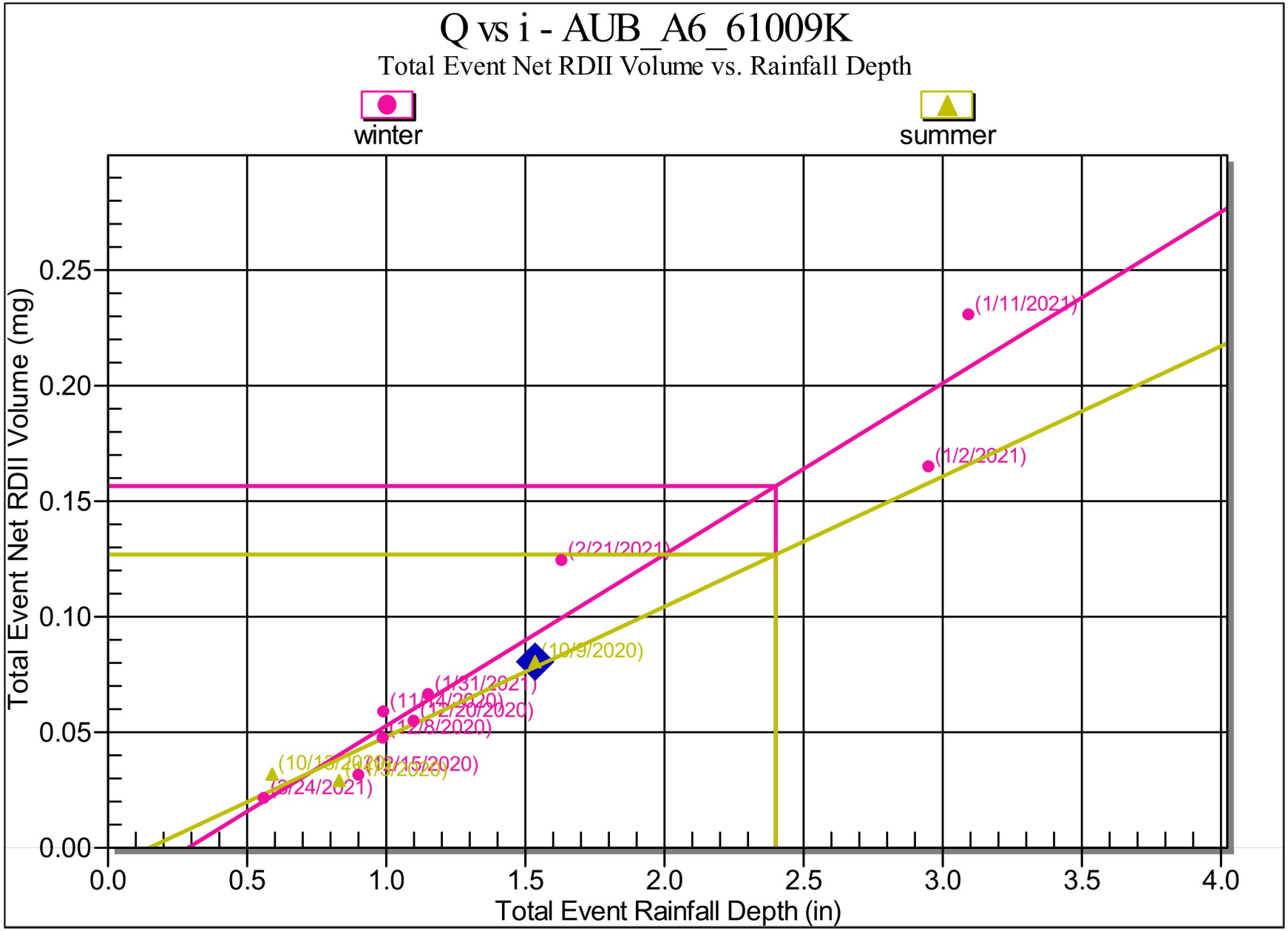

Q vs i - AUB_A1b_30968
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/31/2021)
(12/15/2020)
(2/21/2021)
(10/13/2020)
(10/9/2020)

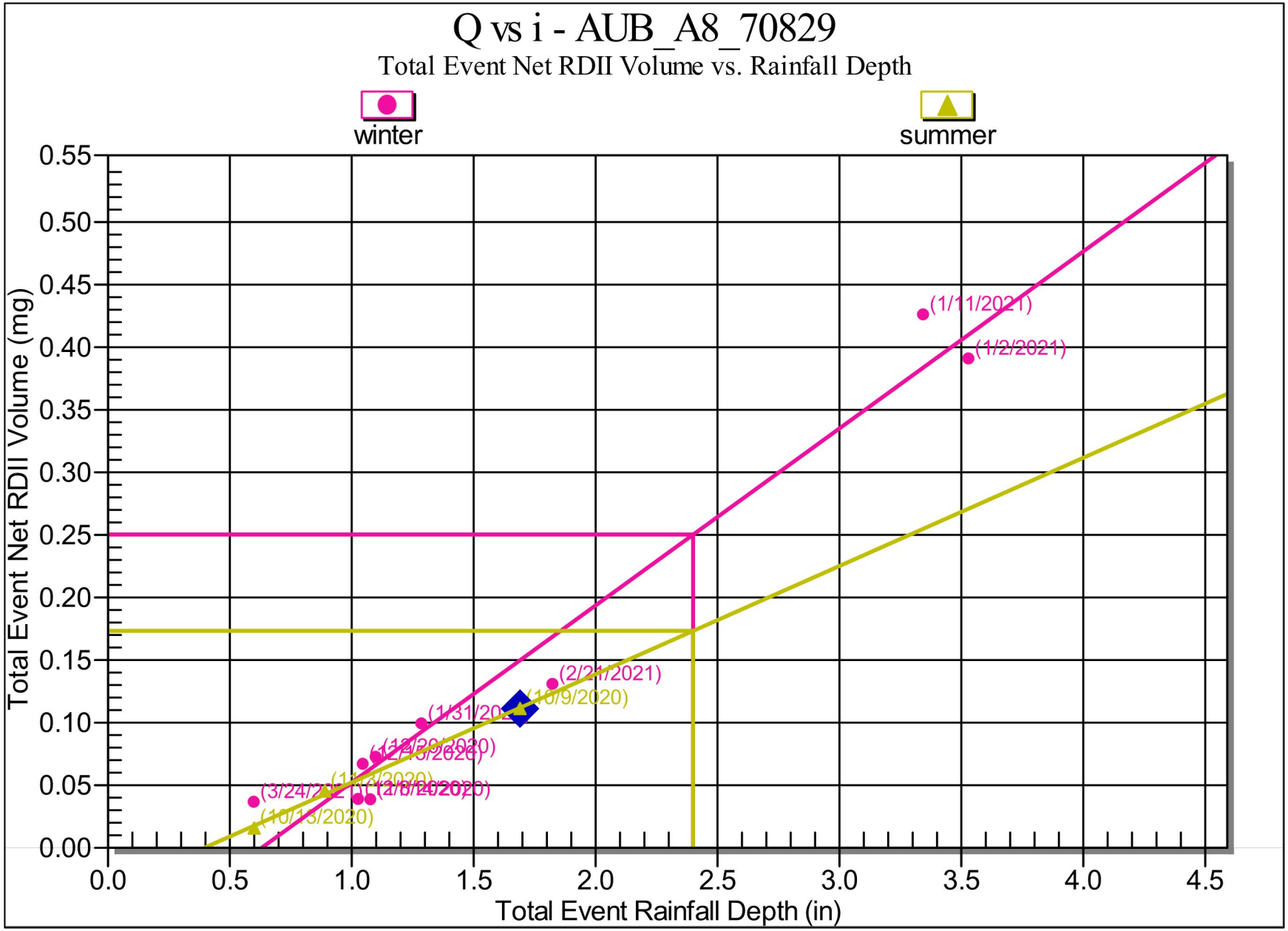

Q vs i - AUB_A1c_30906
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(10/9/2020)

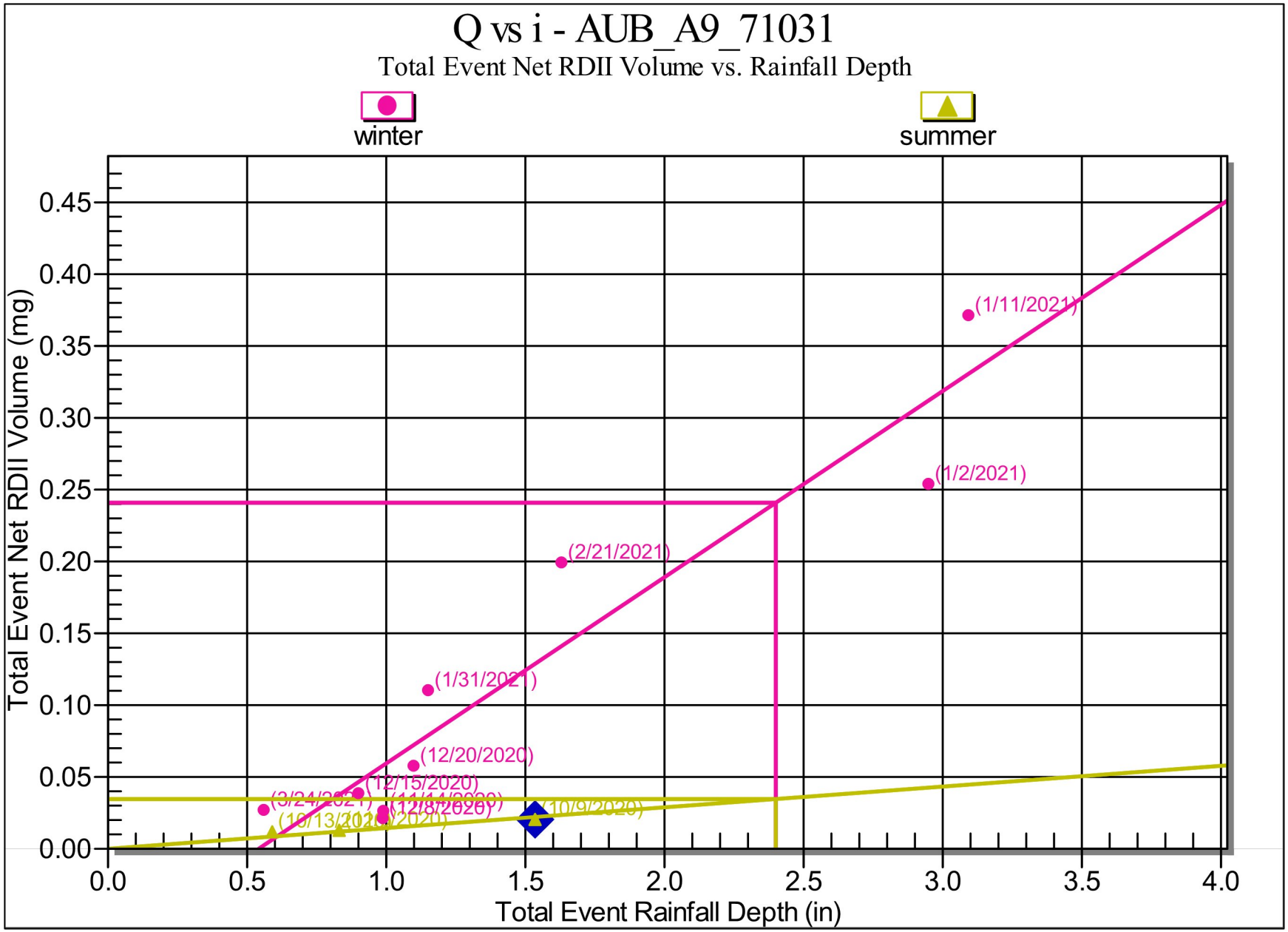

Q vs i - AUB_A1d_30910
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(12/20/2020)
(11/3/2020)

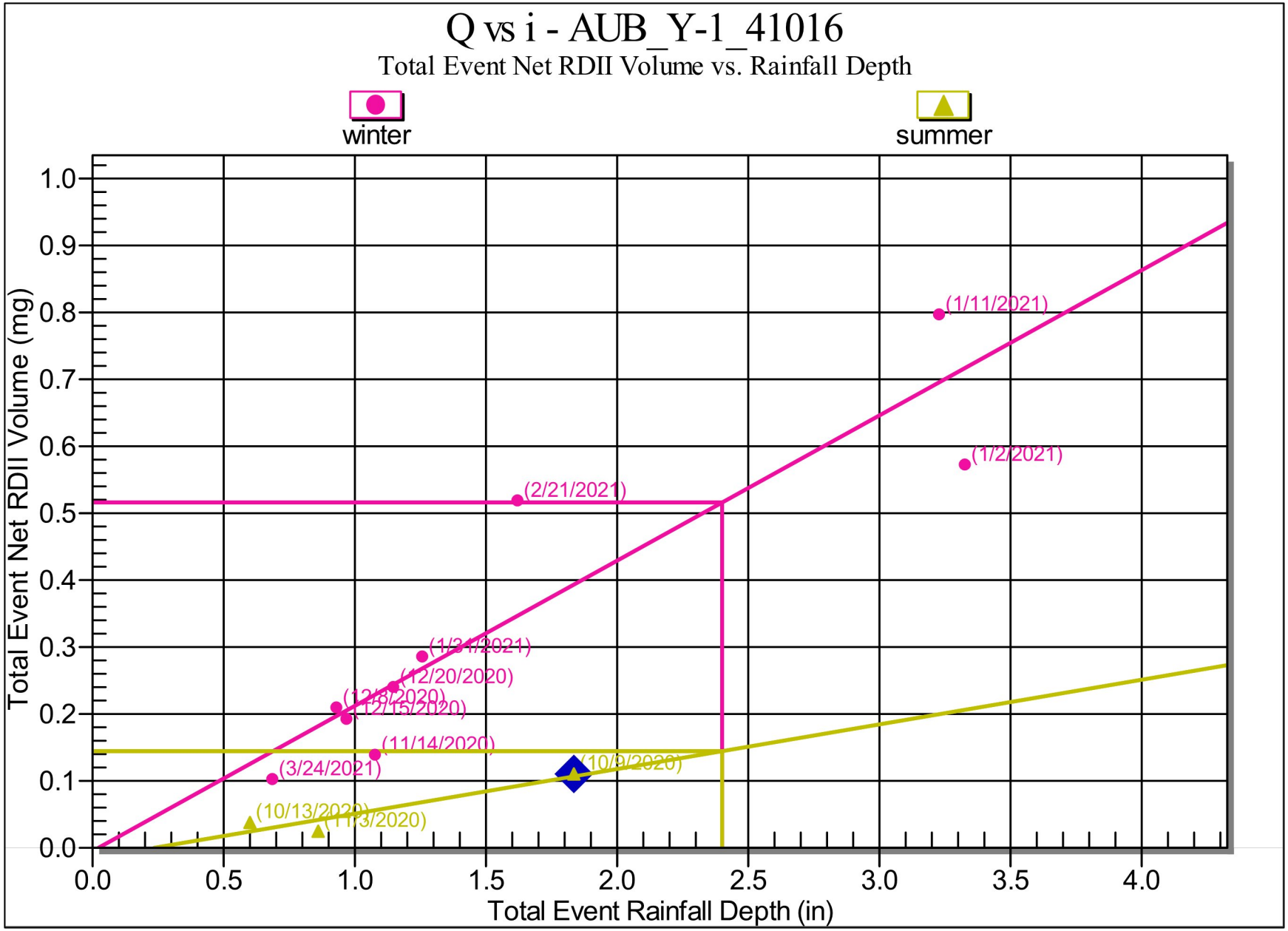

Q vs i - AUB_A3_40834
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(2/15/2020)
(10/9/2020)

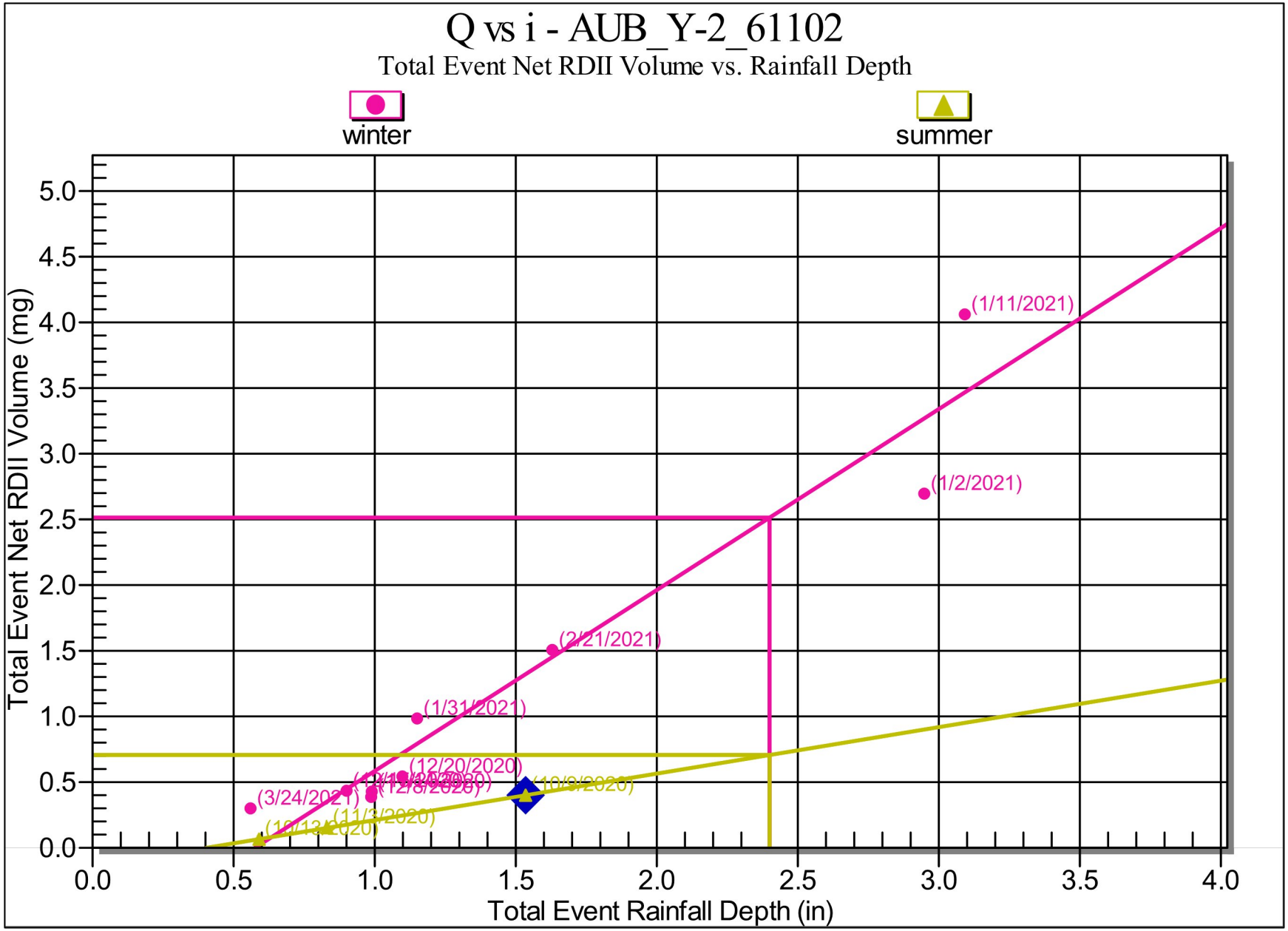

Q vs i - AUB_A4_50817
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/2/2021)
(1/11/2021)
(2/21/2021)
(1/31/2021)
(12/20/2020)
(3/24/2021)
(12/15/2020)
(12/14/2020)
(10/13/2020)
(12/8/2020)
(11/3/2020)
(10/9/2020)

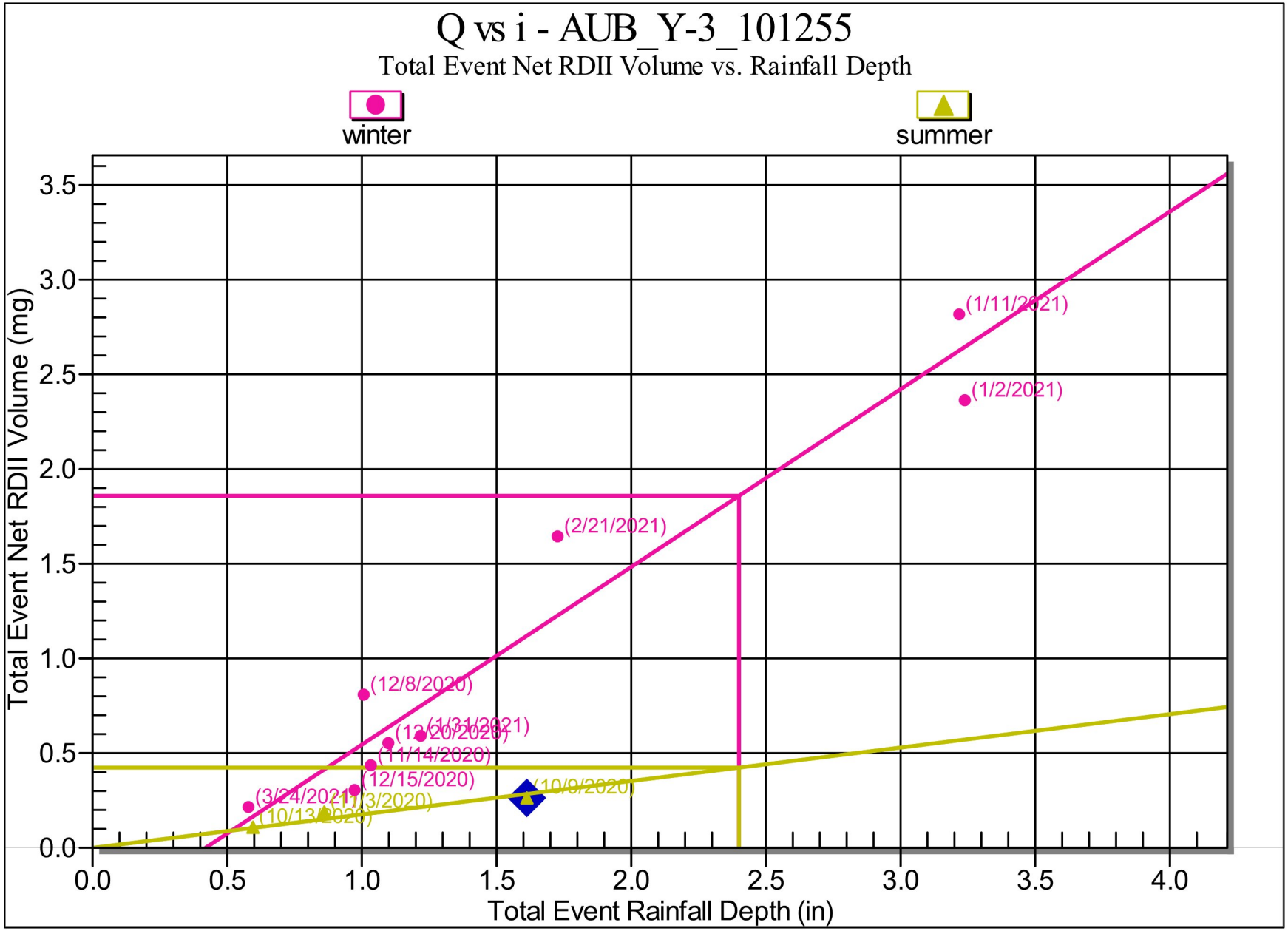

Q vs i - AUB_A6_61009K
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(10/9/2020)
(1/31/2021)
(11/14/2020)
(12/20/2020)
(12/8/2020)
(10/15/2020)
(3/24/2021)

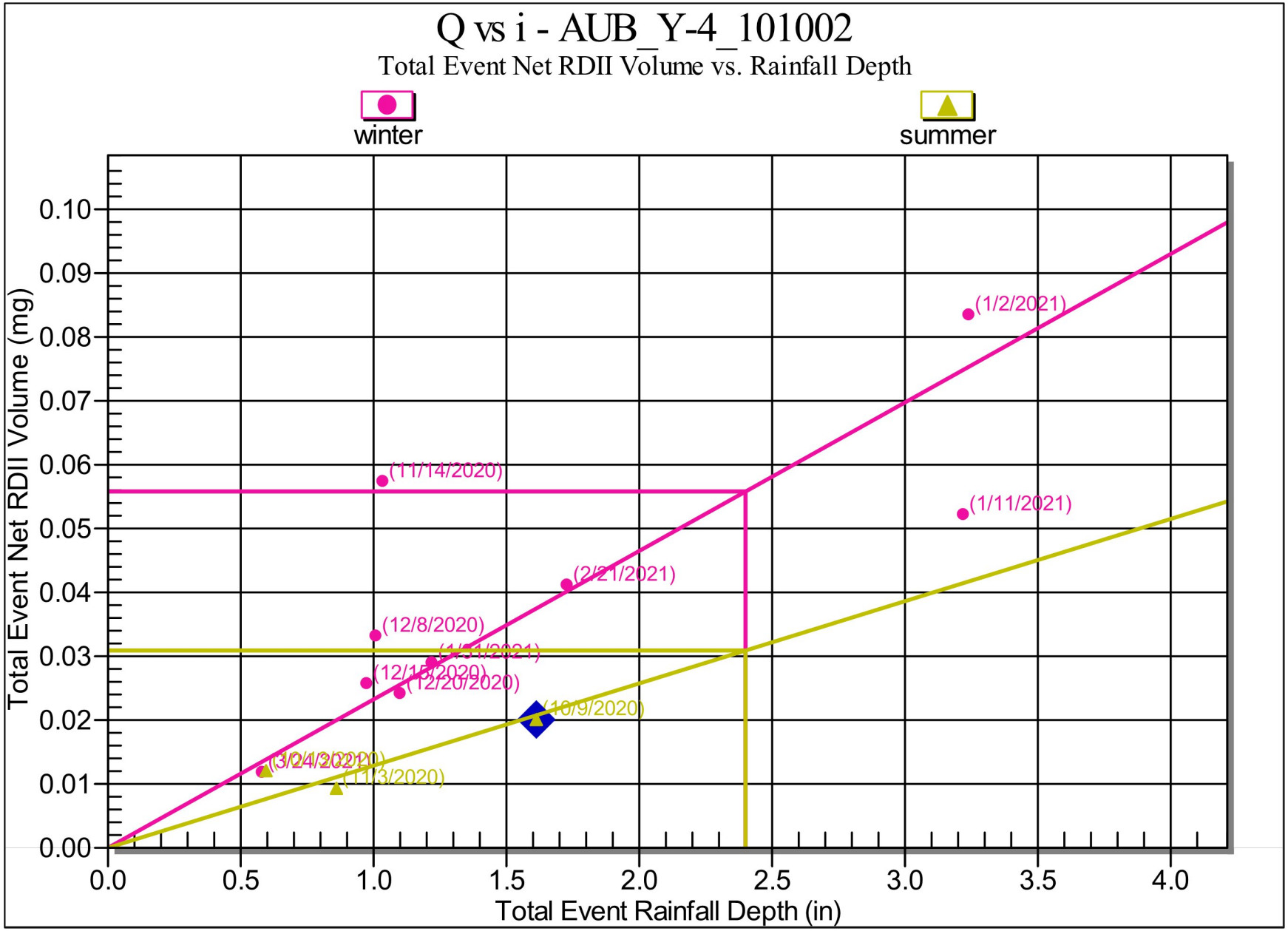

Q vs i - AUB_A8_70829
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(10/9/2020)
(10/13/2020)

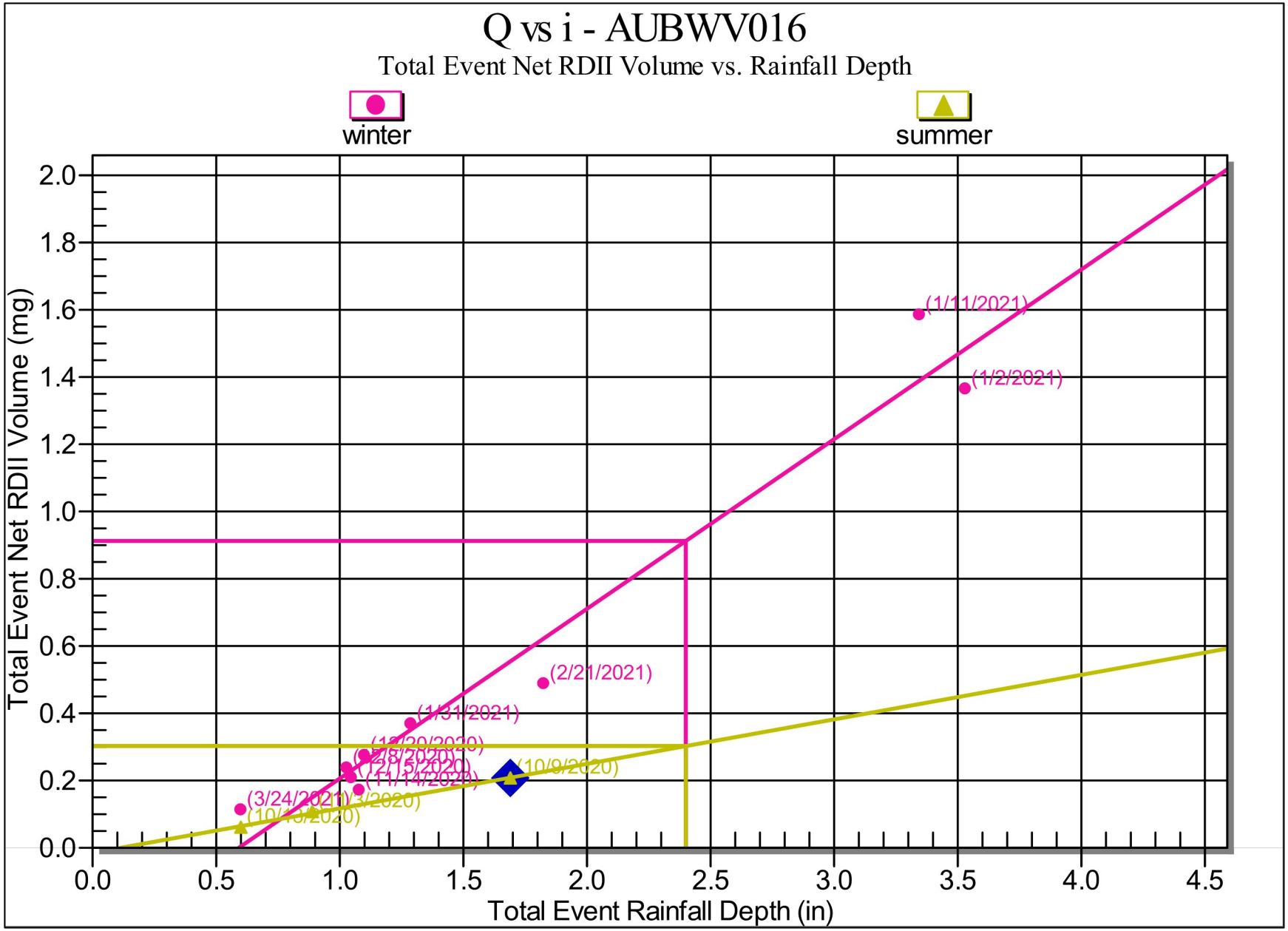

Q vs i - AUB_A9_71031
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(12/20/2020)
(12/15/2020)
(12/8/2020)
(10/9/2020)

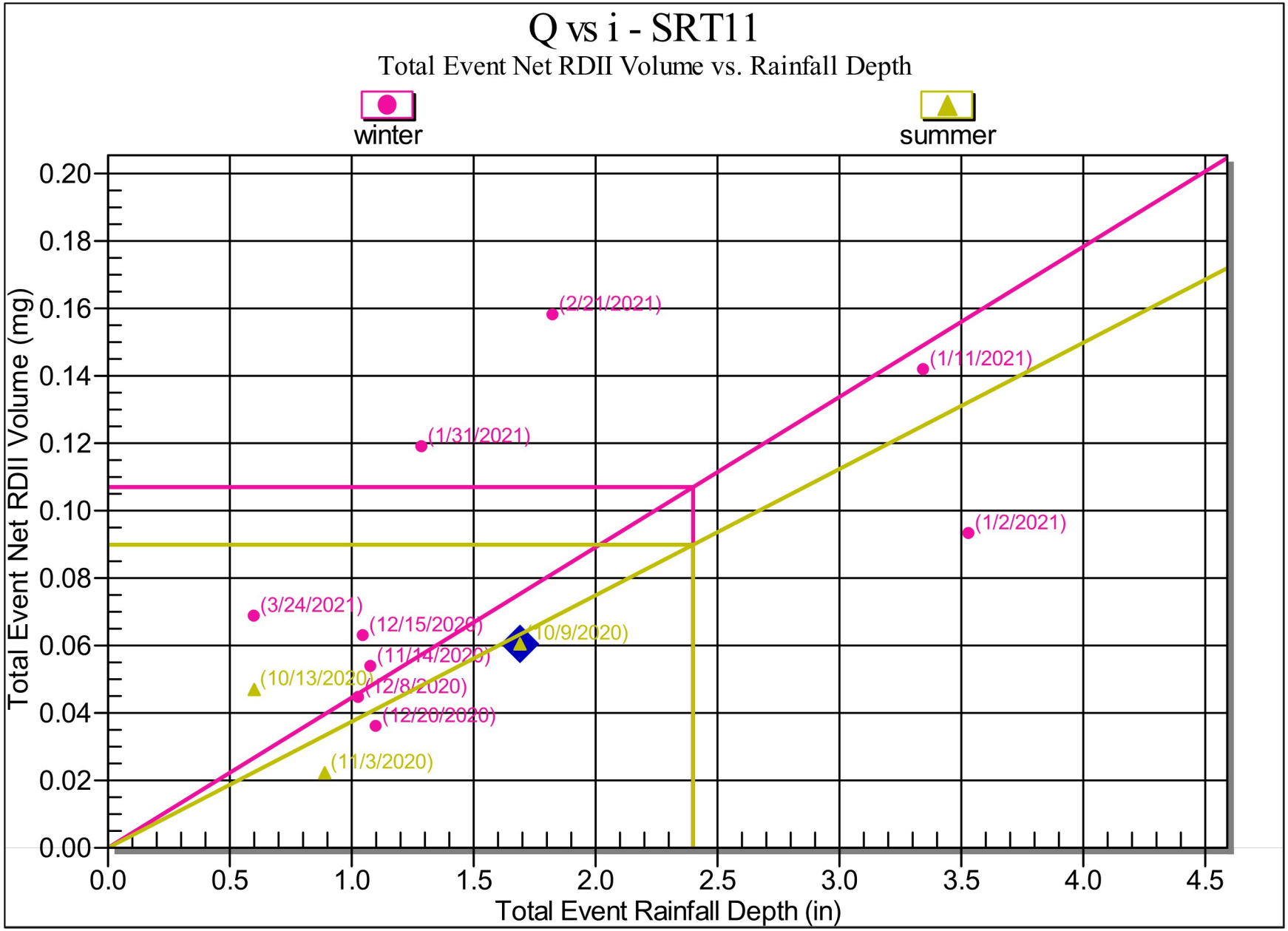

Q vs i - AUB_Y-1_41016
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(12/20/2020)
(12/8/2020)
(12/15/2020)
(11/14/2020)
(3/24/2021)
(10/9/2020)
(10/13/2020)
(11/3/2020)

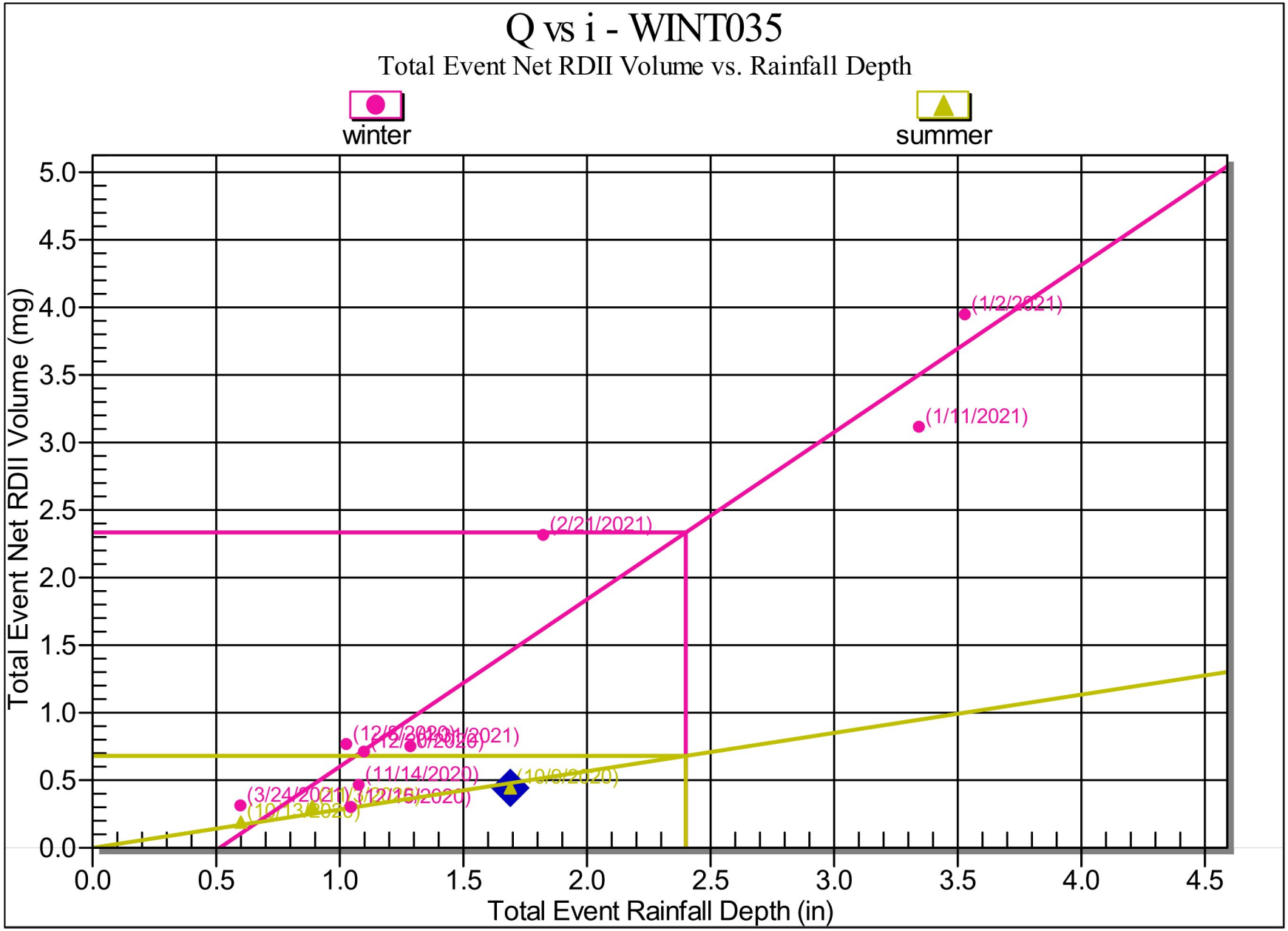

Q vs i - AUB_Y-2_61102
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(12/20/2020)
(3/24/2021)
(11/3/2020)

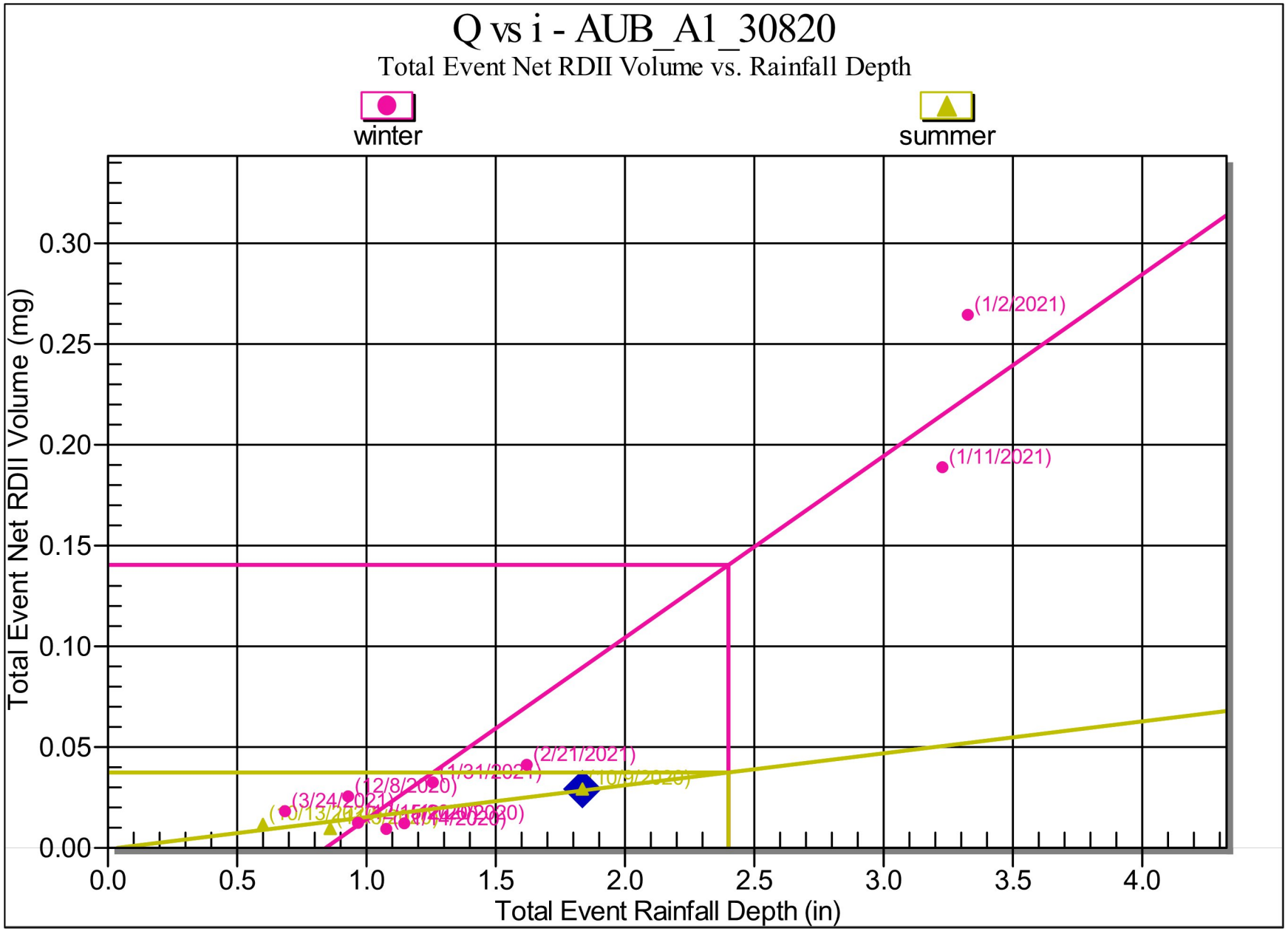

Q vs i - AUB_Y-3_101255
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
(1/11/2021)
(1/2/2021)
(2/21/2021)
(12/8/2020)
(1/31/2021)
(12/20/2020)
(11/14/2020)
(12/15/2020)
(3/24/2021)
(11/3/2020)
(10/13/2020)
(10/9/2020)

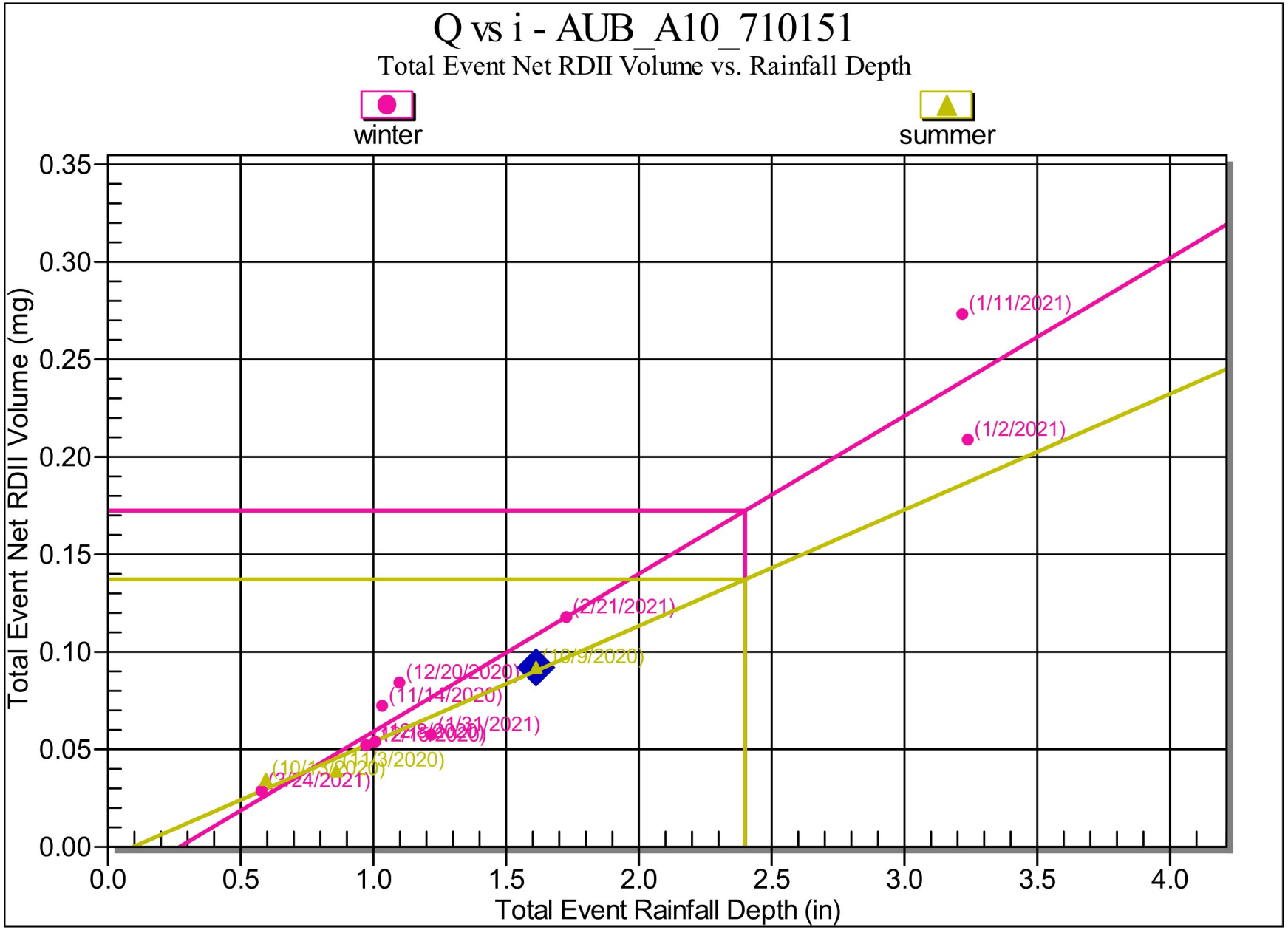

Q vs i - AUB_Y-4_101002
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/2/2021)
(11/14/2020)
(1/11/2021)
(2/21/2021)
(12/8/2020)
(12/20/2020)
(10/9/2020)
(11/3/2020)

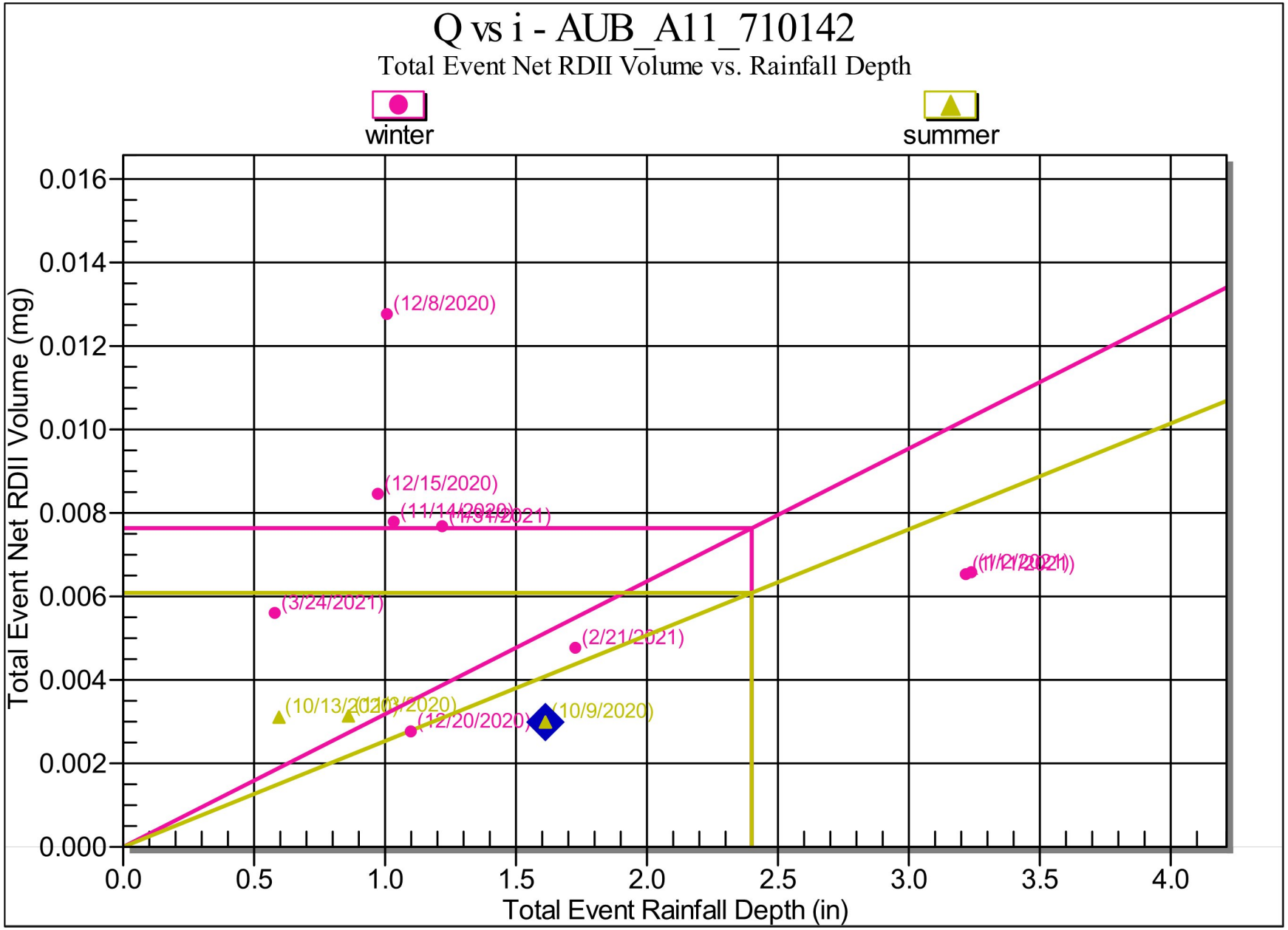

Q vs i - AUBWV016
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(10/9/2020)
(11/14/2020)
(3/24/2021)

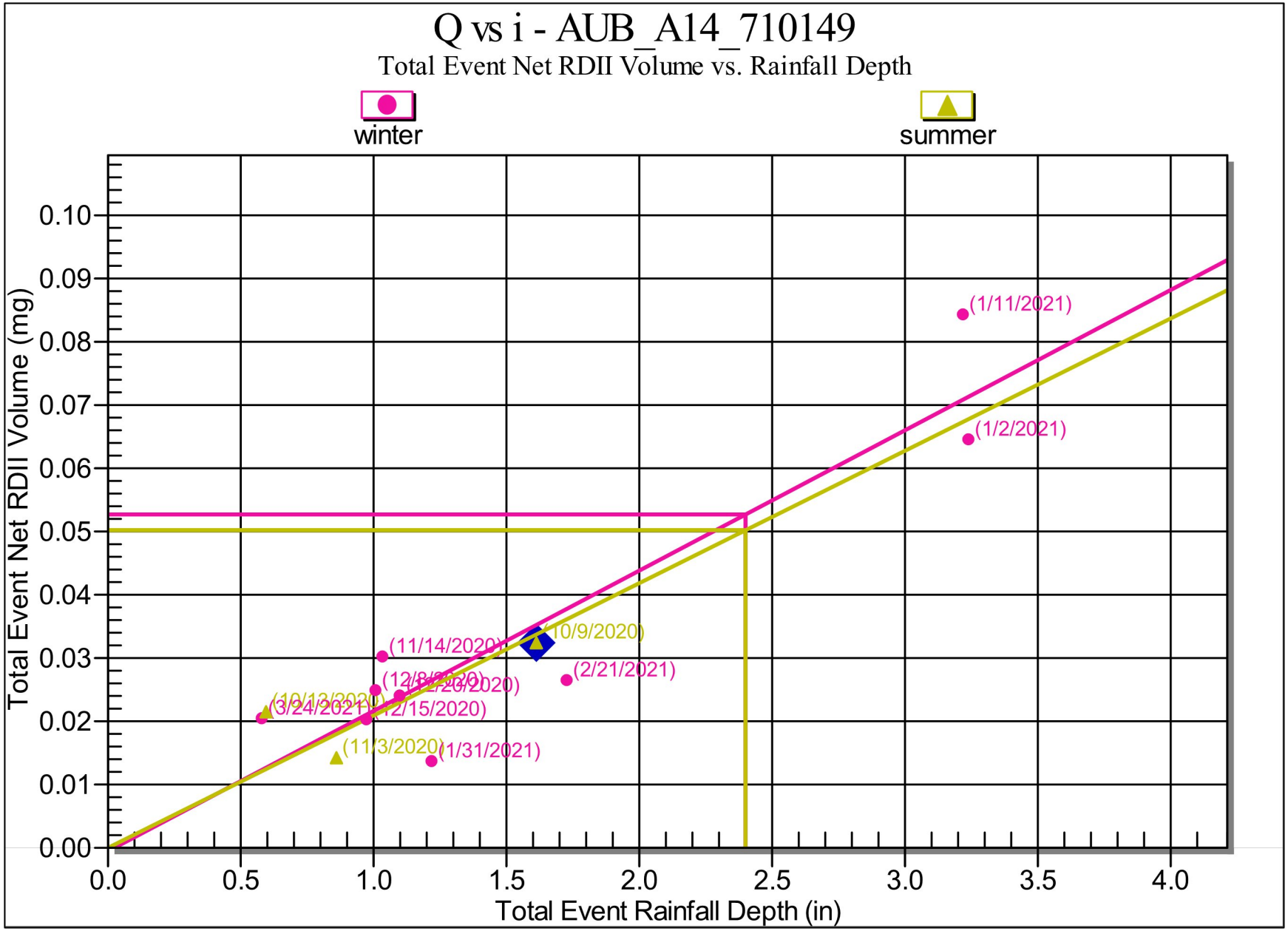

Q vs i - SRT11
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Total Event Rainfall Depth (in)
(2/21/2021)
(1/11/2021)
(1/31/2021)
(1/2/2021)
(3/24/2021)
(12/15/2020)
(10/9/2020)
(11/14/2020)
(10/13/2020)
(12/8/2020)
(12/20/2020)
(11/3/2020)

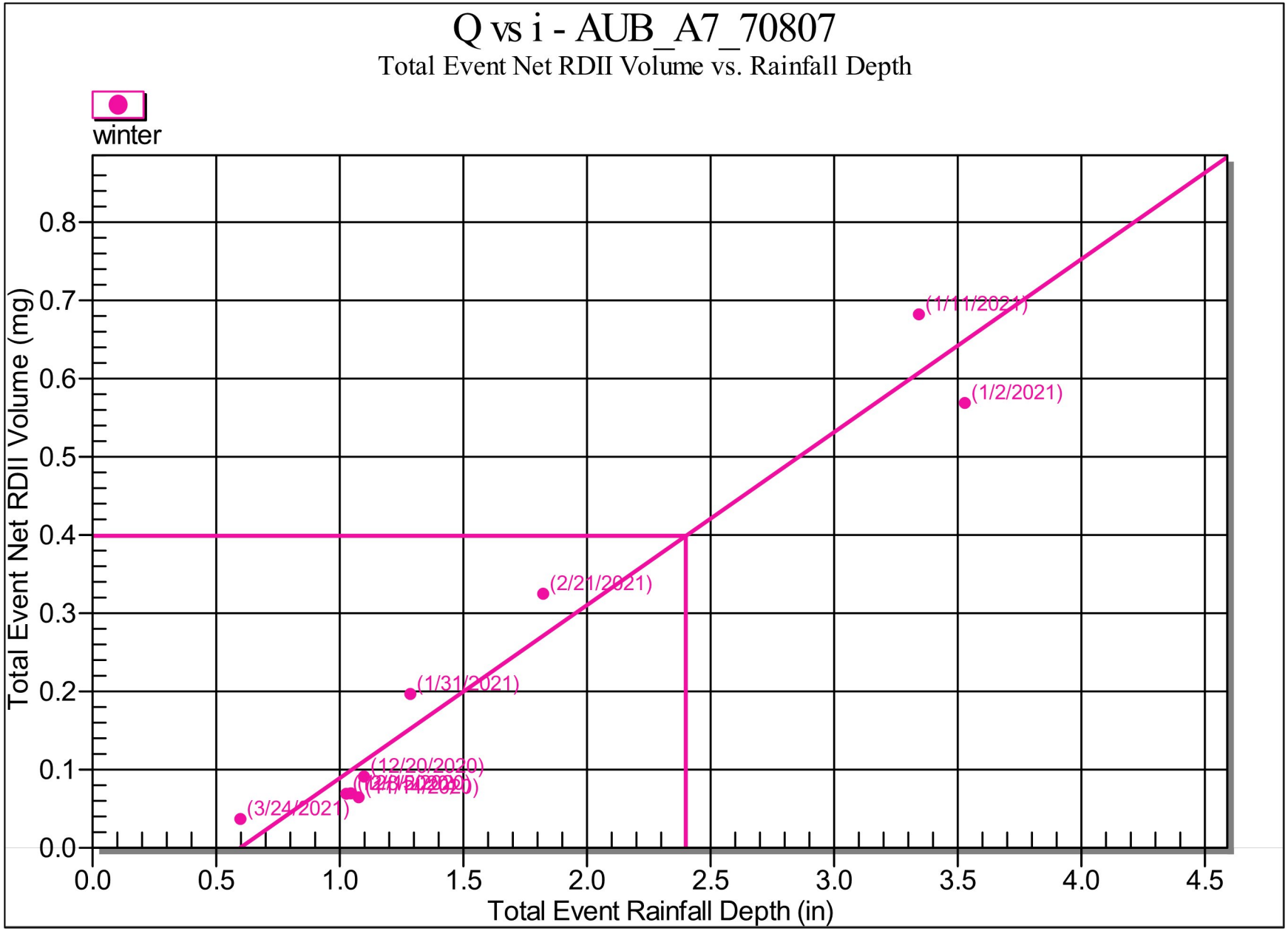

Q vs i - WINT035
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
(1/2/2021)
(1/11/2021)
(2/21/2021)
(11/14/2020)
(10/9/2020)

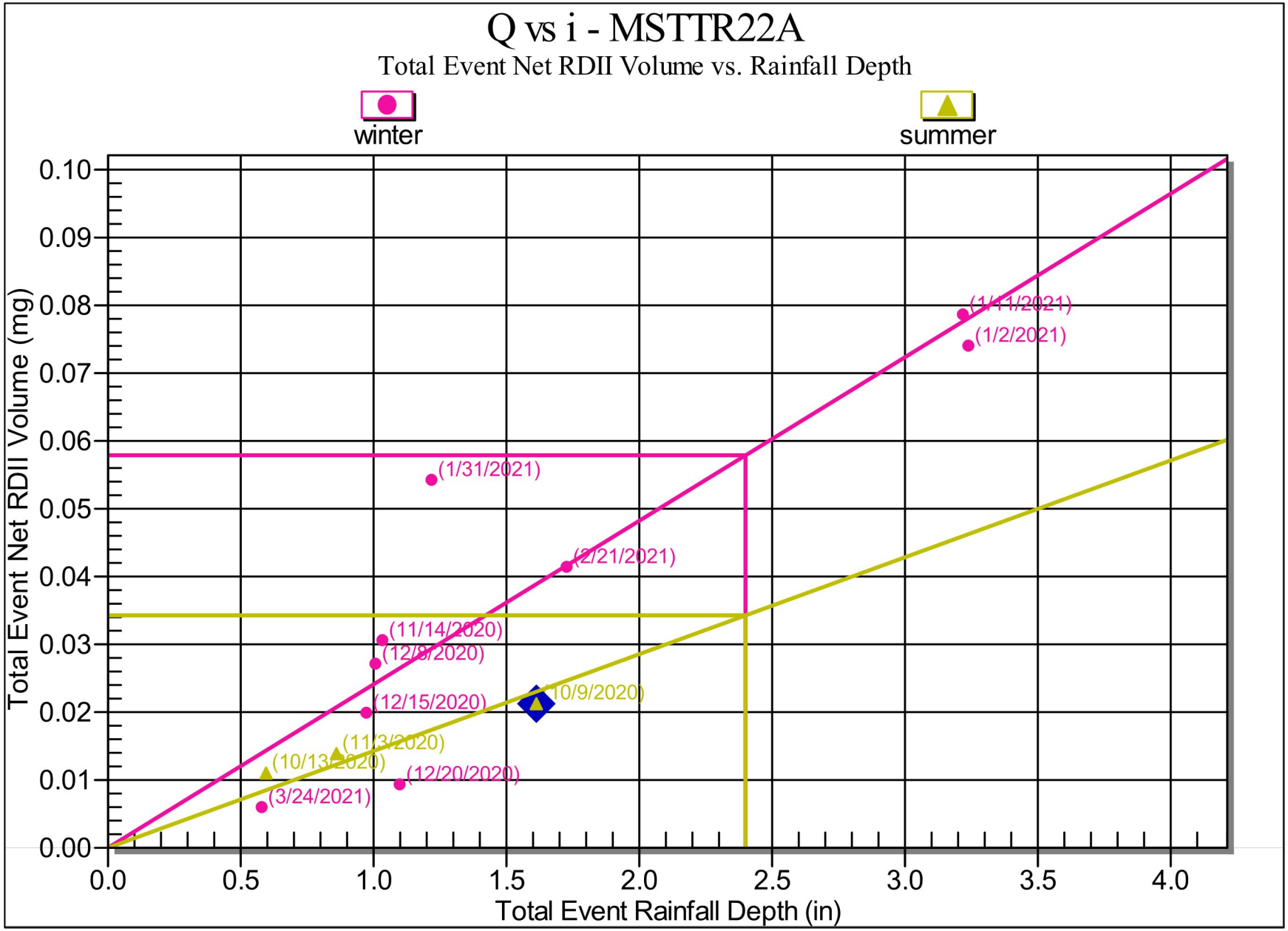

Q vs i - AUB_A1_30820
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/2/2021)
(1/11/2021)
(2/21/2021)
(12/8/2020)
(3/24/2021)

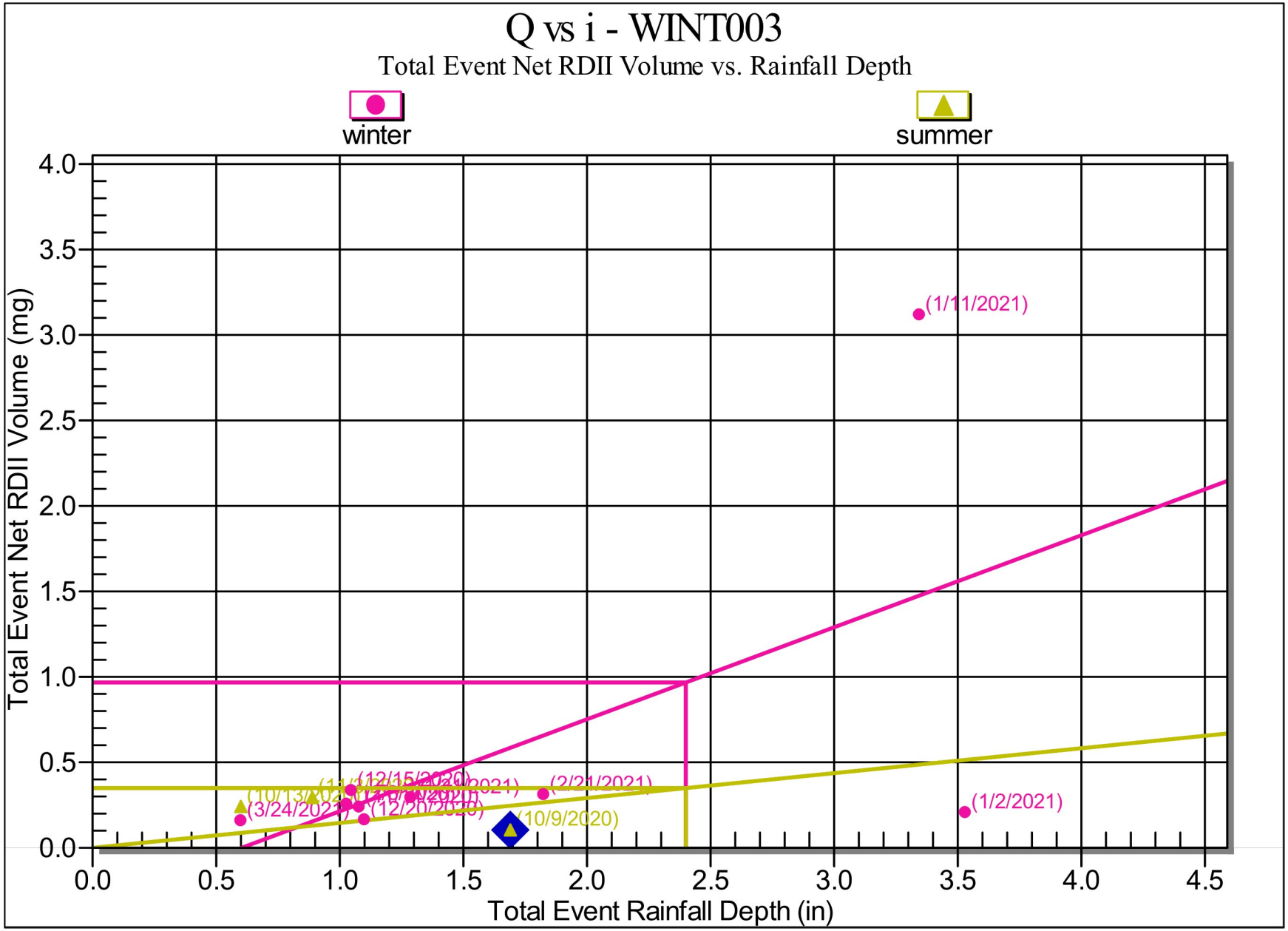

Q vs i - AUB_A10_710151
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(2/21/2021)
(12/20/2020)
(11/14/2020)
(1/31/2021)
(11/3/2020)
(3/24/2021)

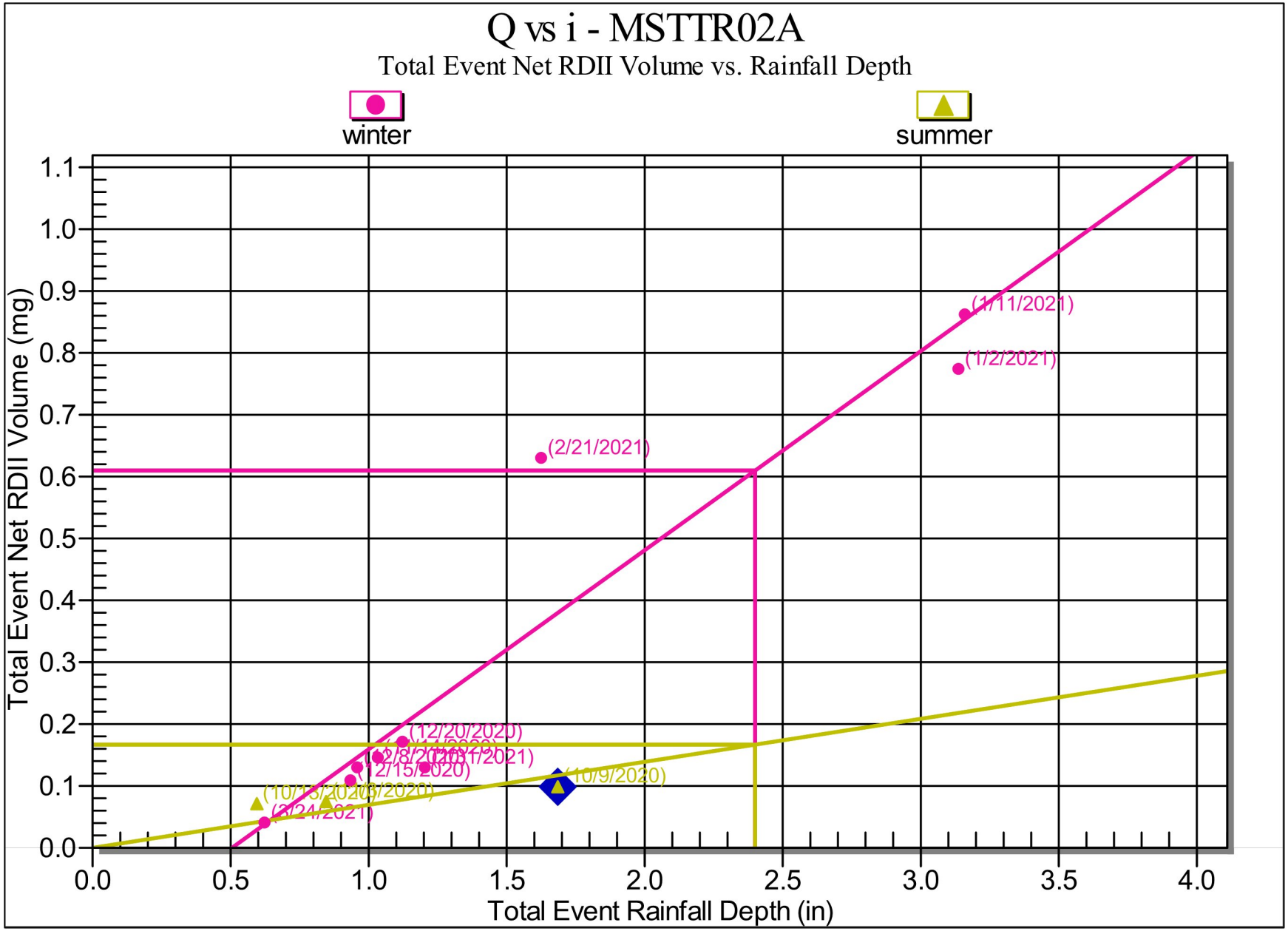

Q vs i - AUB_A11_710142
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(12/8/2020)
(12/15/2020)
(3/24/2021)
(2/21/2021)
(10/9/2020)
(12/20/2020)

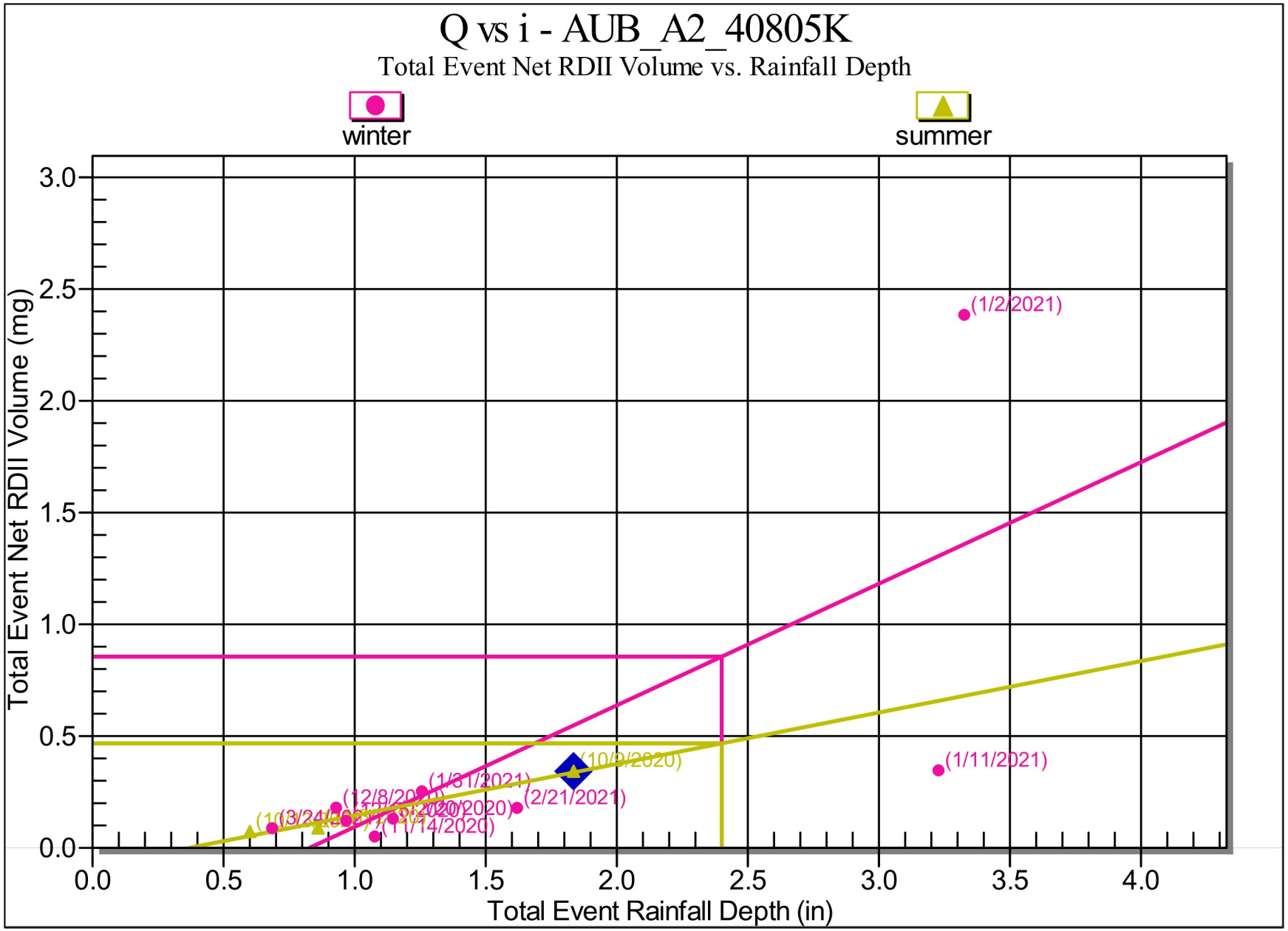

Q vs i - AUB_A14_710149
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(10/9/2020)
(11/14/2020)
(2/21/2021)
(12/15/2020)
(11/3/2020)
(1/31/2021)


Q vs i - AUB_A7_70807
Total Event Net RDII Volume vs. Rainfall Depth
winter
Total Event Net RDII Volume (mg)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
(1/11/2021)
(1/2/2021)
(2/21/2021)
(1/31/2021)
(12/20/2020)
(3/24/2021)


Q vs i - MSTTR22A
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
Total Event Rainfall Depth (in)
(1/11/2021)
(1/2/2021)
(1/31/2021)
(2/21/2021)
(11/14/2020)
(12/8/2020)
(12/15/2020)
(10/9/2020)
(11/3/2020)
(10/13/2020)
(12/20/2020)
(3/24/2021)


Q vs i - WINT003
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
(1/11/2021)
(2/21/2021)
(1/2/2021)
(10/9/2020)
(3/24/2021)


Q vs i - MSTTR02A
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
(1/11/2021)
(1/2/2021)
(2/21/2021)
(12/20/2020)
(12/15/2020)
(10/9/2020)
(2/24/2021)

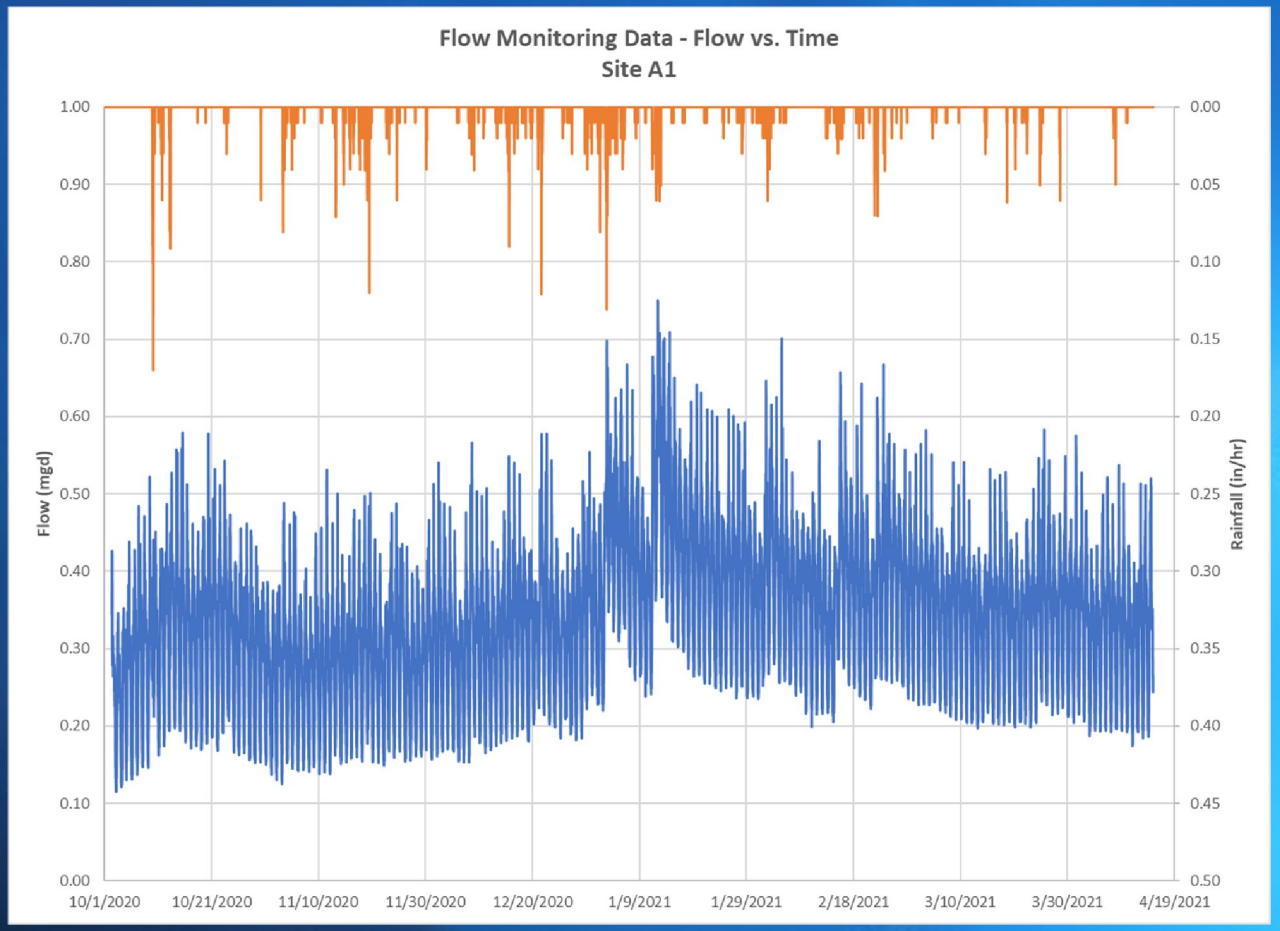

Q vs i - AUB_A2_40805K
Total Event Net RDII Volume vs. Rainfall Depth
winter
summer
Total Event Net RDII Volume (mg)
Total Event Rainfall Depth (in)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
(1/2/2021)
(1/11/2021)
(10/9/2020)
(1/31/2021)
(12/8/2020)
(2/21/2021)
(11/14/2020)

ATTACHMENT 1B

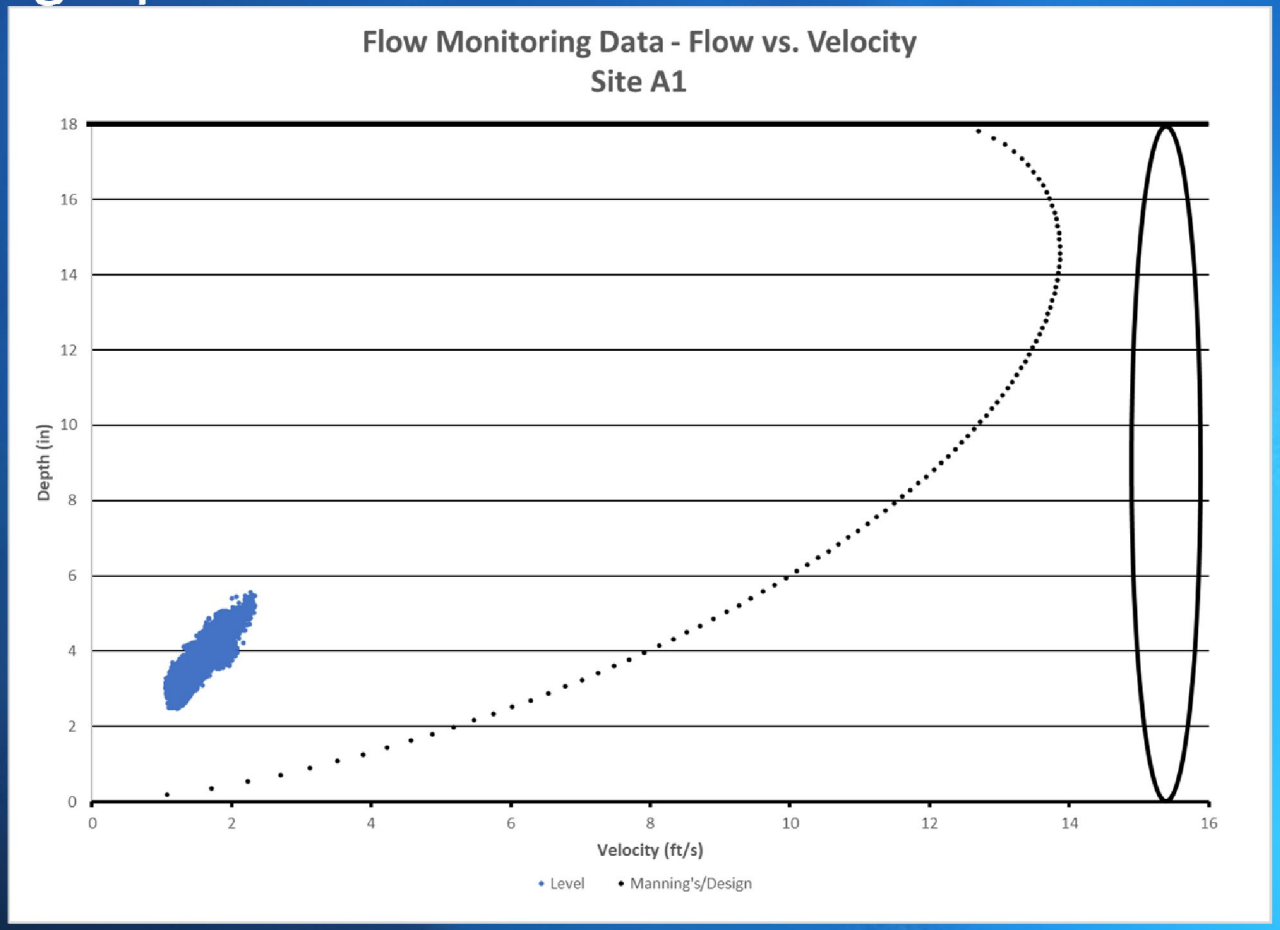
FLOW METER QUALITY REVIEW

Meter AUB_A1

Flow vs Rainfall

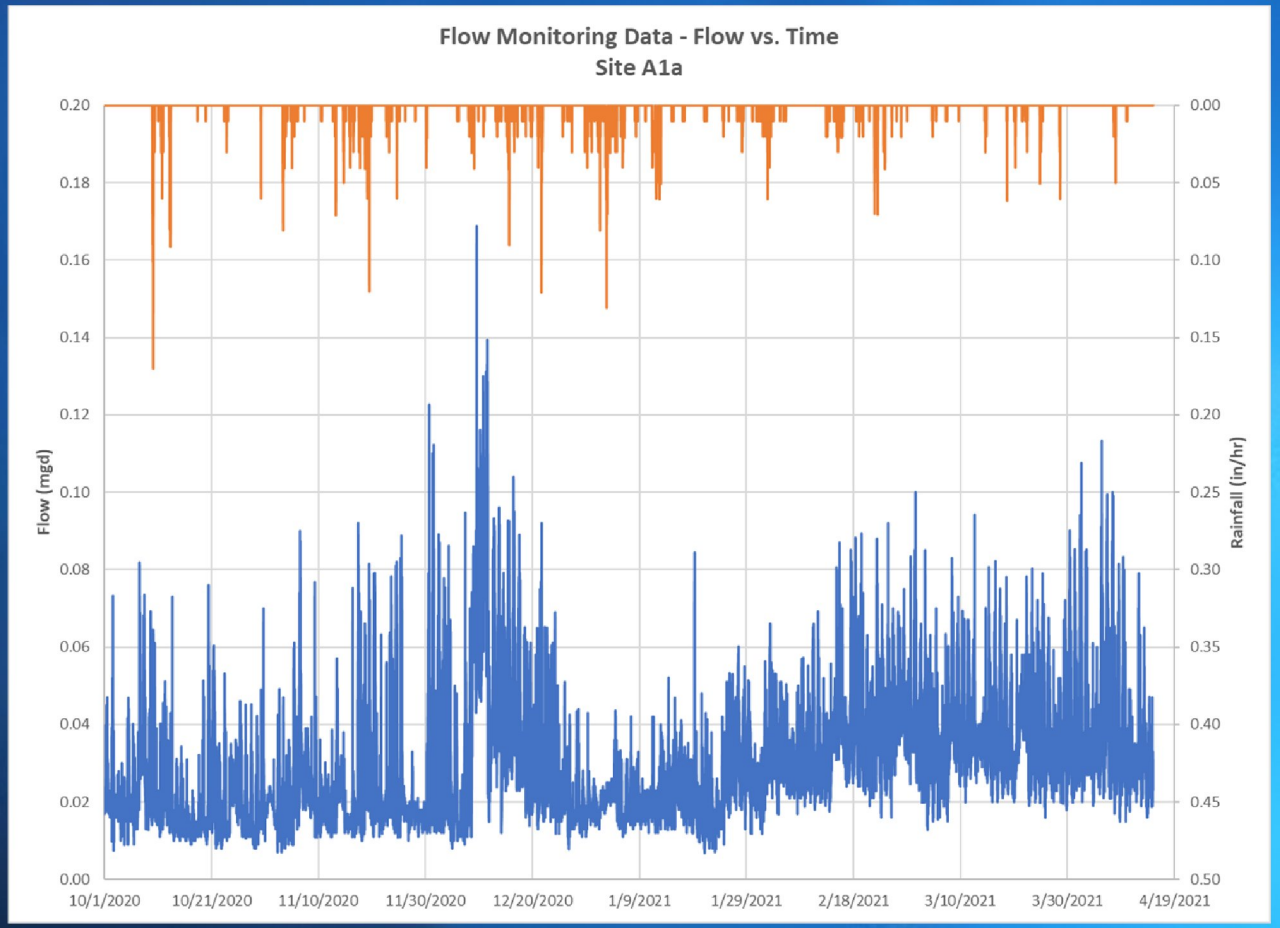


Meter AUB_A1
Scattergraph

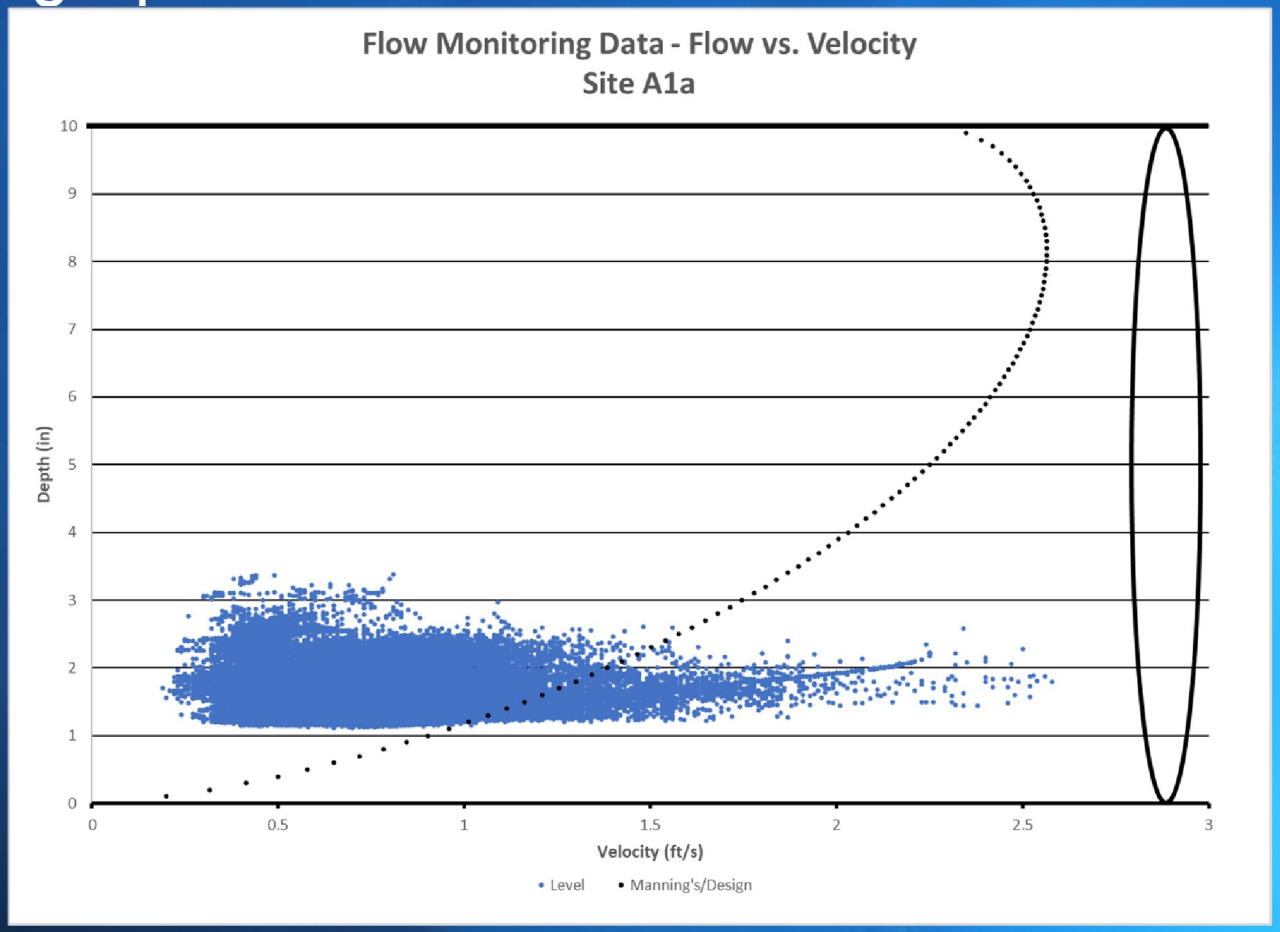


Meter AUB_A1a

Flow vs Rainfall

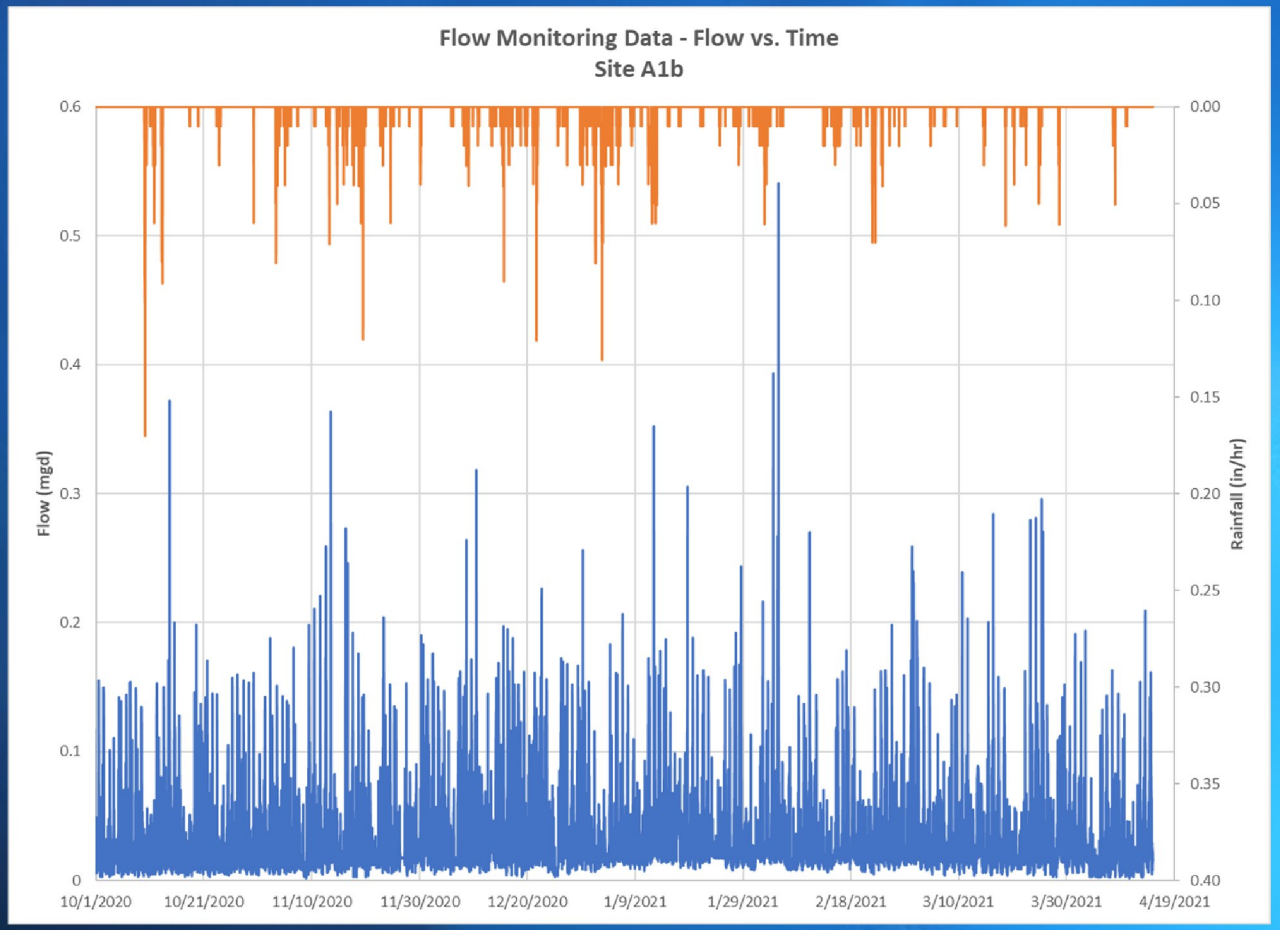


Meter AUB_A1a Scattergraph

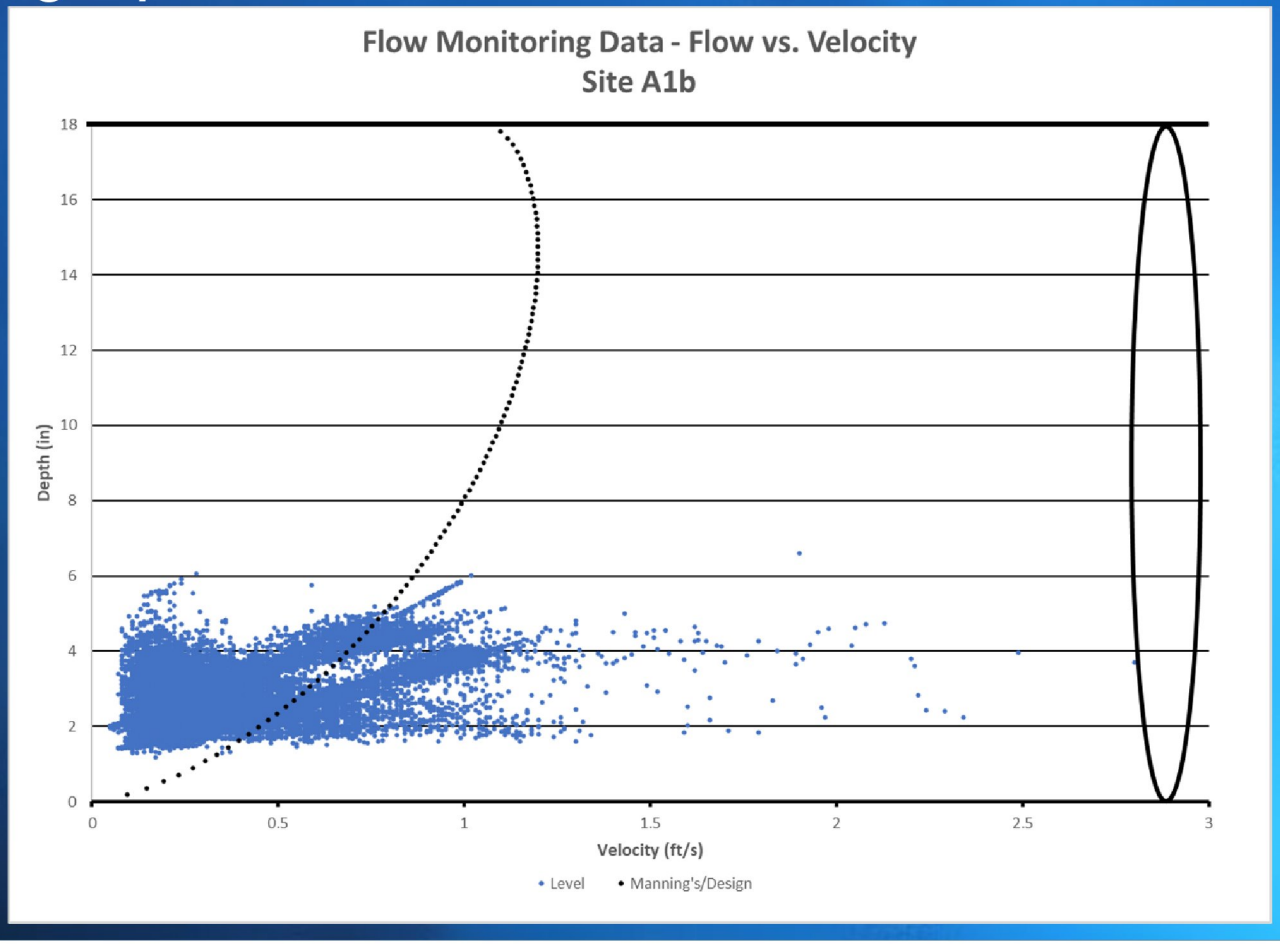


Meter AUB_A1b

Flow vs Rainfall

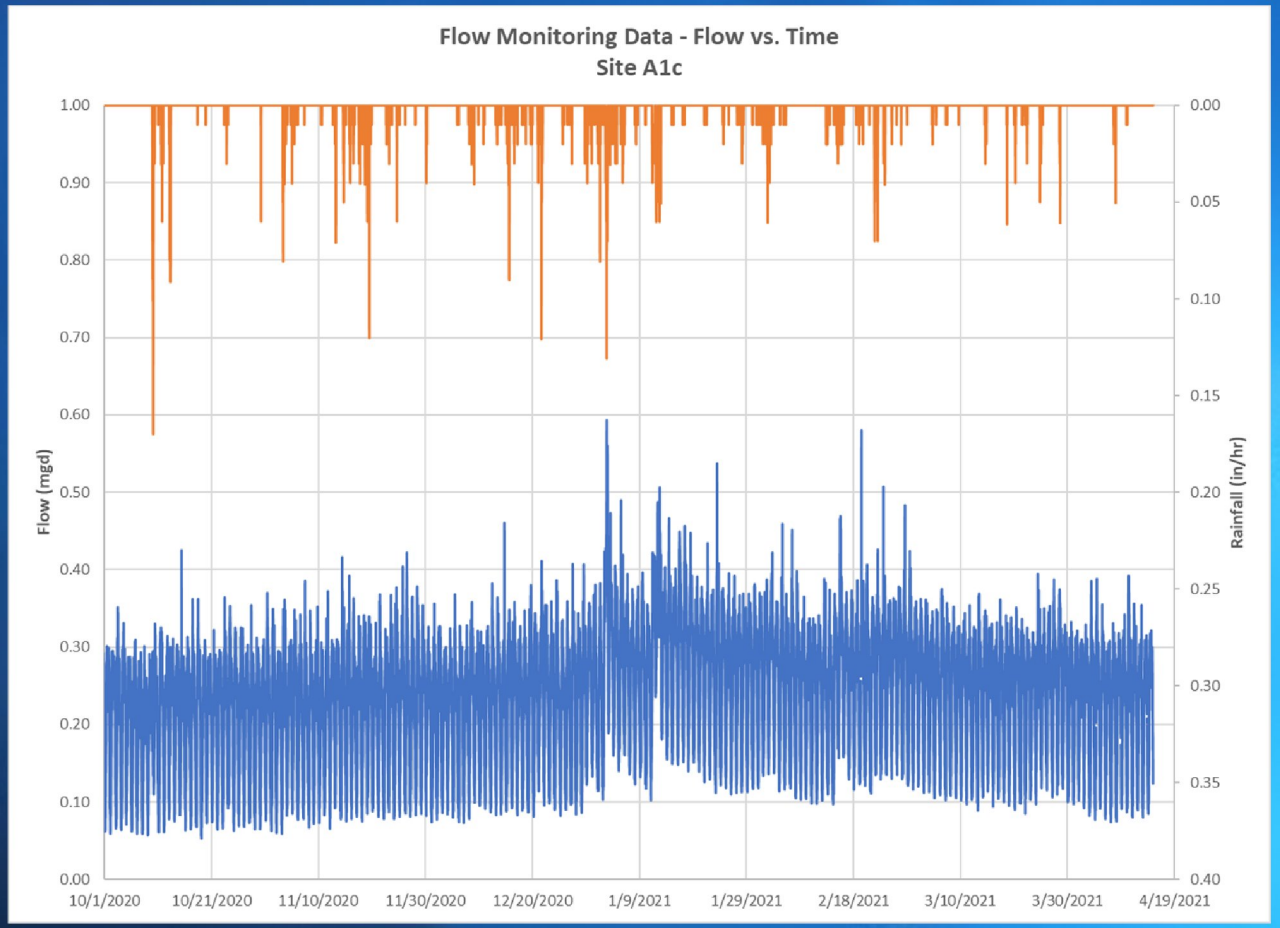


Meter AUB_A1b Scattergraph

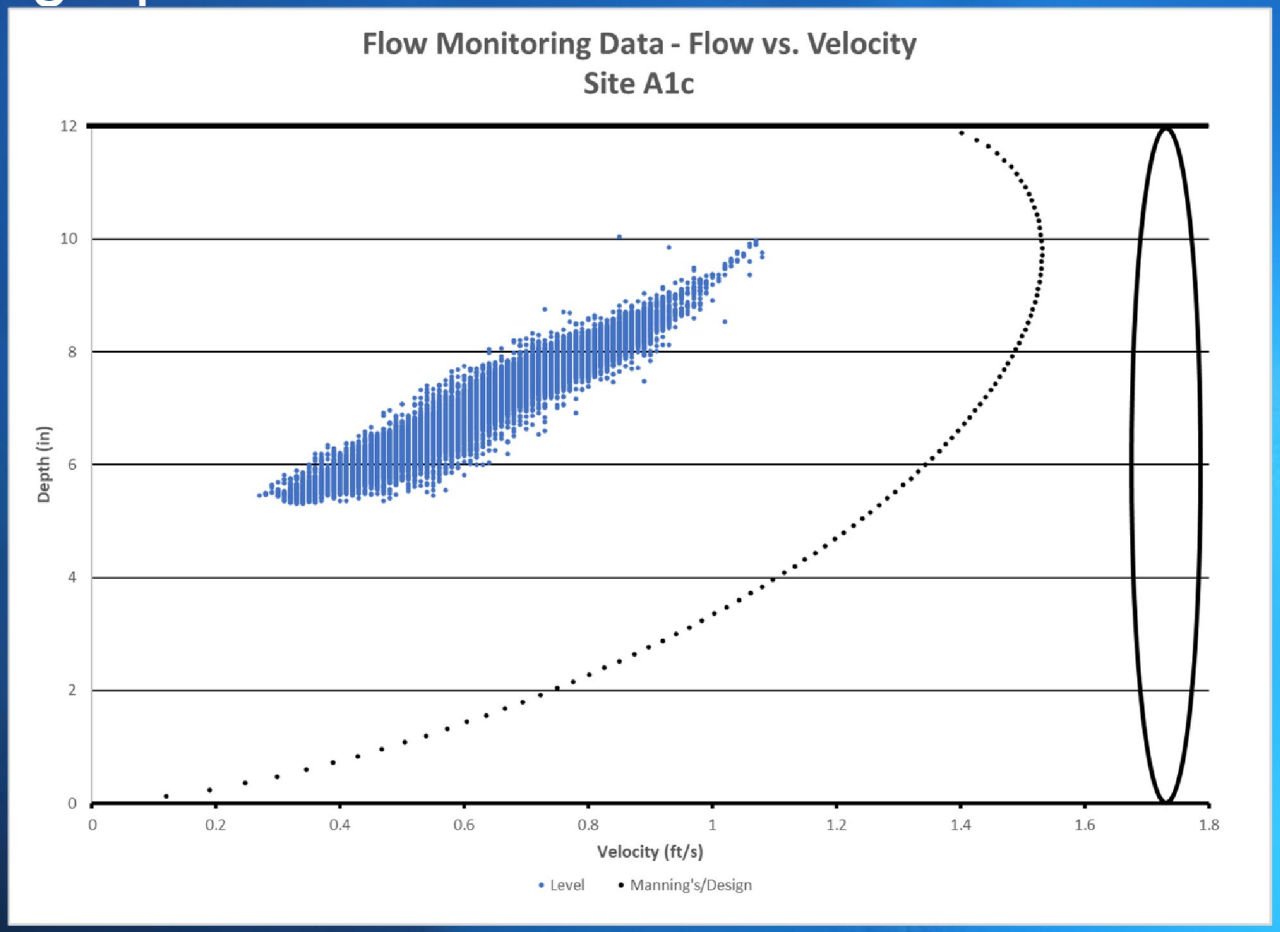


Meter AUB_A1c

Flow vs Rainfall

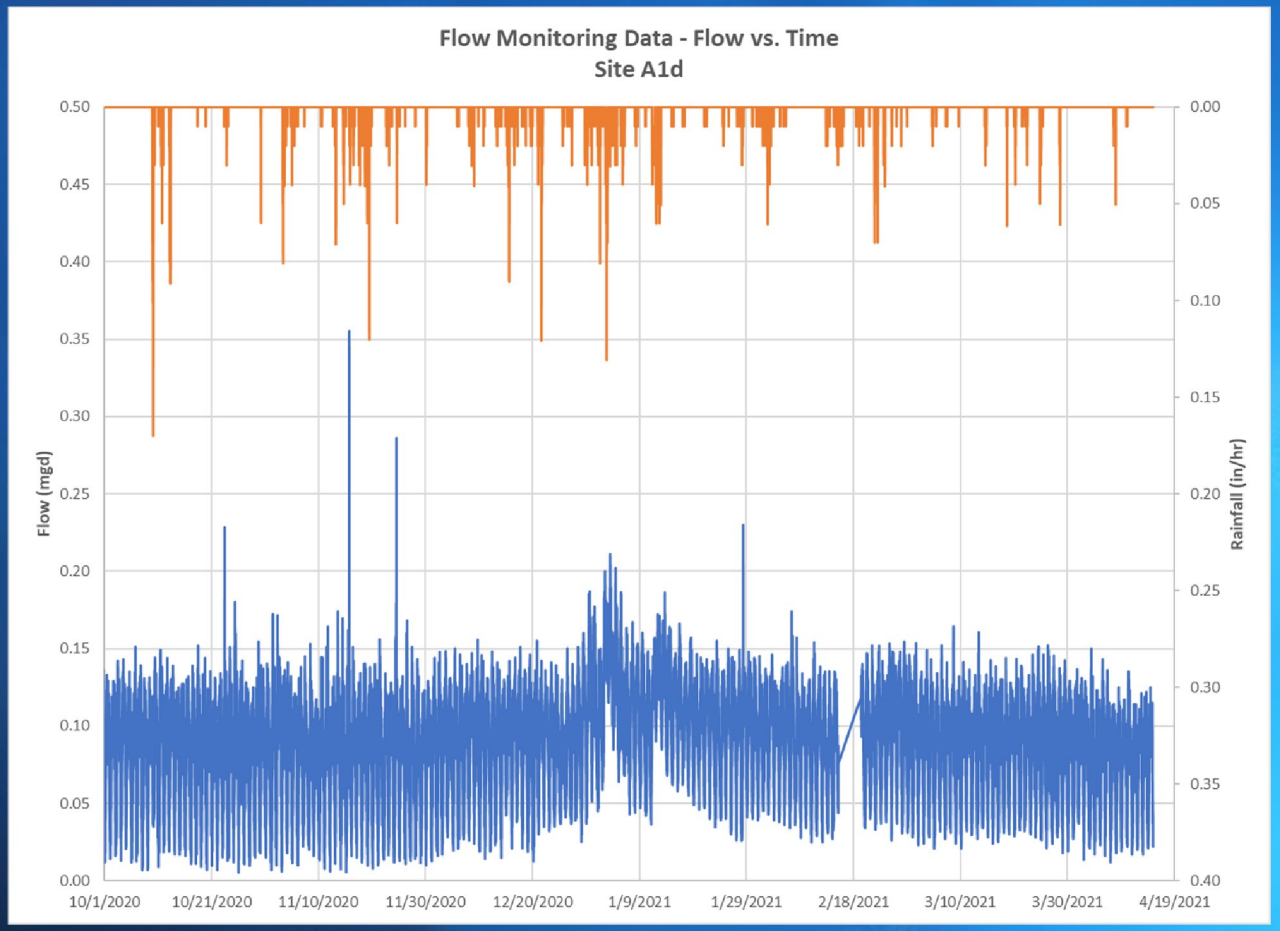


Meter AUB_A1c Scattergraph

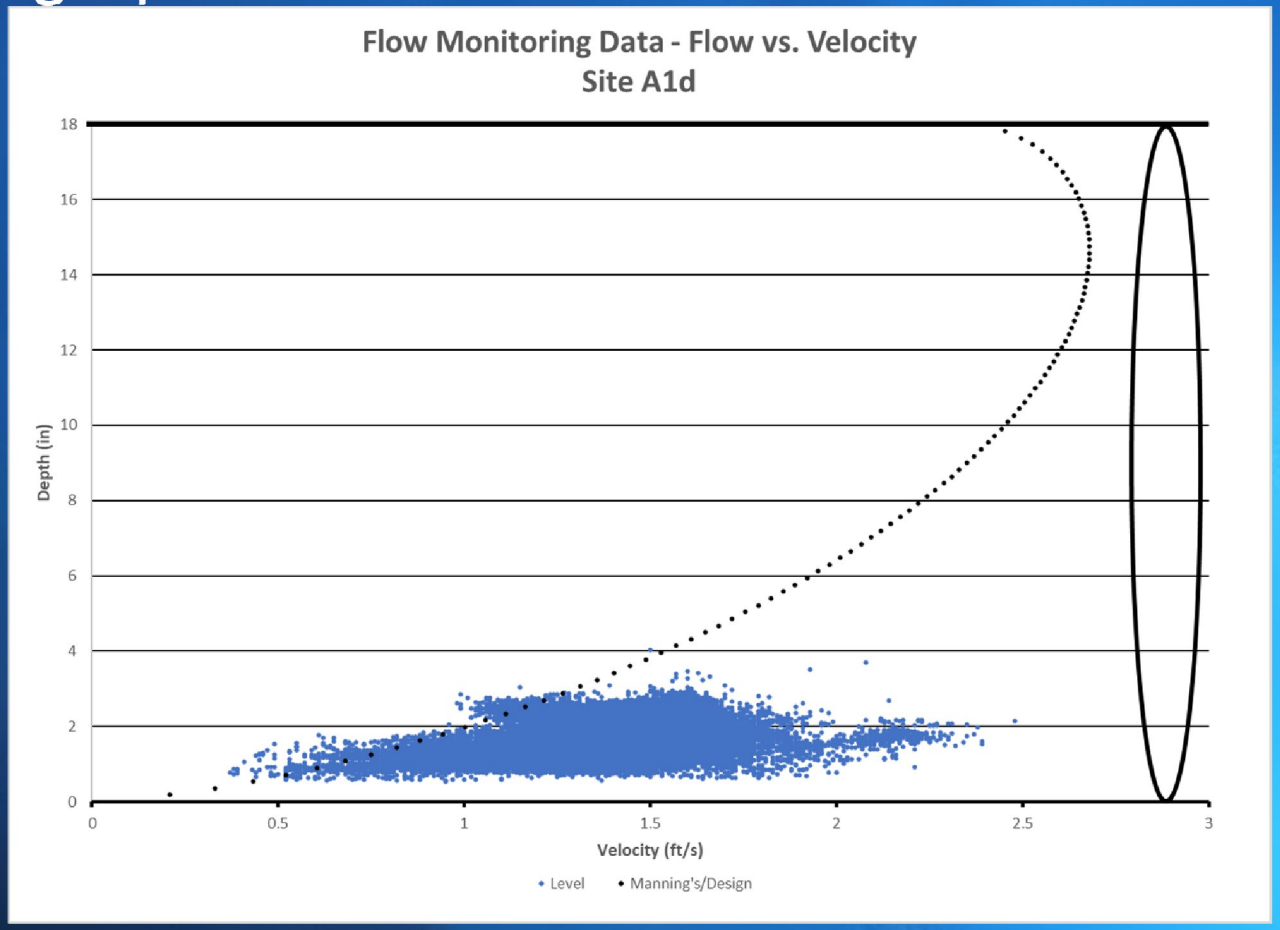


Meter AUB_A1d

Flow vs Rainfall

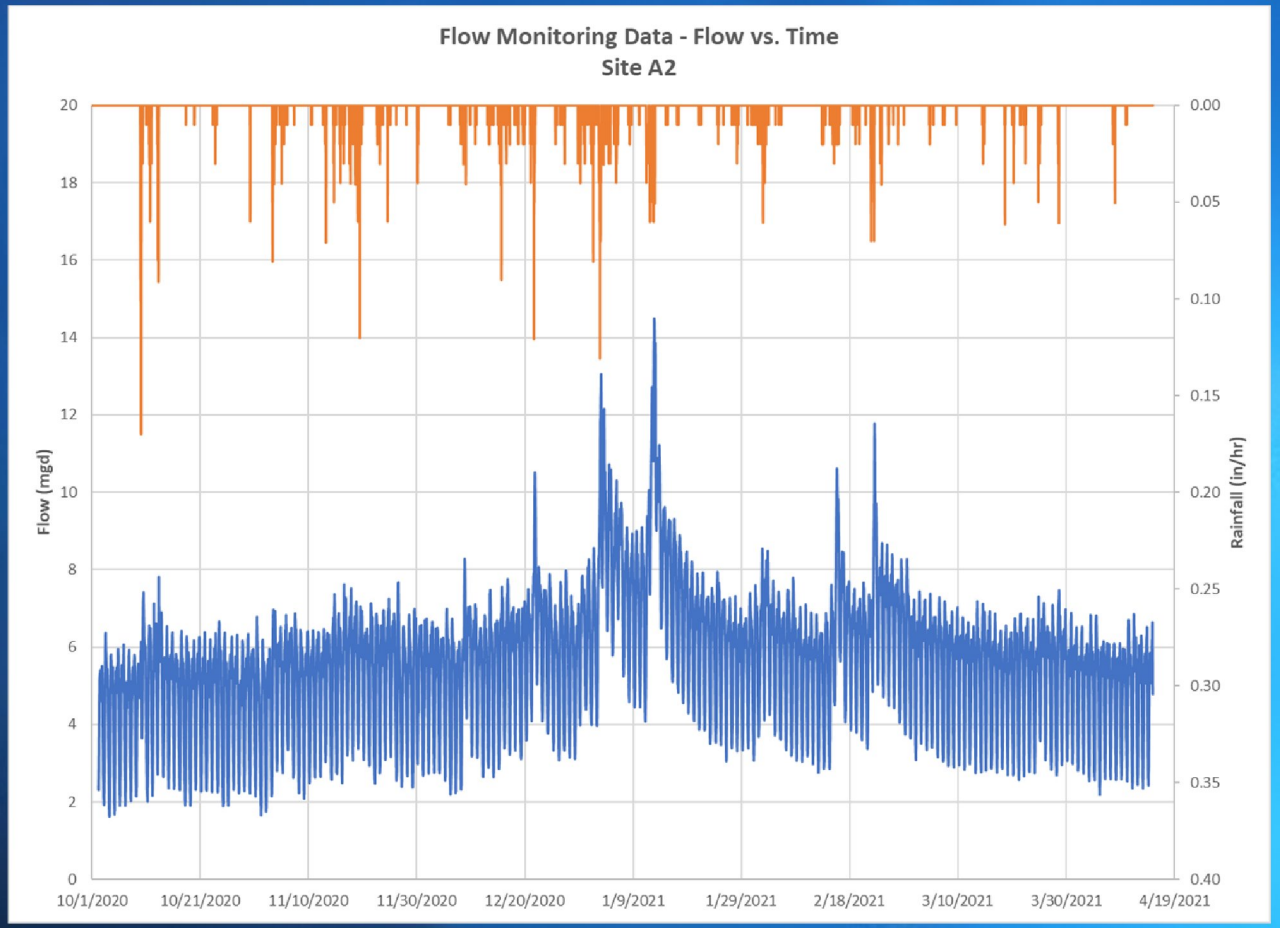


Meter AUB_A1d Scattergraph

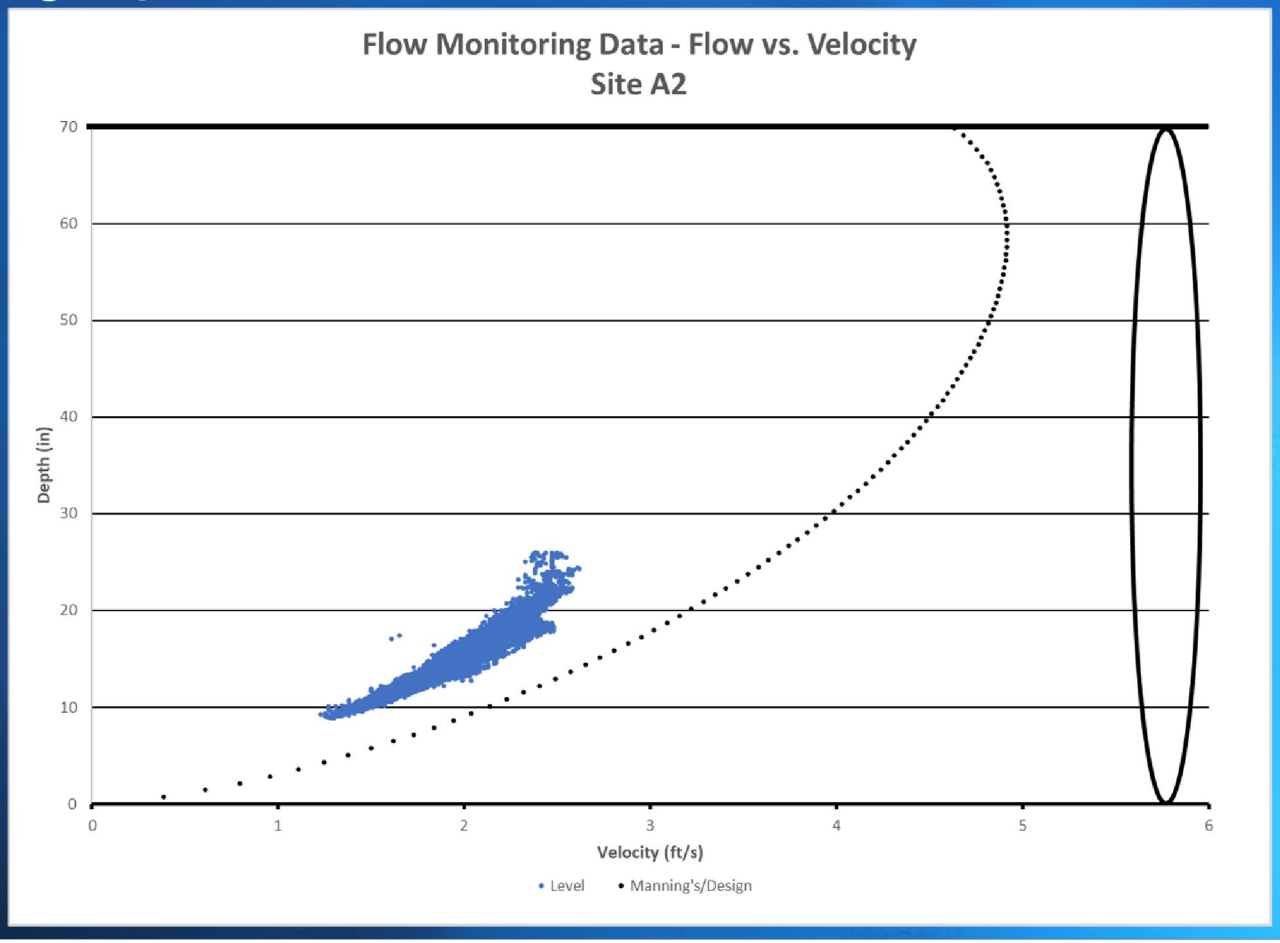


Meter AUB_A2

Flow vs Rainfall

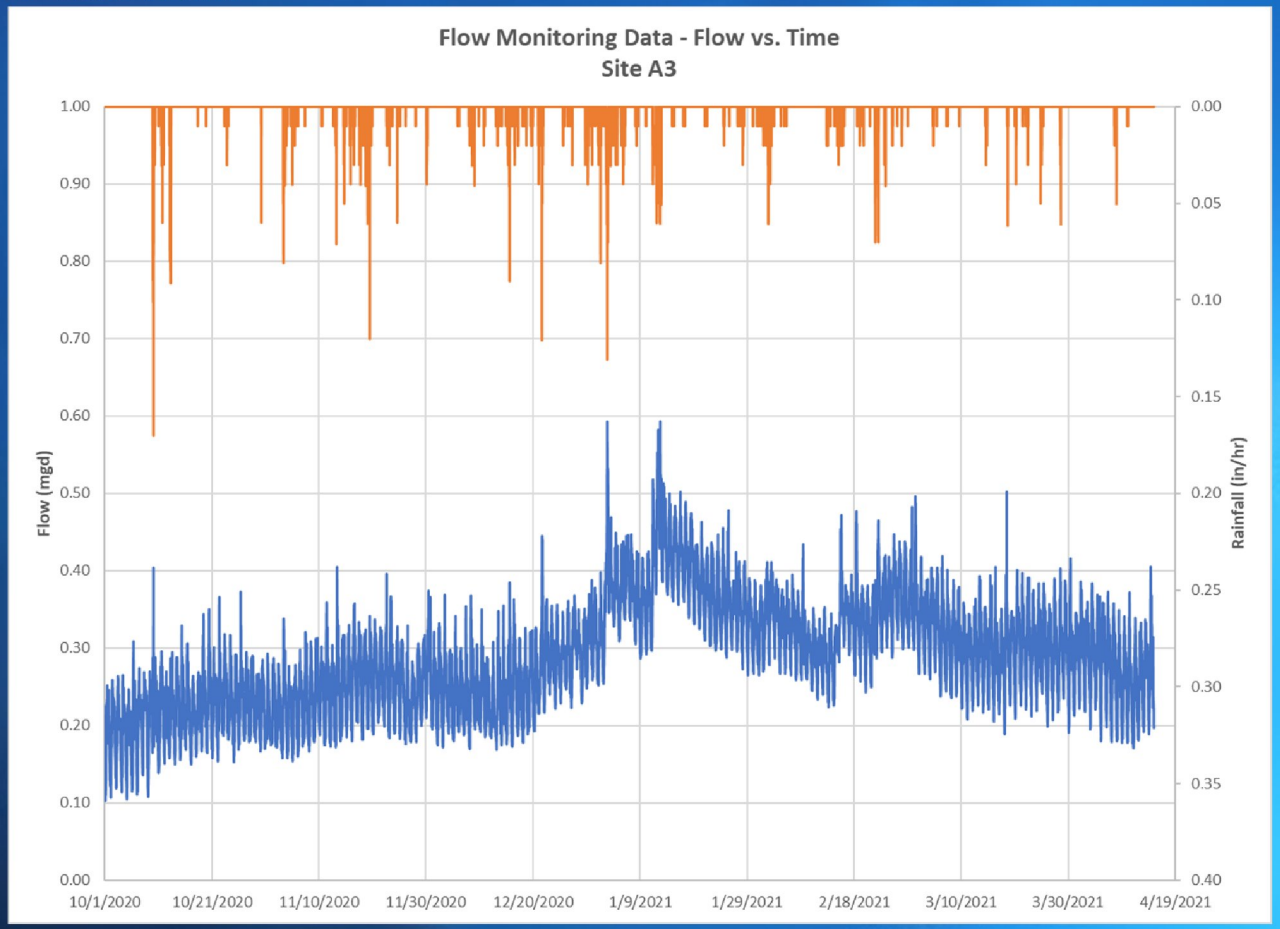


Meter AUB_A2
Scattergraph

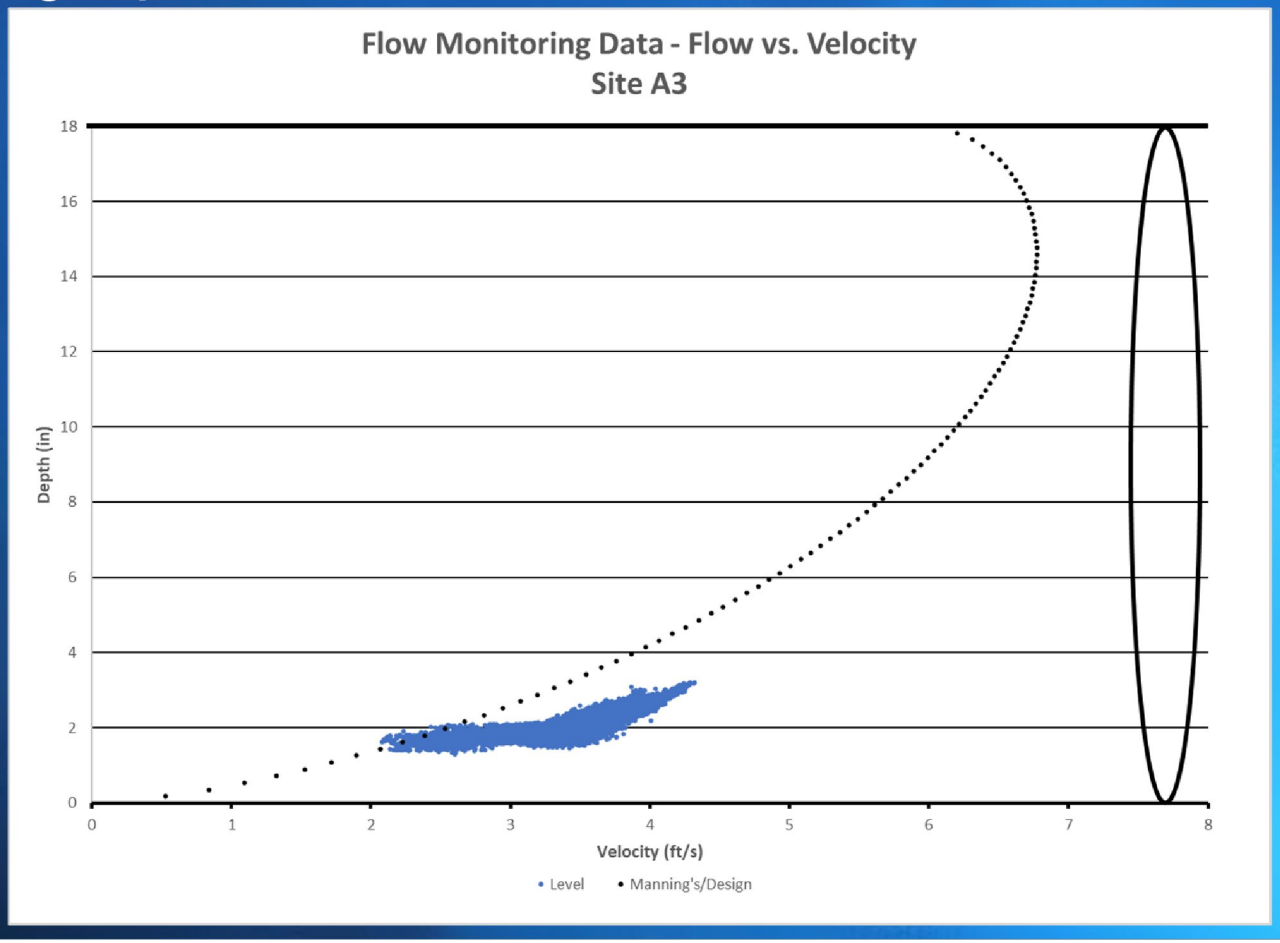


Meter AUB_A3

Flow vs Rainfall

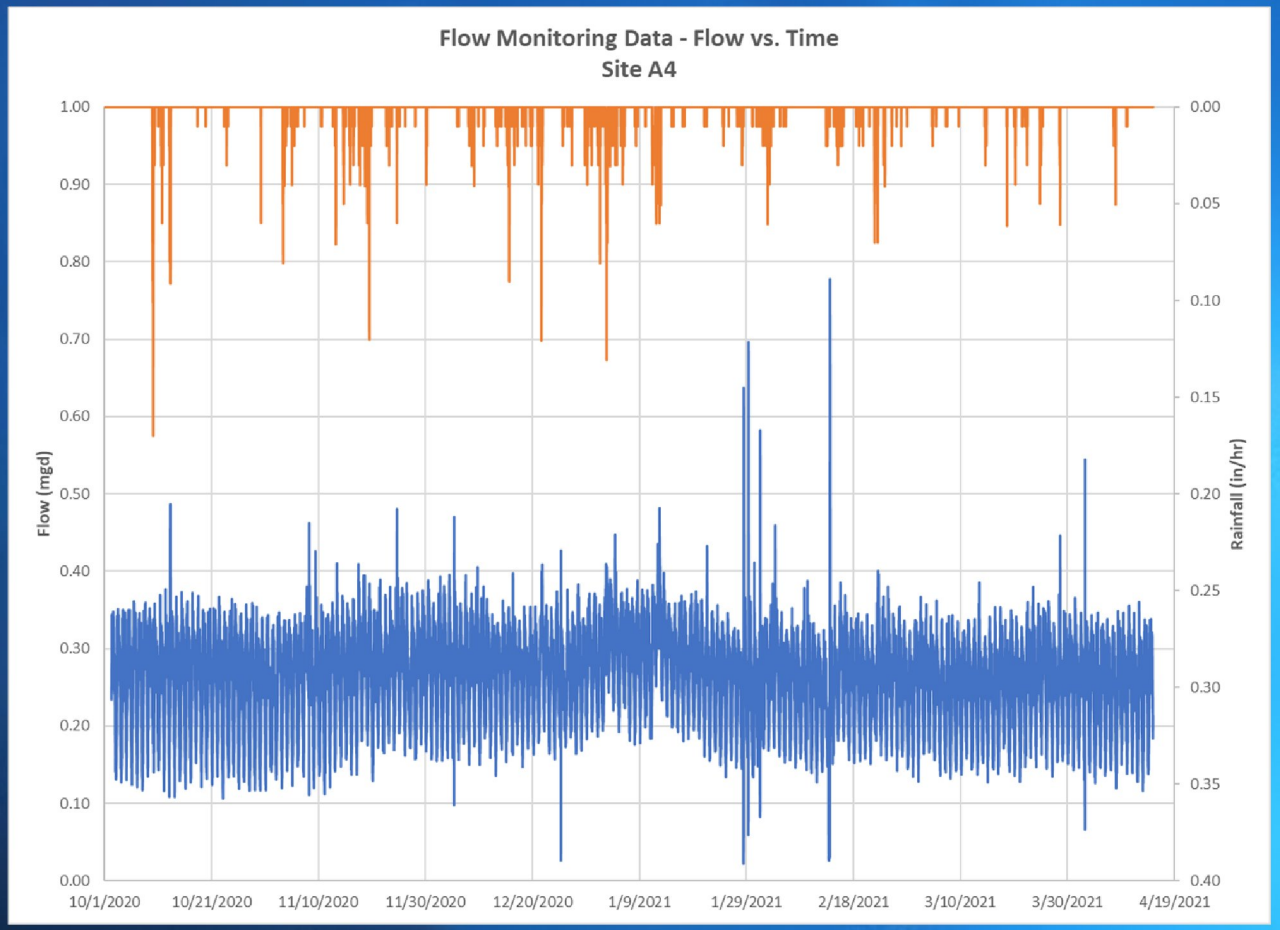


Meter AUB_A3
Scattergraph

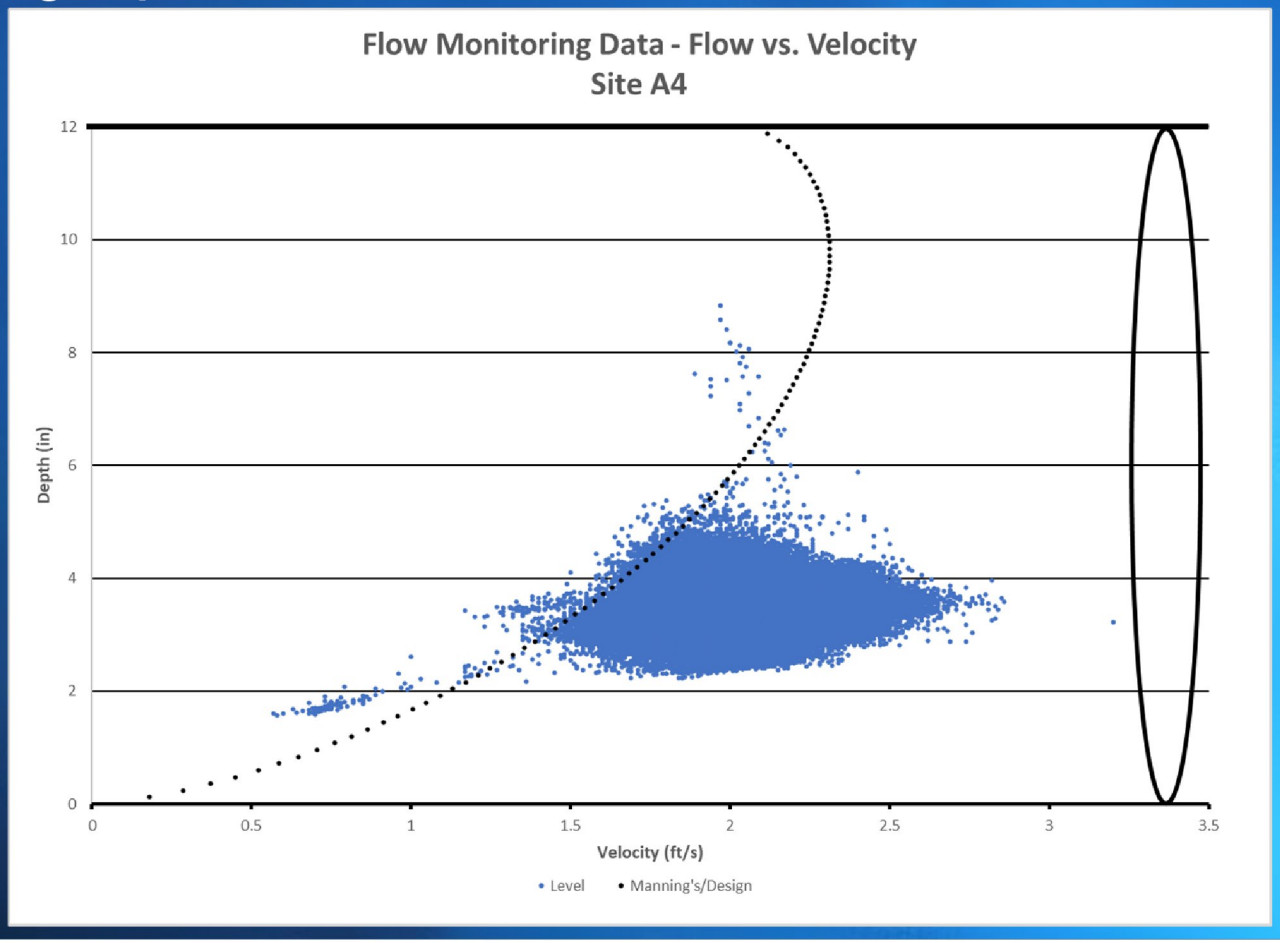


Meter AUB_A4

Flow vs Rainfall

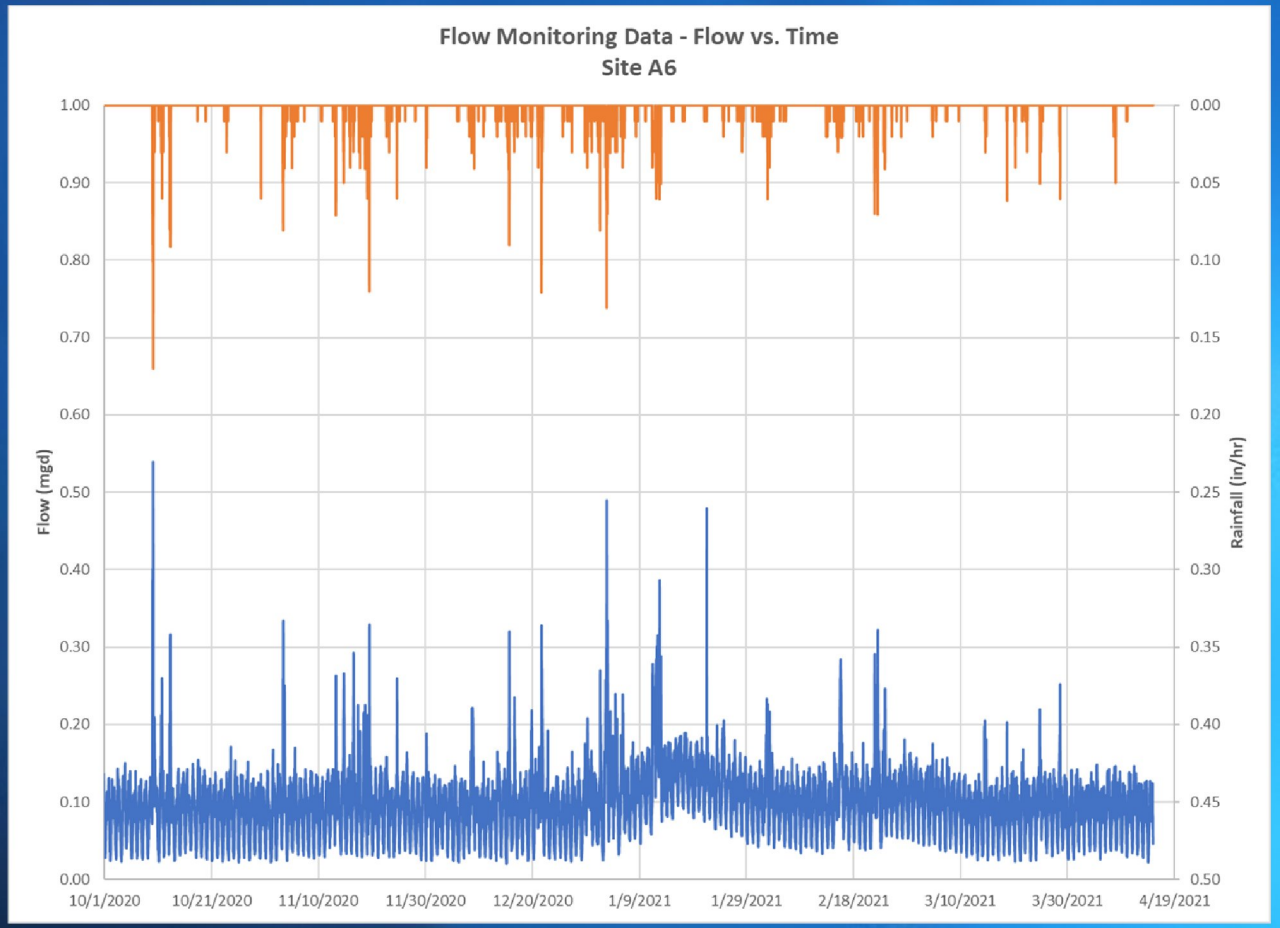


Meter AUB_A4
Scattergraph

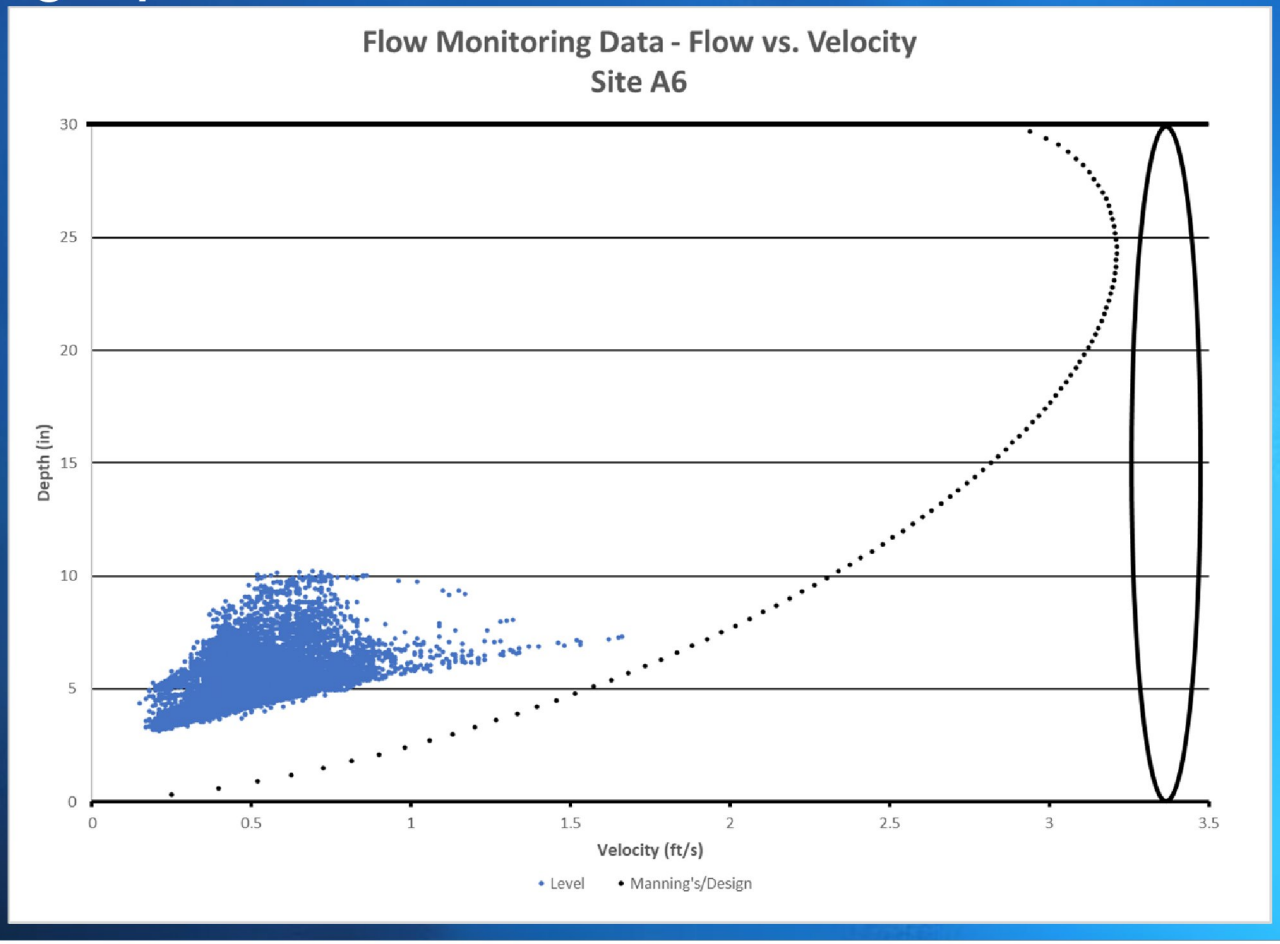


Meter AUB_A6

Flow vs Rainfall

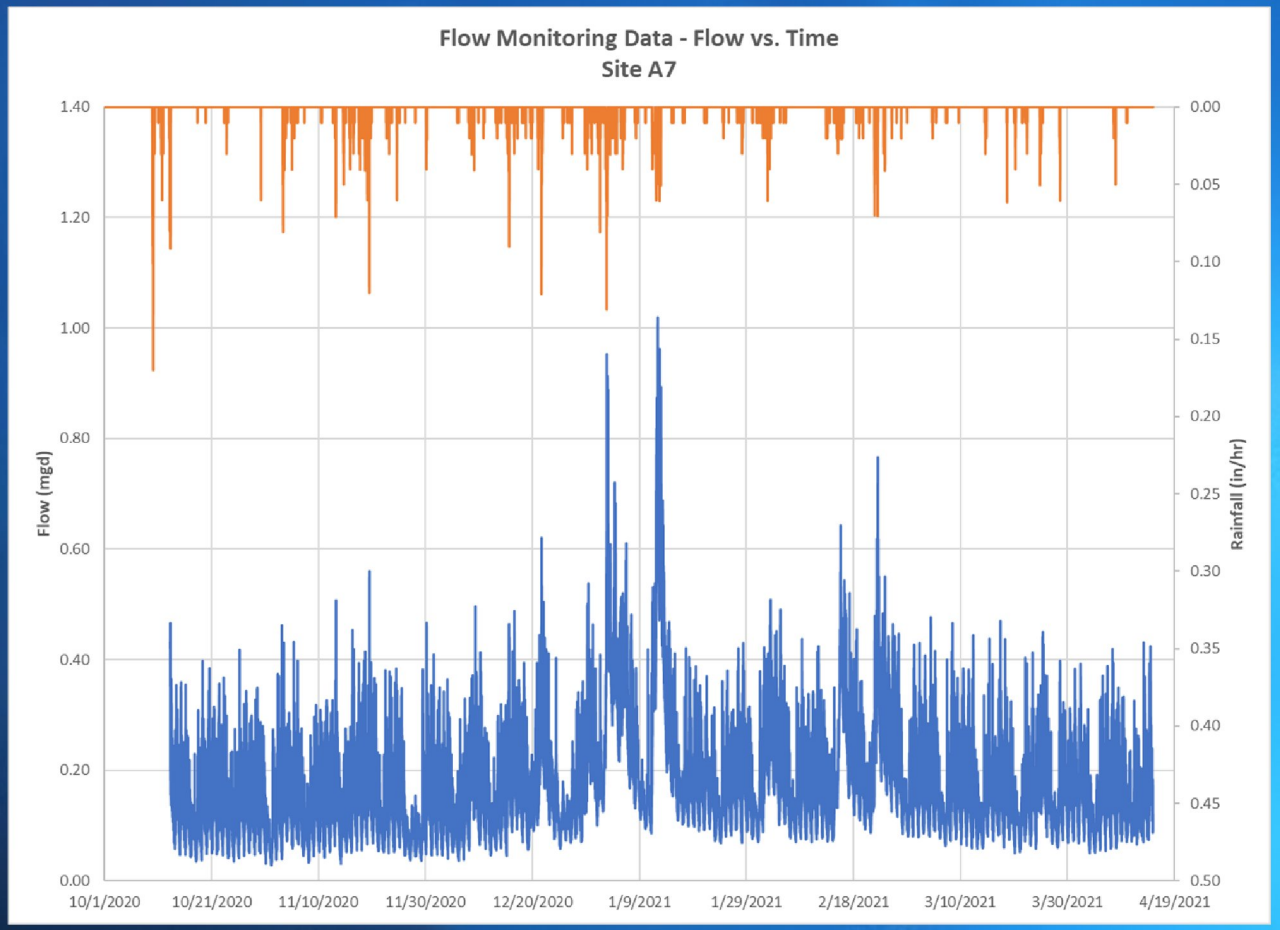


Meter AUB_A6
Scattergraph

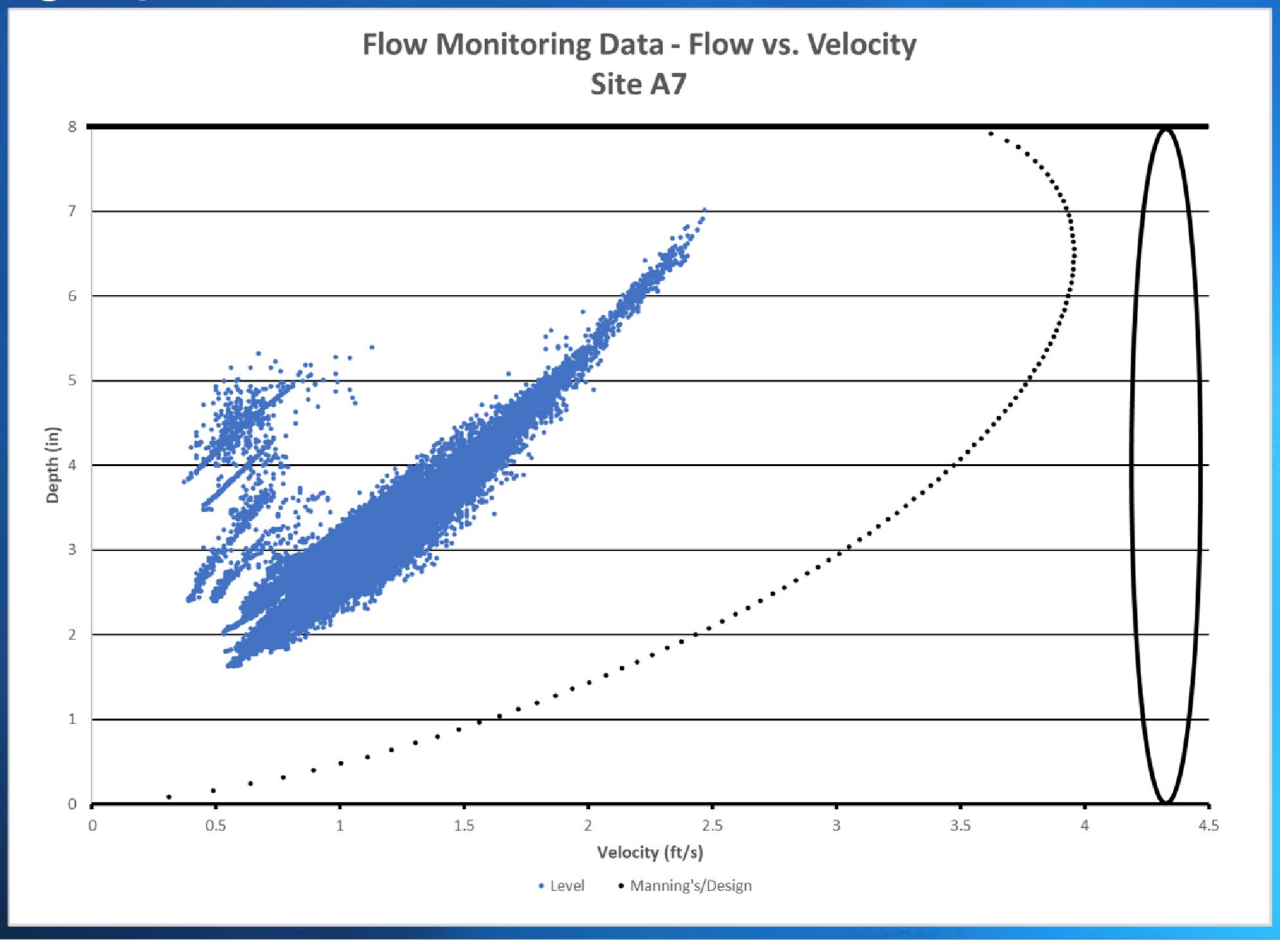


Meter AUB_A7

Flow vs Rainfall

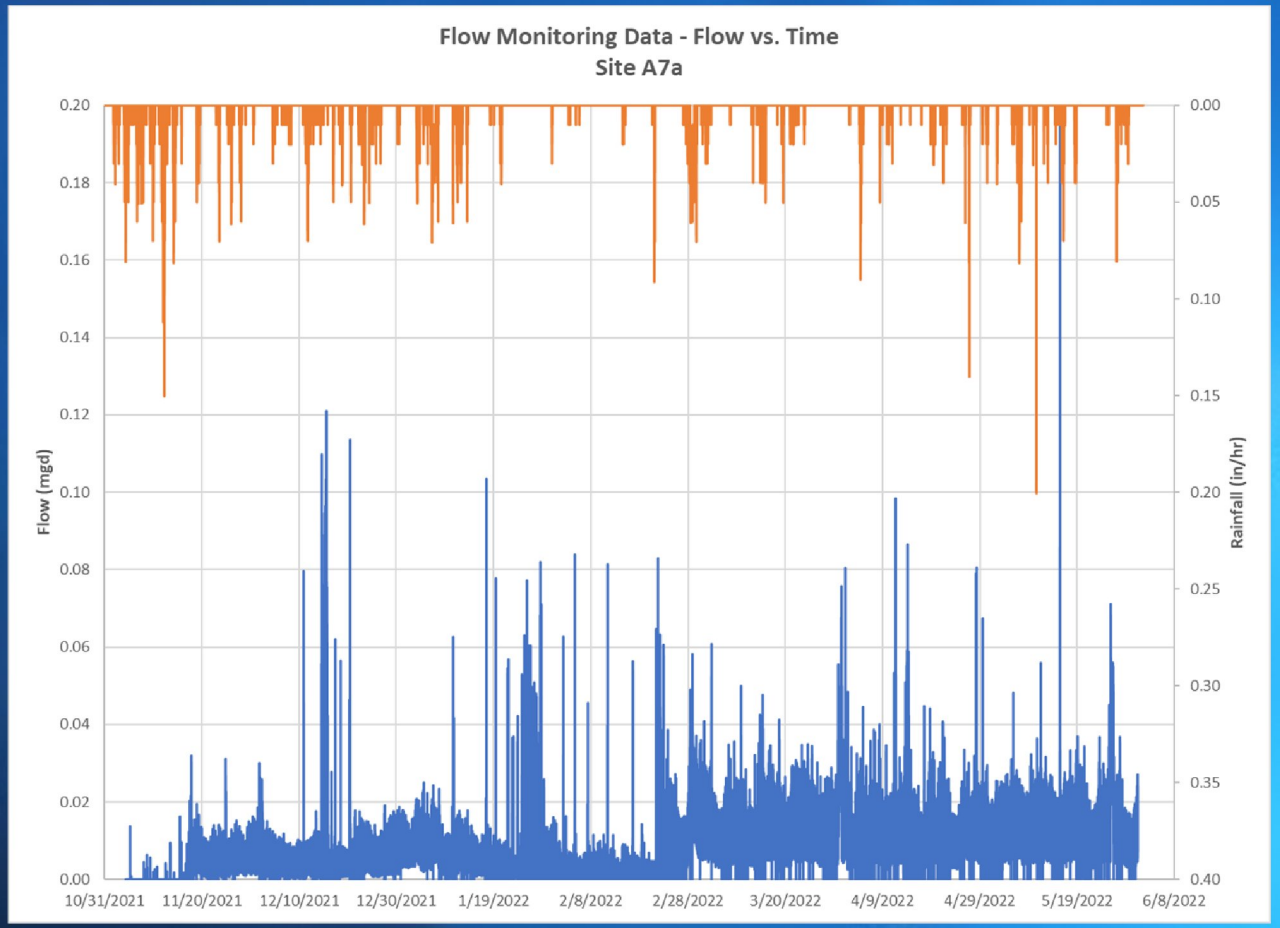


Meter AUB_A7
Scattergraph

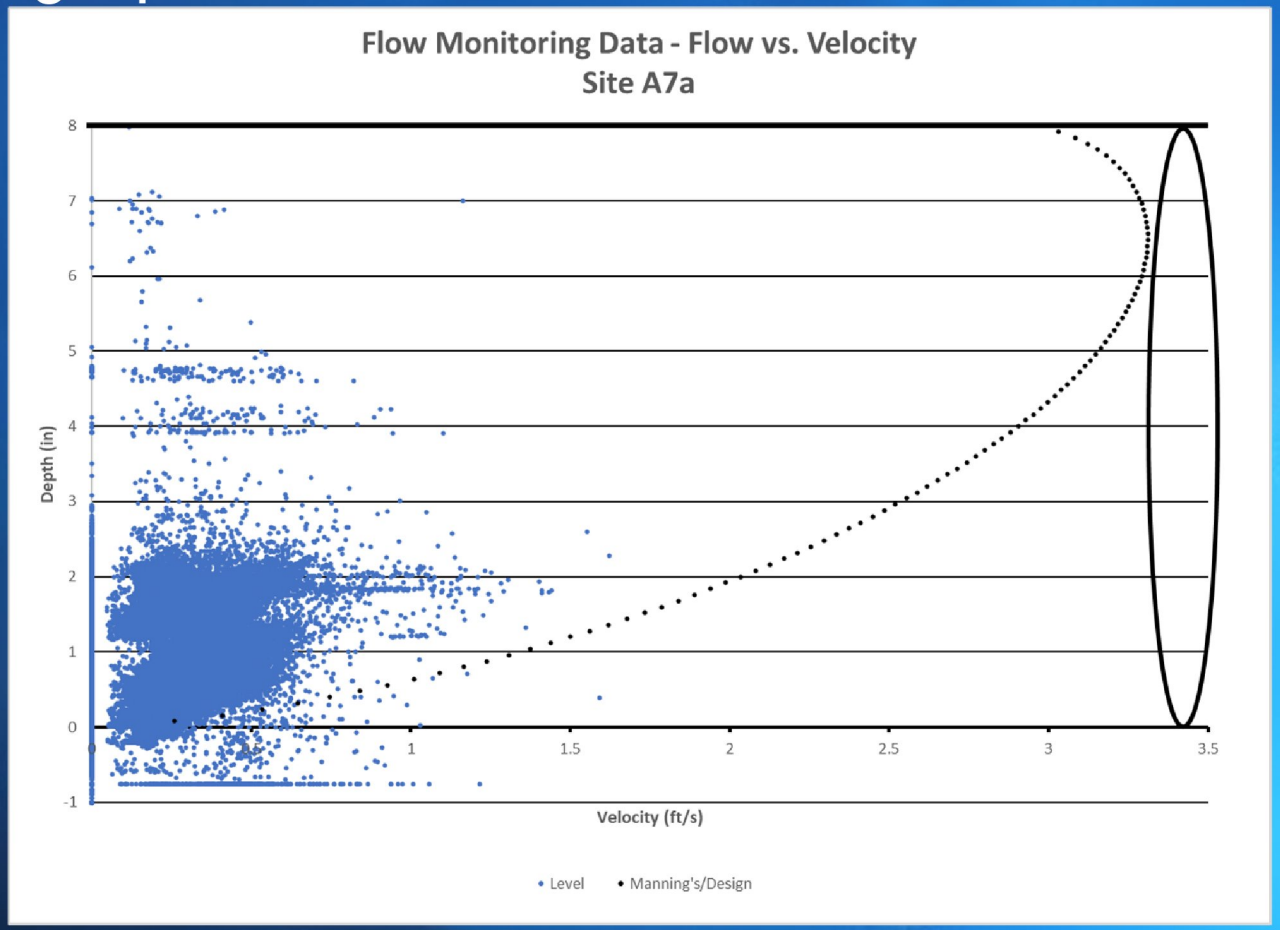


Meter AUB_A7a

Flow vs Rainfall

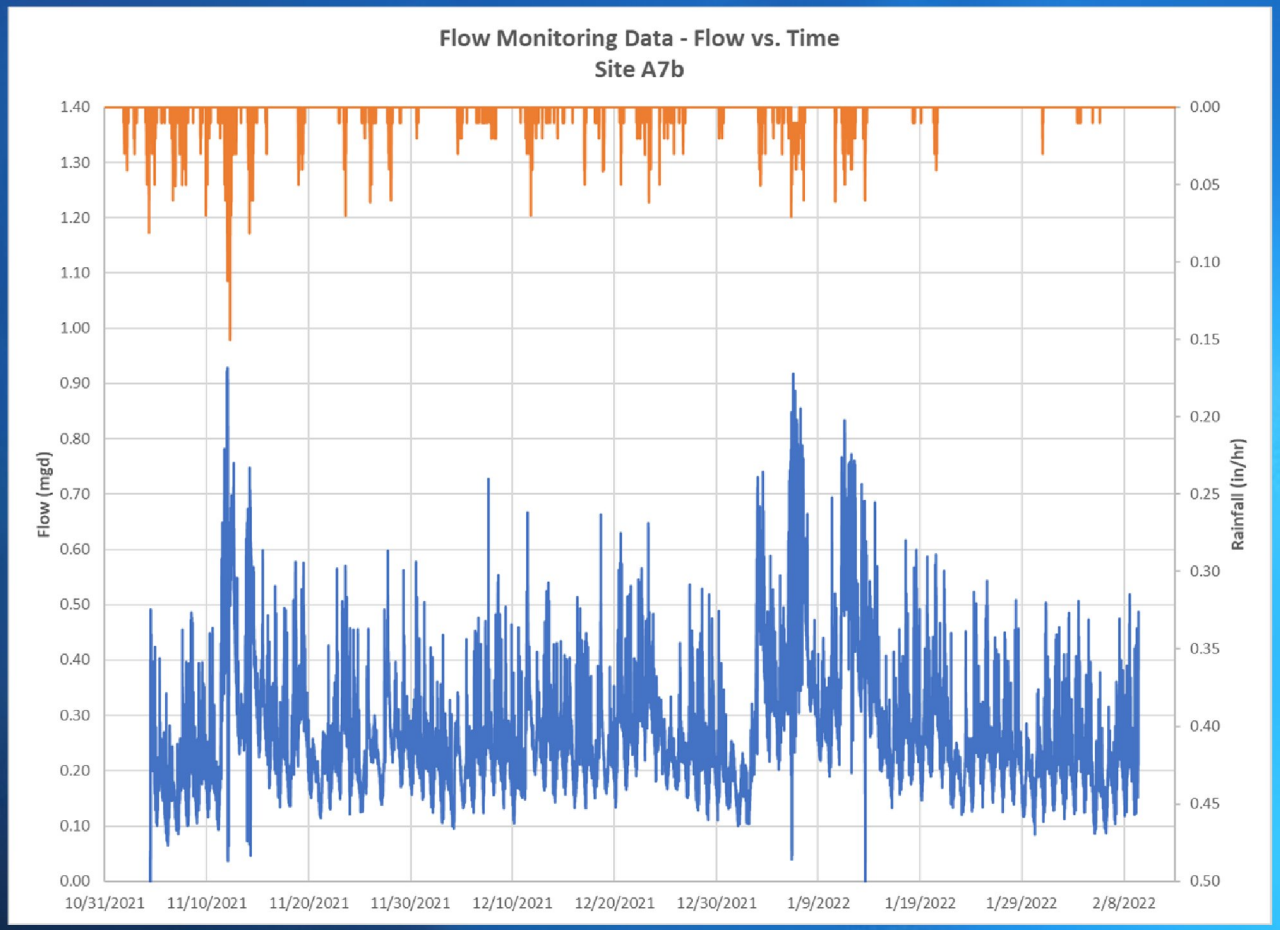


Meter AUB_A7a Scattergraph



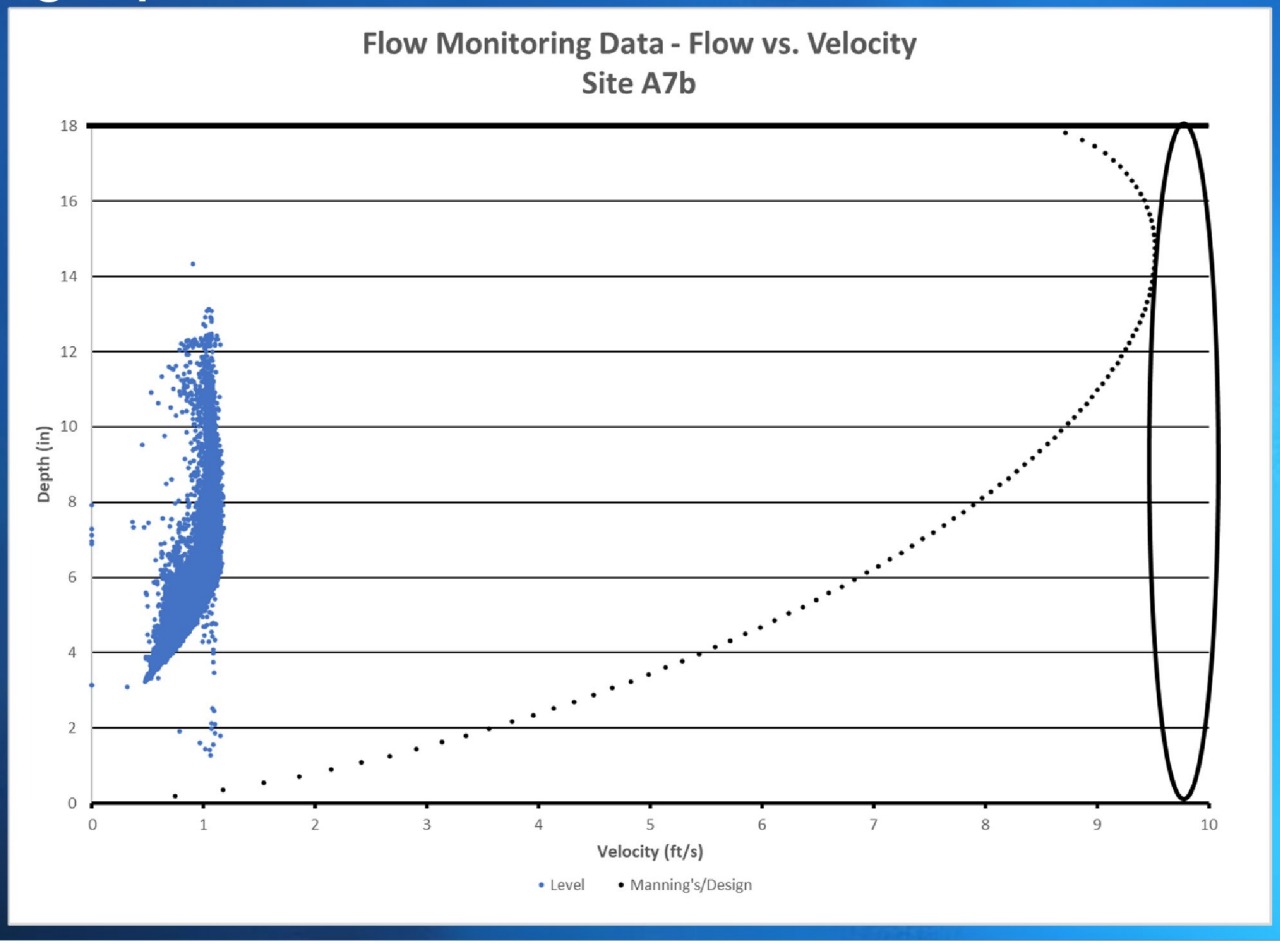
Meter AUB_A7b

Flow vs Rainfall



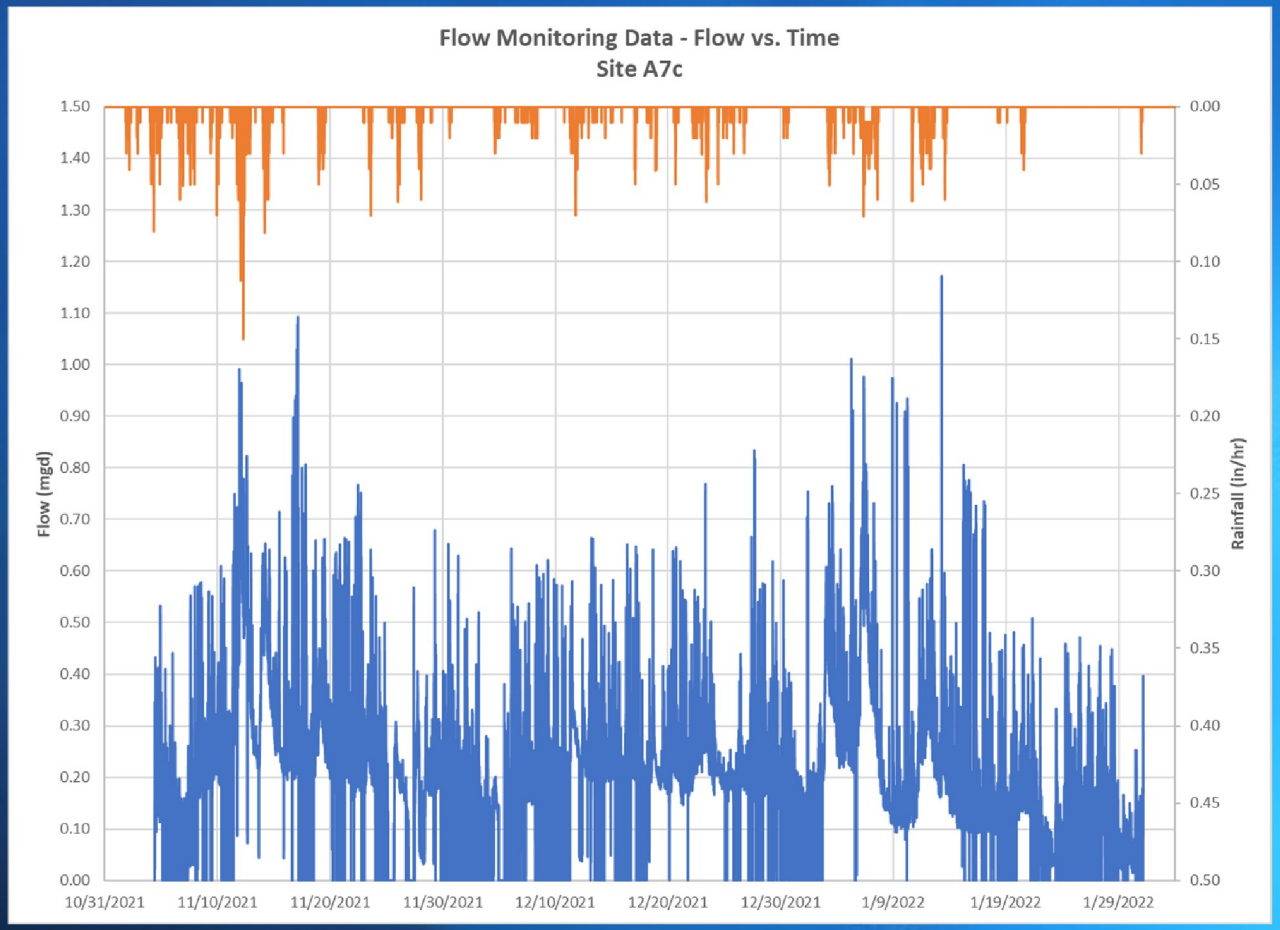
Meter AUB_A7b Scattergraph

Note: 3 data points with negative velocity, including 1 data point with negative depth

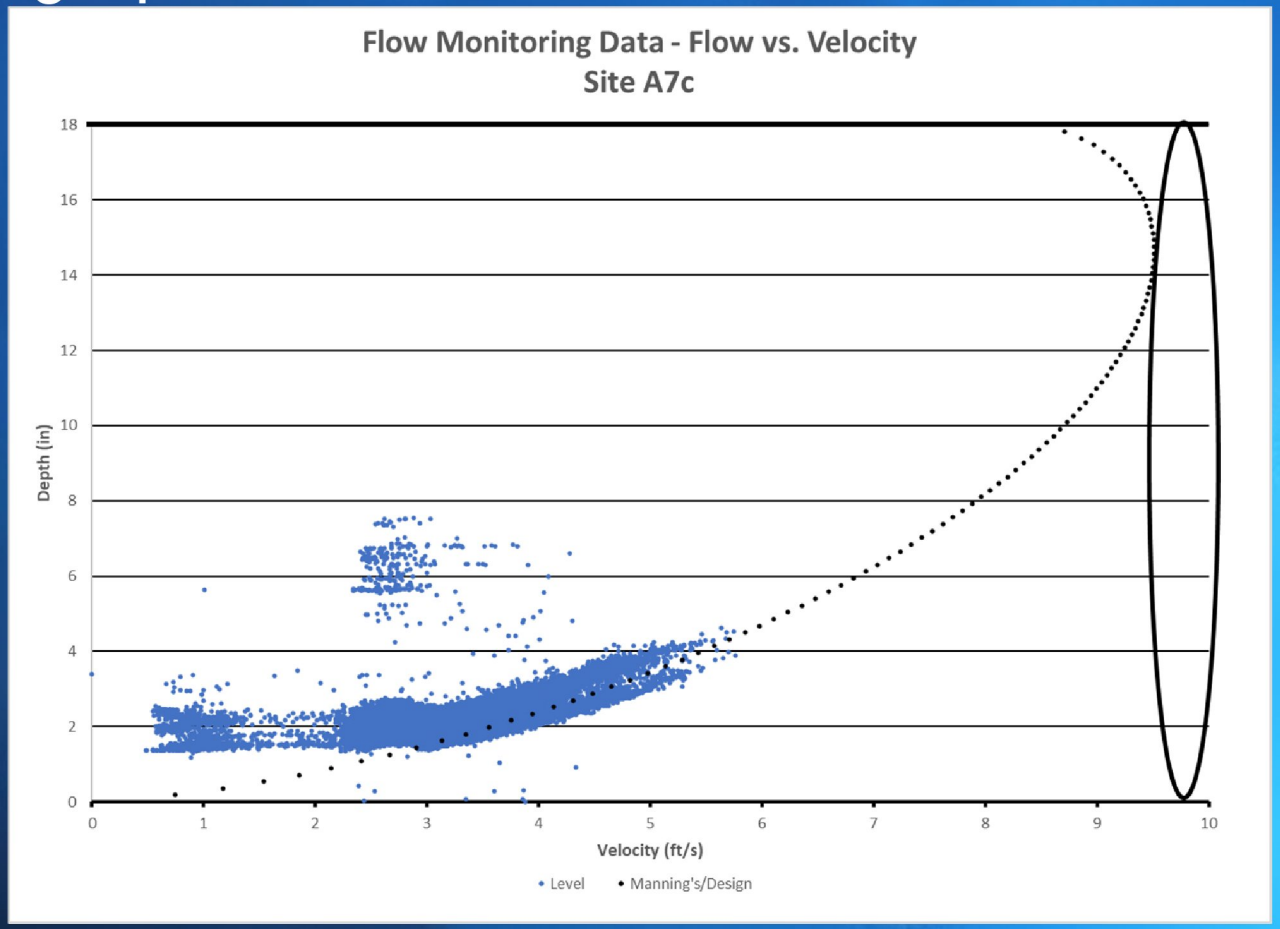


Meter AUB_A7c

Flow vs Rainfall

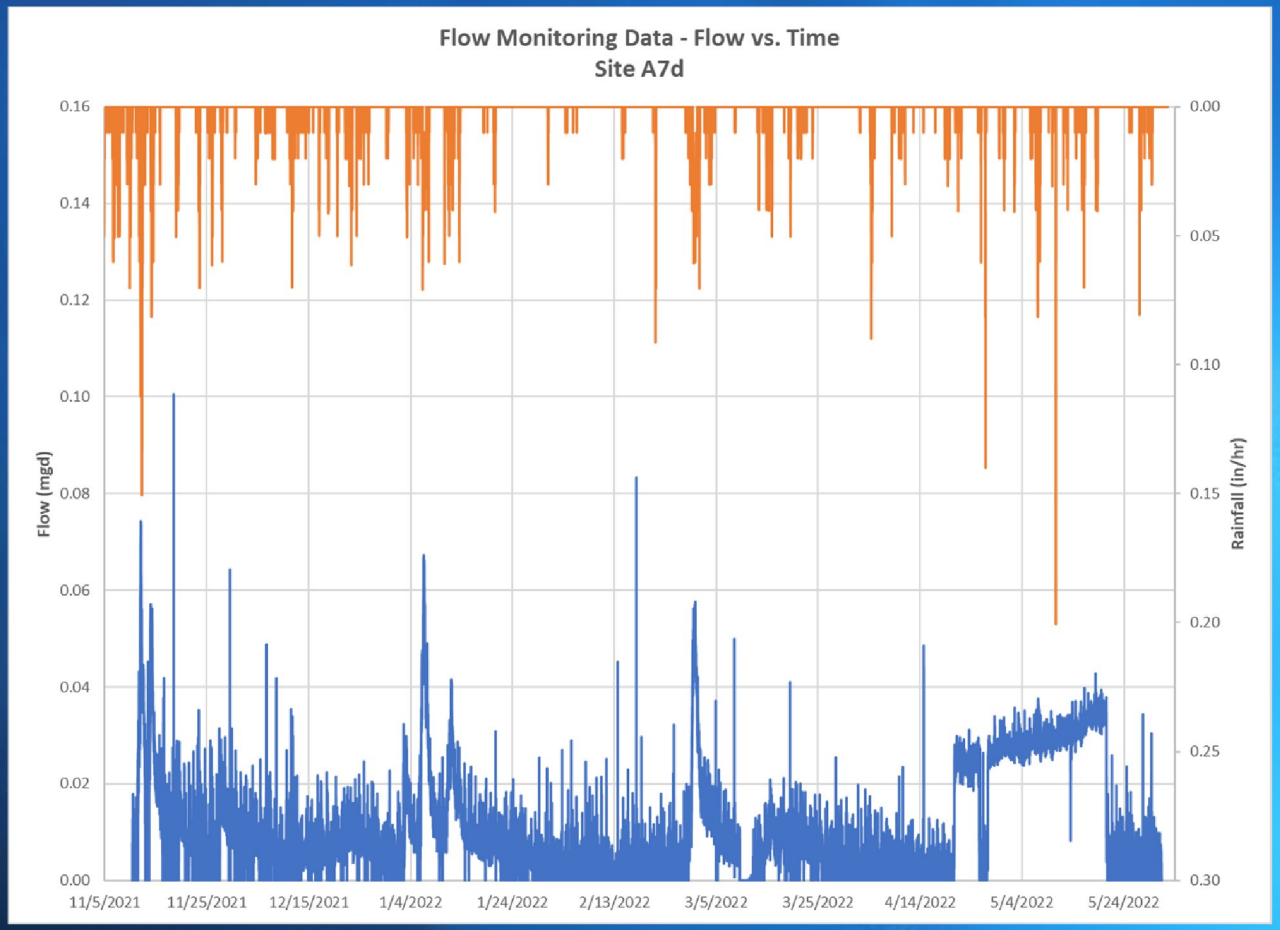


Meter AUB_A7c Scattergraph

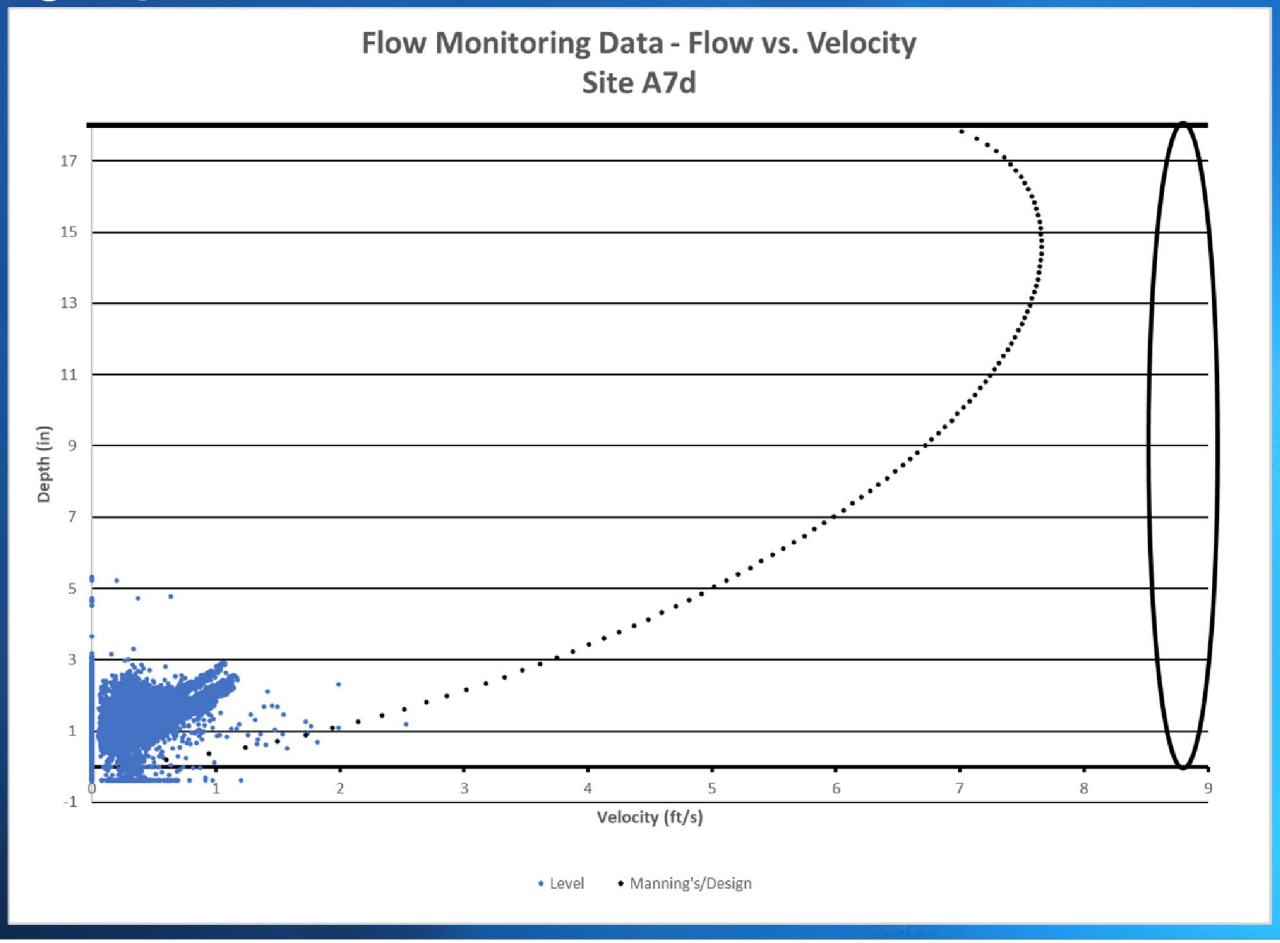


Meter AUB_A7d

Flow vs Rainfall

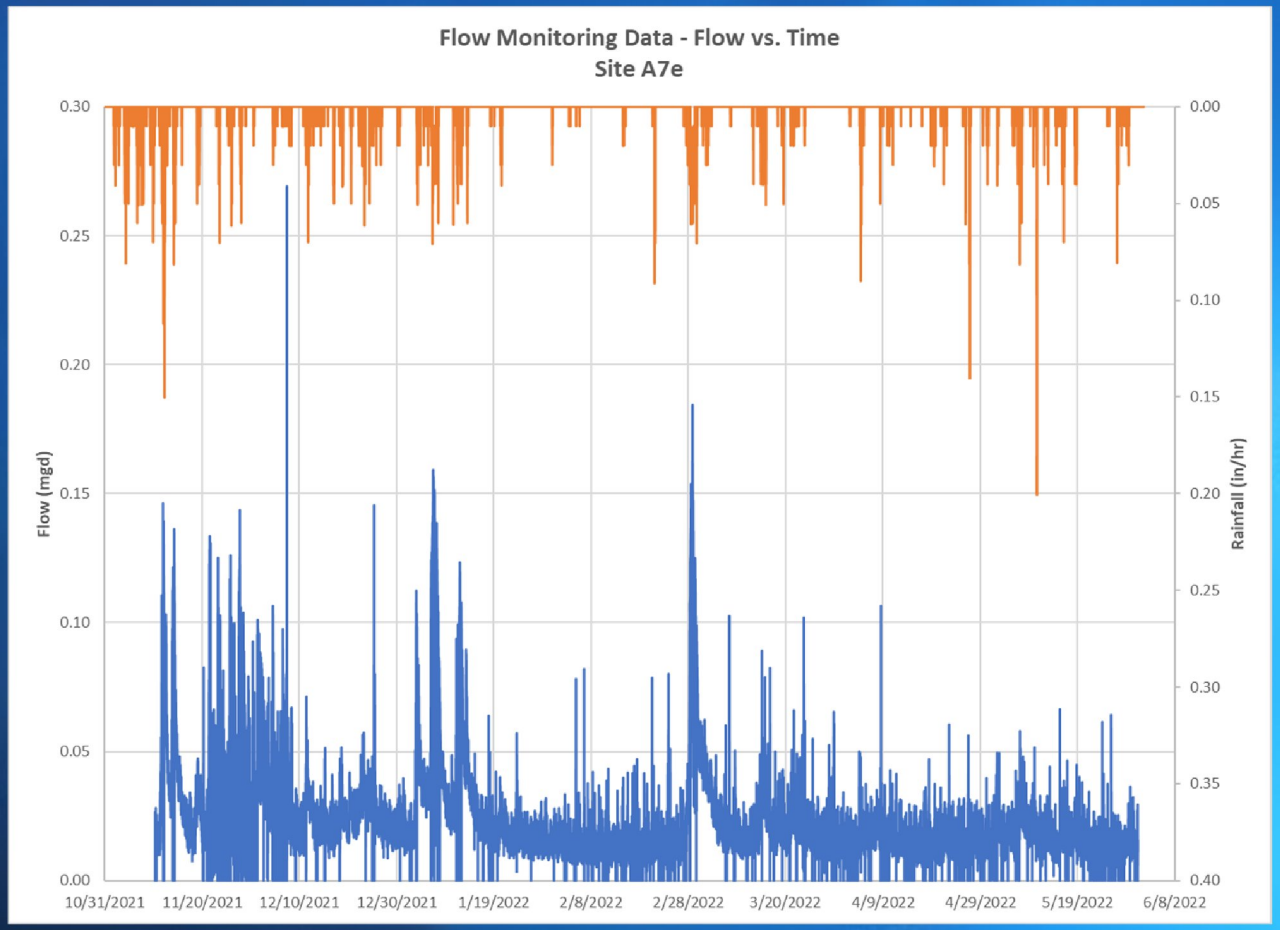


Meter AUB_A7d Scattergraph



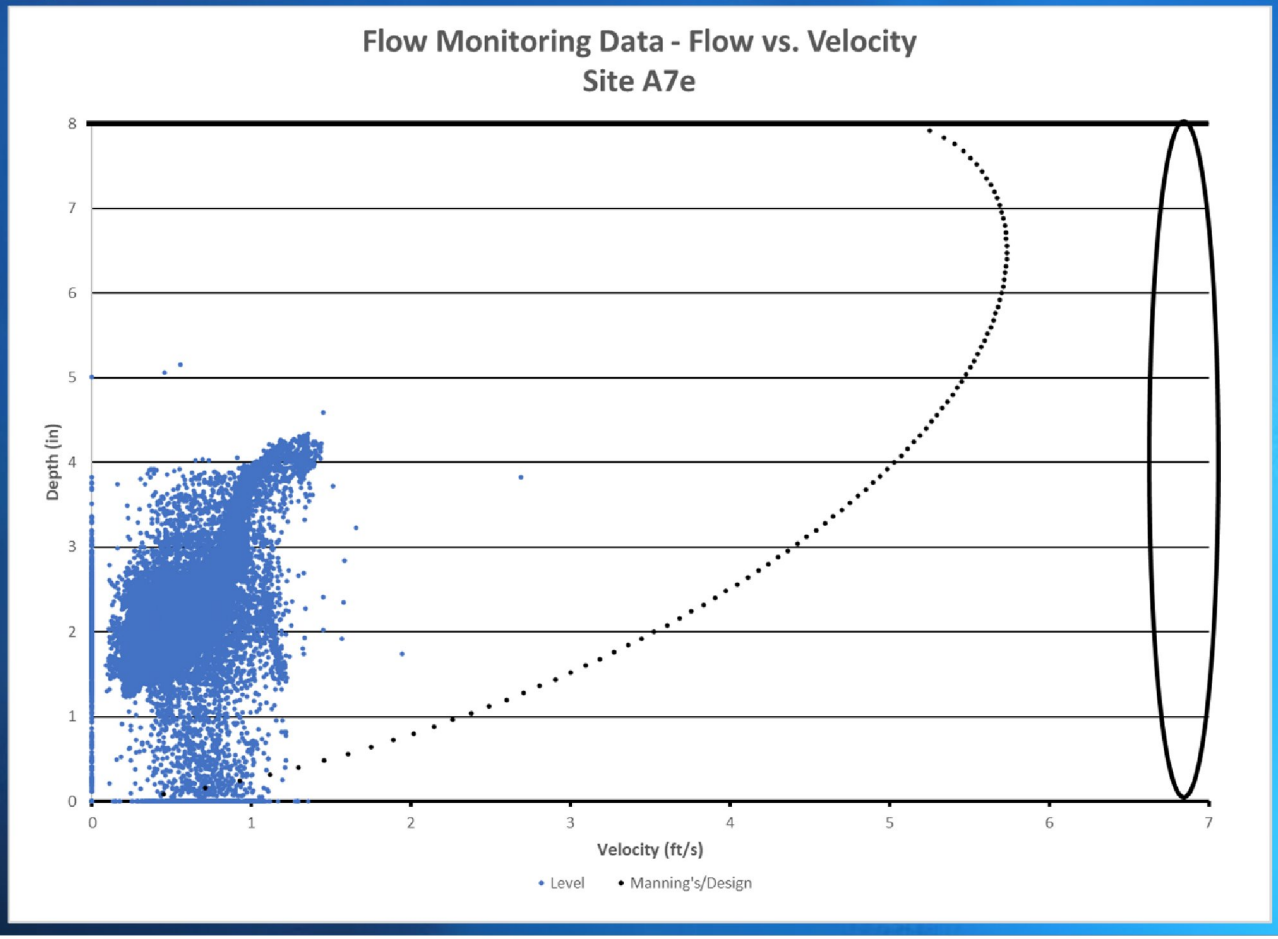
Meter AUB_A7e

Flow vs Rainfall



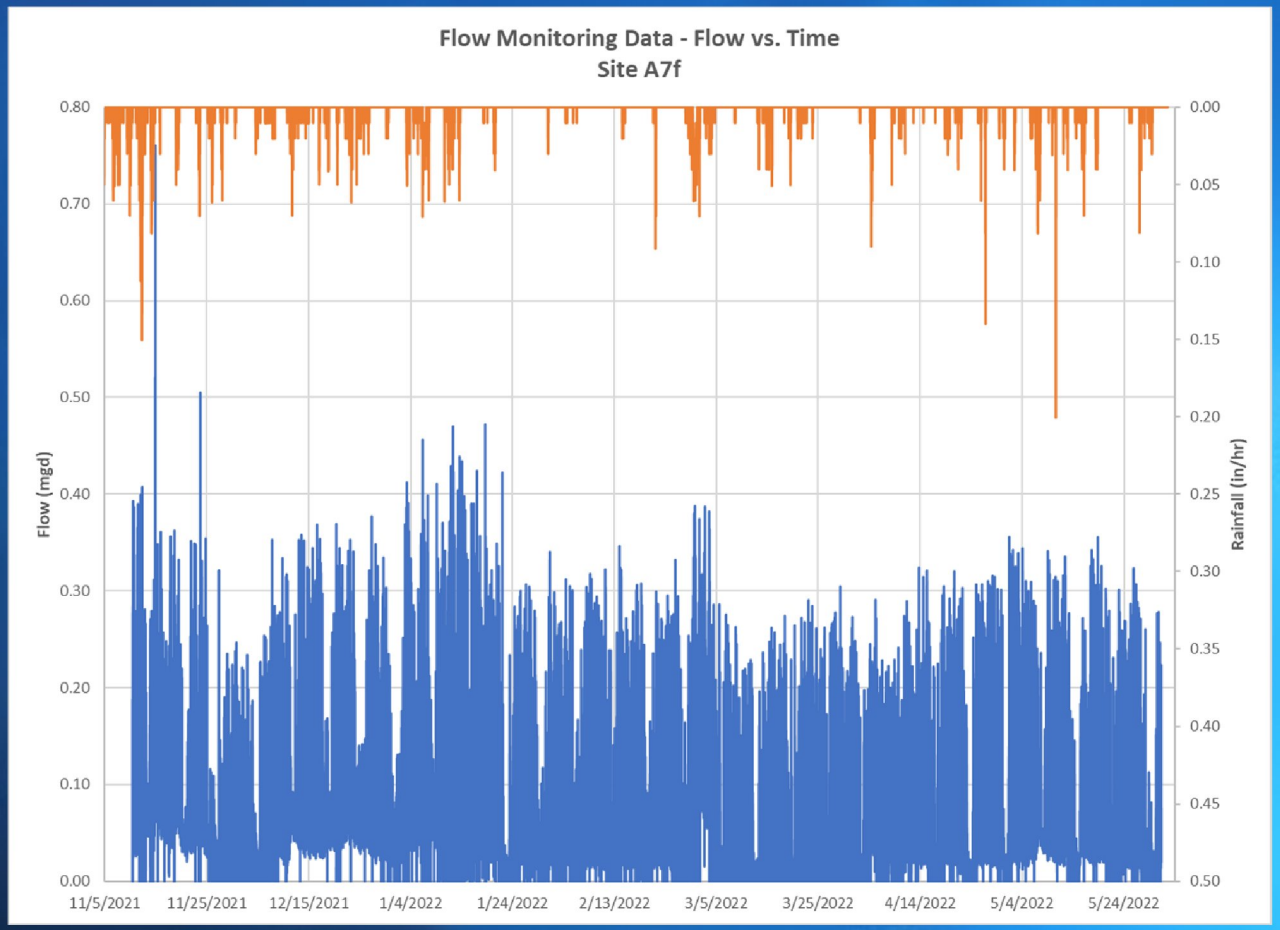
Meter AUB_A7e Scattergraph

Note: 1 data point with negative depth

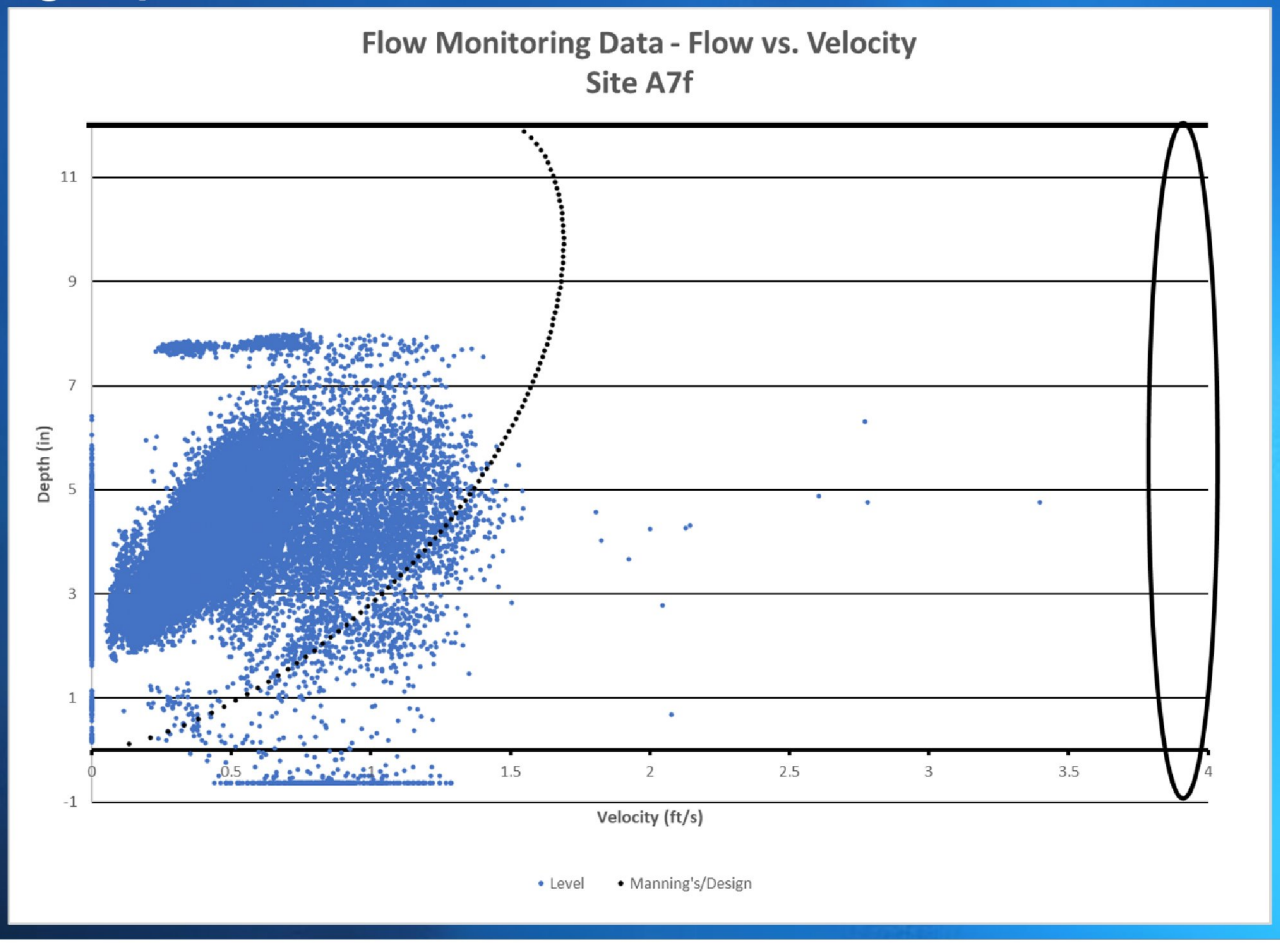


Meter AUB_A7f

Flow vs Rainfall

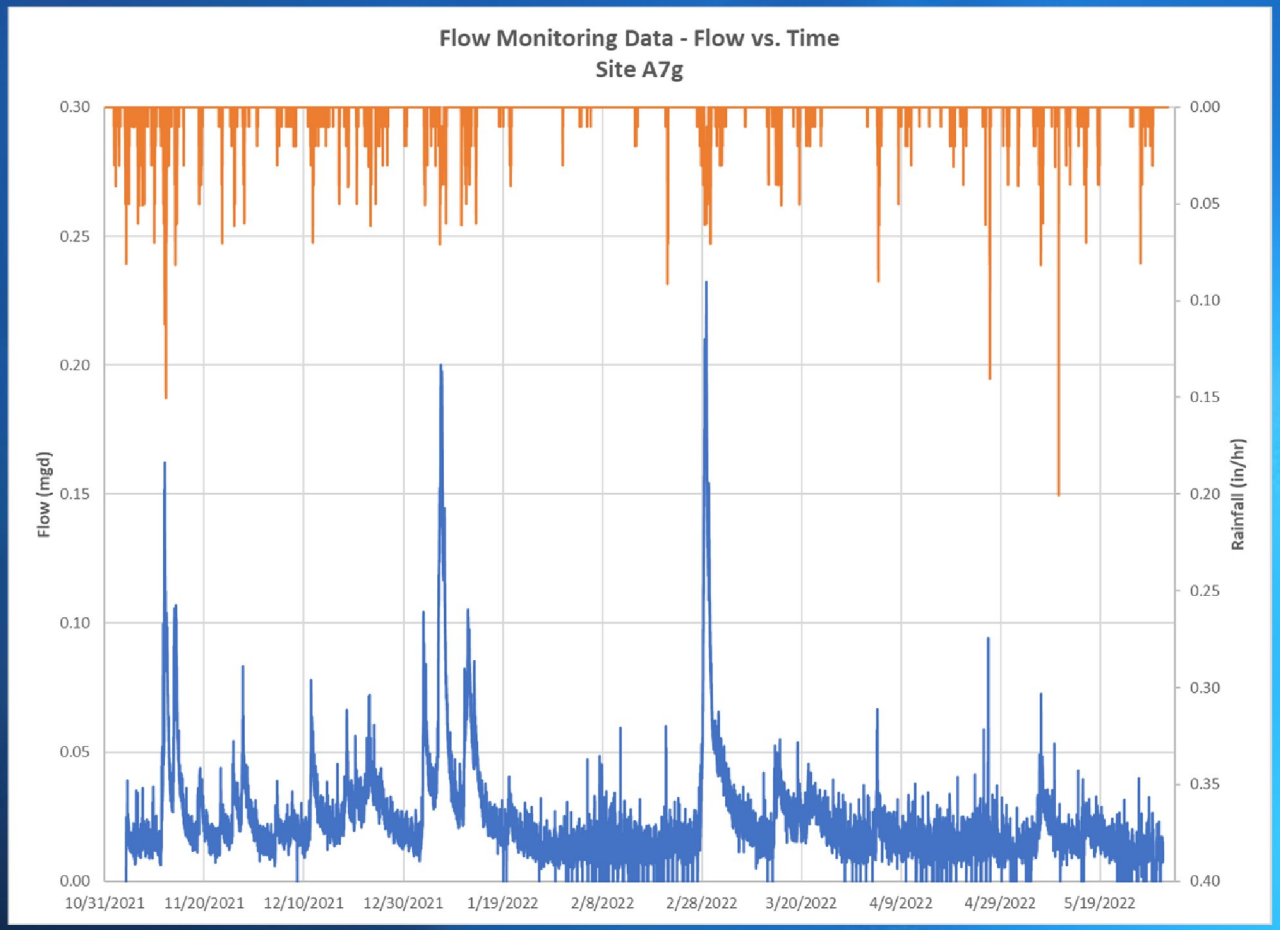


Meter AUB_A7f Scattergraph

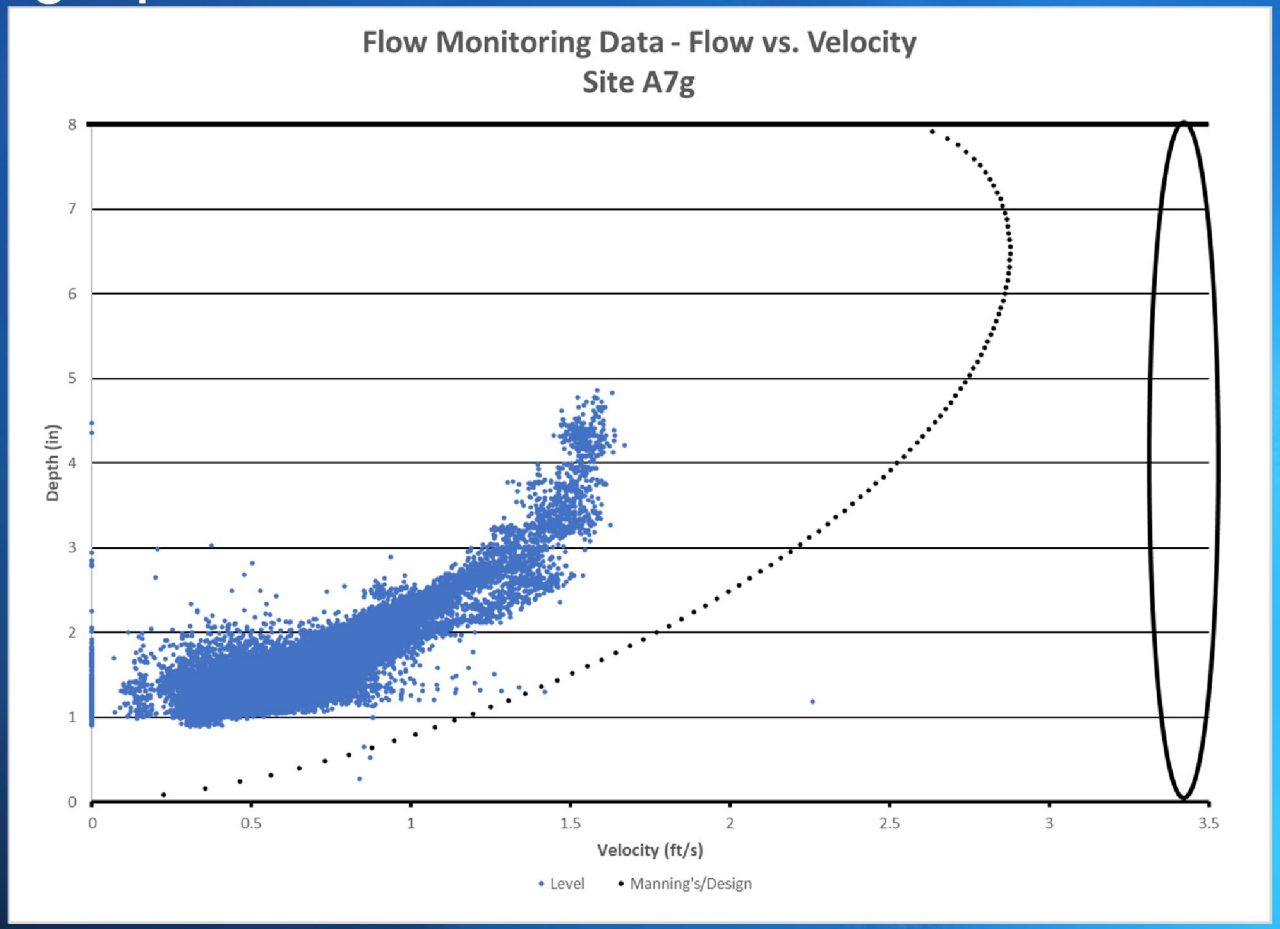


Meter AUB_A7g

Flow vs Rainfall

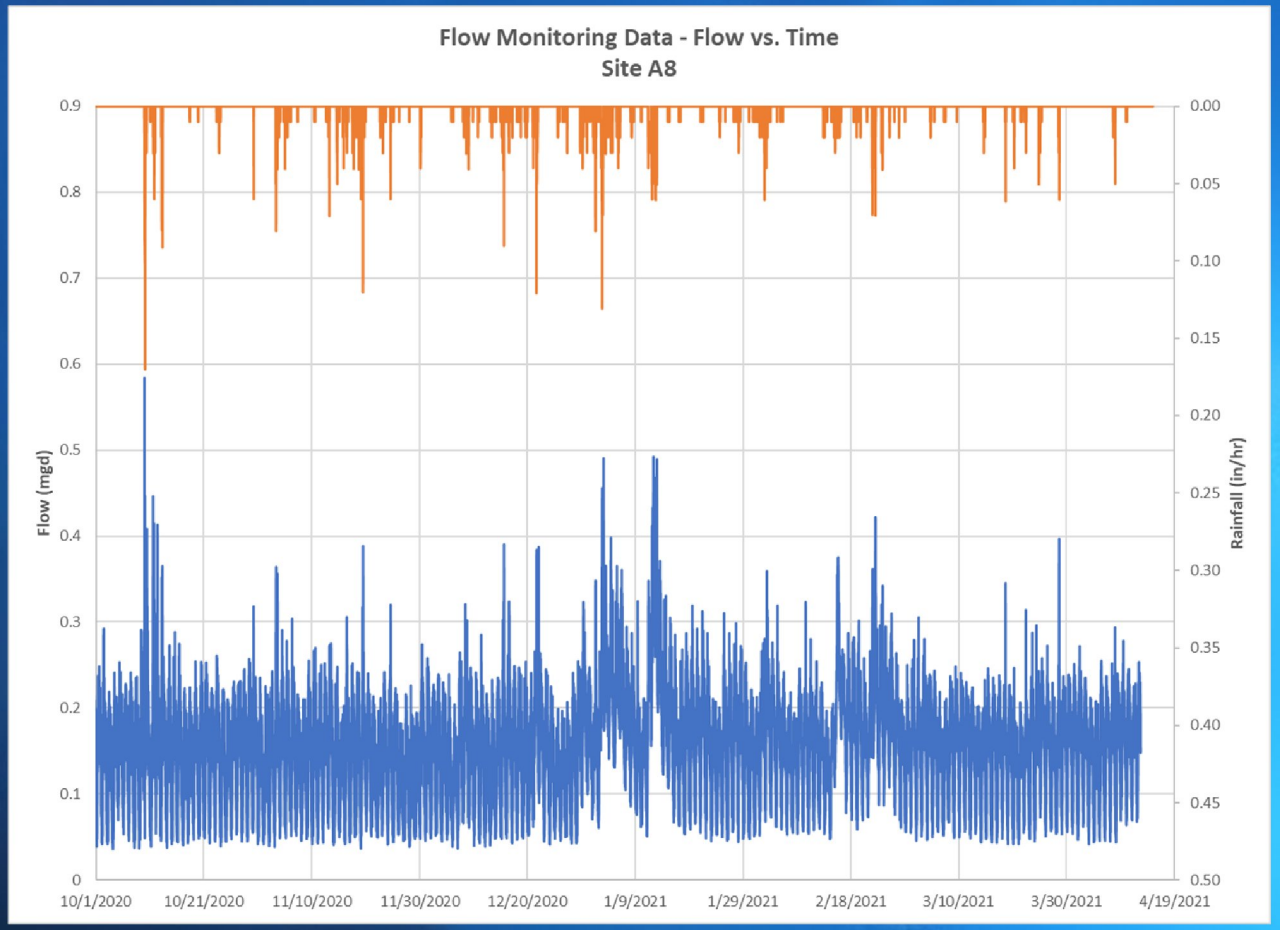


Meter AUB_A7g Scattergraph

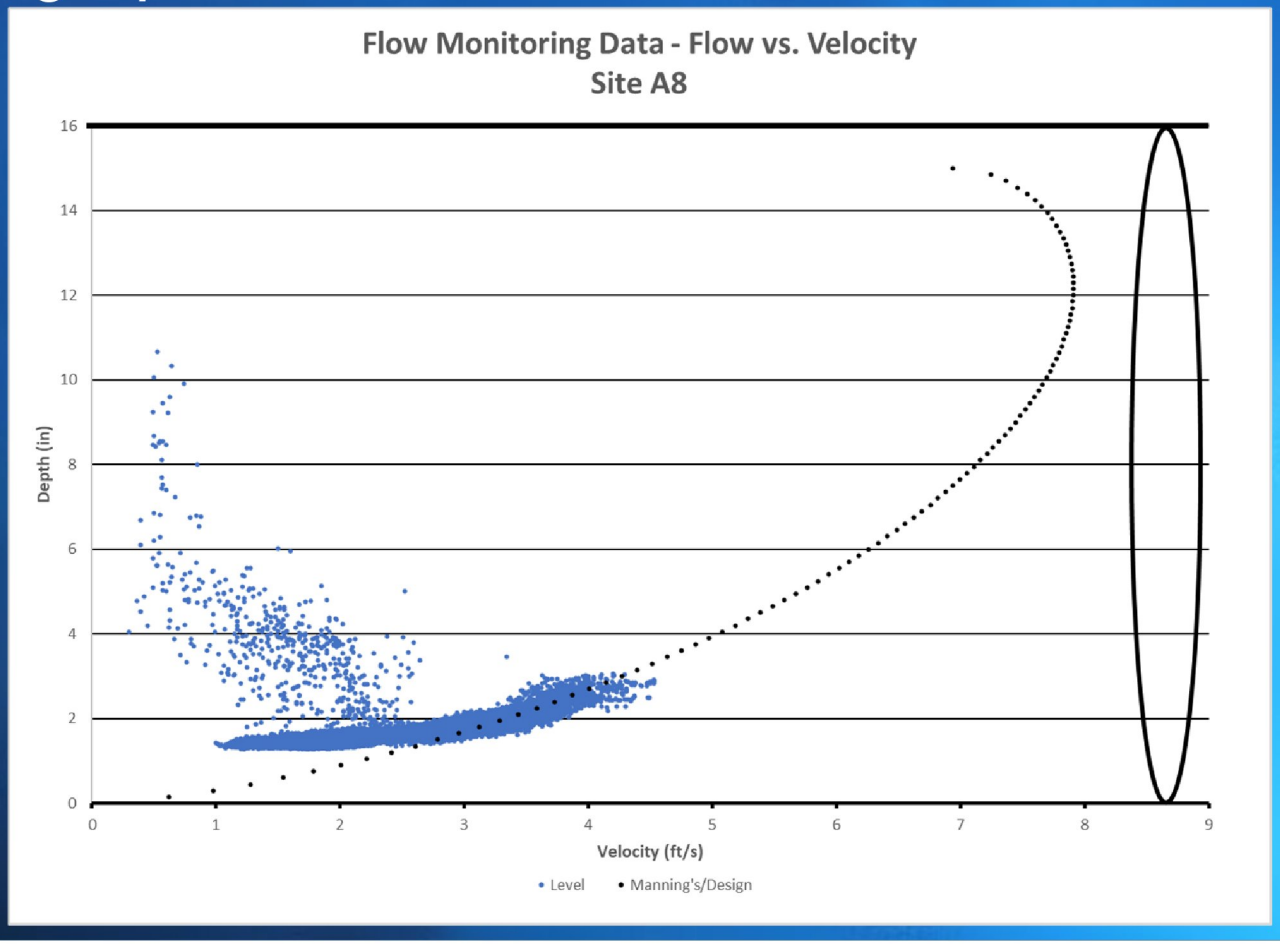


Meter AUB_A8

Flow vs Rainfall

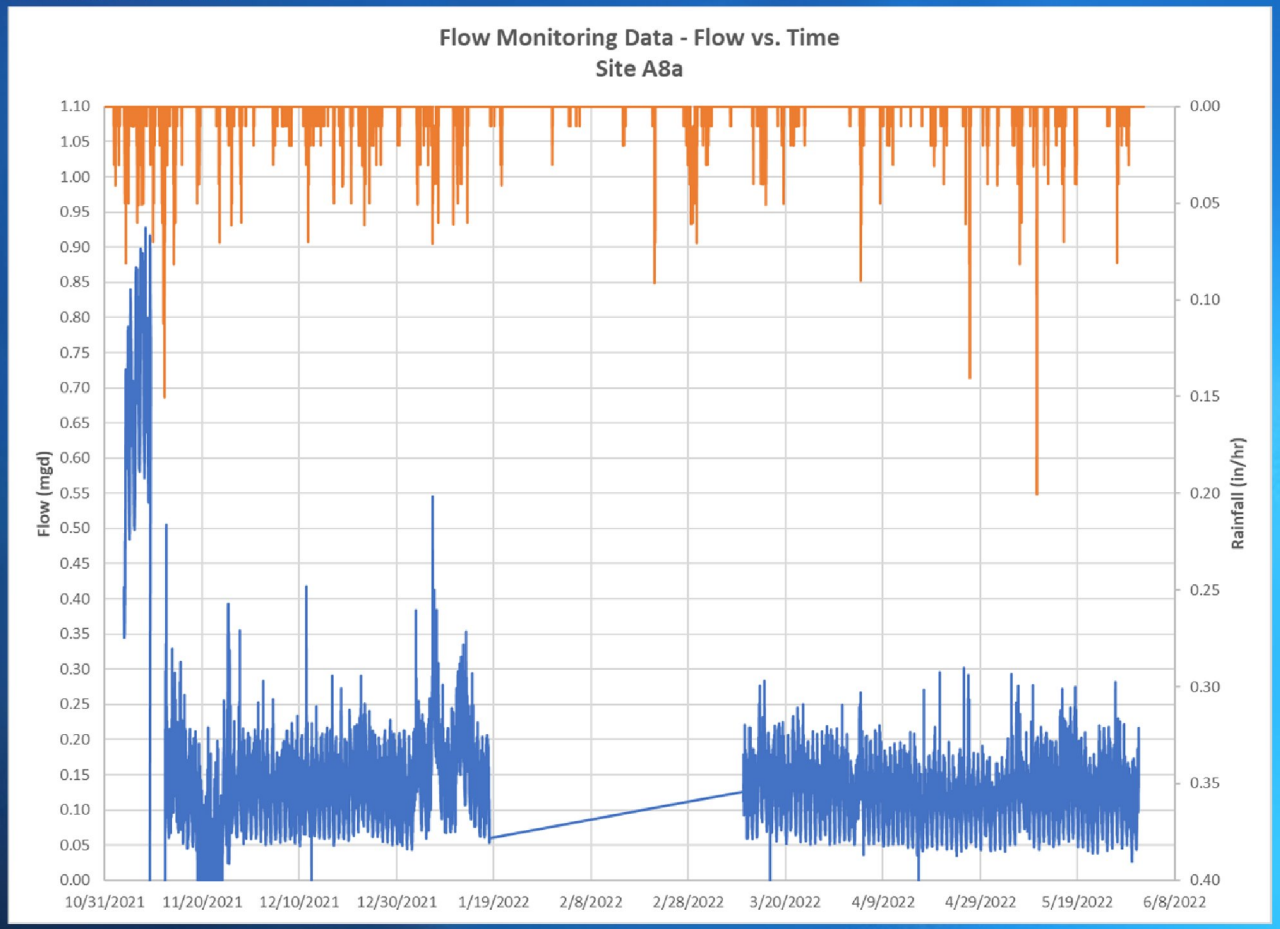


Meter AUB_A8
Scattergraph

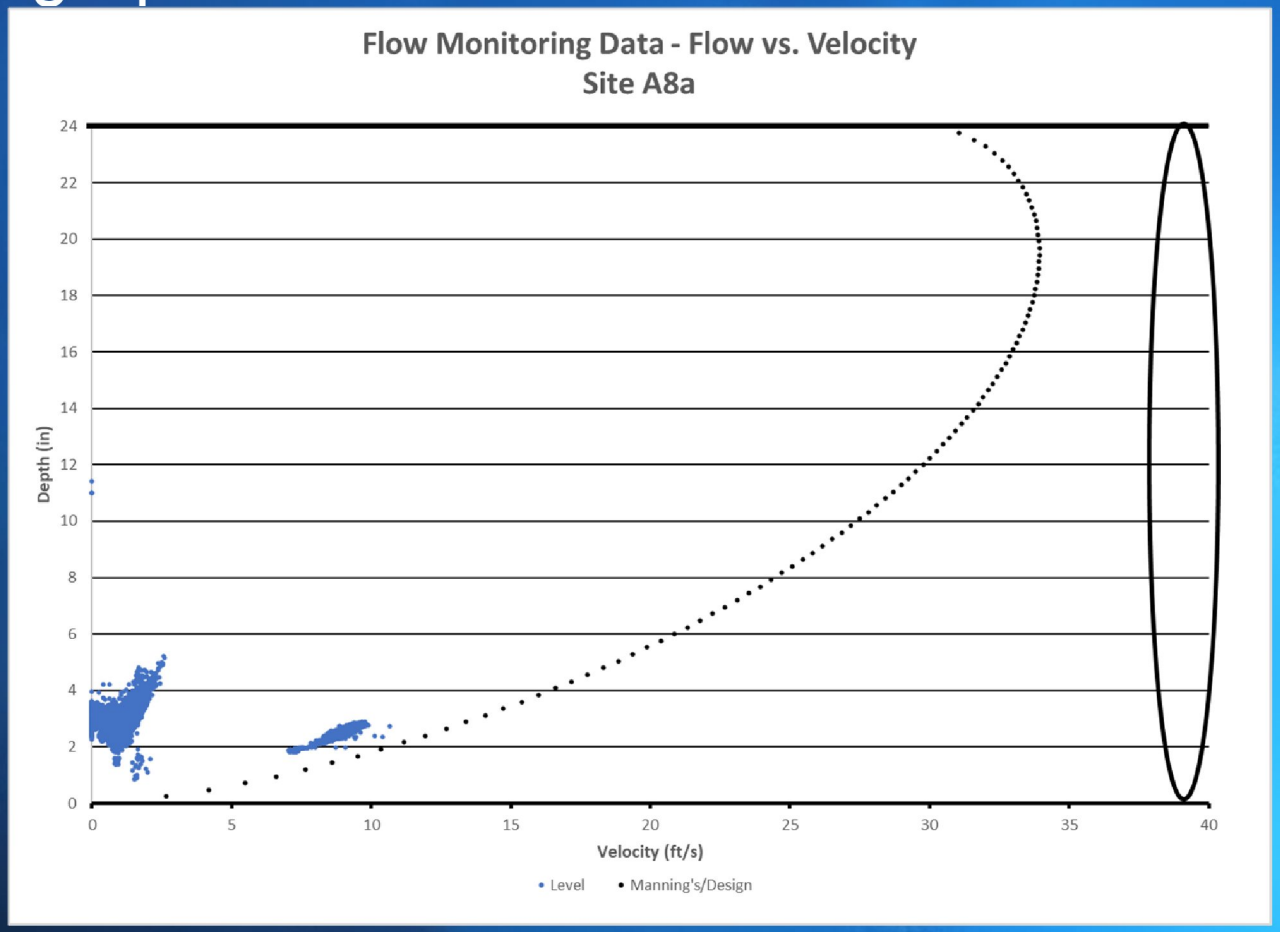


Meter AUB_A8a

Flow vs Rainfall



Meter AUB_A8a Scattergraph



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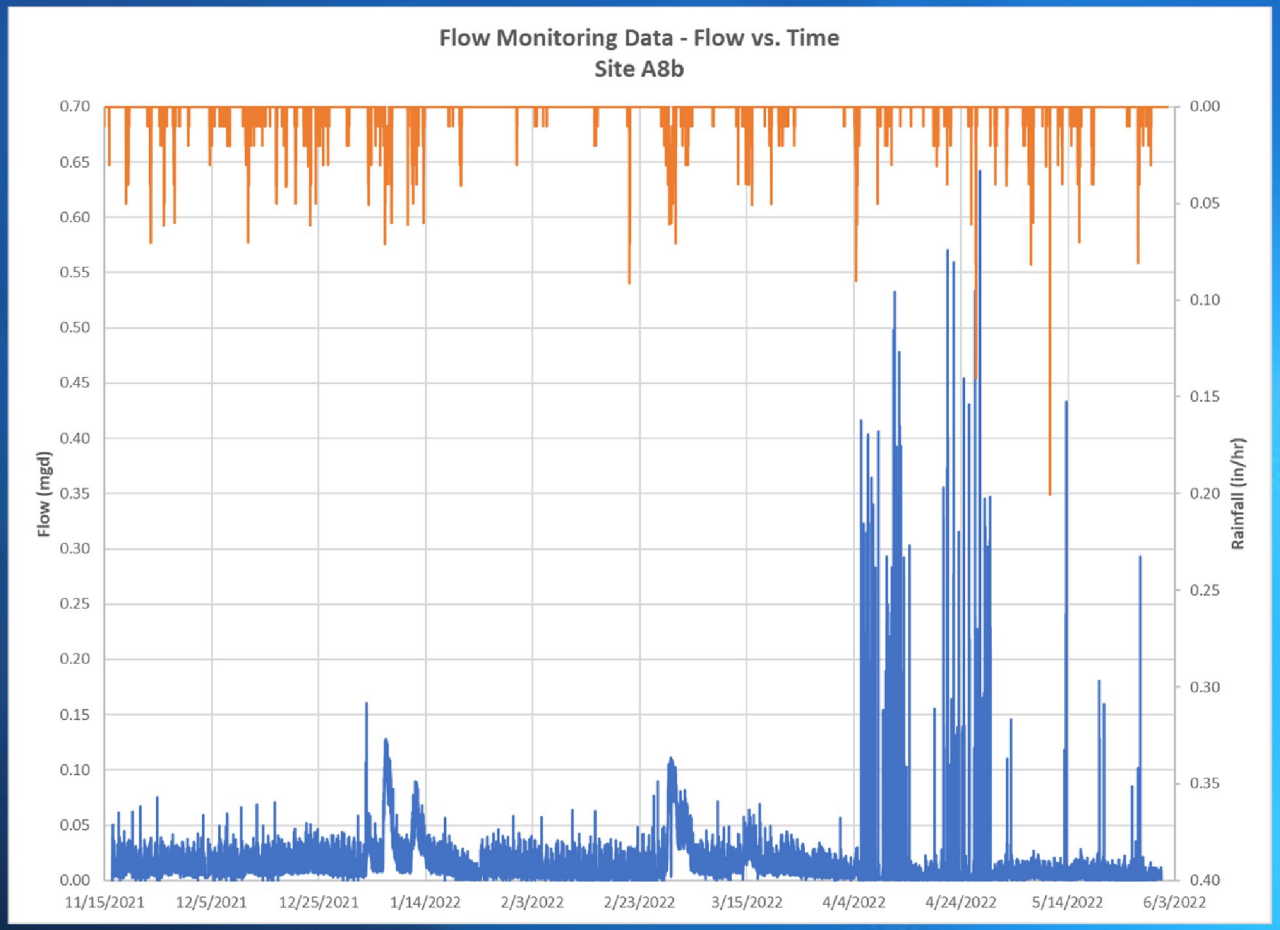

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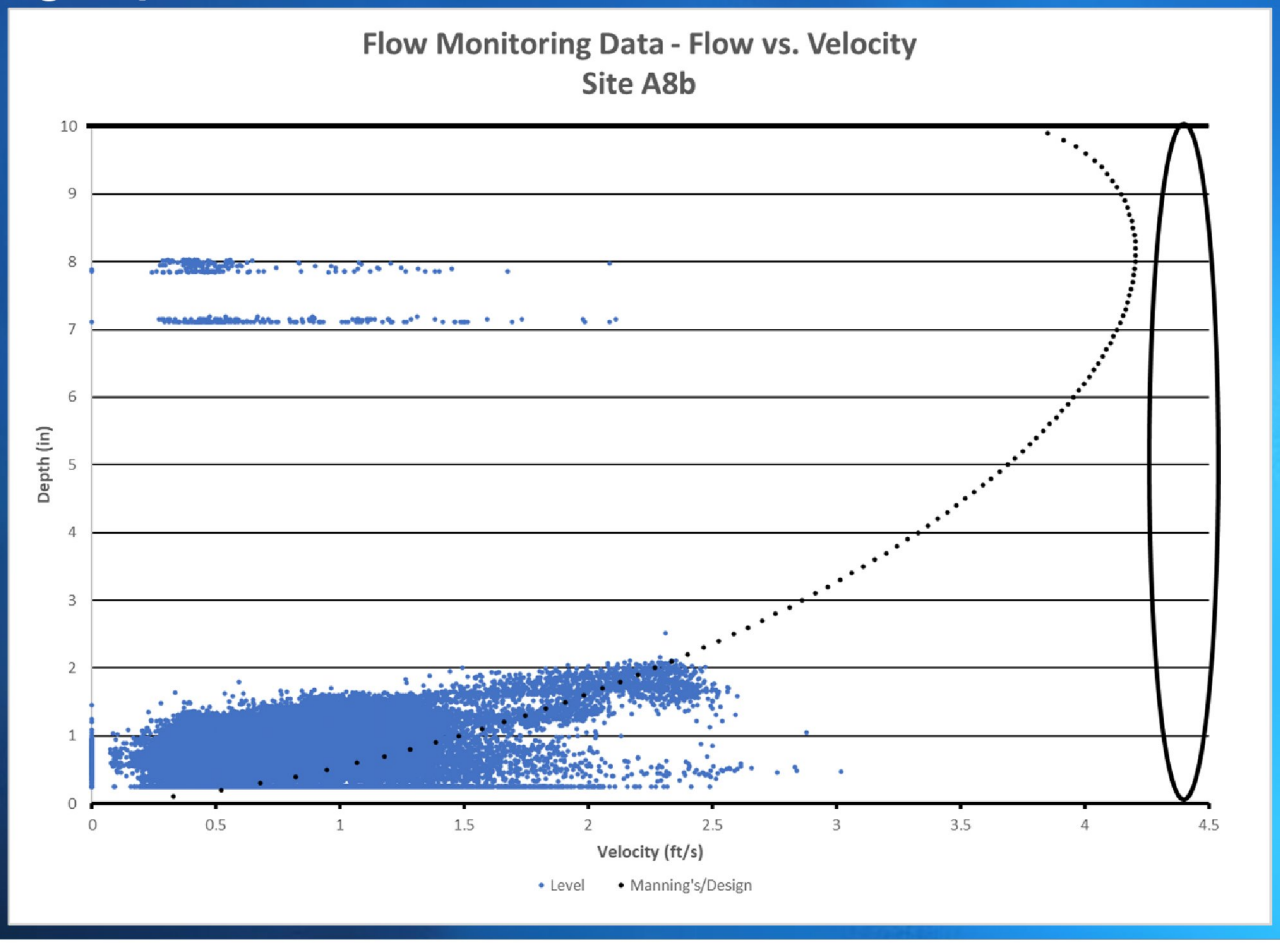

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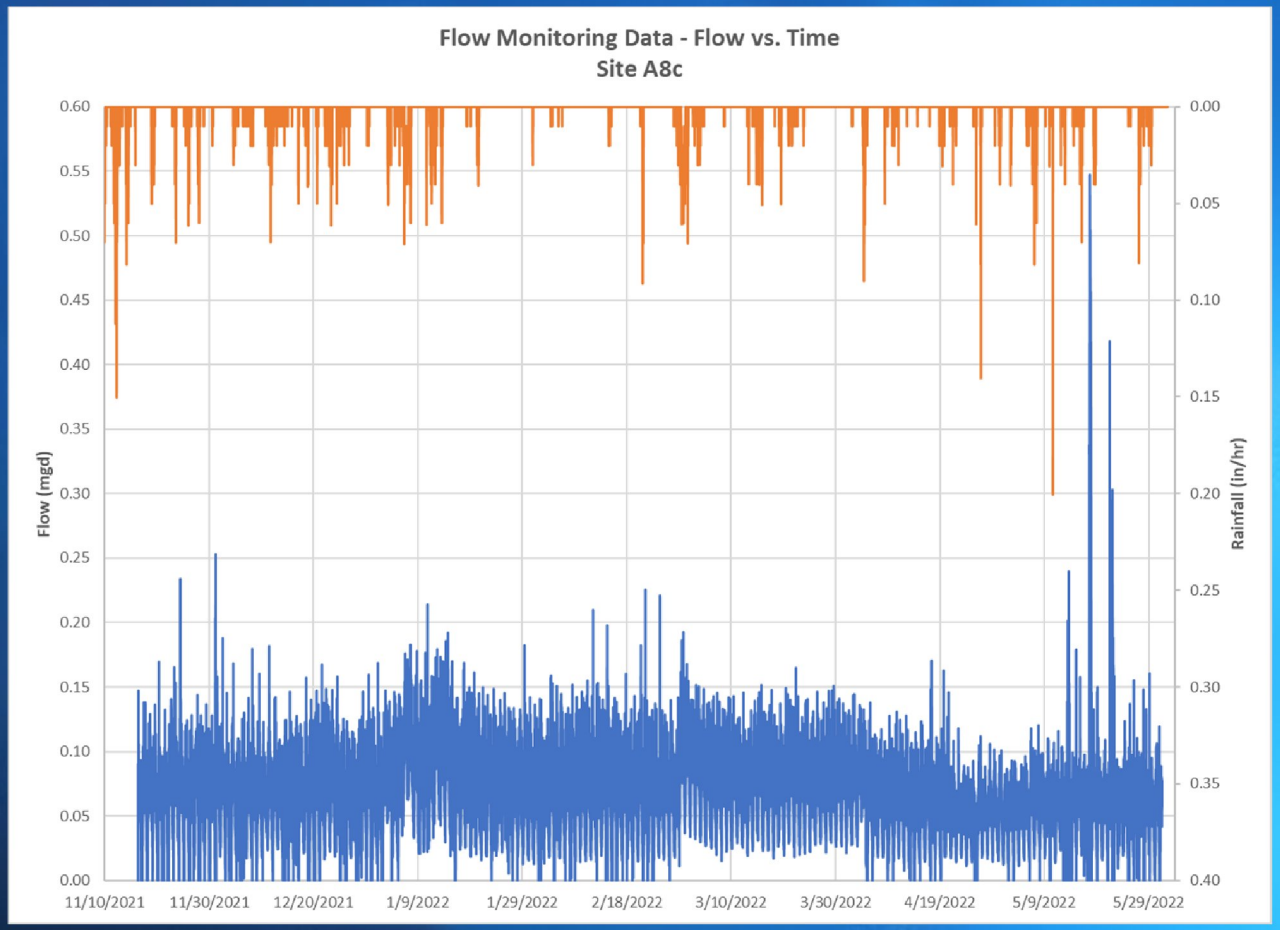

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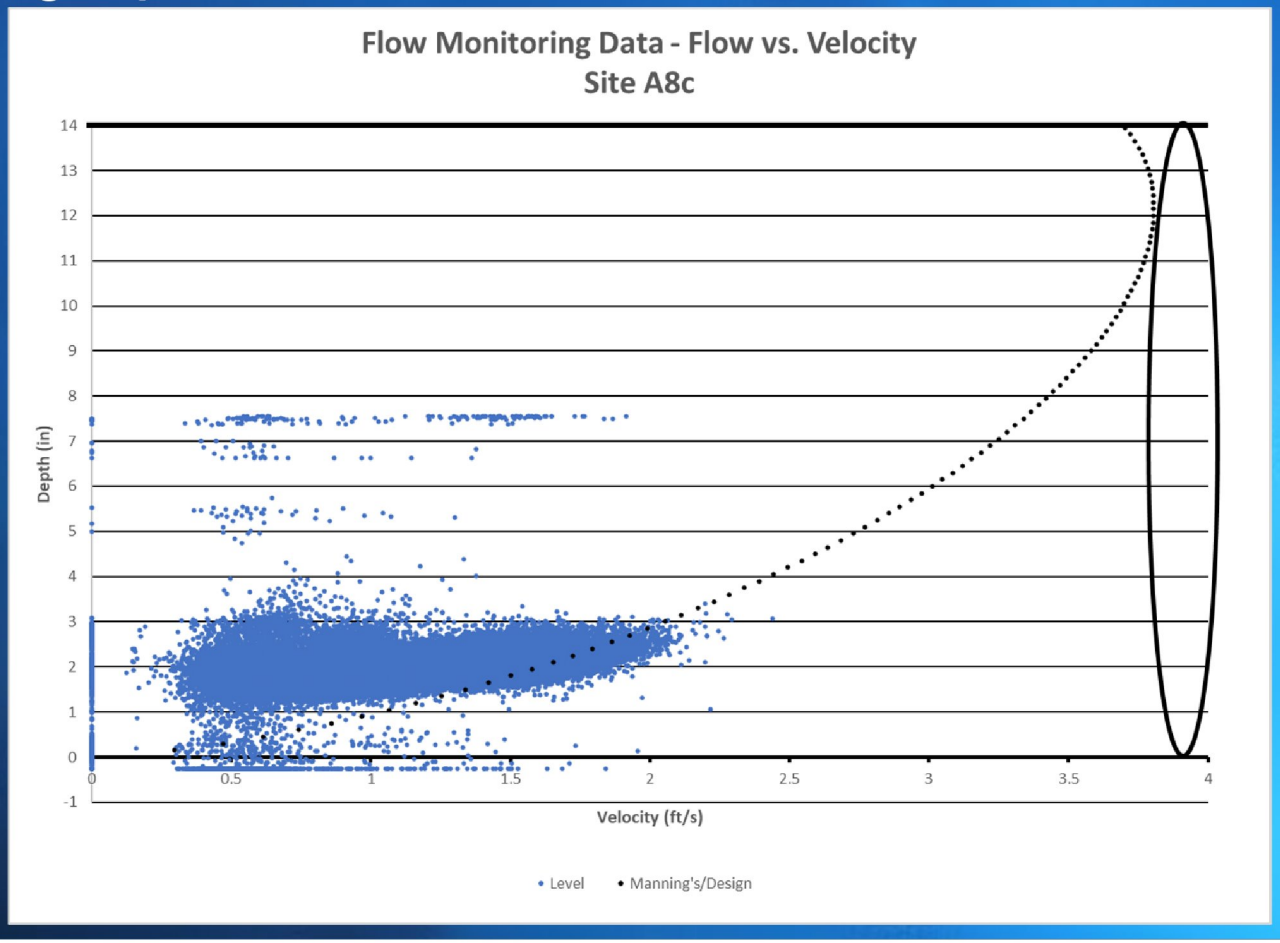

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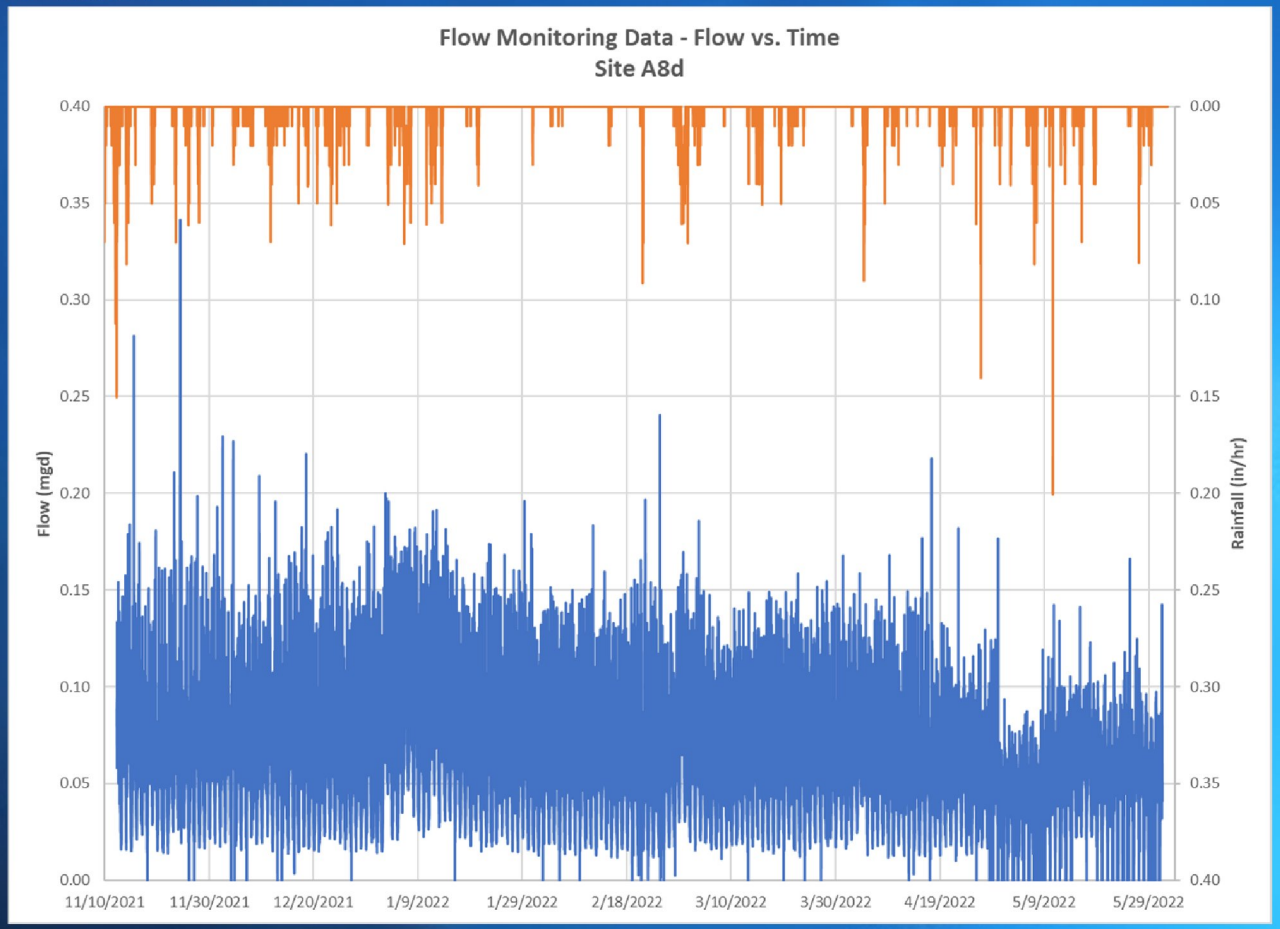

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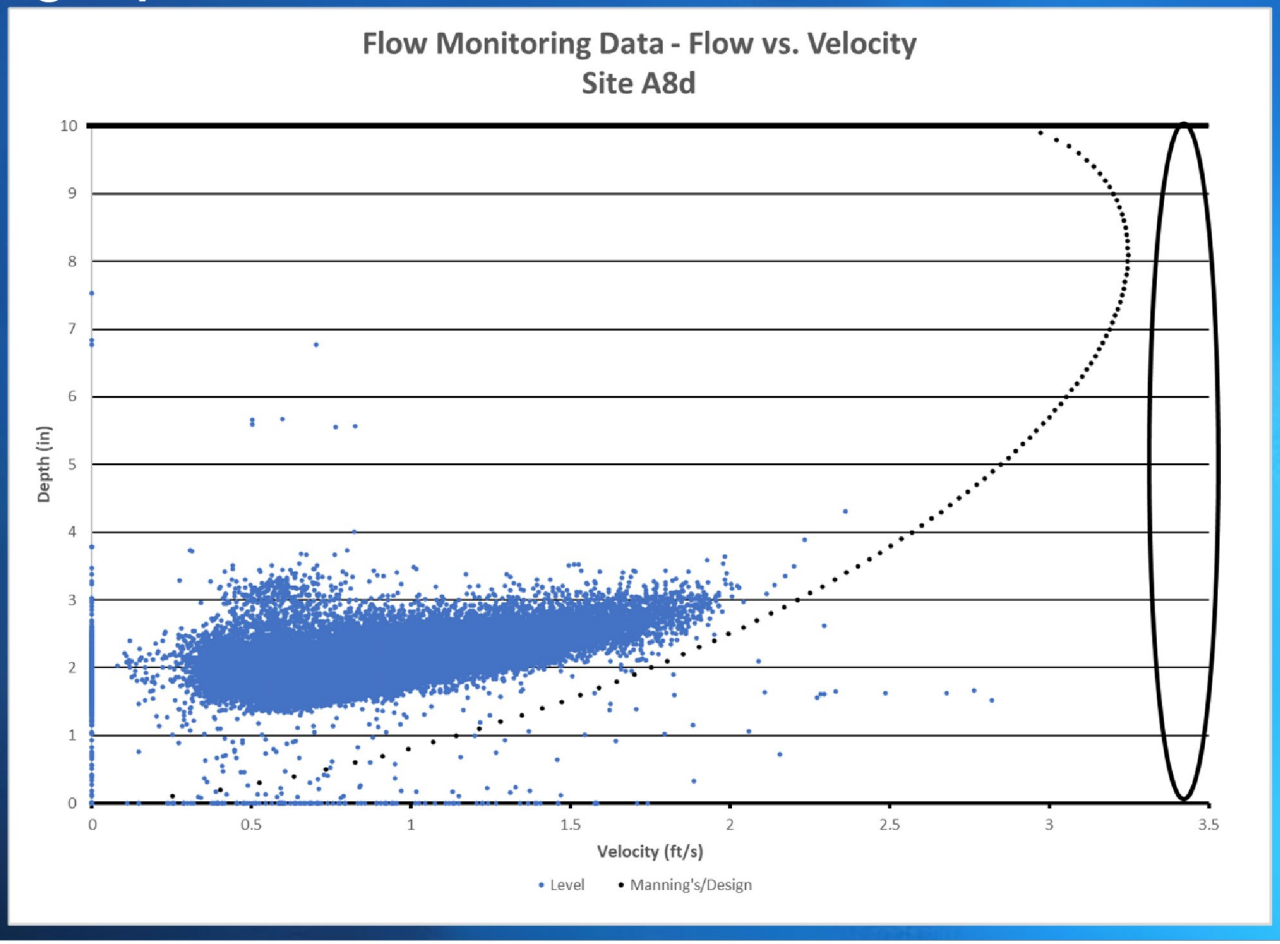

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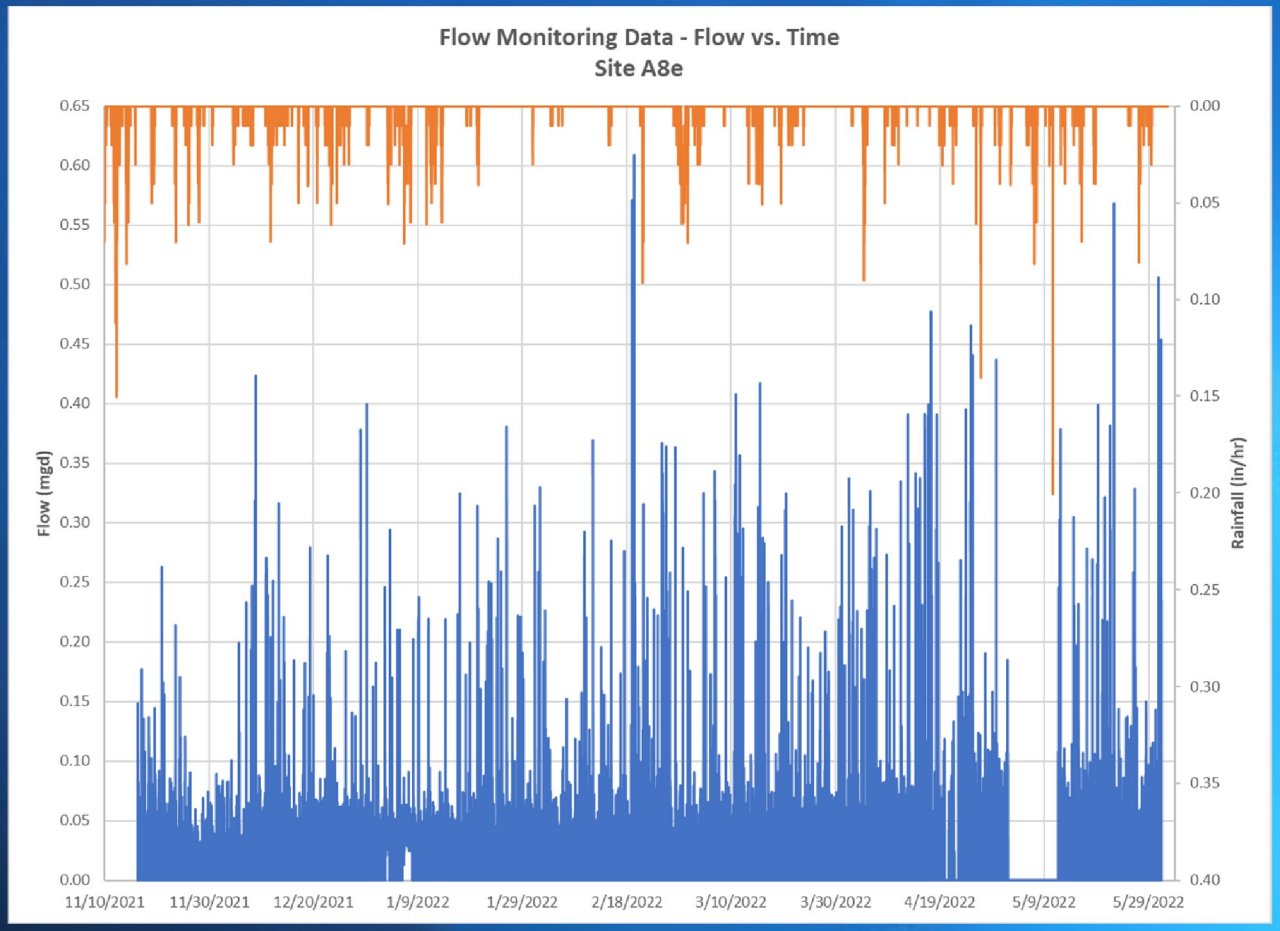

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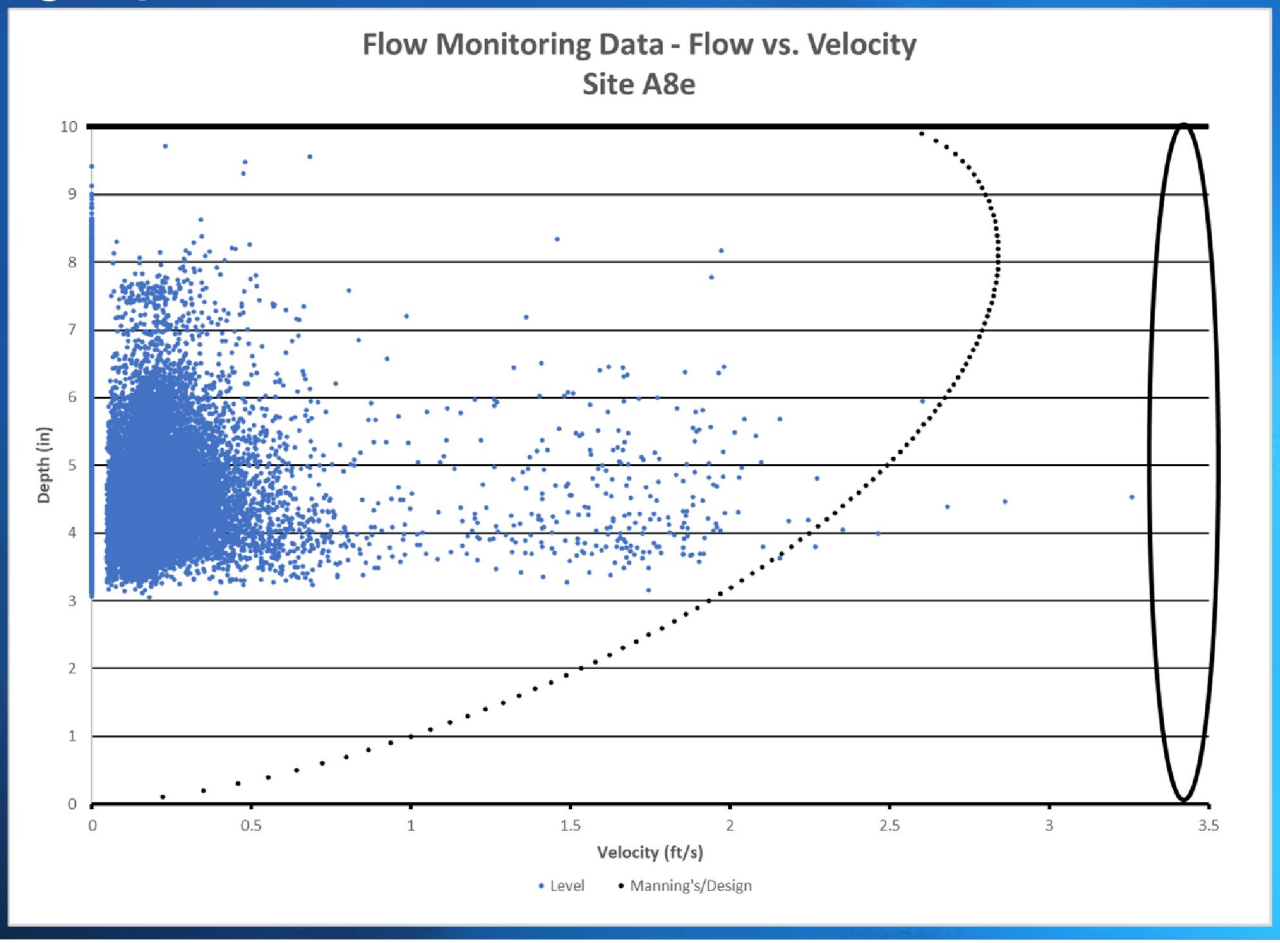

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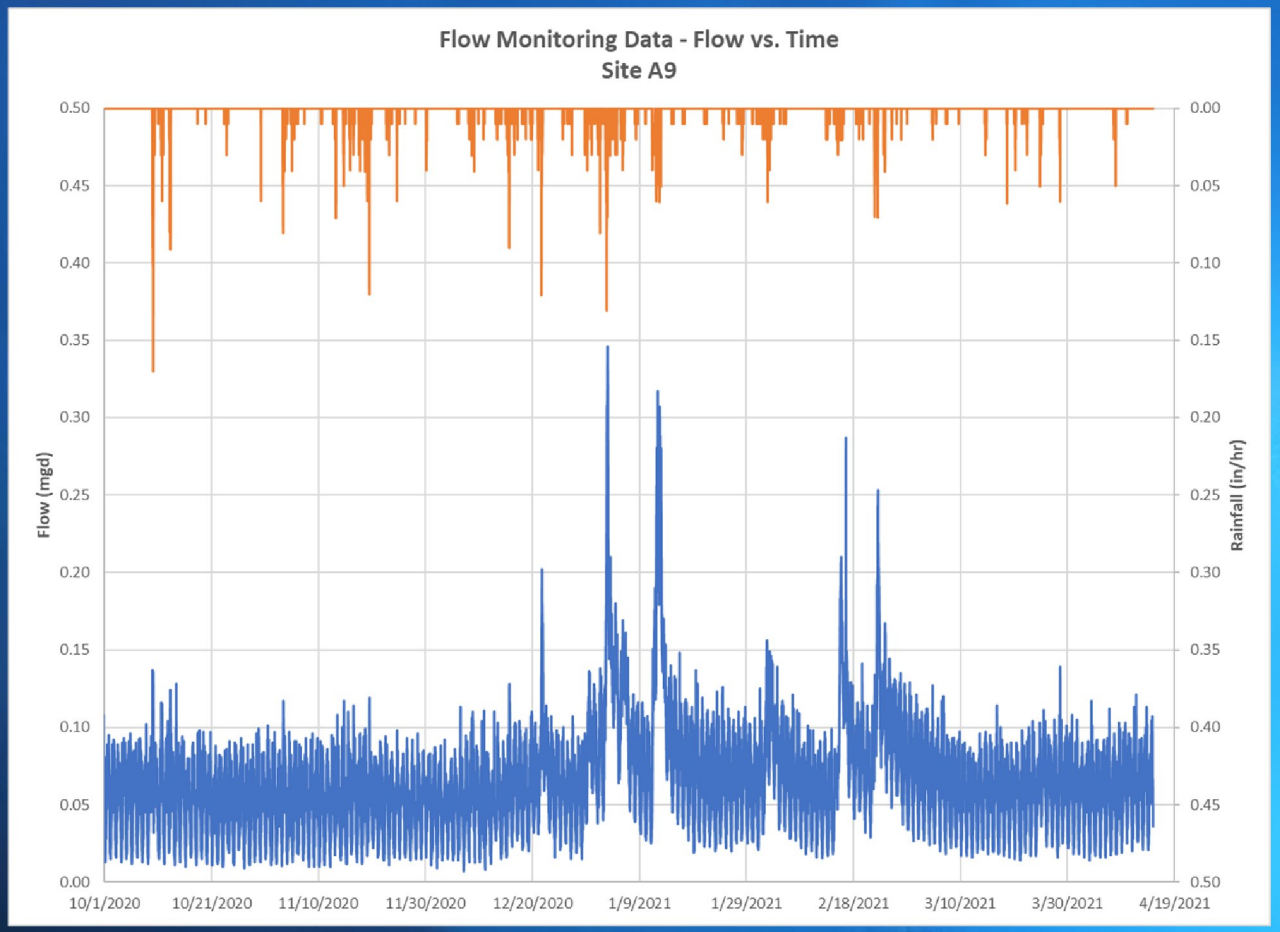

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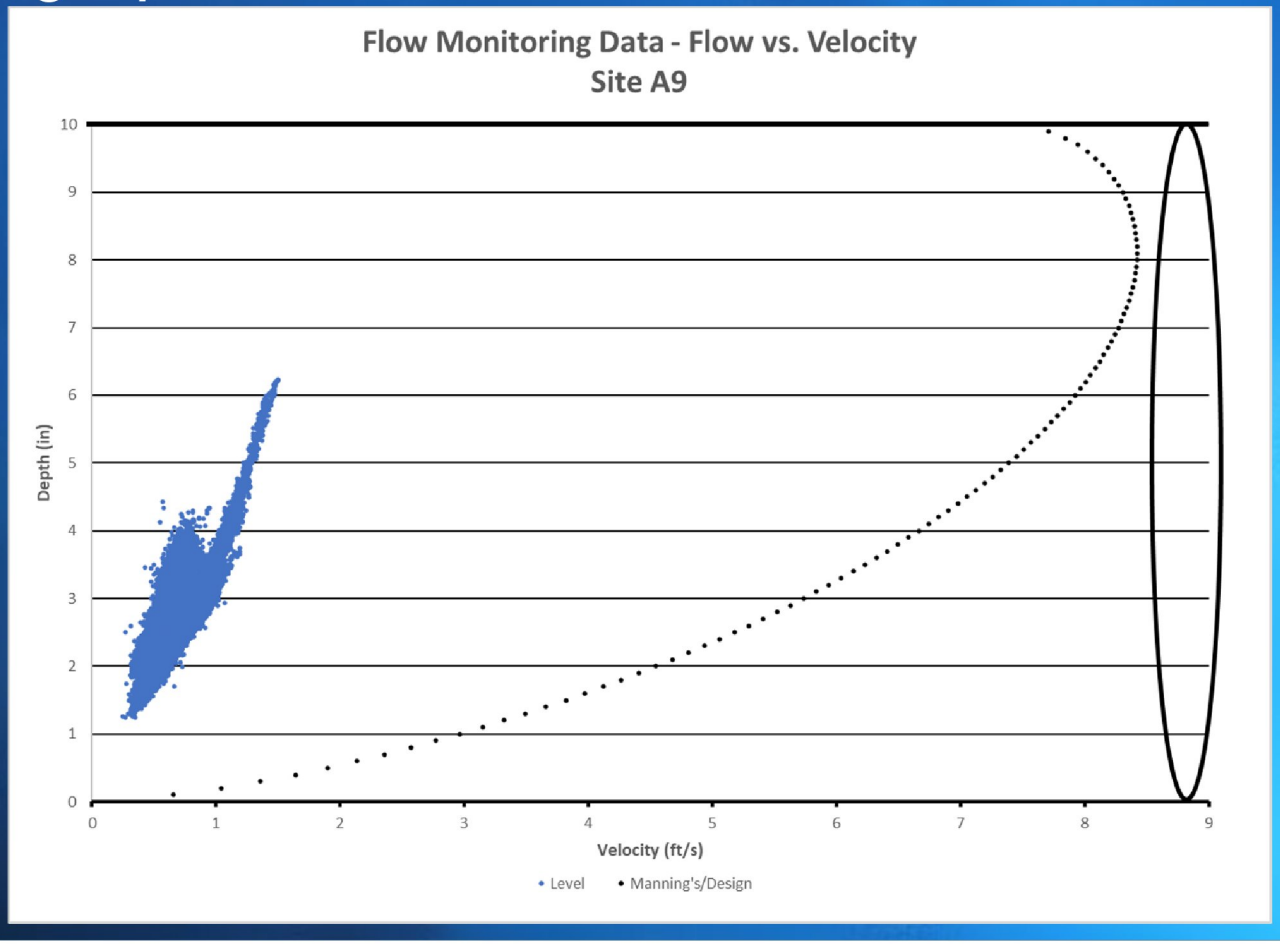

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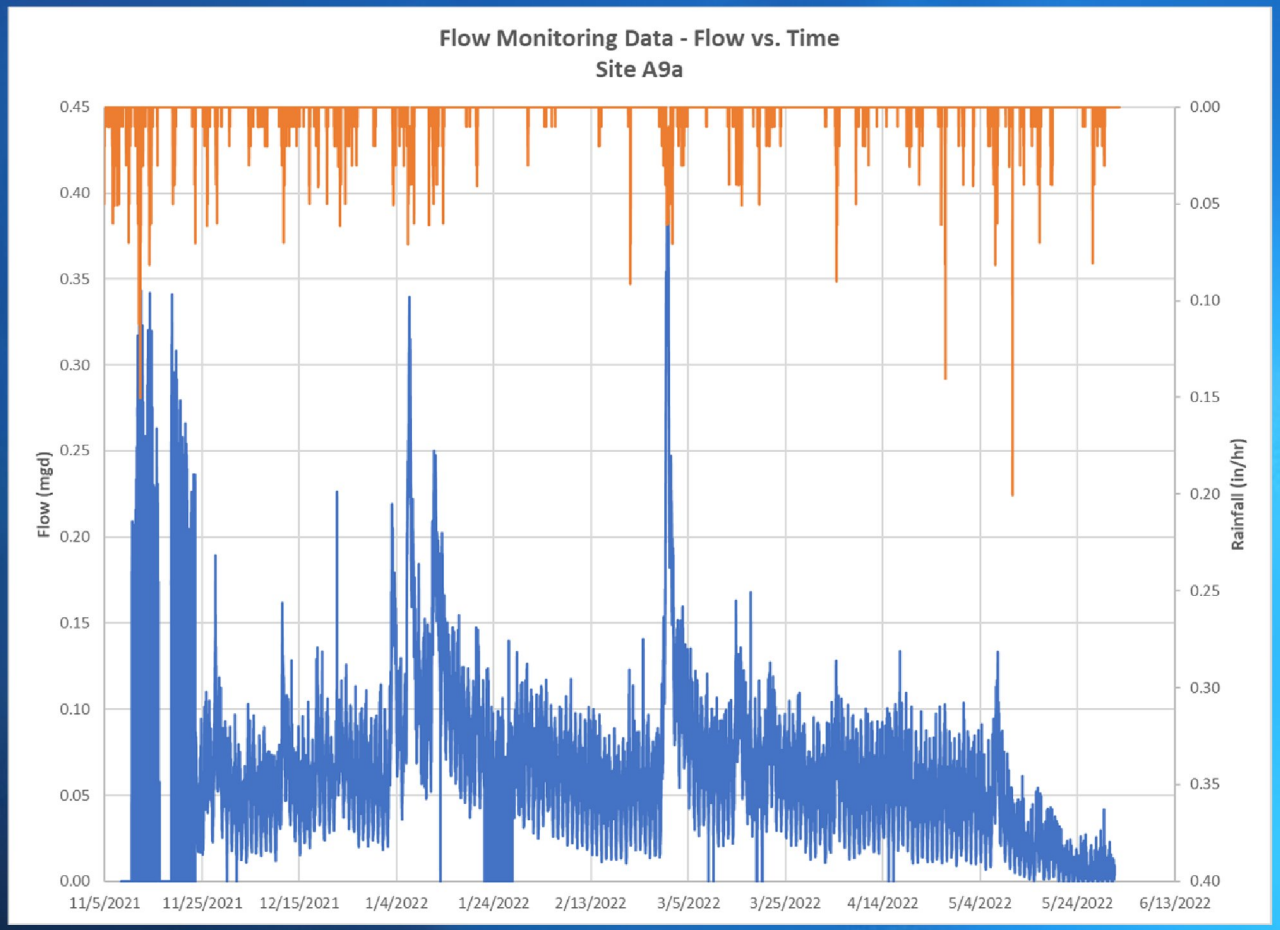

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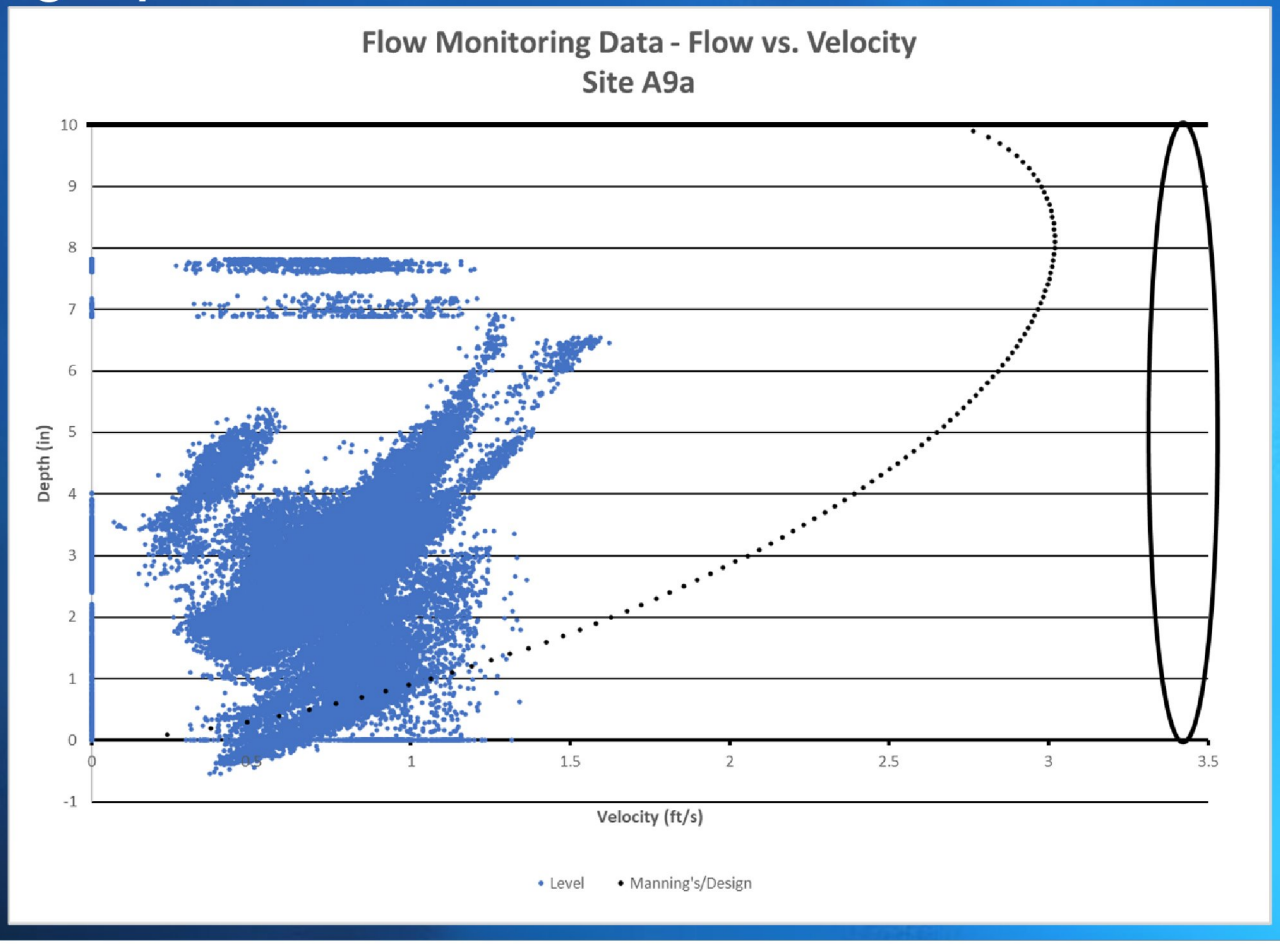

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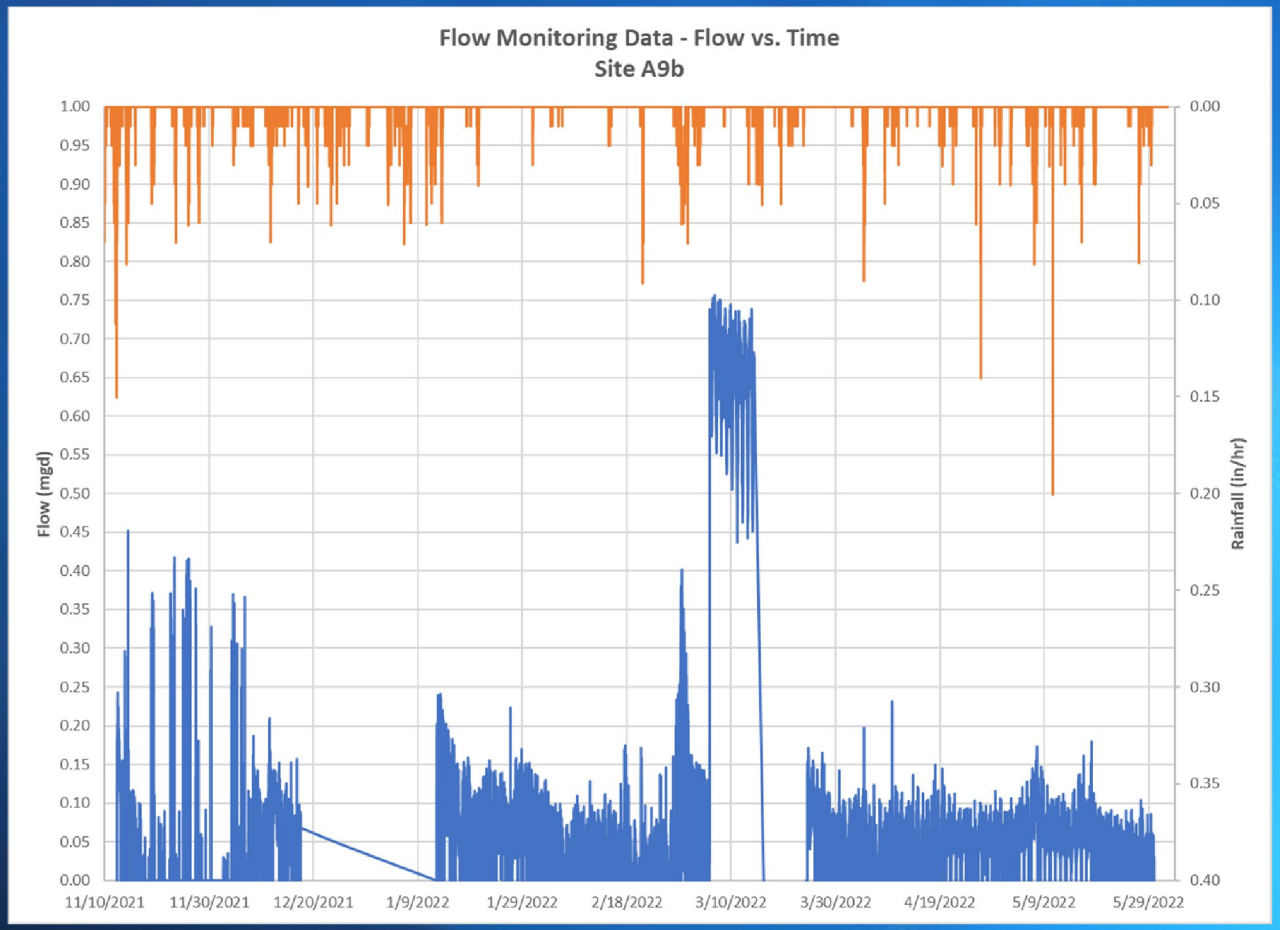

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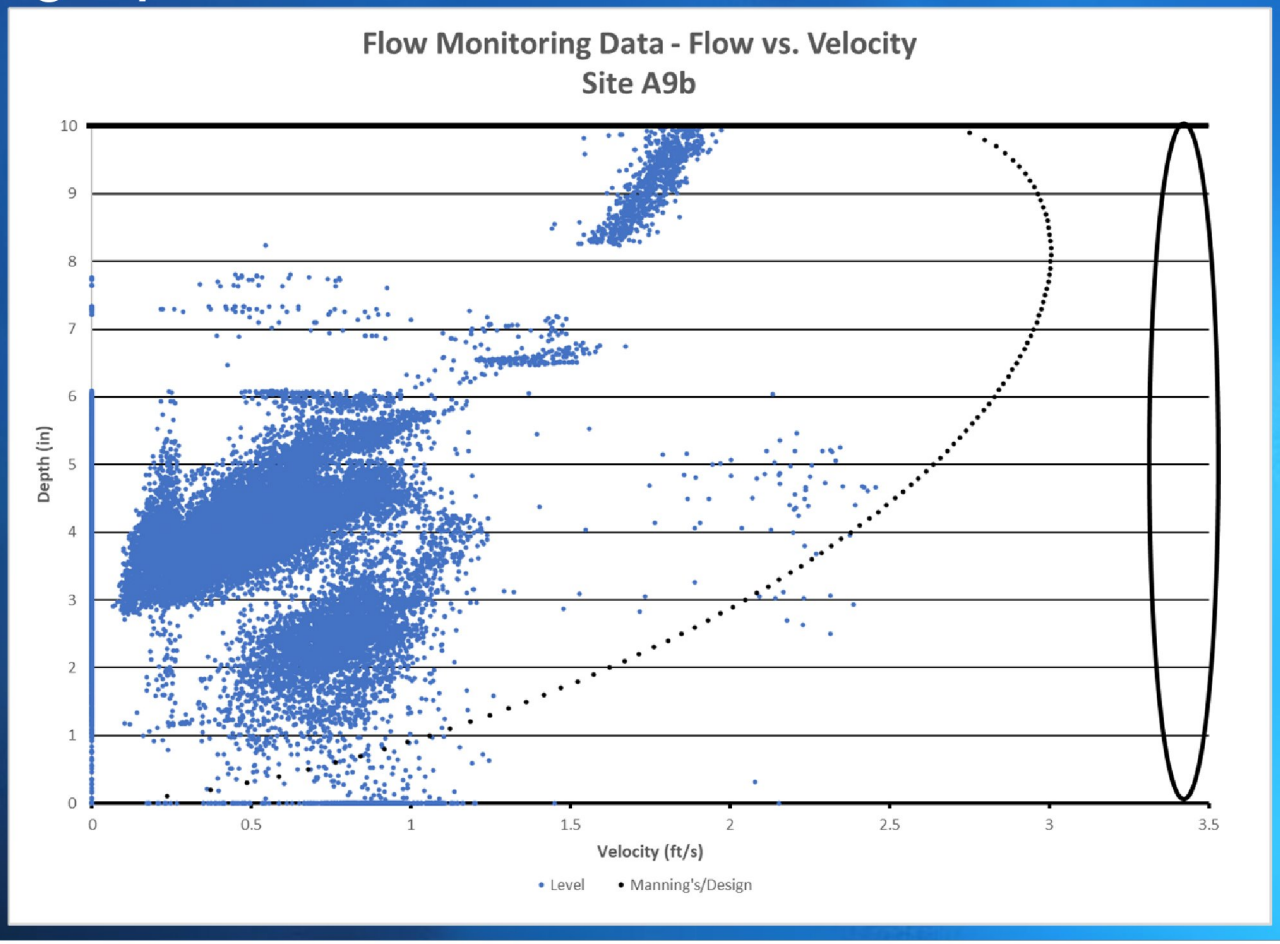

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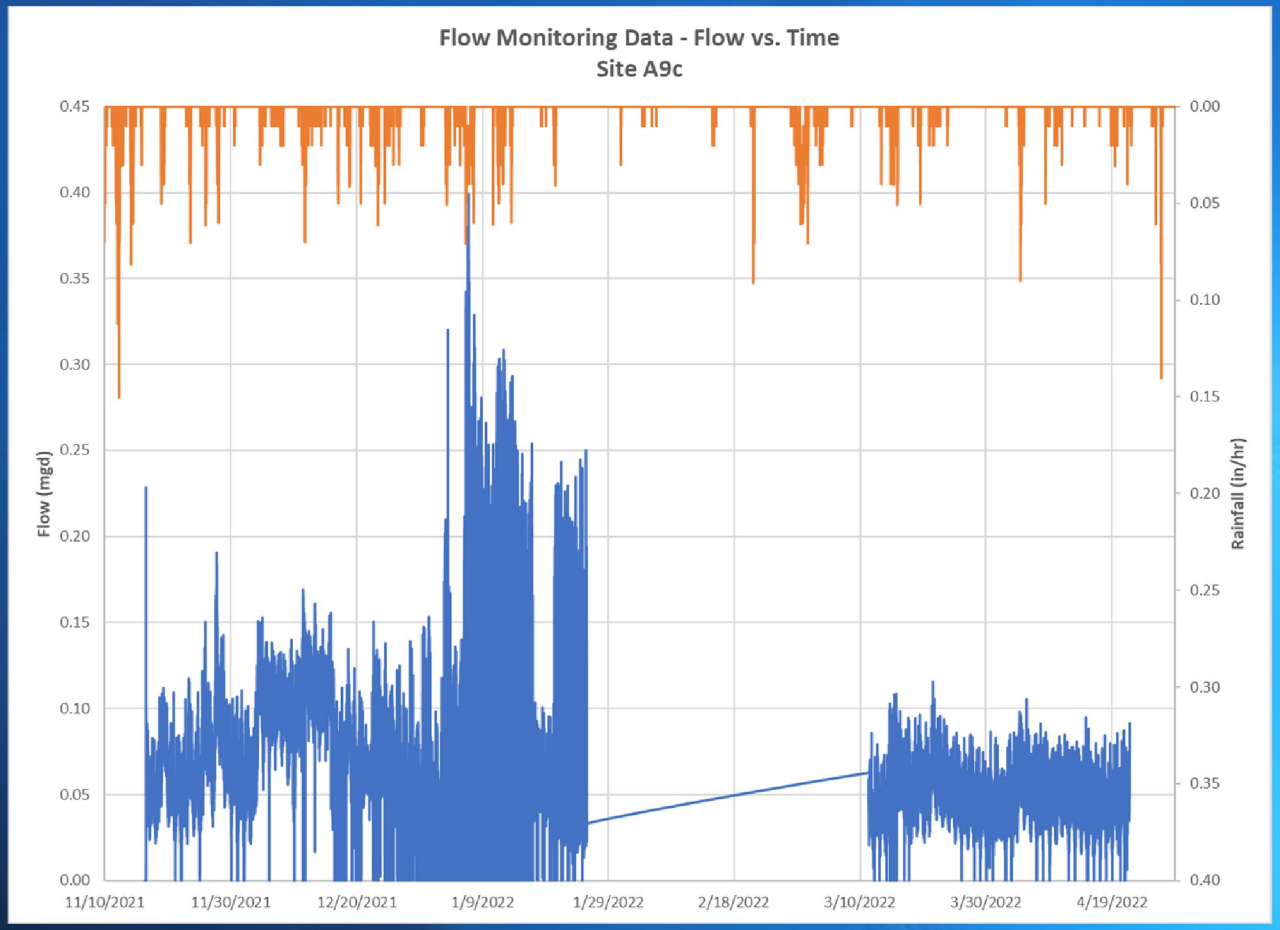

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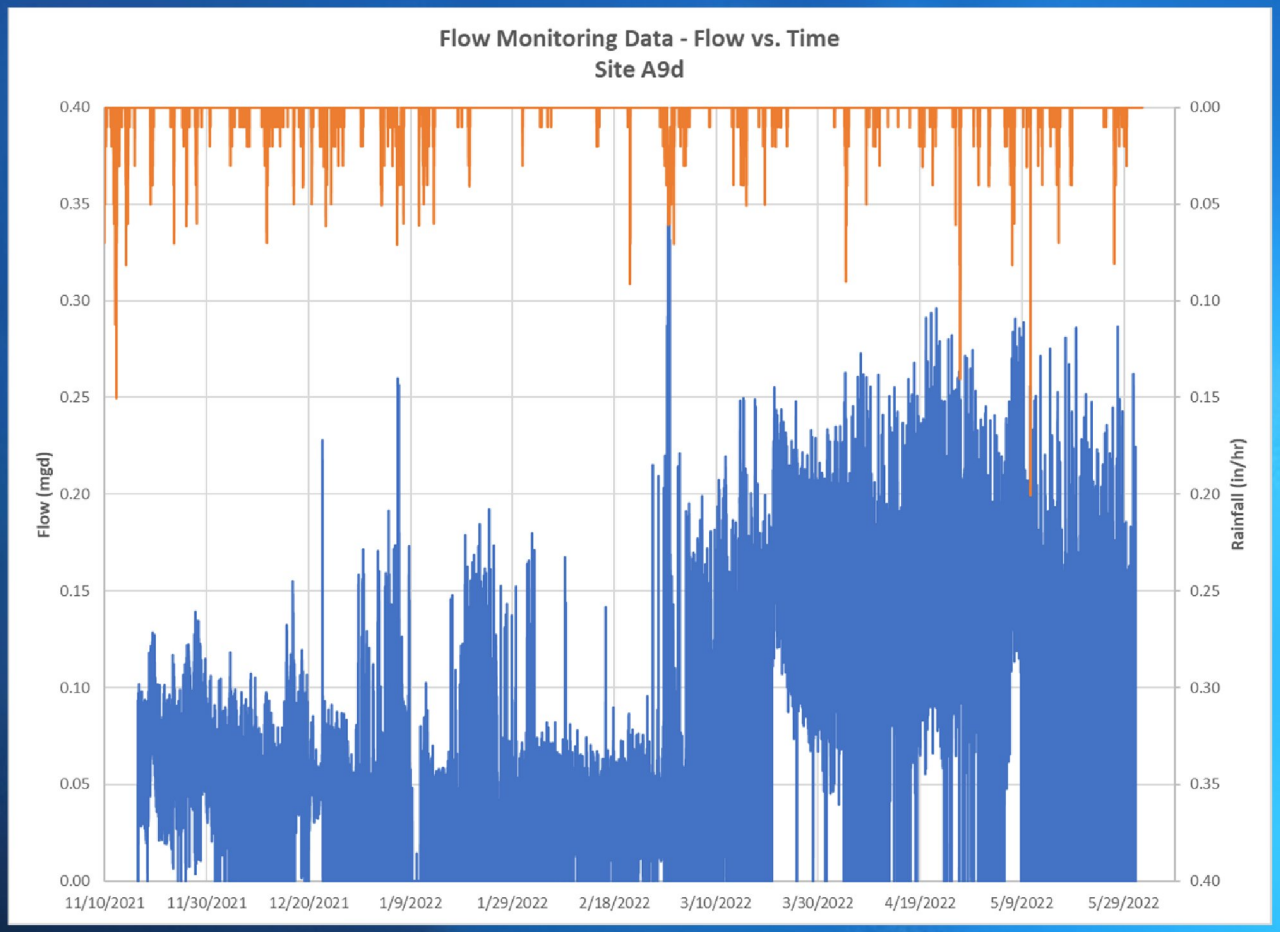

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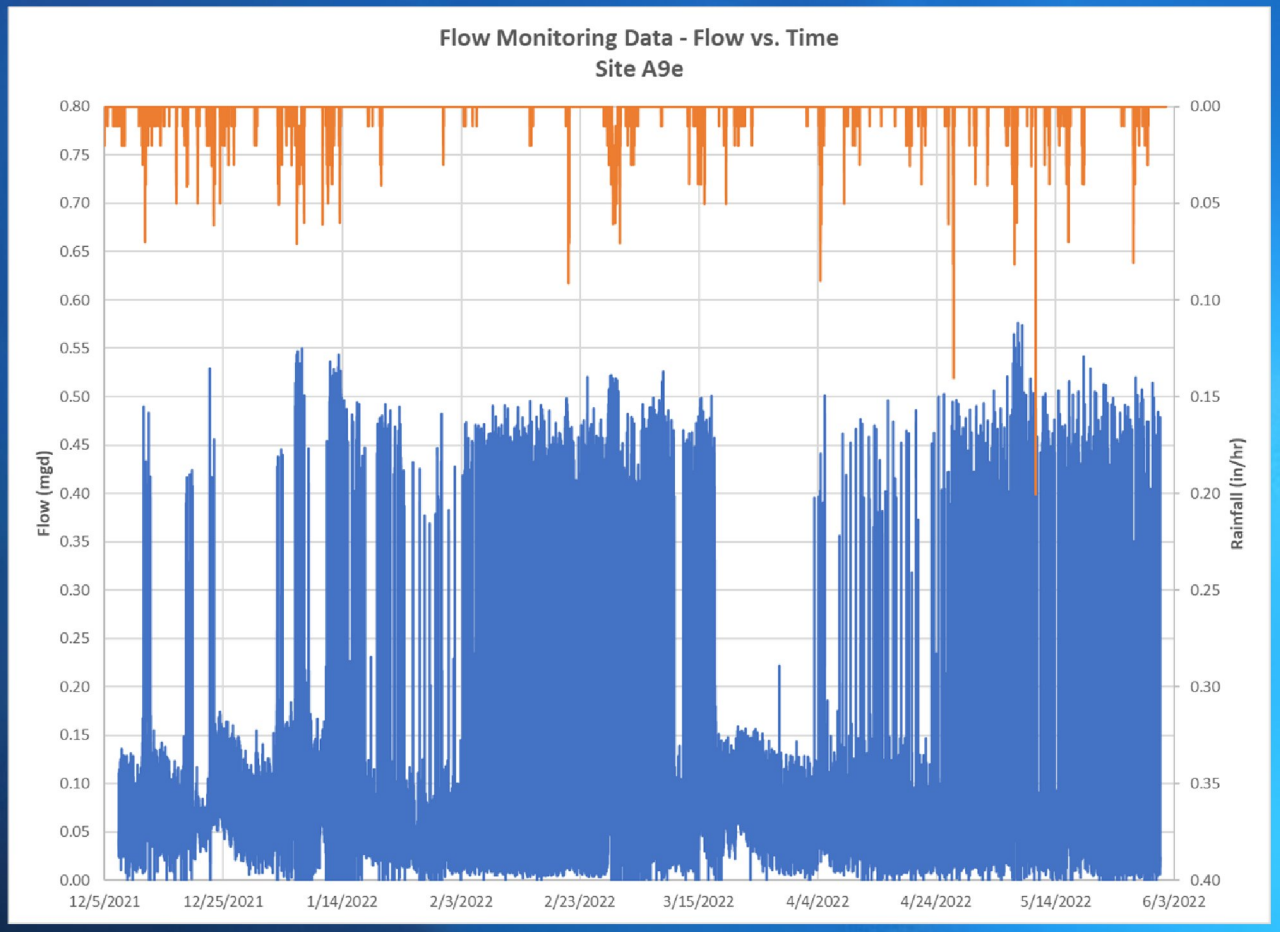

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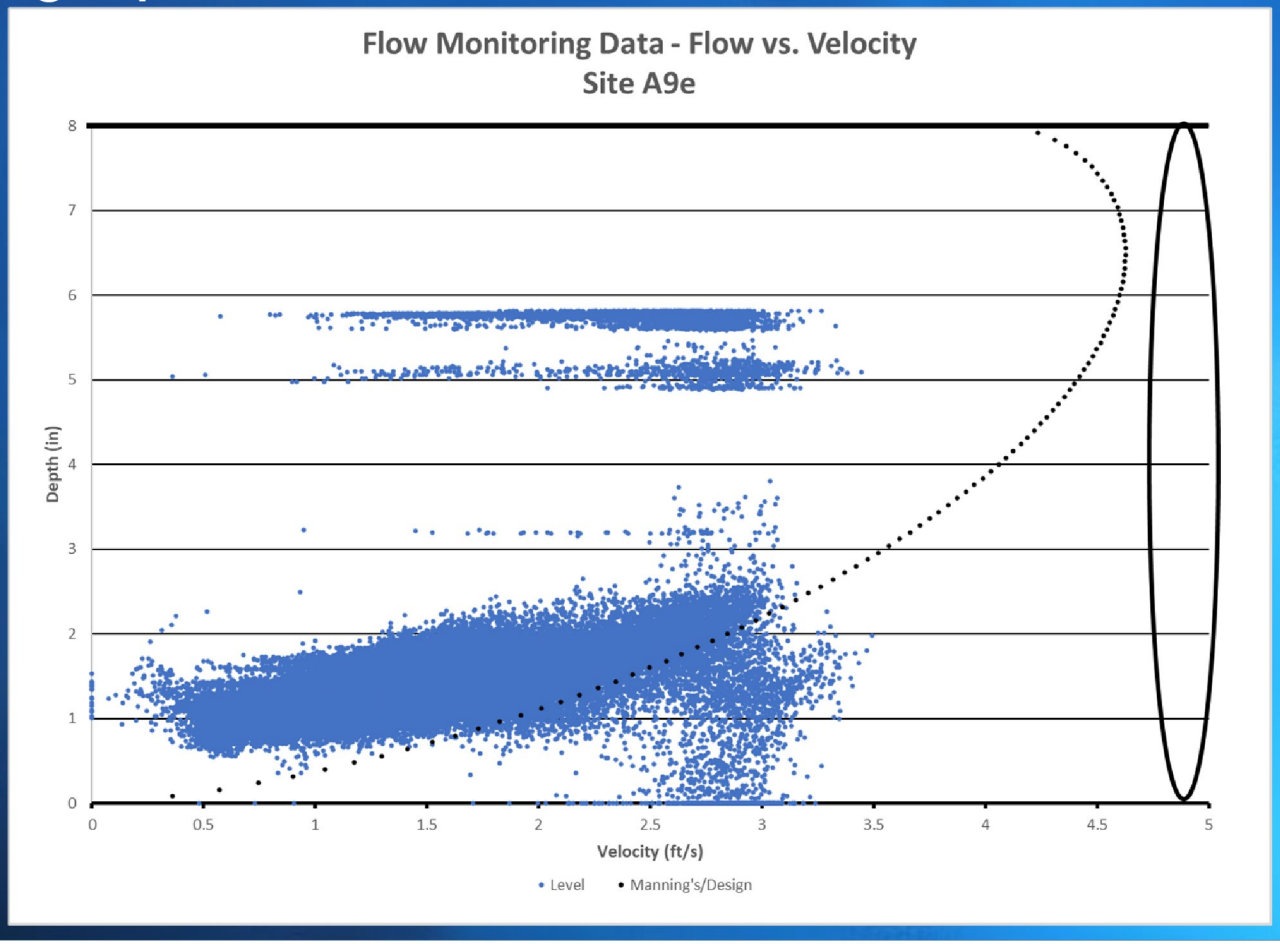

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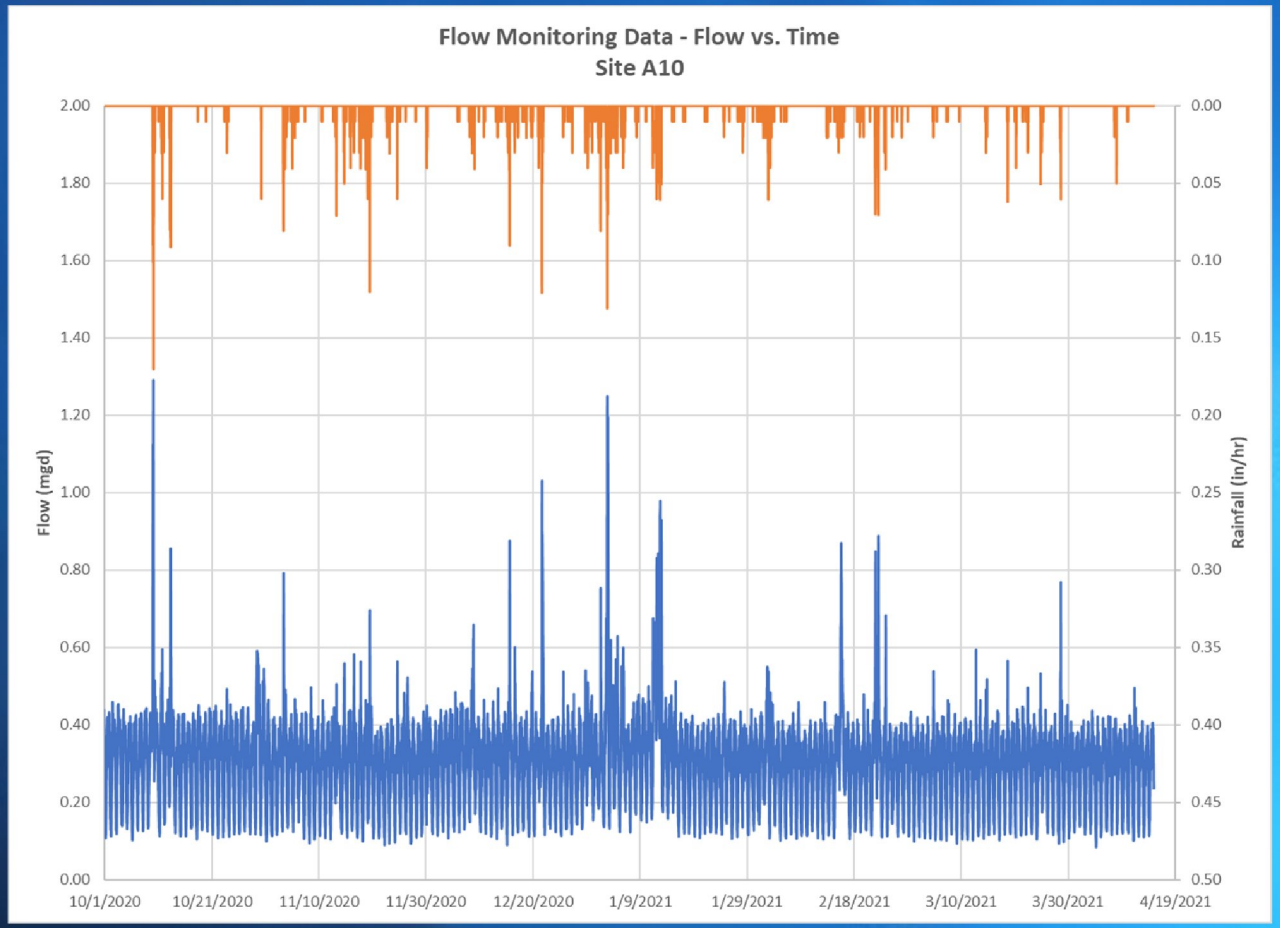

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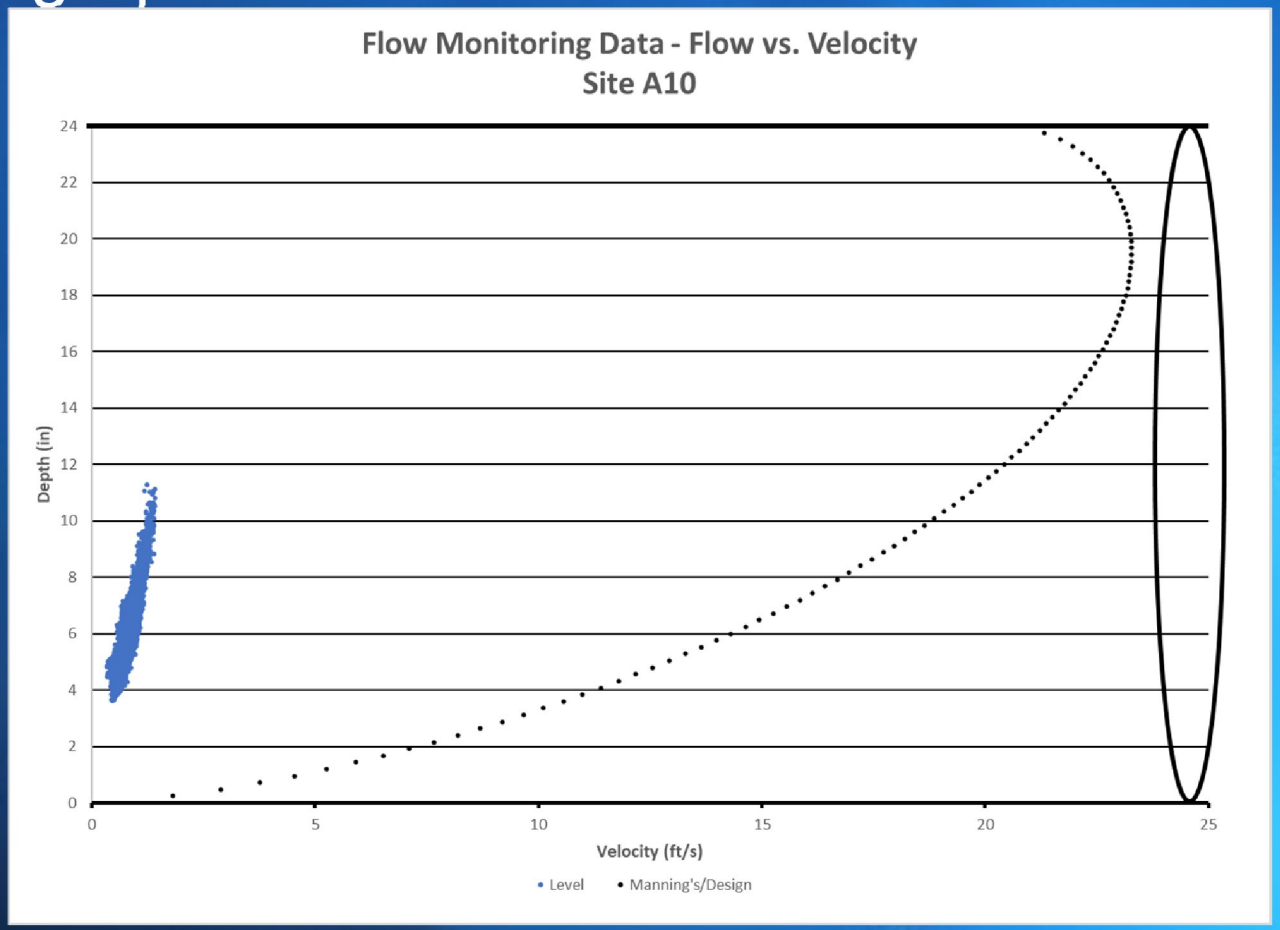

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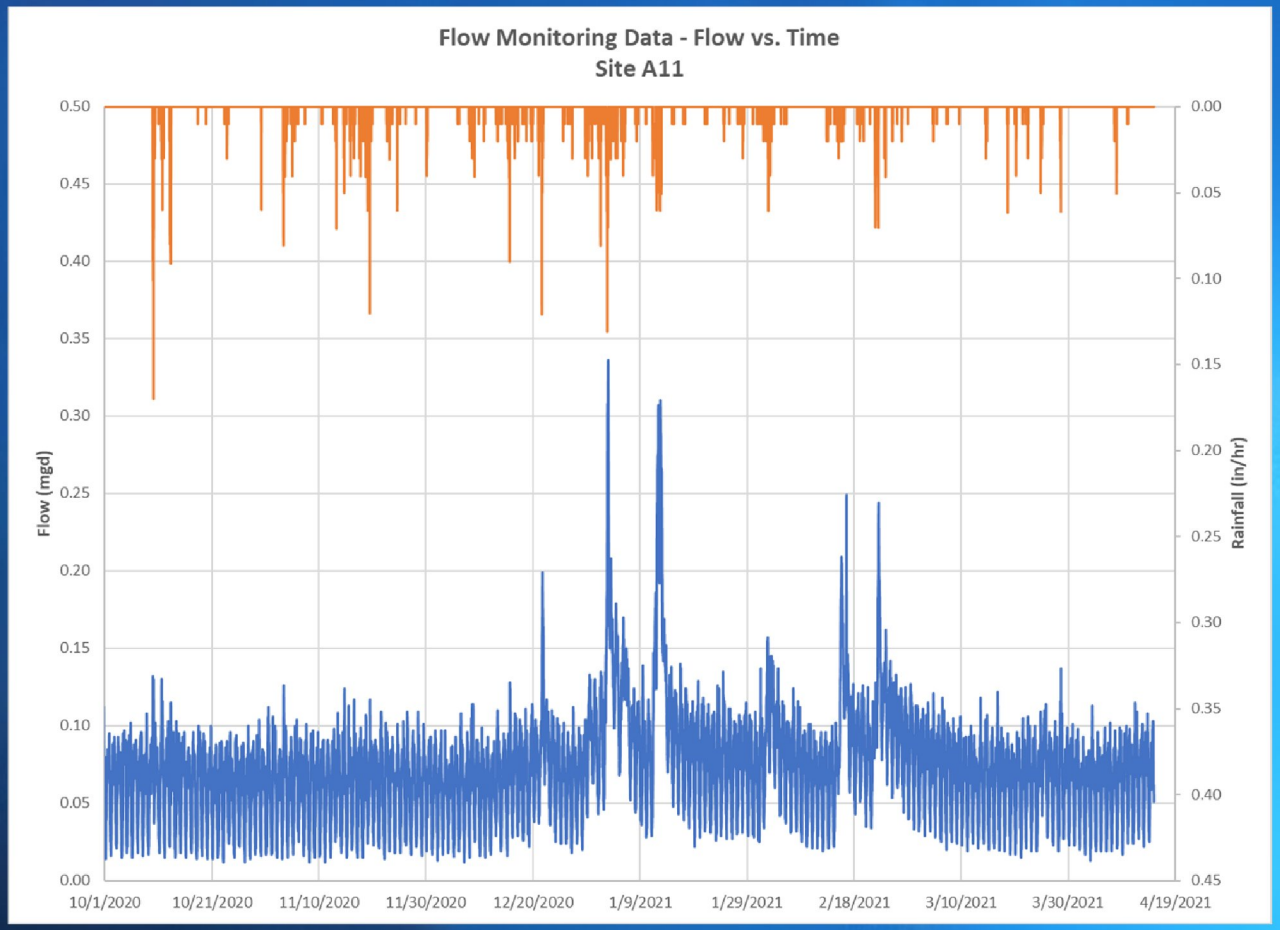

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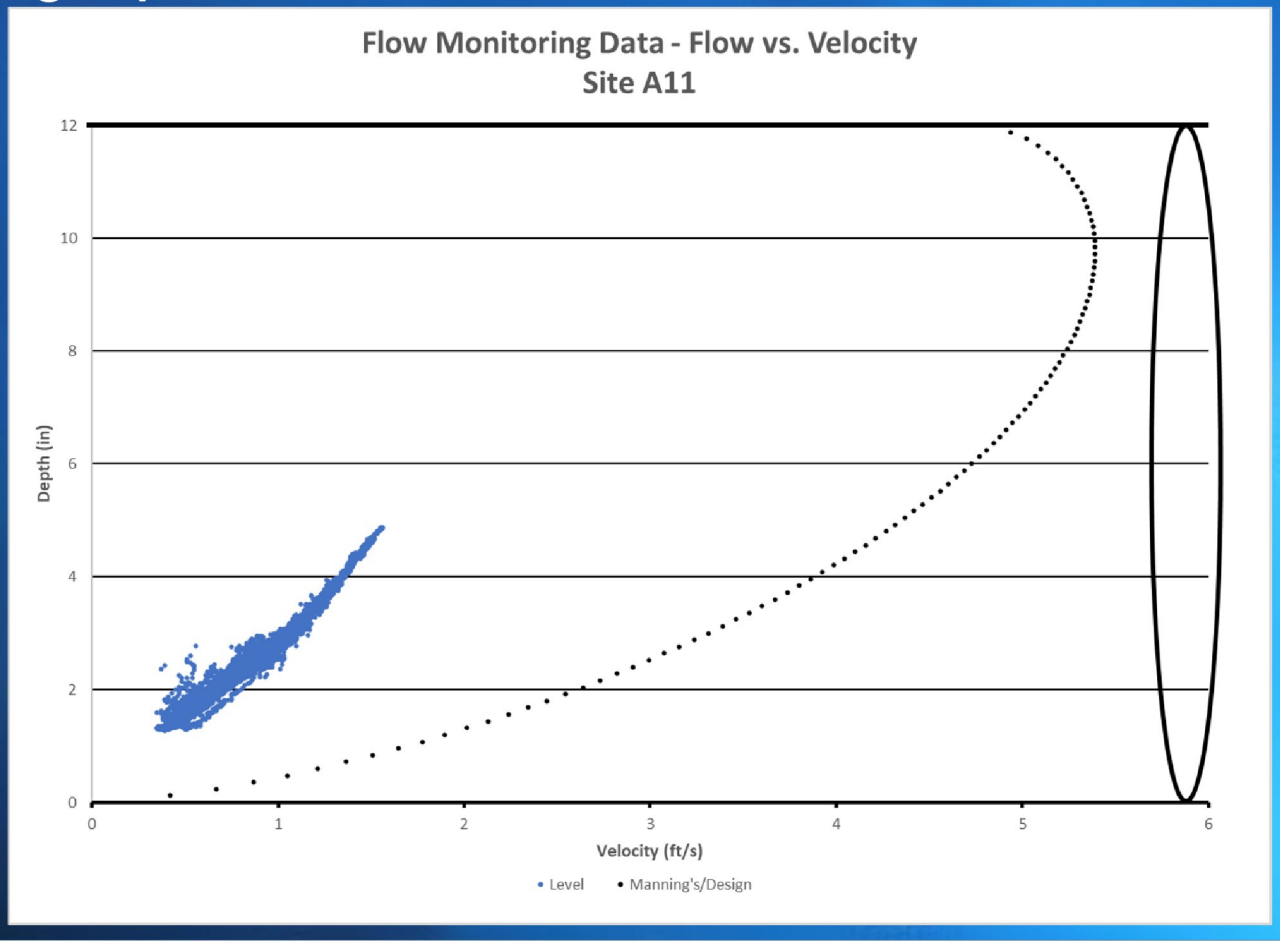

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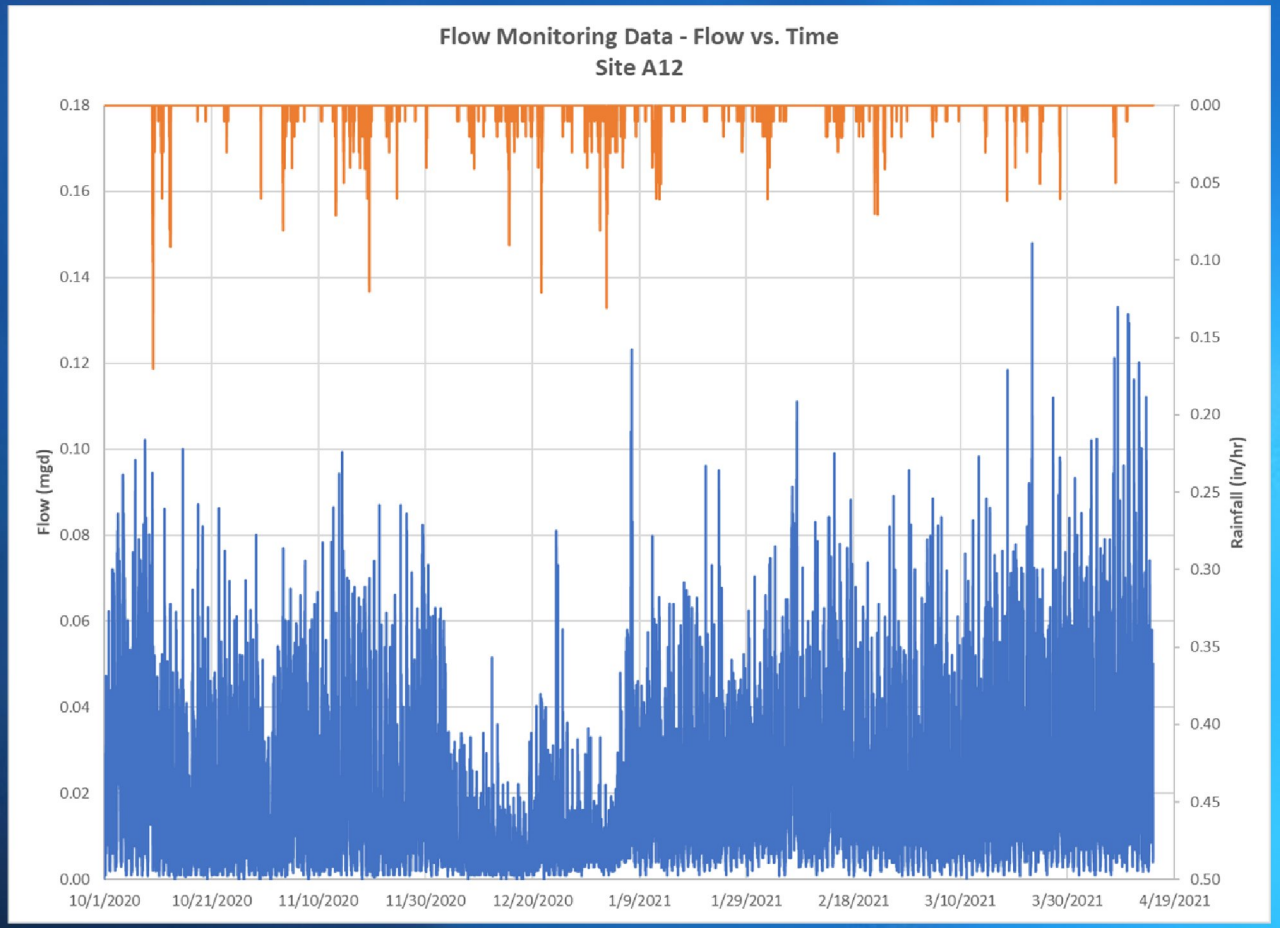

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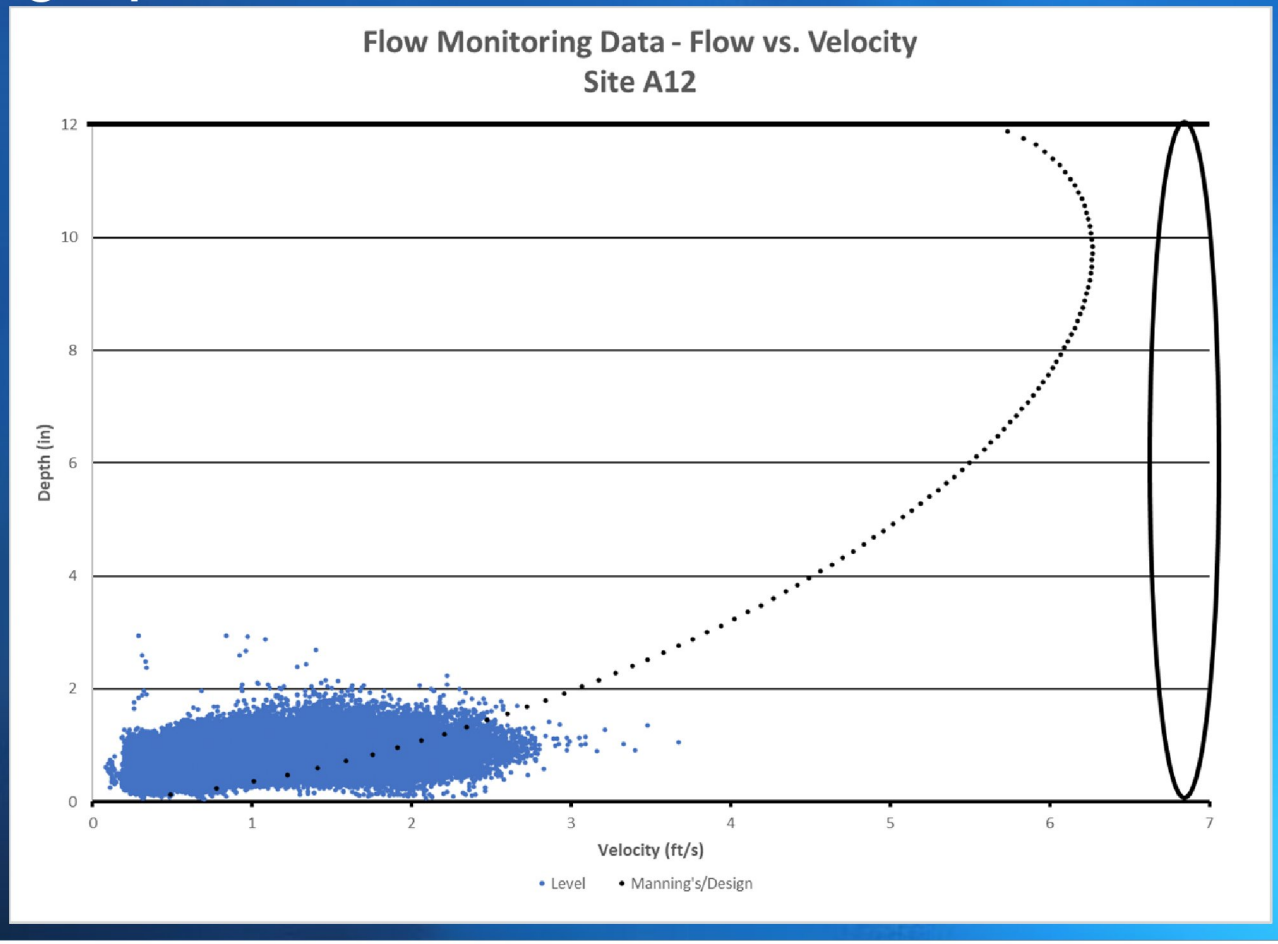

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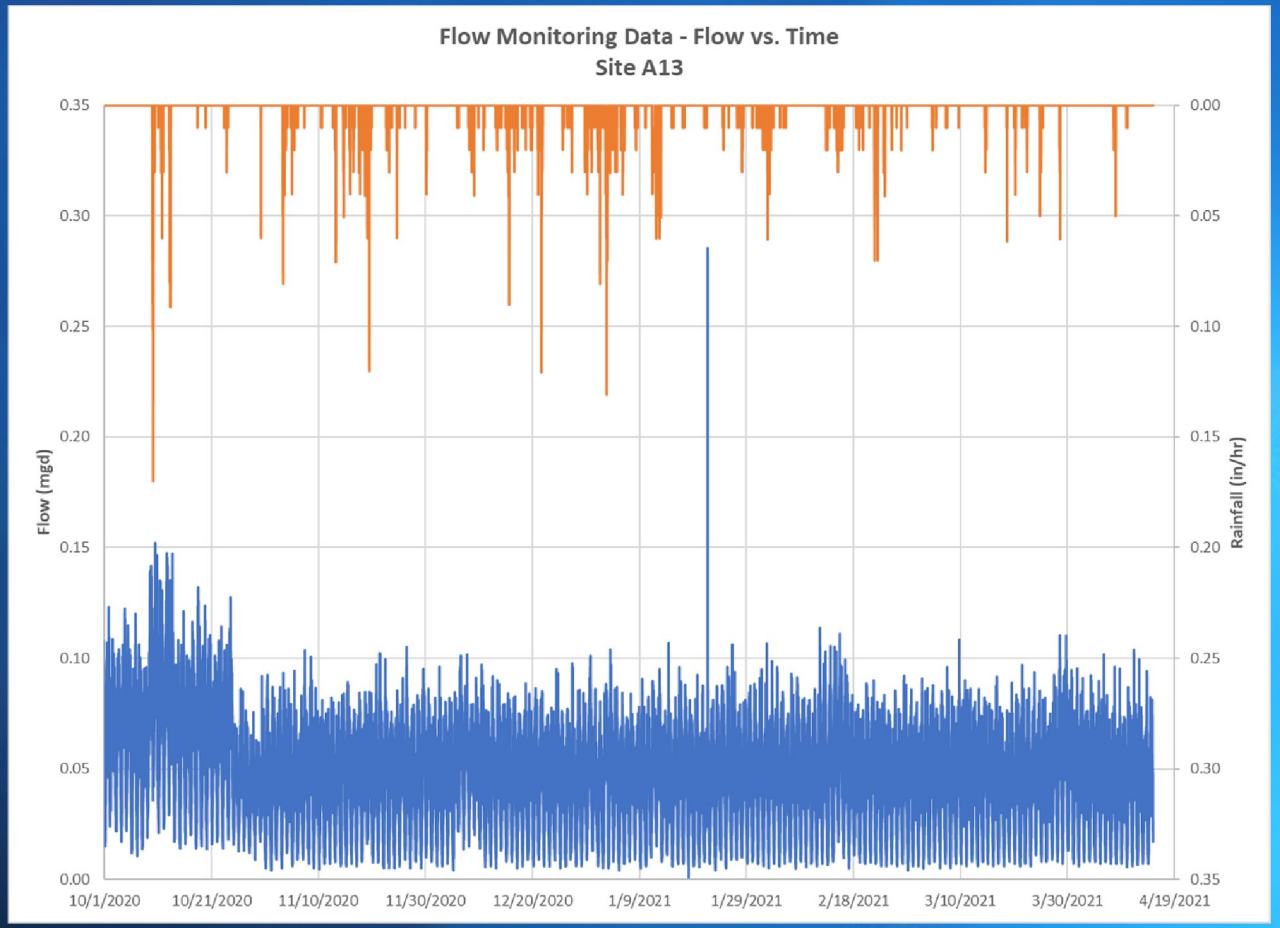

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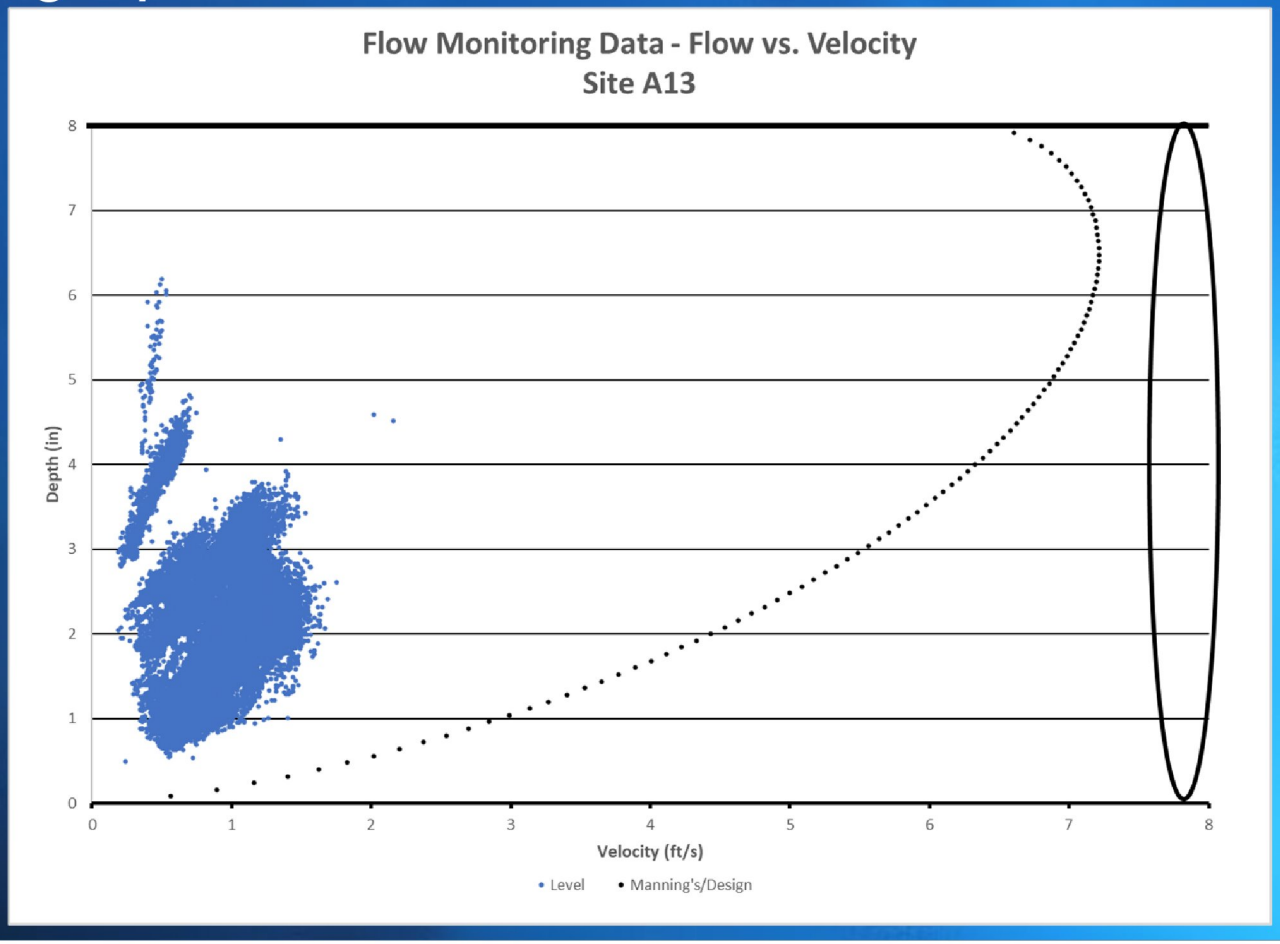

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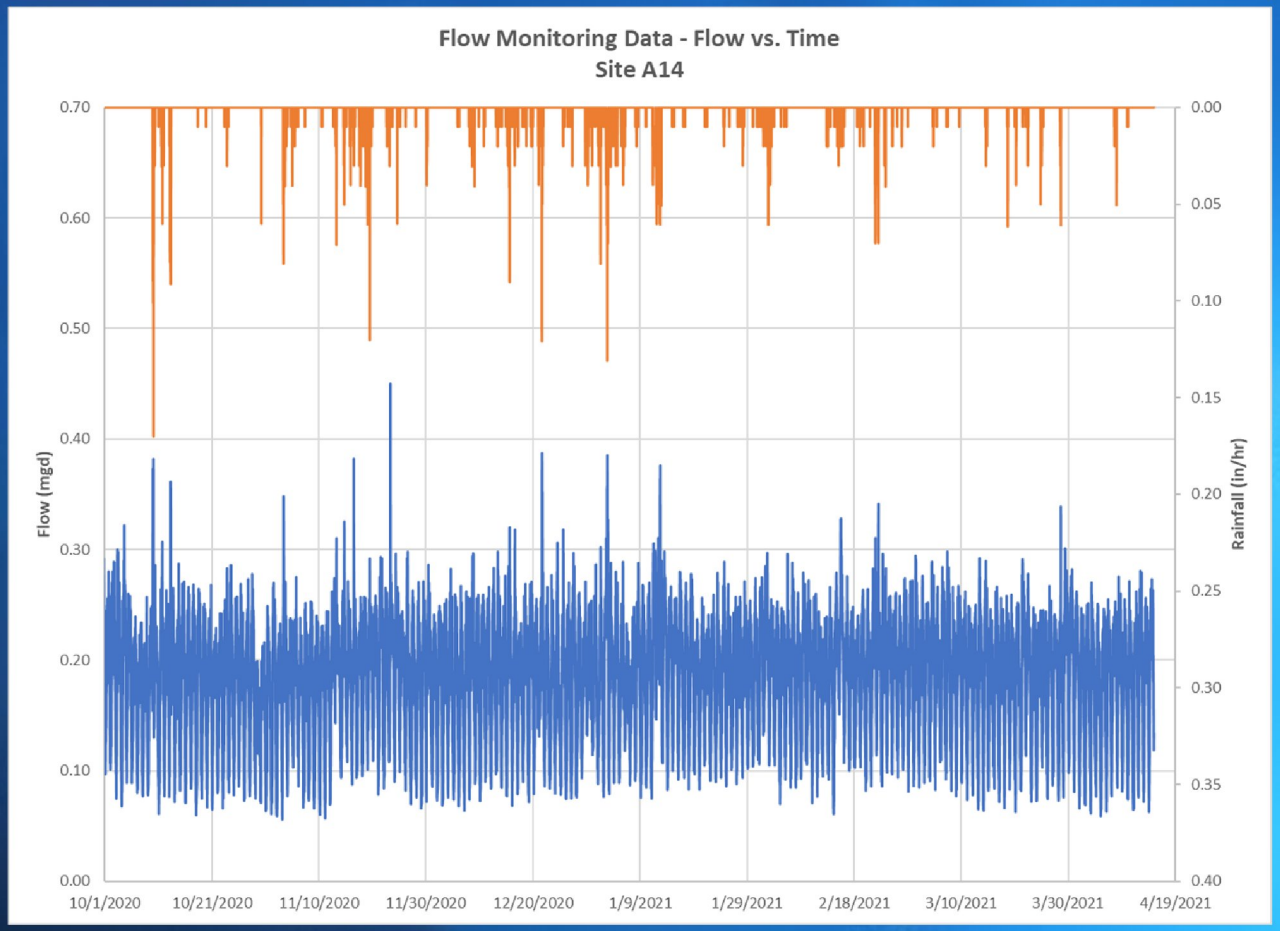

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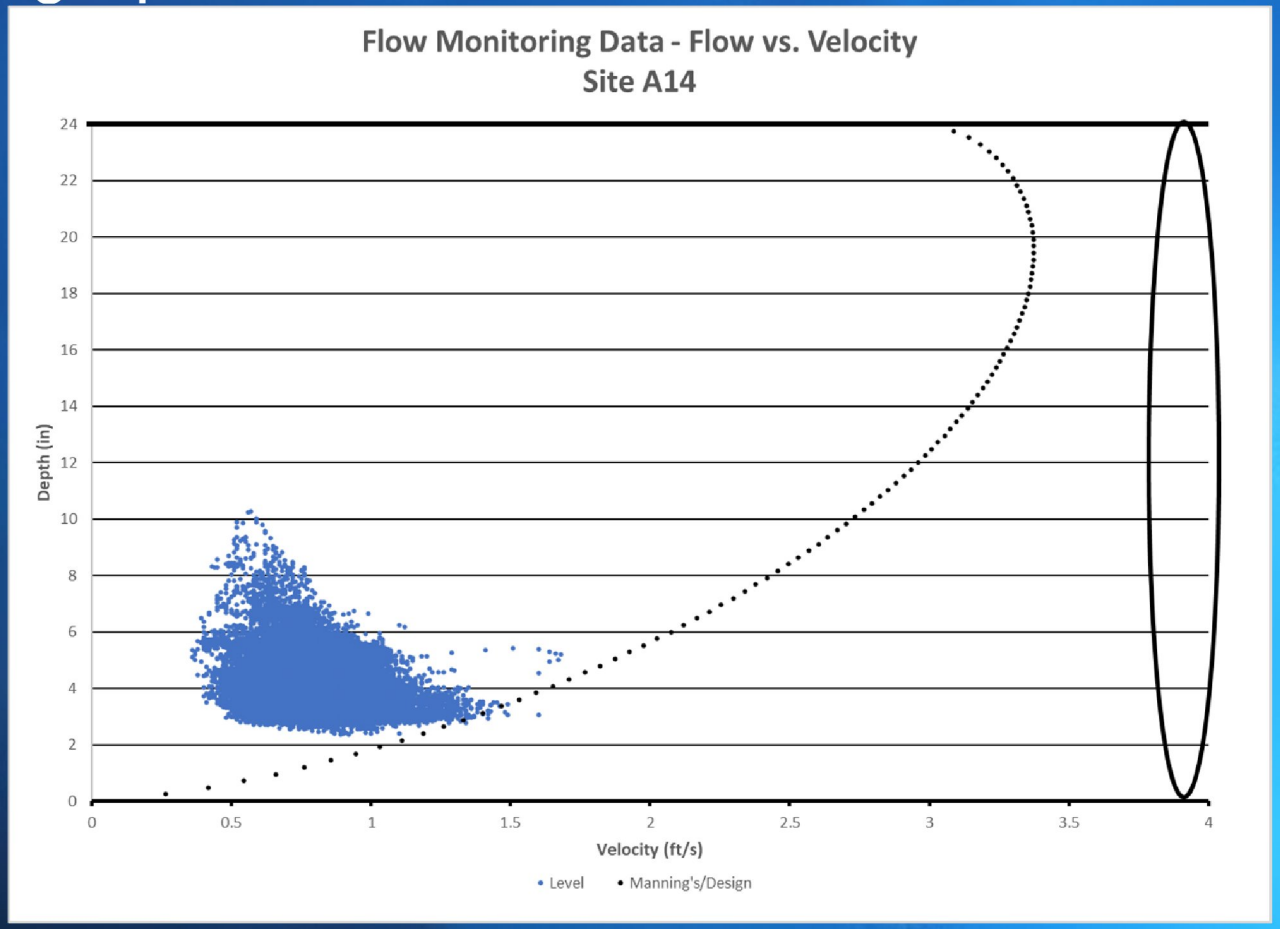

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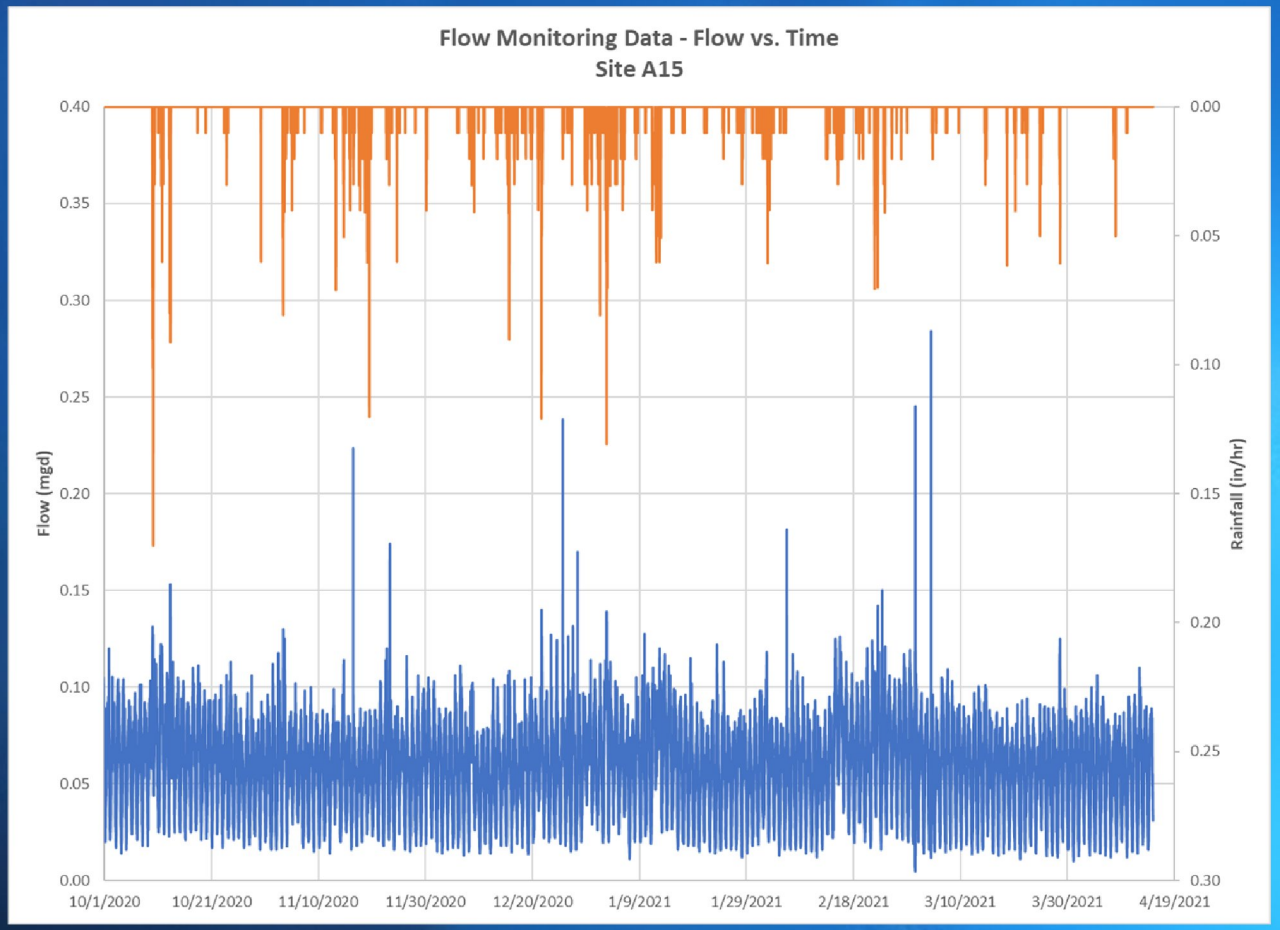

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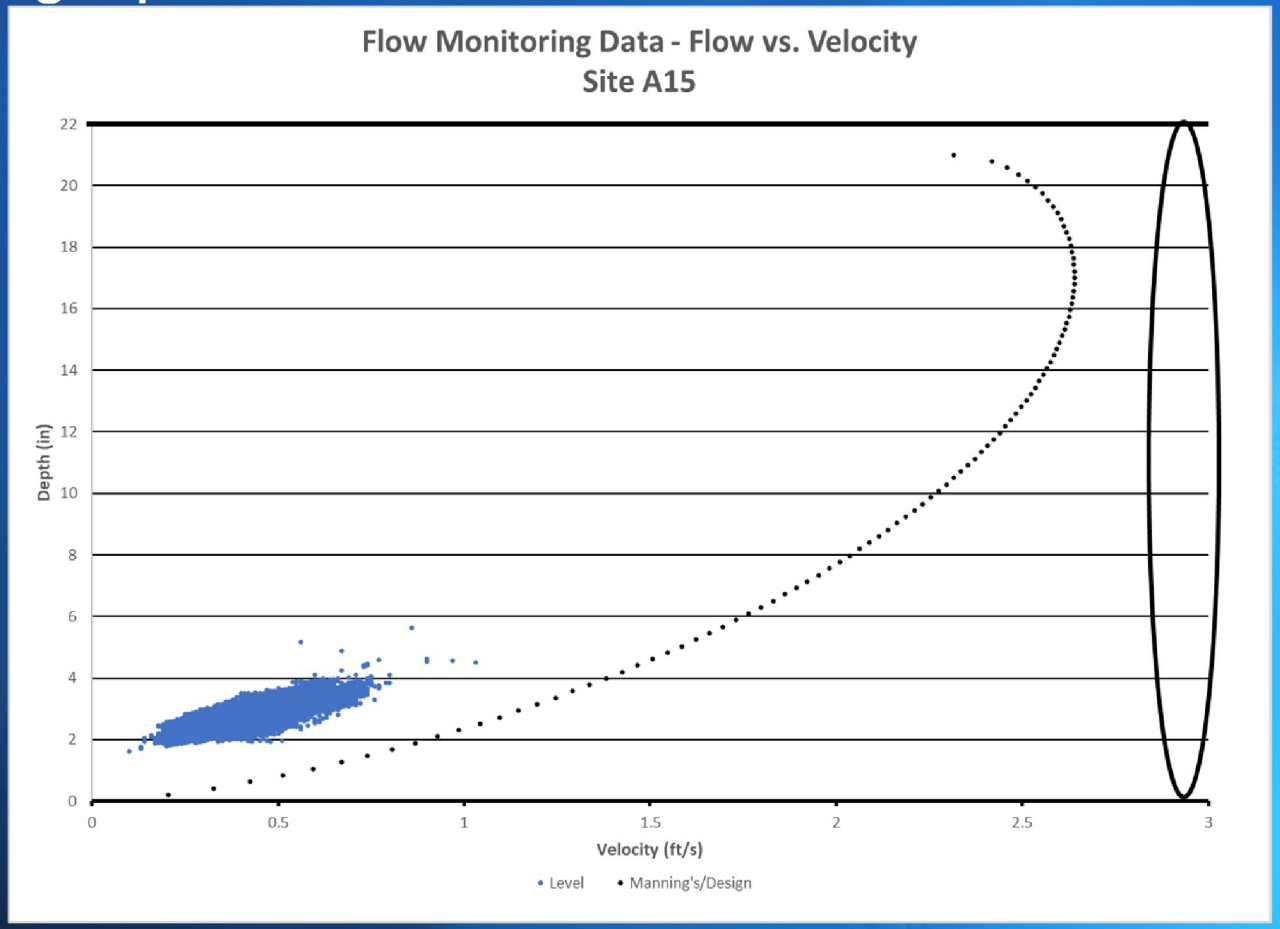

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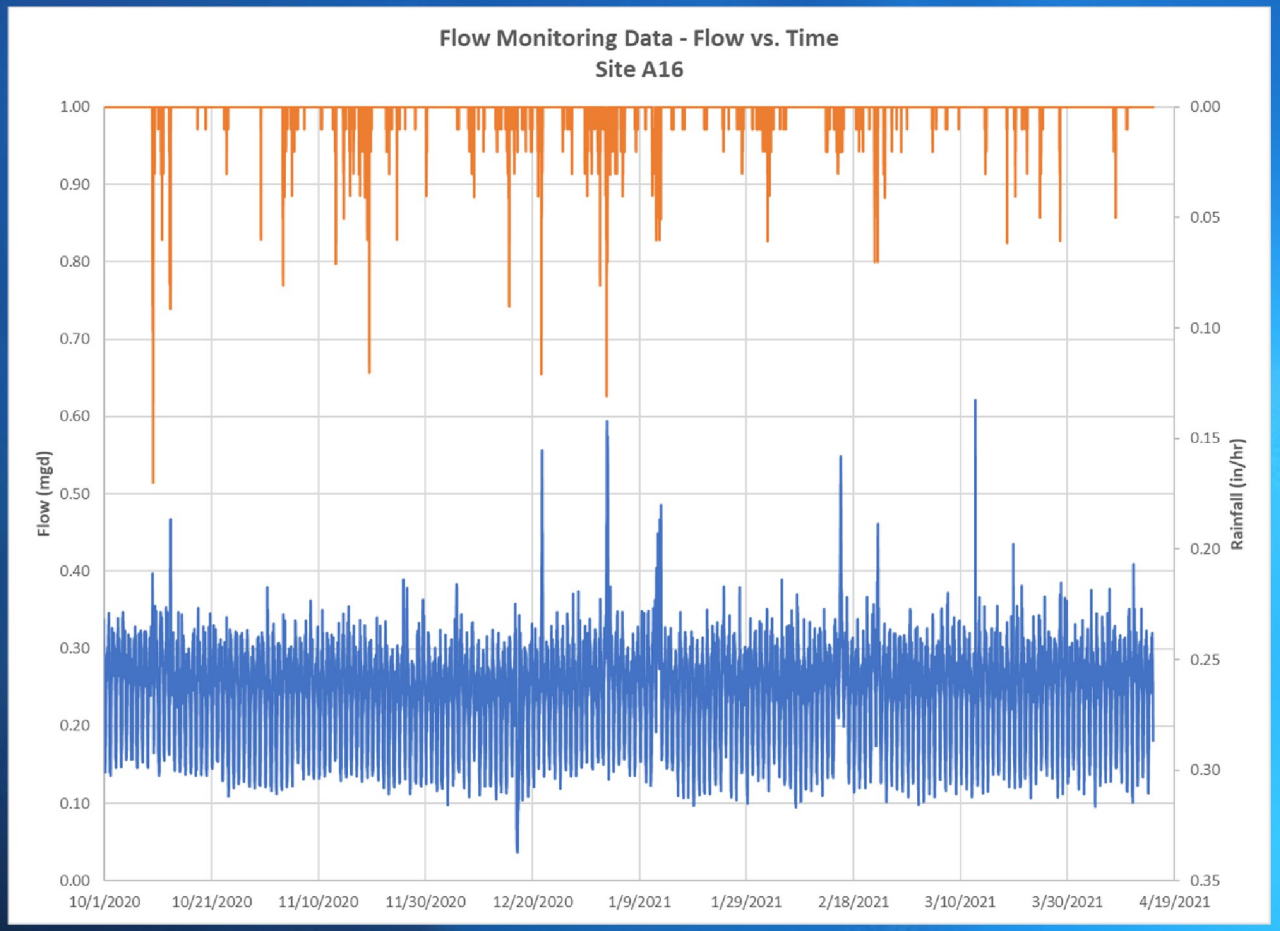

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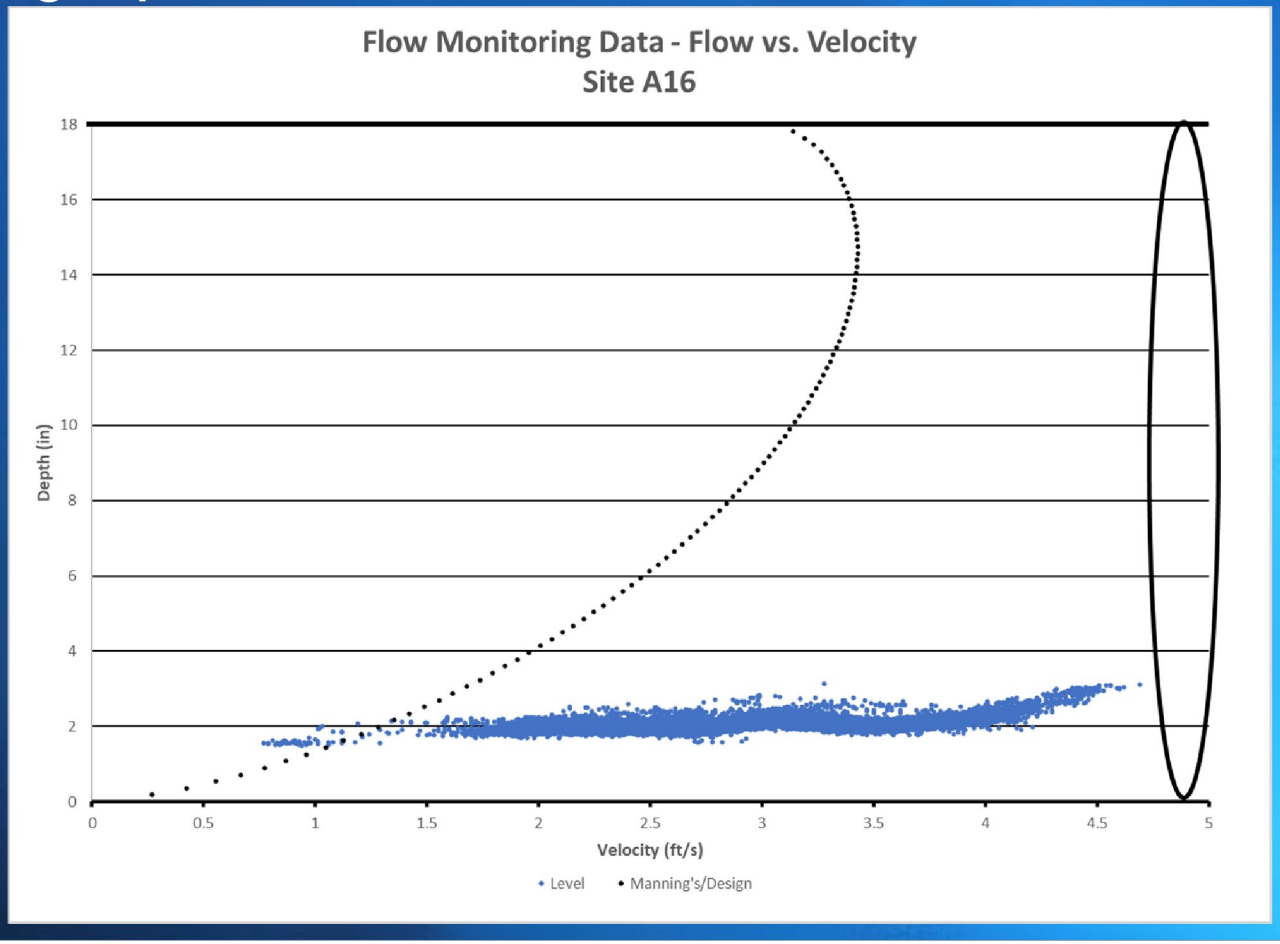

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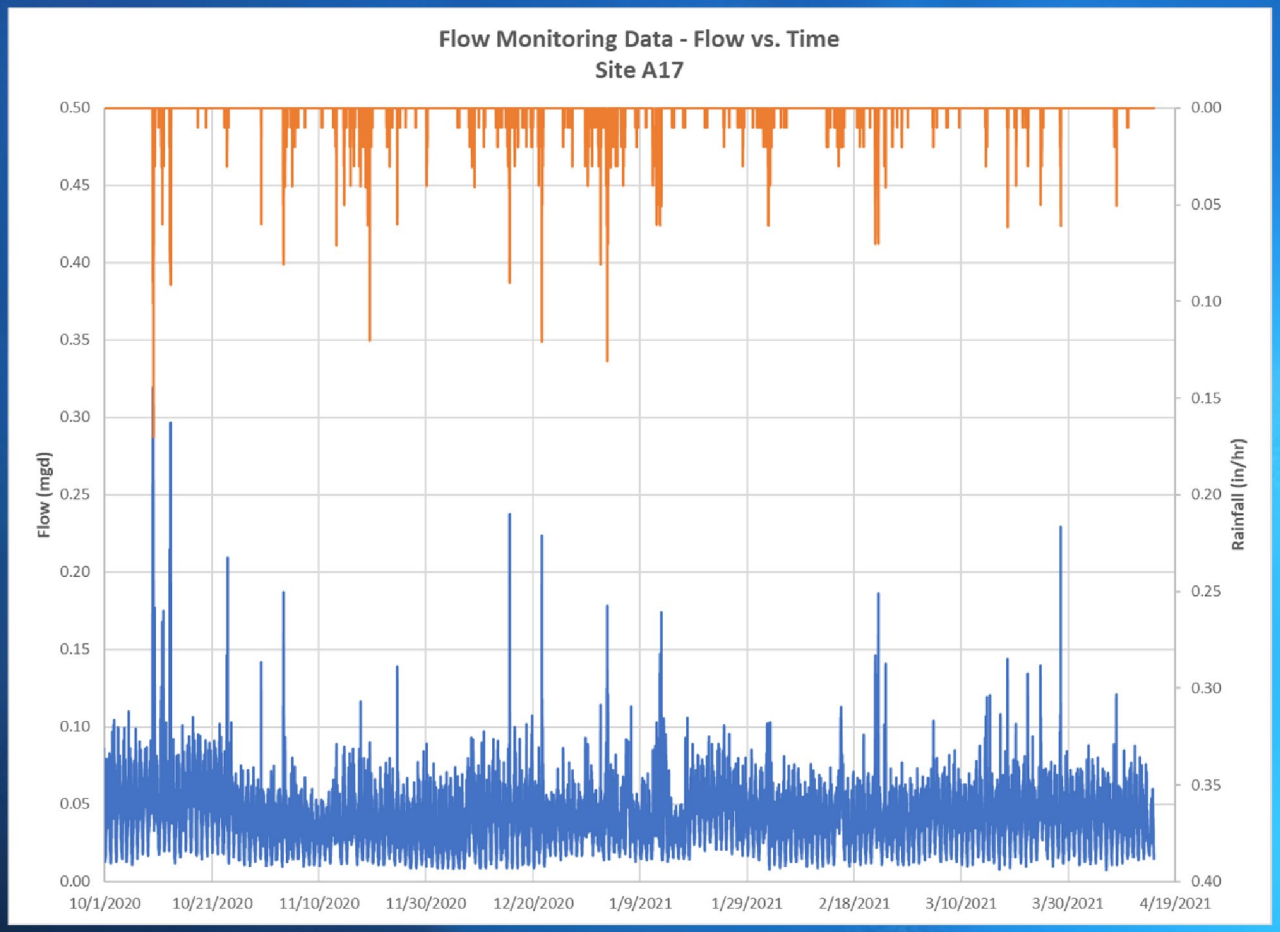

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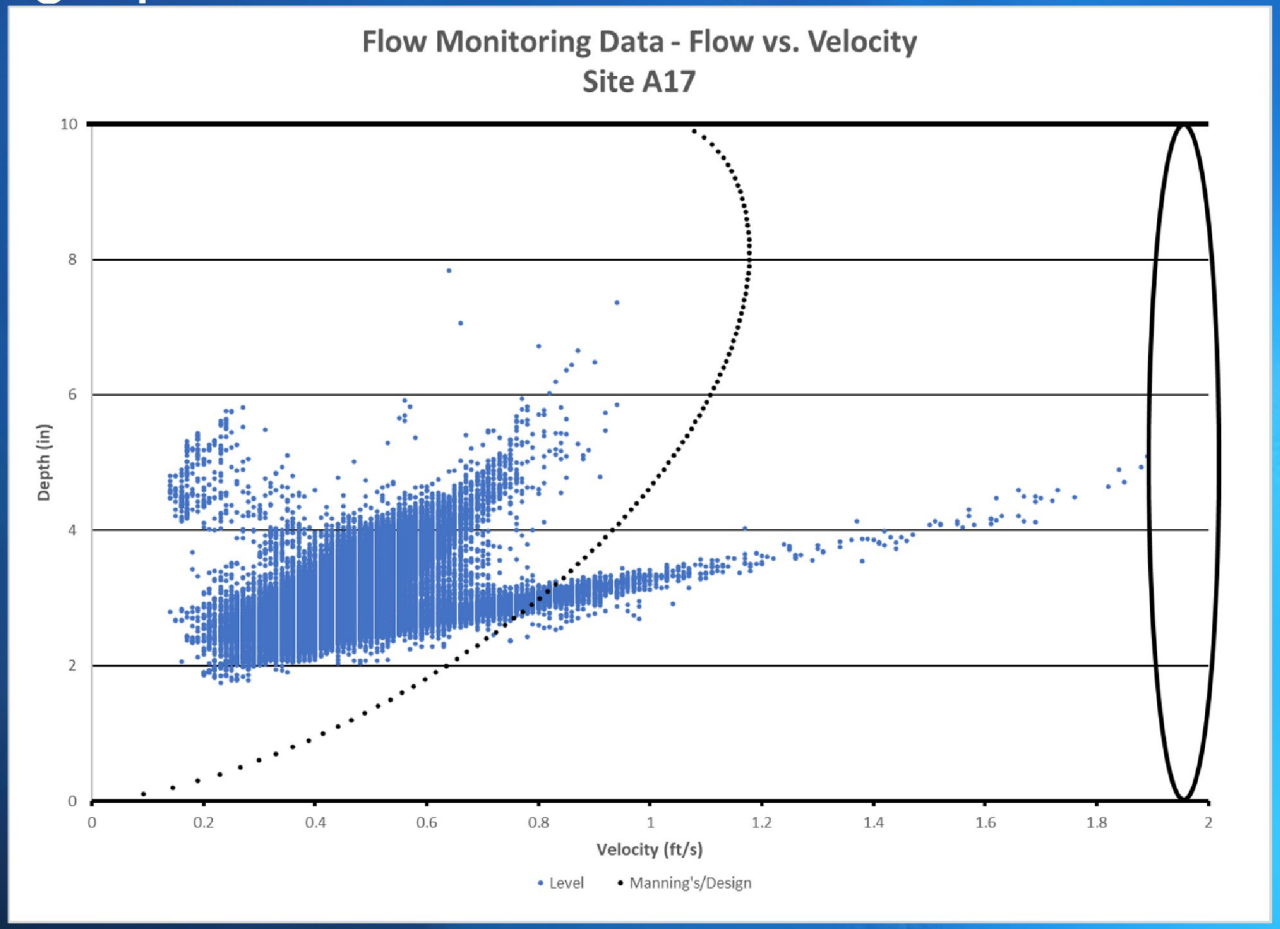

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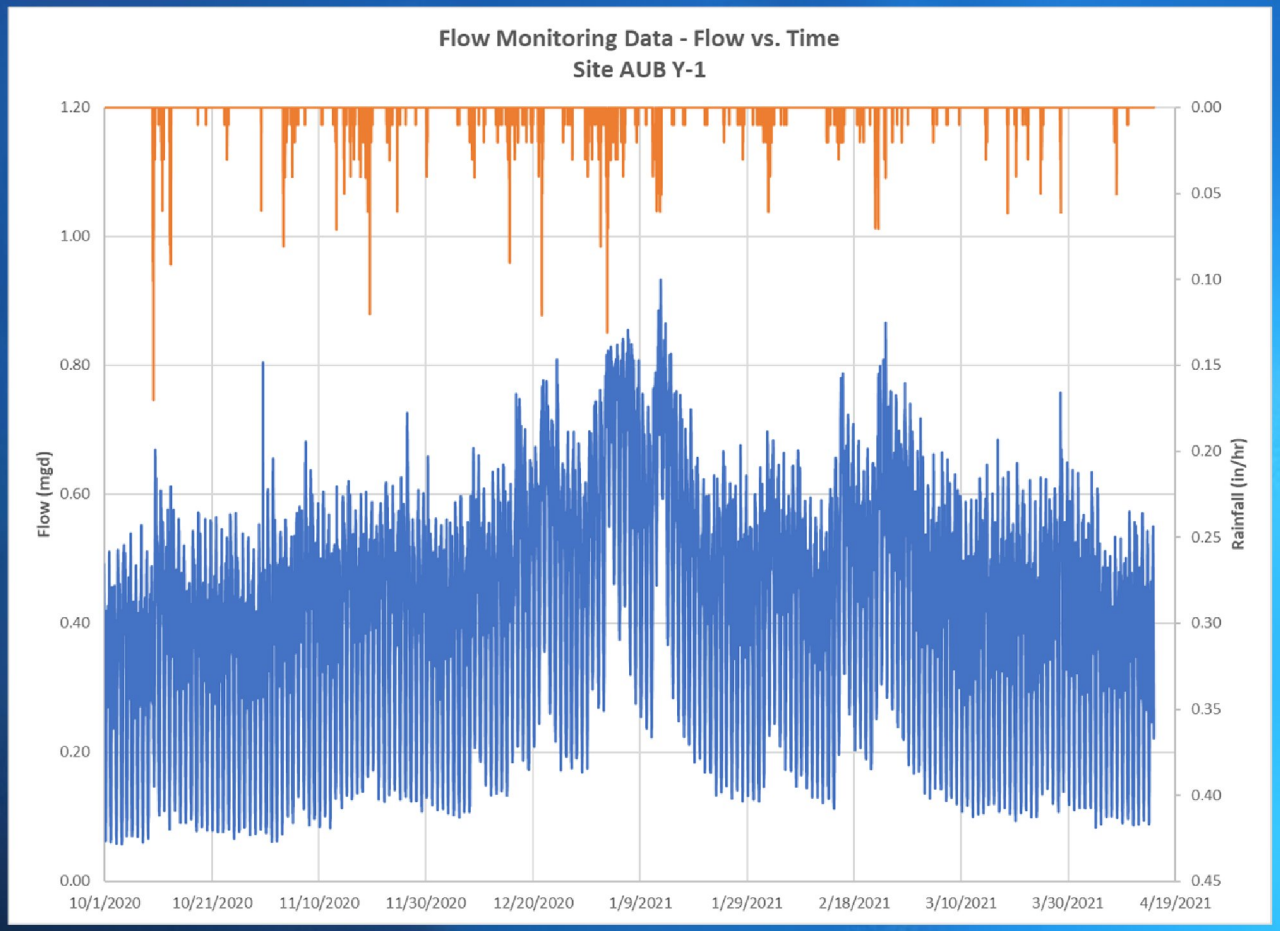

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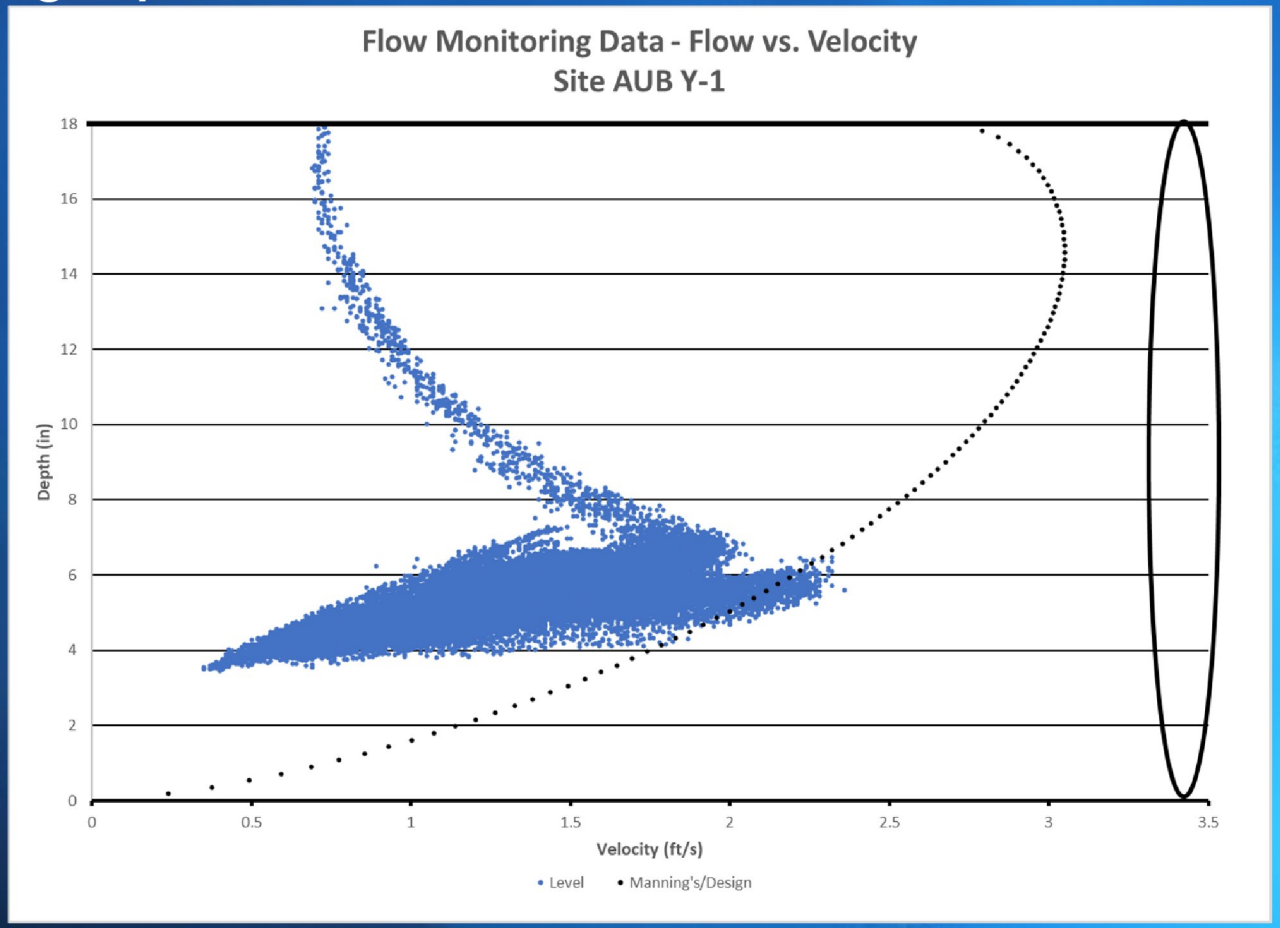

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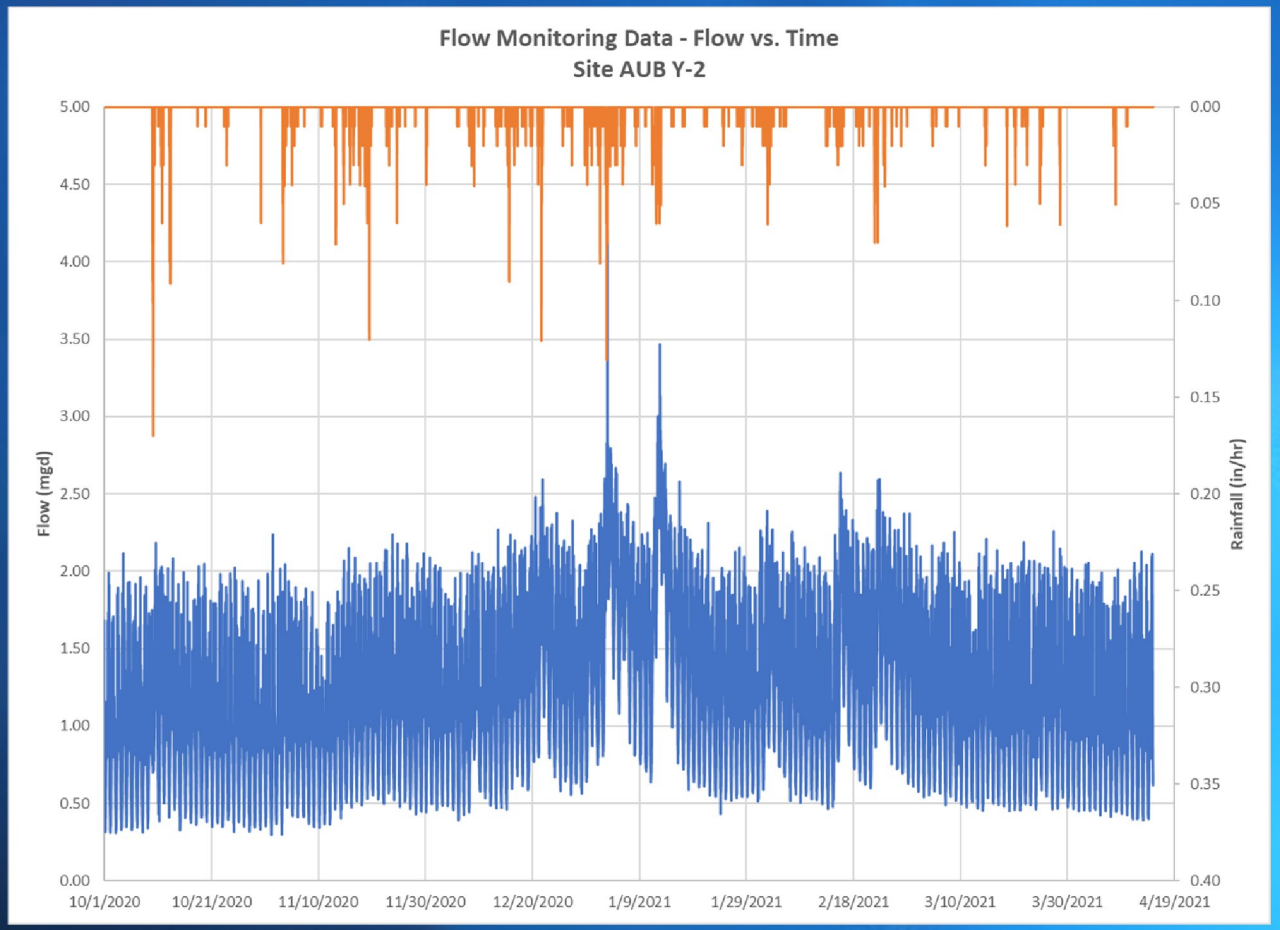

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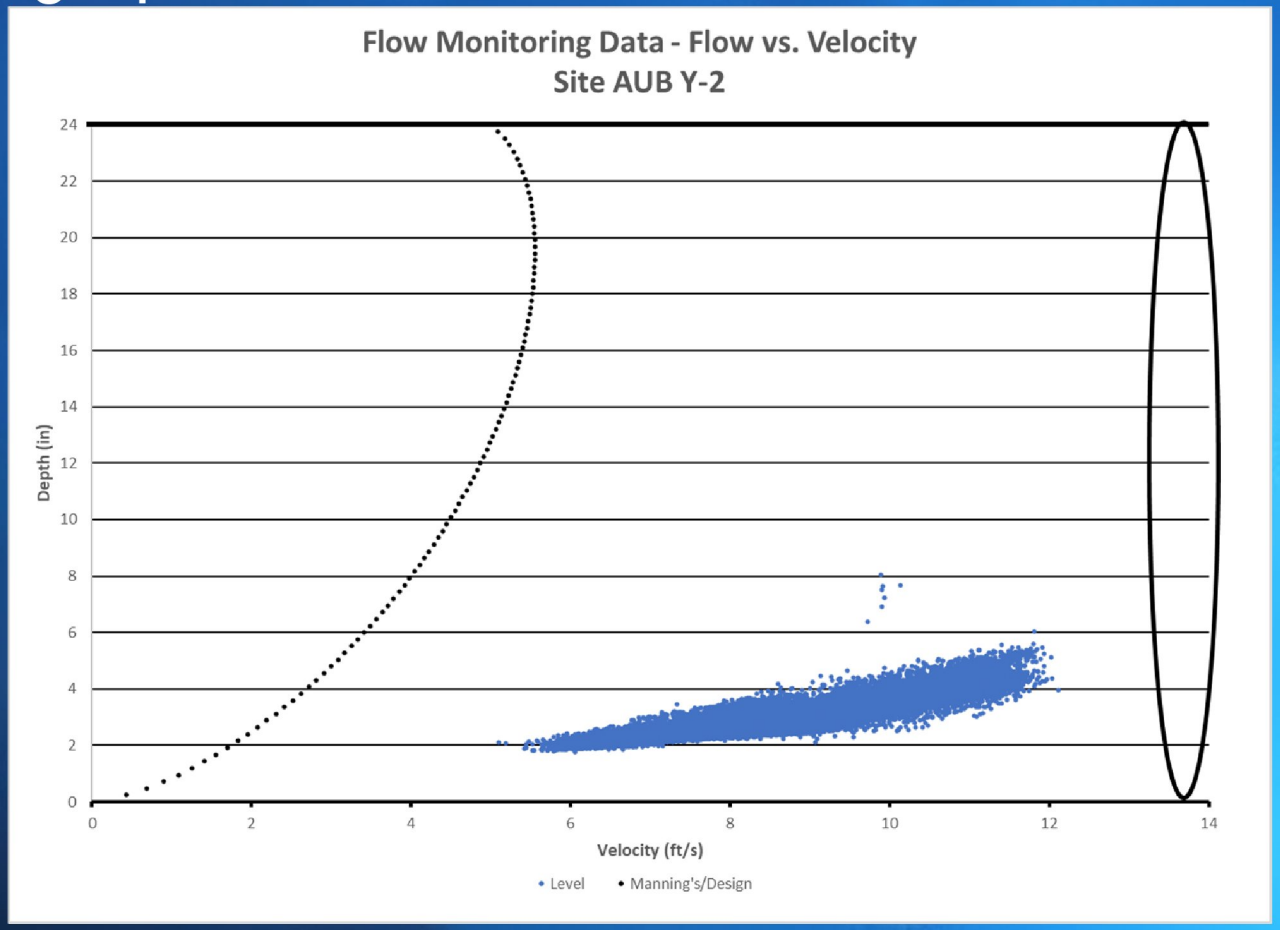

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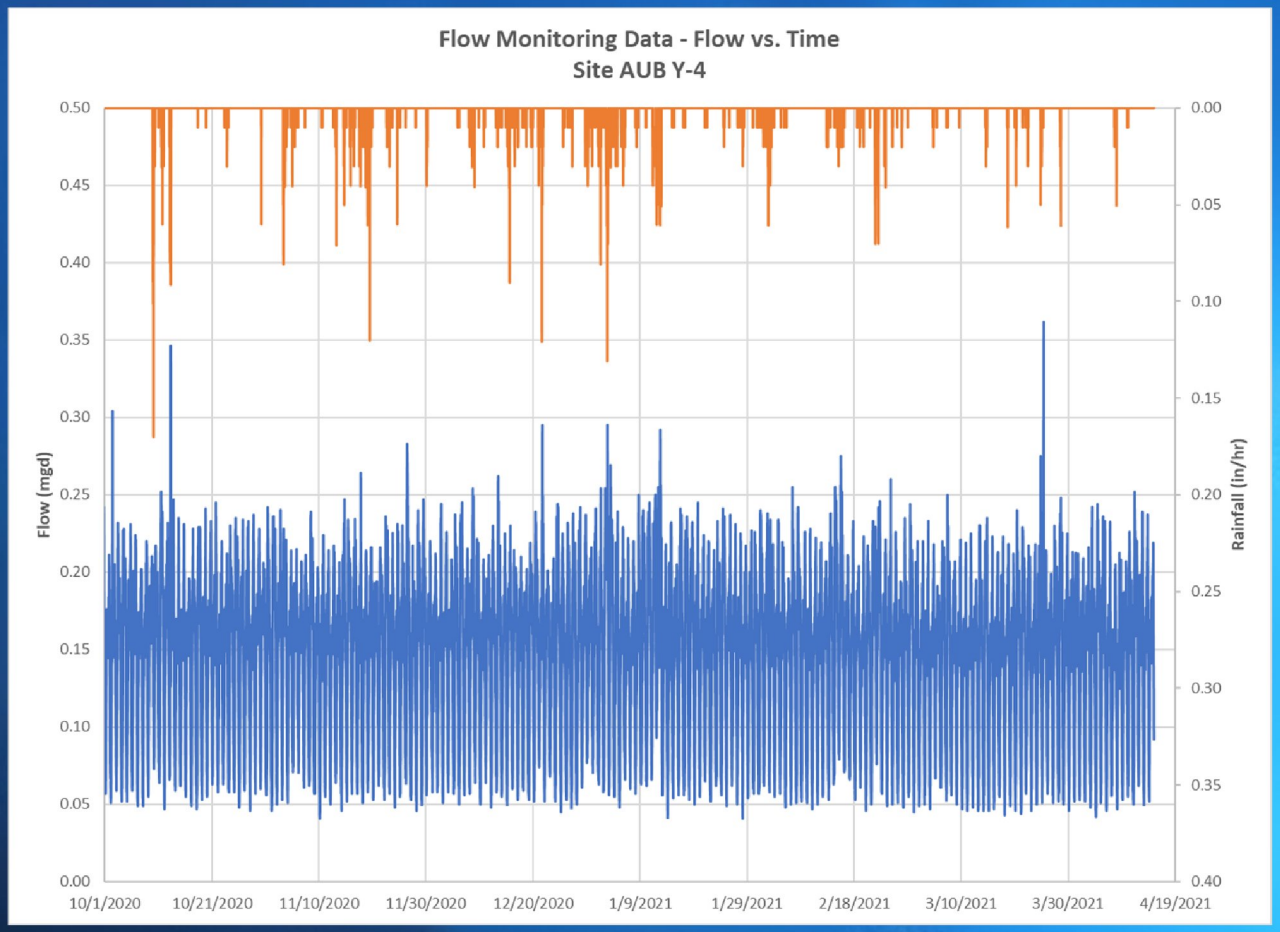

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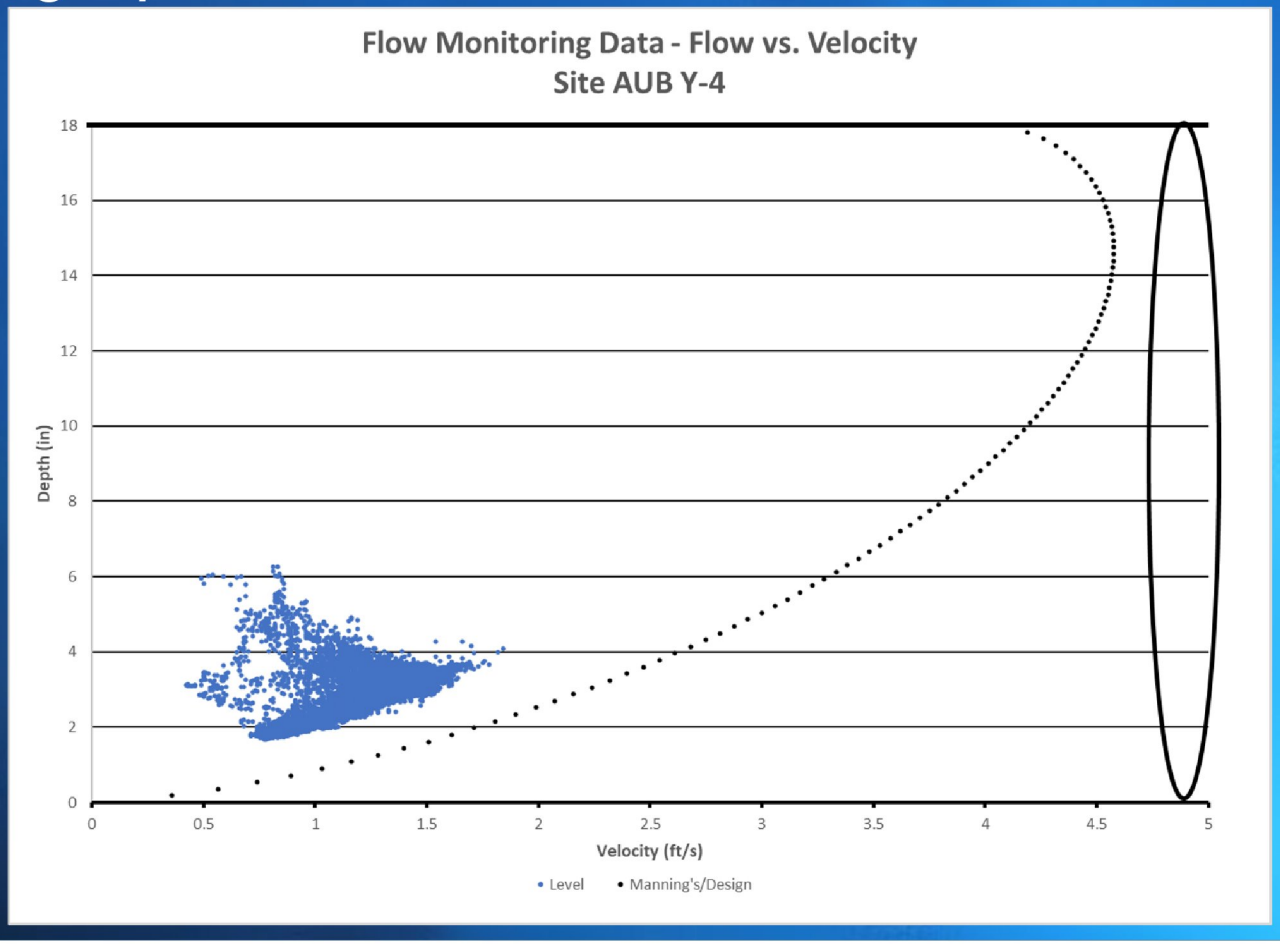

ATTACHMENT 1C

LAND USE ELEMENTS OF COMPREHENSIVE PLAN

LAND USE ELEMENT





LAND USE ELEMENT

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VOLUME 1
LAND USE ELEMENT

Vision

The Auburn community is both physically and socially connected. We take pride in the quality of our built environment as well as the beauty and function of our natural environment. Land use patterns are supported by a complete and efficient transportation and utility infrastructure system. Neighborhoods, commercial centers, and parks are attractive, interesting, accessible, and well maintained. Natural riverine and forested corridors are interspersed throughout the city, offering sanctuaries where fish and wildlife reside, and providing opportunities for people to observe and learn about the environment. Residents have a strong association with their neighborhoods, and are engaged and involved in the decisions that steer Auburn into the future.

Conditions and Trends

Dispersed Land Use Pattern

For the first 100 years of Auburn's existence, the land use pattern developed in a relatively logical manner. Auburn was fully contained to the valley floor with a traditional downtown urban center, several north/south heavy commercial and industrial corridors paralleling Highway 167, and a surrounding housing stock that was built primarily between 1910 and 1960. In the last 30 years, the land use pattern of Auburn has changed, primarily from incorporation of areas to the south, east, and west. Each newly incorporated area has its own identity and land use pattern.

Disconnected Communities

Because a significant portion of today's Auburn was settled prior to incorporation, the basic land use patterns and infrastructure have already been established. Furthermore, much of today's Auburn land use pattern was established in either Auburn, the Muckleshoot Reservation, or prior to incorporation in King County or Pierce County. Given the mix of jurisdictional oversight, myriad land use policies, regulations, infrastructure standards, and investments have been applied in these areas. This has resulted in a relatively uncoordinated and random land use pattern. It also means that the various communities lack connectivity to each other, have a mix of identities, and are experiencing a change in their character from rural to more urban.

Robust Diversity of Land Use

Auburn has a strong mix of housing and industry. Auburn's residential land use pattern includes a variety of densities, ages, and housing type. Auburn's nonresidential land use pattern includes a mix of local and regional retail, entertainment, services, manufacturing, warehousing, and distribution centers. This mix of land use is a strength because it exemplifies social, economic, and cultural diversity.

Diversity in Natural Resources

Auburn's natural resources include the Green River and its tributaries, the White River and its tributaries, a robust inventory of wetlands, floodplains, steep slopes, and mature open spaces. With a strong base to work from, the City and its partners can be strategic about how to better connect and preserve natural areas so that the overall system is enhanced for future generations to enjoy.

Introduction

All land within the City of Auburn is assigned a land use designation, which builds off the past Comprehensive Plan Map, the existing land use

pattern, previously approved subarea plans, topography, natural features, and targeted goals for shifting the character of specified areas. This chapter provides a description for each designation, general criteria for how to assign the designation, and a series of policies that govern land use within each designation. The Comprehensive Plan Land Use Map contained in the Core Comprehensive Plan shows the location and boundaries for each designation. This map should be consulted together with the written policies of this Plan when decisions about zoning designations, land use activities, and development of public infrastructure are considered.

This Section of the document also explains the reasoning and intention behind the Plan Map's land use designations. This should be useful in:

- developing and implementing tools (such as zoning provisions)
- interpreting the Plan Map as it applies to specific regulatory decisions or development proposals
- adjusting or amending the Plan Map when changing conditions or land use markets warrant
- planning for public services and infrastructure

Finally, this chapter sets forth special policies intended to address the unique challenges and opportunities of specific locations within Auburn. These specific policies supplement the general goals, objectives and policies found elsewhere in this plan.

Residential Land Use Designations

Character Sketch

Residential uses will comprise a diverse arrangement of multiple densities. The pattern of one single density in a zone or neighborhood will evolve into increased and mixed densities in exchange for amenities that enhance quality of life. There will be greater connectivity and stronger spatial relationships between neighborhoods through strategic locations of roadway, trail, park, and neighborhood-serving businesses. These amenities will help create localized identity while also linking one area to another. The design and build quality of new construction and infill will be held to a high standard. The City will encourage projects to be unique, innovative, and provide the residents of Auburn true choice.

Values

Character: Residential neighborhoods will include amenities, features, and layouts that promote interaction amongst residents.

Wellness: The design of residential neighborhoods will emphasize safety and nonmotorized connectivity.

Service: Through outreach and engagement, individual residents and homeowners' associations are connected to and aware of municipal services, events, and activities.

Economy: Neighborhoods have a physical and personal connection to Auburn's commercial centers and attractions. People want to move to Auburn because of the commercial and recreational opportunities it has to offer.

Celebration: Districts and neighborhoods are identified, promoted, and celebrated.

Environment: The built environment will fit into the natural landscape in a way that protects and respects ecosystem function and that preserves native vegetation and soils.

Sustainability: Natural resources, economic prosperity, and cultural vibrancy are balanced in a way that builds and maintains a thriving and long-lasting community.

General Policies

LU-1 Regulations for new developments and infill should address the following elements:

a. Connectivity by multiple means to adjacent subdivisions, nearby commercial hubs, and parks and recreation facilities.

b. Relationship to nearby existing or future transit service.

c. Usable community amenities and spaces.

d. Environmental protection and preservation of natural features.

e. Preservation of areas that can support low-impact development techniques.

f. Promote the use of energy and water conservation measures

g. Efficient and effective delivery of utility service.

h. Innovative design.

i. Crime prevention through environmental design.

j. Long-term maintenance considerations.

LU-2 As the market and availability of utilities enable denser development to occur, standards should be developed to maximize density while preserving open space and critical areas.

LU-3 Programs should be implemented to improve the quality of low-income neighborhoods and encourage rehabilitation of deteriorating structures and facilities.

LU-4 Public and institutional uses may be permitted as a conditional use if designed in a manner that enhances the residential character of the area. Special care shall be given to ensuring adequate parking, landscaping, and traffic circulation to avoid conflict with residential uses.

LU-5 New residential development should contribute to the creation, enhancement, and improvement of the transportation system, health and human services, emergency services, school system, and park system. This may be accomplished through the development of level-of-service standards, mitigation fees, impact fees, or construction contributions.

LU-6 Cluster development is the preferred form of residential development in all residential designations with the goal of preserving natural areas, critical areas, and areas that support low-impact development. Where clustering accomplishes these objectives, it should not come at the expense of lost development potential. Variances to lot size, lot dimensions, building height, and other bulk or dimensional standards should be utilized in order to create incentives that promote preservation.

Residential Conservancy Designation

Description

This designation should consist primarily of low-density residential uses (one dwelling unit per four acres is allowed) and accessory agricultural uses in areas featuring environmental constraints or requiring special protection such as the Coal Creek Springs watershed area, low-lying areas along the Green River, and areas that are isolated from urban services. This designation will serve to both protect environmental features and hold areas for higher density development until such time public facilities become available.

Designation Criteria

1. Areas with significant environmental constraints, intrinsic value, or that may pose environmental hazards if developed, such as areas tributary to public water sources;

2. Affords greater protections to environmental features than existing designation;

3. Level of service for property consistent with adjacent residential conservancy properties; or

4. Location, size of properties, and character is consistent with a residential conservancy use.

Implementing Zoning Designations

Residential Conservancy

Policies

LU-7 Densities and activities shall be of a very low intensity and shall not compromise environmental and watershed resources.

LU-8 In addition to single-family homes, these larger properties can also be developed with garages, accessory dwelling units, barns, and other accessory outbuildings. Home occupations, agricultural uses, and other allowed nonresidential activities may

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operate out of any type of permitted building, subject to intensity and use limitations.

LU-9 Until these areas are served by public utilities (water, sewer, storm services), existing and new development is not expected to be served by public infrastructure, such as urban streets, curbs, gutters, sidewalks, street lighting, and landscaping.

LU-10 As the market and utility availability enable denser development to occur, standards should be developed to maximize density while preserving open space and critical areas.

LU-11 Small-scale agricultural uses are allowed and encouraged. Commercial activities that are directly related to and support agricultural uses may also be allowed. The procedural standards may vary depending upon the type and scale of agricultural uses and supporting commercial activities. Small-scale agricultural uses are allowed and encouraged.

LU-12 Land use standards should adequately limit and control excessive accumulation of debris. Where a permitted activity does allow outdoor storage, it should be adequately screened from adjacent properties and roads, as well as ensuring adequate soil and environmental protection.

LU-13 Public, institutional, and resource-extractive uses that are low-intensity and preserve the environment may be considered conditional uses.

Single-Family Residential Designation

Description

This designation is the predominant land use category in the City. Maintaining and creating a diverse arrangement of interconnected subdivisions, neighborhoods, and communities that have a mix of densities and housing types; linkages with other residential areas and commercial hubs through nonmotorized modes, such as pedestrian and bicycling, and vehicular modes will be encouraged.

Designation Criteria

1. Previously developed single-family residential areas;
2. Undeveloped areas that do not meet the designation criteria for other Residential, Commercial, Industrial, Institutional or Public/Quasi-Public designations; or
3. Residential Conservancy areas that contain limited critical areas, are served by public utilities (water, sewer, storm services), and meet the development parameters of the single-family designation.

Implementing Zoning Designations

R-1 Residential Zone (One Dwelling Unit Per Acre): All properties located within the Urban Separator Overlay are zoned R-1, as consistent with King County County-wide Planning Policies.

R-5 Residential Zone (Five Dwelling Units Per Acre): All properties not located within the Urban Separator Overlay may be zoned R-5.

R-7 Residential Zone (Seven Dwelling Units Per Acre): All properties not located within the Urban Separator Overlay may be zoned R-7.

Policies

LU-14 Accessory dwelling units should play an integral part of promoting infill development and affordable housing, and are therefore encouraged within this land use category.

LU-15 Home occupations, bed-and-breakfasts, day cares, and other appropriate uses should be encouraged as viable accessory uses.

LU-16 Manufactured homes shall be permitted on single-family lots provided they are sited and constructed in a manner that would blend with adjacent homes.

LU-17 Provide a variety of housing typologies to suit the needs of various potential residents.

LU-18 Density bonuses outside of the Urban Separator Overlay should be approved based on innovations in transportation, stormwater management, and public amenities proposed for the development or adjacent neighborhoods associated

with the request. The onus is on the developer to justify density above baseline. Examples of amenities and concepts that justify density bonuses include park space, art, enhanced landscaping, trails that connect to adjacent properties, neighborhood commercial property set asides, use of low-impact development techniques beyond the minimum code requirements, incorporation of CPTED concepts, and variation of architecture and housing typology.

Moderate Density Residential Designation

Description

Moderate Density Residential designated areas are planned to accommodate a variety of residential dwelling types. Varying intensities may be permitted to provide a transition between single-family residential and other more intensive uses or activities (such as arterial streets) based on adjacent density, intensity, and/or character. Appropriate densities in these areas generally range from 7 up to 20 dwelling units per acre. Dwelling types generally range from single-family dwelling to multiple-family dwellings, with larger structures allowed (within the density range) where offsetting community benefits can be identified.

Designation Criteria

1. Previously developed moderate-density residential areas; or
2. Areas that provide a transition between single-family and multifamily, single-family and nonresidential, multifamily and nonresidential zones or development that are adjacent and meet the development parameters of the Moderate Density Residential designation.

Implementing Zoning Designations

Residential Transition

R-10 Residential (Ten Dwelling Units Per Acre)

R-16 Residential (Sixteen Dwelling Units Per Acre)

Policies

LU-19 Density bonuses and flexible development standards should be considered an incentive for innovative neighborhood design.

LU-20 Carefully developed low-intensity office, or residentially related commercial uses (such as day care centers) can be compatible.

LU-21 Accessory dwelling units should play an integral part of promoting infill development and affordable housing and are therefore encouraged within this land use category.

Multiple-family Designation

Description

This category shall be applied to those areas that are either now developed or are reserved for multiple family dwellings. Densities may range from 20 to 24 units per acre. These communities are served by transit, have nonmotorized connections to surrounding amenities and services, or have access to on-site amenities.

Designation Criteria

1. Previously developed high-density residential or manufactured/mobile home parks; or
2. Properties that are connected to single-family and nonresidential designations by the Residential Transition designation and meet the development parameters of the Multifamily designation.

Implementing Zoning Designations

R-20 Residential Zone (Twenty Dwelling Units Per Acre): All Multiple-family designated land not previously developed as manufactured/mobile home parks are zoned R-20.

Manufactured/Mobile Home Park: All previously developed manufactured/mobile home parks are zoned RMHC.

Policies

LU-22 Development regulations should include density bonuses and flexible development standards that create incentives for innovative site and building design, incorporation of open space and public art, nonmotorized connectivity to parks and commercial areas, proximity to transit services,

supplemental natural resource protection, supplemental use of CPTED, and supplemental use of low-impact development techniques.

LU-23 Home occupations and shared housing should be allowed in this designation; however, given their high densities, it is appropriate to establish additional restrictions, procedures, and requirements in order to ensure that they are compatible with their surroundings and do not adversely affect the community.

LU-24 Live–work units are encouraged.

LU-25 Improve the quality of low-income neighborhoods and implement programs that encourage rehabilitation of deteriorating structures and facilities the downtown area, areas between lower-density residential uses and more intense nonresidential activities, and areas with high levels of transit service and available high-quality services.

LU-26 Multiple-family development should be subject to building and site design standards. These standards should address the appearance of buildings, compatibility with nearby uses, exterior lighting, connectivity with surrounding properties and uses, the relationship of ground floor spaces and entryways with the streetscape, and connectivity to nearby nonresidential hubs (shopping centers and schools).

LU-27 Provide a variety of housing typologies to suit the needs of various potential residents.

LU-28 Establish intensity limitations such as floor area ratios, density, building height, coverage ratios, setbacks, and other standards.

LU-29 Access to nearby amenities and health and human services should be considered when reviewing senior housing developments.

LU-30 Encourage development of permanent supportive housing to address the homeless population and those with special needs.

LU-31 Encourage adaptive reuse, particularly of historic properties.

Commercial Land Use Designations

Character Sketch

Commercial uses will be wide ranging in terms of scale and type. A mix of businesses – local, regional, and national – will be among the businesses in the various designations, and will be carefully located to create balance and maintain appropriateness based on adjacent uses. These commercial areas will be economically vibrant, unique, and active outside of traditional work hours. They will be accessible by foot, bike, car, and public transport.

Values

Character – Active gathering spaces, such as parks, plazas, cafes, concert venues, festivals and markets, will be distributed throughout the City; these spaces will be engaging and filled with people interacting, irrespective of culture, age, or income level.

Wellness: A variety of healthy food options will be physically and economically accessible to all members of the Auburn community.

Service: The City's resources and services are available and utilized by the business community. The business community finds the City approachable, empathetic, and responsive. An open and collaborative dialogue exists to help identify problems and find solutions.

Economy: A wide complement of retail, service, and dining options will cater to local needs, attract visitors, and encourage consistent patronage of local businesses.

Celebration: Auburn will have a thriving and expanding arts and culture community. There will be events, amenities, and attractions that draw people to congregate and socialize.

Environment: Local businesses benefit from Auburn's collection of natural resources and amenities because residents and visitors are choosing Auburn as their home or destination.

Sustainability: Local businesses benefit from, and contribute to, a sustainable economy because Auburn is an easy location to start up, maintains opportunity for growth, and has a business friendly economic climate.

General Policies

LU-32 The commercial uses permitted must be carefully regulated in regards to performance criteria and design.

LU-33 Permitted uses would consist of local-serving and community-serving retail trade, offices, personal services, and eating establishments.

LU-34 Encourage uses that provide health and human services to the adjacent community.

LU-35 Encourage adaptive reuse, particularly of historic properties.

LU-36 Promote the use of energy and water conservation measures (PSRC 11/12/15)

LU-37 Ensure that legally established existing uses that may not conform with the underlying zone, but that are compatible with their surrounding uses, and are allowed to continue to evolve and operate without being classified as "nonconforming" uses.

Downtown Urban Center Designation

Description

This category should be applied exclusively in downtown Auburn. The area should be developed in a manner consistent with and conducive to pedestrian-oriented activities. The ambiance of the downtown should encourage leisure shopping, provide services to local residents and area employees, and provide amenities that attract regional visitors and shoppers.

Designation Criteria

1. Located within the Urban Center boundaries established by the King County Countywide planning policies or within Business Improvement Area boundaries.

Implementing Zoning Designations

Downtown Urban Center

Policies

LU-38 Vertical mixed-use should be encouraged; the location of retail sales and services should predominately be on the ground floor with residential or more retail or services above. However, small freestanding commercial spaces may be established as an accessory use to a larger vertical mixed-use development.

LU-39 Deviations of height, density or intensity limitations should be allowed when supplemental amenities are incorporated into site and building design. Examples of amenities include use of low-impact development, use of sustainable site and building techniques, public space and art, transit-oriented development, landscaping and lighting, and bike shelters - as well as the inclusion of affordable housing.

LU-40 Encourage a broad mix of uses within the downtown area. A wide range of consumer-oriented goods and services are compatible within this designation since creating an attractive shopping environment is a primary emphasis. Permitted uses include retail trade, offices, personal services, eating and drinking establishments, financial institutions, governmental offices, and similar uses. Legally established existing uses that do not fit within the range of desired new uses continue to be a valuable part of the downtown economy and character and should be allowed to evolve and operate in a manner that resembles listed permitted uses.

LU-41 Encourage multiple family dwellings, particularly within the upper stories of buildings.

LU-42 Drive-in windows should not be permitted to maintain the area's pedestrian environment.

LU-43 Parking standards within the downtown should reflect the pedestrian orientation of the area, but also consider parking's impact for economic development.

LU-44 Discourage uses that rely on direct access by vehicles or involve heavy truck traffic (other than for merchandise delivery).

LU-45 Unsightly outdoor storage and similar activities should be prohibited.

LU-46 The downtown should capitalize on opportunities for multimodal transportation.

LU-47 Encourage adaptive reuse, particularly of historic properties.

LU-48 As a designated VISION 2040 Regional Growth Center that contains a transit station, land use policies and regulations should encourage population and employment growth.

Neighborhood Commercial Designation

Description

Low-intensity, small-scale commercial services that meet the daily needs of and complement the quality of the residential neighborhoods they serve. Commercial uses need to be carefully located (if located within single-family residential neighborhoods) or should be buffered from single-family residential areas. These areas are characterized by lower traffic generation, fewer operating hours, smaller-scale buildings, and less signage than light commercial areas.

Designation Criteria

1. Located along arterial or collector streets;
2. Properties that are buffered from the single-family designation by landscaping, environmental features, or the Residential Transition designation; and
3. Meets the development parameters of the Neighborhood Commercial designation.

Implementing Zoning Designations

Neighborhood Commercial

Policies

LU-49 The commercial uses permitted must be carefully regulated in regards to performance criteria and design. Architectural style, building height and size, lighting, and signage should be consistent with the surrounding residential properties.

LU-50 Permitted uses would consist of small-scale local-serving and community-serving retail trade, offices, personal services, and non-drive-through eating establishments.

LU-51 Special emphasis will be directed at those accessory activities that can alter the character of these areas into heavier commercial areas. Examples include outdoor storage, location and screening of trash receptacles, loading and unloading zones, and parking lots. Regulations and permit conditions will employ techniques that mitigate light and noise impacts associated with surrounding residential properties.

LU-52 Encourage adaptive reuse of existing residential buildings and historic properties.

LU-53 Commercial uses will have an orientation that is directed toward adjacent public streets while also providing pedestrian and bike-oriented access.

LU-54 Upzone requests to the next zone should be approved based on the innovations in transportation and stormwater management and public amenities proposed for the development associated with the request.

Light Commercial Designation

Description

This category represents the prime commercial designation for small-to moderate-scale commercial activities. These commercial areas should be developed in a manner consistent with and attracts pedestrian-oriented activities. Such areas should encourage walkability, leisure shopping, engaging public space, and should provide other amenities conducive to attracting shoppers.

Designation Criteria

1. Previously developed light commercial areas buffered from more intense commercial or

industrial designations by landscaping or environmental features; or
2. Located along arterial or collector streets;
3. Properties that are buffered from the single-family designation by landscaping, environmental features, or the Residential Transition designation; and
4. Meets the development parameters of the Light Commercial designation.

Implementing Zoning Designations

Light Commercial

Policies

LU-55 A wide range of consumer-oriented goods and services are compatible within this designation since creating an attractive shopping environment is a primary emphasis. Permitted uses would consist of local-serving and community-serving retail trade, offices, personal services, eating establishments, financial institutions, governmental offices, and similar uses.

LU-56 Parking lots must be located and designed in a manner that softens their appearance from adjacent public roads. This is accomplished through landscaping, pedestrian spaces, and the location of buildings on the property. Where practicable, low-impact development techniques and landscaping should be used to promote on site stormwater infiltration and shading of hard surfaces. Minimum and maximum parking ratios must be established for each type of permitted use.

LU-57 Development incentives should be established that encourage the creation of electric car charging stations, use of sustainable building and/or operational practices, development of nonmotorized infrastructure, and proximity and connection to public transit.

LU-58 Multiple family dwellings are only allowed as part of mixed-use developments where they do not interfere with the shopping character of the area, such as within the upper stories of buildings.

LU-59 Drive in windows should only be allowed accessory to a permitted use, and only when carefully sited under the administrative use process, in order to ensure that an area's pedestrian environment is not compromised.

LU-60 Large-scale regional retail uses and uses that rely on direct access by vehicles or involve heavy truck traffic (other than for merchandise delivery) are not appropriate in this category.

LU-61 Unsightly outdoor storage and similar activities should be prohibited.

LU-62 Encourage adaptive reuse, particularly of historic properties.

LU-63 Upzone requests to the next zone should be approved based on the innovations in transportation and stormwater management and public amenities proposed for the development associated with the request.

Heavy Commercial Designation

Description

This category is intended to accommodate uses that would also accommodate a wide range of heavier commercial uses involving extensive storage or vehicular movement.

Designation Criteria

1. Previously developed heavy commercial areas; or
2. Located along major arterial streets;
3. Properties that are buffered from the single-family designation by landscaping, environmental features, or the Residential Transition designation and buffered from all other Residential designations; and
4. Meets the development parameters of the Heavy Commercial designation.

Implementing Zoning Designations

Heavy Commercial: All Heavy Commercial designated land not located within the Northeast Auburn Special Planning Area or located within the Northeast Auburn Special Planning Area,

but incapable of meeting the C-MU zoning requirements.

Policies

LU-69 A wide variety of commercial-oriented services are appropriate within this category. This includes but is not limited to regional-scale retail and entertainment uses, commercial uses with outdoor sales areas, drive-in restaurant or other drive in commercial businesses, and commercial services with outdoor storage as an accessory use.

LU-70 Parking lots must be located and designed in a manner that softens their appearance from adjacent public roads. This is accomplished through landscaping, pedestrian spaces, and the location of buildings on the property. Where practicable, low-impact development techniques and landscaping should be used to promote on site stormwater infiltration and shading of hard surfaces. Minimum and maximum parking ratios must be established for each type of permitted use.

LU-71 Development incentives should be established that encourage the creation of electric car charging stations, use of sustainable building and/or operational practices, development of nonmotorized infrastructure, and proximity and connection to public transit.

Industrial Land Use Designations

Character Sketch

Industrial uses will become a more integrated part of the physical and social life of the City. Since so many people work in these areas and these companies contribute so much to the financial life of the city, it is important that they are connected through paths, roads and by public transportation. Locations that have access to rail and highways that also encourage intelligent growth patterns will be prioritized. Innovation will be a key requirement of new and infill projects as the City looks to mitigate impacts of production and limit damage to the environment.

Values

Character: Buildings, landscaping, and outdoor spaces will be attractive, interesting, well designed, and well maintained.

Wellness: Risk to life and property from all hazards will be minimized. Properties and businesses are connected to nonmotorized corridors that offers alternative means to commute.

Service: The city works closely with individuals and organizations to fully understand the demands, needs, and concerns of the industrial community so that the City can sponsor initiatives that help aid in their success.

Economy: Cornerstone institutions will strategically expand in regional prominence. As industry grows, land use policy will support efforts to grow within Auburn.

Celebration: The Community will be made aware of and celebrate the accomplishments of our local, regional and international leaders in manufacturing, warehousing, and distribution.

Environment: The built environment will fit into the natural landscape in a way that protects and respects ecosystem function. Natural resource protection will be supported and celebrated by City leadership and the community.

Sustainability: Industrial uses are contributing to, and supportive of, efforts to build and maintain a transportation system that ensures the people and goods move safely throughout the City and beyond.

General Policies

LU-72 A wide range of industrial uses may be permitted, subject to performance standards.

LU-73 Outside storage shall be permitted subject to performance criteria addressing its quantity and location.

LU-74 Development incentives should be established that encourage the creation of electric car charging stations, use of sustainable building and/or operational practices, development of nonmotorized

infrastructure, and proximity and connection to public transit.

LU-75 Promote the use of energy and water conservation measures

Light Industrial Designation

Description

This category is intended to accommodate a wide range of industrial and commercial uses. This designation is intended to provide an attractive location for manufacturing, processing and assembling land use activities that contribute to quality surroundings. A wide variety of appropriate commercial uses in this designation benefit from the location, access, physical configuration, and building types of these properties. It is distinguished from heavier industrial uses by means of performance criteria. All significant activities shall take place inside buildings, and the processing or storage of hazardous materials shall be strictly controlled and permitted only as an incidental part of another use.

Designation Criteria

1. Previously developed light industrial areas; or
2. Located along high-visibility corridors;
3. Provides buffering for heavy industrial areas or is buffered from the single-family designation by landscaping, environmental features, or the Residential Transition designation and buffered from all other Residential designations; and
4. Meets the development parameters of the Light Industrial designation.

Implementing Zoning Designations

Light Industrial

Policies

LU-76 A wide range of industrial uses may be permitted, subject to performance standards. Heavy commercial uses that serve the needs of workers in light industries are also appropriate. These uses include indoor manufacturing, processing, and assembling of materials from previously prepared or raw materials and ancillary and necessary warehousing and distribution of finished goods associated with manufacturing and industrial uses.

LU-77 Parking lots must be located and designed in a manner that softens their appearance from adjacent public roads. This is accomplished through landscaping, pedestrian spaces, and the location of buildings on the property. Where practicable, low-impact development techniques and landscaping should be used to promote on site stormwater infiltration and shading of hard surfaces. Minimum and maximum parking ratios must be established for each type of permitted use.

LU-78 Landscaping, sidewalks, and bike paths will be integral parts of site design if a development is located on an impression corridor or located within or adjacent to an identified nonmotorized corridor.

LU-79 Outside storage shall be permitted subject to performance criteria addressing its quantity and location. This is to ensure compatibility with adjacent uses, so that such storage would not detract from the potential use of the area for light industry. In all cases, such storage shall be extensively screened.

LU-80 Where a light industrial use is located adjacent to a property with a less intense zoning designation, the light industrial use bears the burden of incorporating techniques that mitigate the visual, noise, dust, and odor impacts.

LU-81 Uses involving substantial storage or processing of hazardous materials, as well as substantial emissions, should not be permitted in these areas.

LU-82 A wide range of commercial activities may be allowed to provide increased opportunities for sales tax revenue.

LU-83 The Burlington Northern Santa Fe Railroad Auburn Yard located within the Railroad Special Plan Area is considered a compatible use at its current level of usage. It is not bound by the policies concerning outside storage under the existing light industrial designation

as it was an existing use prior to the development of this policy. Should BNSF decide to reactivate its applications to upgrade the yard to an intermodal facility, the proposal will be subject to the essential public facility siting process as defined in the Capital Facilities Element.

LU-84 Upzone requests to the next zone should be approved based on the innovations in transportation and stormwater management and public amenities proposed for the development associated with the request.

Heavy Industrial Designation

Description

This designation allows the full range of industrial uses, as well as certain heavy commercial uses that serve the needs of workers in light industries are also appropriate.

Designation Criteria

1. Previously developed heavy industrial areas; or
2. Not located along high-visibility corridors;
3. Buffered by the Light Industrial Designation or otherwise buffered from all other compatible designations; and
4. Meets the development parameters of the Heavy Industrial designation.

Implementing Zoning Designations

Heavy Industrial

Policies

LU-85 While this zone should be reserved primarily for the heavier forms of industrial activities, a wide range of industrial activities may be permitted. These heavier forms of industrial activities may include outdoor or semi-enclosed manufacturing, processing, or assembling activities, significant outdoor storage, and uses involving substantial storage or processing of hazardous materials. Heavy commercial uses that serve the needs of workers in heavy industries are also appropriate.

LU-86 Parking lots must be located and designed in a manner that softens their appearance from adjacent public roads. This is accomplished through landscaping, pedestrian spaces, and the location of buildings on the property. Where practicable, low-impact development techniques and landscaping should be used to promote on site stormwater infiltration and shading of hard surfaces. Minimum and maximum parking ratios must be established for each type of permitted use.

LU-87 Landscaping, sidewalks, and bike paths will be integral parts of site design if a development is located on an impression corridor or located within or adjacent to an identified nonmotorized corridor.

LU-88 Where a heavy industrial use is located adjacent to a property with a less intense zoning designation, the heavy industrial use bears the burden of incorporating techniques that mitigate the visual, noise, dust, and odor impacts.

Public and Institutional Land Use Designations

Character Sketch

Public and institutional uses will occur in both low- and high-density environments. For passive uses, land and views will be protected; limited access to these areas will be typical. For more active uses, usability and accessibility will be key features and new development will be subject to standards reflecting programmed space and interconnectivity. These spaces will be varied in type, providing service to areas large and small, urban and more rural in character. Sustainable solutions and innovations that are responsive to the native ecology will be typical of public and institutional uses.

Values

Character: Community facilities and programs bring people together and connect residents and visitors to our natural resources.

Wellness: Multiple recreation options, and nearby trails, parks, activities, and events will be readily accessible to the entire community.

Service: Land use policy supports the provision of community, health and human services to all residents.

Economy: Residents and visitors seek Auburn as a residence or destination because of its natural resources, community events, and community pride.

Celebration: We utilize our open spaces and public facilities to promote who we are, our diversity, and our community pride.

Environment: Residents and visitors will enjoy open spaces and environmentally sensitive areas, while encouraging the appreciation of their importance and beauty. Impacts of new development on natural resources are considerate of their sensitivity and importance.

Sustainability: Public and private funds are used to make investments in land preservation, restoration and protection. Public investments in land and facilities are considered for their perpetual or generational value versus short-term motivations.

General Policies

LU-89 The primary purpose of this designation is to address public needs while taking advantage of synergies with the adjacent areas where they are sited.

LU-90 Innovative strategies to integrate the uses and sites into the areas where they are sited is encouraged. These strategies should maximize use of the site while minimizing fiscal impacts and impacts to adjacent areas.

LU-91 Increase visibility of resources through public information campaigns.

LU-92 Appropriate uses include low-intensity recreational uses, passive use open areas, protected environmental habitat, stormwater detention facilities, and similar low-intensity uses.

LU-93 Promote the use of energy and water conservation measures

Open Space Designation

Description

This category shall be applied to areas that are owned by a public entity and managed in a largely undeveloped character. It includes parks, watersheds, shoreline areas, significant wildlife habitats, storm drainage ponds, utility corridors with public access, and areas with significant development restrictions.

Designation Criteria

1. Passive parks or undeveloped Parks Department property;
2. Any site containing a significant developmental hazard; or
3. Any site containing open space value suitable for public protection without unduly encroaching on private property rights.

Implementing Zoning Designations

Open Space

Policies

LU-94 Active parks that provide sports field, activity and community centers, cemeteries, and public buildings should not be designated as open space.

LU-95 Open space lands are primarily designated to provide wildlife and aquatic habitat, flood detention, vegetation and soil preservation, and view shed protection. Land designated as open space may be used for public access to trails, interpretive centers, education opportunities, and other uses and facilities that support the purpose of their designation.

LU-96 Increase distribution of open space and increase access to open space amenities throughout Auburn.

LU-97 Enhance restoration, preservation and protection of natural resources and critical areas.

LU-98 Seek out opportunities to develop recreation and education opportunities on public lands or through public–private partnerships.

LU-99 Increase visibility of resources through public information campaigns. Continue to work with regional partners to develop and maintain trail systems that connect Auburn with regional destinations.

LU-100 Build on partnerships with school districts to expand public use of school facilities for recreation and exercise, and to improve public access to facilities for this purpose, as appropriate.

Public/Quasi-Public Designation

Description

This category includes those areas that are reserved for public or quasi-public uses. It is intended to include those of a significant extent, and not those smaller public uses that are consistent with and may be included in another designation. These public uses include public schools, developed parks, and uses of quasi-public character such as large churches and private schools. Public uses of an industrial character are included in the industrial designation, and small-scale religious institutions of a residential character are included in the residential designation. Streets, utilities, and other separate uses are not intended to be mapped separately as Public/Quasi-Public.

Designation Criteria

1. Previously developed institutional uses; or
2. Meets the development parameters of the Public/Quasi-Public designation.
3. Properties identified in the Airport Master Plan as Landing Field.

Implementing Zoning Designations

Institutional
Public Use
Landing Field

Policies

LU-101 A responsible management entity and the purpose for the public/quasi-public designation should be identified for each property interest within this designation. Management policies and plans are appropriate for all lands in this designation.

LU-102 Appropriate uses for this designation include facilities that serve the needs of the larger community such as public schools, active parks, city operated municipal facilities, large churches, and fire stations.

LU-103 This designation permits a wide array of uses that tend to be located in the midst of other dissimilar uses. For this reason, the following must be considered of new requests for this designation:

a. The impacts that the designation may have on the surrounding community.
b. Site-specific conditions that should be attached to new requests for this designation that are designed to mitigate impacts on the surrounding community.
c. Site-specific conditions that should be attached to development proposals that are designed to mitigate impacts on the surrounding community.

LU-104 Coordination with other public or institutional entities is essential in the implementation of this land use designation.

LU-105 Industrial and commercial uses that are affiliated with and managed by educational institutions for vocational educational purposes may be classified as an institutional use and permitted on a con¬ditional basis.

LU-106 For the Landing Field (LF) zone, an Airport Master Plan (AMP) should be developed that establishes the vision, policies, and implementation strategies that govern uses, management principles, and future planning efforts. The AMP shall be incorporated by reference in the Auburn Comprehensive Plan as an appendix.

LU-107 Auburn Municipal Airport is included in the federal airport system - the National Plan of Integrated Airport Systems (NPIAS). Participation in the NPIAS is limited to public use airports that meet specific FAA criteria. NPIAS airports are eligible for federal funding of improvements through FAA programs. To maintain eligibility for funding through FAA programs, the Airport Master Plan should be periodically updated as conditions change.

LU-108 Uses, activities, and operations within the LF Airport Landing Field District must be coordinated and consistent with the Airport Master Plan.

LU-109 Future expansions of the LF Airport Landing Field District, for the purpose of airport uses, activities, and operations, should be coordinated and consistent with the Airport Master Plan.

LU-110 While the industrially designated area east of the Airport is highly suited for airport related activities, other industrial type uses are now located here. Therefore, the City will encourage use in this area to take advantage of its proximity to the Airport.

LU-111 New commercial land uses in proximity to the airport should be air-related and/or complementary to the airport.

LU-112 To protect the viability of the Auburn Municipal Airport the City shall create an airport overlay that is consistent with FAA regulations and WSDOT guidance.

LU-113 The City's zoning ordinance and other appropriate regulatory measures shall enforce the airport overlay and the FAR Part 77 surfaces.

LU-114 The airport overlay shall protect the operations of the Auburn Municipal Airport by establishing controls on incompatible land uses and development.

LU-115 The airport overlay should be implemented to manage land uses and development around the airport to ensure compatibility into the future and prevent incompatible future uses. The regulations applied to properties surrounding the airport should encourage land uses that are related to, and benefit from, proximity to the airport but not restricted exclusively to only these.

LU-116 The impact of development on air safety shall be assessed through the City zoning ordinance, FAA regulations, SEPA review, input from the Auburn Municipal Airport, and relevant technical guidance. Appropriate mitigation measures shall be required by the City.

LU-117 Uses in proximity to the airport that may create potential operational (e.g. height or noise) conflicts shall be reviewed for their consistency to airport operations and conformance with the FAA regulations.

LU-118 The airport should be protected from nonconforming uses and structures that pose a safety concern to airport operations.

LU-119 The City shall determine whether nonconforming uses and structures affect airport operations and require their minimization or elimination, at cost to owner, based on individualized study of proposals, City regulations, input from the Auburn Municipal Airport, and relevant technical guidance.

Overlays, Urban Growth Area, and Special Planning Land Use Designations

Character Sketch

These areas help control growth, protect the environment, and prevent urban sprawl conditions in our City. For a variety of reasons, specific areas exist within the City that require further specificity or focus of land use planning, policy, regulation, or investment. Overlays, urban growth areas, and special planning areas may be designated that help further enumerate a purpose. These areas are to be designated through the Comprehensive Plan and treated as a component of the Land Use

VOL. 1

Element of the Plan.

Values

Each area designated as an overlay, urban growth area, or special planning area shall reflect the values identified in the Core Comprehensive Plan.

General Policies

LU-120 These land use designations must be consistent with the Growth Management Act, Puget Sound Regional Council, and countywide planning policies.

LU-121 Any proposed changes to these designations must be pursued in coordination with applicable State, Regional and County agencies.

Urban Separator Designation

Description

Urban separators are areas designated for low-density uses in the King County Countywide planning policies. They are intended to "protect Resource Lands, the Rural Area, and environmentally sensitive areas, and create open space and wildlife corridors within and between communities while also providing public health, environmental, visual, and recreational benefits." There are two primary areas of urban separators, one on Lea Hill and one on West Hill.

Designation Criteria

Areas designated through the process of annexation

Implementing Overlay Designations

Lea Hill Overlay
West Hill Overlay
Urban Separator Overlay

Policies

LU-122 The City is obligated to maintain (and not redesignate) until at least the year 2022, pursuant to countywide planning policies and an annexation agreement with King County.

LU-123 Urban separators are deemed to be both a regional as well as local concern and no modifications to development regulations governing their use may be made without King County review and concurrence. Therefore, the areas designated as "urban separator" on the Comprehensive Land Use map, will be zoned for densities not to exceed one dwelling unit per acre, with lot clustering being required if a subdivision of land is proposed.

Urban Growth Area and Potential Annexation Area Designation

Description

Urban growth areas and potential annexation areas are areas located outside of the municipal city limits of Auburn. They are areas that are anticipated to be incorporated into the City within 10 years of their designation.

Designation Criteria

Potential annexation areas are jointly developed by cities and the County in which they are located. They are based upon countywide growth projections that are divided among all urban growth areas within each respective County. Urban growth areas and potential annexation areas are distinguished from each other by whether they have been assigned to a City or not. Urban growth areas have been identified but have not been assigned to a City. Potential annexation areas are urban growth areas that have been assigned to a specific City.

Implementing Designations

Urban Growth Area
Potential Annexation Area

Policies

LU-124 Work with King and Pierce County, as well as nearby cities, to redesignate urban growth areas into potential annexation areas.

LU-125 Auburn's Potential Annexation Area is shown on the Comprehensive Plan Land Use Map (Map 1.1). Map 1.1 also depicts Growth Impact Areas. These Growth

Impact Areas are generally adjacent cities or unincorporated County lands in which development that occurs potentially impacts the city of Auburn.

LU-126 The Auburn City Council may revise the boundaries of the Potential Annexation Area in the future, in response to:

a. Amendments to King and Pierce County Urban Growth Areas as specified in the King and Pierce County countywide policies
b. Discussions between Auburn and adjacent jurisdictions regarding POTENTIAL ANNEXATION AREA boundaries
c. Discussions with Pierce County concerning the designation of POTENTIAL ANNEXATION AREA boundaries
d. Changed circumstances relating to population and employment growth and projections, urban service feasibility, or similar factors.

LU-127 Develop strategies and agreements for the review of development and provision of utilities within potential annexation areas that have yet to be annexed.

LU-128 Prior to annexation, develop strategies and agreements that address the orderly transition of areas into the City such as transfer of permit authority, infrastructure financing, financing of fire and police services, and interim development regulations.

Transition Designation

Description

The Transition Designation following establishes policies and guidance are intended to provide a basis for future development of zoning and other regulatory tools to manage and reduce impacts from proximity of boundaries between sharper differences of intensity in land uses and is meant to apply city-wide.

Designation Criteria

The Designation should apply to areas that are located between single-family and multifamily land use designations; between multifamily and nonresidential land use designations; and between single-family and nonresidential land use designations.

Implementing Designations

The Designation and implementing zoning and other regulatory tools shall generally apply to the more intense land use designation.

Policies

LU-129 Between single-family and multifamily:

a. Where a multifamily use is proposed to be located adjacent to a single-family zone, the multifamily use will bear the burden of providing an adequate transition of land use. Mitigating measures that control light, noise, and dust should be incorporated into multifamily development proposals.
b. Provide non-motorized access through the site in order to connect the adjacent land uses.
c. Housing size, type, and orientation shall be utilized as a means of providing harmonious transition of the built environment.
d. Provide a mix of townhomes, duplexes, cottage housing and small-scale multifamily housing.

LU-130 Between multifamily and nonresidential

a. Where a non-residential use is proposed to be located adjacent to a multifamily zone, the non-residential use will bear the burden of providing an adequate transition of land use. Mitigating measures that control light, noise, and dust should be incorporated into nonresidential development proposals.
b. Provide non-motorized access through the site in order to connect the adjacent land uses.
c. Provide a mix of townhomes, duplexes, cottage housing and small-scale multifamily housing.

LU-131 Between single-family and nonresidential:

a. Where a non-residential use is proposed to be located adjacent to a single-family zone, the non-residential use will bear the burden of providing an adequate transition of land use. Mitigating measure that control light, noise, and dust should be incorporated into nonresidential development proposals.

b. Provide non-motorized access through the site in order to connect the adjacent land uses.

Critical Area Overlay Land Use

Description

Under the Growth Management Act cities and counties are required to identify, designate and protect critical areas. Critical areas include (a) wetlands, (b) areas with a critical recharging effect on aquifers used for potable water, (c) fish and wildlife habitat conservation areas, (d) frequently flooded areas, and (e) geologically hazardous areas.

Designation Criteria

Designation of critical areas includes both criteria that should be applied to the specific type of critical area as well as buffers and/or setbacks that are necessary for the protection of the critical area and/or life and property. Designation of critical areas is based on best available science as it applies to local conditions.

Implementing Designations

Wetlands
Critical Aquifer Recharge Areas
Fish and Wildlife Habitat Conservation Areas
Frequently Flooded Areas
Geologically Hazardous Areas

Policies

LU-132 Best available science will be utilized for the specific designation criteria and the associated adopted protection standards and development regulations.

LU-133 Reasonable use provisions will be included within the critical area regulations that ensure a property owner is not denied use of a preexisting parcel, lot or tract.

LU-134 Exemptions to the critical areas ordinance should be provided for very limited and justified circumstances such as maintenance of existing land uses, work within some types of human-made features, limited types of site investigation work, emergency activities, and certain types of invasive vegetation control.

LU-135 Critical area regulations will identify the process and standards for alteration of a critical area and criteria related to mitigation, performance, and monitoring.

Special Planning Area Designation

Description

"Special Planning Areas" consist of Districts, subareas, Impression Corridors, and Gateways within Auburn that warrant additional empha¬sis in planning, investments, and policy develop¬ment. Each may be recognized separately within the Comprehensive Plan, as an Element of the Comprehensive Plan, or as an subarea plan (dis¬cussed below). There are a variety of reasons for designating and distinguishing a special planning area, and once designated, a variety of poten¬tial outcomes. Reasons for designating a special planning area include:

- Areas of high visibility and traffic. These areas create an impression or image of Auburn. It is therefore particularly important to ensure that they are attractive and well maintained. Examples include Auburn Way South and as¬sociated major highway on- and off-ramps.
- Land use activities that warrant joint planning between the City and owner/operator. In ad¬dition to developing approaches and strat¬egies for the land use activity, there may be additional emphasis on ensuring compatibility with surrounding land uses. Examples include, Green River College, the Auburn Municipal Airport, and Emerald Downs Thoroughbred Horse Racetrack.

- Neighborhoods in which a resident and mer¬chant live and conduct daily business and leisure. Neighborhoods may also be distin¬guished by physical setting, physical separa¬tions, and similarity over an area. Examples include downtown, Lea Hill, and Lakeland.
- Areas with a focused desire to create great¬er physical and economic cohesiveness. These may be large planned developments or clus¬ters. Examples include the Auburn North Business Area and Mt. Rainier Vista.
- Areas with an existing built environment or an existing regulatory framework that does not, in itself, meet the expectations of the seven val¬ues that underscore the Comprehensive Plan. Examples include the need for multimodal connections between West Hill and Lea Hill to north and downtown Auburn.

Designation Criteria

1. **Districts**: The geographic limit of districts and areas that make up this category of Special Planning Areas extends beyond an alignment with any particular street, trail, river, stream, or other linear corridor. Districts may contain other smaller Special Planning Areas, such as subareas. Additionally, districts are generally consistent with the geography of one of the eight "neighborhoods"[1] identified in the 2014 City of Auburn Community Vision Report. Generally speaking, districts are identified for the purpose of creating identity. This means that the land use designations and overarching policies and implementing regulations are not going to change from one district to the next. Instead, Districts are important for event planning, establishing park and open space level-of-service standards, and promoting community identity.

Districts (see Map 1.2)

- West Hill
- North Auburn
- Lea Hill
- Downtown
- South Auburn
- Plateau
- Lakeland
- Southeast Auburn

2. **Subareas**: Subareas are smaller in geography than a district. Though relatively large, multiple subareas may be located within a single district. Subareas allow for the refinement and recognition of existing unique characteristics within a district. Subareas are intended to anticipate, support, and guide long-term growth and redevelopment through planned development and a unique vision for how that area should look and function in the future. It can also be used to provide flexibility when there is uncertainty regarding how an area may be most appropriately developed in the future.

   Twenty-eight (28) subareas currently exist. These subareas are categorized into five different types of subareas:

- Identified Areas;
- Designatged Areas;
  - Economic Development Strategy Areas (a Designated Areas sub-category);
  - Areas of Concern (another Designated Areas sub-category; and
- Adopted Areas.

Uses, intensities, and infrastructure development determined for each subarea or planned area through individual planning processes. Connectivity throughout the planned area, and connections to multimodal transportation opportunities outside of the planned area are also emphasized through the individual planning process. The result of each individual planning process is the adoption of Comprehensive Plan element or subarea plan for the particular subarea by City Council. Each Plan element must be consistent with the general goals, objectives, and policies of the Comprehensive Plan, and once adopted, subarea plans are intended to guide the future development of each respectively adopted subarea.

1. The eight "neighborhoods" are identified for comprehensive planning purposes only, as neither the City nor its neighborhoods have elected to officially designate the boundaries of City neighborhoods.

2a. Identified Areas: Identified areas are identified as a subarea within the Comprehensive Plan, but have not been established on the Comprehensive Plan Map. Therefore, the specific and detailed boundaries of an identified subarea have not been defined. Identification of a subarea within the Comprehensive Plan occurs by official action of the City Council.

Identified Areas

- Auburn Golf Course
- GSA/Boeing
- Green River College
- Mary Olsen Farm
- Les Gove Campus
- Emerald Downs
- Auburn High School

2b. Desginated Areas: Designated Areas have been designated on the Comprehensive Plan Map, which defines the specific and detailed boundaries of the area. Designation of an area on the Comprehensive Plan Map occurs by official action of the Auburn City Council. It is intended that future development of these areas will be guided by individual Plan element or subarea plan of the Comprehensive Plan. The future subarea plan will either supplement existing goals, policies, and implement strategies, or replace existing Comprehensive Plan designations and policies for the area within the specific and detailed boundary.

Designated Areas (see Map 1.3)

- Auburn Municipal Airport
- BNSF Rail Yard
- Stuck River Road
- Lakeview
- Mt. Rainier

2b(1). Designated Areas - Areas of Concern: Areas of Concern are a specific type (or subcategory) of designated area. Areas of Concern are established because they represent an area that features a lack in the infrastructure and services (e.g. municipal water and sewer service, urban roads, traffic demand, and storm water management) necessary to support increase in density or other development. These areas require a close assessment of and an emphasis on infrastructure development and planning to support further development. While this Plan may not fully represent the intensity of uses that could ultimately be supported in these areas (in part due to the current weakness of the City's infrastructure to support future growth). Development intensification within the Area of Concern needs to be coordinated with the necessary infrastructure and services to support growth.

Designated Areas - Areas of Concern (see Map 1.3):

- AWS/Auburn Black Diamond Rd.
- Pike Street NE
- 8th Street NE

2b(2). Designated Areas - Economic Development Strategy Areas: The Economic Development Strategy Areas are a specific type (or subcategory) of designated area. In 2005, City Council adopted six Economic Development Strategy Areas under Resolution No. 3944. These areas, initially identified by a focus group of diverse business and community interests, are targeted for population and employment growth within the planning horizon of the City's 20-year growth target (2031). By 2012, the City Council added three additional economic development strategy areas , bringing the total to nine (9) strategy areas.

During the City's 2015 update of the Comprehensive Plan the list of economic development strategy areas to reflect current conditions and status of these areas. As such, two of the original six economic development strategy areas was removed from the list. The Urban Center, one of the original six development strategy areas, was removed as it is no longer a designated area. The Urban Center, also known as "Downtown Auburn" or the "Downtown Urban Center" is an adopted area (since 2001) and features its own subarea plan. The Auburn Environmental Park (AEP)/Green Zone has also been removed as an economic development strategy area. The AEP/Green Zone economic development strategy area

was previously zoned EP, Environmental Park Zone. The intent of this zone was to encourage economic development in the form of medical, biotech and "green" technologies including energy conservation, engineering, water quality and similar uses. Through Ordinance No. 6660 City Council rezoned the AEP/Green Zone from EP, Environmental Park Zone to M-1, Light Industrial, hereby effectively removing the need to designate the AEP/Green Zone as an specific economic development strategy area.

The current economic development strategy areas are included below. The boundaries of the economic development strategy areas are incorporated as designated subareas "Designated Areas – Special Planning Areas" map of the Land Use Element.

Designated Areas -Economic Development Strategy Areas (see Map 1.3)

- A St SE (corridor)
- Auburn Way South (AWS) Corridor
- Auburn Way North (AWN) Corridor
- M St SE (between AWN and AWS)
- SE 312th/124th Ave
- NW Manufacturing Village
- 15th St SW/West Valley Hwy N

2c. Adopted Areas: Adopted Areas include an Adopted Subarea Plan incorporated into the Comprehensive Plan that establishes the purpose of its designation, goals and policies, and implementation strategies. Adoption of a subarea plan occurs by official action of the City Council. As an adopted document of the Comprehensive Plan, the subarea Plans are subject to a review, and if necessary, revision to address changes in conditions, issues, or even characteristics of the planned areas. The review and revision a subarea Plan will also include the review and, if necessary, a revision of zoning regulations and architectural design standards.

Adopted Areas (see Map 1.4)

- Downtown (Ordinance No. 5549)
- Auburn Adventist Academy (Resolution No. 2254)
- Auburn North Business Area (Resolution No. 2283)
- Lakeland Hills (Resolution No. 1851)
- Lakeland Hills South (County H.E. Case Z15/UP70)
- Northeast Auburn (Ordinance No. 6183)

3. **Impression Corridors**: Impression corridors are aligned with a particular street, trail, river, stream, or specific linear corridor. Some corridors may be part of a subarea, in which case the Impression Corridor policies are additive to a subarea plan. Impression corridors enhance the areas in which residents, businesses, visitors move throughout the City. The benefit of an impression corridor is twofold: residents know that the City is invested in the aesthetic of main thoroughfares and businesses can build off of the design and aesthetic provided by the impression corridor. Improvements or modification to impression corridors consist of aesthetic signage, landscaping, and monument features, and the rehabilitation or removal of existing buildings and property. Impression Corridor boundaries and policies are formally designated by adoption of the Comprehensive Plan. Priority is given to the impression corridors that are a part of a subarea. Priority impression corridors are the thoroughfares in which residents, businesses, visitors move throughout a specific subarea. The priority impression corridors are italicized below.

Impression Corridors (see Map 1.5)

- *Auburn Way North*
- *Auburn Way South*
- *Auburn Black Diamond Road*
- *A Street SE/Auburn Avenue*
- *C Street SW*
- *Division Street*
- *M Street/Harvey Road*
- *Main Street*
- *8th Street NE*
- *15th Street SW*
- *West Valley Highway*
- *15th Street NW/NE*
- 132nd Ave SE

- SE 320th Street
- SE 312th Street
- SE 304th Street
- R Street
- Lake Tapps Pkwy SE
- Green River Road
- 37th Street NW
- S 277th Street
- Interurban Trail
- Green River
- White River
- Mill Creek

4. **Gateways**: Gateways are specific places, intersections, or blocks within the City. These essential locations are established because they constitute the first impression into of Auburn. Gateways are intended to create a "welcome" into distinct areas of the City or into the City itself. They are therefore highly important to plan, construct, maintain, and enhance their appearance and function. Gateway locations and policies are formally designated by adoption of the Comprehensive Plan. Priority is given to those gateways that are along an priority impression corridor. Priority gateways function as a entrance to an impression corridor. The priority gateways are italicized below.

Gateways (see Map 1.6)

- *Auburn Way North and Auburn Avenue (where the roads converge)*
- *East Main Street and M Street NE/ SE (at the intersection)*
- *Auburn Way South and 4th Street SE*
- *Auburn Way S and 6th Street SE*
- *West Main Street between C Street NW and B Street NW*
- All roads with an entry into the city
- Hwy 167 Off Ramps
- SR 18 Off Ramps

Implementing Designations

Planned Unit Development (PUD)
Master Plans

Policies

District Policies.

LU-123 Through regulation, capital investment, and community planning, identify, promote and market district identity.

Subarea Policies.

LU-124 Each subarea will contain its own vision, goals, policies and strategies.

LU-125 BNSF Rail Yard - This approximately 150 acre Special Planning Area is located in the south-central portion of the City and surrounded by SR-18 to the North, Ellingson Road to the South, C Street SW to the west and A Street SE to the East. The Special Planning Area should consider both sides of C Street and A Street. Consideration should be given to:

- The needs of Burlington Northern.
- Providing pedestrian, bicycle and vehicular access across the site to connect the southeast and southwest sides of the city.
- Providing a more visually appealing "entry corridor" into the City from the south along A and C Streets.
- Allowing for a mix of uses including single and multifamily development and commercial and industrial uses where appropriate.

LU-126 Stuck River Road - A portion of the Stuck River Road Special Planning Area is currently the site of a large sand and gravel mining operation. This area and other adjacent land comprising a total of approximately 664 acres has been designated as a long term resource area (mineral resource area), so development of the Special Area Plan for this area should be a low priority as mining is expected to continue on this site for as long as 30 years. The land uses for the Stuck River Road Special Planning Area will be determined through the subarea planning process and the City Council's adoption of the subarea plan. Potential land uses applied through the subarea planning process could include single-family

residential, multi-family residential, commercial, institutional, and recreational. Some light industrial uses may be appropriate for consideration and designation through the subarea planning process if the uses are "industrial or business park" in character, conducted entirely within an enclosed building, and exhibit a high degree of performance standards and are non-nuisance in nature and if appropriately limited in extent and location. A mix of housing types ranging from single family residential to multi-family residential is appropriate for this planning area. The subarea plan should be adopted taking into consideration the period during which mining is expected and the intent of the ultimate development of the area. An active permit has been processed by the City with respect to the mining activity on a portion (approximately 664 acres) of the mineral extraction operation. The permit process should continue, however, any permit for mining in the mineral resource area should be granted for the life of the resource, with reviews conducted periodically (every five years) to determine whether changes in the originally proposed mineral extraction operation have arisen and give rise to the need for additional or revised permit conditions to address the new impacts (if any) of any such changes. Any permit applications for additional acreage within the mineral resource area shall be processed by the City.

Development of this area should not occur until adequate public facilities are available to support the development consistent with City concurrency policy.

The City recognizes the potential for expanding the Stuck River Road Special Planning Area to include additional land east of Kersey Way and north of the Covington-Chehalis power line easement, and will consider a proposal by all affected property owners. If the area is expanded, the number of non-multiple family, non-manufactured home park dwellings units may be increased proportionate to the increase in acreage. Any such proposal shall specifically apportion the types and quantities of development to occur within each separate ownership.

LU-127 Lakeview - The Lakeview subarea is currently the site of two independent sand and gravel mining operations. While mining activity continues in the eastern operation, indications in 1995 are that the western operation has ceased. Activity in the western portion is now limited to a concrete batch plant and future site reclamation. Following reclamation, the area should be developed as a primarily single family residential neighborhood of low to moderate urban density. A planned development would be particularly appropriate for this approximately 235 acre site. The permitted development density of the site will depend heavily upon the ability of the transportation system near the site to handle the new uses. Consideration shall be given to the environmental, recreational and amenity value of White Lake, the historical and cultural significance, as well as tribal ownership and jurisdiction of the Muckleshoot Tribe in the development of the Lakeview Plan element. Permit applications have been accepted and are currently being processed by the City with respect to the mining activity on the eastern portion of the area. The permit process should continue, however, any permit for continued mining in this portion of the area should be limited to 10 years to encourage completion of the mining, and subsequent reclamation by the property owner in preparation for development. The Lakeview Plan element should be adopted prior to the City's acceptance or processing of any other permit applications for the mining operation in the Lakeview Special Planning Area. The environmental information and analysis included in the Final Environmental Impact Statement for Lakeview (November 1980), shall be considered in the development of the

Lakeview Plan element. While heavy commercial or industrial uses would not be appropriate as permanent uses of this area, conversion of the area now zoned for heavy industry to office commercial (or similar) uses would be appropriate.

LU-128 Mt. Rainier Vista - This 145 acre subarea is located south of Coal Creek Springs Watershed. Overall development of the Mt. Rainier Vista subarea plan shall be consistent with the following conditions:

1. Primary consideration in use and development of the property shall be given to protection of Coal Creek Springs' water quality. Development types, patterns and standards determined to pose a substantial risk to the public water source shall not be allowed.

2. The maximum number of dwelling units will be determined as part of any sub-area plan process. Dwelling units shall be located within portions of the property where development poses the least risk of contamination for Coal Creek Springs. Lands upon which any level of development would have a high risk for contaminating the water supply shall not be developed, but would be retained as open space. The development pattern shall provide for a logical transition between areas designated for rural uses and those designated for single family residential use. All dwelling units shall be served by municipal water and sanitary sewer service, and urban roads. If 53rd Street S.E. is the major access to serve the Special Planning Area, the developer will be responsible for developing the street to urban standards, from the property owners' eastern property line that abuts 53rd Street, west to the intersection of 53rd and Kersey Way.

3. Percolation type storm sewer disposal systems shall not be permitted. All surface water drainage shall be conveyed consistent with the City's current storm drainage standards. Treatment of stormwater shall occur prior to its discharge to any surface water body, consistent with standard public works or other requirements in general effect at the time of development.

4. The site shall be zoned temporarily, at one unit per four acres, until the sub-area plan is completed and the long-term urban zoning determined.

5. The Mt. Rainier Vista special planning area boundary may be modified through the development of the subarea plan.

6. The Mt. Rainier Vista and Stuck River Road Special Planning Areas shall be coordinated subarea plans.

Designated Areas - Areas of Concern Policies.

LU-129 AWS/Auburn Black Diamond Rd – The area between Auburn-Black Diamond Road and the Burlington Northern Railroad currently lacks urban facilities necessary to support urban development. Major development proposals shall be carefully assessed under SEPA to ensure that the development can be supported by the available facilities. Once property owners are able to demonstrate to the City that they can provide urban services (municipal water and sewer service, urban roads and storm water management) necessary to support the intensity of development proposed within the entire area, the Plan designation and zoning for this area should be changed to an urban residential or commercial classification. The appropriate classification(s) shall be determined after a review of the development proposal and the pertinent Comprehensive Plan policies.

LU-130 Pike Street NE – The area located north of 8th NE, east of Harvey Road, and south of 22nd NE is inadequately served by residential arterials. No increase in density or other development which would increase traffic demand in this area should be approved.

LU-131 8th Street NE – The areas paralleling 8th Street NE located between Auburn Way and M Street are designated for multiple

family residential while 8th Street NE is designated as a minor arterial. However, the road is not currently constructed to this standard and is not able to support current traffic demand adequately. The Plan designation would greatly increase traffic volumes. Implementation of the Plan designations should not occur until 8th Street NE is constructed to the adequate arterial standard and water service is upgraded. Up zones should not be granted from current zoning until these stems are upgraded or guaranteed.

Designated Areas - Economic Development Strategy Ares Policies.

LU-132 The City should adopt a formal subarea plan for each of the seven economic development strategy areas (listed below) as an element of the Comprehensive Plan. Each economic development strategy area subarea plan should identify the uses, intensities, and infrastructure development necessary to support the types of business and activities that are most consistent with community aspirations. Each subarea plan should address and include policies regarding the expected level of housing density (or residential growth targets) and employment growth targets.

- Auburn Way South Corridor
- Auburn Way North Corridor
- NW Auburn Manufacturing Village
- 15th St. SW/C St. SW/W Valley Hwy. N
- A St. SE
- SE 312th St. /124th Ave SE
- M St. SE between Auburn Way N and Auburn Way S

Adopted Areas Policies.

LU-133 Adoption or revision of a subarea plan will be treated as a comprehensive plan amendment and will comply with the Growth Management Act, Countywide planning policies, Vision 2040, and the Core Comprehensive Plan.

LU-134 Adventist Academy - Adopted under Resolution No. 2254 on November 14, 1991. The Auburn Adventist Academy is Special Planning Area (Adopted Area) is a multi-use campus operated by the Western Washington Conference of Seventh-Day Adventists. The Campus plays a large role in the Western Washington Conference of Seventh-Day Adventists' private elementary and secondary education system in Washington and hosts many community events as well as an annual regional camp meeting for Adventists from Washington and around the world. The Campus previously housed Harris Pine Mill, a furniture manufacturer, for many years. The Mill provided financial benefit to the Academy's budget and provided employment opportunities, learning experiences, and vocational education for Academy students. The Academy continues to include in its plan industrial uses that support the mission of the school financially. The reuse of existing mill buildings and redevelopment of buildings lost to a fire in 1989 are the focal points of the current industrial development. In addition to institutional and industrial uses, the Academy is also operates a landing strip and associated aircraft hangars for student aviation and flight training. A single family subdivision is located to the south of the airstrip. In addition to these uses, the Academy wishes to allow development of uses such a multi-family and senior housing and assisted living and memory care which will generate perpetual revenue through a long-term land lease on a portion of the Campus lying generally north of Auburn Way South and south of 32nd Street S.E. that will directly aid its mission. The financial benefit from these uses will allow funding an endowment, subsidize student tuition, provide financial aid for students needing tuition assistance, for new educational programs, for additional faculty, facility maintenance and upgrades, and other needs. The plan focuses on provides predictability to planning, zoning, subdivision, and development decisions within the Special

Planning Area (Adopted Area) made by the City.

LU-135 Auburn North Business Area - Adopted under Resolution No. 2283 on March 2, 1992. The Auburn North Business Area Special Planning Area Plan was the result of a comprehensive planning study due to increased development pressure north of the Central Business District. Since the Central Business District, which contains Downtown, the core of Auburn, is adjacent to these areas, future development in this area is crucial. A comprehensive and cohesive direction was also needed based on increased development proposals and rezone requests. In addition to development concerns, many of the considerable undeveloped parcels contain wetlands. All of these factors made development controls beyond zoning and development regulations advisable.

LU-136 Lakeland Hills - Adopted under Resolution No. 1851 on April 18, 1988. Lakeland Hills area lies between the Stuck River and the southern City limits of Auburn in the most southwestern part of the City. The area consists of planned residential and commercial subdivisions, and is predominately residential in nature, offering a range of housing types, including single family and multi-family dwellings. The Lakeland Hills Plan was intended to provide long-term predictability to both the City and potential developers. As a planned community, development and design must be consistent with the policy guidance of the Lakeland Hills Plan.

LU-137 Lakeland Hills South - Approved under Pierce County Hearing Examiner Case Z15/UP70.Lakeland Hills South lies south of the Lakeland Hills special plan area and is the most southwestern part of the City. The area is predominately residential, allowing for a range of housing types, with commercial uses, including Lakeland Town Center, in the center. Nonresidential uses, including civic, religious, and municipal services are allowed throughout the area through an Administrative Use Permit. Unlike Lakeland Hills, Lakeland Hills South was accepted into Auburn was a Planned Unit Development (PUD). The Lakeland Hills PUD, originally the Lakeland Hills South Planned Development District (PDD), was approved under Pierce County Hearing Examiner Case no Z15-UP70 in 1990. Lakeland Hills South PUD is intended to provide enhanced flexibility to develop a site through innovative and alternative development standards. As a PUD, specific development and design standards are prescribed.

LU-138 Auburn Downtown Plan (Urban Center) - Adopted under Ordinance No. 5549 on May 21, 2001. Downtown Auburn is the business, governmental, and cultural hub of Auburn, its physical and cultural heart. Many stores, restaurants, service providers, and small offices are well-represented throughout this district. Downtown hosts many community events and activities, such as the weekly Auburn International Farmers Market in the summer, Soundbites! Concert Series (in the City Hall Plaza) and the Veterans Day Parade. Downtown features public art that includes temporary installations such as Pianos on Parade and a permanent outdoor Downtown Sculpture Gallery with rotating pieces. This dynamism is possible because the district is a collection of uses that coexist in close proximity to one another. Due to the value, importance, and complexity of this district, The Auburn Downtown Plan identified four general needs to be addressed by the plan:

- Update of the existing plan in order to continue Downtown revitalization
- Concern over the reopening of Stampede Pass
- Multiple large projects proposed for Downtown

- Scarce private investment

In conjunction with project-based items, a regulatory element that emerged from the goals of the Auburn Downtown Plan was the Downtown Urban Center (DUC) zoning district, which was established in 2007. While the DUC zoning district is intended specifically to address the needs of downtown, though the implementation of policies identified by the Downtown Auburn Plan , many challenges related to public and private investment, development, and strategic planning have yet to be addressed as downtown has evolved.

LU-139 Northeast Auburn Special Plan Area – Adopted under Ordinance No. 6183 on June 5, 2008. The Plan was prepared in fulfillment of the policies included in the Comprehensive Plan for the area between Auburn Way North and the Green River, south of 277th Street (52nd Street NE) and north of approximately 37th Street NE in the City of Auburn (Map No. 14.2). The planning area was narrowed to an area covering approximately 120 acres, north of 45th Street NW and between Auburn Way North and the existing I Street NE right-of-way. The Northeast Auburn/ Robertson Properties Special Area Plan focuses on proposed develop of the Auburn Gateway project area, a 60-acre group of properties owned or under consideration for purchase by Robertson Properties Group, owners of the Valley 6 Drive-In Theater. The plan calls for a mix of office, retail, and multifamily development under a new zoning designation (C-4, Mixed Use Commercial) for the central portion of this planning area, created to accommodate mixed use development. The plan calls for phased development in coordination with the provision of new roads, stormwater and other utilities, and flood management measures.

Impression Corridor Policies.

LU-140 Create specific plans for each identified corridor, outlining development policies and regulations, necessary capital improvements, and implementation strategies. In the absence of any specific corridor plans, this section contains general policies that are to be applied within designated impression corridors.

LU-141 Coordinate corridor planning, design, construction, and maintenance with other agencies, such as BNSF, the Muckleshoot Indian Reservation, and the Washington State Department of Transportation. Where one agency may more effectively manage the corridor, management or ownership consolidation is appropriate.

LU-142 Promote the elimination or renovation of existing derelict or unmaintained structures, signs, fences, and properties along impression corridors through regulatory or enforcement mechanisms

LU-143 Work with private and public property owners to educate, create incentives, and enforce regulations that are intended to improve the overall appearance of identified corridors.

LU-144 Emphasize the design, orientation, construction materials, landscaping, and site layout for development proposals of new and existing buildings along impression corridors. New construction and the renovation of existing buildings create important opportunities for enhancing the appearance of impression corridors.

LU-145 Establish regulations that ensure coordinated, attractive commercial signage is of an appropriate size and quantity. Signage regulations along these corridors may be different than those in other areas.

LU-146 Take advantage of opportunities to provide informational signs, wayfinding signs, and traffic control signs that

are attractive, useful, and integrated into a larger citywide signage plan or policy.

LU-147 Outdoor storage of materials, inventory, and other goods and off-street surface parking should be located at the rear of the property. If outdoor storage cannot be located in the rear of the property, then it should be screened from view from adjacent rights-of-way.

LU-148 Design, construct, and enhance impression corridors to accommodate multimodal uses.

LU-149 Design and construct vehicular access points in a manner that consolidates access points serving multiple uses.

LU-150 Signage, landscaping, and monument features should be used to establish prominent access points.

LU-151 Discourage aerial utilities.

LU-152 Invest in impression corridors by acquiring rights-of-way, constructing and widening sidewalks, installing landscaping, building center medians, constructing parklets, providing street furniture, and constructing other improvements.

Gateway Policies.

LU-153 Prioritize by rank all gateways and develop potential opportunities and designs for each location.

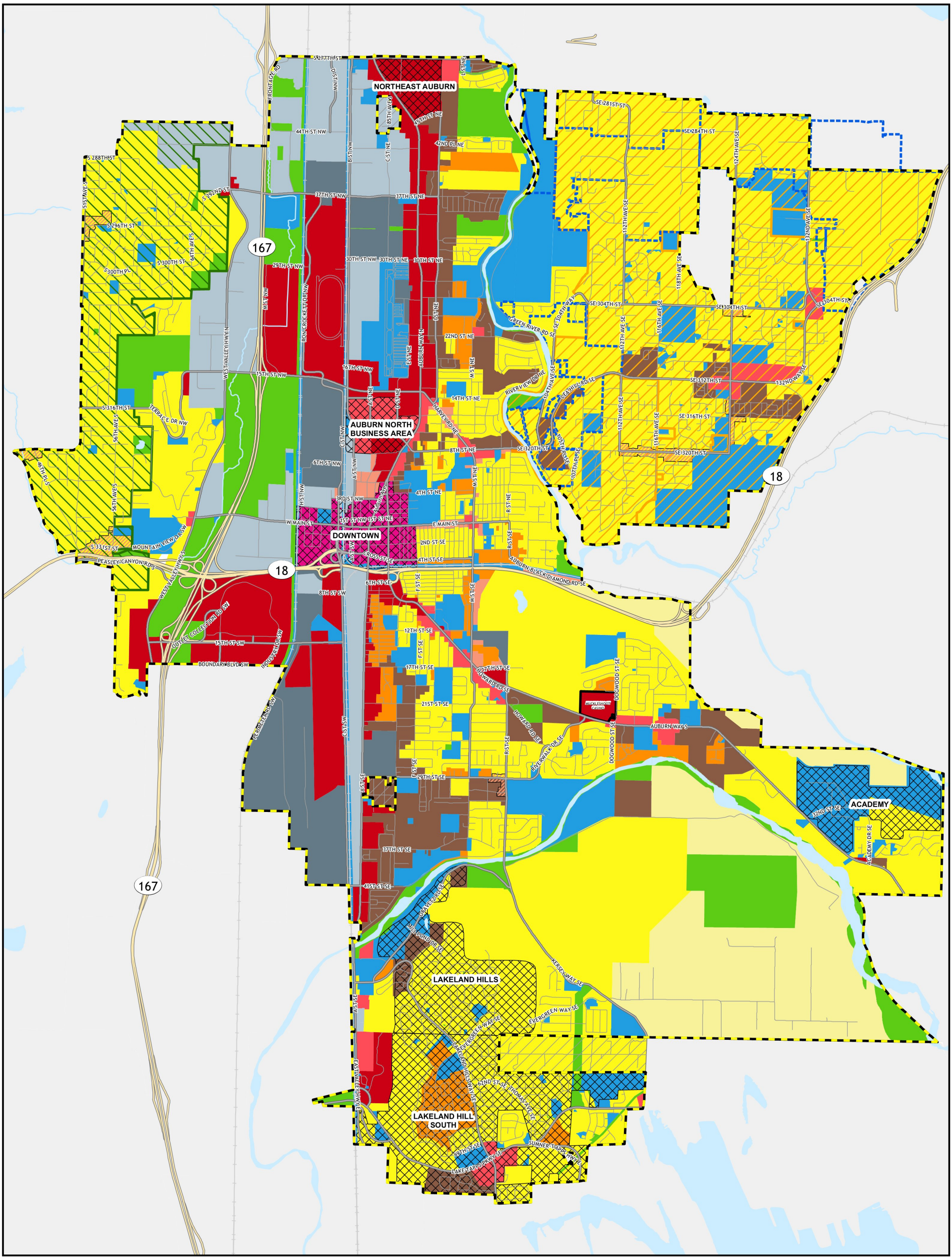
LU-154 Develop land use regulations that incorporate gateway priorities and concepts into private development proposals that are located at identified gateways.

LU-155 Coordinate with the Washington State Department of Transportation to understand options and implement actions at gateway location. Many of the gateway locations are within the WSDOT right-of-way.

LU-156 Develop design layouts for gateway locations. Designs will identify key areas that greet residents and visitors as they enter the City or downtown center, opportunities for signage and monument features, and landscaping.

LU-157 Maintain established gateways.

City of Auburn Comprehensive Land Use



Adopted Areas
Downtown Urban Center
Heavy Commercial
Heavy Industrial
Public/Quasi-Public
Light Commercial
Light Industrial
Moderate Density Residential
Multiple-Family
Neighborhood Commercial
Neighborhood Commercial Overlay
Open Space
Residential Conservancy
Residential Transition Overlay
Single Family
Auburn City Limits
Potential Annexation Areas
Water Features
Lea Hill Overlay (Ordinance: 5346 & 6121)
West Hill Overlay (Ordinance: 6122)
Urban Separators Overlay

0 1,000 2,000 3,000 4,000 5,000
FEET

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W E
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Printed On: 9/14/2022
Map ID: 6208

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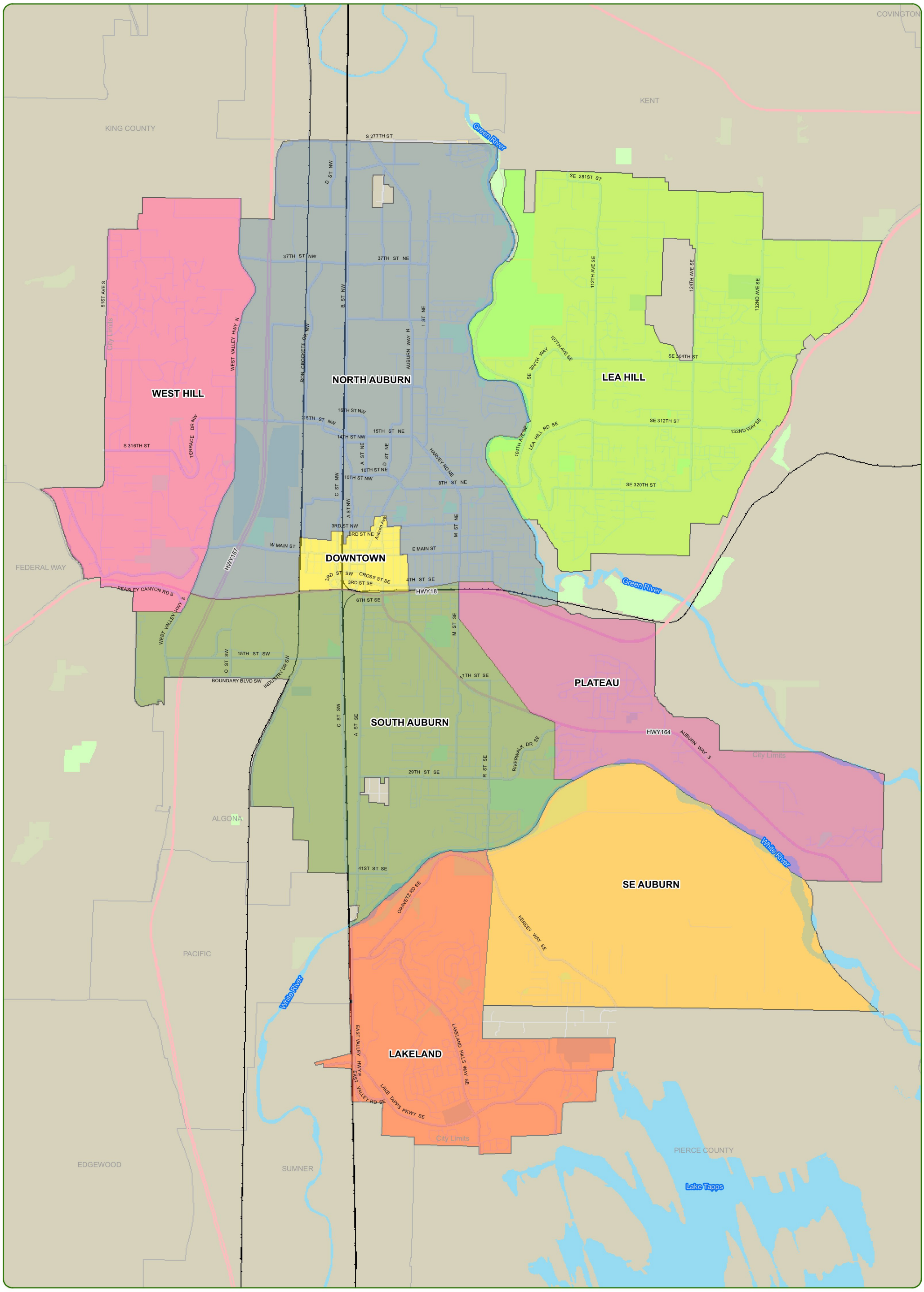
Zoning map is current through Ordinance No. 6698, December 17, 2018



Districts

Special Planning Areas

(Map 1.2)

0 ¼ ½ ¾ 1 Mi

N W E S

Printed Date: 1/9/2019
Map ID: 6094

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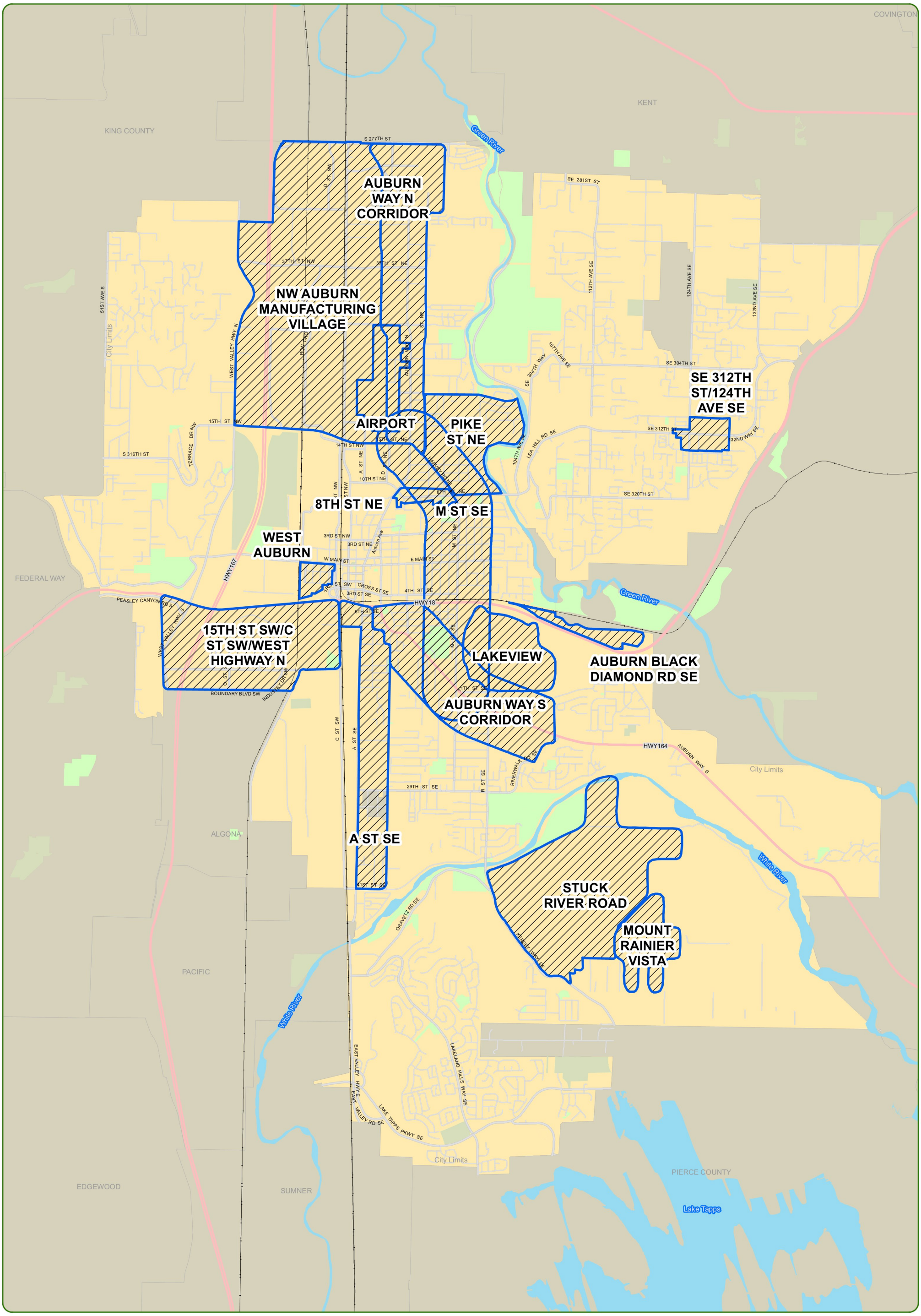
Map is current through Ordinance No. 6584 & 6698, December 17, 2018



Designated Areas

Designated Areas

Proposed Special Planning Areas

(Map 1.3)

N W E S

0 ¼ ½ ¾ 1 Mi

Printed Date: 1/15/2019
Map ID: 6061

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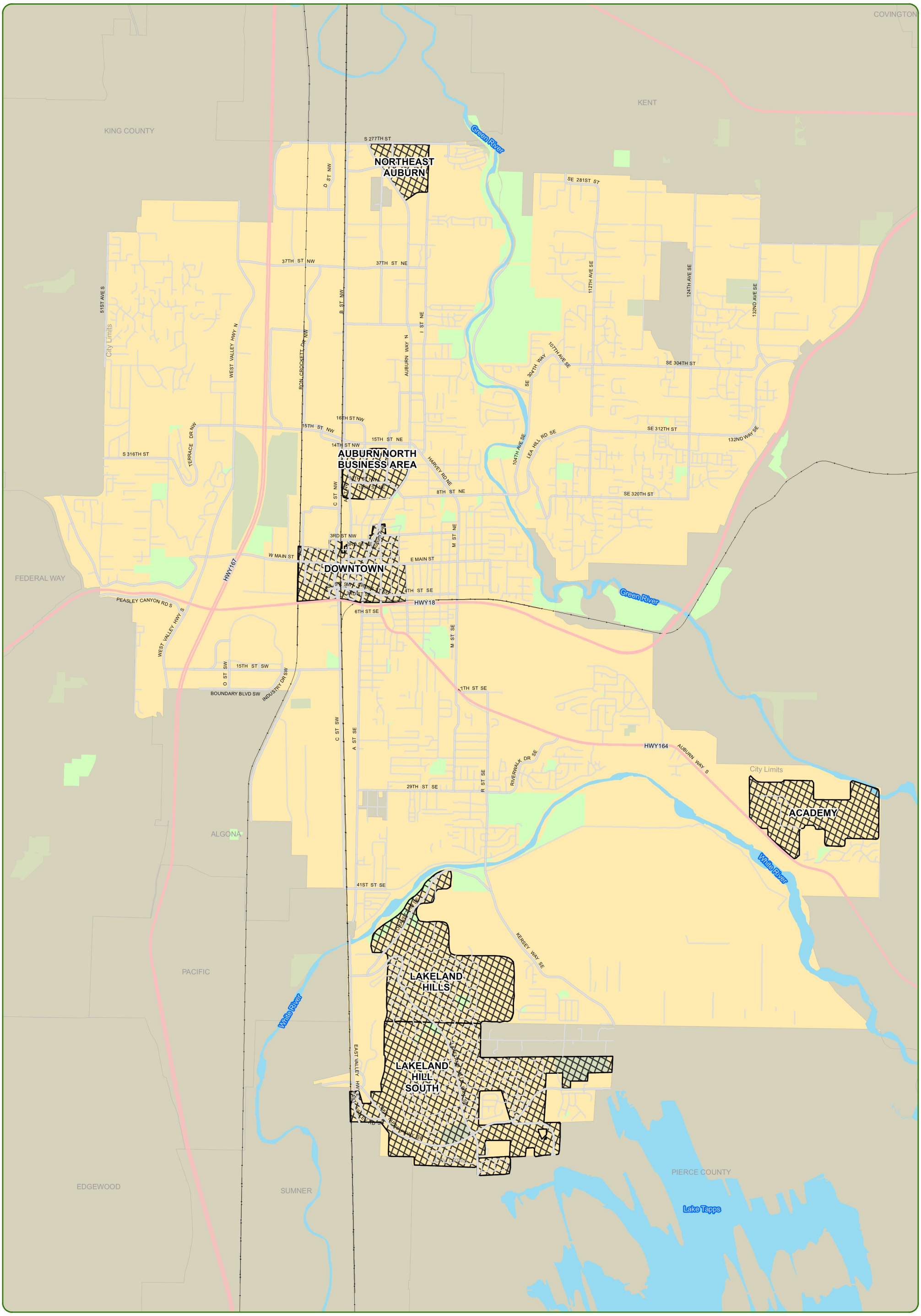
Map is current through Ordinance No. 6584 & 6698, December 17, 2018



Adopted Areas

Adopted Areas

Special Planning Areas

(Map 1.4)

N
W E
S

0 ¼ ½ ¾ 1 Mi

Printed Date: 1/9/2019
Map ID: 6093

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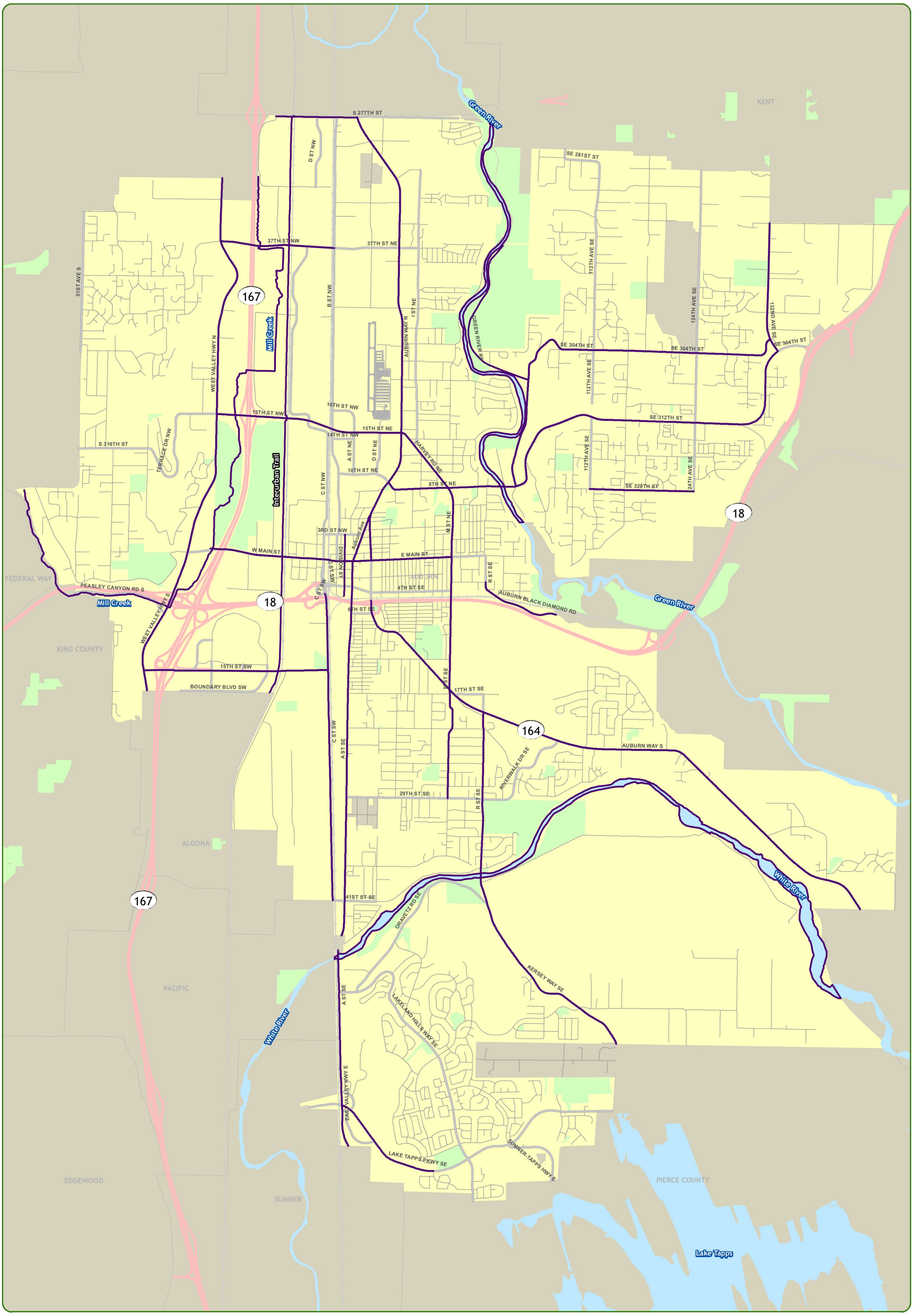
Map is current through Ordinance No. 6584 & 6698, December 17, 2018



Impression Corridors

Special Planning Areas

(Map 1.5)

Impression Corridors

N
W E
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0 ¼ ½ ¾ 1 Mi

Printed Date: 1/9/2019
Map ID: 6070

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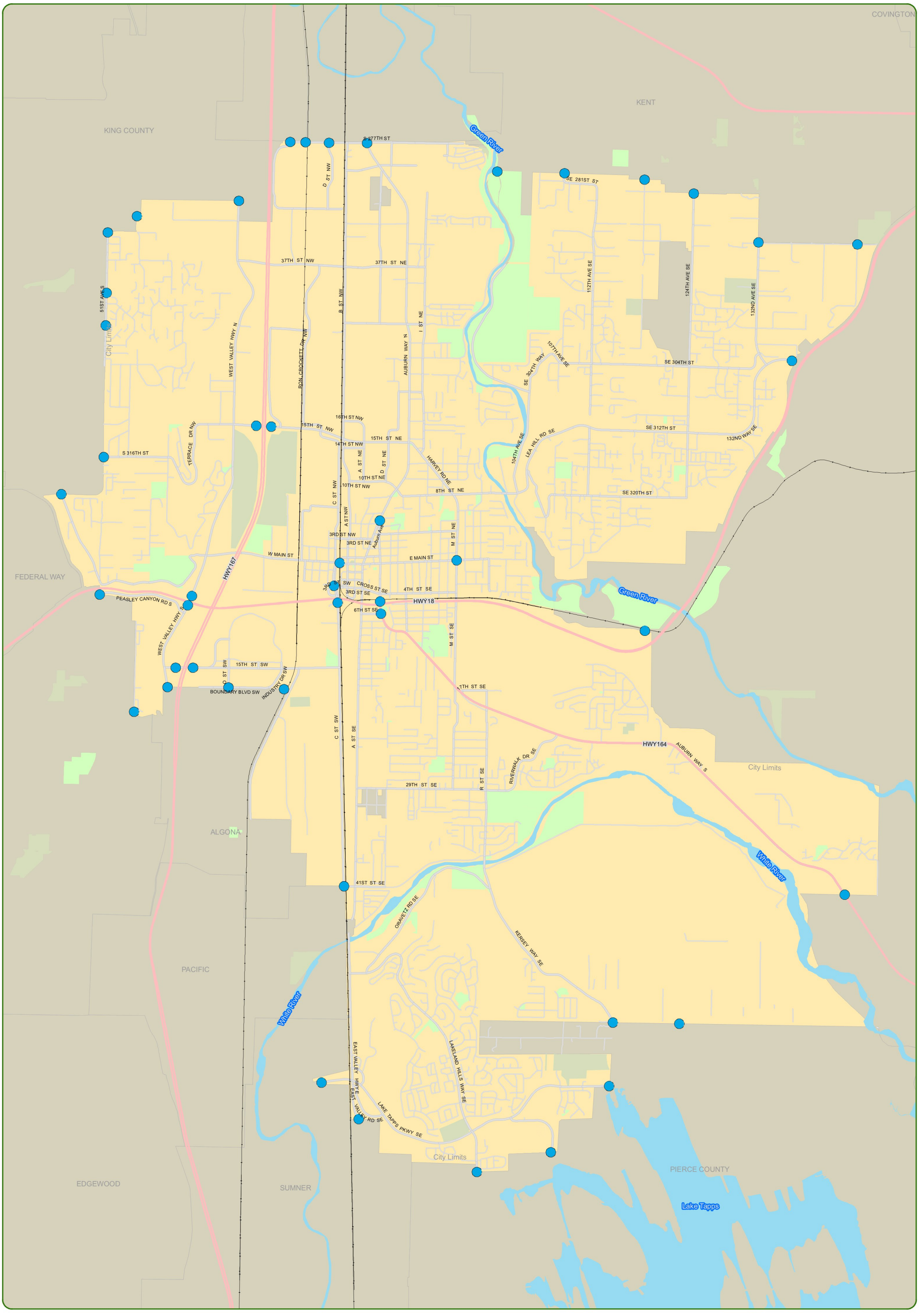
Map is current through Ordinance No. 6698, December 17, 2018



Gateways

Special Planning Areas

(Map 1.6)

- Gateways

0 ¼ ½ ¾ 1 Mi

N W E S

Printed Date: 1/9/2019
Map ID: 6092

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Map is Current through Ordinance No. 6584 & 6698, December 17, 2018

ATTACHMENT 1D FLOW FACTORS

Table 1 - Existing Acreage by Land Use Classification

Land Use Classification	Total	A1	A1c	A1d	A3	A4	A6	A7	A9	A10	A11	A12	A13	A14	A15	A16	AUB Y-1	AUB Y-2	AUB Y-3	AUB Y-4	WINT003	MSTTR02A	AUBURN53
SINGLE FAMILY	2,778	0.0	40.2	22.6	31.4	0.0	72.4	9.9	17.0	23.2	7.7	20.4	40.1	55.8	46.4	93.5	90.8	603.1	355.4	144.1	624.1	306.5	173.7
MODERATE DENSITY	147	0.0	0.0	0.0	5.0	0.0	2.0	0.0	4.6	2.8	2.6	0.0	17.2	1.7	14.9	27.5	0.0	0.0	20.9	8.5	3.2	35.9	0.0
RESIDENTIAL	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7	0.0	0.0	0.0	0.0
OPEN SPACE	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.1
NEIGHBORHOOD	64	0.0	0.0	0.0	0.0	0.9	8.2	6.1	9.8	0.0	1.7	0.0	1.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.7	0.0
NEIGHBORHOOD COMMERCIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MULTI-FAMILY	335	0.0	52.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	26.8	57.4	35.8	104.8	50.0	0.0
LIGHT INDUSTRIAL	721	103.2	1.0	0.0	0.0	6.7	0.0	36.3	8.6	1.9	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	70.7	0.0	490.6
LIGHT	165	0.0	0.0	0.0	0.0	43.1	12.4	0.0	4.9	4.1	0.6	0.0	0.0	1.2	4.7	10.2	0.0	25.2	11.6	0.0	31.6	13.7	1.7
INSTITUTIONAL	953	0.0	7.9	0.0	23.4	0.0	0.0	4.8	15.9	36.6	4.1	0.0	4.4	0.0	24.4	28.3	115.3	191.2	75.1	103.9	169.9	52.1	95.9
HEAVY	861	0.2	80.4	33.3	28.0	66.0	3.0	1.0	7.4	12.6	0.0	0.0	0.0	0.0	1.8	33.5	0.0	0.0	5.0	0.0	266.6	56.7	265.6
HEAVY	414	61.3	0.0	1.5	8.8	0.0	0.0	23.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5	0.0	0.0	0.0	0.0	238.9	10.8	37.6
DOWNTOWN	58	0.0	0.0	0.0	0.0	0.0	0.0	27.4	0.0	30.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 2 - Planning Flow Factors

Land Use Classification	Total	A1	A1c	A1d	A3	A4	A6	A7	A9	A10	A11	A12	A13	A14	A15	A16	AUB Y-1	AUB Y-2	AUB Y-3	AUB Y-4	WINT003	MSTTR02A	AUBURN53
SINGLE FAMILY	920	850	600	950	2,100		900	800	600	250	400	900	650	1,900	600	850	1,500	1,100	1,050	400	750	800	900
MODERATE DENSITY	950				2,100		1,000		900	600	600		750	2,400	800	1,000			1,000	600	800	1,000	
RESIDENTIAL	800																		800				
OPEN SPACE	0																						
NEIGHBORHOOD	1020					1,000	1,000	1,000	1,000		800		1,000	1,800								1,000	
MULTI-FAMILY	2440		1,400	2,500												1,700		2,600	2,500	1,500	3,000	3,000	
LIGHT INDUSTRIAL	530	500	250		700	800		600	500	200						500					800		500
LIGHT	640					800	800		500	300	300			1,200	500			500	600		800	600	500
INSTITUTIONAL	1230		400		2,500		1,500	1,000	1,000	200	500		900	1,800	550	800	2,300	1,400	1,000	300	1,500	1,000	1,000
HEAVY	1920	800	600	1,800	3,800	3,200	3,000	1,600	1,500	450					800	1,500			1,500		2,500	1,400	1,500
HEAVY	1890	750		1,700	3,600			1,600								1,500					2,200	1,700	2,000
DOWNTOWN	1500							2,300		800													

Table 3 - ADWF by Land Use

Land Use Classification	Total	A1	A1c	A1d	A3	A4	A6	A7	A9	A10	A11	A12	A13	A14	A15	A16	AUB Y-1	AUB Y-2	AUB Y-3	AUB Y-4	WINT003	MSTTR02A	AUBURN53
SINGLE FAMILY	2,405,279	3	24,102	21,502	66,001	-	65,130	7,946	10,208	5,799	3,063	18,320	26,060	######	27,822	79,452	136,247	663,409	373,206	57,653	468,051	245,191	156,360
MODERATE DENSITY	140,545	-	-	-	10,405	-	2,009	-	4,156	1,669	1,552	-	12,922	4,012	11,881	27,509	-	-	20,866	5,126	2,569	35,871	-
RESIDENTIAL	8,540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,540	-	-	-	-
OPEN SPACE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEIGHBORHOOD	65,725	-	-	-	-	910	8,233	6,144	9,765	-	1,400	-	1,474	4,073	-	-	-	-	-	-	-	33,726	-
MULTI-FAMILY	817,559	-	73,176	505	-	-	-	-	-	-	-	-	-	-	-	12,780	-	69,623	143,472	53,659	314,256	150,088	-
LIGHT INDUSTRIAL	140,237	51,614	241	-	-	5,378	-	21,783	4,301	374	-	-	-	-	-	0	-	-	-	-	56,544	-	245,314
LIGHT	105,240	-	-	-	-	34,478	9,957	-	2,458	1,224	193	-	-	1,471	2,366	-	-	12,596	6,955	-	25,301	8,241	835
INSTITUTIONAL	1,078,078	-	3,169	-	58,607	-	16	4,809	15,869	7,315	2,026	-	3,988	21	13,437	22,668	265,188	267,688	75,122	31,157	254,895	52,102	95,935
HEAVY	1,258,311	127	48,229	59,970	106,241	211,291	8,956	1,571	11,109	5,682	-	-	-	-	1,464	50,259	-	-	7,425	-	666,624	79,364	398,378
HEAVY	709,541	45,965	-	2,487	31,630	-	-	38,245	-	-	-	-	-	-	-	47,211	-	-	-	-	525,561	18,441	75,148
DOWNTOWN	87,521	-	-	-	-	-	-	63,013	-	24,509	-	-	-	-	-	-	-	-	-	-	-	-	-
Measured ADWF	7.81	0.099	0.146	0.085	0.281	0.255	0.092	0.145	0.057	0.046	0.008	0.018	0.044	0.122	0.057	0.240	0.401	1.033	0.657	0.143	2.321	0.611	0.949
Estimated ADWF	7.79	0.098	0.149	0.084	0.273	0.252	0.094	0.144	0.058	0.047	0.008	0.018	0.044	0.116	0.057	0.240	0.401	1.013	0.636	0.148	2.314	0.623	0.972
% Difference		1%	-2%	1%	3%	1%	-3%	1%	-1%	-1%	0%	0%	-1%	5%	-1%	0%	0%	2%	3%	-3%	0%	-2%	-2%

AUBWV016	SRT11	WINT035	Unmetered
0.0	0.0	0.0	18.1
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	106.7
0.0	0.0	0.0	0.0
0.0	0.0	0.0	4.1
0.0	0.0	0.0	37.8
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0

FM_Basin_1st_Season	FM_Basin_1st_Season
A1	Unmetered
A10	A1
A11	AUB Y-2
A12	AUBURN53
A13	MSTTR02A
A14	A16
A15	A3
A16	WINT035
A1c	A1c
A1d	AUBY-1
A2	AUB Y-3
A3	A13
A4	A12
A6	WINT003
A7	SRT11
A9	A1d
AUB Y-2	A10
AUB Y-3	A14
AUB Y-4	A7
AUBWV016	A15
AUBY-1	A6
MSTTR02A	AUB Y-4
SRT11	AUBWV016
Unmetered	A9
WINT035	A2
	A11

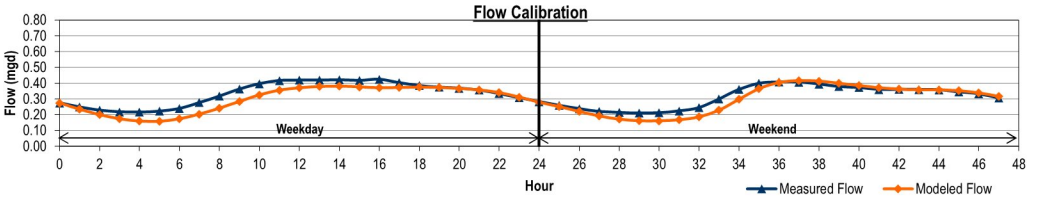
ATTACHMENT 1E

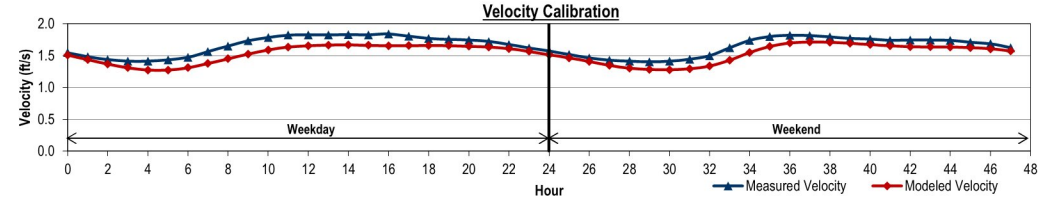
DRY WEATHER CALIBRATION SUMMARY SHEETS

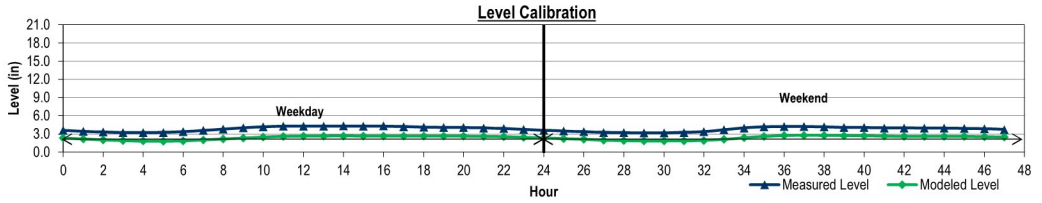
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A1 DRY WEATHER FLOW CALIBRATION

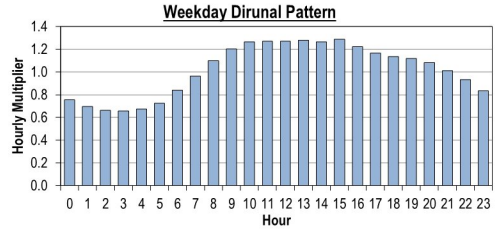
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.28	3.59	1.55	0.28	2.33	1.51	1.26	0.76	0.76	0.76
	1	0.25	3.44	1.48	0.24	2.17	1.44	1.27	0.70	0.70	0.70
	2	0.23	3.32	1.44	0.20	2.02	1.37	1.30	0.66	0.66	0.66
	3	0.22	3.25	1.41	0.18	1.90	1.31	1.34	0.66	0.66	0.66
	4	0.22	3.23	1.41	0.16	1.83	1.27	1.40	0.68	0.68	0.68
	5	0.22	3.26	1.43	0.16	1.81	1.27	1.45	0.73	0.73	0.73
	6	0.24	3.36	1.47	0.17	1.88	1.31	1.49	0.84	0.84	0.84
	7	0.28	3.58	1.56	0.20	2.01	1.38	1.56	0.96	0.96	0.96
	8	0.32	3.79	1.65	0.24	2.17	1.45	1.62	1.10	1.10	1.10
	9	0.36	4.02	1.73	0.28	2.34	1.53	1.68	1.20	1.20	1.20
	10	0.40	4.20	1.79	0.33	2.49	1.59	1.71	1.26	1.26	1.26
	11	0.42	4.29	1.82	0.36	2.60	1.63	1.69	1.27	1.27	1.27
	12	0.42	4.30	1.83	0.37	2.65	1.66	1.65	1.27	1.27	1.27
	13	0.42	4.30	1.83	0.38	2.67	1.67	1.63	1.28	1.28	1.28
	14	0.42	4.31	1.83	0.38	2.68	1.67	1.63	1.27	1.27	1.27
	15	0.42	4.28	1.83	0.38	2.66	1.66	1.62	1.29	1.29	1.29
	16	0.43	4.31	1.84	0.37	2.64	1.65	1.66	1.22	1.22	1.22
	17	0.40	4.21	1.81	0.37	2.64	1.66	1.57	1.17	1.17	1.17
	18	0.38	4.13	1.77	0.38	2.65	1.66	1.49	1.14	1.14	1.14
	19	0.38	4.09	1.76	0.37	2.64	1.66	1.45	1.12	1.12	1.12
	20	0.37	4.05	1.75	0.37	2.62	1.65	1.43	1.08	1.08	1.08
	21	0.36	4.00	1.72	0.36	2.60	1.63	1.40	1.01	1.01	1.01
	22	0.33	3.89	1.68	0.34	2.55	1.61	1.34	0.93	0.93	0.93
	23	0.31	3.76	1.62	0.31	2.46	1.57	1.31	0.83	0.83	0.83
Weekend	24	0.28	3.62	1.57	0.28	2.34	1.51	1.28	0.79	0.79	0.79
	25	0.26	3.49	1.52	0.25	2.23	1.46	1.26	0.72	0.72	0.72
	26	0.24	3.37	1.47	0.22	2.11	1.41	1.25	0.67	0.67	0.67
	27	0.22	3.26	1.43	0.19	1.99	1.35	1.27	0.65	0.65	0.65
	28	0.22	3.21	1.41	0.17	1.89	1.30	1.33	0.64	0.64	0.64
	29	0.21	3.18	1.40	0.16	1.84	1.28	1.34	0.65	0.65	0.65
	30	0.21	3.20	1.41	0.16	1.83	1.28	1.37	0.68	0.68	0.68
	31	0.22	3.26	1.44	0.17	1.86	1.29	1.41	0.75	0.75	0.75
	32	0.25	3.39	1.50	0.19	1.94	1.34	1.45	0.91	0.91	0.91
	33	0.30	3.69	1.62	0.23	2.12	1.43	1.57	1.10	1.10	1.10
	34	0.36	4.01	1.74	0.30	2.38	1.55	1.62	1.21	1.21	1.21
	35	0.40	4.19	1.80	0.36	2.61	1.65	1.58	1.24	1.24	1.24
	36	0.41	4.23	1.82	0.40	2.74	1.70	1.49	1.24	1.24	1.24
	37	0.41	4.23	1.82	0.42	2.78	1.71	1.44	1.20	1.20	1.20
	38	0.39	4.17	1.79	0.41	2.78	1.71	1.39	1.15	1.15	1.15
	39	0.38	4.09	1.77	0.40	2.74	1.69	1.35	1.13	1.13	1.13
	40	0.37	4.06	1.76	0.39	2.69	1.67	1.37	1.09	1.09	1.09
	41	0.36	4.00	1.74	0.37	2.64	1.65	1.35	1.09	1.09	1.09
	42	0.36	3.99	1.75	0.36	2.61	1.64	1.38	1.09	1.09	1.09
	43	0.36	3.99	1.74	0.36	2.60	1.64	1.39	1.09	1.09	1.09
	44	0.36	3.98	1.74	0.36	2.60	1.64	1.38	1.05	1.05	1.05
	45	0.35	3.92	1.71	0.35	2.58	1.63	1.34	1.01	1.01	1.01
	46	0.33	3.86	1.69	0.34	2.54	1.61	1.32	0.93	0.93	0.93
	47	0.31	3.74	1.62	0.32	2.47	1.57	1.27	0.86	0.86	0.86
Average											
	Weekday	**0.34**	**3.87**	**1.67**	**0.30**	**2.38**	**1.53**		**1.02**	**1.02**	**1.02**
	Weekend	**0.32**	**3.75**	**1.64**	**0.30**	**2.37**	**1.53**		**0.96**	**0.96**	**0.96**
	ADWF[1]	**0.33**	**3.84**	**1.66**	**0.30**	**2.37**	**1.53**		**1.00**	**1.00**	**1.00**
% Error											
	Weekday				-11.0%			1.71			
	Weekend				-5.3%			1.62			

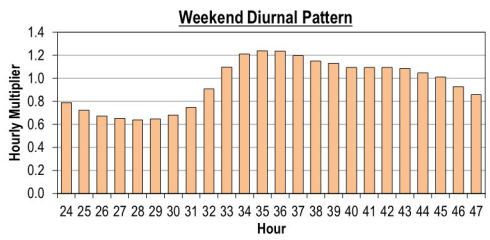
Note:







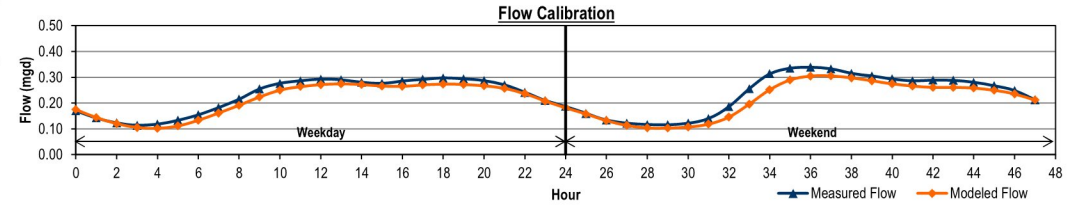


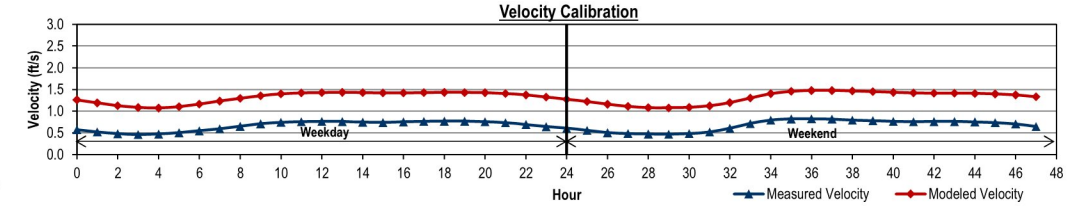


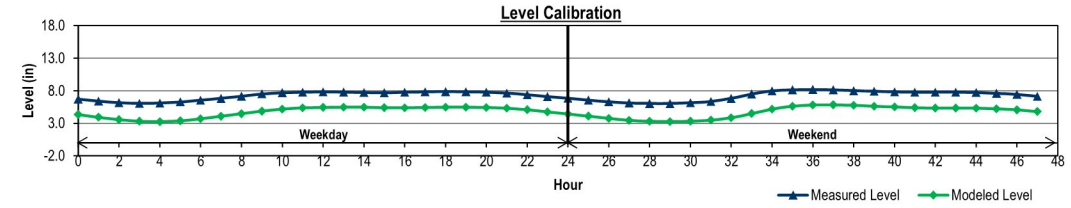
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A1c DRY WEATHER FLOW CALIBRATION

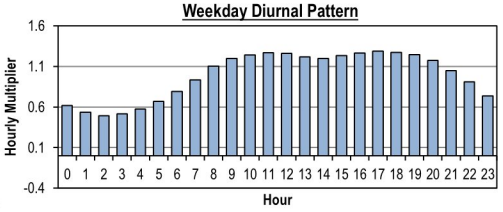
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.17	6.70	0.58	0.18	4.35	1.26	2.35	0.62	0.62	0.62
	1	0.14	6.40	0.52	0.14	3.93	1.19	2.47	0.53	0.53	0.53
	2	0.12	6.17	0.48	0.12	3.57	1.13	2.60	0.49	0.49	0.49
	3	0.11	6.05	0.46	0.11	3.33	1.09	2.72	0.51	0.51	0.51
	4	0.12	6.11	0.48	0.10	3.25	1.08	2.86	0.58	0.58	0.58
	5	0.13	6.28	0.51	0.11	3.37	1.11	2.91	0.67	0.67	0.67
	6	0.15	6.54	0.55	0.13	3.69	1.17	2.85	0.79	0.79	0.79
	7	0.18	6.83	0.60	0.16	4.08	1.23	2.76	0.93	0.93	0.93
	8	0.22	7.15	0.65	0.19	4.47	1.30	2.68	1.11	1.11	1.11
	9	0.26	7.51	0.72	0.22	4.87	1.36	2.65	1.20	1.20	1.20
	10	0.28	7.69	0.75	0.25	5.18	1.40	2.50	1.24	1.24	1.24
	11	0.29	7.77	0.76	0.26	5.36	1.42	2.41	1.27	1.27	1.27
	12	0.29	7.82	0.77	0.27	5.45	1.43	2.37	1.26	1.26	1.26
	13	0.29	7.81	0.76	0.27	5.49	1.44	2.32	1.22	1.22	1.22
	14	0.28	7.73	0.75	0.27	5.47	1.43	2.26	1.20	1.20	1.20
	15	0.28	7.70	0.74	0.27	5.40	1.42	2.30	1.24	1.24	1.24
	16	0.29	7.76	0.76	0.26	5.38	1.42	2.39	1.27	1.27	1.27
	17	0.29	7.82	0.77	0.27	5.43	1.43	2.39	1.29	1.29	1.29
	18	0.30	7.86	0.77	0.27	5.48	1.44	2.38	1.27	1.27	1.27
	19	0.29	7.83	0.77	0.27	5.47	1.43	2.37	1.25	1.25	1.25
	20	0.29	7.78	0.76	0.27	5.41	1.43	2.37	1.17	1.17	1.17
	21	0.27	7.64	0.74	0.26	5.31	1.41	2.33	1.05	1.05	1.05
	22	0.24	7.39	0.70	0.24	5.08	1.38	2.31	0.91	0.91	0.91
	23	0.21	7.10	0.65	0.21	4.76	1.33	2.34	0.74	0.74	0.74
Weekend	24	0.19	6.86	0.61	0.18	4.42	1.28	2.44	0.69	0.69	0.69
	25	0.16	6.57	0.56	0.16	4.11	1.22	2.47	0.58	0.58	0.58
	26	0.13	6.30	0.51	0.13	3.75	1.16	2.54	0.53	0.53	0.53
	27	0.12	6.13	0.49	0.11	3.46	1.11	2.67	0.51	0.51	0.51
	28	0.12	6.04	0.48	0.10	3.30	1.08	2.74	0.50	0.50	0.50
	29	0.12	6.05	0.48	0.10	3.27	1.08	2.78	0.53	0.53	0.53
	30	0.12	6.15	0.49	0.11	3.32	1.09	2.82	0.61	0.61	0.61
	31	0.14	6.35	0.52	0.12	3.48	1.13	2.86	0.81	0.81	0.81
	32	0.19	6.83	0.61	0.15	3.86	1.20	2.97	1.11	1.11	1.11
	33	0.26	7.48	0.72	0.20	4.49	1.31	2.99	1.36	1.36	1.36
	34	0.31	7.97	0.80	0.25	5.17	1.40	2.80	1.45	1.45	1.45
	35	0.33	8.15	0.82	0.29	5.62	1.46	2.53	1.47	1.47	1.47
	36	0.34	8.19	0.83	0.30	5.81	1.48	2.38	1.44	1.44	1.44
	37	0.33	8.15	0.82	0.31	5.83	1.48	2.32	1.37	1.37	1.37
	38	0.32	8.01	0.80	0.30	5.75	1.47	2.26	1.32	1.32	1.32
	39	0.31	7.92	0.78	0.29	5.63	1.45	2.29	1.27	1.27	1.27
	40	0.29	7.83	0.77	0.28	5.51	1.44	2.32	1.24	1.24	1.24
	41	0.29	7.77	0.76	0.27	5.40	1.42	2.37	1.25	1.25	1.25
	42	0.29	7.77	0.77	0.26	5.34	1.42	2.43	1.25	1.25	1.25
	43	0.29	7.77	0.77	0.26	5.33	1.42	2.44	1.22	1.22	1.22
	44	0.28	7.72	0.75	0.26	5.31	1.41	2.41	1.16	1.16	1.16
	45	0.27	7.59	0.74	0.25	5.22	1.40	2.37	1.08	1.08	1.08
	46	0.25	7.44	0.71	0.24	5.06	1.38	2.38	0.92	0.92	0.92
	47	0.21	7.13	0.65	0.21	4.80	1.33	2.33	0.81	0.81	0.81
Average											
	Weekday	**0.23**	**7.23**	**0.67**	**0.21**	**4.73**	**1.32**		**0.99**	**0.99**	**0.99**
	Weekend	**0.24**	**7.26**	**0.68**	**0.21**	**4.72**	**1.32**		**1.02**	**1.02**	**1.02**
	ADWF[1]	**0.23**	**7.24**	**0.67**	**0.21**	**4.73**	**1.32**		**1.00**	**1.00**	**1.00**
% Error											
	Weekday				-6.9%			2.91			
	Weekend				-9.5%			2.99			

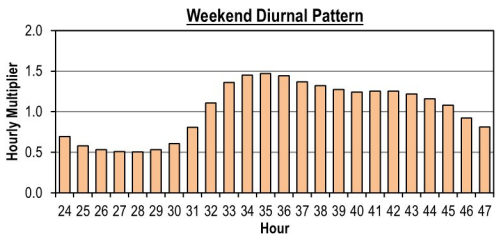
Note:







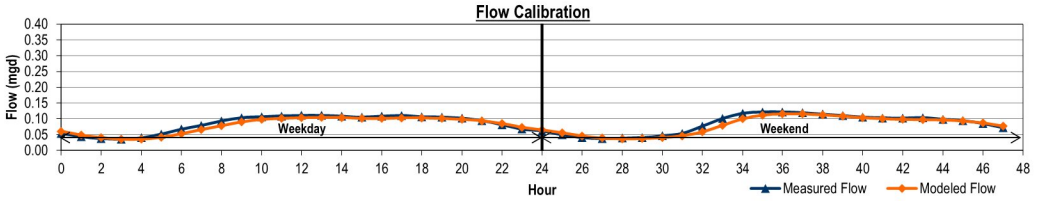


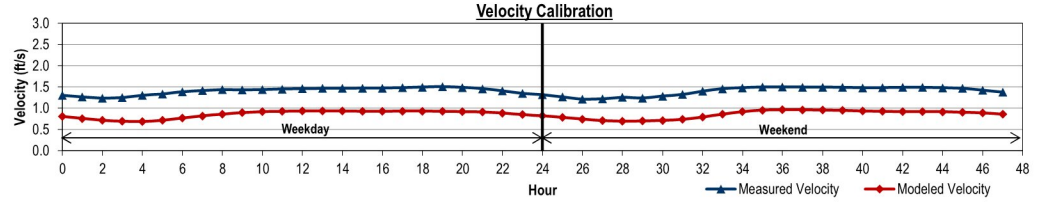


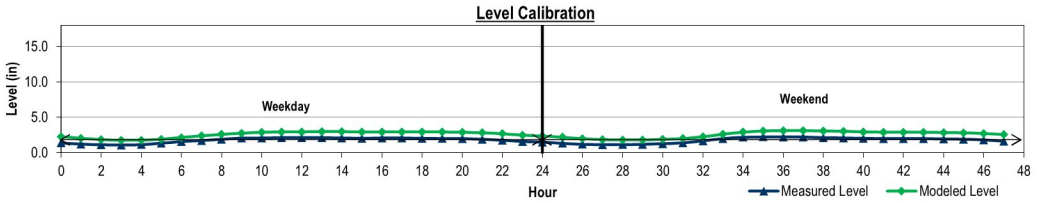
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A1d DRY WEATHER FLOW CALIBRATION

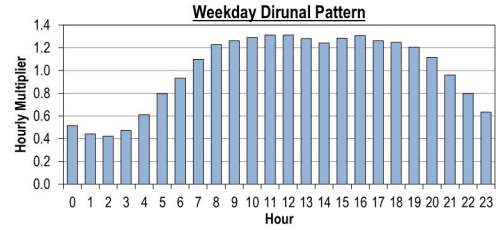
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.05	1.39	1.31	0.06	2.28	0.81	-0.89	0.52	0.52	0.52
	1	0.04	1.22	1.27	0.05	2.06	0.76	-0.83	0.44	0.44	0.44
	2	0.04	1.12	1.24	0.04	1.88	0.72	-0.76	0.42	0.42	0.42
	3	0.04	1.08	1.26	0.04	1.77	0.69	-0.69	0.47	0.47	0.47
	4	0.04	1.15	1.30	0.04	1.77	0.69	-0.63	0.61	0.61	0.61
	5	0.05	1.34	1.34	0.04	1.91	0.72	-0.57	0.80	0.80	0.80
	6	0.07	1.57	1.39	0.05	2.16	0.77	-0.59	0.93	0.93	0.93
	7	0.08	1.72	1.42	0.07	2.39	0.82	-0.67	1.10	1.10	1.10
	8	0.09	1.91	1.44	0.08	2.60	0.86	-0.69	1.23	1.23	1.23
	9	0.10	2.07	1.44	0.09	2.78	0.90	-0.71	1.26	1.26	1.26
	10	0.11	2.10	1.45	0.10	2.89	0.92	-0.79	1.29	1.29	1.29
	11	0.11	2.12	1.45	0.10	2.94	0.93	-0.82	1.31	1.31	1.31
	12	0.11	2.14	1.46	0.10	2.97	0.94	-0.83	1.31	1.31	1.31
	13	0.11	2.13	1.47	0.10	2.98	0.94	-0.85	1.28	1.28	1.28
	14	0.11	2.09	1.47	0.10	2.97	0.94	-0.88	1.24	1.24	1.24
	15	0.11	2.04	1.48	0.10	2.93	0.93	-0.89	1.28	1.28	1.28
	16	0.11	2.09	1.48	0.10	2.93	0.93	-0.84	1.31	1.31	1.31
	17	0.11	2.11	1.49	0.10	2.96	0.94	-0.85	1.26	1.26	1.26
	18	0.11	2.04	1.50	0.10	2.96	0.94	-0.91	1.25	1.25	1.25
	19	0.11	2.01	1.51	0.10	2.93	0.93	-0.91	1.21	1.21	1.21
	20	0.10	1.98	1.49	0.10	2.89	0.92	-0.91	1.12	1.12	1.12
	21	0.09	1.91	1.46	0.09	2.82	0.91	-0.92	0.96	0.96	0.96
	22	0.08	1.76	1.41	0.09	2.69	0.89	-0.93	0.80	0.80	0.80
	23	0.07	1.59	1.35	0.07	2.50	0.85	-0.91	0.63	0.63	0.63
Weekend	24	0.06	1.52	1.32	0.07	2.37	0.82	-0.85	0.59	0.59	0.59
	25	0.05	1.34	1.27	0.06	2.19	0.79	-0.85	0.48	0.48	0.48
	26	0.04	1.20	1.22	0.05	1.99	0.75	-0.79	0.45	0.45	0.45
	27	0.04	1.14	1.23	0.04	1.85	0.71	-0.71	0.46	0.46	0.46
	28	0.04	1.15	1.26	0.04	1.80	0.70	-0.65	0.48	0.48	0.48
	29	0.04	1.19	1.24	0.04	1.82	0.70	-0.63	0.55	0.55	0.55
	30	0.05	1.29	1.29	0.04	1.89	0.71	-0.60	0.64	0.64	0.64
	31	0.05	1.40	1.33	0.05	2.01	0.74	-0.62	0.91	0.91	0.91
	32	0.08	1.69	1.40	0.06	2.26	0.79	-0.57	1.19	1.19	1.19
	33	0.10	2.00	1.46	0.08	2.62	0.86	-0.62	1.39	1.39	1.39
	34	0.12	2.20	1.48	0.10	2.92	0.92	-0.73	1.44	1.44	1.44
	35	0.12	2.24	1.50	0.11	3.08	0.96	-0.84	1.44	1.44	1.44
	36	0.12	2.23	1.50	0.12	3.13	0.97	-0.90	1.41	1.41	1.41
	37	0.12	2.21	1.50	0.12	3.12	0.97	-0.92	1.36	1.36	1.36
	38	0.12	2.15	1.50	0.11	3.08	0.96	-0.93	1.30	1.30	1.30
	39	0.11	2.10	1.49	0.11	3.03	0.95	-0.93	1.25	1.25	1.25
	40	0.11	2.04	1.48	0.10	2.97	0.94	-0.93	1.22	1.22	1.22
	41	0.10	2.00	1.49	0.10	2.91	0.93	-0.91	1.21	1.21	1.21
	42	0.10	1.99	1.49	0.10	2.89	0.92	-0.90	1.23	1.23	1.23
	43	0.10	2.00	1.50	0.10	2.88	0.92	-0.88	1.17	1.17	1.17
	44	0.10	1.95	1.48	0.10	2.87	0.92	-0.92	1.12	1.12	1.12
	45	0.09	1.91	1.47	0.09	2.81	0.91	-0.90	1.01	1.01	1.01
	46	0.09	1.80	1.43	0.09	2.72	0.89	-0.92	0.85	0.85	0.85
	47	0.07	1.64	1.38	0.08	2.57	0.86	-0.92	0.73	0.73	0.73
Average											
	Weekday	**0.08**	**1.78**	**1.41**	**0.08**	**2.58**	**0.86**		**1.00**	**1.00**	**1.00**
	Weekend	**0.08**	**1.77**	**1.41**	**0.08**	**2.57**	**0.86**		**0.99**	**0.99**	**0.99**
	ADWF[1]	**0.08**	**1.77**	**1.41**	**0.08**	**2.58**	**0.86**		**1.00**	**1.00**	**1.00**
% Error											
	Weekday				-5.4%			0.93			
	Weekend				-4.7%			0.93			

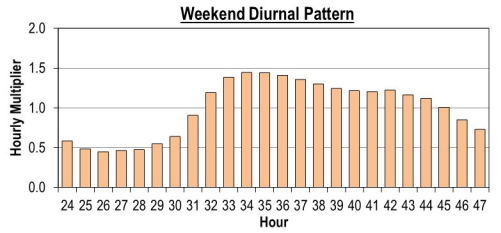
Note:







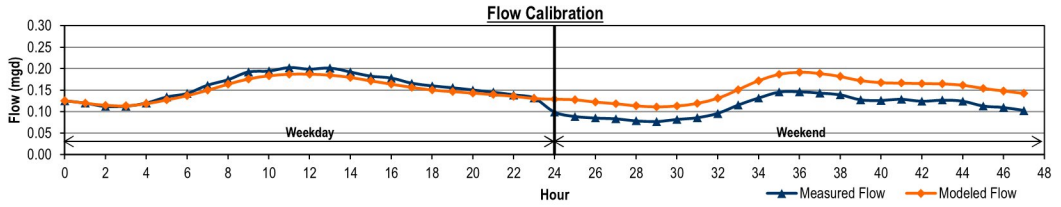


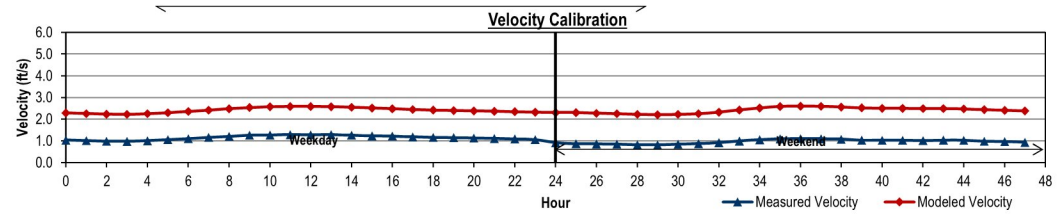


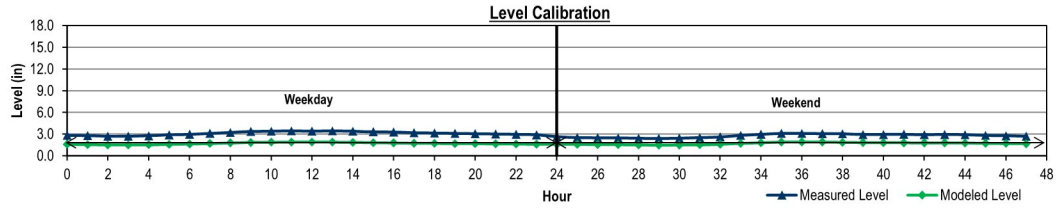
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A3 DRY WEATHER FLOW CALIBRATION

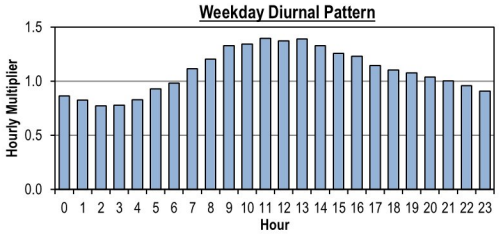
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.13	2.85	1.04	0.13	1.58	2.29	1.27	0.83	0.86	0.86
	1	0.12	2.80	1.02	0.12	1.55	2.26	1.25	0.77	0.83	0.83
	2	0.11	2.73	0.99	0.11	1.52	2.23	1.21	0.78	0.77	0.77
	3	0.11	2.72	0.99	0.11	1.51	2.23	1.22	0.83	0.78	0.78
	4	0.12	2.79	1.02	0.12	1.53	2.26	1.25	0.93	0.83	0.83
	5	0.13	2.91	1.07	0.13	1.58	2.30	1.33	0.98	0.93	0.93
	6	0.14	2.97	1.10	0.14	1.64	2.36	1.33	1.12	0.98	0.98
	7	0.16	3.13	1.17	0.15	1.71	2.42	1.42	1.20	1.12	1.12
	8	0.17	3.24	1.21	0.16	1.79	2.49	1.46	1.33	1.20	1.20
	9	0.19	3.38	1.27	0.18	1.85	2.54	1.53	1.34	1.33	1.33
	10	0.19	3.40	1.27	0.18	1.89	2.57	1.51	1.40	1.34	1.34
	11	0.20	3.46	1.30	0.19	1.90	2.59	1.55	1.37	1.40	1.40
	12	0.20	3.43	1.29	0.19	1.91	2.59	1.53	1.39	1.37	1.37
	13	0.20	3.46	1.29	0.19	1.89	2.58	1.56	1.33	1.39	1.39
	14	0.19	3.40	1.27	0.18	1.87	2.55	1.53	1.26	1.33	1.33
	15	0.18	3.33	1.23	0.17	1.83	2.52	1.50	1.23	1.26	1.26
	16	0.18	3.30	1.22	0.16	1.79	2.49	1.51	1.15	1.23	1.23
	17	0.17	3.21	1.19	0.16	1.75	2.45	1.46	1.10	1.15	1.15
	18	0.16	3.16	1.17	0.15	1.72	2.42	1.44	1.08	1.10	1.10
	19	0.16	3.13	1.16	0.15	1.70	2.40	1.43	1.04	1.08	1.08
	20	0.15	3.08	1.14	0.14	1.68	2.39	1.39	1.00	1.04	1.04
	21	0.15	3.03	1.12	0.14	1.66	2.37	1.37	0.96	1.00	1.00
	22	0.14	2.98	1.10	0.14	1.64	2.35	1.33	0.91	0.96	0.96
	23	0.13	2.91	1.07	0.13	1.61	2.32	1.29	0.86	0.91	0.91
Weekend	24	0.10	2.65	0.92	0.13	1.60	2.31	1.05	0.61	0.68	0.68
	25	0.09	2.54	0.88	0.13	1.59	2.31	0.94	0.59	0.61	0.61
	26	0.09	2.51	0.87	0.12	1.56	2.28	0.94	0.58	0.59	0.59
	27	0.08	2.48	0.85	0.12	1.54	2.25	0.94	0.54	0.58	0.58
	28	0.08	2.43	0.83	0.11	1.51	2.22	0.92	0.53	0.54	0.54
	29	0.08	2.42	0.82	0.11	1.49	2.21	0.93	0.56	0.53	0.53
	30	0.08	2.46	0.85	0.11	1.50	2.22	0.96	0.59	0.56	0.56
	31	0.09	2.51	0.88	0.12	1.53	2.26	0.98	0.66	0.59	0.59
	32	0.10	2.62	0.93	0.13	1.61	2.33	1.01	0.80	0.66	0.66
	33	0.12	2.83	1.00	0.15	1.71	2.43	1.11	0.91	0.80	0.80
	34	0.13	2.99	1.06	0.17	1.83	2.52	1.16	1.01	0.91	0.91
	35	0.15	3.12	1.10	0.19	1.90	2.59	1.22	1.01	1.01	1.01
	36	0.15	3.10	1.10	0.19	1.92	2.61	1.18	0.99	1.01	1.01
	37	0.14	3.08	1.10	0.19	1.91	2.59	1.17	0.96	0.99	0.99
	38	0.14	3.04	1.08	0.18	1.88	2.56	1.16	0.88	0.96	0.96
	39	0.13	2.96	1.04	0.17	1.83	2.52	1.12	0.87	0.88	0.88
	40	0.13	2.96	1.03	0.17	1.81	2.50	1.15	0.89	0.87	0.87
	41	0.13	2.98	1.04	0.17	1.80	2.50	1.18	0.86	0.89	0.89
	42	0.12	2.94	1.02	0.17	1.80	2.49	1.14	0.88	0.86	0.86
	43	0.13	2.96	1.04	0.16	1.79	2.49	1.17	0.86	0.88	0.88
	44	0.12	2.93	1.03	0.16	1.78	2.48	1.16	0.78	0.86	0.86
	45	0.11	2.83	0.99	0.15	1.74	2.44	1.09	0.76	0.78	0.78
	46	0.11	2.78	0.98	0.15	1.71	2.41	1.07	0.71	0.76	0.76
	47	0.10	2.72	0.94	0.14	1.68	2.38	1.04	0.68	0.71	0.71
Average											
	Weekday	**0.16**	**3.12**	**1.15**	**0.15**	**1.71**	**2.42**		**1.09**	**1.09**	**1.09**
	Weekend	**0.11**	**2.78**	**0.97**	**0.15**	**1.71**	**2.41**		**0.77**	**0.77**	**0.77**
	ADWF[1]	**0.14**	**3.02**	**1.10**	**0.15**	**1.71**	**2.41**		**1.00**	**1.00**	**1.00**
% Error											
	Weekday				-4.9%			1.56			
	Weekend				34.3%			1.22			

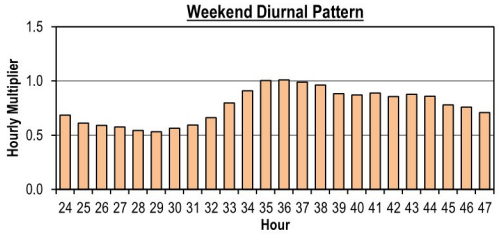
Note:







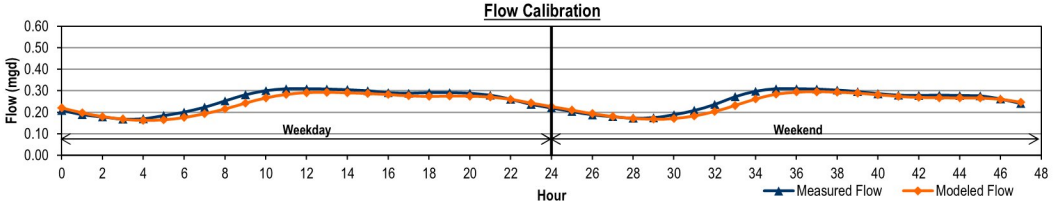


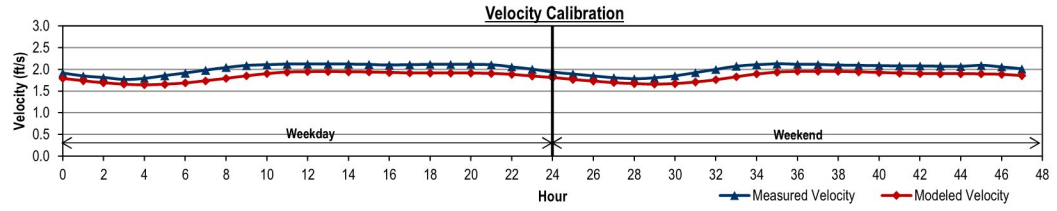


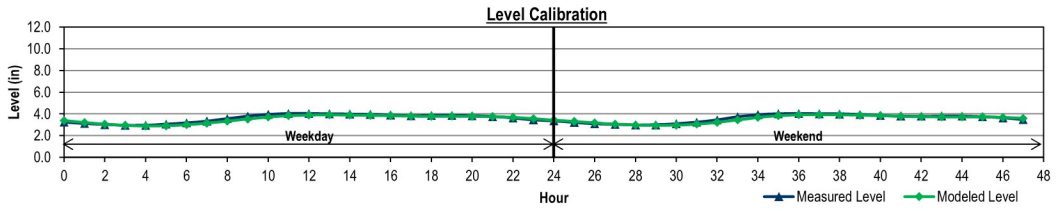
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A4 DRY WEATHER FLOW CALIBRATION

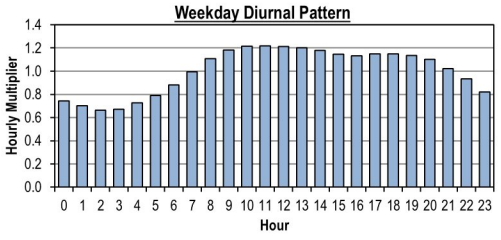
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.21	3.26	1.92	0.22	3.40	1.79	-0.13	0.74	0.74	0.74
	1	0.19	3.12	1.85	0.20	3.21	1.74	-0.09	0.70	0.70	0.70
	2	0.18	3.03	1.81	0.18	3.06	1.69	-0.03	0.66	0.66	0.66
	3	0.17	2.97	1.77	0.17	2.96	1.66	0.01	0.67	0.67	0.67
	4	0.17	2.96	1.79	0.16	2.90	1.64	0.07	0.73	0.73	0.73
	5	0.18	3.06	1.86	0.16	2.92	1.65	0.15	0.79	0.79	0.79
	6	0.20	3.18	1.91	0.18	3.01	1.69	0.17	0.88	0.88	0.88
	7	0.22	3.35	1.98	0.19	3.15	1.74	0.20	0.99	0.99	0.99
	8	0.25	3.57	2.04	0.22	3.33	1.79	0.24	1.11	1.11	1.11
	9	0.28	3.80	2.09	0.24	3.54	1.85	0.26	1.18	1.18	1.18
	10	0.30	3.96	2.11	0.27	3.72	1.90	0.24	1.22	1.22	1.22
	11	0.31	4.03	2.12	0.28	3.84	1.93	0.19	1.22	1.22	1.22
	12	0.31	4.04	2.12	0.29	3.90	1.95	0.14	1.21	1.21	1.21
	13	0.31	4.02	2.12	0.29	3.91	1.95	0.11	1.20	1.20	1.20
	14	0.31	4.00	2.12	0.29	3.90	1.95	0.10	1.18	1.18	1.18
	15	0.30	3.96	2.11	0.29	3.88	1.94	0.08	1.15	1.15	1.15
	16	0.29	3.90	2.10	0.28	3.84	1.93	0.05	1.13	1.13	1.13
	17	0.29	3.85	2.11	0.28	3.80	1.92	0.05	1.15	1.15	1.15
	18	0.29	3.87	2.12	0.27	3.79	1.91	0.08	1.15	1.15	1.15
	19	0.29	3.87	2.12	0.28	3.79	1.92	0.08	1.13	1.13	1.13
	20	0.29	3.84	2.12	0.28	3.79	1.91	0.05	1.10	1.10	1.10
	21	0.28	3.77	2.11	0.27	3.76	1.91	0.01	1.02	1.02	1.02
	22	0.26	3.64	2.06	0.26	3.69	1.88	-0.05	0.93	0.93	0.93
	23	0.24	3.47	2.00	0.24	3.57	1.85	-0.10	0.82	0.82	0.82
Weekend	24	0.22	3.37	1.94	0.23	3.44	1.81	-0.07	0.80	0.80	0.80
	25	0.20	3.23	1.89	0.21	3.31	1.77	-0.08	0.74	0.74	0.74
	26	0.19	3.11	1.85	0.19	3.18	1.73	-0.07	0.71	0.71	0.71
	27	0.18	3.05	1.81	0.18	3.06	1.69	-0.02	0.68	0.68	0.68
	28	0.17	2.99	1.79	0.17	2.98	1.67	0.01	0.69	0.69	0.69
	29	0.17	3.00	1.80	0.17	2.94	1.66	0.06	0.74	0.74	0.74
	30	0.19	3.11	1.85	0.17	2.97	1.67	0.14	0.82	0.82	0.82
	31	0.21	3.25	1.92	0.18	3.07	1.71	0.18	0.93	0.93	0.93
	32	0.24	3.45	2.00	0.20	3.23	1.76	0.22	1.07	1.07	1.07
	33	0.27	3.74	2.07	0.23	3.45	1.83	0.29	1.17	1.17	1.17
	34	0.30	3.93	2.11	0.26	3.68	1.89	0.25	1.22	1.22	1.22
	35	0.31	4.02	2.13	0.28	3.84	1.94	0.18	1.22	1.22	1.22
	36	0.31	4.03	2.12	0.29	3.92	1.95	0.11	1.21	1.21	1.21
	37	0.31	4.03	2.11	0.30	3.93	1.95	0.09	1.19	1.19	1.19
	38	0.30	4.01	2.10	0.29	3.92	1.95	0.09	1.16	1.16	1.16
	39	0.30	3.95	2.09	0.29	3.89	1.94	0.06	1.13	1.13	1.13
	40	0.29	3.86	2.09	0.28	3.84	1.93	0.02	1.10	1.10	1.10
	41	0.28	3.81	2.08	0.27	3.79	1.91	0.02	1.10	1.10	1.10
	42	0.28	3.79	2.08	0.27	3.75	1.90	0.05	1.10	1.10	1.10
	43	0.28	3.81	2.07	0.27	3.73	1.90	0.07	1.09	1.09	1.09
	44	0.28	3.80	2.07	0.27	3.73	1.90	0.07	1.09	1.09	1.09
	45	0.28	3.75	2.09	0.27	3.72	1.90	0.03	1.03	1.03	1.03
	46	0.26	3.65	2.06	0.26	3.69	1.88	-0.04	0.95	0.95	0.95
	47	0.24	3.49	2.01	0.25	3.59	1.85	-0.10	0.87	0.87	0.87
Average											
	Weekday	0.255	3.6	2.02	0.241	3.5	1.84		1.00	1.00	1.00
	Weekend	0.252	3.6	2.00	0.241	3.5	1.84		0.99	0.99	0.99
	ADWF[1]	0.254	3.6	2.01	0.241	3.5	1.84		1.00	1.00	1.00
% Error											
	Weekday				-5.4%			0.26			
	Weekend				-4.3%			0.29			

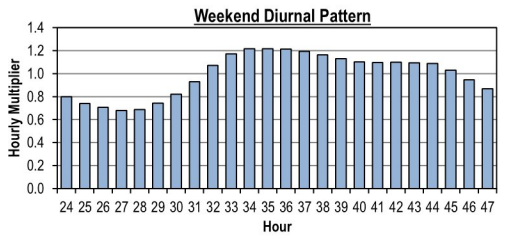
Note:







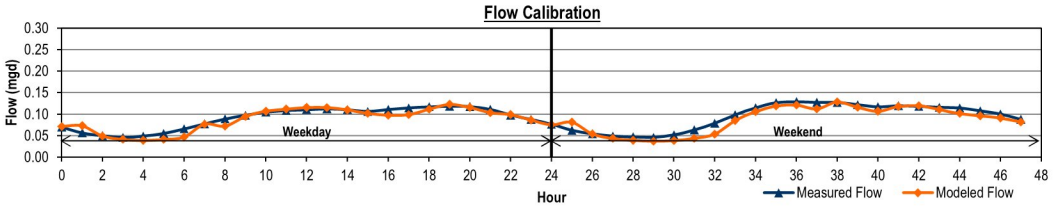


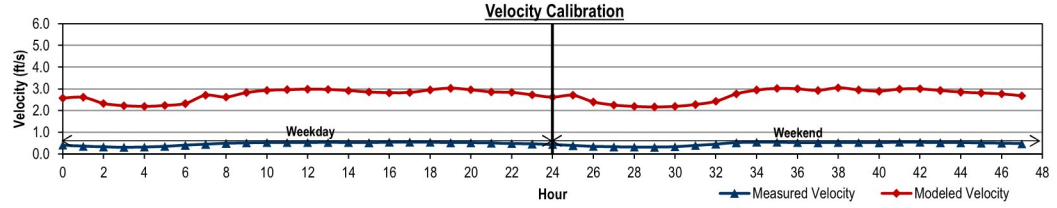


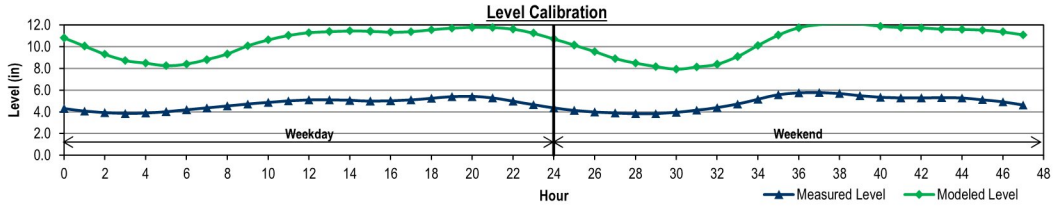
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A6 DRY WEATHER FLOW CALIBRATION

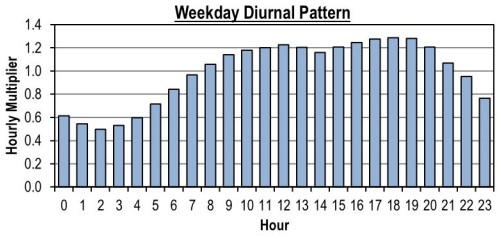
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.07	4.31	0.42	0.07	10.80	2.58	-6.49	0.61	0.61	0.61
	1	0.06	4.07	0.36	0.07	10.07	2.62	-6.00	0.54	0.54	0.54
	2	0.05	3.94	0.33	0.05	9.30	2.34	-5.36	0.50	0.50	0.50
	3	0.05	3.85	0.31	0.04	8.73	2.23	-4.87	0.53	0.53	0.53
	4	0.05	3.90	0.33	0.04	8.48	2.20	-4.58	0.60	0.60	0.60
	5	0.05	4.01	0.36	0.04	8.25	2.24	-4.23	0.72	0.72	0.72
	6	0.07	4.20	0.41	0.05	8.39	2.33	-4.19	0.84	0.84	0.84
	7	0.08	4.37	0.46	0.08	8.80	2.71	-4.43	0.97	0.97	0.97
	8	0.09	4.55	0.50	0.07	9.33	2.63	-4.78	1.06	1.06	1.06
	9	0.10	4.73	0.52	0.09	10.08	2.84	-5.35	1.14	1.14	1.14
	10	0.10	4.88	0.53	0.11	10.63	2.94	-5.75	1.18	1.18	1.18
	11	0.11	5.00	0.54	0.11	11.03	2.97	-6.03	1.20	1.20	1.20
	12	0.11	5.10	0.53	0.12	11.29	2.99	-6.19	1.23	1.23	1.23
	13	0.11	5.11	0.54	0.12	11.39	2.98	-6.28	1.20	1.20	1.20
	14	0.11	5.06	0.54	0.11	11.45	2.92	-6.39	1.16	1.16	1.16
	15	0.11	4.99	0.53	0.10	11.42	2.86	-6.43	1.21	1.21	1.21
	16	0.11	5.02	0.55	0.10	11.33	2.82	-6.31	1.25	1.25	1.25
	17	0.11	5.10	0.55	0.10	11.38	2.84	-6.27	1.28	1.28	1.28
	18	0.12	5.26	0.54	0.11	11.55	2.95	-6.30	1.29	1.29	1.29
	19	0.12	5.41	0.53	0.12	11.70	3.03	-6.29	1.28	1.28	1.28
	20	0.12	5.42	0.52	0.12	11.78	2.96	-6.36	1.21	1.21	1.21
	21	0.11	5.28	0.51	0.10	11.75	2.86	-6.47	1.07	1.07	1.07
	22	0.10	4.98	0.49	0.10	11.63	2.84	-6.64	0.95	0.95	0.95
	23	0.09	4.65	0.47	0.09	11.25	2.73	-6.59	0.76	0.76	0.76
Weekend	24	0.08	4.37	0.45	0.08	10.71	2.63	-6.34	0.68	0.68	0.68
	25	0.06	4.14	0.39	0.08	10.14	2.71	-6.00	0.59	0.59	0.59
	26	0.05	4.00	0.36	0.05	9.54	2.40	-5.55	0.53	0.53	0.53
	27	0.05	3.89	0.33	0.04	8.91	2.26	-5.02	0.51	0.51	0.51
	28	0.05	3.84	0.32	0.04	8.49	2.20	-4.64	0.50	0.50	0.50
	29	0.05	3.84	0.32	0.04	8.16	2.17	-4.33	0.56	0.56	0.56
	30	0.05	3.97	0.34	0.04	7.92	2.20	-3.95	0.69	0.69	0.69
	31	0.06	4.15	0.40	0.04	8.13	2.28	-3.98	0.86	0.86	0.86
	32	0.08	4.38	0.46	0.05	8.38	2.43	-4.00	1.07	1.07	1.07
	33	0.10	4.72	0.53	0.09	9.09	2.77	-4.37	1.25	1.25	1.25
	34	0.11	5.16	0.55	0.11	10.11	2.95	-4.95	1.38	1.38	1.38
	35	0.13	5.57	0.54	0.12	11.07	3.02	-5.49	1.40	1.40	1.40
	36	0.13	5.76	0.53	0.12	11.74	3.01	-5.98	1.39	1.39	1.39
	37	0.13	5.77	0.52	0.11	12.03	2.93	-6.26	1.39	1.39	1.39
	38	0.13	5.69	0.53	0.13	12.12	3.06	-6.43	1.33	1.33	1.33
	39	0.12	5.50	0.53	0.12	12.08	2.95	-6.58	1.28	1.28	1.28
	40	0.12	5.35	0.53	0.11	11.87	2.90	-6.53	1.30	1.30	1.30
	41	0.12	5.29	0.55	0.12	11.75	3.00	-6.46	1.29	1.29	1.29
	42	0.12	5.29	0.54	0.12	11.72	3.00	-6.43	1.26	1.26	1.26
	43	0.12	5.31	0.53	0.11	11.61	2.93	-6.31	1.24	1.24	1.24
	44	0.11	5.27	0.53	0.10	11.59	2.85	-6.32	1.17	1.17	1.17
	45	0.11	5.12	0.51	0.10	11.53	2.81	-6.41	1.09	1.09	1.09
	46	0.10	4.92	0.50	0.09	11.36	2.77	-6.44	0.96	0.96	0.96
	47	0.09	4.62	0.48	0.08	11.09	2.68	-6.47	0.84	0.84	0.84
Average											
	Weekday	0.091	4.7	0.47	0.087	10.5	2.72		0.99	0.99	0.99
	Weekend	0.094	4.8	0.47	0.087	10.5	2.70		1.02	1.02	1.02
	ADWF[1]	0.092	4.7	0.47	0.087	10.5	2.72		1.00	1.00	1.00
% Error											
	Weekday				-3.8%			6.64			
	Weekend				-7.9%			6.58			

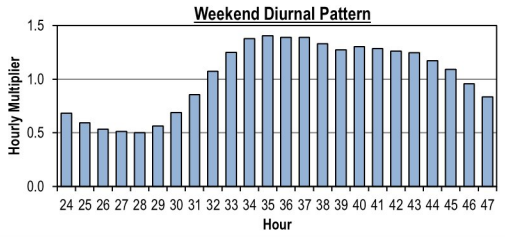
Note:







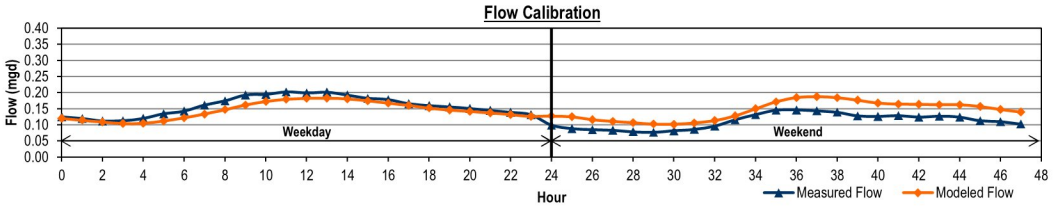


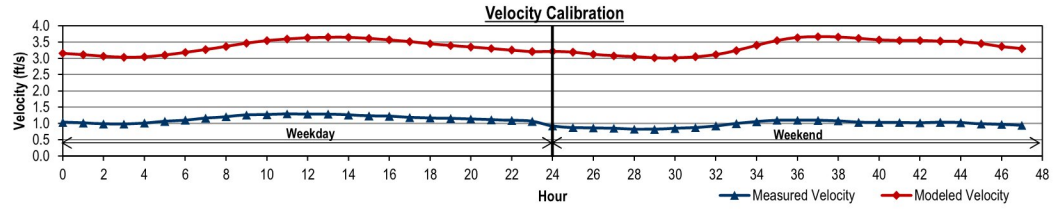


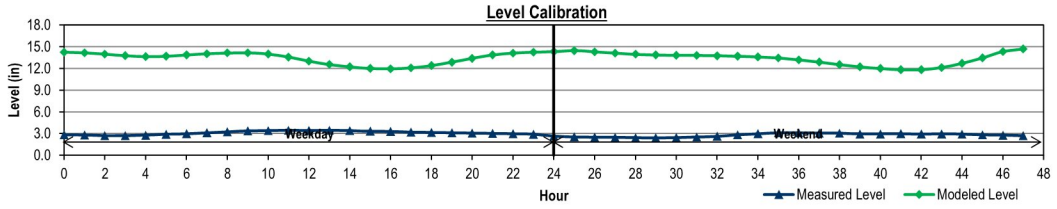
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A7 DRY WEATHER FLOW CALIBRATION

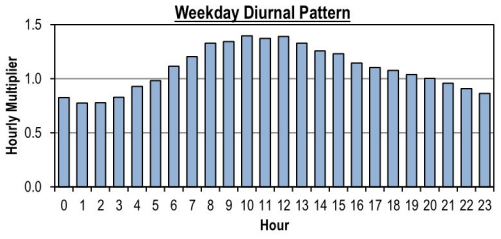
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.13	2.85	1.04	0.12	14.23	3.16	-11.38	0.83	0.83	0.83
	1	0.12	2.80	1.02	0.11	14.14	3.11	-11.34	0.77	0.77	0.77
	2	0.11	2.73	0.99	0.11	13.96	3.07	-11.23	0.78	0.78	0.78
	3	0.11	2.72	0.99	0.10	13.76	3.03	-11.04	0.83	0.83	0.83
	4	0.12	2.79	1.02	0.10	13.62	3.04	-10.84	0.93	0.93	0.93
	5	0.13	2.91	1.07	0.11	13.68	3.10	-10.77	0.98	0.98	0.98
	6	0.14	2.97	1.10	0.12	13.86	3.18	-10.88	1.12	1.12	1.12
	7	0.16	3.13	1.17	0.13	14.02	3.27	-10.89	1.20	1.20	1.20
	8	0.17	3.24	1.21	0.15	14.13	3.37	-10.89	1.33	1.33	1.33
	9	0.19	3.38	1.27	0.16	14.14	3.47	-10.76	1.34	1.34	1.34
	10	0.19	3.40	1.27	0.17	14.00	3.54	-10.59	1.40	1.40	1.40
	11	0.20	3.46	1.30	0.18	13.56	3.59	-10.11	1.37	1.37	1.37
	12	0.20	3.43	1.29	0.18	13.00	3.63	-9.57	1.39	1.39	1.39
	13	0.20	3.46	1.29	0.18	12.54	3.65	-9.08	1.33	1.33	1.33
	14	0.19	3.40	1.27	0.18	12.22	3.64	-8.82	1.26	1.26	1.26
	15	0.18	3.33	1.23	0.17	12.00	3.61	-8.68	1.23	1.23	1.23
	16	0.18	3.30	1.22	0.17	11.95	3.56	-8.66	1.15	1.15	1.15
	17	0.17	3.21	1.19	0.16	12.07	3.51	-8.86	1.10	1.10	1.10
	18	0.16	3.16	1.17	0.15	12.40	3.45	-9.24	1.08	1.08	1.08
	19	0.16	3.13	1.16	0.15	12.86	3.39	-9.74	1.04	1.04	1.04
	20	0.15	3.08	1.14	0.14	13.38	3.35	-10.31	1.00	1.00	1.00
	21	0.15	3.03	1.12	0.14	13.86	3.30	-10.83	0.96	0.96	0.96
	22	0.14	2.98	1.10	0.13	14.11	3.25	-11.14	0.91	0.91	0.91
	23	0.13	2.91	1.07	0.13	14.23	3.21	-11.32	0.86	0.86	0.86
Weekend	24	0.10	2.65	0.92	0.13	14.31	3.21	-11.66	0.61	0.61	0.61
	25	0.09	2.54	0.88	0.13	14.45	3.19	-11.91	0.59	0.59	0.59
	26	0.09	2.51	0.87	0.12	14.30	3.12	-11.79	0.58	0.58	0.58
	27	0.08	2.48	0.85	0.11	14.10	3.08	-11.62	0.54	0.54	0.54
	28	0.08	2.43	0.83	0.11	13.95	3.05	-11.52	0.53	0.53	0.53
	29	0.08	2.42	0.82	0.10	13.85	3.02	-11.43	0.56	0.56	0.56
	30	0.08	2.46	0.85	0.10	13.80	3.01	-11.34	0.59	0.59	0.59
	31	0.09	2.51	0.88	0.11	13.78	3.05	-11.27	0.66	0.66	0.66
	32	0.10	2.62	0.93	0.11	13.74	3.12	-11.12	0.80	0.80	0.80
	33	0.12	2.83	1.00	0.13	13.68	3.24	-10.85	0.91	0.91	0.91
	34	0.13	2.99	1.06	0.15	13.57	3.40	-10.58	1.01	1.01	1.01
	35	0.15	3.12	1.10	0.17	13.43	3.55	-10.31	1.01	1.01	1.01
	36	0.15	3.10	1.10	0.18	13.18	3.64	-10.08	0.99	0.99	0.99
	37	0.14	3.08	1.10	0.19	12.87	3.67	-9.78	0.96	0.96	0.96
	38	0.14	3.04	1.08	0.18	12.53	3.66	-9.48	0.88	0.88	0.88
	39	0.13	2.96	1.04	0.18	12.23	3.62	-9.27	0.87	0.87	0.87
	40	0.13	2.96	1.03	0.17	11.98	3.57	-9.02	0.89	0.89	0.89
	41	0.13	2.98	1.04	0.16	11.82	3.55	-8.84	0.86	0.86	0.86
	42	0.12	2.94	1.02	0.16	11.83	3.55	-8.89	0.88	0.88	0.88
	43	0.13	2.96	1.04	0.16	12.12	3.53	-9.16	0.86	0.86	0.86
	44	0.12	2.93	1.03	0.16	12.70	3.51	-9.77	0.78	0.78	0.78
	45	0.11	2.83	0.99	0.16	13.45	3.45	-10.62	0.76	0.76	0.76
	46	0.11	2.78	0.98	0.15	14.31	3.36	-11.53	0.71	0.71	0.71
	47	0.10	2.72	0.94	0.14	14.69	3.30	-11.98	0.68	0.68	0.68
Average											
	Weekday	0.158	3.1	1.15	0.144	13.4	3.35		1.09	1.09	1.09
	Weekend	0.112	2.8	0.97	0.144	13.4	3.35		0.77	0.77	0.77
	ADWF[1]	0.145	3.0	1.10	0.144	13.4	3.35		1.00	1.00	1.00
% Error											
	Weekday				-8.7%			11.38			
	Weekend				29.0%			11.98			

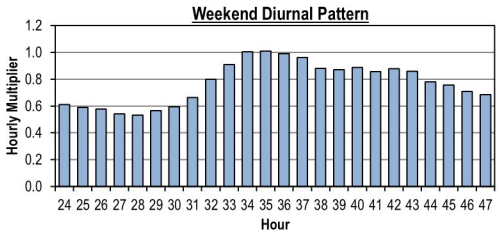
Note:







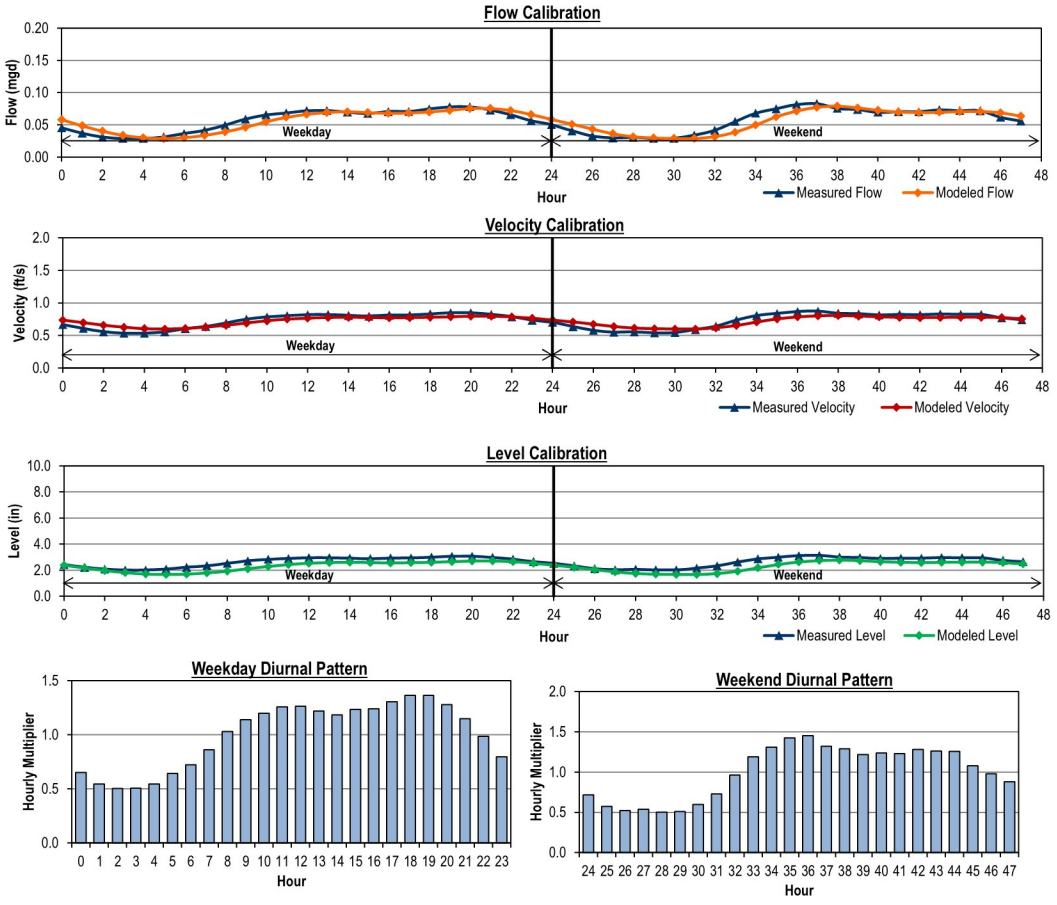




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A9 DRY WEATHER FLOW CALIBRATION

		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.05	2.44	0.67	0.06	2.38	0.73	0.06	0.65	0.65	0.65
	1	0.04	2.23	0.61	0.05	2.18	0.70	0.05	0.54	0.54	0.54
	2	0.03	2.08	0.56	0.04	1.98	0.66	0.11	0.50	0.50	0.50
	3	0.03	2.01	0.54	0.03	1.81	0.63	0.20	0.51	0.51	0.51
	4	0.03	2.02	0.54	0.03	1.71	0.61	0.31	0.55	0.55	0.55
	5	0.03	2.09	0.56	0.03	1.67	0.60	0.43	0.64	0.64	0.64
	6	0.04	2.23	0.60	0.03	1.70	0.61	0.53	0.72	0.72	0.72
	7	0.04	2.35	0.64	0.03	1.79	0.63	0.55	0.86	0.86	0.86
	8	0.05	2.53	0.69	0.04	1.93	0.66	0.60	1.03	1.03	1.03
	9	0.06	2.72	0.75	0.05	2.11	0.69	0.61	1.14	1.14	1.14
	10	0.07	2.84	0.78	0.05	2.29	0.72	0.56	1.20	1.20	1.20
	11	0.07	2.90	0.80	0.06	2.44	0.75	0.46	1.26	1.26	1.26
	12	0.07	2.96	0.82	0.07	2.53	0.77	0.43	1.26	1.26	1.26
	13	0.07	2.96	0.82	0.07	2.59	0.78	0.37	1.22	1.22	1.22
	14	0.07	2.92	0.81	0.07	2.61	0.78	0.31	1.18	1.18	1.18
	15	0.07	2.89	0.80	0.07	2.59	0.78	0.29	1.23	1.23	1.23
	16	0.07	2.94	0.81	0.07	2.57	0.77	0.37	1.24	1.24	1.24
	17	0.07	2.94	0.81	0.07	2.58	0.77	0.37	1.30	1.30	1.30
	18	0.07	3.01	0.83	0.07	2.61	0.78	0.40	1.36	1.36	1.36
	19	0.08	3.07	0.85	0.07	2.65	0.79	0.41	1.36	1.36	1.36
	20	0.08	3.07	0.85	0.08	2.70	0.80	0.36	1.28	1.28	1.28
	21	0.07	2.98	0.83	0.08	2.71	0.80	0.27	1.15	1.15	1.15
	22	0.07	2.84	0.79	0.07	2.66	0.79	0.19	0.99	0.99	0.99
	23	0.06	2.66	0.74	0.07	2.54	0.76	0.13	0.79	0.79	0.79
Weekend	24	0.05	2.53	0.70	0.06	2.39	0.74	0.15	0.71	0.71	0.71
	25	0.04	2.33	0.64	0.05	2.22	0.71	0.11	0.57	0.57	0.57
	26	0.03	2.13	0.58	0.04	2.05	0.67	0.08	0.52	0.52	0.52
	27	0.03	2.04	0.55	0.04	1.88	0.64	0.16	0.54	0.54	0.54
	28	0.03	2.07	0.56	0.03	1.75	0.61	0.32	0.50	0.50	0.50
	29	0.03	2.02	0.54	0.03	1.69	0.60	0.33	0.51	0.51	0.51
	30	0.03	2.03	0.55	0.03	1.67	0.60	0.36	0.60	0.60	0.60
	31	0.03	2.16	0.59	0.03	1.67	0.60	0.49	0.73	0.73	0.73
	32	0.04	2.34	0.64	0.03	1.74	0.62	0.60	0.96	0.96	0.96
	33	0.06	2.63	0.73	0.04	1.92	0.65	0.71	1.19	1.19	1.19
	34	0.07	2.87	0.81	0.05	2.18	0.71	0.69	1.31	1.31	1.31
	35	0.08	3.00	0.84	0.06	2.44	0.75	0.56	1.42	1.42	1.42
	36	0.08	3.11	0.87	0.07	2.63	0.78	0.49	1.45	1.45	1.45
	37	0.08	3.14	0.87	0.08	2.74	0.80	0.40	1.32	1.32	1.32
	38	0.08	3.01	0.84	0.08	2.78	0.81	0.23	1.29	1.29	1.29
	39	0.07	2.97	0.83	0.08	2.73	0.80	0.24	1.22	1.22	1.22
	40	0.07	2.90	0.82	0.07	2.66	0.79	0.24	1.23	1.23	1.23
	41	0.07	2.92	0.82	0.07	2.61	0.78	0.30	1.23	1.23	1.23
	42	0.07	2.92	0.82	0.07	2.59	0.78	0.33	1.28	1.28	1.28
	43	0.07	2.97	0.83	0.07	2.60	0.78	0.37	1.26	1.26	1.26
	44	0.07	2.95	0.83	0.07	2.62	0.78	0.33	1.26	1.26	1.26
	45	0.07	2.95	0.82	0.07	2.62	0.78	0.33	1.08	1.08	1.08
	46	0.06	2.76	0.77	0.07	2.59	0.77	0.17	0.98	0.98	0.98
	47	0.06	2.65	0.74	0.06	2.49	0.76	0.16	0.88	0.88	0.88
Average											
	Weekday	0.057	2.7	0.73	0.056	2.3	0.72		1.00	1.00	1.00
	Weekend	0.057	2.6	0.73	0.056	2.3	0.72		1.00	1.00	1.00
	ADWF[1]	0.057	2.7	0.73	0.056	2.3	0.72		1.00	1.00	1.00
% Error											
	Weekday				-1.8%			0.61			
	Weekend				-1.9%			0.71			

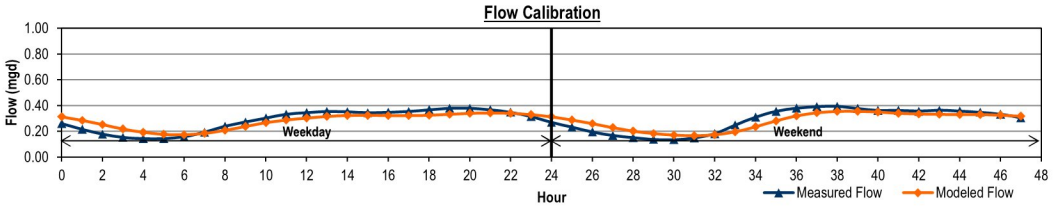
Note:

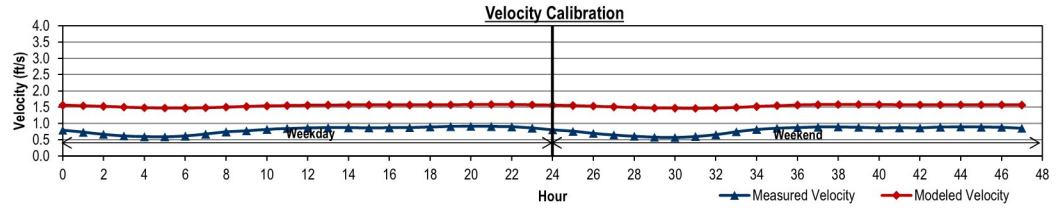


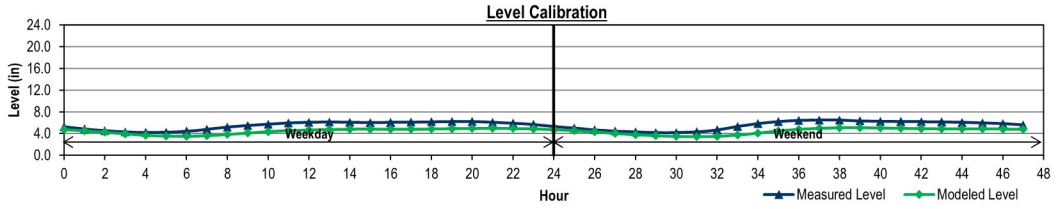
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A10 DRY WEATHER FLOW CALIBRATION

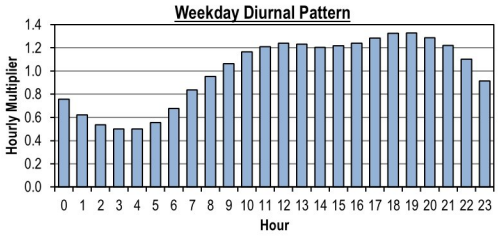
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.26	5.25	0.80	0.31	4.73	1.56	0.52	0.76	0.76	0.76
	1	0.22	4.88	0.73	0.29	4.52	1.55	0.36	0.62	0.62	0.62
	2	0.18	4.54	0.67	0.25	4.24	1.53	0.30	0.54	0.54	0.54
	3	0.15	4.31	0.62	0.22	3.94	1.50	0.36	0.50	0.50	0.50
	4	0.14	4.21	0.60	0.19	3.70	1.48	0.52	0.50	0.50	0.50
	5	0.14	4.23	0.59	0.18	3.54	1.47	0.69	0.55	0.55	0.55
	6	0.16	4.42	0.62	0.17	3.51	1.47	0.91	0.68	0.68	0.68
	7	0.19	4.76	0.68	0.18	3.61	1.48	1.16	0.84	0.84	0.84
	8	0.24	5.18	0.74	0.21	3.83	1.50	1.35	0.95	0.95	0.95
	9	0.27	5.49	0.78	0.24	4.11	1.52	1.38	1.06	1.06	1.06
	10	0.30	5.73	0.82	0.27	4.35	1.54	1.38	1.17	1.17	1.17
	11	0.33	5.96	0.85	0.29	4.53	1.55	1.44	1.21	1.21	1.21
	12	0.35	6.07	0.86	0.30	4.66	1.56	1.41	1.24	1.24	1.24
	13	0.35	6.12	0.87	0.32	4.75	1.56	1.37	1.23	1.23	1.23
	14	0.35	6.09	0.87	0.32	4.81	1.57	1.28	1.20	1.20	1.20
	15	0.34	6.03	0.87	0.32	4.82	1.57	1.21	1.22	1.22	1.22
	16	0.35	6.06	0.87	0.32	4.80	1.57	1.26	1.24	1.24	1.24
	17	0.35	6.10	0.88	0.32	4.80	1.57	1.30	1.28	1.28	1.28
	18	0.37	6.17	0.89	0.33	4.83	1.57	1.34	1.33	1.33	1.33
	19	0.38	6.23	0.91	0.33	4.88	1.57	1.35	1.33	1.33	1.33
	20	0.38	6.21	0.92	0.34	4.94	1.58	1.27	1.29	1.29	1.29
	21	0.37	6.10	0.91	0.34	4.96	1.58	1.14	1.22	1.22	1.22
	22	0.35	5.92	0.90	0.34	4.93	1.58	0.99	1.10	1.10	1.10
	23	0.31	5.67	0.86	0.33	4.86	1.57	0.81	0.92	0.92	0.92
Weekend	24	0.27	5.32	0.81	0.31	4.73	1.56	0.59	0.81	0.81	0.81
	25	0.23	5.01	0.76	0.29	4.53	1.55	0.47	0.68	0.68	0.68
	26	0.20	4.69	0.70	0.26	4.30	1.53	0.39	0.59	0.59	0.59
	27	0.17	4.46	0.65	0.23	4.04	1.51	0.42	0.53	0.53	0.53
	28	0.15	4.31	0.61	0.20	3.79	1.49	0.52	0.48	0.48	0.48
	29	0.14	4.18	0.58	0.18	3.60	1.48	0.58	0.47	0.47	0.47
	30	0.13	4.18	0.57	0.17	3.48	1.47	0.69	0.52	0.52	0.52
	31	0.15	4.32	0.60	0.17	3.43	1.47	0.89	0.64	0.64	0.64
	32	0.18	4.67	0.65	0.17	3.50	1.47	1.17	0.87	0.87	0.87
	33	0.25	5.29	0.75	0.20	3.72	1.49	1.58	1.09	1.09	1.09
	34	0.31	5.83	0.82	0.24	4.08	1.52	1.75	1.25	1.25	1.25
	35	0.36	6.22	0.86	0.28	4.47	1.55	1.74	1.33	1.33	1.33
	36	0.38	6.42	0.88	0.32	4.78	1.57	1.63	1.37	1.37	1.37
	37	0.39	6.48	0.89	0.34	4.97	1.58	1.51	1.38	1.38	1.38
	38	0.39	6.47	0.90	0.35	5.06	1.58	1.42	1.32	1.32	1.32
	39	0.38	6.34	0.88	0.36	5.06	1.58	1.28	1.27	1.27	1.27
	40	0.36	6.26	0.87	0.35	5.01	1.58	1.25	1.27	1.27	1.27
	41	0.36	6.22	0.87	0.34	4.95	1.58	1.27	1.25	1.25	1.25
	42	0.36	6.18	0.87	0.33	4.91	1.57	1.28	1.27	1.27	1.27
	43	0.36	6.15	0.89	0.33	4.88	1.57	1.27	1.25	1.25	1.25
	44	0.36	6.07	0.89	0.33	4.87	1.57	1.20	1.22	1.22	1.22
	45	0.35	5.96	0.89	0.33	4.86	1.57	1.10	1.17	1.17	1.17
	46	0.33	5.83	0.88	0.33	4.82	1.57	1.01	1.07	1.07	1.07
	47	0.31	5.60	0.85	0.32	4.76	1.57	0.84	0.94	0.94	0.94
Average											
	Weekday	0.285	5.5	0.80	0.280	4.4	1.54		1.00	1.00	1.00
	Weekend	0.286	5.5	0.79	0.280	4.4	1.54		1.00	1.00	1.00
	ADWF[1]	0.285	5.5	0.79	0.280	4.4	1.54		1.00	1.00	1.00
% Error											
	Weekday				-1.9%			1.44			
	Weekend				-2.0%			1.75			

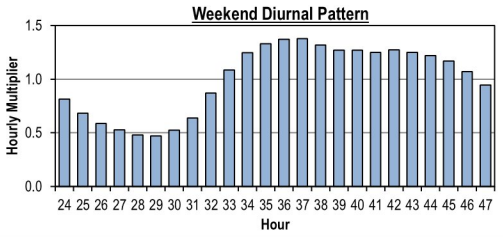
Note:







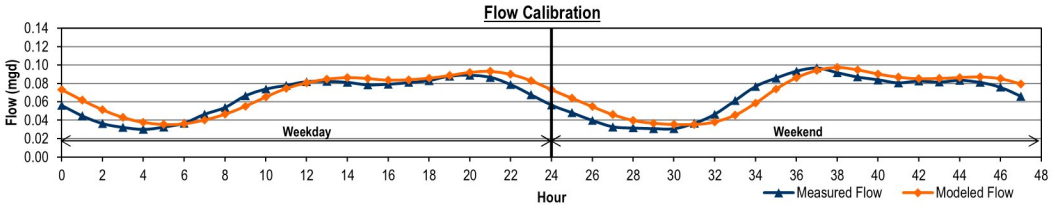


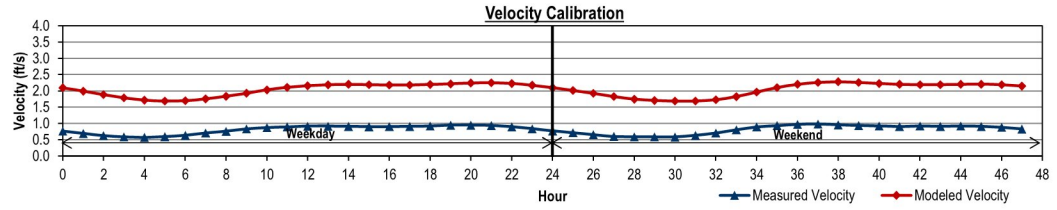


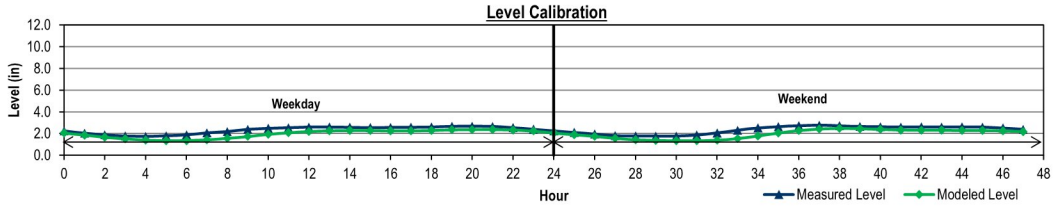
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A11 DRY WEATHER FLOW CALIBRATION

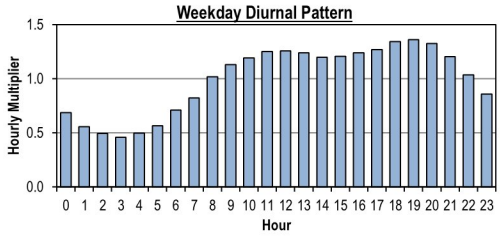
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.06	2.23	0.77	0.07	2.05	2.10	0.18	0.69	0.69	0.69
	1	0.04	2.04	0.69	0.06	1.86	1.99	0.18	0.56	0.56	0.56
	2	0.04	1.88	0.63	0.05	1.66	1.89	0.22	0.49	0.49	0.49
	3	0.03	1.79	0.59	0.04	1.52	1.79	0.27	0.46	0.46	0.46
	4	0.03	1.74	0.57	0.04	1.40	1.72	0.34	0.50	0.50	0.50
	5	0.03	1.79	0.60	0.04	1.34	1.69	0.45	0.56	0.56	0.56
	6	0.04	1.89	0.64	0.04	1.35	1.70	0.54	0.71	0.71	0.71
	7	0.05	2.07	0.71	0.04	1.43	1.76	0.64	0.82	0.82	0.82
	8	0.05	2.19	0.76	0.05	1.56	1.84	0.63	1.02	1.02	1.02
	9	0.07	2.38	0.84	0.06	1.73	1.93	0.65	1.13	1.13	1.13
	10	0.07	2.49	0.88	0.07	1.94	2.03	0.55	1.19	1.19	1.19
	11	0.08	2.54	0.90	0.07	2.08	2.11	0.46	1.25	1.25	1.25
	12	0.08	2.59	0.92	0.08	2.18	2.16	0.41	1.26	1.26	1.26
	13	0.08	2.60	0.92	0.08	2.25	2.19	0.35	1.24	1.24	1.24
	14	0.08	2.58	0.91	0.09	2.28	2.20	0.30	1.20	1.20	1.20
	15	0.08	2.55	0.90	0.09	2.27	2.19	0.28	1.21	1.21	1.21
	16	0.08	2.56	0.90	0.08	2.25	2.18	0.31	1.24	1.24	1.24
	17	0.08	2.58	0.91	0.08	2.25	2.18	0.33	1.27	1.27	1.27
	18	0.08	2.61	0.92	0.09	2.29	2.20	0.32	1.35	1.35	1.35
	19	0.09	2.67	0.95	0.09	2.35	2.22	0.32	1.36	1.36	1.36
	20	0.09	2.68	0.95	0.09	2.36	2.24	0.32	1.32	1.32	1.32
	21	0.09	2.65	0.94	0.09	2.37	2.25	0.28	1.20	1.20	1.20
	22	0.08	2.55	0.90	0.09	2.32	2.23	0.23	1.04	1.04	1.04
	23	0.07	2.41	0.84	0.08	2.23	2.17	0.18	0.86	0.86	0.86
Weekend	24	0.06	2.24	0.77	0.07	2.05	2.10	0.19	0.74	0.74	0.74
	25	0.05	2.11	0.72	0.06	1.90	2.01	0.20	0.61	0.61	0.61
	26	0.04	1.96	0.66	0.06	1.73	1.93	0.23	0.50	0.50	0.50
	27	0.03	1.81	0.60	0.05	1.56	1.83	0.24	0.48	0.48	0.48
	28	0.03	1.78	0.59	0.04	1.43	1.75	0.35	0.47	0.47	0.47
	29	0.03	1.77	0.59	0.04	1.37	1.71	0.40	0.47	0.47	0.47
	30	0.03	1.76	0.59	0.04	1.34	1.69	0.42	0.56	0.56	0.56
	31	0.04	1.87	0.64	0.04	1.34	1.69	0.54	0.71	0.71	0.71
	32	0.05	2.06	0.71	0.04	1.39	1.73	0.67	0.94	0.94	0.94
	33	0.06	2.31	0.81	0.05	1.53	1.82	0.78	1.17	1.17	1.17
	34	0.08	2.52	0.89	0.06	1.79	1.97	0.74	1.31	1.31	1.31
	35	0.09	2.64	0.94	0.07	2.05	2.11	0.59	1.43	1.43	1.43
	36	0.09	2.73	0.97	0.09	2.27	2.20	0.46	1.48	1.48	1.48
	37	0.10	2.77	0.99	0.09	2.41	2.26	0.36	1.40	1.40	1.40
	38	0.09	2.72	0.96	0.10	2.47	2.28	0.25	1.33	1.33	1.33
	39	0.09	2.66	0.94	0.09	2.44	2.26	0.21	1.28	1.28	1.28
	40	0.08	2.62	0.92	0.09	2.38	2.23	0.25	1.23	1.23	1.23
	41	0.08	2.59	0.91	0.09	2.32	2.20	0.26	1.26	1.26	1.26
	42	0.08	2.61	0.92	0.09	2.31	2.19	0.30	1.24	1.24	1.24
	43	0.08	2.59	0.91	0.09	2.31	2.19	0.28	1.27	1.27	1.27
	44	0.08	2.61	0.92	0.09	2.28	2.20	0.33	1.24	1.24	1.24
	45	0.08	2.59	0.91	0.09	2.28	2.21	0.30	1.16	1.16	1.16
	46	0.08	2.52	0.88	0.09	2.25	2.19	0.27	1.01	1.01	1.01
	47	0.07	2.38	0.83	0.08	2.18	2.15	0.21	0.86	0.86	0.86
Average											
	Weekday	0.065	2.3	0.82	0.069	2.0	2.04		1.00	1.00	1.00
	Weekend	0.066	2.3	0.82	0.069	2.0	2.04		1.01	1.01	1.01
	ADWF(1)	0.065	2.3	0.82	0.069	2.0	2.04		1.00	1.00	1.00
% Error											
	Weekday				5.9%			0.65			
	Weekend				4.9%			0.78			

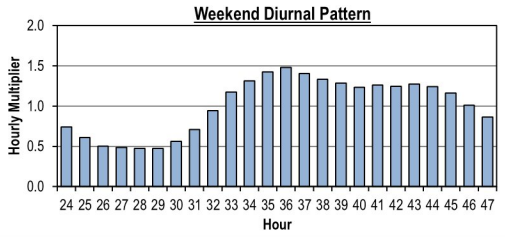
Note:







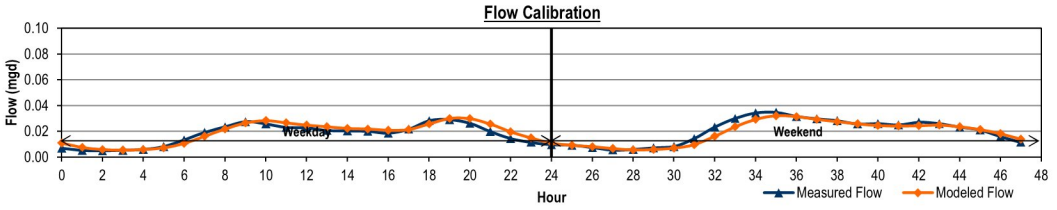


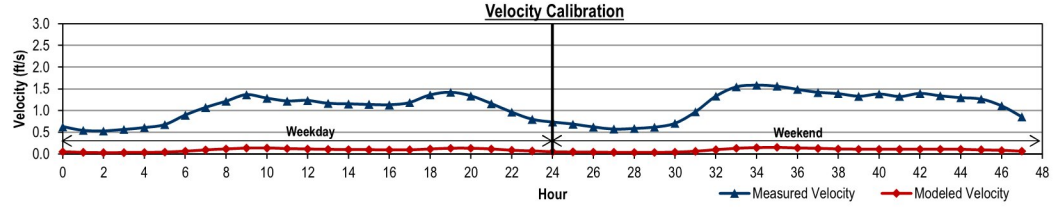


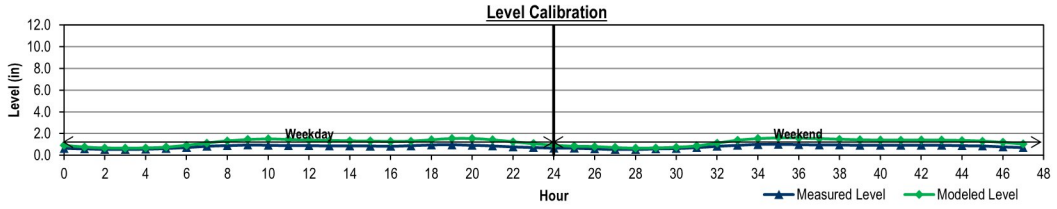
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A12 DRY WEATHER FLOW CALIBRATION

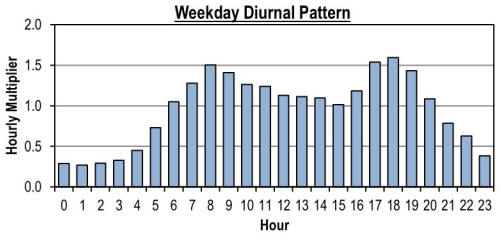
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.01	0.64	0.63	0.01	0.92	0.05	-0.28	0.29	0.29	0.29
	1	0.01	0.58	0.55	0.01	0.76	0.04	-0.18	0.27	0.27	0.27
	2	0.00	0.55	0.53	0.01	0.67	0.03	-0.12	0.29	0.29	0.29
	3	0.01	0.54	0.57	0.01	0.65	0.03	-0.11	0.33	0.33	0.33
	4	0.01	0.56	0.61	0.01	0.68	0.04	-0.12	0.45	0.45	0.45
	5	0.01	0.63	0.68	0.01	0.75	0.05	-0.12	0.73	0.73	0.73
	6	0.01	0.72	0.90	0.01	0.91	0.07	-0.19	1.05	1.05	1.05
	7	0.02	0.84	1.08	0.02	1.14	0.10	-0.30	1.28	1.28	1.28
	8	0.02	0.90	1.22	0.02	1.32	0.12	-0.43	1.50	1.50	1.50
	9	0.03	0.94	1.37	0.03	1.46	0.14	-0.52	1.41	1.41	1.41
	10	0.03	0.93	1.29	0.03	1.51	0.14	-0.58	1.26	1.26	1.26
	11	0.02	0.89	1.22	0.03	1.46	0.13	-0.57	1.24	1.24	1.24
	12	0.02	0.89	1.23	0.02	1.41	0.12	-0.52	1.13	1.13	1.13
	13	0.02	0.86	1.17	0.02	1.37	0.11	-0.50	1.11	1.11	1.11
	14	0.02	0.86	1.15	0.02	1.33	0.10	-0.47	1.10	1.10	1.10
	15	0.02	0.85	1.14	0.02	1.31	0.10	-0.46	1.02	1.02	1.02
	16	0.02	0.83	1.13	0.02	1.29	0.10	-0.45	1.18	1.18	1.18
	17	0.02	0.88	1.19	0.02	1.30	0.10	-0.42	1.54	1.54	1.54
	18	0.03	0.95	1.36	0.03	1.43	0.12	-0.48	1.59	1.59	1.59
	19	0.03	0.97	1.42	0.03	1.55	0.13	-0.58	1.43	1.43	1.43
	20	0.03	0.93	1.34	0.03	1.55	0.13	-0.61	1.09	1.09	1.09
	21	0.02	0.85	1.16	0.03	1.43	0.12	-0.58	0.78	0.78	0.78
	22	0.01	0.77	0.97	0.02	1.25	0.09	-0.48	0.63	0.63	0.63
	23	0.01	0.72	0.80	0.01	1.08	0.07	-0.36	0.38	0.38	0.38
Weekend	24	0.01	0.66	0.74	0.01	0.92	0.05	-0.26	0.51	0.51	0.51
	25	0.01	0.65	0.69	0.01	0.84	0.05	-0.19	0.41	0.41	0.41
	26	0.01	0.60	0.63	0.01	0.80	0.05	-0.20	0.30	0.30	0.30
	27	0.01	0.54	0.58	0.01	0.72	0.04	-0.18	0.32	0.32	0.32
	28	0.01	0.53	0.59	0.01	0.66	0.04	-0.12	0.39	0.39	0.39
	29	0.01	0.60	0.62	0.01	0.68	0.04	-0.08	0.45	0.45	0.45
	30	0.01	0.62	0.71	0.01	0.74	0.05	-0.12	0.79	0.79	0.79
	31	0.01	0.71	0.97	0.01	0.88	0.06	-0.17	1.27	1.27	1.27
	32	0.02	0.82	1.33	0.02	1.14	0.10	-0.31	1.64	1.64	1.64
	33	0.03	0.92	1.55	0.02	1.38	0.13	-0.47	1.87	1.87	1.87
	34	0.03	1.00	1.59	0.03	1.54	0.15	-0.54	1.90	1.90	1.90
	35	0.03	1.01	1.56	0.03	1.61	0.15	-0.59	1.72	1.72	1.72
	36	0.03	0.99	1.49	0.03	1.59	0.14	-0.60	1.62	1.62	1.62
	37	0.03	0.95	1.42	0.03	1.53	0.13	-0.57	1.55	1.55	1.55
	38	0.03	0.95	1.39	0.03	1.48	0.12	-0.53	1.40	1.40	1.40
	39	0.03	0.93	1.33	0.03	1.43	0.11	-0.50	1.42	1.42	1.42
	40	0.03	0.91	1.39	0.02	1.39	0.11	-0.48	1.37	1.37	1.37
	41	0.02	0.93	1.32	0.02	1.38	0.11	-0.45	1.48	1.48	1.48
	42	0.03	0.93	1.40	0.02	1.39	0.11	-0.46	1.42	1.42	1.42
	43	0.03	0.92	1.34	0.02	1.40	0.11	-0.48	1.27	1.27	1.27
	44	0.02	0.89	1.30	0.02	1.37	0.11	-0.48	1.15	1.15	1.15
	45	0.02	0.85	1.27	0.02	1.30	0.10	-0.45	0.87	0.87	0.87
	46	0.02	0.78	1.11	0.02	1.20	0.09	-0.42	0.63	0.63	0.63
	47	0.01	0.71	0.86	0.01	1.05	0.07	-0.33	0.53	0.53	0.53
Average											
	Weekday	0.018	0.8	1.03	0.019	1.2	0.09		0.96	0.96	0.96
	Weekend	0.020	0.8	1.13	0.019	1.2	0.09		1.09	1.09	1.09
	ADWF[1]	0.018	0.8	1.06	0.019	1.2	0.09		1.00	1.00	1.00
% Error											
	Weekday				7.2%			0.61			
	Weekend				-5.7%			0.60			

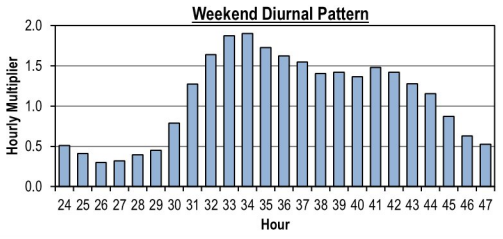
Note:







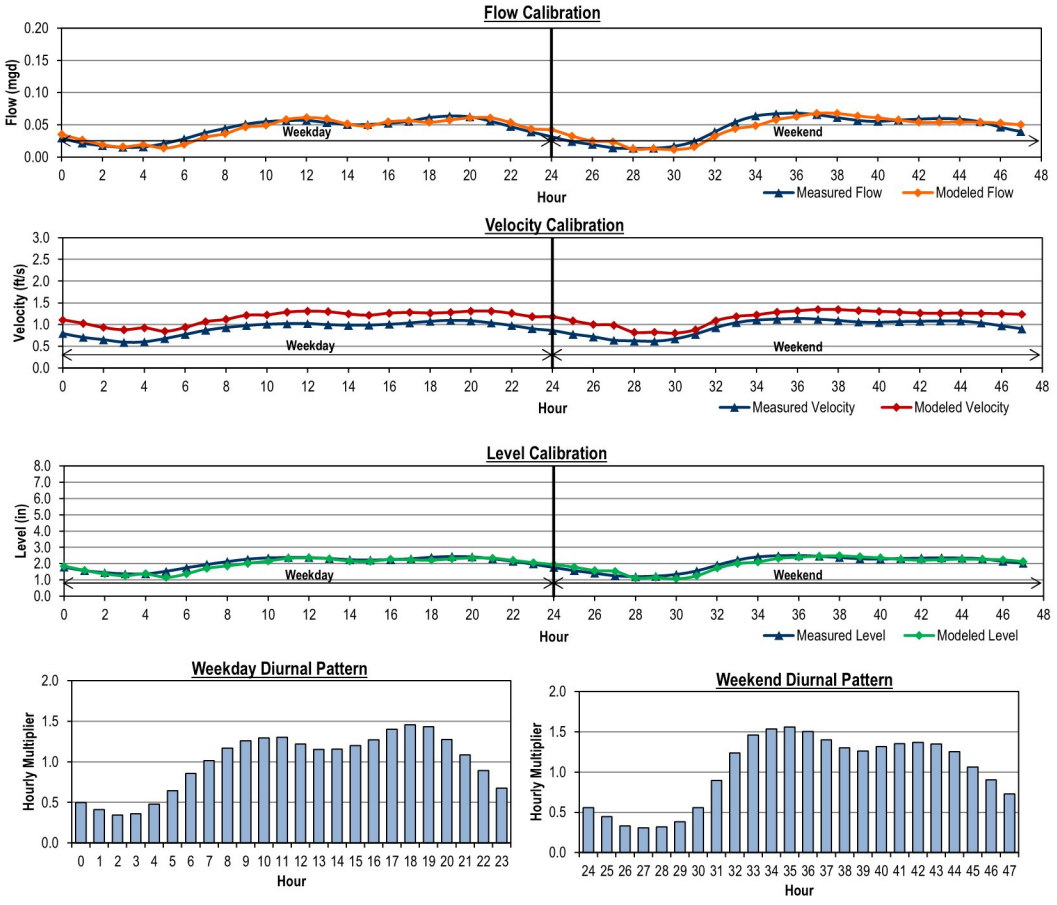




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A13 DRY WEATHER FLOW CALIBRATION

		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.03	1.79	0.80	0.04	1.85	1.11	-0.06	0.50	0.50	0.50
	1	0.02	1.57	0.71	0.03	1.59	1.03	-0.01	0.41	0.41	0.41
	2	0.02	1.46	0.65	0.02	1.38	0.93	0.08	0.34	0.34	0.34
	3	0.02	1.37	0.60	0.02	1.27	0.88	0.11	0.36	0.36	0.36
	4	0.02	1.38	0.60	0.02	1.39	0.93	-0.01	0.48	0.48	0.48
	5	0.02	1.54	0.68	0.01	1.17	0.85	0.37	0.65	0.65	0.65
	6	0.03	1.75	0.77	0.02	1.38	0.94	0.36	0.86	0.86	0.86
	7	0.04	1.96	0.87	0.03	1.72	1.07	0.24	1.02	1.02	1.02
	8	0.04	2.12	0.93	0.04	1.86	1.12	0.26	1.17	1.17	1.17
	9	0.05	2.28	0.98	0.05	2.02	1.22	0.26	1.26	1.26	1.26
	10	0.06	2.35	1.01	0.05	2.16	1.23	0.19	1.30	1.30	1.30
	11	0.06	2.38	1.02	0.06	2.33	1.29	0.05	1.30	1.30	1.30
	12	0.06	2.38	1.02	0.06	2.36	1.31	0.02	1.22	1.22	1.22
	13	0.05	2.32	1.00	0.06	2.30	1.30	0.02	1.15	1.15	1.15
	14	0.05	2.25	0.99	0.05	2.16	1.25	0.08	1.15	1.15	1.15
	15	0.05	2.22	0.99	0.05	2.15	1.22	0.07	1.20	1.20	1.20
	16	0.05	2.26	1.01	0.05	2.27	1.26	-0.01	1.27	1.27	1.27
	17	0.06	2.31	1.04	0.06	2.24	1.28	0.07	1.40	1.40	1.40
	18	0.06	2.40	1.08	0.05	2.22	1.26	0.18	1.46	1.46	1.46
	19	0.06	2.45	1.10	0.06	2.31	1.28	0.14	1.43	1.43	1.43
	20	0.06	2.43	1.09	0.06	2.36	1.31	0.07	1.28	1.28	1.28
	21	0.06	2.31	1.04	0.06	2.34	1.31	-0.03	1.08	1.08	1.08
	22	0.05	2.15	0.98	0.05	2.20	1.26	-0.05	0.89	0.89	0.89
	23	0.04	1.98	0.91	0.04	2.06	1.18	-0.09	0.67	0.67	0.67
Weekend	24	0.03	1.77	0.86	0.04	1.95	1.18	-0.18	0.56	0.56	0.56
	25	0.02	1.58	0.78	0.03	1.79	1.09	-0.21	0.45	0.45	0.45
	26	0.02	1.42	0.72	0.03	1.58	1.00	-0.16	0.33	0.33	0.33
	27	0.01	1.26	0.64	0.02	1.53	0.99	-0.26	0.31	0.31	0.31
	28	0.01	1.21	0.63	0.01	1.12	0.82	0.09	0.32	0.32	0.32
	29	0.01	1.24	0.62	0.01	1.15	0.83	0.08	0.38	0.38	0.38
	30	0.02	1.34	0.67	0.01	1.07	0.81	0.27	0.56	0.56	0.56
	31	0.02	1.55	0.78	0.02	1.26	0.88	0.30	0.89	0.89	0.89
	32	0.04	1.91	0.93	0.03	1.72	1.09	0.19	1.24	1.24	1.24
	33	0.05	2.23	1.05	0.04	2.01	1.19	0.22	1.46	1.46	1.46
	34	0.06	2.43	1.11	0.05	2.11	1.23	0.32	1.53	1.53	1.53
	35	0.07	2.49	1.13	0.06	2.33	1.29	0.16	1.56	1.56	1.56
	36	0.07	2.50	1.14	0.06	2.40	1.32	0.10	1.50	1.50	1.50
	37	0.07	2.46	1.12	0.07	2.47	1.35	-0.01	1.40	1.40	1.40
	38	0.06	2.38	1.10	0.07	2.49	1.35	-0.10	1.30	1.30	1.30
	39	0.06	2.31	1.06	0.06	2.43	1.32	-0.12	1.26	1.26	1.26
	40	0.06	2.28	1.05	0.06	2.36	1.31	-0.08	1.31	1.31	1.31
	41	0.06	2.32	1.07	0.06	2.26	1.29	0.05	1.35	1.35	1.35
	42	0.06	2.35	1.08	0.05	2.22	1.26	0.13	1.37	1.37	1.37
	43	0.06	2.36	1.08	0.05	2.25	1.26	0.11	1.35	1.35	1.35
	44	0.06	2.34	1.08	0.05	2.28	1.26	0.07	1.25	1.25	1.25
	45	0.05	2.30	1.04	0.05	2.27	1.26	0.03	1.06	1.06	1.06
	46	0.05	2.15	0.97	0.05	2.25	1.25	-0.09	0.90	0.90	0.90
	47	0.04	2.02	0.90	0.05	2.13	1.24	-0.11	0.73	0.73	0.73
Average											
	Weekday	**0.044**	**2.1**	**0.91**	**0.043**	**2.0**	**1.16**		**0.99**	**0.99**	**0.99**
	Weekend	**0.044**	**2.0**	**0.94**	**0.044**	**2.0**	**1.16**		**1.02**	**1.02**	**1.02**
	ADWF[1]	**0.044**	**2.0**	**0.92**	**0.043**	**2.0**	**1.16**		**1.00**	**1.00**	**1.00**
% Error											
	Weekday				-1.1%			0.37			
	Weekend				-0.7%			0.32			

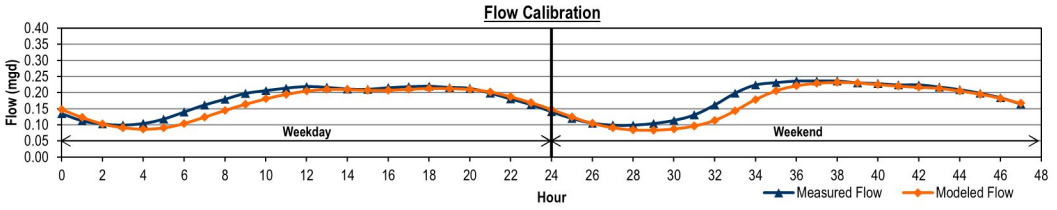
Note:

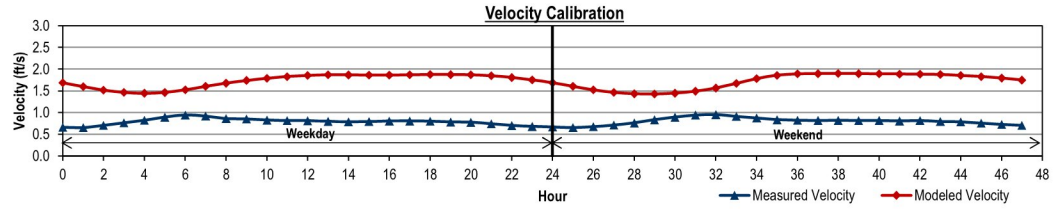


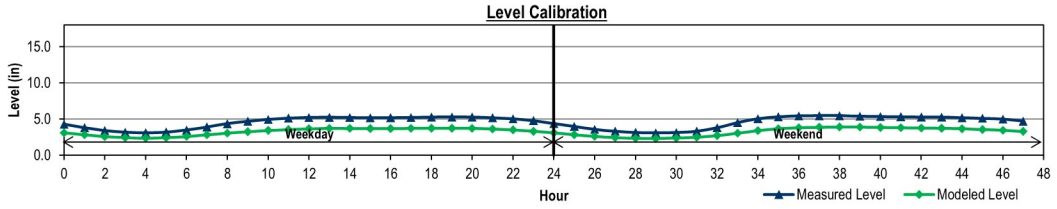
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A14 DRY WEATHER FLOW CALIBRATION

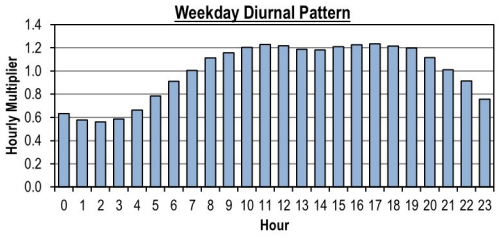
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.14	4.29	0.66	0.15	3.09	1.69	1.20	0.63	0.63	0.63
	1	0.11	3.83	0.66	0.12	2.83	1.60	1.00	0.58	0.58	0.58
	2	0.10	3.42	0.71	0.10	2.58	1.52	0.84	0.56	0.56	0.56
	3	0.10	3.19	0.77	0.09	2.43	1.47	0.76	0.59	0.59	0.59
	4	0.10	3.12	0.83	0.09	2.37	1.45	0.75	0.66	0.66	0.66
	5	0.12	3.21	0.90	0.09	2.42	1.47	0.79	0.79	0.79	0.79
	6	0.14	3.49	0.94	0.10	2.59	1.53	0.90	0.91	0.91	0.91
	7	0.16	3.91	0.92	0.12	2.83	1.61	1.09	1.01	1.01	1.01
	8	0.18	4.37	0.86	0.14	3.06	1.68	1.32	1.11	1.11	1.11
	9	0.20	4.71	0.86	0.16	3.25	1.74	1.46	1.16	1.16	1.16
	10	0.21	4.94	0.83	0.18	3.43	1.79	1.51	1.20	1.20	1.20
	11	0.21	5.13	0.82	0.19	3.56	1.83	1.57	1.23	1.23	1.23
	12	0.22	5.22	0.81	0.21	3.66	1.86	1.57	1.22	1.22	1.22
	13	0.22	5.25	0.80	0.21	3.70	1.87	1.55	1.19	1.19	1.19
	14	0.21	5.21	0.79	0.21	3.70	1.87	1.51	1.18	1.18	1.18
	15	0.21	5.17	0.80	0.21	3.68	1.86	1.49	1.21	1.21	1.21
	16	0.22	5.20	0.81	0.21	3.68	1.86	1.52	1.23	1.23	1.23
	17	0.22	5.23	0.81	0.21	3.71	1.87	1.52	1.23	1.23	1.23
	18	0.22	5.28	0.80	0.21	3.73	1.88	1.55	1.21	1.21	1.21
	19	0.22	5.30	0.79	0.21	3.73	1.88	1.58	1.20	1.20	1.20
	20	0.21	5.29	0.78	0.21	3.70	1.87	1.59	1.12	1.12	1.12
	21	0.20	5.19	0.75	0.20	3.64	1.85	1.55	1.01	1.01	1.01
	22	0.18	5.03	0.71	0.19	3.49	1.81	1.53	0.91	0.91	0.91
	23	0.16	4.78	0.68	0.17	3.31	1.76	1.46	0.76	0.76	0.76
Weekend	24	0.14	4.40	0.67	0.15	3.10	1.69	1.30	0.67	0.67	0.67
	25	0.12	3.99	0.66	0.12	2.84	1.61	1.15	0.59	0.59	0.59
	26	0.11	3.59	0.68	0.10	2.61	1.53	0.98	0.56	0.56	0.56
	27	0.10	3.32	0.72	0.09	2.43	1.47	0.89	0.56	0.56	0.56
	28	0.10	3.17	0.77	0.08	2.34	1.43	0.83	0.59	0.59	0.59
	29	0.10	3.09	0.84	0.08	2.33	1.43	0.77	0.64	0.64	0.64
	30	0.11	3.14	0.90	0.09	2.38	1.45	0.76	0.73	0.73	0.73
	31	0.13	3.32	0.95	0.10	2.50	1.49	0.83	0.91	0.91	0.91
	32	0.16	3.81	0.96	0.11	2.71	1.57	1.09	1.11	1.11	1.11
	33	0.20	4.51	0.91	0.14	3.04	1.68	1.47	1.26	1.26	1.26
	34	0.22	5.04	0.88	0.18	3.40	1.79	1.64	1.30	1.30	1.30
	35	0.23	5.32	0.84	0.21	3.66	1.86	1.66	1.33	1.33	1.33
	36	0.24	5.44	0.83	0.22	3.80	1.89	1.64	1.32	1.32	1.32
	37	0.24	5.47	0.82	0.23	3.87	1.90	1.60	1.33	1.33	1.33
	38	0.24	5.47	0.82	0.23	3.90	1.90	1.57	1.30	1.30	1.30
	39	0.23	5.40	0.82	0.23	3.88	1.90	1.52	1.28	1.28	1.28
	40	0.23	5.35	0.82	0.22	3.84	1.89	1.51	1.26	1.26	1.26
	41	0.22	5.32	0.81	0.22	3.79	1.89	1.52	1.26	1.26	1.26
	42	0.22	5.29	0.82	0.22	3.77	1.89	1.53	1.22	1.22	1.22
	43	0.22	5.27	0.80	0.21	3.73	1.88	1.53	1.18	1.18	1.18
	44	0.21	5.19	0.79	0.21	3.66	1.86	1.52	1.11	1.11	1.11
	45	0.20	5.11	0.76	0.20	3.57	1.83	1.54	1.03	1.03	1.03
	46	0.18	4.99	0.73	0.18	3.45	1.80	1.54	0.93	0.93	0.93
	47	0.16	4.72	0.71	0.17	3.29	1.75	1.43	0.79	0.79	0.79
Average											
	Weekday	0.177	4.6	0.80	0.167	3.3	1.73		1.00	1.00	1.00
	Weekend	0.180	4.6	0.80	0.167	3.2	1.72		1.01	1.01	1.01
	ADWF[1]	0.178	4.6	0.80	0.167	3.3	1.73		1.00	1.00	1.00
% Error											
	Weekday				-6.0%			1.59			
	Weekend				-7.4%			1.66			

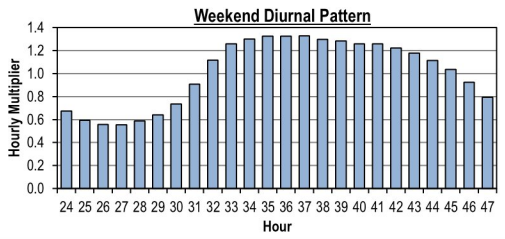
Note:







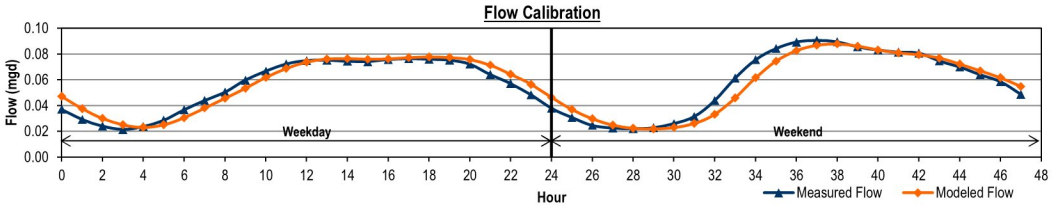


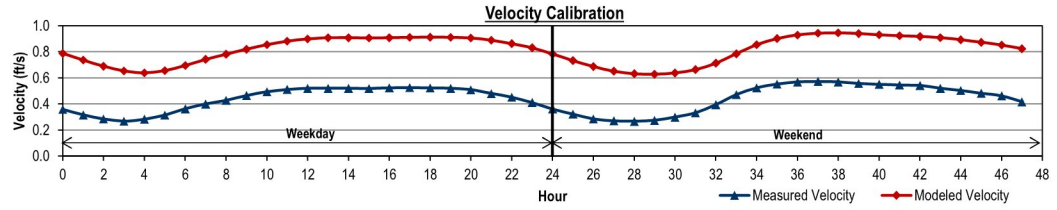


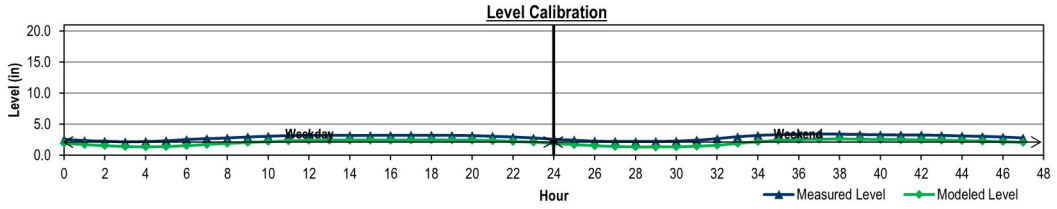
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A15 DRY WEATHER FLOW CALIBRATION

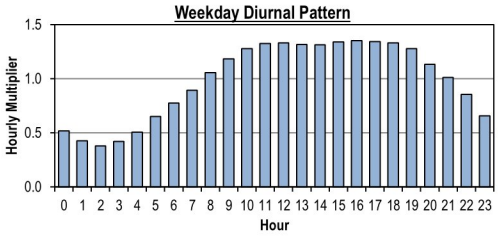
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.04	2.57	0.36	0.05	1.93	0.79	0.64	0.52	0.52	0.52
	1	0.03	2.39	0.32	0.04	1.73	0.74	0.66	0.43	0.43	0.43
	2	0.02	2.26	0.28	0.03	1.55	0.69	0.71	0.38	0.38	0.38
	3	0.02	2.18	0.27	0.03	1.42	0.65	0.76	0.42	0.42	0.42
	4	0.02	2.22	0.28	0.02	1.37	0.64	0.86	0.51	0.51	0.51
	5	0.03	2.35	0.31	0.03	1.42	0.66	0.93	0.65	0.65	0.65
	6	0.04	2.53	0.36	0.03	1.56	0.70	0.97	0.78	0.78	0.78
	7	0.04	2.67	0.40	0.04	1.74	0.74	0.93	0.89	0.89	0.89
	8	0.05	2.81	0.43	0.05	1.90	0.78	0.91	1.06	1.06	1.06
	9	0.06	2.97	0.47	0.05	2.05	0.82	0.91	1.18	1.18	1.18
	10	0.07	3.07	0.49	0.06	2.20	0.85	0.87	1.28	1.28	1.28
	11	0.07	3.16	0.51	0.07	2.32	0.88	0.83	1.33	1.33	1.33
	12	0.07	3.20	0.52	0.07	2.40	0.90	0.80	1.33	1.33	1.33
	13	0.08	3.21	0.52	0.08	2.44	0.91	0.77	1.32	1.32	1.32
	14	0.07	3.19	0.52	0.08	2.45	0.91	0.74	1.31	1.31	1.31
	15	0.07	3.19	0.52	0.08	2.44	0.91	0.75	1.34	1.34	1.34
	16	0.08	3.21	0.52	0.08	2.44	0.91	0.77	1.35	1.35	1.35
	17	0.08	3.23	0.53	0.08	2.46	0.91	0.77	1.34	1.34	1.34
	18	0.08	3.22	0.52	0.08	2.47	0.91	0.76	1.33	1.33	1.33
	19	0.08	3.22	0.52	0.08	2.46	0.91	0.76	1.28	1.28	1.28
	20	0.07	3.17	0.51	0.08	2.44	0.91	0.73	1.13	1.13	1.13
	21	0.06	3.05	0.48	0.07	2.37	0.89	0.68	1.01	1.01	1.01
	22	0.06	2.94	0.45	0.06	2.25	0.86	0.69	0.85	0.85	0.85
	23	0.05	2.79	0.41	0.06	2.11	0.83	0.68	0.66	0.66	0.66
Weekend	24	0.04	2.60	0.36	0.05	1.92	0.78	0.69	0.54	0.54	0.54
	25	0.03	2.45	0.32	0.04	1.71	0.73	0.73	0.44	0.44	0.44
	26	0.02	2.30	0.29	0.03	1.54	0.69	0.76	0.40	0.40	0.40
	27	0.02	2.24	0.27	0.02	1.41	0.65	0.82	0.39	0.39	0.39
	28	0.02	2.21	0.27	0.02	1.35	0.63	0.87	0.40	0.40	0.40
	29	0.02	2.23	0.27	0.02	1.33	0.63	0.90	0.46	0.46	0.46
	30	0.03	2.29	0.30	0.02	1.36	0.64	0.93	0.56	0.56	0.56
	31	0.03	2.43	0.33	0.03	1.45	0.66	0.98	0.78	0.78	0.78
	32	0.04	2.68	0.39	0.03	1.63	0.71	1.06	1.09	1.09	1.09
	33	0.06	2.98	0.47	0.05	1.91	0.78	1.08	1.34	1.34	1.34
	34	0.08	3.21	0.52	0.06	2.20	0.86	1.01	1.49	1.49	1.49
	35	0.08	3.33	0.55	0.07	2.41	0.90	0.92	1.58	1.58	1.58
	36	0.09	3.40	0.57	0.08	2.54	0.93	0.86	1.60	1.60	1.60
	37	0.09	3.41	0.57	0.09	2.60	0.94	0.81	1.58	1.58	1.58
	38	0.09	3.40	0.57	0.09	2.62	0.95	0.78	1.52	1.52	1.52
	39	0.09	3.34	0.56	0.09	2.59	0.94	0.75	1.47	1.47	1.47
	40	0.08	3.31	0.55	0.08	2.55	0.93	0.76	1.44	1.44	1.44
	41	0.08	3.29	0.55	0.08	2.52	0.92	0.77	1.43	1.43	1.43
	42	0.08	3.27	0.54	0.08	2.49	0.92	0.78	1.32	1.32	1.32
	43	0.07	3.19	0.52	0.08	2.45	0.91	0.74	1.24	1.24	1.24
	44	0.07	3.13	0.50	0.07	2.38	0.89	0.75	1.13	1.13	1.13
	45	0.06	3.04	0.48	0.07	2.29	0.87	0.74	1.04	1.04	1.04
	46	0.06	2.94	0.46	0.06	2.20	0.85	0.74	0.86	0.86	0.86
	47	0.05	2.78	0.42	0.05	2.08	0.82	0.71	0.67	0.67	0.67
Average											
	Weekday	0.056	2.9	0.44	0.057	2.1	0.82		0.99	0.99	0.99
	Weekend	0.058	2.9	0.44	0.057	2.1	0.81		1.03	1.03	1.03
	ADWF[1]	0.056	2.9	0.44	0.057	2.1	0.82		1.00	1.00	1.00
% Error											
	Weekday				2.0%			0.97			
	Weekend				-2.4%			1.08			

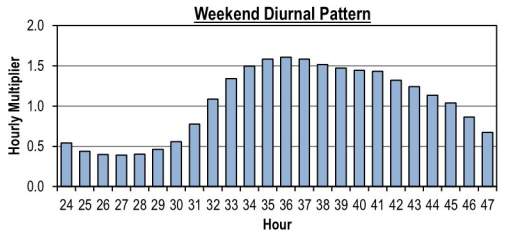
Note:







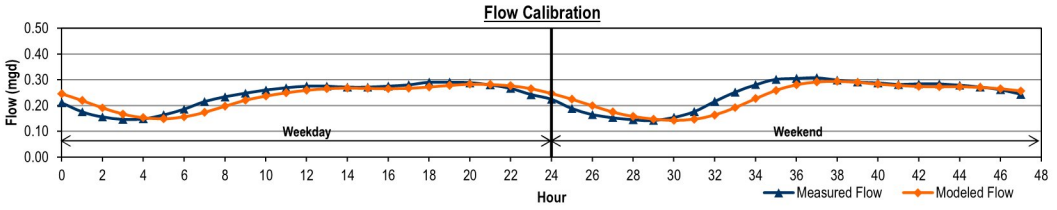


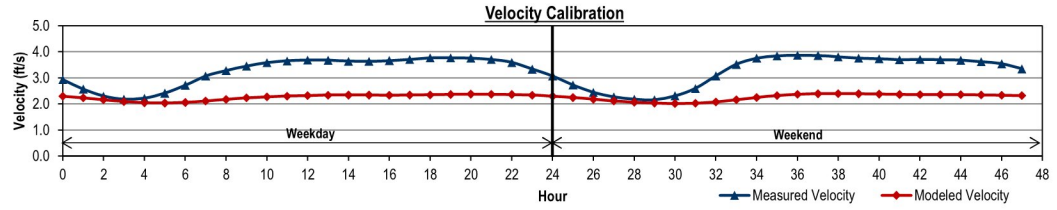


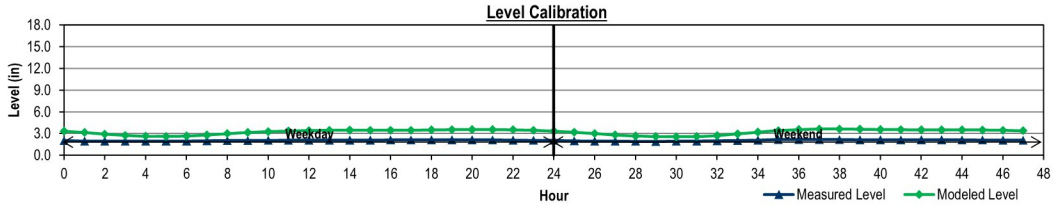
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A16 DRY WEATHER FLOW CALIBRATION

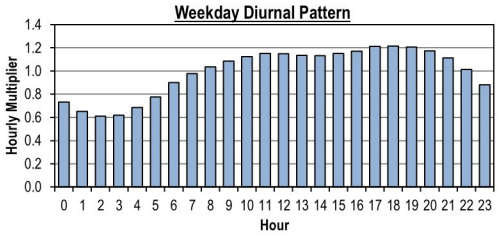
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.21	2.05	2.93	0.25	3.32	2.30	-1.28	0.73	0.73	0.73
	1	0.18	1.98	2.57	0.22	3.15	2.24	-1.17	0.65	0.65	0.65
	2	0.16	1.97	2.30	0.19	2.94	2.16	-0.97	0.61	0.61	0.61
	3	0.15	1.95	2.19	0.17	2.75	2.09	-0.80	0.62	0.62	0.62
	4	0.15	1.95	2.22	0.15	2.64	2.05	-0.69	0.68	0.68	0.68
	5	0.16	1.97	2.41	0.15	2.61	2.04	-0.64	0.78	0.78	0.78
	6	0.19	1.98	2.72	0.16	2.67	2.06	-0.69	0.90	0.90	0.90
	7	0.22	2.01	3.07	0.17	2.81	2.11	-0.80	0.98	0.98	0.98
	8	0.23	2.04	3.28	0.20	2.99	2.18	-0.96	1.04	1.04	1.04
	9	0.25	2.05	3.46	0.22	3.15	2.23	-1.11	1.09	1.09	1.09
	10	0.26	2.06	3.59	0.24	3.26	2.27	-1.20	1.12	1.12	1.12
	11	0.27	2.08	3.65	0.25	3.35	2.30	-1.27	1.15	1.15	1.15
	12	0.28	2.10	3.69	0.26	3.41	2.32	-1.31	1.15	1.15	1.15
	13	0.28	2.10	3.68	0.27	3.45	2.34	-1.35	1.13	1.13	1.13
	14	0.27	2.10	3.64	0.27	3.47	2.34	-1.37	1.13	1.13	1.13
	15	0.27	2.10	3.64	0.27	3.46	2.34	-1.36	1.15	1.15	1.15
	16	0.28	2.11	3.66	0.27	3.45	2.34	-1.34	1.17	1.17	1.17
	17	0.28	2.12	3.71	0.27	3.46	2.34	-1.34	1.21	1.21	1.21
	18	0.29	2.15	3.77	0.27	3.50	2.35	-1.35	1.21	1.21	1.21
	19	0.29	2.15	3.77	0.28	3.53	2.37	-1.39	1.21	1.21	1.21
	20	0.29	2.14	3.76	0.28	3.56	2.37	-1.42	1.17	1.17	1.17
	21	0.28	2.12	3.71	0.28	3.56	2.37	-1.43	1.11	1.11	1.11
	22	0.27	2.09	3.59	0.28	3.52	2.36	-1.43	1.01	1.01	1.01
	23	0.24	2.06	3.34	0.27	3.45	2.34	-1.38	0.88	0.88	0.88
Weekend	24	0.22	2.07	3.07	0.25	3.33	2.30	-1.26	0.79	0.79	0.79
	25	0.19	1.99	2.73	0.22	3.18	2.25	-1.19	0.69	0.69	0.69
	26	0.17	1.96	2.45	0.20	3.00	2.18	-1.04	0.64	0.64	0.64
	27	0.15	1.96	2.28	0.17	2.82	2.12	-0.86	0.60	0.60	0.60
	28	0.14	1.93	2.18	0.16	2.68	2.07	-0.75	0.59	0.59	0.59
	29	0.14	1.92	2.16	0.15	2.60	2.03	-0.67	0.64	0.64	0.64
	30	0.15	1.94	2.31	0.14	2.56	2.02	-0.61	0.74	0.74	0.74
	31	0.18	1.97	2.60	0.15	2.59	2.03	-0.62	0.90	0.90	0.90
	32	0.22	2.02	3.08	0.16	2.73	2.08	-0.71	1.05	1.05	1.05
	33	0.25	2.05	3.52	0.19	2.95	2.16	-0.91	1.17	1.17	1.17
	34	0.28	2.10	3.75	0.23	3.20	2.25	-1.10	1.26	1.26	1.26
	35	0.30	2.17	3.85	0.26	3.41	2.32	-1.24	1.28	1.28	1.28
	36	0.31	2.18	3.87	0.28	3.55	2.37	-1.37	1.29	1.29	1.29
	37	0.31	2.20	3.86	0.29	3.62	2.39	-1.42	1.25	1.25	1.25
	38	0.30	2.17	3.81	0.29	3.63	2.40	-1.45	1.22	1.22	1.22
	39	0.29	2.15	3.76	0.29	3.60	2.39	-1.45	1.20	1.20	1.20
	40	0.29	2.15	3.74	0.28	3.56	2.38	-1.42	1.18	1.18	1.18
	41	0.28	2.13	3.70	0.28	3.53	2.36	-1.40	1.19	1.19	1.19
	42	0.28	2.14	3.71	0.27	3.51	2.36	-1.37	1.19	1.19	1.19
	43	0.28	2.14	3.70	0.27	3.50	2.35	-1.36	1.17	1.17	1.17
	44	0.28	2.13	3.68	0.27	3.50	2.35	-1.37	1.14	1.14	1.14
	45	0.27	2.11	3.63	0.27	3.48	2.35	-1.37	1.09	1.09	1.09
	46	0.26	2.09	3.54	0.27	3.45	2.34	-1.36	1.02	1.02	1.02
	47	0.24	2.07	3.35	0.26	3.39	2.32	-1.32	0.94	0.94	0.94
Average											
	Weekday	0.238	2.1	3.26	0.234	3.2	2.26		1.00	1.00	1.00
	Weekend	0.242	2.1	3.26	0.234	3.2	2.26		1.01	1.01	1.01
	ADWF[1]	0.239	2.1	3.26	0.234	3.2	2.26		1.00	1.00	1.00
% Error											
	Weekday				-2.0%			1.43			
	Weekend				-3.2%			1.45			

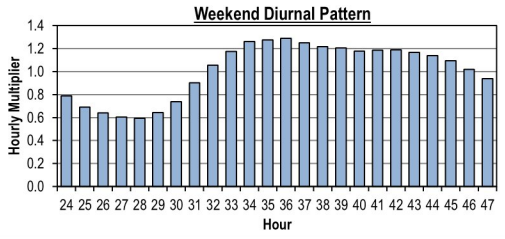
Note:







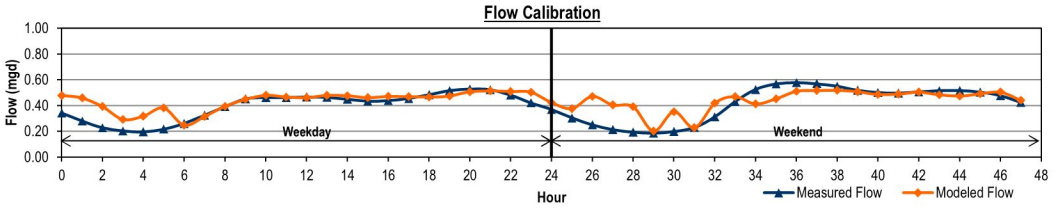


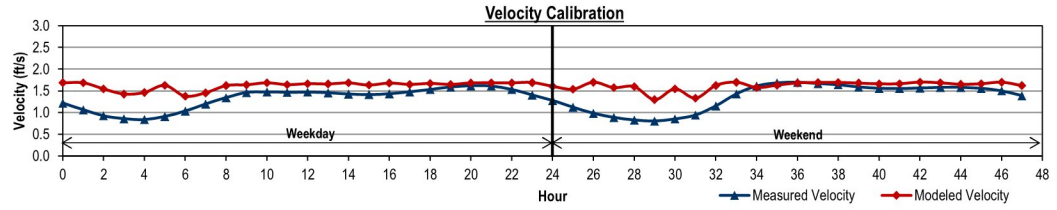


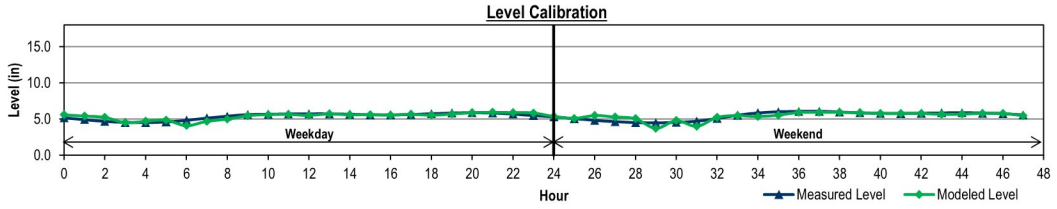
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-1 DRY WEATHER FLOW CALIBRATION

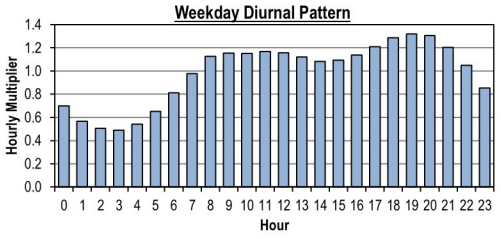
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.34	5.20	1.22	0.48	5.59	1.69	-0.39	0.70	0.70	0.70
	1	0.28	4.93	1.07	0.46	5.41	1.69	-0.48	0.57	0.57	0.57
	2	0.23	4.68	0.93	0.39	5.24	1.55	-0.57	0.51	0.51	0.51
	3	0.20	4.55	0.86	0.29	4.53	1.43	0.02	0.49	0.49	0.49
	4	0.20	4.51	0.84	0.32	4.71	1.46	-0.20	0.54	0.54	0.54
	5	0.22	4.61	0.91	0.38	4.86	1.63	-0.24	0.65	0.65	0.65
	6	0.26	4.85	1.04	0.25	4.10	1.38	0.75	0.81	0.81	0.81
	7	0.33	5.14	1.20	0.31	4.70	1.46	0.44	0.98	0.98	0.98
	8	0.39	5.40	1.34	0.39	4.98	1.62	0.42	1.13	1.13	1.13
	9	0.45	5.63	1.46	0.45	5.48	1.64	0.16	1.15	1.15	1.15
	10	0.46	5.68	1.48	0.48	5.63	1.69	0.05	1.15	1.15	1.15
	11	0.46	5.70	1.47	0.47	5.66	1.64	0.04	1.17	1.17	1.17
	12	0.47	5.73	1.47	0.46	5.52	1.67	0.21	1.16	1.16	1.16
	13	0.46	5.73	1.46	0.48	5.71	1.66	0.02	1.12	1.12	1.12
	14	0.45	5.68	1.43	0.48	5.59	1.69	0.09	1.08	1.08	1.08
	15	0.43	5.58	1.42	0.46	5.63	1.64	-0.04	1.10	1.10	1.10
	16	0.44	5.58	1.43	0.47	5.55	1.68	0.03	1.14	1.14	1.14
	17	0.46	5.63	1.48	0.47	5.66	1.65	-0.03	1.21	1.21	1.21
	18	0.48	5.74	1.53	0.47	5.54	1.67	0.20	1.29	1.29	1.29
	19	0.52	5.84	1.59	0.47	5.70	1.65	0.14	1.32	1.32	1.32
	20	0.53	5.88	1.62	0.51	5.89	1.68	-0.02	1.30	1.30	1.30
	21	0.52	5.84	1.62	0.51	5.94	1.69	-0.10	1.20	1.20	1.20
	22	0.48	5.70	1.54	0.51	5.90	1.68	-0.20	1.05	1.05	1.05
	23	0.42	5.48	1.41	0.50	5.83	1.69	-0.34	0.85	0.85	0.85
Weekend	24	0.37	5.33	1.28	0.42	5.36	1.61	-0.03	0.76	0.76	0.76
	25	0.30	5.07	1.13	0.38	5.10	1.54	-0.04	0.63	0.63	0.63
	26	0.25	4.83	0.99	0.47	5.49	1.70	-0.66	0.53	0.53	0.53
	27	0.21	4.64	0.89	0.40	5.28	1.58	-0.64	0.48	0.48	0.48
	28	0.19	4.54	0.83	0.39	5.06	1.60	-0.52	0.46	0.46	0.46
	29	0.19	4.49	0.81	0.20	3.72	1.30	0.77	0.50	0.50	0.50
	30	0.20	4.56	0.85	0.35	4.80	1.55	-0.25	0.57	0.57	0.57
	31	0.23	4.71	0.95	0.23	4.00	1.33	0.71	0.78	0.78	0.78
	32	0.31	5.09	1.15	0.42	5.24	1.62	-0.15	1.08	1.08	1.08
	33	0.43	5.54	1.43	0.47	5.48	1.70	0.06	1.31	1.31	1.31
	34	0.52	5.86	1.61	0.41	5.34	1.58	0.52	1.42	1.42	1.42
	35	0.57	6.01	1.69	0.45	5.55	1.63	0.45	1.44	1.44	1.44
	36	0.58	6.06	1.70	0.51	5.91	1.68	0.14	1.42	1.42	1.42
	37	0.57	6.07	1.67	0.52	5.94	1.69	0.13	1.37	1.37	1.37
	38	0.55	5.99	1.64	0.52	5.95	1.70	0.04	1.30	1.30	1.30
	39	0.52	5.87	1.59	0.51	5.91	1.68	-0.04	1.25	1.25	1.25
	40	0.50	5.79	1.56	0.49	5.78	1.66	0.00	1.24	1.24	1.24
	41	0.50	5.78	1.56	0.49	5.78	1.67	-0.01	1.26	1.26	1.26
	42	0.51	5.82	1.57	0.50	5.80	1.70	0.02	1.29	1.29	1.29
	43	0.52	5.86	1.58	0.48	5.66	1.68	0.20	1.29	1.29	1.29
	44	0.52	5.88	1.58	0.47	5.69	1.65	0.18	1.26	1.26	1.26
	45	0.50	5.83	1.56	0.49	5.80	1.67	0.03	1.19	1.19	1.19
	46	0.48	5.75	1.50	0.50	5.80	1.70	-0.05	1.06	1.06	1.06
	47	0.42	5.57	1.39	0.44	5.46	1.62	0.11	0.92	0.92	0.92
Average											
	Weekday	0.395	5.4	1.33	0.436	5.4	1.62		0.99	0.99	0.99
	Weekend	0.414	5.5	1.35	0.438	5.4	1.62		1.03	1.03	1.03
	ADWF(1)	0.400	5.4	1.33	0.437	5.4	1.62		1.00	1.00	1.00
% Error											
	Weekday				10.3%			0.75			
	Weekend				5.9%			0.77			

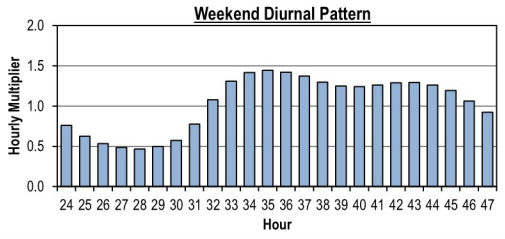
Note:







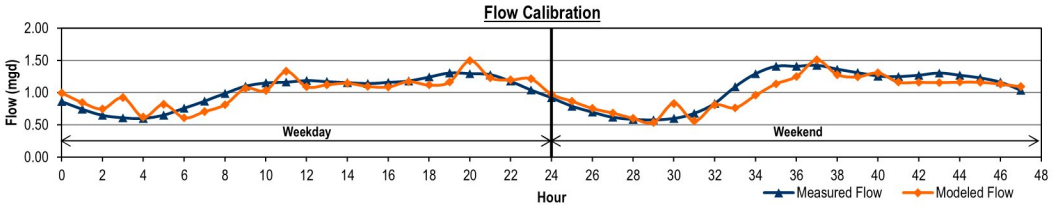


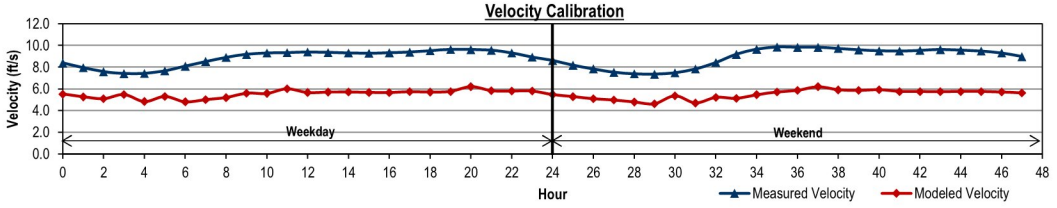


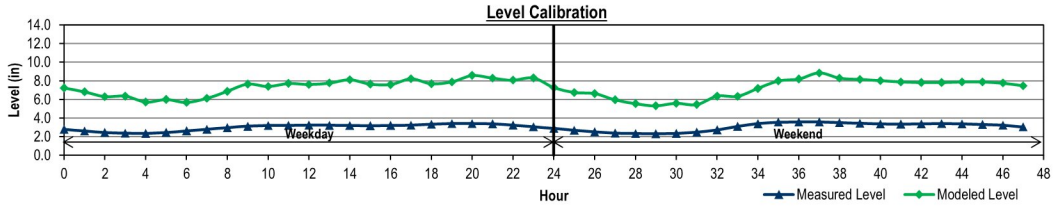
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-2 DRY WEATHER FLOW CALIBRATION

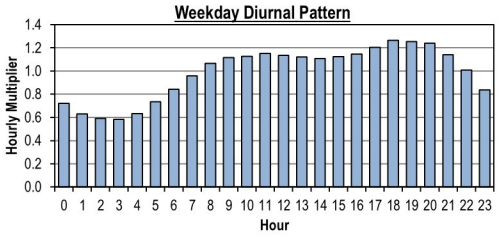
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.86	2.80	8.39	1.00	7.24	5.53	-4.44	0.72	0.72	0.72
	1	0.74	2.61	7.96	0.85	6.83	5.28	-4.22	0.63	0.63	0.63
	2	0.65	2.45	7.59	0.75	6.30	5.10	-3.85	0.59	0.59	0.59
	3	0.61	2.38	7.43	0.92	6.36	5.49	-3.98	0.58	0.58	0.58
	4	0.60	2.36	7.43	0.62	5.72	4.84	-3.36	0.63	0.63	0.63
	5	0.65	2.45	7.67	0.82	5.99	5.30	-3.54	0.74	0.74	0.74
	6	0.76	2.63	8.09	0.61	5.68	4.82	-3.05	0.84	0.84	0.84
	7	0.87	2.79	8.52	0.71	6.12	5.02	-3.32	0.96	0.96	0.96
	8	0.99	2.97	8.89	0.81	6.87	5.20	-3.90	1.07	1.07	1.07
	9	1.10	3.13	9.19	1.06	7.65	5.61	-4.52	1.12	1.12	1.12
	10	1.15	3.20	9.32	1.03	7.39	5.58	-4.19	1.13	1.13	1.13
	11	1.16	3.22	9.35	1.33	7.72	6.01	-4.51	1.15	1.15	1.15
	12	1.19	3.25	9.39	1.09	7.60	5.67	-4.35	1.14	1.14	1.14
	13	1.17	3.22	9.36	1.12	7.75	5.71	-4.53	1.12	1.12	1.12
	14	1.16	3.20	9.32	1.15	8.11	5.72	-4.91	1.11	1.11	1.11
	15	1.14	3.18	9.29	1.10	7.65	5.67	-4.46	1.12	1.12	1.12
	16	1.16	3.21	9.33	1.09	7.59	5.66	-4.38	1.15	1.15	1.15
	17	1.18	3.24	9.39	1.17	8.21	5.75	-4.97	1.21	1.21	1.21
	18	1.24	3.33	9.52	1.12	7.68	5.70	-4.35	1.27	1.27	1.27
	19	1.31	3.42	9.64	1.16	7.88	5.76	-4.46	1.26	1.26	1.26
	20	1.30	3.40	9.62	1.50	8.58	6.21	-5.18	1.24	1.24	1.24
	21	1.28	3.38	9.56	1.23	8.29	5.84	-4.90	1.14	1.14	1.14
	22	1.18	3.25	9.32	1.20	8.07	5.81	-4.82	1.01	1.01	1.01
	23	1.04	3.05	8.94	1.21	8.31	5.81	-5.25	0.84	0.84	0.84
Weekend	24	0.92	2.88	8.62	0.98	7.27	5.49	-4.39	0.77	0.77	0.77
	25	0.79	2.68	8.18	0.87	6.74	5.29	-4.06	0.68	0.68	0.68
	26	0.70	2.53	7.85	0.76	6.63	5.10	-4.09	0.60	0.60	0.60
	27	0.62	2.39	7.53	0.68	5.96	4.98	-3.57	0.57	0.57	0.57
	28	0.59	2.33	7.40	0.60	5.55	4.80	-3.21	0.56	0.56	0.56
	29	0.58	2.32	7.36	0.53	5.32	4.64	-2.99	0.58	0.58	0.58
	30	0.60	2.36	7.49	0.83	5.59	5.38	-3.23	0.66	0.66	0.66
	31	0.68	2.50	7.84	0.56	5.45	4.70	-2.95	0.81	0.81	0.81
	32	0.83	2.73	8.43	0.81	6.35	5.22	-3.62	1.06	1.06	1.06
	33	1.09	3.11	9.18	0.76	6.34	5.13	-3.23	1.25	1.25	1.25
	34	1.29	3.40	9.65	0.96	7.18	5.47	-3.78	1.37	1.37	1.37
	35	1.41	3.56	9.86	1.14	7.99	5.72	-4.43	1.37	1.37	1.37
	36	1.41	3.57	9.83	1.25	8.18	5.88	-4.62	1.38	1.38	1.38
	37	1.43	3.59	9.83	1.51	8.84	6.20	-5.25	1.32	1.32	1.32
	38	1.36	3.50	9.73	1.28	8.28	5.91	-4.78	1.27	1.27	1.27
	39	1.31	3.44	9.61	1.24	8.16	5.87	-4.72	1.22	1.22	1.22
	40	1.26	3.36	9.51	1.31	8.02	5.93	-4.65	1.21	1.21	1.21
	41	1.25	3.35	9.49	1.16	7.88	5.76	-4.53	1.23	1.23	1.23
	42	1.27	3.38	9.55	1.16	7.83	5.76	-4.45	1.26	1.26	1.26
	43	1.30	3.42	9.63	1.16	7.82	5.75	-4.40	1.23	1.23	1.23
	44	1.27	3.38	9.57	1.16	7.88	5.76	-4.50	1.19	1.19	1.19
	45	1.23	3.31	9.48	1.16	7.88	5.76	-4.56	1.13	1.13	1.13
	46	1.16	3.23	9.31	1.13	7.76	5.72	-4.53	1.01	1.01	1.01
	47	1.04	3.05	8.99	1.09	7.47	5.64	-4.42	0.89	0.89	0.89
Average											
	Weekday	1.021	3.0	8.85	1.027	7.3	5.55		0.99	0.99	0.99
	Weekend	1.058	3.1	8.91	1.004	7.2	5.49		1.03	1.03	1.03
	ADWF[1]	1.031	3.0	8.87	1.021	7.3	5.53		1.00	1.00	1.00
% Error											
	Weekday				0.6%			5.25			
	Weekend				-5.1%			5.25			

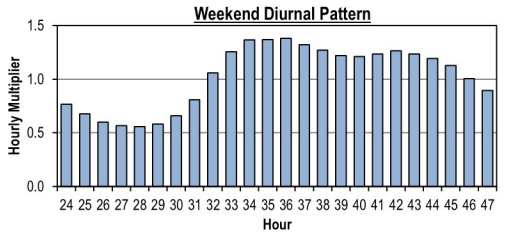
Note:







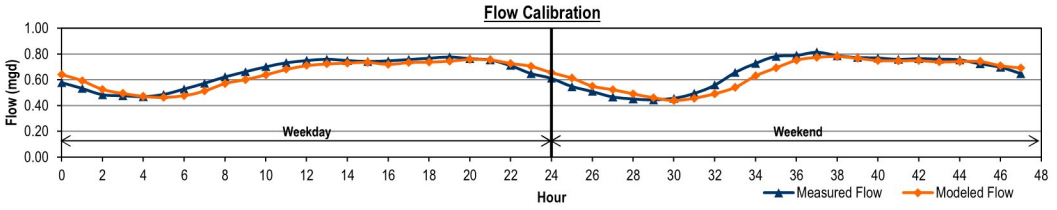


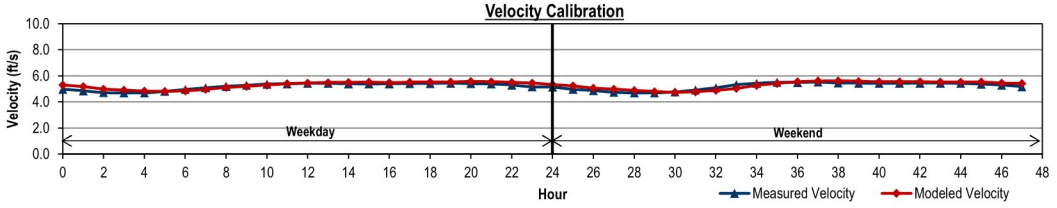


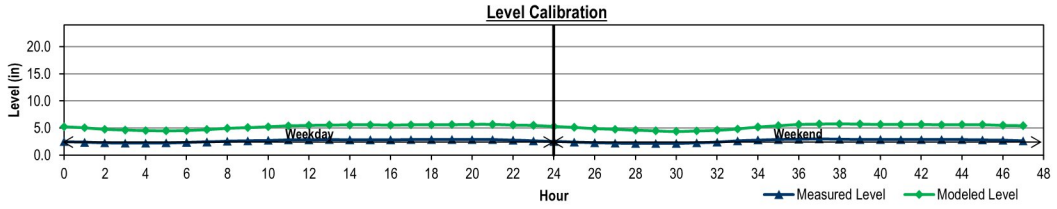
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-3 DRY WEATHER FLOW CALIBRATION

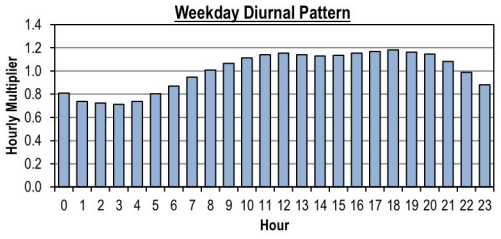
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.58	2.51	4.99	0.64	5.26	5.30	-2.74	0.81	0.81	0.81
	1	0.53	2.40	4.85	0.59	5.06	5.18	-2.66	0.74	0.74	0.74
	2	0.48	2.30	4.71	0.53	4.79	5.00	-2.49	0.72	0.72	0.72
	3	0.48	2.27	4.70	0.49	4.64	4.91	-2.38	0.71	0.71	0.71
	4	0.47	2.25	4.70	0.47	4.55	4.84	-2.30	0.74	0.74	0.74
	5	0.49	2.27	4.82	0.46	4.50	4.81	-2.23	0.80	0.80	0.80
	6	0.53	2.37	4.96	0.48	4.57	4.85	-2.20	0.87	0.87	0.87
	7	0.57	2.47	5.08	0.51	4.73	4.96	-2.26	0.95	0.95	0.95
	8	0.62	2.59	5.20	0.57	4.98	5.12	-2.39	1.01	1.01	1.01
	9	0.66	2.67	5.28	0.60	5.10	5.20	-2.43	1.07	1.07	1.07
	10	0.70	2.75	5.37	0.64	5.24	5.29	-2.49	1.11	1.11	1.11
	11	0.73	2.82	5.40	0.68	5.41	5.39	-2.59	1.14	1.14	1.14
	12	0.75	2.86	5.42	0.71	5.52	5.46	-2.66	1.15	1.15	1.15
	13	0.76	2.88	5.44	0.72	5.57	5.49	-2.69	1.14	1.14	1.14
	14	0.75	2.86	5.40	0.73	5.59	5.50	-2.73	1.13	1.13	1.13
	15	0.74	2.85	5.39	0.74	5.62	5.52	-2.76	1.14	1.14	1.14
	16	0.75	2.86	5.40	0.72	5.56	5.48	-2.70	1.15	1.15	1.15
	17	0.76	2.89	5.41	0.73	5.60	5.51	-2.72	1.17	1.17	1.17
	18	0.77	2.91	5.42	0.74	5.63	5.52	-2.72	1.18	1.18	1.18
	19	0.78	2.93	5.44	0.74	5.64	5.53	-2.71	1.16	1.16	1.16
	20	0.76	2.91	5.41	0.76	5.70	5.57	-2.79	1.15	1.15	1.15
	21	0.75	2.88	5.38	0.75	5.69	5.56	-2.80	1.08	1.08	1.08
	22	0.71	2.80	5.30	0.73	5.58	5.50	-2.78	0.99	0.99	0.99
	23	0.65	2.66	5.17	0.70	5.50	5.45	-2.83	0.88	0.88	0.88
Weekend	24	0.61	2.57	5.14	0.66	5.32	5.33	-2.75	0.83	0.83	0.83
	25	0.55	2.43	4.97	0.61	5.15	5.23	-2.72	0.78	0.78	0.78
	26	0.51	2.34	4.88	0.55	4.88	5.06	-2.55	0.71	0.71	0.71
	27	0.47	2.24	4.74	0.52	4.78	4.99	-2.53	0.69	0.69	0.69
	28	0.45	2.20	4.70	0.49	4.63	4.89	-2.43	0.68	0.68	0.68
	29	0.45	2.19	4.70	0.46	4.50	4.80	-2.31	0.70	0.70	0.70
	30	0.46	2.21	4.77	0.44	4.39	4.74	-2.19	0.75	0.75	0.75
	31	0.49	2.29	4.92	0.46	4.48	4.79	-2.19	0.85	0.85	0.85
	32	0.56	2.44	5.09	0.49	4.63	4.90	-2.20	1.00	1.00	1.00
	33	0.66	2.65	5.32	0.54	4.85	5.04	-2.20	1.11	1.11	1.11
	34	0.73	2.81	5.43	0.63	5.22	5.27	-2.41	1.19	1.19	1.19
	35	0.78	2.92	5.51	0.69	5.46	5.42	-2.54	1.20	1.20	1.20
	36	0.79	2.95	5.50	0.75	5.68	5.55	-2.73	1.24	1.24	1.24
	37	0.81	3.00	5.52	0.78	5.76	5.60	-2.76	1.20	1.20	1.20
	38	0.79	2.95	5.46	0.78	5.78	5.62	-2.83	1.18	1.18	1.18
	39	0.77	2.92	5.44	0.77	5.74	5.59	-2.81	1.17	1.17	1.17
	40	0.77	2.91	5.43	0.75	5.66	5.55	-2.75	1.16	1.16	1.16
	41	0.76	2.89	5.42	0.75	5.65	5.54	-2.76	1.16	1.16	1.16
	42	0.76	2.89	5.44	0.75	5.66	5.55	-2.77	1.16	1.16	1.16
	43	0.76	2.88	5.44	0.74	5.63	5.52	-2.75	1.15	1.15	1.15
	44	0.75	2.88	5.43	0.74	5.64	5.53	-2.76	1.10	1.10	1.10
	45	0.72	2.82	5.37	0.74	5.64	5.53	-2.82	1.06	1.06	1.06
	46	0.70	2.76	5.30	0.71	5.52	5.46	-2.76	0.99	0.99	0.99
	47	0.65	2.66	5.18	0.69	5.45	5.42	-2.78	0.93	0.93	0.93
Average											
	Weekday	0.657	2.7	5.19	0.643	5.3	5.29		1.00	1.00	1.00
	Weekend	0.656	2.7	5.21	0.645	5.3	5.29		1.00	1.00	1.00
	ADWF[1]	0.657	2.7	5.20	0.644	5.3	5.29		1.00	1.00	1.00
% Error											
	Weekday				-2.1%			2.83			
	Weekend				-1.6%			2.83			

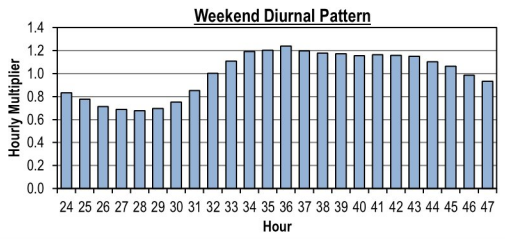
Note:







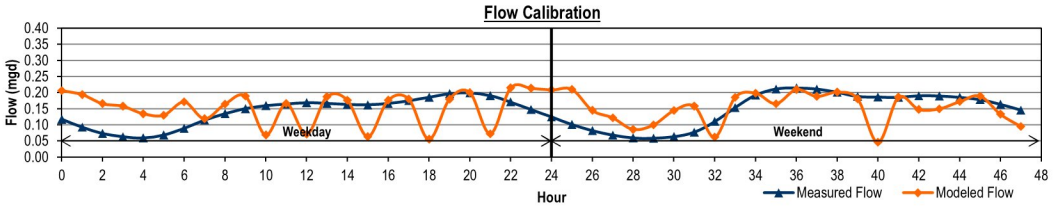


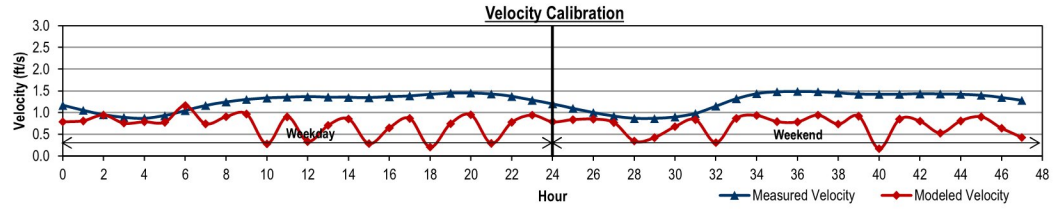


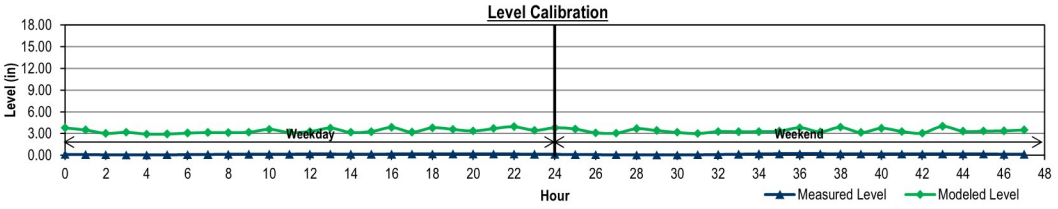
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-4 DRY WEATHER FLOW CALIBRATION

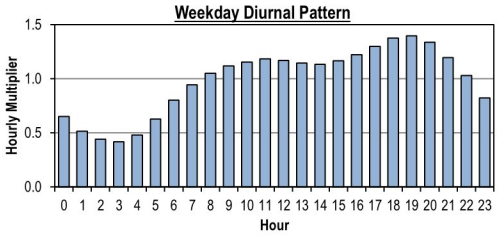
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	0.12	0.12	1.17	0.21	3.78	0.79	-3.66	0.65	0.65	0.65
	1	0.09	0.09	1.05	0.19	3.49	0.81	-3.40	0.52	0.52	0.52
	2	0.07	0.07	0.95	0.17	3.04	0.94	-2.96	0.44	0.44	0.44
	3	0.06	0.06	0.89	0.16	3.18	0.76	-3.12	0.42	0.42	0.42
	4	0.06	0.06	0.87	0.13	2.92	0.79	-2.86	0.48	0.48	0.48
	5	0.07	0.07	0.93	0.13	2.94	0.78	-2.87	0.63	0.63	0.63
	6	0.09	0.09	1.05	0.17	3.07	1.16	-2.98	0.80	0.80	0.80
	7	0.11	0.11	1.17	0.12	3.14	0.74	-3.03	0.94	0.94	0.94
	8	0.13	0.13	1.25	0.16	3.13	0.91	-3.00	1.05	1.05	1.05
	9	0.15	0.15	1.30	0.19	3.18	0.97	-3.03	1.12	1.12	1.12
	10	0.16	0.16	1.34	0.07	3.59	0.28	-3.43	1.15	1.15	1.15
	11	0.16	0.16	1.35	0.17	3.13	0.90	-2.97	1.18	1.18	1.18
	12	0.17	0.17	1.37	0.07	3.28	0.34	-3.11	1.17	1.17	1.17
	13	0.17	0.17	1.36	0.19	3.76	0.71	-3.59	1.15	1.15	1.15
	14	0.16	0.16	1.35	0.18	3.17	0.86	-3.00	1.13	1.13	1.13
	15	0.16	0.16	1.35	0.06	3.26	0.29	-3.10	1.17	1.17	1.17
	16	0.17	0.17	1.37	0.18	3.85	0.65	-3.69	1.22	1.22	1.22
	17	0.17	0.17	1.39	0.18	3.19	0.87	-3.02	1.30	1.30	1.30
	18	0.19	0.19	1.42	0.06	3.79	0.21	-3.61	1.38	1.38	1.38
	19	0.20	0.20	1.45	0.18	3.59	0.75	-3.39	1.40	1.40	1.40
	20	0.20	0.20	1.45	0.20	3.36	0.95	-3.16	1.34	1.34	1.34
	21	0.19	0.19	1.43	0.07	3.70	0.29	-3.51	1.20	1.20	1.20
	22	0.17	0.17	1.37	0.21	3.95	0.78	-3.78	1.03	1.03	1.03
	23	0.15	0.15	1.29	0.21	3.46	0.94	-3.31	0.82	0.82	0.82
Weekend	24	0.12	0.12	1.20	0.21	3.79	0.79	-3.67	0.71	0.71	0.71
	25	0.10	0.10	1.10	0.21	3.64	0.84	-3.53	0.57	0.57	0.57
	26	0.08	0.08	1.00	0.15	3.11	0.85	-3.03	0.48	0.48	0.48
	27	0.07	0.07	0.92	0.12	3.05	0.77	-2.98	0.42	0.42	0.42
	28	0.06	0.06	0.87	0.09	3.67	0.35	-3.61	0.41	0.41	0.41
	29	0.06	0.06	0.87	0.10	3.43	0.42	-3.37	0.44	0.44	0.44
	30	0.06	0.06	0.90	0.14	3.17	0.68	-3.10	0.54	0.54	0.54
	31	0.08	0.08	0.98	0.16	3.00	0.84	-2.92	0.77	0.77	0.77
	32	0.11	0.11	1.15	0.06	3.29	0.31	-3.18	1.07	1.07	1.07
	33	0.15	0.15	1.32	0.19	3.25	0.87	-3.10	1.34	1.34	1.34
	34	0.19	0.19	1.44	0.20	3.26	0.93	-3.07	1.48	1.48	1.48
	35	0.21	0.21	1.48	0.17	3.32	0.79	-3.11	1.50	1.50	1.50
	36	0.21	0.21	1.49	0.21	3.82	0.79	-3.60	1.48	1.48	1.48
	37	0.21	0.21	1.48	0.19	3.23	0.94	-3.02	1.41	1.41	1.41
	38	0.20	0.20	1.46	0.20	3.88	0.74	-3.67	1.32	1.32	1.32
	39	0.19	0.19	1.43	0.18	3.14	0.92	-2.96	1.30	1.30	1.30
	40	0.19	0.19	1.42	0.05	3.73	0.17	-3.55	1.30	1.30	1.30
	41	0.19	0.19	1.42	0.19	3.29	0.85	-3.10	1.33	1.33	1.33
	42	0.19	0.19	1.44	0.15	3.06	0.80	-2.87	1.33	1.33	1.33
	43	0.19	0.19	1.43	0.15	4.01	0.53	-3.82	1.30	1.30	1.30
	44	0.19	0.19	1.42	0.17	3.32	0.81	-3.14	1.25	1.25	1.25
	45	0.18	0.18	1.40	0.19	3.35	0.90	-3.17	1.15	1.15	1.15
	46	0.16	0.16	1.35	0.13	3.37	0.64	-3.21	1.02	1.02	1.02
	47	0.15	0.15	1.28	0.09	3.52	0.43	-3.37	0.87	0.87	0.87
Average											
	Weekday	0.141	0.1	1.25	0.153	3.4	0.73		0.99	0.99	0.99
	Weekend	0.148	0.1	1.26	0.154	3.4	0.71		1.03	1.03	1.03
	ADWF(1)	0.143	0.1	1.25	0.153	3.4	0.72		1.00	1.00	1.00
% Error											
	Weekday				8.1%			3.78			
	Weekend				4.0%			3.82			

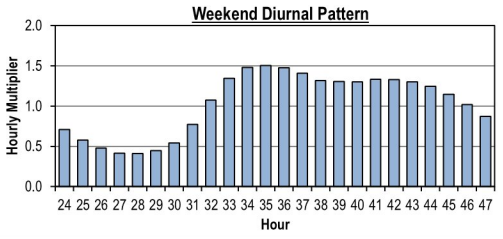
Note:







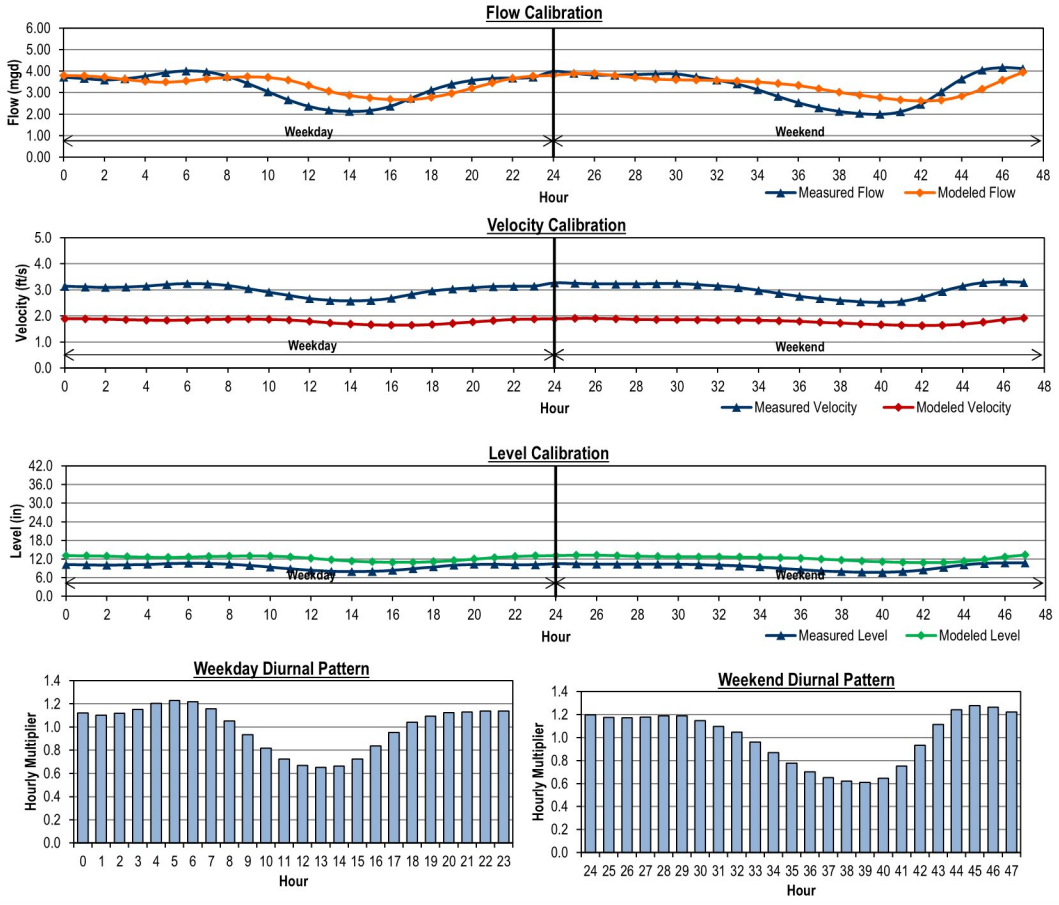




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE WINT003 DRY WEATHER FLOW CALIBRATION

		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	3.72	10.21	3.14	3.80	13.08	1.89	-2.87	1.12	1.12	1.12
	1	3.66	10.15	3.12	3.78	13.05	1.89	-2.90	1.10	1.10	1.10
	2	3.59	10.07	3.10	3.72	12.94	1.88	-2.88	1.12	1.12	1.12
	3	3.65	10.15	3.11	3.62	12.76	1.85	-2.61	1.15	1.15	1.15
	4	3.76	10.27	3.15	3.52	12.58	1.84	-2.31	1.20	1.20	1.20
	5	3.93	10.51	3.21	3.49	12.52	1.83	-2.01	1.23	1.23	1.23
	6	4.01	10.63	3.24	3.55	12.62	1.84	-1.99	1.22	1.22	1.22
	7	3.97	10.58	3.23	3.64	12.79	1.86	-2.21	1.16	1.16	1.16
	8	3.77	10.35	3.17	3.71	12.92	1.87	-2.57	1.05	1.05	1.05
	9	3.44	9.94	3.05	3.74	12.99	1.88	-3.05	0.93	0.93	0.93
	10	3.05	9.41	2.92	3.71	12.94	1.87	-3.53	0.82	0.82	0.82
	11	2.67	8.85	2.78	3.58	12.71	1.85	-3.86	0.72	0.72	0.72
	12	2.36	8.37	2.67	3.34	12.26	1.79	-3.89	0.67	0.67	0.67
	13	2.18	8.06	2.60	3.06	11.74	1.73	-3.68	0.65	0.65	0.65
	14	2.12	7.96	2.58	2.87	11.35	1.69	-3.39	0.66	0.66	0.66
	15	2.17	8.02	2.60	2.75	11.11	1.66	-3.08	0.72	0.72	0.72
	16	2.36	8.36	2.68	2.69	10.97	1.65	-2.61	0.84	0.84	0.84
	17	2.73	8.92	2.83	2.68	10.96	1.65	-2.04	0.95	0.95	0.95
	18	3.11	9.46	2.96	2.78	11.15	1.67	-1.69	1.04	1.04	1.04
	19	3.40	10.03	3.03	2.97	11.52	1.72	-1.49	1.09	1.09	1.09
	20	3.57	10.28	3.09	3.20	11.98	1.77	-1.70	1.12	1.12	1.12
	21	3.67	10.31	3.13	3.46	12.47	1.82	-2.16	1.13	1.13	1.13
	22	3.68	10.16	3.14	3.66	12.84	1.86	-2.69	1.14	1.14	1.14
	23	3.72	10.20	3.15	3.77	13.04	1.88	-2.83	1.14	1.14	1.14
Weekend	24	3.99	10.51	3.27	3.81	13.10	1.89	-2.59	1.20	1.20	1.20
	25	3.90	10.39	3.25	3.88	13.23	1.91	-2.84	1.17	1.17	1.17
	26	3.83	10.30	3.23	3.89	13.24	1.91	-2.94	1.17	1.17	1.17
	27	3.82	10.30	3.22	3.79	13.07	1.89	-2.78	1.18	1.18	1.18
	28	3.84	10.32	3.23	3.70	12.91	1.87	-2.59	1.19	1.19	1.19
	29	3.88	10.37	3.24	3.64	12.79	1.86	-2.42	1.19	1.19	1.19
	30	3.88	10.36	3.24	3.60	12.72	1.85	-2.36	1.15	1.15	1.15
	31	3.74	10.20	3.20	3.59	12.70	1.85	-2.50	1.10	1.10	1.10
	32	3.58	10.00	3.15	3.57	12.67	1.85	-2.67	1.05	1.05	1.05
	33	3.41	9.79	3.09	3.54	12.62	1.84	-2.82	0.96	0.96	0.96
	34	3.13	9.46	2.98	3.50	12.55	1.83	-3.09	0.87	0.87	0.87
	35	2.83	9.04	2.87	3.43	12.42	1.81	-3.38	0.78	0.78	0.78
	36	2.53	8.59	2.76	3.34	12.25	1.79	-3.67	0.70	0.70	0.70
	37	2.29	8.20	2.66	3.18	11.96	1.76	-3.76	0.65	0.65	0.65
	38	2.12	7.92	2.59	3.02	11.65	1.73	-3.73	0.62	0.62	0.62
	39	2.03	7.77	2.55	2.88	11.37	1.69	-3.60	0.61	0.61	0.61
	40	1.99	7.72	2.51	2.77	11.14	1.67	-3.42	0.65	0.65	0.65
	41	2.11	7.97	2.56	2.66	10.92	1.64	-2.95	0.75	0.75	0.75
	42	2.45	8.49	2.71	2.62	10.82	1.63	-2.33	0.93	0.93	0.93
	43	3.04	9.33	2.95	2.65	10.89	1.64	-1.56	1.11	1.11	1.11
	44	3.64	10.12	3.15	2.84	11.27	1.69	-1.15	1.24	1.24	1.24
	45	4.05	10.61	3.28	3.16	11.90	1.76	-1.29	1.28	1.28	1.28
	46	4.17	10.77	3.31	3.58	12.67	1.85	-1.90	1.26	1.26	1.26
	47	4.12	10.73	3.29	3.95	13.35	1.92	-2.61	1.22	1.22	1.22
Average											
	Weekday	3.262	9.6	2.99	3.379	12.3	1.80		1.00	1.00	1.00
	Weekend	3.266	9.6	3.01	3.358	12.3	1.80		1.00	1.00	1.00
	ADWF[1]	3.263	9.6	2.99	3.373	12.3	1.80		1.00	1.00	1.00
% Error											
	Weekday				3.6%			3.89			
	Weekend				2.8%			3.76			

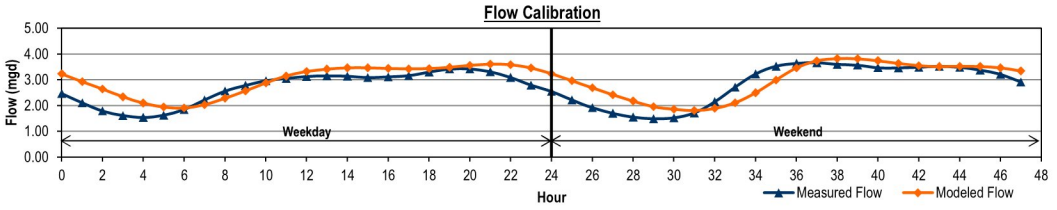
Note:

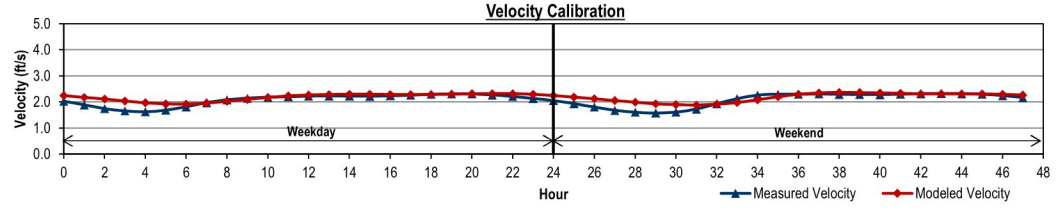


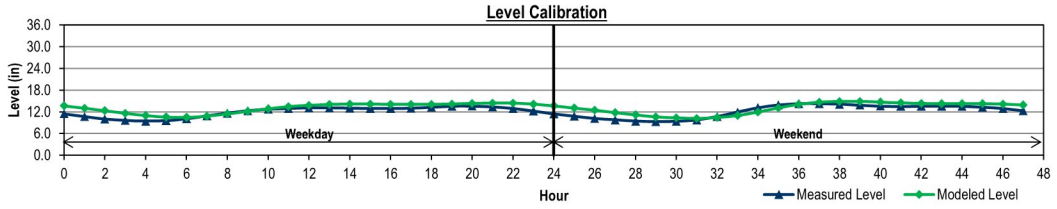
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE MSTTR02 DRY WEATHER FLOW CALIBRATION

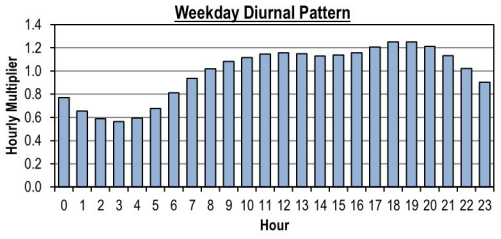
		Measured Data			Modeled Data				Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)	Level Diff (in)	Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	2.46	11.47	2.03	3.23	13.65	2.24	-2.18	0.77	0.77	0.77
	1	2.11	10.69	1.89	2.93	12.98	2.18	-2.29	0.66	0.66	0.66
	2	1.79	10.02	1.75	2.64	12.33	2.11	-2.31	0.59	0.59	0.59
	3	1.61	9.62	1.65	2.34	11.60	2.03	-1.98	0.56	0.56	0.56
	4	1.54	9.45	1.63	2.10	10.98	1.97	-1.53	0.59	0.59	0.59
	5	1.62	9.59	1.68	1.94	10.56	1.93	-0.98	0.68	0.68	0.68
	6	1.85	10.09	1.81	1.91	10.46	1.91	-0.38	0.81	0.81	0.81
	7	2.22	10.90	1.97	2.03	10.80	1.95	0.10	0.94	0.94	0.94
	8	2.56	11.66	2.08	2.28	11.45	2.03	0.21	1.02	1.02	1.02
	9	2.78	12.32	2.14	2.56	12.13	2.10	0.20	1.08	1.08	1.08
	10	2.96	12.74	2.18	2.88	12.85	2.17	-0.12	1.12	1.12	1.12
	11	3.05	12.94	2.20	3.15	13.45	2.23	-0.51	1.15	1.15	1.15
	12	3.13	13.09	2.23	3.32	13.83	2.27	-0.74	1.16	1.16	1.16
	13	3.15	13.13	2.23	3.42	14.04	2.29	-0.91	1.15	1.15	1.15
	14	3.14	13.05	2.23	3.47	14.14	2.30	-1.09	1.13	1.13	1.13
	15	3.09	12.94	2.22	3.46	14.14	2.29	-1.20	1.14	1.14	1.14
	16	3.11	12.94	2.24	3.44	14.09	2.29	-1.14	1.16	1.16	1.16
	17	3.16	12.99	2.26	3.42	14.05	2.29	-1.07	1.21	1.21	1.21
	18	3.30	13.26	2.30	3.43	14.08	2.29	-0.82	1.25	1.25	1.25
	19	3.42	13.55	2.31	3.49	14.18	2.30	-0.63	1.25	1.25	1.25
	20	3.42	13.58	2.30	3.56	14.33	2.31	-0.74	1.21	1.21	1.21
	21	3.31	13.38	2.27	3.61	14.44	2.32	-1.06	1.13	1.13	1.13
	22	3.09	12.91	2.21	3.59	14.39	2.32	-1.48	1.02	1.02	1.02
	23	2.79	12.23	2.14	3.46	14.13	2.29	-1.89	0.90	0.90	0.90
Weekend	24	2.55	11.46	2.06	3.24	13.66	2.25	-2.21	0.81	0.81	0.81
	25	2.21	10.77	1.94	2.96	13.06	2.19	-2.29	0.70	0.70	0.70
	26	1.92	10.16	1.80	2.69	12.44	2.12	-2.28	0.62	0.62	0.62
	27	1.70	9.79	1.68	2.42	11.79	2.06	-2.00	0.57	0.57	0.57
	28	1.55	9.45	1.61	2.18	11.18	1.99	-1.73	0.55	0.55	0.55
	29	1.49	9.29	1.58	1.96	10.61	1.93	-1.31	0.56	0.56	0.56
	30	1.52	9.36	1.61	1.85	10.32	1.90	-0.96	0.63	0.63	0.63
	31	1.72	9.77	1.73	1.81	10.19	1.88	-0.42	0.79	0.79	0.79
	32	2.14	10.70	1.93	1.89	10.41	1.91	0.28	0.99	0.99	0.99
	33	2.71	11.92	2.13	2.11	10.99	1.98	0.93	1.18	1.18	1.18
	34	3.23	13.14	2.26	2.49	11.95	2.08	1.19	1.29	1.29	1.29
	35	3.53	13.91	2.30	2.99	13.10	2.20	0.82	1.33	1.33	1.33
	36	3.64	14.24	2.30	3.46	14.11	2.30	0.13	1.34	1.34	1.34
	37	3.66	14.29	2.31	3.73	14.68	2.35	-0.40	1.32	1.32	1.32
	38	3.60	14.13	2.30	3.83	14.88	2.37	-0.74	1.31	1.31	1.31
	39	3.57	13.85	2.29	3.81	14.86	2.36	-1.01	1.27	1.27	1.27
	40	3.47	13.59	2.28	3.74	14.71	2.35	-1.12	1.27	1.27	1.27
	41	3.46	13.48	2.30	3.63	14.49	2.33	-1.01	1.28	1.28	1.28
	42	3.49	13.52	2.32	3.55	14.32	2.31	-0.80	1.29	1.29	1.29
	43	3.52	13.58	2.33	3.51	14.24	2.30	-0.66	1.28	1.28	1.28
	44	3.49	13.53	2.31	3.52	14.25	2.31	-0.73	1.24	1.24	1.24
	45	3.38	13.27	2.30	3.52	14.25	2.31	-0.98	1.18	1.18	1.18
	46	3.21	12.93	2.25	3.46	14.14	2.29	-1.21	1.07	1.07	1.07
	47	2.91	12.33	2.17	3.34	13.89	2.27	-1.56	0.93	0.93	0.93
Average											
	Weekday	2.694	12.0	2.08	2.985	13.0	2.18		0.99	0.99	0.99
	Weekend	2.819	12.2	2.09	2.987	13.0	2.18		1.03	1.03	1.03
	ADWF[1]	2.730	12.1	2.08	2.985	13.0	2.18		1.00	1.00	1.00
% Error											
	Weekday				10.8%			2.31			
	Weekend				5.9%			2.29			

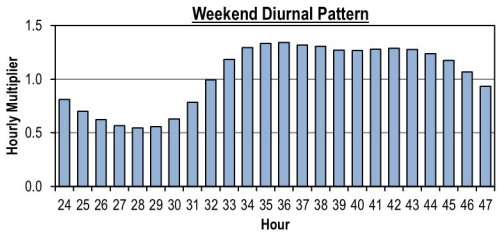
Note:







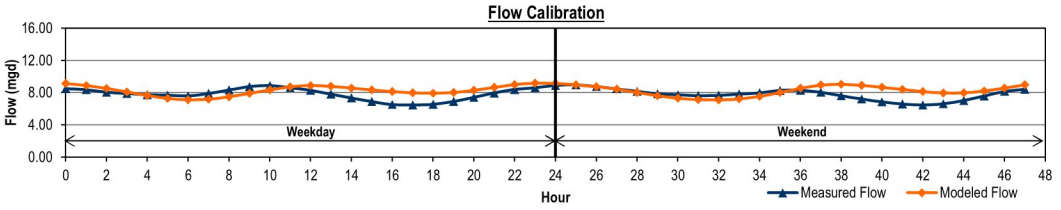


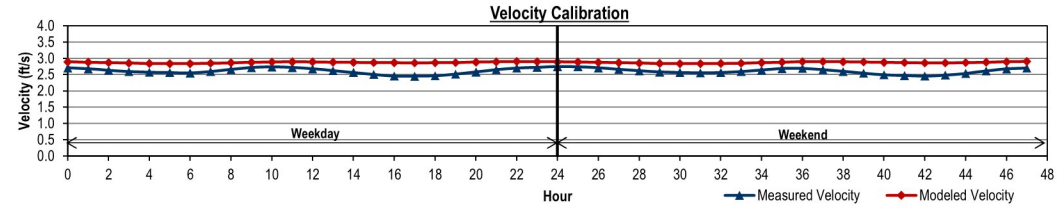


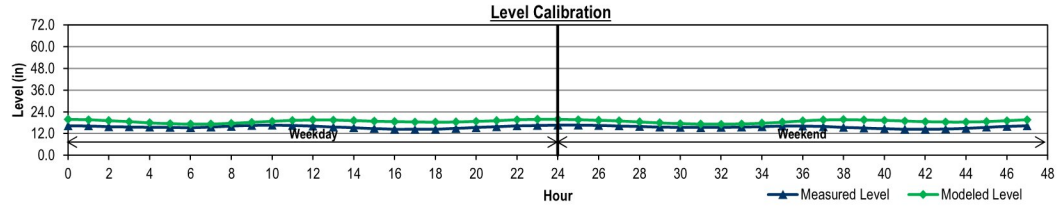
City of Auburn
Collection System Planning Project
FLOW MONITORING SITE AUBRN53 DRY WEATHER FLOW CALIBRATION

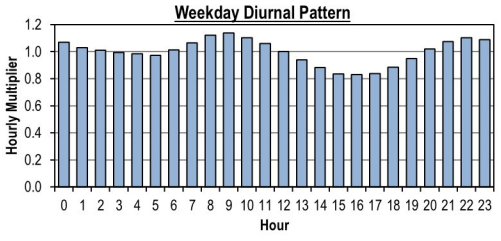
	Hour	Measured Data Flow (mgd)	Measured Data Level (in)	Measured Data Velocity (ft/s)	Modeled Data Flow (mgd)	Modeled Data Level (in)	Modeled Data Velocity (ft/s)	Level Diff (in)	Diurnal Initial Curve	Diurnal Modified Curve	Diurnal Calibrated Diurnal
Weekday	0	8.50	16.35	2.71	9.14	19.87	2.89	-3.52	1.07	1.07	1.07
	1	8.36	16.20	2.68	8.90	19.58	2.88	-3.38	1.03	1.03	1.03
	2	8.05	15.87	2.63	8.52	19.12	2.87	-3.25	1.01	1.01	1.01
	3	7.90	15.68	2.60	8.09	18.57	2.86	-2.89	0.99	0.99	0.99
	4	7.76	15.51	2.57	7.65	17.98	2.84	-2.48	0.98	0.98	0.98
	5	7.69	15.42	2.56	7.29	17.49	2.84	-2.07	0.97	0.97	0.97
	6	7.60	15.33	2.55	7.11	17.21	2.84	-1.88	1.01	1.01	1.01
	7	7.91	15.64	2.60	7.19	17.27	2.85	-1.63	1.07	1.07	1.07
	8	8.33	16.08	2.66	7.48	17.65	2.86	-1.57	1.12	1.12	1.12
	9	8.76	16.52	2.72	7.91	18.21	2.88	-1.69	1.14	1.14	1.14
	10	8.89	16.68	2.74	8.34	18.78	2.89	-2.10	1.10	1.10	1.10
	11	8.63	16.46	2.72	8.72	19.27	2.89	-2.81	1.06	1.06	1.06
	12	8.29	16.14	2.68	8.88	19.52	2.89	-3.38	1.00	1.00	1.00
	13	7.81	15.68	2.62	8.79	19.43	2.88	-3.75	0.94	0.94	0.94
	14	7.35	15.23	2.57	8.57	19.15	2.87	-3.93	0.88	0.88	0.88
	15	6.90	14.78	2.51	8.35	18.87	2.87	-4.09	0.84	0.84	0.84
	16	6.53	14.40	2.46	8.14	18.61	2.86	-4.20	0.83	0.83	0.83
	17	6.49	14.37	2.45	7.99	18.39	2.86	-4.02	0.84	0.84	0.84
	18	6.55	14.45	2.47	7.93	18.30	2.86	-3.85	0.89	0.89	0.89
	19	6.91	14.83	2.52	8.03	18.41	2.87	-3.58	0.95	0.95	0.95
	20	7.42	15.34	2.58	8.29	18.73	2.88	-3.39	1.02	1.02	1.02
	21	7.96	15.86	2.65	8.65	19.17	2.90	-3.31	1.07	1.07	1.07
	22	8.40	16.27	2.70	9.00	19.62	2.90	-3.36	1.10	1.10	1.10
	23	8.62	16.46	2.72	9.19	19.89	2.90	-3.43	1.09	1.09	1.09
Weekend	24	8.91	16.69	2.75	9.15	19.87	2.89	-3.18	1.15	1.15	1.15
	25	8.97	16.71	2.74	8.97	19.66	2.89	-2.95	1.12	1.12	1.12
	26	8.76	16.51	2.71	8.74	19.38	2.88	-2.87	1.08	1.08	1.08
	27	8.47	16.21	2.67	8.44	19.01	2.87	-2.80	1.04	1.04	1.04
	28	8.16	15.90	2.62	8.02	18.48	2.85	-2.58	1.01	1.01	1.01
	29	7.86	15.59	2.58	7.63	17.95	2.84	-2.36	0.99	0.99	0.99
	30	7.73	15.44	2.57	7.31	17.51	2.84	-2.06	0.98	0.98	0.98
	31	7.64	15.35	2.56	7.14	17.25	2.84	-1.91	0.98	0.98	0.98
	32	7.68	15.39	2.57	7.11	17.18	2.84	-1.79	1.00	1.00	1.00
	33	7.83	15.60	2.60	7.22	17.32	2.85	-1.72	1.02	1.02	1.02
	34	7.98	15.80	2.64	7.54	17.71	2.87	-1.92	1.06	1.06	1.06
	35	8.28	16.13	2.69	8.01	18.33	2.88	-2.20	1.06	1.06	1.06
	36	8.29	16.12	2.69	8.55	19.03	2.90	-2.90	1.03	1.03	1.03
	37	8.05	15.87	2.65	8.94	19.56	2.90	-3.69	0.98	0.98	0.98
	38	7.62	15.45	2.60	9.03	19.71	2.89	-4.26	0.92	0.92	0.92
	39	7.21	15.05	2.54	8.91	19.58	2.89	-4.53	0.88	0.88	0.88
	40	6.85	14.70	2.50	8.67	19.29	2.88	-4.60	0.84	0.84	0.84
	41	6.60	14.45	2.47	8.40	18.95	2.87	-4.50	0.83	0.83	0.83
	42	6.49	14.38	2.46	8.13	18.60	2.86	-4.22	0.85	0.85	0.85
	43	6.61	14.52	2.48	7.97	18.36	2.86	-3.85	0.90	0.90	0.90
	44	7.03	14.95	2.54	7.98	18.35	2.87	-3.40	0.97	0.97	0.97
	45	7.60	15.50	2.61	8.20	18.61	2.88	-3.12	1.04	1.04	1.04
	46	8.15	16.03	2.68	8.57	19.07	2.89	-3.05	1.08	1.08	1.08
	47	8.43	16.28	2.71	8.98	19.58	2.90	-3.30	1.14	1.14	1.14
Average											
	Weekday	7.817	15.6	2.61	8.256	18.7	2.87		1.00	1.00	1.00
	Weekend	7.800	15.6	2.61	8.233	18.7	2.87		1.00	1.00	1.00
	ADWF[1]	7.812	15.6	2.61	8.250	18.7	2.87		1.00	1.00	1.00
% Error											
	Weekday				5.6%			4.20			
	Weekend				5.6%			4.60			

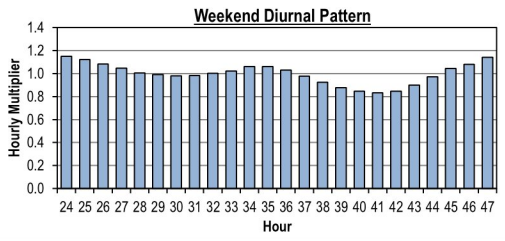
Note:











ATTACHMENT 1F

RDII PARAMETERS

Table 1 Connected Basin Area

Basin	Area (acres)	Connected Impervious (acres)	Connected Pervious (acres)	Total Connected (acres)	Total Connected (%)
A1	223.6	1.2	5.8	7.0	3.2
A1c	151.1	0.5	2.4	2.9	1.9
A1d	52.5	0.3	4.2	4.5	8.6
A3	83.0	1.4	31.5	33.0	39.7
A4	113.1	0.5	3.8	4.4	3.9
A6	97.6	0.6	5.4	6.0	6.1
A7	109.1	3.3	17.4	20.7	19.0
A9	52.5	1.5	4.9	6.4	12.1
A10	115.3	3.8	5.8	9.6	8.3
A11	16.7	0.0	0.0	0.0	0.2
A12	21.4	0.2	0.0	0.2	0.9
A13	63.3	0.2	0.3	0.5	0.8
A14	102.2	1.5	1.0	2.6	2.5
A15	72.3	0.3	0.4	0.7	1.0
A16	285.4	1.7	2.0	3.7	1.3
AUB Y-1	93.7	0.2	0.7	0.8	0.9
AUB Y-2	872.1	11.3	78.5	89.8	10.3
AUB Y-3	541.4	8.7	54.1	62.8	11.6
AUB Y-4	177.7	0.2	0.2	0.4	0.2
AUBRN53	997.7	10.0	29.9	39.9	4.0
AUBWV016	214.2	1.7	6.4	8.1	3.8
MSTTR02A	481.9	1.4	3.9	5.3	1.1
SRT11	111.4	0.9	3.3	4.2	3.8
WINT003	74.5	0.2	0.3	0.5	0.7
WINT035	1,685.2	13.5	50.6	64.0	3.8
Default	101.7	0.7	3.1	3.8	3.7

Table 2 Model A Parameters

Basin	Impervious (%)	Time of Concentration (min)	Reduction Factor	Initial Loss (in)
A1	0.55	7	0.9	0.0020
A1c	0.3	7	0.9	0.0020
A1d	0.6	7	0.9	0.0020
A3	1.7	7	0.9	0.0020
A4	0.47	7	0.9	0.0020
A6	0.6	7	0.9	0.0020
A7	3	7	0.9	0.0020
A9	2.8	7	0.9	0.0020
A10	3.3	7	0.9	0.0020
A11	0.1	7	0.9	0.0020
A12	0.8	3	0.9	0.0020
A13	0.3	7	0.9	0.0020
A14	1.5	7	0.9	0.0020
A15	0.4	7	0.9	0.0020
A16	0.6	7	0.9	0.0020
AUB Y-1	0.2	7	0.9	0.0020
AUB Y-2	1.3	7	0.9	0.0020
AUB Y-3	1.6	7	0.9	0.0020
AUB Y-4	0.1	7	0.9	0.0020
AUBRN53	1	20	0.9	0.0020
AUBWV016	0.8	120	0.9	0.1327
MSTTR02A	0.3	80	1	0.0000
SRT11	0.8	7	0.9	0.0020
WINT003	0.3	80	1	0.0000
WINT035	0.8	7	0.9	0.0020
Unmetered	0.7	7	0.9	0.0020

Table 3 RDI Parameters

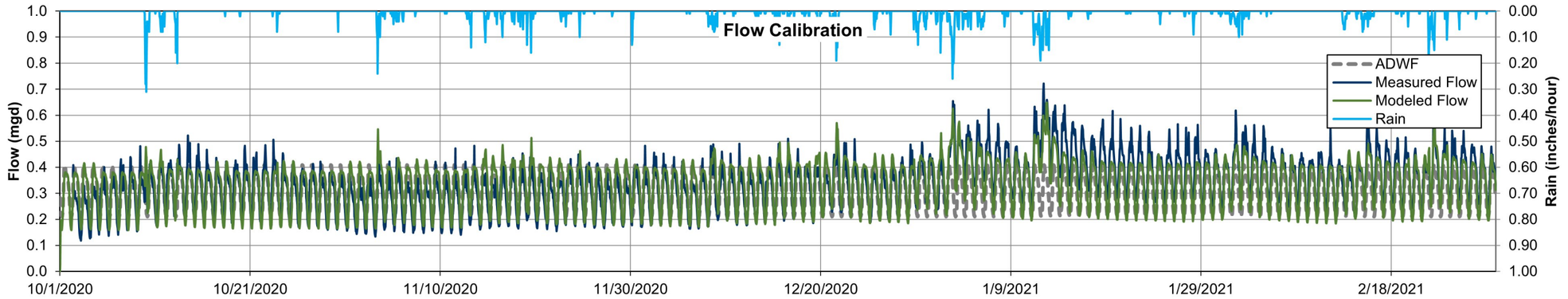
Basin	Percent RDI Area (%)	Surface Storage (Umax)	Root Zone Storage (Lmax)	Overland Coefficient (Cqof)	Groundwater Coefficient (Carea)	TC Overland Flow (CKof)	TC Interflow (CKif)	TC Baseflow (CKbf)	Overland Flow Threshold (Tof)	Interflow Threshold (Tif)	Groundwater Threshold (Tg)	Initial Surface Storage (U)	Initial Root Zone Moisture (L)	Initial Groundwater Depth (GWL)	Initial Overland Flow (OF)	Initial Interflow (IF)	Specific Yield (Sy)	Minimum Groundwater Depth	Max GW depth causing Baseflow	GW Depth for Unit Capillary flux (GWLfl1)
A1	2.60	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A1c	1.60	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A1d	8.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A3	38.00	0.030	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A4	3.40	0.060	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A6	5.50	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A7	16.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A9	9.30	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A10	5.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A11	0.10	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A12	0.05	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A13	0.45	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A14	1.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A15	0.60	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
A16	0.70	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
AUB Y-1	0.70	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
AUB Y-2	9.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
AUB Y-3	10.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
AUB Y-4	0.10	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
AUBRN53	3.00	0.063	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
AUBWV016	3.00	0.032	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
MSTTR02A	0.80	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
SRT11	3.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
WINT003	0.40	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
WINT035	3.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0
Unmetered	3.00	0.033	0.328	0.200	1	10	200	1000	0	0	0	0	0	32.8	0	0	0.1	0	32.8	0

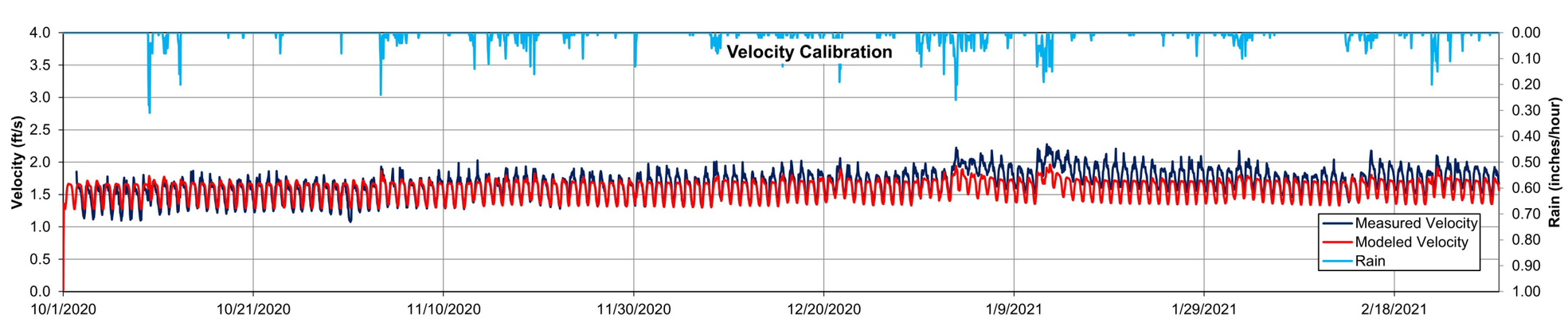
ATTACHMENT 1G

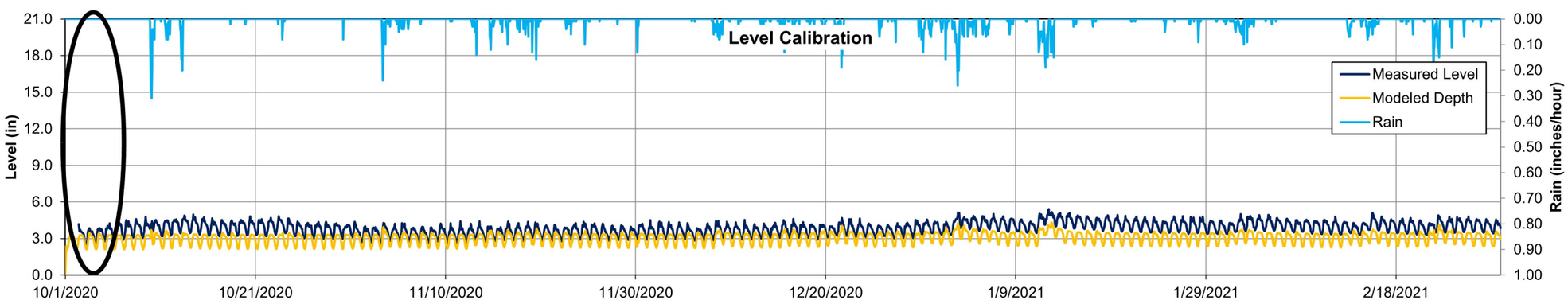
WET WEATHER CALIBRATION SUMMARY SHEETS

FLOW MONITORING A1 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A1
Pipeline diameter: 21"
City Manhole ID: 308-20

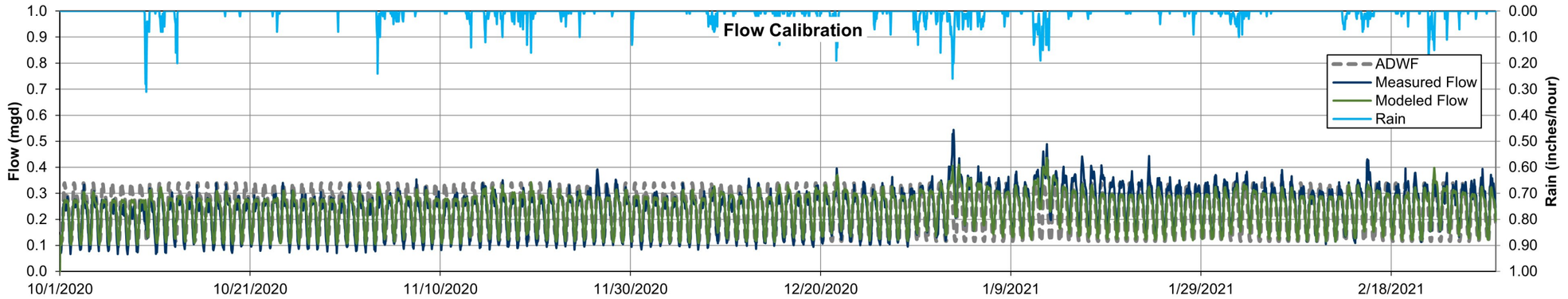


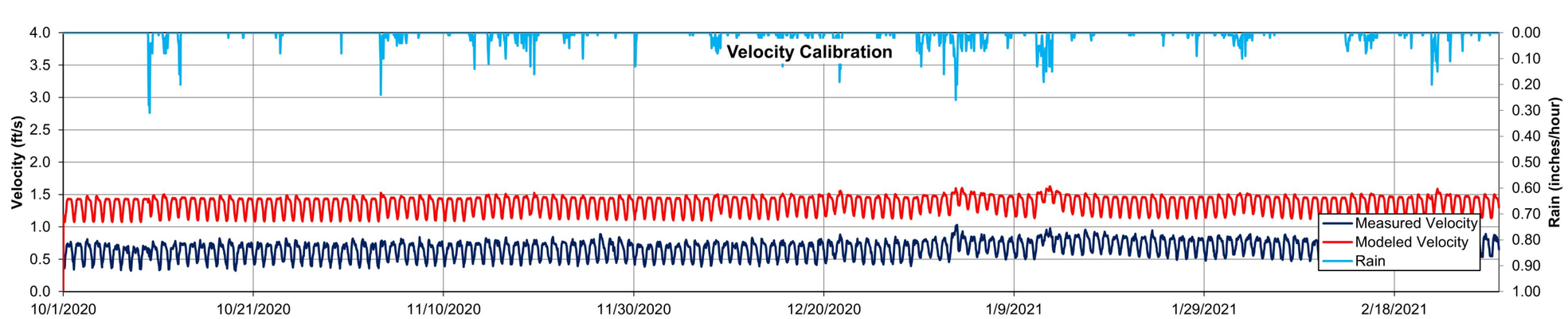


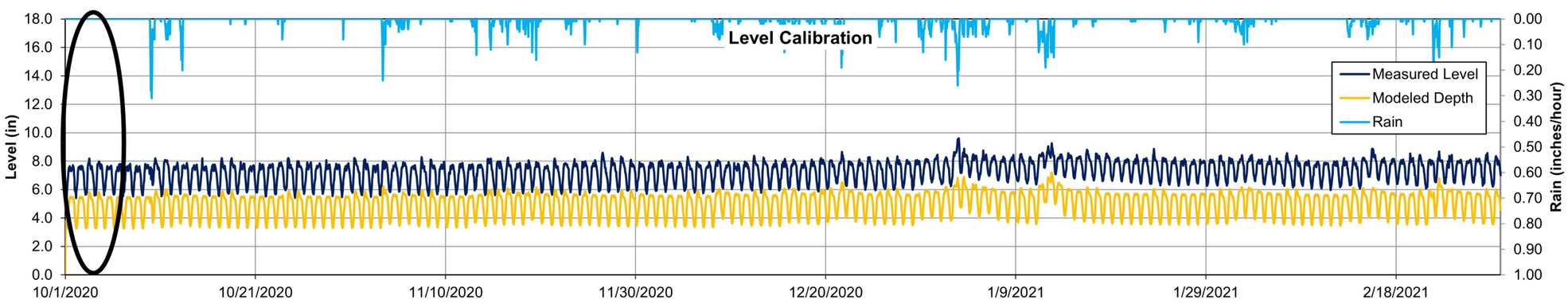


FLOW MONITORING A1c WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A1c
Pipeline diameter: 18"
City Manhole ID: 309-06

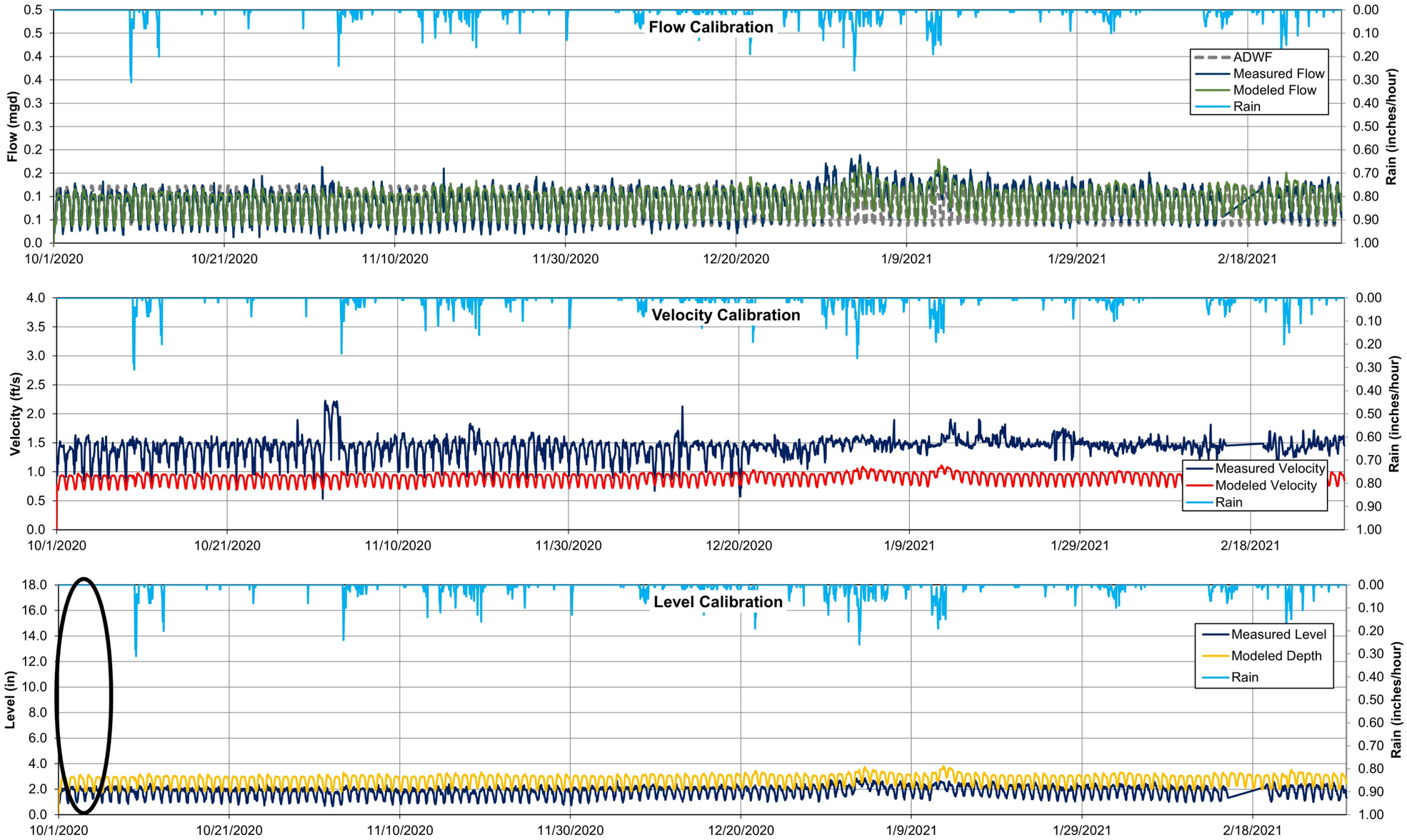






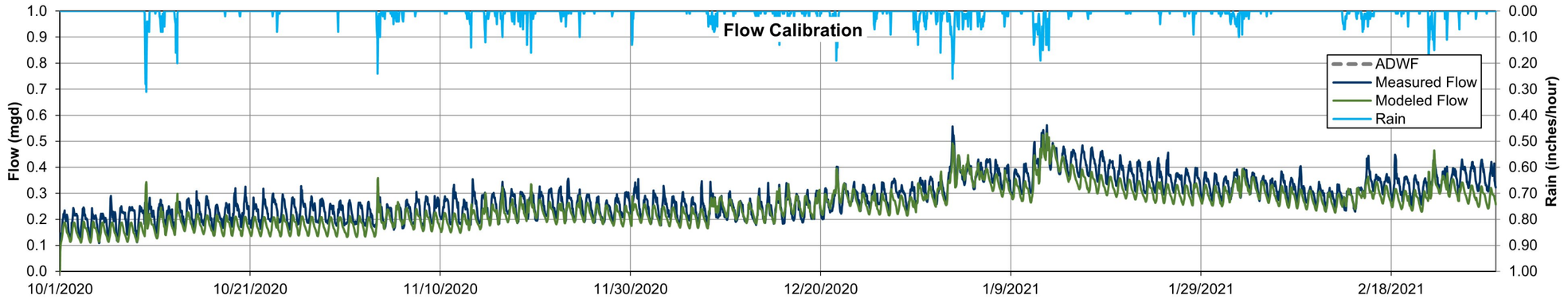
FLOW MONITORING A1d WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

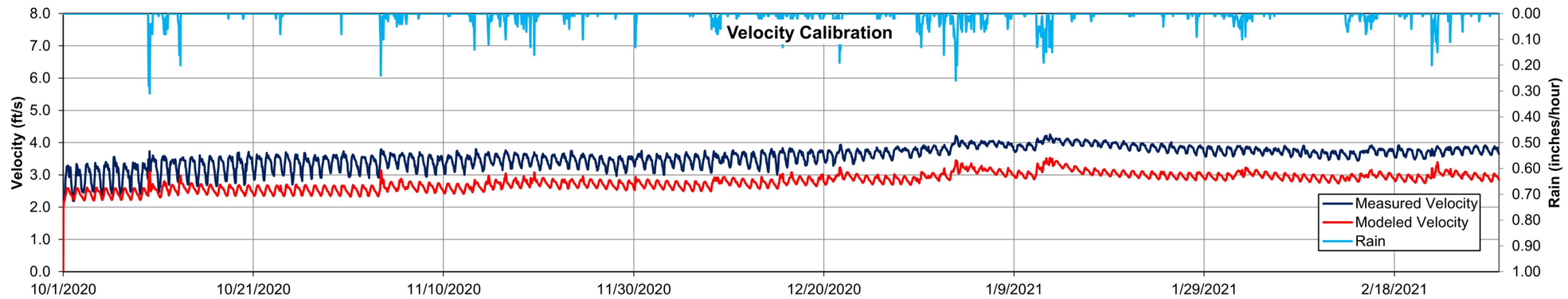
Location: A1d
Pipeline diameter: 18"
City Manhole ID: 309-10

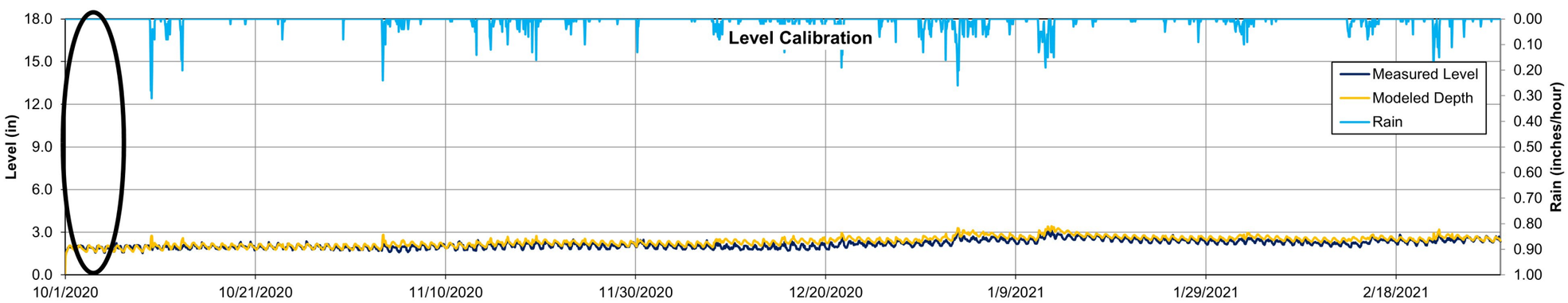


FLOW MONITORING A3 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A3
Pipeline diameter: 18"
City Manhole ID: 409-34

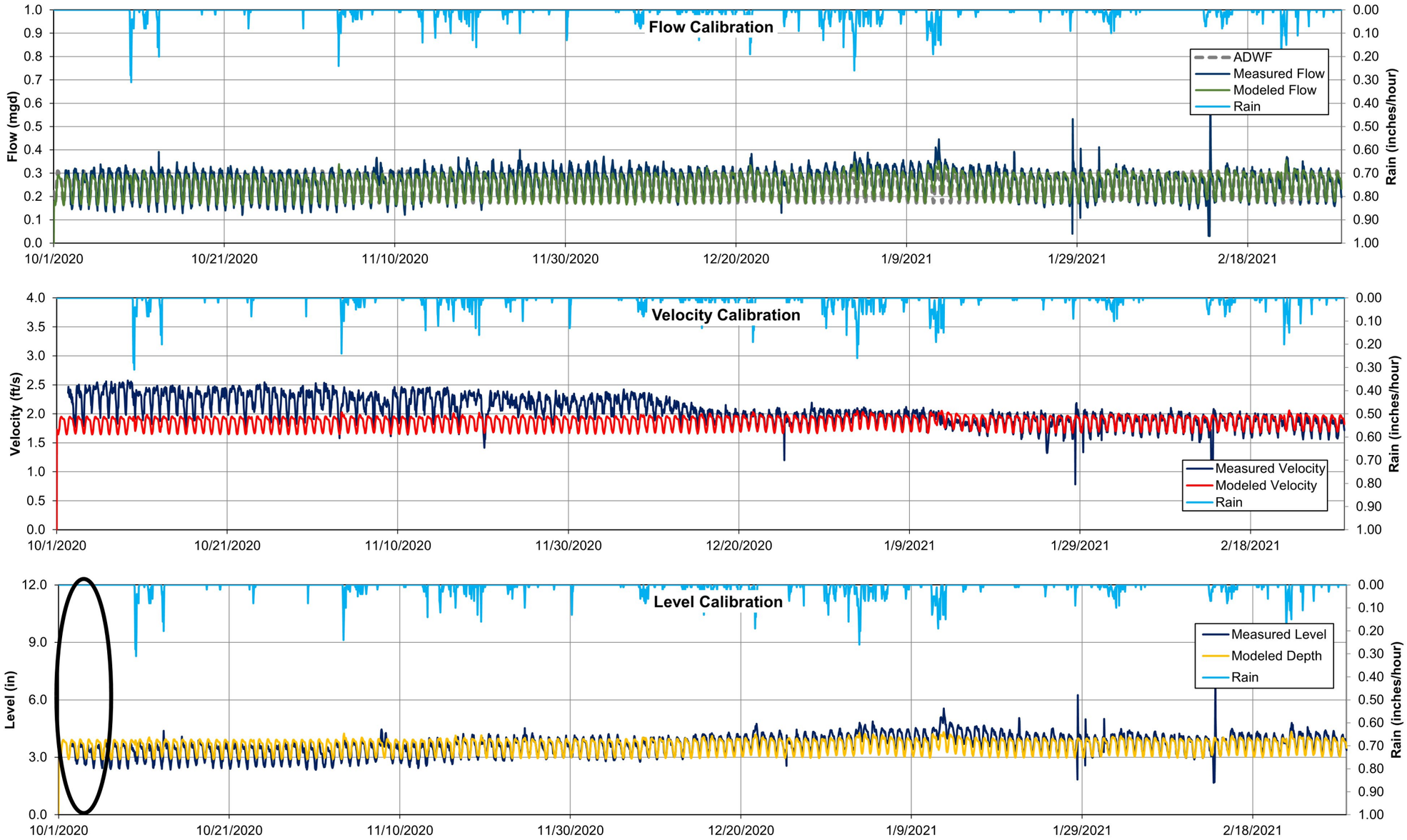






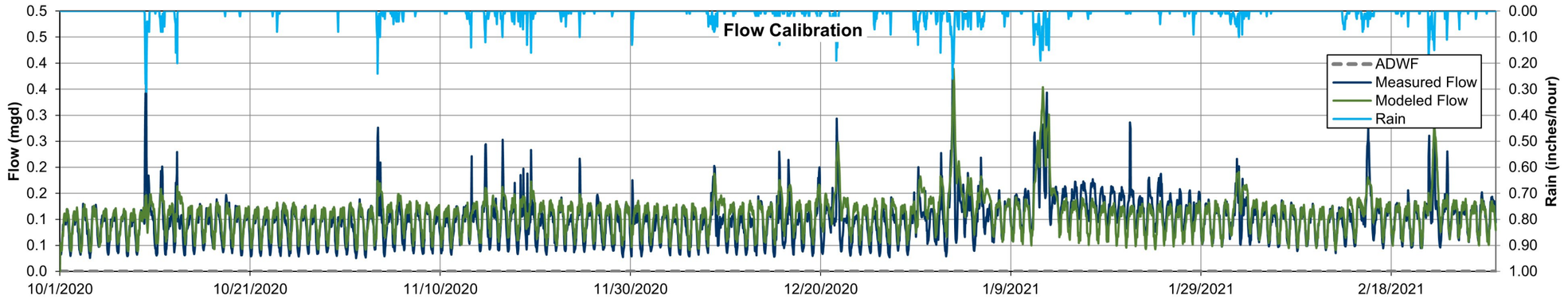
FLOW MONITORING A4 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

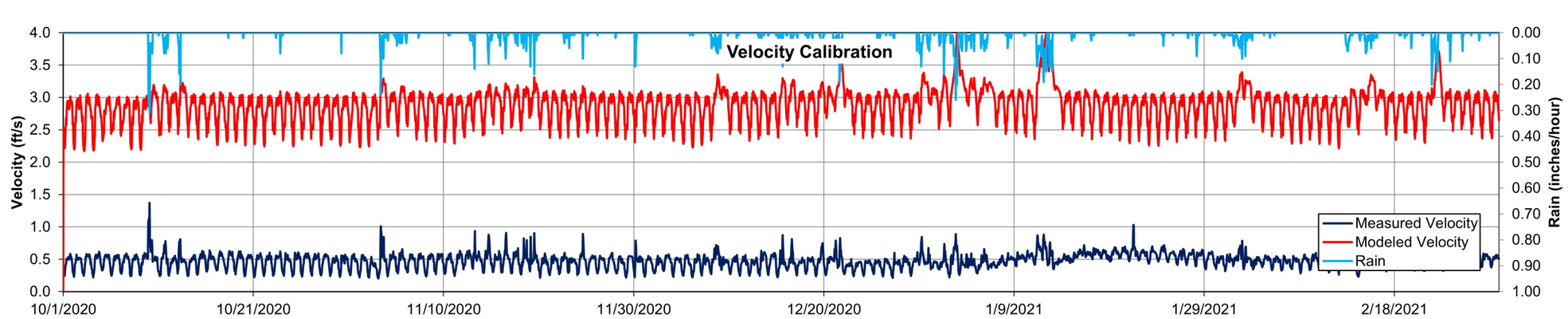
Location: A4
Pipeline diameter: 12"
City Manhole ID: 508-17

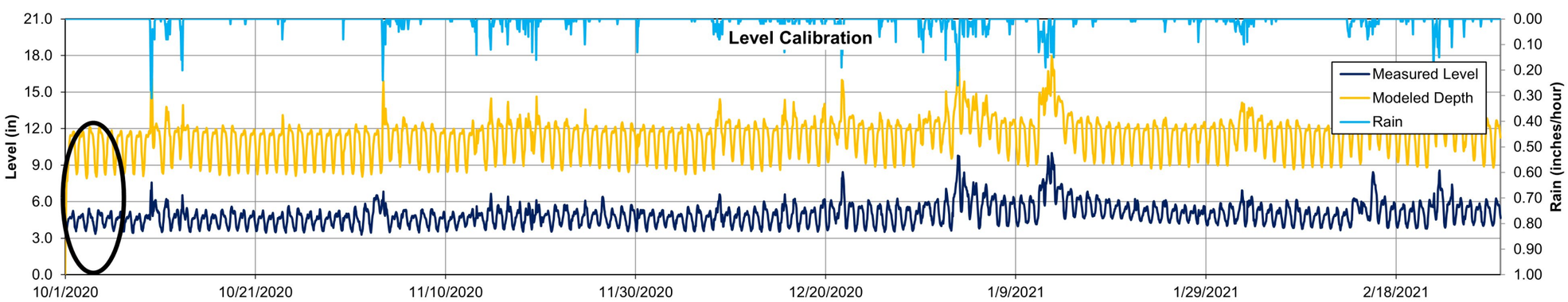


FLOW MONITORING A6 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A6
Pipeline diameter: 12"
City Manhole ID: 610-31

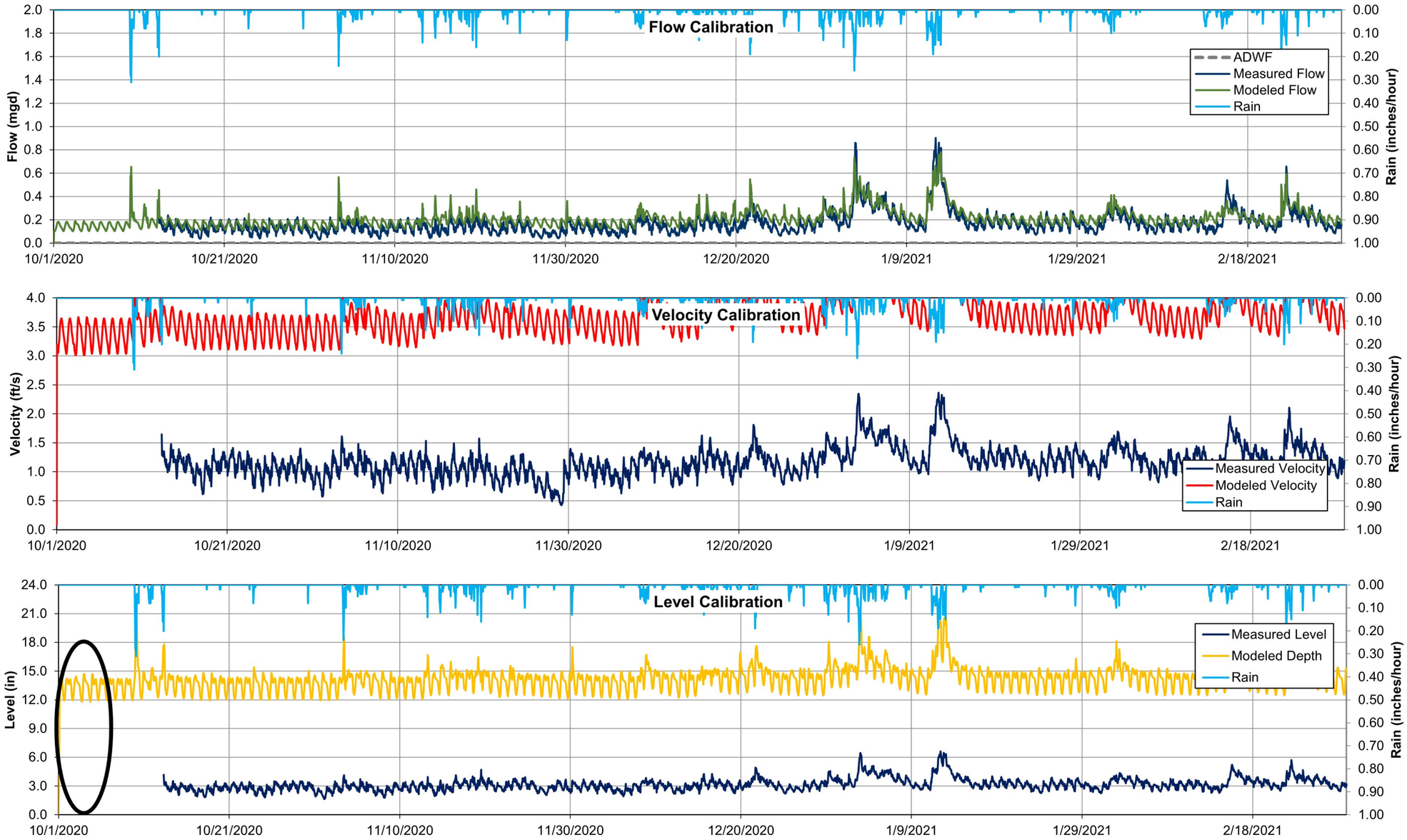






FLOW MONITORING A7 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A7
Pipeline diameter: 18"
City Manhole ID: 707-03



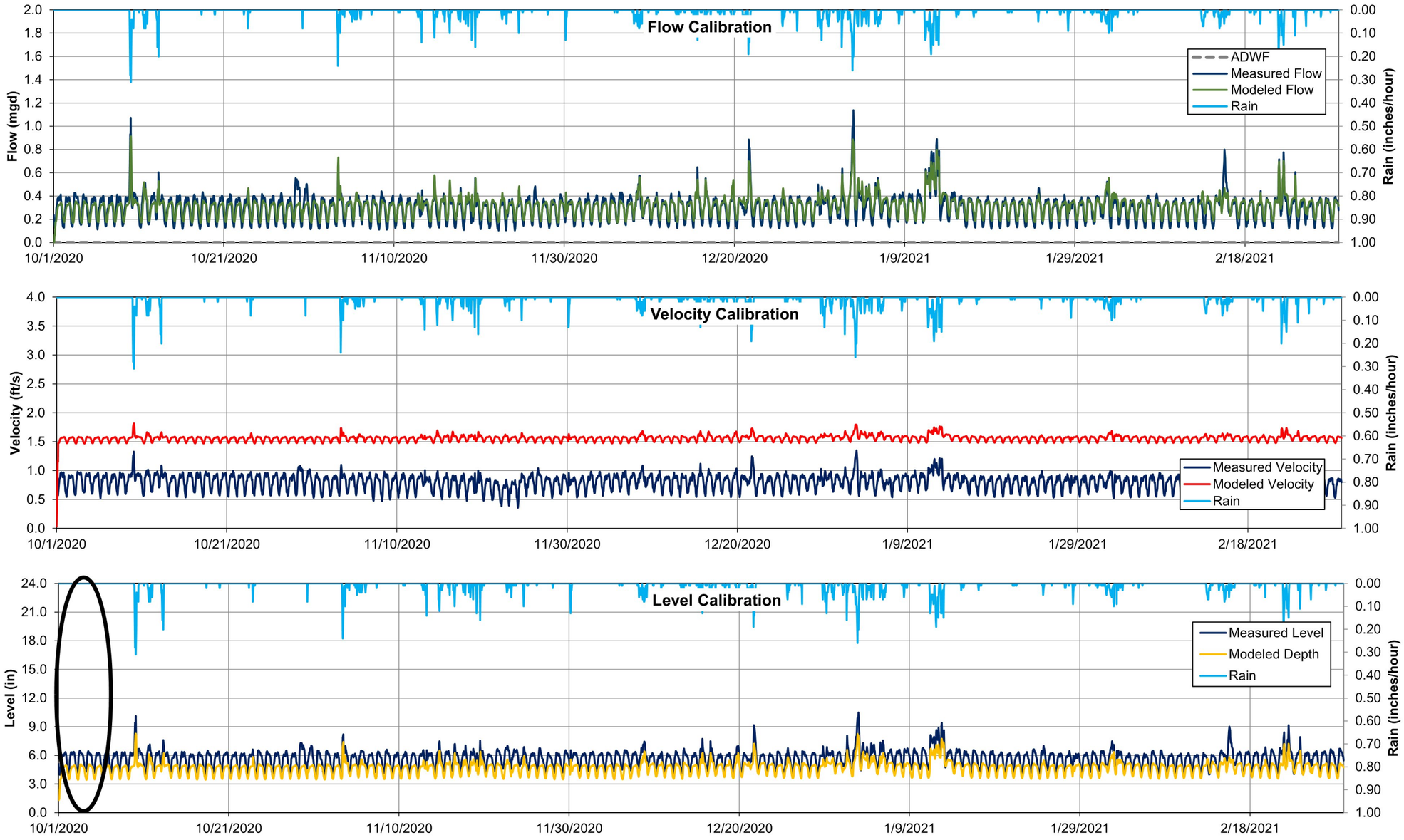
FLOW MONITORING A9 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A9
Pipeline diameter: 10"
City Manhole ID: 710-31



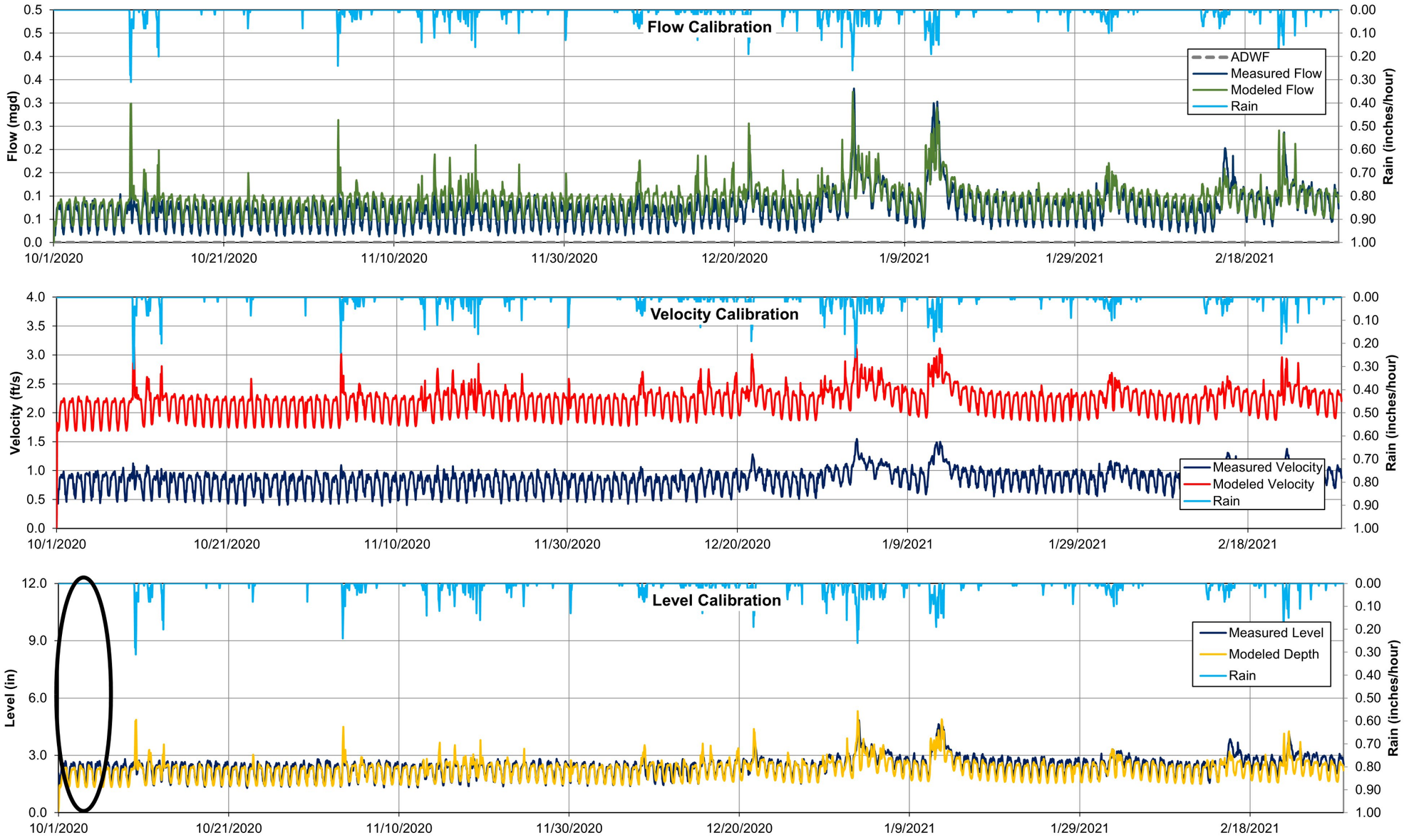
FLOW MONITORING A10 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A10
Pipeline diameter: 24"
City Manhole ID: 710-151



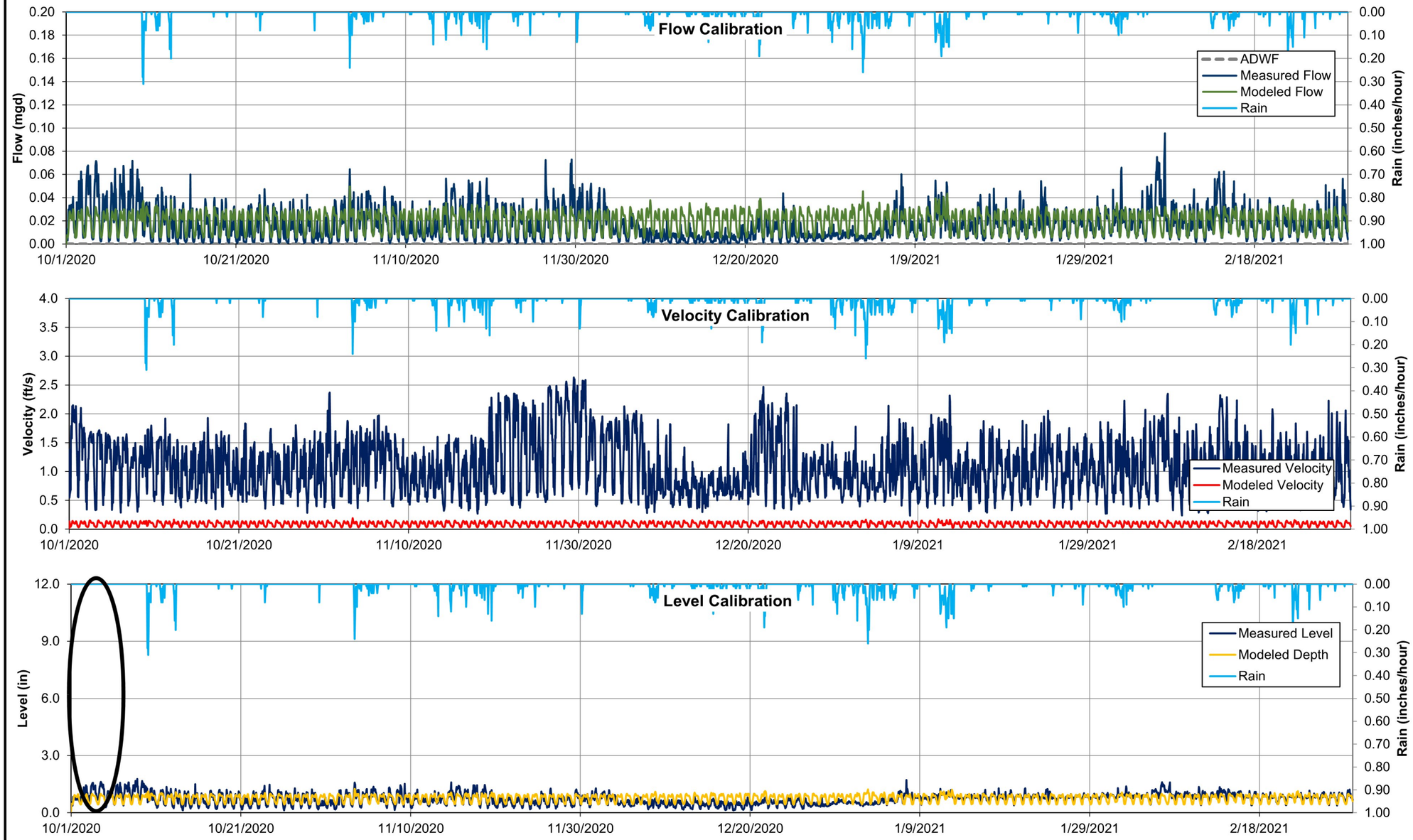
FLOW MONITORING A11 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A11
Pipeline diameter: 12"
City Manhole ID: 710-142



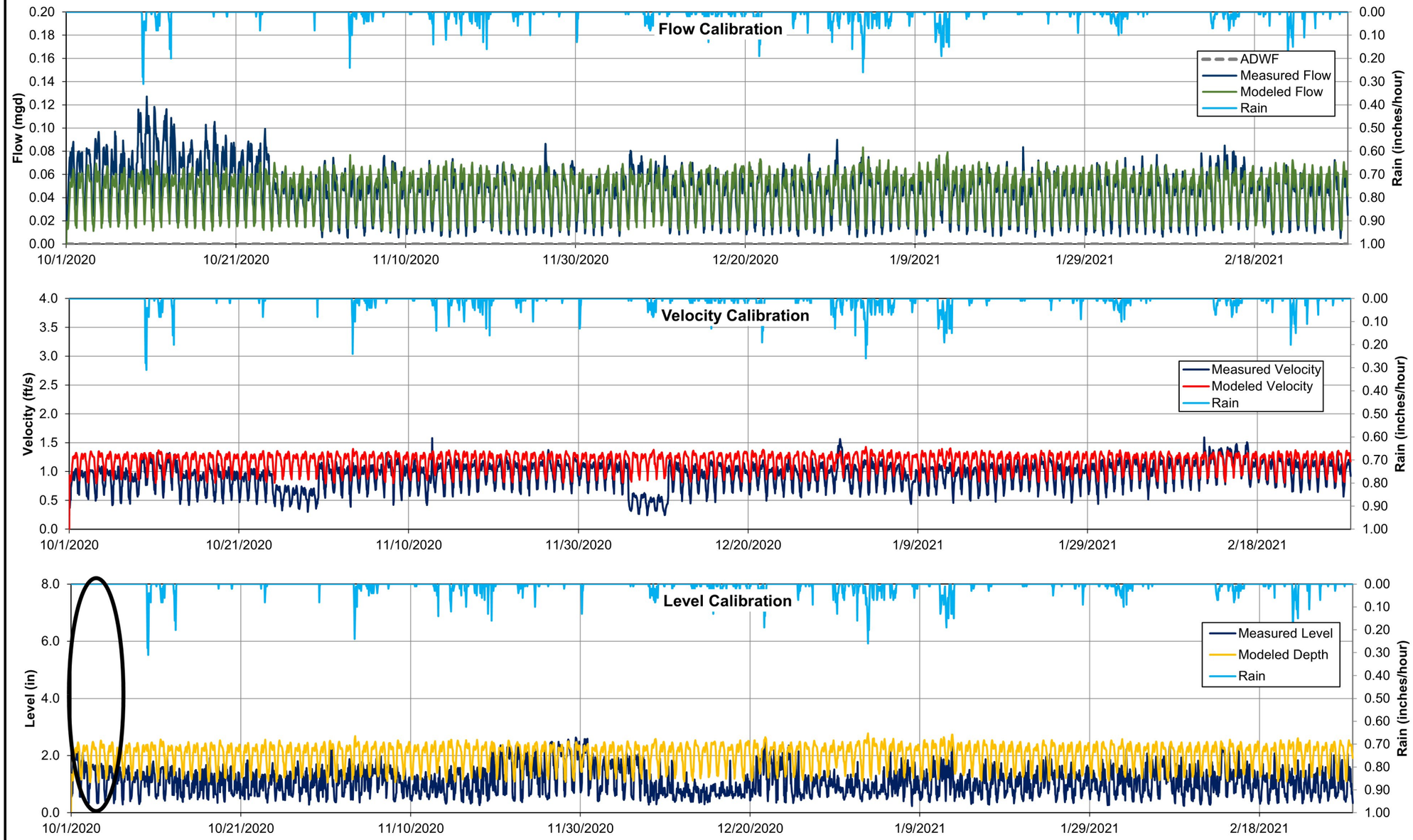
FLOW MONITORING A12 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A12
Pipeline diameter: 12"
City Manhole ID: 710-43



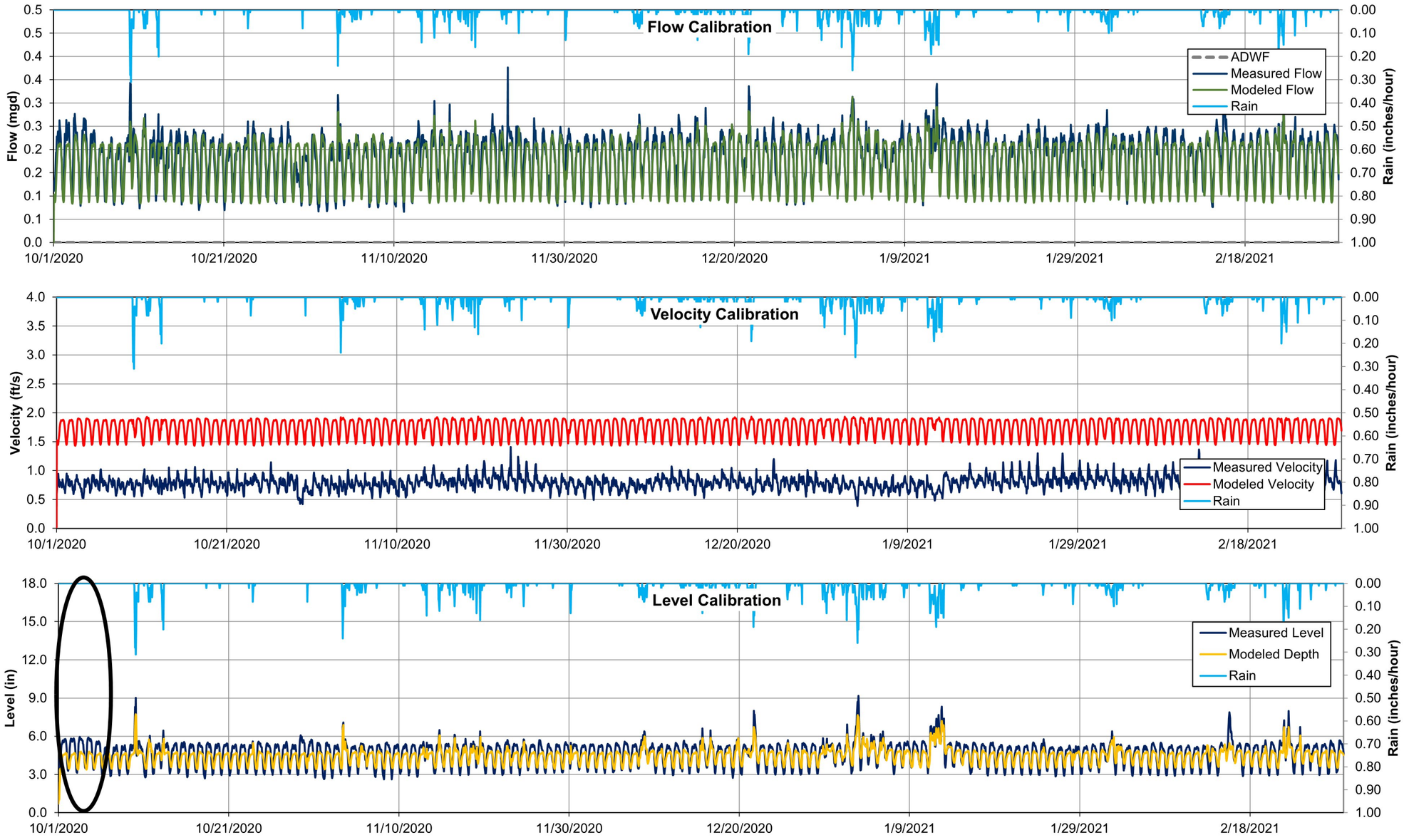
FLOW MONITORING A13 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A13
Pipeline diameter: 8"
City Manhole ID: 710-85



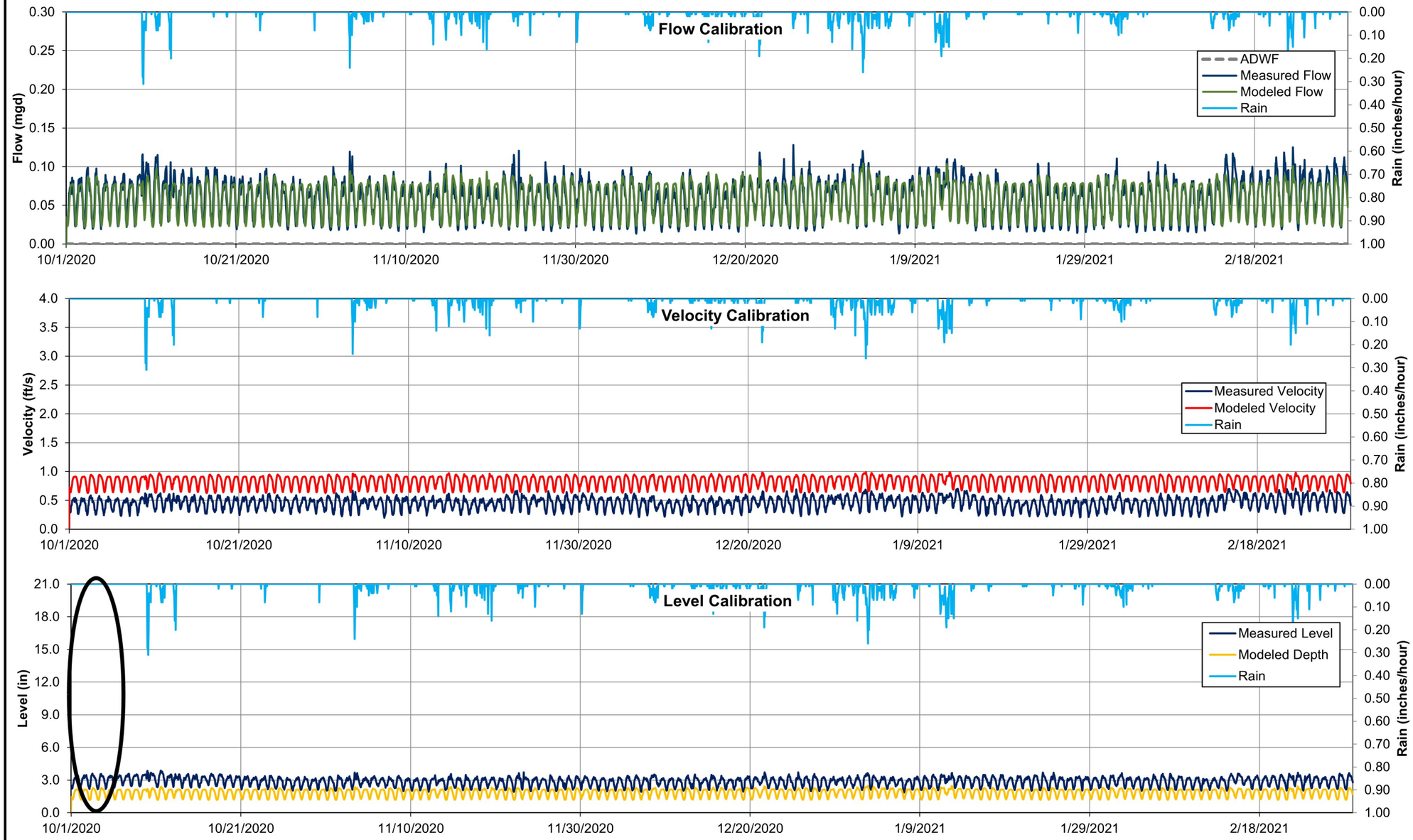
FLOW MONITORING A14 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A14
Pipeline diameter: 18"
City Manhole ID: 710-149



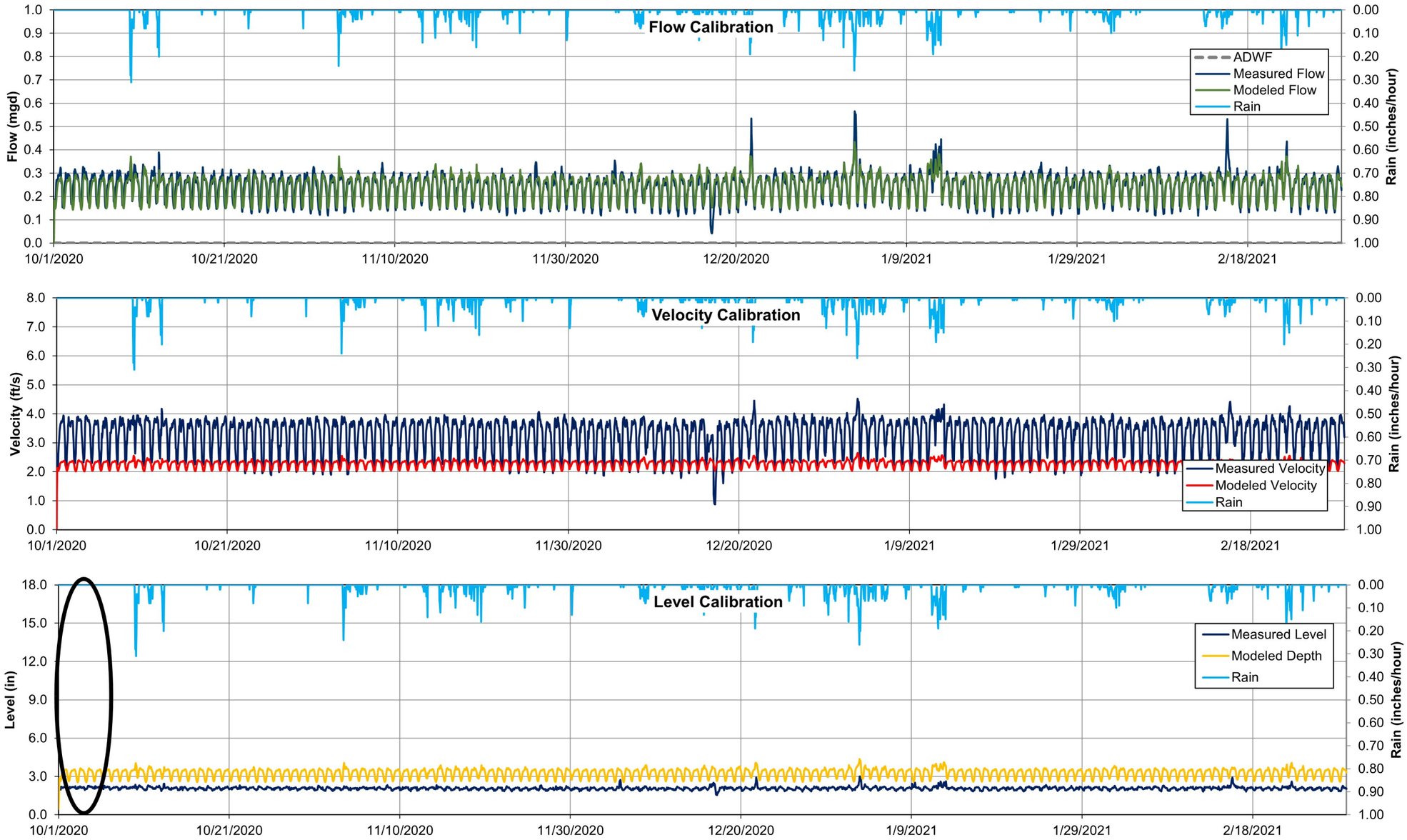
FLOW MONITORING A15 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A15
Pipeline diameter: 21"
City Manhole ID: 809-30



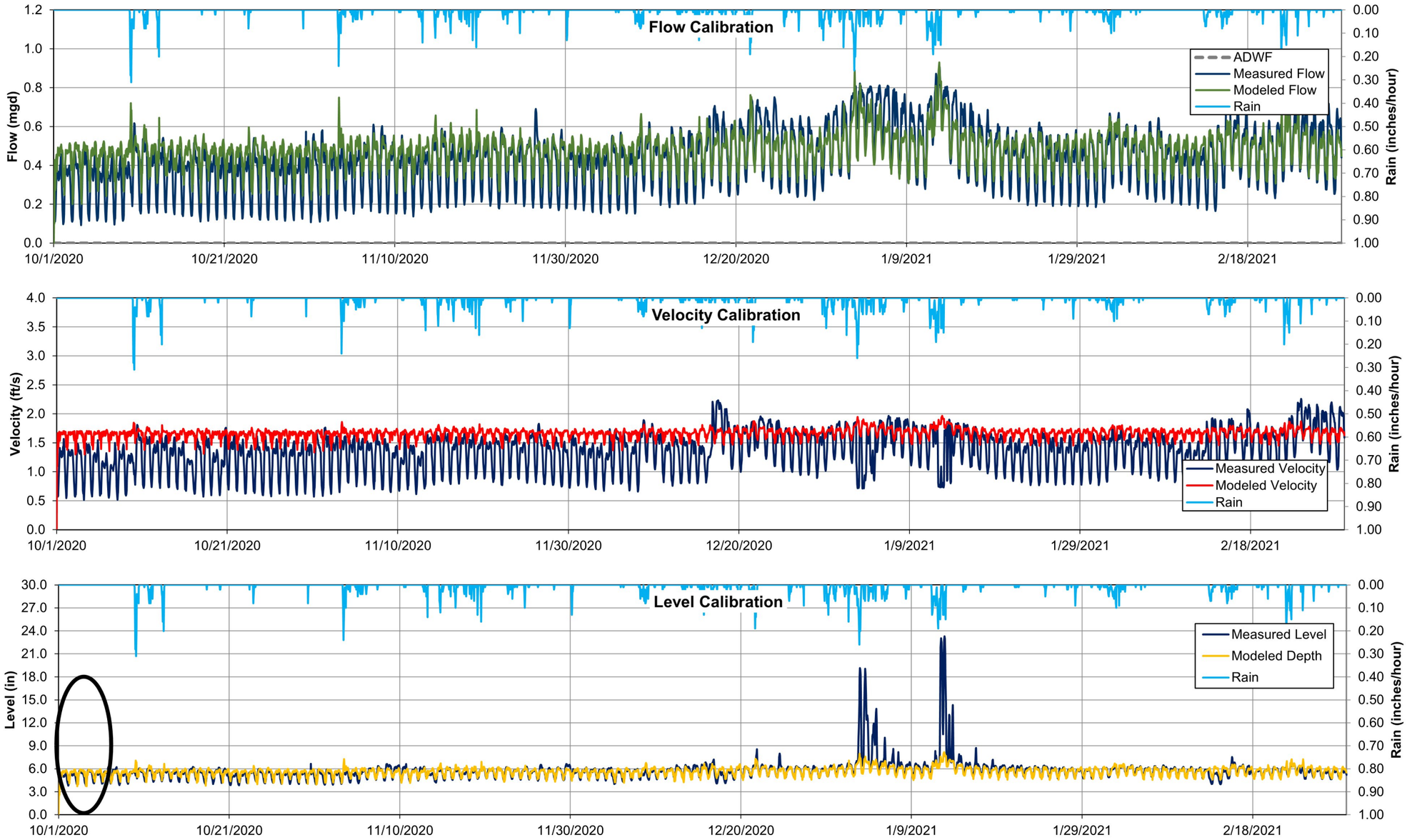
FLOW MONITORING A16 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: A16
Pipeline diameter: 18"
City Manhole ID: 809-56



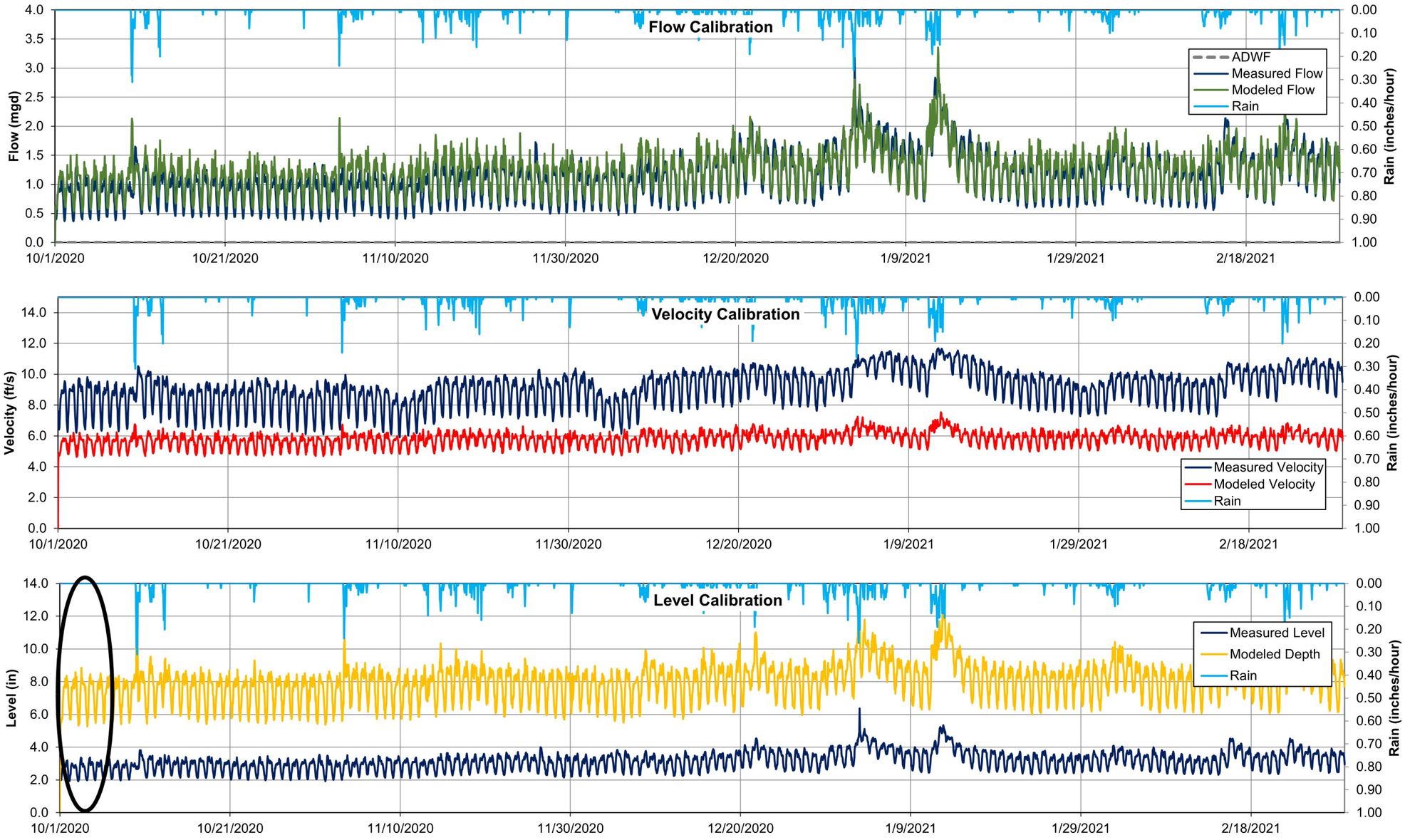
FLOW MONITORING Y-1 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: Y-1
Pipeline diameter: 18"
City Manhole ID: 410-16



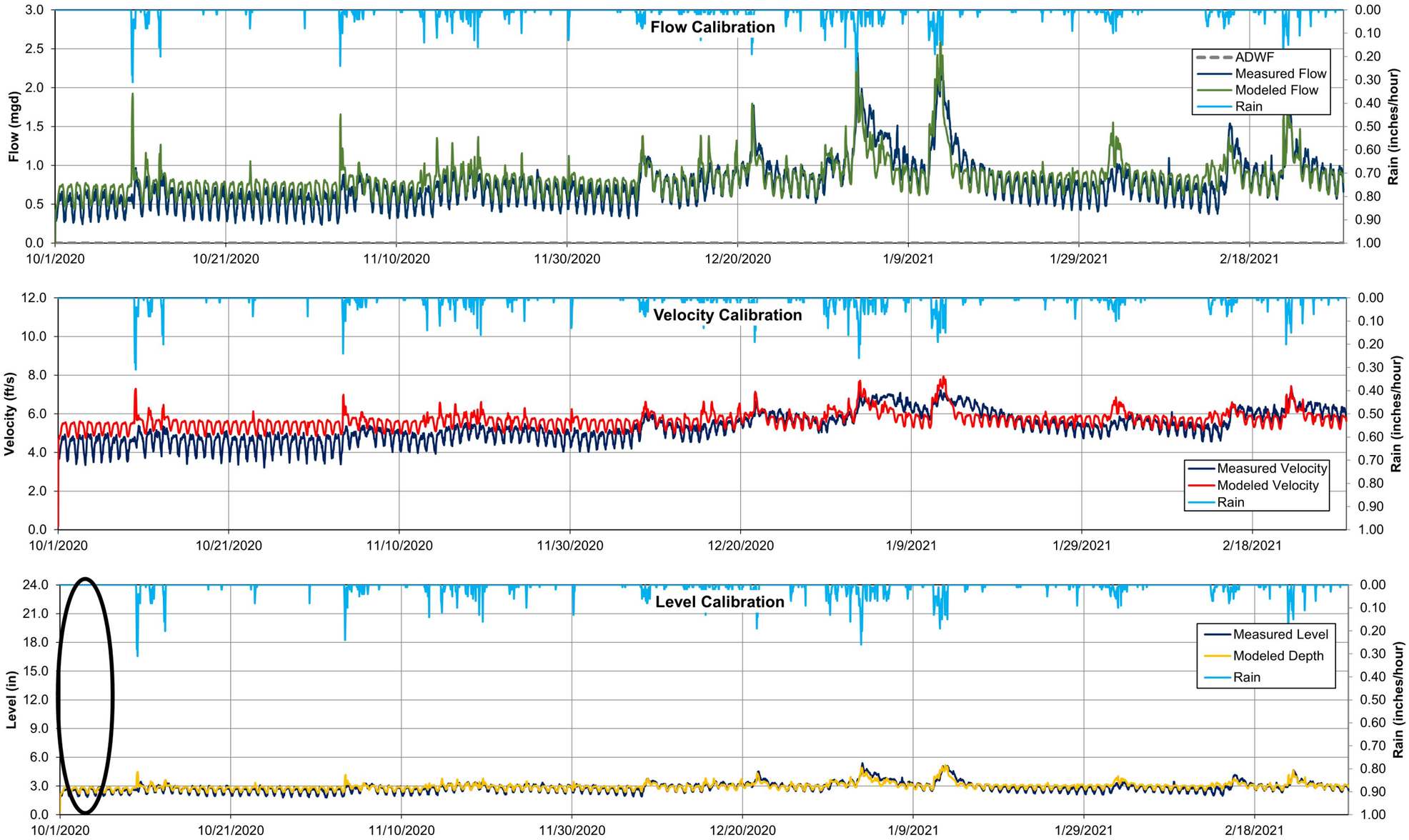
FLOW MONITORING Y-2 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: Y-2
Pipeline diameter: 14"
City Manhole ID: 611-02



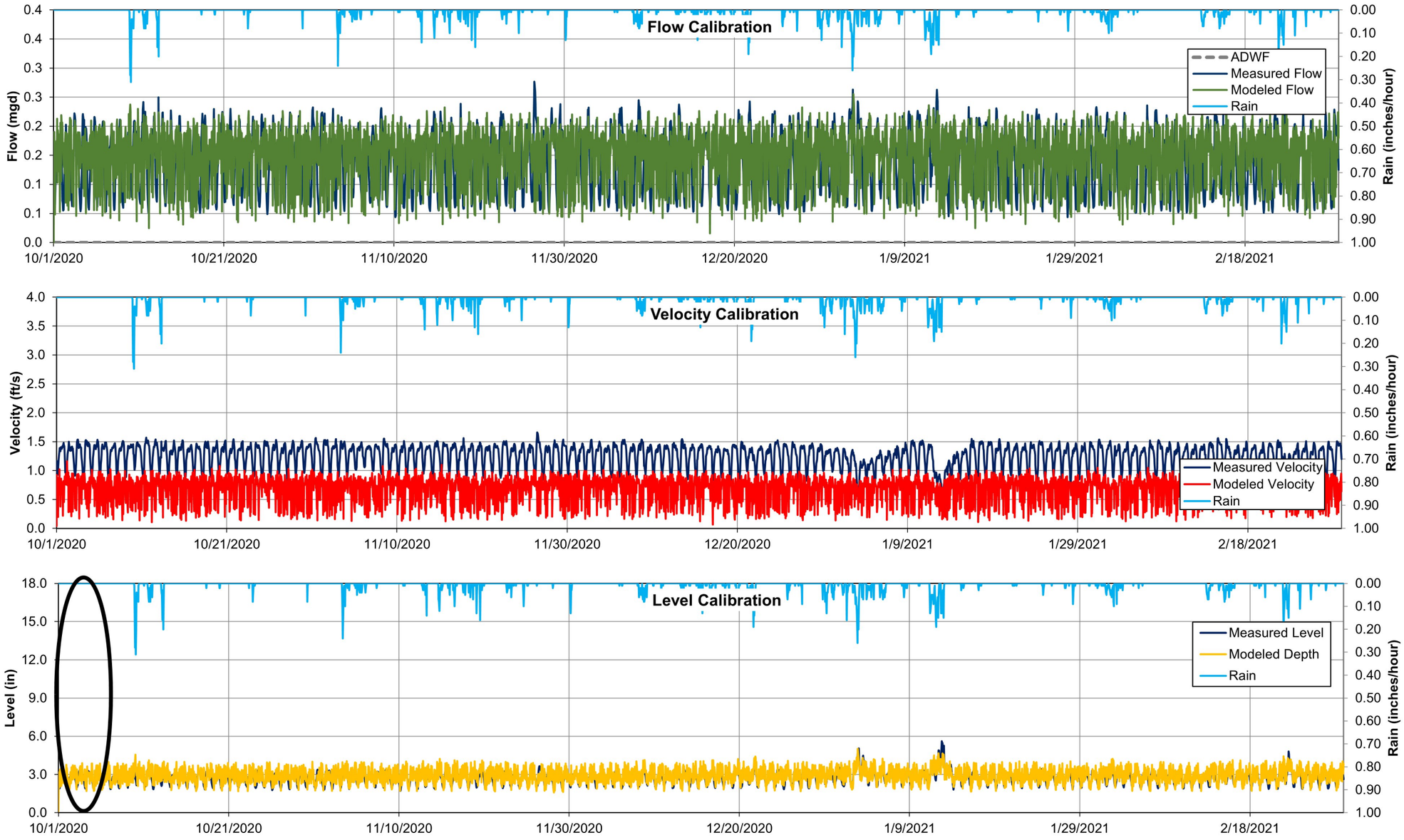
FLOW MONITORING Y-3 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: Y-3
Pipeline diameter: 24"
City Manhole ID: 1012-55



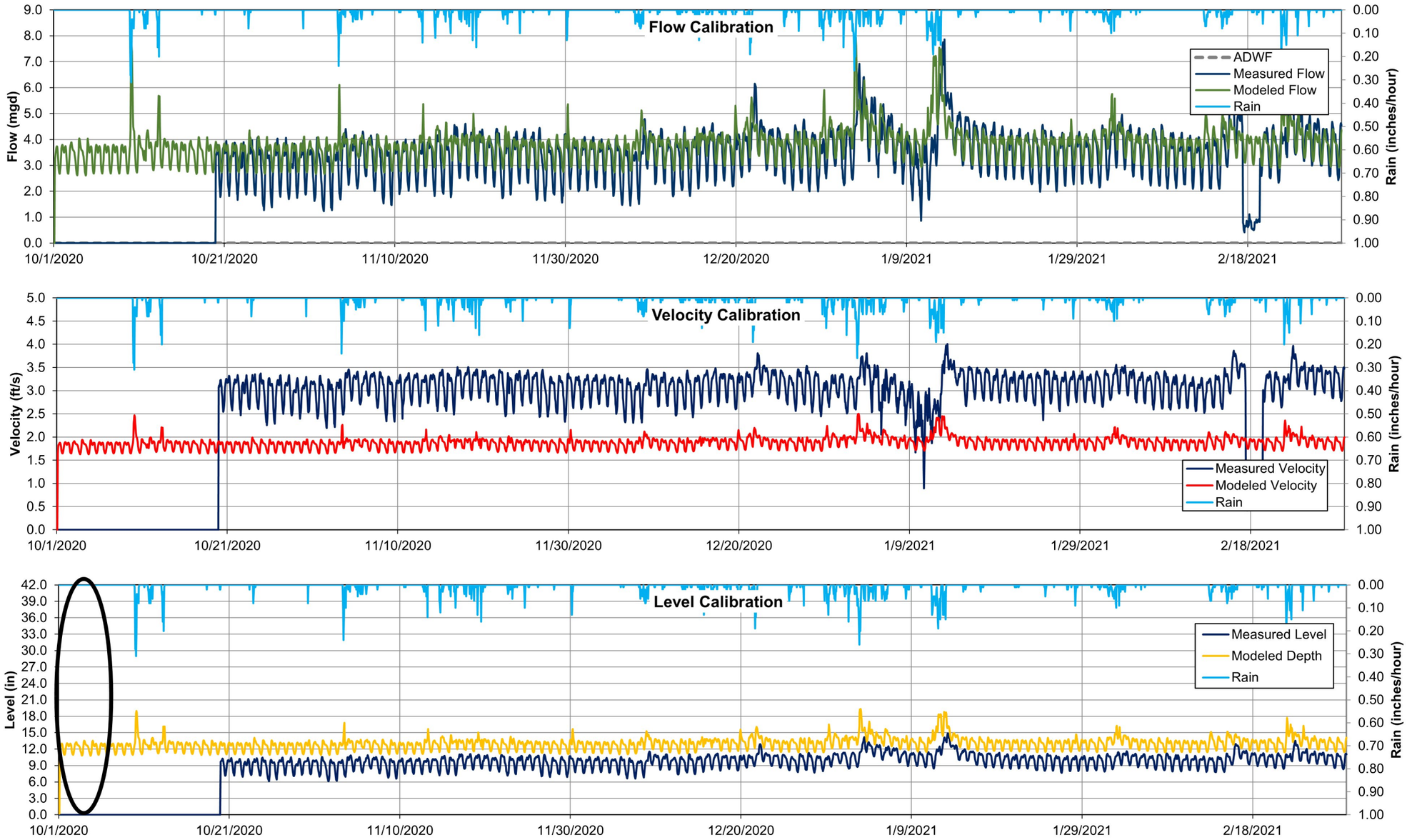
FLOW MONITORING Y-4 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: Y-4
Pipeline diameter: 18"
City Manhole ID: 1010-02



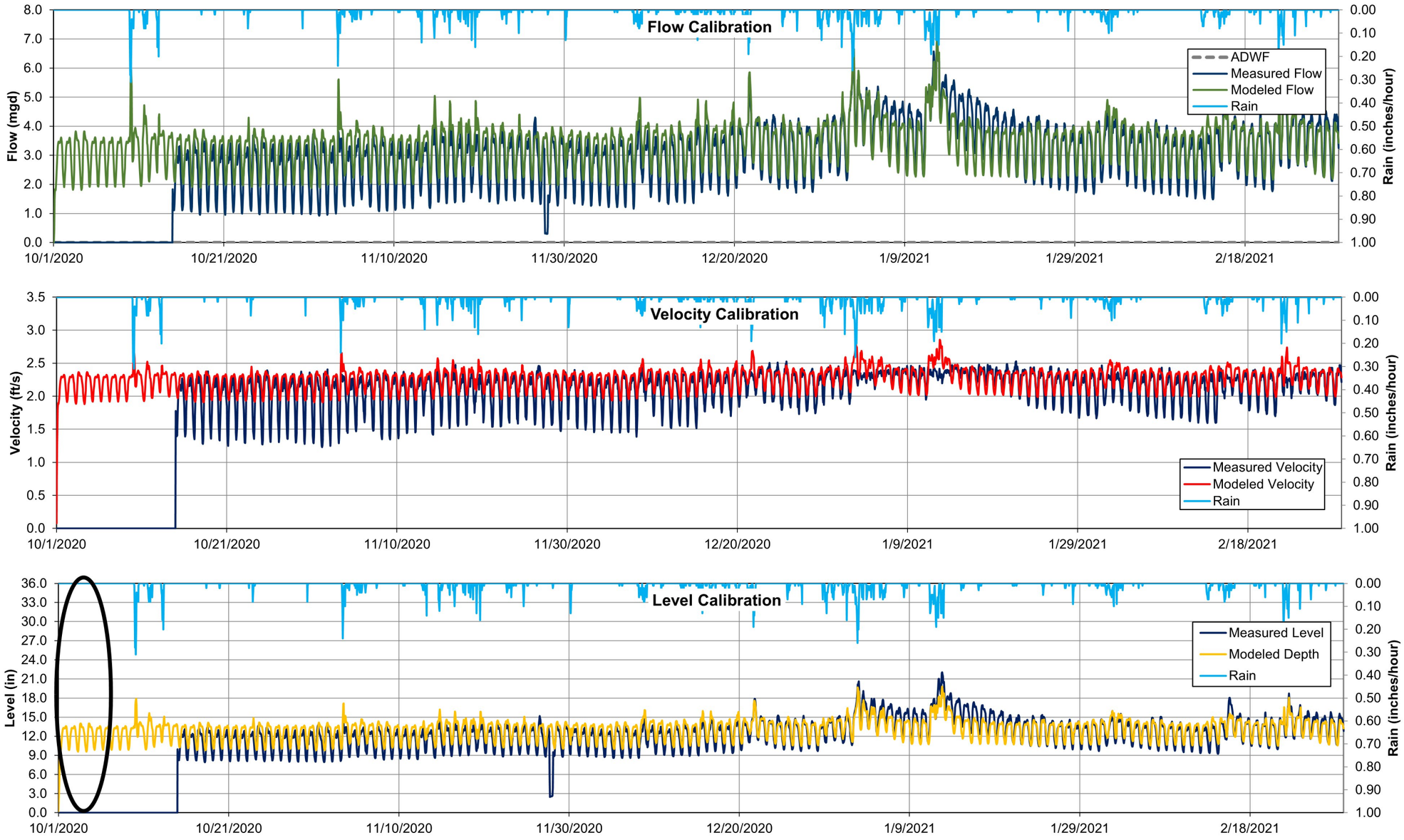
FLOW MONITORING WINT003 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: WINT003
Pipeline diameter: 42"
City Manhole ID: 508-02



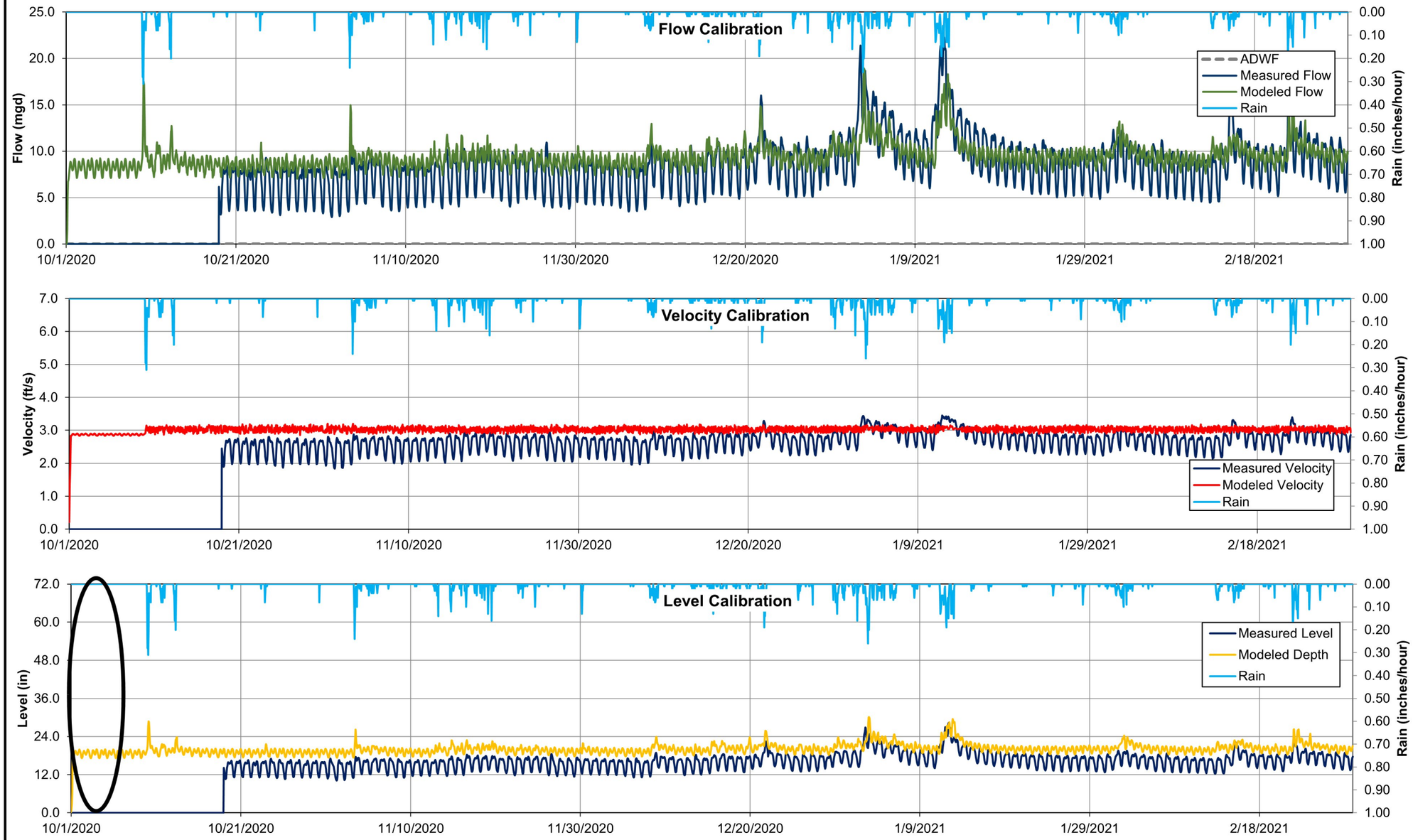
FLOW MONITORING MSTTR02 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: MSTTR02
Pipeline diameter: 36"
City Manhole ID: 509-16



FLOW MONITORING AUBRN53 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn

Location: AUBRN53
Pipeline diameter: 72"
City Manhole ID: 207-01



APPENDIX C

PUMP STATION DATA SUMMARY

PUMP STATION DATA SUMMARY

Structure ID	Pump Station Name	Year Built	Serial Number	Number of Pumps	Wet Well						Lead Pump		Lag Pump		Single Pump Capacity (gpm)	Single Pump Capacity (mgd)	Total Station Capacity (All Pumps Running)- (mgd)
					Invert Elevation (feet)	Rim Elevation (feet)	Depth (feet)	Unit Area (ft^3/ft)	Volume (ft^3)	Diameter, Assuming Circular (feet)	Start Level (feet)	Stop Level (feet)	Start Level (feet)	Stop Level (feet)			
South Hill Sewer Basin																	
1610	Area 19	2006	09-07383-00V	2	522.21	540.81	18.6	28.27	525.8	6	529.2	527.5	530.2	527.5	325	0.468	0.702
1511	North Tapps	2007	09-07382-00N	2	505	537.45	32.45	28.26	917.0	6	512	510.6	513	510.6	510	0.734	1.101
1509	Terrace View	2007	09-07382-00N	2	58.5	77.6	19.1	28.27	540.0	6	64.6	63.8	65.6	63.8	675	0.972	1.458
Valley Sewer Basin																	
210	Auburn 40	2010	12-07206-00	2	23	57.4	34.4	63.6	2187.8	9	28.5	26.5	29.5	26.5	440	0.634	0.951
1309	Ellingson Road	2011	12-07210-00-F	2	72.3	93.9	21.6	50.27	1085.8	8	77.5	75.8	79.0	75.8	1527	2.199	3.299
1009	F Street	1980	08-7822-D	2	80.2	103.3	23.1	28.27	653.0	6	86.7	85.3	87.7	85.3	400	0.576	0.864
710	R Street	1977	07-7563-F	2	53.98	71	17.02	28.26	481.0	6	60.2	59.2	61.2	59.2	100	0.144	0.216
811	Valley Meadows	1992	14-1723-Z	2	46.98	72.5	25.52	28.26	721.2	6	51.5	50.5	52.5	50.5	125	0.180	0.270
710	8th Street	1974	14-1795-Z	2	60.25	78.25	18	28.27	508.9	6	64.1	63.05	65.05	63.05	150	0.216	0.324
511	22nd Street	1967	800-5	2	41	57.43	16.43	28.7	471.5	6	47.1	45.8	48.1	45.8	550	0.792	1.188
Auburn Way South Sewer Basin																	
912	Dogwood	2010	09-07394-00-F	2	255	273.4	18.4	50.26	924.8	8	260	259	260.8	259	300	0.432	0.648
West Hill Sewer Basin																	
705	Peasley Ridge	2001	08-8478-K	2	454.55	474.25	19.7	28.26	556.7	6	460.5	458.6	461.5	458.6	275	0.396	0.594
206	Hudson	2018	18-01131-00-X	2	25.58	53.23	27.7	50.27	1392.5	8	29.0	27.1	30.0	27.1	600	0.864	1.296
Lea Hill Sewer Basin																	
614	Rainer Ridge	1980	07-7699-C	2	385.25	405	19.75	28.26	558.1	6	391.2	389.1	392.2	389.1	200	0.288	0.432
611	Riverside	1981	07-7784-R	2	41.96	71.21	29.25	28.26	826.6	6	48.4	47.0	49.4	47.0	400	0.576	0.864
413	Verdana	2011	19-01368-00-N	3	363.17	394	30.83	175	5395.3	15	371.37	369.37	372.37	369.37	1750	2.520	3.780
514	Promenade	2018	09-07404-00-X	2	370.60	391	20.40	79	1611.6	10	374.10	372.10	374.60	372.10	174	0.250	0.375

Pump/Pump Station Manufacturer Information

All pump stations except 22nd Street Pump Station

Lenexa, Kansas 66215
Phone: 913.888.5201

22nd Street Pump Station

Smith and Loveless
Cornell Pumps 14040 Santa Fe Trail Drive, Portland, OR

Local Equipment Representative

ADS Equipment
PO Box 81045
Seattle, WA 98108
Phone: 206.763.3600

Local Equipment Representative

Ideal Pump
8625 219th SE
Woodinville, WA 98072
Phone: 425.481.7777

Use of contents on this sheet is subject to the limitations specified at the end of this document.

APPENDIX D

SEPA CHECKLIST

SEPA[1] Environmental Checklist

Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal**, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

[1] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/Checklist-guidance

A.Background

Find help answering background questions[2]

1. **Name of proposed project, if applicable:**

   City of Auburn, 2024 Comprehensive Sewer Plan

2. **Name of applicant:**

   City of Auburn, Public Works Department, Sewer Division

3. **Address and phone number of applicant and contact person:**

   City of Auburn
   Public Works Department
   25 West Main Street
   Auburn, WA 98001
   253-931-3010

   Robert Elwell, Sewer Utility Engineer
   253-931-4008

4. **Date checklist prepared:**

   June 17, 2024

5. **Agency requesting checklist:**

   City of Auburn

6. **Proposed timing of schedule (including phasing, if applicable):**

   The Comprehensive Sewer Plan is scheduled for adoption during 2024. It identifies near-term projects for the next six years, and long-term projects over the next twenty years. It also provides direction for inspection, maintenance, and operation of the utility. A public hearing was held regarding the adoption of the Plan at the June 4, 2024 Planning Commission meeting.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

None beyond those discussed in this Comprehensive Sewer Plan The next comprehensive sewer plan update is proposed for the year 2032.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

   Depending upon the scope of projects proposed in the plan, an individual environmental checklist and threshold determination would be completed as specified projects are proposed for construction. There are no environmental or background studies that have been completed for this sanitary sewer plan.

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

   At this time, there are no known pending applications for general applicability related to the area covered by the sewer system. There may be applications pending related to improvements to the sewer system such as various on-going plats and developer extensions occurring within the sewer service area. The City plans to adopt the capital improvement plan outlined in this document as part of the City's six-year capital facilities plan.

10. **List any government approvals or permits that will be needed for your proposal, if known.**

    The Comprehensive Sewer Plan must be approved by the City of Auburn City Council, the King County Council, and the Washington State Department of Ecology.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.**

    The proposed non-project action includes adoption of the Comprehensive Sewer Plan as an element of the City's Comprehensive Plan. The City of Auburn's 2024 Comprehensive Sewer Plan replaces the City of Auburn's 2016 Comprehensive Sewer Plan. The plan examines the existing sewer service area which includes both areas within the city limits and potential annexation areas for the City of Auburn. It addresses policies, design criteria, and recommends improvements to the sewer system and its service area. The plan analyzes the current level of service and identifies important projects necessary to meet City and State Standards regarding public health, facility efficiency, and operations and maintenance. The wide range of facility improvements includes repair and replacement, system improvements, facility evaluations, and extensions of the utility to meet future sewer demands. The Comprehensive Sewer Plan is an ongoing element of the city Comprehensive Plan and serves as a guide for the operation, maintenance and expansion of the utility within its Sewer Service Area, in accordance with local, County, and State requirements.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The sewer service planning area as established in the plan is defined as the City of Auburn's existing city limits and potential annexation areas. The City of Auburn's service area has been modified by several interlocal agreements with neighboring sewer service providers. Those agreements are included in Appendix A of the Comprehensive Sewer Plan. The service area is shown on Figure 1.2 of the Comprehensive Sewer Plan and reflects those agreements.

B.Environmental Elements

1. Earth

Find help answering earth questions[3]

a. General description of the site:

The sewer service area is characterized by a relatively flat valley floor bordered by steep hillsides and upland plateaus overlooking the valley.

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

b. What is the steepest slope on the site (approximate percent slope)?

The actual land slopes vary throughout the planning area. Steep slopes exist east and north of the Green River on Lea Hill, south of the White River, and west along the West Valley Highway toward the West Hill. The steepest slopes are close to 100 percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The valley floor is made up primarily of soils of the Oridia, Renton, Snohomish, and Briscott series. These soils are poorly drained and formed in the alluvium (river

[3] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-earth

sediments) associated with the White and Green rivers. These are considered good agricultural soils, though in many areas, are not well-drained. There is no designated farmland within the City of Auburn.

The hillsides and plateaus are made up of primarily Alderwood associated soils and a small amount of Everett associated soils (U.S. Department of Agriculture, 1973). Alderwood soils are moderately well drained gravelly sandy loams 20-40 inches deep. Beneath these soils is glacial till with low permeability. Roots penetrate easily to the hardpan layer. Runoff potential is slow to medium. Erosion and slippage hazard is moderate, ranging to severe on steeper slopes. The Everett series consists of somewhat excessively drained soils that are underlain by very gravelly sand. These soils formed in very gravelly glacial outwash deposits under conifers. They are found on terraces and terrace fronts and are gently undulating to moderately steep.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Some steep slopes, in the areas described earlier, are possible locations of unstable soils. Geologic hazard areas including volcanic, seismic, landslide, and erosion hazard areas are mapped in the City Comprehensive Plan and sensitive areas maps.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Does not apply, since the proposed Comprehensive Sewer Plan is a non-project action. Sewer system construction projects identified in the plan will require excavation and grading of an undetermined quantity of material. Specific projects will be subject to individual environmental review prior to construction.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Does not apply, since this non-project action does not involve site specific development proposals.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

This is a non-project action, so no site specific erosion control is proposed. Specific projects described by the plan will be subject to individual environmental review

before implementation. Where applicable, erosion and sedimentation control measures together with best management practices per the 2019 Surface Water Management Manual will be used in all areas of potential erosion.

2. Air

Find help answering air questions[4]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Does not apply to this non-project action. Specific projects, which are subject to environmental review, will be evaluated for their potential impact and corresponding mitigation measures prior to implementation.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Does not apply to this non-project action. Specific projects, which are subject to environmental review, will be evaluated for their potential impact and corresponding mitigation measures prior to implementation.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation. However, standard emission controls for construction equipment will be utilized during construction of projects recommended by this plan.

3. Water

Find help answering water questions[5]

a. Surface:

Find help answering surface water questions[6]

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

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[4] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air

[5] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water

[6] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Surface-water

The major bodies of water within Auburn are the Green River, the White River, Mill Creek, Bowman Creek, and White Lake.

2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation and compliance with the City's Shoreline Master Program.

3. **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

4. **Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.**

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

5. **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

Several areas within Auburn lie within the 100-year floodplain of the Green or White River and Mill Creek. . Specific projects described by the plan which lie within these flood plains will be subject to individual environmental review before implementation and must comply with all applicable regulations.

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

No

b. Ground:

Find help answering ground water questions[7]

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate**

[7] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater

quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

Does not apply to this non-project action. No waste material will be discharged into the ground as a result of this Plan.

c. Water Runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

4. Plants

Find help answering plants questions

a. Check the types of vegetation found on the site:

☒ **deciduous tree: alder, maple, aspen, other**

☒ **evergreen tree: fir, cedar, pine, other**

☒ **shrubs**

☒ **grass**

☒ **pasture**

☒ **crop or grain**

☒ **orchards, vineyards, or other permanent crops.**

☒ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**

☒ **water plants: water lily, eelgrass, milfoil, other**

☒ **other types of vegetation**

Does not apply to this non-project action. A wide variety of plants exist across the Plan area. Specific projects described by the plan will be subject to individual environmental review before implementation.

b. What kind and amount of vegetation will be removed or altered?

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

c. List threatened and endangered species known to be on or near the site.

Does not apply to this non-project action. Any threatened or endangered species on or near the recommended projects of this Plan will be listed at the time of the environmental review process for each individual project.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

e. List all noxious weeds and invasive species known to be on or near the site.

Does not apply to this non-project action. Any noxious weeds or invasive species on or near the recommended projects of this plan will be listed at the time of environmental review process for each individual project.

5. Animals

Find help answering animal questions[8]

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Examples include:

- **Birds: hawk, heron, eagle, songbirds, other: geese, ducks, crows**
- **Mammals: deer, beaver, other: urban animals such as dogs, cats, squirrels, rodents, opossums, raccoons, etc are also present.**
- **Fish: salmon, trout**

Does not apply to this non-project action. Adoption of the Comprehensive Sewer Plan does not involve a specific site. Many of the following species could be present within the project area. Specific projects will be subject to individual environmental review for the identification of species present before implementation.

b. List any threatened and endangered species known to be on or near the site.

The City of Auburn Comprehensive Plan identifies the presence of Great Blue Heron and Bald Eagles within the sewer service area. The Environmental Impact Statement for the Auburn Thoroughbred Racetrack indicates that peregrine falcons, bald eagles, and the Aleutian Canadian Goose have been seen in the Auburn area. Chinook Salmon have been listed as endangered by the National Marine Fisheries Service and Bull Trout have been listed as endangered by the US Fish and Wildlife Service. Chinook are known to use Mill Creek and the Green and White Rivers. Bull Trout may inhabit the Green and White Rivers.

c. Is the site part of a migration route? If so, explain.

Does not apply to this non-project action. Adoption of the Comprehensive Sewer Plan does not involve a specific site. Specific projects will be subject to individual environmental review before implementation. Auburn is a portion of the Pacific Flyway for migratory birds and the migration route of a threatened or endangered species on or near the location of recommended projects of this plan will be listed at the time of the environmental review process for that particular project.

d. Proposed measures to preserve or enhance wildlife, if any.

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

[8] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals

e. List any invasive animal species known to be on or near the site.

Does not apply to this non-project action. Any invasive animal species on or near the recommended projects of this Plan will be listed at the time of environmental review process for each individual project.

6. Energy and natural resources

Find help answering energy and natural resource questions[9]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Does not apply to this non-project action. Adoption of the Comprehensive Sewer Plan itself will not result in the direct reduction or control of energy impacts. The policies included in Chapter 2 of this plan do promote sustainability practices within the Sewer Utility.

7. Environmental health

Health Find help with answering environmental health questions[10]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

[9] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-6-Energy-natural-resou
[10] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-7-Environmental-health

1. **Describe any known or possible contamination at the site from present or past uses.**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

2. **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

3. **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

-

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

4. **Describe special emergency services that might be required.**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

5. **Proposed measures to reduce or control environmental health hazards, if any.**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

b. Noise

1. **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

2. **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

3. **Proposed measures to reduce or control noise impacts, if any:**

Does not apply to this non-project action. Specific projects will be subject to individual environmental review before implementation.

8. Land and shoreline use

Find help answering land and shoreline use questions[11]

a. **What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

The sewer service area comprises various land uses including residential, industrial, commercial, open space, and public land uses.

b. **Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

Much of Green and White River Valleys and the City of Auburn were used for agriculture at some time in the past. Over the last several decades, rapid growth in the area resulted in much of the agricultural land converting to urban uses. No land within the city is designated as agricultural, though some parcels continue as that type of use. No change in land use will result from the adoption of the Comprehensive Sewer Plan.

1. **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

No.

c. **Describe any structures on the site.**

Many types of structures exist in the sewer service area, including residential, commercial, institutional, manufacturing, and industrial buildings.

d. **Will any structures be demolished? If so, what?**

[11] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-8-Land-shoreline-use

Does not apply to this non-project action. Projects which are subject to environmental review will identify any structures proposed for demolition.

e. What is the current zoning classification of the site?

In general, the sewer service area contains various zoning districts in Auburn and Unincorporated King and Pierce Counties. In general, the zoning includes single-family and multi-family residential, light and heavy commercial, light and heavy industrial, public, and open spaces. Specific Comprehensive Plan Land Use designations will be identified along with each project's individual environmental review.

f. What is the current comprehensive plan designation of the site?

-
- *The sewer service area contains various Comprehensive Plan designations. The City of Auburn has jurisdiction over the majority of the service area. Several small portions of the service area, as shown on Figure 2-2, lie within King County or Pierce County. Those areas are subject to the land use designations of the King County and Pierce County Comprehensive Plans. Specific zoning designations will be identified along with each project's individual environmental review.*
-

g. If applicable, what is the current shoreline master program designation of the site?

Portions of the City along the Green and White Rivers fall under the Shoreline Master Program. Shorelines of the State are reflected in Auburn's Shorelines Master Program, and specific projects described by the plan will be required to comply with the program.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Lands classified as critical areas exist within the sewer service area, including wetlands and streams, geologic hazard areas, aquifer recharge, habitat areas, groundwater protection areas, and frequently flooded areas. Specific projects described by the plan will be subject to individual environmental review before implementation.

i. Approximately how many people would reside or work in the completed project?

Does not apply to this non-project action. No specific development is proposed

j. Approximately how many people would the completed project displace?

Does not apply to this non-project action. The Plan's programs and project are not intended to displace any people.

k. Proposed measures to avoid or reduce displacement impacts, if any.

Does not apply to this non-project action.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The Comprehensive Sewer Plan is written in accordance with all existing local, county, and state regulations. This includes the City Comprehensive Plan developed under the Growth Management Act policies, the King County Comprehensive Plan, the King County Regional Wastewater Services Plan, and the Pierce County Comprehensive Plan.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The Comprehensive Sewer Plan includes policies consistent with King County and Pierce County policies to not extend sanitary sewer service to county rural zoned properties.

9. Housing

Find help answering housing questions[12]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Does not apply to this non-project action.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Does not apply to this non-project action.

[12] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-9-Housing

c. Proposed measures to reduce or control housing impacts, if any:

Does not apply to this non-project action.

10. Aesthetics

Find help answering aesthetics questions[13]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

b. What views in the immediate vicinity would be altered or obstructed?

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

11. Light and glare

Find help answering light and glare questions[14]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

c. What existing off-site sources of light or glare may affect your proposal?

[13] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-10-Aesthetics
[14] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-11-Light-glare

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

d. Proposed measures to reduce or control light and glare impacts, if any:

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

12. Recreation

Find help answering recreation questions

a. What designated and informal recreational opportunities are in the immediate vicinity?

The City of Auburn provides a full range of parks and recreational facilities.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

13. Historic and cultural preservation

Find help answering historic and cultural preservation questions[15]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

Although this non-project action will not directly affect any of these structures, there are several such buildings located within the sewer service area within the City of Auburn. Policies concerning these sites are addressed in the Historic Preservation Element of the City's Comprehensive Plan.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

[15] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-13-Historic-cultural-p

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

14. Transportation

Find help with answering transportation questions[16]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Numerous streets and highways traverse the service area. State Highways 18 and 167 are the two major highways crossing the service area. The City is served by a network of streets classified as arterials, collectors, and local streets.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Yes, the City of Auburn is served by Sound Transit, King County Metro, Pierce Transit, and Muckleshoot Tribal Transit.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

[16] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Does not apply to this non-project action. Specific projects described by the plan will be subject to individual environmental review before implementation.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Does not apply to this non-project action.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Does not apply to this non-project action.

g. Proposed measures to reduce or control transportation impacts, if any:

Does not apply to this non-project action.

15. Public services

Find help answering public service questions[17]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Does not apply to this non-project action.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Does not apply to this non-project action.

16. Utilities

Find help answering utilities questions[18]

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other: cable television.

[17] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-15-public-services
[18] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities

Various levels of service are available throughout the service area.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The recommended repairs, replacements, improvements, or extensions to sewer system facilities are required to meet the level of service criteria set forth by local, county, and state governments. The facilities include sewer mains, manholes, pump stations, force mains and related appurtenances. Each recommended project will be subject to its own environmental review process.

C.Signature

Find help about who should sign[19]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Name of signee Robert Elwell

Position and Agency/Organization Sewer Utility Engineer, City of Auburn

Date Submitted: May 24, 2024

D.Supplemental sheet for nonproject actions

Find help for the nonproject actions worksheet[20]

Do not use this section for project actions.

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

[19] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-C-Signature

[20] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-d-non-project-actions

1. **How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?**

The proposed non-project action consists of adoption of the Comprehensive Sewer Plan, which will not itself increase discharge to water or air. Implementation of some elements of the Comprehensive Sewer Plan has the potential to result in discharges to water and air. For example construction projects identified in the Plan have the potential to result in increased noise and exhaust from construction equipment and dust from exposed soils.

- **Proposed measures to avoid or reduce such increases are:**

No specific mitigation is proposed for the Plan adoption. The potential for discharge to air or water will be minimized through the use of best management practices and through the design and construction and operation consistent with the applicable local, state, and federal laws. Proposed projects will be reviewed and addressed on an individual basis by the appropriate agencies prior to implementation.

2. **How would the proposal be likely to affect plants, animals, fish, or marine life?**

It is not anticipated that the proposed projects will have a significant impact upon fish or wildlife. Improvements to the system described by the plan are intended to increase reliability, thereby reducing the risk of environmental contamination, thereby reducing potential harmful effects on wildlife.

- **Proposed measures to protect or conserve plants, animals, fish, or marine life are:**

No such measures are proposed for the plan adoption. Proposed projects will be reviewed on an individual basis and addressed by the appropriate agencies as they commence.

3. **How would the proposal be likely to deplete energy or natural resources?**

It is not anticipated that any of the proposed projects will have significant impact on the use of or need for energy or natural resources. Specific projects described by the plan will reviewed for their potential impact to energy and resource use as part of individual environmental reviews prior to implementation.

- **Proposed measures to protect or conserve energy and natural resources are:**

None specifically, as this is a non-project action. However, the proposed Sewer Comprehensive Plan includes a policy to evaluate activities to emphasize "sustainability practices." Specific projects described by the plan will reviewed for their potential impact to energy and resource use as part of individual environmental reviews prior to implementation.

4. **How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection, such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?**

It is not anticipated that the proposed projects will have a significant impact upon environmentally sensitive areas or areas designated for governmental protection. Improvements to the system described by the plan are intended to increase reliability, thereby reducing the risk of impacts to sensitive areas..

- **Proposed measures to protect such resources or to avoid or reduce impacts are:**

The Plan does not increase the ability of any person, company, or agency to develop projects that would affect sensitive areas. Proposed projects identified as part of the plan will be reviewed on an individual basis and addressed by the appropriate agencies prior to implementation. Conformance with the applicable local, state, and federal guidelines and regulations will be required.

5. **How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?**

The Comprehensive Sewer Plan does not allow or encourage uses incompatible with existing plans. Specific projects will be subject to individual environmental review before implementation.

- **Proposed measures to avoid or reduce shoreline and land use impacts are:**

None specifically, as this is a non-project action. However, specific projects described by the plan will reviewed for their potential impact to shoreline use and land use as part of individual environmental reviews prior to implementation.

6. **How would the proposal be likely to increase demands on transportation or public services and utilities?**

The proposal will not result in an increase in demands on transportation and public services. The Comprehensive Sewer Plan responds to growth by identifying the public facilities and improvement needed to address future growth addressed by the City Comprehensive Plan.

- **Proposed measures to reduce or respond to such demand(s) are:**

The Comprehensive Sewer Plan identifies sewer facilities required to accommodate growth. Any proposal to construct those facilities will be subject to environmental review which will identify specific impacts to transportation, public services or other utilities.

7. **Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.**

The Sewer Comprehensive Plan does not appear to present any conflict with local, state, or federal laws or requirements.

[Correction]

DETERMINATION OF NON-SIGNIFICANCE (DNS)
City of Auburn Comprehensive Plan Sewer Update
SEP24-0008

The City of Auburn is issuing a Notice of Application (NOA) and a Determination of Non-Significance (DNS) for the following described project. The permit applications and listed studies may be reviewed at the Auburn Department of Community Development at One E Main St., 2nd Floor, Customer Service Center, Auburn, WA 98001 and by visiting www.auburnwa.gov/landuse.

Proposal: The proposed non-project action includes adoption of the Comprehensive Sewer Plan as an element of the city's Comprehensive Plan. The City of Auburn's 2024 Comprehensive Sewer Plan replaces the City of Auburn's 2016 Comprehensive Sewer Plan. The plan examines the existing sewer service area which includes both areas within the city limits and potential annexation areas for the City of Auburn. It addresses policies, design criteria, and recommends improvements to the sewer system within its service area. The plan analyzes the current level of service and identifies important projects necessary to meet city and state standards regarding public health, facility efficiency, and operations and maintenance. The wide range of facility improvements includes repair and replacement, system improvements, facility evaluations, and extensions of the utility to meet future sewer demands. The Comprehensive Sewer Plan is an ongoing element of the city's Comprehensive Plan and serves as a guide for the operation, maintenance and expansion of the utility within the sewer service area, in accordance with the local, County, and State requirements.

Location: City-wide

Notice of Application:
Not Applicable.
Application Complete:
June 25, 2024
Permit Application:
June 17, 2024

File Nos.
SEP24-0008

Property Owner:
City of Auburn
25 W Main St.
Auburn WA, 98001

Applicant:
City of Auburn
Robert Elwell
25 W Main St.
Auburn WA, 98001

Studies/Plans Submitted with Application:
SEPA Environmental Checklist, prepared by City of Auburn, revision dated September 2023
Sewer Comprehensive Plan Element, prepared by City of Auburn, revision dated June 2024

Other Permits, Plans, and Approvals Needed:
Not Applicable.

Statement of Consistency and List of Applicable Development Regulations: This proposal is subject to and shall be consistent with the Auburn City Code, Comprehensive Plan, and Public Works Design and Construction Standards.

Lead Agency: City of Auburn. The lead agency for this proposal has determined that it does not have probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed

environmental checklist and other information on file with the lead agency. This information is available to the public on request.

SEPA Environmental Review: This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below.

Public Comment Period: This may be your only opportunity to comment on the environmental impact of the proposal. All persons may comment on this application. Comments must be in writing and submitted by **5:00 p.m. on August 26, 2024** to the mailing address of 25 W Main St., Auburn, WA, 98001 or emailed to the contact below. Any person wishing to become a party of record, shall include in their comments that they wish to receive notice of and participate in any hearings, if relevant, and request a copy of decisions once made. *The responsible official will reconsider the DNS based on timely comments and may retain, modify, or, if significant adverse impacts are likely, withdraw the DNS.* ***If the DNS is retained, it will be final after the expiration of the comment deadline.***

Any person aggrieved of the City's determination may file an appeal with the Auburn City Clerk at 25 West Main Street, Auburn, WA 98001-4998 within 14 days of the close of the comment period, or by 5:00 p.m. on September 9, 2024.

For questions regarding this project, please contact Gabriel Clark, Planner I, at planning@auburnwa.gov or 253-470-2147.

Public Hearing: N/A

RESPONSIBLE SEPA OFFICIAL:
Alexandria D. Teague, Planning Services Manager

ADDRESS:
25 West Main St.
Auburn, WA 98001
253-931-3090

DATE ISSUED: August 8, 2024 SIGNATURE: Alexandria D. Teague

Note: This determination does not constitute approval of the proposal. Approval of the proposal can only be made by the legislative or administrative body vested with that authority. The proposal is required to meet all applicable regulations.

APPENDIX E

RECLAIMED WATER CHECKLIST

For questions, call Kristina Westbrook,
King County Reclaimed Water Program Manager at (206) 296-5279
www.kingcounty.gov/reclaimedwater

King County

Water Reclamation Evaluation Checklist
For Systems with 1,000 or more Connections

The County and State recognize that changing conditions could initiate a need to respond in new ways to future water quality standards, wastewater discharge requirements, take advantage of advances in treatment technologies and/or allow our region to be positioned to respond to changes associated with climate change and population growth.

In 2003, Chapter 90.46 of the Revised Code of Washington (RCW) was amended to require public water systems serving 1,000 or more connections to evaluate opportunities for reclaimed water when completing their water system plans. Please use this checklist to meet King County consistency requirements in responding to this legislation.

Please use this checklist, including the inventory template, to ensure that your water system plan includes sufficient information about opportunities for reclaimed water and your system's efforts to develop those opportunities. If a question is not applicable or the information is unavailable, then answer, "unknown" or "n/a." King County will consider the checklist completed if each answer is filled in with the best available information, even if the utility states that it is not aware of any reclaimed water opportunities within its service area.

Water System Name: City of Auburn
Date: 03/11/2024
PWS ID# 03350V
Contact: Senait Gebreeyesus

1. **Identifying Potential Future Demand for Reclaimed Water:** King County maintains a database and map of potential reclaimed water users for evaluating future projects. Please use the template below, or similar table, to provide information to assist King County in further researching these potential uses.
   - **Large Utility Water Users** (choose one):
     - ☐ Attached is an inventory of twenty large (above 20,000 gallons/month on average), non single-family residential, water users served by our utility that have a potential for reclaimed water use, or
     - ☑ Attached is an inventory of our utility's top twenty water users, or
     - ☐ The information requested is unknown or not available.
       Additional Comments: _____
   - **Large Self Suppliers** (choose one):
     - ☐ Attached is an inventory of large, self-supplied water users within our water utility's service boundaries - especially those near wastewater treatment plants, mainlines, outfalls, and pump stations or similar reclaimed water facilities), or
     - ☑ The information requested is unknown or not available.
       Additional Comments: _____
   - **Other** (choose one):
     - ☐ Attached is an inventory of other water users (such as those that are clustered near one another and could be served by a single system) that may be likely candidates for reclaimed water use, or
     - ☑ The information requested is unknown or not available.
       Additional Comments: _____

2. **Environmental Commitment**: Are you a city/town, or providing water service to a city/town, that has made commitments within resource management plans, salmon recovery plans, or other environmental initiatives for which there is a potential opportunity for using reclaimed water to assist in meeting commitments? (choose one)

☐ Yes, here are plans that have potential for reclaimed water use in our service area to meet the above commitments:

_____

_____

☑ The information requested is unknown, not available.
Additional Comments: _____

3. **Identifying Areas of Potential Use of Reclaimed Water for Environmental Benefit:**
Below are ***examples*** of uses of reclaimed water ***that comply with State, Federal and other reclaimed water environmental, health and safety standards***. All of these uses are currently in effect somewhere in Washington State. To the best of your knowledge, are any of these potential uses for reclaimed water applicable to your area?

River Augmentation (choose one):

☐ Yes, our water rights are limited by instream flows. For more information, King County may contact:

_____

_____

☑ The information requested is unknown, or not available.
Additional Comments: _____

Groundwater Recharge (choose one):

☐ Yes, we withdraw water from an aquifer that is in a groundwater management area, or from a declining aquifer, where water levels may need to be replenished or to maintain aquifer storage. For more information, King County may contact:

_____

☑ The information requested is unknown, or not available.
Additional Comments: _____

Water Rights Mitigation (choose one):

☑ Yes, our area is pursuing, or planning to pursue, new or additional water rights, and there may be an opportunity to use reclaimed water for mitigation of those new water rights. For more information, King County may contact:
Application G1-28404. Contact Ingrid Gaub, 253-804-3113

☐ The information requested is unknown, or not available.
Additional Comments: _____

Potential Areas of Environmental Need (choose one):

☐ Yes, parts of our service area include potential environmental enhancement locations, such as wetlands enhancement, aquifer recharge, stream flow augmentation, that might be candidates for reclaimed water use. For more information, King County may contact:

_____

☑ The information requested is unknown, or not available.
Additional Comments: _____

4. **Local Reclaimed Water Legislation**: If water reclamation is mandated for this water system through local government agreement, contract, local regulations, ordinances, or other mechanisms, please provide a copy of the governing mechanism (choose one).

   ☐ Yes, local legislation exists in our area in support of reclaimed water use. The following relevant legislation is attached (please list titles of documents):

   _____

   _____

   ☑ No water reclamation legislation exists, or is known to exist, at a local level in our service area.

5. **Coordination with Local Wastewater Utility:** Include a brief description of your interactions with any wastewater or reclaimed water utility (King County or other) adjacent to your service area to evaluate any potential opportunities to develop reclaimed water (choose one).

   ☑ Describe if applicable:
   The City of Auburn's policy is to coordinate with King County to explore potential opportunities for water reclamation.

   ☐ None. Additional Comments: _____

Template for
Inventory of Water Users and Identification of Potential Reclaimed Water Users

Site Owner or Site Name	Site Address (for general mapping purposes)	Estimated Annual Water Use	Water uses not requiring potable water[1]	Is this a Potential Reclaimed Water Customer?
Boeing	700 15th St SW	188,246,355 gal.	?	Yes
Muckleshoot Casino	2402 Auburn Way S	32,219,539 gal.		No
Auburn Manor	210 37th St SE	22,827,838 gal.		No
Copper Gate	4750 Auburn Way N	14,905,895 gal.		No? (new)
Emerald Downs	2828 Emerald Downs Dr.	29,984,048 gal.	12,095,080	Yes
White River Estates	4248 A St. SE	15,270,794 gal.		No
Laundry Facility	1600 M ST. NW	25,749,807 gal.		No? (new)
Promenade Apartments	12902 SE 312th St	15,666,411 gal.		No? (new)
MultiCare	202 N Division St	13,091,590 gal.		No
Villas/Reserve	1107 A St NE	11,592,354 gal.		No? (new)
Walmart/Supermall	1200 Supermall Way	13,991,247 gal.	1,319,101	Yes
Auburn Dairy	702 W Main St	10,548,203 gal.		No
Rio Verde	1402 22nd St NE	12,753,400 gal.		No
College Place	31600 126th Ave SE	11,624,762 gal.		No? (new)
Skylark Village	900 29th St SE	12,359,952 gal.		No? (new)
The River Estates	3611 I St. NE	10,086,593 gal.		No? (new)
Safeway	3520 Pacific Ave S	9,678,279 gal.		No
Adventist Academy	32nd St SE & Wyman Dr.	9,028,734 gal.	?	Yes
Forest Villa (PIC)	4205 Auburn Way S	9,163,094 gal.		No
Tall Cedars	40137th St SE	6,759,209 gal.		No

[1] See Washington State Reclamation and Reuse Standards, September 1997, Section 1, Articles 1-5 for allowable uses of reclaimed water. http://www.ecy.wa.gov/PROGRAMS/WQ/reclaim/standards.html

ENGINEERING SERVICES

2024 COMPREHENSIVE SEWER PLAN UPDATE

BOB ELWELL, SEWER UTILITY ENGINEER

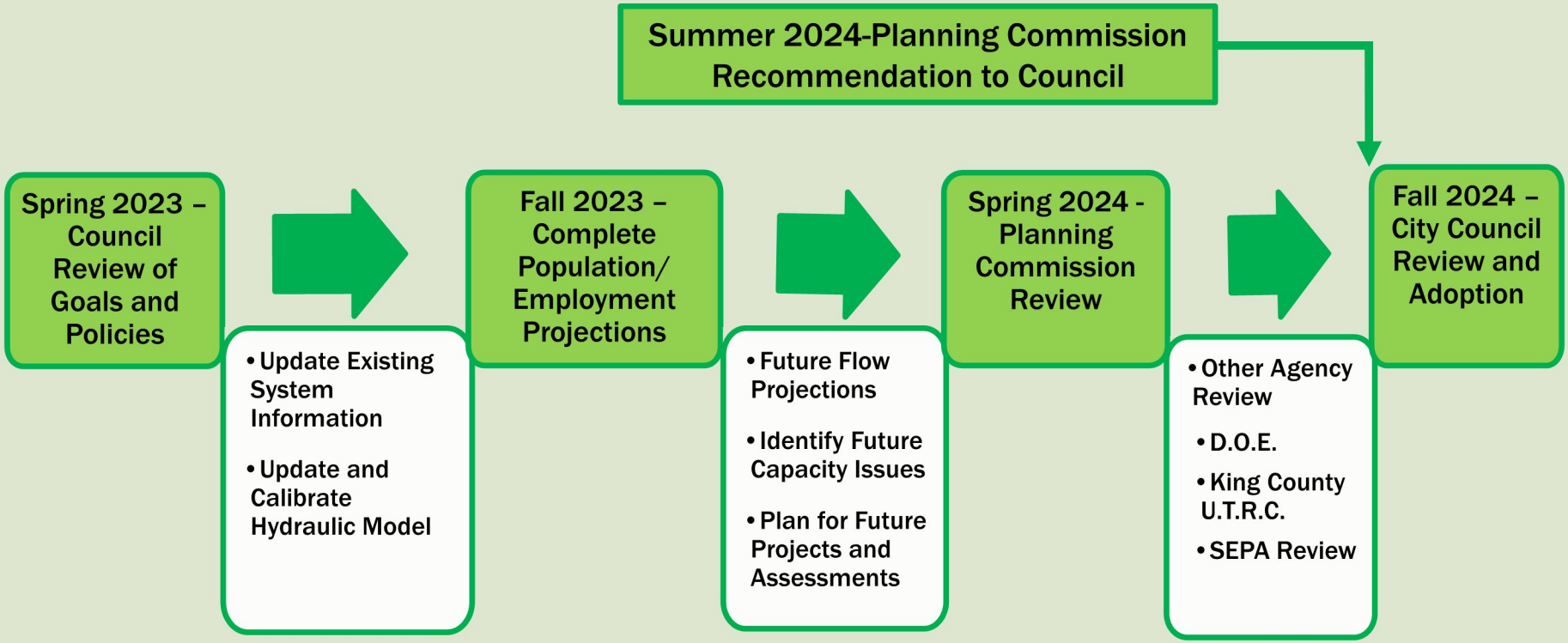
PLANNING COMMISSION MEETING
SEPTEMBER 17, 2024

Public Works Department
Engineering Services • Airport Services • Maintenance & Operations Services

AUBURN VALUES

SERVICE
ENVIRONMENT
ECONOMY
CHARACTER
SUSTAINABILITY
WELLNESS
CELEBRATION

PLAN DEVELOPMENT PROGRESS/MILESTONES



AGENCY COMMENT SUMMARY

- Department of Ecology (DOE)/King County Utilities Technical Review Committee (UTRC)
  - Administrative Comments
  - Mapping Clarity
  - Modeling Clarity
  - Policy Clarification
  - Miscellaneous (water conservation, odor, corrosion, and industrial waste)

2024 SANITARY SEWER COMPREHENSIVE PLAN

Any Questions?

AGENDA BILL APPROVAL FORM

Agenda Subject:
Parks and Recreation PROS Plan (Gouk)

Date:
August 28, 2024

Department:
Community Development

Attachments:
PROS Plan
PROS Plan Presentation

Budget Impact:
Current Budget: $0
Proposed Revision: $0
Revised Budget: $0

Administrative Recommendation:

Background for Motion:

Background Summary:
See Attachments

Reviewed by Council Committees:

Councilmember:

Staff: Thaniel Gouk

Meeting Date: September 17, 2024

Item Number:

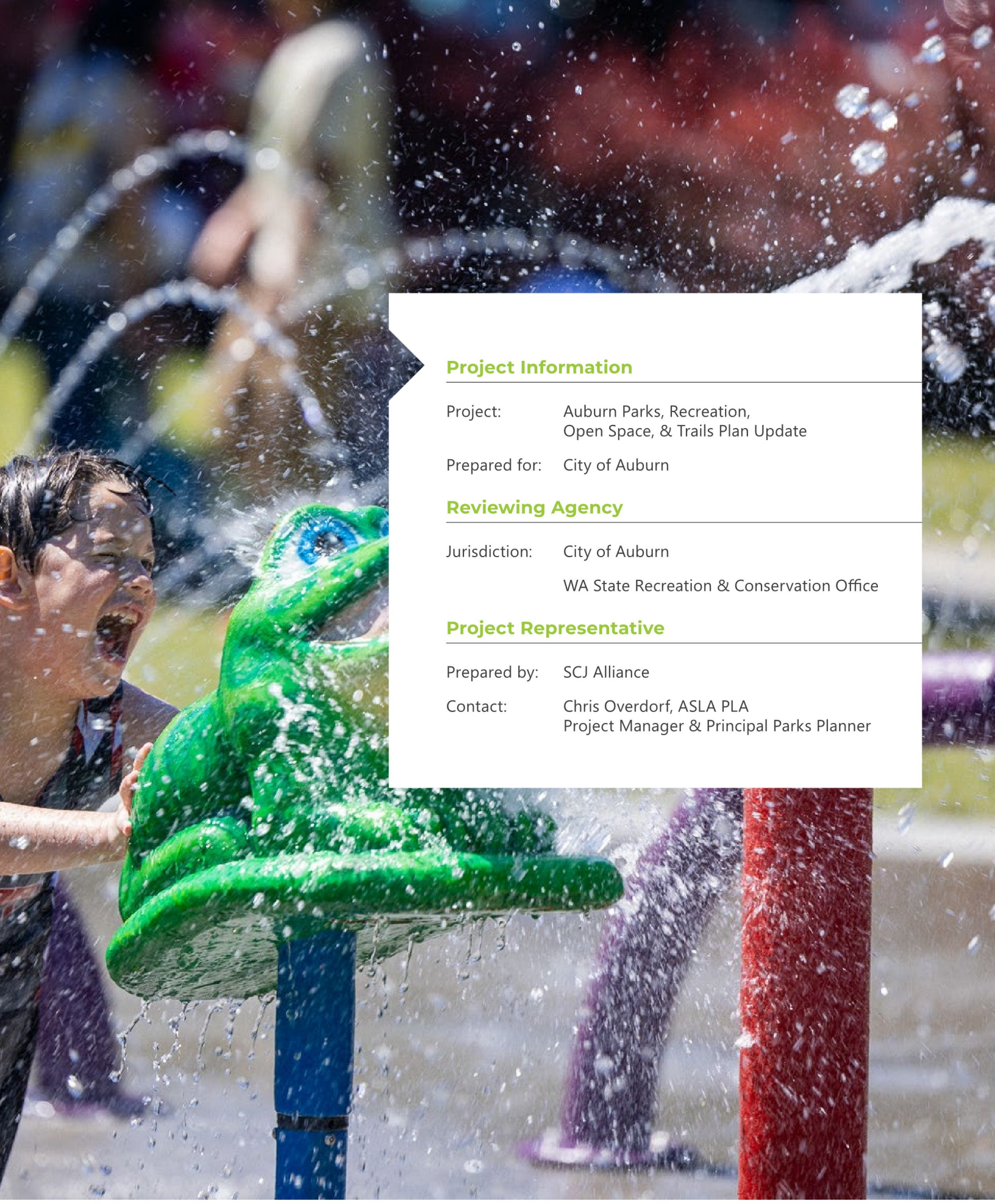


AUBURN

Parks, Recreation, Open Space, & Trails Plan Update

September 2024

CITY OF AUBURN
PARKS, ARTS & RECREATION



Project Information

Project:	Auburn Parks, Recreation, Open Space, & Trails Plan Update
Prepared for:	City of Auburn

Reviewing Agency

Jurisdiction:	City of Auburn
	WA State Recreation & Conservation Office

Project Representative

Prepared by:	SCJ Alliance
Contact:	Chris Overdorf, ASLA PLA Project Manager & Principal Parks Planner



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Summary

The City of Auburn's Parks, Recreation, and Open Space (PROS) Plan is an ambitious and visionary blueprint designed to elevate the city's parks and recreation facilities to meet the evolving needs of its vibrant community. This comprehensive plan, which spans from 2024 to 2030, is the result of extensive public engagement, reflecting the community's collective aspirations for a higher quality of life through enhanced recreational services and access to diverse outdoor opportunities.

The PROS Plan outlines a strategic Capital Improvement Program (CIP) that prioritizes both immediate enhancements and long-term projects, ensuring that Auburn's parks and open spaces continue to be cherished assets for generations to come. It reaffirms the city's commitment to fostering a healthy, walkable community, promoting environmental stewardship, and creating spaces that inspire connection, well-being, and a sense of place.

To bring this vision to life, the plan is designed with flexibility, allowing for adjustments as community needs evolve, new opportunities arise, and funding sources become available. The city is committed to leveraging a mix of municipal budgets, grants, and the passionate efforts of community volunteers to realize these improvements. Through ongoing review and adaptive management, Auburn aims to create a parks and recreation system that not only meets the current needs of its residents but also anticipates and shapes the future, ensuring that the city remains a dynamic, engaging, and inclusive place to live, work, and play.



PLACEHOLDER FOR COVER LETTER FROM DARYL...



Introduction







Welcome to the City of Auburn's Parks, Recreation, and Open Space Plan Update (PROS Plan). This document fulfills the requirements of the Growth Management Act (GMA), ensuring the City's eligibility for funding from the Washington State Recreation and Conservation Office (RCO) and other sources over the next six to ten years. It provides a comprehensive overview of Auburn's parks, recreation areas, open spaces, and non-motorized trails.

The PROS Plan incorporates public input gathered through surveys, outreach, and online tools to assess recreational needs and preferences. It evaluates the current conditions of the city's parks and open spaces, establishing a vision and goals based on community demand.

A critical component of this document is the Capital Improvement Plan (CIP). Upon approval, the CIP will finalize the PROS Plan by recommending enhancements aimed at improving services for Auburn residents over the next six years and beyond. These recommendations are strategically linked to potential grant funding sources, guiding the City in prioritizing projects that align with the community's desired quality of life.

Purpose

In Washington State, communities like Auburn rely on Parks, Recreation, and Open Space (PROS) Plans to shape the future of their outdoor spaces, serving as vital roadmaps for growth, development, and preservation. These plans are not just state mandates; they are essential tools for balancing growth with environmental protection and enhancing residents' quality of life.

For Auburn, the PROS Plan is crucial for complying with the Growth Management Act (GMA), which ensures thoughtful planning to accommodate growth while protecting the environment and enhancing residents' quality of life.

However, the PROS Plan goes beyond mere compliance. It embodies a vision and a commitment to community engagement, providing a platform for residents to express their needs and desires for parks, trails, and recreational areas. Through surveys, outreach, and online tools, the city gathers valuable input to ensure the plan reflects the diverse interests and aspirations of its people.

At its core, the PROS Plan is about dreaming big while remaining practical. It sets ambitious goals for improving access to recreational amenities, enhancing existing facilities, and expanding green spaces. These goals are not just lofty ideals; they are actionable steps toward creating a community where residents can live, work, and play.

Within the PROS Plan is the Capital Improvement Plan (CIP), a strategic blueprint for turning vision into action. The CIP outlines specific projects and improvements designed to enhance services for Auburn's residents over the next six years and beyond. These projects are carefully aligned with the community's goals and values, ensuring that every dollar spent brings tangible benefits.

In essence, the PROS Plan is Auburn's promise to its residents: a commitment to vibrant parks, thriving green spaces, and abundant opportunities for outdoor adventure. It is a testament to the city's dedication to building a sustainable future where nature and community flourish together.

Regulatory Requirements

Growth Management Act Requirements

RCW 36.70A.140, known as the Growth Management Act (GMA), is crucial to all Comprehensive Parks, Recreation, and Open Space (PROS) Plans in Washington State. This law mandates that local governments, such as cities and counties, plan for growth through comprehensive plans that consider natural resources, economic development, and residents' quality of life.

Specifically, the GMA requires local governments to adopt comprehensive plans that address various aspects, including parks and recreation. Additionally, it outlines the requirements for a Capital Facilities Plan (CIP) that includes:

- An inventory of existing public facilities, including green spaces.
- Forecasts for future needs of these facilities.
- Plans for expanding or building new facilities.
- A six-year funding plan with identified public funding sources.
- A requirement to reassess plans if funding falls short, ensuring all elements are coordinated. Parks and recreation facilities are integral to the CIP.

The Parks and Recreation element of the GMA further specifies that the plan should include:

- Estimates of park and recreation demand for at least ten years.
- An evaluation of existing facilities and service needs.
- Exploration of opportunities for regional collaboration on park and recreation services.

In the context of a PROS Plan, RCW 36.70A.140 provides the legal framework for integrating parks, recreation, and open space considerations into overall planning. The PROS Plan becomes a specific component of the broader comprehensive plan, focusing on developing, maintaining, and enhancing these aspects within the community.

By adhering to RCW 36.70A.140, cities like Auburn ensure their PROS Plans align with state goals for sustainable growth and development. Compliance with the GMA is essential for Auburn to access state funding and effectively manage its parks, recreation, and open spaces.

Washington Recreation and Conservation Office (RCO) Requirements

The Recreation and Conservation Office (RCO) promotes outdoor recreation and conservation in Washington State through grants and technical assistance, ensuring that all residents have access to well-maintained parks and protected natural spaces. However, their role extends beyond funding.

1. The RCO recognizes the importance of well-planned park systems, which not only serve local communities but also contribute to a statewide network of parks and open spaces. A well-implemented Parks, Recreation, and Open Space (PROS) Plan acts as a roadmap for a city's park system, communicating the current state of parks, recreation facilities, budgeting, and programs to the RCO. It identifies gaps in current and future service levels and develops an actionable vision for the community's future. This roadmap assures the RCO that grant money will be used effectively to meet community needs aligned with statewide goals.

The RCO requires a PROS Plan, updated every six years, to comply with the Growth Management Act (GMA). These plans should cover the following key elements:

2. Existing Conditions & Baseline Analysis: Establishes the groundwork by reviewing past plans, demographics, and park system trends.
3. Community & Systems Needs Assessment: Identifies gaps and needs in park infrastructure, assesses facility conditions, and sets service level benchmarks.
4. Priorities, Strategies, and Implementation Plan: Compiles the analyses and proposes recommendations. It prioritizes goals, outlines implementation strategies, and establishes a potential capital improvement plan for park development.

By following RCO's guidelines and creating a strong PROS Plan, Auburn can secure grant funding, improve its park system, and enhance the quality of life for its residents. To ensure compliance with RCO's framework

and alignment with the GMA, communities must submit the PROS Plan along with the RCO's Self-Certification Form (see Approvals Section). By adhering to this framework, Washington communities can develop a robust vision for their parks and recreation systems and strengthen their grant applications by demonstrating clear vision and strategic priorities.

More information can be found in RCO's Manual 2: Planning Guidelines (January 2024), available at:

https://rco.wa.gov/recreation-and-conservation-office-grants/grant-manuals/.

Process

While RCO has no specific requirements for the number of pages, number of chapters, or format for comprehensive parks plans, it is expected that the plan will capture the needs of the organization and, more importantly, the quality of life desired by the community.

The process used to develop the City of Auburn's Park's PROS Plan Update is modeled after six minimum elements noted in RCO Manual 2: Planning Policies & Guidelines. Whether this plan supports a grant application for a capital project (facility development and land acquisition) or a non-capital project (architectural, engineering, planning, etc.,) the organization of this plan and the process followed is purposefully designed to capture the elements expected by RCO.

Aside from this, the first section, the project overview, this plan is structured around six primary sections or elements needed for an effective comprehensive parks plan:

Existing Conditions (Systems Inventory)

A description of the planning or service area, including the physical setting, the community profile, other mutually supportive planning efforts, and a summary of conditions of the complete inventory of each existing outdoor recreation asset or program.

Public Involvement

A description of how the planning process gave the public ample opportunity to be involved in plan development and adoption.

Demand & Needs Analysis

An analysis that takes your inventory work and public involvement into consideration, balancing public demand with your organization's current capacity and future expectations.

Goals and Objectives

The plan must support the applicant's park and recreation mission, including the current project, with broad statements of intent, or goals that capture a community's desired outdoor recreation resources.



Capital Improvement Program

A list of the desired capital improvements or capital facility programs of at least 6 years that lists and prioritizes desired land acquisition, development, renovation, and restoration projects.

Approvals

A resolution, ordinance, or other adoption instrument showing formal approval of the plan and planning process by the governing entity.

The process diagram below identifies the priority sections needed to develop a GMA-compliant and RCO-certified PROST plan, however, many steps ran concurrently.





Inventory & Assessment



INVENTORY & ASSESSMENT

This section aims to provide a comprehensive understanding of the current conditions of Auburn's parks, recreation programs, open space, and trail system. It examines the condition of the City's parks system, the population served by these parks, and the regional context and planning efforts that shape the system.

The City of Auburn manages a diverse range of parks and recreation assets, including 10 neighborhood parks, 14 community parks, 6 parcels of dedicated open space, 13 pocket parks and tot lots, and 16 special use facilities, including a golf course and trail systems. Given Auburn's current population of 90,096 in 2024, this equates to approximately 11.8 acres of parkland per 1,000 residents. This ratio aligns Auburn with other communities across the country, which have a median of 11.2 acres of parkland per 1,000 residents. A more detailed analysis of the composition of Auburn's parks and recreation system is provided in the Demand & Needs section of this report.

The inventory and assessment section, and the information that follows, is divided into four distinct contexts that capture the structure upon which the parks system is a part of.

- **Physical Context**
- **Demographic Context**
- **Planning Context**
- **Site Evaluations**

Pocket Parks

21st Street Playground • North Tapps Estates
Riversands Park • Terminal Park
Village Square Park • Ballard Park
Dorothy Bothell Park • Dykstra Park
Edgeview Park • Forest Villa Tot Lot
Gaines Park • Indian Tom Park • Jordana Park

Neighborhood Parks

Auburndale 2 Park • Shaughnessy Park
Auburndale Park • Cameron Park
Cedar Lanes Park • Evergreen Park
Lakeland Hills Park • Riverpoint Park
Scootie Brown Park • Trail Run

Community Parks

104th Ave SE • Brannan Park • Fulmer Park
Game Farm Park • Game Farm Wilderness
GSA Park • Isaac Evans Park
Jacobsen Tree Farm (und.) • Lea Hill Park
Les Gove Park • Mill Pond Park • Roegner Park
Sunset Park • Veterans Memorial Park

Open Space

Auburn Environmental • Clark Property
Game Farm Open Space • Golf Course
Lakeland Nature Area • Mary Olson Farm
West Auburn Lake

Special Use Areas

B Street Plaza • Bicentennial Park
Centennial Viewpoint Park • City Hall Plaza
Clark Plaza • Community Garden A
Community Garden B • Environmental Park
Fenster Nature Park • Fly-in Lion
Mary Olson Farm • Mountain View Cemetery
Pioneer Cemetery • Plaza Park
Slaughter Memorial

Planning Context

Auburn: A History of Transformation

The Auburn area has a rich history of human settlement, with indigenous populations being the first inhabitants. Tribal groups such as the Skopamish, Smalhkamish, and Stkamish thrived at the confluence of local rivers, establishing trade routes over the Cascade Mountains, interacting with eastern tribes, and using the waterways for resource gathering and commerce with coastal groups.

In the mid-1800s, the first European pioneers arrived in the White River Valley. The following decades, particularly the 1880s, saw the arrival of railroads, which attracted settlers from various regions, including the eastern and Midwestern United States, Europe, and Asia. Early European and Japanese farmers began cultivating the fertile land, leading to bountiful harvests and establishing the White River Valley as a prominent agricultural center.

Auburn's central location between Seattle and Tacoma played a significant role in its development. The construction of a hydroelectric power plant on the upper White River in 1911 provided electricity for Auburn, Seattle, and Tacoma, and powered the Interurban Railway. Additionally, the selection of Auburn by the Northern Pacific Railroad in 1910 as the site for its western freight terminal spurred a population boom, driven by the influx of permanent rail workers in need of housing.

World War II had a profound impact on Auburn's trajectory. The federal government's wartime relocation of Japanese American citizens to internment camps resulted in the loss of numerous businesses, homes, and farms. Unfortunately, most of these families never returned.

Although Auburn remained an agricultural hub for some time, the city began transitioning towards increased industrialization in the post-war period. In the 1960s, the establishment of a Boeing aircraft plant in the city marked a pivotal shift. Efforts to address historical flooding issues, including the construction of Mud Mountain and Howard Hanson Dams by the U.S. Army Corps of Engineers, further supported Auburn's transformation from a frontier settlement to a developed industrial center.

Auburn's strategic position within south King County made it a desirable location during the 1990s, a period coinciding with a population surge across the Puget Sound region. The city's population, estimated to be around 30,000 in 1990, grew significantly over the next few decades, reaching approximately 76,347 by 2014—a 154.5% increase. However, from around 2014 onward, growth slowed to approximately 11%, marking a significant deceleration from the previous pace.

This slowdown during the 2000s can be attributed to a combination of economic and demographic factors. The region faced the aftermath of the dot-com bust and the early 2000s economic recession, which impacted job creation and investment. Additionally, the housing market crisis that culminated in the 2008 financial crash significantly affected real estate development and home purchases, leading to a decrease in population influx. Infrastructure limitations and congestion also played a role, as the city's capacity to accommodate rapid growth was stretched thin, particularly considering its physical context. Moreover, competition from nearby cities offering more attractive amenities or better economic opportunities may have diverted potential residents and businesses away from Auburn. These factors collectively contributed to a period of slower growth for the city during that decade.

Today, Auburn remains an attractive community known for its family-oriented, small-town atmosphere. With more affordable housing compared to most of King County, convenient highway access, and a charming small-town feel, Auburn is poised for continued, stable, and sustainable growth. This growth will increase the demand for quality of life elements that the community expects, including the demand for and access to recreational facilities.

Physical Context

Auburn's location in the Puget Sound region has profoundly influenced its historical development and future growth. The city's geography has been central to its evolution, with its proximity to rivers making it an essential transportation hub for both Native Americans and early settlers. The fertile valley attracted cultivation, and railways were later built to transport crops and timber from Auburn to larger cities like Tacoma and Seattle.

Today, Auburn is traversed by two major rivers, the White River and the Green River, along with two critical transportation corridors, SR-167 and SR-18. These natural and man-made features divide the city, with a flat valley floor surrounded by steep ascents leading to the West Hill and East Hill. The valley is further segmented by Highway 167 and distinct zoning designations, creating identifiable areas such as Downtown and the Industrial Valley.

The Green River is fed by numerous creeks that carve through the East Hill, forming ravines and preserving natural spaces, which in turn limit mobility within this region. East Hill is primarily a residential area with pockets of retail, and it is crossed by major roads like Highway 515 and E James Street. In contrast, West

Hill is somewhat isolated from the rest of the city, bounded by the Green River and Highway 516, and further divided by I-5.

Topography

Nestled within the Puget Sound Lowland region of the Pacific Northwest, Auburn is a city shaped by the enduring legacy of ancient glacial epochs and the ongoing influence of geological forces. Positioned between the eastern foothills of the Cascade Range and the shores of Puget Sound, Auburn features a diverse range of terrain types.

To the east, the Cascade foothills rise gradually, giving the landscape a gentle undulation that ascends toward the towering peaks of the Cascade Range. These foothills provide a rich tapestry of topographical variety, offering panoramic vistas and numerous recreational opportunities.

The city's landscape is marked by a broad, flat valley bordered by the Green River and Lea Hill to the east, and West Hill to the west. These green slopes define Auburn's contours, creating natural boundaries within the urban expanse while offering breathtaking views of the Cascade Range and the iconic silhouette of Mount Rainier.

To the west, Auburn's proximity to Puget Sound imparts a maritime character to its climate and geography. Located near the southern edge of the sound, the city benefits from easy access to waterfront areas and the thriving marine ecosystems they support. This maritime influence moderates the climate, resulting in milder winters and cooler summers compared to the more extreme conditions experienced further inland.

Hydrology

Auburn's intricate network of rivers and creeks holds deep significance for the community, serving a variety of crucial functions and enriching the local landscape. These waterways act as natural drainage systems, contribute to flood mitigation, provide vital habitats for diverse fish and wildlife, offer scenic beauty, hold historical importance, and create opportunities for recreation.

The history of Auburn's watercourses, particularly the White River, highlights the complex interaction between natural forces and human intervention. Before 1906, the White River flowed through King County, merging with the Green River before emptying into Elliot Bay. However, a significant debris blockage in 1906 altered the river's course, diverting floodwaters away from King County and redirecting them down the Stuck River into the Puyallup River. To manage this change, a permanent diversion wall was built at Game Farm Park in Auburn, directing the White River to its current path.

Today, the White River in southern Auburn serves as a natural boundary, separating the more developed urban core from the rural areas beyond. Historically, the city developed within the river valley, where many of its parks are located. However, with the valley reaching its developmental capacity, urban growth has expanded into newly annexed areas to the west, east, and south. Various water bodies, including the Green River, Mill Creek, Bowman Creek, Olson Creek, Mill Pond, and White Lake, have significantly influenced Auburn's spatial development. The wetlands along much of Mill Creek have limited extensive urbanization in that area, though some industrial properties have been established.

Among Auburn's water features, White Lake and West Auburn Lake are the only naturally occurring lakes or ponds. West Auburn Lake, acquired by the city within the past decade, offers recreational opportunities within a highly urbanized setting. In contrast, White Lake, located south of Highway 18, remains privately owned and inaccessible to the public, preserving its natural state.

Climate

Nestled within a temperate maritime climate, Auburn experiences a nuanced interplay of meteorological forces, shaping its seasonal identity with distinct variability.

Summer (June to August) brings warmth to the region, with temperatures typically ranging from 75°F to 85°F (24°C to 29°C). While the season is mostly dry, occasional light rainfall may punctuate the otherwise arid conditions.

Autumn (September to November) ushers in cooler temperatures, settling between 60°F and 70°F (15°C to 24°C). During this period, Auburn transitions to a wetter climate, with more frequent showers that cast the familiar Pacific Northwest veil of precipitation over the landscape.

Winter (December to February) sees temperatures dip to an average of 45°F to 50°F (7°C to 10°C). While cold air intrusions can briefly push temperatures below freezing, such occurrences are typically short-lived. Precipitation increases during the winter months, and although snowfall is rare, it occasionally blankets the city. When snow is accompanied by freezing rain, it can significantly impact local traffic.

Spring (March to May) signals a gradual warming, with temperatures rising to a moderate 55°F to 65°F (13°C to 18°C). Intermittent showers persist, remnants of the previous seasons' precipitation, as the landscape undergoes its annual rejuvenation.

Auburn receives approximately 37 inches (940 mm) of annual precipitation, evenly distributed across the seasons, reflecting its maritime influence. The city's proximity to the Pacific Ocean helps moderate extreme temperatures, tempering both the summer heat and winter chill.

Auburn's diverse topography, with its varying elevations and water bodies like the Green River, fosters the development of microclimates within the city. These microclimates create subtle weather patterns and temperature differences, adding richness and complexity to Auburn's overall climate.

DEMOGRAPHIC CONTEXT

Auburn, Washington, is a vibrant city with a diverse demographic profile. Based on the latest U.S. Census data, here is a detailed breakdown of key demographic aspects:

Population Size & Growth

Auburn is a mid-sized city in King County, Washington, with a population of approximately 90,096 as of July 2023. The city has experienced steady growth, reflecting broader trends in the Seattle metropolitan area. Since 2000, Auburn's population has increased by 54.4%. With a population density of about 3,046 people per square mile, the city continues to see urban development and residential expansion.

In recent years, Auburn's growth rate has moderated. Between 2020 and 2023, the population grew at an annual rate of about 0.99%. Looking ahead, the growth rate is projected to decelerate to approximately 0.31% annually from 2023 to 2028.

Employment

Auburn's economy is diverse, with key industries including retail, manufacturing, healthcare, education, and various service sectors. Major employers in the city reflect this diversity. Among them are Boeing, which operates a significant aerospace manufacturing facility in Auburn, employing thousands of workers and playing a central role in the city's industrial base. Multicare Health System and CHI Franciscan Health are also significant employers, providing a wide range of healthcare services to the region.

In addition to these, The Muckleshoot Indian Tribe is a major contributor to the local economy, not only through its government operations but also through its enterprises, such as the Muckleshoot Casino and Muckleshoot Bingo. Auburn School District is another key employer, reflecting the city's strong focus on education.

Many residents of Auburn work within the city, benefiting from the presence of these major employers. However, a significant portion of the population commutes to nearby employment hubs such as Seattle, Tacoma, and Bellevue, which are easily accessible due to Auburn's strategic location and robust transportation infrastructure, including major highways and rail services.

Auburn's accessibility and central location make it a vital center for both residential living and employment opportunities within the Puget Sound region. The combination of local employment and the city's position within a broader regional economy enhances Auburn's role as both a residential community and a significant economic hub.

Race and Ethnicity

Auburn stands out for its notable ethnic and racial diversity, which is somewhat unique compared to other cities in Washington State. According to recent data, the racial composition of Auburn's population is approximately 59.7% White, 11.6% Asian, 7.3% Black or African American, 2.1% American Indian or Alaska Native, and 2.8% Native Hawaiian or other Pacific Islander. Additionally, 16.5% of the population identifies as Hispanic or Latino. The city's diversity is further highlighted by the fact that 21.4% of Auburn's residents are foreign-born, a figure that exceeds the state average.

Auburn's significant Asian and Hispanic or Latino populations are particularly noteworthy. While many cities in Washington have diverse communities, Auburn's proportion of Asian residents stands out, reflecting broader trends in the Seattle-Tacoma-Bellevue metropolitan area, yet distinguishing itself from smaller or less urban areas in the state.

Moreover, Auburn is home to a significant population of Marshall Islanders, who have migrated to the United States primarily under the Compact of Free Association (COFA). This treaty allows citizens of the Marshall Islands, along with those from Micronesia and Palau, to live and work in the U.S. without visas. Auburn has become a notable center for Marshallese migrants, following Arkansas, which hosts the largest population on the mainland.

The migration of Marshallese to the U.S. has been driven

by various factors, including economic opportunities and better access to healthcare. Additionally, many Marshallese migrate due to environmental degradation and health issues linked to the legacy of nuclear testing conducted by the United States in the Marshall Islands during the mid-20th century. This has resulted in health concerns such as cancer and other chronic diseases, prompting many to seek better healthcare in the U.S.

In Auburn, the Marshallese community has maintained strong cultural ties, frequently gathering in local churches and community events to support one another and preserve their traditions. This tight-knit community aspect is crucial as they navigate the challenges of migration, including language barriers and economic adjustments.

Auburn's demographic diversity is rooted in its historical development as a key agricultural and industrial hub, which has attracted various immigrant communities over the years. This has created a rich cultural fabric that continues to shape the city's identity today.

Languages

While English is the primary language spoken in Auburn, with 69.36% of residents speaking it exclusively, the city's cultural diversity means that a variety of languages can be heard in everyday life. Spanish is the most common non-English language, spoken by 13.28% of the population. Additionally, other languages, including various Slavic languages, contribute to the city's linguistic landscape.

The Auburn School District reflects this diversity, with over 80 languages spoken in the homes of its students. More than 40% of students use multiple languages in their daily lives. The district's Multilingual Learner Program is designed to help students develop English language skills while also promoting the preservation of their home languages. Although the exact number of students speaking each language at home is not disclosed due to privacy concerns, the fact that the district's Multilingual Learners department serves students from over 80 different language backgrounds illustrates the rich tapestry of languages spoken in Auburn.

Moreover, the district offers translation services for a variety of languages, including Afrikaans, Burmese, Hmong, Marshallese, Russian, Spanish, and Ukrainian. While this is not an exhaustive list, it highlights some of the prominent languages spoken in the community alongside English.

These languages likely represent just a portion of Auburn's diverse linguistic landscape. However, by examining the languages supported by the school district, we can gain insight into the multilingual character of the city.

Age

Auburn has a diverse age distribution among its population of approximately 90,096 people. The largest age group consists of residents aged 35 to 54, comprising about 27% of the population. This is followed by children and teenagers (ages 5 to 17), who make up roughly 18%. Young adults aged 25 to 34 represent around 15%, while those in the 55 to 64 age bracket account for approximately 12%. The senior population (over 65 years) comprises about 13% of the population, and those aged 18 to 24 constitute around 9%. The youngest segment, children under 5 years old, represents about 7% of Auburn's population.

Recent trends in Auburn's age distribution have shown relative stability across the different age groups. However, there has been a slight increase in the senior population, mirroring broader national trends of an aging demographic. This shift suggests a growing need for services and amenities that cater to older residents, while also maintaining support for families and younger adults.

Gender

Auburn's gender distribution is close to an even split between males and females, with a slightly higher percentage of males. According to the latest U.S. Census Bureau data, Auburn has approximately 46,922 males (52.1%) and 43,174 females (47.9%), indicating a clear majority of males over females in the city. This trend is somewhat uncommon in many parts of the United States, where women typically outnumber men.

Income

Auburn's residents represent a wide range of income levels, reflecting the diverse economic profiles of its neighborhoods and communities. While some areas of Auburn are affluent, others have a higher percentage of lower-income households. The city's economic structure includes a mix of blue-collar and white-collar workers, contributing to this diversity. As of the most recent data, the median household income in Auburn is approximately $83,881, with a per capita income around $41,440. The city's poverty rate is 10.7%, and 14.9% of children live below the poverty line. Housing is a significant aspect of the local economy, with the median home value around $561,000 (per 2024 Zillow Home Value Index). This reflects a community with varied economic experiences, encompassing both substantial earning potential and areas in need of economic support.

Education

Auburn is served by a variety of educational institutions, including both public and private schools. The Auburn School District is a key provider, operating numerous elementary, middle, and high schools, such as Auburn High School, Auburn Riverside High School, and Auburn Mountainview High School, along with various elementary and middle schools spread throughout the city. The district serves a substantial student population, with an enrollment of over 17,000 students.

Private education options in Auburn include Valley Christian School, which offers a Christian-centered education from preschool through 12th grade, and Auburn Adventist Academy, a Seventh-day Adventist high school. Additionally, the Muckleshoot Tribal School, managed by the Muckleshoot Indian Tribe, provides education from kindergarten through high school, addressing the specific needs of its tribal community.

Green River College is a notable public institution in the area, offering a range of associate degrees, certificates, and transfer programs. Collectively, these educational institutions contribute to the diverse and comprehensive learning environment in Auburn.

Housing

Auburn's housing market is diverse, featuring a mix of single-family homes, apartments, and affordable housing options. As of mid-2024, the median home price in Auburn is approximately $621,000 (per 2024 Zillow Home Value Index), reflecting a 5.5% increase over the past year. The market remains highly competitive, with homes typically selling within a week of listing. Rental prices are also significant, with median rents around $1,919 per month. The city supports a range of affordable housing programs through the King County Housing Authority, including Section 8 vouchers and subsidized housing designed for low-income families, seniors, and individuals with disabilities.

This varied housing landscape influences Auburn's parks and recreation system by increasing the demand for accessible and inclusive recreational spaces. The presence of affordable housing communities, such as Burndale Homes and Firwood Circle, which offer on-site services and are located near parks, highlights the importance of maintaining and expanding public recreational facilities. These parks provide essential amenities and green spaces for residents of all income levels, promoting community well-being and environmental sustainability.

Commuters

Auburn is often considered a commuter city due to its strategic location in the Puget Sound region and its proximity to major employment centers such as Seattle, Tacoma, and Bellevue. The city's population fluctuates during the day as residents commute to jobs in these areas. The average one-way commute time for Auburn residents is approximately 31.6 minutes, covering an average distance of around 10.75 miles.

Here's an overview of key cities to which Auburn residents commonly commute for work and the respective employment opportunities:

1. Tacoma is a major city in the Puget Sound region offering a wide range of employment opportunities across various industries.
2. As a neighboring city, Puyallup provides job options in retail, healthcare, education, and other sectors.
3. Although farther from Auburn, some residents commute to Seattle for jobs in tech, finance, healthcare, and various other industries.
4. Located to the north, Kent offers job opportunities in logistics, manufacturing, and retail.
5. Also north of Auburn, Renton is home to companies in aerospace, technology, healthcare, and other industries.
6. To the west, Federal Way has a diverse job market, including opportunities in retail, healthcare, and education.

System Inventory

Auburn takes great pride in its expansive parks system, designed to cater to a variety of recreational interests while preserving the natural beauty of the area. Among the many parks throughout the city, Les Gove Park stands out as a tranquil oasis in downtown Auburn, offering verdant green spaces, meandering pathways, and designated picnic areas, providing a peaceful retreat amid the urban bustle. Game Farm Park, a premier destination for sports enthusiasts and families alike, spans 80 acres and features sports fields for soccer, baseball, and softball, along with tennis courts, a skate park, and playgrounds. Isaac Evans Park, located along the scenic Green River, delights visitors with riverside trails, scenic viewpoints, and inviting picnic spots, allowing nature lovers to immerse themselves in a serene environment. Brannan Park, near the Green River, is a picturesque spot for outdoor recreation, offering walking trails, picnic shelters, and a boat launch for water enthusiasts. For those seeking a more botanical experience, Soos Creek Botanical

Garden (privately owned) showcases a stunning array of native and exotic flora, inviting visitors to explore its themed gardens, winding paths, and tranquil ponds.

Auburn's park system extends beyond recreation to include educational and environmental initiatives. Auburn Environmental Park combines recreational amenities with interactive exhibits and interpretive trails, serving as a platform for environmental education and awareness. These programs enrich the community's understanding of local ecosystems and foster a deeper appreciation for the natural world. In essence, Auburn's parks system is more than just a collection of green spaces; it's a vibrant tapestry of recreational opportunities, natural wonders, and educational endeavors that enrich the lives of residents and visitors alike.

Auburn prioritizes the development of park spaces that align with the community's values. To determine what improvements are needed or desired, the first step is to catalog and assess the current conditions of all the city's existing parks, open spaces, and trail resources. This process involves identifying the assets that Auburn currently owns, manages, and maintains, and evaluating them to ensure they meet or exceed park development standards, safety criteria, liability and risk concerns, recreational trends, aesthetic appeal (placemaking), and landscape and climate change resiliency objectives.

To effectively plan for budgeting and resource allocation based on each park's level of service or area of influence, parks are also assessed to determine the individual contributions they provide to the community.

Physical & Mental Health: Assessing a park by expected or projected use helps visitors know what to expect and allows park managers to establish rules and guidelines that ensure visitors' safety and preserve the park's resources.

Ecological Diversity: Parks often vary in terms of their ecosystems and biodiversity. Assessing parks based on their ecological features can aid in understanding and protecting these unique natural environments.

Cultural and Historical Significance: Some parks are often assessed based on their cultural or historical importance. These designations help preserve and showcase sites of cultural heritage, such as historical landmarks, archaeological sites, and areas with indigenous significance.

Tourism & Branding Benefits: Classifying parks can aid in promoting tourism and attracting visitors. Visitors often have varying interests, so categorizing parks allows tourism agencies to target specific audiences with appropriate marketing strategies.

Educational and Interpretive Benefits: Classification helps in developing educational programs and interpretive materials tailored to the park's unique characteristics. This enhances visitor experiences by providing relevant information about the park's natural, cultural, and historical attributes.

Research and Conservation Planning: Scientists and conservationists can use classification systems to prioritize research efforts and develop conservation plans. By understanding the different types of parks and their specific features, they can focus on areas that are most in need of study and protection.



Categorized Recreation Programs

The City of Auburn offers a wide range of recreation programs designed to meet the diverse interests and needs of its community members. These programs, categorized by age group and activity type, provide opportunities for fitness, personal growth, social engagement, and community involvement.:

Fitness Programs:

- Fitness memberships
- Fitness classes
- Open gym sessions
- Equipment and weight room access at the Auburn Community & Event Center

Preschool Programs (Ages 1-5):

- Indoor playground
- Classes and programs
- Birthday party packages
- Youth Programs (Ages 6-12):
- Rec n Roll (mobile recreation unit)
- Summer camps
- Classes and programs
- Family programs
- Birthday party packages

Teen Programs (Ages 13-18):

- The REC Teen Center
- Classes and programs
- Camps
- MakerSpace

Adult Programs (Ages 18+):

- Art classes
- MakerSpace
- Fitness classes
- Open gym

Senior Programs (Ages 50+):

- Senior Activity Center
- Fitness classes
- Social activities
- Educational workshops

Family Programs:

- Various family-oriented activities and events

Specialized Recreation:

- Programs for individuals with disabilities
- Sports & Athletics:
- Youth leagues
- Youth sports classes

Community Events and Special Programs:

- Auburn Farmers Market
  (June-September at Les Gove Park)
- National Recreation and Park Month events
  Various special events throughout the year

Cultural Arts Programs:

- Performing arts
- Public art installations

Outdoor Recreation:

- MTB Trailblazers biking program
- Hiking and trail activities

Volunteer Opportunities:

- Community service and volunteer programs

Facility Rentals:

- Athletic fields
- Campground
- Meeting and banquet rooms
- Picnic shelters

Overall, the City of Auburn's diverse array of programs and services supports a healthy, active, and engaged community and highlights Auburn's commitment to providing diverse and inclusive recreational opportunities for its residents, promoting community well-being and engagement

Existing Parks & Recreation Facilities

The City of Auburn offers a wide array of recreational opportunities and park spaces for both residents and visitors, with a strong emphasis on developing park spaces that align with the community's values. Auburn's park system currently encompasses approximately 980 acres of mostly developed or partially developed parklands, along with non-contiguous trail segments along the White River that aim to connect to the downtown core.

To identify necessary or desired improvements, the City first catalogs and assesses the current conditions of all its existing parks, open spaces, and trail resources. This assessment process involves identifying and evaluating the assets that the City of Auburn owns, manages, and maintains, ensuring they meet or exceed park development standards, safety criteria, and liability and risk concerns. Additionally, this evaluation addresses recreational trends, enhances aesthetic appeal through placemaking, and supports landscape resiliency.

Assessment Methodology

Modeled after RCO's suggested Level-of-Service (LOS) grading system and NRPA's "system level" approach, a custom assessment methodology was used in this study to inventory and assess the current range of recreation and open space opportunities within any particular area. The methodology used in this report is ranked on a scale of 5 to 0, from high to low, across a number of different criteria, including:

- Location
- Park Classification
- Facility Age
- History
- Funding Encumbrances or Regulatory Framework
- Condition of Individual Components & Amenities
- Maintenance / Known Issues

Table 2-1: Assessment Rankings

Ranking (High to Low)	Description
0	n/a - Not Present
1	Major liability and structural failures present and imminent. Needs to be closed.
2	Condition is poor with major structural, cosmetic, maintenance, and liability issues observed.
3	Condition is moderate with some major cosmetic or maintenance issues that create minor liability concerns.
4	Condition is very nice with only minor cosmetic or maintenance issues observed.
5	Perfect condition with a long life cycle and no risk or liability issues.

Please note that park areas developed by private entities e.g., a HOA, or and public or private schools were not included on the overall City Park map, therefore they were not part of the assessment procedure.

Process

The following steps were executed to capture the institutional knowledge of City staff, while allowing the consultant team to assess each park and trail component.

1. Inventory and build maps of the existing parks.
2. Develop a detailed inventory of each park from the previous planning process and geospatial sources, including encumbrances research and park / funding histories.
3. Distribute inventory information to City for review.

Park Classifications

Classification systems provide a standardized method to develop, organize, operate, and manage parks based on certain criteria, which can include factors such as their size, ecological importance, recreational opportunities provided, historical or cultural significance, placemaking potential, economic development, and ability to support conservation & climate resiliency goals.

Table 2-2: Park Classifications

Key*	Classification
C	Community
N	Neighborhood
O	Natural Areas & Greenspaces (Open Space)
S	Special Use Facilities
P	Pocket Parks / Mini-Parks / Tot Lots
T	Trails, Bikeways & Pathways

* to be used when referring to the parks system key map, Figure 2-1.

Washington State Parks & RCO use different classification definitions but are built on the same premise - consistent methodology is critical to best manage our public spaces and to ensure the public are active and able to enjoy a quality mix of structured and natural environments and all the benefits that they provide.

There are six basic park and greenspace facility types typically classified and utilized by municipalities the size of Auburn of which are currently exhibited:

Pocket Parks / Mini-Parks / Tot Lots

Pocket parks are very small and serve a limited radius (up to ¼-mile) from the site; they provide passive and play-oriented recreational opportunities. Examples of pocket parks can include a tot lot with play equipment such as a climber, slide or swings; a viewpoint; or waterfront access areas such as at street ends.

A small urban plaza or civic recognition project may also be considered a pocket park. Parking is not often provided at pocket parks, although lighting may be used for security and safety.

Neighborhood (Local) Park

Generally considered the basic unit of traditional park systems, neighborhood or local parks are small park areas designed for unstructured play and limited active and passive recreation. They are generally up to around 5 acres in size, but can be larger depending on a variety of factors including neighborhood need, physical location and opportunity, and should meet a minimum size of 2 acre in size when possible.

Community Park

Larger multi-acre sites developed for organized play, contain a wider array of facilities and, as a result, appeal to a more diverse group of users. Community parks are generally 20 to 50 acres in size, meet a minimum size of 20 acres when possible and serve residents within a 1-mile radius of the site.

Natural Areas (Open Space)

Natural areas are those which are preserved to maintain the natural character of the site and are managed to protect valuable ecological systems, such as riparian corridors and wetlands, and to preserve native habitat and biodiversity. In managing for their ecological value, these natural areas may contain a diversity of native vegetation that provides fish and wildlife habitat and embodies the beauty and character of the local landscape. Low-impact activities, such as walking, nature observation, and fishing are allowed, where appropriate, and horseback riding is also permitted on certain sites.

Trails, Bikeways & Pathways

Trails are non-motorized transportation networks separated from roads. Trails can be developed to accommodate multiple uses or shared uses, such as pedestrians, in line skaters, bicyclists, and equestrians. Bikeways are different than trails in that their principal focus is on safe and efficient non-motorized transportation. Bikeways & pathways serve distinctly different user groups than trail users. For shared-use trails, it is important that the alignment and cross sections be designed with flexibility to accommodate higher speeds, passing zones and greater widths. Surfaces will vary with intended use and environmental considerations.

More information on the other classification types not used can be found in Appendix B.

Current Inventory

Over its 133-year history, Auburn, WA, has developed a robust park system under the guidance of its past and present Mayors and City Councils. The City has expanded its parkland through various means, including donations, dedications, and purchases. Each park undergoes regular evaluations and renovations to ensure they align with evolving recreational trends, aesthetic standards, safety protocols, and government regulations. To meet the needs of both current and future residents, Auburn must continue to acquire new parkland while also maintaining and enhancing its existing parks and facilities.

This section provides an overview of each park and open space, detailing the neighborhood it is located in, its year of establishment, classification, and acreage. As a prelude, the following table identifies the quantity and total acreage of the entire system, based on its classification.

Parks, Open Space & Special Use Facilities

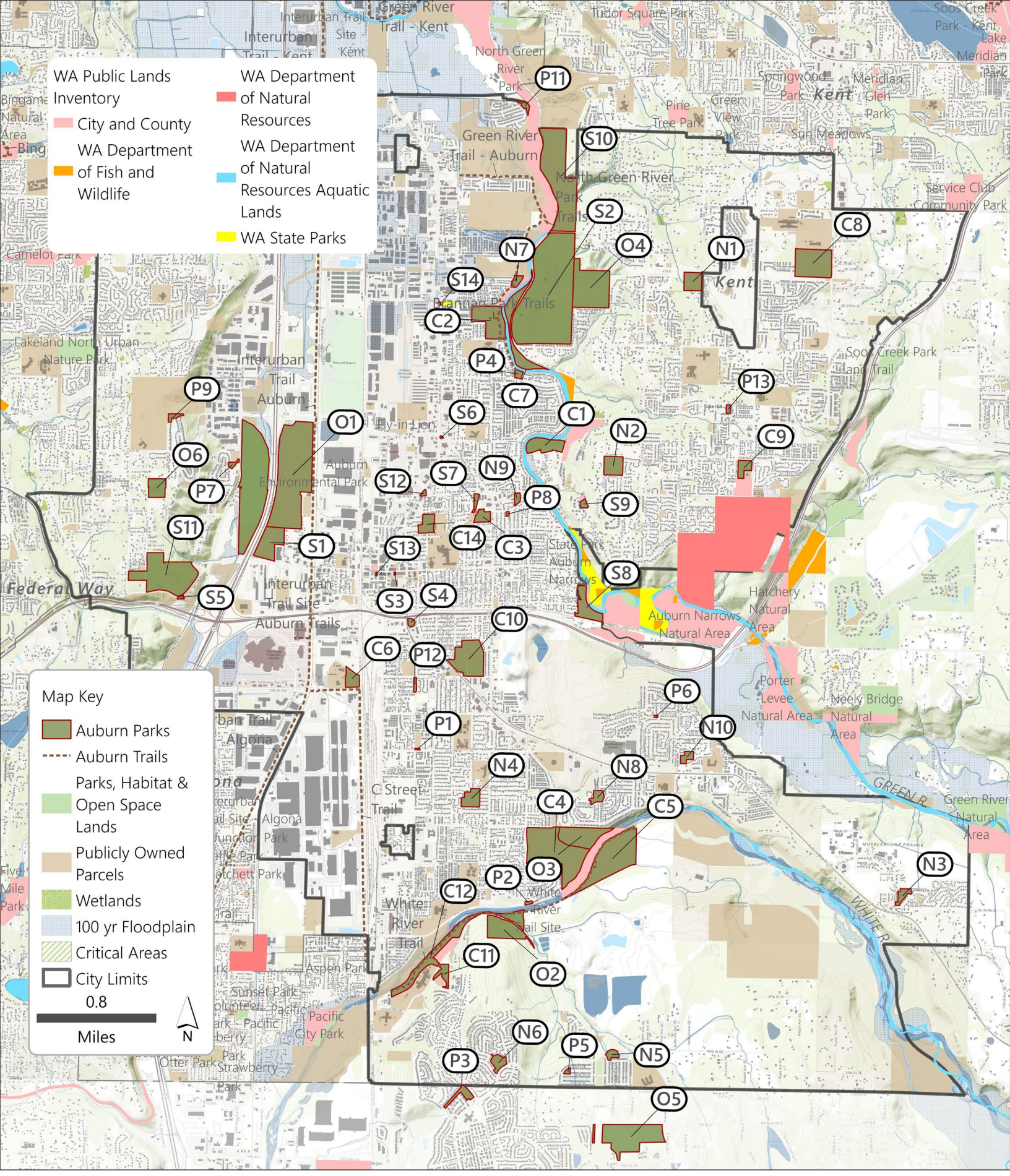
The core of Auburn, WA's parks system is characterized by its diverse parklands, expansive open spaces, and specialized use facilities, all of which contribute to the community's recreational and aesthetic needs.

Auburn's parklands consist of a variety of mini-parks, neighborhood parks, community parks, open spaces, and special use facilities that provide residents with access to green spaces for leisure, sports, and recreational activities. These parks are equipped with amenities such as playgrounds, sports fields, picnic areas, and walking trails, ensuring they cater to the needs of individuals and families alike. Open spaces offer residents opportunities for passive recreation, such as hiking, bird-watching, and enjoying the scenic beauty of nature. The city's commitment to maintaining these open spaces ensures that natural resources are protected and accessible to the community.

Table 2-3: Existing Parks & Open Spaces

Key	Classification	Count	Acres
C	Community	14	283.30
N	Neighborhood	10	51.23
O	Open Space	6	321.42
S	Special Use Facilities	14	307.69
P	Tot-Lots	13	16.71
	Totals:	**57**	**980.35***

* does not include other non-park related properties, or other landbanked right-of-ways and easements.


WA Public Lands Inventory
City and County
WA Department of Fish and Wildlife
WA Department of Natural Resources
WA Department of Natural Resources Aquatic Lands
WA State Parks
Map Key
Auburn Parks
Auburn Trails
Parks, Habitat & Open Space Lands
Publicly Owned Parcels
Wetlands
100 yr Floodplain
Critical Areas
City Limits
0.8
Miles
N
Green River Trail - Kent
Interurban Trail Site - Kent
North Green River Park
Green River Trail - Auburn
North Green River Park Trails
Brannen Park Trails
Interurban Trail - Auburn
Auburn Environmental Park
Interurban Trail Site - Auburn Trails
Federal Way
Auburn Narrows Natural Area
Hatchery Natural Area
Porter Levee Natural Area
Neely Bridge Natural Area
Green River Natural Area
GREEN R
WHITE R
C Street Trail
White River Trail
White River Trail Site
Pacific City Park
Aspen Park
Sunset Park
Strawberry Park
Otter Park
Lakeland North Urban Nature Park
Camelot Park
Tudor Square Park
Springwood Park
Meridian Glen Park
Sun Meadows Park
Service Club Community Park
Soos Creek Park and Trail
Soos Creek Park - Kent
Lake Meridian Park
Pine Tree Park
Green View Park
Kent
Fly-in-Lion
State Park Auburn Narrows
P1
P2
P3
P4
P5
P6
P7
P8
P9
P11
P12
P13
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
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S13
S14
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C14
O1
O2
O3
O4
O5
O6
N1
N2
N3
N4
N5
N6
N7
N8
N9
N10

Table 2-4: Existing Parks Inventory				
Key	Name	Classification	Acres	Rating
C1	104TH AVE SE PARK	COMMUNITY	13.22	3
C2	BRANNAN PARK	COMMUNITY	23.55	3.5
C3	FULMER PARK	COMMUNITY	4.88	4
C4	GAME FARM PARK	COMMUNITY	56.94	4
C5	GAME FARM WILDERNESS	COMMUNITY	48.59	3
C6	GSA PARK	COMMUNITY	6.34	3
C7	ISAAC EVANS PARK	COMMUNITY	17.94	3.75
C8	JACOBSEN TREE FARM	COMMUNITY	29.34	3
C9	LEA HILL PARK	COMMUNITY	5.32	3.5
C10	LES GOVE PARK	COMMUNITY	27.83	4.5
C11	MILL POND PARK	COMMUNITY	4.85	3
C12	ROEGNER PARK	COMMUNITY	21.79	4
C13	SUNSET PARK	COMMUNITY	15.46	3
C14	VETERANS MEMORIAL PARK	COMMUNITY	7.25	3
	Subototals	14	283.31	
N1	AUBURNDALE 2 PARK	NEIGHBORHOOD	9.39	3
N10	SHAUGHNESSY PARK	NEIGHBORHOOD	3.32	3
N2	AUBURNDALE PARK	NEIGHBORHOOD	10.14	4
N3	CAMERON PARK	NEIGHBORHOOD	3.79	3
N4	CEDAR LANES PARK	NEIGHBORHOOD	8.38	3.5
N5	EVERGREEN PARK	NEIGHBORHOOD	2.74	3
N6	LAKELAND HILLS PARK	NEIGHBORHOOD	5.15	3
N7	RIVERPOINT PARK	NEIGHBORHOOD	2.65	3
N8	ROTARY PARK	NEIGHBORHOOD	3.89	3
N9	SCOOTIE BROWN PARK	NEIGHBORHOOD	1.77	3
	Subototals	10	51.23	
O1	AUBURN ENVIRONMENTAL PARK OPEN SPACE	OPEN SPACE	180.17	3
O2	CLARK PROPERTY OPEN SPACE	OPEN SPACE	27.42	3
O3	GAME FARM OPEN SPACE	OPEN SPACE	22.67	3
O4	GOLF COURSE OPEN SPACE	OPEN SPACE	40.97	3
O5	LAKELAND HILLS NATURE AREA	OPEN SPACE	41.02	3
O6	LEWIS LAKE NATURE PARK	OPEN SPACE	9.17	3
	Subototal:s	6	321.42	
P1	21ST STREET PLAYGROUND	POCKET PARK / MINI-PARK / TOT LOT	0.21	3

Table 2-4: Existing Parks Inventory				
P11	TRAIL RUN PARK	POCKET PARK / MINI-PARK / TOT LOT	1.73	3
P12	TERMINAL PARK	POCKET PARK / MINI-PARK / TOT LOT	1.16	3
P13	VILLAGE SQUARE PARK	POCKET PARK / MINI-PARK / TOT LOT	0.97	3
P2	BALLARD PARK	POCKET PARK / MINI-PARK / TOT LOT	0.64	3
P3	DOROTHY BOTHELL PARK	POCKET PARK / MINI-PARK / TOT LOT	4.83	3
P4	DYKSTRA PARK	POCKET PARK / MINI-PARK / TOT LOT	1.73	2
P5	EDGEVIEW PARK	POCKET PARK / MINI-PARK / TOT LOT	0.80	3
P6	FOREST VILLA TOT LOT	POCKET PARK / MINI-PARK / TOT LOT	0.24	3
P7	GAINES PARK	POCKET PARK / MINI-PARK / TOT LOT	1.34	3
P8	INDIAN TOM PARK	POCKET PARK / MINI-PARK / TOT LOT	0.41	3
P9	JORNADA PARK	POCKET PARK / MINI-PARK / TOT LOT	1.87	3
	Subototal:s	13	16.71	
S1	AUBURN ENVIRONMENTAL PARK	SPECIAL USE AREA	18.81	3
S10	MARY OLSON FARM	SPECIAL USE AREA	68.78	3
S11	MOUNTAIN VIEW CEMETERY	SPECIAL USE AREA	50.29	3
S12	PIONEER CEMETERY	SPECIAL USE AREA	0.75	3
S13	PLAZA PARK	SPECIAL USE AREA	0.15	3
S14	SLAUGHTER MEMORIAL	SPECIAL USE AREA	0.15	3
S2	AUBURN GOLF COURSE	SPECIAL USE AREA	150.52	3.5
S3	B STREET PLAZA	SPECIAL USE AREA	0.13	3
S4	BICENTENNIAL PARK	SPECIAL USE AREA	1.34	3
S5	CENTENNIAL VIEWPOINT	SPECIAL USE AREA	0.50	3
S6	CLARK PLAZA	SPECIAL USE AREA	0.17	3
S7	COMMUNITY GARDEN	SPECIAL USE AREA	1.84	3
S8	FENSTER PROPERTY	SPECIAL USE AREA	12.72	3
S9	LEA HILL TENNIS COURTS	SPECIAL USE AREA	1.54	3.5
	Subototal:s	14	307.69	
	Totals:	**57**	**980.35**	

* does not include other non-park related properties, or other landbanked right-of-ways and easements.

P1



21st Street Playground

405 21st Street SE
0.17 acres – Dedicated in 2006
Classification: Pocket Park
Status: Developed

This small pocket park is situated adjacent to a City stormwater detention pond. Park amenities include a playground, picnic table, and benches. The park is on a short list of parks that need to go through the naming process.

N1



Auburndale Park

31700 108th ST SE
9.74 acres –Transferred in 2003
Classification: Neighborhood Park
Status: Developed

Auburndale Park falls into the neighborhood park category, and like many in this classification, is underused. The City recently constructed an entrance on the east side of the park in order to provide better access to the surrounding neighborhoods in an effort to increase use in the park. The main feature of the park is a natural wooded area with a loop trail. There is a play area, picnic tables and barbecue grill.

N1

Auburndale Park II

29725 118th ST SE
9.34 acres – Transferred in 2003
Classification: Neighborhood Park
Status: Undeveloped

Auburndale II is an undeveloped park with a mix of native over-story, and an under-story that is dominated by Himalayan blackberry and scotch b room. A future trail connecting Lea Hill to the valley floor is being considered, which would likely run east to west along the northern boundary of the park.

P2



Ballard Park

1612 37th Way SE
0.68 acres - Dedicated in 1966
Classification: Pocket Park
Status: Developed

Ballard Park is a neighborhood park with a distinctive stone picnic shelter. In 2003, a new playground and irrigation system was installed, as well as pathways and an entrance gate. Two new tables and benches were installed and a new concrete fence constructed at that same time. Ballard Park is situated high above the White River and benefits from an appealing view of the river. There is not direct river access.



Cameron Park

3727 Lemon Tree Lane
3.85 acres – Dedicated in 1989
Classification: Neighborhood Park
Status: Developed

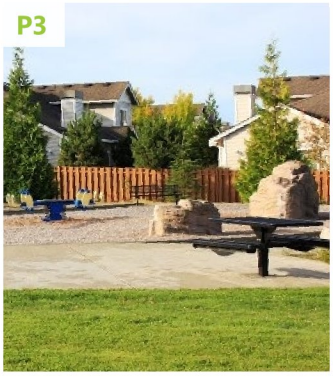
Cameron Park is a nestled between two rows of houses, east of the Muckleshoot Indian Reservation. The park has two entrances, one near the intersection of Lemon Tree Lane SE and Academy Drive SE, and the other off of Lemon Tree Lane SE. Visitors can take an asphalt path into the heart of the park that winds through a large grassy open field, planted with occasional trees. A colorful play structure is located in the northeast corner of the park. Picnic tables next to the playground provide seating for picnics or for caretakers of young children. The layout of the path provides a good opportunity to integrate the play area into the rest of the park using landscaping to create a more lush and cohesive setting. A limiting factor in achieving this is the utility easement of Northwest Pipeline, which reduces the ability to landscape and improve some parts of the park.



Cedar Lanes Park

1002 25th Street SE
8.36 acres – Dedicated in 1969
Classification: Neighborhood Park
Status: Developed

Cedar Lanes Park is a unique combination of native woodland, well-kept lawn, and a formal playground. The forested area contains a mix of western red cedar, big leaf maple, and cottonwood trees. The park includes a bike skills park with drop zones, a flow track and other features that was constructed in 2023. In 2024 an asphalt pump track, new restroom, and storage/shelter were constructed.



Dorothy Bothell Park

1087 Evergreen Way SE
4.35 acres – Dedicated in 2009
Classification: Pocket Park
Status: Developed

Located adjacent to the Lakeland Hill Community Center, Dorothy Bothell Park is a an attractive neighborhood park in Lakeland Hills. Park amenities include a playground, climbing boulders, and a trail that connects with other trails beyond the park. Dinosaur bones have been buried in the play area for the kids to uncover.

P4





Dykstra Park

1487 22nd Street NE

1.67 acres – Dedicated in 1979

Classification: Neighborhood Park

Status: Developed

Dykstra Park is a small, attractive park along the Green River. Its linkage to the larger Isaac Evans Park via a suspension bridge increases its value to the community. The bridge was substantially repaired in 2002, with major structural repair completed on the north end of the structure.

Dykstra is primarily a playground neighborhood park, and its proximity to the river also makes it popular with walkers and wildlife lovers. A new playground was installed in April 2015 made possible by a Dr. Pepper/ Kaboom! Playground grant. The playground was constructed using volunteer labor during the City's annual Clean Sweep volunteer event. In addition to the three new playground pieces, approximately 150 cubic yards of playground fiber wood chips were placed within the play area.

P6

Forest Villa Park

1647 Fir St. SE

0.23 acres – Dedicated in 1971

Classification: Pocket Park

Status: Developed

The Forest Villa Park is located on a single lot in a single family residential neighborhood. The play structure is the primary focus of the park.

P7



Gaines Park

1008 Pike Street NW

1.33 acres – Dedicated in 1999

Classification: Neighborhood Park

Status: Developed

Gaines Park is located in the Vistaria/Sunning Hills residential area. This park is a joint project between the City's Storm Water Division and Parks and Recreation. There is a short section of boardwalk through a wetland area on the east edge of the park. The park has a picnic area, play area, ½ basketball court, and a walking trail through the park.

P8



Indian Tom Park

1316 6th Street NE

0.42 acres – Deeded to the City in 1979 from King County

Classification: Pocket Park

Status: Developed

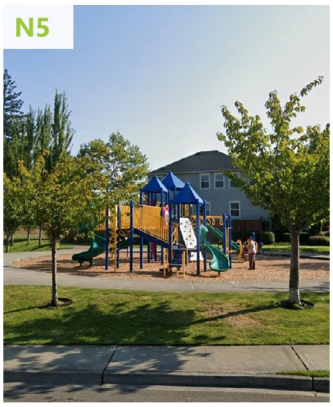
This small park is located on a single lot in the middle of a residential block. A playground was installed in April 2014 made possible by a Dr. Pepper/ Kaboom! Playground grant. The playground was constructed using volunteer labor at the City's annual Clean Sweep volunteer event.



Jornada Park

1433 U Court. NW
1.89 acres – Dedicated in 2004
Classification: Pocket Park
Status: Developed

This small park is located on a single lot in the middle of a residential block. It contains a play structure, climbing wall, picnic tables and a short loop trail.



Evergreen Park

5480 Charlotte Ave. SE
2.73 acres – Dedicated in 2014
Classification:Neighborhood Park
Status: Developed

This park was constructed to meet level of service needs for a neighborhood park within in newly developed Kersey III neighborhood. A paved walking trail with picnic tables and benches connects the ball field, to the playground and the basketball court.



Edge View Park

1433 U Court. NW
0.79 acres – Dedicated in 2014
Classification: Pocket Park
Status: Developed

This park has similar features and amenities as nearby Evergreen Park, but on a smaller scale.



Lakeland Hills Park

1401 Evergreen Way SE
5.06 acres – Dedicated in 1993
Classification: Neighborhood Park
Status: Developed

Lakeland Hills Park serves the Lakeland development in south Auburn. This five-acre park is nestled into a wooded hillside, where many native trees were saved and integrated into the design of the park. The park provides active recreation facilities at a neighborhood scale, and also a paved trail around the circumference of the park. Restroom facilities were built in this park and share a common structure with some water utility equipment.



Lea Hill Tennis Courts

32121 105th Pl. SE.
1.18 acres
Classification: Special Use Facility
Status: Developed

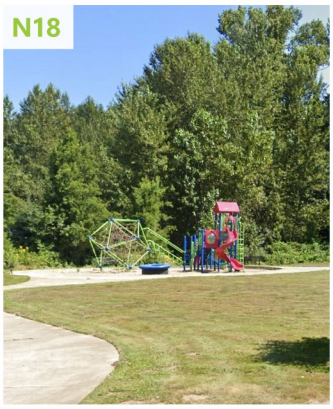
The Lea Hill Tennis Court has a unique location on top of a City of Auburn water reservoir. Originally, two courts were constructed, but one of these is now being used as a basketball court. The court is on Lea Hill, surrounded by an adjacent apartment complex. Standing water is evident in several low areas.



Riverpoint Park

1450 32nd St. NE
3.8 acres – Dedicated in 2005
Classification: Neighborhood Park
Status: Developed

Built in 2005, the park is adjacent to the Green River and provides an access point to the Green River Trail.



Trail Run

5014 Pike Street NE
1.76 acres – Dedicated in 2015
Classification: Neighborhood Park
Status: Developed

This pocket neighborhood park located is along the Green River near the northern City Limits. Visitors can gain direct access from the park to a bridge across the river that connects to the City of Kent's S. 277th Street Trail (1.1 miles). The future Green River Trail will run along the eastern boundary of the park if the trail is ever extended through Auburn.



Rotary Park

2635 Alpine Street SE
3.89 acres – Dedicated in 1966
Classification: Neighborhood Park
Status: Developed

Rotary Park was developed in 1966 by the Auburn Rotary Club. At first glance the playground is the only apparent facility here. The rolling topography, unusual shape of the site and the location of conifers obscure the presence of the other major recreation facilities, including the basketball court and informal softball field. An additional acre, and a half-court basketball was added to Rotary Park in connection with the development of the Riverwalk neighborhood.



Scootie Brown Park

1403 Henry Road NE
1.68 acres – Dedicated in 1973
Classification: Neighborhood Park
Status: Developed

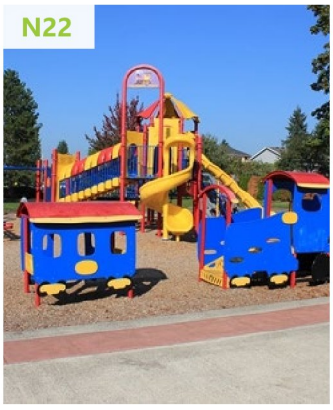
The park is located at a junction between commercial and residential zones. Bounded on the north by 8th Street N.E., the park has a busy, open feel, with minimal landscaping. The City's youth baseball programs use this park for practice.



Shaughnessy Park

3302 21st Street SE
3.46 acres – Dedicated in 1973
Classification: Neighborhood Park
Status: Developed

Shaughnessy Park is located in an attractive setting of mature Douglas Firs on a quiet residential street. Several recreational courts are located in close proximity to the street. An open play field with a backstop is in a corner of the park and is not readily apparent from other parts of the park and street. The adjacent residential neighbors have erected fences between their backyards and the playing field. Recent park improvements were made possible by a Neighborhood Block Grant in the amount of $50,000.



Terminal Park

1292 C Street SE
1.22 acres – Dedicated in 1913
Classification: Neighborhood Park
Status: Developed

Terminal Park is a small park along a quiet residential street. The newly renovated playground at the center of the park is the focal point here. The remainder of the park contains a slightly rolling lawn, with mature trees scattered throughout. Improved irrigation has also been added. In 2013 broken patio pavers were replaced with colored concrete in the patio adjacent to the playground.



Village Square

12111 SE 310th Street
1.10 acres – Transferred in 2007
Classification: Pocket Park
Status: Developed

This is a small pocket park is located in the middle of an apartment complex. The park has a short loop trail with a small grassy area in the middle. Access to the park can either be gained from the adjacent apartment complex or from SE 310th Street.



104th Ave SE

31495 104th Ave. SE
14.73 acres – Transferred in 2006
Classification: Community Park
Status: Undeveloped

This undeveloped riverside property is comprised of two parcels along the Green River. A nice sandy beach along the Green River is popular for swimmers in the summer, and fishermen in the fall and winter months. Nearly two-thirds of the park is located within the 100-year floodplain so given the location of the park along the river and regulatory constraints, the park will likely be designed as a passive use nature park.



Brannan Park

1019 28th St. NE
21.68 acres – Dedicated in 1973
Classification: Community Park
Status: Developed

Brannan Park contains one of Auburn's most heavily used sports complexes. The City sponsors many sports events at Brannan Park; Cascade Middle School users and a variety of organizations – youth soccer leagues, and Little League - also use the playing fields extensively. Brannan Park is on a flat, open site, with the Green River forming the park's eastern boundary. The remaining sides are bounded by residential housing to the north and west, and Cascade Middle School to the south.



Fulmer Park

1005 5th Street NE
5.04 acres – Dedicated in 1979
Classification: Community Park
Status: Developed

Fulmer Park is primarily an active sports facility. In 2015 an undeveloped area on the north side of the park was bladed, all of the blackberry bushes were removed, and a new perimeter fence was installed. New irrigation, perimeter landscaping, and grass seed was added in 2014. New backstops, fencing, dugouts and drinking fountains, as well as scorekeeper tables, were added to the park in 1998. A new playground was installed in 2023.



Game Farm Park

3030 R ST SE
57.20 acres – Dedicated in 1988
Classification: Community Park
Status: Developed

Game Farm Park continues to be one of the largest and most frequented parks in Auburn. The park contains a wide variety of facilities for organized sports activities as well as a distinctive natural setting. The hillside backdrop and the White River along its southern edge create an intimate setting for park for users to enjoy. The park with its many courts, fields and picnic facilities is heavily used. Game Farm Park was dedicated in 1988 and exhibits many successful design features. Designing and building the park in one phase resulted in functional architectural features and site layout. Passive uses such as trails or open grassy slopes are located where the park abuts residences. Good pedestrian access is available to the surrounding neighborhood at several points along the park's perimeter. A trail head off of Forest Ridge Drive SE provides access to a relatively unimproved gravel trail along the river in the eastern portion of the park. A pedestrian bridge was constructed in 2024 connecting the two Game Farm parks across the White River.



Game Farm Wilderness Park

2407 Stuck River Dr. SE 48.50acres –
Dedicated in 1989
Classification: Community Park
Status: Developed

Game Farm Wilderness Park emphasizes a connection between park users and the natural environment. It has limited development and has preserved most of the native woodland along the White River. The White River Trail continues along the river on the north side of the park from Kersey Way beyond the east end of the park. The park is designed for both overnight and daytime visitors. The camping area is designed to accommodate recreation vehicles, providing each unit with water and power hook-ups. An 18-hole disc golf course is located in the wooded area between the campground and White River.



GSA Park

413 15th St. SW
5.31 acres – Dedicated in 1966
Classification: Community Park
Status: Developed

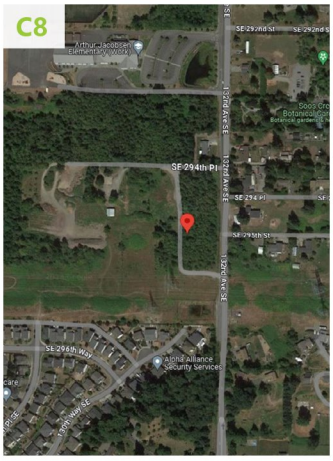
The land for GSA Park was donated to the City by the U.S. General Services Administration. Its location in a heavily trafficked industrial zone has resulted in an atypical park setting. Currently the park has two youth softball/baseball fields, a parks maintenance building, and dugouts. New dugout covers were recently added, made possible by donations from Auburn Little League. A greenhouse is located on the property near the maintenance that is used by the City's horticulturist to propagate new plants. The two ball fields were completed in 2003, including drinking fountains and an asphalt trail to the ball fields.



Isaac Evans Park

29827 Green River Road SE
19.87 acres – Dedicated in 1989
Classification: Community Park
Status: Developed

Isaac Evans Park is a riverfront park providing valuable passive recreation opportunities for the citizens of Auburn. The park's connection to Dykstra Park via the suspension bridge increases its accessibility to local residents and is an appealing feature for visitors. The pedestrian bridge may also accommodate future trail connections between the eastern and western sides of the river. A internal paved trail runs around the circumference of the park. The forested riparian area along the Green River remains in a natural condition with recent restoration plantings added to accommodate the Reddington Levee Setback project located across the river from the park. Scattered throughout the grassy space on the inside of the trail are clusters of picnic tables, a picnic shelter, restroom facilities, and playground equipment.



Jacobsen Tree Farm Park

29387 132nd Ave. SE
29.30 acres – Transferred in 2003
Classification: Community Park
Status: Undeveloped

The Jacobsen Tree Farm property is an undeveloped park located in the Lea Hill area of Auburn. The City went through a master planning process for the future park, which was completed in 2010. Future elements of the park include soccer fields, baseball fields, play grounds, and passive recreational opportunities. The park is adjacent to Arthur Jacobsen Elementary and Auburn Mountainview High School, and has magnificent views of Mount Rainier. A bond or levy will be needed in order to develop this large community park property.



Lea Hill Park

31693 124th Ave. SE
5.26 acres –Dedicated in 2013
Classification: Community Park
Status: Developed

Lea Hill Park is a community park that serves the Lea Hill neighborhood and is located adjacent to the Green River Community College Campus. Park amenities include a skate park, pervious walking pathways, a rentable picnic shelter, an amphitheater, baseball field, free game synthetic sport area, half basketball court, and a play area featuring a tractor and climbing toys. An ADA accessible restroom facility with two unisex bathrooms and drinking fountains was completed in the spring 2015.



Les Gove Park/Les Gove Community Campus

910 9th St. SE
26.07 acres –Dedicated in 1966
Classification: Community Park
Status: Developed

Les Gove Park is a recreational and educational facility serving the entire community. The Library, Parks and Recreation Administration Building, Community Center, Teen Center, Senior Center, the White River Valley Museum, and a variety of recreational features make Les Gove a very popular destination.



Mill Pond Park

4582 Mill Pond Dr. SE
4.20 acres – Dedicated in 1997
Classification: Community Park
Status: Developed

Mill Pond is unique in several ways. The park is a joint project between the Parks and Public Works Departments, the Auburn School District, and the developer of Lakeland Hills. All of these groups came together to create a park with a dual purpose: to provide a recreational experience in a natural setting, and to provide stormwater detention and filtering for a 400 acre area. The site includes a permanent pond, a grass-lined bio-swale that becomes a temporary pond during storms, a 1/4 mile paved trail around the circumference of the ponds, and a fishing dock. Fishing in the pond is limited to children under 15.



Roegner Park

601 Oravetz Road SE
19.22 acres – Dedicated in 1994
Classification: Community Park
Status: Developed

This community park is located along the banks of the White River, adjacent to Auburn Riverside High School. A trail system includes both hard and soft-surfaced sections that meet the needs of many different users, including equestrians from the near- by Hidden Valley neighborhood. Trail construction began in 1997 from the east side of Roegner Park to Kersey Way, and continuing east along the river to Game Farm Wilderness Park. An approximate ½- acre off-leash fenced dog park is located near the trail, and can be easily accessed from the parking area off of Oravitz Road. Commissioned artwork for the park includes a uniquely designed bench with a salmon motif, placed to allow views of the river.



Sunset Park

1420 69th St. SE
15.15 acres – Dedicated in 2003
Classification: Community Park
Status: Developed

Sunset Park was developed by the developer in Lakeland Hills. It is unique in several ways. The community park serves the Lakeland Hills neighborhood but also the community. The site includes a picnic shelter, two youth baseball/softball fields, trails, basketball court and skate park.



Veterans Memorial Park

405 E St. NE
7.67 acres – Dedicated in 1926
Classification: Community Park
Status: Developed

Veteran's Memorial Park, formerly City Park, is a popular community park located close to downtown Auburn and adjacent to Auburn High School's Memorial Stadium. The park is distinctive for its Veterans Memorial structure, shady woods and underlying expanse of green lawn. The Veterans Memorial structure was funded with donations and fund-raising events by local veterans groups. Its design and construction were accomplished with use of volunteer labor.

Special use facilities include unique recreational and cultural amenities that serve specific community interests. This includes the Auburn Golf Course, the White River Valley Museum, and various sports complexes and community centers, all enhancing the quality of life for Auburn residents.

Trails, Bikeways & Pathways

Auburn's parks system is designed to offer a balanced mix of recreational opportunities, natural preservation, and specialized facilities, which fosters a vibrant and active community. The city's mild climate, combined with a strong culture of outdoor activities, significantly contributes to the high usage and support of its extensive trail network.

The city categorizes its trails into three primary types:

1. Recreational loop trails
2. Linear trails
3. Recreation/transportation trails.

Recreational loop trails are typically short paths that form loops within a single park or site. These trails are designed for activities such as walking, bicycling, hiking, or skating, and they often connect various activity areas within a park or provide access to natural preserves or nearby neighborhoods. These trails can be constructed with either hard surface materials and are usable in all weather conditions, while soft surface trails offer a more rustic and natural experience.

Linear trails in Auburn are designed to connect different areas of the city or activity centers, leading to key destinations. These trails are generally hard-surfaced, making them suitable for activities like walking, bicycling, and skating, even in varying weather conditions. Notable examples of linear trails include the Green River (Reddington) Trail, Lakeland Hills Linear Trail, Lake Tapps Parkway Trail, and the White River Trail. The White River Trail, for example, stretches from Game Farm Wilderness Park through Roegner Park and ends at A Street SE, featuring both paved sections and soft surface areas that accommodate a variety of users, including mountain bikers, horseback riders, and hikers.

Recreation/transportation trails serve a dual purpose by connecting various parts of the city or activity centers for both recreational and transportation uses. Refer to Table 2-6 for the primary or major examples of these trails. These trails are typically linear, hard-surfaced, and designed to accommodate a variety of transportation modes, such as walking, bicycling, and skating. Sometimes referred to as "multi-modal trails," they are built to stricter standards and are generally designed for two-way traffic.

Table 2-5: Existing Trails					
Park/Trail	Description	Linear Trails Total (miles)	Recreational Loop Trails Total (miles)	Recreation / Transportation Trails Total (miles)	Total Length
Auburndale Park	Paved loop path around park		0.41		0.14
Auburn Environmental Park	Board Walk Trail		0.23		0.23
Brannan Park	Paved loop path around Park to Reddington levee. A paved surface linear trail extends along the levee.	1.7	0.72		2.42
C' Street SE Trail	Ellington Rd. SW to 15th Street SW			1.6	1.6
Cameron Park	Paved loop path through park and loops through Lemon Tree Lane		0.33		0.33
Cedar Lanes Park	Informal path through wooded area		0.25		0.25
Dorothy Bothell	Loop trail		0.25		0.25
Game Farm Park	Paved loop path around meadow, play structure, ball fields. Extensive sidewalk throughout park		3.3		3.3
Game Farm Wilderness Park	Paved trail along the White River and around the group camp area.	See White R. Trail			
Interurban Trail	Paved 12' wide trail runs alongside the Union Pacific railroad, from the city's northern to southern limits			4.5	4.5
Isaac Evans Park	Paved loop through wood and along the Green River		1.07		1.07
Jornada Park	Paved loop through wood and around park		0.1		0.1
Lakeland Hills Linear	Extensive sidewalk path on Lake- land Hills Way from Evergreen Way to Lake Tapps Parkway	0.73			0.73
Lakeland Hills Park Trail	Paved loop path around recreational fields		0.39		0.39
Lake Tapps Pkwy Trail	Paved sidewalk and asphalt trail	1.62			1.62
Les Gove Park Trail	Paved loop path around open space		0.58		0.58
Mill Pond Park Trail	Paved loop path around pond. Connects to Lakeland Hills Trail.		0.29		0.29
PSE (Lakeland)		0.4			0.4
Roegner Park	Both hard and soft surface trails are present in the park. A paved loop path is marked.	See White River Trail Below			
Sunset Park	Paved loop path around park.		1.19		1.19
West Auburn Lake			0.25		0.25
White River Trail	Paved and soft surface trail	3.5			2.3
Total		**7.95**	**9.11**	**6.1**	**23.16**

The Interurban Trail is managed by King County Parks for the sections outside specific municipal boundaries. However, within Auburn's city limits, the Auburn Parks Department is responsible for maintaining the segment of the trail that runs through the city. This collaborative effort ensures the trail remains well-maintained and accessible throughout its route. On the other hand, the White River Trail is primarily maintained by the City of Auburn Parks Department, which ensures its upkeep and accessibility as it connects several key parks within the city. The Interurban Trail is a prominent example of this type, serving as a major non-motorized route that runs north to south through several cities, including Tukwila, Kent, Auburn, Algona, and Pacific. This 12-foot-wide path follows the Puget Power right-of-way and parallels the Union Pacific Railroad for much of its length, making it a key transportation and recreational asset. The trail also provides access to several of Auburn's major employers, including Boeing, GSA, the Outlet Collection, and Auburn Environmental Park. Located less than half a mile from downtown Auburn, the Interurban Trail is a vital link for the community.

Table 2-6: Auburn Maintained Trails (Dedicated)

Type	Length
Interurban Trail (South)	4.5 mi
White River Trail	3.5 mi
Green River Trail*	TBD
	8.0 mi

* Future proposed extension

Both the Interurban Trail and the White River Trail are also designed to accommodate equestrians, making them versatile for a range of users. Additionally, informal trails in the open space areas of southeast Auburn and the shoulders of some rural roads are also used by equestrians, although these are not specifically designed or managed for this purpose. Auburn's commitment to providing diverse and accessible recreational options ensures that the city's parks and trails continue to meet the needs of its growing population.

Schools & Other Outdoor Recreation Amenities

In Auburn, recreational opportunities extend beyond city parks, encompassing other public lands and private facilities, which play a crucial role in assessing the adequacy of the City's park system. Among these, schools are one of the largest contributors to recreational space outside of city-managed parks.

Schools naturally serve as neighborhood gathering places and are often within walking distance of most homes in the city. School grounds typically feature sports fields, open grassy areas for play, playground equipment, and basketball courts. However, the accessibility and availability of these school facilities can vary. During the school year, these spaces are primarily used by the schools throughout the day and often during after-school hours, limiting their availability for individual use or non-school sports leagues. Additionally, some sports fields may be too small or not maintained to the standards required for organized league play. Therefore, while school facilities are valuable components of the community's overall recreational resources, they cannot substitute for a robust public park system.

Table 2-7 in the following pages summarizes the recreational facilities available at Auburn School District properties. It's important to note that the Auburn School District's boundaries extend beyond the Auburn city limits, resulting in a service area that does not fully align with that of the City of Auburn. As a result, the availability and utilization of these school facilities for Auburn residents may vary based on geographic and jurisdictional differences.

In addition to school properties, several other lands used informally for recreation are owned by other public entities. The Auburn Water Utility manages several watershed areas with restricted access to maintain water quality. The Coal Creek Spring Watershed in south Auburn is the city's primary water source, while the West Hill Watershed serves as a secondary source. Despite the proximity of these areas to neighborhoods, public access is generally discouraged to protect water quality.

King County Parks also owns several developed and undeveloped properties near Auburn. While Auburn's parks are more convenient for residents, many recreational users also utilize nearby King County parks, regardless of civic boundaries. A significant regional project, the Green River Trail, managed by King County, spans over 19 miles from Cecil Moses Park near Seattle's southern boundary to North Green River Park near Auburn. Extending the Green River Trail south from Kent has indeed faced challenges due to private property issues. However, plans are still in development to continue this extension through Auburn and eventually to Flaming Geyser State Park at the Green River Gorge. The project remains in the design and planning stages, with ongoing efforts to resolve these challenges and facilitate the trail's expansion further south.

Additionally, the State of Washington owns an easement along certain sections of the west side of the Green River within the city. This easement, which runs directly behind several residences, permits access for fishing only, limiting broader public use.

Table 2-7: Auburn School District Facilities	
School	Available Facilities
Elementary Schools	
Alpac	2 youth baseball/softball fields
Chinook	4 youth baseball/softball fields
Evergreen Heights	2 youth baseball/softball fields
Gildo Rey	2 youth baseball/softball fields
Ilalko	2 youth baseball/softball fields
Lakeview	3 youth baseball/softball fields
Lea Hill	2 youth baseball/softball fields
Dick Scobee	2 youth baseball/softball fields
Pioneer	3 youth baseball/softball fields
Terminal Park	2 youth baseball/softball fields
Washington	2 youth baseball/softball fields
Middle Schools	
Cascade	1 Football Field with Track,
	Gymnasium with 1 basketball court, Annex 2 Baseball/Softball Fields, 90' & 65' fields
Mt. Baker	1 Football Field with Track, 2 Gymnasium
	3 Baseball Fields, 90' & 65' fields
	3 Softball Fields
Olympic	1 Football Field, Track,
	Gymnasium with 1 basketball court
	2 Baseball/Softball Fields, 90' & 65' fields
Rainier	1 Football Field, Track
	Gymnasium with 2 basketball court
	2 Baseball/Softball Fields, 90' & 65' fields
Senior High Schools	
Auburn Riverside High	1 Football Field synthetic turf with Track (Lighted), 8 Tennis Courts
	5 Gymnasiums
	1 Baseball Field, 90' infield, 3 softball fields
Auburn Senior High	1 Football Field synthetic turf with Track (Lighted), 8 Lighted Tennis Courts
	Gymnasium with 2 basketball court 1 Baseball Field, 90' infield
Auburn Mountain View High	1 Football Field with Track,
	6 Gymnasiums, 8 Tennis Courts
	2 Baseball Fields, 90' & 65' fields, 2 Softball Fields
West Auburn High	1 Baseball/Softball Field, 65' infield
	1 Gymnasium

Existing Major Public Art Projects

The City of Auburn Parks Department plays a vital role in maintaining the city's vibrant public art installations. These installations not only enhance the beauty of public spaces but also reflect the cultural and artistic spirit of the community. Below is a list of the major public art installations that the Auburn Parks Department is responsible for maintaining, ensuring they remain in excellent condition for all residents and visitors to enjoy.



Table 2-8: Existing Public Art Inventory

Year	Artist	Piece	Location
1989	Meg Pettibone	Steelhead	Isaac Evans Park
1991	Richard Beyer	Children Playing Train at the Switch	City Hall
1993	Michele Van Slyke	Every Year the Salmon Return	Roegner Park
1994	Nancy Hammer	Burlington Northern Railroad Bridge	Auburn Way S & Hwy 18
1995	Garth Edwards	B Street Plaza	E Main & B St. SE
1996	Timothy Siciliano	Bus Shelter Murla	15th St SW
1996	Gerald Tsutukawa	Sun Circle	Game Farm Park
1997	Timothy Siciliano	The Equine Amusement	15th St. NE @ Metro P&R
1998	Deborah Merksy	Pioneer Cemetery Entryway	Auburn Way N & 8th St. NE
1999	Kulzer & Spitzer	Xtreme AtmosFearic Oscillator	Auburn Skate Park
2000	Evans & Mee	Mnemosyne's Opus	King County Library
2001	Phillip Levine	Threshold	Les Gove Park
2001	Ries Niemi	5 Moments Senior Center	Les Gove Park
2003	Paul Sorey	Running Figures	Sound Transit Plaza
2004	Brandon Zebold	Sighting	LL Hills Way & Evergreen Way
2004	Sidney Genette	Blue Neutron	Auburn Justice Center
2005	Ingrid Lahti	Les Gove Community Campus Sign	Auburn Way S & F Street
2006	Darel Grothaus	Evergreen-Washelli Cemetery: Seattle, WA	Cemetery Admin Building
2007	Greg Boudreau	Veteran's Day Parade	Veteran's Memorial Building
2008	Tom Askman Le Anne Lake	Tobu Bo	West Main Street
2008	Jesse Brown	Urban Art Works Mural	233 W. Main Street (A1 Collision Building)
2009	Susan Zoccola	Swing and Flight	Auburn Golf Course
2011	Bruce Meyers	Auburn Valley Topography	Les Gove Park
2011	Sheila Klein	Civic Lanterns	25 W. Main, City Hall
2011	Rachael Dotson	Utility Boxes	Various– Throughout Down- town
2011	Mauricia Robalino	Ride the Wave	116 A Street
2012	Chris Sharp	Railroads our Beginning Mural	364 W Main Street
1013	Michael Laughlin	Strawberry Calf	Lea Hill Park
2013	Lin McJunkin	Riparian Totem	Auburn Justice Center
2013	Patricia Vader	Watch My Tail	4910 A Street SE
2014	Kenneth Hall	Origami #2 – Fuchia	Sunset Park
2016	Virginia Paquette	Confluence/ Community	9910 Ninth Street SE
2016	Steve Tyree	Hawk	Game Farm Park
2017	David Varnau	Joie de Vivre	Auburn Community & Event Center
2019	Jacob Novinger	Heirloom Hare	Les Gove Park
2019	Peter Reiquam	Crow with Fries	Les Gove Park
2019	Nicholas Goettling	Pillow Fight Mural	F Street Bridge Underpass
2021	MacRae Wylde	Truth	Postmark Center for the Arts

Public Involvement









The successful development and implementation of a community's parks system ultimately relies on listening to the needs, demands, and ideas the community has to improve or suggest new additions to the system. Knowing that "the people who show up get to make the decisions", it was imperative that a successful public involvement process be implemented that allowed Auburn's citizens, and its visitors, multiple opportunities to inform the process and results. These opportunities hosted during this planning process included:

- Community Needs Assessment Survey
- Community Visioning Survey

With grant programs and other decision makers focusing on understanding a community's desired quality of life, public involvement is the most crucial and time-consuming element of the PROS planning process, allowing a correct assessment of a community's desired quality of life. This is where the public and users can share their ideas, goals, and objectives for their parks system and communicate these needs and desires to the City.

The intention behind the public involvement approach was to maximize an equitable distribution of needs, wishes, and ideas from the public. To ensure that the PROS Plan is reflective of the Auburn community and their interests, needs, and priorities, a series of engagement goals and methodologies were discussed and developed.

Engagement Goals

As this process began and continued through the COVID-19 pandemic, many public events were canceled or postponed due to safety concerns and government restrictions, leading to a substantial decline or, in many cases, the elimination of in-person participation. To adapt, more focus was placed on virtual engagement techniques, which provided a safer alternative for community engagement, though they could not fully replace in-person experiences. There was also a notable increase in the use of parks and outdoor spaces as people sought safe ways to engage in recreational activities while maintaining social distancing, with activities like hiking, biking, and outdoor fitness classes gaining popularity. The pandemic prompted a reevaluation of public health and safety practices, resulting in changes to engagement planning and execution. As restrictions eased, participation rates began to recover gradually, although some individuals still remained cautious about returning to large in-person events. Additionally, there was an increased focus on health

and wellness, driving interest in related programs offered by parks and recreation departments and encouraging the development of more diverse and inclusive programming to meet community needs. Overall, COVID-19 brought about significant changes in public participation, with a lasting impact on how events are conducted and attended. To overcome this potential lack of participation, a series of goals for the engagement plan was developed.

1. Continue to Build On or Validate Public Sentiment From Previous Surveys

The goal is to recognize that in communities like Auburn, public communication often relies heavily on informal channels such as word-of-mouth and conversations among neighbors. This approach is effective for disseminating information and fostering discussions about local events. Auburn also has other planning processes, such as the Comprehensive Plan and Downtown Master Plan, ongoing during this time. The current planning effort aims to incorporate a review of these past surveys to identify relevant data that can inform the understanding of the community's desired quality of life.

2. Ensure equitable distribution of new survey results throughout the city.

To gain a holistic understanding of a city's diverse communities and their needs, conducting surveys at the neighborhood level is crucial. This approach ensures that the concept of "quality of life" is not skewed towards a specific demographic. Ideally, the surveys are designed to capture respondents' residential locations within the city. This allows for the identification of localized needs and the development of tailored strategies for equitable resource allocation, targeted interventions, and effective community engagement. Using a GIS-based tool to identify the locations of comments will ensure we can achieve a desired level of response equity across all neighborhoods of Auburn.

3. Deploy multiple engagement opportunities

The inclusion of multiple participation methods effectively broadens the reach of the survey and addresses potential accessibility challenges. In addition to online and virtual surveys, the public is invited to participate in multiple engagement events online and complete paper surveys distributed at designated locations like City Hall, the Senior Center, and the Museum. This multi-modal approach ensures inclusivity by catering to residents with varying technological access and preferences.

4. Provide a broad range of constituents the ability to supply both broad and specific action-oriented feedback.

The goal is to transcend the collection of broad public needs and desires by implementing an online map-based engagement tool that uniquely incorporates opportunities for residents to actively participate in the "design" of their parks, generating site-specific suggestions. This approach will align with the principles of an inclusive planning framework, emphasizing citizen engagement in shaping service delivery. The aim is to create avenues for the public to contribute "real" ideas and concepts, fostering a sense of ownership and impact. Additionally, measures will be taken to ensure participant demographics accurately reflect the Auburn community profile.

Public Engagement Plan Overview

The engagement plan was organized around a series of both virtual and in-person events, noting the specific time dates. With the primary goal of the City always being to engage with the public about its park and recreation needs, the City developed a public engagement plan centered around two different kinds of virtual engagement techniques: 1) an online Needs & Assessment Survey, and 2) an online map-based project.

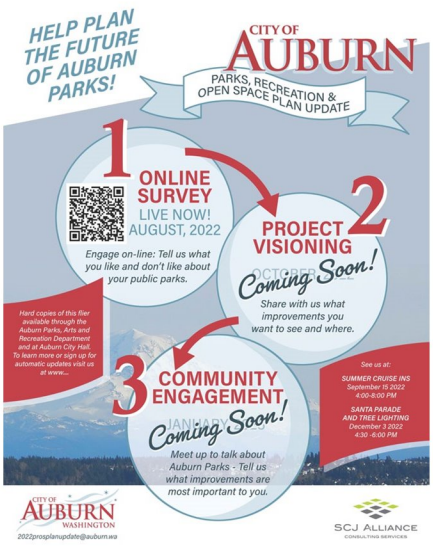
A successful engagement process harnesses the community's energy and inspires community ownership of the process, while also adapting to new insights and feedback. Stakeholders and community members supply the local knowledge, context, and information necessary to make informed project decisions.

As part of this engagement process, public comment was collected via an online community needs assessment survey, conducted in the Fall of 2022 and linked through the City's website. The project team will use the collected input, summarized in this report, to inform and drive the PROS Plan update.

Kickoff Meeting

SCJ met with City of Auburn Staff to conduct a kickoff meeting. At this meeting, the following was reviewed and discussed:

1. Determine the current parks, recreation, and open space issues
2. Brainstorm and finalize stakeholder interview list
3. Share and finalize the Public Engagement Plan





Engagement Marketing

With a primary goal of the City to always be engaging with the public about its park & recreation needs, the City developed a public engagement plan centered around two different kinds of virtual engagement techniques, 1) A online Needs & Assessment Survey, and 2) a on-line map-based project

A successful engagement process harnesses the community's energy and inspires community ownership of the process, while also adapting to new insights and feedback. Stakeholders and community members supply the local knowledge, context, and information necessary to make informed project decisions.

As part of this engagement process, public comment was collected via an online community needs assessment survey, conducted in the Fall of 2022 and linked through the City's website. The project team will use the collected input, summarized in this report, to inform and drive the PROS Plan update.

Note that all the engagement marketing, flyers, and surveys were all translated and offer in multiple languages, including Chinese, Russian, and Spanish. A Marshaleese translator was found but was not able to process the survey information in time.

Parks Needs & Assessment Survey

To assess how people were using Auburn's park and trail system, an online survey was conducted in the fall of 2022. This initiative aimed to gather valuable insights from both residents and visitors. The survey specifically focused on understanding current usage patterns of existing parks and trails, identifying any barriers that hinder their use, and gauging resident interest in adding or removing specific park and recreation features. The online survey consisted of both multiple-choice and open-ended questions focusing on community needs and issues with regards to Auburn's park facilities and recreation programs.

Additionally, the survey sought to identify the most popular parks and amenities among residents and visitors. To ensure broad participation, the survey was offered in both English, Spanish, Chinese, and Russian.

The list of questions asked, minus typical demographic inquiries, included:

How frequently do you use the City's park and recreation facilities?

How long is your average visit to these facilities?

What are the existing barriers to your use of parks in Auburn?

The survey was live for several months in the Fall of 2022, and a total of 619 completed surveys were received in that time. A summary of the responses to each question is provided on the following pages.

How much do you or would you use specific recreational elements?

What does Auburn need more or less of?

What is your connection to Auburn?

Other typical demographic questions were asked as well, in order to better understand the survey audience, identify any trends and ensure that a balanced representation was captured.

Full survey results are found in Appendix C, with key takeaways and highlights summarized here.

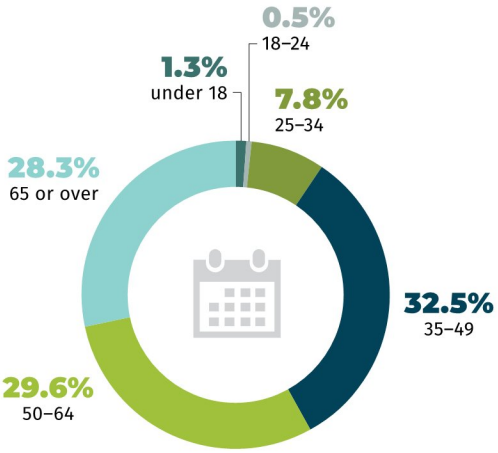


Demographics

Demographic information was collected to help ensure survey responses are representative of the community and amenities are tailored to patrons and residents. All responses were voluntary and were collected anonymously.

Age Range

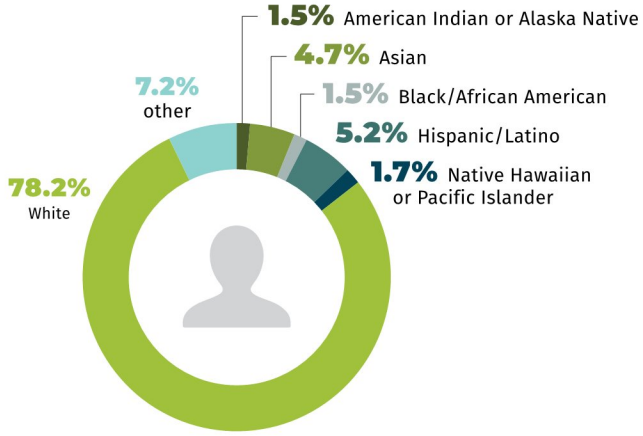
When asked the question, "What age range are you in?" the largest percentage (33%) were in the 35–49 age range. Another 30% were in the 50–64 range, and 28% were 65 or over. Only 10% of respondents were under the age of 35.



Ethnicity

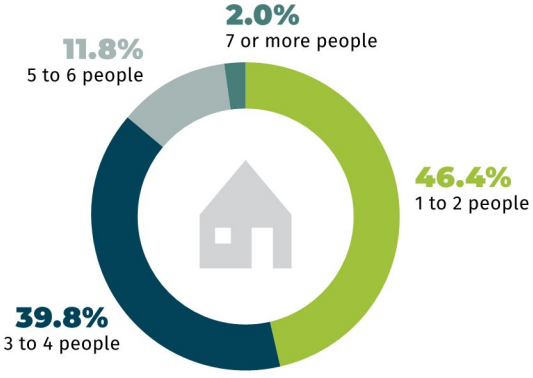
When asked "What is your ethnicity?" the largest percentage (78%) identified as "White", with another 5% identifying as "Hispanic/Latino" and 5% identifying as "Asian."

"American Indian or Alaska Native," "Black/ African American," and "Native Hawaiian or Pacific Islander" each accounted for less than 2% of the respondent population, and about 7% of respondents identified as "Other."



Household Size

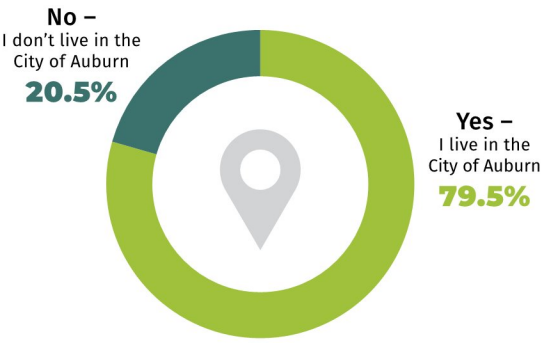
Nearly half of respondents (46%) indicated their household consists of only 1 to 2 people, and another 40% indicated their household consists of 3 to 4 people.

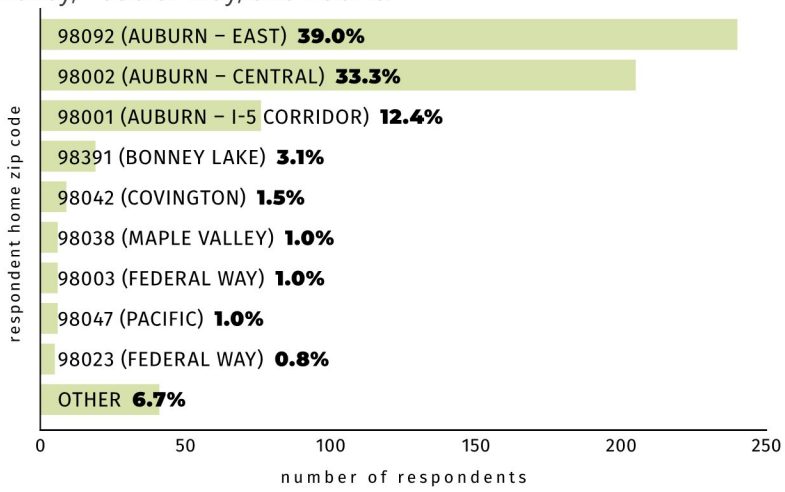


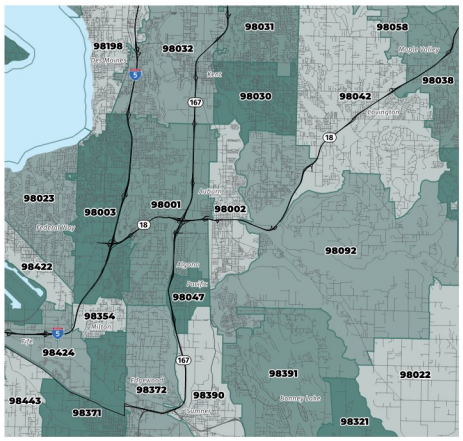
Demographics

Home Location

A majority of survey participants (79.5%) indicated they live in the City of Auburn. In order to better understand where Auburn's park users live, survey participants were also asked what zip code they live in. Nearly 40% of participants responded that they live in zip code 98092 (Auburn – east), with another third of participants in 98002 (Auburn – central) and 12% in 98001 (Auburn – I-5 corridor). The survey also saw a significant number of participants who lived in Bonney Lake, Covington, Maple Valley, Federal Way, and Pacific.

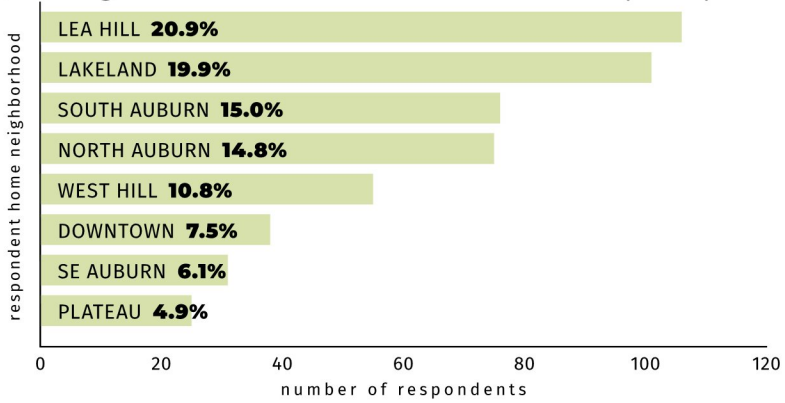


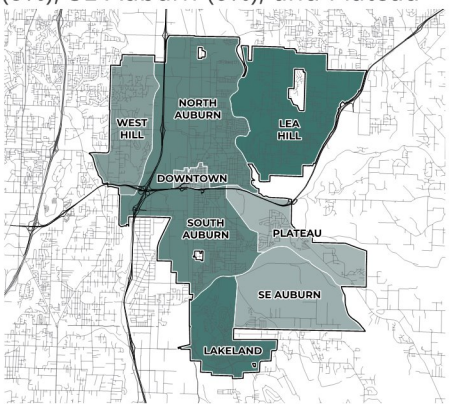




Neighborhood of Residence

Of the 507 survey participants who indicated they live in the City of Auburn, the highest percentages live in the Lea Hill (21%) and Lakeland (20%) neighborhoods. The Downtown (8%), SE Auburn (6%), and Plateau (5%) neighborhoods had the smallest numbers of participants.

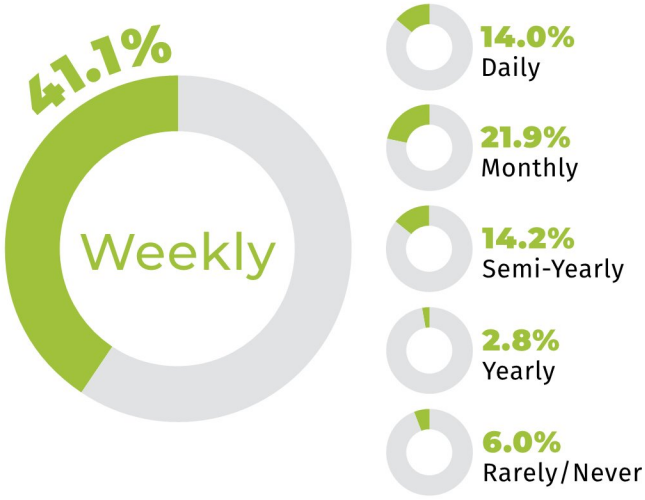




Use of Auburn's Existing Facilities

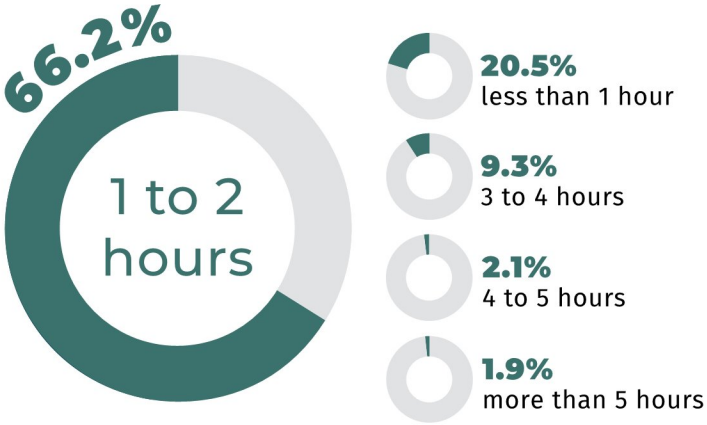
Frequency

Survey participants were asked, "How frequently do you visit the parks or recreational facilities within the City of Auburn?" Over 40% indicated they visit Auburn's parks weekly, with another 22% visiting monthly.



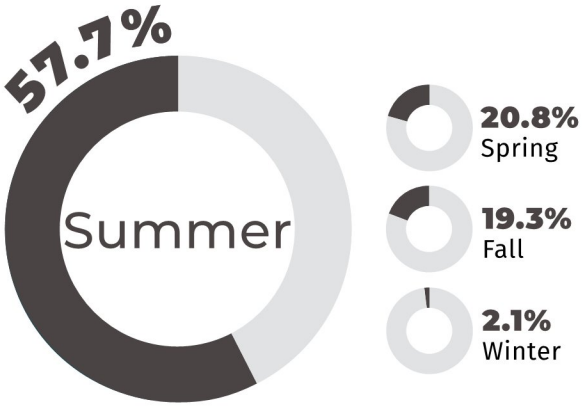
Length of Visit

When asked, "How long is your average visit to a park or recreational facility within the City of Auburn?" nearly two-thirds of participants responded with 1 to 2 hours, with another 21% indicating their average visits last less than 1 hour. Only 13% of respondents indicated their average visits were longer than 2 hours.



Season

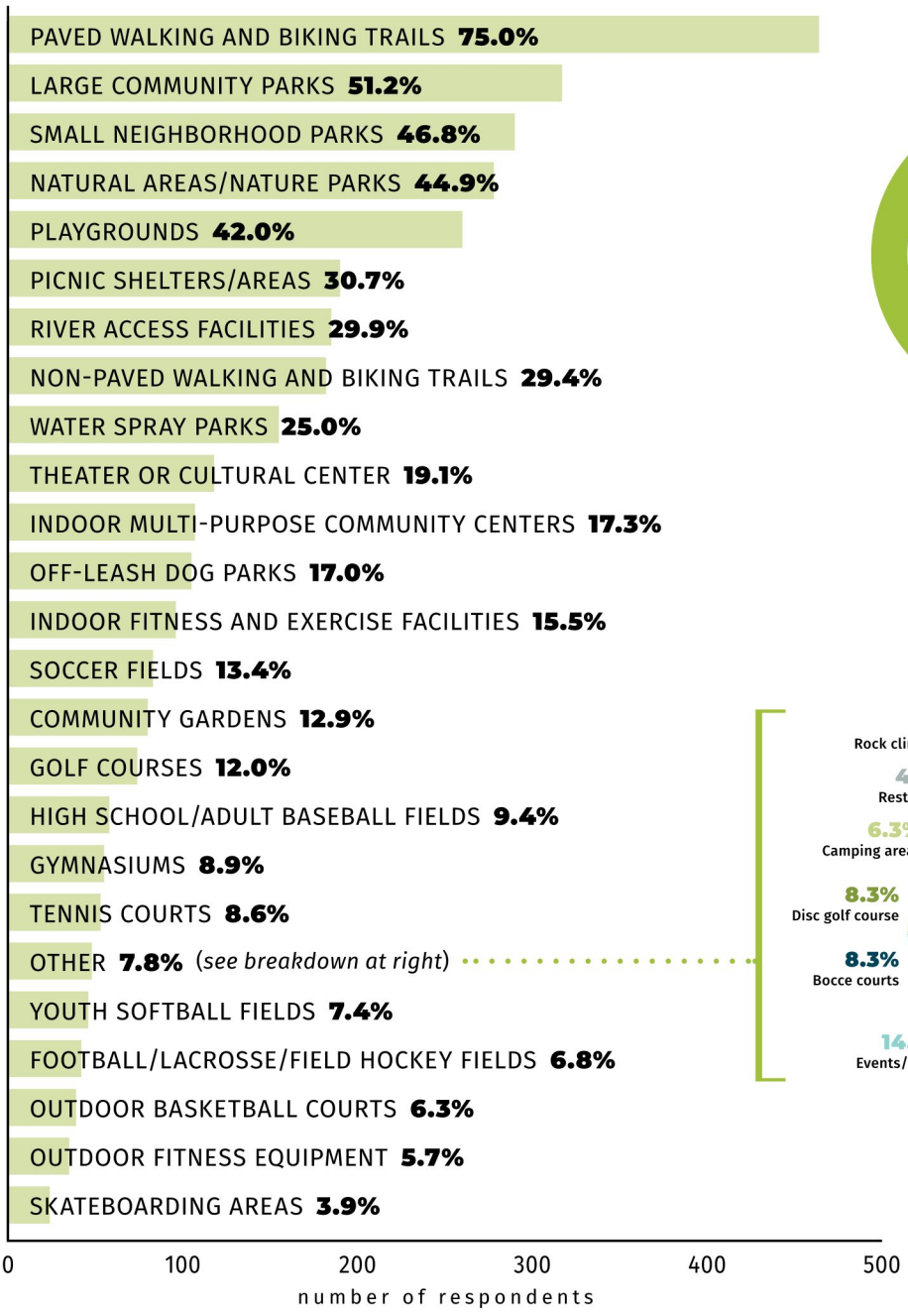
Participants were asked, "What is your favorite season to visit parks and recreational facilities in the City of Auburn?" Summer was the favorite time to visit for 58% of respondents, with Spring and Fall each garnering about 20% of the vote. Only 2% of respondents indicated winter was their favorite season for a parks visit.

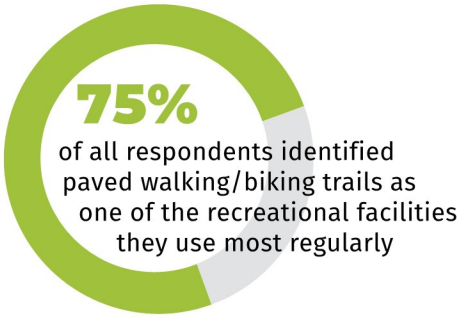


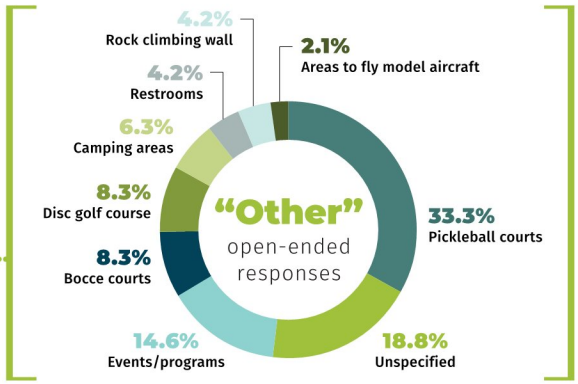
Recreational Facility Use

Types of Facilities Used

Respondents were asked to select from a multiple-choice list to answer the question, "What are the types of recreational amenities/facilities that you most regularly use?" Respondents could select as many choices as applicable for them/their household, regardless of whether the facilities were located in Auburn or not.







Recreational Facility Use

Recreational Facilities Outside Auburn

As a follow-up question to what types of recreational amenities/facilities they use most regularly, survey participants were asked, "Do you currently travel outside the City of Auburn for any of these amenities?" They were then asked to list the facilities they currently travel outside the City of Auburn to use. The open-ended answers provided by participants can be broadly broken into the categories below.



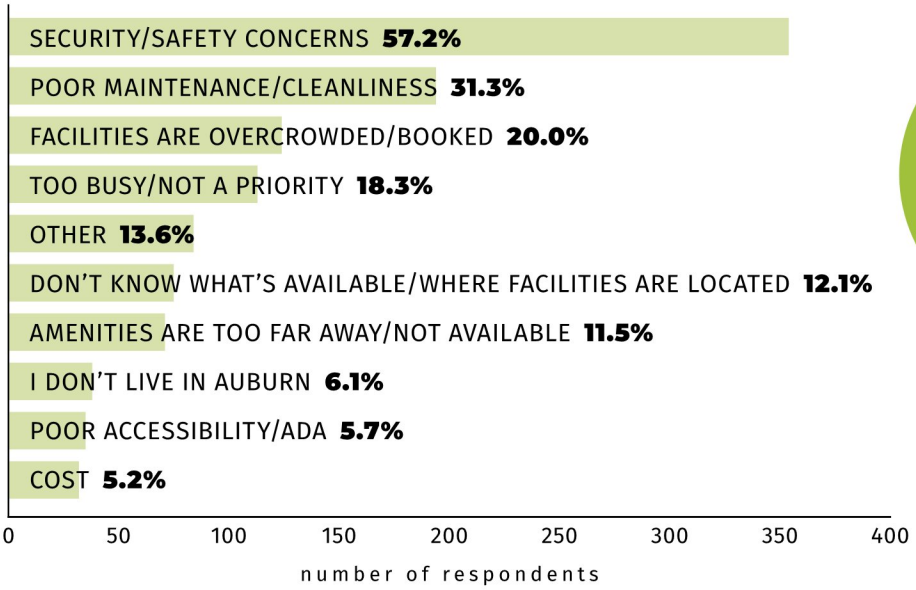


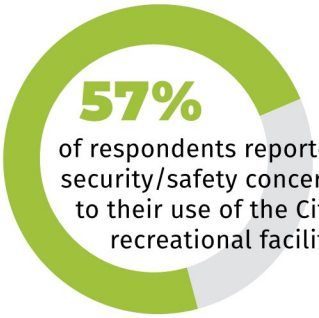
of all respondents indicated they travel outside of Auburn to access the recreational amenities/facilities they use most frequently

Recreational Facility Use

Barriers to Use

Survey participants were asked to select from a multiple-choice list to answer the question, "What are some of the existing barriers or reasons why you may not use available recreational facilities or participate in parks and recreational programs within the City of Auburn?" Participants were invited to select as many choices as applied for them/their household. Security/safety concerns (57%) were the top barrier to participants' use of existing facilities, followed by maintenance/cleanliness (31%) and overcrowded/booked facilities (20%).

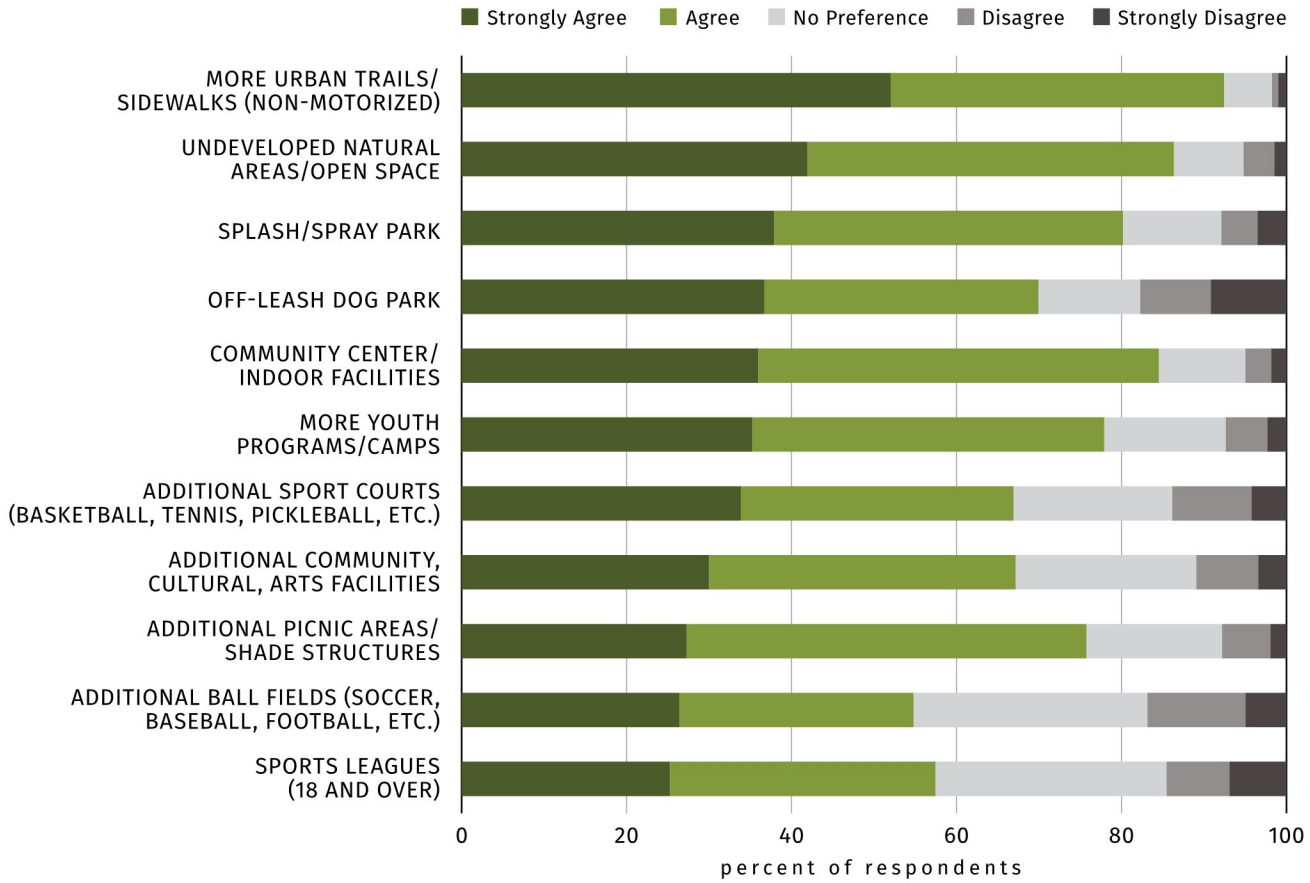




of respondents reported that security/safety concerns are a barrier to their use of the City's available recreational facilities or programs

Parks and Recreation Needs

The City Needs...



Survey participants were provided with a list of recreational facilities and amenities, each framed as a statement ("The City needs [facility/amenity]"). Participants were asked to select how strongly they agreed or disagreed with each statement on a sliding scale of one to five (5 = strongly agree, 4 = agree, 3 = no preference, 2 = disagree, 1 = strongly disagree). Responses are summarized in the above chart.

At the top of the list, over 90% of participants either agreed or strongly agreed that the City needs more urban trails/sidewalks (non-motorized). Strong support was also given for undeveloped natural areas/ open space, splash/spray parks, off-leash dog parks, community center/indoor facilities, and more youth programs/camps.

Key Takeaways

The project team will use the input collected through the community survey to inform and drive the PROS Plan update. Key takeaways from the survey data include:

- Survey respondents' **most-used** recreational facilities include **paved walking/biking trails** (used by 75% of respondents), **large community parks** (51%), **small community parks** (47%), small neighborhood parks (47%), **natural areas/nature parks** (45%), and **playgrounds** (42%).
- Survey respondents' **least-used** recreational facilities include **skateboarding areas** (used by 4% of respondents), **outdoor fitness equipment** (6%), **football/lacrosse/hockey fields** (7%), and **youth softball fields** (7%).
- 63% of survey participants indicated they **travel outside of Auburn** to access the recreational amenities/facilities they use most frequently. These facilities include other (nearby) **city parks** (29%), **walking/hiking trails** (17%), **water access** (8%), and **indoor community centers** (6%). These responses suggest there could be a need for more of these facility types in the City of Auburn, or a need to improve those that already exist within the city.
- **Barriers to use** indicate existing issues that need to be addressed by the City in order to improve Auburn parks users' experience. The largest barriers to use of the City's available recreation facilities or programs, as reported by survey respondents, are **security/safety concerns** (57% of respondents), **poor maintenance/cleanliness** (31%), and **overcrowded/booked facilities** (20%).
- According to survey respondents, the City of Auburn's biggest parks and recreation needs include:
  - More non-motorized urban trails/sidewalks (92.5% of respondents)
  - Undeveloped natural areas/open space (86.4%)
  - Community centers/indoor facilities (84.5%)
  - Splash/spray parks (80.2%)
  - More youth programs/camps (77.9%)
  - Off-leash dog parks (69.9%)

Demand & Needs









The purpose of the demand and needs analysis is to evaluate, quantify, and understand the current and future demand for recreational facilities and parkland. This analysis also identifies the existing and anticipated needs for providing parkland, facilities, and open spaces, both now and in the future. "Needs" in this context includes both the preservation of existing services and resources, as well as the projected future requirements based on population forecasts and economic outlooks.

This update reflects the community's needs, desires, and recommended priorities, establishing a foundation for the next 6 to 10 years. It also outlines longer-term aspirations for the next 15 to 20 years.

Quantifications vs Qualifications

Traditionally, quantitative standards have been used to assess the need for and identify potential actions to acquire or develop additional parks and recreation elements. Based on the National Recreation and Park Association's (NRPA) guidelines and its online database "Park Metrics," simple comparisons of adequate land, derived from normalized averages across the country, were used to determine the minimum amount of parkland required to effectively provide parks and recreation services.

While this plan is primarily focused on the needs identified by the public, it also evaluates the recreational demands of the City of Auburn using traditional level-of-service (LOS) standards, recreation trends, and a gap analysis of access within the current park system.

However, while quantifiable metrics allow for straightforward comparisons, they fall short when it comes to understanding the "quality" of life that a community expects or demands. Developing strong strategies and identifying potential improvements requires engaging with community members through surveys, public meetings, and other forms of public consultation. The previous section of this report outlines this process in detail.

This section concludes with a comparison of the quantitative and qualitative findings to refine a methodology for testing and ultimately selecting improvements that will enhance Auburn's quality of life, aligned with its demonstrated values and preferences.

Park Equity & Access

To better understand where the demand and need for park lands should occur, a service area map was created on the following pages that identifies the current service area of each existing park and the new service areas created by proposed improvements.

To develop the service maps, Open Street Map data was used to identify and verify known sidewalk data and the City's transportation grid that the City of Auburn provided. Sidewalks are considered to be safe walking routes. All the existing access points to each existing park and/or trail space were digitized and a network analysis of the safe walking routes to each access point was developed. The analysis would initially stop even if the end of a sidewalk was encountered before the 10-min range (approximately 1/2 mile) was reached.

A second analysis ignored the known sidewalks and trails but followed the City's existing transportation grid, essentially identifying known gaps in the walkshed that could be addressed by extending existing sidewalks.

Additional maps on pages 60 and 61 highlight specific areas of the City where residents identified gaps in the current park system, with a particular emphasis on the need for more sports fields, courts, and other recreational amenities, as indicated through public involvement responses.

The "10-Min Walk" Metric

A 10-minute walk is considered an important park access metric for several reasons. A 10-minute walk (approximately 1/2 mile on level ground) as a park access metric is important because it promotes physical activity, equity, sustainability, social interaction, and overall community well-being (see 'Benefits of the 10-min Walk' on the next page.) It aligns with various health, environmental, and social goals the City has and should encourage staff and policymakers to prioritize accessible green spaces as a fundamental part of Auburn's development and the community's desired quality of life.

The figure on the following page identifies the service areas, AKA the 10-minute "walksheds", for each existing park as well as showing the current gaps on the page after that.

Gap Analysis

As outlined in the Goals & Objectives and related policies, ensuring that residents have fair and easy access to parks located within a half-mile of their homes is crucial for the overall health and well-being of the community. This previous figure offer insights into population density and conducts a network analysis of park accessibility. This analysis examines each property's ability to reach a nearby park within a half-mile, either via a street or a trail. The service area maps are designed to demonstrate how accessible parks with various amenities are to the community and how accessibility could be enhanced through improvements to parks that currently offer limited amenities. It's worth noting that these accessibility gaps can be reduced by ensuring safe access to parks can be increased with new sidewalks and transportation improvements.

City of Auburn Projections

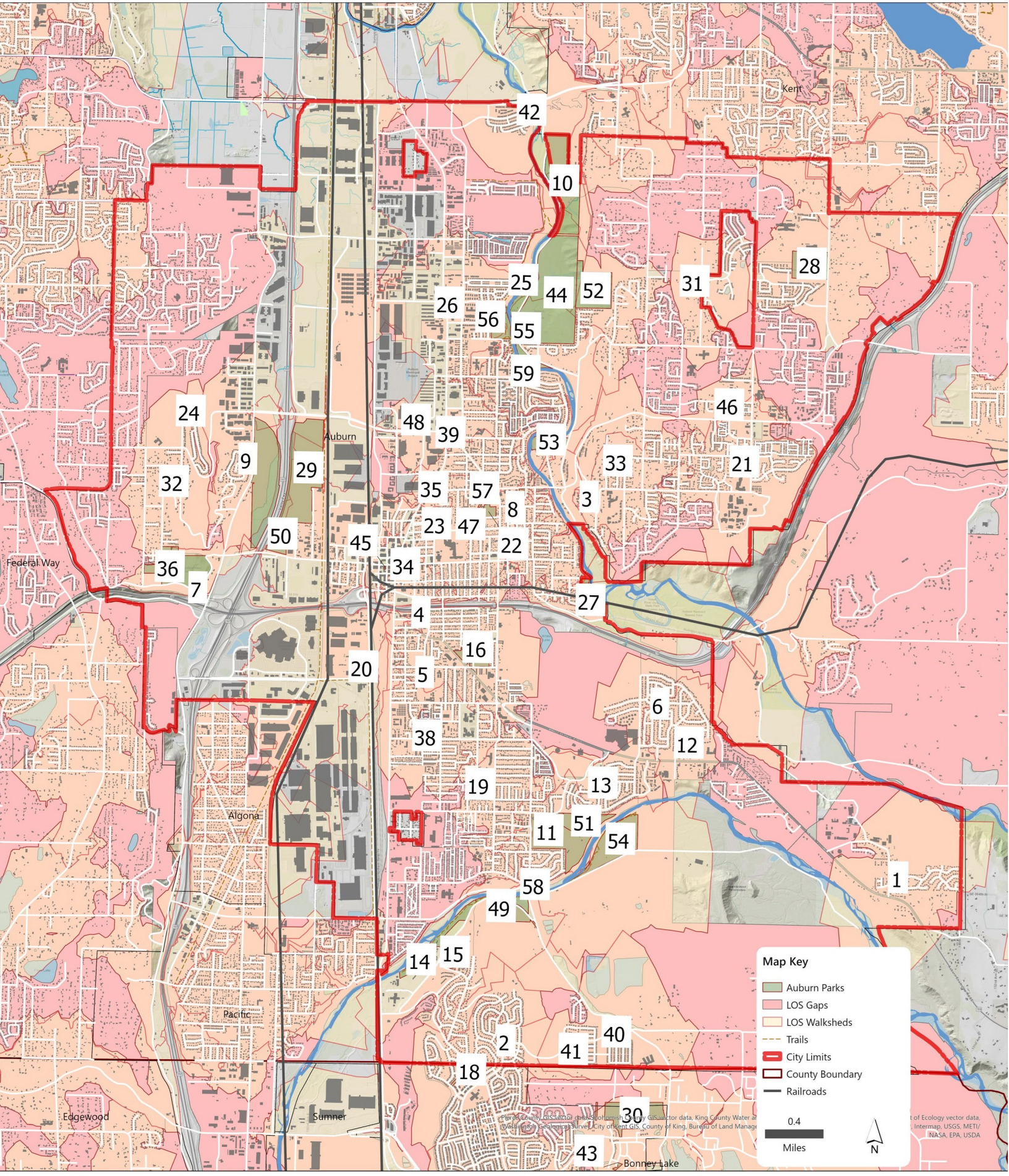
The City of Auburn, out of 635 named cities and populated areas, is currently ranked #14 in the list of cities in the State of Washington based on population size, and is located in the county with the highest desnity of people living per sq mile.

The Office of Financial Management (OFM) predicts population projections under the Growth Management Act (GMA) to accommodate growth over the next 20 years. While the most recent census data available is from 2020, it shows the population has grown to over 88,000. The rapid growth experienced during the '90's and '00's may have slowed, but Auburn remains an attractive community known for its family-oriented, small-town atmosphere. With affordable housing compared to most of King County, convenient highway access, and a charming small-town feel, Auburn is poised for continued, stable growth that will support the demand for recreational facilities.

Recreation Trends

Outdoor recreation is on the rise nationwide, and Washington State and all its communities is no exception. Since 2019, and especially throughout the Covid pandemic, outdoor recreation equipment sales saw a significant increase across all major product categories. In Washington, there has been a notable surge in the participation rates of 20 outdoor activities since 2017. Among these activities, non-motorized trails, nature and wildlife viewing, camping, paddling, winter recreation, and leisure activities in nearby parks are consistently in high demand among Washington residents. With an expected statewide population increase of 2 million residents in the next 25 years, it's more critical for cities such as Auburn to plan for the future demand on outdoor recreation facilities.

Outdoor recreation not only supports local economies


Kent
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Federal Way
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Sumner
Bonney Lake
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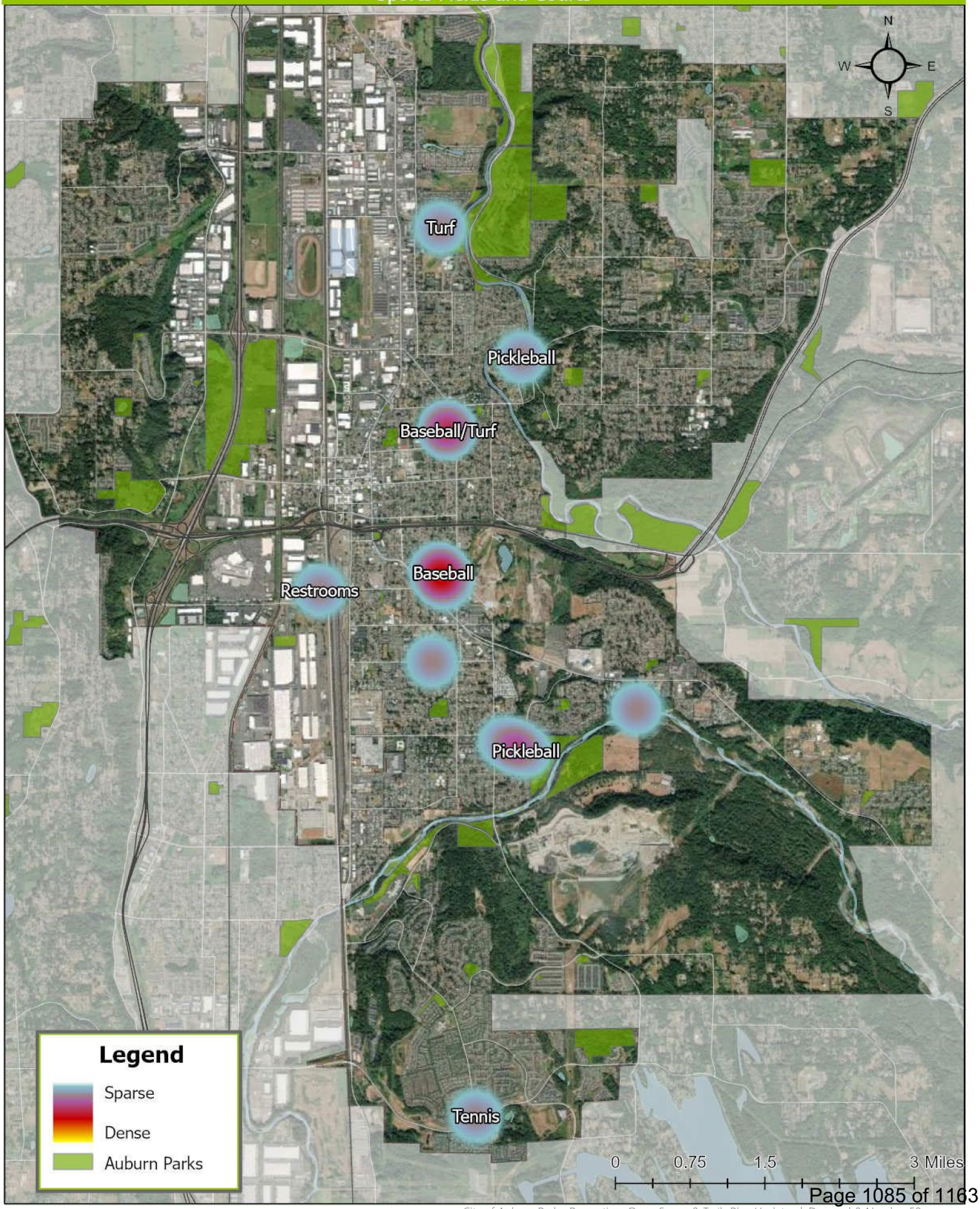
18
30
43
Map Key
Auburn Parks
LOS Gaps
LOS Walksheds
Trails
City Limits
County Boundary
Railroads
0.4
Miles
N

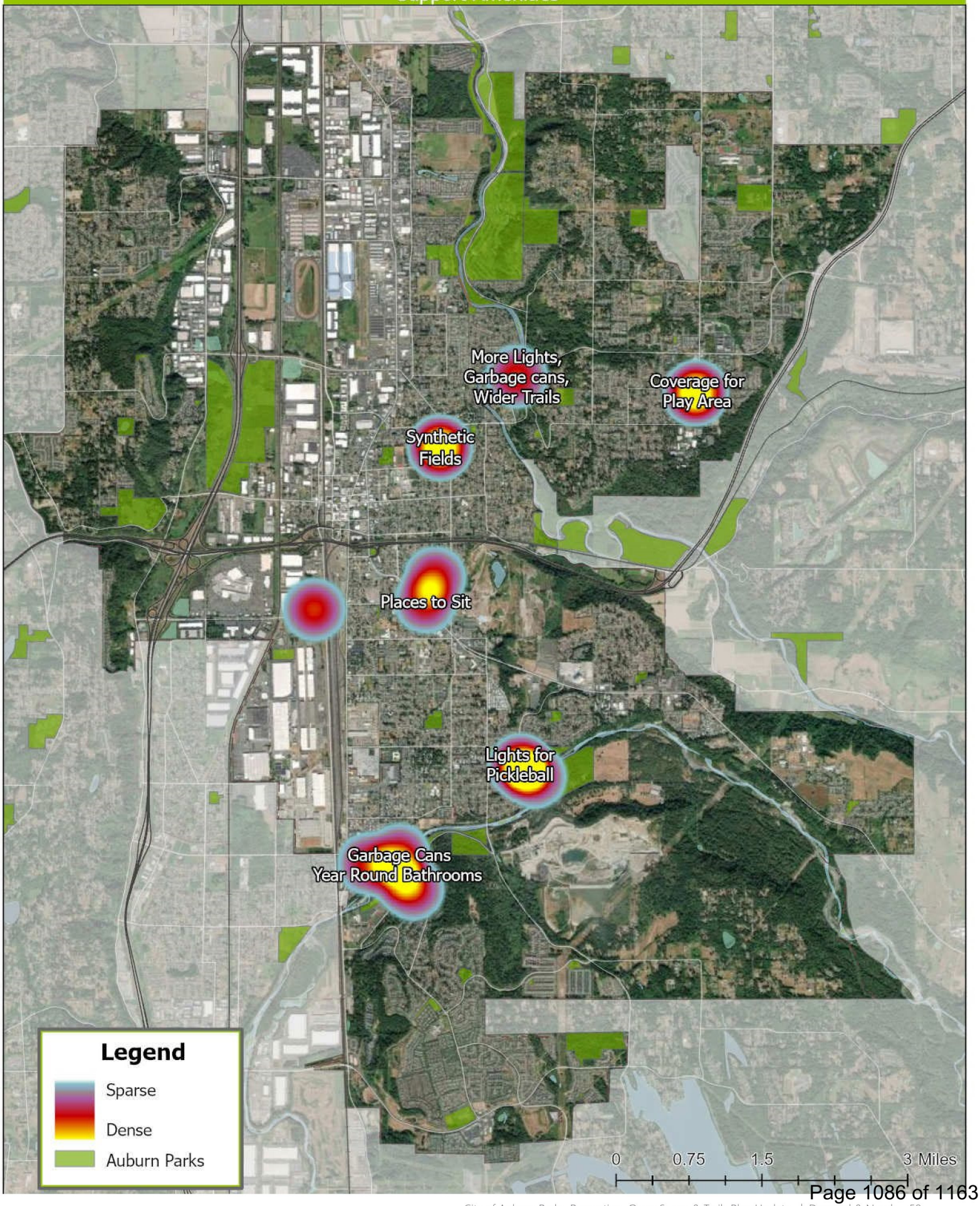
Auburn Parks PROS

Sports Fields and Courts



Auburn Parks PROS

Support Amenities



but also connects people with the natural world, promoting physical and mental well-being. With the rise of work-from-home arrangements post-pandemic and housing shifts from larger cities to smaller communities, residents are increasingly seeking convenient access to a variety of outdoor experiences, both developed and primitive, that allow them to integrate nature-based recreation into their busy schedules while avoiding crowds and traffic.

However, striking a balance between providing access to outdoor recreation and safeguarding natural and cultural resources remains a significant concern statewide. The heavy concentration of outdoor recreation at popular sites has led to resource degradation and reduced user satisfaction. Many communities face disparities in access to meaningful outdoor recreation opportunities, and residents often struggle with the time, cost, and information needed to support their outdoor pursuits. As the state aims to promote equitable access to the social, health, and economic benefits of outdoor recreation, a careful approach to outdoor recreation management is essential to ensure the protection of natural and cultural resources.

2030 Statewide Comprehensive Outdoor Recreation Plan

The 2023 Recreation and Conservation Plan, or commonly referred to as the Statewide Comprehensive Outdoor Recreation Plan (SCORP), is a comprehensive document outlining the state's vision for outdoor recreation and public land conservation. Developed by the Recreation and Conservation Office (RCO), the plan guides investments for the next 5-10 years. It considers challenges and benefits of outdoor recreation, assesses current demand, and inventories existing opportunities. By establishing statewide priorities and goals, the plan serves a crucial role in securing funding, guiding investments strategically, and fostering collaboration between land managers. Public input through surveys and outreach ensures the plan reflects the needs of Washington residents. Ultimately, the WA State RCO SCORP Plan serves as a blueprint for a sustainable future where outdoor recreation and public lands are preserved and accessible for all.

RCO's 2022 Assessment of Resident Demand

In the 2022 Assessment of Resident Demand report, participation rates for 45 activities were compared to 2017. All but two of those activities (Technology-based games and Collecting or Gathering Things in Nature) showed an increase in participation. Activities that had the greatest increase in participation include the following:

- Wildlife or nature viewing increased by 28%
- Paddle sports increased by 28%
- Visiting outdoor cultural or historical facility increased by 27%
- Tent camping (undeveloped area) increased by 26%
- Backpacking increased by 25%
- Playing yard games (in a park) increased by 25%
- Snowshoeing increased by 23%
- Tent camping (developed area) increased by 19%
- Hanging out (in a park) increased by 19%
- Mountain biking increased by 18%

The SCORP document classifies Auburn within the 'Seattle King" region, encompassing King CVounty soley. Note that a portion of Auburn stretches into Pierce County. Regardless, the SCORP survey reveals a significant trend – "walking in a park or trail setting" that boasts the highest participation rate in the region (92% compared to the statewide average of 82%). This preference for walking holds true across diverse demographics, including age, gender, race, and income groups.

An interesting observation is the increasing popularity of walking as a recreational activity since the previous RCO survey in 2012. Additionally, participation in boating and swimming has also risen, with swimming now ranking among the top 10 recreational activities in the Seattle King region. Other favored activities include nature-based pursuits like visiting rivers, streams, and beaches, wildlife viewing, attending outdoor events like farmer's markets and fairs, and day hiking. These findings from the SCORP planning outreach program align with the trends identified in state-level surveys, underscoring the importance of walking/hiking opportunities and nature-based recreation in King County.

Trails

Trails, both within parks and connecting parks, schools, shops, and destinations are generally the top demand seen across the country. Providing trail connections between these popular destinations enhances a community's walkability and encourages active lifestyles. Trail usage has seen a significant uptick in recent years, with data suggesting a surge starting in 2020. Recent studies by both American Trails report increases ranging from 79% to 171% and can

attributed to several factors, especially as a response to the COVID-19 pandemic. With access to traditional forms of exercise and leisure activities significantly impacted due to closures and safety concerns, many people turned to outdoor recreation, including hiking and other trail-based activities as safe and accessible options. This trend has continued post-pandemic, with increased trail use likely due, in part, to the population continuing to seek alternative ways to exercise and maintain mental well-being.

While some pandemic restrictions have eased, evidence from the National Parks Service and the Washington State SCORP suggests a continued rise, or at least a steady hold, in trail use. This trend underscores the growing importance of well-maintained trail networks. This applies not just within parks themselves, but also in connecting parks and open spaces together. As demand for these outdoor spaces rises, so too does the need for additional supporting infrastructure to ensure their continued enjoyment by all.

Canines

The trend of dog ownership in the United States is experiencing a significant upswing, with estimates suggesting a population exceeding 89 and 94 million canine companions nationwide. This surge translates to a parallel rise in demand for designated dog parks across the country. These parks, particularly larger facilities, have become popular destinations, attracting dog owners and potentially boosting agency revenue through user fees and contributing to tourism.

In Washington State, the growing human-canine bond is likely influencing public land use plans. With dogs increasingly viewed as cherished family members, especially in urban environments, families are actively seeking opportunities to include their furry companions in outdoor activities. Cities are likely taking note of this trend, potentially leading to the inclusion of designated dog walking areas or off-leash spaces within their planning strategies.

Pickleball & Padel

The participation in pickleball has witnessed a remarkable surge, growing by 159% in just three years, reaching 8.9 million participants in 2022, as reported by the Sports & Fitness Industry Association.

This swift expansion has presented challenges for public parks and recreation departments, which must strike a balance between the competing interests of diverse recreational activities while working within constraints of limited space and budgets. Parks agencies are becoming more confronted with the task of accommodating pickleball enthusiasts, who favor this tennis-like sport with a smaller court, without causing discomfort or inconvenience to others. The noise and disruption generated by pickleball is becoming more a source of frustration for some neighbors, tennis enthusiasts, parents with young children, and other community members.

In various towns and cities, homeowners' associations and local residents have begun to impose restrictions on pickleball activities and thwart the construction of new courts. They have initiated petitions, pursued legal actions, and voiced their concerns at council and town hall meetings, all in an effort to temper the widespread enthusiasm for pickleball and its unique auditory characteristics.

Similar to pickleball, Padel is a racket sport of Mexican origin gaining popularity across the United States. This game is a cross between tennis, racquetball, and squash. It's currently estimated that Padel has over 100,000 players in the United States, and the number of courts has more than doubled in the last two years, expecting to grow to 30,000 courts by 2030. It is expected that the sport will grow substantially in communities with growing Hispanic populations, including Auburn.

Youth Sports

Participation in youth sports leagues has undergone a complex transformation in recent years. While traditional team sports remain popular, data suggests a decline in children (ages 6-12) consistently playing on teams. The Aspen Project reports a drop from 45% in 2008 to 38% in 2018, and the Sports & Fitness Industry Association (SFIA) confirms this trend with a 6% decline in core participation (ages 6-17) between 2019 and 2022. This translates to roughly 1.2 million fewer participants. Several factors may contribute to this decline, including the financial burden of participation fees, equipment, and travel expenses, concerns about over-specialization leading to burnout, and time constraints due to competing academic and extracurricular demands.

This changing landscape has potential implications for the need for large regional sports facilities. While the decline in regular participation suggests a decreased demand for facilities solely focused on traditional team sports, total team sports participation (including those playing at least once a year) remained stable between 2019 and 2022, suggesting a potential shift towards less structured forms of sports involvement. Basketball continues to be the most popular sport, with nearly a

quarter of youth (ages 6-17) participating at least once in 2022.

Multi-sport facilities catering to a wider range of activities and hosting tournaments or events attracting teams from a broader area are expected to see continued use. Well-designed facilities could also become community hubs, offering recreational activities for all ages and potentially incorporating amenities like fitness centers or indoor walking tracks that would noit be affected by inclement weather.

The future of youth sports will require adaptation in programs. Focusing on fun and inclusivity, offering flexible scheduling and shorter seasons, implementing strategies to reduce financial barriers, e.g. developing parks districts to help cover long-term operating & maintenance costs, and promoting foundational athletic skills applicable to various sports are all crucial considerations. By adapting to these trends, youth sports programs can ensure they continue to play a vital role in promoting physical activity, social development, and positive health outcomes for children.

Playground Trends

Modern playground design reflects a growing emphasis on inclusivity, fostering connections with nature, and catering to a wider range of users. A key trend to note is the creation of inclusive playgrounds, ensuring accessibility for children with various abilities through features like ramps, sensory panels, and equipment that accommodates different physical and cognitive needs.

Playgrounds are also increasingly designed to mimic natural environments, incorporating elements like logs, boulders, and water features. This reconnection with nature encourages open-ended and imaginative play.

The concept of multigenerational playgrounds is also gaining traction, offering adult fitness equipment and interactive features that promote intergenerational play within families and communities. Grant programs such as AARP's FitLot program is a great example.

Sensory play experiences are being actively integrated through musical instruments, textured panels, and fragrant plants. These elements stimulate different senses, enriching the play experience and catering to children with special needs.

While still emerging, some playgrounds are exploring seamless technology integration through augmented reality or interactive elements, adding a new layer to physical play.

Recognizing the limitations of shrinking green spaces in downtown cores or within communities, there's a growing focus on "playgrounds within reach." This involves maximizing the play value of smaller spaces through multifunctional equipment, innovative design, and better integration with surrounding areas.

Overall, these trends highlight a shift towards playgrounds that are not just fun, but also inclusive, educational, and promote holistic development in children.

Electrification

As electric technology develops, maintenance equipment, vehicles, mowers, and other equipment used in parks and recreation are transitioning from gas powered resources to electric assets. This transition provides long-term cost savings, environmental benefits, and decreased noise. Additionally, parks and trailheads should consider the addition of EV charging stations in parking lots, as the number of EV cars on the road continues to grow. Washington State has led this transition to electric vehicles, with over 18% of new cars sold in the first half of 2023 being fully electric or plug-in hybrids according to the Seattle Times. Vehicle chargers located at park facilities enable drivers to engage with park facilities while waiting for a full charge.

Climate Resiliency

The concept of electrification pertains to growing needs for climate resilience and the ways in which future park implementations can accommodate the increase of hotter days and nights, as well as the increase of storm and wildfire impacts. Parks create a great opportunity to address these goals through smart design and engineering. Parks and open space can mitigate urban heat islands, absorb flood and stormwater, and create fire breaks through green space and linear trail corridors. Climate change, stormwater/flooding implementations, and tree canopy coverage should be considered in future park renovations to increase resiliency.

Funding Threats & Availability

Funding for parks and municipal recreation services has been forced into a creative shift as municipalities have been forced to seek additional ways to fund operation and improvements. Long-standing grant and funding assistance programs have repeatedly come under threat at both the federal and state level. Congress let the Land and Water Conservation

Fund (LWCF) expire in 2015 for the first time in 50 years. In response to public outcry, several members in Congress fought for a short-term solution: an emergency authorization of three years. In 2016, Congress had another opportunity to permanently reauthorize LWCF, thanks to legislation championed by Washington's own Senator Maria Cantwell in the Energy Bill. While LWCF initially failed under the past administration, in September 2021, LWCF was permanently authorized with full funding through the Dingell Act. This act directed a significant portion of offshore oil and gas royalties to the LWCF for the preservation of public lands, waters, and recreational opportunities.

Since then, specific funding levels and appropriations for the LWCF have varied from year to year as part of the federal budgeting process. Funding for the LWCF depends on annual appropriations by Congress, hence the program's budget and funding levels can be subject to changes and priorities set by the federal government.

Investments in Parks Will Rise

Across other municipal agencies statewide, investment in state and local infrastructure, which had been depressed since the Great Recession of 2008, and especially since the COVID-related stimulus packages, e.g., ARPA, increased federal funding has helping that fund public works and park and recreation infrastructure improvements, such as buildings, restrooms, and roads.

State and local spending is up nearly 10 percent from last year, according to data from the Commerce Department, and spending on capital outlays continues to grow. The Commerce Department data also show that spending on amusement and recreation facilities is up 31 percent from a year ago. It appears that economic conditions will remain favorable for new investments in park and recreation infrastructure if local and state tax collections continue to rise and interest rates remain relatively low. Building on the momentum of the past few years, local and state governments will make even more park and recreation infrastructure investments in buildings, playground equipment, roads and bridges, and capital repairs to aging infrastructure, topping the highest level of infrastructure spending since the recession of 2008.

Level-of-Service (LOS)

To evaluate how different types of parks align with a community's desires, the National Recreation & Park Association (NRPA) developed and maintains simple demand standards as a guideline for identifying the number of park facilities potentially needed per community. While there are various methods to assess the service standards of a park system, the NRPA's standards focus primarily on comparing population size to the number and types of parks or recreational amenities offered.

Traditionally, the ratio of land acres per thousand people has been a widely adopted measure. However, this metric provides only a limited evaluation of a park system. A more comprehensive approach to determining service standards should consider the distribution of land and facilities throughout the community, the per capita value of the system, the availability of programs for all demographics, the characteristics of the park user base, the quality and upkeep of facilities, and, most importantly, public perception of the park system as an indicator of quality of life.

Recognizing that the vision, values, and needs of each community are unique, planners have acknowledged that simply applying local level-of-service (LOS) standards to a national benchmark is not an effective means of evaluating a community's specific needs and vision. Consequently, NRPA's LOS standards have evolved in recent decades, now recommending that each community develop its own standards based on local goals, priorities, and conditions.

NRPA Recommendations

The National Recreation and Park Association (NRPA) provides guidelines for Level of Service (LOS) standards, which help communities determine appropriate targets for parks and recreational facilities based on population. However, it's important to note that NRPA has moved away from prescribing specific numeric LOS standards (traditional benchmarks) for all communities, recognizing that each community has unique needs and contexts. Instead, they emphasize using data-driven approaches, including benchmarking against similar communities, community input, and local conditions to determine the appropriate LOS.

For communities with populations of 85,000 to 100,000 residents, the NRPA suggests the following general recommendations:

Total Parkland per 1,000 Residents

Traditional Benchmark: Historically, a common benchmark was to provide around 10 acres of parkland per 1,000 residents. However, this is no longer a one-size-fits-all recommendation. Communities are encouraged to set their own targets based on factors such as geographic constraints, population density, and specific recreational needs.

Contemporary Approach: Communities might set goals ranging from 5 to 20 acres per 1,000 residents, depending on their unique circumstances and priorities.

Park Access and Distribution

Accessibility: NRPA recommends that all residents should have access to a park or green space within a 10-minute walk (approximately 0.5 miles) from their home. This focus on accessibility ensures that park benefits are equitably distributed across the community.

Distribution: For larger communities, ensure that parks are evenly distributed across different neighborhoods and are easily accessible by diverse modes of transportation, especially safe walkable routes.

Programming and Services

Diversity: Communities should offer a wide range of recreational programs that meet the diverse needs of their population, including youth, adults, seniors, and special populations. This may include sports leagues, fitness classes, arts and culture programs, and environmental education.

Staffing Levels

Staffing is crucial for maintaining facilities and delivering quality programming. NRPA provides guidance on staffing ratios, often suggesting a mix of full-time, part-time, and seasonal staff based on the size and scope of the park system.

Staffing by Park Acreage Benchmark: NRPA recommends approximately 1 full-time equivalent (FTE) maintenance staff member per 10 to 20 acres of developed parkland. This number can vary depending on the complexity of the park, the intensity of maintenance required, and the specific facilities within the park (e.g., sports fields, playgrounds, trails).

Programming and Operations Staff: For every 50 to 100 acres of parkland, NRPA suggests having 1 FTE dedicated to programming and operations. This staff is responsible for organizing events, managing facilities, and overseeing day-to-day operations.

Staffing by Number of Parks: NRPA recommends approximately 1 FTE staff member (including maintenance, administrative, and programming roles) per park, assuming the park is of average size and complexity. Smaller parks might not require a full-time staff member and could be maintained by part-time

Budget and Funding

NRPA annually surveys parks organizations across the country to provide quantitative data on several budget and funding metrics:

Per Capita Spending: NRPA Park Metrics reports suggest that the average spending per capita by park and recreation agencies across the U.S. is around $85-$90 per resident. However, this can vary significantly depending on the size of the city, regional cost of living, and specific needs of the community.

Operating Budget Per Acre: NRPA's Park Metrics also indicate that the median operating expenditure is around $6,000 to $8,000 per park acre. This includes costs for maintenance, staffing, utilities, and other operational needs.

Capital Expenditures: A common benchmark is that capital expenses (new developments, major renovations, etc.) should be a significant portion of the overall budget. A rough guideline is allocating 20-30% of the total budget to capital projects, though this can fluctuate based on current needs and existing infrastructure.

Auburn's Quantitative LOS

With NRPA's recommendations in mind, a straightforward quantitative analysis of the City's Level of Service (LOS) can be conducted. The following section evaluates Auburn's current park system against expected NRPA benchmarks to identify current performance and future needs. Ultimately, these quantitative findings will be integrated with the public involvement findings to develop a customized set of LOS standards. This approach, grounded in extensive community engagement, ensures that Auburn's parks and recreation system reflects the community's priorities, whether that means more green spaces, enhanced sports facilities, expanded trails, or additional cultural amenities.

LOS Standards & Overview

Table 4.1 presents the current Level of Service (LOS) based on Auburn's park classifications and recreational amenities inventory. The LOS analysis utilizes assumed low to median values for each category, considering

Table 4-1: Existing Facility Type & LOS Targets					
Facility Type	Current	Recommended Standard*	Current Ratio	Current Difference	Projected Difference****
Park Classification					
Mini-Parks (Pocket Parks)	16.71 acres	0.25 to 0.5 acres	0.19	-0.06	-0.1
Neighborhood Parks	51.23 acres	1 to 2 acres	0.57	-0.43	-0.55
Community Parks	283.31 acres	5 to 8 acres	3.14	-1.86	-3.14
Open Space	321.42 acres	5 to 10 acres	3.57	-1.43	-2.19
Special Use Areas	307.69 acres	Variable			
Total Parkland	980.35 acres	10 acres	10.88	+0.88	-1.44
Total # of Parks	57	1 park per 2000	46	+11	-
Trails	21.96**	.25 to .5 miles	0.24	-	-6.67
Recreation Amenity					
Baseball/Softball Fields	7	1 per 5,000	18.02	-9	-13
Soccer Fields	4	1 per 10,000	9.01	-5	-11
Football Fields	2	1 per 20,000 to 25,000	3.6	-2	-4
Multi-use Fields	6	1 per 10,000	9.01	-3	-5
Basketball Courts	18	1 per 5,000	18.02	-	-5
Tennis Courts	8	1 per 4,000	22.52	-13	-20
Playgrounds	33	1 per 1,000 children under 12***	18	+15	+3
Pickleball Courts	16	1 per 4,000	22.52	-6	-12
Volleyball Courts	2	1 per 10,000	9.01	-7	-9
Recreation Centers	1	1 per 25,000	3.6	-2.6	+3.5
Splash Pads	2	1 per 25,000	3.6	-1.6	-2.5
Dog Parks	2	1 per 50,000	1.8	-	-
Skate Parks	4	1 per 25,000	3.6	-	-.5
Golf Courses (18-hole)	1	1 per 50,000	1.8	-1	-1
Community Gardens (Plots)	16	1 per 10,000	9.01	+7	+5
Amphitheaters	1	1 per 50,000	1.8	-0.8	-1

* measured as acres per 1000 population

** Includes other trails maintained by others

*** Projected 2044 Population = 114,540

**** Assumed # of childen under 12 approximately 20% of overall population

Auburn's current population of 90,096 (as of 2024) and a projected population of 114,540 by 2044. Below is an overview and guideline for LOS quantifications, structured around common park classifications and key recreational elements.

Total Parkland LOS Analysis

Overview: Currently, the City of Auburn boasts a diverse portfolio of parks and recreation assets, totaling 57 sites and covering over 980 acres. This exceeds the lower end of the expected range for parkland based on NRPA guidelines. The NRPA typically recommends between 10 to 20 acres of parkland per 1,000 residents as a general standard. With Auburn's current population of 90,096 (as of 2024), the expected median total acreage of parkland would range from approximately 900 to 1,800 acres. Auburn's park system is therefore well-aligned with these recommendations, supporting the recreational needs of its residents today.

- Total Number: 57 parks
- NRPA Target Number of Parks Based on Population: 57 Parks
- Total Acreage: 980.35 acres
- Average Size: 21.97 acres
- NRPA Target Acreage Based on Population: 10-20 acres per 1000
- Current LOS: 10.88 acres per 1,000 residents
- Projected LOS: 8.56 acres per 1,000 residents
- Auburn Target LOS: 10 acres per 1,000 residents or additional 164 acres of total parkland by 2024

Conclusion/Recommendations: Auburn's current total acreage of parkland is generally within the expected range for a community of its size and physical context. However, when analyzing the distribution and average size of its park types, especially neighborhood and community parks, there are notable discrepancies compared to national standards.

According to the National Recreation and Park Association (NRPA), the recommended level of service (LOS) for community parks is between 5 to 8 acres per 1,000 residents. Auburn currently averages only 3.14 acres per 1,000 residents, which is below this recommended standard. For neighborhood parks, the NRPA suggests an LOS of 1 to 2 acres per 1,000 residents, but Auburn's current average is just 0.57 acres per 1,000 residents. This indicates a significant shortfall in the provision of both neighborhood and community parks relative to the city's population.

Furthermore, the NRPA recommends 5 to 10 acres of open space per 1,000 residents, yet Auburn currently provides only 3.57 acres per 1,000 residents. When factoring in land managed by other organizations, such as King County's Department of Natural Resources, this figure improves and aligns more closely with the recommended range.

Auburn exceeds expectations in total acreage due to the significant footprint of its Special-Use Facilities. This surplus is largely attributed to the inclusion of extensive environmental areas and the golf course, both of which are managed differently from traditional parks and offer limited access to the general public. While reclassifying the golf course as open space might enhance Auburn's Level of Service (LOS) for open space, the specific use, management practices, and limited public access associated with the golf course support its continued classification as a special-use area.

In summary, while the overall size of Auburn's park system aligns with general recommendations, there is a clear shortfall in the distribution of neighborhood and community parks. Additionally, while the city maintains over 30 beautification areas that enhance its aesthetic appeal, these spaces do not replace the need for more neighborhood and community parks to meet national standards and adequately serve the recreational needs of Auburn's residents.

Parklets / Mini Parks / Tot-Lots LOS Analysis

Overview: These parks serve small areas, often a single neighborhood or part of one. They typically feature amenities like playgrounds, benches, and small open spaces with no restrooms. incorporating more parklets and mini-parks can be an effective strategy for addressing Level of Service (LOS) deficiencies, especially in urban areas where space is limited. These smaller parks can provide critical, but disconnected, green space, recreational opportunities, and social gathering spots within densely populated neighborhoods. They are often easier and quicker to implement than larger parks, making them a practical solution to improve accessibility and equity in park distribution. However, they generally require the same level of maintenance and operational purview as larger local or neighborhood parks and, factoring in the increased travel time, can potentially become a lrger burden on park staff.

- Number: 13 parks
- Acreage: 16.71 acres
- Average Size: 1.28 acres
- Target Size: Typically less than 1 acre
- NRPA Target LOS: 0.25 to 0.5 acres per 1,000 residents
- Current LOS (2024): 0.19 acres per 1,000 residents
- Projected LOS (2044): 0.15 acres per 1,000 residents
- Draft NEW LOS: 0.25 acres per 1,000 residents
- Projected Deficit (Acres): 11.29 acres
- Service Radius: 1/4 mile or less

Conclusion/Recommendations: To address the projected decline in the Level of Service (LOS) for mini-parks, parklets, and tot-lots, it is recommended that the City prioritize the strategic addition of these smaller park facilities only as opportunities arise. Currently, the LOS stands at approximately 0.19 acres per 1,000 residents, which close to NRPA's minimum of .25, but without intervention, this will decrease to 0.15 acres per 1,000 residents by 2044. To maintain an adequate LOS, the City should aim to add approximately 11 acres of new park areas in this classification by 2044, ensuring continued access to these essential recreational spaces for the growing population.

Neighborhood Parks LOS Analysis

Overview: Local or neighborhood parks serve as the recreational and social hubs of a neighborhood. These parks are designed to be accessible by foot or bicycle and typically feature amenities such as playgrounds, athletic fields, picnic areas, sports courts, and open play areas. Some parks may also include restrooms and other supportive facilities. Currently, there is a shortage of local or neighborhood parks based on current park classifications, but the total parkland acreage across the city exceeds the cumulative standard.

- Number: 10 parks
- Acreage: 51.23 acres
- Average Size: 5.12 acres
- Target Size: Generally 5 to 10 acres
- NRPA Target LOS: 1 to 2 acres per 1,000 residents
- Current LOS (2024): 0.57 acres per 1,000 residents
- Projected LOS (2044): 0.45 acres per 1,000 residents
- NEW LOS: 1 acres per 1,000 residents
- Projected Deficit (Acres): 63.31 acres
- Service Radius: 1/4 to 1/2 mile

Conclusion/Recommendations: The current Level of Service (LOS) for neighborhood parks in Auburn is 0.57 acres per 1,000 residents, which is projected to decline to 0.45 acres per 1,000 residents by 2044. This projected LOS falls significantly below the recommended minimum standard of 1 acre per 1,000 residents. To meet this new standard by 2044, Auburn will need to add approximately 63 acres of new neighborhood parks. This strategic addition is critical to ensuring that the growing population has sufficient access to neighborhood park facilities, maintaining a high quality of life and community well-being.

Community Park Inventory and Needs Analysis

A community park is planned primarily to provide active and structured recreation op- portunities for young people and adults. They often exceed 10 acres in size and may have sports fields, water bodies, gardens, nature trails or similar features as the central focus of the park. Community parks can also provide indoor facilities to meet a wide range of recre- ation interests. They require more support facilities such as parking and restrooms than neighborhood parks. Community parks serve a much larger area than neighborhood parks and offer more facilities. Where there are no neighborhood parks, the community park can also serve the neighborhood park function. The community park service area covers a one to two mile radius.

Community Parks LOS Analysis

Overview: Community parks serve broader community needs, often featuring larger facilities or arrays of facilities types, e.g., tournament baseball field complexes, and a wider range of amenities, such as swimming pools, and community centers that are intended to support the entire community. The number of community parks a city like Auburn, WA, should have depends on several factors, including NRPA guidelines, local demand, and geographic considerations. The target acreage for community parks typically ranges from 20 to 50 acres per park or 5-8 acres per 1000 residents, according to NRPA guidelines. Using those metrics, Auburn, WA, should have about 2 to 4 community parks based on its population, with an ideal total acreage between 40 - 200 acres. This ensures that the parks are large enough to accommodate a variety of amenities, such as sports fields, playgrounds, walking trails, and open spaces, while serving a significant portion of the population effectively.

- Number: 14 parks
- Acreage: 283.31 acres
- Average Size: 20.2 acres
- Target Size: Generally 20 to 50 acres
- NRPA Target LOS: 5 to 8 acres per 1,000 residents
- Current LOS (2024): 3.14 acres per 1,000 residents
- Projected LOS (2044): 2.47 acres per 1,000 residents
- NEW LOS: 3.5 acres per 1,000 residents
- Projected Deficit (Acres): 116.69 acres
- Service Radius: 1 to 2 miles

Conclusion/Recommendations: The current Level of Service (LOS) for community parks in Auburn is 3.14 acres per 1,000 residents, but it is projected to decline to 2.47 acres per 1,000 residents by 2044. This anticipated reduction highlights a significant shortfall, with a projected deficit of over 116 acres in this park classification. To meet the needs of Auburn's growing population and maintain the recommended LOS, the City will need to prioritize the addition of these 116 acres of new community parks by 2044.

Future community park sites should be strategically selected in areas like West Hill and Lea Hill, where development is ongoing, and large gaps exist between existing parks. Additionally, other residential areas, particularly in the northeast and southeast corners of the City, are on the edges of existing service areas and will require new community park acquisitions and development as population growth continues.

Two key sites, Jacobsen Tree Farm and the 104th Ave SE property along the Green River, offer significant potential for development into community parks. These sites account for 44 acres of undeveloped land that will be crucial in addressing the City's parkland needs. The development of these areas into community parks will help close the gap in service coverage and ensure that Auburn's residents continue to have access to ample recreational spaces, supporting the overall quality of life in the community.

Special Use Parks LOS Analysis

Overview: Unlike other recreational classifications, special use facilities serve very unique, often singular functions and include unique features that add depth and variety to the city's recreational and open space amenities. By integrating these specialized spaces, Auburn creates a vibrant public landscape that reflects the city's identity and enhances recreational opportunities for the community. Examples of these facilities include pocket landscape areas, community gardens, streetscapes, unique sections of the Environmental Park, viewpoints, historic sites, public art installations, and traffic islands.

- Number: 14
- Acreage: 307.69 acres
- Auburn Average Size: 21.9 acres
- Target Quanitity & Size: Varies depending on the facility type and use
- Target LOS: Depends on community needs; not typically defined by a strict LOS but considered based on demand.
- Service Radius: Typically serves the entire community or region.

Conclusion/Recommendations: Past and more recent survey comments indicate that residents have a strong desire to enhance the City's aesthetics by increasing the planting of street trees, flowers, and other greenery. Integrating these beautification efforts, along with the development of additional special-use areas as opportunities arise, presents a valuable chance to improve the overall appearance of the community.

However, there are currently no specific targets or goals for purposefully developing more special-use areas. Introducing a significant number of small, specialized facilities could result in higher-than-expected maintenance and operational costs for the department. As development continues and additional land is acquired—including smaller, less usable areas within the public right-of-way—it is essential to remain vigilant in assessing these opportunities. Evaluating them for their unique, heritage, natural, and activity-centric qualities that could provide community value is recommended.

The Parks Department should continue collaborating with relevant departments to ensure that landscaping standards support the inclusion of street trees and other plantings, further integrating existing green spaces and improving their connectivity. This will not only enhance the city's aesthetics but also contribute to public safety. Additionally, encouraging the development of boulevard-style streets in key locations can further improve the visual appeal and functionality of the urban environment.

Natural Resource Areas and Greenways (Open Space)

Overview: Open space areas are vital for protecting and preserving natural landscapes, wildlife habitats, and green corridors. The purpose of these amenities is to maintain natural landscapes, safeguard wildlife habitats, and protect critical natural infrastructure, while also providing residents with opportunities for passive recreation and environmental education, such as hiking and birdwatching.

NRPA provides general guidelines for the amount and size of open space and natural areas within a community. Typically, these guidelines recommend that a city should maintain between 7 to 10 acres of open space and natural areas per 1,000 residents. For a city the size of Auburn, with a population of 90,096 (as of 2024), this would equate to approximately 630 to 900 acres of open space and natural areas. Currently, Auburn has 321 acres of dedicated open space areas. However, when considering other greenways and open spaces within the city that are not maintained by the City of Auburn, the total approaches the minimum target of 630 acres.

Given Auburn's current inventory of open space areas available to residents, the city is close to meeting the lower range of the NRPA's recommendations for open space and natural areas. Auburn's commitment to preserving these areas aligns well with NRPA guidelines, and the city's existing acreage of natural areas and open spaces is well-positioned to support the ecological and recreational needs of its residents. This ensures that Auburn continues to provide valuable natural amenities as the community grows.

- Number: 6 Open Space and Natural Areas
- Total Acreage: 321.42
- Average Size: 53.57 acres
- Target Acreage: 630-900 acres
- NRPA Target LOS: 5 to 10 acres per 1,000 residents
- Current LOS (2024): 3.57 acres per 1,000 residents
- Projected LOS (2044): 2.81 acres per 1,000 residents

- NEW LOS: 4 acres per 1,000 residents
- Projected Deficit (Acres): 136.58 acres
- Service Radius: Typically regional, with users traveling farther to access these areas

Conclusion/Recommendations: Auburn's current Level of Service (LOS) for open space areas is 3.57 acres per 1,000 residents as of 2024. However, with the city's projected population growth, this LOS is expected to decline to 2.81 acres per 1,000 residents by 2044. This decrease places Auburn below both the National Recreation and Park Association's (NRPA) target LOS of 5 to 10 acres per 1,000 residents and the City's draft new LOS standard of 4 acres per 1,000 residents.

The decision to increase the LOS for open space reflects a growing recognition of the critical role these areas play in promoting climate change resiliency, managing flood hazards, supporting wildlife habitats, and mitigating the effects of urban heat on aging populations. As climate change continues to impact weather patterns, open spaces can serve as vital buffers, absorbing excess rainfall and reducing the risk of flooding, particularly in vulnerable areas along rivers and low-lying regions.

Furthermore, open spaces provide essential habitats for wildlife, helping to preserve biodiversity within the city. These natural areas are increasingly important as urbanization encroaches on green spaces, putting pressure on local ecosystems. By expanding and protecting open space, Auburn can help ensure that wildlife populations continue to thrive, maintaining ecological balance and enhancing the natural beauty of the community.

In addition to their environmental benefits, open spaces are crucial for the health and well-being of Auburn's residents, especially as the population ages. Access to nature has been shown to reduce the effects of heat islands in urban areas, where concrete and asphalt trap heat, leading to higher temperatures. These elevated temperatures can be particularly harmful to older adults, who are more susceptible to heat-related illnesses. Expanding open space provides shaded areas and cooling effects that are vital for protecting vulnerable populations.

To meet the new LOS standard of 4 acres per 1,000 residents by 2044, Auburn will need to acquire and develop an additional 136.58 acres of open space. This strategic expansion is essential not only to meet recreational needs but also to ensure the city's resilience in the face of climate change and urbanization. By investing in open spaces, Auburn can enhance its ability to manage environmental challenges, protect its natural heritage, and promote the long-term health and well-being of all its residents.

Trails LOS Analysis

Auburn, WA, boasts an extensive network of trails that weave through the city's diverse landscapes, offering residents and visitors a range of recreational opportunities. These trails, often referred to as linear parks, typically follow natural and man-made features such as stream corridors, abandoned railroads, or power line easements. They serve multiple purposes, including providing pathways for walking, running, and biking, as well as creating interpretive areas, open spaces, and landscaped zones.

The city's trail system is designed with minimal development to preserve the natural environment, focusing on essentials such as trailheads, educational signage, benches, and picnic tables. However, in areas with more space, like wide power line easements, there is potential for more extensive development, allowing for a broader range of recreational uses while still maintaining the primary function of these linear parks.

Auburn currently has 21 different trail segments of varying purposes covering a total of 21.96 miles across the city, however 6.75 miles of those trails are within existing parks (see Table 2-5.)

- Total Miles of Trails (All): .25 to .5 miles per 1,000 residents
- Total Miles of Trails (All): .25 to .5 miles per 1,000 residents
- Expected NRPA Standard: .25 to .5 miles per 1,000 residents
- Existing Ratio: Total: 0.28 miles per 1,000 residents
- Existing Inventory: 21.96 miles
- Current Need: 0.0 miles
- Future Need (2044): 6.69 miles
- NEW LOS: 0.125 miles per 1,000 residents

Conclusion/Recommendations: Auburn's current ratio of 0.24 miles of developed trail parkland per 1,000 residents aligns closely with the minimum expected average. However, with the projected population increase, there is an anticipated need for an additional 6 miles of trails by 2044. Given the existing opportunities for new trail development and the high level of public interest in trails, it is recommended to slightly adjust the standard to 0.125 miles of developed trail parkland per 1,000 residents. Although Auburn's current inventory of trails already exceeds the adopted standards, further expansion and development are essential to ensure connectivity across different areas of the city and beyond. The demand for an interconnected trail system is expected to grow, particularly as residents, especially post-pandemic, continue to express a strong interest in trails for

recreation and as an alternative means of commuting, as identified in the Statewide Comprehensive Outdoor Recreation Plan (SCORP). This underscores the importance of enhancing Auburn's trail network to meet the evolving needs of its community.

Future Trails/Linear Park Development:

There are several opportunities to develop additional trails and linear parks in Auburn providing local and regional trail systems. Considering the interest in trail activities as demonstrated by public invovlement results and national recreation trends, these additional trails are worth pursuing. Identified locations for potential loop trails within parks, new linear parks, or extensions of existing linear parks include:

- BPA Power Line Easement (Lea Hill to Green River Road)
- Green River TRail (Planned)
- White River Trail (A Street to Interurban Trail)
- Mill Creek Corridor
- Rotary Park
- Shaughnessy Park
- Fulmer Park

Goals & Objectives









The Auburn Parks, Arts, and Recreation Department is dedicated to preserving the city's natural beauty through a vibrant and well-maintained system of parks, open spaces, and trails. Our mission is to enrich the lives of Auburn's residents by providing diverse recreational and cultural opportunities that foster a strong sense of community, promote health and well-being, and celebrate the unique natural landscapes that define our city.

The goals and objectives outlined in this chapter have been meticulously crafted to align with the requirements of the Growth Management Act (GMA) and are the result of an extensive and thoughtful planning process. This process drew upon a range of valuable resources, including insights from the 2015 Park, Arts, and Recreation Open Space Plan, findings from the 2023 Parks, Recreation, and Open Space Survey, and input from dedicated Parks and Recreation staff. Additionally, we carefully analyzed recreation trends, participation rates, and the current state of our parks to ensure that these goals are both forward-looking and responsive to the evolving needs of our community.

Through this comprehensive approach, we aim to create a park system that not only meets the present demands but also anticipates future growth and challenges. Our commitment is to maintain and enhance Auburn's parks and recreation offerings, ensuring that they continue to serve as vital community assets for generations to come.

Goal 1: Serve all residents and provide a broad range of programs and facilities in order to serve all residents regardless of age or ability.

The Auburn Parks, Arts, and Recreation Department is committed to providing accessible leisure and recreational programs for all residents, with a focus on accommodating special needs. To ensure awareness of these programs, the City has adapted its marketing strategies, blending innovative social media with traditional outreach to engage the community effectively.

Goal 1: Objectives

1A. Provide a variety of recreation facilities and programs that will improve the physical and mental well being of community members.

1B. Provide a system of neighborhood and community parks so that residents live within a half mile walking distance to a developed park.

1C. Develop multi-use facilities to increase flexibility to meet recreational trends as demonstrated by community input.

1D. Continue to identify under-served segments of the population and develop programs that will satisfy unmet needs.

1E. Develop marketing strategies allowing the widest possible distribution of information concerning park facilities and recreation programs.

1F. Provide programs and facilities designed for maximum affordability to local residents.

1G. Continue to improve upon and expand the Fee Waiver and Scholarship Programs, where possible, to allow more low income youth and seniors to participate at reduced rates.

1H. Continue to improve access for the disabled and seniors by providing wheelchair ramps and other appropriate facilities in parks where they do not currently exist.

1I. Continue to maintain an open decision-making process that allows opportunity for resident input.

1J. Parks and Recreation Department staffing levels shall be sufficient to maintain and improve the existing cultural and recreation programs. As programs expand or additional parks are developed, the impact on current staff levels and the need for additional staff will be evaluated.

Goal 2: Provide a balanced mix of passive and active recreation opportunities to promote healthy and balanced activities.

The Auburn Parks and Recreation Department recognizes the importance of offering diverse recreational opportunities that cater to all residents. To promote a healthy and balanced lifestyle, our goal is to provide a well-rounded mix of both active and passive recreation options. This approach ensures that everyone, regardless of their activity level, can enjoy and benefit from the City's parks and recreational facilities.

Goal 2: Objectives

2A. Develop a park system that provides facilities for social, cultural and physical activities.

2B. Provide parks areas that accommodate passive recreation opportunities such as picnicking and walking.

2C. Provide park areas that accommodate active recreation such as ballfields, skate parks, spray parks, sports courts, etc.

2D. Track changing trends at the local, state, and national levels. Respond with appropriate programs and facilities to meet changing needs as funding and budgets are available and meet the level of service expectations of the residents of Auburn.

2E. Provide access to healthy foods through the continued operation of the Auburn Farmer's Market and Community Gardens.

Goal 3: Provide a system of high quality parks that are well maintained and aesthetically pleasing.

Parks are one of the most visible public features in a City, their design and maintenance can influence people's perceptions of the community. Long term maintenance, good design, and the use of high quality materials will all affect the appearance of a park for years to come.

Goal 3: Objectives

3A. Develop Level of Service Standards that are consistent with NRPA standards to assure that residents' expectations are met.

3B. Parks shall be intentionally designed to require low maintenance, and low water and energy consumption. Higher maintenance features like fountains or annual beds are reserved for high visibility locations or as appropriate.

3C. Select environmentally friendly materials that are durable and aesthetically pleasing.

3D. Parks shall exhibit a "cared for" appearance through close attention to maintenance.

3E. In order to maintain parks in a safe and attractive condition, maintenance staff levels will be evaluated with additions of new park land or facilities.

3F. Renovate deteriorating features. Identify conditions that require redesign or construction of new facilities; schedule and budget necessary changes in the City's Capital Facilities Plan.

3G. Conduct regularly scheduled inspections to identify necessary repairs and upgrades to ensure safe conditions.

Goal 4: Provide a park system that contributes to a positive city image for Auburn.

Auburn's Comprehensive Plan contains goals and objectives to enhance the City's identity by ensuring a quality visual environment. Parks are an effective tool in improving visual appearance, but many of Auburn's parks are tucked away in residential neighborhoods, unseen and unknown except to residents. This lack of visibility hinders the parks from effectively contributing to the city's overall appearance. Increased visibility and high quality design are paramount to "advertising" our community as a good place in which to live and work.

Goal 4: Objectives

4A. Select new park sites with high visibility and access. This may be accomplished by locating at least one side of larger parks along arterial streets.

4B. Increase the quantity of trees, shrubs and ground covers in parks.

4C. Continue to work on Tree City USA goals for better Urban Forestry design and tree preservation.

4D. Create a green spaces in the downtown core that will be a focal point for community activities and stimulate economic growth.

4E. Incorporate artwork as part of new park development or when upgrading existing parks or other public facilities.

Goal 5: Acquire and manage important open spaces in the City of Auburn.

Undeveloped open spaces contribute to the well-being of our community in many ways. We value them for their ability to provide buffers from urban encroachment; to provide opportunities for recreation; to provide public access to creeks, rivers and other water bodies; to create distinctive settings within the city; to provide connections between different areas for both people and wildlife; as well as offering health and safety benefits.

Goal 5: Objectives

5A. Maintain and protect a system of forested corridors and buffers to provide separation between natural areas and urban land uses.

5B. Target significant open space areas in the City, with emphasis on their planning and acquisition. Target areas include the land along the Green and White Rivers, steep hillsides, Mill Creek Corridor and West Hill Watershed.

5C. Explore all possible funding mechanisms to enable the acquisition of open space on a regular basis to identify properties as they become available.

5D. City owned open space lands shall be accessible to the public wherever possible and appropriate.

5E. Provide adequate management and maintenance of public open spaces, ensuring their ability to provide environmental benefits and wildlife habitat.

5F. When mitigation is required, develop a monitoring and maintenance plan to ensure successful establishment.

5G. Involve the community in habitat restoration activities through the City's annual Clean Sweep event, community service days, and an adopt a park program.

5H. Determine the ecosystem service value reach open space and park space continues to address climate resiliency goals.

Goal 6: Provide a network of pedestrian and bicycle trails.

To enhance Auburn's recreational and transportation infrastructure, we aim to create a comprehensive network of bike and pedestrian trails that serves both commuters and recreational users. This network will be strategically developed to connect key areas within the city and extend to neighboring communities. By prioritizing the acquisition of land, especially along the Green River, and focusing on trail designs that highlight Auburn's unique natural landscapes, we can offer diverse experiences to residents and visitors alike. Our commitment also includes ensuring accessibility for all users, enhancing safety through thoughtful design, and implementing a cohesive wayfinding system. To sustain this network, securing ongoing funding for maintenance will be essential. Through these objectives, Auburn will establish a robust and interconnected trail system that promotes active transportation, environmental stewardship, and community well-being.

Goal 6: Objectives

6A. Develop a network of trails created or extended to provide adequate coverage for both commuting and recreational cyclists. Locations for east/west trails shall be identified and developed.

6B. Acquisition of land for the proposed Green River Trail shall continue to be a priority.

6C. Trail design and layout shall take advantage of unique natural locations and provide access to a variety of landscapes and habitats.

6D. Participate in planning activities for regional trails in South King County and North Pierce County.

6E. Explore possibilities for new trail connections between Auburn and neighboring communities.

6F. Develop and maintain trails to comply with Americans with Disabilities Act.

6G. Provide safe trail system by discouraging crime through environmental design concepts.

6H. Develop a standardized interpretive and way-finding program to be used through- out our trail system.

6I. Identify and provide funding to maintain existing trail systems.

Goal 7: Expand our existing park inventory where level of service standards are not being met, with an emphasis on the West Hill and Lea Hill areas of the City.

Our goal is to prioritize the development of community and linear parks with trail systems, focusing on larger, multi-use spaces to meet Auburn's diverse needs. We will actively pursue funding to acquire and preserve key parklands, emphasizing shoreline properties for public access. To minimize land use conflicts, particularly in residential areas, we will implement thoughtful design and strategic placement. High-quality design standards will guide new park developments, supported by comprehensive Master Plans and public input. Additionally, we aim to create vibrant public gathering spaces in the downtown core to enhance community life.

Goal 7: Objectives

7A. Make the development of community parks and linear parks with trail systems a priority over small neighborhood parks when possible and appropriate.

7B. Apply for King County Conservation Futures and Recreation & Conservation Office grants and other available funding sources to acquire and preserve park land and natural areas.

7C. Acquisition of community amenities, such as shoreline property, shall be emphasized, to preserve or allow public access to these special places.

7D. Minimize land use conflicts between parks and other uses, and use sensitive design measures when locating parks in residential neighborhoods.

7E. Criteria for new park development ensures consistent high quality design meeting the needs of the community.

7F. Develop Master Plans for undeveloped park properties and incorporate future park development costs into the Capital Facilities plan as appropriate.

7G. Schedule public meetings as a part of the Master Planning process to ensure that residents' voices are heard and needs are met when developing new parks.

7H. Develop public gathering spaces in the downtown core.

Goal 8: Establish park and trail levels of service provided in the PROS plan.

To ensure Auburn's parks and recreational spaces continue to meet the needs of a growing population, we are committed to maintaining a consistent level of investment per capita. Currently, the City provides over 10 acres of parkland per 1,000 residents, a standard we aim to uphold even as our community expands. By sustaining this investment, Auburn will preserve its high quality of life and ensure that all residents have ample access to well-maintained and accessible parks and green spaces.

Goal 8: Objectives

8A. Fields, Courts, Tracks, Gyms: Improve the equivalent population per Auburn facility type based on expected demand and need ideintified by public survey responses.

8B. Informal Recreation Facilities: Increase the number of Picnic Shelters, Off Leash Areas, Playgrounds, Paths, Community Gardens, Flexible Open Turf Areas, Gathering Spaces and Amphitheaters: Resident equivalent population per facility consistent with the current ratio.

8C. Trails: Increase the number of per trail miles to be consistent with .25 miles per 1000 residents.

8D. Parks: Maintain a minimum total parkland Level of Service (LOS) of over 10 acres per 1,000 residents, regardless of park classification.

Capital Improvement Program









The vision articulated in this PROS Plan is not only a mandate of the Growth Management Act but is also essential to enhancing the quality of life and driving economic development in the City of Auburn. This plan is both pragmatic, addressing the immediate needs of current residents, and forward-looking, preparing the park system to meet future demands while delivering economic, social, and environmental benefits. This section outlines the City's approach to incorporating public feedback through a comprehensive Capital Improvement Program (CIP), presented initially in tabular form and followed by detailed descriptions of conceptual improvements planned for the next six years.

Serving as a crucial blueprint, this plan significantly impacts residents' quality of life via Auburn's Parks & Recreation system. The effective administration of these services by the City's limited staff requires a committed allocation of budget resources. Realizing this vision also depends on grant funding and the continued dedication of community volunteers. Annual investments in personnel, equipment, and supplies are vital for maintaining a diverse range of outdoor recreational opportunities, ensuring safety, and meeting public expectations.

Aligned with Auburn's strategic goals and integrated into the principles of the Comprehensive Plan, this PROS Plan promotes a safe, healthy, and walkable community, cultural enrichment, and environmental conservation, reflecting the aspirations and quality of life desired by the city's residents.

This section emphasizes Auburn's commitment to addressing public feedback and improving system deficiencies by detailing a comprehensive CIP. This program includes specific park-related projects and broader recommendations aimed at closing service gaps. The proposals, summarized in tables and elaborated upon in detail, outline enhancements and conceptual improvements scheduled for implementation over the next six years. Additionally, the inclusion of long-term visionary projects shows a readiness to seize opportunistic improvements based on market conditions or funding availability.

At the core of this plan are key recommendations designed to address current challenges, anticipate future needs, maximize funding flexibility, and align with public preferences. It thoroughly considers the range of parks and recreation amenities available within the city, ensuring that Auburn's park system evolves in a balanced and sustainable manner.

Developing The Capital Improvement Program

This plan spans a six-year period from 2024 through 2030, aiming to guide park and recreation improvements while also presenting a conceptual vision for additional long-term enhancements aligned with Auburn's projected growth. It is designed to be flexible and dynamic, recognizing that funding availability, public needs, and political priorities may shift over time. As such, the plan is not a rigid script but rather a strategic guide adaptable to unforeseen opportunities that may better serve the public.

The listed capital improvement projects are initially categorized into six-year and long-term (20-year) CIP lists based on specific recommendations. However, the implementation timeline is subject to various factors, including design and permitting durations, other critical public works projects, grant funding cycles, available budgets, and city staff capacity. These timelines are for planning purposes only and do not represent a commitment to implementation in any particular year. The plan should remain a living document, continually updated as conditions evolve.

The CIP project list reflects public demand and needs, validated through input from city staff, commission members, and the City Council. The actual implementation over the next six years will depend on available funding, success in securing grants, and essential maintenance and repair needs. In developing the CIP, several aspects were considered to ensure it is robust yet flexible, capable of adapting to changing circumstances and opportunities.

Strategic Project Development and Funding Opportunities

Improving the parks system is a collaborative effort, not solely reliant on city funding. Auburn should actively pursue grants and donations from various sources to maximize public investment in parks, recreation, and open space facilities. Specific improvements should be matched with appropriate Recreation Conservation Office programs, such as the Youth Athletic Field or Land Water Conservation Fund grants, which have a history of being funded. Additionally, many trail and access projects can integrate with Safe Route to School grants and other transportation-related projects. Combining park projects with transportation and economic development initiatives will enhance implementation flexibility and open up further funding opportunities from county, state, and federal programs.

Auburn's Fiscal Sources

Auburn, WA's parks budget is supported by a diverse mix of funding sources. The City's General Fund, which includes revenues from property and sales taxes, is a primary source of funding for the Parks, Arts, and Recreation Department. Additional revenue comes from fees collected for recreational programs, facility rentals, and special events. The City also actively pursues grants from sources like the Washington State Recreation and Conservation Office (RCO), King County Conservation Futures, and federal programs such as the Land and Water Conservation Fund (LWCF). To address the demands of population growth, Auburn charges impact fees on new developments to fund the expansion of parks and recreational facilities. The budget is further supplemented by a portion of the Real Estate Excise Tax (REET) and a dedicated sales tax, which is 1/10th of 1% of the countywide sales tax. Occasionally, the City issues bonds for large-scale park projects, which are repaid over time. Additional funding comes from donations, sponsorships, and partnerships with local businesses, non-profits, and other governmental agencies, all of which contribute to maintaining and enhancing Auburn's park system.

Estimate of Probable Cost

This CIP includes preliminary estimates of construction costs for recommended improvements at each park and city-wide. These estimates are intended for budgeting and scoping future design and construction projects and are subject to change based on site conditions, final design, and market circumstances. The estimates are based on current park master planning projects and include considerations for inflation, annual cost escalators, design contingencies, permitting, and other soft costs. However, staff time costs are not included in these estimates.

Performance and Monitoring

Auburn's plan addresses the level of service and needs for parks, recreation, open spaces, and trails identified at the time of the plan's creation. Recognizing the dynamic nature of communities and outdoor spaces, this plan is designed to be flexible and adaptable in its implementation. To monitor progress and adapt to changing circumstances, including new grant and funding sources, the following actions should be taken annually during the capital improvement budgeting cycle:

Annual Prioritization Review:

City staff and volunteers should conduct annual evaluations to determine if any changes to the park system are necessary, especially considering funding availability or demographic shifts.

Plan Update:

Beginning in early-to-mid 2030, a formal update process should engage Auburn residents, staff, and committee members to review changing service needs, propose new capital improvements, and renew eligibility for the Washington Recreation and Conservation Office (RCO) programs for the next performance period. By maintaining this proactive and adaptive approach, Auburn can ensure that its parks and recreational facilities continue to meet the evolving needs of its community.

Park Development:

The development of more mini-parks (under one or two acres) is not encouraged. Mini-parks have not been found to be as successful as larger community parks, because they tend to serve very small populations and are difficult and expensive to maintain. Developers may have the opportunity to develop neighborhood parks that are maintained by the local homeowners association but meet the City's park standards.

Unforeseen Threats to the CIP Strategy

Several unforeseen threats could impact the strategy and implementation of Auburn's Capital Improvement Program (CIP):

Economic Downturns:

A significant economic recession could reduce available funding from local, state, and federal sources, impacting the ability to finance planned projects.
Natural Disasters: Events such as earthquakes, floods, or wildfires could damage existing infrastructure and necessitate reallocation of funds for emergency repairs and rebuilding efforts.
Pandemics or Public Health Crises: Situations similar to the COVID-19 pandemic could disrupt project timelines, reduce workforce availability, and shift funding priorities towards health and safety measures.
Policy and Regulatory Changes: New laws or regulations at the local, state, or federal level could alter funding eligibility, increase costs, or impose new requirements on project implementation.
Environmental Issues: Unforeseen environmental challenges, such as soil contamination or endangered species habitats, could delay or complicate project execution.
Community Opposition: Public opposition or legal challenges to specific projects could result in delays or necessitate project modifications.
Technological Changes: Rapid advancements in technology may require updates to project plans or could render certain planned improvements obsolete.
Market Fluctuations: Changes in the cost of materials and labor due to market volatility can significantly impact project budgets and timelines.
Considering these potential threats, the CIP must remain adaptable, ensuring that Auburn can respond effectively to changing conditions and continue to meet the needs of its residents.



Table 5-1: Capita;l Facilities Plan Projects & Financing Municipal Parks Construction Fund (See the Capital Facilities Plan sheets for details on the following numbers.)								
Capacity Projects:		**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
Auburndale Park II								
	Capital Costs	-	-	$125,000	-	$2,000,000	-	$2,125,000
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	-	-	-	-	$1,000,000	-	$1,000,000
	Other (TBD)	-	-	$125,000	-	$1,000,000	-	$1,125,000
BPA Trail on Lea Hill								
	Capital Costs	-	-	-	-	150,000	-	$150,000
	Funding Sources:							
	Fund Balance	-	-	-	-	150,000	-	$150,000
	Grants (Fed,State,Local)	-	-	-	-	-	-	-
	KC Prop 2	-	-	-	-	-	-	-
Fulmer Park Turf Fields								
	Capital Costs	-	-	-	-	-	-	-
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	-	-	1,800,000	-	-	-	1,800,000
	Park Impact Fees	-	-	-	-	-	-	-
	KC Prop 2	-	-	-	-	-	-	-
Game Farm Park Improvements								
	Capital Costs	200,000	-	-	-	-	-	200,000
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	200,000	1,500,000	-	-	-	-	1,700,000
	Park Impact Fees	-	500,000	-	-	-	-	500,000
Jacobsen Tree Farm Development								
	Capital Costs	125,000	5,000,000	-	-	5,000,000	-	10,125,000
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	-	1,000,000	-	-	1,000,000	-	2,000,000
	KC Prop 2	-	-	-	-	-	-	-
	Other (TBD)	-	2,000,000	-	-	2,000,000	-	4,000,000
	Park Impact Fees	125,000	2,000,000	-	-	2,000,000	-	4,125,000

Table 5-1: Capita;l Facilities Plan Projects & Financing Municipal Parks Construction Fund (See the Capital Facilities Plan sheets for details on the following numbers.)								
Capacity Projects:		**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
Lakeland Hills Nature Area								
	Capital Costs	-	-	400,000	-	-	-	400,000
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	-	-	200,000	-	-	-	200,000
	Park Impact Fees	-	-	200,000	-	-	-	200,000
Miscellaneous Parks Improvements								
	Capital Costs	150,000	150,000	150,000	150,000	150,000	150,000	900,000
	Funding Sources:							
	Fund Balance	50,000	50,000	50,000	50,000	50,000	50,000	300,000
	Grants (Fed,State,Local)	-	-	-	-	-	-	-
	KC Prop 2	150,000	150,000	150,000	150,000	150,000	150,000	900,000
	Park Impact Fees	100,000	100,000	50,000	50,000	50,000	50,000	400,000
Park Acquisitions/Development								
	Capital Costs	125,000	125,000	125,000	125,000	125,000	125,000	750,000
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	-	-	-	-	-	-	-
	KC Prop 2	125,000	125,000	125,000	125,000	125,000	125,000	750,000
Sunset Park Improvements								
	Capital Costs	-	-	-	-	-	-	-
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Park Impact Fees	350,000	-	1,500,000	-	-	-	1,850,000
	Other (TBD)	-	-	500,000	-	-	-	500,000
West Hill Park Acquisition and Development								
	Capital Costs	-	-	750,000	1,000,000	-	-	1,750,000
	Funding Sources:							
	Fund Balance	-	-	-	-	-	-	-
	Grants (Fed,State,Local)	-	-	400,000	500,000	-	-	900,000
	Park Impact Fees	-	-	350,000	500,000	-	-	850,000

Table 5-1: Capita;l Facilities Plan Projects & Financing Municipal Parks Construction Fund (See the Capital Facilities Plan sheets for details on the following numbers.)								
Capacity Projects:	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
Subtotal, Capacity Projects:							
Capital Costs	600,000	5,275,000	1,550,000	1,275,000	7,425,000	275,000	16,400,000
Non-Capacity Projects:							
Dykstra Footbridge							
Capital Costs	-	-	-	-	-	-	-
Funding Sources:							
Fund Balance	-	-	-	-	-	-	-
ARPA funding	40,000	-	-	-	-	-	40,000
Other (TBD)	-	-	-	-	-	-	-
Fairway Drainage Improvement							
Capital Costs	30,000	30,000	30,000	30,000	30,000	30,000	180,000
Funding Sources:							
Fund Balance	-	-	-	-	-	-	-
Grants (Fed,State,Local)	-	-	-	-	-	-	-
REET 2	30,000	30,000	30,000	30,000	30,000	30,000	180,000
Capacity Projects:	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**Total**
Capacity Projects	600,000	5,275,000	1,550,000	1,275,000	7,425,000	275,000	16,400,000
Non-Capacity Projects	30,000	30,000	30,000	30,000	30,000	30,000	180,000
Total Costs	630,000	5,305,000	1,580,000	1,305,000	7,455,000	305,000	16,580,000
Fund Balance	50,000	50,000	50,000	50,000	200,000	50,000	450,000
Grants (Fed,State,Local)	200,000	2,500,000	2,400,000	500,000	2,000,000	-	7,600,000
Grants - Private	-	-	-	-	-	-	-
KC Prop 2	275,000	275,000	275,000	275,000	275,000	275,000	1,650,000
ARPA funding	40,000	-	-	-	-	-	40,000
Park Impact Fees	575,000	2,600,000	2,100,000	550,000	2,050,000	50,000	7,925,000
REET 2	30,000	30,000	30,000	30,000	30,000	30,000	180,000
Other (TBD)	-	2,000,000	625,000	-	3,000,000	-	5,625,000
Total Funding	1,170,000	7,455,000	5,480,000	1,405,000	7,555,000	405,000	23,470,000

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Brannan Park Improvements**
Project No:
Project Type: **Capacity**
Project Manager: Thaniel Gouk

Description:

Court upgrades, trail improvements, and new synthetic fields.

Progress Summary:

Future Impact on Operating Budget:

Increased utility costs of $2,000; lessened maintenance requirements for grass fields.

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	300,000	-	300,000
Impact Fees	-	-	-	-	-
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**300,000**	**-**	**300,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Municipal Parks Construction Fund	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	-	1,000,000	1,300,000
Impact Fees	-	-	-	500,000	500,000
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**1,500,000**	**1,800,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Capital Facilities Plan

Six Year Capital Facilities Plan, 2025-2030

Capital Projects Fund

Project Title: **Golf Course Maintenance Building**
Project No:
Project Type: **Capacity**
Project Manager:

Description:

Replace dilapited mainteance building at the Auburn Golf Course.

Progress Summary:

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**-**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Municipal Parks Construction Fund	-	350,000	-	-	350,000
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	300,000	-	-	300,000
Other	-	-	-	-	-
Total Funding Sources:	**-**	**650,000**	**-**	**-**	**650,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan
Capital Projects Fund

Project Title: **Auburndale Park II**
Project No: **gpbd05**
Project Type: **Capacity**
Project Manager: **Thaniel Gouk**

Description:

Develop a Master Plan, improve the existing trail system and install signage and play structure.

Progress Summary:

Future Impact on Operating Budget:

Increased utility costs of $2,000

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other TBD	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**-**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	1,000,000	-	1,000,000
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other TBD	125,000	-	1,000,000	-	1,125,000
Total Funding Sources:	**125,000**	**-**	**2,000,000**	**-**	**2,125,000**
Capital Expenditures:					
Design	125,000	-	-	-	125,000
Right of Way	-	-	-	-	-
Construction	-	-	2,000,000	-	2,000,000
Total Expenditures:	**125,000**	**-**	**2,000,000**	**-**	**2,125,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **BPA Trail on Lea Hill**
Project No: **gpbd23**
Project Type: **Capacity**
Project Manager: **Thaniel Gouk**

Description:

Develop a feasibility study related to constructability of a pedestrian trail linking the Jacobsen Tree Farm site to the west end of Lea Hill. This trail would follow the alignment of the Bonneville Power Administration (BPA) transmission lines from 132nd to 108th Avenue SE. Construction would be in phases based on constructability.

Progress Summary:

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Unsecured (State RCO)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
*Other (KC Prop. 2)**	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**-**
Capital Expenditures:					
Predesign	-	-	-	-	-
Design	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Fund 321 -Unrestricted Fund Balance	-	-	150,000	-	150,000
Grants- Unsecured (State RCO)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
*Other (KC Prop. 2)**	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**150,000**	**-**	**150,000**
Capital Expenditures:					
Predesign	-	-	25,000	-	25,000
Design	-	-	125,000	-	125,000
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**150,000**	**-**	**150,000**

Grants / Other Sources:

Project Title: **Cedar Lanes Pump Track & Amenities**
Project No: **cp2127**
Project Type: **Capacity**
Project Manager: **Thaniel Gouk**

Description:

Construct a bike park, pavilion/storage building, and restroom at Cedar Lanes Park. Bike park to include an asphalt pump track and skills course.

Progress Summary:

Evergreen Mountain Bike Alliance completed the bicycle skills course in Spring 2023. Diversified Holdings NW completed the pump track in early 2024. Pavilion/storage building and new restroom will be completed in Summer 2024.

Future Impact on Operating Budget:

None

2024 forw Fees acco

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	49,805	371,143	-	-	420,948
KC Youth Sports Grant (Secured)	-	349,920	-	-	349,920
Unsecured grant	-	-	-	-	-
REET	-	-	-	-	-
Park Impact Fees	63,914	271,586	-	-	335,500
Total Funding Sources:	**113,719**	**992,649**	**-**	**-**	**1,106,368**
Capital Expenditures:					
Design	54,557	-	-	-	54,557
Right of Way	-	-	-	-	-
Construction	59,162	992,649	-	-	1,051,811
Total Expenditures:	**113,719**	**992,649**	**-**	**-**	**1,106,368**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Municipal Parks Construction Fund	-	-	-	-	-
KC Youth Sports Grant (Secured)	-	-	-	-	-
Unsecured grant	-	-	-	-	-
REET	-	-	-	-	-
Park Impact Fees	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**-**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Fulmer Park Playground Replacement**
Project No: **cp2128**
Project Type: **Capacity/Non-Capacity**
Project Manager: **Thaniel Gouk**

Description:

Replace existing grass athletic field with synthetic field and other miscellaneous park improvements.

Progress Summary:

Dilapidated playground structure was replaced with a larger one in 2023.

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	201,190	-	-	-	201,190
Grants- Private	-	-	-	-	-
State Grant	-	-	-	-	-
Local Grant	25,000	-	-	-	25,000
Impact Fees	-	100,000	-	-	100,000
REET	-	-	-	-	-
KC Prop 2	-	-	-	-	-
Total Funding Sources:	**226,190**	**100,000**	**-**	**-**	**326,190**
Capital Expenditures:					
Design	-	-	-	-	-
Demolition	11,412	-	-	-	11,412
Construction	214,778	-	-	-	214,778
Total Expenditures:	**226,190**	**-**	**-**	**-**	**226,190**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Municipal Parks Construction Fund	-	-	-	-	-
Grants- Private	600,000	-	-	-	600,000
State Grant	600,000	-	-	-	600,000
Local Grant	600,000	-	-	-	600,000
Impact Fees	-	-	-	-	-
REET	-	-	-	-	-
KC Prop 2	-	-	-	-	-
Total Funding Sources:	**1,800,000**	**-**	**-**	**-**	**1,800,000**
Capital Expenditures:					
Design	-	-	-	-	-
Demolition	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Game Farm Park Improvements**
Project No: **cp1924, cp2212**
Project Type: **Capacity**
Project Manager: **Daryl Faber**

Description:

Improve interior lighting and pathways and provide access from the newly acquired property on southwest corner of the park. The project will also add lighting to pickleball and basketball court. New turf infields.

Progress Summary:

City completed resurfacing project on the turf fields in early 2021. 2022 budget will fund irrigation improvements. Future improvements to include lighting for the pickleball and basketball courts; a grant has been applied for the lighting improvements.

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Unsecured State	-	-	-	1,000,000	-
Grants- Unsecured Local -KCYSF	150,000	150,000	200,000	500,000	500,000
REET 1	964,476	-	-	-	964,476
Park Impact Fees	294,012	185,524	-	500,000	479,536
Total Funding Sources:	**1,408,488**	**335,524**	**200,000**	**2,000,000**	**1,944,012**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	1,416,628	-	200,000	-	1,616,628
Total Expenditures:	**1,416,628**	**-**	**200,000**	**-**	**1,616,628**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Unsecured State	-	-	-	-	1,000,000
Grants- Unsecured Local -KCYSF	-	-	-	-	700,000
REET 1	-	-	-	-	-
Park Impact Fees	-	-	-	-	500,000
Total Funding Sources:	**-**	**-**	**-**	**-**	**2,200,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	200,000
Total Expenditures:	**-**	**-**	**-**	**-**	**200,000**

Grants / Other Sources: King County Youth Sports Facilities Grant

Project Title: **Jacobsen Tree Farm Development**
Project No: **cp0609, cp2020**
Project Type: **Capacity**
Project Manager: **Daryl Faber**

Description:

Develop the 29.3 acre site into a Community Park. A Master Plan for the park was completed in 2009 and an updated drawing would need to be done to reflect updated community needs.

Progress Summary:

Future Impact on Operating Budget:

No significant impact due to master plan. Future park development will result in maintenance and utility expenses undeterminable at this time.

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	25,321	333,500	-	-	358,821
Grants- Unsecured State	-	-	-	1,000,000	-
King County Prop 2	14,165	-		-	14,165
Park Impact Fees	-	-	125,000	2,000,000	125,000
Other (TBD)	-	-		2,000,000	-
Total Funding Sources:	**39,486**	**333,500**	**125,000**	**5,000,000**	**497,986**
Capital Expenditures:					
Design	39,486		125,000	500,000	164,486
Right of Way	-	-	-	-	-
Construction	-	-		4,500,000	-
Total Expenditures:	**39,486**	**-**	**125,000**	**5,000,000**	**164,486**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Unsecured State	-	-	1,000,000	-	2,000,000
King County Prop 2	-	-	-	-	-
Park Impact Fees	-	-	2,000,000	-	4,125,000
Other (TBD)	-	-	2,000,000	-	4,000,000
Total Funding Sources:	**-**	**-**	**5,000,000**	**-**	**10,125,000**
Capital Expenditures:					
Design	-	-	500,000	-	1,125,000
Right of Way	-	-	-	-	-
Construction	-	-	4,500,000	-	9,000,000
Total Expenditures:	**-**	**-**	**5,000,000**	**-**	**10,125,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Lakeland Hills Nature Area**
Project No: **gpbd11**
Project Type: **Capacity**
Project Manager: **Daryl Faber**

Description:

Complete Master Plan to include the development and construction of an environmental community park. Trails, fencing, parking and visitor amenities are included in the project.

Progress Summary:

Future Impact on Operating Budget:

Increased maintenance costs of $5,000

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Unsecured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
Park Impact Fees	-	25,000	-	-	25,000
Park Mitigation Fees	-	-	-	-	-
Total Funding Sources:	**-**	**25,000**	**-**	**-**	**25,000**
Capital Expenditures:					
Design	-	25,000	-	-	25,000
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**25,000**	**-**	**-**	**25,000**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Unsecured (Fed,State,Local)	200,000	-	-	-	200,000
Bond Proceeds	-	-	-	-	-
Park Impact Fees	200,000	-	-	-	200,000
Park Mitigation Fees	-	-	-	-	-
Total Funding Sources:	**400,000**	**-**	**-**	**-**	**400,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	400,000	-	-	-	400,000
Total Expenditures:	**400,000**	**-**	**-**	**-**	**400,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan
Capital Projects Fund

Project Title: **Les Gove Park Improvements**
Project No: **cp2232**
Project Type: **Capacity**
Project Manager: **Thaniel Gouk**

Description:

Construction of a covered multi-use pavilion building at the south end of Les Gove Park. Uses could include pickleball, farmers market, among others.

Progress Summary:

Future Impact on Operating Budget:

Increased utility costs of $2,000

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	-	-	-	-
ARPA funding	28,626	79,430	-	-	108,056
Grants- Secured (Fed,State,Local)	-	100,000	-	-	100,000
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**28,626**	**179,430**	**-**	**-**	**208,056**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	28,626	179,430	-	-	208,056
Total Expenditures:	**28,626**	**179,430**	**-**	**-**	**208,056**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Municipal Parks Construction Fund	-	-	-	-	-
ARPA funding					
Grants- Secured (Fed,State,Local)	750,000	-	-	-	750,000
Bond Proceeds	750,000	-	-	-	750,000
REET	750,000	-	-	-	750,000
Other	-	-	-	-	-
Total Funding Sources:	**2,250,000**	**-**	**-**	**-**	**2,250,000**
Capital Expenditures:					
Design	100,000	-	-	-	100,000
Right of Way	-	-	-	-	-
Construction	1,400,000	-	-	-	1,400,000
Total Expenditures:	**1,500,000**	**-**	**-**	**-**	**1,500,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Miscellaneous Parks Improvements**
Project No: **various, gpbd03**
Project Type: **Capacity/Non-Capacity**
Project Manager: **Daryl Faber**

Description:

Minor park improvements including shelters, roofs, playgrounds, irrigation and restrooms.

Progress Summary:

Project funding includes the Mill Pond Dock Improvement (cp1915) in 2019, funded $25,000 to help complete the West Auburn Lake Park (cp1801) in 2020 and $35,783 for the Lea Hill Mini Soccer Field Turf replacement (cp2122) in 2021

Future Impact on Operating Budget:

Activity:

Funding Sources:	(Previous 2 Yrs.) Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	55,033	297,400	50,000	50,000	402,433
Grants- Unsecured State	-	-	-	-	-
Local Grant	-	-	-	-	-
KC Prop 2	-	50,000	150,000	150,000	200,000
Other (Park Impact Fee)	25,000	213,869	100,000	100,000	338,869
Total Funding Sources:	**80,033**	**561,269**	**300,000**	**300,000**	**941,302**
Capital Expenditures:					
Professional Services	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	80,033	561,269	150,000	150,000	791,302
Total Expenditures:	**80,033**	**561,269**	**150,000**	**150,000**	**791,302**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Fund 321 -Unrestricted Fund Balance	50,000	50,000	50,000	50,000	300,000
Grants- Unsecured State	-	-	-	-	-
Local Grant	-	-	-	-	-
KC Prop 2	150,000	150,000	150,000	150,000	900,000
*Other (Park Impact Fee)**	50,000	50,000	50,000	50,000	400,000
Total Funding Sources:	**250,000**	**250,000**	**250,000**	**250,000**	**1,600,000**
Capital Expenditures:					
Professional Services	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	150,000	150,000	150,000	150,000	900,000
Total Expenditures:	**150,000**	**150,000**	**150,000**	**150,000**	**900,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Park Acquisitions/Development**
Project No: **gpbd04**
Project Type: **Capacity**
Project Manager: **Daryl Faber**

Description:

Land and other property acquisitions to occur based on demand and deficiencies including parks, open space, trails, corridors and recreational facilities.

Progress Summary:

The City purchased the Auburn Avenue Theater and the Qares property in 2020.

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	(Previous 2 Yrs.) Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	39,183	80,000	-	-	119,183
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET1	647,050	-	-	-	647,050
KC Prop 2	-	125,000	125,000	125,000	250,000
Total Funding Sources:	**686,233**	**205,000**	**125,000**	**125,000**	**1,016,233**
Capital Expenditures:					
Design		-	-	-	-
Acquisition	686,233	205,000	125,000	125,000	1,016,233
Construction	-	-	-	-	-
Total Expenditures:	**686,233**	**205,000**	**125,000**	**125,000**	**1,016,233**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET1	-	-	-	-	-
KC Prop 2	125,000	125,000	125,000	125,000	750,000
Total Funding Sources:	**125,000**	**125,000**	**125,000**	**125,000**	**750,000**
Capital Expenditures:					
Design	-	-	-	-	-
Acquisition	125,000	125,000	125,000	125,000	750,000
Construction	-	-	-	-	-
Total Expenditures:	**125,000**	**125,000**	**125,000**	**125,000**	**750,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Sunset Park Improvements**
Project No:
Project Type: **Capacity**
Project Manager: **Daryl Faber**

Description:

Phse 2 improvements to include looking at options for new or modified court uses (e.g. pickleball). Phase 3 to include replacing the grass base/softball fields with new multi-sport synthetic turf fields.

Progress Summary:

Future Impact on Operating Budget:

Less water use (Bonney Lake Water) for fields would save money for the City.

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Fund 321 -Unrestricted Fund Balance	-	88,161	-	-	88,161
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
Park Impact Fees	89,639	-	350,000	-	439,639
Other -Contributions & Donations	-	-	-	-	-
Total Funding Sources:	**89,639**	**88,161**	**350,000**	**-**	**527,800**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	89,639	88,161	-	-	177,800
Total Expenditures:	**89,639**	**88,161**	**-**	**-**	**177,800**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Fund 321 -Unrestricted Fund Balance	-	-	-	-	-
Grants- Secured (Fed,State,Local)	1,500,000	-	-	-	1,500,000
Bond Proceeds	-	-	-	-	-
Park Impact Fees	1,500,000	-	-	-	1,850,000
Other -Contributions & Donations	500,000	-	-	-	500,000
Total Funding Sources:	**3,500,000**	**-**	**-**	**-**	**3,850,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

Project Title: **West Hill Park Acquisition and Development**
Project No: **gpbd27**
Project Type: **Capacity**
Project Manager: **Jamie Kelly**

Description:

Acquire property adjacent to Watershed property on the West Hill, and develop park. Park to be used as access to the trails on the watershed property. Improvements to include parking, playground, restroom, and kiosks.

Progress Summary:

The City has been exploring local and state funding for acquisition and development. Staff to send out form letters to existing property owners in an effort to gauge interest in selling suitable properties to the City.

Future Impact on Operating Budget:

Undetermined at this time.

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	-	-	-	-
Local Grant (Unsecured)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Park Impact Fees	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**-**
Capital Expenditures:					
Design	-	-	-	-	-
Construction	-	-	-	-	-
Acquisition	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Municipal Parks Construction Fund	-	-	-	-	-
Local Grant (Unsecured)	400,000	500,000	-	-	900,000
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Park Impact Fees	350,000	500,000	-	-	850,000
Total Funding Sources:	**750,000**	**1,000,000**	**-**	**-**	**1,750,000**
Capital Expenditures:					
Design	-	150,000	-	-	150,000
Construction	-	850,000	-	-	850,000
Acquisition	750,000	-	-	-	750,000
Total Expenditures:	**750,000**	**1,000,000**	**-**	**-**	**1,750,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan
Capital Projects Fund

Project Title: **Dykstra Footbridge**
Project No: **cp2214**
Project Type: **Non-Capacity**
Project Manager: **Faber**

Description:

Engineering study was completed and results were better then expected. Most fixes have already been completed and remaining items to be done by a contractor will expend the remaining ARPA monies not moving to the theater project.

Progress Summary:

Minor fixes by mainteance staff completed in 2023; remaining items will be completed in 2024.

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	(10,525)	-	-	(10,525)
ARPA funding	-	400,000	40,000	-	440,000
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**-**	**389,475**	**40,000**	**-**	**429,475**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	389,475	-	-	389,475
Total Expenditures:	**-**	**389,475**	**-**	**-**	**389,475**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Municipal Parks Construction Fund	-	-	-	-	-
ARPA funding	-	-	-	-	40,000
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**40,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan
Capital Projects Fund

Project Title: **Fairway Drainage Improvement**
Project No: **gpbd19, cp2202, cp2302, cp2401**
Project Type: **Non-capacity**
Project Manager: **Daryl Faber**

Description:

Apply top dressing sand to the first five fairways in order to firm up these landing areas so that the holes are playable year round. Sand will be applied with a three yard topdressing machine. Sand will be applied bi/weekly at a tenth of an inch of sand throughout the fairways. Fairways will start to show improvements once four inches of sand are applied.

Progress Summary:

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	(Previous 2 Yrs.) Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET 2	51,085	30,916	30,000	30,000	112,001
Other	-	-	-	-	-
Total Funding Sources:	**51,085**	**30,916**	**30,000**	**30,000**	**112,001**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	51,085	30,916	30,000	30,000	112,001
Total Expenditures:	**51,085**	**30,916**	**30,000**	**30,000**	**112,001**

Forecasted Project Cost:

Funding Sources:	2027	2028	2029	2030	Total 2025-2030
Municipal Parks Construction Fund	-	-	-	-	-
Grants- Secured (Fed,State,Local)	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET 2	30,000	30,000	30,000	30,000	180,000
Other	-	-	-	-	-
Total Funding Sources:	**30,000**	**30,000**	**30,000**	**30,000**	**180,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	30,000	30,000	30,000	30,000	180,000
Total Expenditures:	**30,000**	**30,000**	**30,000**	**30,000**	**180,000**

Grants / Other Sources:

MUNICIPAL PARKS CONSTRUCTION FUND (321)

Six Year Capital Facilities Plan, 2025-2030

Capital Facilities Plan

Capital Projects Fund

Project Title: **Forest Villa Park Improvements (previously Neighborhood Parks Improvement- AR**
Project No: **cp2223 (previously gpbd31)**
Project Type: **Non-Capacity**
Project Manager: **Thaniel Gouk**

Description:

As part of the American Rescue Plan Act the Parks, Arts and Recreation Division will be able to make minor improvements in qualifying neighborhood parks. Numerous parks in our low income census tracts are in need of modernization that will assist in getting these community members outdoors and experiencing a better quality of life. These funds will assist in adding amenities such as playgrounds, sport courts, gathering spaces to areas of need.

Progress Summary:

Future Impact on Operating Budget:

None

Activity:

Funding Sources:	Prior to 2024	2024 Budget	2025 Budget	2026 Budget	2025 Year End Project Total
Municipal Parks Construction Fund	-	-	-	-	-
ARPA funding	28,626	121,374	-	-	150,000
Bond Proceeds	-	-	-	-	-
REET	-	-	-		-
Other	-	-	-	-	-
Total Funding Sources:	**28,626**	**121,374**	**-**	**-**	**150,000**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	28,626	121,374	-	-	150,000
Total Expenditures:	**28,626**	**121,374**	**-**	**-**	**150,000**

Forecasted Project Cost:

	2027	2028	2029	2030	Total 2025-2030
Funding Sources:					
Municipal Parks Construction Fund	-	-	-	-	-
ARPA funding	-	-	-	-	-
Bond Proceeds	-	-	-	-	-
REET	-	-	-	-	-
Other	-	-	-	-	-
Total Funding Sources:	**-**	**-**	**-**	**-**	**-**
Capital Expenditures:					
Design	-	-	-	-	-
Right of Way	-	-	-	-	-
Construction	-	-	-	-	-
Total Expenditures:	**-**	**-**	**-**	**-**	**-**

Grants / Other Sources:

Park Impact Fee Analysis









Park Impact Fees (PIFs) are charges imposed on new residential developments to fund the acquisition, improvement, and expansion of public parks and recreational facilities. These fees are collected by local governments from developers or property owners when they construct new homes or residential units. The primary purpose of PIFs is to ensure that as communities grow, there are sufficient parks and recreational spaces to meet the needs of the increasing population.

The calculation of PIFs typically involves various factors, including the size and type of the new residential development, the projected increase in population, and the costs associated with providing additional park services to the new residents. Local governments often use specific formulas or criteria to determine the fee amount. The revenue generated from PIFs is earmarked for specific purposes related to parks and recreation, such as purchasing land for new parks, developing new recreational facilities, upgrading existing parks.

Implemented through local ordinances, PIFs are part of broader parks, recreation, and open space plans that outline the level of service standards for parks and recreational facilities. These standards ensure that the funds are used effectively to meet community needs. The underlying philosophy of PIFs is that growth should pay for growth, meaning that the financial burden of expanding public infrastructure to accommodate new residents should be borne by those who contribute to the growth, rather than existing residents. Overall, Park Impact Fees are a crucial tool for cities and municipalities to manage urban growth sustainably and ensure that all residents have access to quality parks and recreational facilities.

This document specifically addresses the impact fees related to parks and recreational facilities in Auburn. These fees are applied to all residential developments to ensure that the city's parks and recreational infrastructure can support the demands of a growing population.

Regulatory Framework for Impact Fees

Pursuant to state statute (RCW 82.02.050 - 82.02.100), Washington counties and cities, including Auburn, are authorized to collect impact fees to "ensure adequate facilities are available to serve new growth and development." These fees are designed to fund public facilities that support new developments, ensuring that the infrastructure required by a growing population is adequately financed.

Impact fees must be spent on projects related to the impacts of new development and cannot be used to correct pre-existing deficiencies or to pay for maintenance costs. They also cannot exceed a development's proportionate share of the total cost for system improvements. The fees must be based on a formula or other method that calculates this fair share, ensuring equity and effectiveness in funding public infrastructure.

Impact fees can be collected for four types of public facilities: public streets and roads, publicly owned parks, open spaces and recreational facilities, school facilities, and fire protection facilities (in areas not served by a fire district), as specified in RCW 82.02.050(2) and (4), and RCW 82.02.090(7). These fees must be used for "system improvements" that serve the broader community rather than "project improvements" specific to individual developments, as outlined in RCW 82.02.050(3)(a) and RCW 82.02.090(6) and (9).

Local governments must establish reasonable service areas and develop impact fee rate categories for various land uses, as mandated by RCW 82.02.060(6). The improvements funded by these fees must benefit new development and be reasonably related to it, ensuring that the new infrastructure meets the needs generated by growth.

In 2011, the Washington Legislature extended the period during which impact fees must be spent from six to ten years. According to RCW 82.02.070(3), if impact fees are not spent within ten years following their collection, they must be refunded. This extension provides local governments with more flexibility in planning and implementing necessary infrastructure projects to support new development.

By incorporating these statutes, Auburn ensures that its impact fees are used effectively to fund essential public facilities, maintaining a high quality of life for its residents while accommodating growth.

Auburn Municipal Code:

Chapter 19.08 of the Auburn Municipal Code establishes the legal framework for assessing parks impact fees, as authorized by RCW 82.02. These fees are imposed on new residential developments to ensure that adequate parks and recreational facilities are available to support growth. The assessment of these fees is based on a specific schedule and is typically due at the time of building permit issuance. The funds collected must be used exclusively for improvements to parks and recreational facilities that serve the new development, and cannot be used for maintenance or to address existing deficiencies. A dedicated account is established for managing these funds, with stringent reporting and management requirements to ensure transparency. The code also provides for refunds if the impact fees are not spent within ten years, as well as adjustments and credits under certain conditions, such as when developers provide on-site recreational facilities. Additionally, there are provisions for exemptions and an appeals process for disputing fee assessments.

Assessing the Need for Impact Fees

To establish appropriate impact fee rates in Auburn, several critical factors must be considered. These include determining which public facilities the city is responsible for, identifying the demand for additional parks and recreational spaces, securing the necessary revenue to support these facilities, and understanding the benefits these amenities bring to new developments.

The City of Auburn is responsible for its parks and recreational facilities, and impact fees can only be applied to public facilities, including those managed by other government entities, as outlined in RCW 82.02.090(7). Evaluating the need for new parks involves comparing current service levels with future demands based on population growth, identifying any gaps, and ensuring compliance with statutory requirements. Auburn's approach includes analyzing per capita investment in existing facilities to determine the need for additional parks and recreational spaces.

Revenue from impact fees is crucial for funding the development and maintenance of these facilities, ensuring that new developments contribute to the infrastructure they require. This process involves evaluating current funding levels and forecasting the additional revenue needed to support Auburn's growth. New parks and recreational facilities not only enhance the attractiveness of new developments but also improve residents' quality of life and provide significant economic and social benefits. Therefore, ensuring that new developments contribute to these amenities is essential for sustainable and balanced growth in the city.

Evaluating the Benefit of Impact Fees in Auburn

Impact fee laws in Auburn ensure that the fees imposed on new developments are justified and beneficial through several key principles and tests. These principles ensure that the fees are fair, equitable, and directly related to the needs generated by new development.

Rational Nexus Test

The rational nexus test requires a clear connection between the need for new public facilities and the development being charged the impact fees. In Auburn, this means that the fees must be used to fund improvements that directly address the impacts of new development. This test ensures that the impact fees are justified and applied appropriately.

Proportionality Test

The proportionality test ensures that the amount of the impact fee is proportional to the development's impact on public facilities. This means that the fees collected in Auburn should not exceed the cost of the facilities needed to accommodate the new development. The fees must be fair and reflect the actual cost of providing the necessary public services and infrastructure.

Specific Benefit

Auburn's impact fee laws require that the fees collected provide a specific benefit to the new development paying the fees. This ensures that the improvements funded by the impact fees directly enhance the facilities and services available to the new development, supporting growth in a way that benefits those contributing developments.

Compliance with Statutory Requirements

Impact fees in Auburn must comply with statutory requirements, which include detailed documentation and analysis to support the fees. This includes identifying existing deficiencies, reserve capacity, and new capacity needs. These statutory requirements ensure transparency and accountability in the use of impact fees.

In summary, Auburn's impact fee laws evaluate the benefit provided by these fees through the rational nexus and proportionality tests, ensuring that the fees are directly related to and proportional to the impact of new development. The laws also mandate that the fees provide a specific benefit to the development and comply with statutory requirements to maintain fairness, transparency, and accountability.

Methodology and Relationship to Capital Facilities Plan

In the City of Auburn, the calculation of impact fees for parks and recreational facilities is anchored in the per capita value of the city's capital improvements for these amenities. The purpose is to ensure that new housing and other private and public developments contribute their fair share of the investment necessary to support, often needing to improve, the city's level of service objectives for its parks and recreational facilities. This investment is typically supported by a combination of general revenue, capital improvement funds, grant funding, and impact fees.

To determine the amount of the impact fee, Auburn multiplies the average number of residents per dwelling unit by the per capita investment needed for new development. This per capita investment reflects the cost of future parks projects identified in the City's Capital Facilities Plan. By using this approach, Auburn ensures that the infrastructure required to support population growth is adequately financed and fairly shared.

This method is consistent with Auburn's municipal regulations and complies with RCW 82.02, which mandates that impact fees be equitable, proportional, and dedicated to system improvements that benefit new developments. This ensures transparency and fairness in funding the necessary expansions and enhancements to Auburn's parks and recreational facilities.

Current Impact Fee Summary

The City of Auburn, WA, has implemented impact fees to finance necessary infrastructure improvements due to new developments, ensuring that the cost of growth is shared equitably among developers. These fees cover transportation, schools, and parks, with a special focus on park impact fees. Park impact fees are authorized by RCW 82.02.090 (7) and are designed to support the acquisition, expansion, and development of parks, open spaces, and recreational facilities. In Auburn, "parks" include both developed recreational facilities and open spaces preserved for their natural and ecological value.

The impact fees are calculated based on the type and intensity of new development, ensuring a proportional distribution of costs. Different land uses, such as residential, commercial, and industrial developments, are assessed varying fees. Residential developments are categorized similarly to the transportation impact fee system for ease of understanding and administration. The City of Auburn ensures proper administration of these fees through regular updates, transparency, and accountability, with funds earmarked for specific park projects. The benefits of park impact fees include equitable cost distribution, enhanced quality of life, and sustainable growth.

Projected Growth and Density per Dwelling Unit Population Growth:

Between 2024 and 2044, Auburn, WA, is projected to experience significant population growth. The population is expected to increase from approximately 90,096 residents in 2024 to around 114,540 residents by 2044, the projected population growth rate for Auburn between 2024 and 2044 is approximately 27.13%, representing an addition of approximately 24,444 residents over the 20-year period, which will significantly impact housing demand and density. This growth underscores ongoing urban development, rising housing demand, and Auburn's attractiveness as a residential and economic hub in the region. To sustain the quality of life for both current and future residents, this projected growth necessitates careful planning and substantial investment in infrastructure, including parks and recreational facilities.

Per Unit Occupancy:

The most recent estimates from the Washington State Office of Financial Management indicate the following average number of occupants per dwelling unit for Auburn:

Single-Family Residential: 2.864 persons per unit
Multi-Family Residential: 1.907 persons per unit
Using these OFM estimates and the City's existing inventory of single-family and multi-family residential units, we have calculated a weighted average occupancy of 2.559 persons per unit. This average is used for a uniform impact fee calculation, ensuring equitable distribution of costs associated with accommodating the city's growth.

Using these estimates and the city's current inventory of single-family and multi-family residential units, the weighted average number of persons per unit is calculated to be approximately 2.545 persons. This figure is instrumental in calculating uniform impact fees and supporting future planning needs as Auburn continues to grow.

Level of Service Standards for Parks, Recreation, and Open Space

Auburn's previous Parks, Recreation, and Open Space Plan Update (2015) included a comprehensive demand and needs analysis including specific recreation facility types, that were used to develop proposed Level of Service (LOS) standards established within the same plan. After further review, and as detailed in this plan's Demand & Needs, it was determined these standards are no longer aligned with Auburn's current demographics, community needs, and future parks development plans. Consequently, this plan is adopting and revising the following recommended LOS standards:

Parks:

Neighborhood Parks: 1.25 acres per 1,000 population
Community Parks: 5 acres per 1,000 population

Trails: 0.25 miles per 1,000 population

The following analysis includes an update to the parks impact fees based on the updated standards. Importantly, as outlined in the Capital Improvement Program section, the City of Auburn has identified the need to exclude football fields and indoor pool facilities from the impact fee cost basis, as there are no immediate plans to develop additional amenities of this type. City staff determined that excluding these facilities more accurately reflects the current and future recreational needs of Auburn's residents, ensuring that the impact fees are aligned with planned improvements and community priorities.

Projected Costs for Parks and Facilities, and Total Cost Basis for the Parks Impact Fees

Based on this detailed analysis to update its parks impact fees, based on revised Level of Service (LOS) standards needed for this parks, recreation, and open space update, the 2002 standards were found to be outdated and not reflective of the city's current demographics, needs, or future development plans. As a result, the City adopted new standards, including 1.25 acres of neighborhood park per 1,000 residents, 5 acres of community park per 1,000 residents, and 0.25 miles of multi-use trail per 1,000 residents.

The total cost required to meet these standards through 2044, included developing 63.31 acres of neighborhood parks, 116 acres of community parks, and 6.68 miles of multi-use trails, had an estimated total cost of almost $56M.

After adjusting the total cost by accounting for external funding sources, including transfers from the General Fund and sales tax, as well as anticipated grant money. After these adjustments, the net cost basis for the parks impact fees was calculated to be approximately $6.134 million. This cost was then used to determine the per-household impact fee, ensuring that new developments contribute their fair share towards maintaining Auburn's parks and recreational facilities at the revised LOS standards.

Using the number of parks facilities needed to meet the revised standards for growth over the next six years and the unit cost estimates, the total cost of the growth was calculated. Based on the information provided and the calculations we discussed earlier, the calculated impact fee per household is approximately $4,612.

Table 6-: PIF Analysis					
City	Current Population 2024	Projected Population 2044	% Growth	Single-family fee	Multifamily fee
Renton	108,555	140,000	28.97	$2,915	$1,978
Tukwila	21,798	30,000	37.63	$3,006	$2,618
Woodinville	14,330	20,000	39.57	$3,175	$3,175
Auburn	83,870	120,000	43.08	$3,500	$3,500
University Place	35,500	50,000	40.85	$3,644	$2,660
Puyallup	42,861	65,000	51.65	$3,675	$3,675
Shoreline	61,353	80,000	30.39	$4,692	$3,077
Redmond	80,280	110,000	37.02	$5,124	$3,557
Kirkland	91,194	120,000	31.59	$5,629	$4,278
Lynnwood	40,592	60,000	47.81	$5,899	$4,238
Sammamish	65,116	90,000	38.21	$6,739	$4,362
Issaquah	40,380	70,000	73.35	$9,107	$5,590

This fee was determined by dividing the net cost basis of $6.134 million (after accounting for grants and other funding sources) by the projected population growth, and then calculating the fee on a per-household basis using the average occupancy of 2.545 persons per household.

Comparison Analysis

With an updated park impact fee of $4,612 per household, Auburn is positioned competitively compared to similar-sized communities in the region. This fee closely aligns with those charged by cities like Kent and Federal Way, reflecting a similar commitment to funding park infrastructure. Auburn's fee is slightly higher than those in Renton, Puyallup, and Lakewood, indicating a modestly greater investment in parks to accommodate future growth. However, it remains significantly lower than the fees in areas like Redmond, where higher development costs drive more substantial impact fees. Overall, Auburn's impact fee ensures a balanced approach to maintaining and enhancing park services while staying competitive within the region.



Approvals







Adoption Process

In order for this Plan to be formally adopted, the plan must be reviewed by several bodies, including the public, ultimately culminating with a resolution, ordinance, or other adoption instrument showing formal approval of the plan and planning process by the governing entity. Only after RCO approves the plan, may the organization may apply for grants for up to six calendar years from the date when the governing body adopted the plan.

With the depth of public and staff involvement made over the execution of this planning process, the following review and approvals have been included:

1. City Council Ordinance
2. RCO Self-Certification Checklist



Council Resolution

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Planning Eligibility Self-Certification Form		
Use this form to certify that the need for any grant projects have been developed through an appropriate planning process. Provide the completed form with the subject plans and adoption documentation to RCO via e-mail or other means of electronic access (i.e. Web link, Box.com, etc.).		
Organization Name:		
Contact Name:		
Adoption Date of Submitted Documents:		
Seeking Eligibility for: ☐ Recreation Grants ☐ Conservation Grants ☐ Both		
Initial Each to Certify Completion	**Plan Element Certification**	**Document and Page Number Location of Information**
	1. Goals, objectives: The attached plan supports our project with broad statements of intent (goals) *and* measures that describe when these intents will be attained (objectives). Goals may include a higher level of service.	
	2. Inventory: The plan includes a description of the service area's facilities, lands, programs, and their condition. *(This may be done in a quantitative format or in a qualitative/narrative format.)*	
	3. Public involvement: The planning process gave the public ample opportunity to be involved in plan development and adoption.	
	4a. Demand and need analysis: In the plans: • An analysis defines priorities, as appropriate, for acquisition, development, preservation, enhancement, management, etc., and explains why these actions are needed. • The process used in developing the analysis assessed community desires for parks, recreation, open space, and/or habitat, as appropriate, in a manner appropriate for the service area (personal observation, informal talks, formal survey(s), workshops, etc.).	
	4b. Level of Service assessment (optional): An assessment of the criterion appropriate to your community. Possibly establish a higher level of service as a plan goal (above).	
	5. Capital Improvement Program: The plan includes a capital improvement/facility program that lists land acquisition, development, and renovation projects by year of anticipated implementation; include funding source. The program includes any capital project submitted to the Recreation and Conservation Funding Board for funding.	
	6. Adoption: The plan and process has received formal governing body approval *(that is, city/county department head, district ranger, regional manager/supervisor, etc., as appropriate)*. Attach signed resolution, letter, or other adoption instrument.	

Certification Signature

I certify that this information is true and complete to the best of my knowledge.

Print/Type Name: _____

Signature (Hand Written or Digital):_____

Title:_____

Date: _____

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SCJ ALLIANCE
CONSULTING SERVICES

CITY OF AUBURN
PARKS, ARTS & RECREATION



Appendices/Attachments

A - Terms & Definitions

Washington State Recreation & Conservation Office (RCO) has found that many terms commonly used in recreation planning do not have consistent definitions from one plan to another. RCO suggests, but does not require, the following definitions compiled from various sources, including Washington Administrative Code, Department of Natural Resources, and Washington State Parks & Recreation Commission used in this master parks plan include:

Table A1: Terms & Definitions

Term	Definition#
Access	The public's ability to physically use land or water.
Active Recreation	Predominately human muscle powered recreational activities.
Camping	An overnight stay in a tent or other non-permanent structure.
Capital Improvement Program (CIP)	A list or description of proposal capital projects.
Capital Project	A project that results in redevelopment of an existing property, acquisition of new property, or a new built facility with a budget that excess $10,000.00
Consumptive	Recreation that physically consumes resources; examples include berry picking, shellfish harvest, hunting, fishing.
Development	A development project is construction or work resulting in new elements, including but not limited to structures, facilities, and/or materials to enhance outdoor recreation resources.
Dispersed	Recreation that is scattered or spread across the landscape and not concentrated at a specific site. Examples include trail uses, camping, walking, cycling, and jogging.
Impact (Low, Medium, High)	The effect that recreational uses have on resources including but not limited to soils, water, species, habitat, sites, and facilities.



Table A1: Terms & Definitions	
Term	**Definition#**
Improve	Expanding an existing site or facility to serve more uses or more types of use.
Level of Service	Measure of the current status of a park and recreation system as a whole based on either quantitative or qualitative characteristics.
Maintain	To maintain existing areas and facilities through repairs and upkeep for the benefit of outdoor recreationists.
Multiple-use	Use by more than one type of recreation on the same facility.
Non-consumptive	Resource recreation that depends on, but does not consume, resources; for example, photographing wildlife.
Park	Land or an area set aside for a special purpose, but particularly for leisure or recreation. • **Totlot/Mini-Park/Pocket Park** – a small local park or civic space accessible to the general public without the capacity for large outdoor recreation activities like field sports and often associated with playground equipment for toddlers and young children. • **Neighborhood Park** – a local-scale park with a service area of a reasonable walking distance, typically ½ mile, but up to 1 mile. • **Community Park** – a community-scale park facility has a service area typically of 1-5 miles that includes the city limits of a town or city. • **Regional Park** – a larger park facility intended to serve populations and uses from multiple jurisdictions. • **State Park** – a park facility owned and managed by the State of Washington. • **Marine Park** – a state or regional park facility intended to serve populations spanning multiple jurisdictions with primary access via watercraft . • **Day-use Park** – any kind of park facility that does not allow overnight uses such as camping. • **Seasonal Parks** – any kind of parks intended for use in specific seasons.
Passive	Activities usually conducted in place and requiring minimal physical exertion such as picnicking, watching a sports event, sun bathing, or relaxing.
Qualitative	An adjective relating to the quality of something interpreted by its intrinsic non-numerical characteristics other than some quantity or measured value.
Quantitative	Relating to, measuring, or measured by the quantity of something obtained using a numerical measurement process.
Recreation	Activities of a voluntary and leisure time Nature that aid in promoting entertainment, pleasure, play, relaxation, or instruction.
Renovate (Renovation)	The activities intended to improve an existing site or structure in order to increase its useful service life beyond original expectations or functions. This does not include maintenance activities to maintain the facility for its originally expected useful life.
Restoration	Bringing a site back to its historic function as part of a natural ecosystem or improving the ecological functionality of a site.
Shared Use	Use by more than one type of recreation on the same facility.
Trail	According to the Washington State Trails Plan (RCO, 2013): *"...a path, route, way, right-of-way, or corridor posted, signed, or designated as open for travel or passage by the general public but not normally designated as open for the transportation of commercial goods or services by motorized vehicles."* A trail is a recreational facility that also can serve as a non-motorized route for transportation.

B - Standards & Guidelines

There are six basic park and greenspace facility types typically utilized by municipalities:

- Pocket Parks / Mini-Parks / Tot Lots
- Neighborhood Parks
- Community Parks
- Natural Areas & Greenspaces
- Trails, Bikeways & Paths
- Special Facilities

POCKET PARKS / MINI-PARKS / TOT LOTS

Pocket parks are very small and serve a limited radius (up to ¼-mile) from the site; they provide passive and play-oriented recreational opportunities. Examples of pocket parks can include a tot lot with play equipment such as a climber, slide or swings; a viewpoint; or waterfront access areas such as at street ends.

A small urban plaza or civic recognition project may also be considered a pocket park. Parking is not often provided at pocket parks, although lighting may be used for security and safety.

LOCAL / NEIGHBORHOOD PARK

Neighborhood parks are generally considered the basic unit of traditional park systems. They are small park areas designed for unstructured play and limited active and passive recreation. They are generally 3-5 acres in size, depending on a variety of factors including neighborhood need, physical location and opportunity, and should meet a minimum size of 2 acre in size when possible.

Neighborhood parks are intended to serve residential areas within short walking distance (up to ½-mile radius) of the park and should be geographically distributed throughout the community. Access is mostly pedestrian, and park sites should be located so that persons living within the service area will not have to cross a major arterial street or other significant natural or man-made barrier, such as ravines and railroad tracks, to get to the site.

Additionally, these parks should be located along road frontages to improve visual access and community awareness of the sites.

Generally, developed neighborhood parks typically include amenities such as pedestrian paths, picnic tables, benches, play equipment, a multi-use open field for youth soccer and baseball, sport courts or multi-purpose paved areas, landscaping and irrigation. Restrooms are not provided due to high construction and maintenance costs. Parking is also not usually provided; however, on-street, ADA accessible parking stall(s) may be included.

Neighborhood park development may proceed in phases.

COMMUNITY PARKS

Community parks are larger sites developed for organized play, contain a wider array of facilities and, as a result, appeal to a more diverse group of users. Community parks are generally 20 to 50 acres in size, meet a minimum size of 20 acres when possible and serve residents within a 1-mile radius of the site.

In areas without neighborhood parks, community parks can also serve as local neighborhood parks. In general, community park facilities are designed for organized or intensive recreational activities and sports, although passive components such as pathways, picnic areas and natural areas are highly encouraged and complementary to active use facilities.

Since community parks serve a larger area and offer more facilities than neighborhood parks, parking and restroom facilities are provided. Community parks may also incorporate community facilities, such as community centers, senior centers or aquatic facilities.



NATURAL AREAS & GREENSPACES

NATURAL AREAS

Natural areas are those which are preserved to maintain the natural character of the site and are managed to protect valuable ecological systems, such as riparian corridors and wetlands, and to preserve native habitat and biodiversity. In managing for their ecological value, these natural areas may contain a diversity of native vegetation that provides fish and wildlife habitat and embodies the beauty and character of the local landscape. Low-impact activities, such as walking, nature observation, and fishing are allowed, where appropriate, and horseback riding is also permitted on certain sites.

GREENSPACES

Greenspaces are passive-use open spaces and turf areas without developed amenities or structured functions.

TRAILS & BIKEWAYS

Trails are non-motorized transportation networks separated from roads. Trails can be developed to accommodate multiple uses or shared uses, such as pedestrians, in line skaters, bicyclists, and equestrians. Trail alignments aim to emphasize a strong relationship with the natural environment and may not provide the most direct route from a practical transportation viewpoint.

Bikeways are different than trails in that their principal focus is on safe and efficient non-motorized transportation. Bikeways serve distinctly different user groups than trail users. Typical bikeway user groups would include bicycle commuters, fitness enthusiasts and competitive athletes. Their emphasis is on speed, which can create conflicts with recreation-type trails and their respective user groups.

For shared-use trails, it is important that the alignment and cross sections be designed with flexibility to accommodate higher speeds, passing zones and greater widths. Surfaces will vary with intended use and environmental considerations. Additionally, parking, consistent signage (wayfinding, access, use hierarchy) and interpretive markers or panels should be provided as appropriate.

SPECIAL FACILITIES

Special facilities include single-purpose recreational areas such as skateparks and display gardens, along with community centers, aquatic centers and public plazas in or near the downtown core. Additionally, publicly-accessible sport fields and play areas of public schools are classified as special facilities; while they often serve as proxies to public parks, school sites have restricted daytime access and offer limited recreational use during non-school hours. No standards are proposed concerning special facilities, since facility size is a function of the specific use.

C - Park Needs & Assessment Survey Comments

ADDITIONAL COMMENTS

resources, costs and good staff who maintain the massive areas. Thank you for planning to address continuing future needs."

"Auburn has one of the best senior activity centers in King County. Keep up the good work."

"Bring parks to the west hill!!!"

"Did you miss my request for a park on West Hill with a playground???? Please please please. I've been asking for 4 years. My kids will be out of the house by the time it happens. You've been goldilocksing a park up here since you acquired West Hill 14 years ago. The lake park isn't for kids, theres no where for them to play. I know it's expensive but it's never going to be perfect or the right time, just get us a playground please!!!!!"

> "I absolutely love the community center and the activities they provide."

"Disability friendly off leash park with safe and secure parking area! Needs to be large enough to throw a ball, not a tiny fenced in area."

"Do better to rid the drug activity, homelessness n make trails more wheelchair friendly "

"Do whatever needs to be done so people will feel safe spending time at the parks. I know young mothers who would never come without their husbands to certain parks. Also, prioritize the needs and desires of law abiding citizens over those of the homeless."

"Doing a great job. Would like to see more open spaces. Thank you."

> "I appreciate all the community events and the close, friendly collaboration with the Muckleshoot Tribe."

"Emphasis on sports for elementary age kids. I called recently and was told basketball is not offered. "

"For an indigenous people to have an identity, we must have land on which we can reclaim our ancestral ways. Not "borrowed" day use land by portioned out indigenous owned and indigenous tended land. Auburn has PLENTY of open natural land that can be up for "reclaiming" by indigenous groups of people. Some king of process towards ownership. Open natural space for planting, harvesting, inipi temazcal (sweat ceremony) other relevant ceremonies around our calendar, outdoor kitchens ie stone, mud, brick, yurts, overnight amenities. A communal space for healing and reclaiming the ways of our ancestors."

"I absolutely love the community center and the activities they provide"

"I am a 72 year old active person and I love to walk, bike and hike, go to the gym for exercise. So, don't forget that older folks are sometimes a lot more active than younger folks. I have many neighbors that do not encourage their children to go or play outside. We need to get them out there. I think being inside all the time, and rushing from one activity to the next is causing societal stress. The out doors, green space, and activity is perfect for stress reduction and a healthy life."

"I am happy with the park facilities but do not feel safe at most community areas anymore. I have been robbed, my car window broken out well playing at a park with my family and most recently

ADDITIONAL COMMENTS

confronted by a homeless drug addicted man yelling at me to get him cigarettes. I no longer visit a majority of parks in the city as it's just not safe. "

"I am in my second career as a high school teacher and coach. I became a high school teacher and coach because I saw the need. I care about kids in my community and I want to help them be as successful as possible. They are the literal future. As a teacher I'm able to see behind the scenes at what our most at risk kids need. Please steward our money wisely. I see a crisis on the horizon and right now there is something we can do about it. Thank you! "

"I appreciate all the community events and the close, friendly collaboration with the Muckleshoot Tribe."

"I appreciate the recreational opportunities Auburn provides. One thing I don't like is maintaining so much grass and would like to see more of that converted to planting beds. Reducing fertilizing and mowing would be good for our city."

"I believe Auburn Parks to be the best part of Auburn. Thank you for all that you do."

"I just wanted to share with you my appreciation for being asked for input on this. Having safe, welcoming spaces is a hallmark of a healthy community."

> "As a single mother on a tight budget it helps me out so much to have so many free and low-cost activities available for me and my 8 year old."

"I live in West Hill Auburn, and I feel like we are almost a forgotten area. We are sometimes closer to Federal Way for things, but our address is Auburn, and our school district is Federal Way, so it makes being a part of a community difficult when we are sorta spread out."

"I love all the free activities you have for children!"

"I love Auburn parks. Lets keep them safe and beautiful!"

> "I live in West Hill Auburn, and I feel like we are almost a forgotten area."

"I love our parks and hope they are around for my grandkids to enjoy many years from now"

"I love the parks we have, but they are starting to feel unsafe and dirty. "

"I really appreciate that the parks department put a walkway in our neighborhood park. The park gets a lot more use since we don't have to get shoes wet on the grassy. Also the increased foot traffic makes the park safer. It would be fantastic if the park department would bring summer programs for kids to our local park. Arts and crafts or a nature education would be fabulous for our neighborhood kids."

"I really love Auburn and their Parks and Rec department, as a single mother on a tight budget it helps me out so much to have so many free and low-cost activities available for me and my 8 year old. Keep up the good work!"

"I think the biggest concern for all of Auburn residents is the safety issues because of the crime

ADDITIONAL COMMENTS

rate associated with the homeless drug problem plaguing our once safe city."

"I work in Auburn so I like to use your parks and facilities before and after work."

"I would love more lighting on darker streets, especially this time of year when it's dark and cold. We've lived here for 5 years after over 15 years in Seattle, I was surprised at the slow response to the traffic lights for pedestrians, especially on Auburn Way, I hit the button and wait FOREVER, and often no traffic or people driving like 50MPH because the lights aren't requiring them to stop. I don't feel safe standing on the corners with my toddlers/stroller etc. When it's cold and rainy, the pedestrian WALK light response should be faster. Traffic should stop and pedestrians should be able to cross and not stand and wait. Your traffic control people should talk to the Seattle planners because they are so pedestrian focused. I think I would opt to walk more if it wasn't clear the automobiles have priority."

"I'd like to see a park in the downtown core, close to coffee shop. There was benches at train station but have been removed. No homeless but nobody else. I use to see lots of folks visiting."

"In the last couple of years, there is a new trend to run motorized vehicles on our walking trails, mostly motorbikes. Either people don't read or ignore the no motorized vehicle signs. Its multiple times a week I'm seeing this, i get the police is busy but its getting pretty bad"

"It would be nice if the City of Auburn worked with the YMCA to provide more services and facilities for senior citizens to keep physically active at a cost that is affordable. Thanks for listening."

"I've lived here in Auburn all my life and have always enjoyed our beautiful parks. Thank you to the Auburn parks employees"

> "Keep parks safer. Add better lighting. Deter homeless and drug users. Update equipment. Replace/ repair missing/broken equipment."

"Keep growing the parks and public spaces. We love the free summer events or low cost including music, movies, art."

"Keep parks safer. Add better lighting. Deter homeless and drug users. Update equipment. Replace/repair missing/broken equipment. Les Gove was amazing when it opened- its horrible now."

"Keep prioritizing the needs of the citizens. :) And thanks for asking."

"Keep up the good work. Thanks for all you do."

"Lea Hill seems to be the area most ignored. The high school is the only place with nice fields and they are constantly locked."

"Les Gove and Game Farm get way too crowded during events and parking is impossible. Offering shuttles to events would be great."

"Lights in a dog park!!"

"Loved your Farmer's Market!"

"Make our parks safe again, please. We have some great recreation areas but they're just not safe anymore."

"Maybe a way to link the parks and such facilities to the walking trail along the rail road tracks/!!"

"More biking classes and ninja classes for kids would be so wonderful. It's really needed. Look at marymor park in Redmond. They are a perfect

ADDITIONAL COMMENTS

example. A bike track for riders would be a full family and healthy sport. "

"More safety efforts, more community outreach, more public and community focused events"

> "Overall, we have a great park system in Auburn. Keep up the good efforts to sustain and improve the wonderful parks we have."

"More support for agricultural businesses. More care needed for some of historic mature trees. Both trees and agriculture are part of the city's culture, so the cultural staff need to be kept in the loop and have input on these issues."

"My grandchildren and I love and appreciate the parks in Lakeland Hills! Thank you!"

"Our kids need more contact with mentors and good role models. The Scouts are having a hard time finding a permanent place to meet."

"Overall, we have a great park system in Auburn. Keep up the good efforts to sustain and improve the wonderful parks we have."

"perhaps list pickleball as an activity"

"Please build a playground a fulner asap"

"Please continue to work on the homeless problem. I know it is a very complex issue. I would like to see a more permanent solution. The camps have been cleared out by the Green River three times now. Within days they all move back. Stolen cars are routinely dumped and stripped there and the garbage just piles up again and again. I am also concerned about the river being polluted by all this as well as human waste. Shootings are a regular occurrence. I have had to call 911 numerous times while golfing on our City Golf Course because of gun shots during my golf game. One person was shot and killed on the road there. This is just so unsafe!!!"

"Please work to build the park maintenance crew as they are very understaffed from what I have learned this year. Also, it's VERY difficult for me to report concerns as I see them. I used to tell Mike Miller direct via text / cell but now I have no one to call and I have left numerous messages for the new head of maintenance and parks, with zero returned calls. I am disappointed."

"Safety, graffiti, equipment repair needs to be done in a more expeditious fashion. Parks and rec and the city police and City Hall need to work more closely together to make our community safer and cleaner"

"Shout out for all the work Auburn already does to provide great parks and recreation. Thanks for making these spaces and activities available to all."

"Thank you for asking for public opinion! I will feel safer using Auburn parks when the homeless/drug addict situation is under control."

"Thank you for creating this survey. I think that the main question Auburn should be concerned with is whether we can handle all the incoming people successfully as a city. It seems that the homeless population is growing exponentially, as is the low income population. We need to make sure that there are adequate jobs and services available

> "Parks and rec and the city police and City Hall need to work more closely together to make our community safer and cleaner."

ADDITIONAL COMMENTS

before we add any more folks who need them, if we want to have a safe and successful city."

"Thank you for having recreational facilities available as well as a way for the community to provide feedback."

"Thank you for putting out this survey, please consider Lea Hill Area for development and please look at safety. Slow down the vehicles before there is a serious accident. Walking and biking options are not provided"

"The farmers market is the place I most enjoy. and I appreciate how it has grown. To that end I would like to see the market manager get some needed help."

"The more Green Space available for people of any age, the more we can beautify our city!"

"The summer kids activities at the parks are great: disc golf, parkour, inflatable water slide."

"The trail along the White river is nice but too flat. Need more trails with some variety."

"The youth and adult tennis programs are very good. I appreciate the level of coaching."

"This is a well-designed and thoughtful survey! Before I retired I developed surveys for state government and school districts, so I appreciate the care that went into this. I especially liked the use of the map to identify where in Auburn we live. Please have more opportunities for local artists. Right now, unless the Auburn Arts Commission already knows you, there is slim chance of having your artwork posted or displayed. I know this is beyond the scope of this survey, but Renton and Burien, for example, are much friendlier to their community artists. Unfortunately, Auburn Arts Commission seems a bit clique-ish to me. There could be better use of the REC, for example, to display artwork. The Senior Center displays art but usually not from the people who take art classes there or have taken them there. Too much competition to get your artwork shown!!"

> "The more green space available for people of any age, the more we can beautify our city!"

> "I love that there are a lot of community events and the parks are great."

"We appreciate all of the programming and fun activities that you provide year round - thank you!"

"We appreciate seeing how Auburn takes care of itself and wants to be a place for community."

"We love Auburn parks and nice maintenance all the time. Sometimes I see homeless people at parking lots or next to green river. We wish we could do something for them, we hope we can kind a share each other those parks or trails nicely."

"We love Auburn. I love that there are a lot of community events and activities and the parks are great. Would love to see even more additions and/or improvements to make them even better!"

"We need to find ways to acknowledge and welcome the full diversity of our neighbors. The unsheltered neighbor is still my neighbor! As I would not seek to remove my trailer house living neighbor, nor apartment living, nor too fancy

ADDITIONAL COMMENTS

home for my taste neighbor – nor do I seek to remove these neighbors. How to help us be better neighbors to one another is a real question! What would help them to be better neighbors to me? Restrooms, showers, places to stay warm, cook food, share healthy interactions, places for dumping garbage, transportation opportunities .... hmmmm... hope we are finding a way to positively seek all these neighbors input on these vital questions! Thank you"

> "Working parents need options that are available during non-work hours."

"Working parents need options that are available during non work hours. And toddlers need places to play especially with the COVID baby boom"

"Would like to see the farmers market back on main street"

"Would like to use the parks/facilities again without fearing for my safety or theft."

"Would love an indoor playground near the Lea Hill area"



KEY TAKEAWAYS

The project team will use the input collected through the community survey to inform and drive the PROS Plan update. Key takeaways from the survey data include:

- Survey respondents' **most-used** recreational facilities include **paved walking/biking trails** (used by 75% of respondents), **large community parks** (51%), **small community parks** (47%), small neighborhood parks (47%), **natural areas/nature parks** (45%), and **playgrounds** (42%).
- Survey respondents' **least-used** recreational facilities include **skateboarding areas** (used by 4% of respondents), **outdoor fitness equipment** (6%), **football/lacrosse/hockey fields** (7%), and **youth softball fields** (7%).
- 63% of survey participants indicated they **travel outside of Auburn** to access the recreational amenities/facilities they use most frequently. These facilities include other (nearby) **city parks** (29%), **walking/hiking trails** (17%), **water access** (8%), and **indoor community centers** (6%). These responses suggest there could be a need for more of these facility types in the City of Auburn, or a need to improve those that already exist within the city.
- **Barriers to use** indicate existing issues that need to be addressed by the City in order to improve Auburn parks users' experience. The largest barriers to use of the City's available recreation facilities or programs, as reported by survey respondents, are **security/safety concerns** (57% of respondents), **poor maintenance/cleanliness** (31%), and **overcrowded/booked facilities** (20%).
- According to survey respondents, the City of Auburn's biggest parks and recreation needs include:
  - More non-motorized urban trails/sidewalks (92.5% of respondents)
  - Undeveloped natural areas/open space (86.4%)
  - Community centers/indoor facilities (84.5%)
  - Splash/spray parks (80.2%)
  - More youth programs/camps (77.9%)
  - Off-leash dog parks (69.9%)



PARKS, ARTS & RECREATION

2024 PARKS, RECREATION, AND OPEN SPACE PLAN

THANIEL GOUK, PARK PLANNING & DEVELOPMENT MANAGER

PLANNING COMMISSION SPECIAL MEETING
SEPTEMBER 17, 2024

Parks Department

Parks • Arts & Events • Recreation • Cemetery • Golf Course • Senior Center • Museum

AUBURN VALUES

SERVICE

ENVIRONMENT

ECONOMY

CHARACTER

SUSTAINABILITY

WELLNESS

CELEBRATION

2024 PARKS, RECREATION, AND OPEN SPACE PLAN

- **Auburn Comprehensive Plan Elements**
  - Core Plan (Community Development)
  - Land Use Element (Community Development)
  - Housing Element (Community Development)
  - Historic Preservation (Community Development)
  - Climate Change – NEW (Community Development)
  - Economic Development (Community Development)
  - Capital Facilities Element (Public Works)
  - Transportation Element (Public Works)
  - Utilities Element (Public Works)
  - **Parks, Arts & Recreation (Parks)**

IMAGINE AUBURN
~COMPREHENSIVE PLAN UPDATE 2024~

Citywide effort involving all departments coordinating together to create a cohesive, consistent, and forward-thinking Plan covering range of subject areas

2024 PARKS, RECREATION, AND OPEN SPACE (PROS) PLAN

What is the PROS Plan?

- The PROS plan provides a:
  - Vision
  - Inventory
  - Goals & Objectives
  - Identify Short & Long-Term Projects
  - Funding Strategies
- One element of the City's overall Comprehensive Plan
- Required document to be eligible for State and Federal grants
- What does it include?

What Public Outreach was conducted?

- City-wide online surveys – text & map-based
- E-blasts to 34,000 subscribers w/12,000 opened
- Social media postings to promote survey
- Signage with QR code to survey in EVERY park
- Surveys available in 7 languages
- 619 survey responses

PROS PLAN CORE CHANGES

- **Inventory & Assessment**
  - Methodology / Assessment Ranking
  - Based on Parks Staff & Public Input
  - Updates to parks based on additions / changes since 2015
- **Projected Parks and Rec Needs**
  - Public outreach and input drives new Capital Facility projects
- **Recreation Trends**
  - Changed over the last 10 years
  - More outdoor activities
    - Pickleball, dog parks, etc.
  - Inclusive playgrounds and facilities
    - Multi-generational, nature-focused, etc.
- **Levels of Service (LOS)**
  - New guidance from NRPA and RCO
  - City is slightly deficient in most LOS ratio categories – OK overall

PROS PLAN CORE CHANGES CONT.

- Goals & Policies
  - Reflective of public input
  - Make facilities / parks:
    - More inclusive
    - Lower maintenance
    - More diverse amenities and visual appearance (e.g. art in parks, locate in areas with easy access)
    - Trail connections
- Capital Improvement Program
  - Based on public needs and input
  - Projects based on 6-year (near term) & 30-year (long term) periods
  - Explore add'l grant opportunities
  - Potential impacts to CIP funds
  - List of 2025-2030 projects and funding sources

PROS PLAN CORE CHANGES CONT.

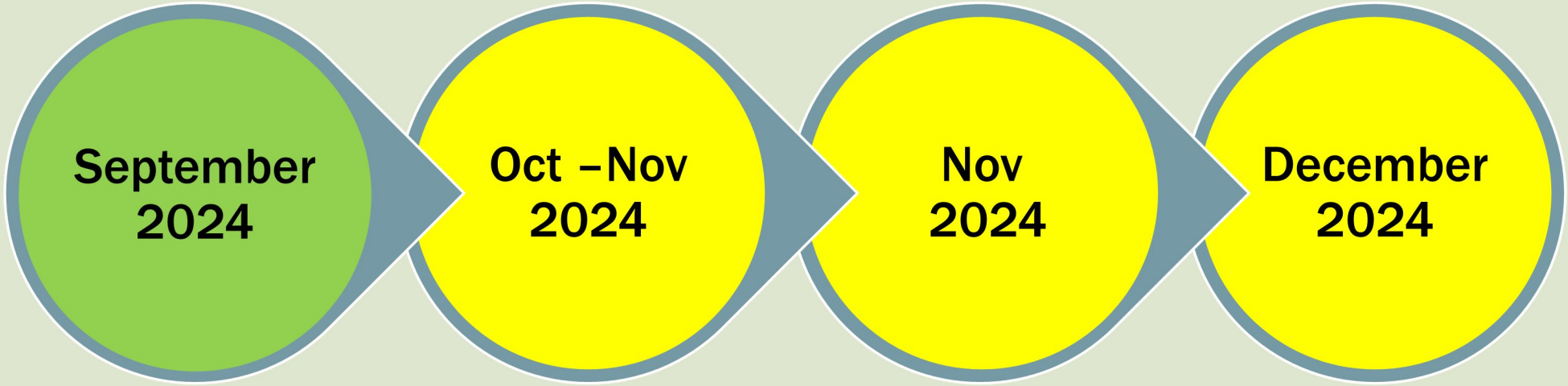
- **Park Impact Fees**
  - Charged to new Residential developments
  - Ensures parks keep up with population growth
  - Current fee $3500/res. unit
  - Proposed $4612 / res. unit
    - Based on 6-year project costs (approx. $6.134 mil.) divided by projected population growth (~90k) divided by 2.545 persons per household (27.13% growth)

- **Park Impact Fee Comparison to nearby cities:**

Table 6 -: PIF Analysis

City	Current Population 2024	Projected Population 2044	% Growth	Impact fee
Renton	108,555	140,000	28.97	$2,915
Tukwila	21,798	30,000	37.63	$3,006
Woodinville	14,330	20,000	39.57	$3,175
Auburn	83,870	120,000	43.08	$3,500
University Place	35,500	50,000	40.85	$3,644
Puyallup	42,861	65,000	51.65	$3,675
Shoreline	61,353	80,000	30.39	$4,692
Redmond	80,280	110,000	37.02	$5,124
Kirkland	91,194	120,000	31.59	$5,629
Lynnwood	40,592	60,000	47.81	$5,899
Sammamish	65,116	90,000	38.21	$6,739

NEXT STEPS



- Planning Commission Meeting - Tonight
- Public Hearing and Deliberation – Tonight
- RCO Review
- Draft Plan Discussion with Council
- Resolution for Adoption

2024 PROS PLAN UPDATE

Any Questions?