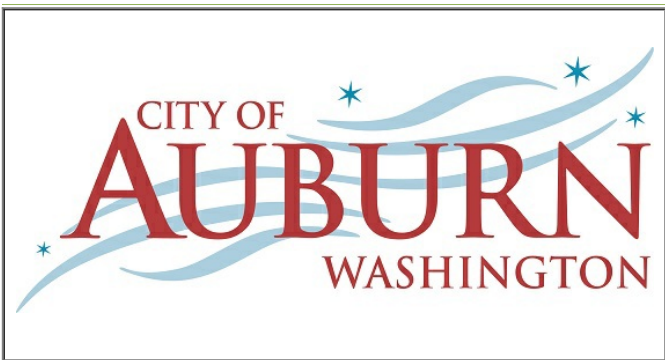


	City Council Study Session PWCD SFA September 23, 2024 - 5:30 PM City Hall Council Chambers AGENDA Watch the meeting LIVE! Watch the meeting video Meeting videos are not available until 72 hours after the meeting has concluded.
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I. CALL TO ORDER

A. PUBLIC PARTICIPATION

Public Participation

The Auburn City Council Study Session Meeting scheduled for Monday, September 23, 2024 at 5:30 p.m. will be held in person and virtually.

Virtual Participation Link:

To view the meeting virtually please click the below link, or call into the meeting at the phone number listed below. The link to the Virtual Meeting is:

<https://www.youtube.com/user/watchauburn/live/?nomobile=1>

To listen to the meeting by phone or Zoom, please call the below number or click the link:

Telephone: 253 215 8782

Toll Free: 877 853 5257

Zoom: <https://us06web.zoom.us/j/82300019985>

B. Roll Call

II. AGENDA MODIFICATIONS

III. ANNOUNCEMENTS, REPORTS, AND PRESENTATIONS

A. REDI Report Out

IV. PUBLIC WORKS AND COMMUNITY DEVELOPMENT DISCUSSION ITEMS

A. Comprehensive Sewer Plan (Gaub) (45 Minutes)

B. Comprehensive Transportation Plan (Gaub) (45 Minutes)

C. Ordinance No. 6958 (Gaub) (20 Minutes)

An Ordinance providing for the Acquisition by Eminent Domain of property located near or adjacent to R Street SE within the City of Auburn, Washington for roadway widening and associated improvements for Project No. CP2116, R Street SE Widening – 22nd Street SE to 33rd Street SE; declaring Public Use and Necessity; and Providing for Severability and an Effective Date

V. AGENDA ITEMS FOR COUNCIL DISCUSSION

A. Council Rules of Procedure (Council) (60 Minutes)

VI. ADJOURNMENT

Agendas and minutes are available to the public at the City Clerk's Office, on the City website (<http://www.auburnwa.gov>), and via e-mail. Complete agenda packets are available for review at the City Clerk's Office.



AGENDA BILL APPROVAL FORM

Agenda Subject:

Comprehensive Sewer Plan (Gaub) (45 Minutes)

Department:

Public Works

Attachments:

[Presentation](#)

[Draft 2024 Sewer Plan - Part 1](#)

[Draft 2024 Sewer Plan - Part 2](#)

[Draft 2024 Sewer Plan - Part 3](#)

[Comprehensive Sewer Plan Appendices](#)

Date:

September 17, 2024

Budget Impact:

Current Budget: \$0

Proposed Revision: \$0

Revised Budget: \$0

Administrative Recommendation:

For discussion only.

Background for Motion:**Background Summary:**

The sewer utility has prepared an update to the Comprehensive Sewer Plan (Plan) in coordination with the update of the City's overall Comprehensive Plan. This Plan is an update of the existing Comprehensive Sewer Plan previously adopted in 2015. The Plan's purpose is to guide the City with respect to future activities and improvements for the Sewer Utility.

Council was first introduced to elements of the Plan at the April 10, 2023 Study Session in conjunction with a general overview of the City Comprehensive Plan Update. The draft policies contained within Chapter 3 of the Plan were then discussed with Council at the Study Session held on May 22, 2023 and a general overview of the Plan contents was discussed with Council at the Study Session held on April 1, 2024.

Staff also presented the Plan to the Planning Commission on May 21, 2024 and on June 6, 2024, with the second meeting also serving as a Public Hearing. Following public comments on the Plan, staff then presented certain updates made to the Plan to Planning Commission on September 17, 2024, which followed with the Planning Commission recommendation of Plan to the City Council for approval.

The Plan has also been submitted to the Washington State Department of Ecology (DOE) and to King County's Utilities Technical Review Committee (UTRC) for review. Following adoption by the City, the final Plan will be submitted to those agencies for final approval.

The purpose of this discussion is to present Council with an overview of the Plan prior to the anticipated adoption of the Plan in conjunction with adoption of the 2024 City Comprehensive Plan.

Reviewed by Council Committees:

Councilmember: Tracy Taylor

Staff: Ingrid Gaub

Meeting Date: September 23, 2024

Item Number:

ENGINEERING SERVICES

2024 COMPREHENSIVE SEWER PLAN OVERVIEW AND UPDATE

BOB ELWELL, SEWER UTILITY ENGINEER
CITY COUNCIL STUDY SESSION
SEPTEMBER 23, 2024

Public Works Department

Engineering Services • Airport Services • Maintenance & Operations Services

AUBURN
VALUES

S E R V I C E
E N V I R O N M E N T
E C O N O M Y
C H A R A C T E R
S U S T A I N A B I L I T Y
W E L L N E S S
C E L E B R A T I O N

2024 COMPREHENSIVE SEWER PLAN IS PART OF THE CITY COMPREHENSIVE 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)

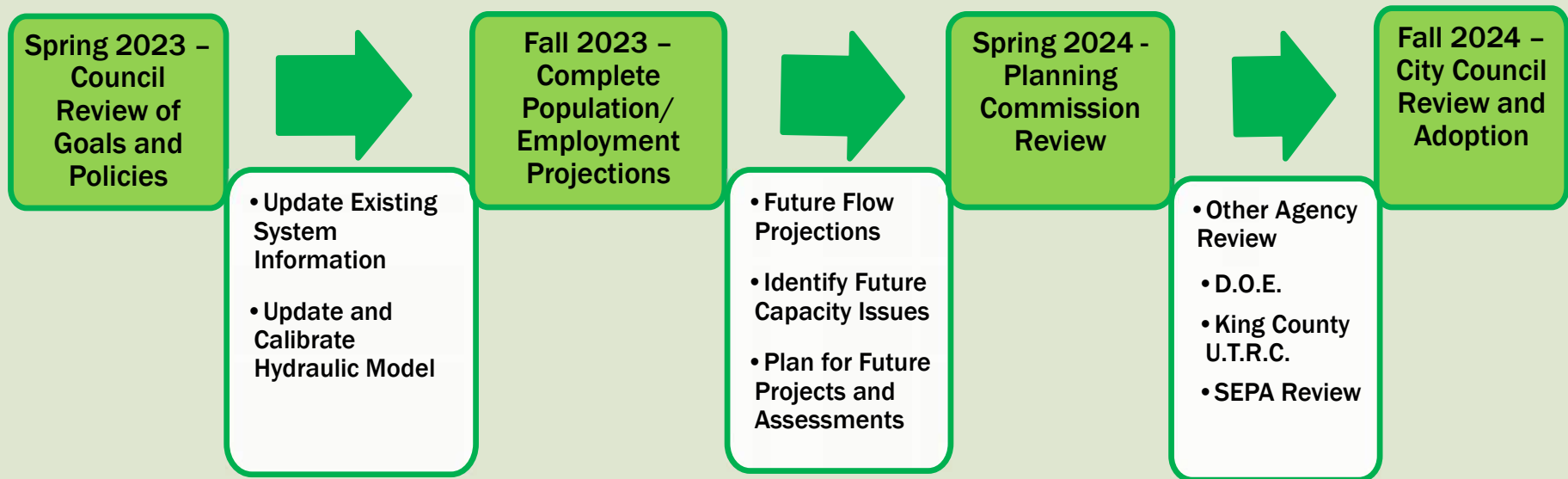
- **Utilities Element (Public Works)**

- Parks and Recreation (Parks)



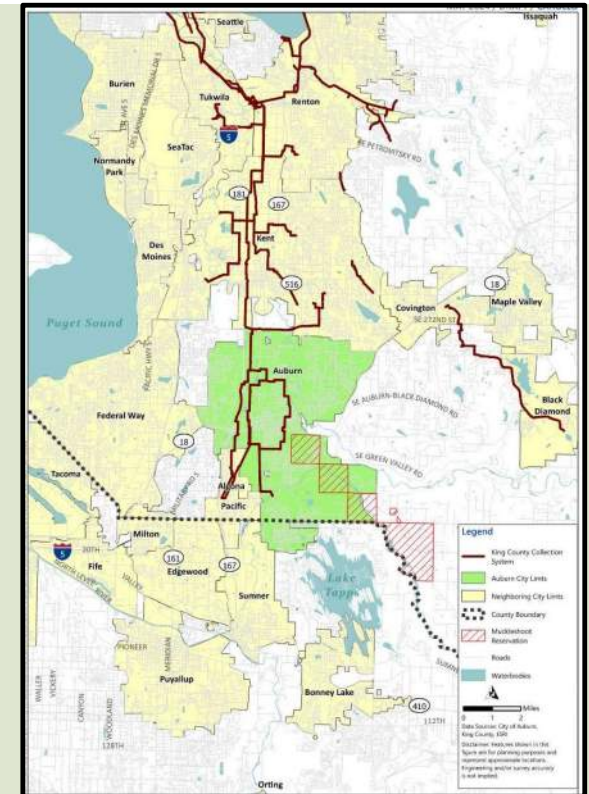
Citywide effort involving all departments coordinating together to create a cohesive, consistent, and forward-thinking Plan covering range of subject areas

PLAN DEVELOPMENT PROGRESS/MILESTONES



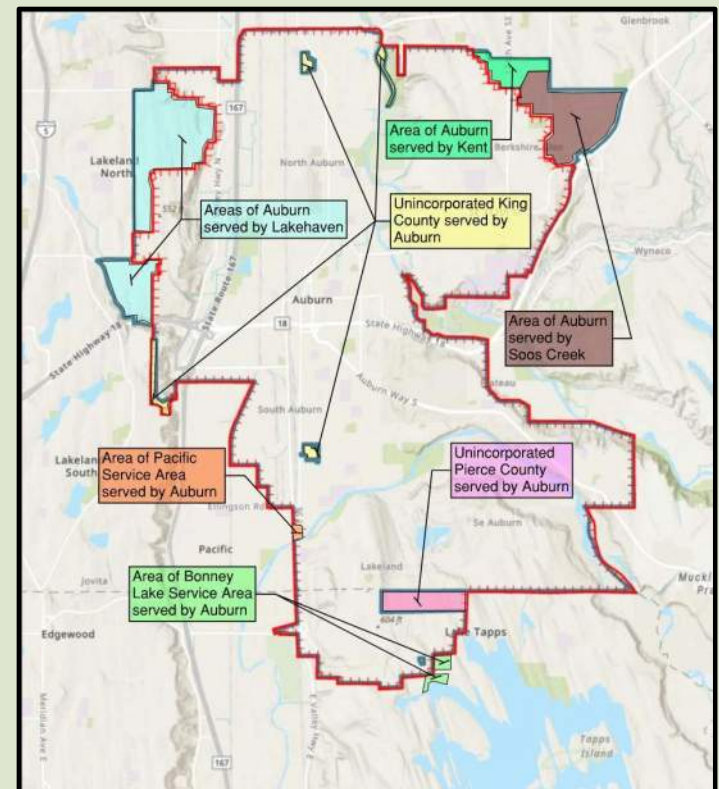
SANITARY SEWER UTILITY INTRODUCTION

- Auburn Operates Collection System
- Auburn System Connects to King County Conveyance System
- King County Conveyance to Treatment Plant in Renton



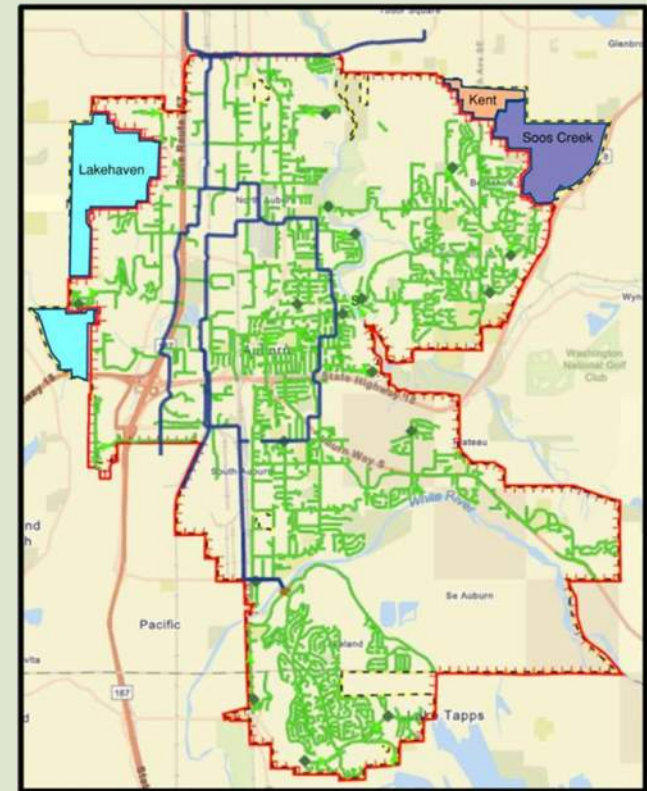
SANITARY SEWER UTILITY INTRODUCTION

- Sanitary Sewer Service Area Generally follows City Limits
- Auburn provides service to several areas not within the City (KC, PC)
- Areas within City Limits served by Lakehaven WSD, Kent, and Soos Creek WSD



SANITARY SEWER UTILITY INTRODUCTION

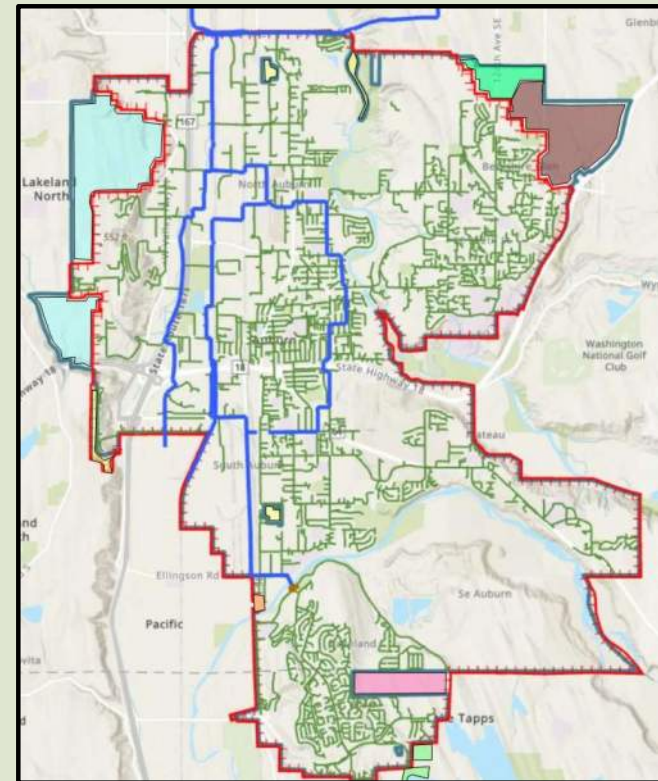
- Approximately 205 miles of Gravity Mains
- 12,700 Service Connections
- 17 Sewer Utility Pump Stations
- Approximately 5 miles of Force Mains



2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 1 Introduction and Background

- Explains need for updating the Plan
- Identifies Objectives
- Provides Background Utility Information
- Describes the Sanitary Sewer Service Area and Neighboring Service Areas



2024 SANITARY SEWER COMPREHENSIVE PLAN

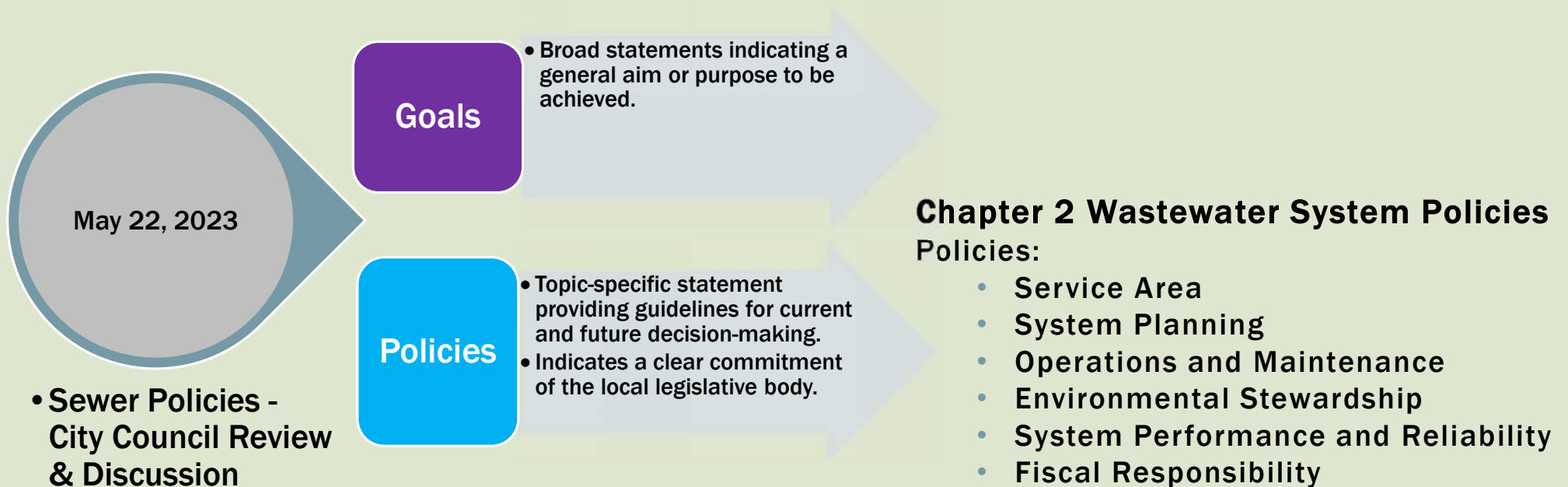
RCW 90.48.110 and WAC 173-240-050

- The Department of Ecology (DOE) is responsible for water pollution prevention and has authority over sewerage systems
- All sewage system improvement plans shall be submitted to the DOE for approval.
- The DOE may delegate plan approval responsibility if a municipality operates under an approved Sewer Plan.

King County Code 13.24

- Requires King County Council approval of any plans that include service in unincorporated King County.
- Adds additional requirements for Comprehensive Sewer Plans.

2024 SANITARY SEWER COMPREHENSIVE PLAN



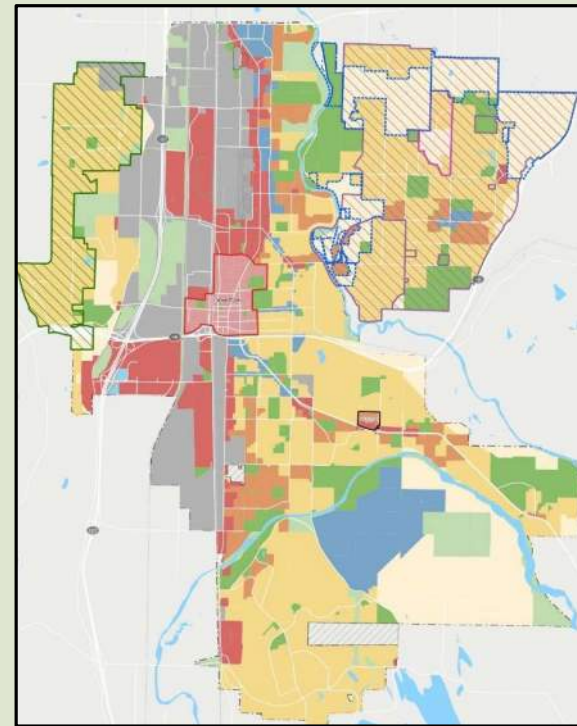
POLICY CLARIFICATION EXAMPLES

- **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 3.7** - 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).

2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 3 Planning Considerations

- Information on Projected Future Growth and Capacity Improvements
- Discusses basis for flow projections

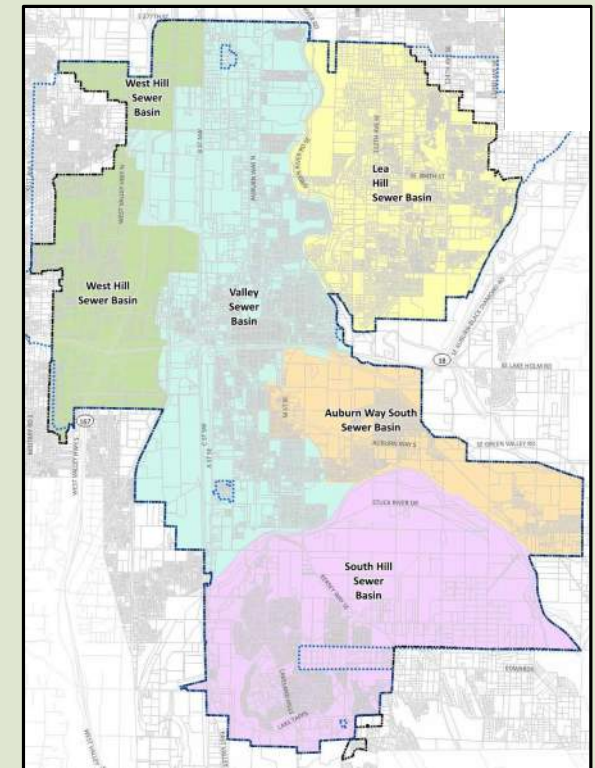


Proposed Land Use Map

2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 4 Description of Existing System

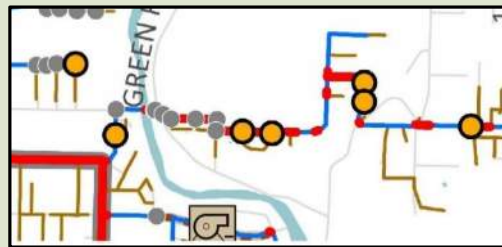
- Description of the City's System
 - Basins/Characteristics
 - Pump Stations
 - Siphons
 - Pipe Material/Age
- Description of King County System
- Industrial Waste Discharges



2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 5 Wastewater System Analysis

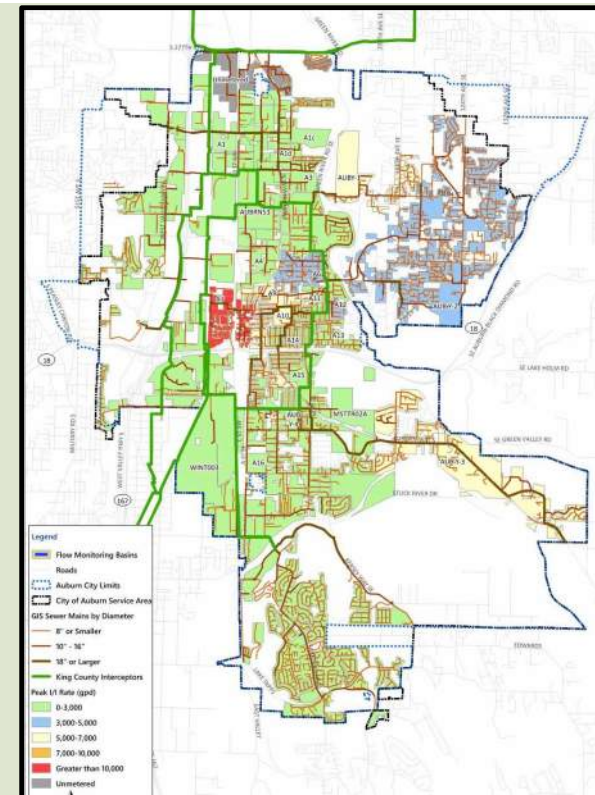
- Existing System Evaluation
- Future System Evaluation
- Future System Evaluation Including Climate Change
- Identify Deficiencies for Capital Improvements



2024 SANITARY SEWER COMPREHENSIVE PLAN

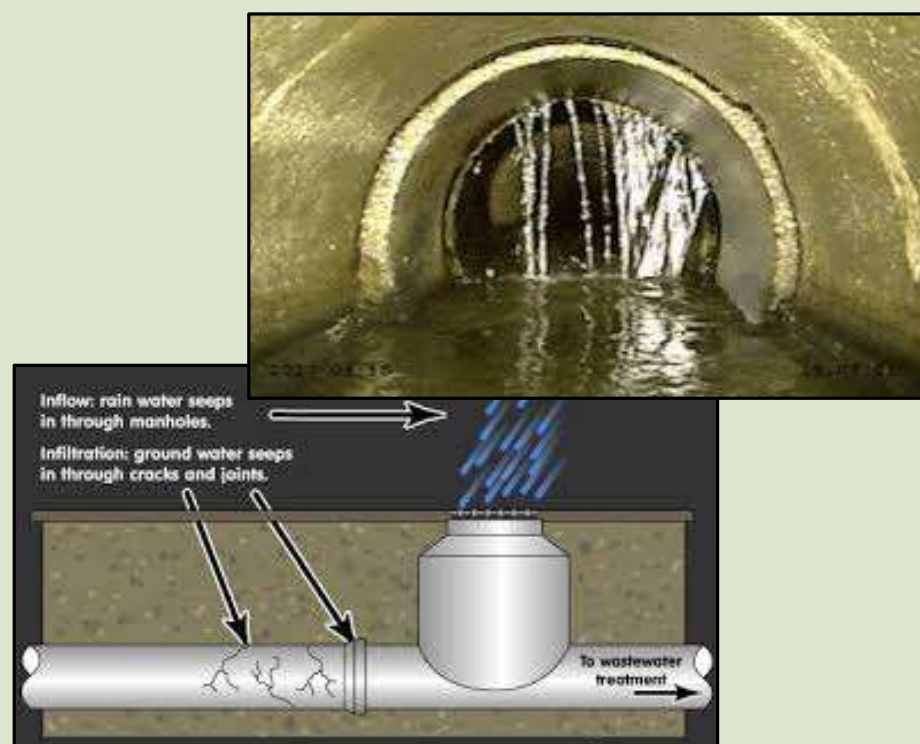
Chapter 5 Wastewater System Analysis

- Relatively Few Capacity Needs
- Focus on:
 - System Repair and Replacement
 - Inflow/Infiltration Analysis
 - System Asset Inventory
 - System Component Evaluations



2024 SANITARY SEWER COMPREHENSIVE PLAN

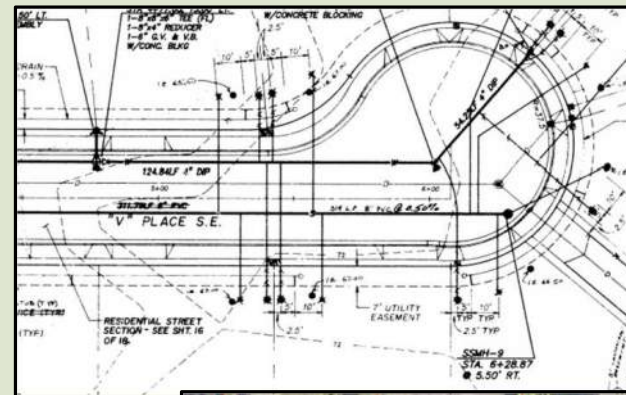
- **Inflow/Infiltration (I/I)**
 - Non-wastewater entering the system.
 - Observations/Inspections
 - Flow Measurement
 - Measure flows in particular sewer mains and correlate to rainfall and seasonal groundwater
- **Reduction Strategies**
 - Rehabilitation/Replacement
 - Construction Standards



2024 SANITARY SEWER COMPREHENSIVE PLAN

System Inventory-GIS and Cartegraph

- Primarily mains, manholes, laterals (side sewers)
- Use “as-built” drawings, inspection records, field investigation
- Conducted by Public Works GIS staff in coordination with M&O



2024 SANITARY SEWER COMPREHENSIVE PLAN

System Component Evaluations

- CCTV Inspections-NASSCO Scoring system
- Siphon Evaluation
- Side Sewer Evaluations
- Large Diameter Pipe Inspections
- Pump Station Assessment



2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 6 Maintenance and Operations

- Organization Overview and Responsibilities
- System Operations
- Fats, Oils, and Grease (FOG) Reduction Program
- Staffing Requirements



FOG Accumulated in a Manhole Channel

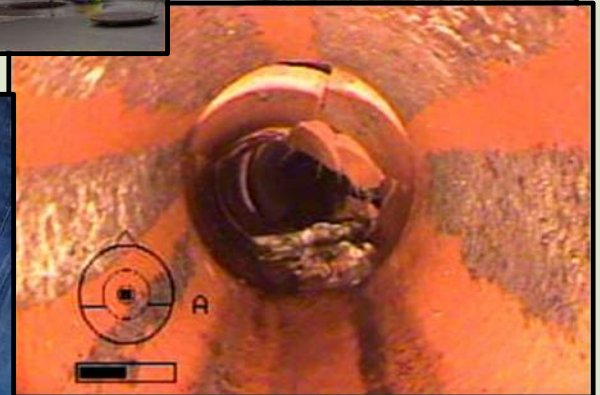


FOG Prevention
Brochure
Provided to
Food Service
Establishments

2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 6 Maintenance and Operations

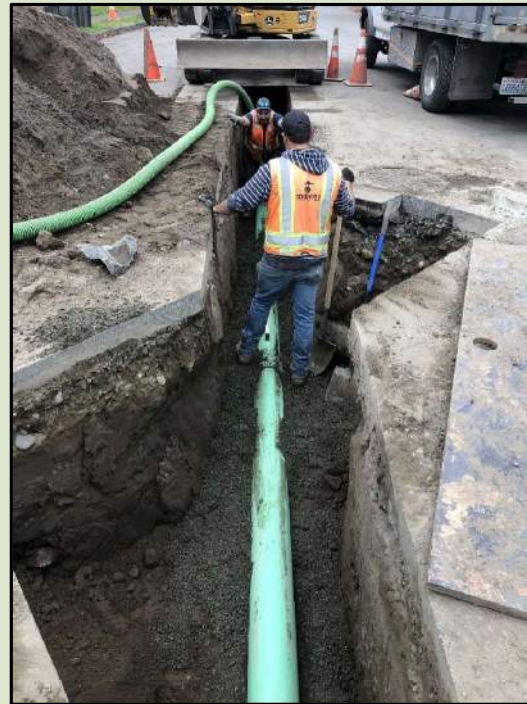
- Maintenance Program
 - Pump Stations
 - Mainlines
- Inspection Program
 - Closed Circuit Television (CCTV)
 - Manhole Inspections
 - Side Sewer Inspections



2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 7 Capital Improvements Plan

- Capital Improvement Needs
- High Level Costs
- Includes System Evaluations
 - Pump Stations
 - Large Diameter Pipes
 - Siphons
 - Side Sewers



2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 7 Capital Improvements Plan

Project Number	Project Name	Priority	2025	2026	2027	2028	2029	2030	2025-2030	2031-44	20-Year Project Cost
1	Sanitary Sewer Repair and Replacement/System Improvements	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
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
3	Side Sewer Inspections	1	\$370,000	\$370,000	\$370,000	\$370,000	\$370,000	\$370,000	\$2,220,000	\$0	\$2,220,000
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
5	Siphon Assessment and Cleaning	1	\$0	\$0	\$580,000	\$0	\$0	\$0	\$580,000	\$580,000	\$1,160,000
6	Pump Station Condition Assessment	1	\$0	\$105,000	\$0	\$0	\$0	\$0	\$105,000	\$105,000	\$210,000
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
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
9	Inflow and Infiltration Monitoring	3	\$0	\$0	\$0	\$0	\$0	\$530,000	\$530,000	\$1,590,000	\$2,120,000
10	Roegner Park Sewer Capacity Improvements	1	\$0	\$0	\$120,000	\$0	\$0	\$1,080,000	\$1,200,000	\$0	\$1,200,000
11	Rainier Ridge Pump Station Replacement	1	\$4,000,000	\$0	\$0	\$0	\$0	\$0	\$4,000,000	\$0	\$4,000,000
12	1st and R Sewer Replacement	2	\$400,000	\$0	\$0	\$0	\$0	\$0	\$400,000	\$0	\$400,000
13	Plan Update	1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800,000	\$800,000
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	\$6,170,000	\$22,975,000	\$36,435,000	\$59,410,000

● Repair and Replacement
 ● Capacity Improvement
 ● System Evaluation

SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

2024 SANITARY SEWER COMPREHENSIVE PLAN

■ Chapter 8 Finance

- 6-Year Review
- Planned Expenses → Funding Plan
- 10-Year Forecast
- Maintaining Reserves
- Projected Rates



NEXT STEPS

**September
-October
2024**

- SEPA and Agency Review and Preliminary Approval

**December
2024**

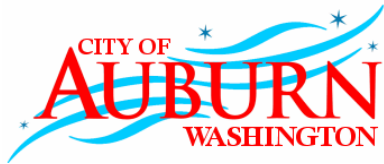
- Resolution for Adoption by Council

**Winter
2024**

- Final Approval by Department of Ecology and King County Council

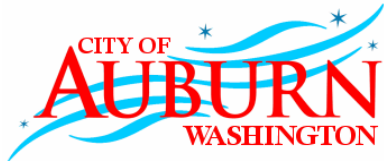
2024 SANITARY SEWER COMPREHENSIVE PLAN

Any Questions?



2024 Comprehensive Sewer Plan

DRAFT / September 2024



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 11, 2024, State of Washington PE No. 43049.



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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.
GW	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	vittrified 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 future 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 Algonia, 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 within 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. ¹These 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.

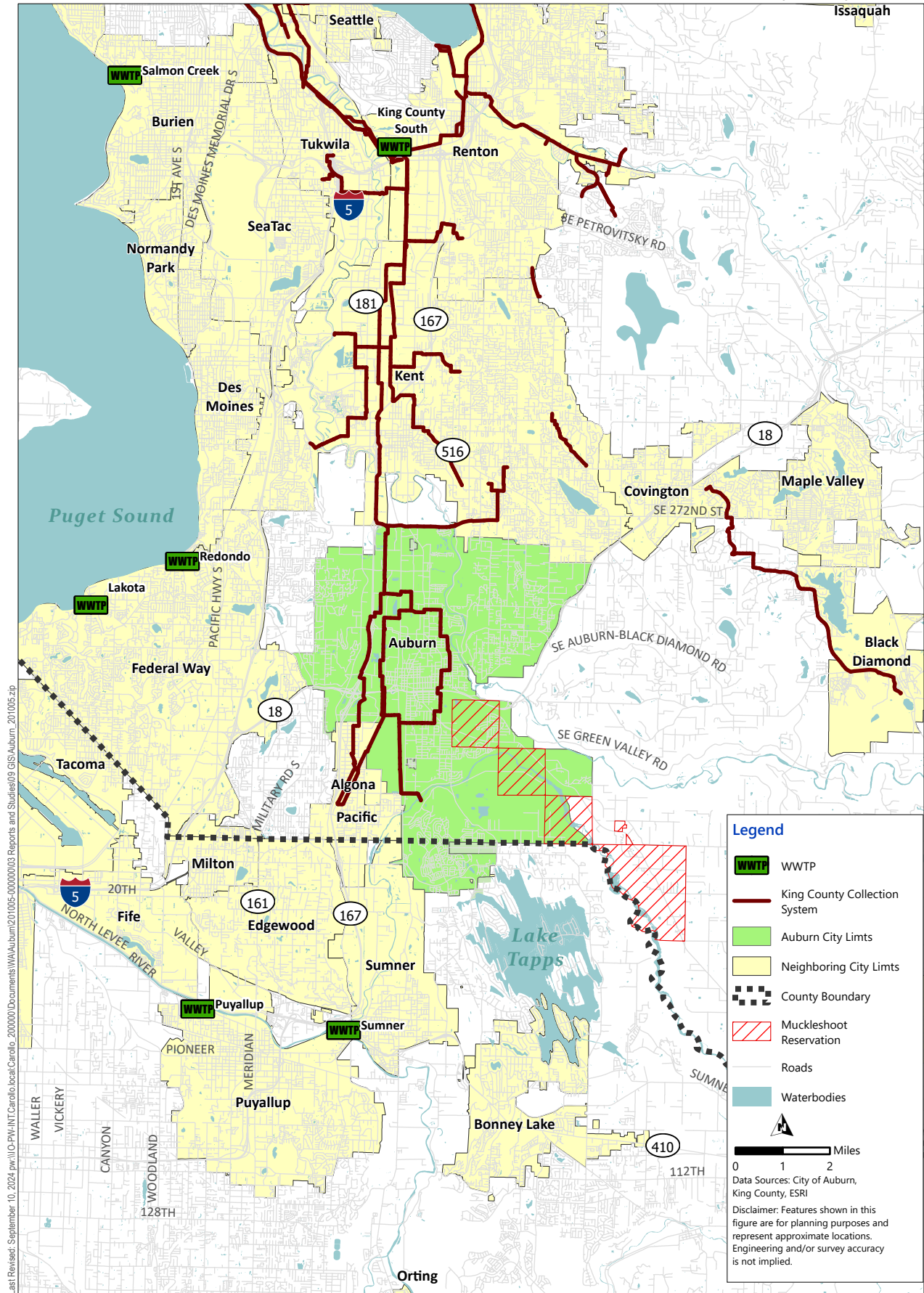


Figure 1.1 Vicinity Map
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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

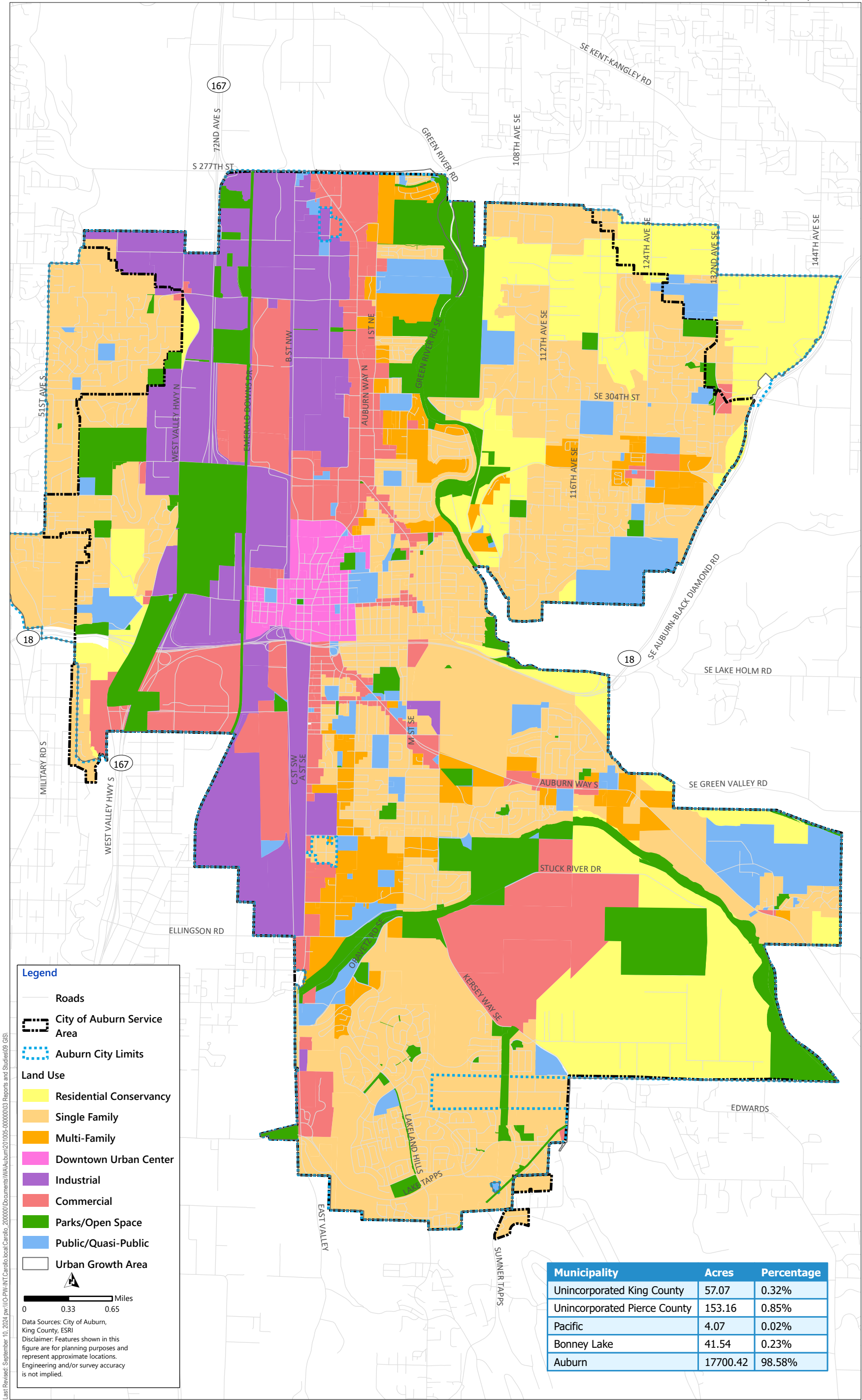


Figure 3.1 City of Auburn Land Use Designations
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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

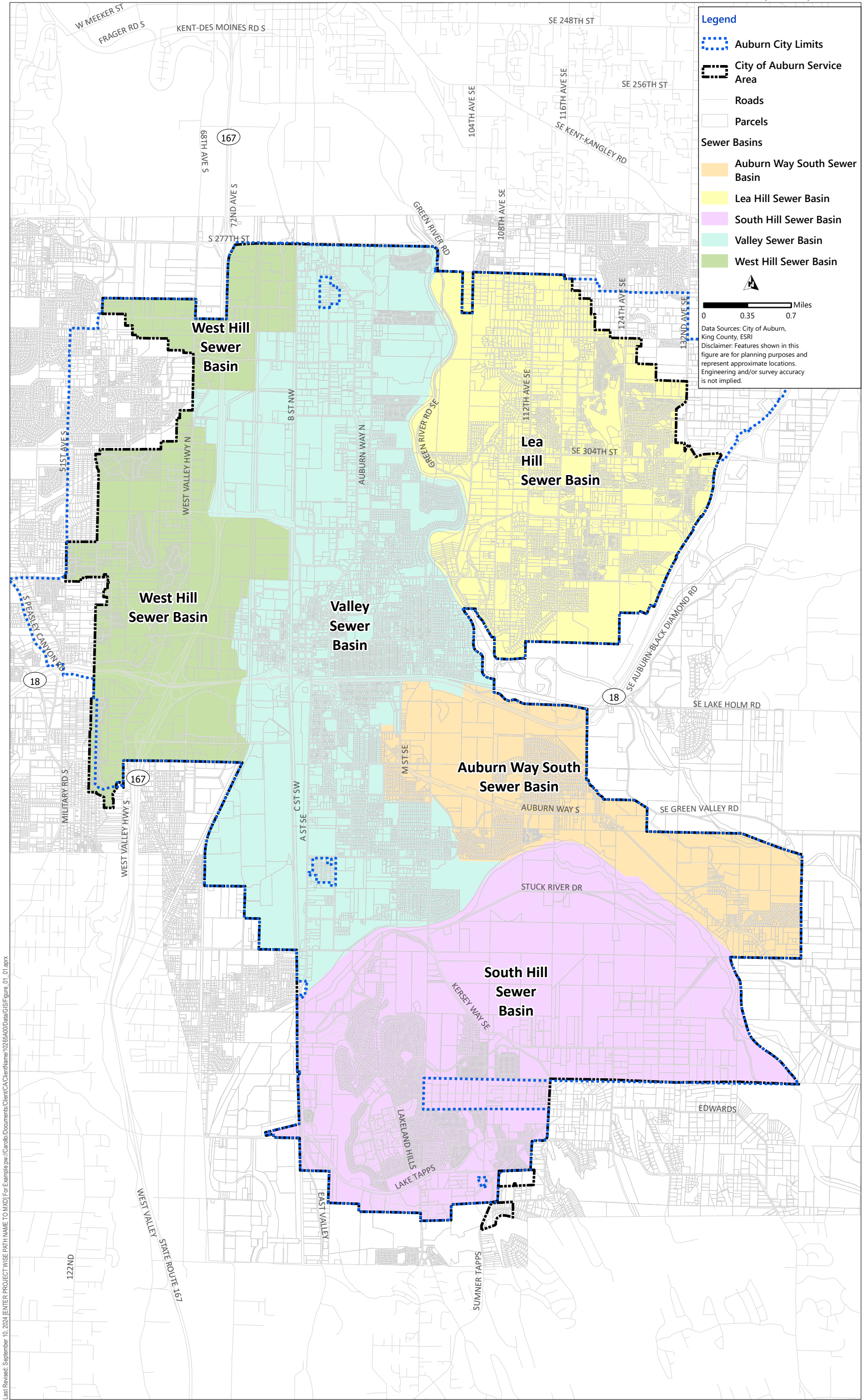
The Auburn Way South Sewer Basin is located east of the Valley Sewer Basin along Auburn Way South on the Enumclaw Plateau. It is geographically bounded by State Route 18 to the north and the White River to the south. The southeast portion of the Auburn Way South Sewer Basin borders the MIT reservation 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.



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

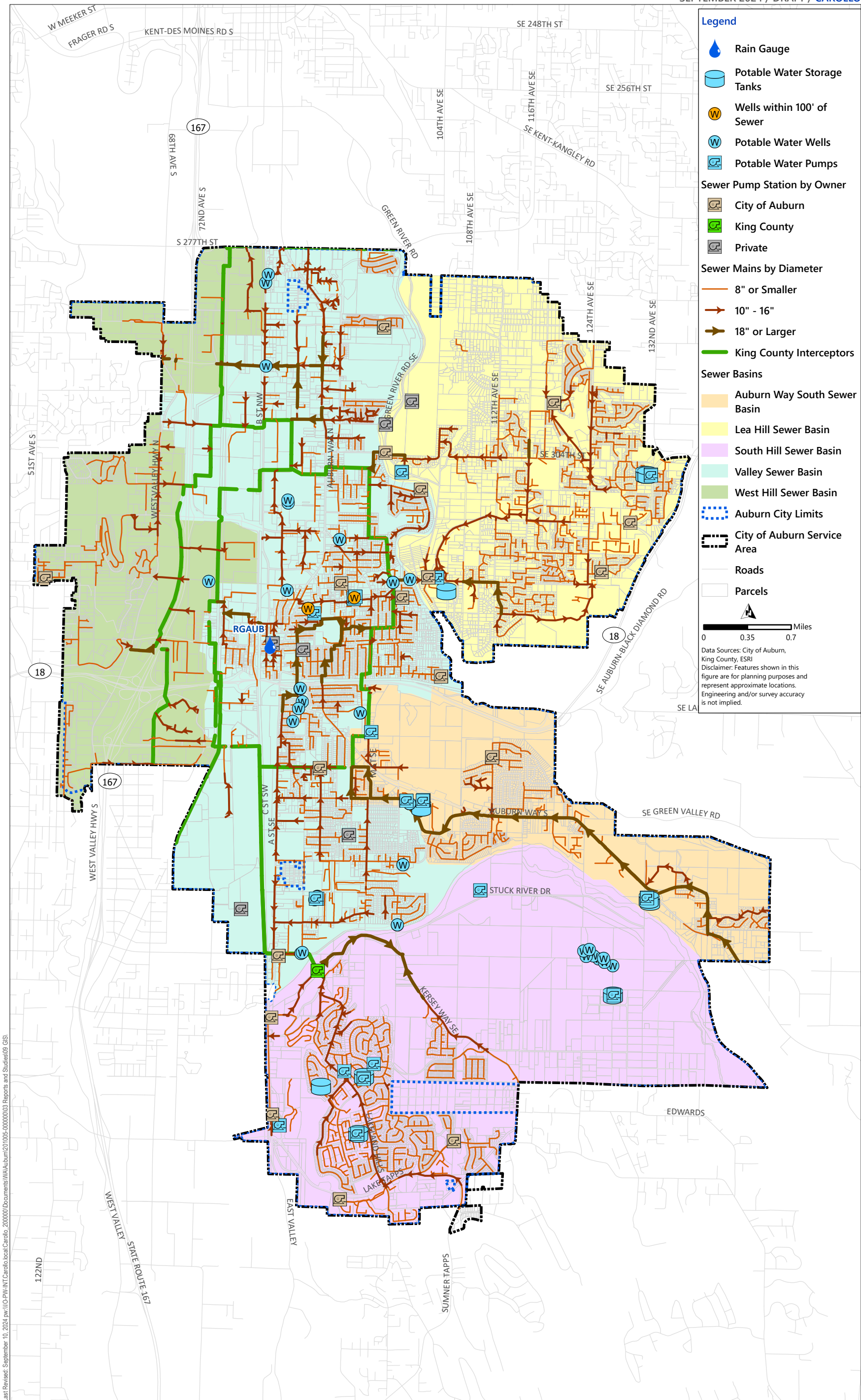


Figure 4.2 Existing Wastewater Conveyance System
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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.

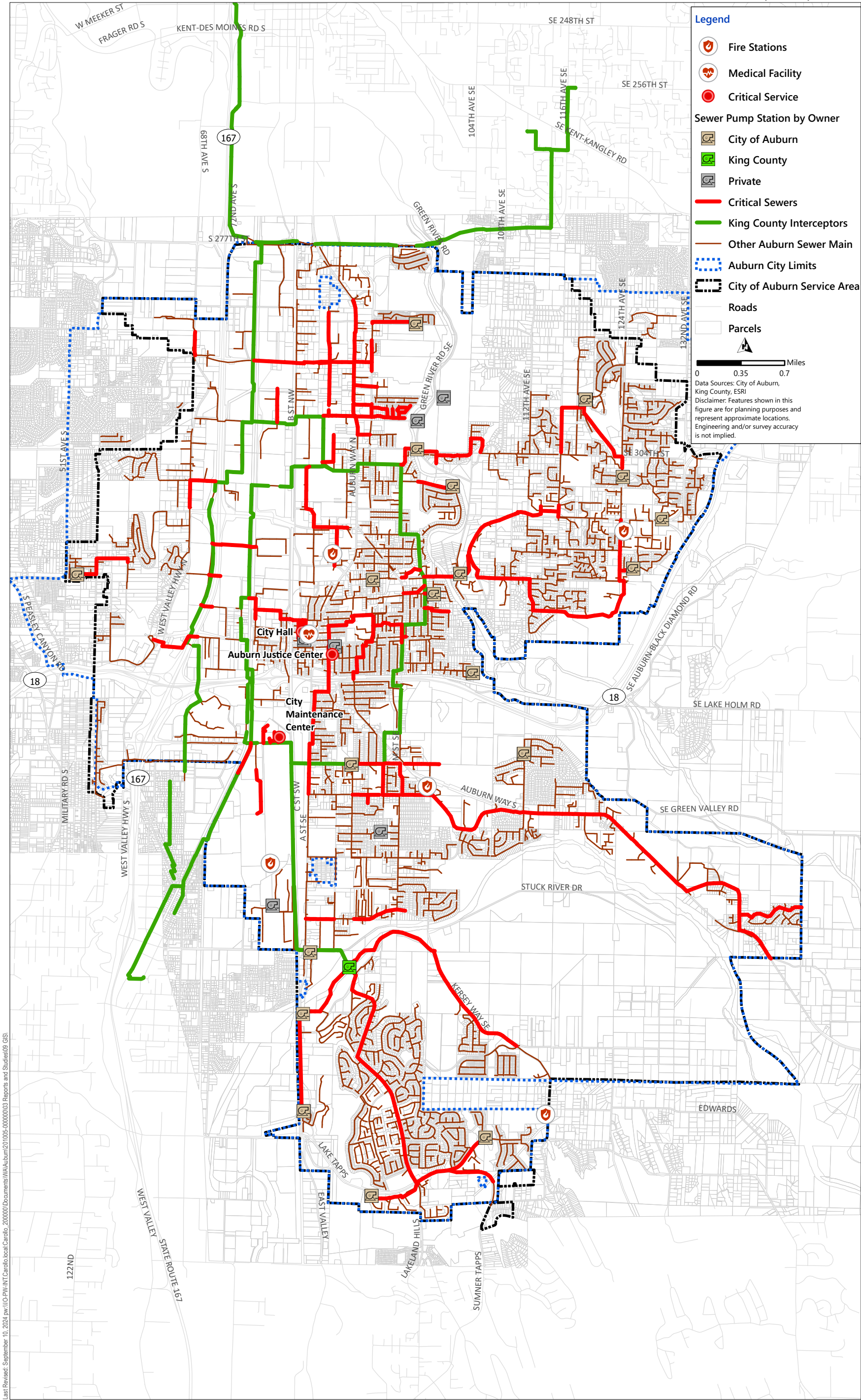


Figure 4.3 Critical Sewers
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

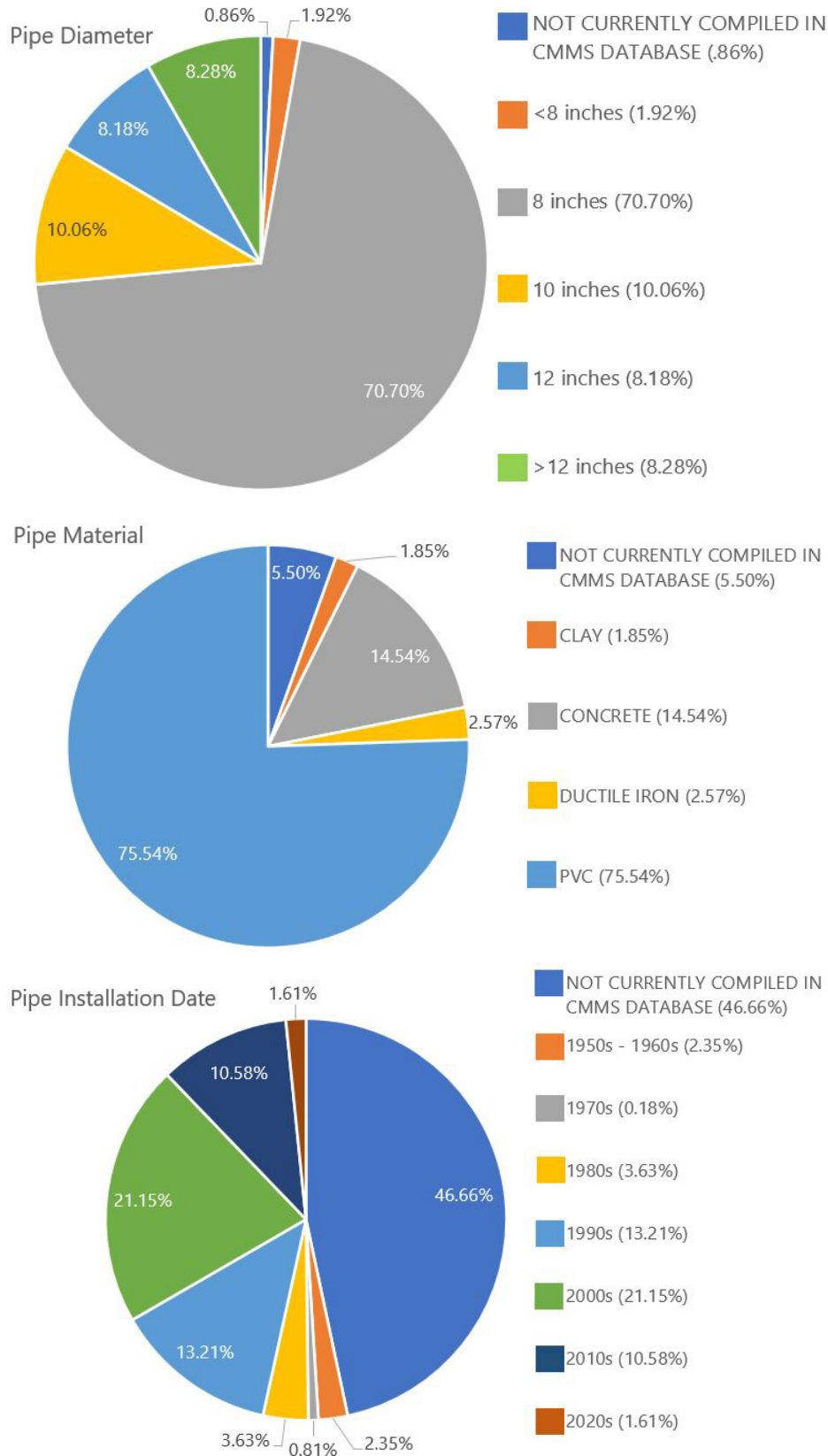


Figure 4.4 City of Auburn Collection System Summary Statistics

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.¹²

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.

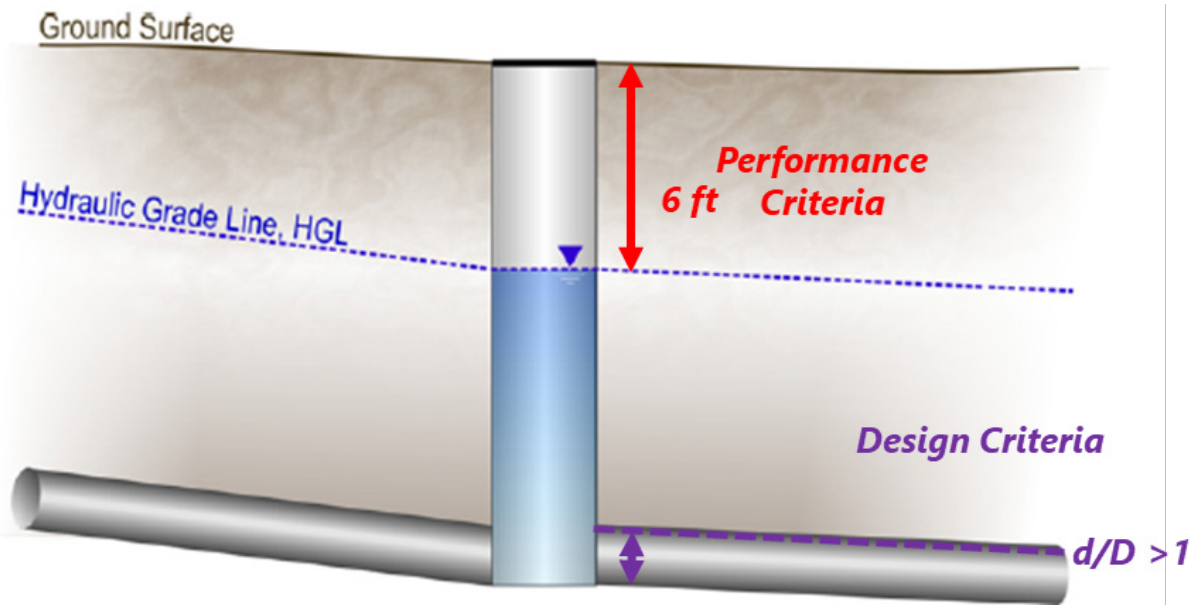


Figure 5.2 Design and Performance HGL Criteria

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.

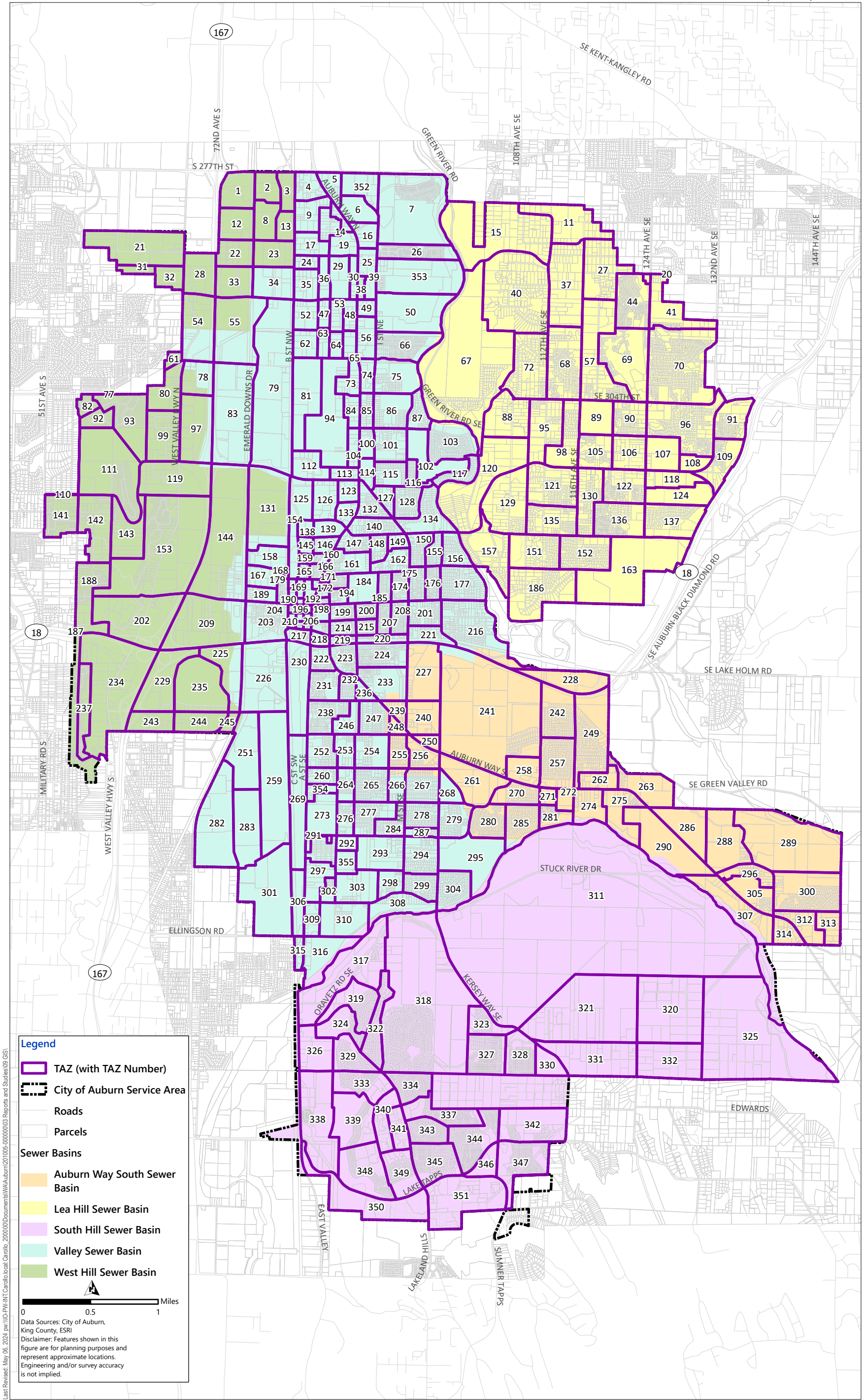


Figure 5.3 TAZ Data
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

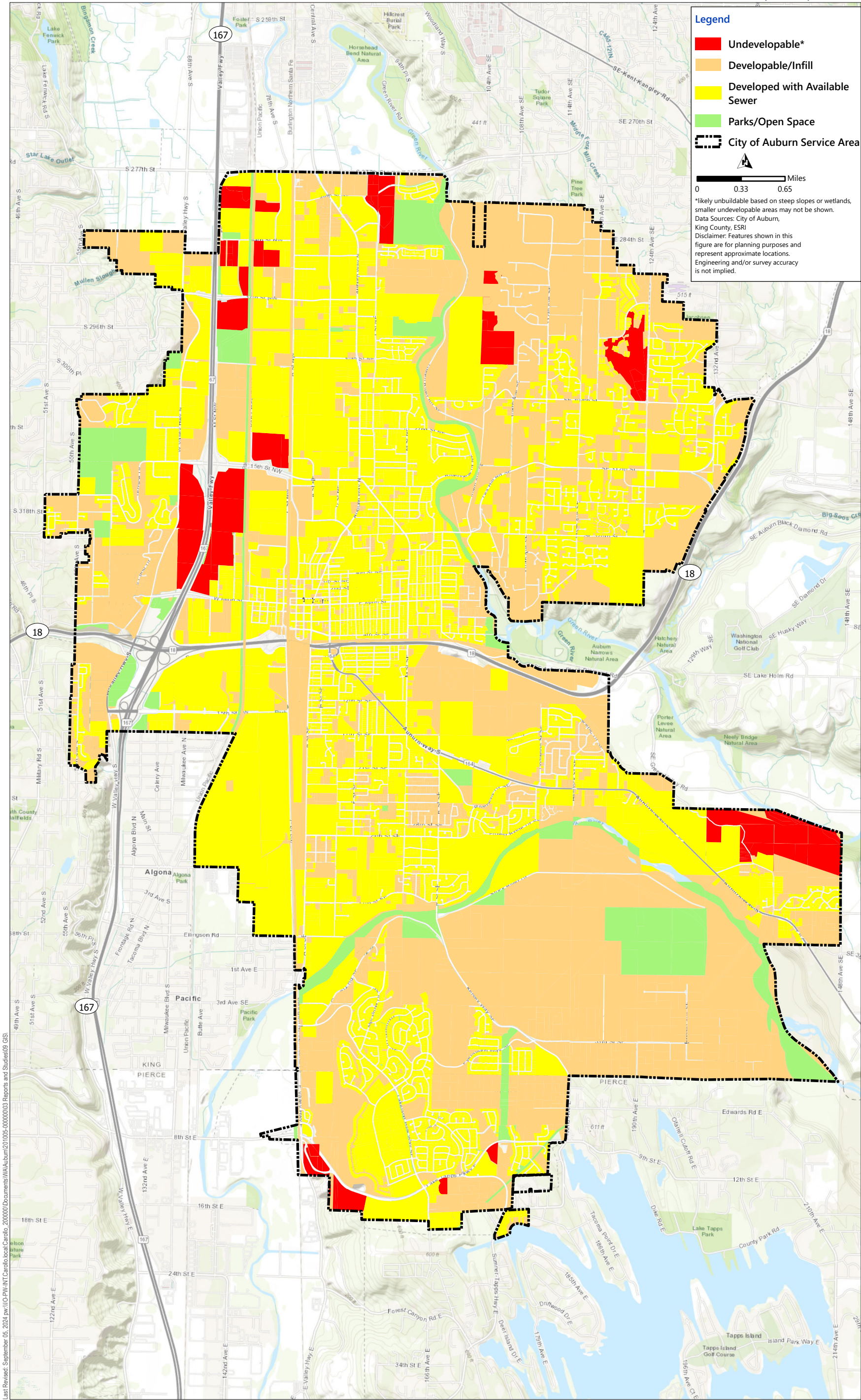


Figure 5.4 Future Contributing Areas
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

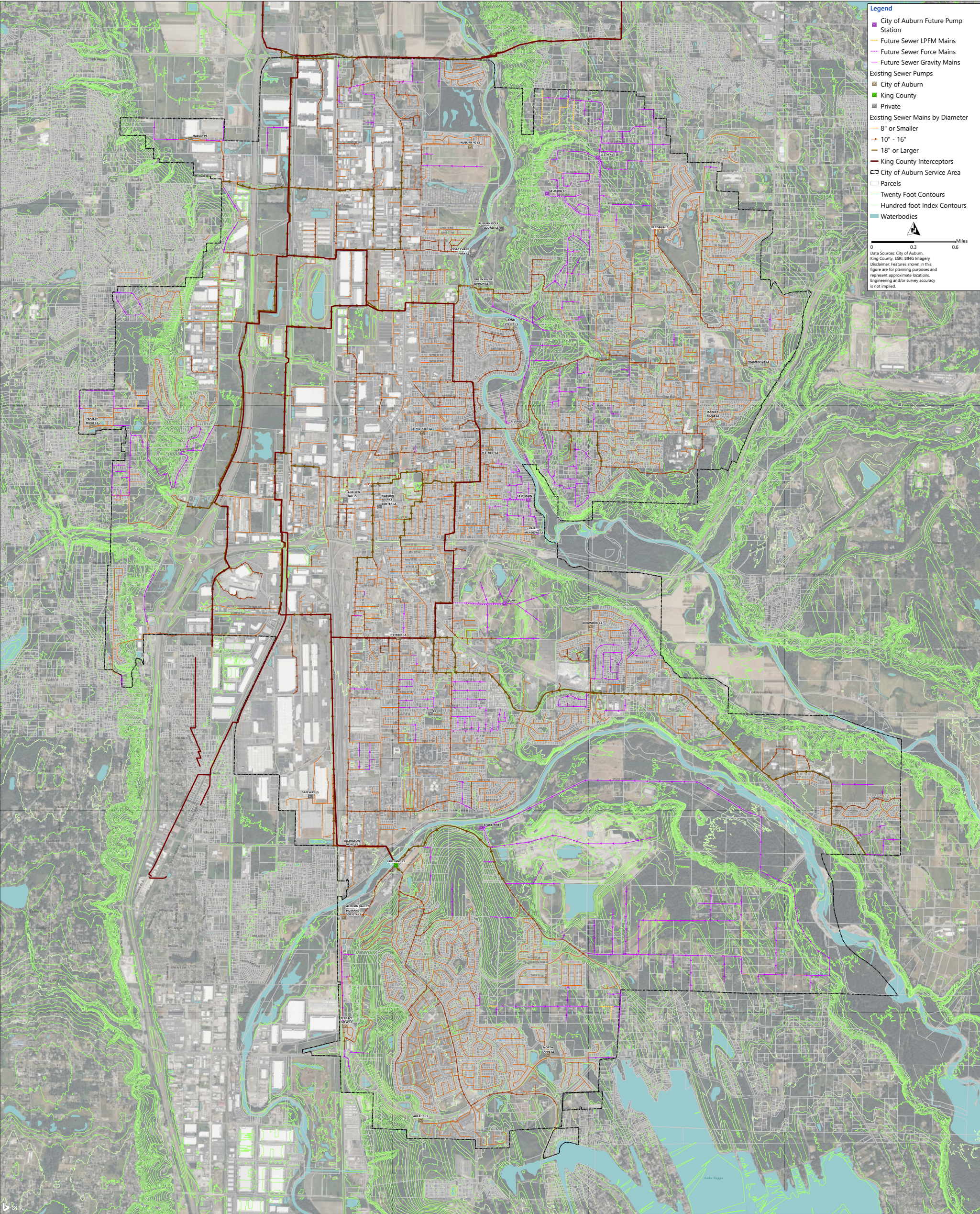


Figure 5.5 Existing and Future Sewer System
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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.

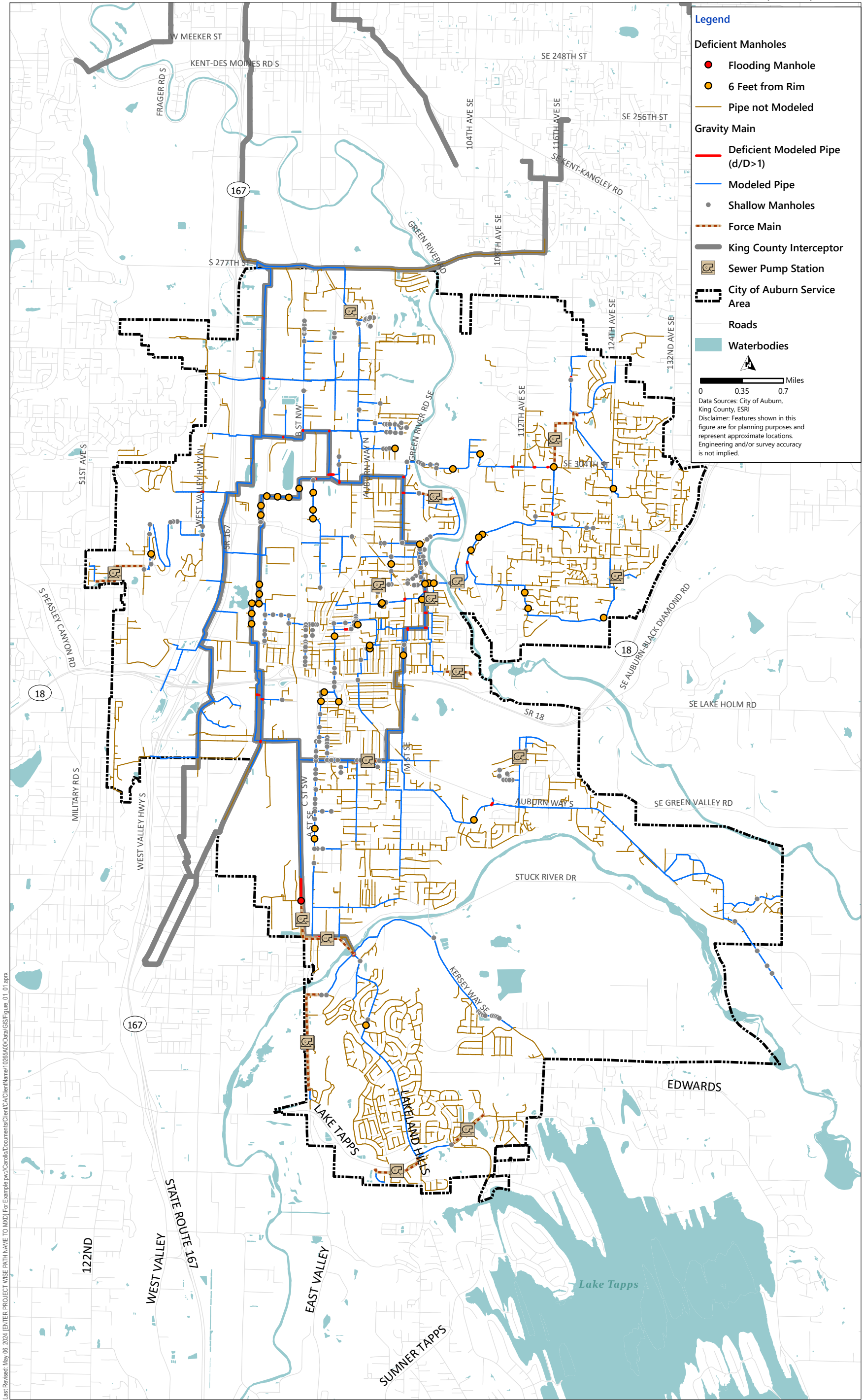


Figure 5.6 Existing System Deficiencies
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

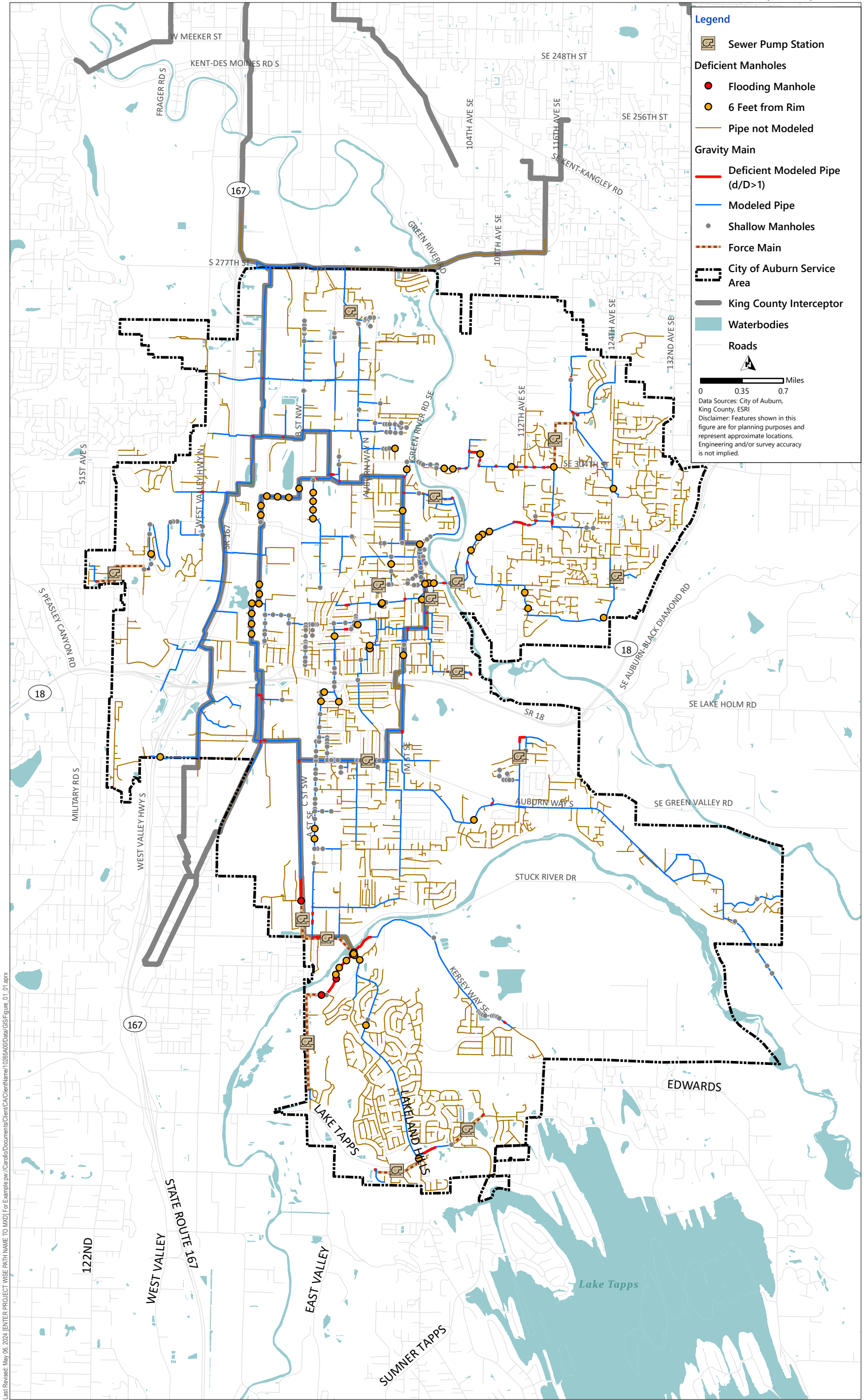


Figure 5.7 2044 System Deficiencies
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

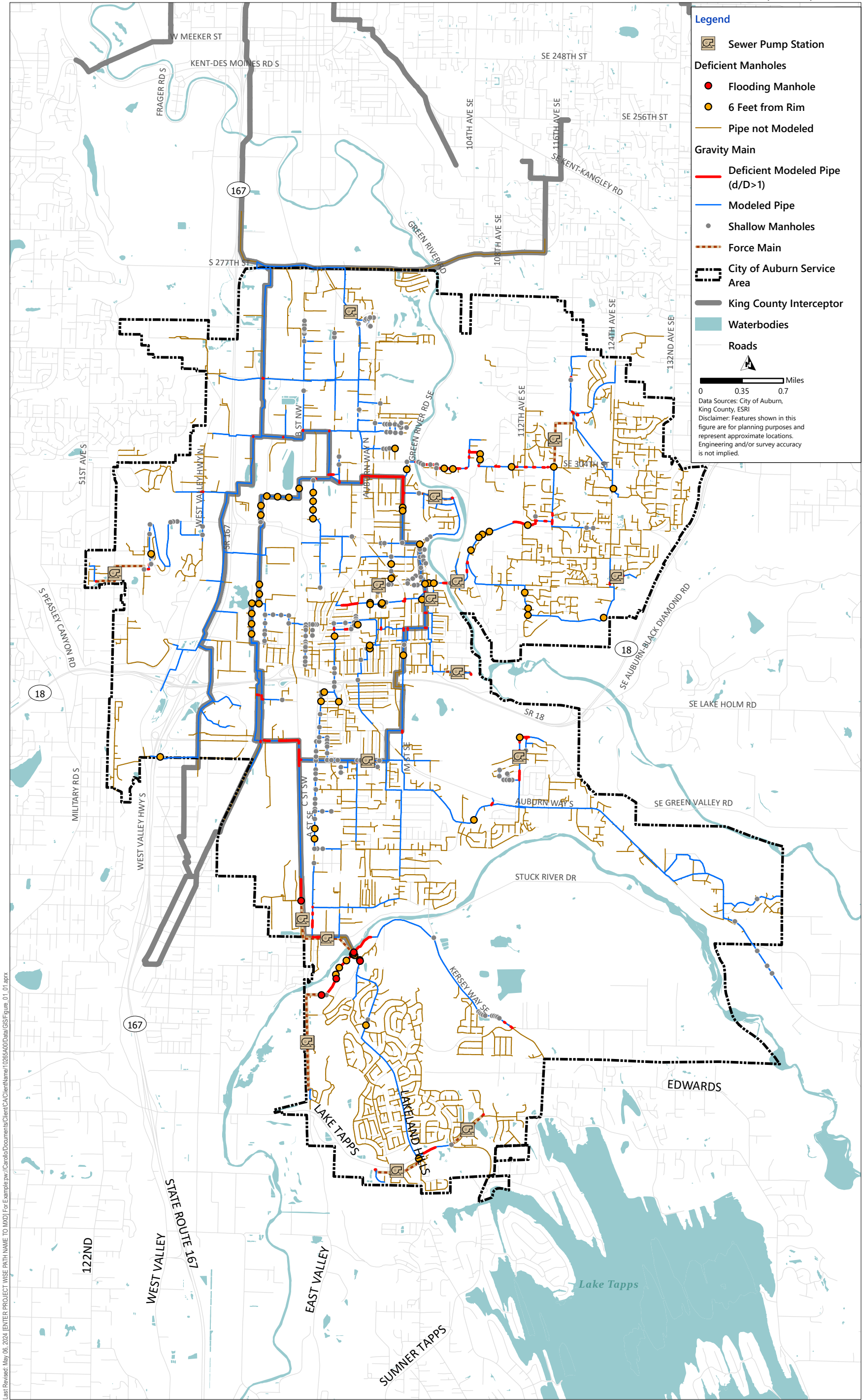


Figure 5.8 2044 Climate Change Design Storm System Deficiencies
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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 are 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).
- Recommended the City to do an initial I/I investigation to support an eventual I/I management program (2016 CSP).
- Sewer extension projects are recommended to serve every parcel within the City limits.
- 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.

The City's hydraulic model can be used to estimate peak flows for the different flow monitoring basins and areas included in the model during the design storm. The following parameters were calculated to better understand I/I severity in the collection system:

- **Peaking Factor:** Peaking factors are the ratio between peak flow and base sanitary flow and are commonly used for wastewater infrastructure design. These factors are derived by dividing the peak flow by the base sanitary flow for each basin. Due to the prolonged rainy season, wastewater agencies in the Pacific Northwest typically experience peaking factors from 2 to 10, and in some cases more than 10.
 - » Systems with a Peaking Factor of 3 or less are often considered as performing well. High Peaking Factors above 5 are typically signs of direct inflow to the collection system.
- **Peak I/I Rate:** The Peak I/I rate is the peak flow rate of all non-sanitary flows. Peak I/I rates are calculated by subtracting the base sanitary flow from the peak flow for each basin. Peak I/I rates are largely dependent on local hydrology, the condition of the collection system, and drainage connections, with the rate expressed in terms of gpad. The Peak I/I rate is calculated by dividing the Peak I/I flow by the total contributing area of land in acres in each basin. Peak I/I Rates can range from 1,000 gpad to over 20,000 gpad in areas in the Pacific Northwest. High peak I/I rates are usually signs of infiltration.

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 (gpac)	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.

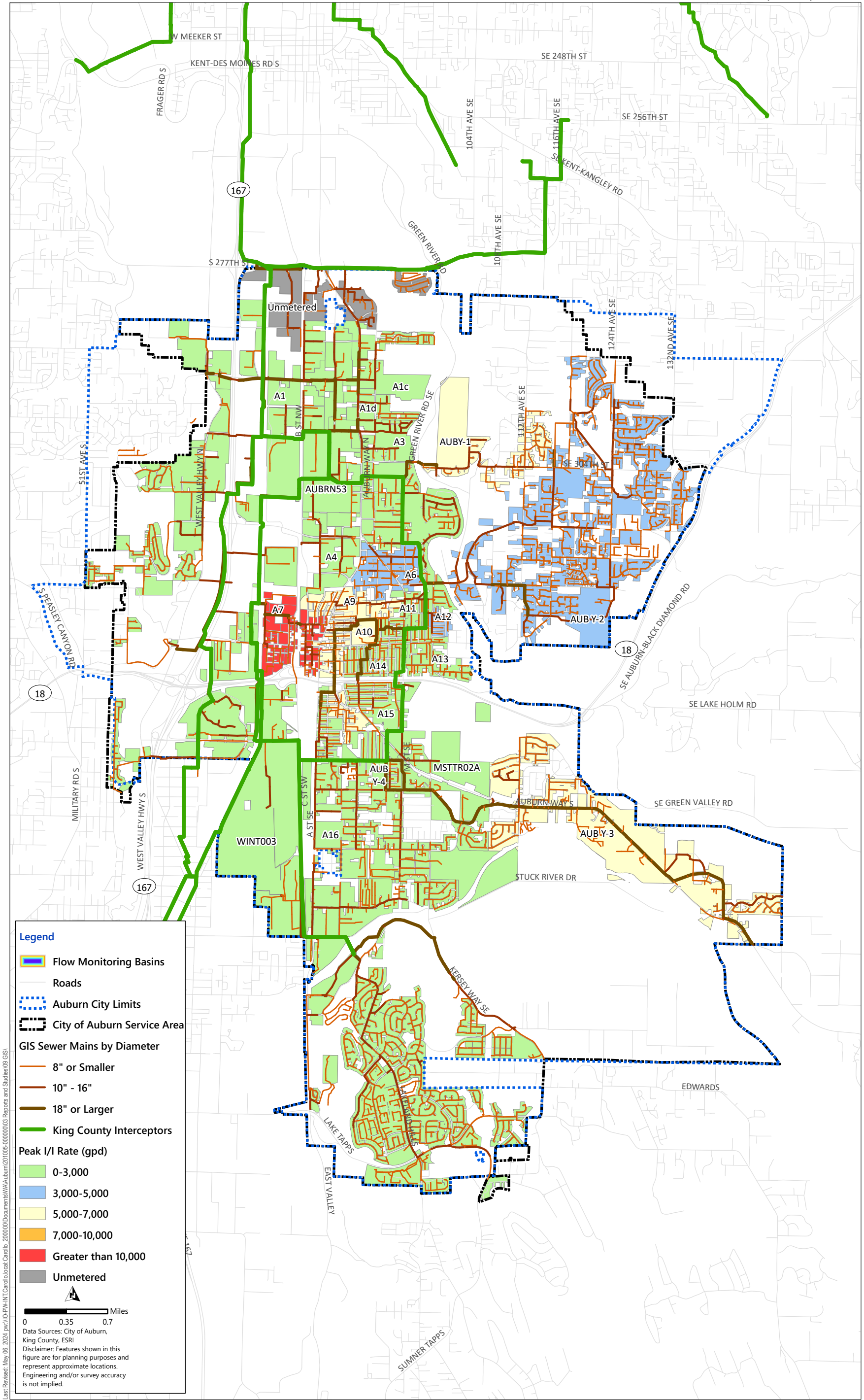


Figure 5.9 Peak I/I Rate by Flow Monitoring Basin
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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

Pipe Material	Feet of Pipeline				
	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.

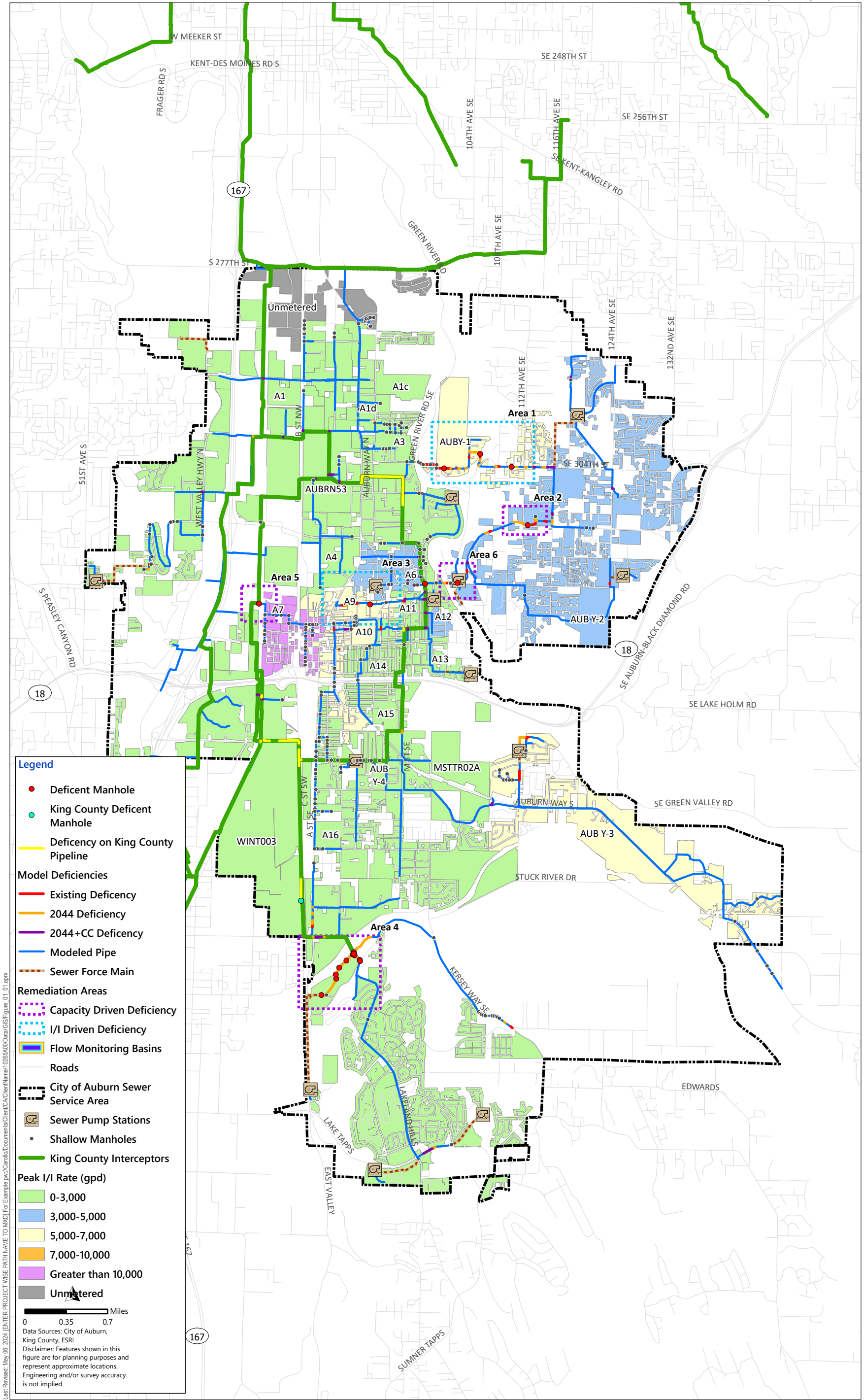


Figure 5.10 Recommended Remediation Strategies
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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.

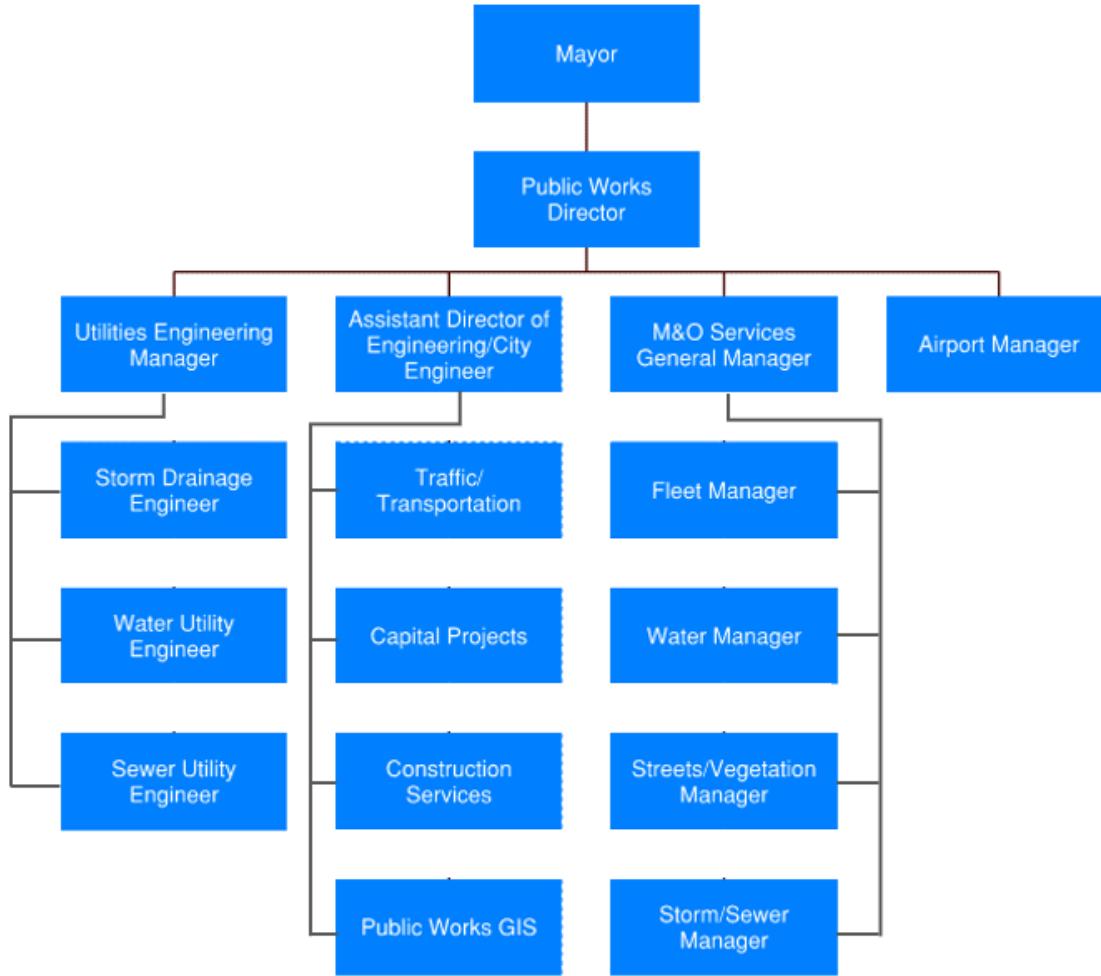


Figure 6.1 City of Auburn Public Works Department Organizational Chart

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 and 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 vac-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 vector/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 vector 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 vector 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.

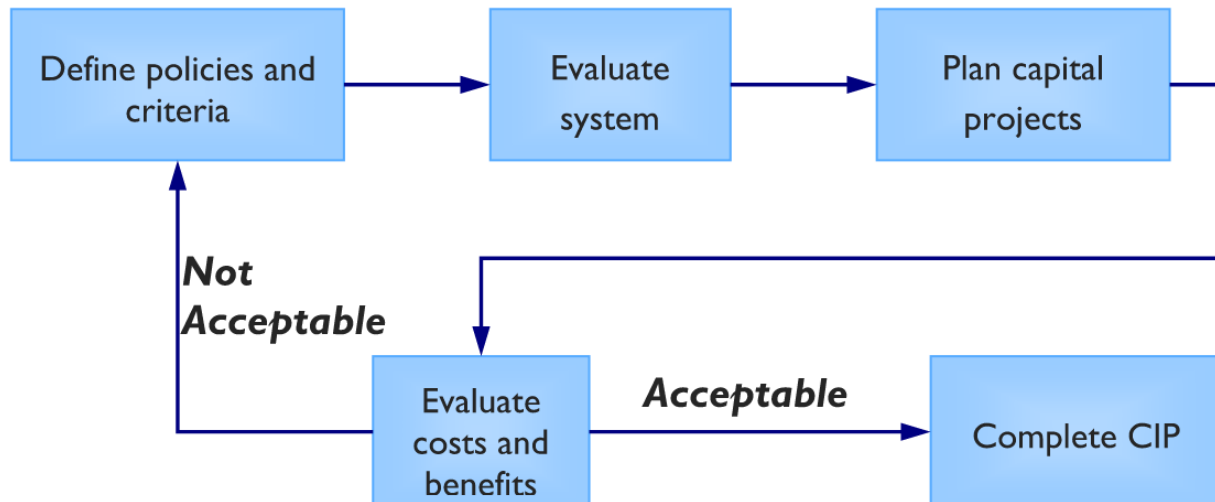


Figure 7.1 CIP Development Flow Chart

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 Pre-design 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	<table> <tr> <td>1. 22th Street Pump Station (2027-2030)</td><td></td></tr> <tr> <td>Based on 2016 Condition Assessment</td><td>\$4,200,000</td></tr> <tr> <td>Subtotal</td><td>\$4,200,000</td></tr> <tr> <td>2. Riverside Pump Station (2031-2033)</td><td></td></tr> <tr> <td>Package pump station</td><td>\$2,724,000</td></tr> <tr> <td>Project contingency (50% of all above costs)</td><td>\$1,362,000</td></tr> <tr> <td>Washington State and King County taxes (10.2% of construction costs)</td><td>\$417,000</td></tr> <tr> <td>Subtotal construction costs</td><td>\$4,503,000</td></tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td><td>\$1,347,000</td></tr> <tr> <td>Subtotal</td><td>\$5,850,000</td></tr> <tr> <td>3. Dogwood Pump Station (2034-2035)</td><td></td></tr> <tr> <td>Package pump station</td><td>\$256,000</td></tr> <tr> <td>Project contingency (50% of all above costs)</td><td>\$128,000</td></tr> <tr> <td>Washington State and King County taxes (10.2% of construction costs)</td><td>\$39,000</td></tr> <tr> <td>Subtotal construction costs</td><td>\$423,000</td></tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td><td>\$127,000</td></tr> <tr> <td>Subtotal</td><td>\$550,000</td></tr> <tr> <td>4. R Street Pump Station (2037-2039)</td><td></td></tr> <tr> <td>Package pump station</td><td>\$605,000</td></tr> <tr> <td>Project contingency (50% of all above costs)</td><td>\$302,500</td></tr> <tr> <td>Washington State and King County taxes (10.2% of construction costs)</td><td>\$93,000</td></tr> <tr> <td>Subtotal construction costs</td><td>\$1,000,500</td></tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td><td>\$299,500</td></tr> <tr> <td>Subtotal</td><td>\$1,300,000</td></tr> <tr> <td>5. 8th Street Pump Station (2041-2043)</td><td></td></tr> <tr> <td>Package pump station</td><td>\$1,513,000</td></tr> <tr> <td>Project contingency (50% of all above costs)</td><td>\$756,500</td></tr> <tr> <td>Washington State and King County taxes (10.2% of construction costs)</td><td>\$231,000</td></tr> <tr> <td>Subtotal construction costs</td><td>\$2,500,500</td></tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td><td>\$749,500</td></tr> <tr> <td>Subtotal</td><td>\$3,250,000</td></tr> </table>	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
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Administration, engineering design, and permitting (30% of costs)	\$749,500																																																														
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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 <table> <tr> <td>Initial CCTV</td> <td>\$6,600</td> </tr> <tr> <td>Cleaning</td> <td>\$15,600</td> </tr> <tr> <td>Post-cleaning CCTV</td> <td>\$6,600</td> </tr> <tr> <td>Subtotal</td> <td>\$28,800</td> </tr> </table> Green River Crossing via 8th Street NE Bridge: 1,191 feet of 14-inch CIP <table> <tr> <td>Traffic control</td> <td>\$117,000</td> </tr> <tr> <td>Bypass pumping</td> <td>\$124,000</td> </tr> <tr> <td>Initial CCTV</td> <td>\$8,000</td> </tr> <tr> <td>Cleaning</td> <td>\$23,000</td> </tr> <tr> <td>Post-cleaning CCTV</td> <td>\$8,000</td> </tr> <tr> <td>Subtotal</td> <td>\$280,000</td> </tr> <tr> <td>Subtotal line-item costs</td> <td>\$308,800</td> </tr> <tr> <td>Project contingency (30% of all above costs)</td> <td>\$92,600</td> </tr> <tr> <td>Washington State and King County taxes (10.2% of construction costs)</td> <td>\$40,900</td> </tr> <tr> <td>Subtotal construction costs</td> <td>\$442,300</td> </tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td> <td>\$132,700</td> </tr> </table>	Initial CCTV	\$6,600	Cleaning	\$15,600	Post-cleaning CCTV	\$6,600	Subtotal	\$28,800	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
Initial CCTV	\$6,600																														
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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 Pre-design 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	<table> <tr> <td>Cleaning</td><td>\$318,000</td></tr> <tr> <td>CCTV</td><td>\$106,000</td></tr> <tr> <td>Disposal</td><td>\$6,000</td></tr> <tr> <td>Traffic control</td><td>\$12,000</td></tr> <tr> <td>Subtotal line-item costs</td><td>\$442,000</td></tr> <tr> <td>Project contingency (50% of all above costs)</td><td>\$221,000</td></tr> <tr> <td>Washington State & King County taxes (10.2% of construction costs)</td><td>\$67,600</td></tr> <tr> <td>Subtotal construction costs</td><td>\$730,600</td></tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td><td>\$219,000</td></tr> </table>	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
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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	<table> <tr> <td>Flow monitoring (four flow meters and two rain gauges for 6 months per year)</td> <td>\$284,500</td> </tr> <tr> <td>Subtotal line-item costs</td> <td>\$284,500</td> </tr> <tr> <td>Project contingency (30% of all above costs)</td> <td>\$85,400</td> </tr> <tr> <td>Washington State & King County taxes (10.2% of construction costs)</td> <td>\$37,700</td> </tr> <tr> <td>Subtotal construction costs</td> <td>\$407,600</td> </tr> <tr> <td>Administration, engineering design, and permitting (30% of costs)</td> <td>\$122,300</td> </tr> </table>	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
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 with 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 Sale 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.

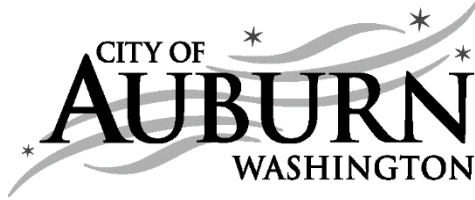
Table 8.10 Community Affordability Test

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 upphase 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.



Please click the below link to view the
Comprehensive Sewer Plan Appendices:

[Comprehensive Sewer Plan Appendices](#)

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)

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

CITY OF AUBURN, WASHINGTON

ORDINANCE NO. 277 #

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.

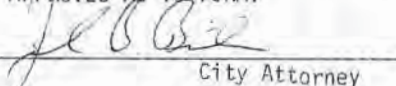
PASSED at a regular open public meeting of the Auburn City Council, Auburn, Washington, this 5th day of November, 1973.


Mayor

ATTEST:


City Clerk

APPROVED AS TO FORM:


City Attorney

PUBLISHED: 3-1-74

MUNICIPALITY OF METROPOLITAN SEATTLE

CITY OF AUBURN

AGREEMENT FOR SEWAGE DISPOSAL

THIS AGREEMENT is made as of this 15th 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 reimbursement 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 supercedes 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.

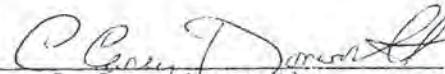
CITY OF AUBURN, WASHINGTON


Stanley P. Kersey, Mayor

ATTEST:


Earla L. Byerley, City Clerk

MUNICIPALITY OF METROPOLITAN SEATTLE

By 
C. Carey Denworth
Chairman of the Council

ATTEST:


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 Everett

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.

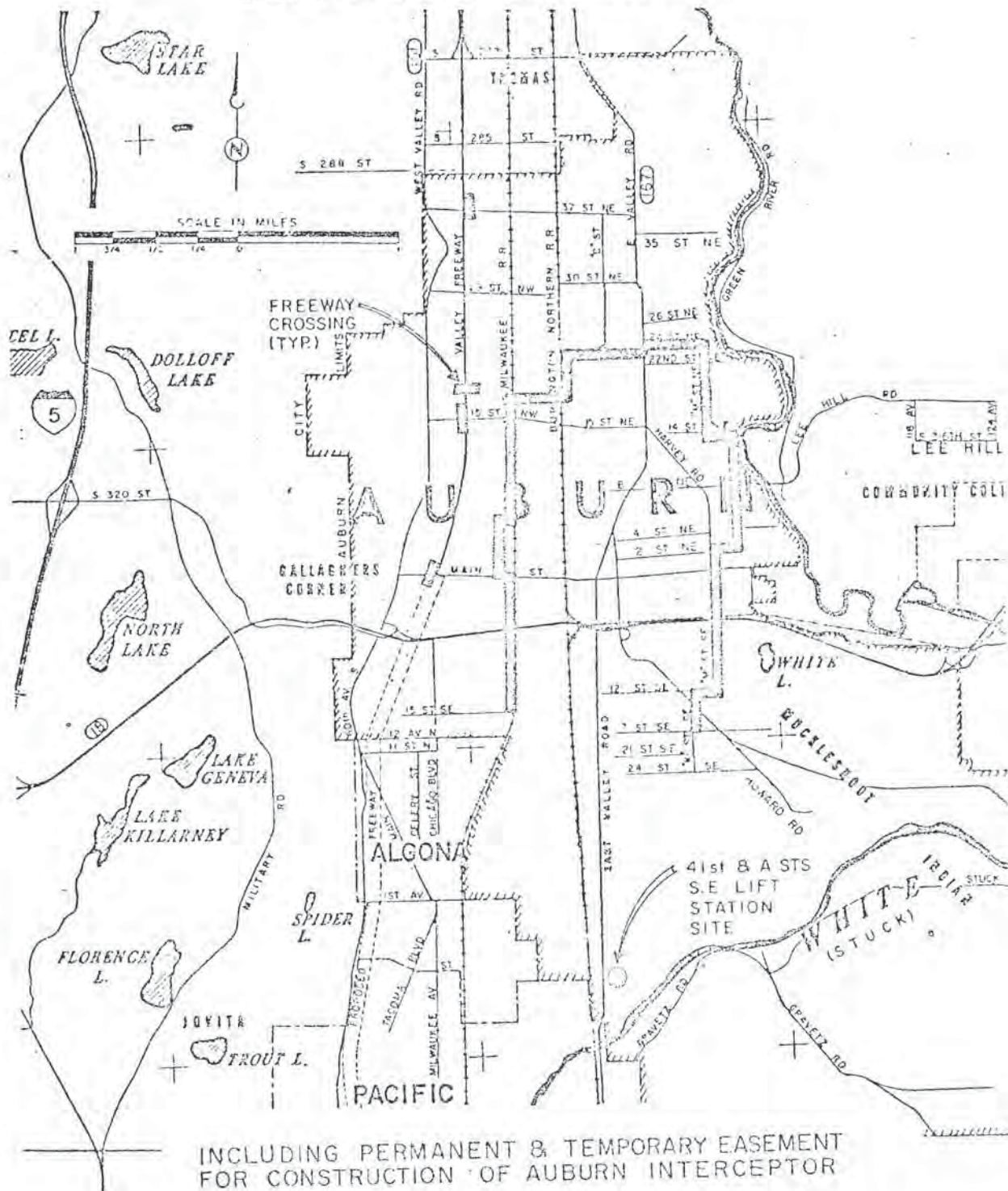
Jack A. Hakala
NOTARY PUBLIC in and for the State
of Washington, residing at SEATTLE

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 approval at follow

RESOLUTION NO. 1 7 2 7

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.

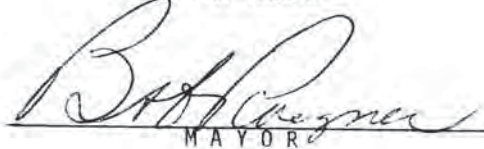
THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HEREWITH RESOLVES THAT:

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.

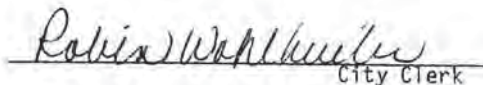
The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directions of this legislation.

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.

Extension of Agreement for
Sewage Disposal
Page One
1/19/87

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

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

6
7 CITY OF AUBURN

8
9 MAYOR

10 ATTEST:

11
12 Robin Wohlhueter
13 Robin Wohlhueter, City Clerk

14
15 MUNICIPALITY OF METROPOLITAN
16 SEATTLE

17
18 By:

19 Gary A. Zimmerman
Gary Zimmerman
Chairman of the Council

20 ATTEST:

21
22 Bonnie Mattson
23 Bonnie Mattson, Clerk of the Council

24
25 -----
26 Extension of Agreement for
Sewage Disposal
Page Two of Two
1/19/87

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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.

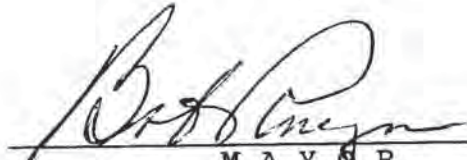
THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HERewith RESOLVES THAT:

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".

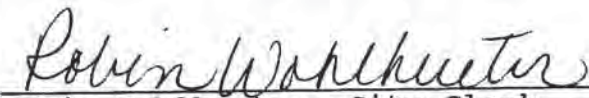
Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

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

Resolution No.
Page 2
May 30, 1990

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 4th 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

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.

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

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

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

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.

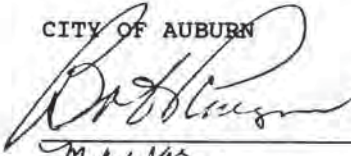
6. The City irrevocably obligates and binds itself to pay its sewage disposal charge out of the gross revenues of the sewer system of the City. The City further binds itself to establish, maintain and collect charges for sewer service which will at all times be sufficient to pay all costs of maintenance 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.

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.

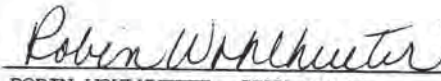
IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

CITY OF AUBURN


Mayor

ATTEST:

APPROVED AS TO FORM:


ROBIN WOHLHUETER, CITY CLERK


MARGUERITE SCHELLENTRAGER, CITY ATTORNEY

MUNICIPALITY OF
METROPOLITAN SEATTLE

Gary Zimmerman
Chair of the Council

ATTEST:

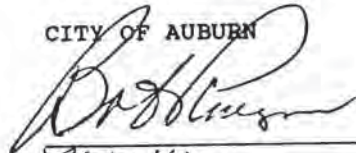
Pes 2090

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.

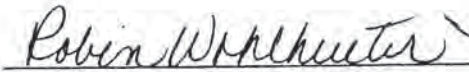
IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

CITY OF AUBURN


Mayor

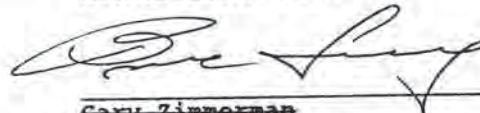
ATTEST:

APPROVED AS TO FORM:


ROBIN WOHLHUETER, CITY CLERK


MARGUERITE SCHELLENRAGER, CITY ATTORNEY

MUNICIPALITY OF
METROPOLITAN SEATTLE


Gary Zimmerman
Chair of the Council

ATTEST:


Benji Mattson

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



20021001001676

PACIFIC NW TIT AG
PAGE 001 OF 024
10/01/2002 14:08
KING COUNTY, WA

42.00

RECORDER'S COVER SHEET

Document Title(s) (or transactions contained therein)

1 Franchise Agreement

24/42

PRINT

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

2010 recording rules were filed for
record by Pacific Northwest Title as
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

2002 100 1001676

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"

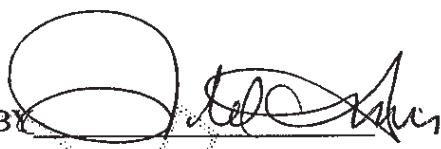
Res 3511

14458

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 14 day of September, 2002.

KING COUNTY, WASHINGTON

BY 

TITLE King County Executive

2002 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

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

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.

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

14458

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

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

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

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

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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

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

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:

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

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 its 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 or 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.

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.

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 42.115 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.

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.

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

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.

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

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.

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.

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

2002 100 1001676

1 of 3



14458

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

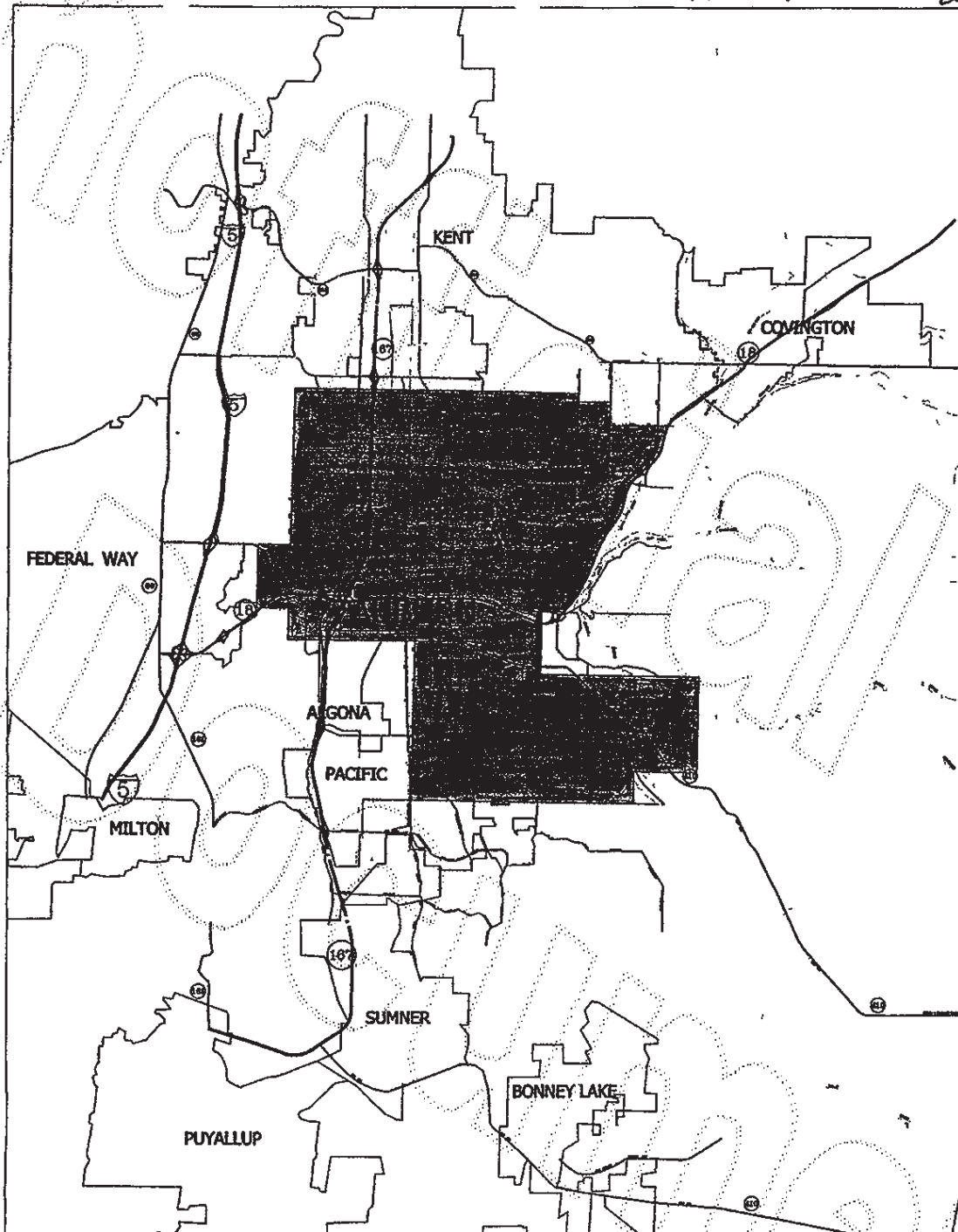
PROPOSED FRANCHISE AREA

JUN 2002

2002 100 1001676

14458

ATTACHMENT B 2 of 3



VICINITY MAP

SCALE 1" = 2 MILES

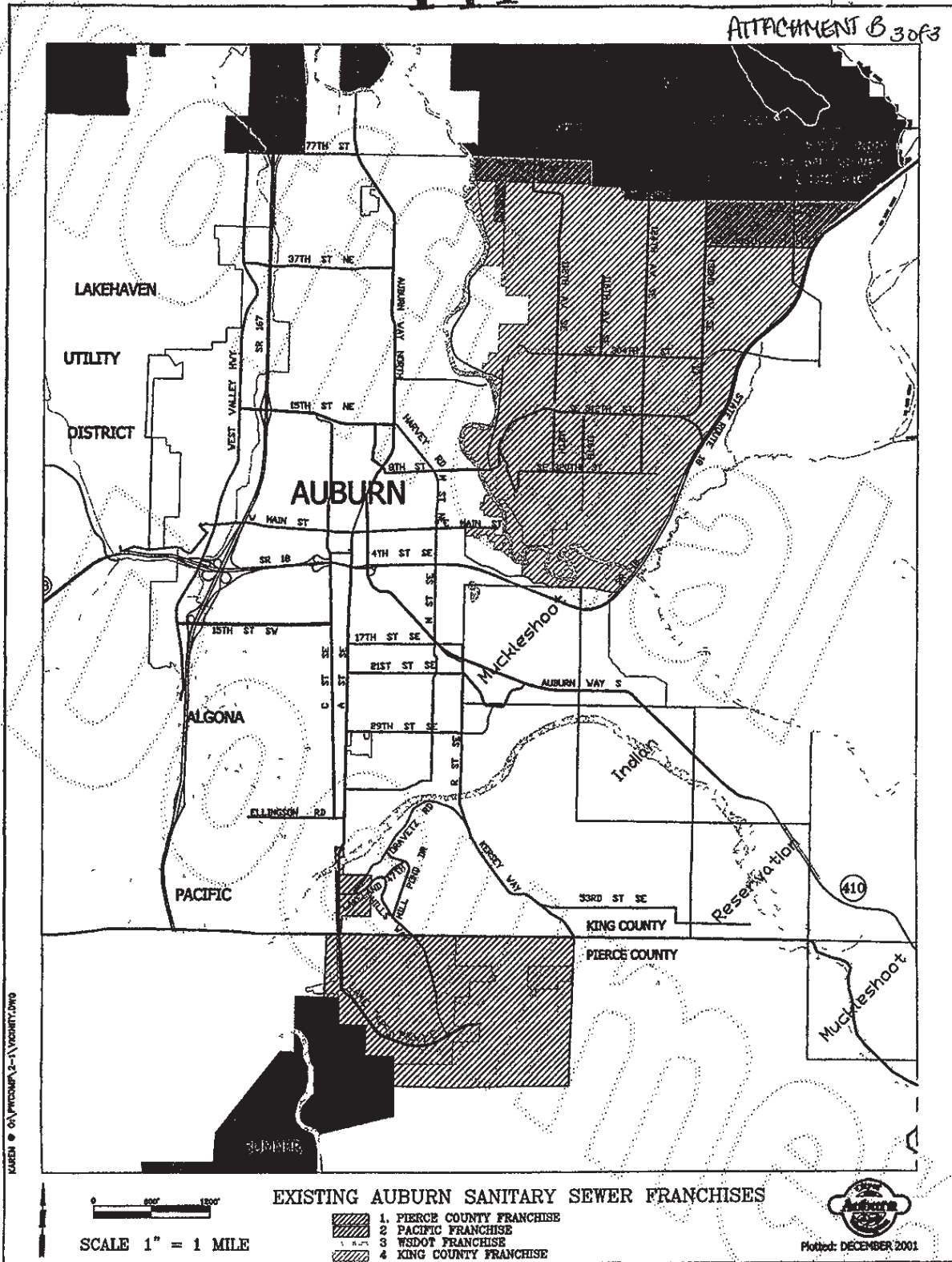


Plotted DECEMBER 2001

14458

ATTACHMENT B 3 of 3

2002 100 1001676



- 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.

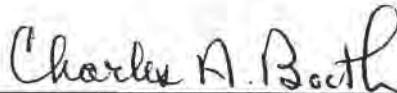
NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN,
WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HERewith
RESOLVES THAT:

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.

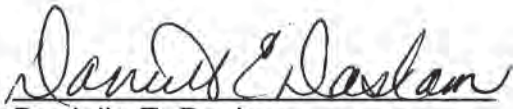
DATED this 20th day of February, 2001.

CITY OF AUBURN



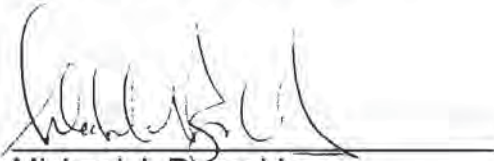
CHARLES A. BOOTH
MAYOR

ATTEST:

A handwritten signature in cursive script, appearing to read "Danielle E. Daskam", written over a horizontal line.

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

A handwritten signature in cursive script, appearing to read "Michael J. Reynolds", written over a horizontal line.

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

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.

2001 040 6001622

**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

2001 040 6001622

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

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.

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.

2001 040 6001622

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

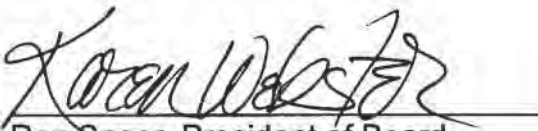
terms of this agreement. Future agreements may occur between the parties to transfer additional or future service areas by mutual agreement.

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:



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

Attest:



Secretary of Board
Philip W. Sullivan

Approved as to form:



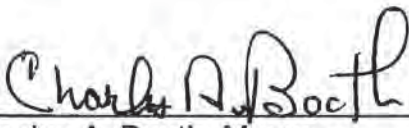
Soos Creek Attorney
Michael M. Hanis

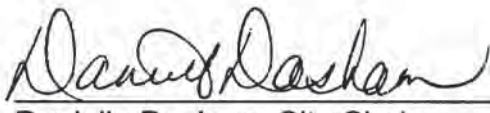
CITY OF AUBURN

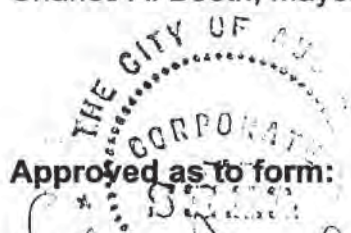
Approved by Resolution No. 3321 of the City of Auburn, Washington, at its regular meeting held on the 20th day of February, 2001.

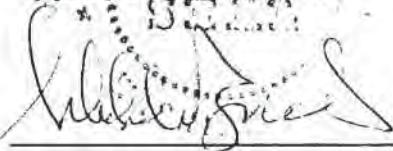
By:

Attest:


Charles A. Booth, Mayor


Danielle Daskam, City Clerk


Approved as to form:


Michael Reynolds, City Attorney

2001 040 6001622



— AUBURN POTENTIAL,
ANNEXATION AREA
BOUNDARY —

— CURRENT SCWSD
SEWER SERVICE AREA —

— AREA TO BE SERVED
BY SOOS CREEK —

— CURRENT SCWSD
CORPORATE BOUNDARY —

EXHIBIT A

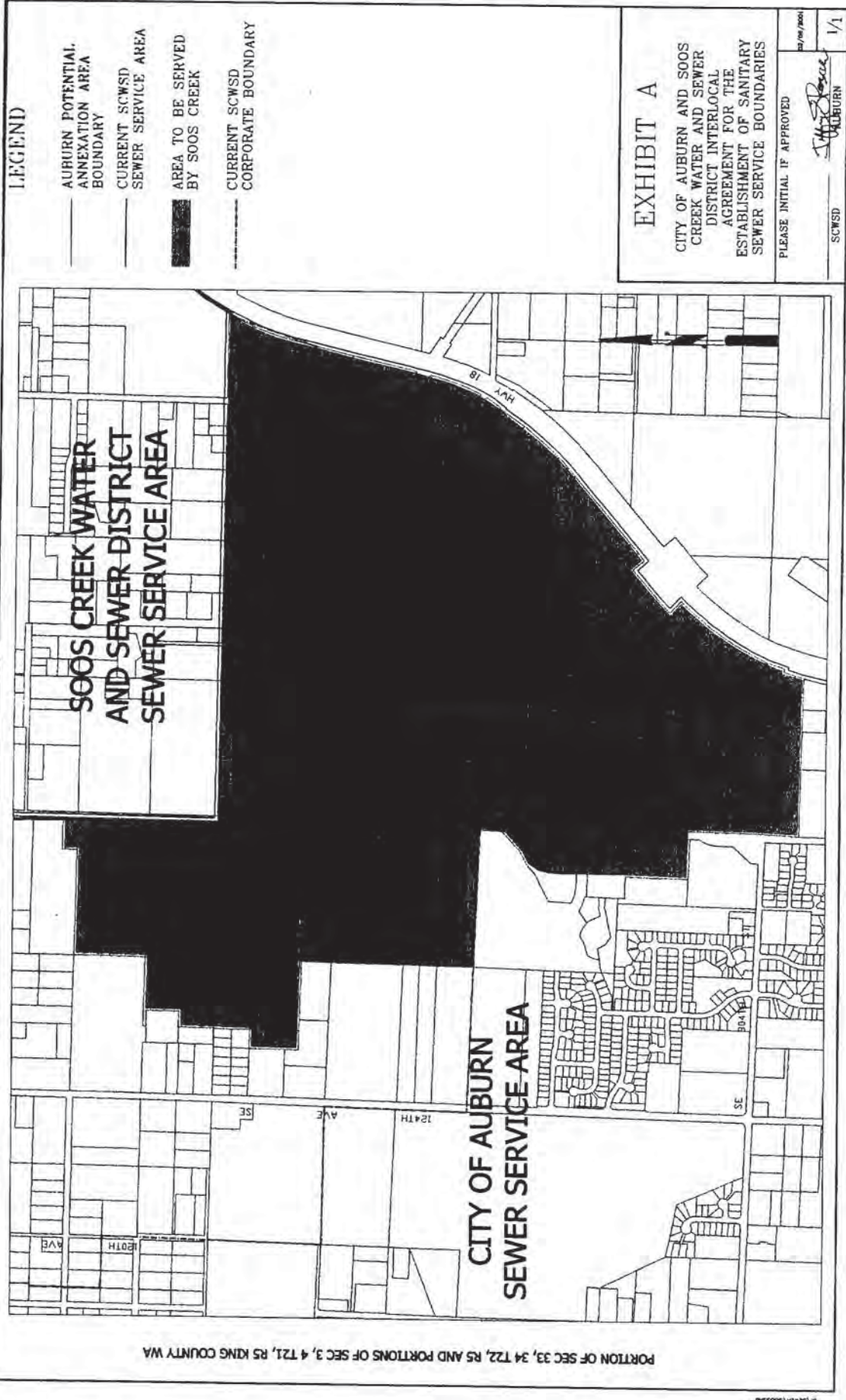
CITY OF AUBURN AND SOOS
CREEK WATER AND SEWER
DISTRICT INTERLOCAL
AGREEMENT FOR THE
ESTABLISHMENT OF SANITARY
SEWER SERVICE BOUNDARIES

PLEASE INITIAL IF APPROVED

SCWSD

AUBURN

 $\frac{1}{1}$



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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"

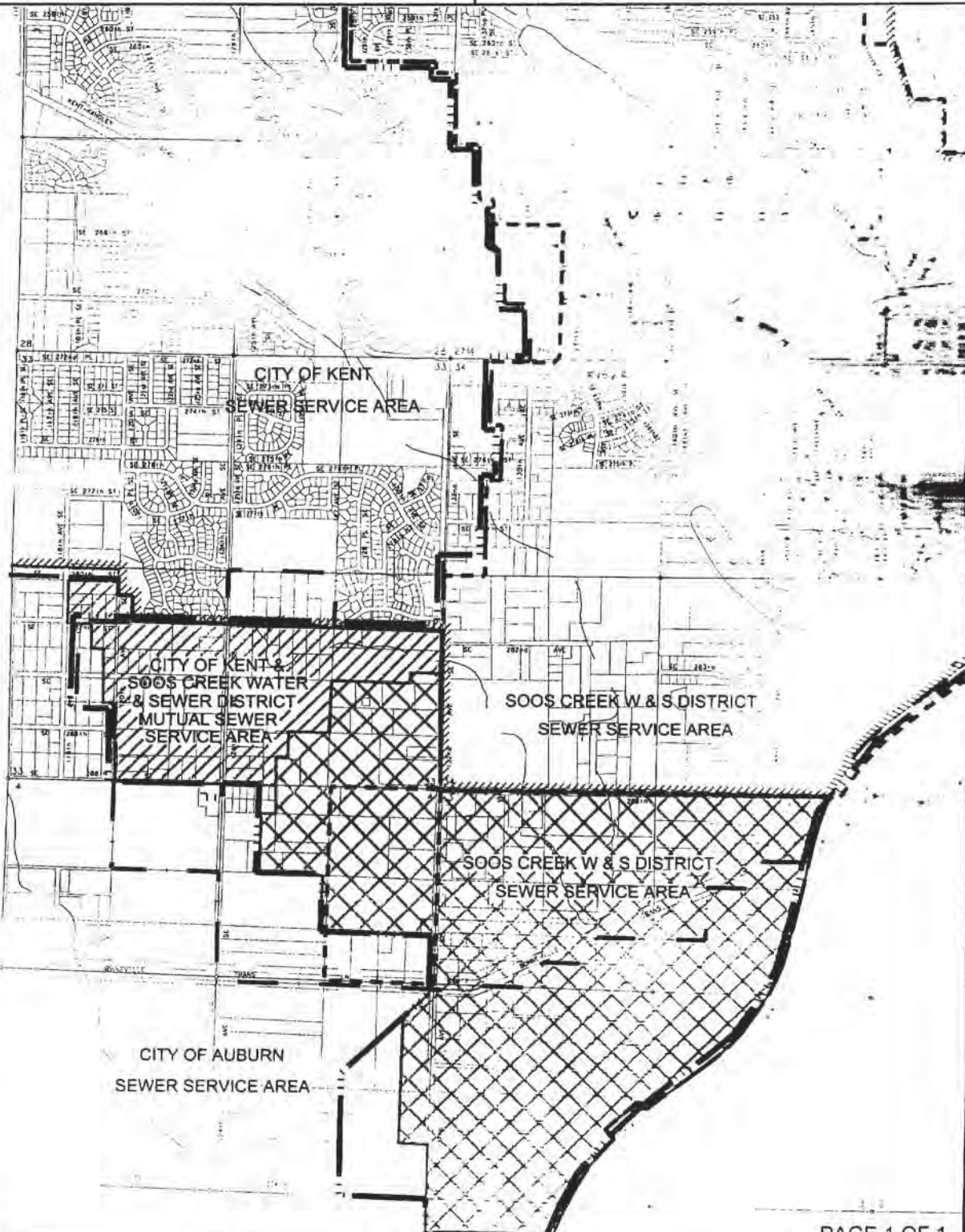
CITY OF AUBURN / SOOS CREEK
WATER & SEWER DISTRICT
INTERLOCAL AGREEMENT

PROPOSED SEWER SERVICE PLANNING AREAS

APPROVAL

[Signature]
SOOS CREEK W & S DISTRICT

[Signature]
CITY OF AUBURN



2001 040 6001622

- 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.

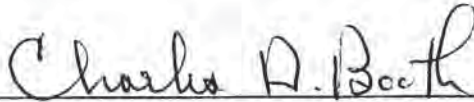
NOW, THEREFORE, THE COUNCIL OF THE CITY OF AUBURN, WASHINGTON, IN A REGULAR MEETING DULY ASSEMBLED, HERewith RESOLVES THAT:

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
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



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PACIFIC NW TIT AG
PAGE 001 OF 007
04/06/2001 15:37
KING COUNTY, WA

14.00

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.

2001 040 6001623

**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

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.

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

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.

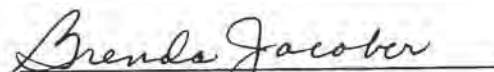
CITY OF KENT

Approved by ~~Resolution No.~~ MOTION of the City of Kent, Washington, at its regular meeting held on the 6TH day of FEBRUARY, 2001.

By:

Attest:


Mayor


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
Charles A. Booth, Mayor

Danielle Daskam
Danielle Daskam, City Clerk

Approved as to form:

[Signature]
Auburn City Attorney

2001 040 6001623

LEGEND

AUBURN POTENTIAL
ANNEXATION AREA
BOUNDARY

CURRENT SCWSD
SEWER SERVICE AREA

AREA TO BE SERVED
BY KENT CITY



EXHIBIT A

CITY OF AUBURN AND CITY
OF KENT INTERLOCAL
AGREEMENT FOR THE
ESTABLISHMENT OF SANITARY
SEWER SERVICE BOUNDARIES

PLEASE INITIAL IF APPROVED

KENT

AUBURN

$$\frac{1}{1}$$

CITY OF KENT

SEWER SERVICE AREA

**SOOS CREEK WATER
AND SEWER DISTRICT
SEWER SERVICE AREA**

CITY OF AUBURN
SEWER SERVICE AREA

2001 040 6001623

- Sewer Service Boundaries (Resolutions 4335 and 730)



RESOLUTION NO. 4 3 3 5

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



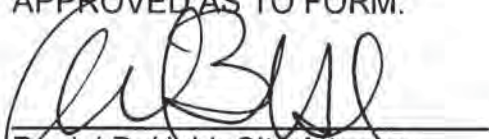
PETER B. LEWIS
MAYOR

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 than 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

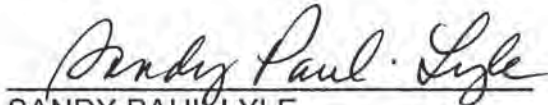
Approved by Resolution No. 730 of the City of Pacific, Washington, at its regular meeting held on the 12th day of May, 2008.

By:



RICHARD HILDRETH,
Mayor, City of Pacific

Attest:



SANDY PAUL-LYLE,
City Clerk, City of Pacific

Approved as to form:

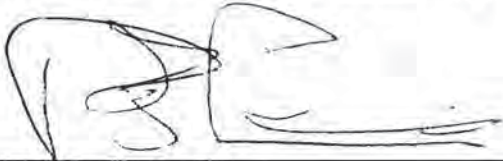


ALBERT A ABUAN,
City Attorney, City of Pacific

CITY OF AUBURN

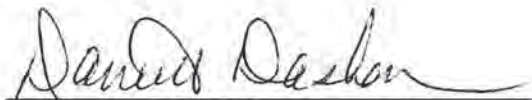
Approved by Resolution No. 4335 of the City of Auburn, Washington, at its regular meeting held on the 5th day of May, 2008.

By:



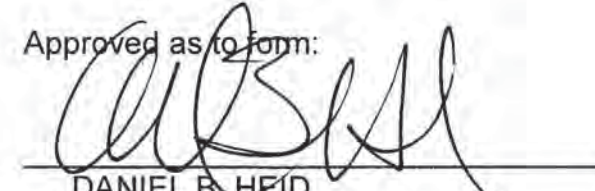
PETER B. LEWIS,
Mayor, City of Auburn

Attest:



DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:



DANIEL B. HEID,
City Attorney, City of Auburn

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.

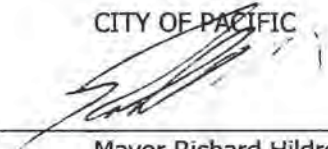
**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PACIFIC, WASHINGTON, AS
FOLLOWS:**

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.

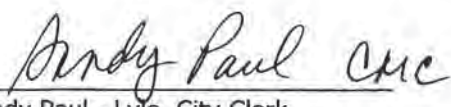
Section 2. The Mayor is hereby authorized to implement such administrative procedures as may be necessary to carry out the directives of this legislation.

PASSED BY THE PACIFIC CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE 12TH DAY OF MAY, 2008.

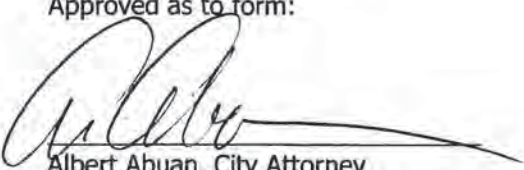
CITY OF PACIFIC


Mayor Richard Hildreth

ATTEST/AUTHENTICATED:


Sandy Paul - Lyle, City Clerk

Approved as to form:


Albert Abuan, City Attorney

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

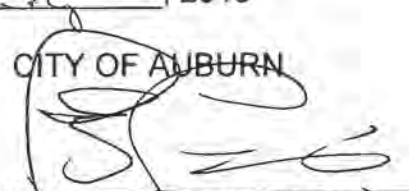
Lands in substantial conformity with the Agreement marked as Exhibit A attached hereto and incorporated herein by this reference, replacing the Agreement approved and authorized by Resolution No 4883

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

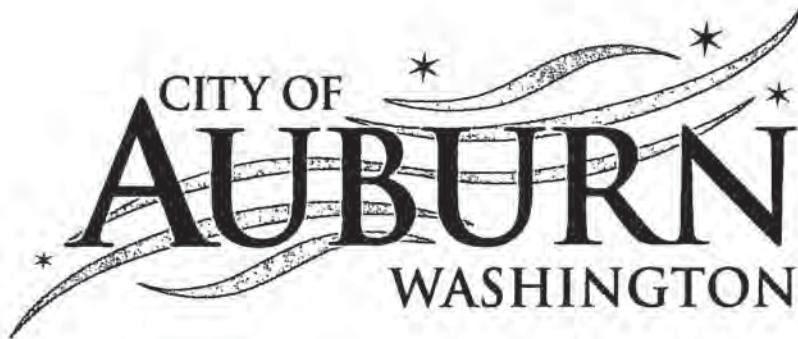

PETER B LEWIS, MAYOR

ATTEST


Danielle E Daskam, City Clerk

APPROVED AS TO FORM


Daniel B Heid, City Attorney



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.

Agreement for Municipal Utility Services

FAC11-00XX Name

Date: _____, 20____

Page 2 of 33

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

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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

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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

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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 be 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.

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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

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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

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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 waivers 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.

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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.

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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

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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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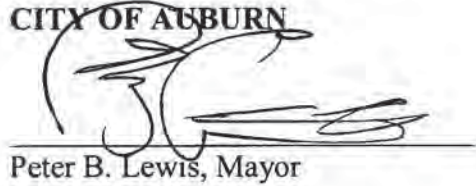
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XXIV. ENTIRE AGREEMENT

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 ^{Peter B Lewis} ~~Dennis Selle~~, to me known as the ^{Mayor} ~~City Engineer~~ 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 Apr. 9, 2016

SIGNATORY - INDIVIDUALS

DATED this _____ day of _____, 20____

STATE OF WASHINGTON)
COUNTY OF KING)ss.
)

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)
COUNTY OF KING)ss.

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 15th day of MARCH, 2013

Viggo Cus
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

[Signature]

Bobbie Jo Norton
Notary Public in and for the State of Washington
residing at Oakhaven, WA
My appointment expires 7/25/2015

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,

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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)

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: _____

Agreement for Municipal Utility Services

FAC11-00XX Name

Date: _____, 20____

Page 27 of 33

EXHIBIT B

LEGAL DESCRIPTION OF THE PROPERTY

EXHIBIT ATTACHED AND ADDED AS THE NEXT PAGE

Agreement for Municipal Utility Services

FAC11-00XX Name

Date: _____, 20____

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EXHIBIT C

SURVEYOR'S EASEMENT AND LEGAL DESCRIPTION

EXHIBIT ATTACHED AND ADDED AS THE NEXT PAGE

Agreement for Municipal Utility Services

FAC11-00XX Name

Date: _____, 20____

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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 City 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 # _____

Agreement for Municipal Utility Services

FAC11-00XX Name _____

Date: _____, 20____

RESOLUTION NO. 3 6 6 0

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 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 1st day of March 2004.

CITY OF AUBURN



PETER B. LEWIS
MAYOR

ATTEST:



Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:



Daniel B. Held,
City Attorney



20041129000242
59.00

PACIFIC NW TIT AG
PAGE 001 OF 041
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 3660)

41/59 PNWT
W 9276-12

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 waiver, 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.

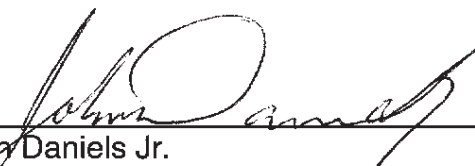
20. OBLIGATION TO COMPLETE PROJECT.

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 AWSCS. 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



John Daniels Jr.
Chairperson, Muckleshoot Tribal Council

3-19-04

Date

CITY OF AUBURN



Peter B. Lewis,
Mayor, City of Auburn

3/26/04

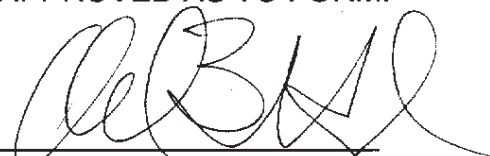
Date

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	
A	1216-20	1216-18	680	7.85	1.10	8.95	21			
	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			
B	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			
	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			
C	1114-04	1013-15	2,490	7.85	6.63	14.48	24			
	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			
D	1012-35	1012-33	350	7.85	7.43	15.28	24			
	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			
E	1011-07	1010-44	2,610	7.85	11.4	19.25	24			
	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

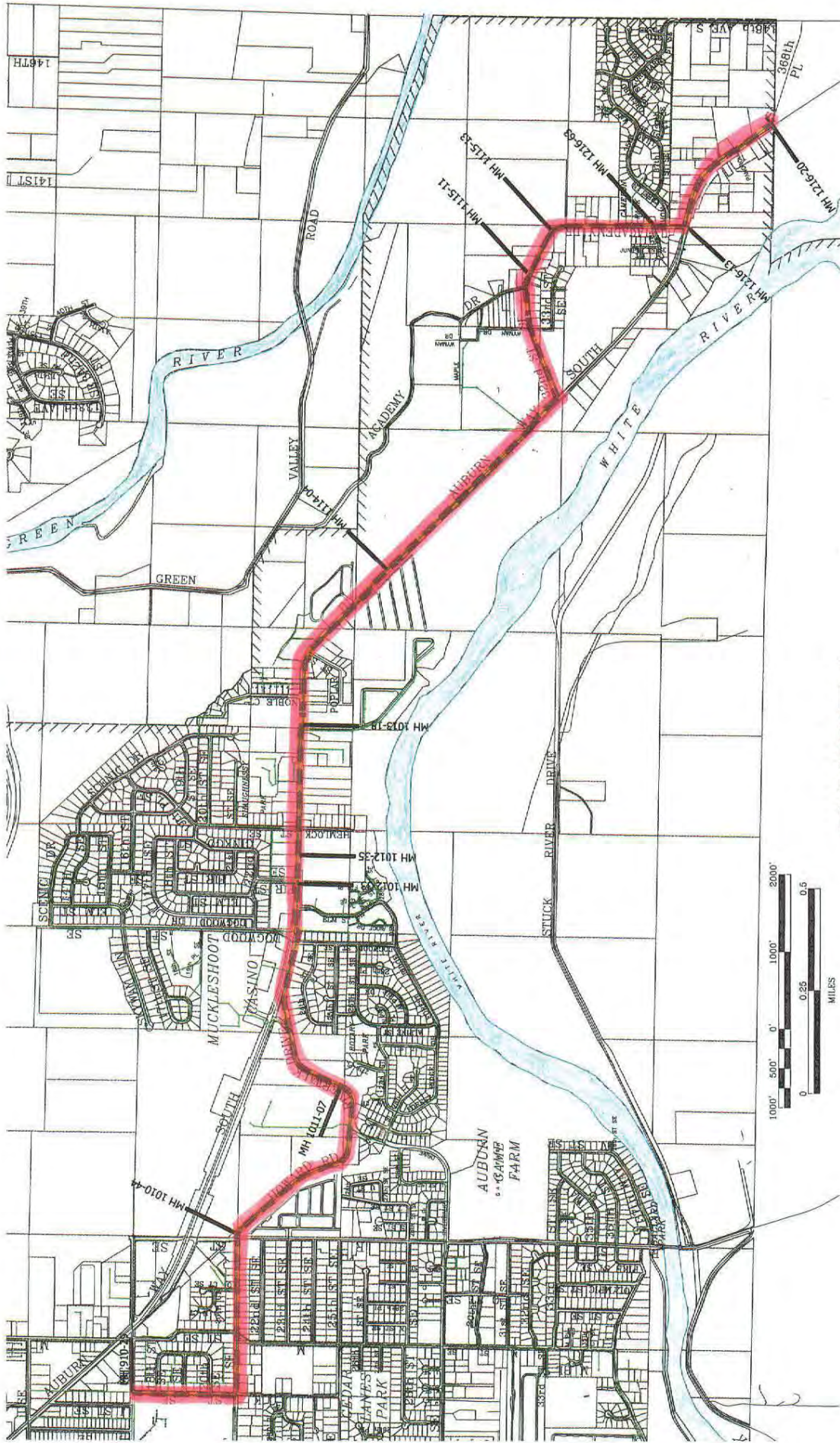


EXHIBIT A

AUBURN MUCKLESHOOT INDIAN TRIBE SANITARY SEWAGE AGREEMENT
AUBURN WAY SOUTH CONVEYANCE SYSTEM

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

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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

2800 and 2671 WHEREAS, the Auburn City Council has by Resolution No. 2800, 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";

97-188 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:

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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 its 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 COMMISSYSTEMS 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:

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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.

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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

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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. 3 5 0 2

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

A handwritten signature in black ink, appearing to read "P. B. Lewis", written over a horizontal line.

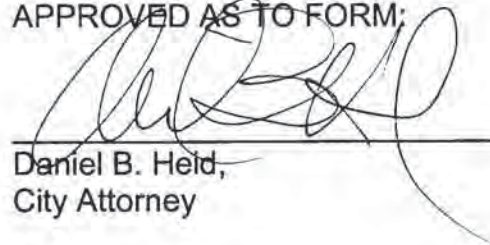
PETER B. LEWIS
MAYOR

ATTEST:



Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:



Daniel B. Held,
City Attorney

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, 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.

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, losses, damages or costs, of whatsoever kind 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 WAIVER 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 than 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:



JOHN DANIELS, JR., CHAIR

11/6/02

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:



PETER B. LEWIS, MAYOR

11/2/02

Date

Attest:



Danielle Daskam, City Clerk

Approved as to form:



Daniel B. Heid, City Attorney

LAKEHAVEN UTILITY DISTRICT

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



RESOLUTION NO. 3 6 5 1

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 2nd day of January, 2004.

GITY 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
PAGE001 OF 013
11/29/2004 10:09
KING COUNTY, WA

31.00

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 PMWT
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 judgments 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

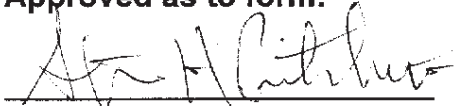
Approved by Resolution No. 2004-1006 of the Lakehaven Utility District, Federal Way, Washington, at its regular meeting held on the 8th day of January, 2004.

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:



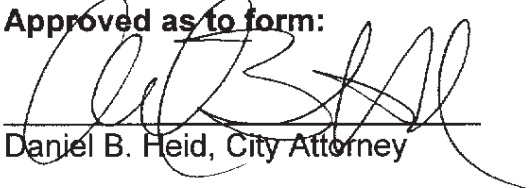
Peter B. Lewis, Mayor
City of Auburn

Attest:

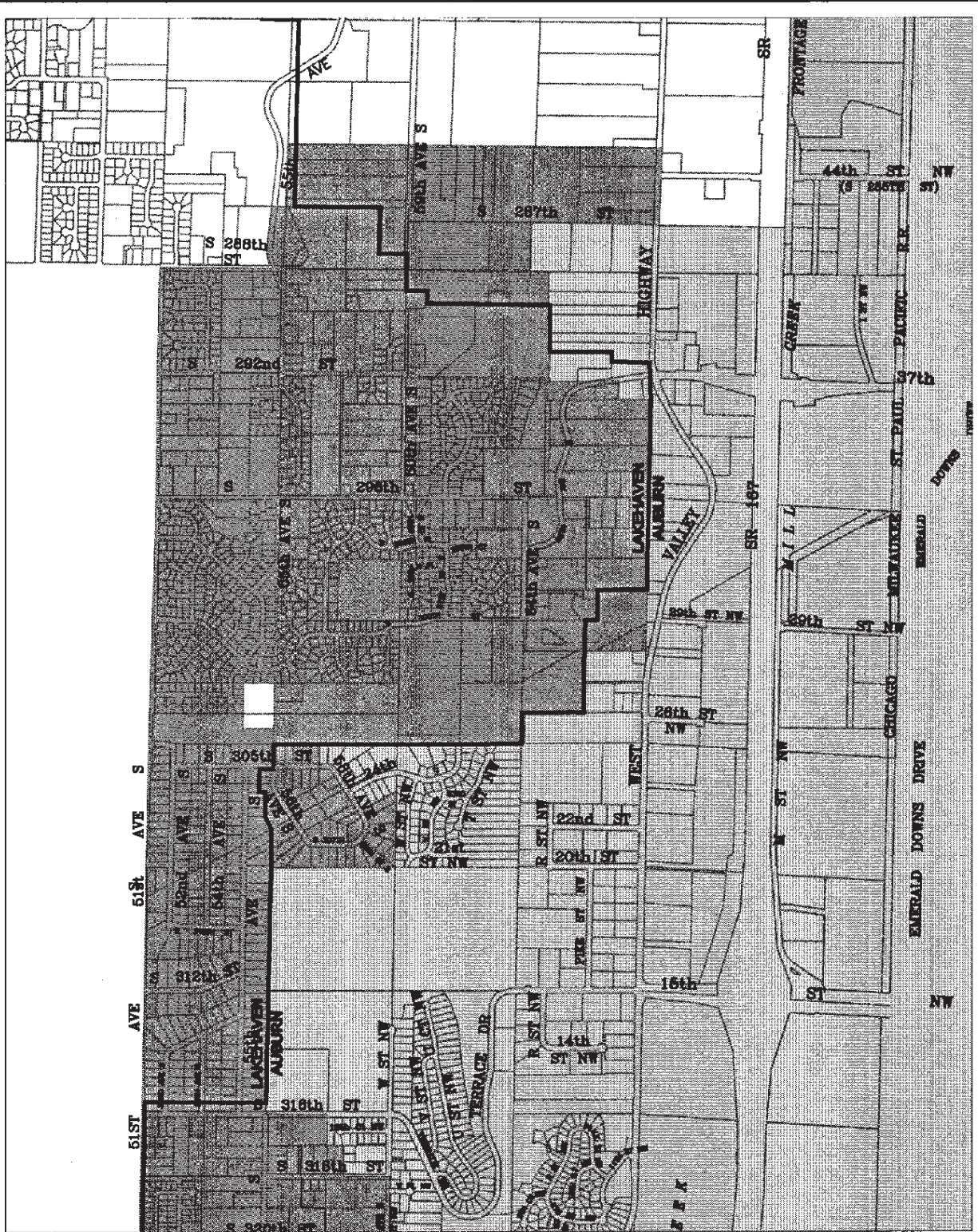


Danielle Daskam, City Clerk

Approved as to form:



Daniel B. Heid, City Attorney



LEGEND

- AUBURN CITY LIMITS
- AUBURN PAA
- PROPOSED SEWER SERVICE BOUNDARY



SCALE: 1" = 100'

Note: Information shown is for general reference purposes only and does not necessarily represent most geographic or cartographic data on mapped.

ATTACHMENT 1

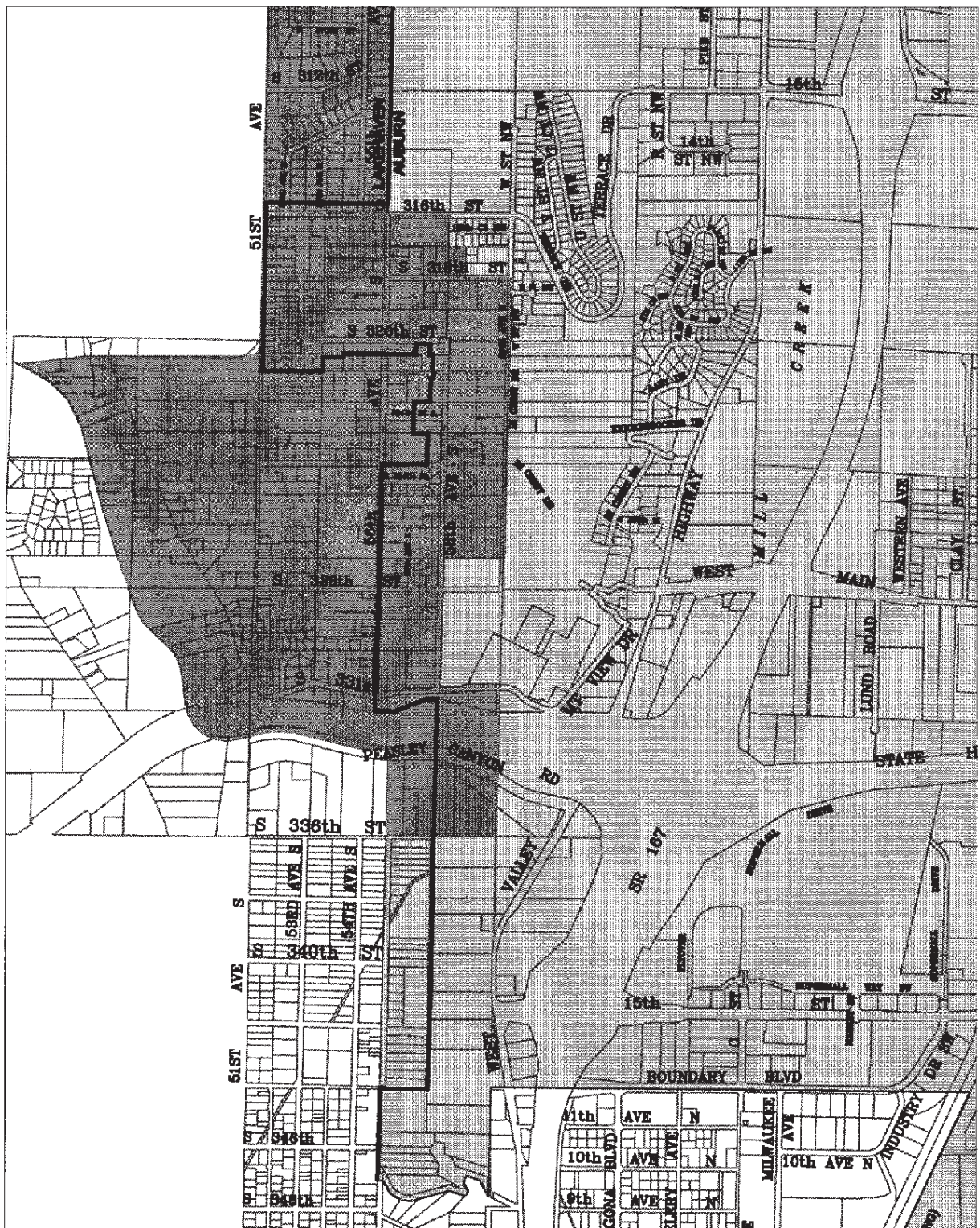
LAKEHAVEN - AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

PLUMBER INITIAL IF APPROVED

Dec 2008

LAKEHAVEN

AUBURN



LEGEND

- AUBURN CITY LIMITS
- AUBURN PAA
- PROPOSED SEWER SERVICE BOUNDARY



SCALE 1" = 100'

Note: Information shown is for general reference purposes only and does not necessarily represent actual geographic or cartographic data as mapped.

ATTACHMENT 1

LAKEHAVEN - AUBURN INTERLOCAL AGREEMENT ESTABLISHING SANITARY SEWER SERVICE BOUNDARIES

PLEASE INITIAL IF APPROVED

Dec 2008

LAKEHAVEN

AUBURN

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.

RESOLUTION NO. 3 8 2 4

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

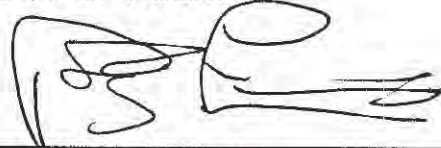
agreement attached hereto, marked as Exhibit "1" and incorporated herein by this reference

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



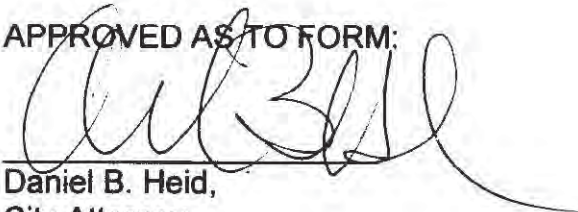
PETER B. LEWIS
MAYOR

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

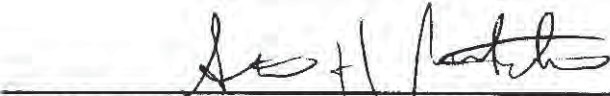
Approved by Resolution No. 2005-1038 of the Lakehaven Utility District, Federal Way, Washington, at its regular meeting held on the 10th day of March, 2005.

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:



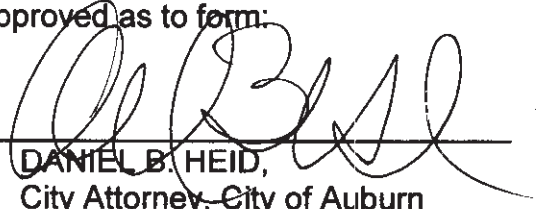
PETER B. LEWIS,
Mayor, City of Auburn

Attest:



DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:



DANIEL B. HEID,
City Attorney, City of Auburn

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:

Edward G. Stewart
President and Commissioner

✓
Yea

Nay

Abstain

Beverly J. Tweddle
Vice President and Commissioner

✓
Yea

Nay

Abstain

Donald R. Miller
Secretary and Commissioner

✓
Yea

Nay

Abstain

[Signature]
Commissioner

✓
Yea

Nay

Abstain

Thomas M. Jermoluk
Commissioner

✓
Yea

Nay

Abstain

Approved as to form: [Signature]
General Counsel

RESOLUTION NO. 5 3 5 3

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:

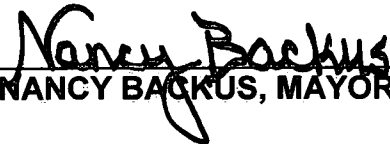
Section 1. The Mayor is hereby authorized to execute an amendment to the Interlocal Agreement with Lakehaven Utility District, in substantial conformity with the agreement attached hereto, marked as Exhibit A and incorporated herein by this reference.

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

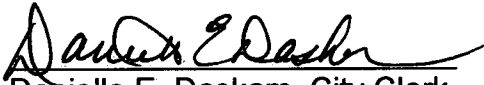
Section 3. This Resolution shall take effect and be in force upon passage and signatures thereon.

DATED and SIGNED on this 19th day of March, 2018.

CITY OF AUBURN


NANCY BACKUS, MAYOR

ATTEST:


Danielle E. Daskam, City Clerk

APPROVED AS TO FORM:

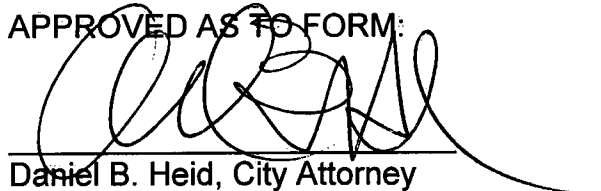

Daniel B. Heid, City Attorney

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:

Timothy G. McLean

Approved as to Form:

Al H. Fitch

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:

Daphne E. Dasko
City Clerk

Approved as to form:

[Signature]
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;

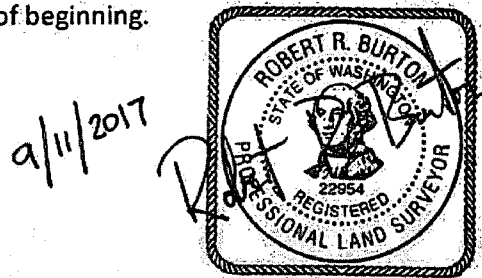
Thence westerly along said westerly boundary and said north margin of South 340th Street to the east margin of 55th Avenue South;

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.



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.



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

April 17, 2018

Robert Elwell, P.E.
City of Auburn
25 West Main Street
Auburn, Washington 98001-4998

RECEIVED

APR 19 2018

City of Auburn
CDPW - Engineering Services

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

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

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, losses, 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, losses, damages or costs, of whatsoever kind 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 than 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

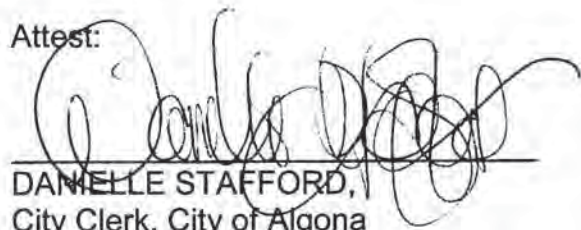
Approved by Resolution No. 70303 of the City of Algona, Washington, at its regular meeting held on the 1st day of April, 2003.

By:



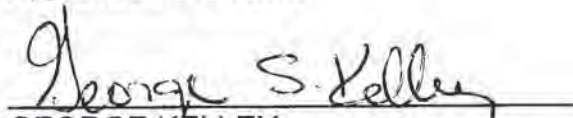
GLENN WILSON,
Mayor, City of Algona

Attest:



DANIELLE STAFFORD,
City Clerk, City of Algona

Approved as to form:



GEORGE KELLEY,
City Attorney, City of Algona

CITY OF AUBURN

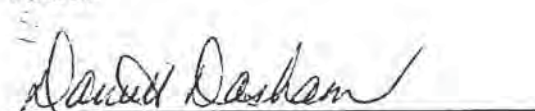
Approved by Resolution No. 3589, of the City of Auburn, Washington, at its regular meeting held on the 21st day of April, 2003.

By:



PETER B. LEWIS,
Mayor, City of Auburn

Attest:

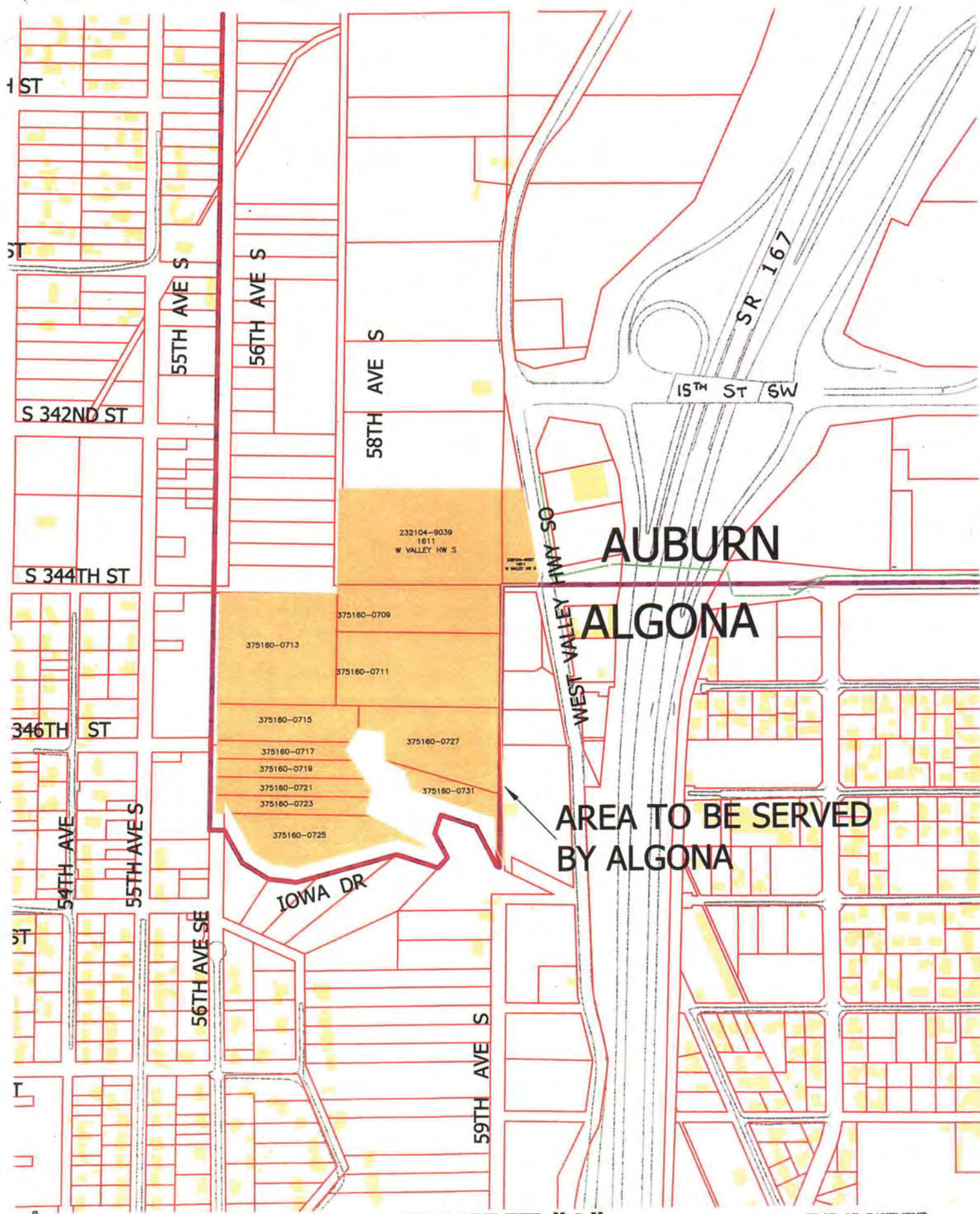


DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:



DANIEL B. HEID,
City Attorney, City of Auburn



AREA TO BE SERVED
BY ALGONA

EXHIBIT "A"
Auburn's Sewer Service Area to be
Transferred to Algona

- EDGE OF PAVEMENT
- SEWER
- PARCEL/ROW LINE
- CITY LIMITS

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:

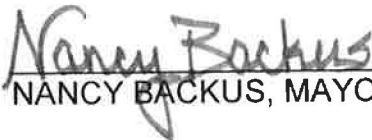
Section 1. The Mayor is authorized to execute an interlocal agreement with the City of Algona, in substantial conformity with the agreement attached as Exhibit A.,

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, MAYOR

ATTEST:


Shawn Campbell, MMC, City Clerk

APPROVED AS TO FORM:


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.

Interlocal Cooperation Agreement
Concerning Water and Sewer Utility
Service, Billing, and Collection.

- 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.

Interlocal Cooperation Agreement
Concerning Water and Sewer Utility
Service, Billing, and Collection.

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.

Interlocal Cooperation Agreement
Concerning Water and Sewer Utility
Service, Billing, and Collection.

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.

Interlocal Cooperation Agreement
Concerning Water and Sewer Utility
Service, Billing, and Collection.

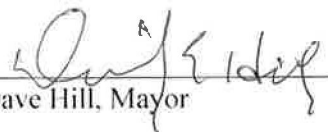
Section 18. Signatory Warranty. Each signatory hereto warrants and represents that he/she has been authorized to execute this Agreement by appropriate action of the legislative body of his/her respective city.

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.

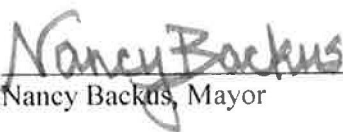
EXECUTED this 15 day of April, 2020.

CITY OF ALGONA



Dave Hill, Mayor

CITY OF AUBURN



Nancy Backus, Mayor

ATTEST/AUTHENTICATED



Jennifer Garnica, City Clerk

APPROVED AS TO FORM

Algona City Attorney

ATTEST/AUTHENTICATED



Shawn Campbell, City Clerk

APPROVED AS TO FORM

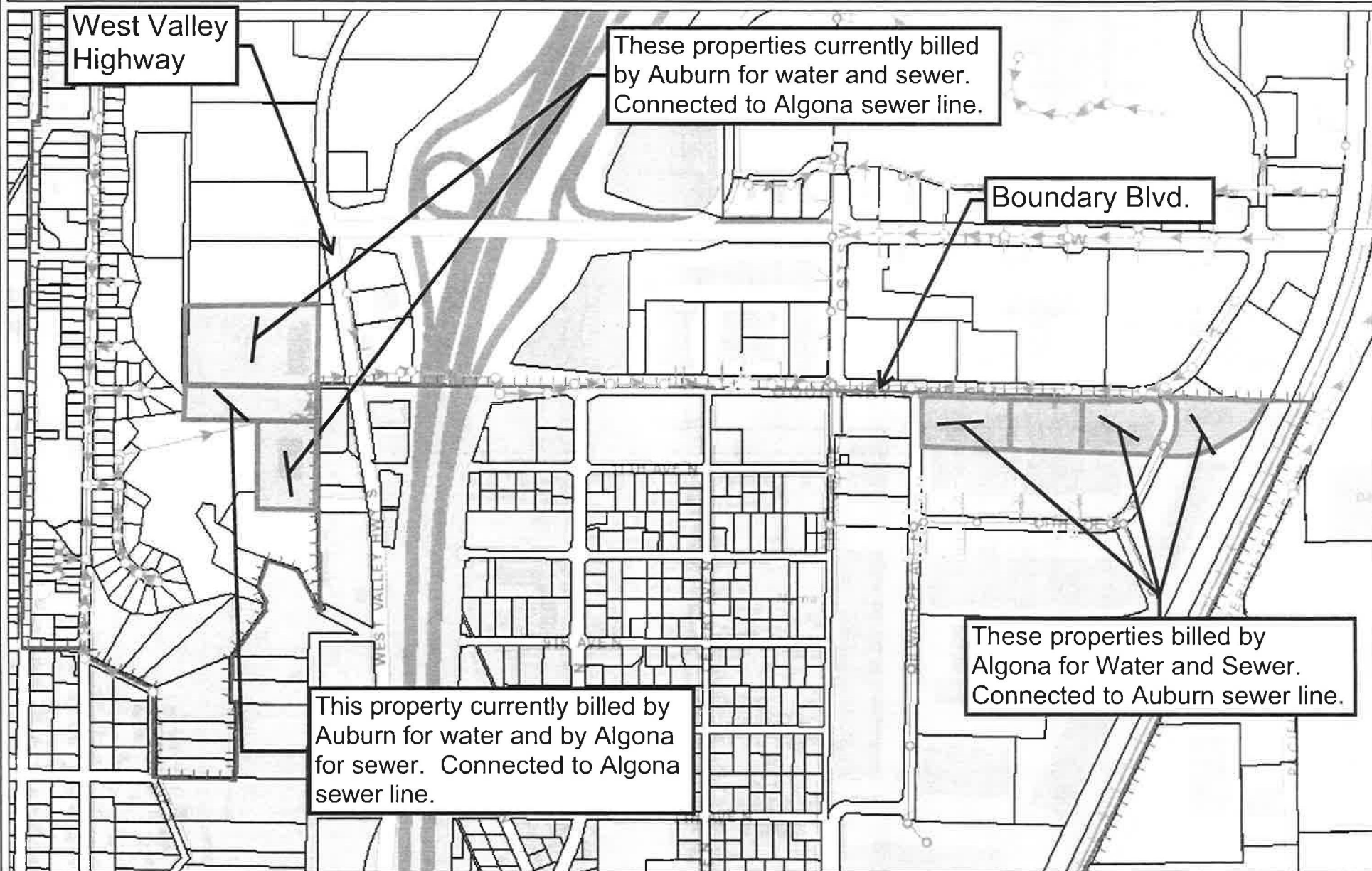


Auburn City Attorney

Interlocal Cooperation Agreement
Concerning Water and Sewer Utility
Service, Billing, and Collection.

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.

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





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

RESOLUTION NO. 3 7 6 0

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



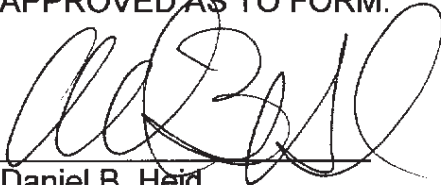
PETER B. LEWIS
MAYOR

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.

WITNESSETH:

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

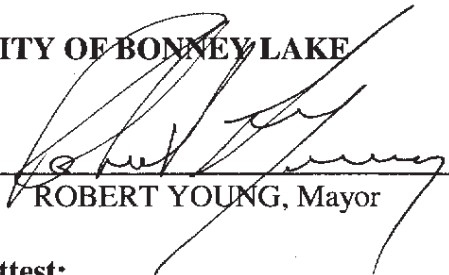
The Settlement Agreement is revised to include a portion of Pierce County parcel # 052005-4046, a portion of the Lake Tapps Parkway as it extends from the west boundary of 182nd Ave East west to Auburn's existing Urban Growth Area, and a portion of the natural gas pipe line parcel as noted in the attached 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.

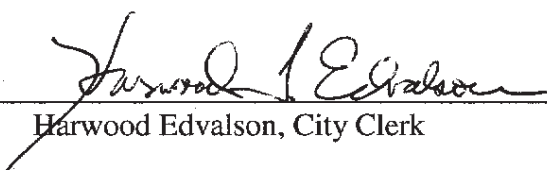
IN WITNESS WHEREOF the parties hereto have executed this Agreement as of the day and year first above written.

CITY OF BONNEY LAKE



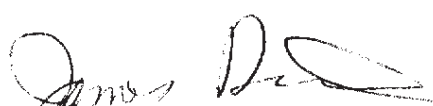
ROBERT YOUNG, Mayor

Attest:



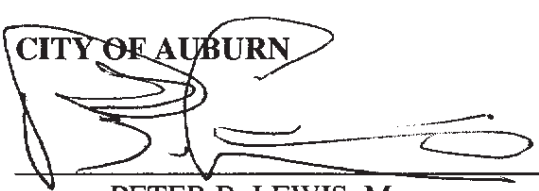
Harwood Edvalson, City Clerk

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. Held, 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;

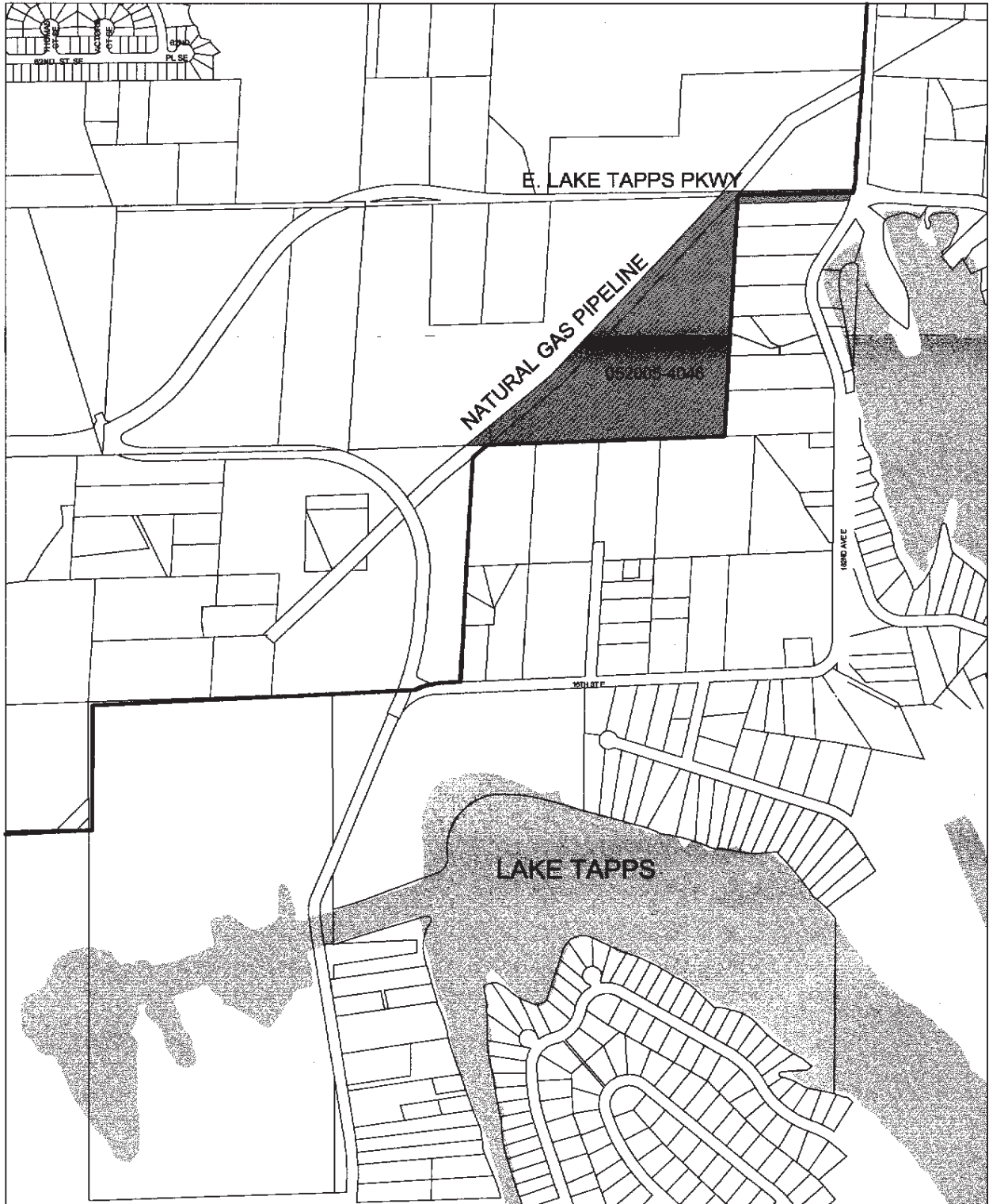
THENCE SOUTHERLY ALONG THE WEST LINE OF 182ND AVENUE EAST AS
DESCRIBED IN SAID INSTRUMENT A DISTANCE OF 40 FEET, MORE OR LESS, TO
THE SOUTH LINE OF THE LANDS CONVEYED TO PIERCE COUNTY IN DEED
RECORDED UNDER AUDITORS FILE NUMBER 9902110924;

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\WQ\Utility - Sewer\atBonney Lake\Addendum Settlement Legal Description.DOC

EXHIBIT C



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.

RESOLUTION NO. 3 7 9 6

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.

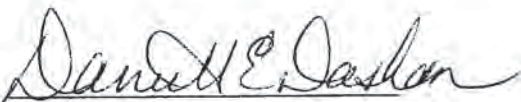
Dated and Signed this 4th day of April, 2005.

CITY OF AUBURN

A stylized handwritten signature in black ink, consisting of a large 'P' and 'B' followed by a horizontal line.

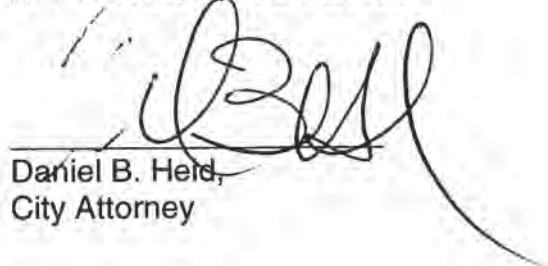
PETER B. LEWIS
MAYOR

ATTEST:

A handwritten signature in black ink, appearing to read 'Danielle E. Daskam'.

Danielle E. Daskam,
City Clerk

APPROVED AS TO FORM:

A handwritten signature in black ink, appearing to read 'Daniel B. Held'.

Daniel B. Held,
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)

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

Recording # 20051100193

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, losses, 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, losses, 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

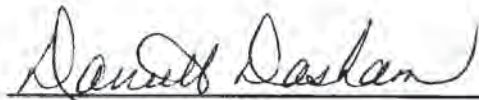
Approved by Resolution No. 3796, of the City of Auburn, Washington, at its regular meeting held on the 4th day of April, 2005.

By:



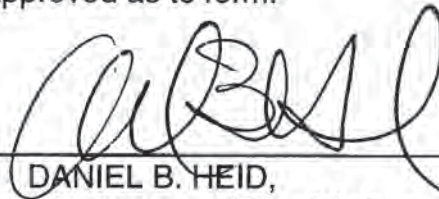
PETER B. LEWIS,
Mayor, City of Auburn

Attest:



DANIELLE DASKAM,
City Clerk, City of Auburn

Approved as to form:



DANIEL B. HEID,
City Attorney, City of Auburn

ATTACHMENT "A"

Legal Description

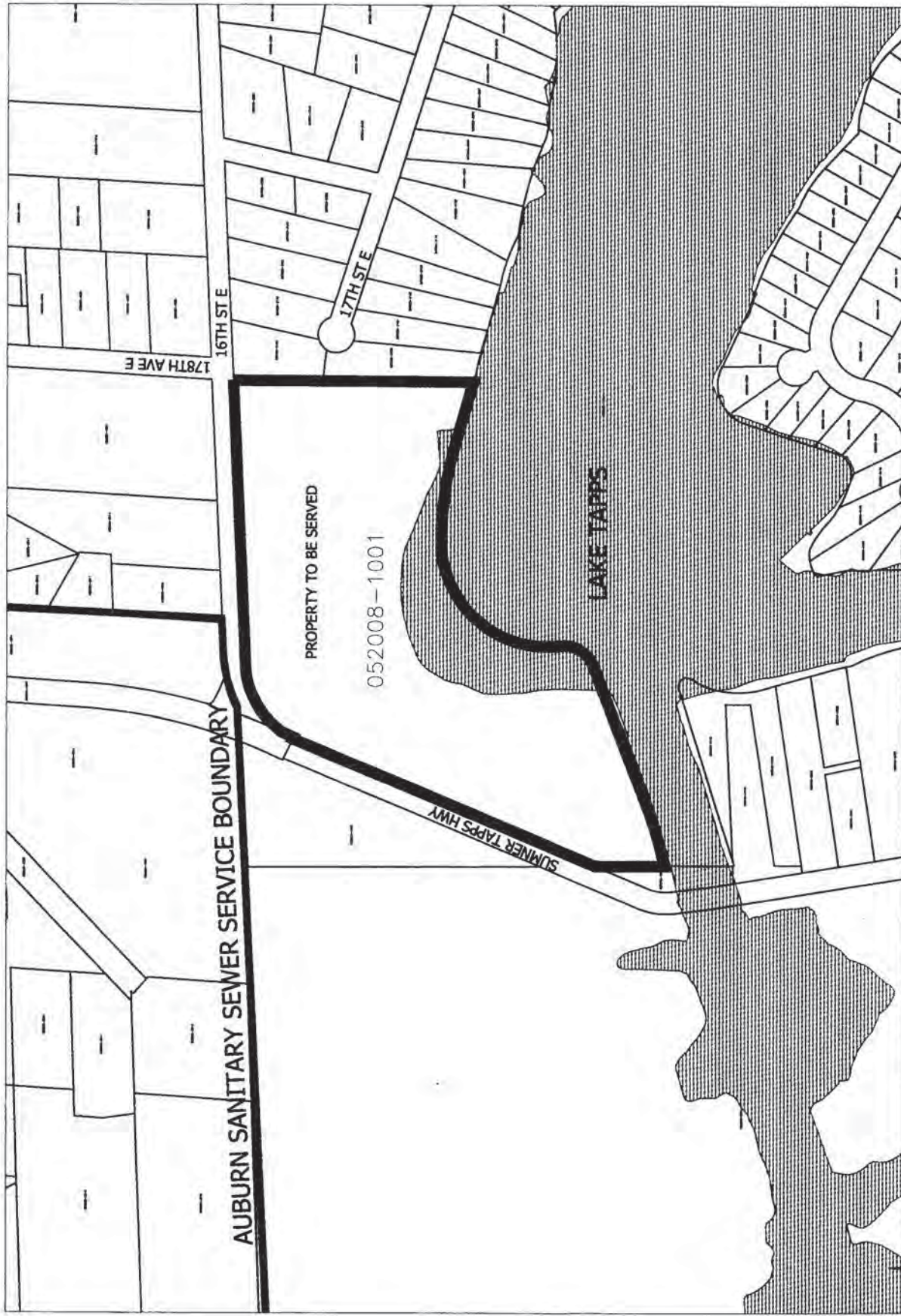
THAT PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 20 NORTH, RANGE 5 EAST, LYING EASTERLY OF SUMNER TAPPS HIGHWAY, SOUTHERLY OF NORTH TAPPS ROAD (16TH STREET EAST (FOREST CANYON ROAD)); EASTERLY OF THE 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

ATTACHMENT "A"
Page 1 of 2

SE QUARTER OF SECTION 8, TOWNSHIP 20 N, RANGE 5 E



SCALE: 1" = 400'

EXHIBIT A

**BONNEY LAKE - AUBURN
SANITARY SEWER SERVICE AGREEMENT
FAIRWEATHER COVE**

PLOTTED: MARCH 2005

ATTACHMENT "A"

Page 2 of 2

Pierce County Recording
20051110 0194

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

A large, stylized handwritten signature in black ink, appearing to read 'P. B. Lewis', is written over a horizontal line.

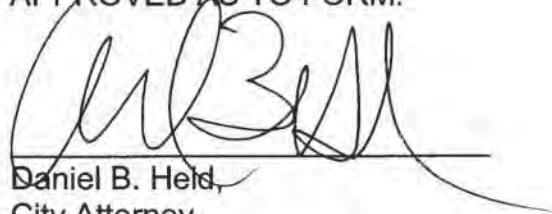
PETER B. LEWIS
MAYOR

ATTEST:

A handwritten signature in black ink, appearing to read 'Danielle E. Daskam', is written over a horizontal line.

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

Exhibit 1

Auburn Resolution No. 3873

Bonney Lake - Auburn Interlocal Agreement
(Fairweather Cove R/W Permit)

Page 3 of 5

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:



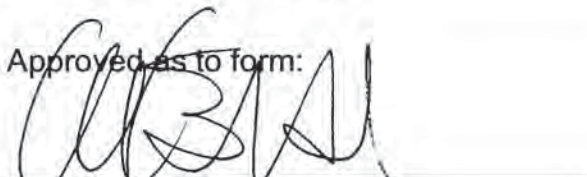
**Peter B. Lewis, Mayor
City of Auburn**

Attest:



Danielle Daskam, City Clerk

Approved as to form:



Daniel B. Heid, City Attorney

Exhibit 1

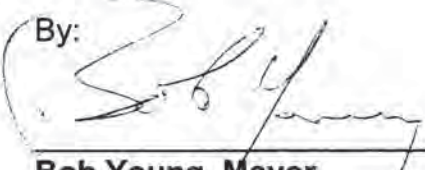
Auburn Resolution No. 3873

Bonney Lake - Auburn Interlocal Agreement
(Fairweather Cove R/W Permit)

CITY OF BONNEY LAKE

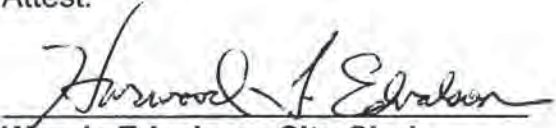
Approved by Resolution No. 1471 of the City of Bonney Lake,
Washington, at its regular meeting held on the 9th day of August
2005.

By:



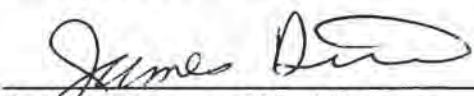
**Bob Young, Mayor
City of Bonney Lake**

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

ATTACHMENT "B"

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, losses, 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, losses, 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

ATTACHMENT "B"

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 than 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:

Approved as to form:

HARWOOD T. EDVALSON
City Clerk, City of Bonney Lake

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:

Approved as to form:

DANIELLE DASKAM,
City Clerk, City of Auburn

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

ATTACHMENT "A"
Page 1 of 2

SE QUARTER OF SECTION 8, TOWNSHIP 20 N, RANGE 5 E

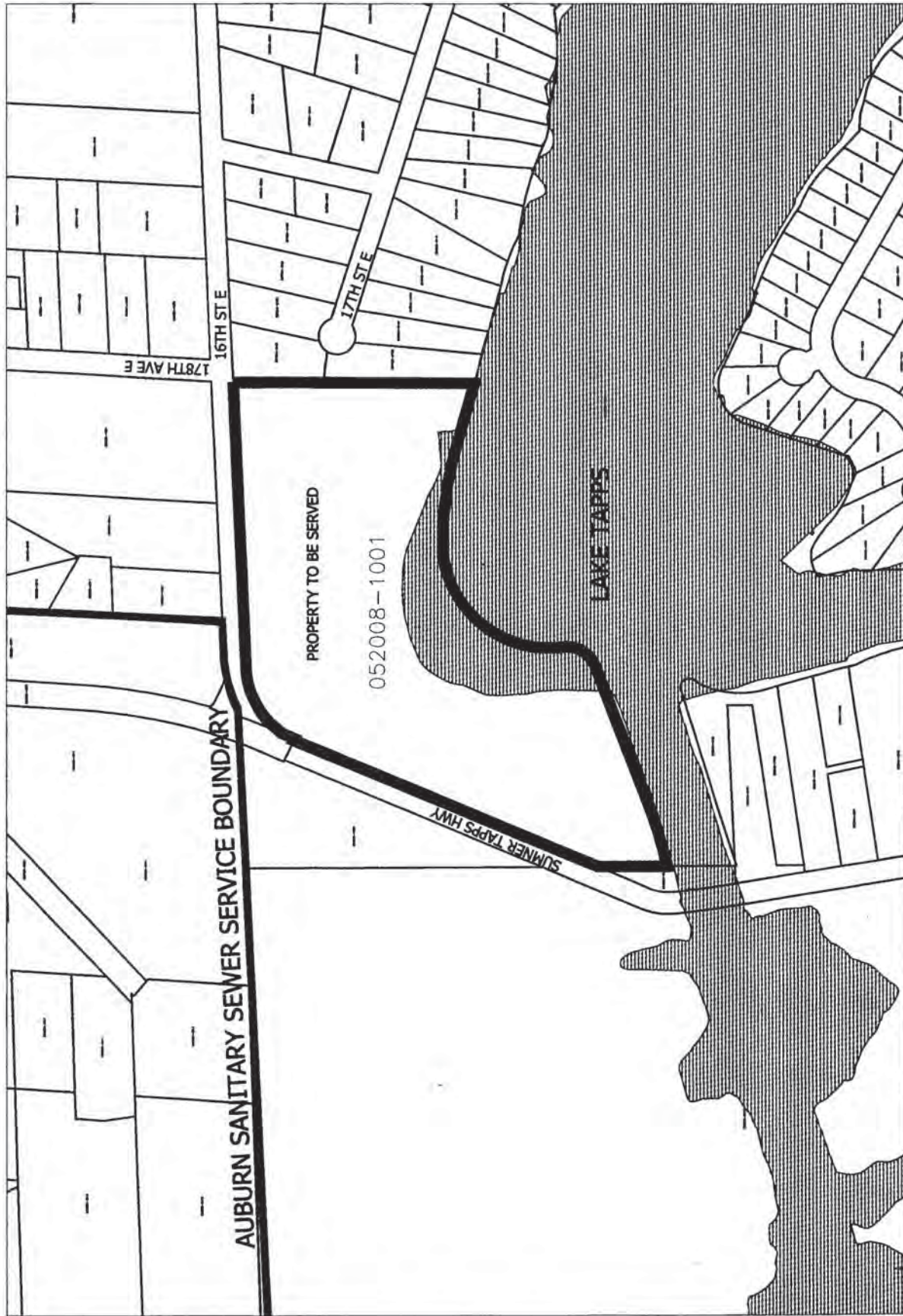


EXHIBIT A
BONNEY LAKE - AUBURN
SANITARY SEWER SERVICE AGREEMENT
FAIRWEATHER COVE

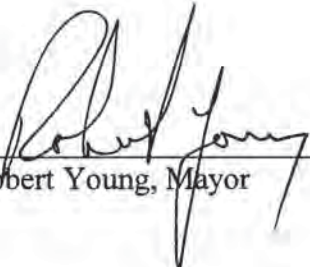
PLOTTED: MARCH 2005
ATTACHMENT "A"
Page 2 of 2

RESOLUTION NO. 1471

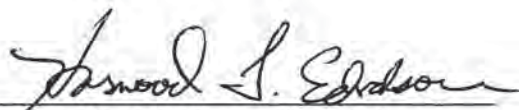
A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BONNEY LAKE, PIERCE COUNTY, WASHINGTON, AUTHORIZING AN INTERLOCAL AGREEMENT BETWEEN CITY OF AUBURN AND CITY OF BONNEY LAKE PIERCE COUNTY RIGHT OF WAY PERMIT FOR SEWER SERVICE TO FAIRWEATHER COVE.

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.

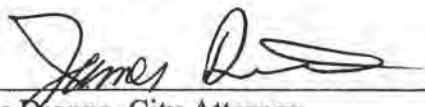
PASSED by the City Council this 9th day of August 2005.


Robert Young, Mayor

ATTEST:

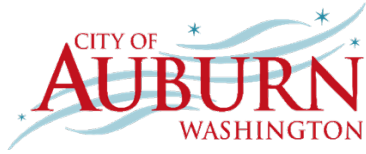

Harwood T. Edvalson, City Clerk

APPROVED AS TO FORM:


James Dionne, City Attorney

APPENDIX B

HYDRAULIC MODEL UPDATE, CALIBRATION, AND CAPACITY ANALYSIS



2024 Comprehensive Sewer Plan

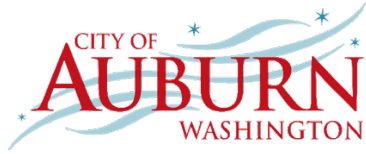


TECHNICAL MEMORANDUM 1

Model Calibration Report

FINAL / May 2024





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
GWl	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.

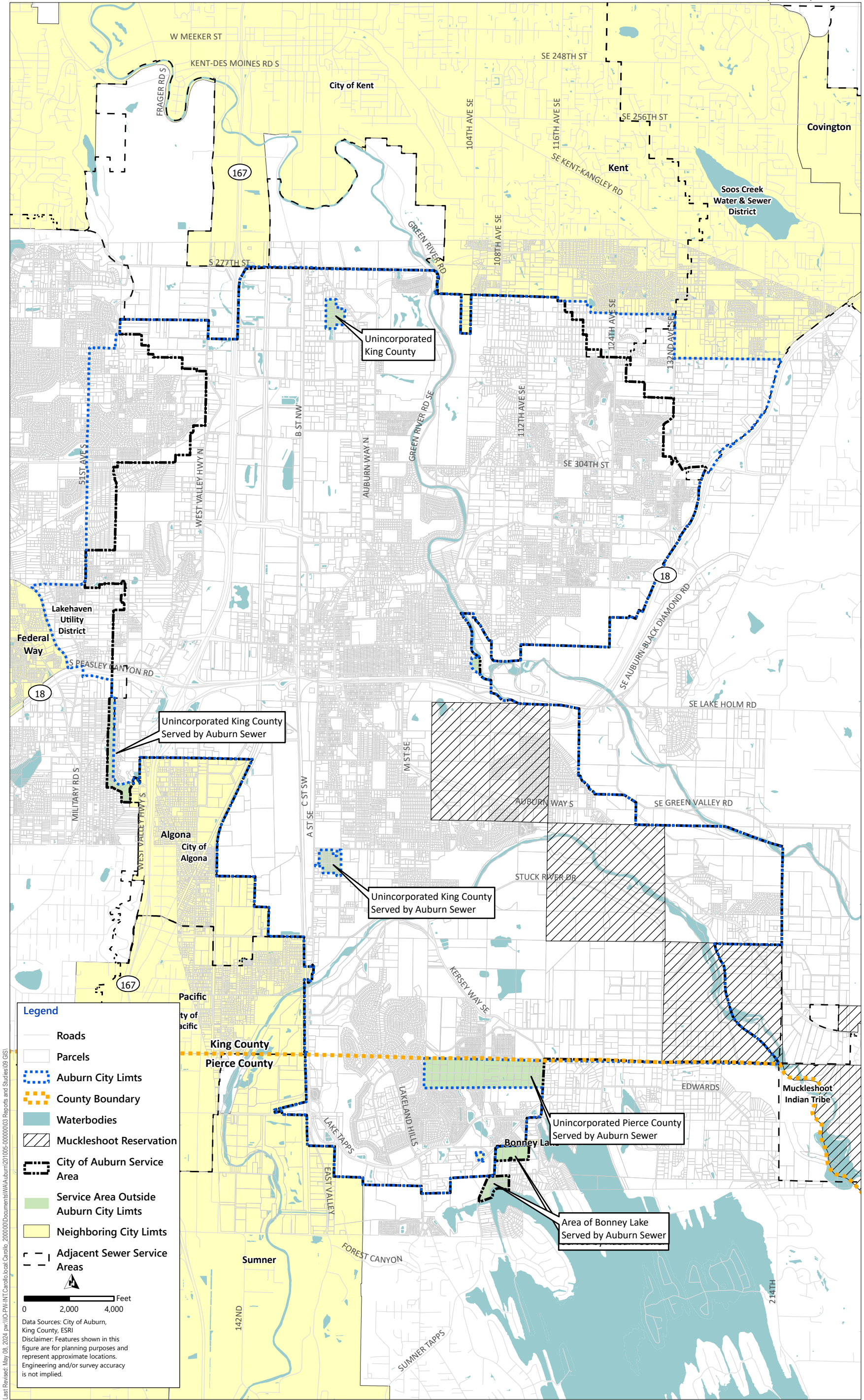


Figure 1.1 Existing Service Area
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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.

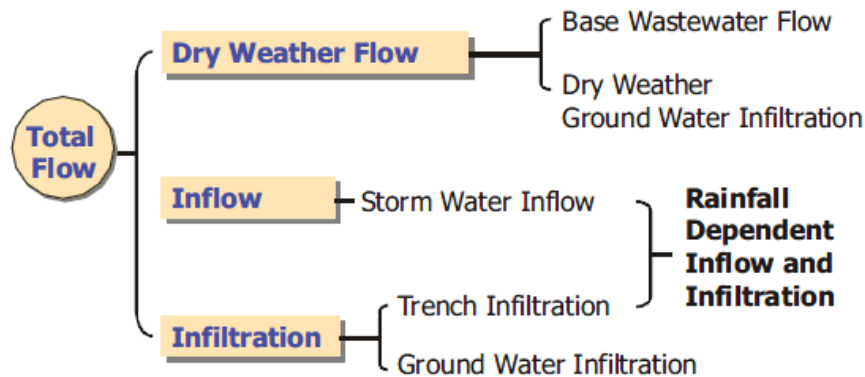
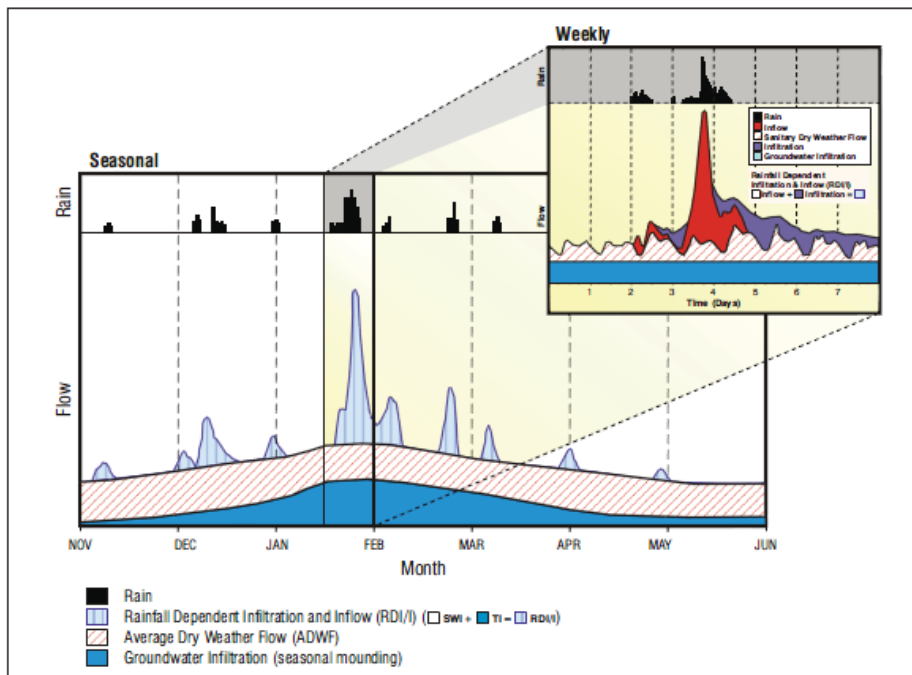


Figure 1.2 Typical Wastewater Flow Components

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

GWl, 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. GWl is related to the condition of the sewer pipes, manholes, and groundwater levels. GWl may occur throughout the year, although rates are typically higher in the late winter and early spring in the Pacific Northwest.

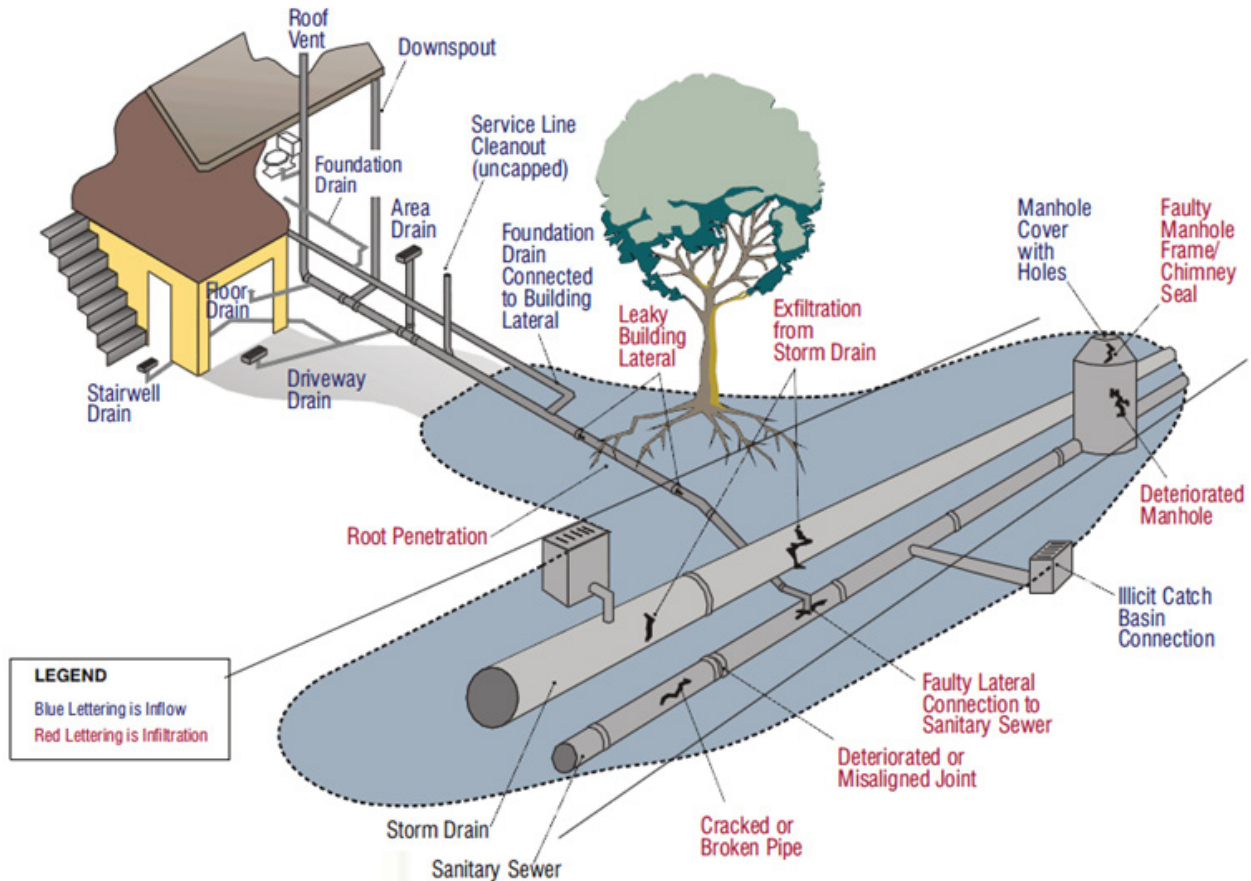


Figure 1.3 Typical Sources of I/I

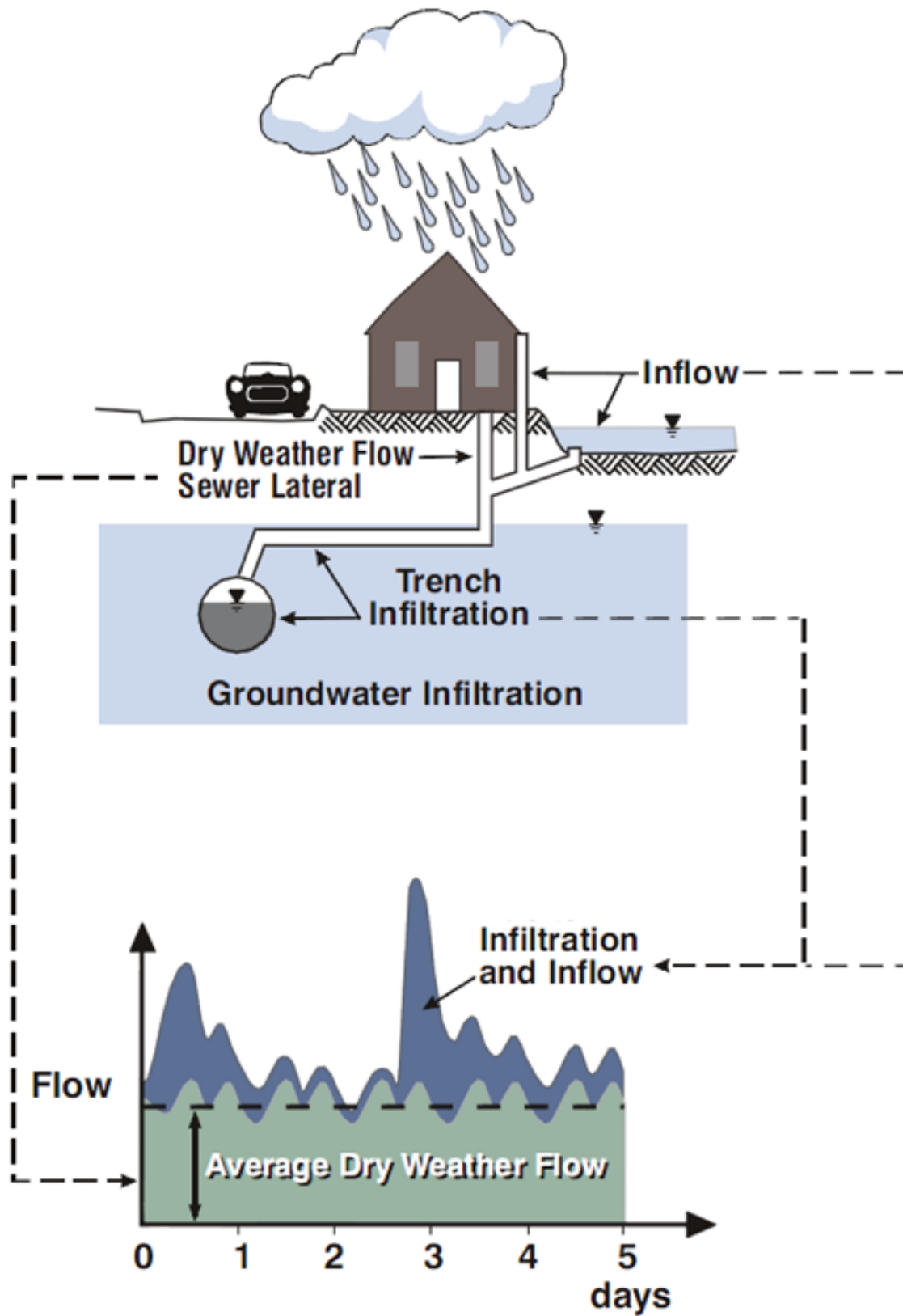


Figure 1.4 Typical Effects of I/I

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 sewer 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

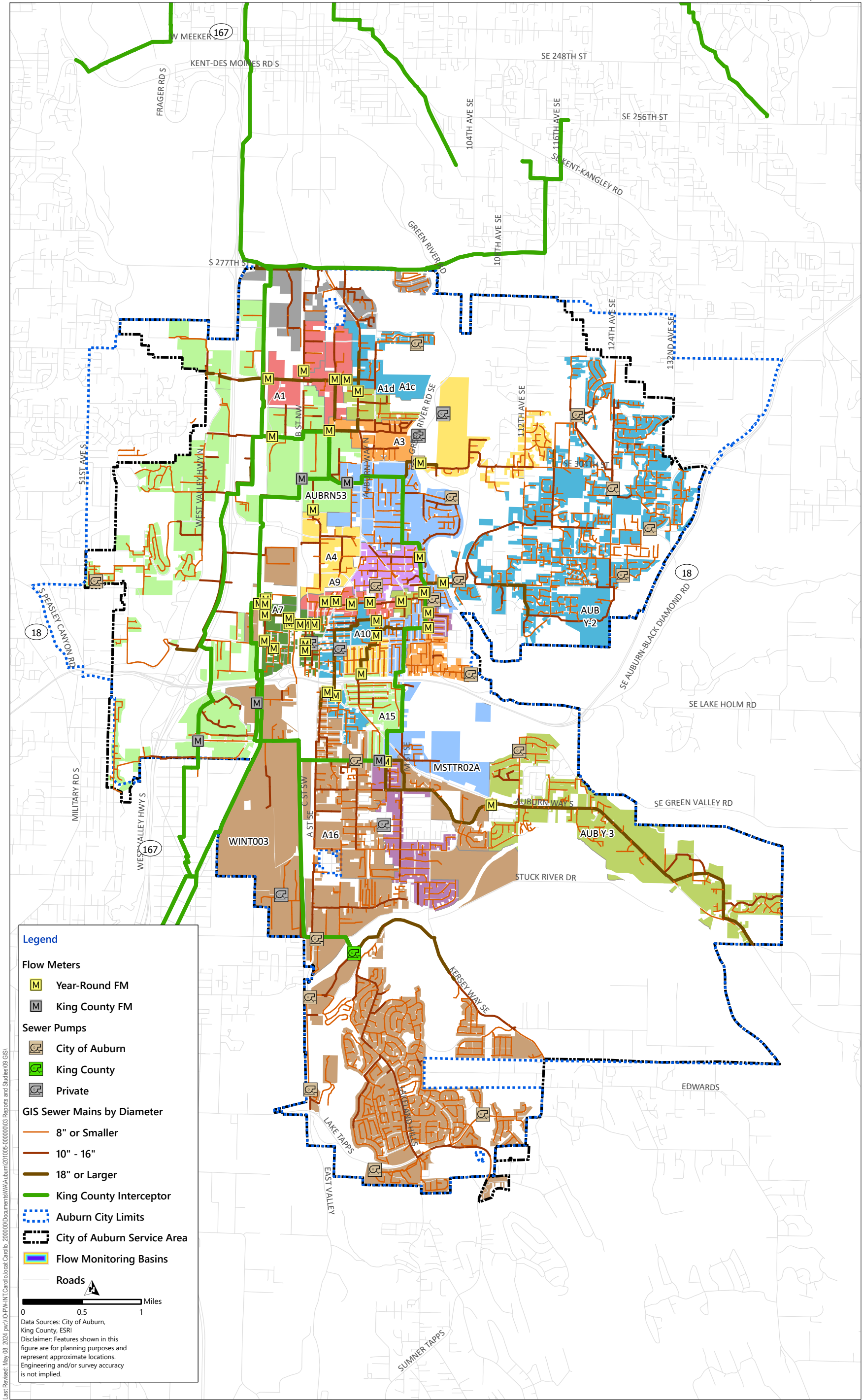


Figure 1.5 Flow Monitoring Locations
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

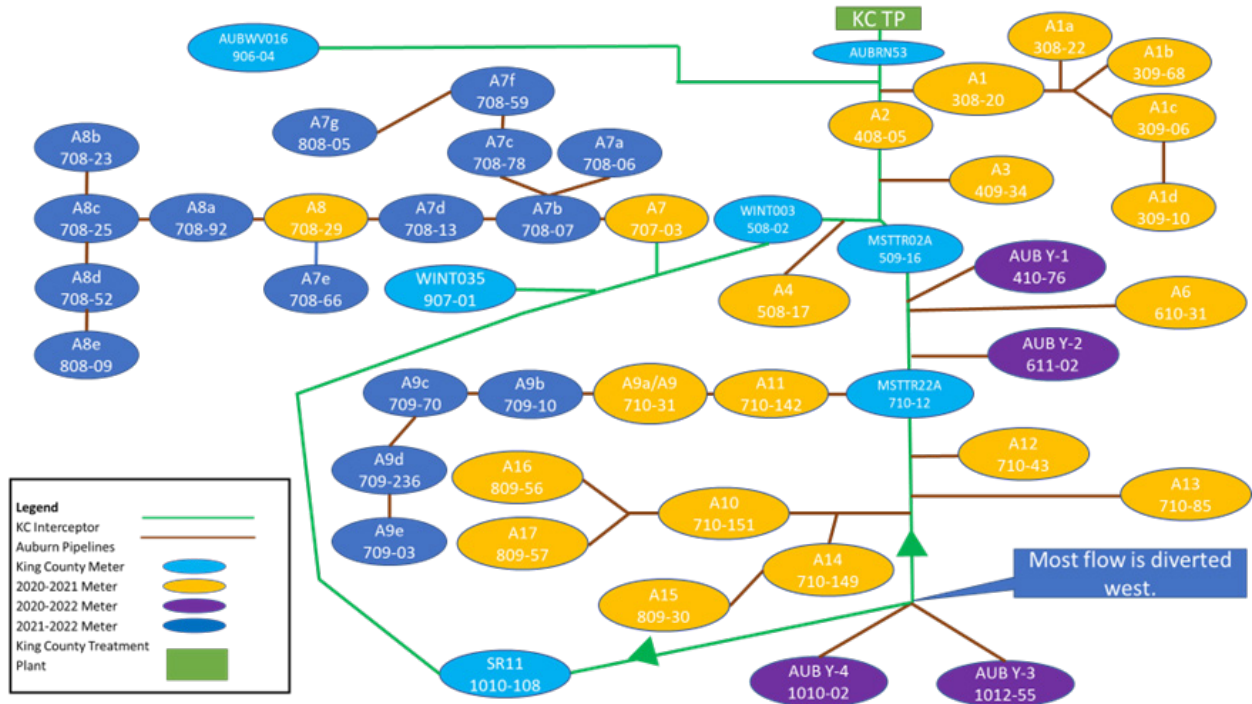


Figure 1.6 Flow Monitoring Schematic



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.

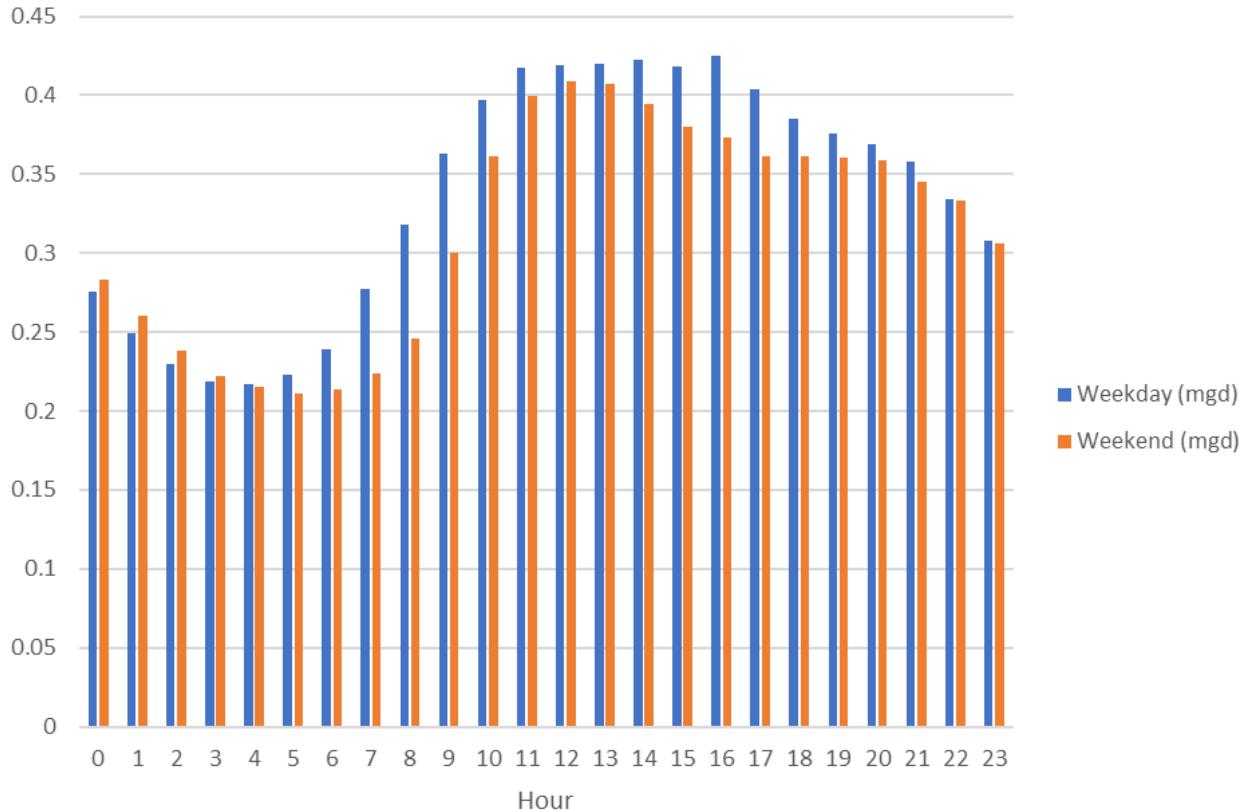


Figure 1.8 Typical Weekday vs Weekend DWF (Meter AUB A-1)

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.

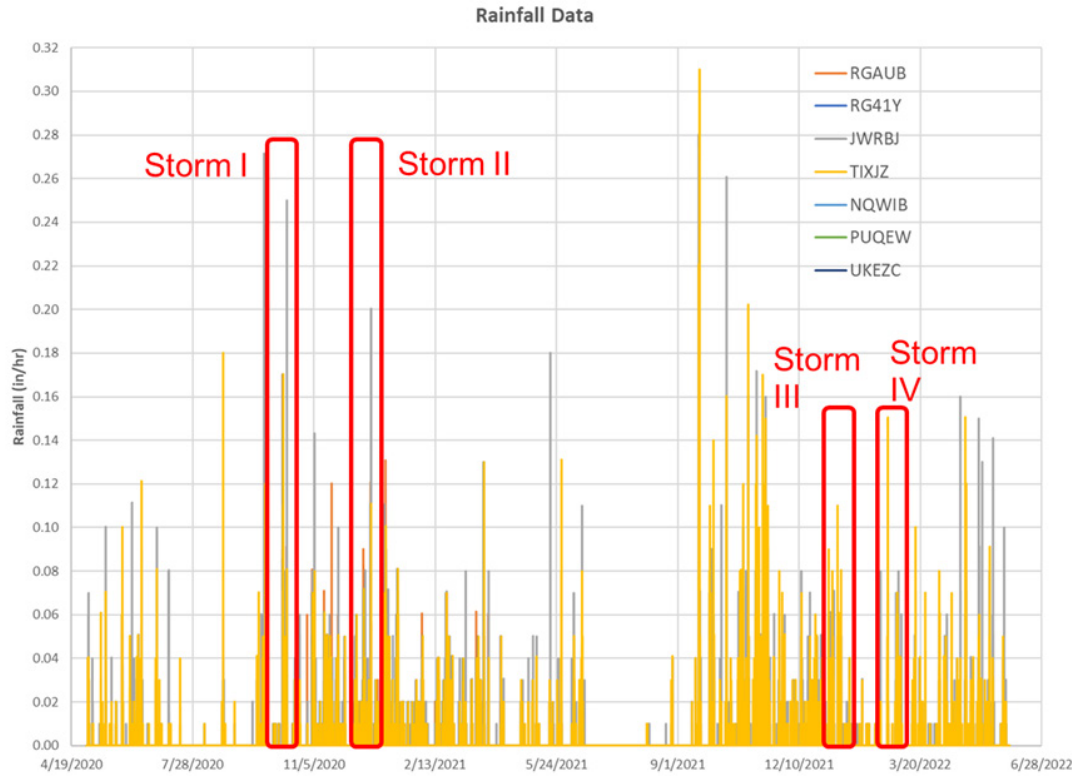


Figure 1.9 Rainfall Intensity

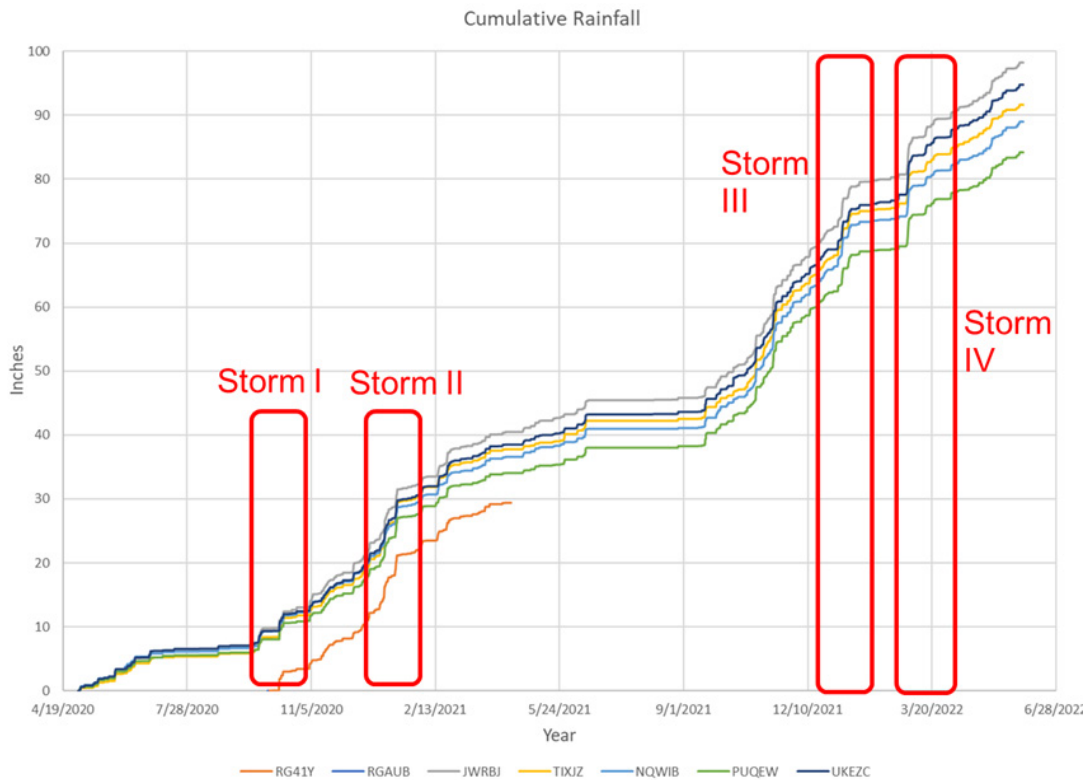


Figure 1.10 Cumulative Rainfall

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.

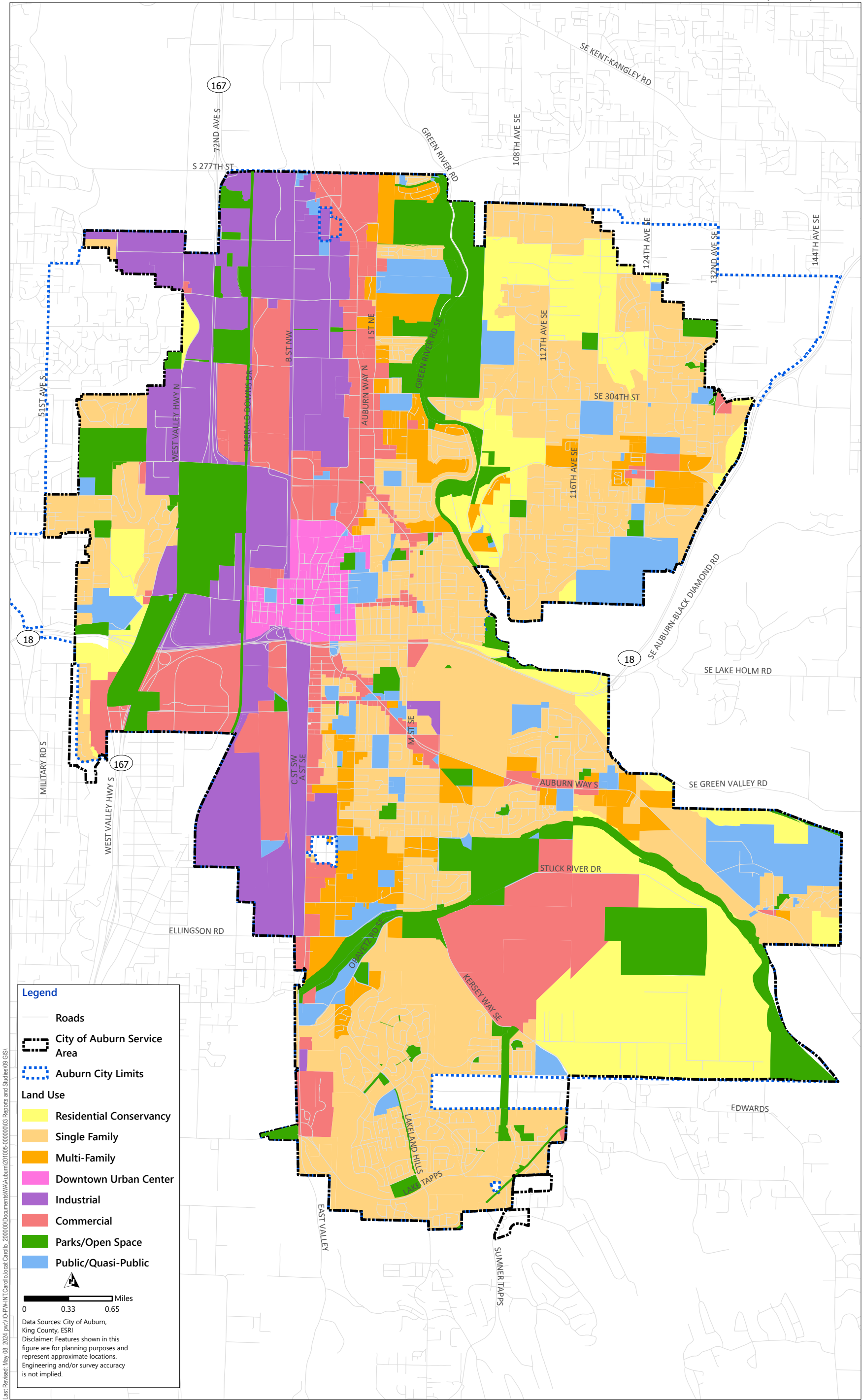


Figure 1.11 City of Auburn Land Use Designations
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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.

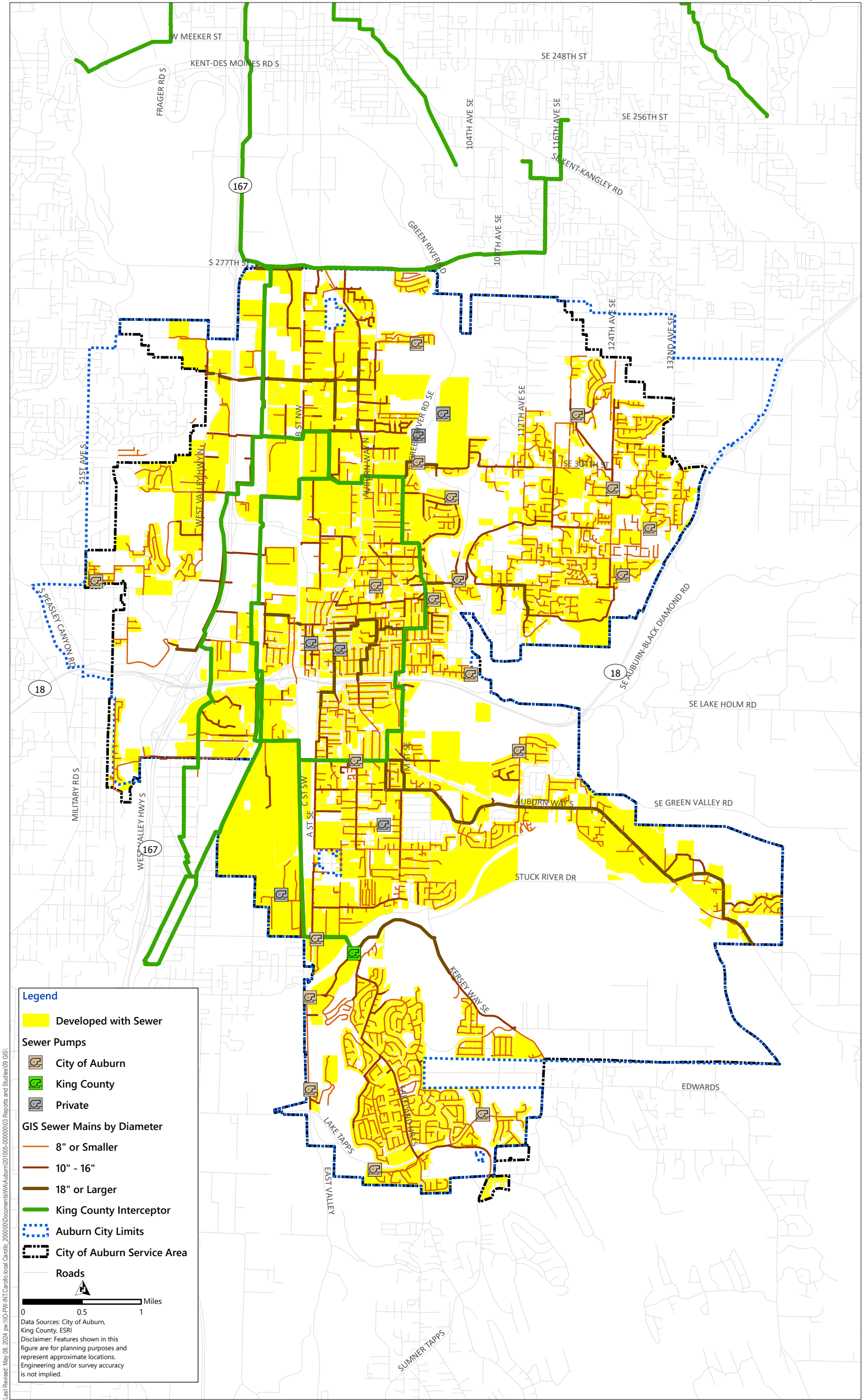


Figure 1.13 Flow Monitoring Locations
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

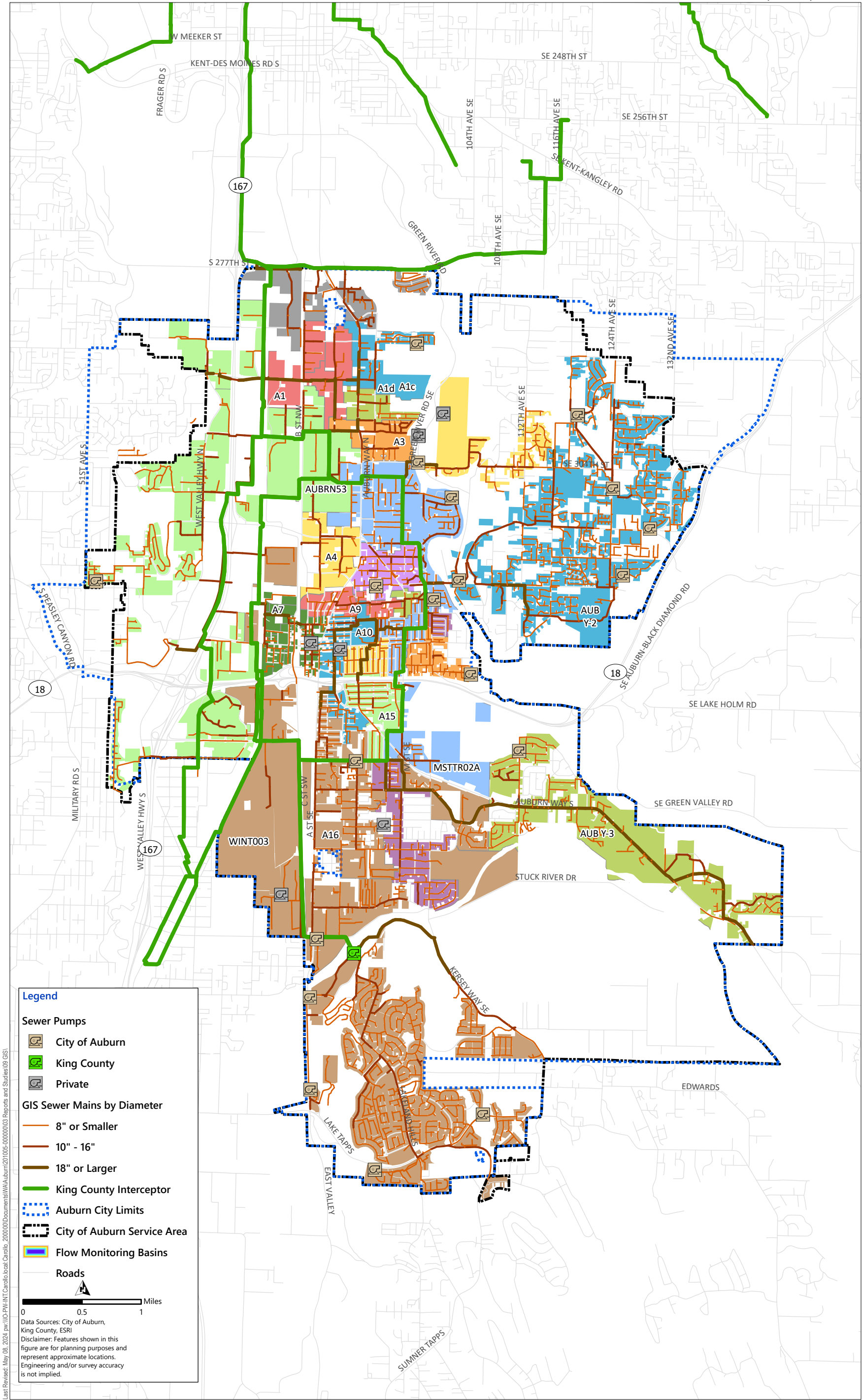


Figure 1.14 Flow Monitoring Basins
CITY OF AUBURN
2024 COMPREHENSIVE SEWER PLAN

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 Guide¹.

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
CITY OF AUBURN
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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 UDG², 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 within 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.

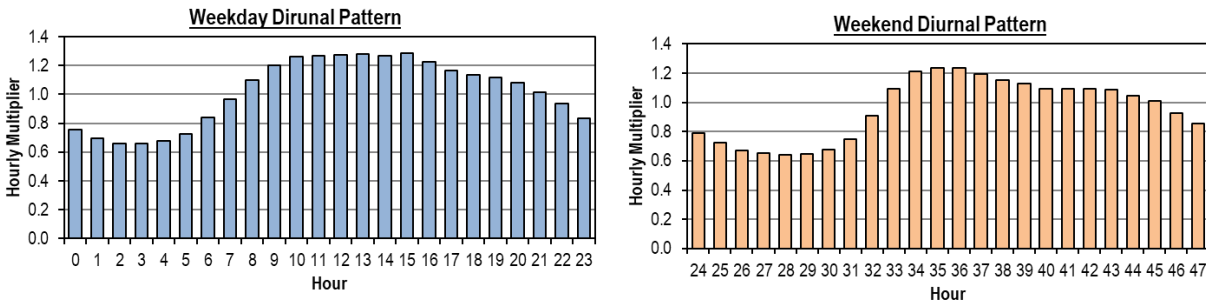


Figure 1.16 Example Diurnal Pattern

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%

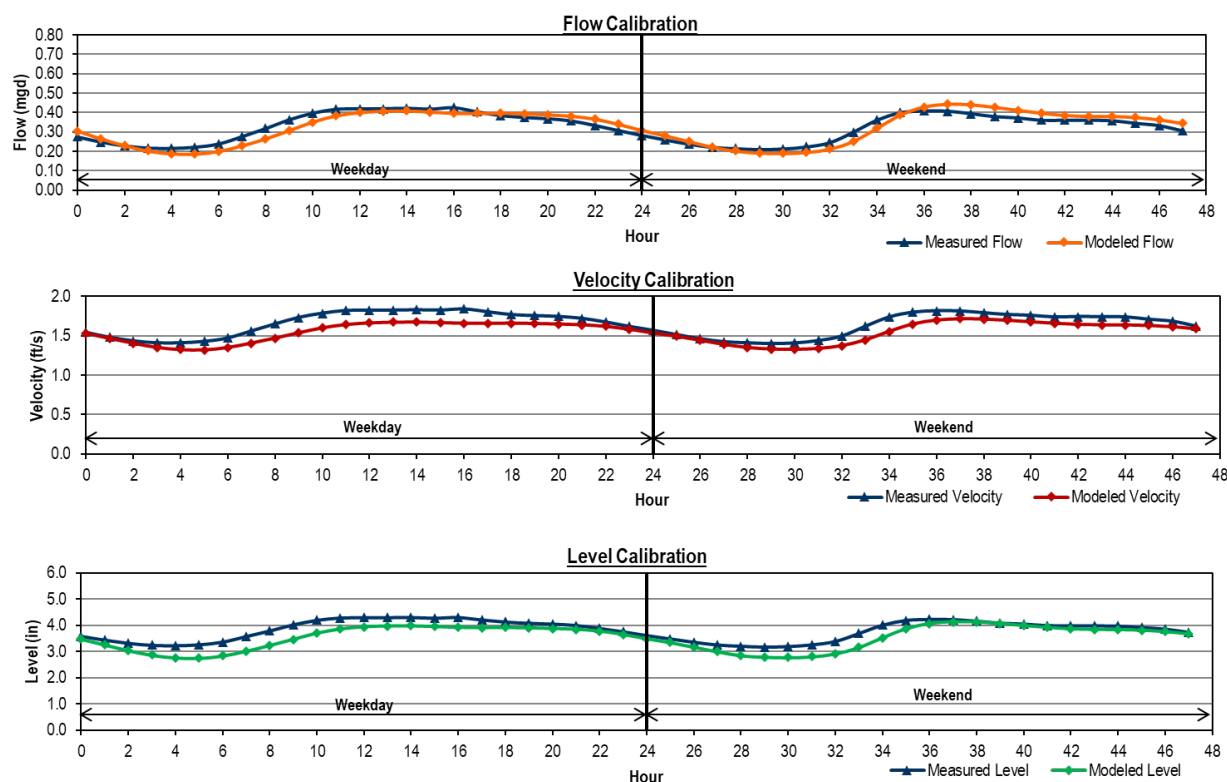


Figure 1.17 Example DWF Calibration (Meter AUB A1)

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 $\pm$ 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.

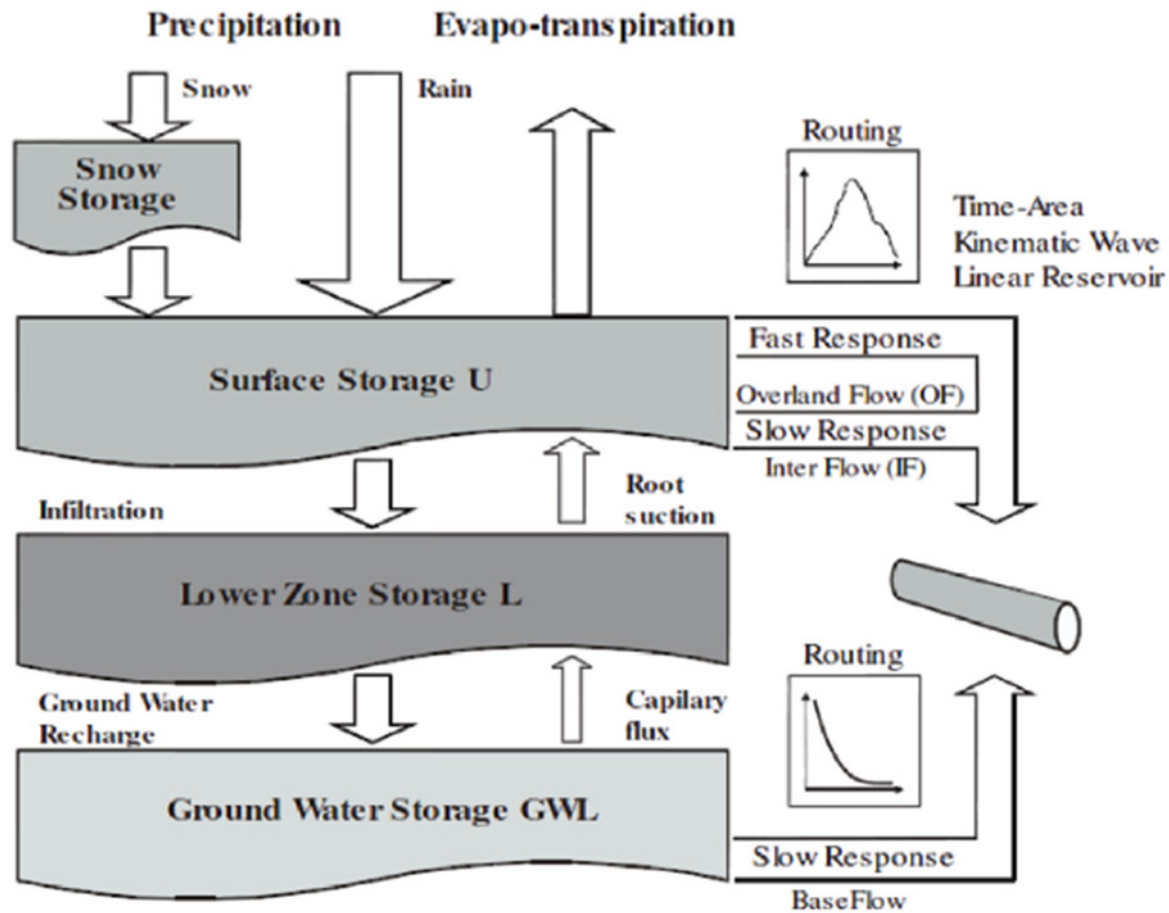


Figure 1.18 RDI Model Schematic

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.

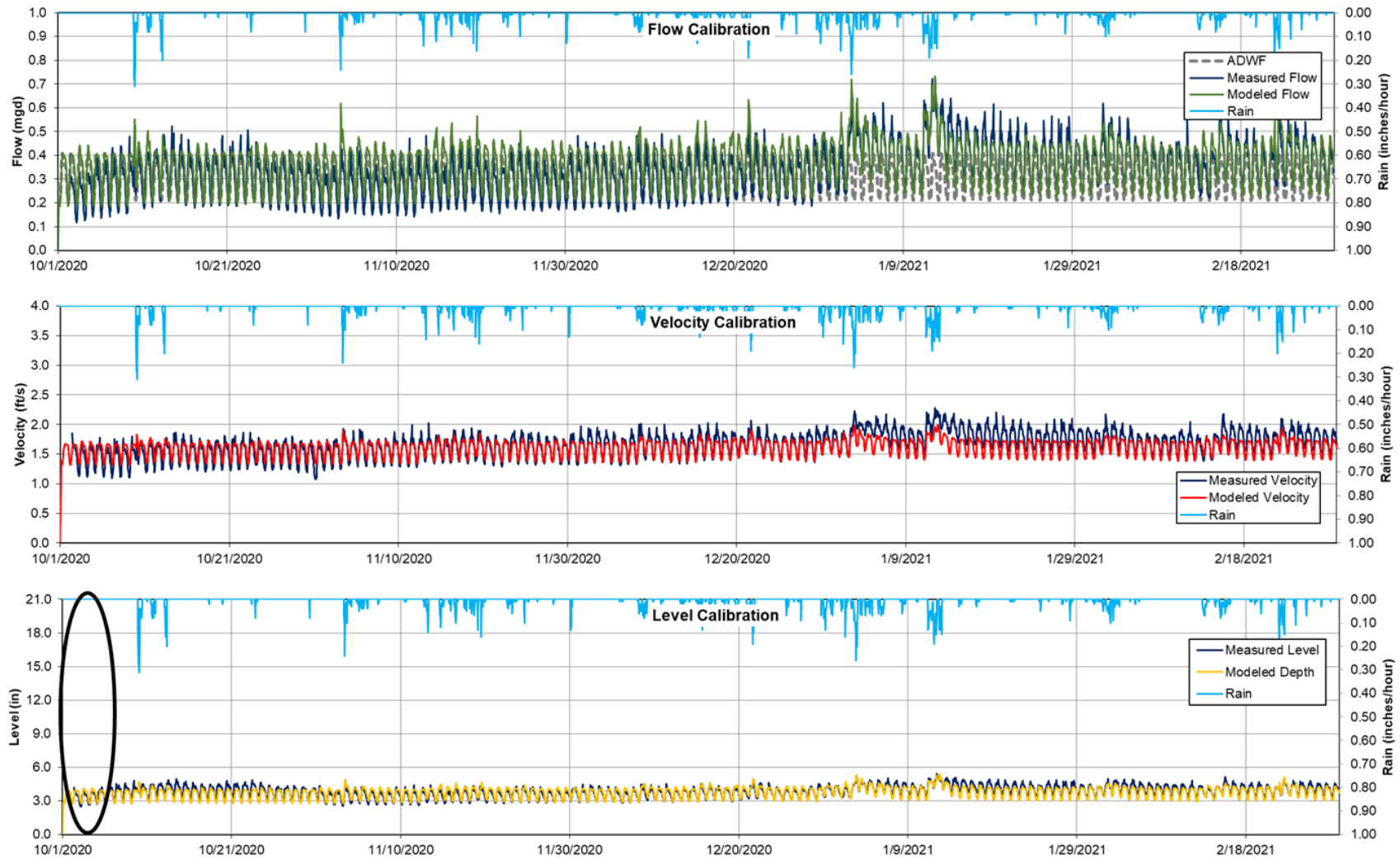


Figure 1.19 Example WWF Calibration

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

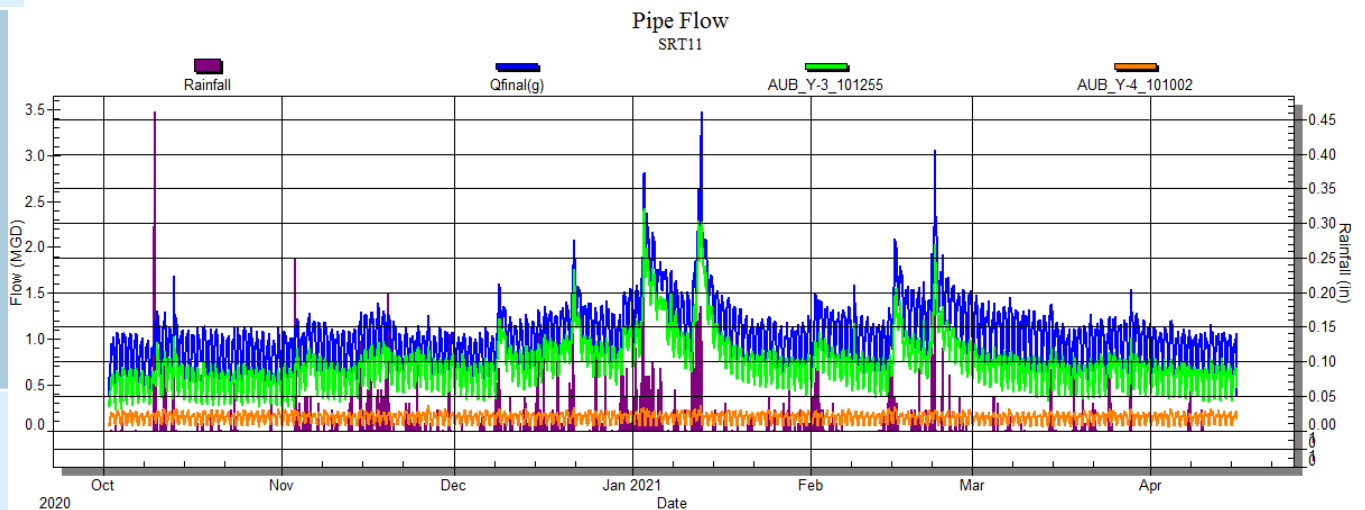


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1.0 – Overview

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.

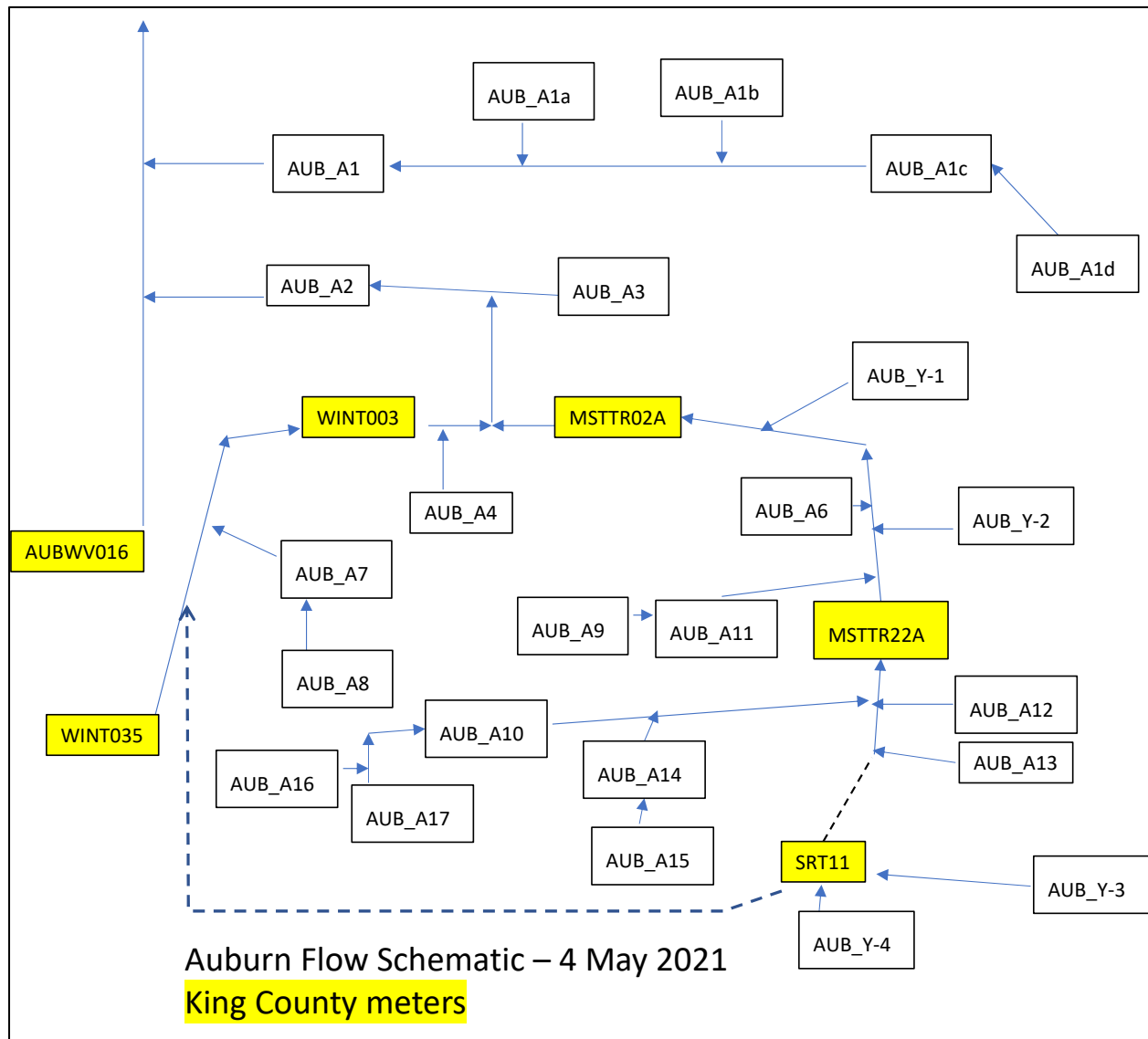
The metering period was from 2 October 2020 through 15 April 2021. This metering period is characterized as a generally dry October following by a rainy winter. A total of 13 storms were analyzed. Two storms on 2 January and 11 January exceeded 3 inches of rainfall, but only one sewer surcharged (Y-1) 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

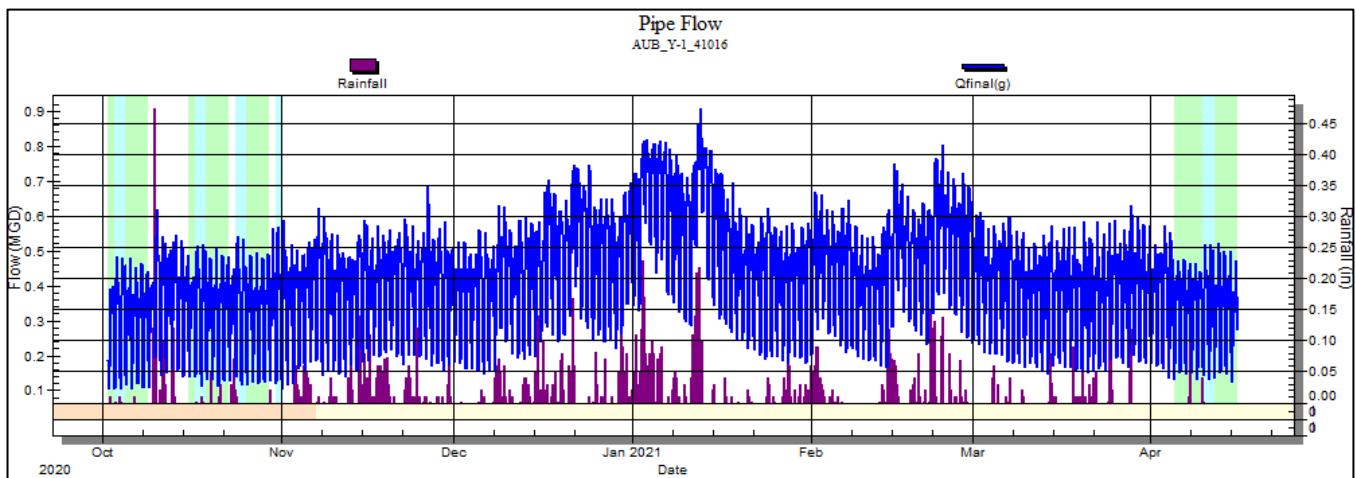
Basin	Area (ac)	Length (LF)
AUB_A1_30820	107	6,711
AUB_A10_710151	87	14,315
AUB_A11_710142	28	3,924
AUB_A12_71043	27	5,241
AUB_A13_71085	85	14,999
AUB_A14_710149	84	14,306
AUB_A15_80930	108	19,043
AUB_A16_80956	365	53,970
AUB_A17_80957	68	7,168
AUB_A1a_30822	50	5,248
AUB_A1b_30968	63	4,217
AUB_A1c_30906	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).

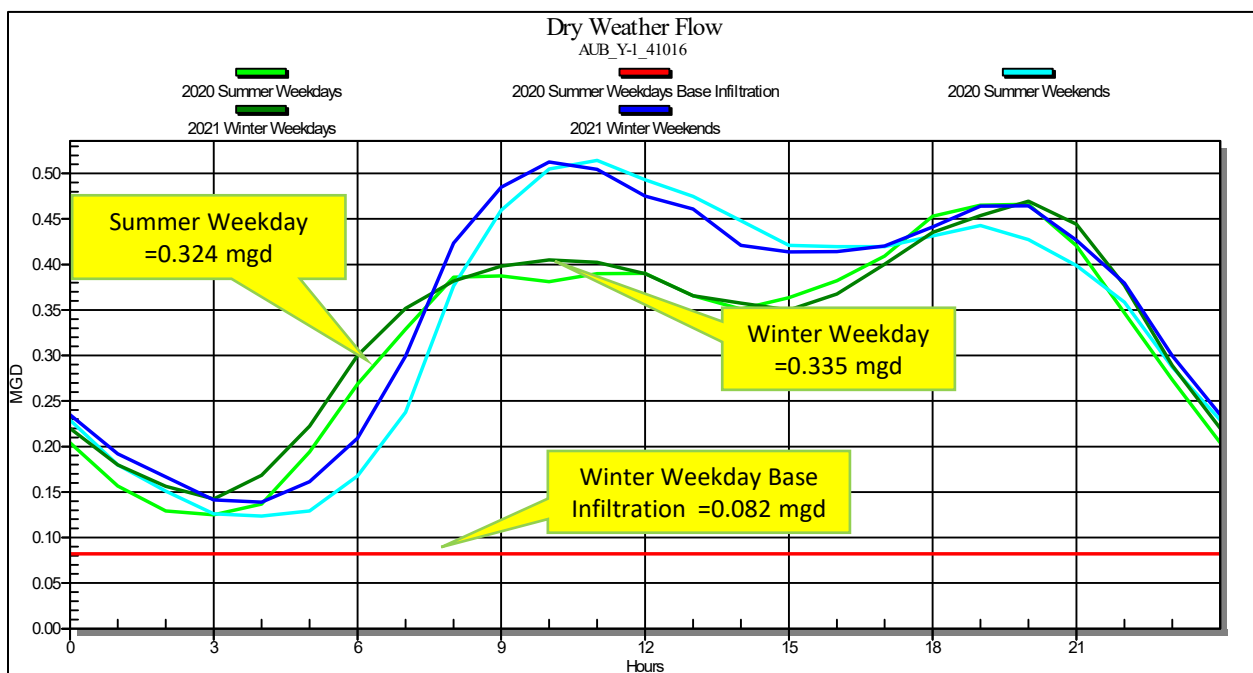
Early in the analysis of RDII data it was observed that there were two distinctly different rain-to-RDII relationships; a Summer season ending 6 November and Winter which is the rest of the metering period. This distinction is common and is a function of vegetation; either actively growing or dormant. 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 $0.082 \text{ mgd} / 0.324 \text{ mgd}$ 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-D}) and minimum flow (Q_{min-D}) of the average dry day hydrograph.

Subtracting WWP from Q_{avg-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

$$WWP = \frac{(Q_{avg-D} - Q_{min-D})}{X}$$

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-D} is the average flow and MDF is the minimum flow of the dry day hydrograph.

Equation BI 3

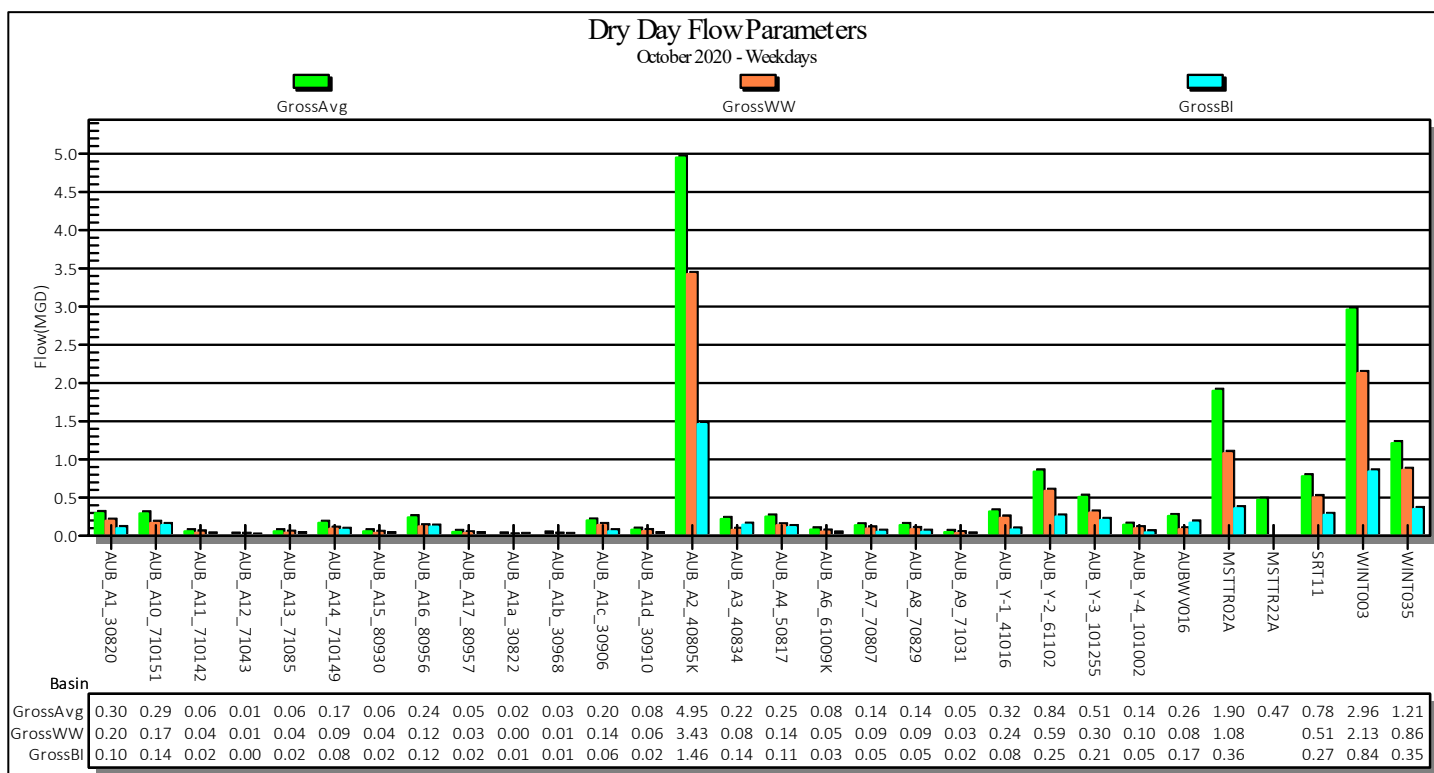
Stevens/Schutzbach Equation

$$Q_{BI} = \frac{0.4 * Q_{min-D}}{1 - 0.60 \left(\frac{Q_{min-D}}{Q_{avg-D}} \right)^{0.70}}$$

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.

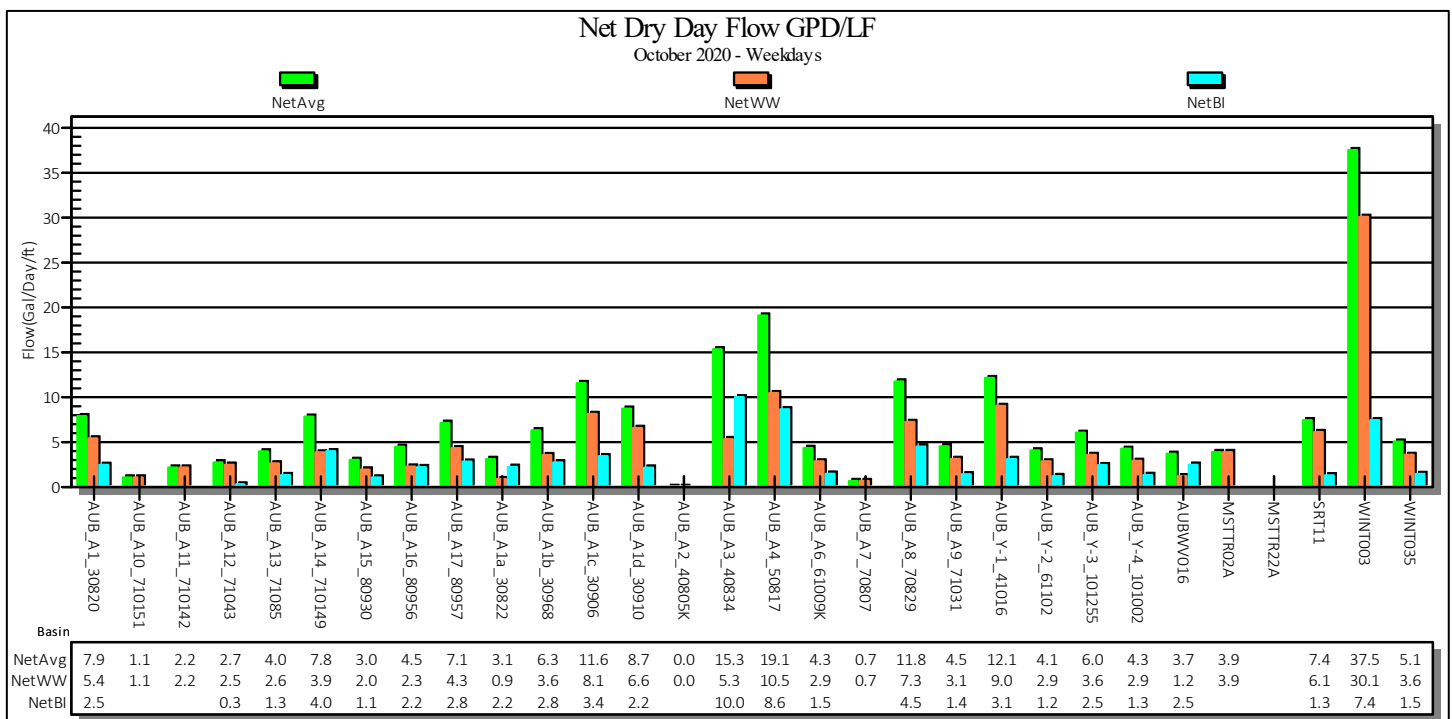
Figure 4 is a graph of the gross average dry day flow (ADDF), the wastewater production and base infiltration at each meter. The term, “gross,” refers to the meter measurement prior to any upstream meter subtraction.

Figure 4 ADDF Wastewater Production and Base Infiltration



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

Storm	Rainfall (In.)			Maximum Return Frequency		
	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

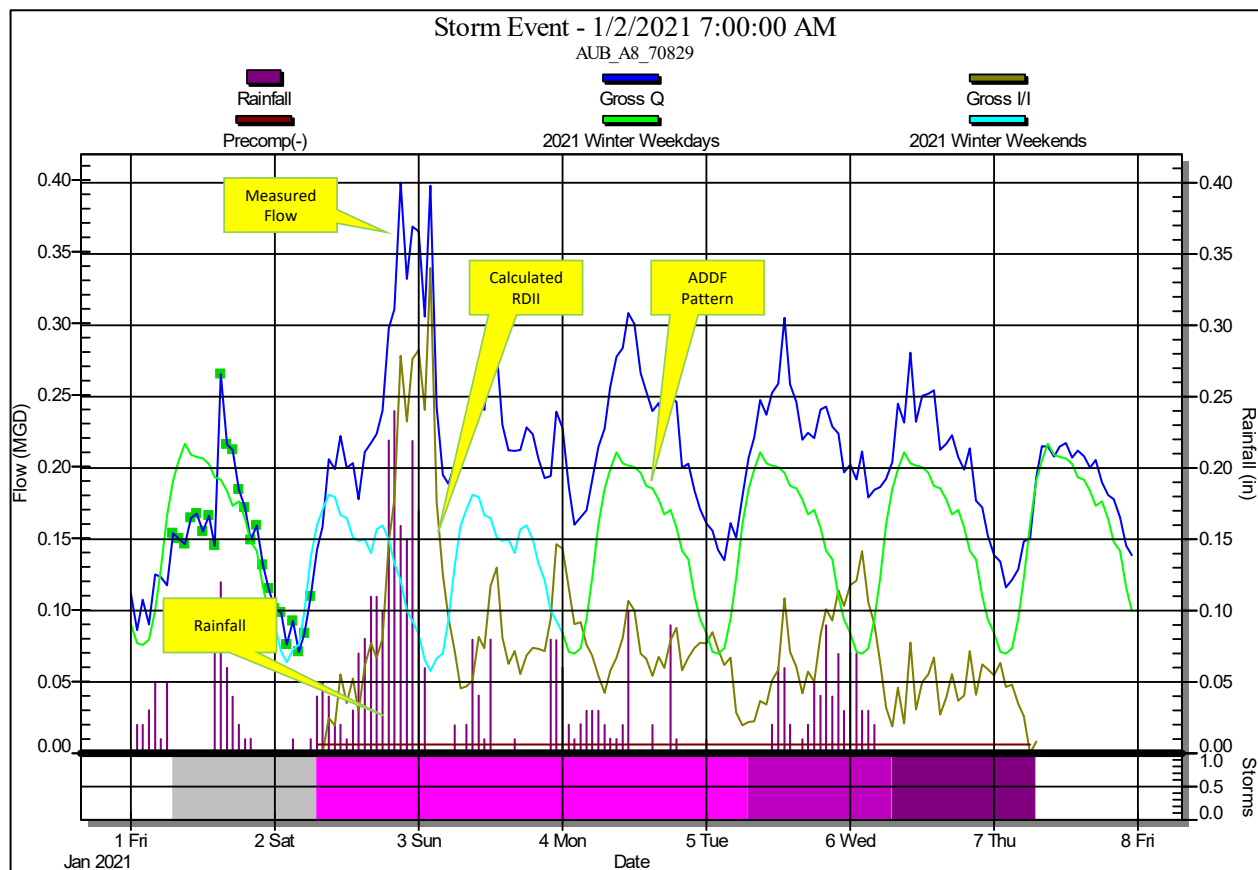


Figure 7 shows the RDII volumes in million gallons from the 6 largest storms. These values are total RDII volume measured during the storm and recovery period.

Figure 7 Gross RDII volume for each meter for the 6 largest storms.

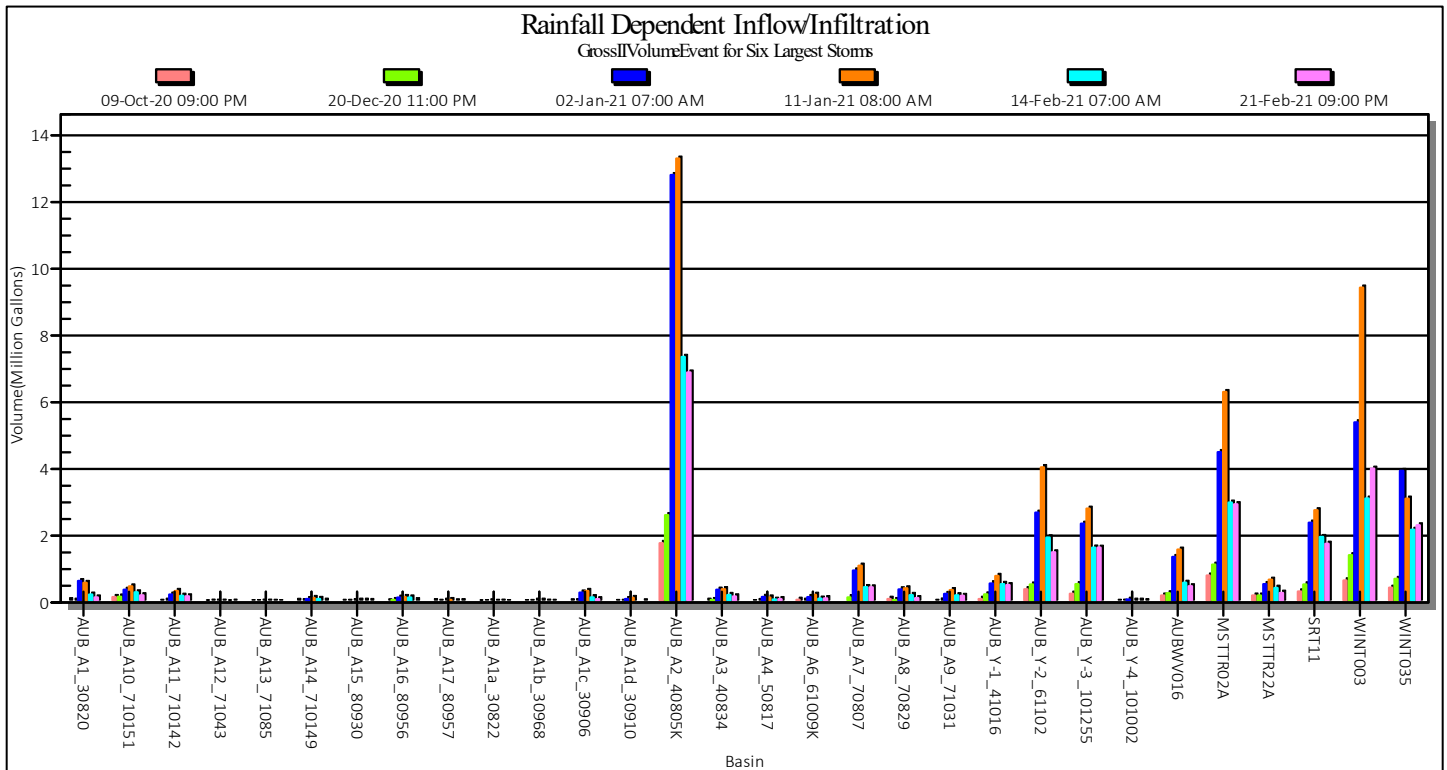
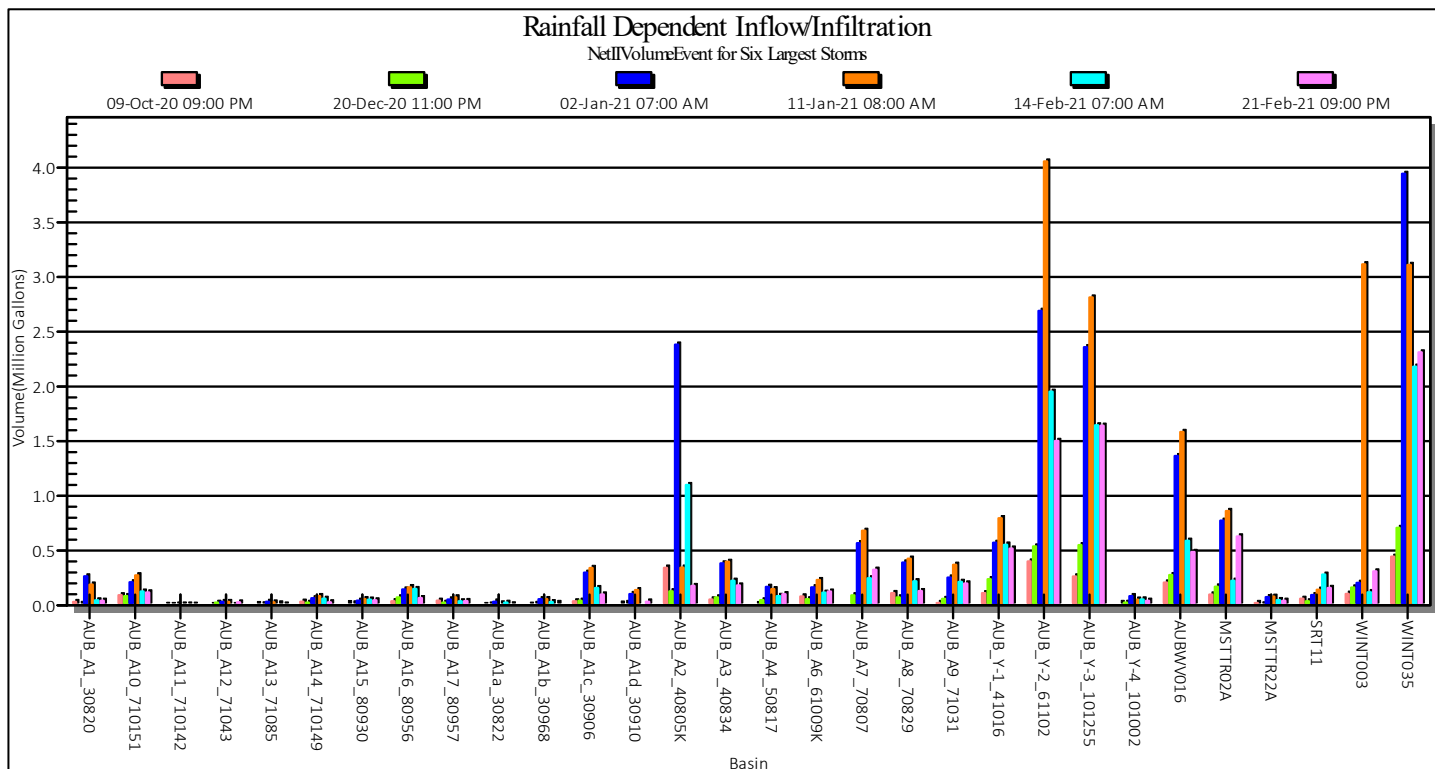


Figure 8 shows the Net Volume of RDII from the 6 largest storms. Net RDII is the volume generated within each sewer shed. Upstream RDII is subtracted from the downstream RDII.

Figure 8 Net RDII volumes from the 6 largest storms.



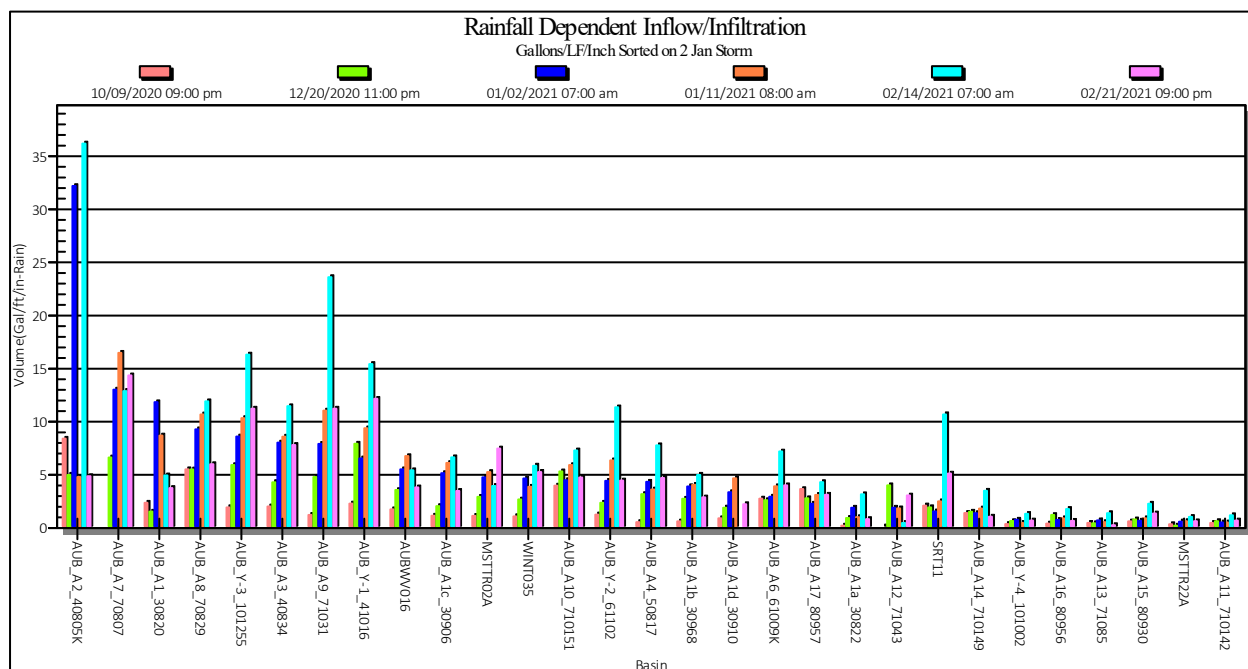
2.5 - RDII Severity

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 will 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.

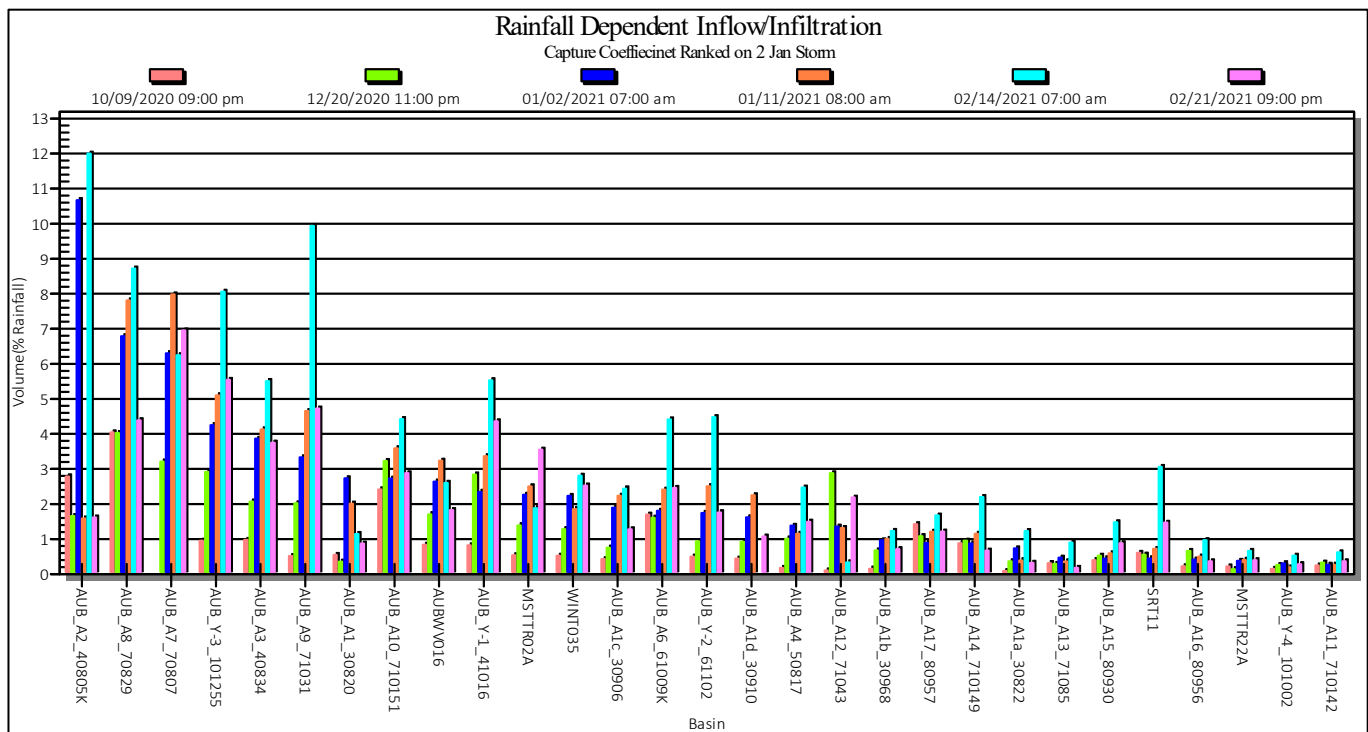
Figure 9 shows RDII normalized by sewer length (Gal/LF/inch) and sorted on the 2 January storm. For severity normalized by length, a general rule of thumb is that sewersheds in the winter/spring with values less than ~10 to 12 Gal/LF/Inch do not have excessive RDII, values up to 20 Gal/LF/Inch are marginal 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.

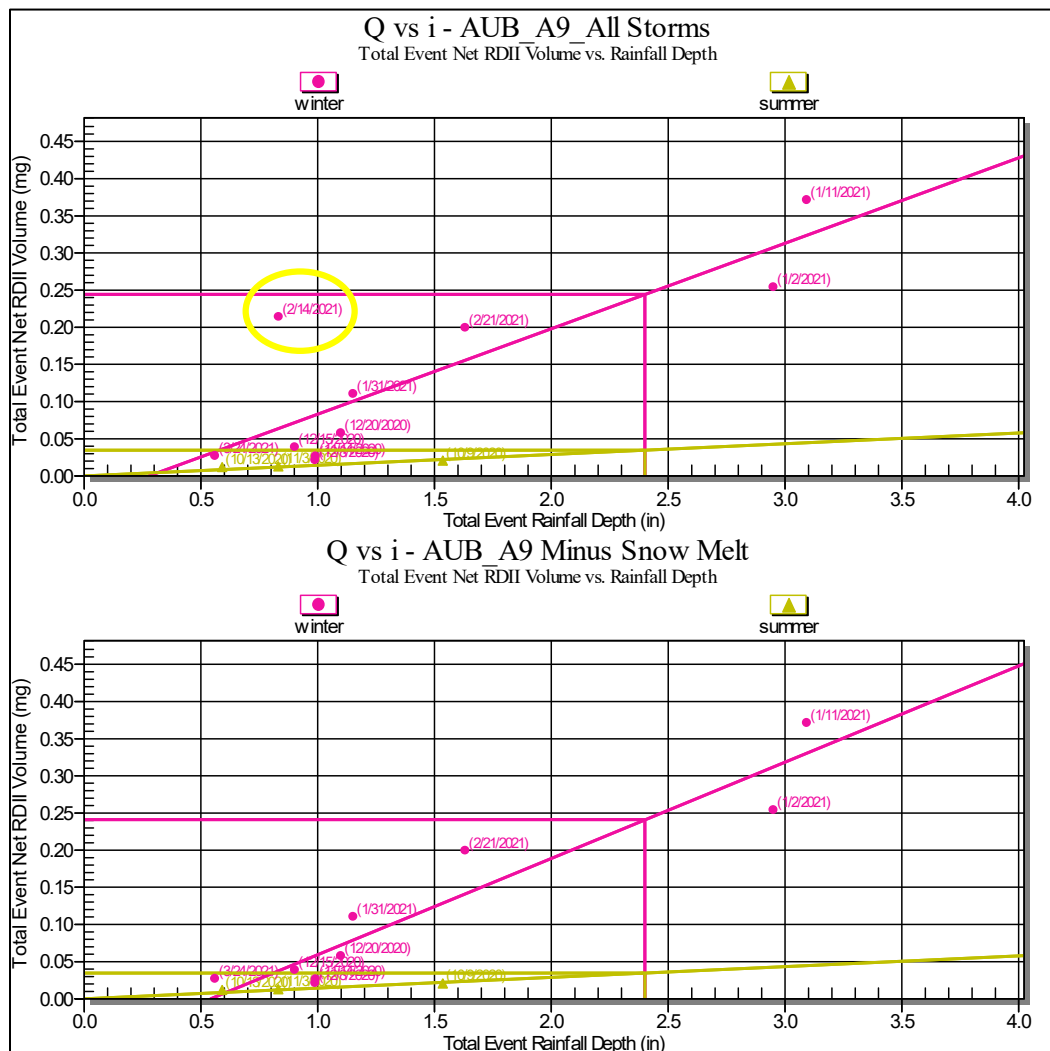
Figure 10 RDII as Capture Coefficient



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.

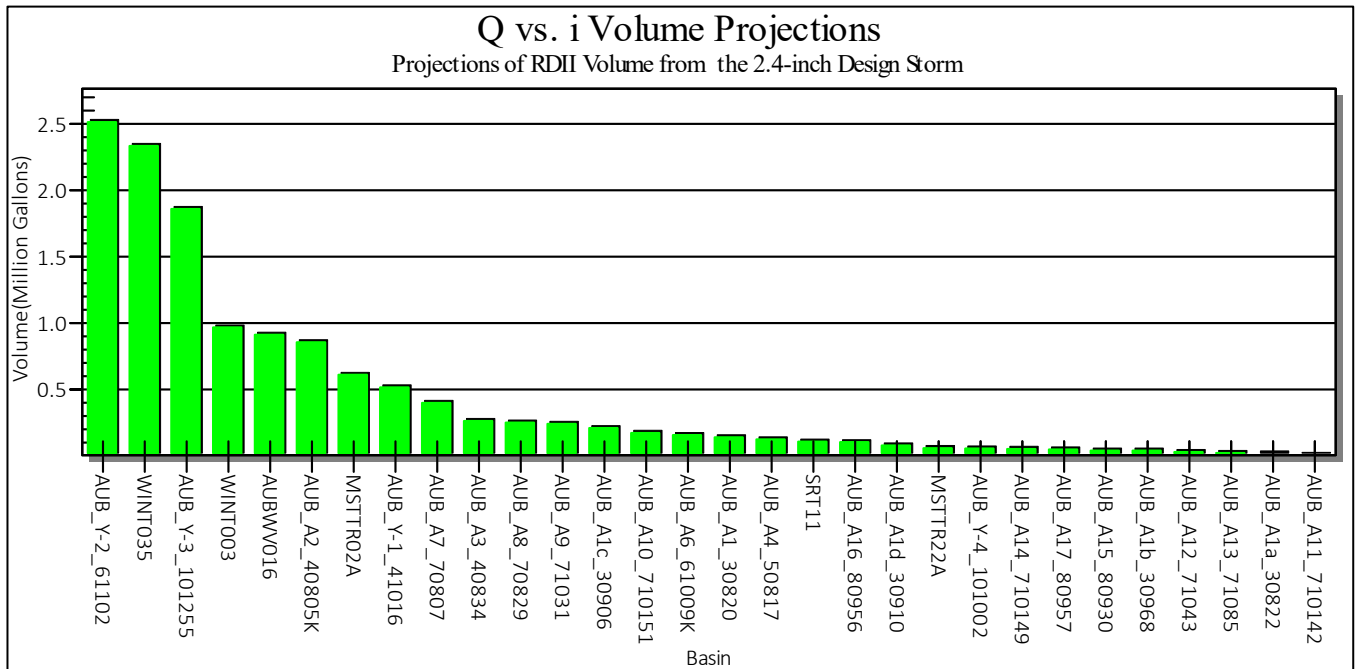
Figure 11 Q vs. i Plots of RDII Volume vs. Rainfall, with and without the snowmelt of 14 Feb 2021.



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 are 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 than 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

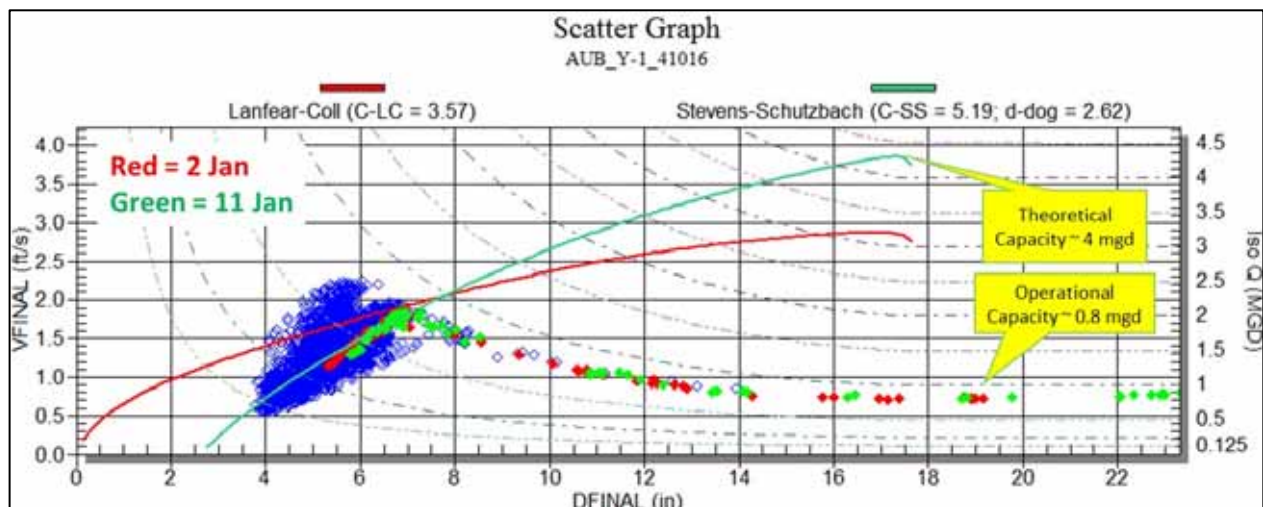
3.0 – Operational Capacities

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.

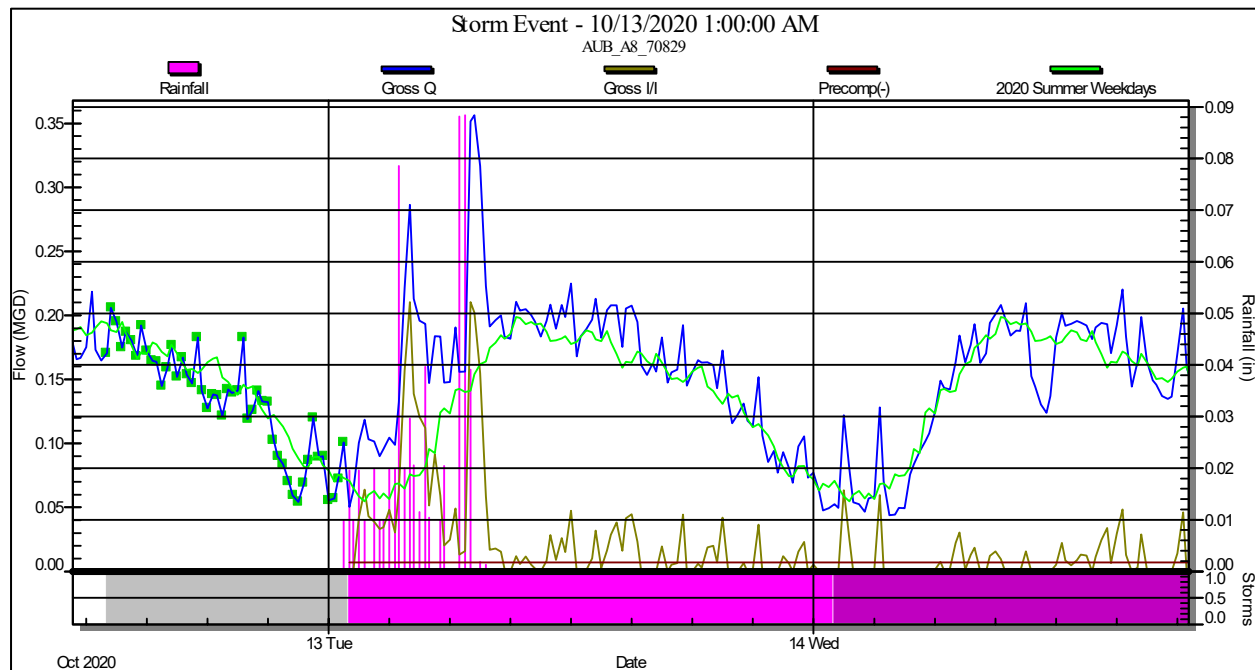
Figure 13 Scattergraph reveals both Theoretical and Operation Capacity of the sewer.



4.0 – Subjective Views of Hydrographs

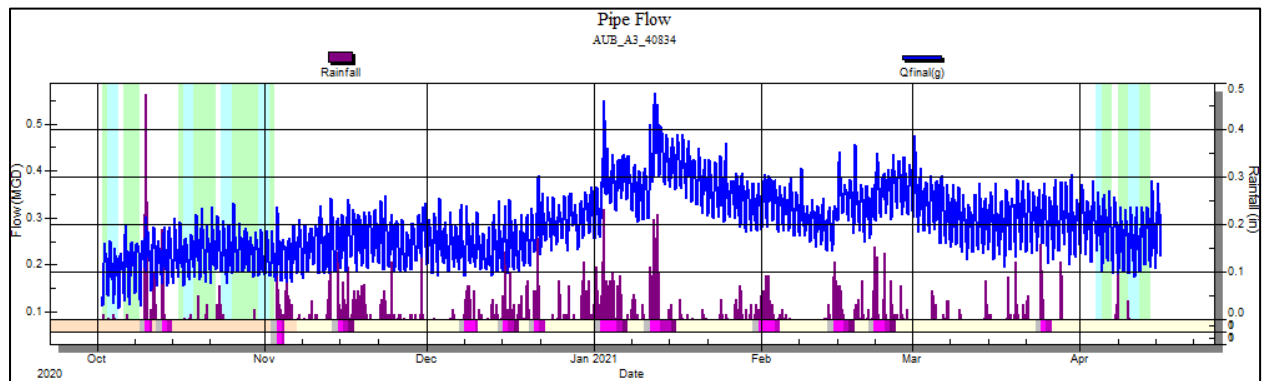
In addition to the numerical analysis in this report we have plotted storm hydrographs for the eight largest storms at each meter in Appendix B. It is noticeable that there appear to be minor sources of Inflow during high intensity storms of October as shown in Figure 14. The gold RDII hydrograph follows 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 RDI 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

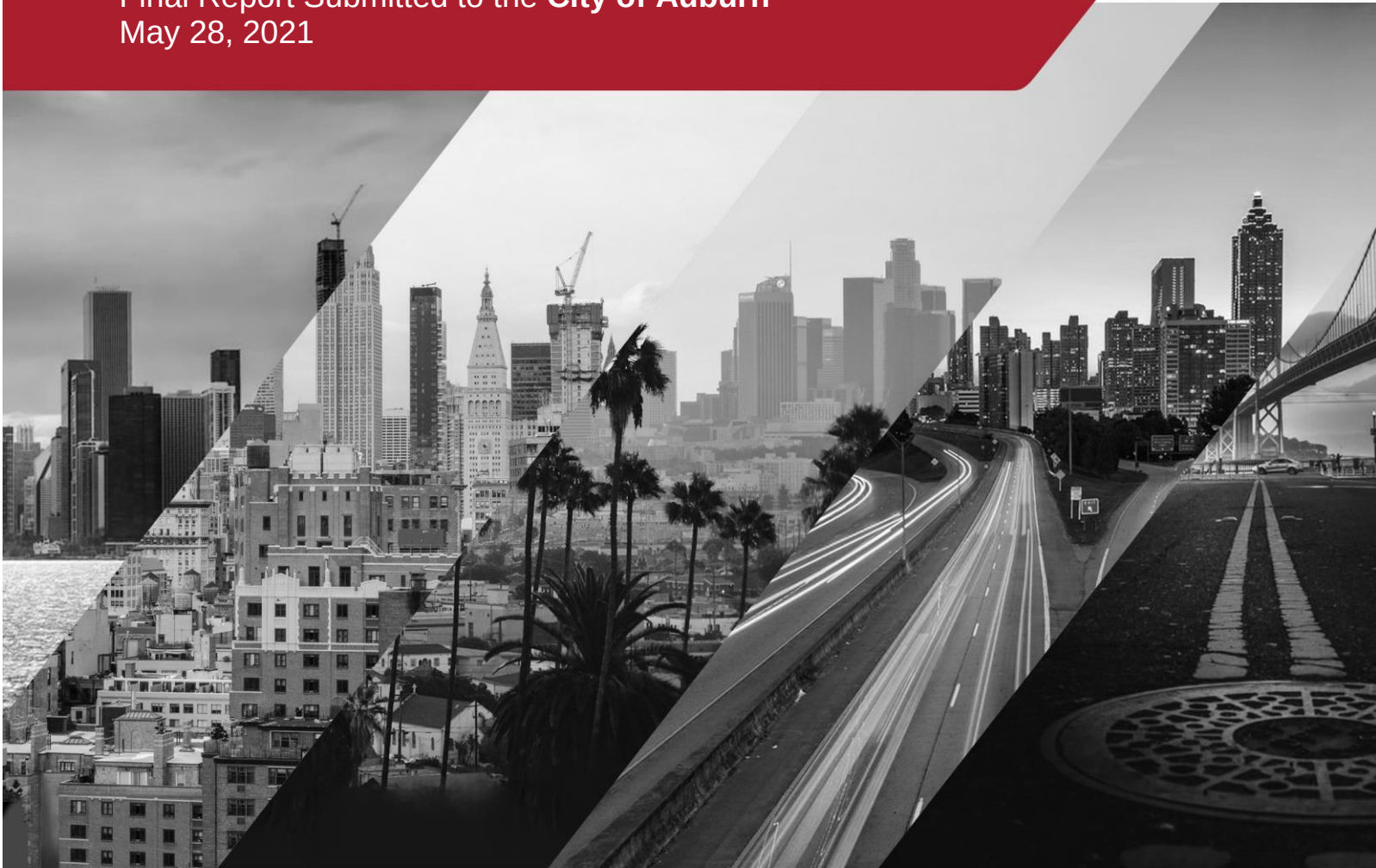
Appendix B - Slicer Graphics

Appendix C – Q vs i Plots

City of Auburn

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

Tuesday, September 22, 2020 to Wednesday, April 14, 2021

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:

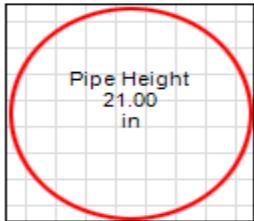
Percent Uptime	
DFINAL (in)	94.934
VFINAL (ft/s)	94.934
QFINAL (MGD - Total MG)	94.934



Hydrograph Report

AUB_A1_30820

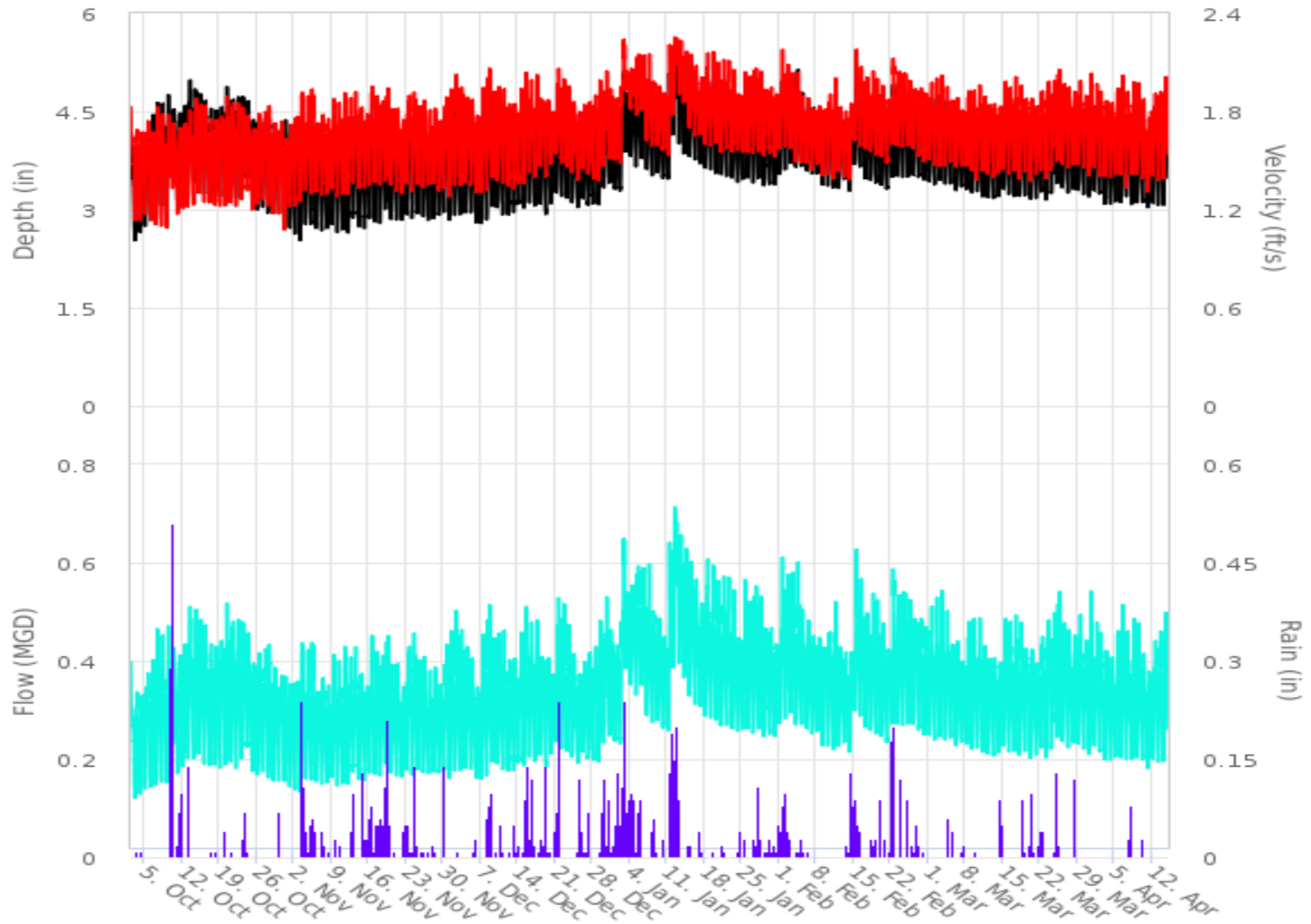
Flow Monitor
AUB_A1_30820



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

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Scattergraph Report

AUB_A1_30820

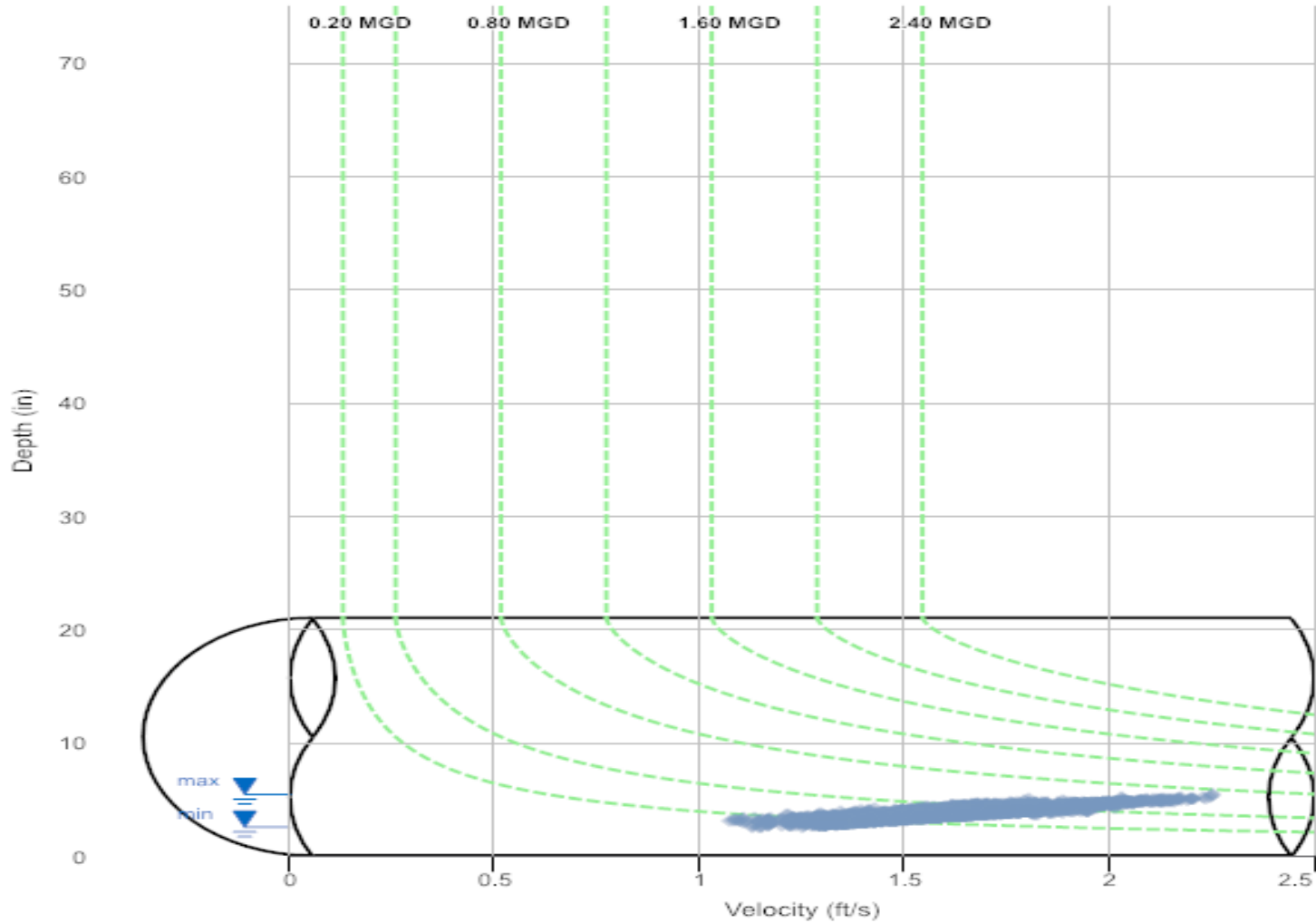
Flow Monitor
AUB_A1_30820

Pipe Height
21.00
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

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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	04:0							

	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	2.6																

	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				AUB_A1_30820	
Site Address /Location:	Opposite 627 - 637 37th St NW			Monitor Series	Location Type
Site Access Details:	Park by kerb	Latitude:	47.340149	TRITON+	Temporary
		Longitude:	-122.238708	Pipe Size (H x W)	Pipe Shape
				21.00 X 21.00	Circular
				Manhole #	System Characteristics
				A130820	Commercial
				Access	Traffic
				Drive	None
					
				Installation Information	
				Installation Date:	Installation Type:
				Friday, October 2, 2020	Doppler Standard Ring and Crank
				Monitoring Location (Sensors):	Monitor Location:
Upstream 0-3 FT	Manhole				
Sensors / Devices:	Pressure Sensor Range (psi)				
Peak Combo (CS4), Smart Depth (CS3)	0 - 3 psi				
Installation Confirmation:					
Time					
10:41:00 AM					
Depth of Flow (Wet DOF) (in)					
3.88					
CS3 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:					
ADS Project Name:		Auburn.TFM.WA20-22			
ADS Project Number:		22519.11.325			



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:

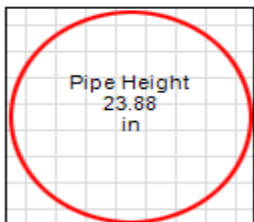
Percent Uptime	
DFINAL (in)	98.75
VFINAL (ft/s)	98.75
QFINAL (MGD - Total MG)	98.75



Hydrograph Report

AUB_A10_710151

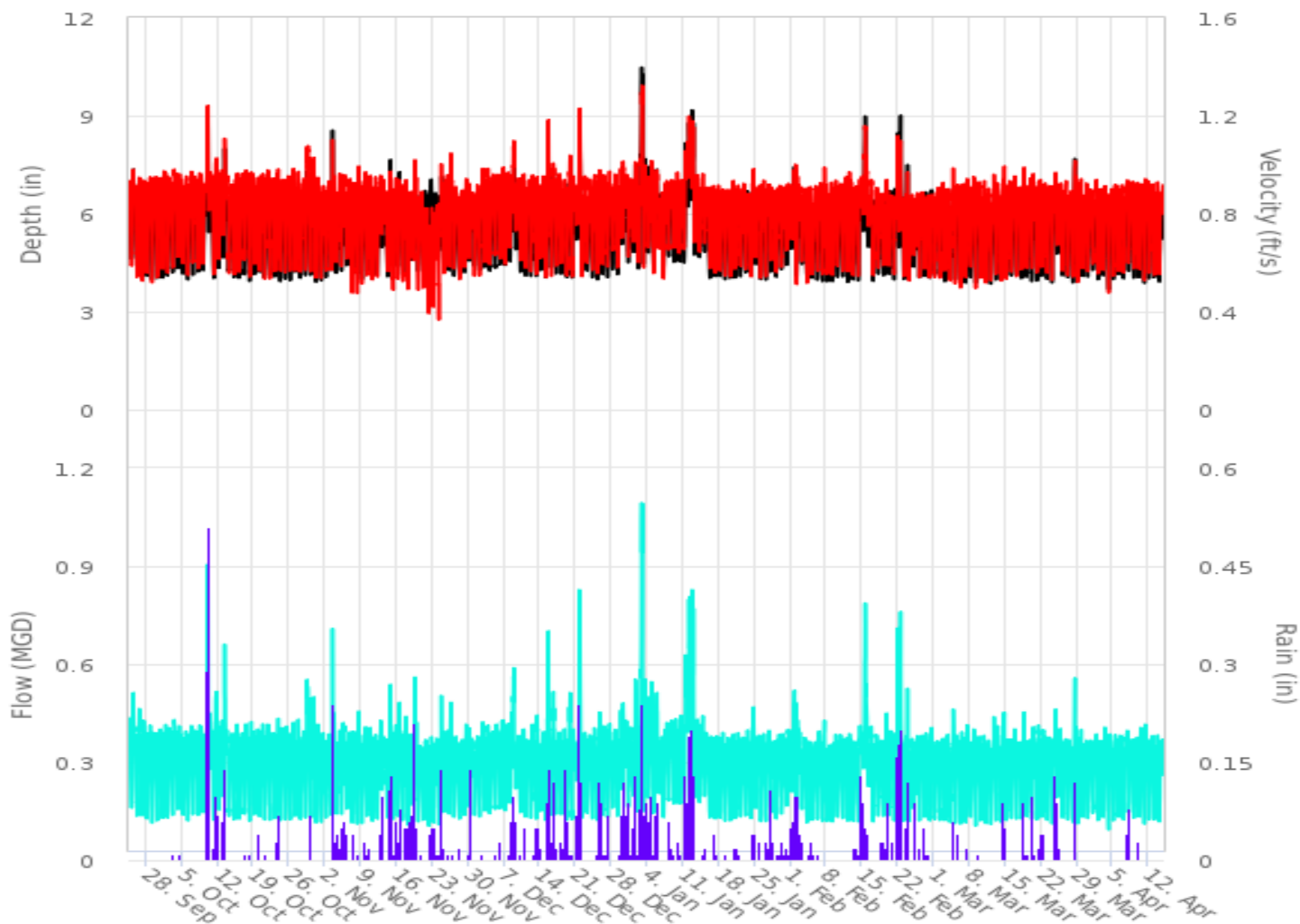
Flow Monitor
AUB_A10_710151



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ABS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A10_710151

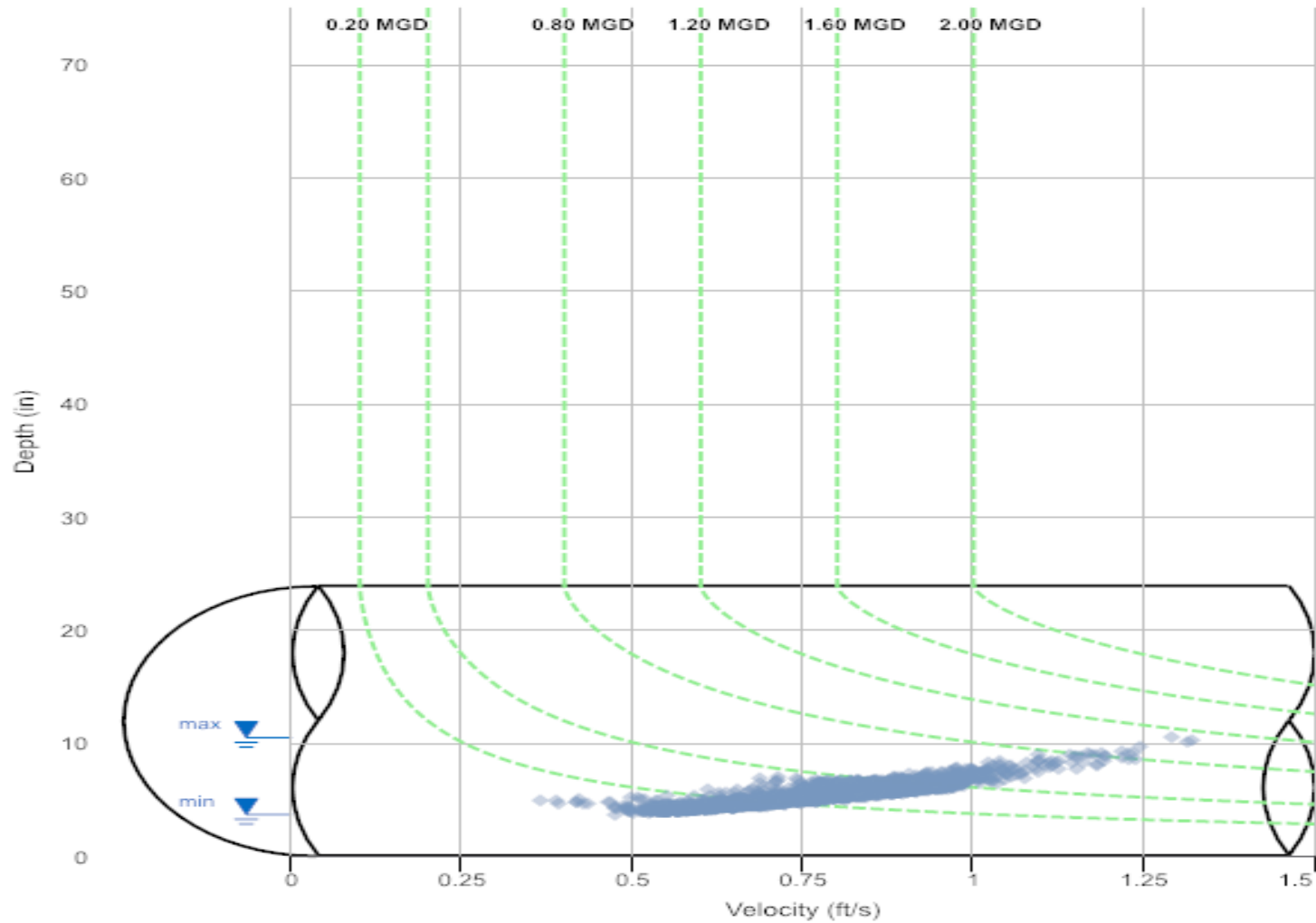
Flow Monitor
AUB_A10_710151

Pipe Height
23.88
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



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															

	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.					

	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				AUB_A10_710151	
Site Address /Location:	1496 Henry Rd			Monitor Series	Location Type
Site Access Details:	Located within roadway	Latitude:	47.314373°	Pipe Size (H x W)	Pipe Shape
		Longitude:	-122.209694°	14.13 x 14.13	Circular
				Manhole #	System Characteristics
				710-142	Residential
				Access	Traffic
				Drive	Light
					
				Installation Information	
				Installation Date:	Installation Type:
				Wednesday, September 23, 2020	Doppler Standard Ring and Crank
				Monitoring Location (Sensors):	Monitor Location:
Upstream 0-3 FT	Manhole				
Sensors / Devices:	Pressure Sensor Range (psi)				
Peak Combo (CS4), Smart Depth (CS5)	0 - 3 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:	
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

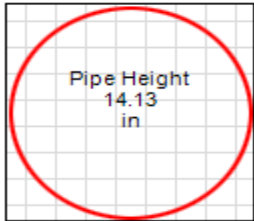
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

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

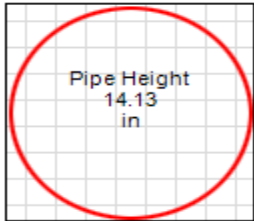
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A11_710142

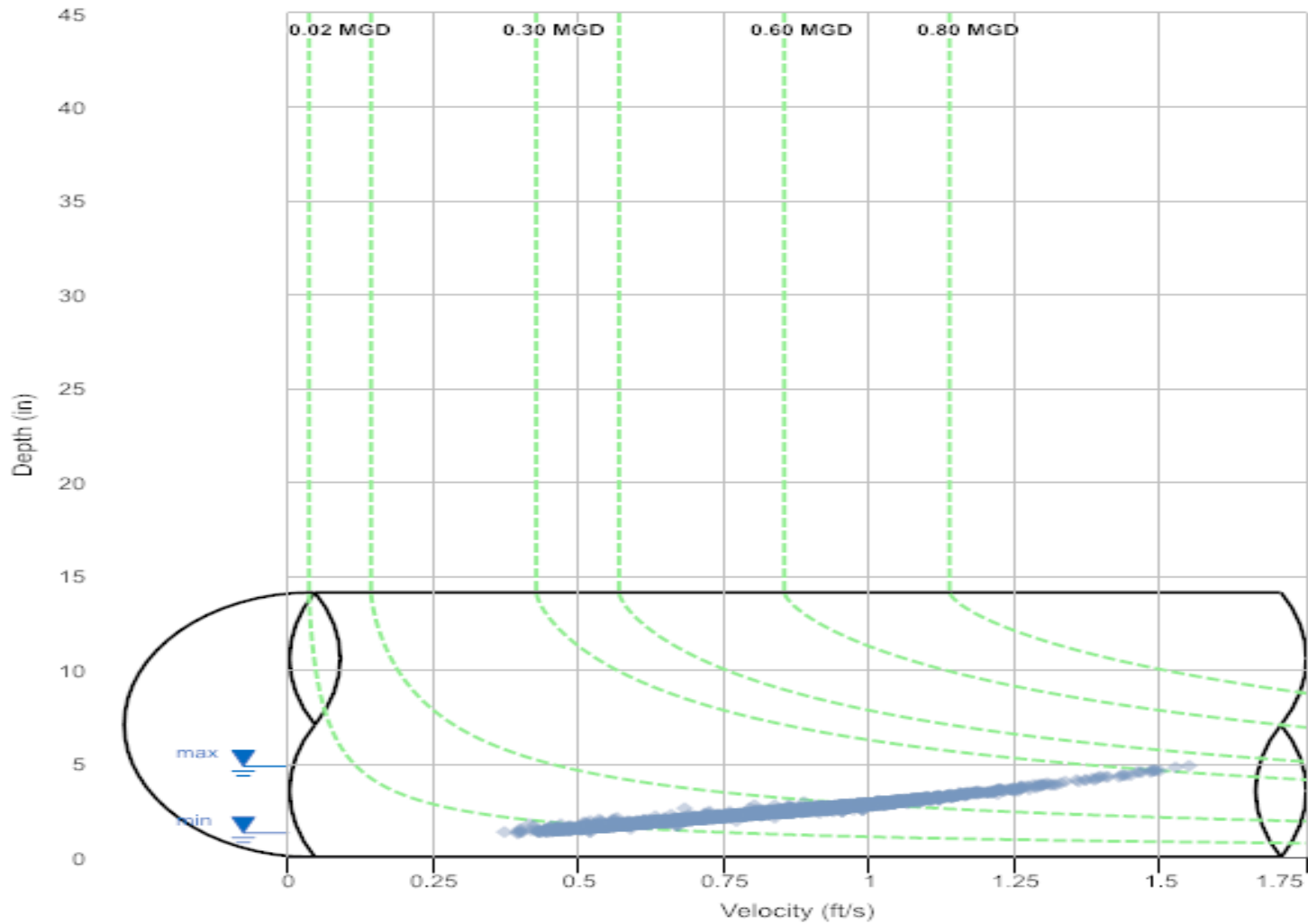
Flow Monitor
AUB_A11_710142



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56

AUB_A11_710142Pipe: Round (14.13 in H), Silt0.00 in

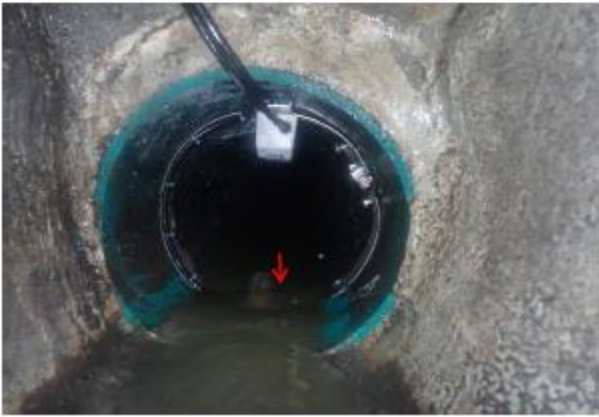
	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)							Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total	
01/01/2021	04:15	2.04	16:15	3.18	2.66	04:15	0.69	16:15	1.14	0.95	04:15	0.043	16:15	0.135	0.090	0.090	0.51	
01/02/2021	05:35	2.09	22:05	4.66	3.06	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																

	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</						

Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	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	0.061	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				AUB_A11_710142	
Site Address / Location:	1498 Henry Rd			Monitor Series	Location Type
Site Access Details:	Located within roadway	Latitude:	47.314373°	Pipe Size (H x W)	Pipe Shape
		Longitude:	-122.209694°	14.13 x 14.13	Circular
				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 0-3 FT Monitor Location: Manhole Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5) Pressure Sensor Range (psi): 0 - 3 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_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

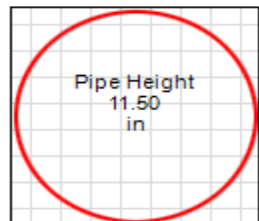
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.319
VFINAL (ft/s)	99.319
QFINAL (MGD - Total MG)	99.319

Hydrograph Report

AUB_A12_71043

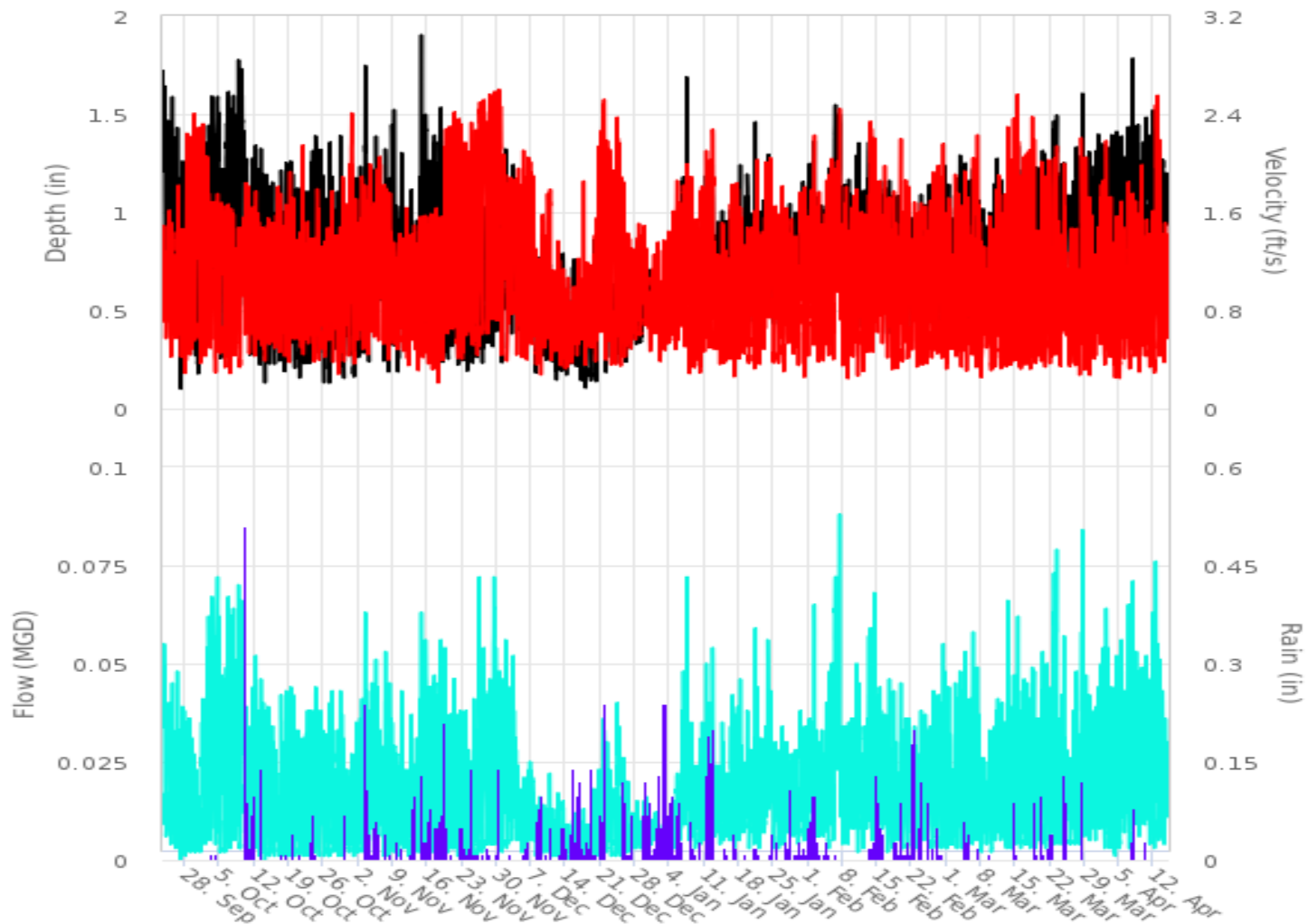
Flow Monitor
AUB_A12_71043



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

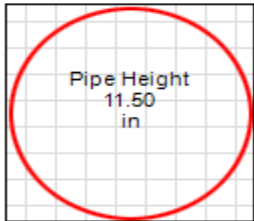
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A12_71043

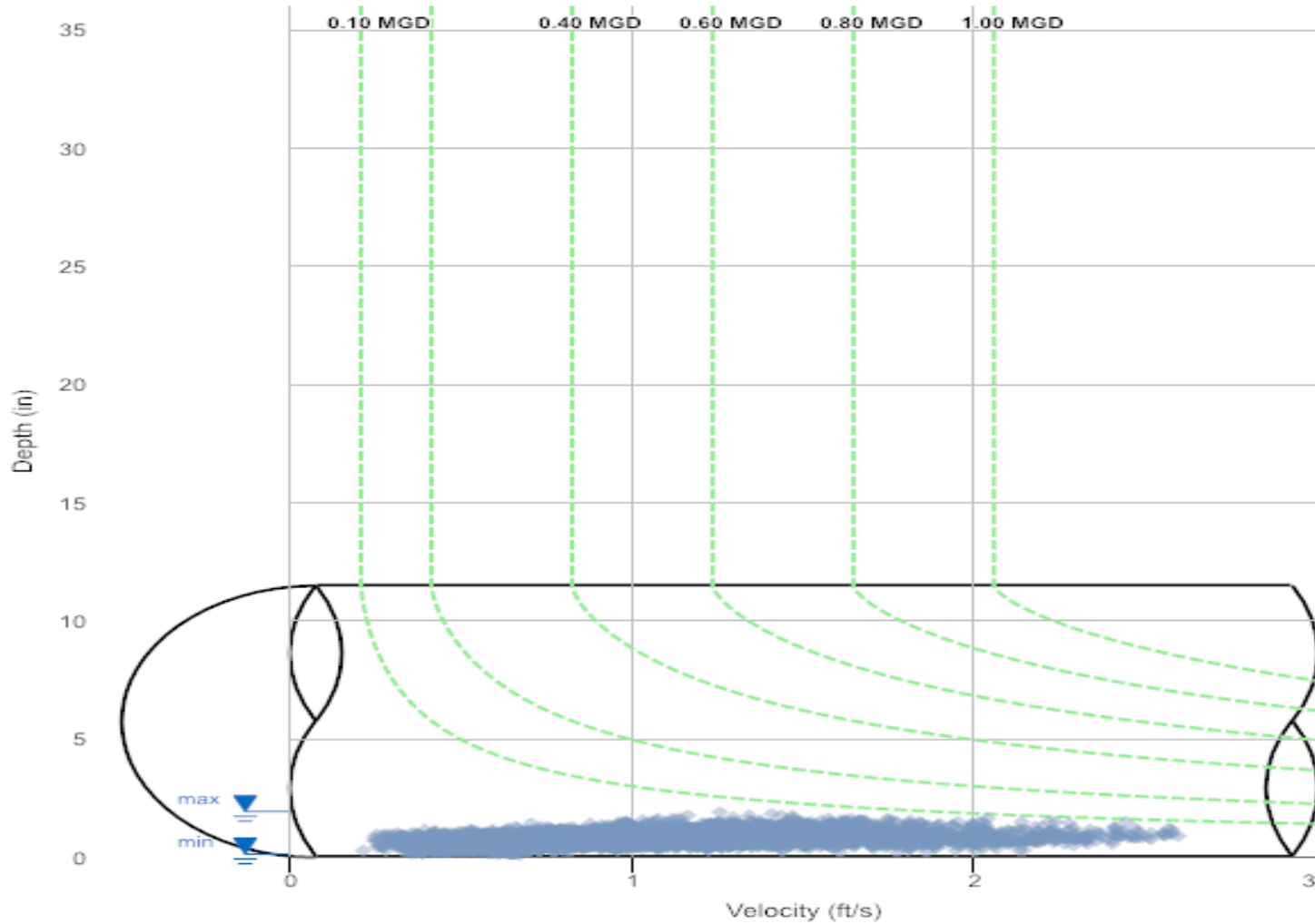
Flow Monitor
AUB_A12_71043



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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						

	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</						

	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				AUB_A12_71043	
Site Address /Location:	310 4th St NE			Monitor Series	Location Type
Site Access Details:	located on roadway	Latitude:	47.311779°	TRITON+	Temporary
		Longitude:	-122.209121°	Pipe Size (H x W)	Pipe Shape
				11.50 x 12.00	Circular
				Manhole #	System Characteristics
				710-43	Residential
				Access	Traffic
				Drive	Light
					
				Installation Information	
				Installation Date: Wednesday, September 23, 2020 Installation Type: Doppler Standard Ring and Crank Monitoring Location (Sensors): Downstream 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)
				9:33:00 AM	16.25x16.38
				Depth of Flow (Wet DOF) (in)	
				1.30	
				CS5 Physical Offset (in)	Measurement Confidence (in)
				1.38	0.15"
				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:	
ADS Project Name:		Auburn.TFM.WA20-22			
ADS Project Number:		22519			



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:

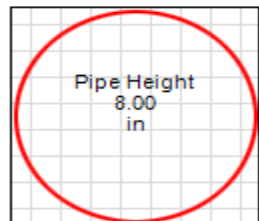
Percent Uptime	
DFINAL (in)	99.284
VFINAL (ft/s)	99.284
QFINAL (MGD - Total MG)	99.284



Hydrograph Report

AUB_A13_71085

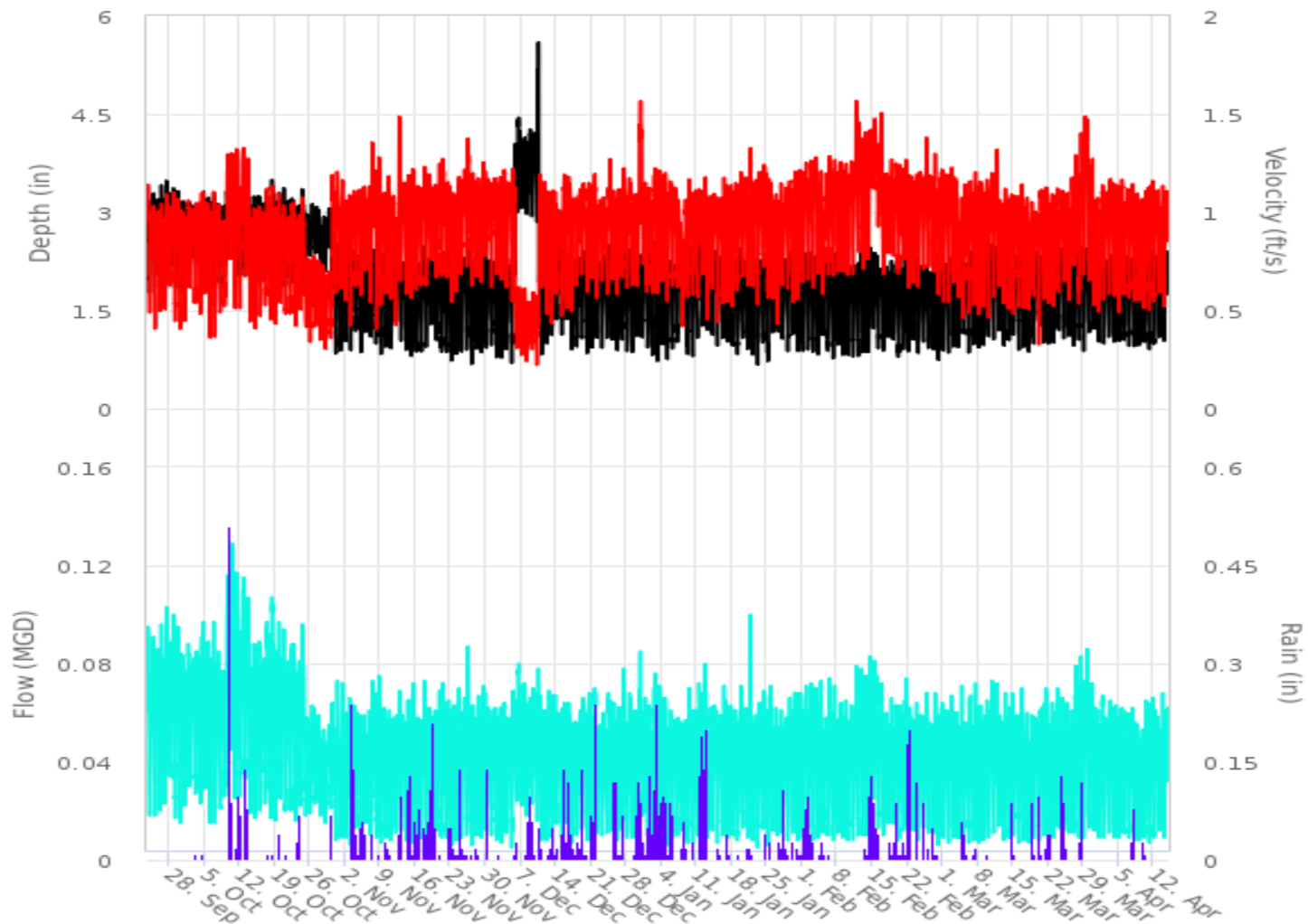
Flow Monitor
AUB_A13_71085



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

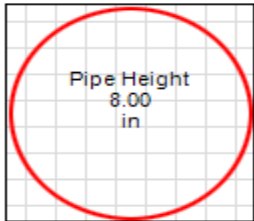
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A13_71085

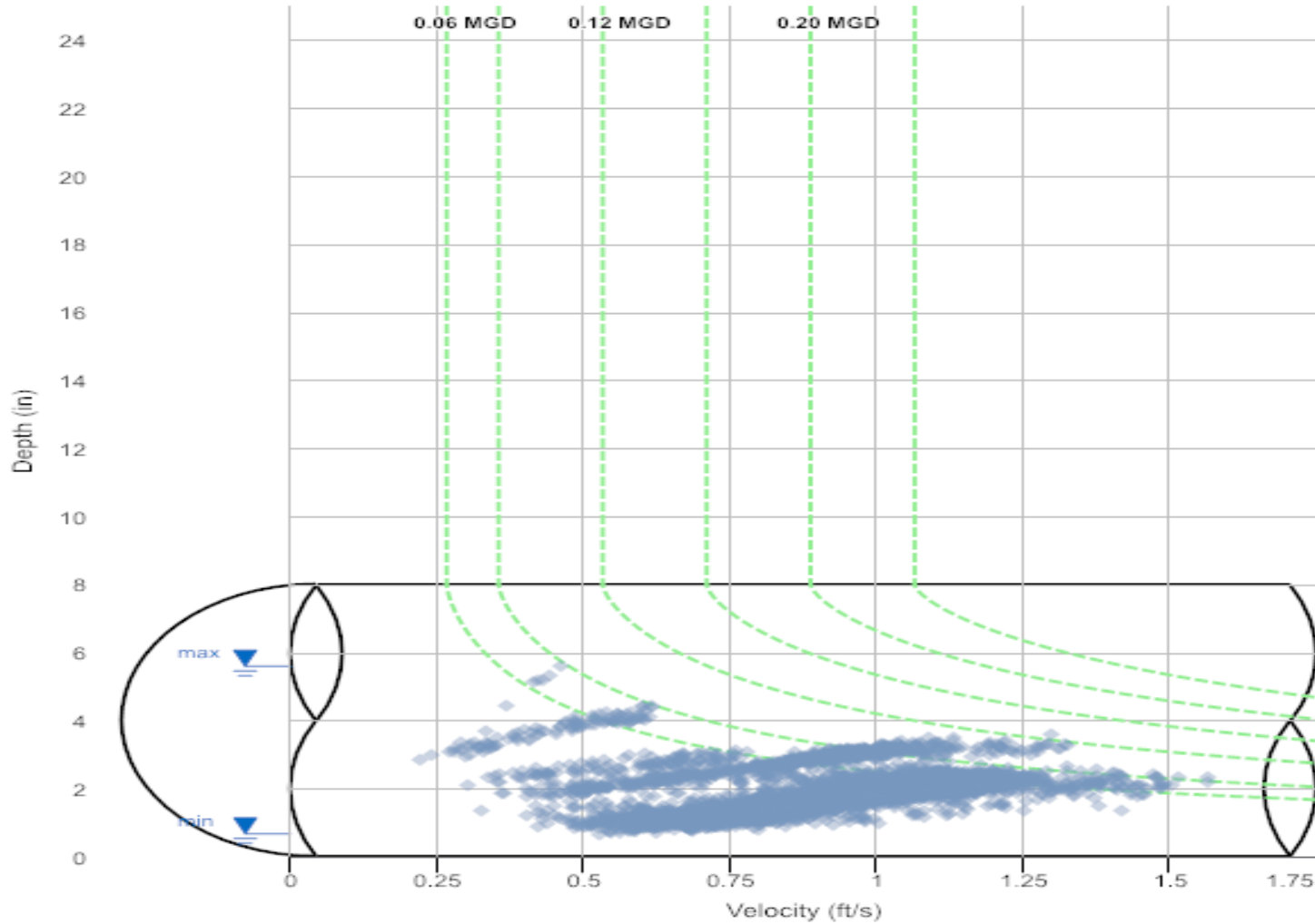
Flow Monitor
AUB_A13_71085



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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.								

	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</						

	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	

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:

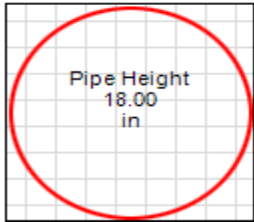
Percent Uptime	
DFINAL (in)	98.74
VFINAL (ft/s)	98.74
QFINAL (MGD - Total MG)	98.74



Hydrograph Report

AUB_A14_710149

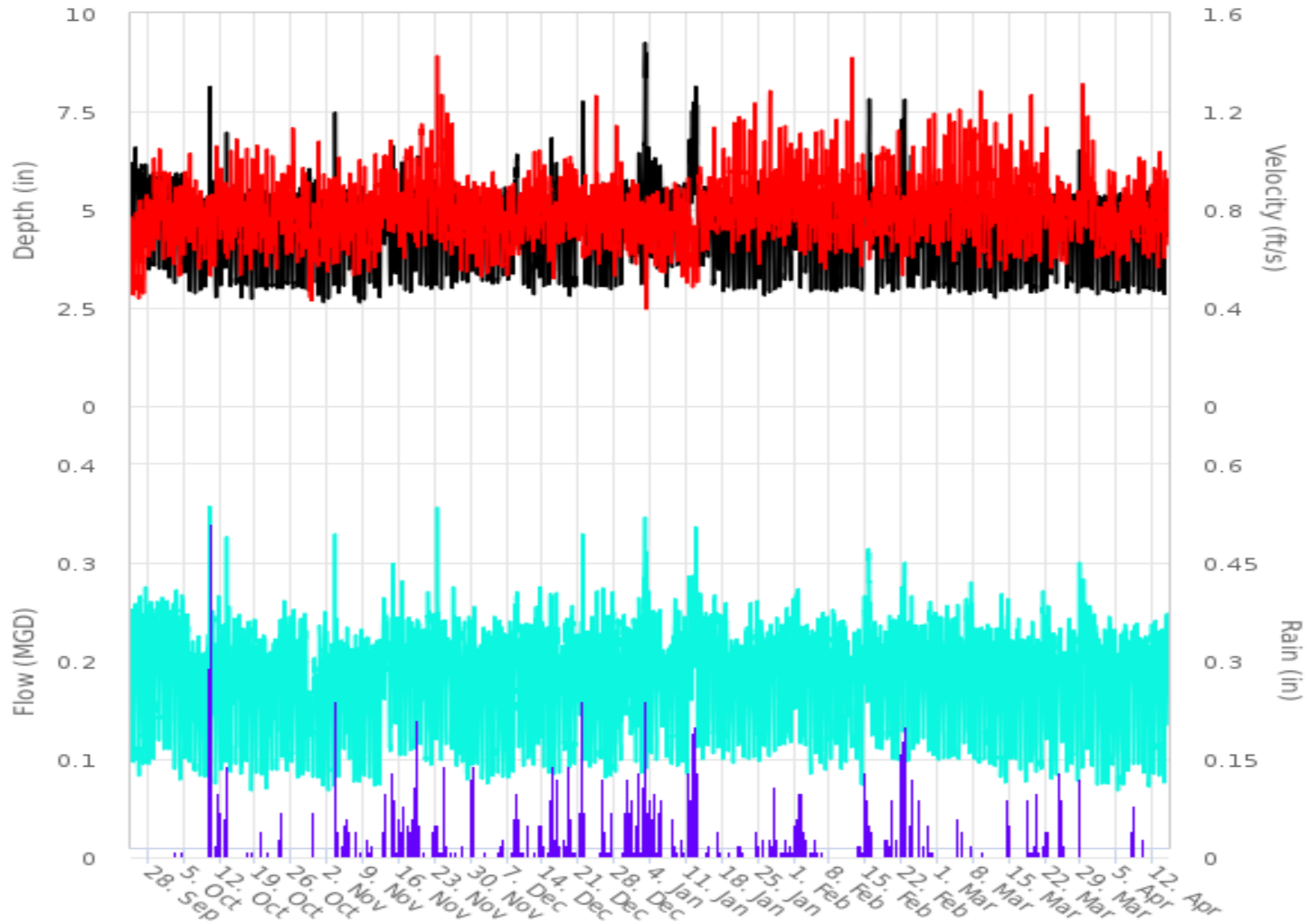
Flow Monitor
AUB_A14_710149



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

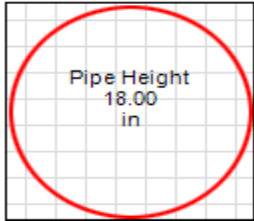
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A14_710149

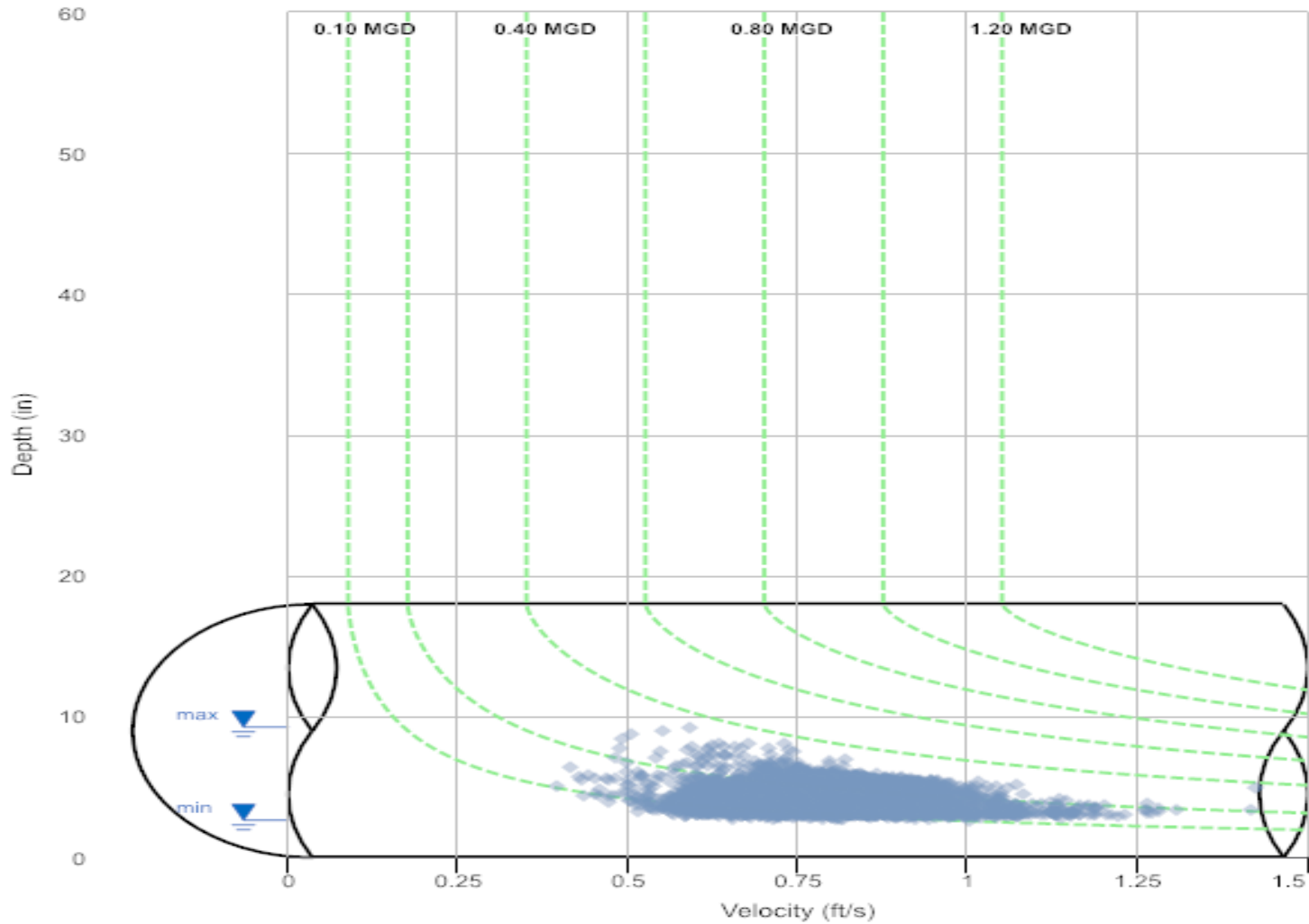
Flow Monitor
AUB_A14_710149



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



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:														

	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	0.0					

	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				AUB_A14_710149									
Site Address /Location:	Auburn High School - I St NE			Monitor Series	Location Type								
Site Access Details:	Keys Required	Latitude:	47.309399°	TRITON+	Temporary								
		Longitude:	-122.218373°	Pipe Size (H x W)	Pipe Shape								
				18.00 x 18.00	Circular								
				Manhole #	System Characteristics								
				710-149	Residential								
				Access	Traffic								
				Drive	Medium								
													
				Installation Information									
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Thursday, September 24, 2020</td> <td>Doppler Standard Ring and Crank</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-5 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS5)</td> <td>0 - 5 psi</td> </tr> </table>		Installation Date:	Installation Type:	Thursday, September 24, 2020	Doppler Standard Ring and Crank	Monitoring Location (Sensors):	Monitor Location:	Upstream 0-5 FT	Manhole
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)									
				3.63									
				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

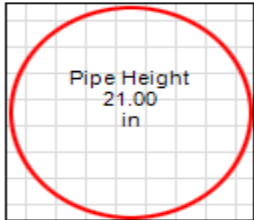
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.263
VFINAL (ft/s)	99.263
QFINAL (MGD - Total MG)	99.263

Hydrograph Report

AUB_A15_80930

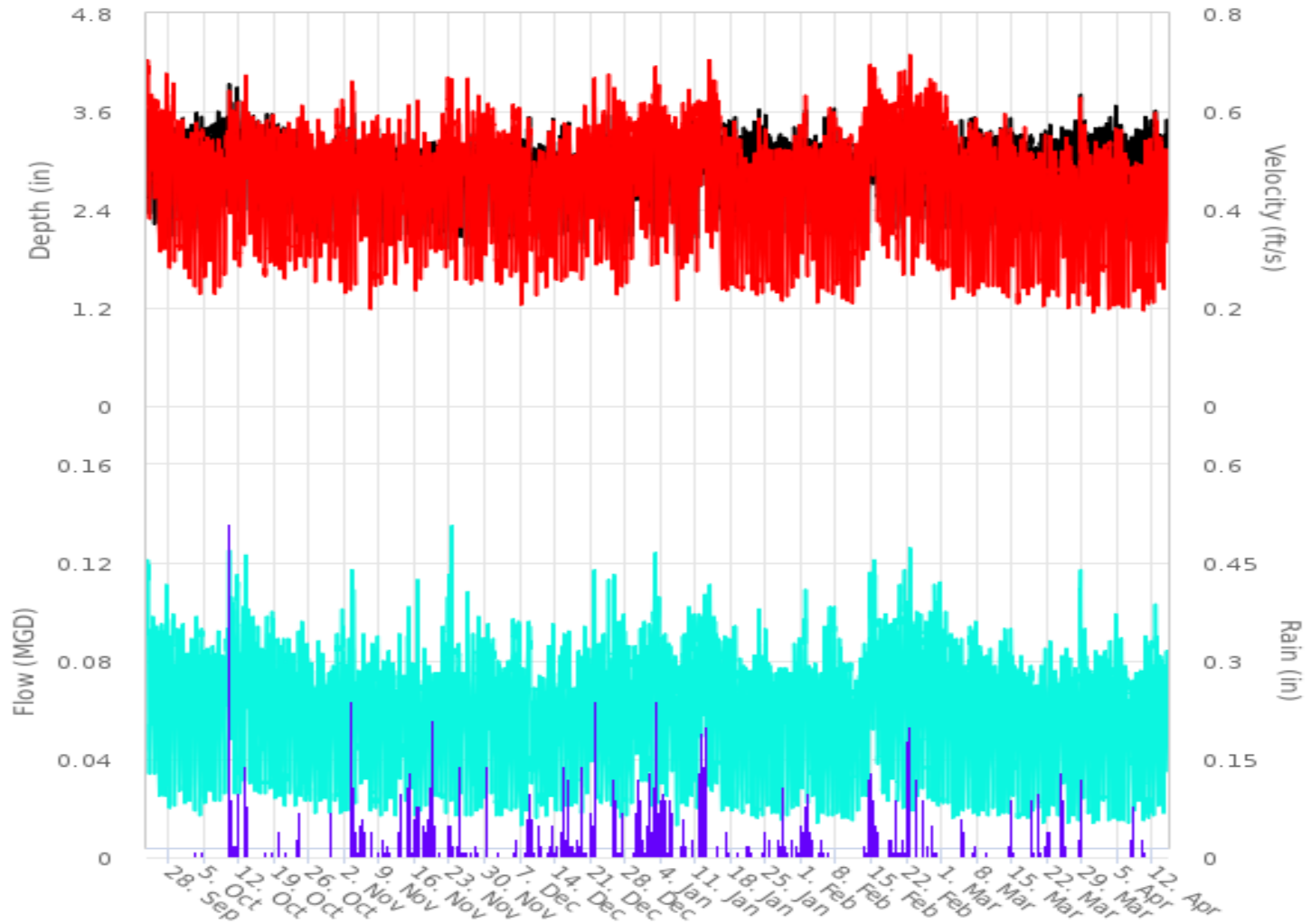
Flow Monitor
AUB_A15_80930



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

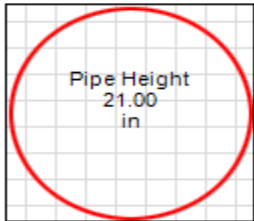
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A15_80930

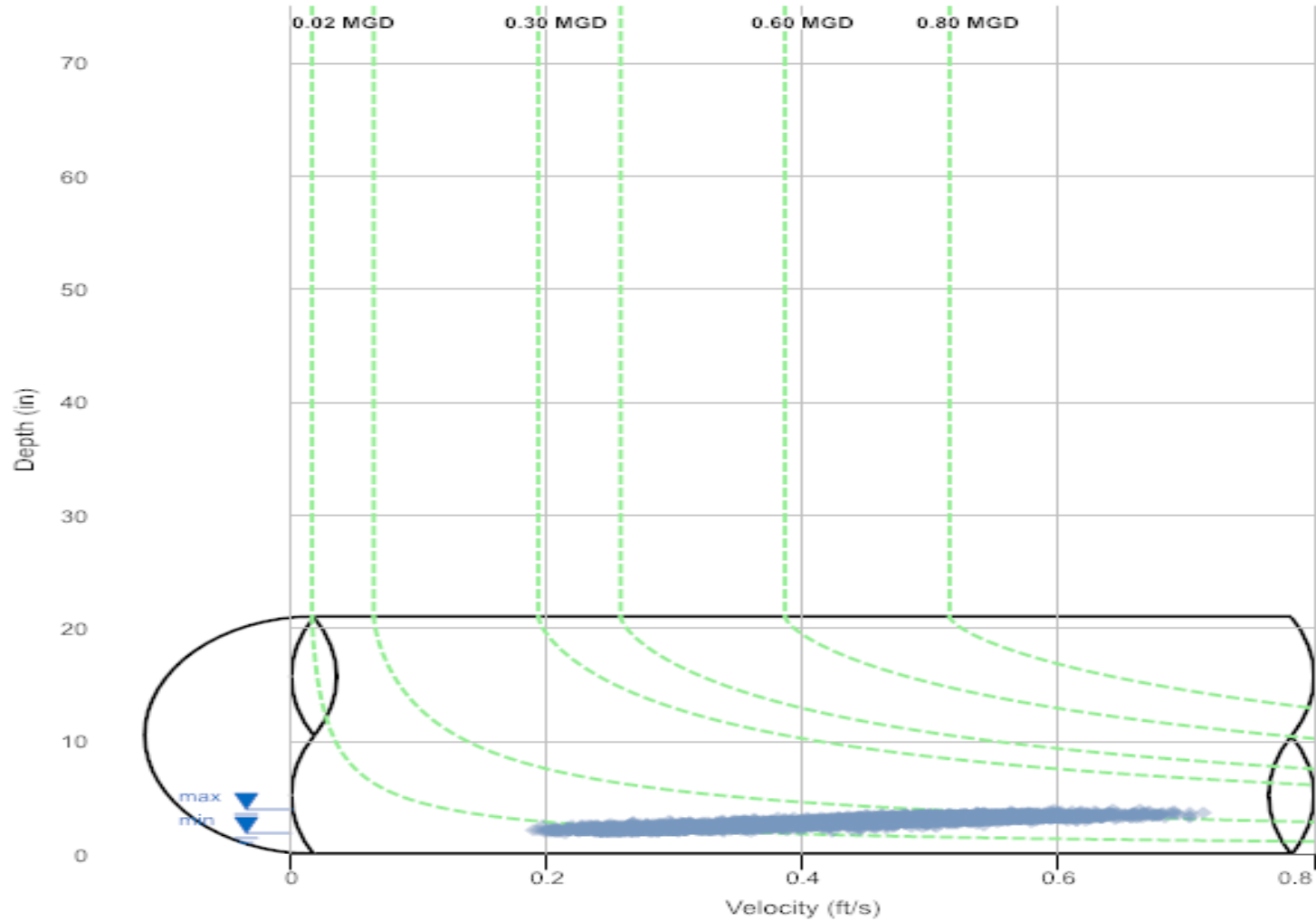
Flow Monitor
AUB_A15_80930



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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	2.2																

	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</						

	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				AUB_A15_80930	
Site Address / Location:	641 4th St SE			Monitor Series	Location Type
Site Access Details:	Park on 4th St SE	Latitude:	47.304257	TRITON+	Temporary
		Longitude:	-122.220984	Pipe Size (H x W)	Pipe Shape
				21.00 x 21.00	Circular
				Manhole #	System Characteristics
				809-30	Residential
				Access	Traffic
				Drive	Medium
					
				Installation Information	
				Installation Date:	Installation Type:
				Wednesday, September 23, 2020	Doppler Standard Ring and Crank
Monitoring Location (Sensors):				Monitor Location:	
Upstream 0-3 FT				Manhole	
Sensors / Devices:				Pressure Sensor Range (psi)	
Peak Combo (CS4), Smart Depth (CS3)				0 - 5 psi	
Installation Confirmation:					
Time:				Pipe Size (HxW)	
12:23:00 PM				16.25x16.38	
Depth of Flow (Wet DOF) (in)					
3.30					
CS3 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					
ADS Project Name:	Auburn.TFM.WA20-22				
ADS Project Number:	22519				



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:

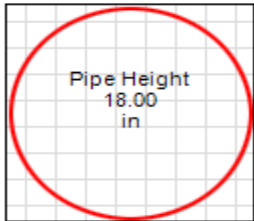
Percent Uptime	
DFINAL (in)	99.761
VFINAL (ft/s)	99.761
QFINAL (MGD - Total MG)	99.761



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

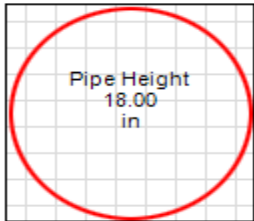
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A16_80956

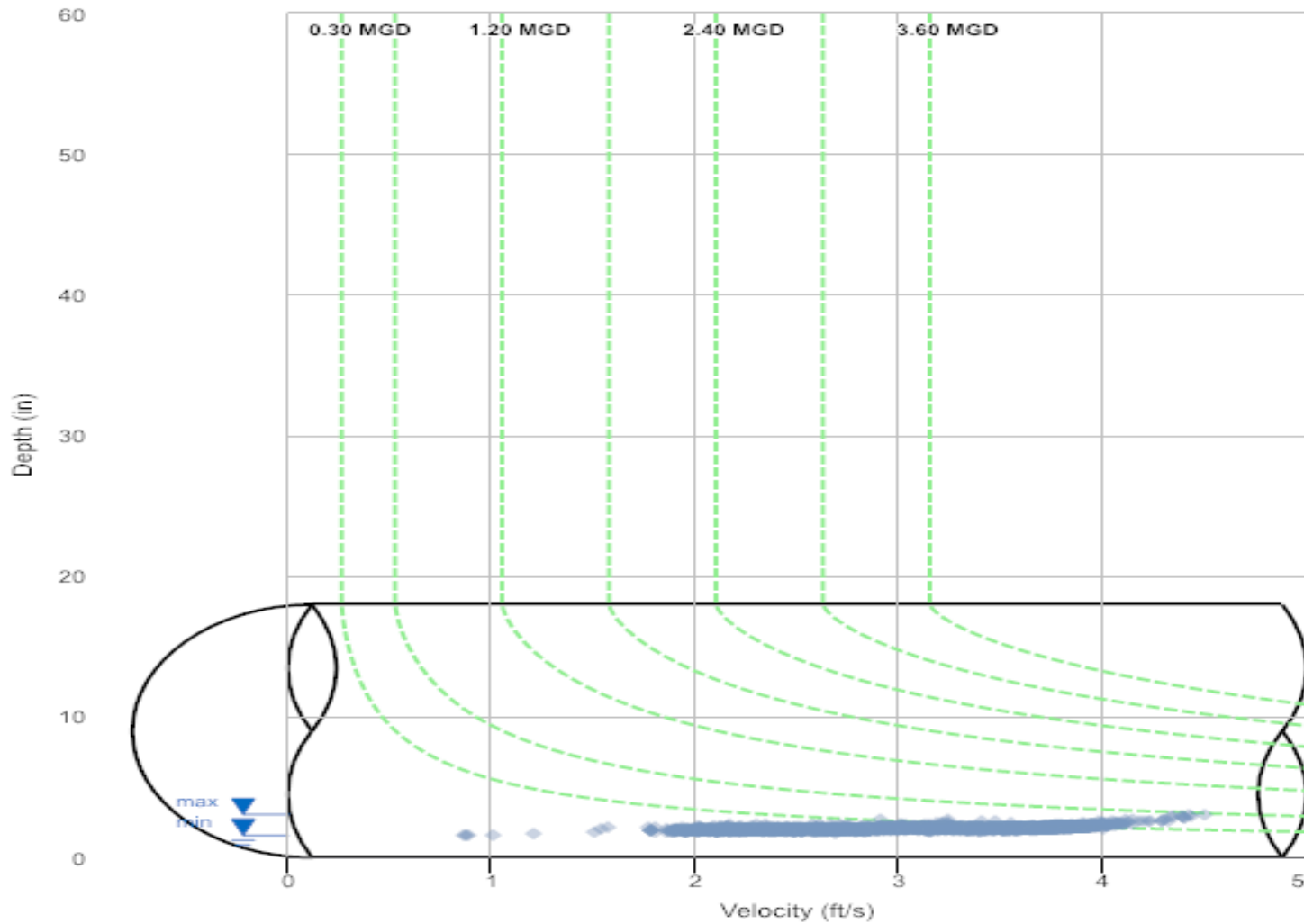
Flow Monitor
AUB_A16_80956



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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	1.8																

	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						

	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				AUB_A16_80956									
Site Address /Location:	Opposite 225 6th St SE			Monitor Series	Location Type								
Site Access Details:	Park in Eastbound lane	Latitude:	47.3019	TRITON+	Temporary								
		Longitude:	-122.226938	Pipe Size (H x W)	Pipe Shape								
				21.00 X 21.00	Circular								
				Manhole #	System Characteristics								
				A130820	Commercial								
				Access	Traffic								
				Drive	Heavy								
													
				Installation Information									
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Monday, September 28, 2020</td> <td>Doppler Standard Ring and Crank</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-3 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS3)</td> <td>0 - 3 psi</td> </tr> </table>		Installation Date:	Installation Type:	Monday, September 28, 2020	Doppler Standard Ring and Crank	Monitoring Location (Sensors):	Monitor Location:	Upstream 0-3 FT	Manhole
Installation Date:	Installation Type:												
Monday, September 28, 2020	Doppler Standard Ring and Crank												
Monitoring Location (Sensors):	Monitor Location:												
Upstream 0-3 FT	Manhole												
Sensors / Devices:	Pressure Sensor Range (psi)												
Peak Combo (CS4), Smart Depth (CS3)	0 - 3 psi												
				Installation Confirmation:									
				Time									
				14:26:00 AM									
				Depth of Flow (Wet DOF) (in)									
				2.50									
				CS3 Physical Offset (in)	Measurement Confidence (in)								
				1.38	0.25"								
				Peak Velocity (fps)	Velocity Sensor Offset (in)								
				0.38	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:									
ADS Project Name:		Auburn.TFM.WA20-22											
ADS Project Number:		22319.11.323											



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:

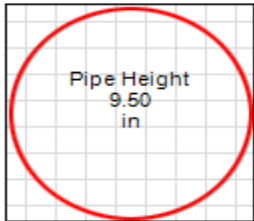
Percent Uptime	
DFINAL (in)	96.773
VFINAL (ft/s)	96.773
QFINAL (MGD - Total MG)	96.773



Hydrograph Report

AUB_A17_80957

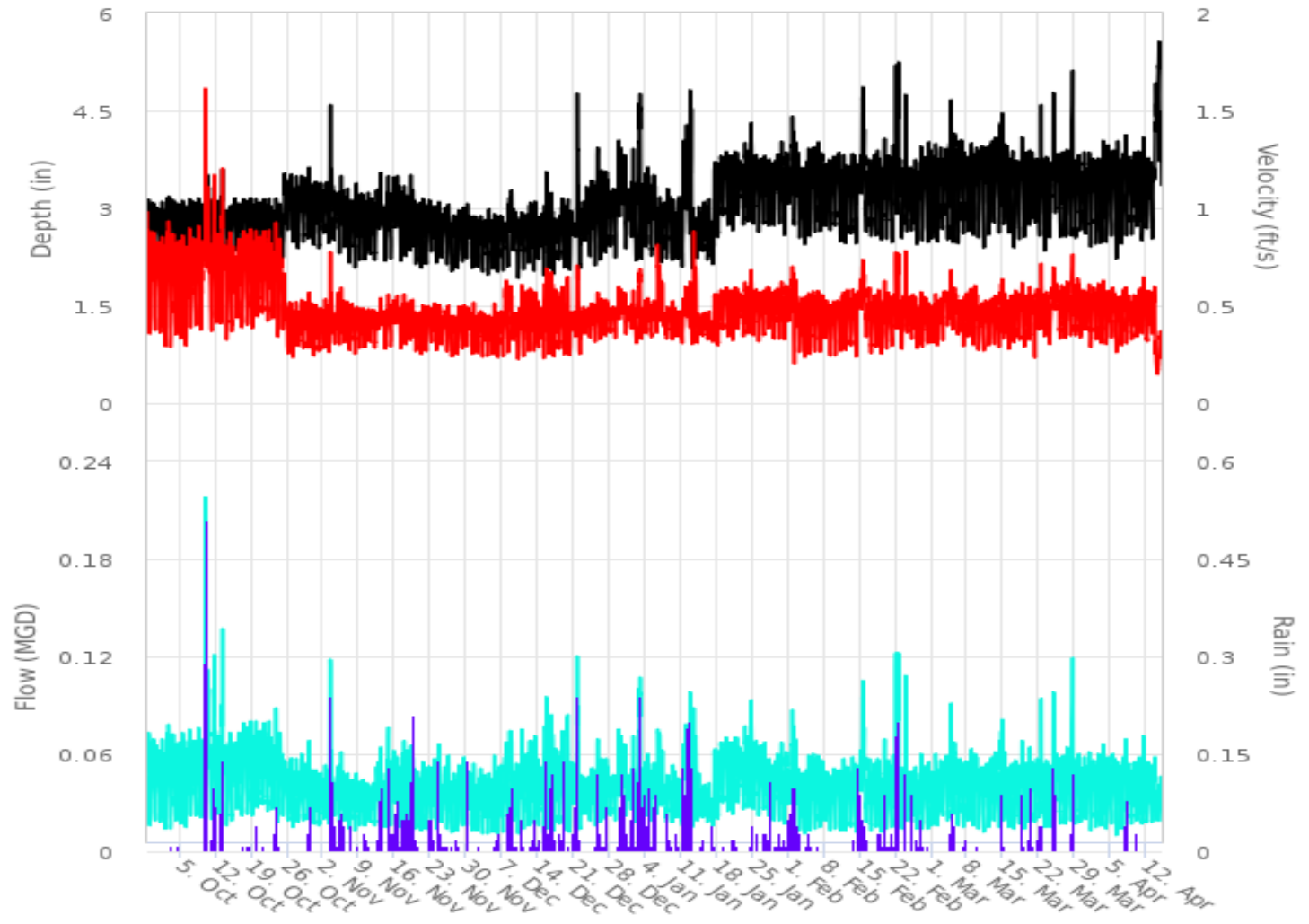
Flow Monitor
AUB_A17_80957



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A17_80957

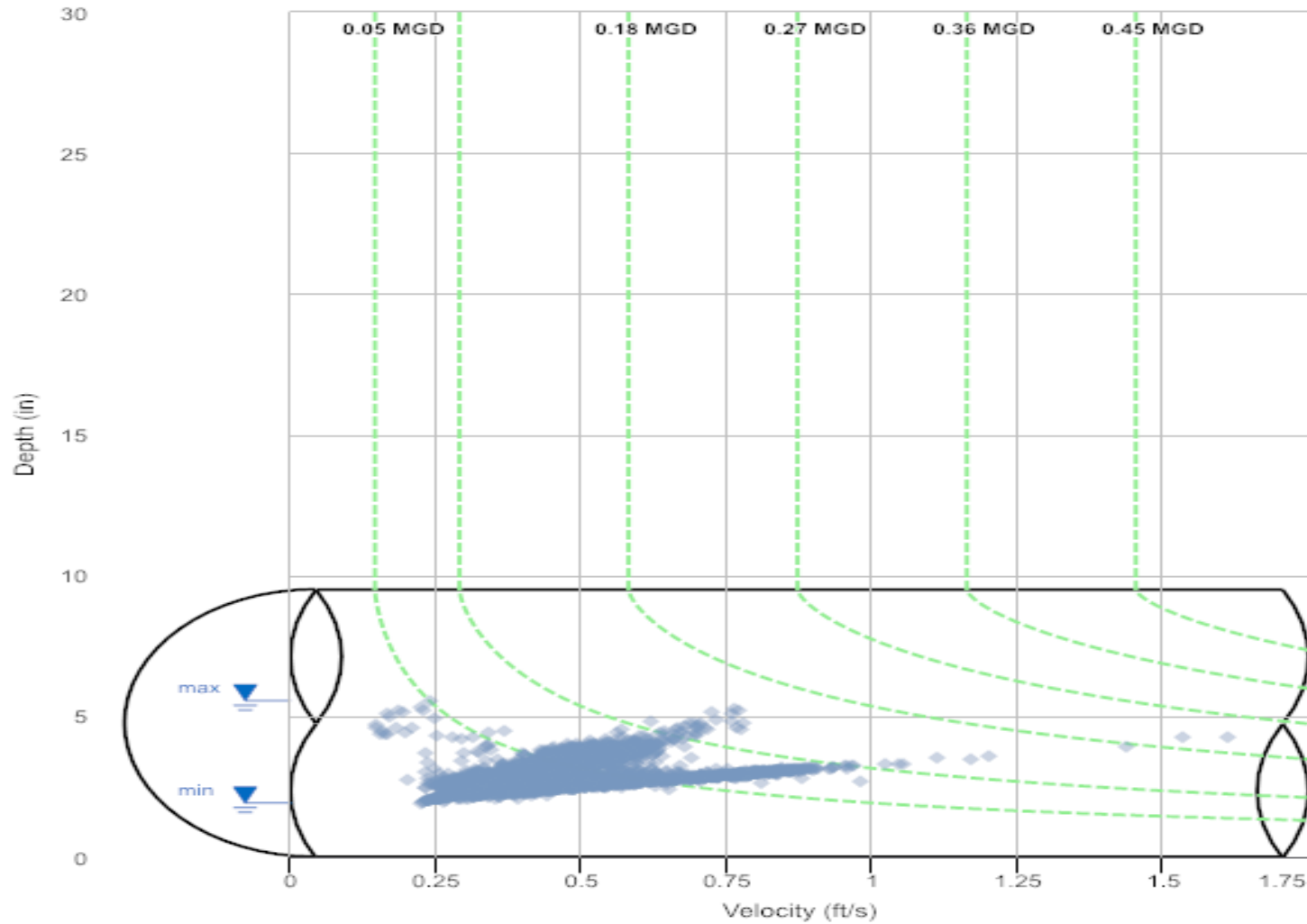
Flow Monitor
AUB_A17_80957

Pipe Height
9.50
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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														

	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</						

	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				AUB_A17_80957			
Site Address /Location:	619 Auburn Way S			Monitor Series	Location Type		
Site Access Details:	Drive	Latitude:	47.301528	TRITON+	Temporary		
		Longitude:	-122.225463	Pipe Size (H x W)	Pipe Shape		
				9.50 X 9.50	Circular		
				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 (CS3)		0 - 5 psi	
				Installation Confirmation:			
				Time			
				14:39:00 AM			
				Depth of Flow (Wet DOF) (in)			
				2.63			
				CS3 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

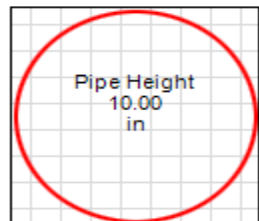
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.842
VFINAL (ft/s)	99.842
QFINAL (MGD - Total MG)	99.842

Hydrograph Report

AUB_A1a_30822

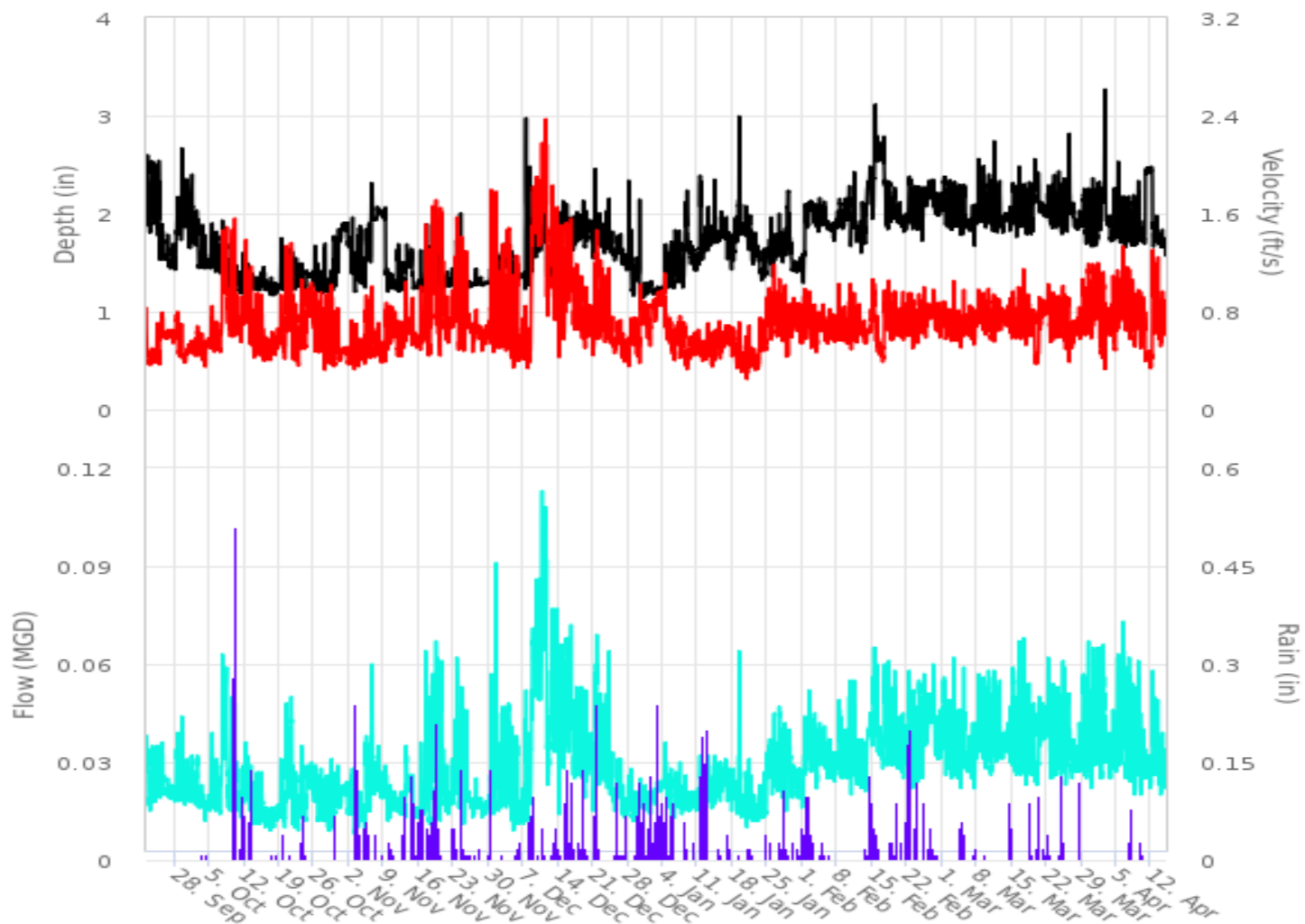
Flow Monitor
AUB_A1a_30822



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

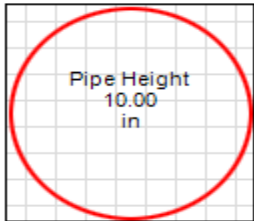
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A1a_30822

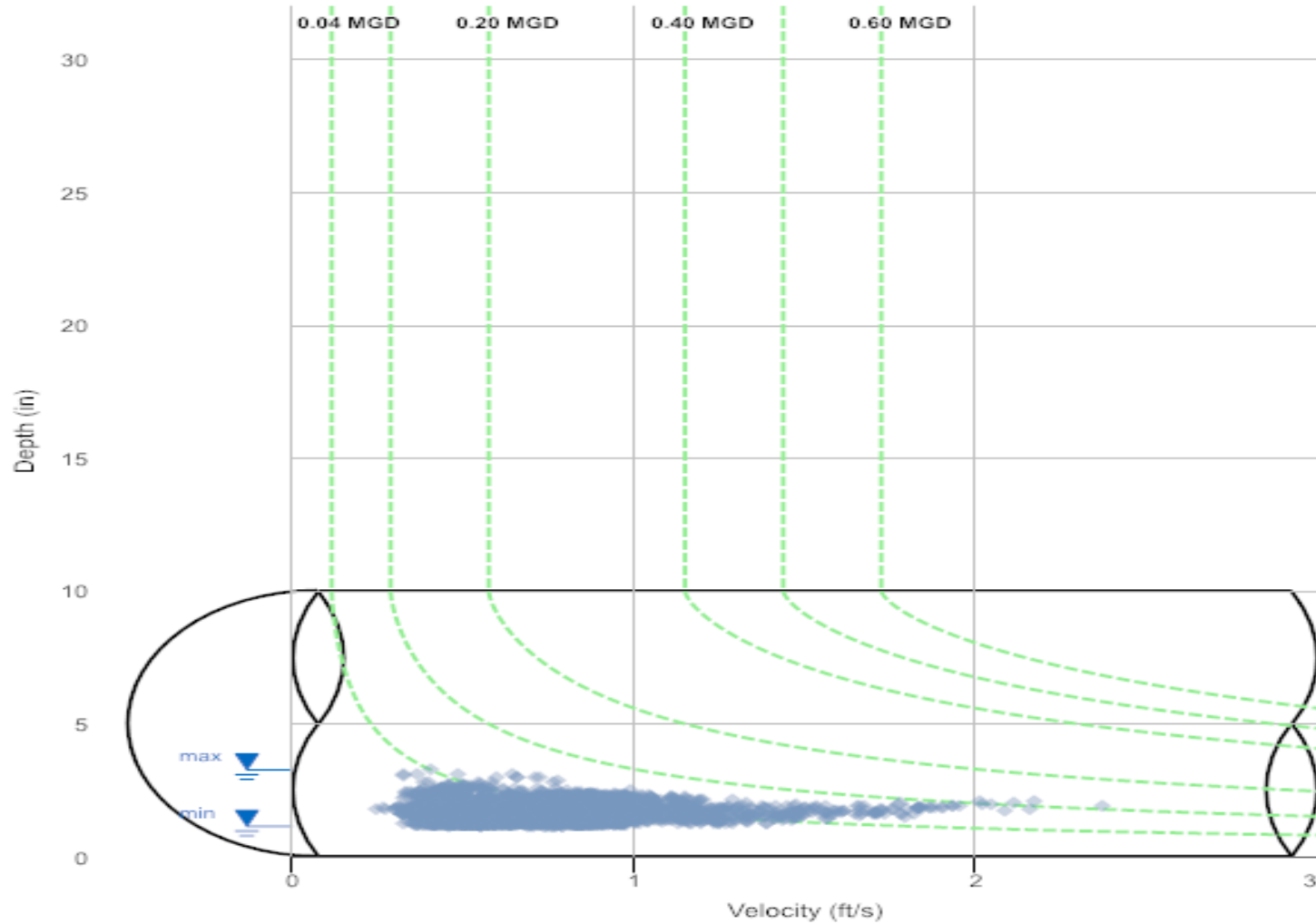
Flow Monitor
AUB_A1a_30822



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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						

	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						

Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	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				AUB_A1a_30822																					
Site Address /Location:	3802 B St NW			Monitor Series	Location Type																				
Site Access Details:	located in road	Latitude:	47.341163	TRITON+	Temporary																				
		Longitude:	-122.232272	Pipe Size (H x W)	Pipe Shape																				
				10.00 X 9.88	Circular																				
				Manhole #	System Characteristics																				
				A1a30822	Commercial																				
				Access	Traffic																				
				Drive	Medium																				
																									
				Installation Information																					
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Tuesday, September 22, 2020</td> <td>Doppler Standard Ring and Crank</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-5 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS3)</td> <td>0 - 5 psi</td> </tr> </table>		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 (CS3)	0 - 5 psi								
Installation Date:	Installation Type:																								
Tuesday, September 22, 2020	Doppler Standard Ring and Crank																								
Monitoring Location (Sensors):	Monitor Location:																								
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Sensors / Devices:	Pressure Sensor Range (psi)																								
Peak Combo (CS4), Smart Depth (CS3)	0 - 5 psi																								
				Installation Confirmation:																					
				Time																					
				7:57:00 AM																					
				Depth of Flow (Wet DOF) (in)																					
				1.88																					
				CS3 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:																					
				<table border="1"> <tr> <td>Manhole Depth (Approx. FT):</td> <td>Manhole Configuration</td> </tr> <tr> <td>9</td> <td>Single</td> </tr> <tr> <td>Manhole Material:</td> <td>Manhole Condition:</td> </tr> <tr> <td>Concrete</td> <td>Good</td> </tr> <tr> <td>Manhole Opening Diameter (in)</td> <td>Manhole Diameter (Approx.):</td> </tr> <tr> <td>24</td> <td>26</td> </tr> <tr> <td>Manhole Cover</td> <td>Manhole Frame</td> </tr> <tr> <td>Steel</td> <td>Normal</td> </tr> <tr> <td>Active Connections</td> <td>Air Quality:</td> </tr> <tr> <td>No</td> <td>Normal</td> </tr> <tr> <td>Pipe Material</td> <td>Pipe Condition:</td> </tr> <tr> <td>PVC</td> <td>Good</td> </tr> </table>		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
Manhole Depth (Approx. FT):	Manhole Configuration																								
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Manhole Material:	Manhole Condition:																								
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No	Normal																								
Pipe Material	Pipe Condition:																								
PVC	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_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

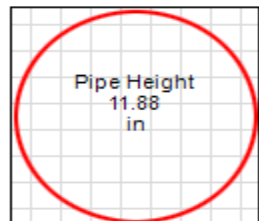
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.827
VFINAL (ft/s)	99.827
QFINAL (MGD - Total MG)	99.827

Hydrograph Report

AUB_A1b_30968

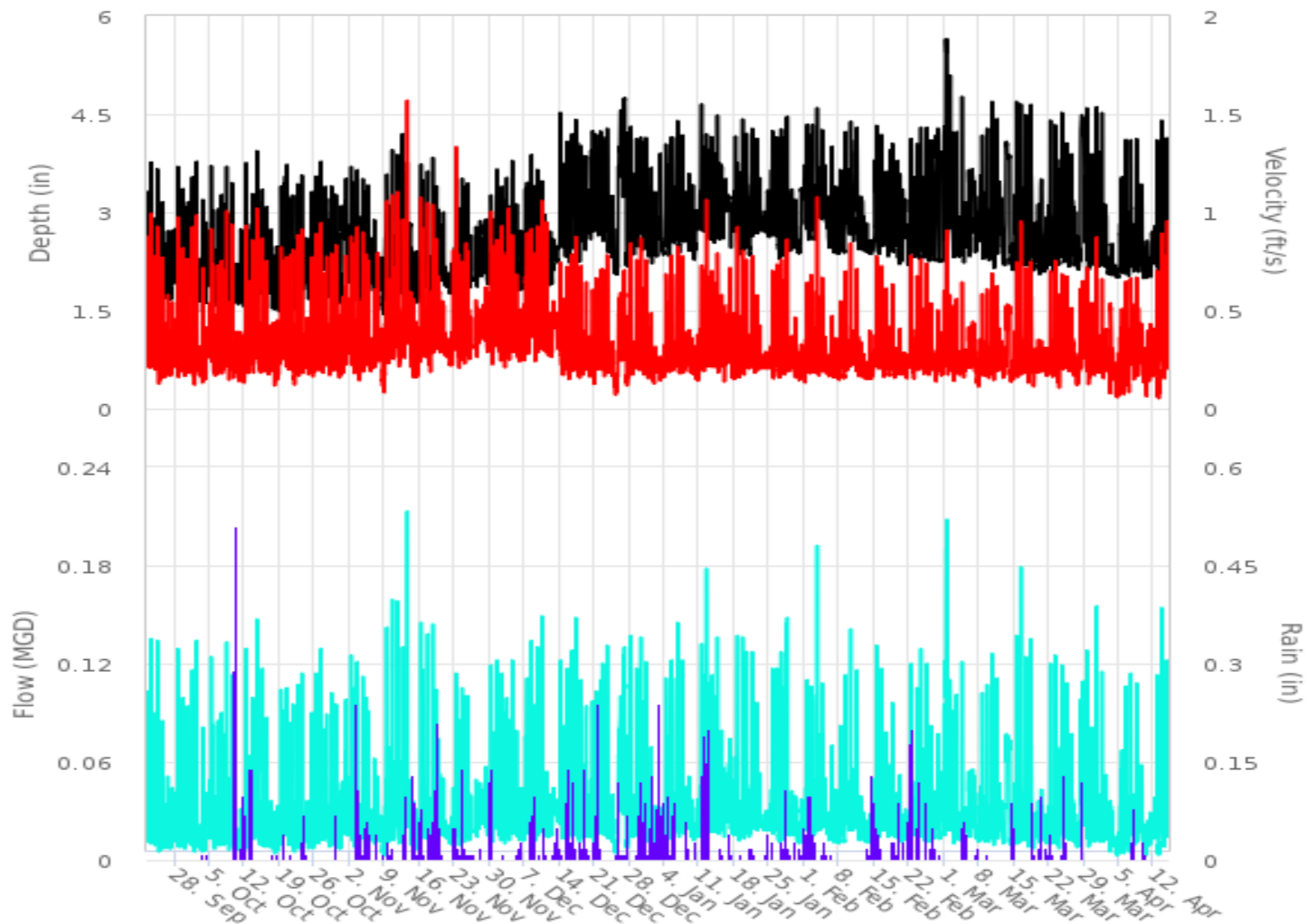
Flow Monitor
AUB_A1b_30968



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

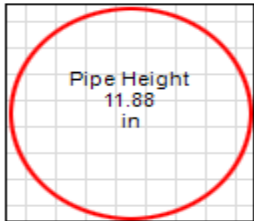
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A1b_30968

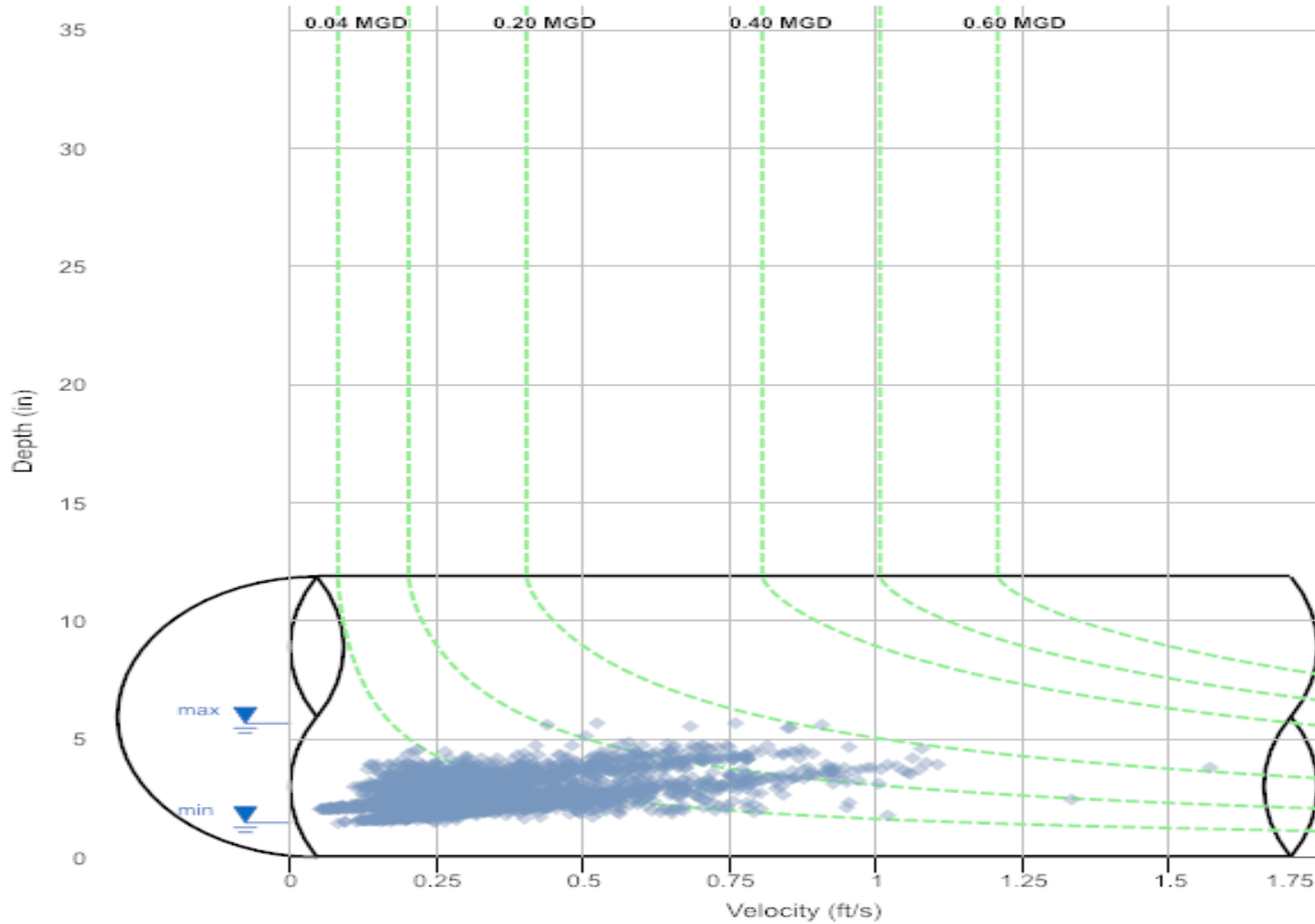
Flow Monitor
AUB_A1b_30968



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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							

	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					

	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				AUB_A1b_30968																					
Site Address /Location:	Cnr 37th St and C St NE			Monitor Series	Location Type																				
Site Access Details:	Located on road edge	Latitude:	47.340252	TRITON+	Temporary																				
		Longitude:	-122.226663	Pipe Size (H x W)	Pipe Shape																				
				11.88 X 11.88	Circular																				
				Manhole #	System Characteristics																				
				A1b30968	Commercial																				
				Access	Traffic																				
				Drive	Light																				
																									
				Installation Information																					
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Tuesday, September 22, 2020</td> <td>Doppler Standard Ring and Crank</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-3 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS5)</td> <td>0 - 3 psi</td> </tr> </table>		Installation Date:	Installation Type:	Tuesday, September 22, 2020	Doppler Standard Ring and Crank	Monitoring Location (Sensors):	Monitor Location:	Upstream 0-3 FT	Manhole	Sensors / Devices:	Pressure Sensor Range (psi)	Peak Combo (CS4), Smart Depth (CS5)	0 - 3 psi								
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Tuesday, September 22, 2020	Doppler Standard Ring and Crank																								
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Peak Combo (CS4), Smart Depth (CS5)	0 - 3 psi																								
				Installation Confirmation:																					
				Time																					
				8:35:00 AM																					
				Depth of Flow (Wet DOF) (in)																					
				1.73																					
				CS5 Physical Offset (in)	Measurement Confidence (in)																				
				1.38	0.25"																				
				Peak Velocity (fps)	Velocity Sensor Offset (in)																				
				0.33	N/A																				
				Silt (in)	Silt Type																				
				0																					
				Manhole / Pipe Information:																					
				<table border="1"> <tr> <td>Manhole Depth (Approx. FT):</td> <td>Manhole Configuration</td> </tr> <tr> <td>7</td> <td>Single</td> </tr> <tr> <td>Manhole Material:</td> <td>Manhole Condition:</td> </tr> <tr> <td>Concrete</td> <td>Good</td> </tr> <tr> <td>Manhole Opening Diameter (in)</td> <td>Manhole Diameter (Approx.):</td> </tr> <tr> <td>24</td> <td>26</td> </tr> <tr> <td>Manhole Cover</td> <td>Manhole Frame</td> </tr> <tr> <td>Steel</td> <td>Normal</td> </tr> <tr> <td>Active Connections</td> <td>Air Quality:</td> </tr> <tr> <td>No</td> <td>Normal</td> </tr> <tr> <td>Pipe Material</td> <td>Pipe Condition:</td> </tr> <tr> <td>PVC</td> <td>Good</td> </tr> </table>		Manhole Depth (Approx. FT):	Manhole Configuration	7	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
Manhole Depth (Approx. FT):	Manhole Configuration																								
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Pipe Material	Pipe Condition:																								
PVC	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_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:

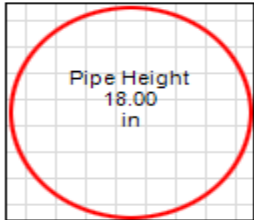
Percent Uptime	
DFINAL (in)	99.334
VFINAL (ft/s)	99.324
QFINAL (MGD - Total MG)	99.324



Hydrograph Report

AUB_A1c_30906

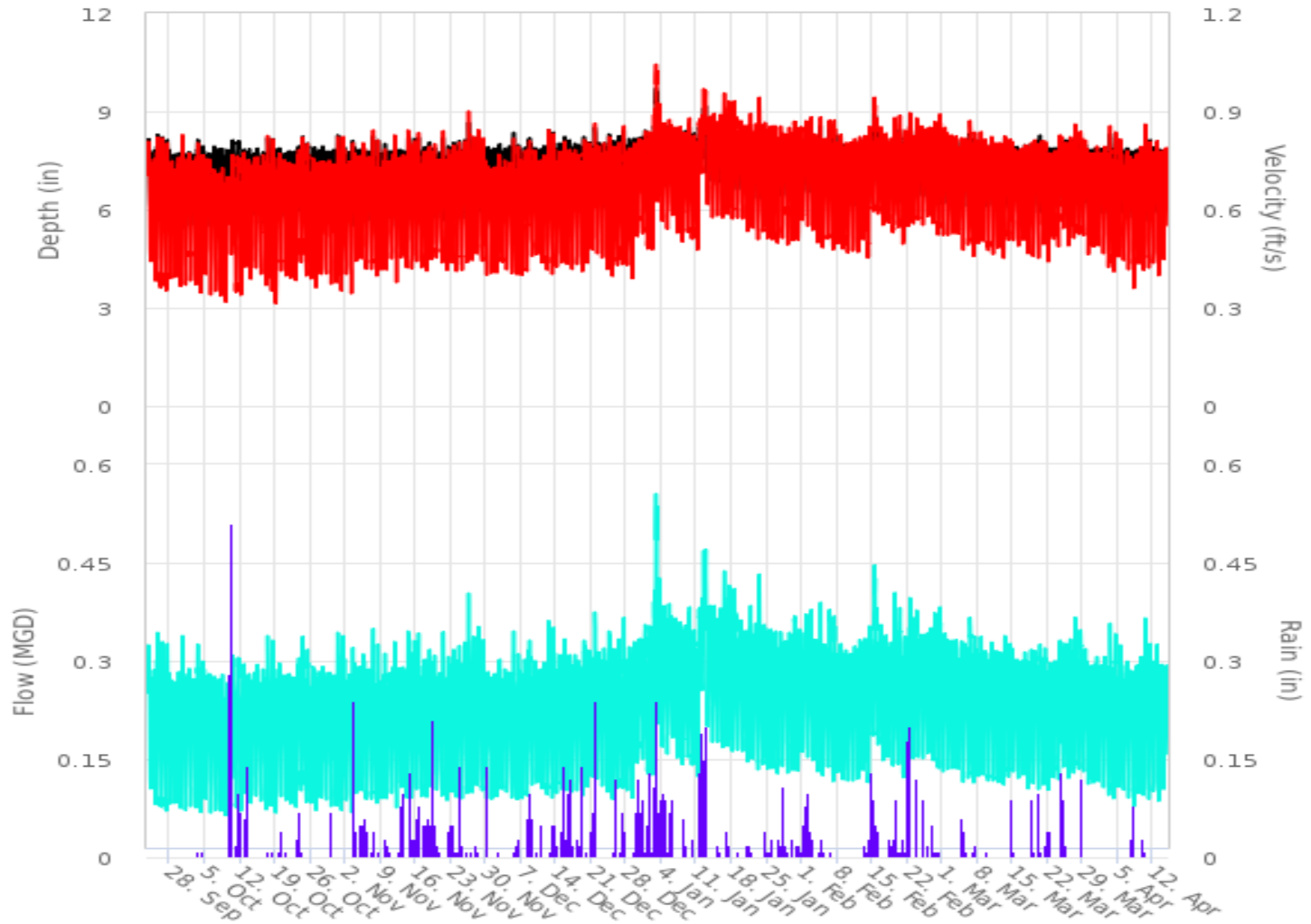
Flow Monitor
AUB_A1c_30906



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

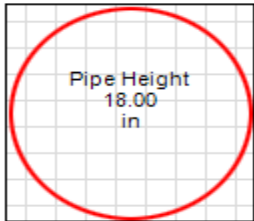
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A1c_30906

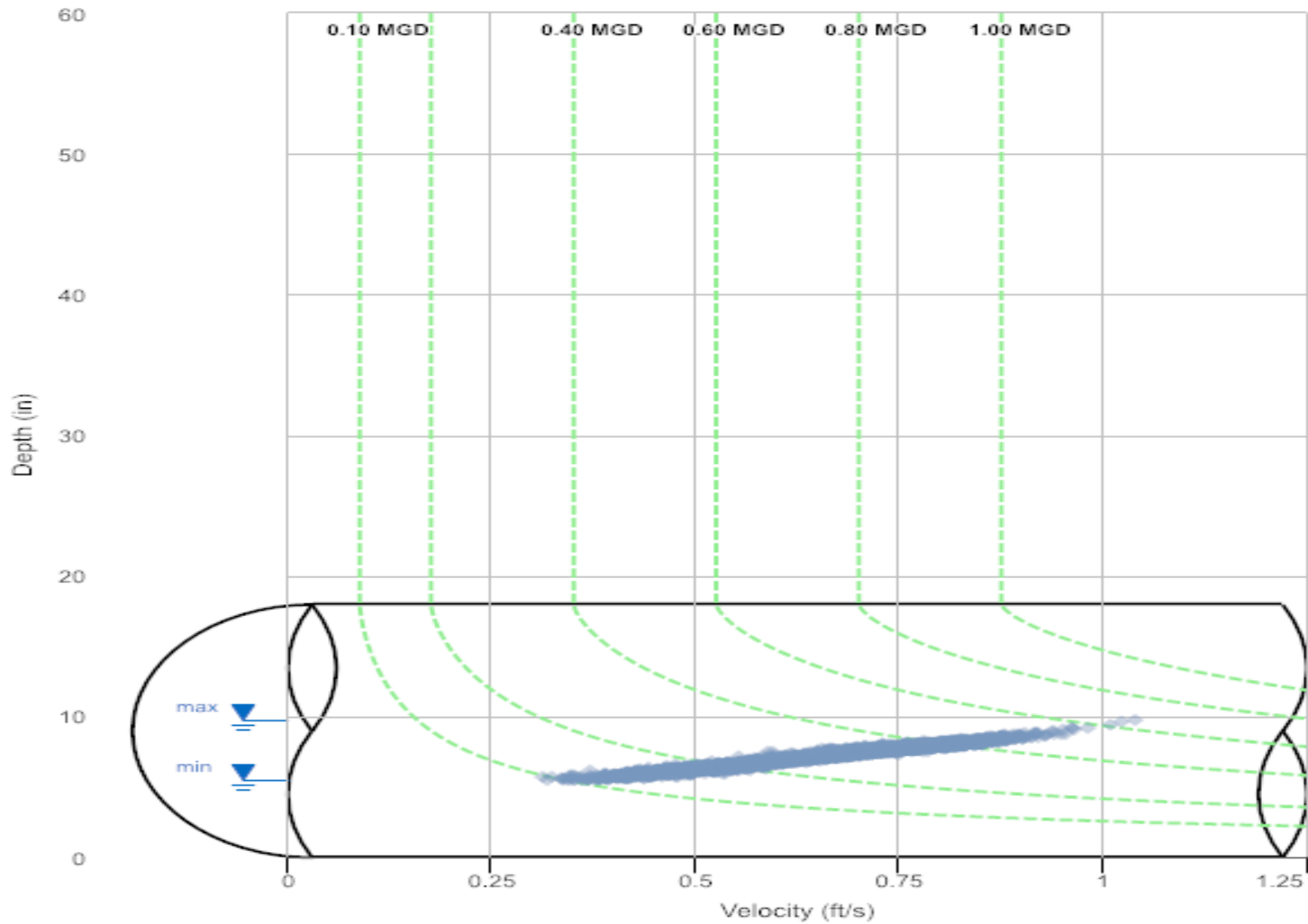
Flow Monitor
AUB_A1c_30906



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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.																

	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	0.06					

	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				AUB_A1c_30906	
Site Address /Location:	184 37th St NE			Monitor Series	Location Type
Site Access Details:	located in middle lane on yellow lines	Latitude:	47.340141	TRITON+	Temporary
		Longitude:	-122.224548	Pipe Size (H x W)	Pipe Shape
				18.00 X 18.00	Circular
				Manhole #	System Characteristics
				A1c30906	Residential
				Access	Traffic
				Drive	Medium
					
				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					
7:30:00 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:					
ADS Project Name:		Auburn.TFM.WA20-22			
ADS Project Number:		22519.11.325			

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:

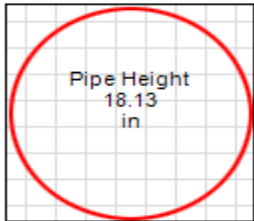
Percent Uptime	
DFINAL (in)	97.749
VFINAL (ft/s)	97.749
QFINAL (MGD - Total MG)	97.749



Hydrograph Report

AUB_A1d_30910

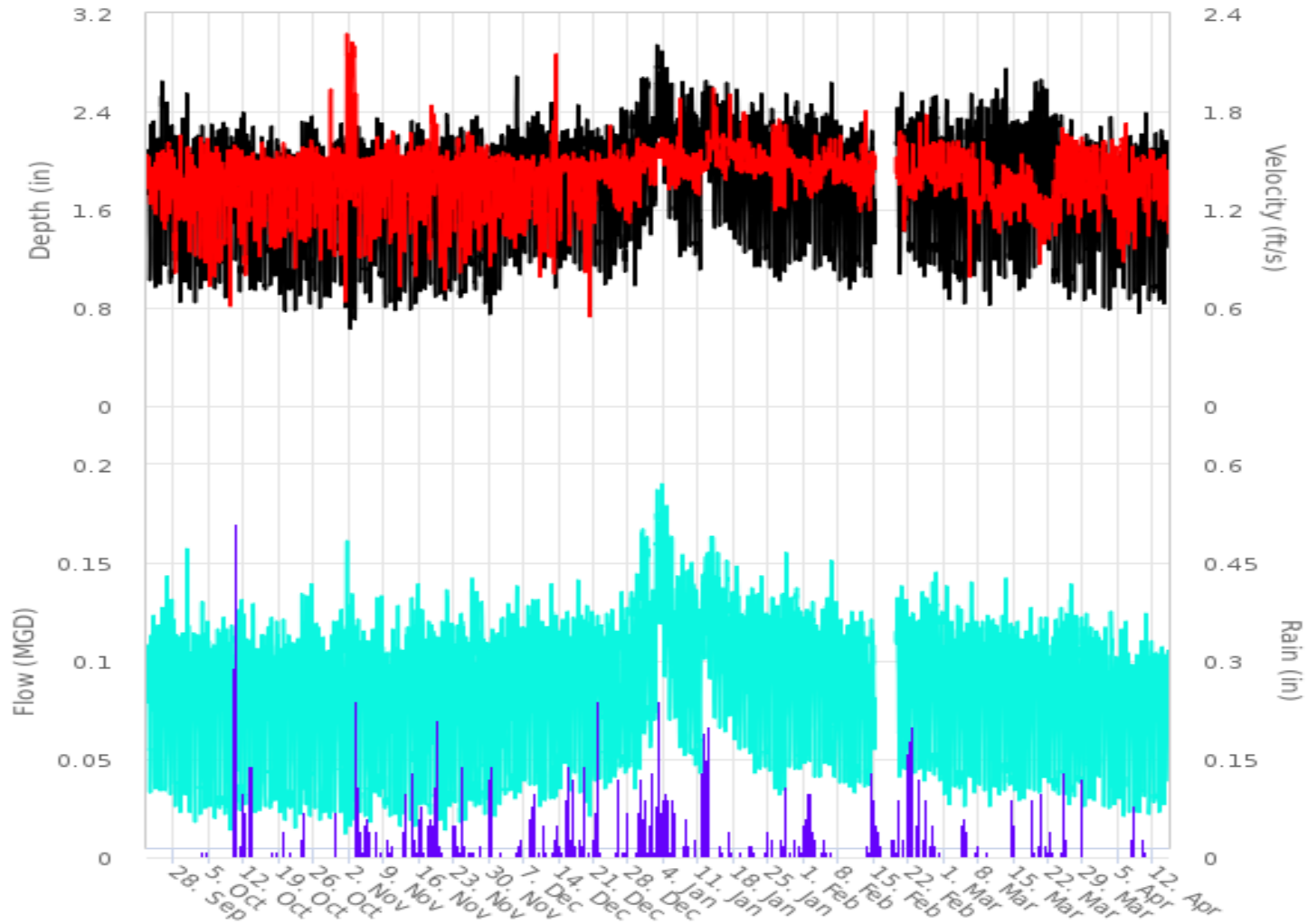
Flow Monitor
AUB_A1d_30910



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

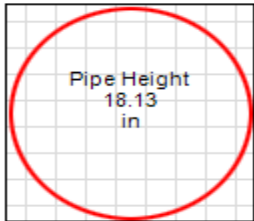
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A1d_30910

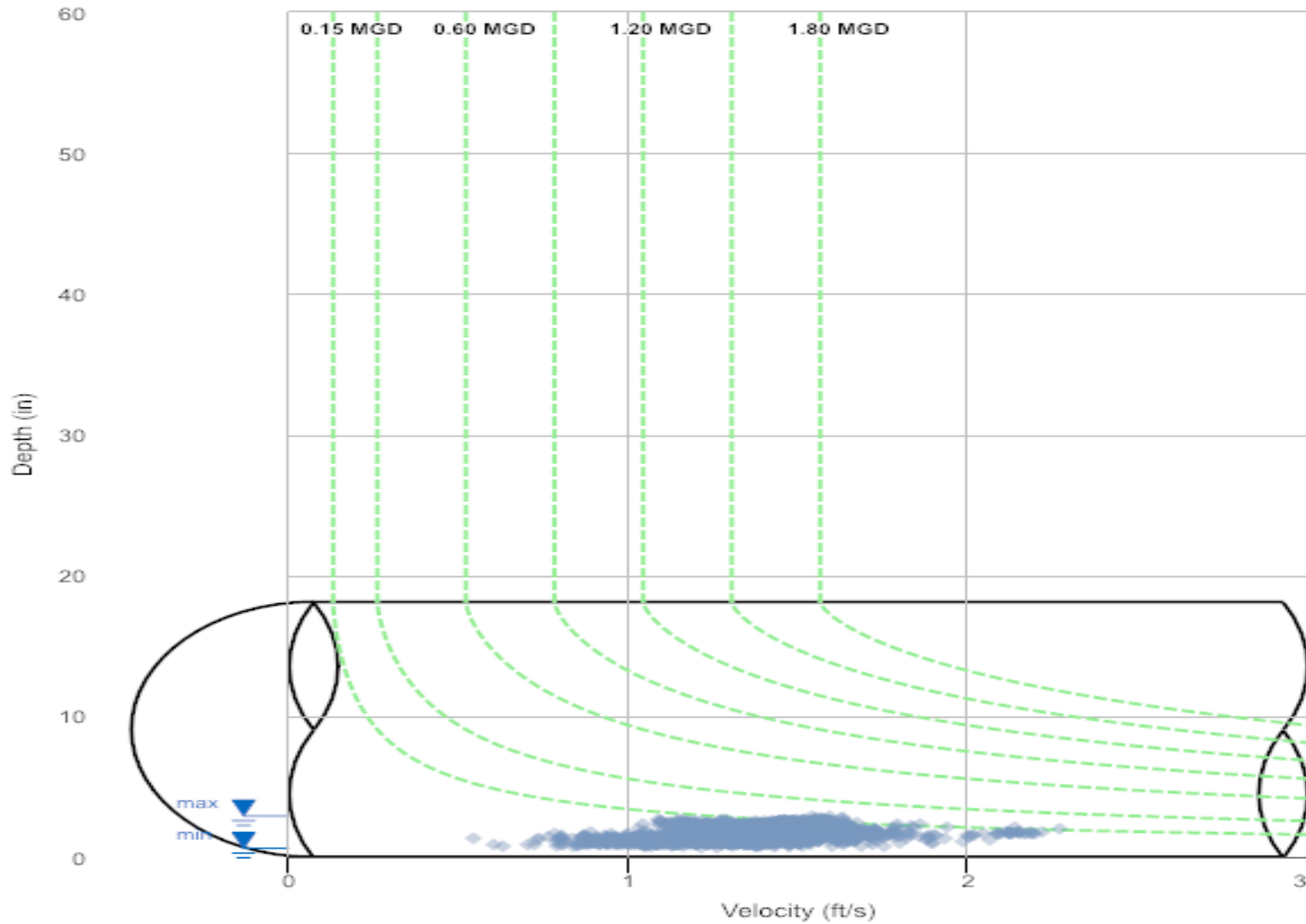
Flow Monitor
AUB_A1d_30910



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	0.09	

	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							

	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				AUB_A1D_30910	
Site Address /Location:	33th St NE			Monitor Series	Location Type
Site Access Details:	Right lane closure needed	Latitude:	47°20'19.63"N	TRITON+	Temporary
		Longitude:	122°13'20.72"W	Pipe Size (H x W)	Pipe Shape
				18.13 X 18.00	Circular
				Manhole #	System Characteristics
				A1D30910	Residential
				Access	Traffic
				Drive	Heavy
					
				Installation Information	
				Installation Date: Tuesday, September 22, 2020 Installation Type: Doppler Standard Ring and Crank Monitoring Location (Sensors): Downstream 5-10 FT Monitor Location: Manhole Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5) Pressure Sensor Range (psi) 0 - 5 psi	
				Installation Confirmation:	
				Time 9:25:00 AM Depth of Flow (Wet DOF) (in) 2.23 CS5 Physical Offset (in) 1.38 Measurement Confidence (in) 0.25" Peak Velocity (fps) 1.57 Velocity Sensor Offset (in) N/A Silt (in) 0 Silt Type 	
				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:	
ADS Project Name: Auburn.TFM.WA20-22 ADS Project Number: 22519.11.323					



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:

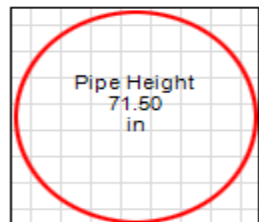
Percent Uptime	
DFINAL (in)	95.015
VFINAL (ft/s)	95.015
QFINAL (MGD - Total MG)	95.015



Hydrograph Report

AUB_A2_40805K

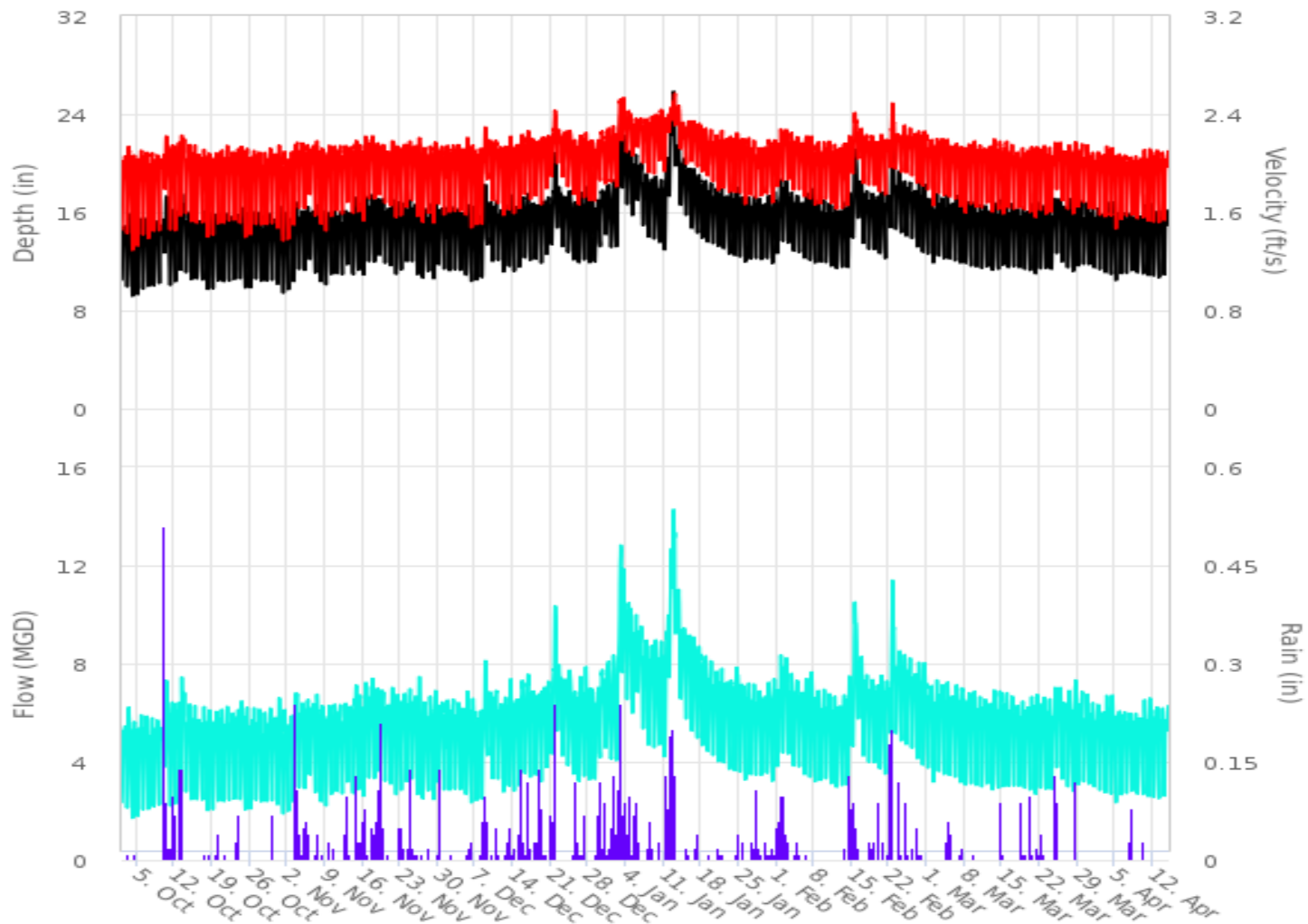
Flow Monitor
AUB_A2_40805K



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

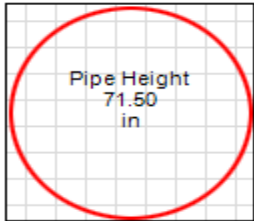
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A2_40805K

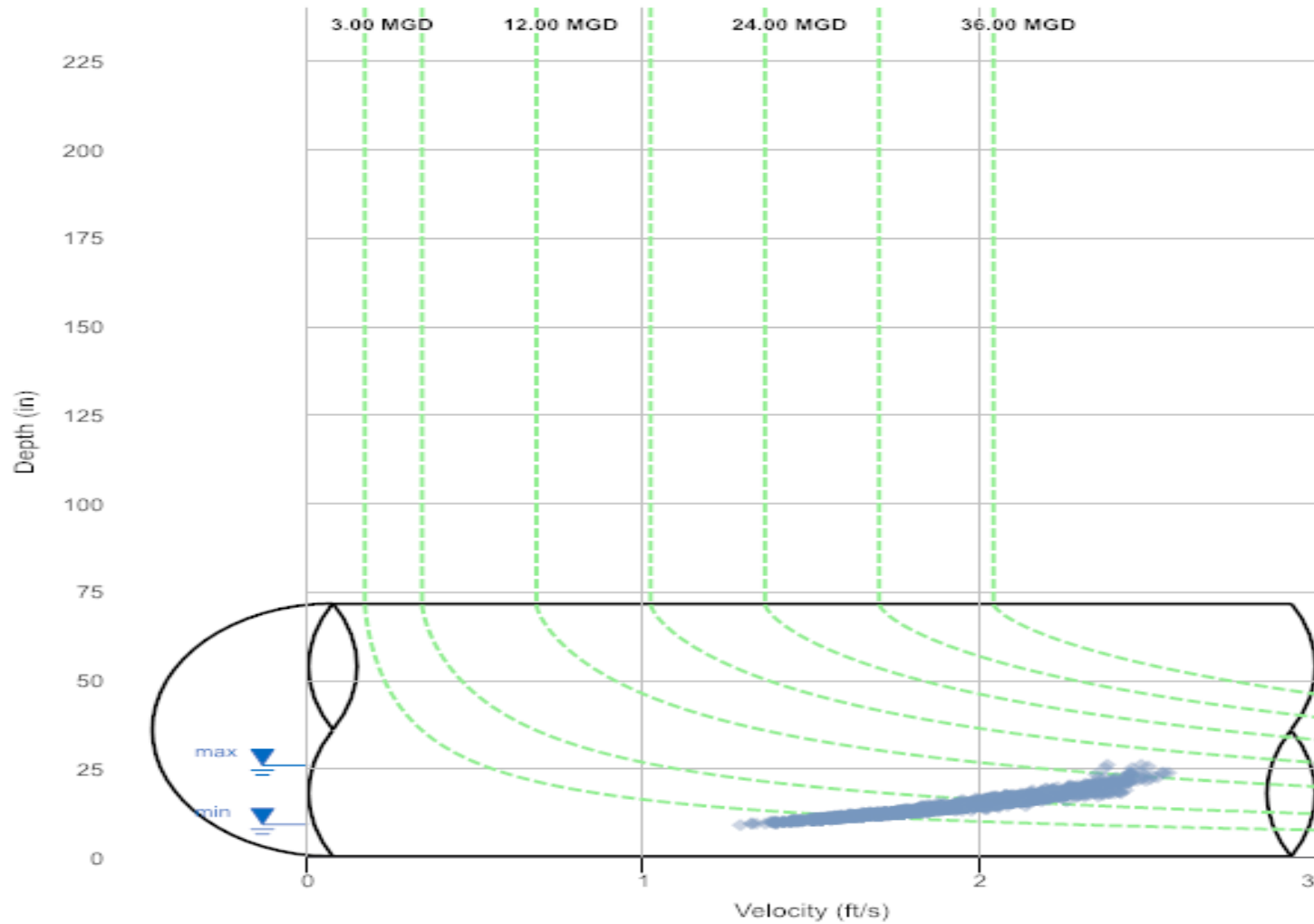
Flow Monitor
AUB_A2_40805K



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



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														

	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/																	

	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				AUB_A2_40805K									
Site Address /Location:	29th St NW and Emerald downs Dr			Monitor Series	Location Type								
Site Access Details:	Outside of Emerald Downs Racetrack	Latitude:	47.333005	TRITON+	Temporary								
		Longitude:	-122.237737	Pipe Size (H x W)	Pipe Shape								
				71.50 X 70.00	Circular								
				Manhole #	System Characteristics								
				A240805K	Commercial								
				Access	Traffic								
				Drive	Light								
													
				Installation Information									
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Friday, October 2, 2020</td> <td>Doppler Special Installation</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-3 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS5)</td> <td>0 - 3 psi</td> </tr> </table>		Installation Date:	Installation Type:	Friday, October 2, 2020	Doppler Special Installation	Monitoring Location (Sensors):	Monitor Location:	Upstream 0-3 FT	Manhole
Installation Date:	Installation Type:												
Friday, October 2, 2020	Doppler Special Installation												
Monitoring Location (Sensors):	Monitor Location:												
Upstream 0-3 FT	Manhole												
Sensors / Devices:	Pressure Sensor Range (psi)												
Peak Combo (CS4), Smart Depth (CS5)	0 - 3 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:									
ADS Project Name:		Auburn.TFM.WA20-22											
ADS Project Number:		22519.11.325											



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

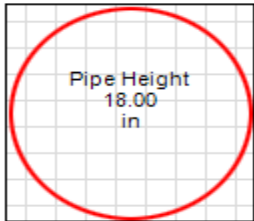
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.782
VFINAL (ft/s)	99.782
QFINAL (MGD - Total MG)	99.782

Hydrograph Report

AUB_A3_40834

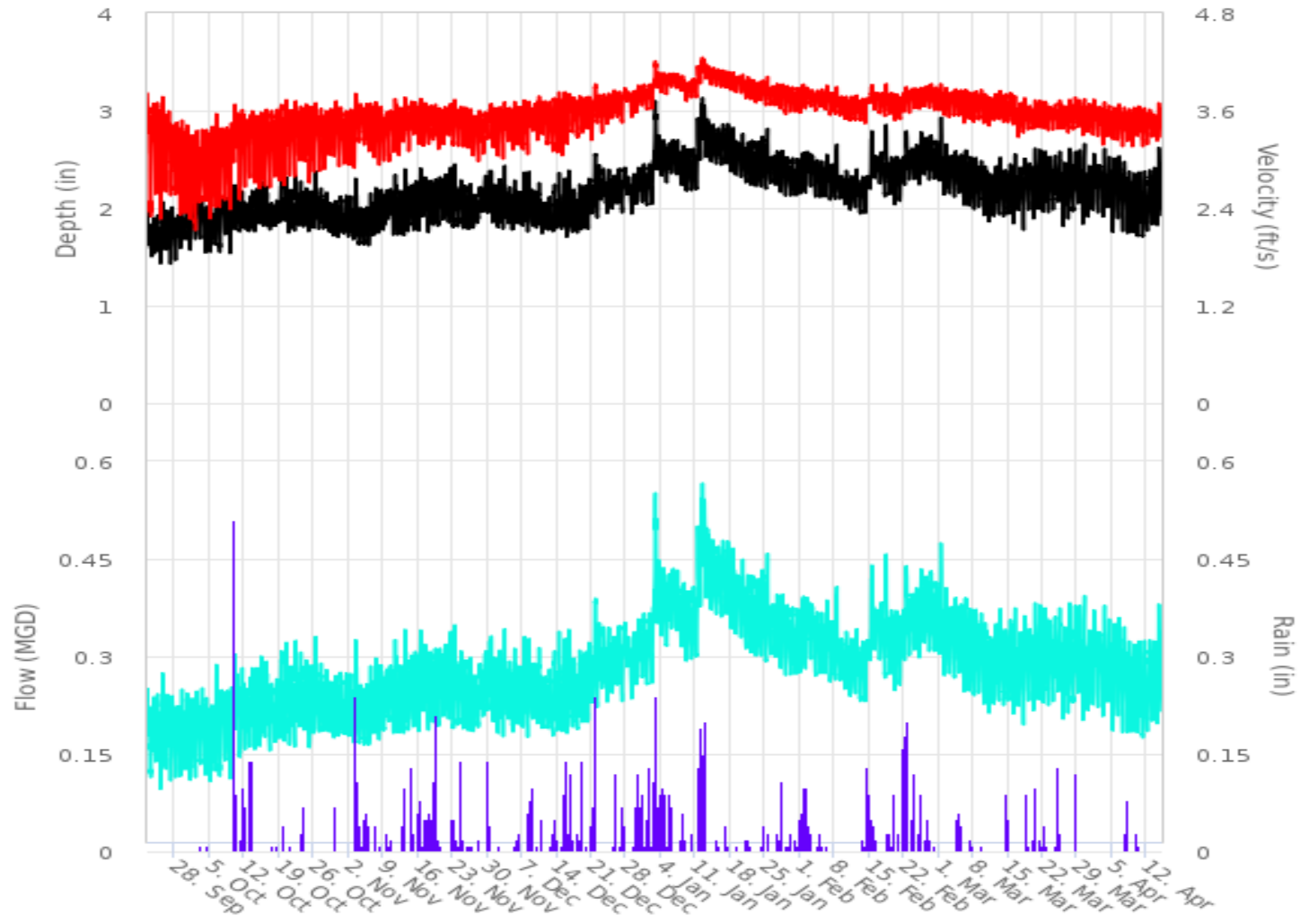
Flow Monitor
AUB_A3_40834



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A3_40834

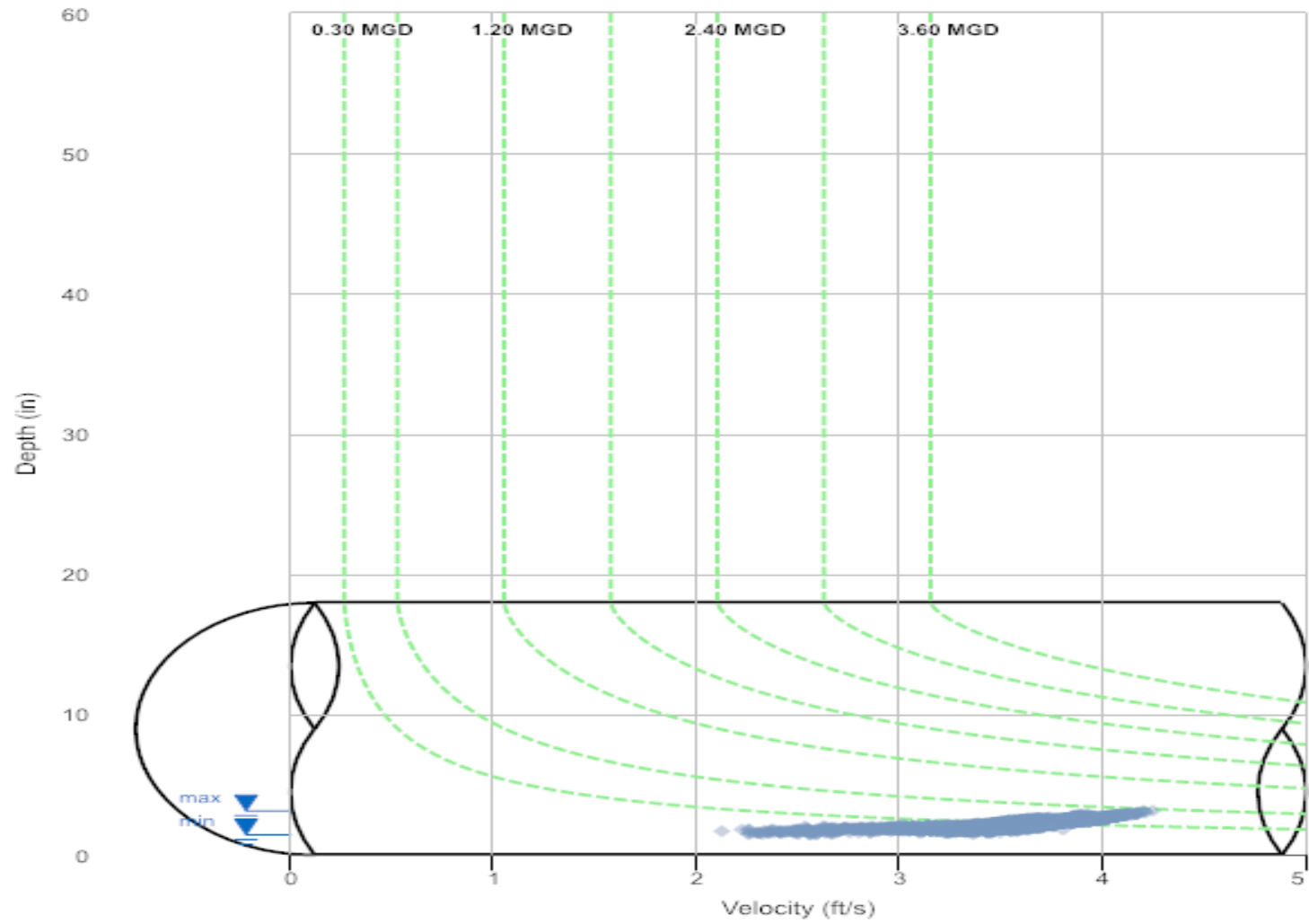
Flow Monitor
AUB_A3_40834

Pipe Height
18.00
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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																

	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						

	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				AUB_A3_40834	
Site Address /Location:		221 30th St NE		Monitor Series	Location Type
Site Access Details:		located in middle lane on yellow line. Small traffic diversion	Latitude: 47.333897 Longitude: -122.227492	TRITON+ Pipe Size (H x W) 18.00 X 18.00	Temporary Pipe Shape Circular
		Manhole #		System Characteristics	
		A340834		Industrial	
		Access		Traffic	
		Drive		Medium	
		Installation Information			
		Installation Date:		Installation Type:	
		Tuesday, September 22, 2020		Doppler Standard Ring and Crank	
		Monitoring Location (Sensors):		Monitor Location:	
Upstream 0-3 FT		Manhole			
Sensors / Devices:		Pressure Sensor Range (psi)			
Peak Combo (CS4), Smart Depth (CS5)		0 - 3 psi			
		Installation Confirmation:			
		Time			
		10:38:00 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	
		0		Silt Type	
		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			
ADS Project Name:		Auburn.TFM.WA20-22			
ADS Project Number:		22519.11.325			
		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

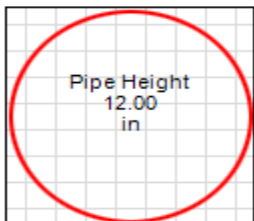
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	94.975
VFINAL (ft/s)	94.975
QFINAL (MGD - Total MG)	94.975

Hydrograph Report

AUB_A4_50817

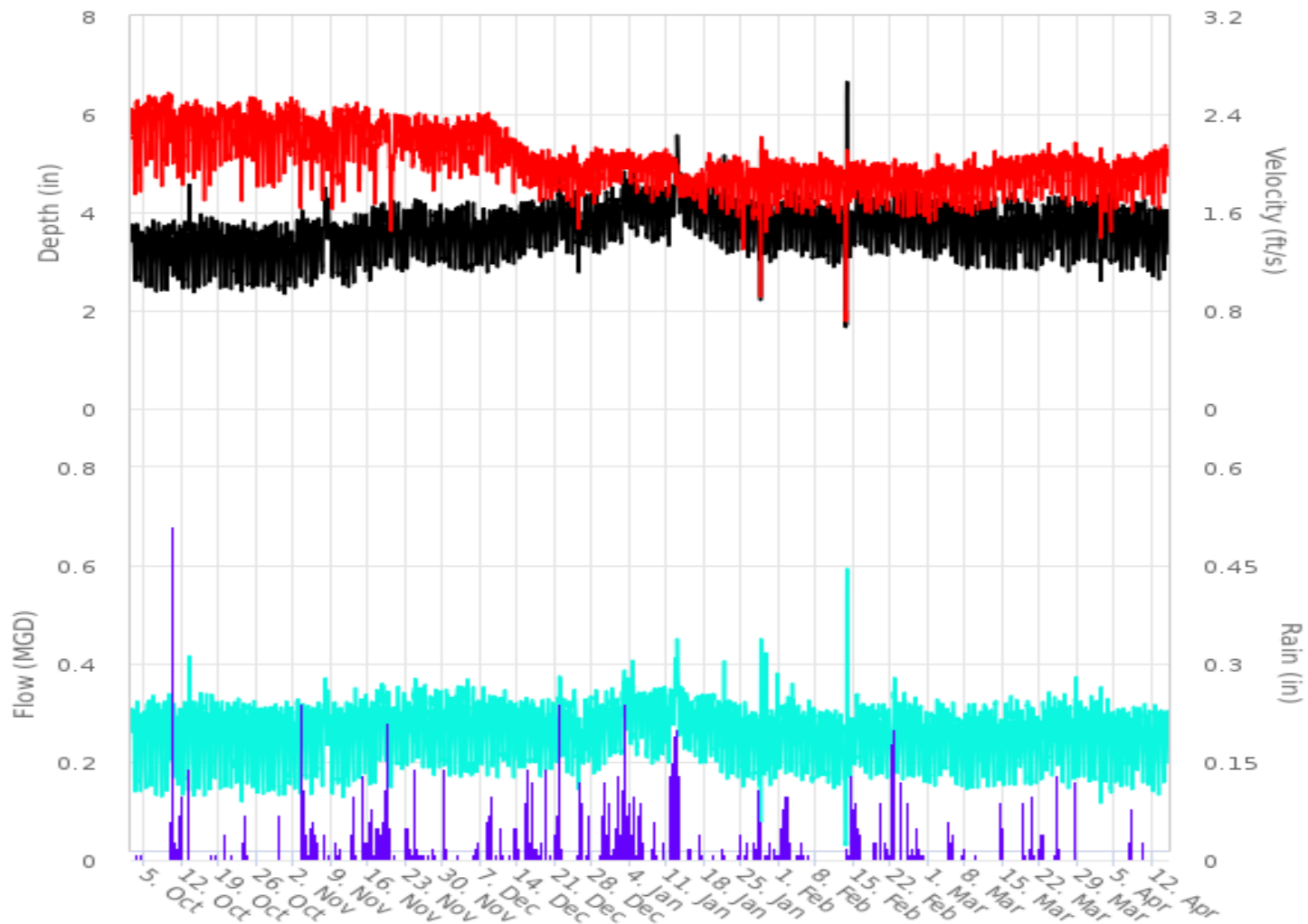
Flow Monitor
AUB_A4_50817



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

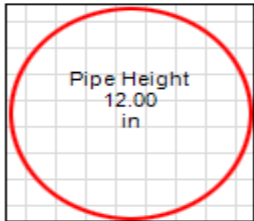
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A4_50817

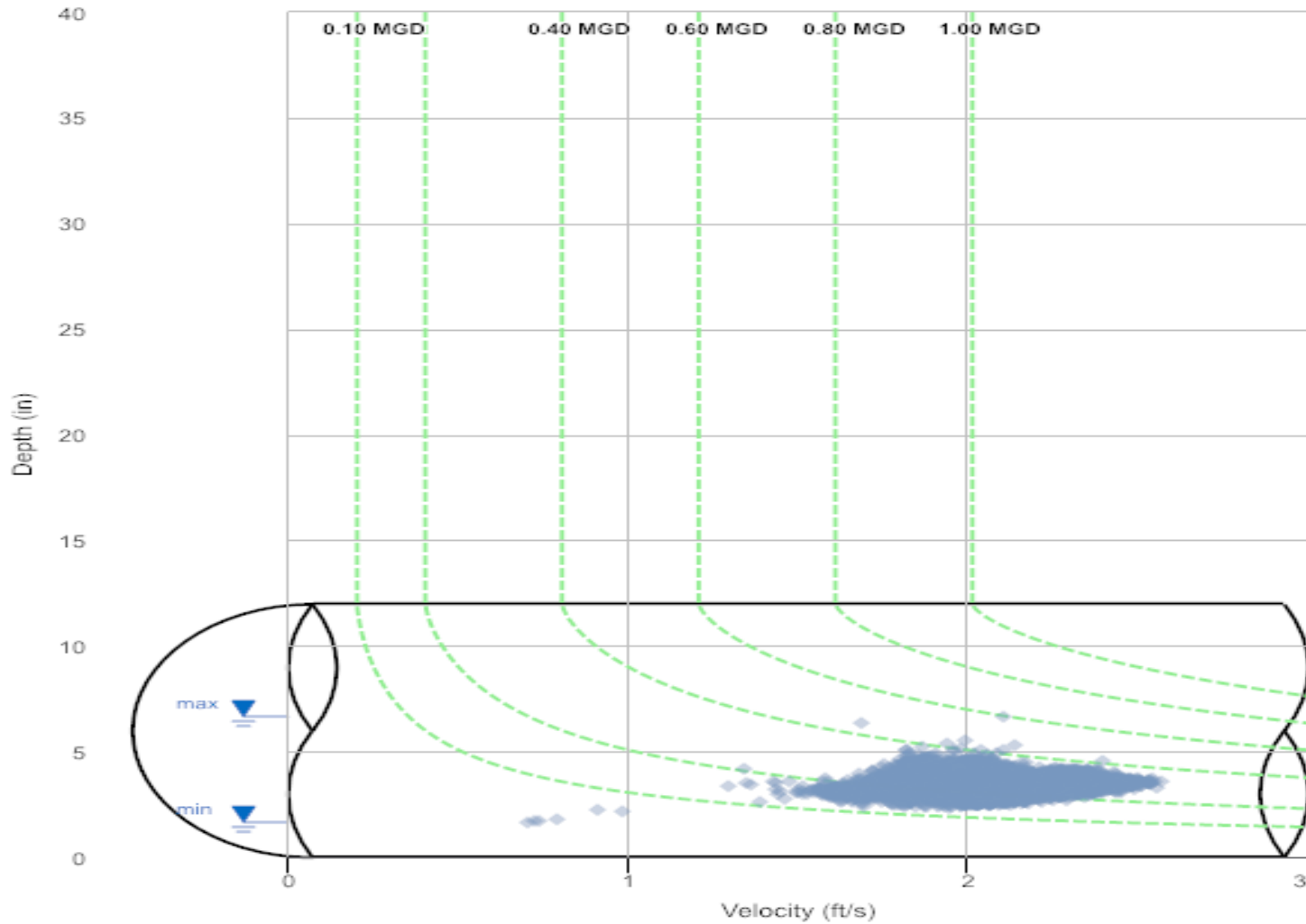
Flow Monitor
AUB_A4_50817



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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							

	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																	

	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				AUB_A4_50817									
Site Address / Location:	1704 B St, NW			Monitor Series	Location Type								
Site Access Details:	Back of parking lot	Latitude:	47.324355°	TRITON+	Temporary								
		Longitude:	-122.230253	Pipe Size (H x W)	Pipe Shape								
				12 X 11.75	Circular								
				Manhole #	System Characteristics								
				A450817	Commercial								
				Access	Traffic								
				Walk (Commercial)	None								
													
				Installation Information									
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Friday, October 2, 2020</td> <td>Doppler Standard Ring and Crank</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-5 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS5)</td> <td>0 - 3 psi</td> </tr> </table>		Installation Date:	Installation Type:	Friday, October 2, 2020	Doppler Standard Ring and Crank	Monitoring Location (Sensors):	Monitor Location:	Upstream 0-5 FT	Manhole
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 - 3 psi												
				Installation Confirmation:									
Time													
7:20:00 AM													
Depth of Flow (Wet DOF) (in)													
3.25													
CS5 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:													
ADS Project Name:		Auburn.TFM.WA20-22											
ADS Project Number:		22519.11.325											



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

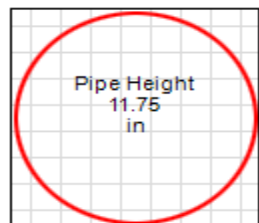
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	99.741
VFINAL (ft/s)	99.741
QFINAL (MGD - Total MG)	99.741

Hydrograph Report

AUB_A6_61009K

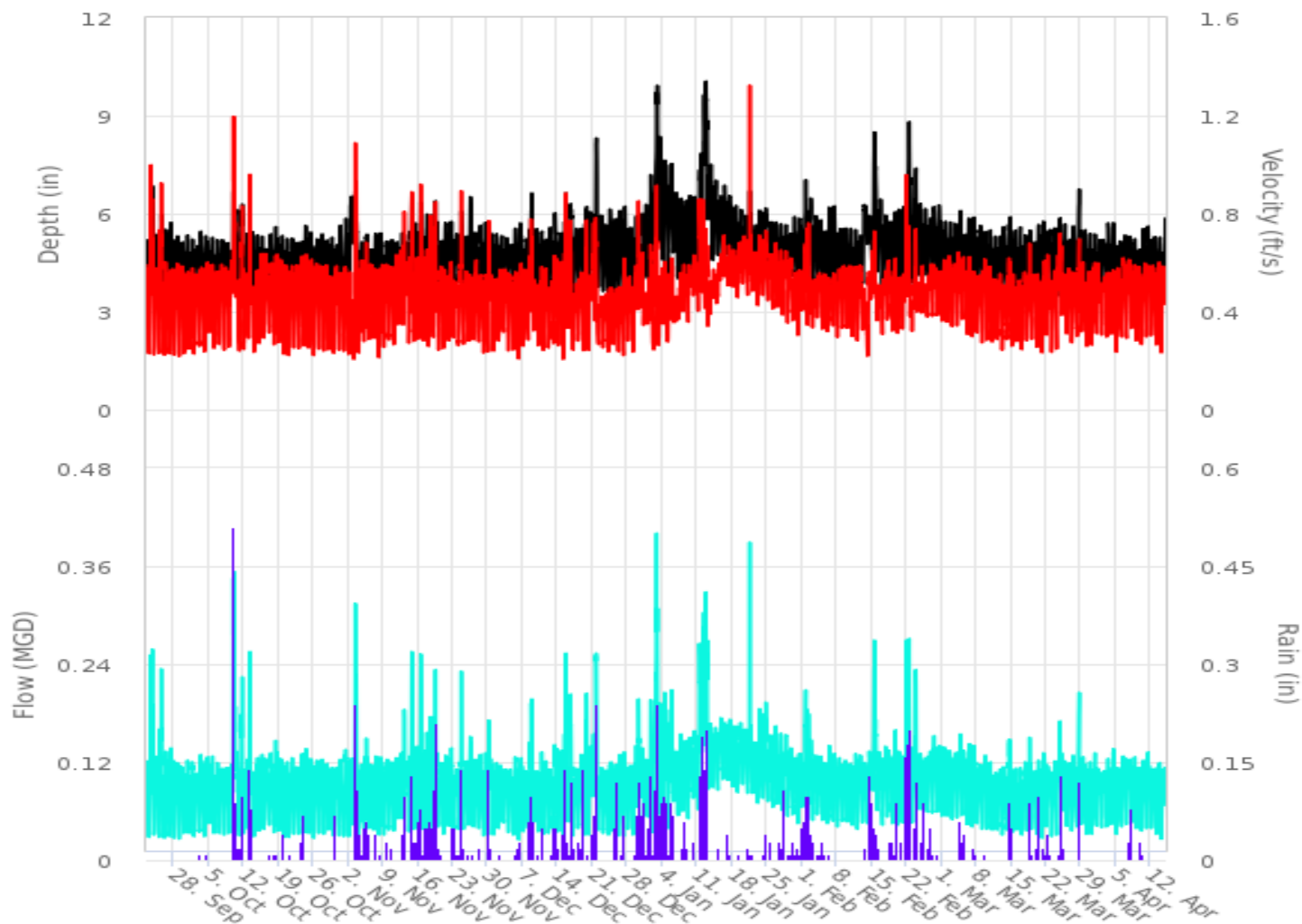
Flow Monitor
AUB_A6_61009K



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

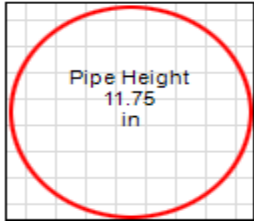
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A6_61009K

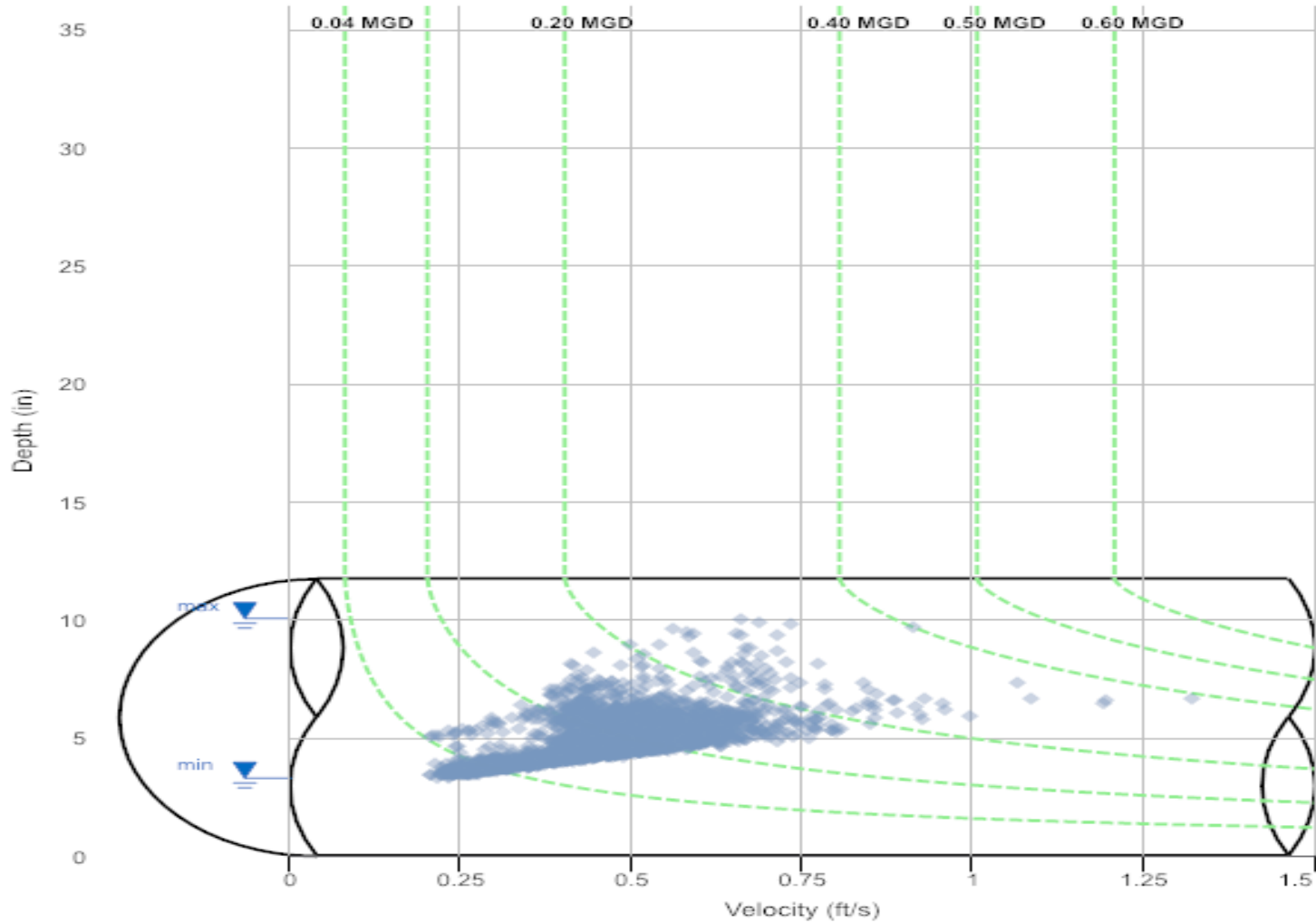
Flow Monitor
AUB_A6_61009K



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



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:															

	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						

	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</													

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				AUB_A6_61009K	
Site Address /Location:	12th St NE + Pike St NE			Monitor Series	Location Type
Site Access Details:	located in residential road, light traffic	Latitude:	47.318639	TRITON+	Temporary
		Longitude:	-122.210787	Pipe Size (H x W)	Pipe Shape
				11.75 X 12.00	Circular
				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 0-3 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)	
				4.73	
				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

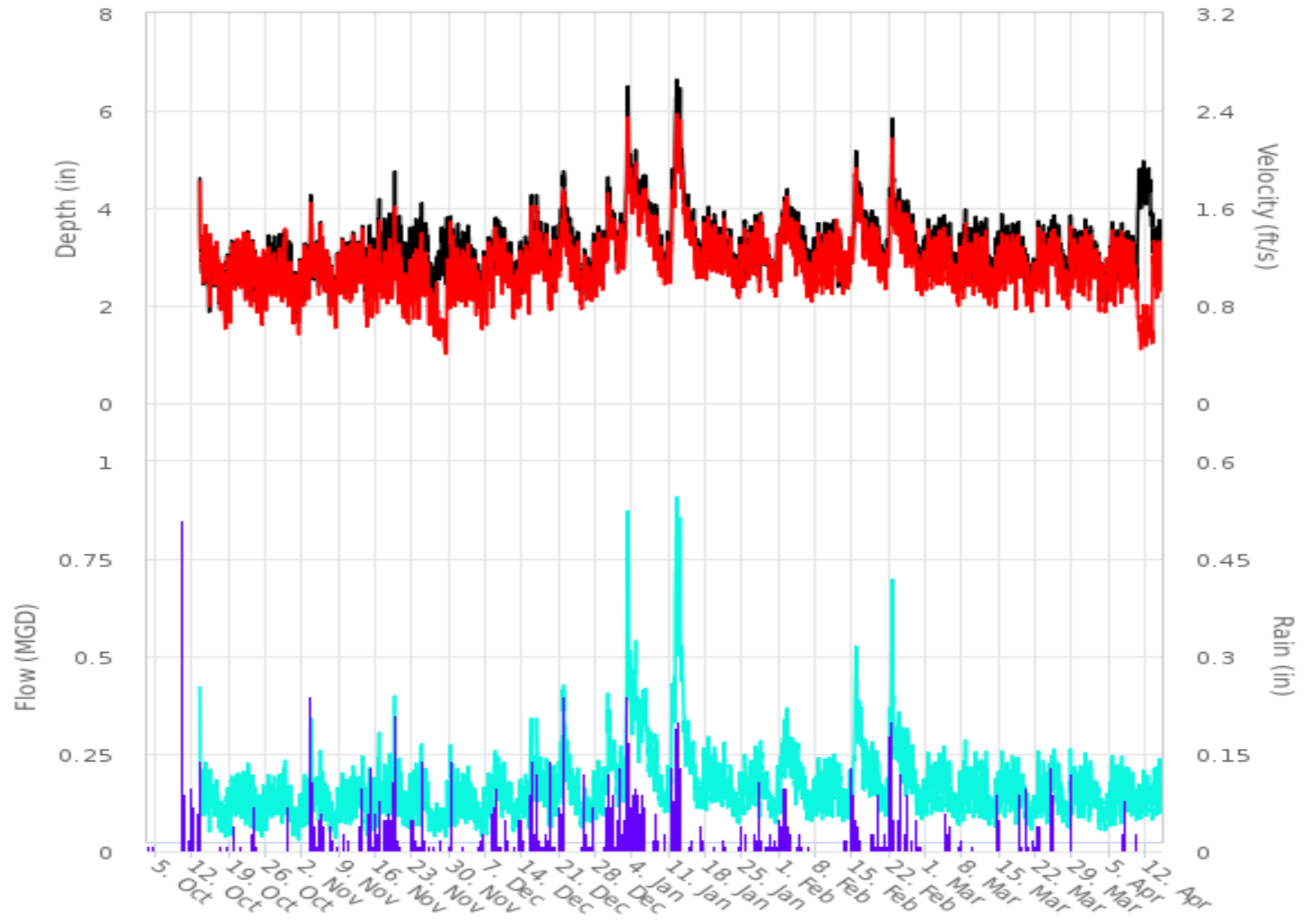
Flow Monitor
AUB_A7_70807

Pipe Height
18.00
in

Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A7_70807

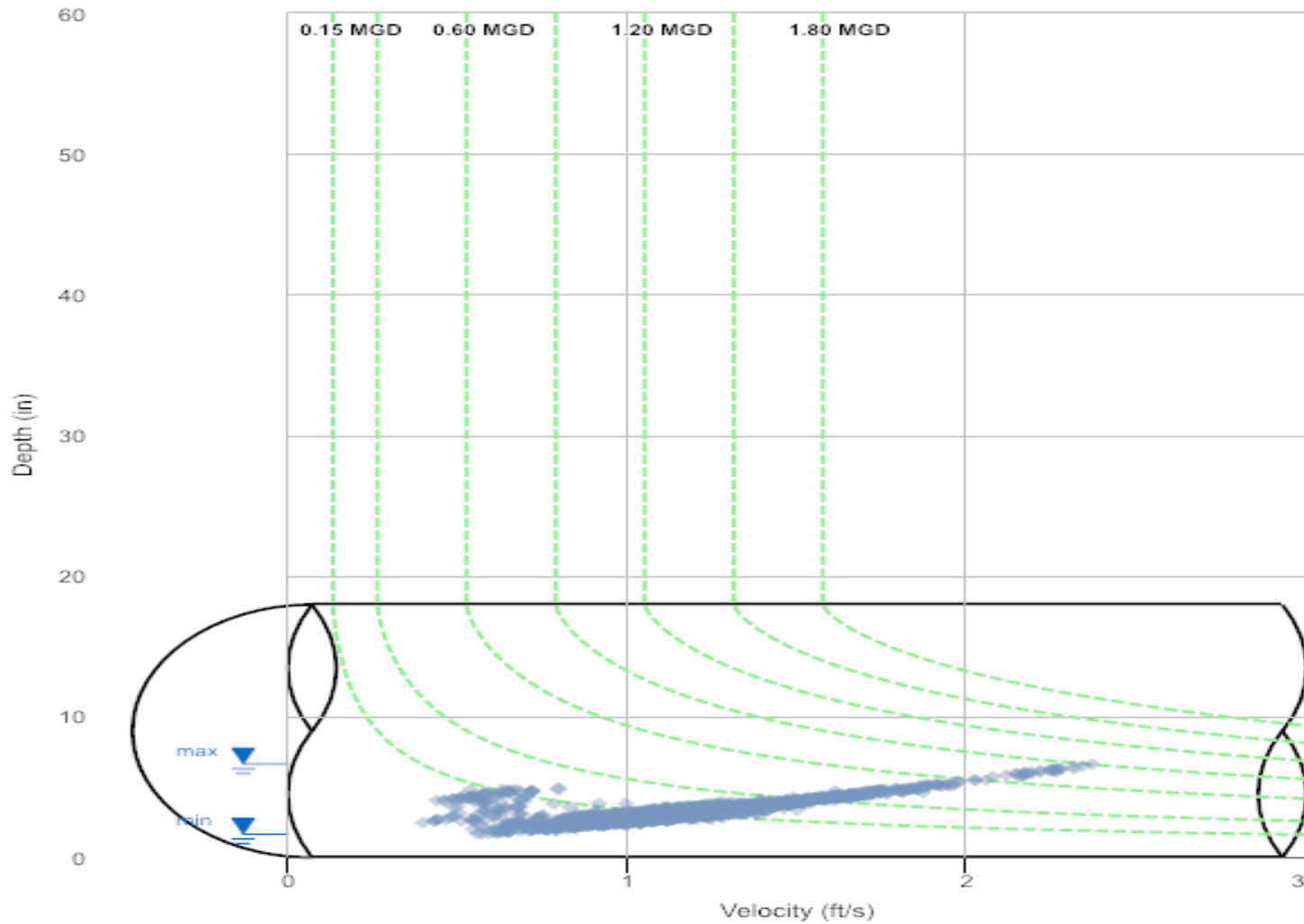
Flow Monitor
AUB_A7_70807

Pipe Height
18.00
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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	05:5							

	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</									

	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				AUB_A7_70807									
Site Address / Location:	Opposite 420 H St NW			Monitor Series	Location Type								
Site Access Details:	Located on Interurban trail	Latitude:	47.3125628	TRITON+	Temporary								
		Longitude:	-122.2394872	Pipe Size (H x W)	Pipe Shape								
				18.00 X 18.00	Circular								
				Manhole #	System Characteristics								
				A770807	Residential								
				Access	Traffic								
				Drive	Light								
													
				Installation Information									
				<table border="1"> <tr> <td>Installation Date:</td> <td>Installation Type:</td> </tr> <tr> <td>Tuesday, October 13, 2020</td> <td>Doppler Standard Ring and Crank</td> </tr> <tr> <td>Monitoring Location (Sensors):</td> <td>Monitor Location:</td> </tr> <tr> <td>Upstream 0-5 FT</td> <td>Manhole</td> </tr> <tr> <td>Sensors / Devices:</td> <td>Pressure Sensor Range (psi)</td> </tr> <tr> <td>Peak Combo (CS4), Smart Depth (CS5)</td> <td>0 - 5 psi</td> </tr> </table>		Installation Date:	Installation Type:	Tuesday, October 13, 2020	Doppler Standard Ring and Crank	Monitoring Location (Sensors):	Monitor Location:	Upstream 0-5 FT	Manhole
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													
CS3 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									
ADS Project Name:	Auburn.TFM.WA20-22												
ADS Project Number:	22519.11.325												



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

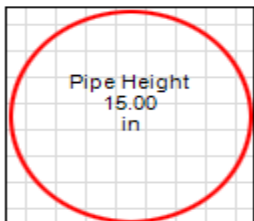
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	97.749
VFINAL (ft/s)	97.749
QFINAL (MGD - Total MG)	97.749

Hydrograph Report

AUB_A8_70829

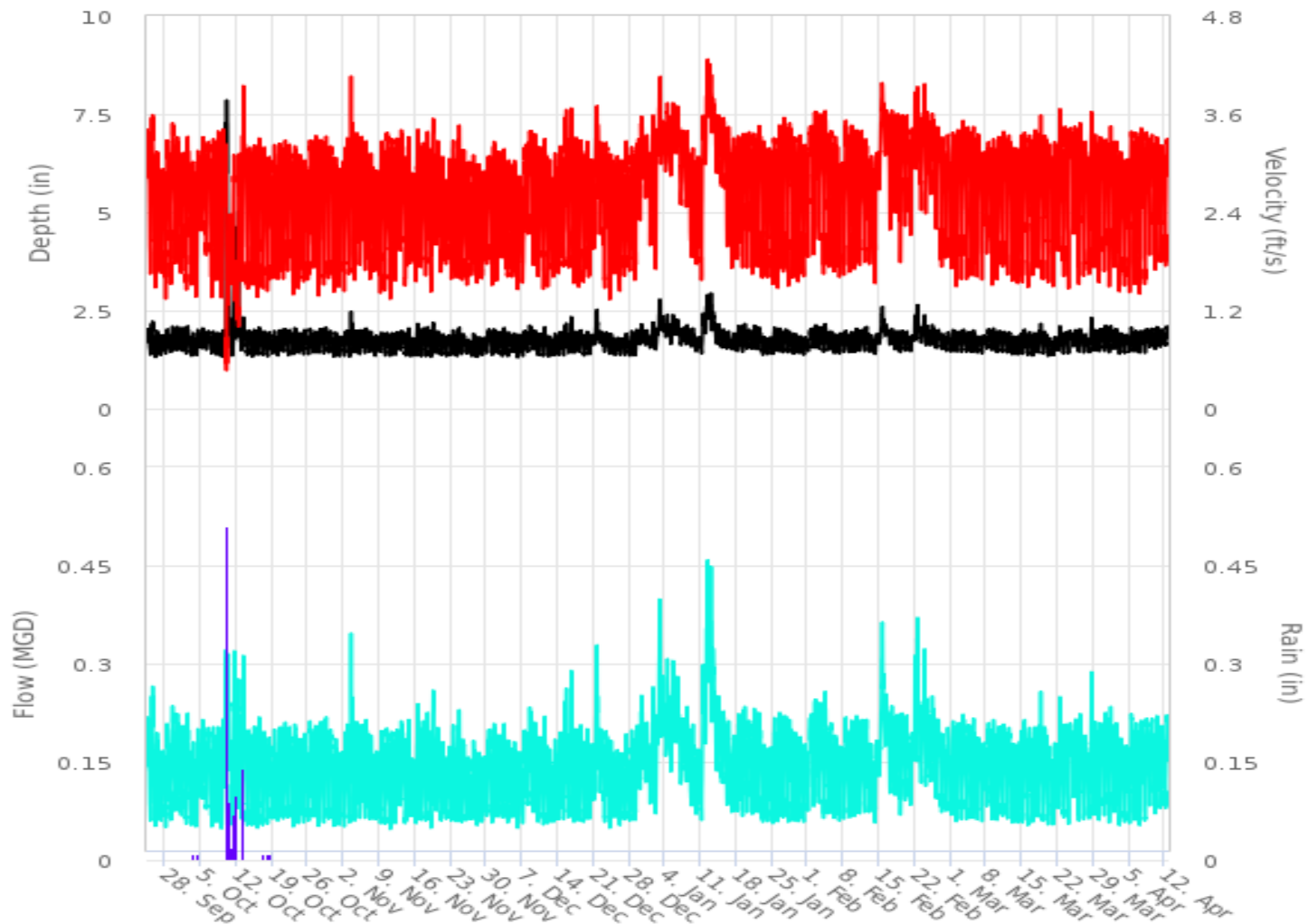
Flow Monitor
AUB_A8_70829



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

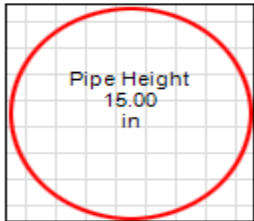
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_A8_70829

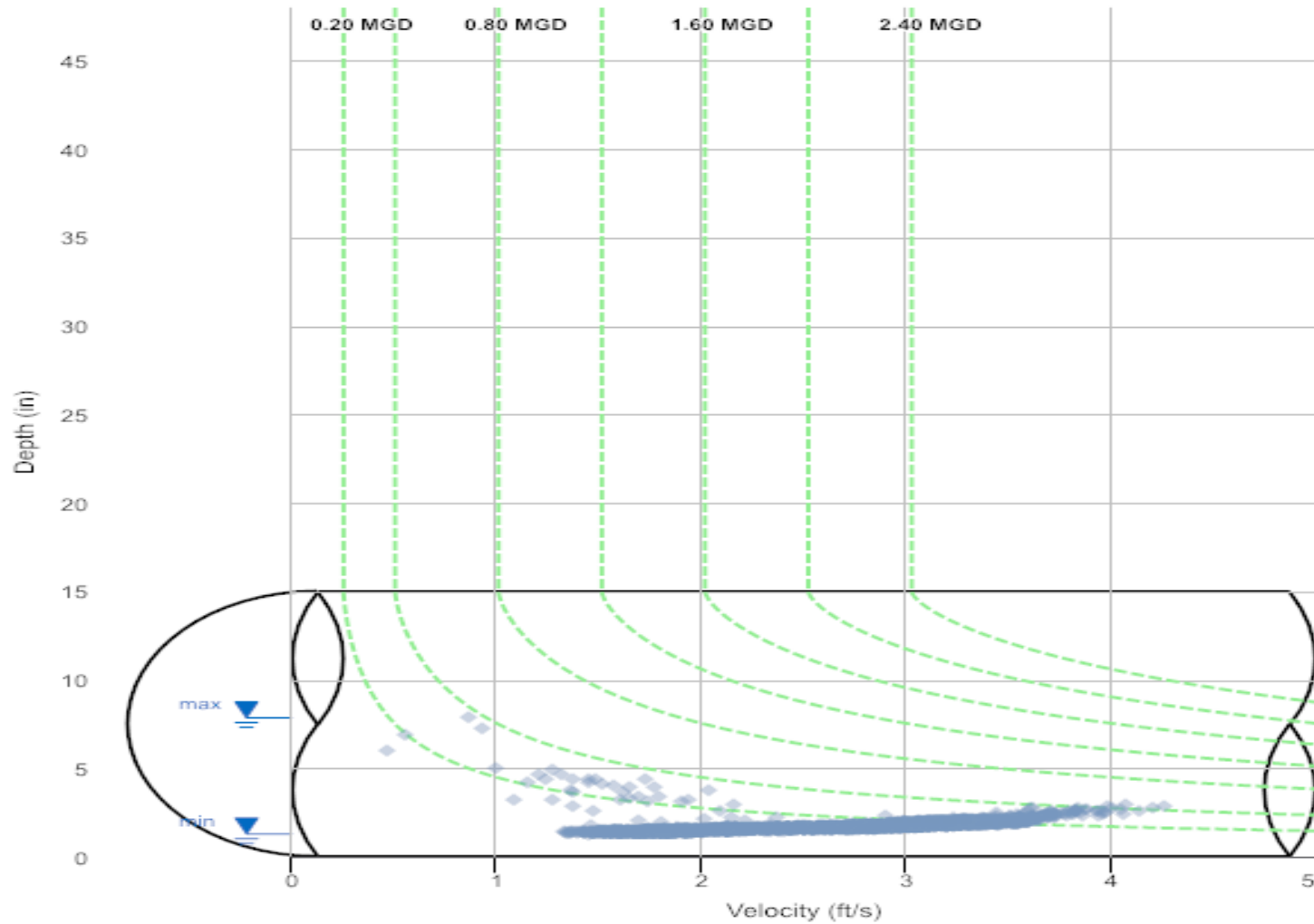
Flow Monitor
AUB_A8_70829



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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										

	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	-

	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				AUB_A8_70829	
Site Address /Location:	3rd St NW			Monitor Series	Location Type
Site Access Details:	Located in parking area next to driveway	Latitude:	47.310238	Pipe Size (H x W)	Pipe Shape
		Longitude:	122.234096	15.00 X 15.00	Circular
				Manhole #	System Characteristics
				AUB_A8_70829	Commercial
				Access	Traffic
				Walk (Commercial)	Light
					
				Installation Information	
				Installation Date: Thursday, September 24, 2020 Monitoring Location (Sensors): Upstream 0-5 FT Sensors / Devices: Peak Combo (CS4), Smart Depth (CS5) Installation Type: Doppler Standard Ring and Crank Monitor Location: Manhole Pressure Sensor Range (psi): 0 - 5 psi	
				Installation Confirmation:	
				Time: 8:06:00 AM Depth of Flow (Wet DOF) (in): 2.13 CS3 Physical Offset (in): 1.38 Peak Velocity (fps): 4.14 Silt (in): 0 Measurement Confidence (in): 0.25" Velocity Sensor Offset (in): N/A Silt Type:	
				Hydraulic Comments:	
				Manhole / Pipe Information:	
				Manhole Depth (Approx. FT): 6 Manhole Material: Concrete Manhole Opening Diameter (in): 24 Manhole Cover: Steel Active Connections: No Pipe Material: Concrete Manhole Configuration: Single Manhole Condition: Good Manhole Diameter (Approx.): 26 Manhole Frame: Normal Air Quality: Normal 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_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

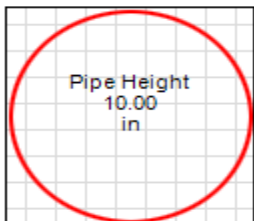
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

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

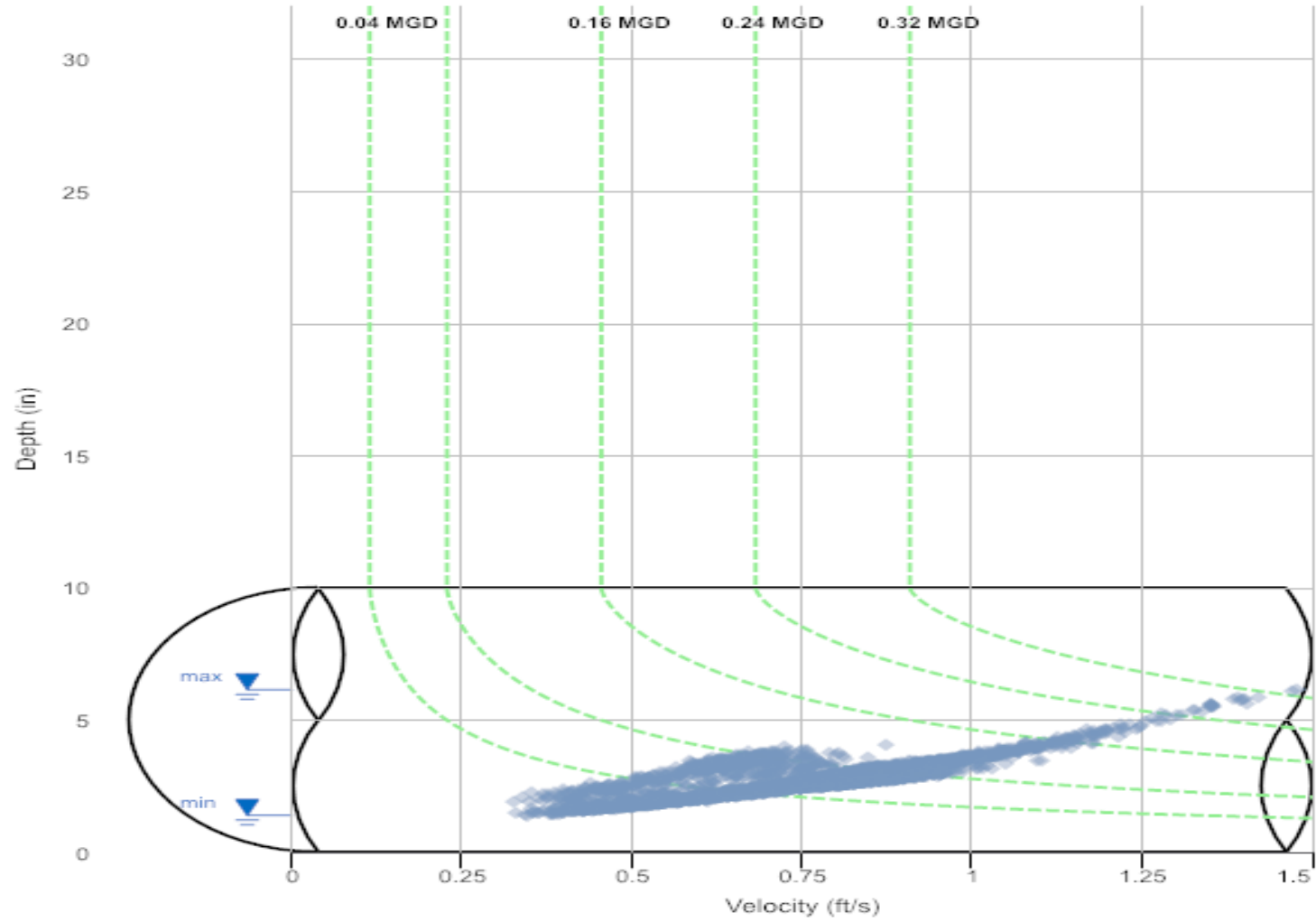
Flow Monitor
AUB_A9_71031

Pipe Height
10.00
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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.							

	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						

	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	

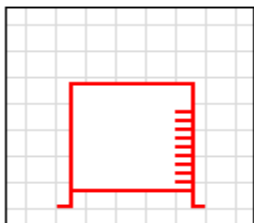
Auburn.TFM.WA20-22				Site Name	
Flow Monitoring Site Report				AUB_A9_71031	
Site Address /Location:		Frank Fulmer Park		Monitor Series	Location Type
Site Access Details:		Entrance on 3th St NE	Latitude: 47.313160° Longitude: -122.214022°	TRITON+	Temporary
				Pipe Size (H x W) 10 x 10	Pipe Shape Circular
		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

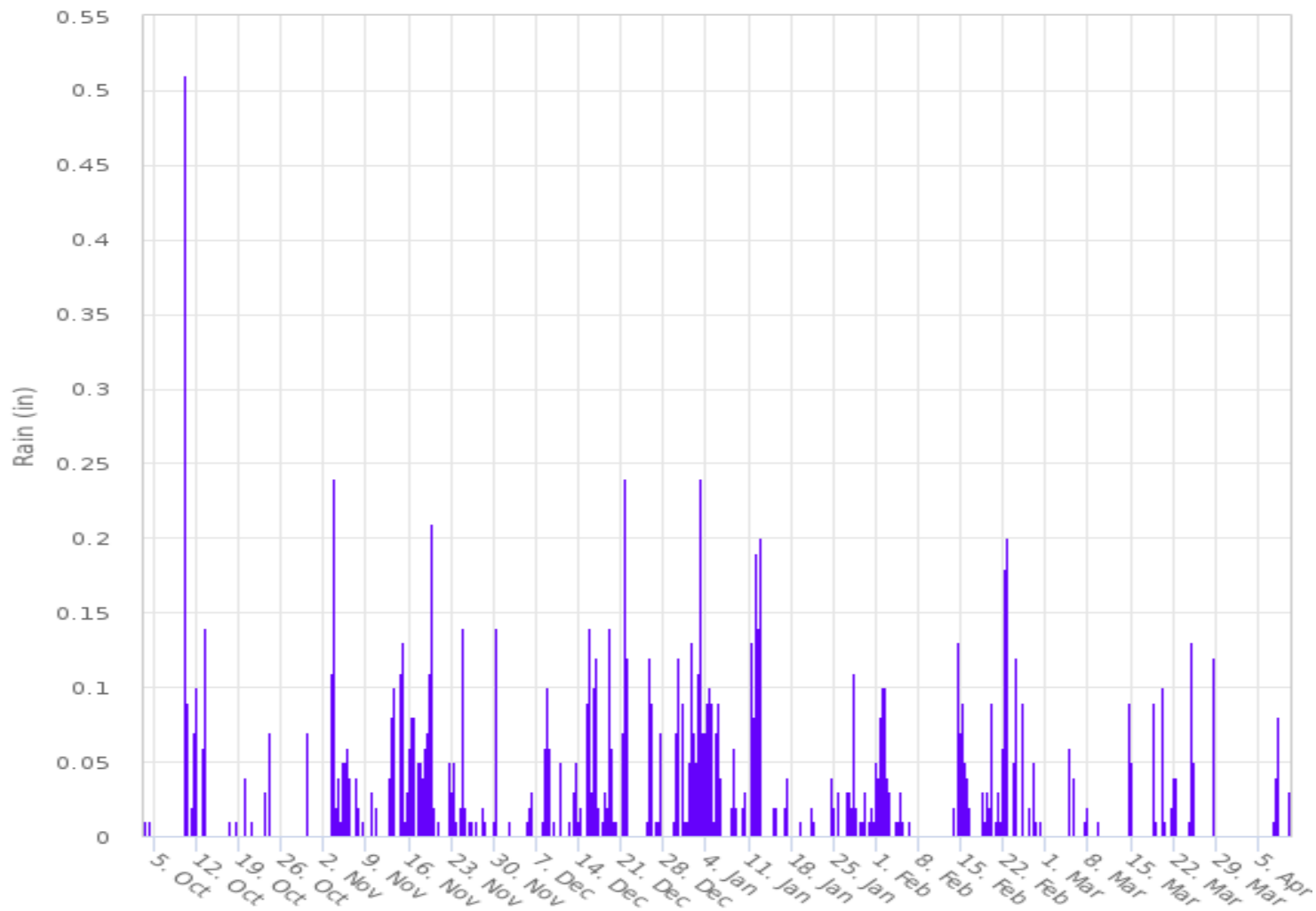
Rain Gauge
AUB_RG



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

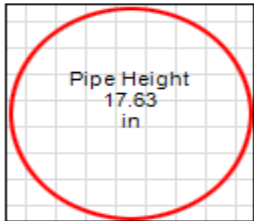
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-1_41016

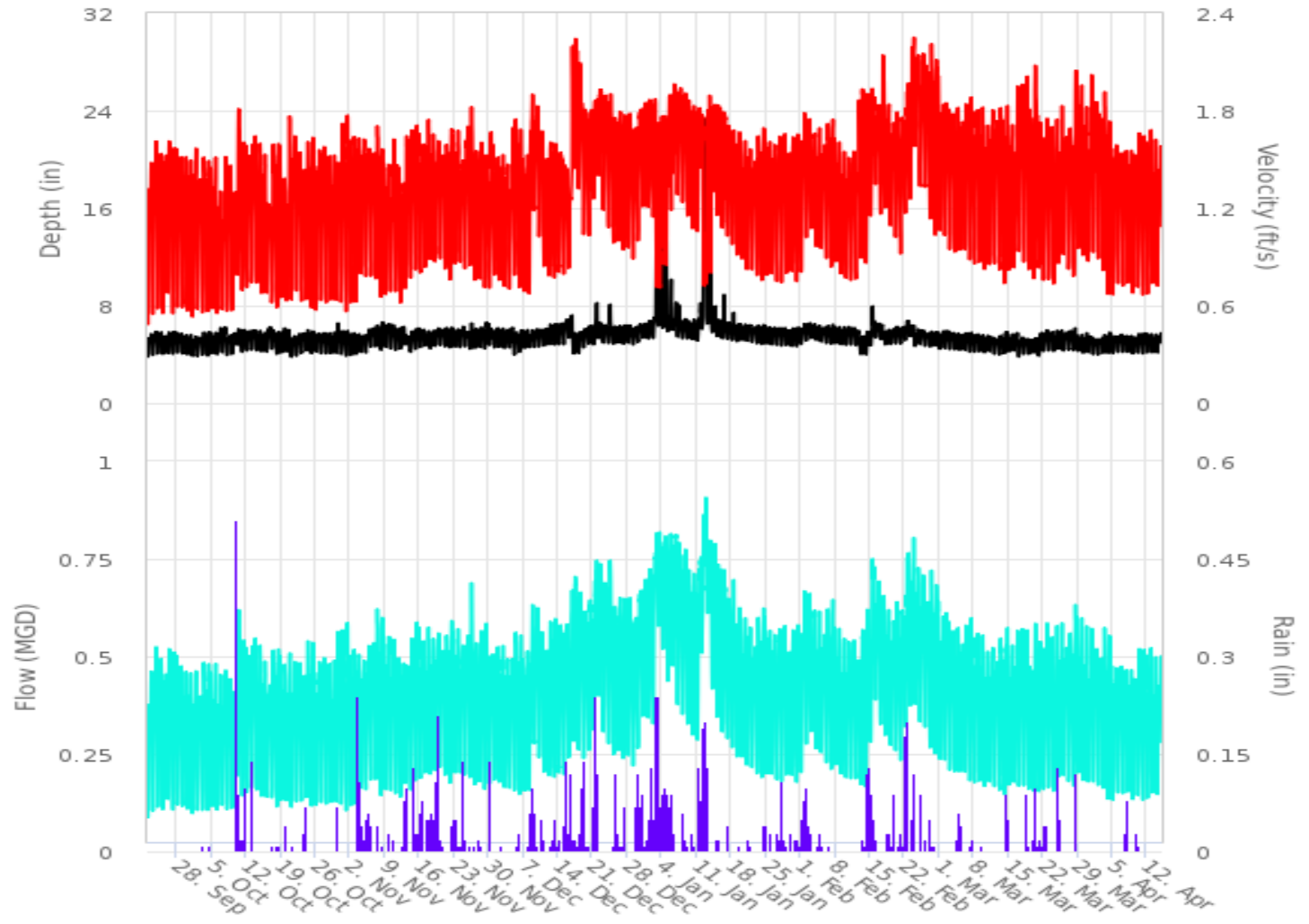
Flow Monitor
AUB_Y-1_41016



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_Y-1_41016

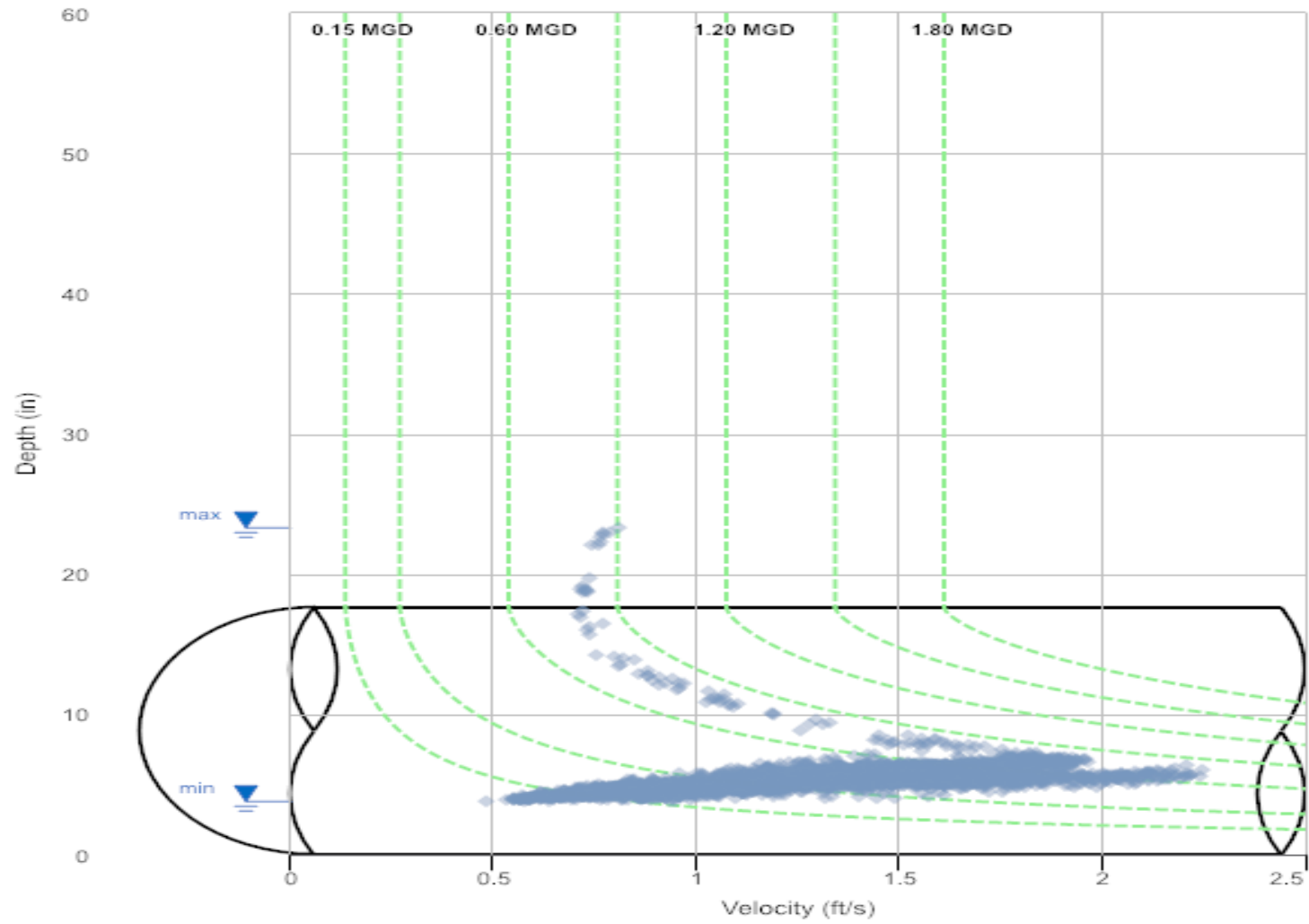
Flow Monitor
AUB_Y-1_41016

Pipe Height
17.63
in

Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ABS ENVIRONMENTAL
SERVICES



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								

	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					

	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		ADS ENVIRONMENTAL SERVICES		Site Name	
Flow Monitoring Site Report				AUB_Y-1_41016	
Site Address /Location:	Green River Rd SE			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	Park at Pump Station Along Green River	Latitude:	47.330137°	Pipe Size (H x W)	Pipe Shape
		Longitude:	-122.210973°	17.63 x 18.00	Circular
 				Manhole #	System Characteristics
				Y-1 (410-16)	Residential
				Access	Traffic
				Drive	None
				Installation Information	
				Installation Date: Thursday, May 14, 2020 Monitoring Location (Sensors): Upstream 0-3 FT Sensors / Devices: Peak Combo (CS4), Smart Depth (CS3) Installation Type: Doppler Standard Ring and Crank Monitor Location: Manhole Pressure Sensor Range (psi): 0 - 3 psi	
				Installation Confirmation:	
				Confirmation Time: 14:04:00 PM Depth of Flow (Wet DOF) (in): 4.63" CS3 Physical Offset (in): 1.38" Peak Velocity (fps): 1.69 Silt (in): 0.00" Pipe Size (HxW): 17.63 x 18.00 Measurement Confidence (in): 0.25" Velocity Sensor Offset (in): 0" Silt Type:	
				Hydraulic Comments:	
				Screen structure downstream	
				Manhole / Pipe Information:	
				Manhole Depth (Approx. FT): 3 Manhole Material: Concrete Manhole Opening Diameter (in): 26 Manhole Cover: Steel Active Connections: No Pipe Material: PVC Manhole Configuration: Single Manhole Condition: Good Manhole Diameter (Approx.): Manhole Frame: Normal Air Quality: Normal Pipe Condition: Fair	
				Communication Information:	
				Communication Type: Wireless Antenna Location: Manhole Pick / Vent Hole	
				Additional Site Info. / Comments:	
				Green River Siphon Downstream	
ADS Project Name:		Auburn.TFM.WA20-22			
ADS Project Number:		22519.22.325			



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

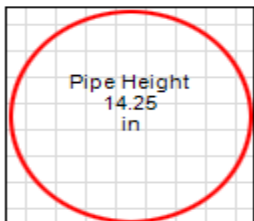
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-2_61102

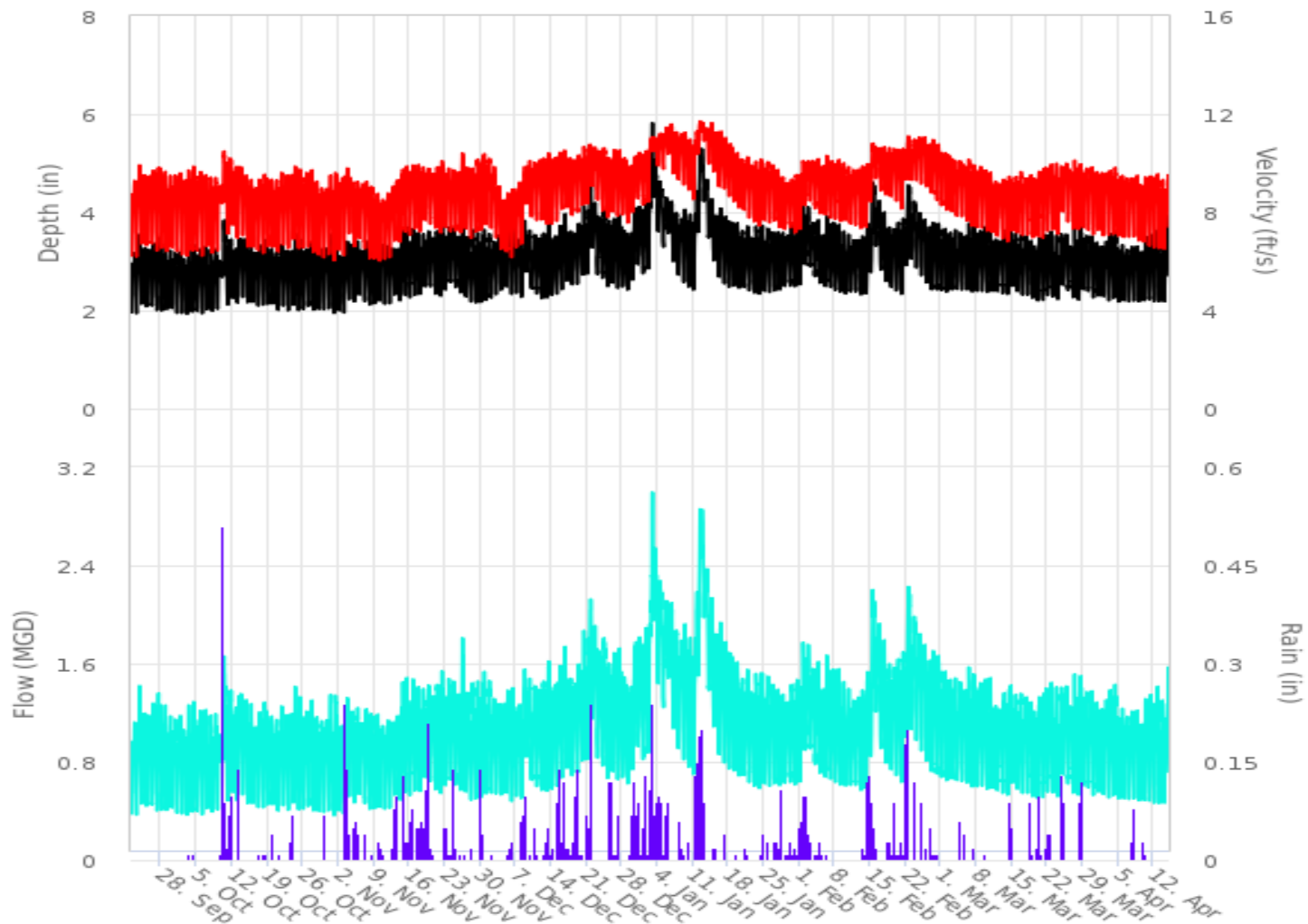
Flow Monitor
AUB_Y-2_61102



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

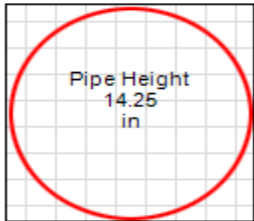
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_Y-2_61102

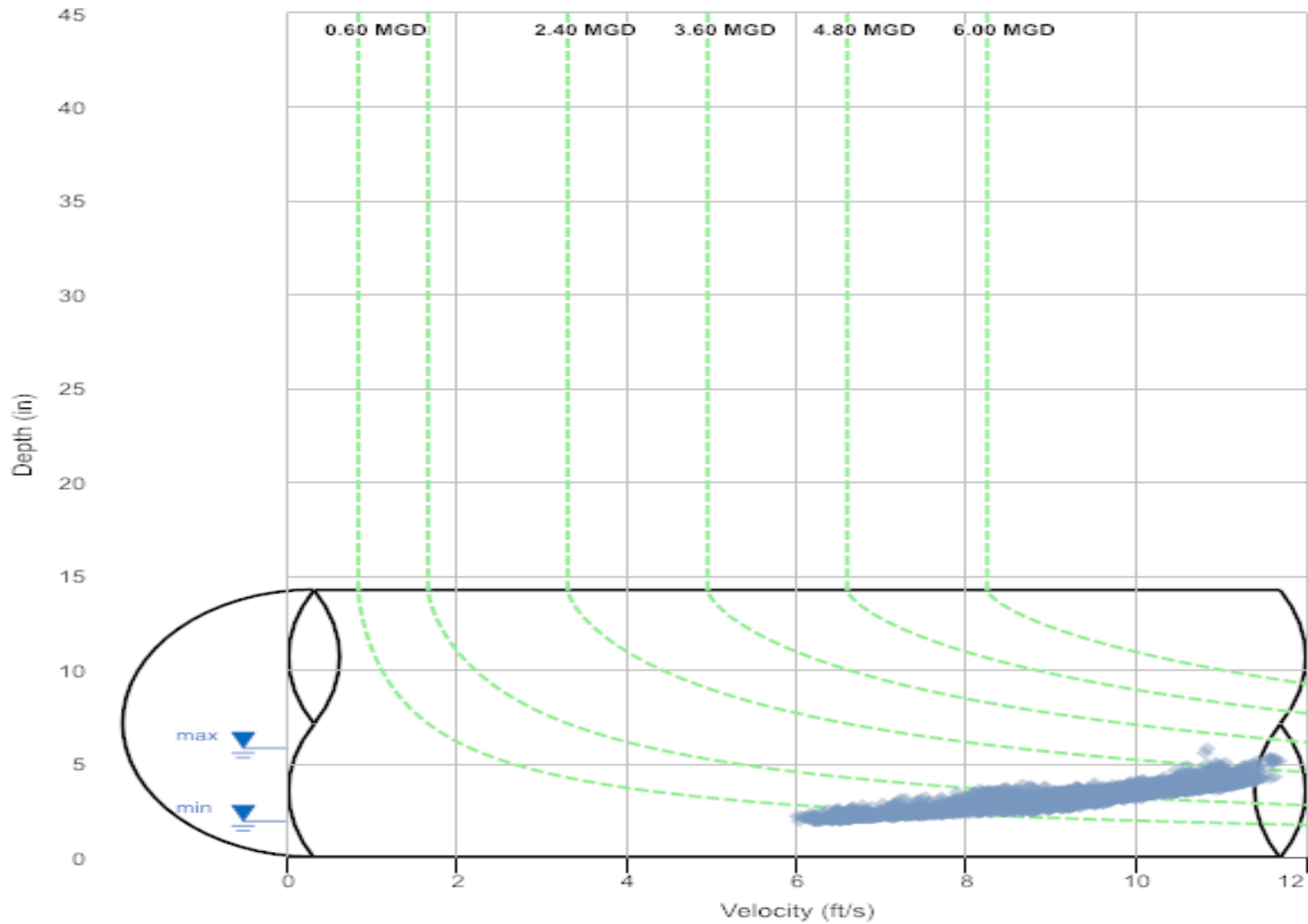
Flow Monitor
AUB_Y-2_61102



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES



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			

	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													

	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						Site Name	
Flow Monitoring Site Report						AUB_Y-2_61102	
Site Address /Location:		1608 8th St NE, Auburn WA		Monitor Series		Location Type	
Site Access Details:		Site within West bound lane control required		TRITON+		Temporary	
		Latitude: 47.315548° Longitude: -122.206507°		Pipe Size (H x W) 14.25 x 14.50		Pipe Shape Circular	
				Manhole #		System Characteristics	
				AUB_Y-2(611-02)		Residential	
				Access		Traffic	
				Drive		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

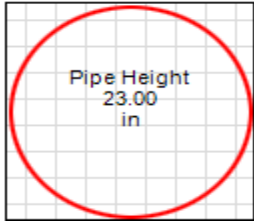
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-3_101255

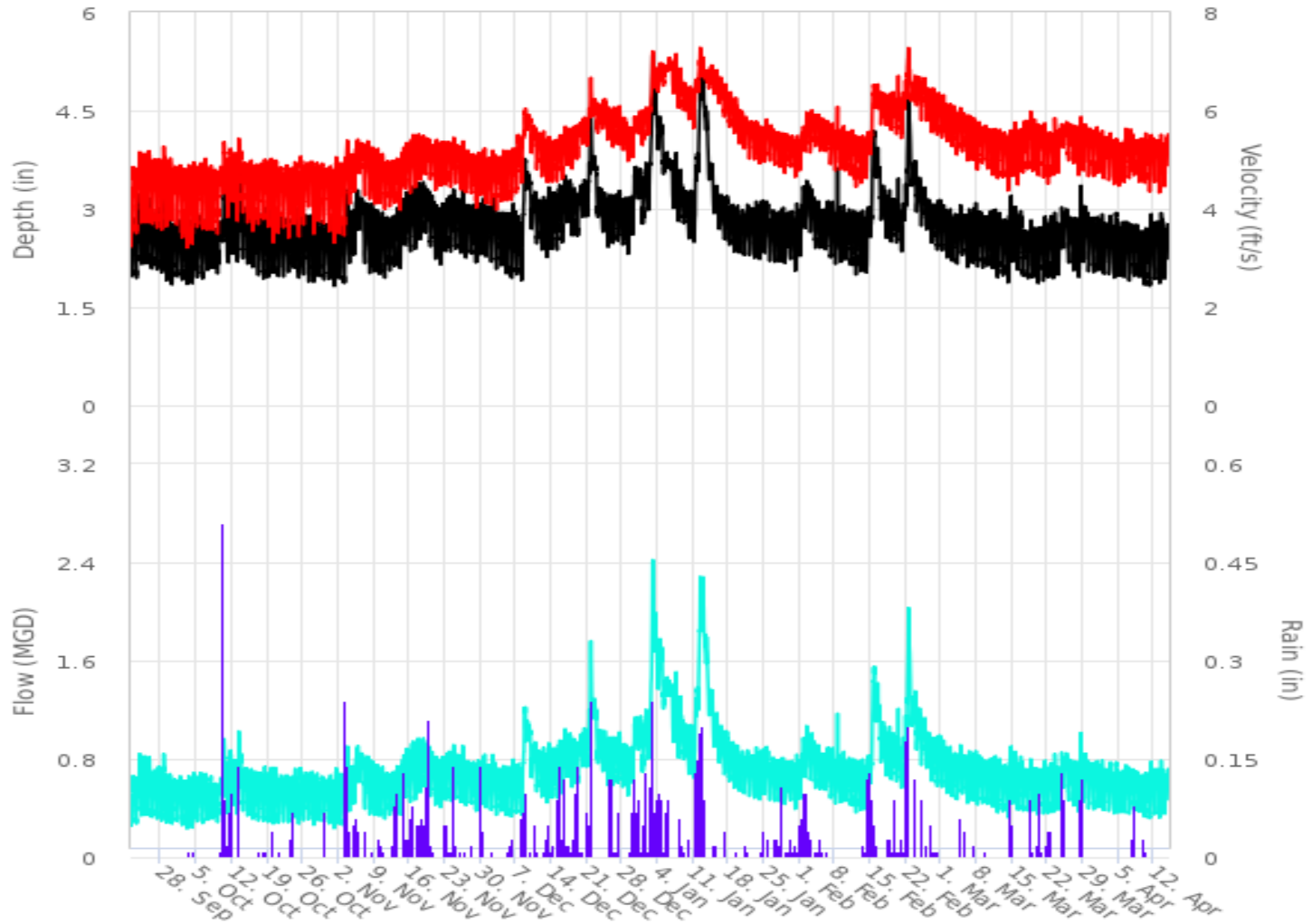
Flow Monitor
AUB_Y-3_101255



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

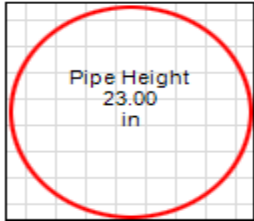
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_Y-3_101255

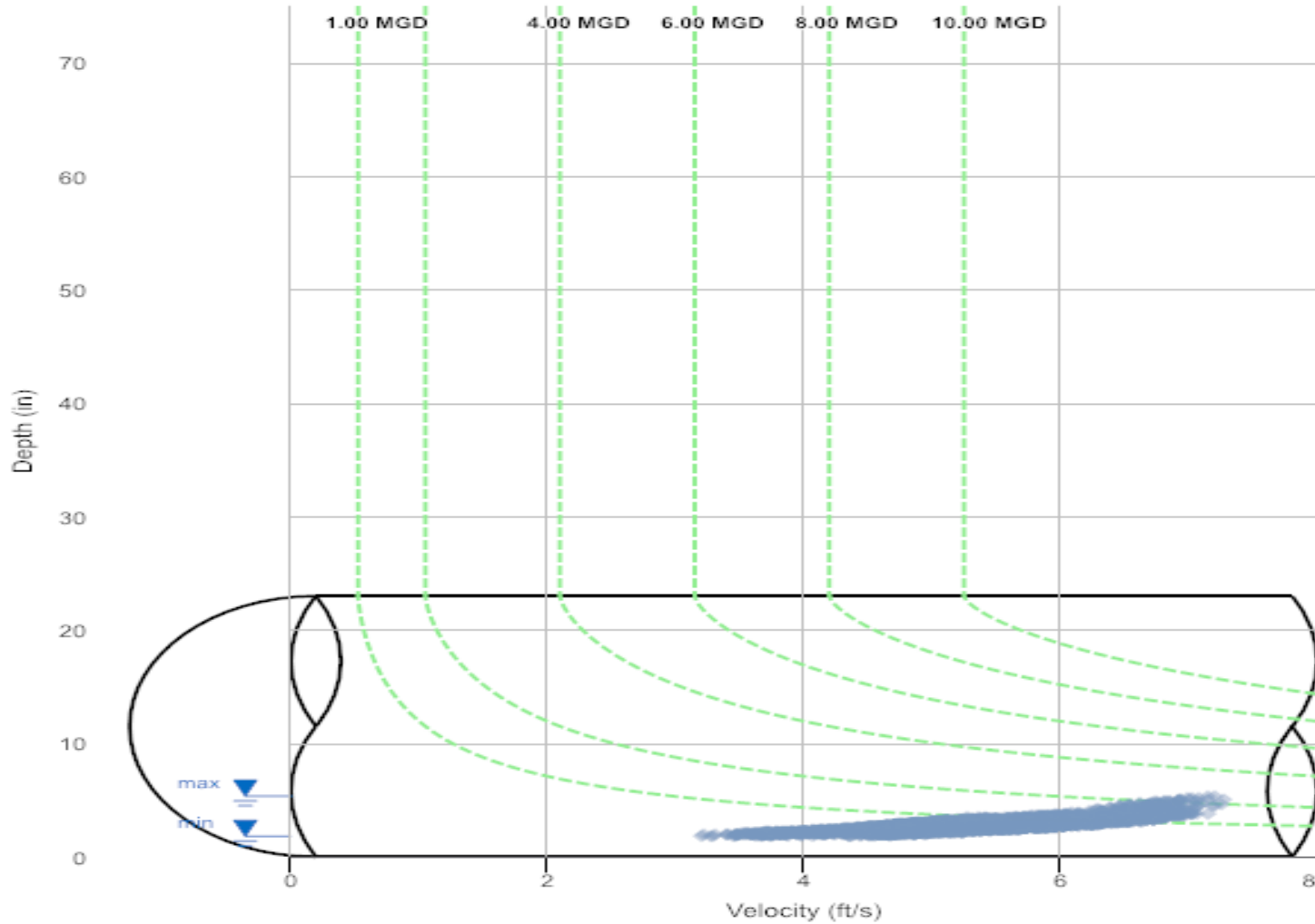
Flow Monitor
AUB_Y-3_101255



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



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</															

	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						

	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				Site Name	
Flow Monitoring Site Report				AUB_Y-3_101255	
Site Address /Location:	2272 Riverwalk Dr SE			Monitor Series	Location Type
Site Access Details:	Park next to M/H	Latitude:	47.288431°	TRITON+	Temporary
		Longitude:	-122.197152°	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
					
				Installation Information	
				Installation Date: Thursday, May 14, 2020 Installation Type: Doppler Standard Ring and Crank Monitoring Location (Sensors): Upstream 0-3 FT Monitor Location: Manhole Sensors / Devices: Pressure Sensor Range (psi) Peak Combo (CS4), Smart Depth (CS3) 0 - 3 psi	
				Installation Confirmation:	
				Confirmation Time: 12:46:00 PM Pipe Size (HxW): 23.00 x 23.50 Depth of Flow (Wet DOF) (in): 2.63" CS3 Physical Offset (in): 1.38 Measurement Confidence (in): 0.38" Peak Velocity (fps): 3.4 Velocity Sensor Offset (in): 0" Silt (in): 0.00" 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): 26 Manhole Diameter (Approx.): Manhole Cover: Steel Manhole Frame: Normal Active Connections: No Air Quality: Normal Pipe Material: PVC Pipe Condition: Fair	
				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: 22519.22.325					



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

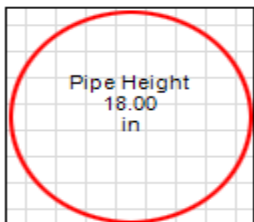
Data uptime observed during **Tuesday, September 22, 2020 to Wednesday, April 14, 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

Hydrograph Report

AUB_Y-4_101002

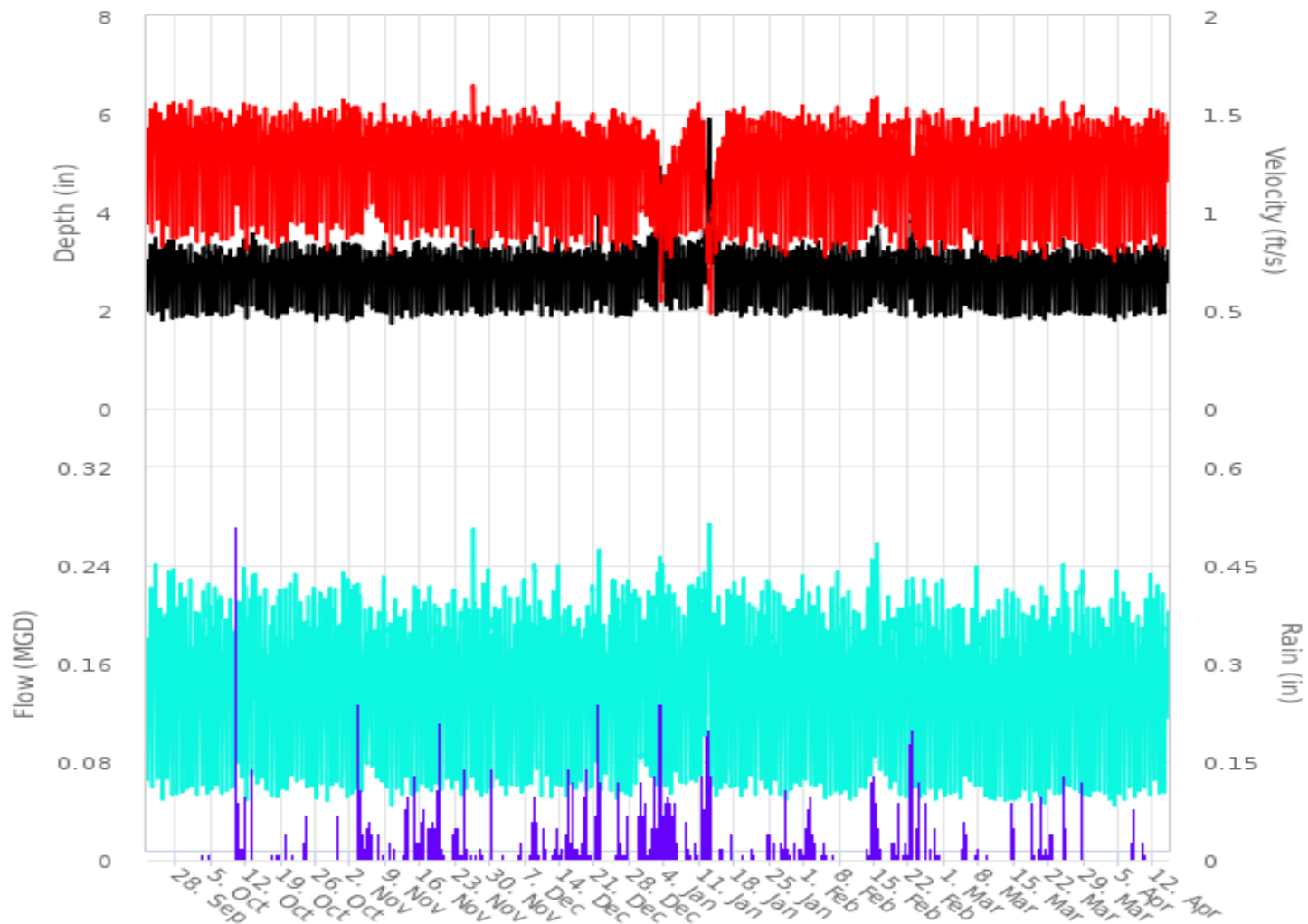
Flow Monitor
AUB_Y-4_101002



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

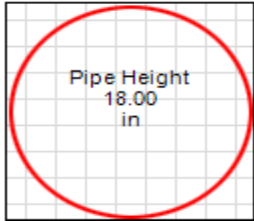
ADS ENVIRONMENTAL
SERVICES



Scattergraph Report

AUB_Y-4_101002

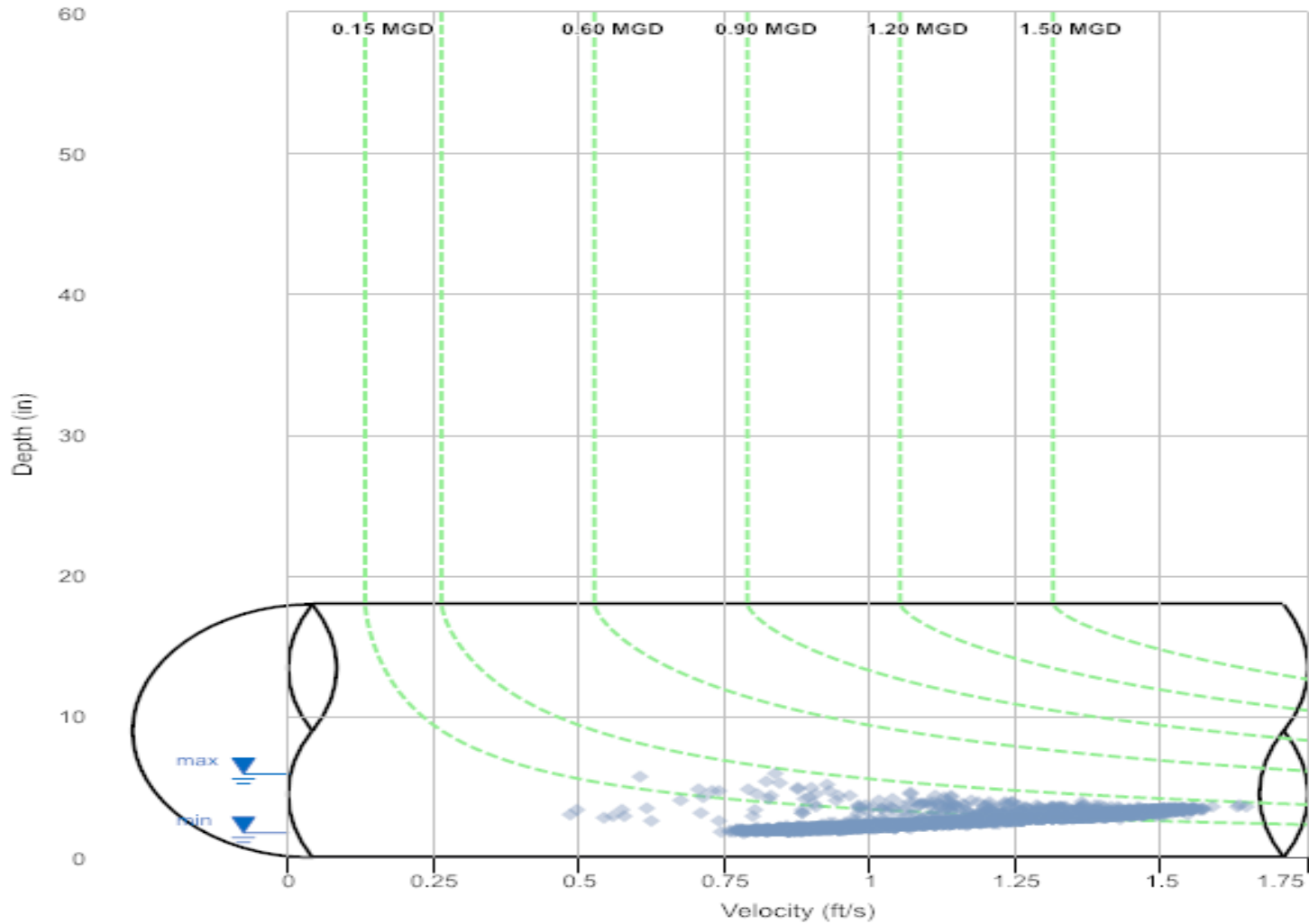
Flow Monitor
AUB_Y-4_101002



Report Period
09/22/2020
To
04/14/2021

Legend
○ DFINAL -
VFINAL
--- Iso-Q™
▼ Min-Max Depth

ADS ENVIRONMENTAL
SERVICES®



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	04:3							

	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						

	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	



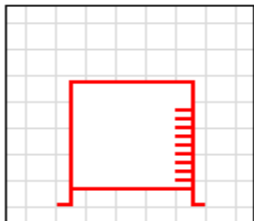
Auburn.TFM.WA20-22				Site Name	
Flow Monitoring Site Report				AUB_Y-4_101002	
Site Address /Location:	Cnr K St SE and 17th SE, Auburn			Monitor Series	Location Type
Site Access Details:	Park on K St SE	Latitude:	47.293542°	Pipe Size (H x W)	Pipe Shape
		Longitude:	-122.216166°	18.00 x 18.00	Circular
				Manhole #	System Characteristics
				Y-4/1010-02	Residential
				Access	Traffic
				Drive	None
					
				Installation Information	
				Installation Date:	Installation Type:
				Thursday, May 14, 2020	Doppler Standard Ring and Crank
				Monitoring Location (Sensors):	Monitor Location:
Upstream 0-3 FT	Manhole				
Sensors / Devices:	Pressure Sensor Range (psi)				
Peak Combo (CS4), Smart Depth (CS3)	0 - 3 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					
CS3 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:	
ADS Project Name:		Auburn.TFM.WA20-22			
ADS Project Number:		22519.22.325			



Hydrograph Report

RainGage_RG41Y

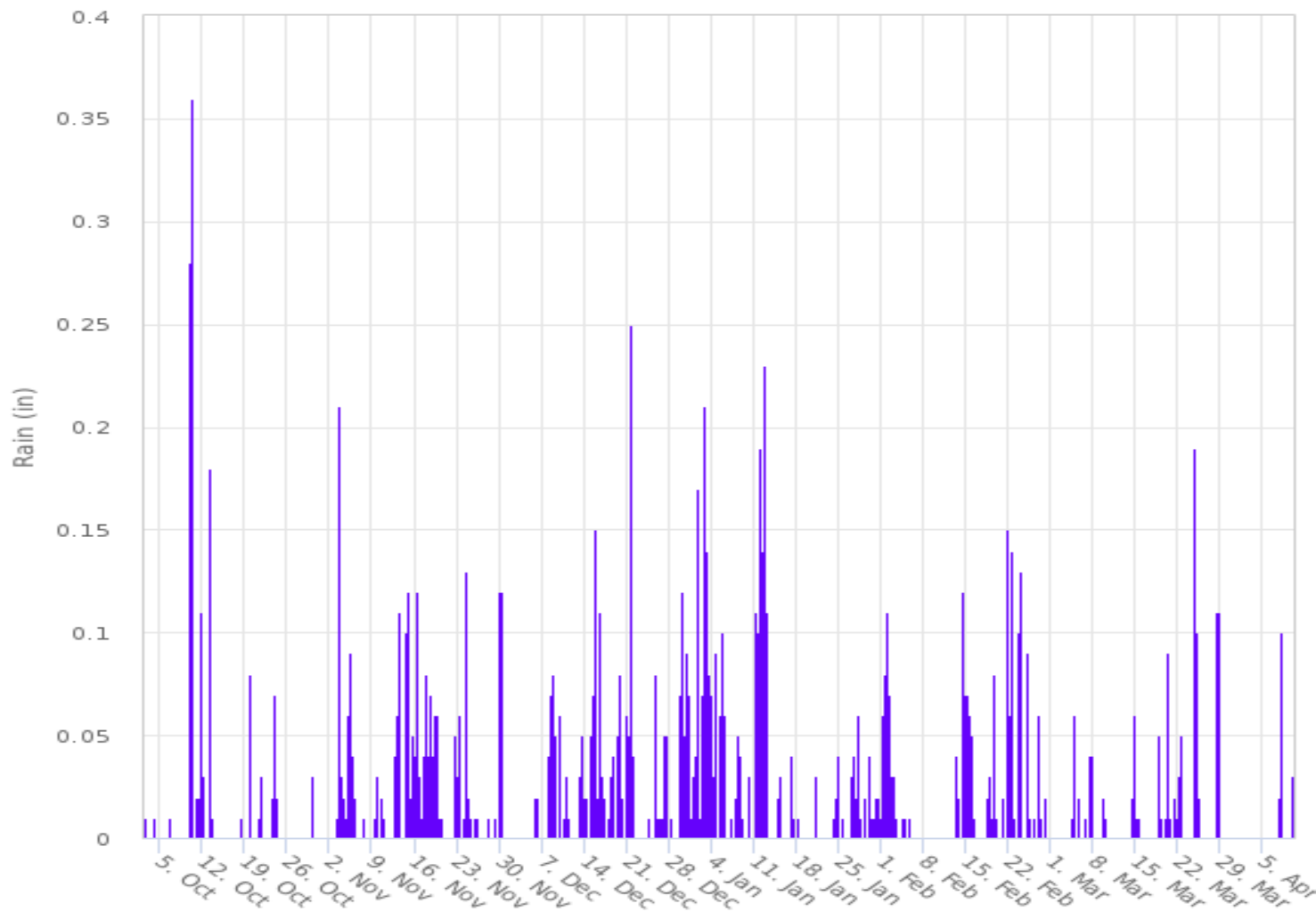
Rain Gauge
RainGage_RG41Y



Report Period
09/22/2020
To
04/14/2021

Legend
— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ADS ENVIRONMENTAL
SERVICES



Daily Tabular Report

09/22/2020 00:00 - 04/14/2021 23:56

RainGage_RG41Y Rain Gauge: Rain Gauge (0 H x 0 W), Silt0.00

Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)							Rain (in)
	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	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

Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	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



Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	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

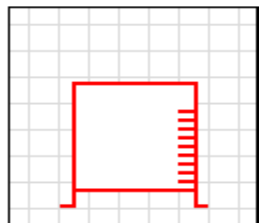
	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total				29.40
Average				



Hydrograph Report

RainGage_RGAUB

Rain Gauge
RainGage_RGAUB



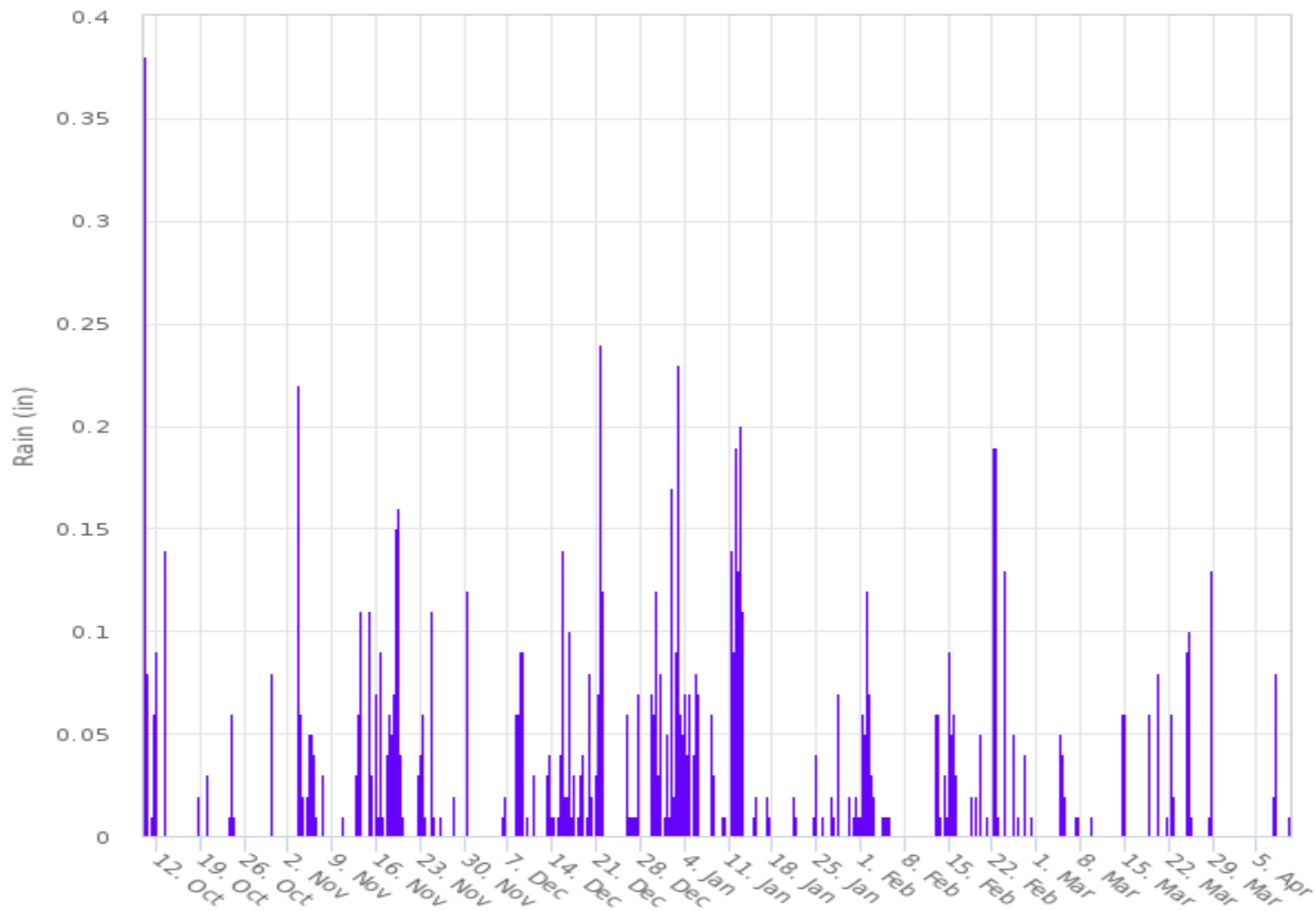
Report Period

09/22/2020
To
04/14/2021

Legend

— DFINAL
— VFINAL
— QFINAL
— RAIN FINAL

ABS 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

Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

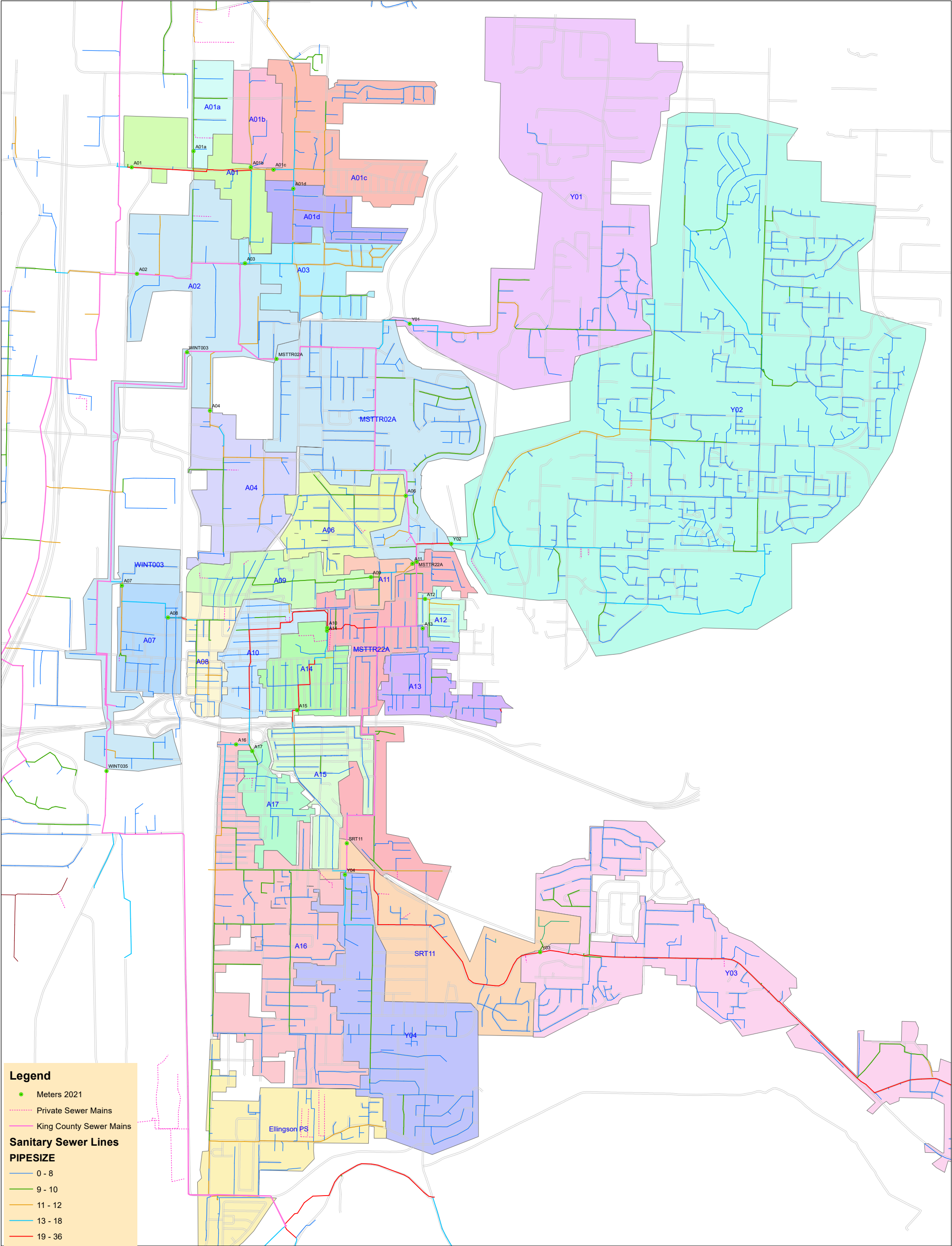


Date	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/10/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
11/11/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/12/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11
11/13/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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

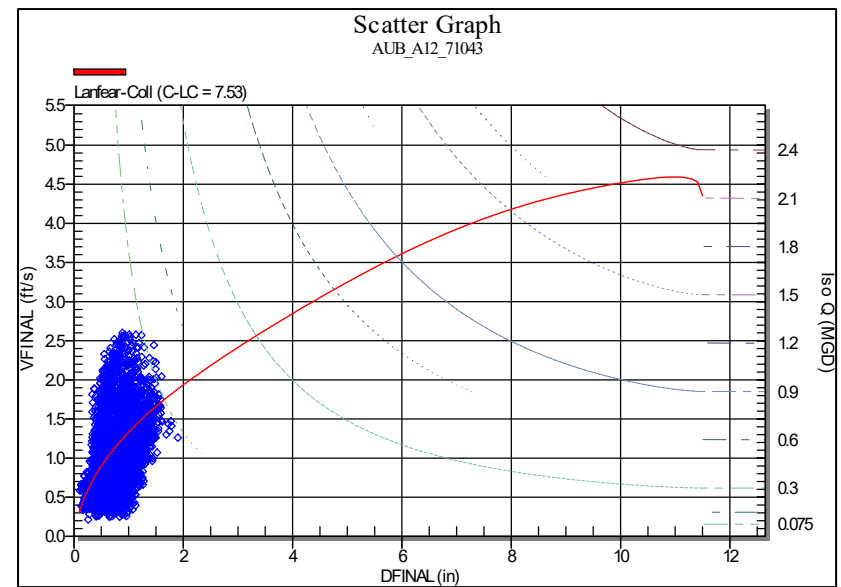
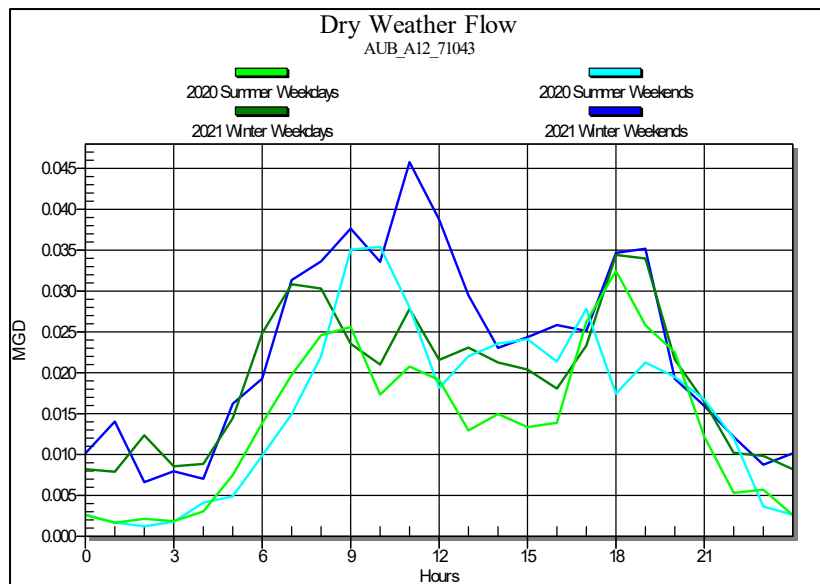
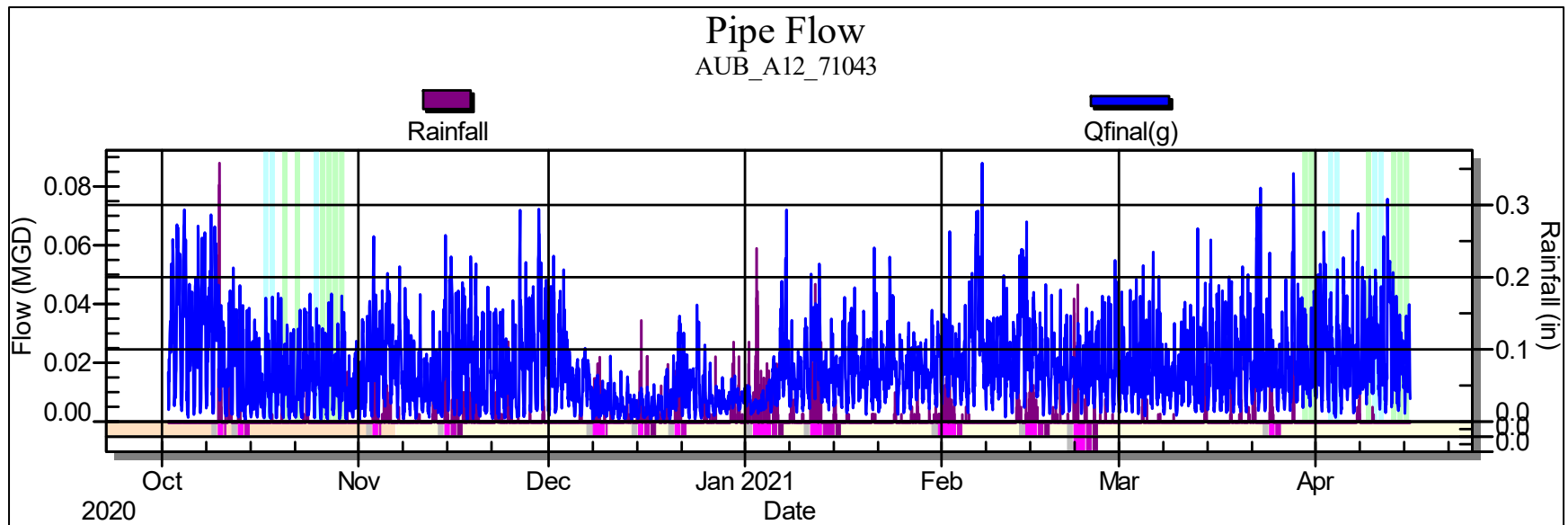
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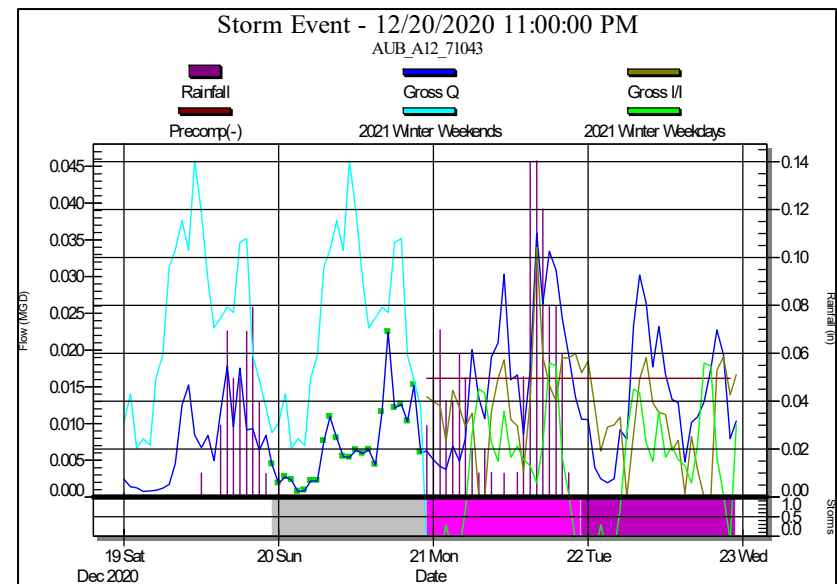
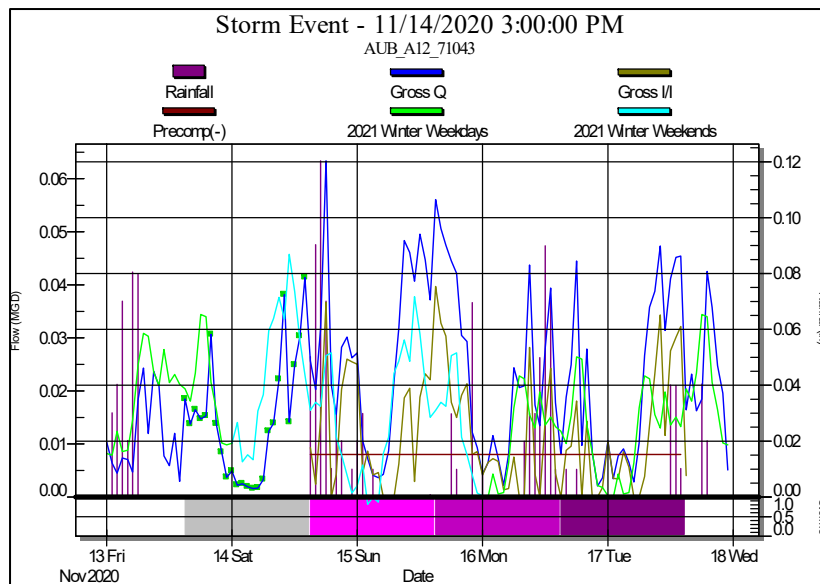
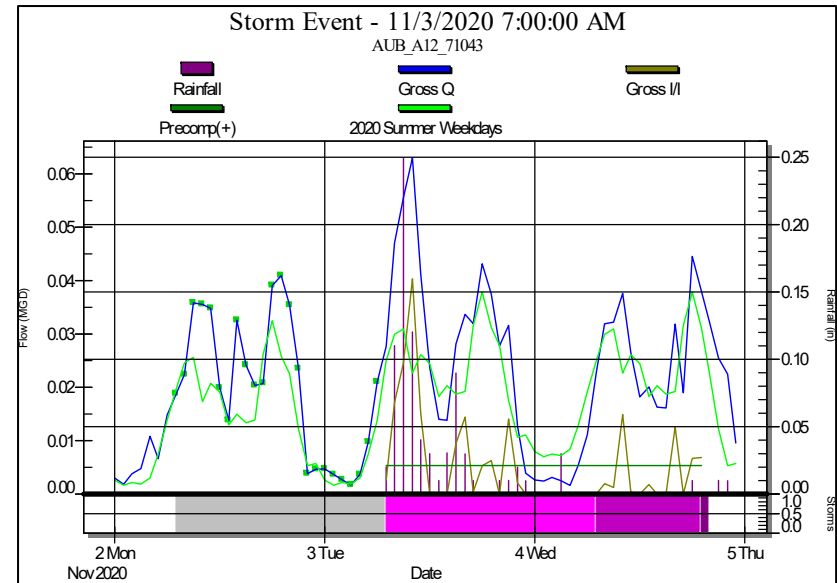
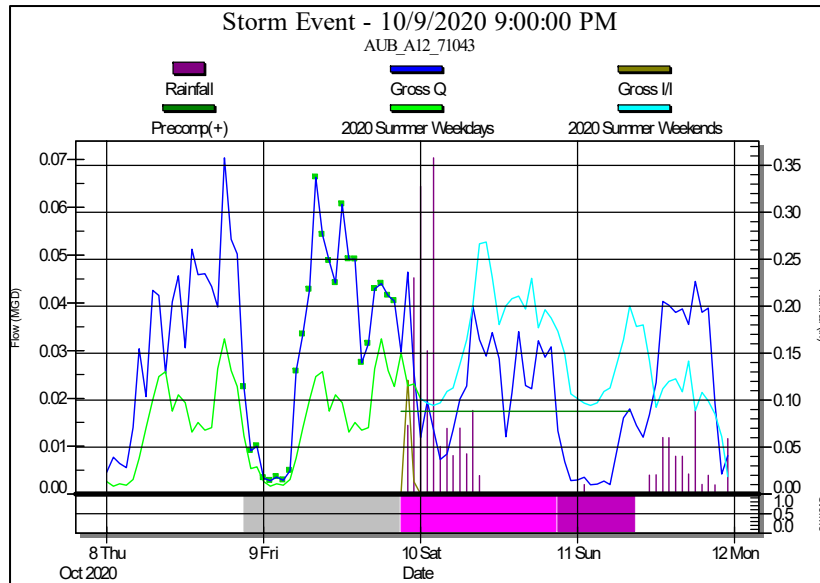
	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total				26.02
Average				

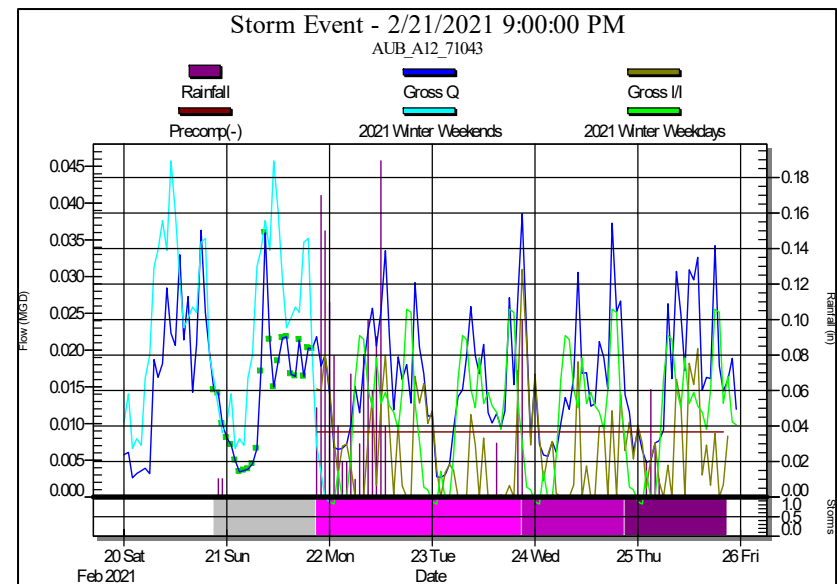
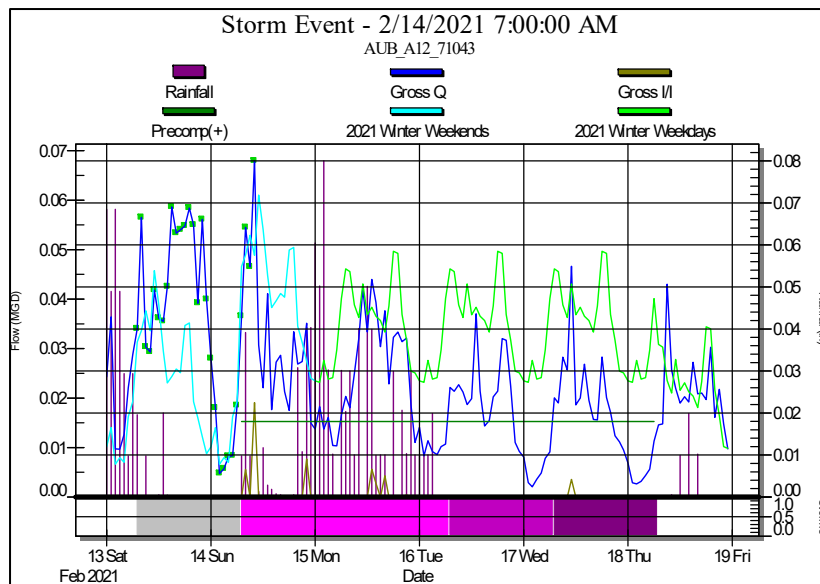
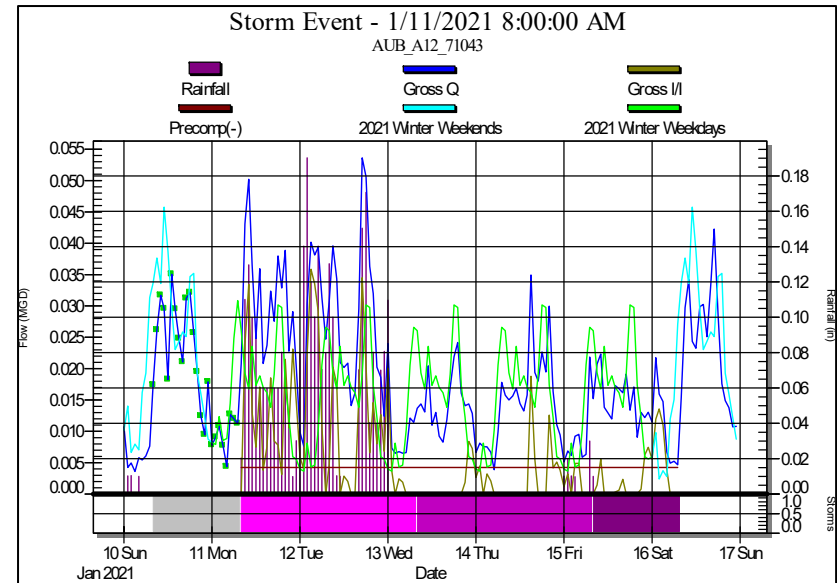
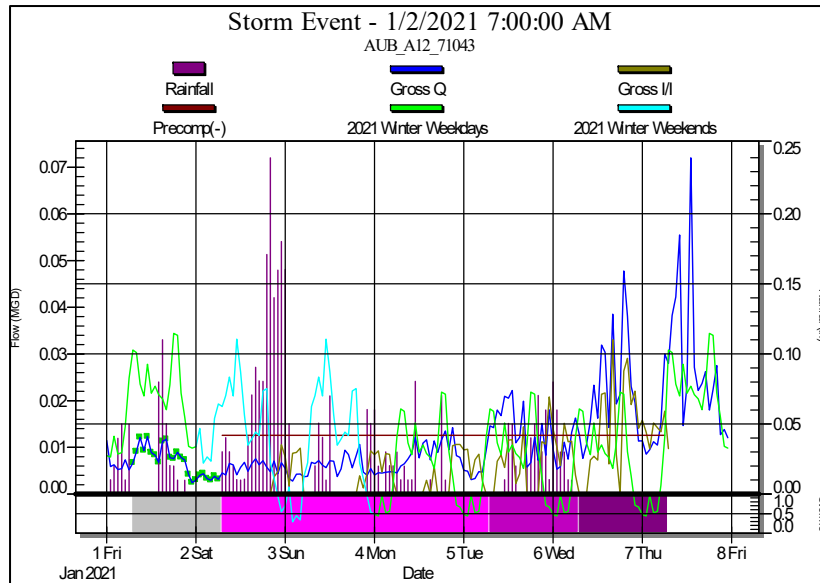


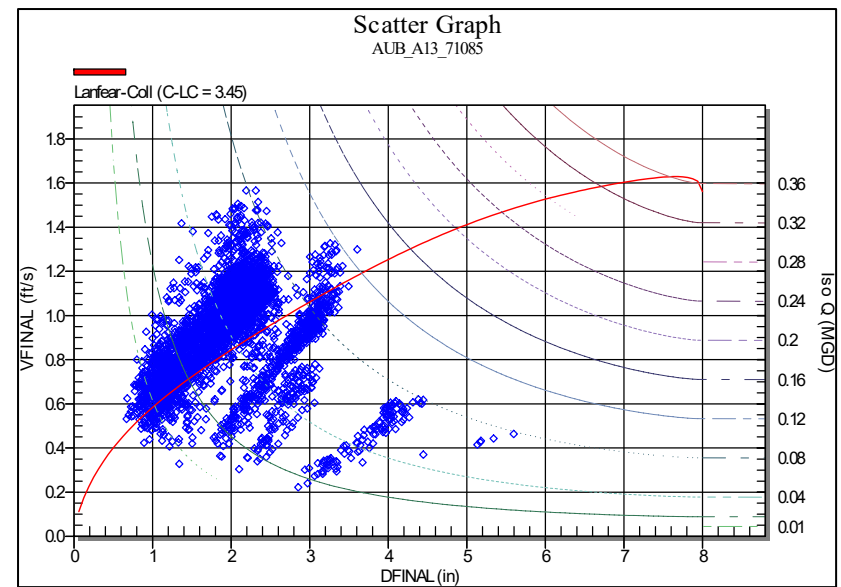
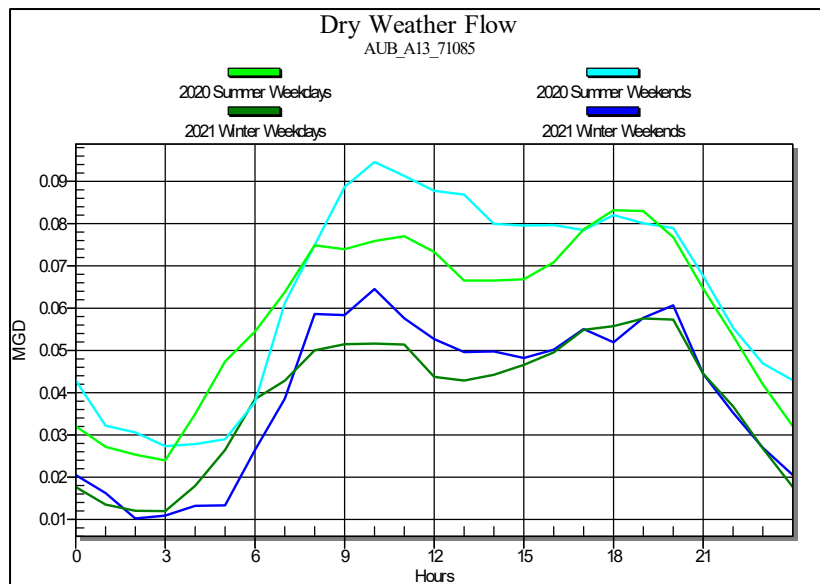
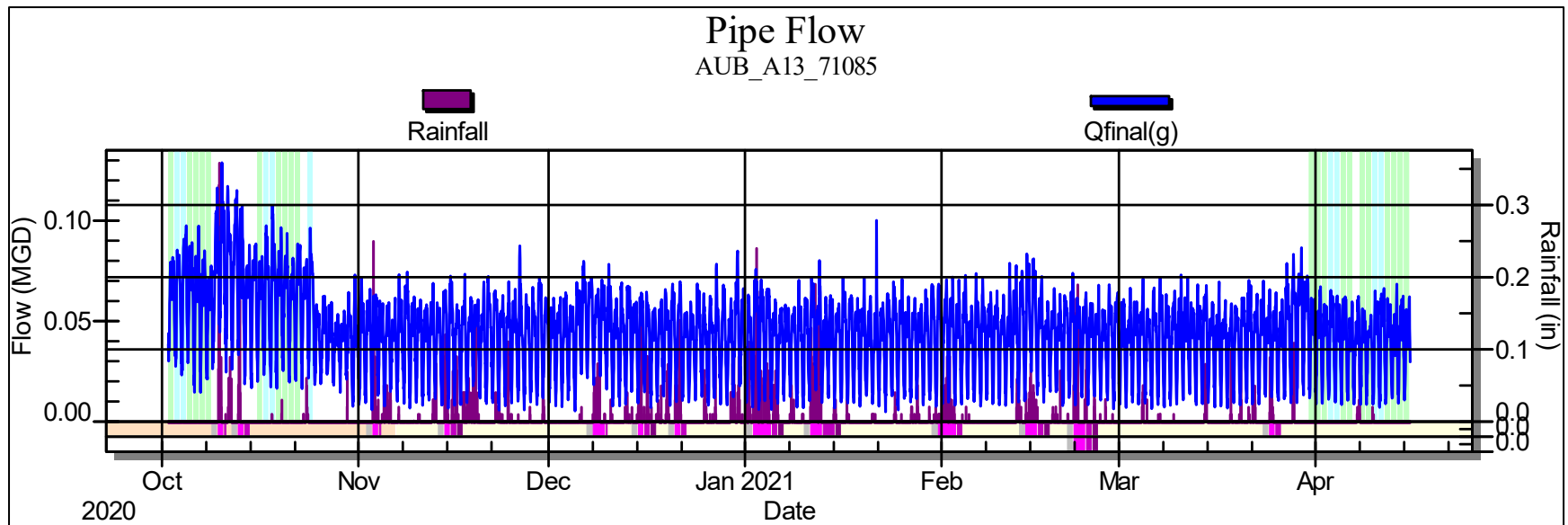


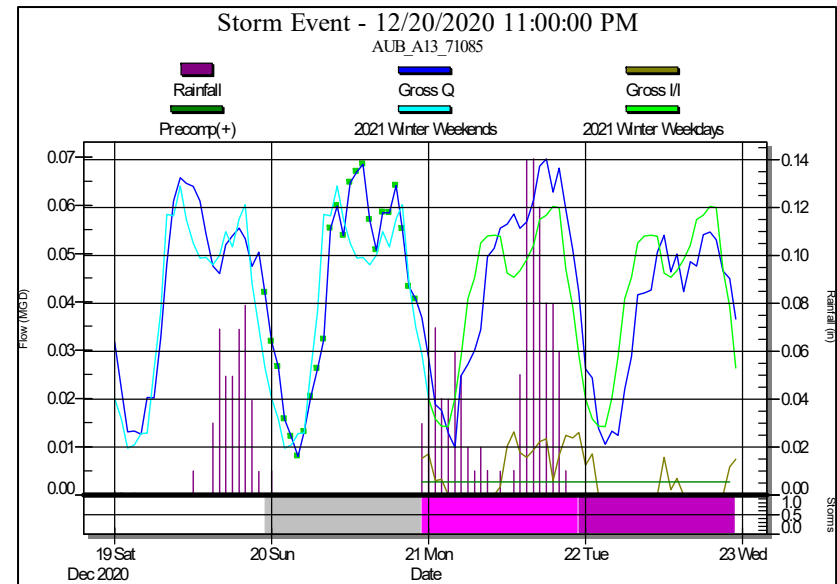
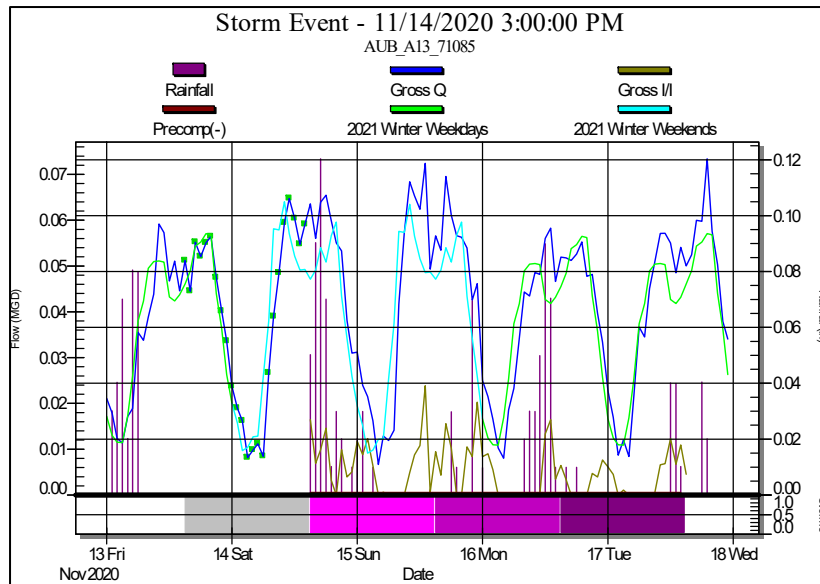
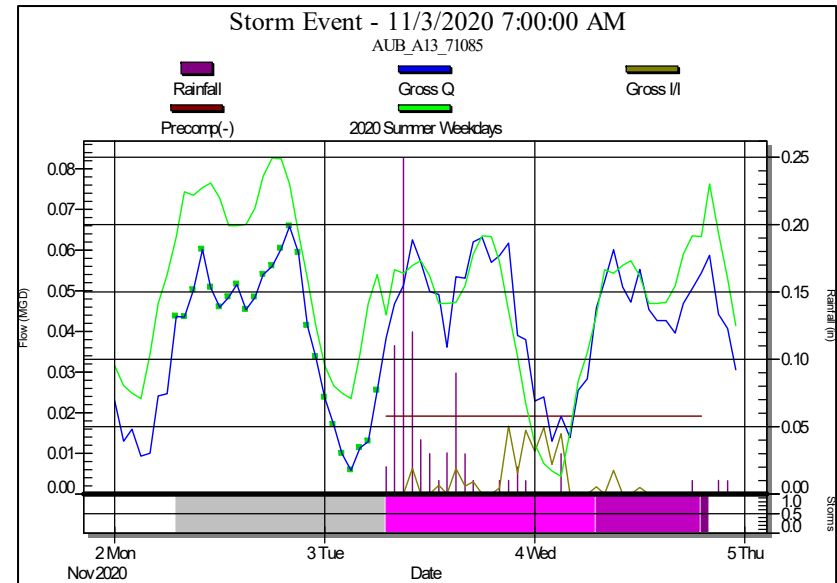
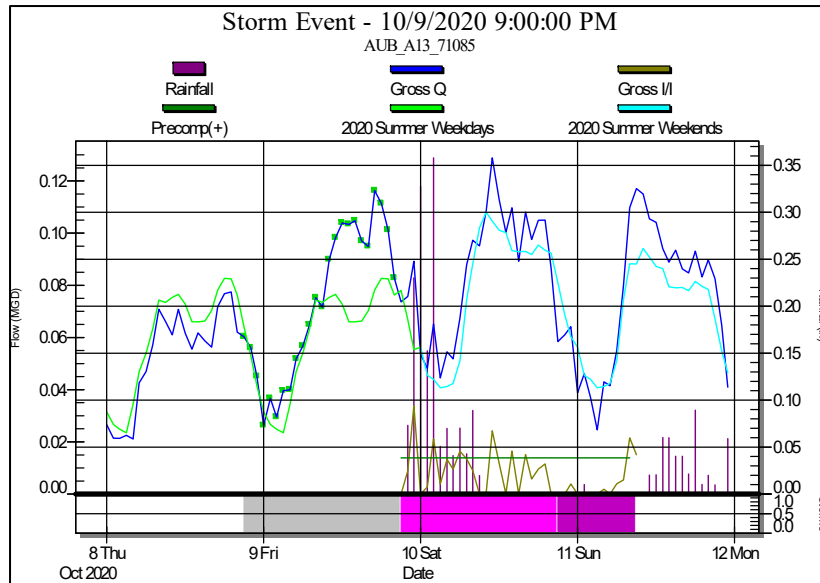
Meter Basins - 29 April 2021

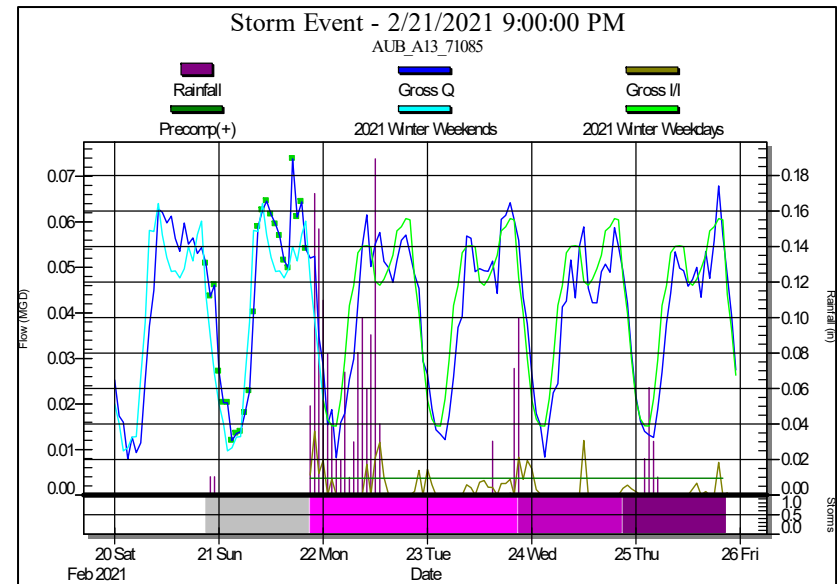
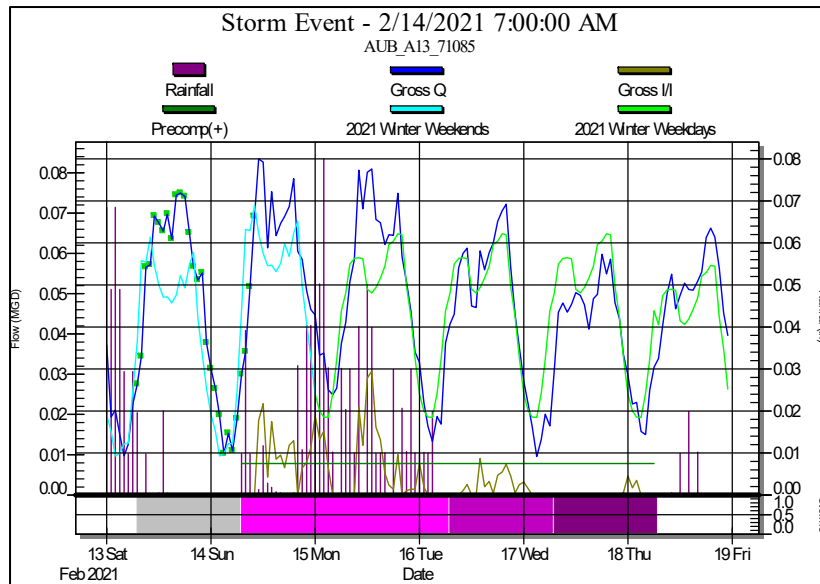
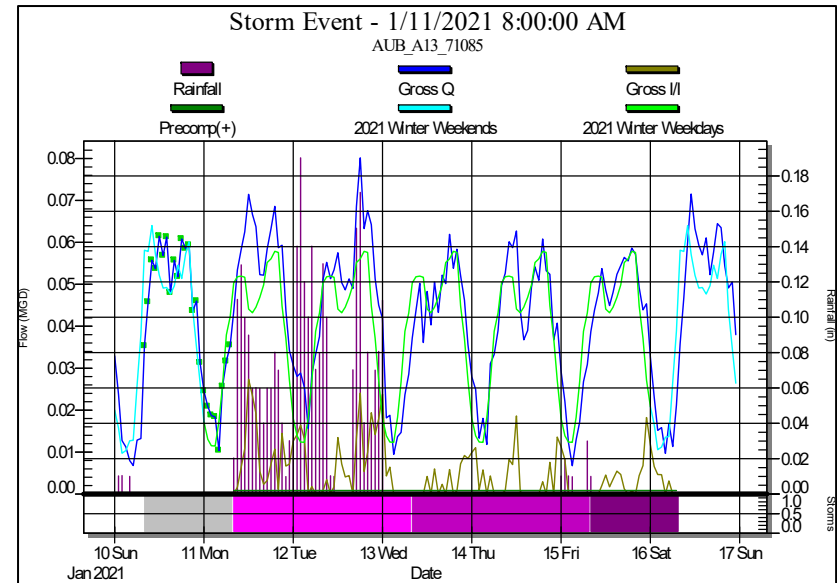
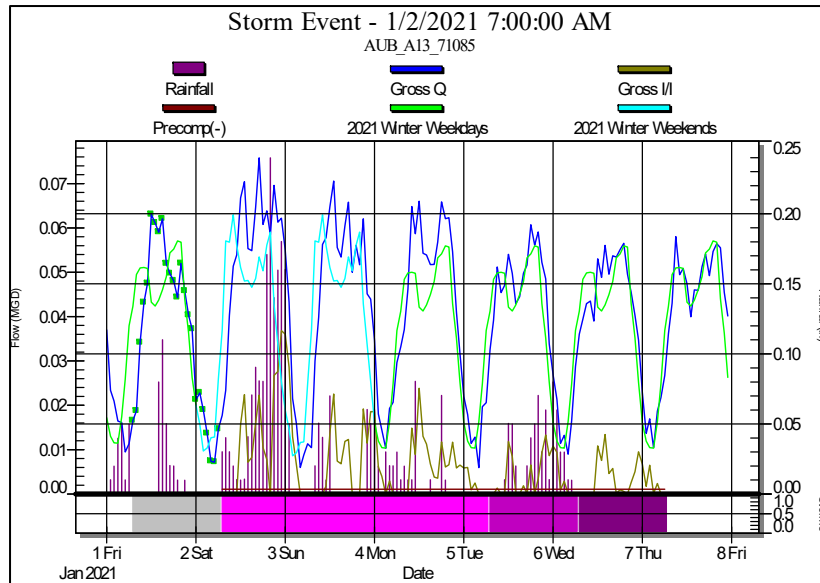


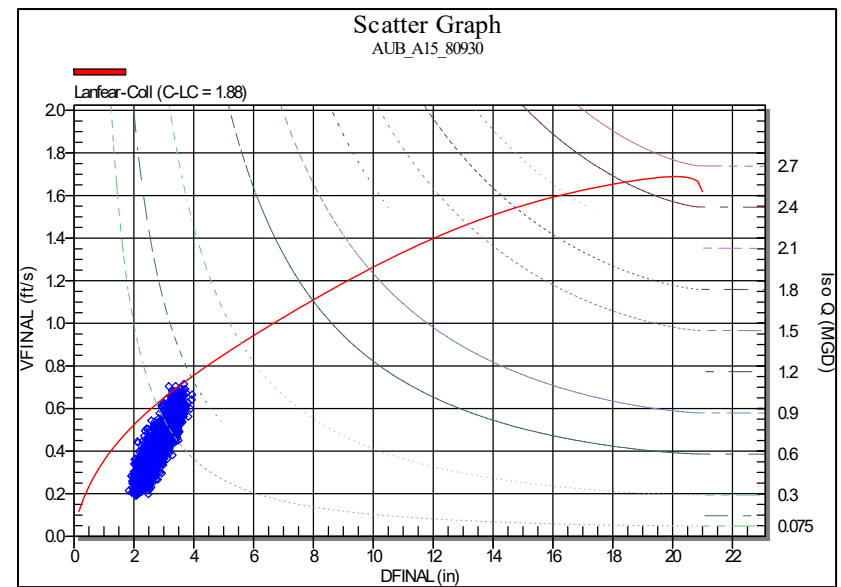
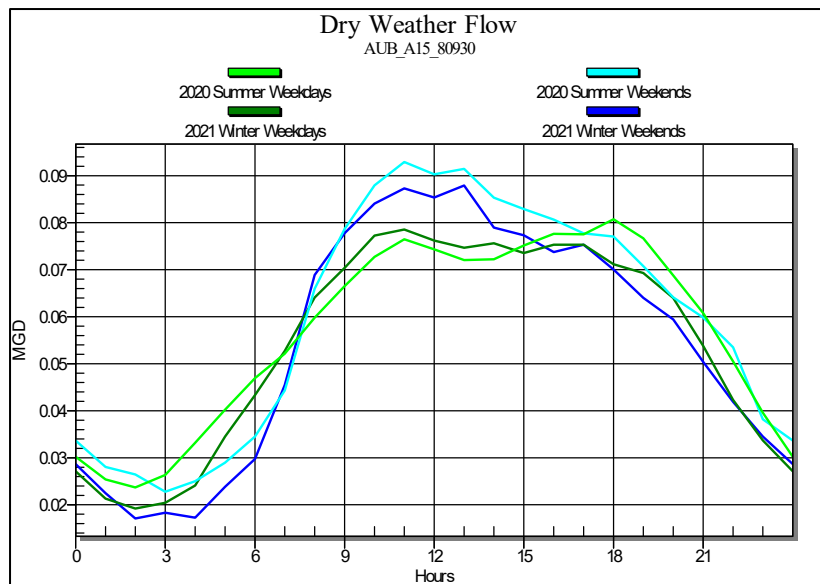
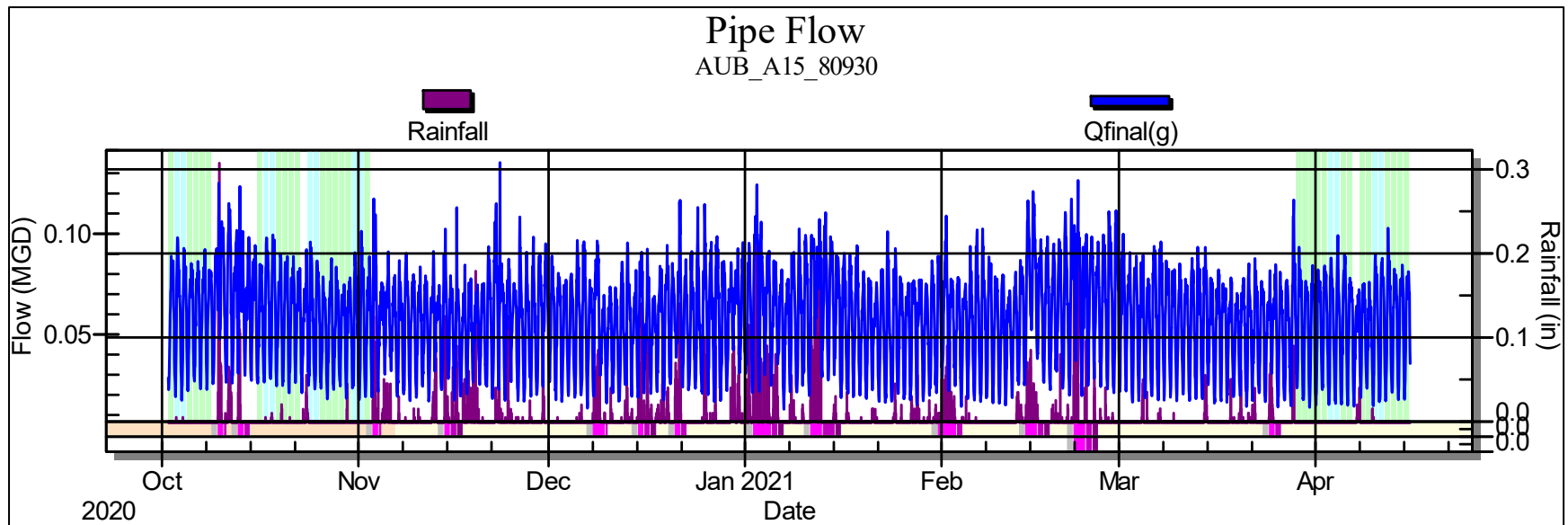


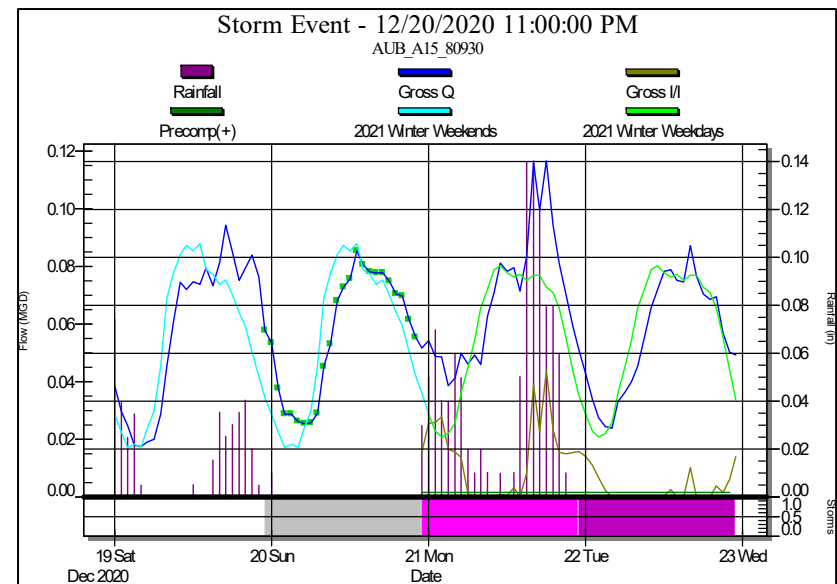
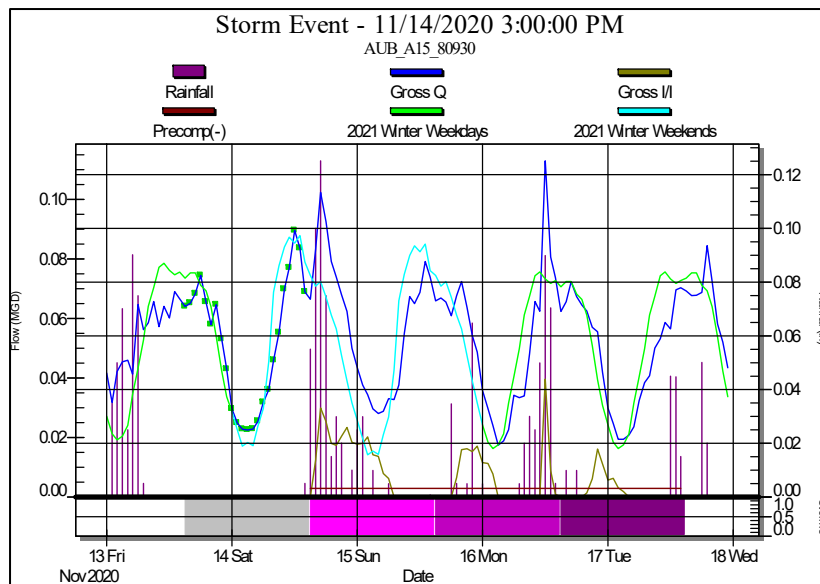
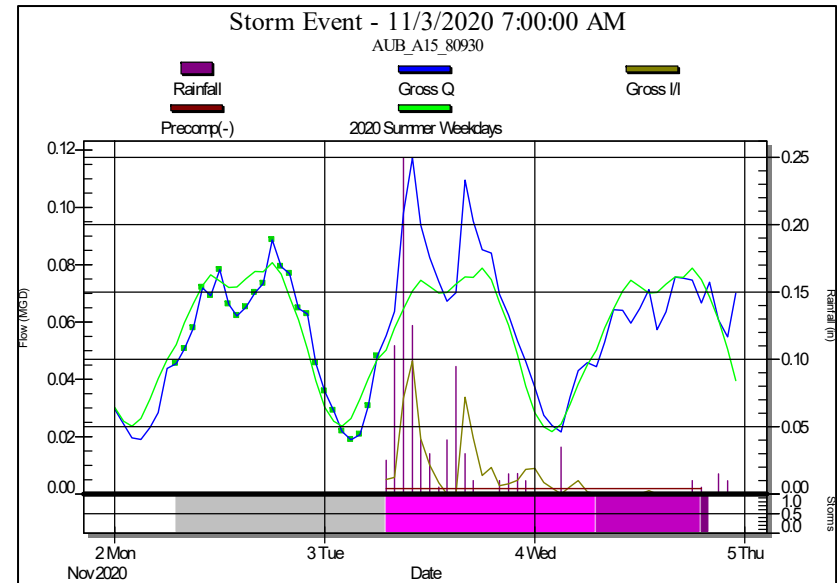
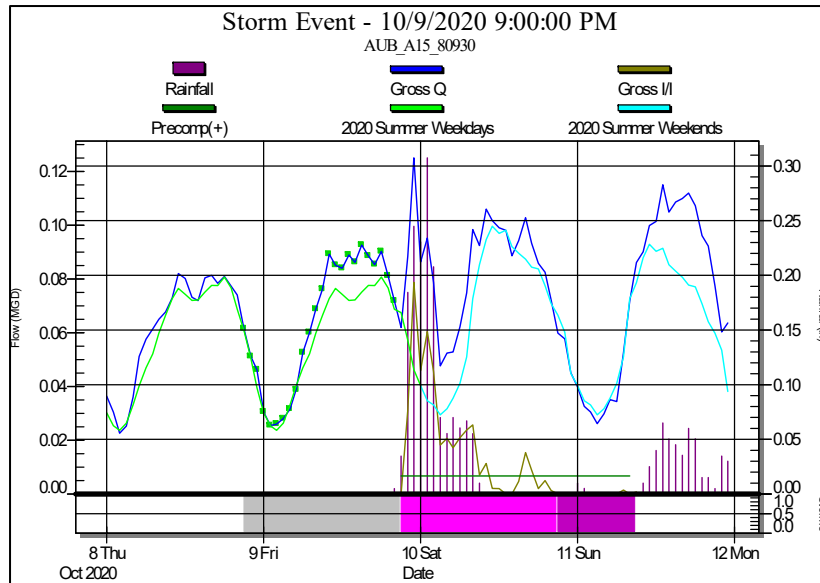


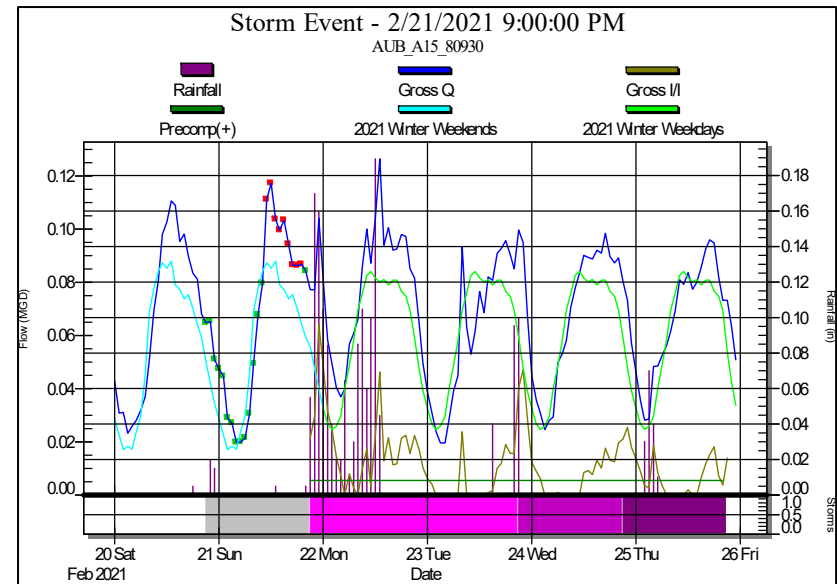
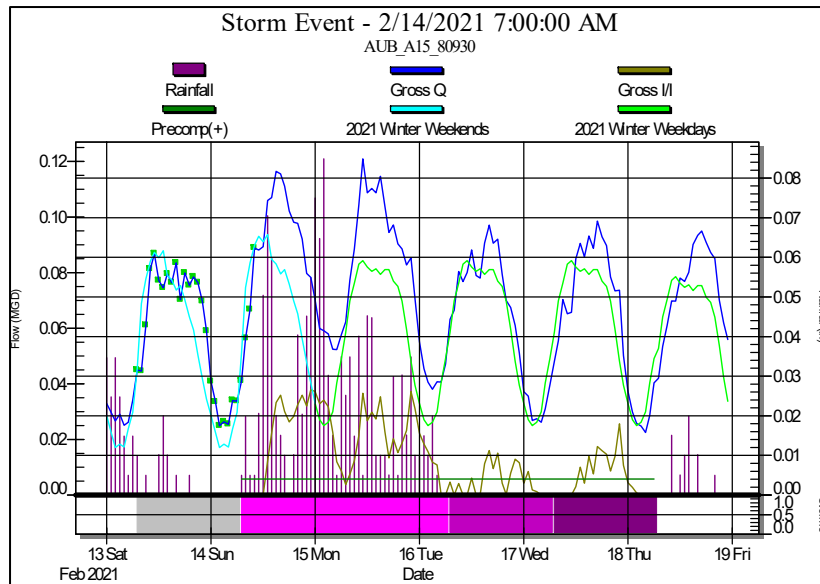
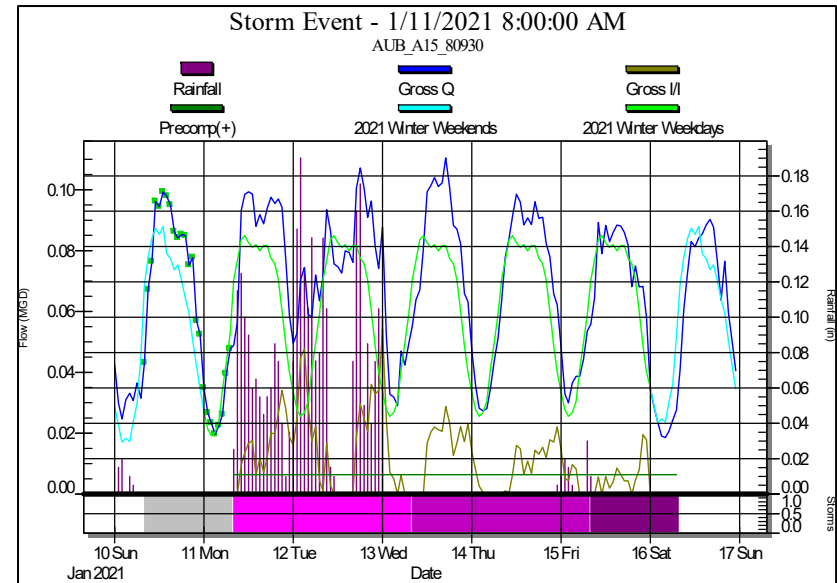
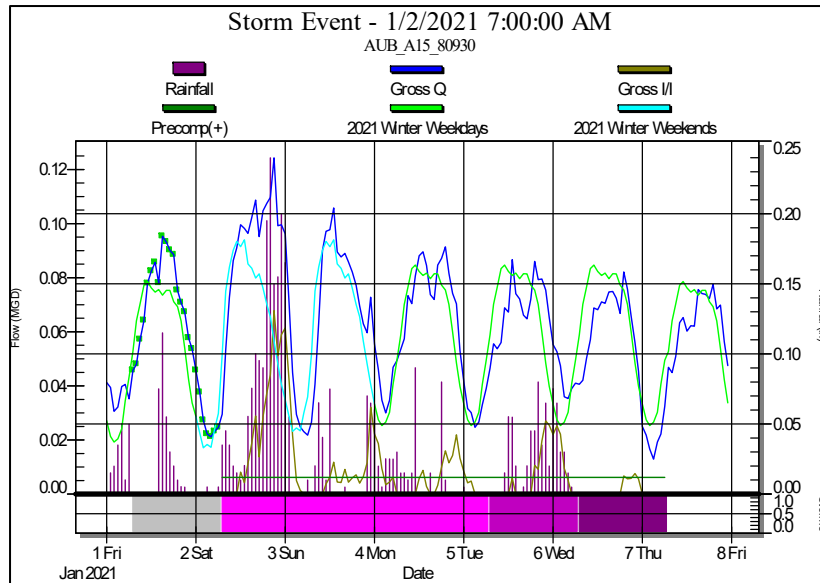


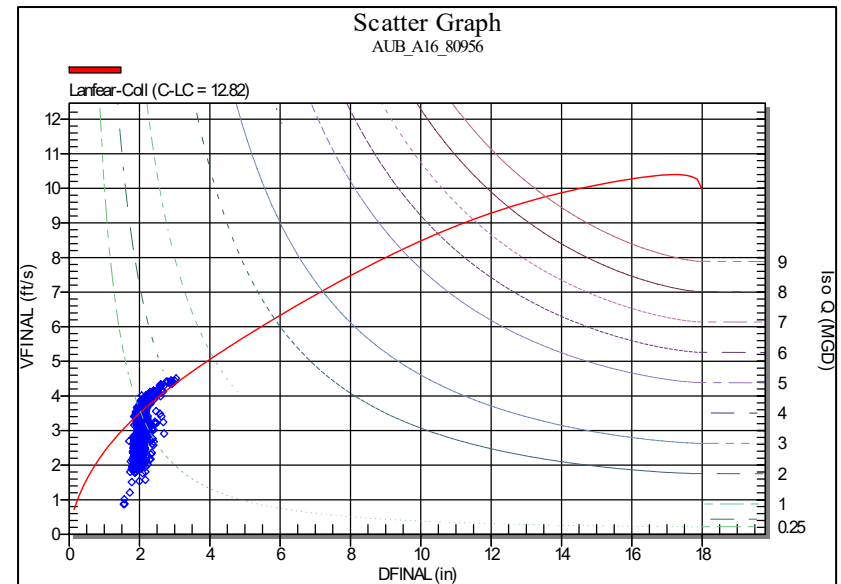
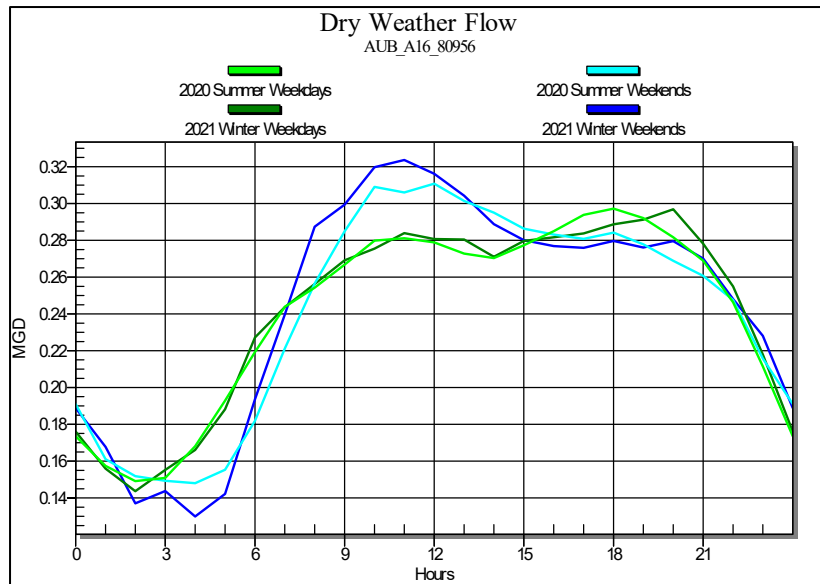
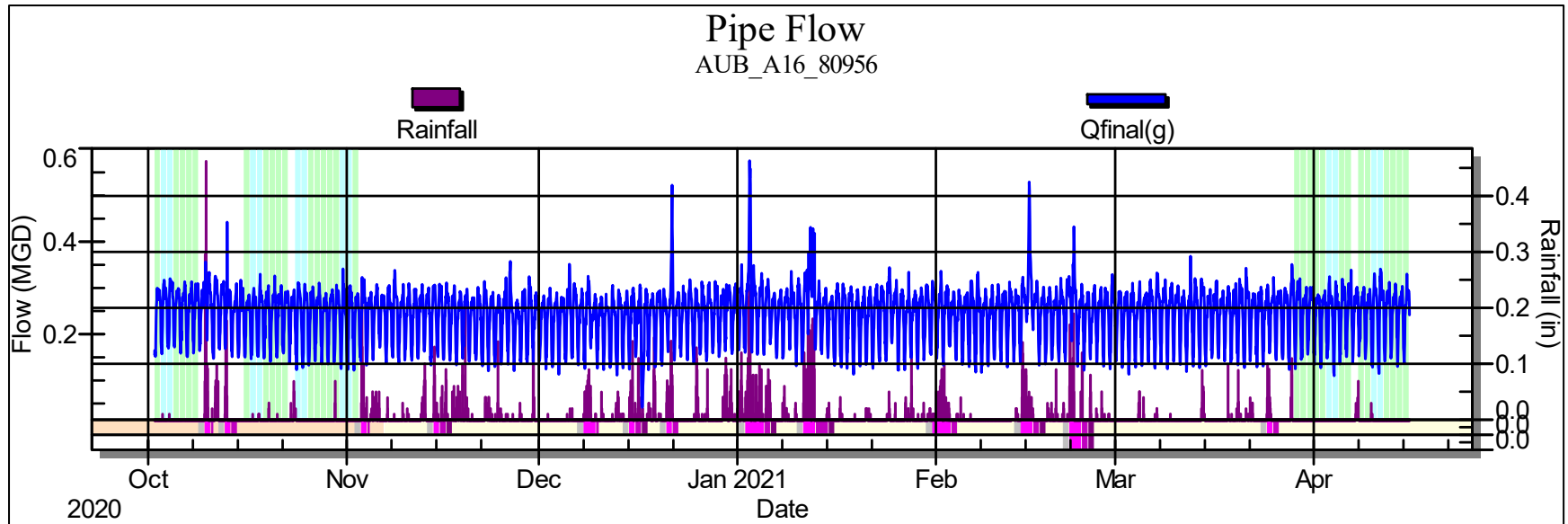


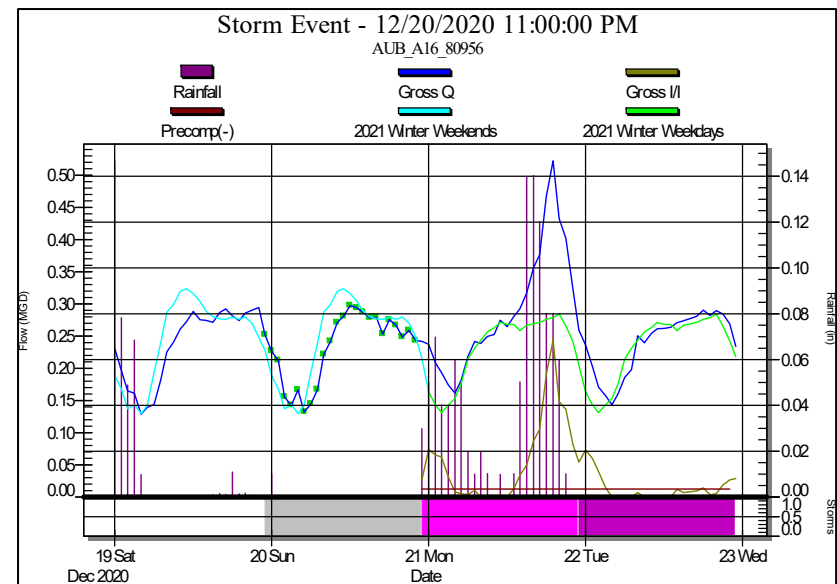
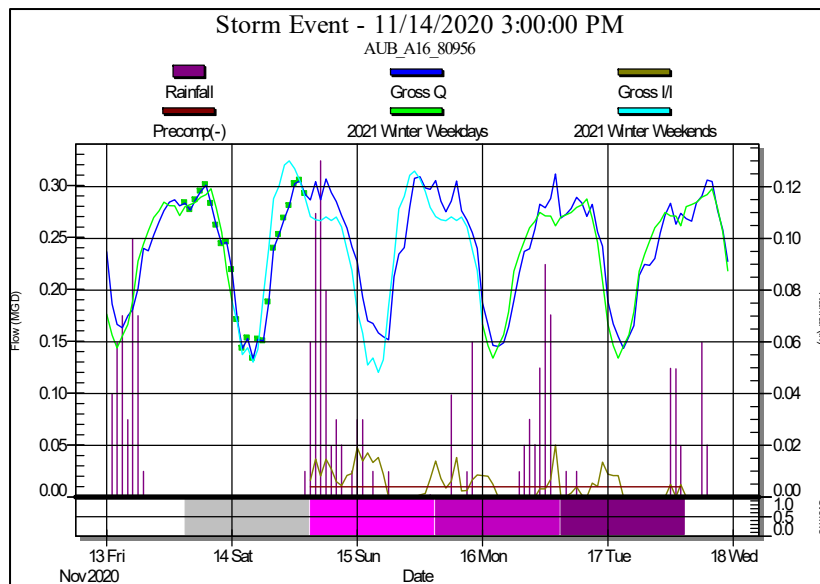
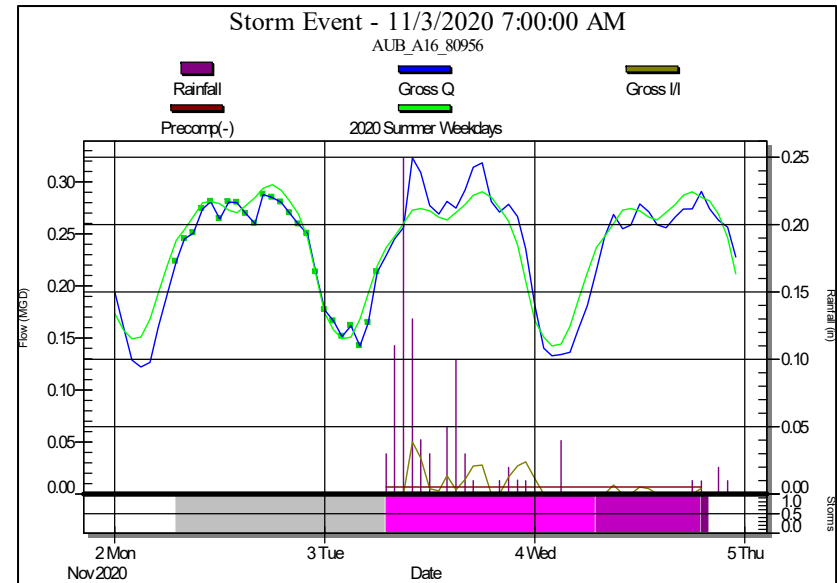
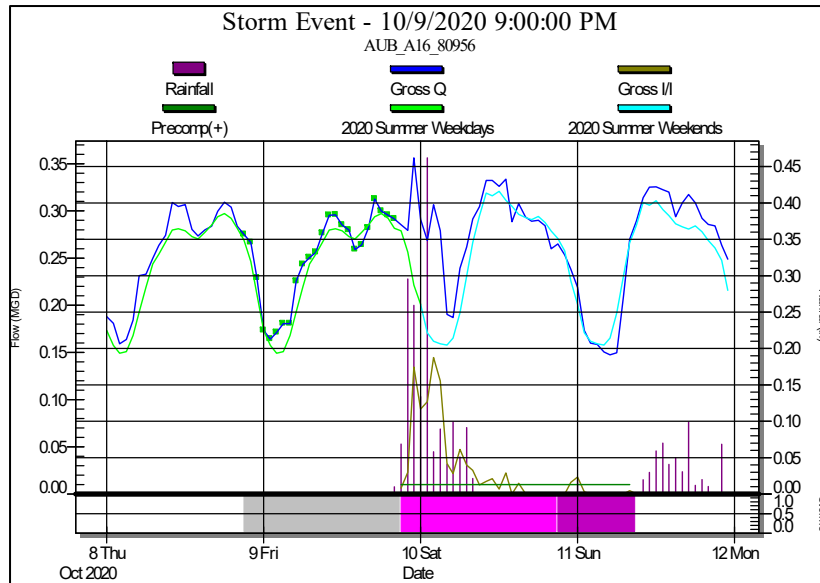


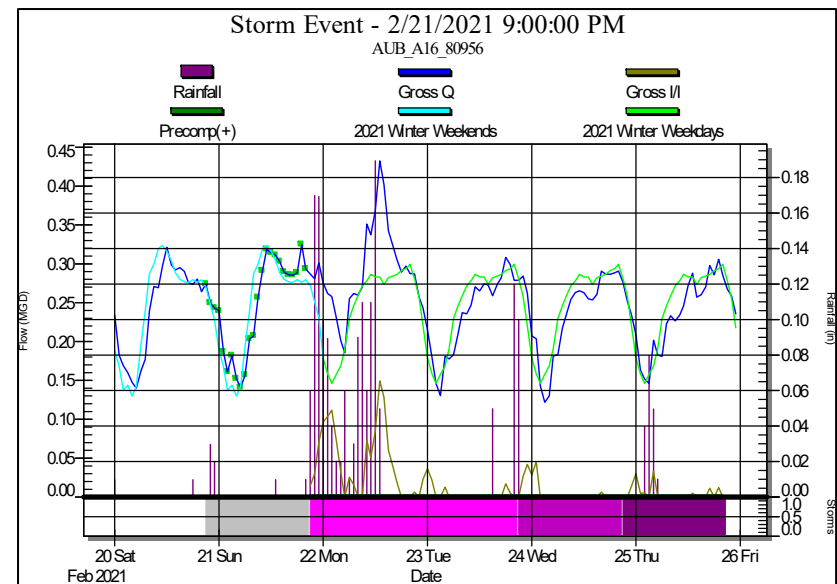
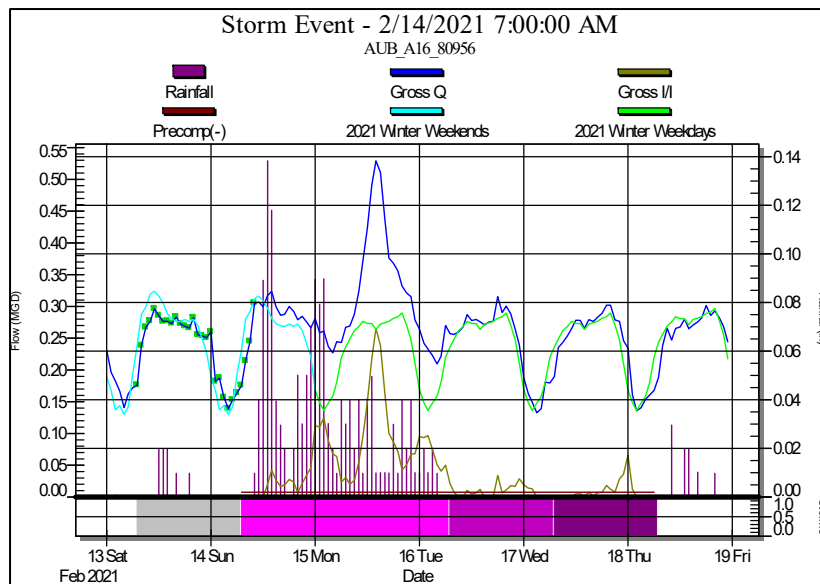
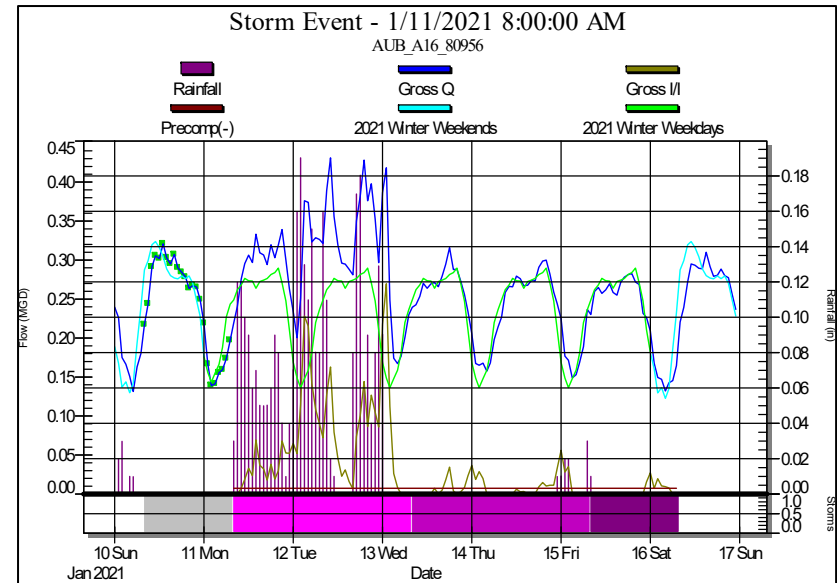
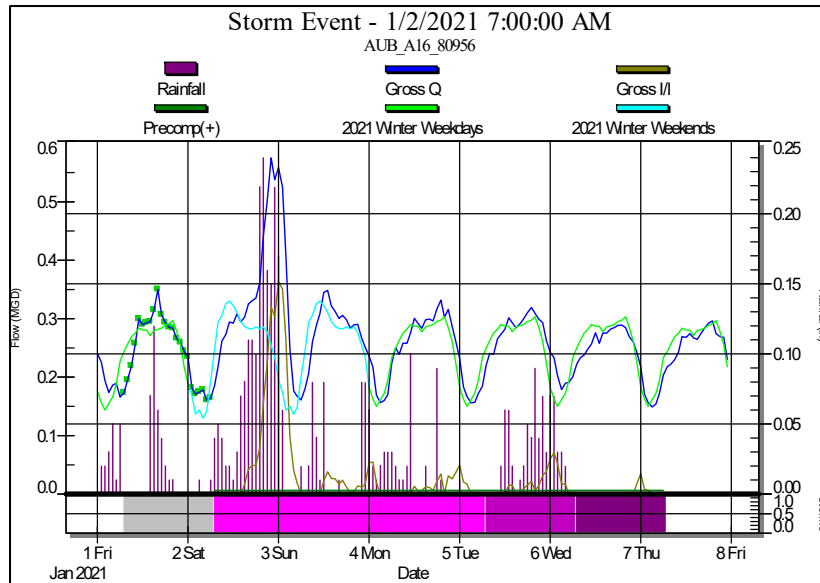


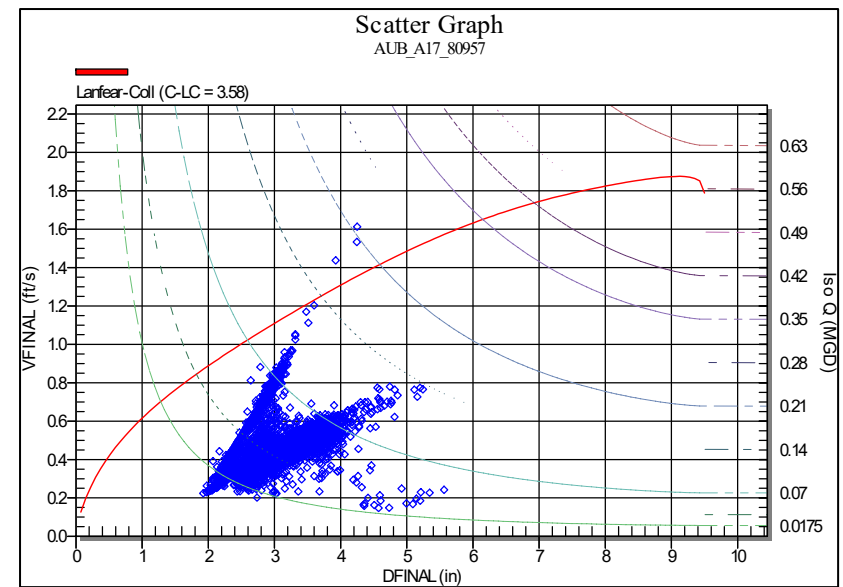
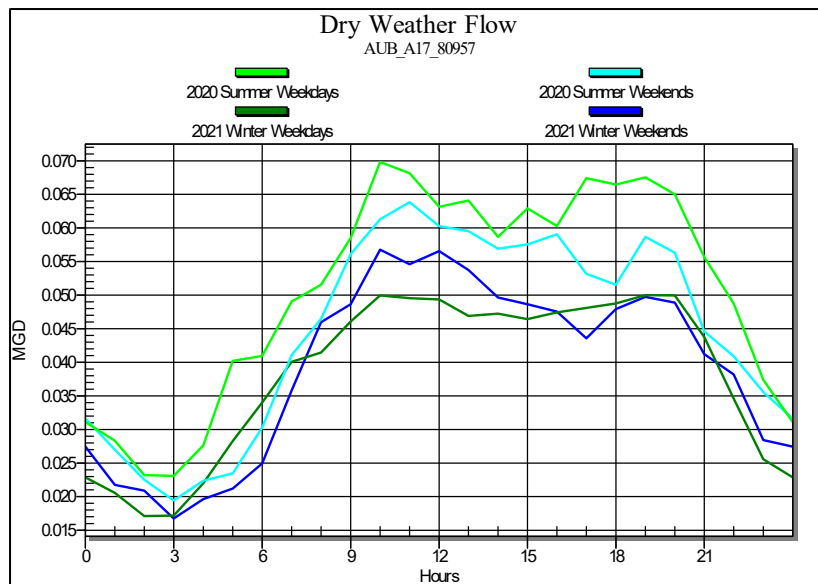
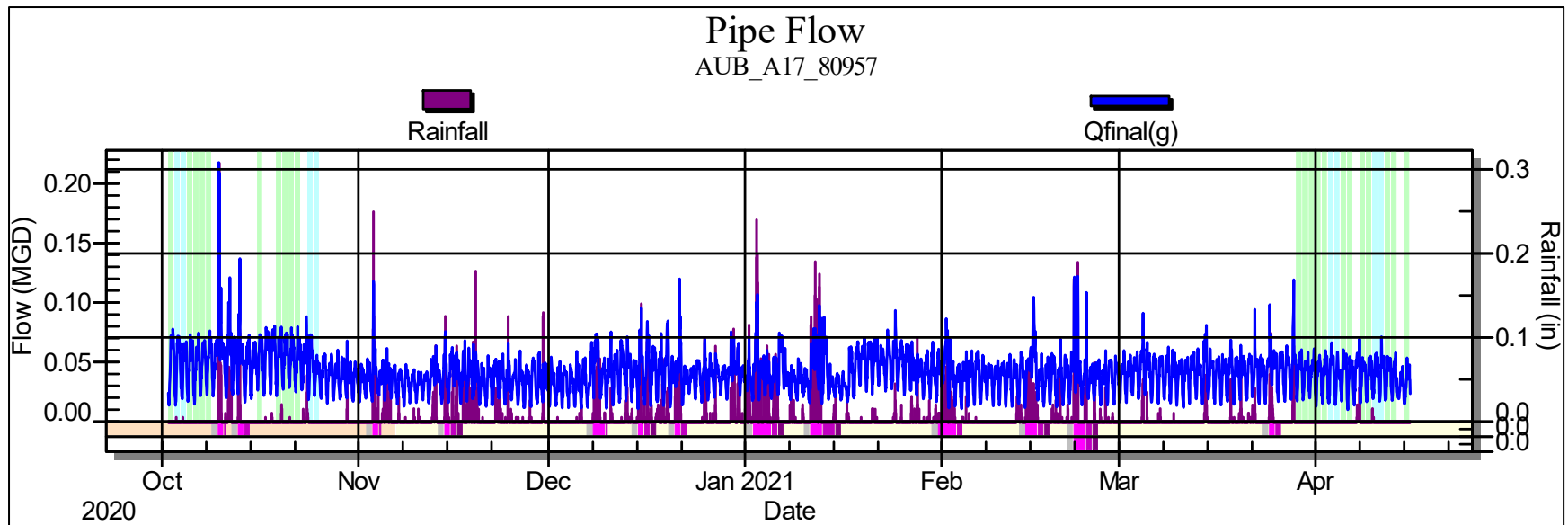


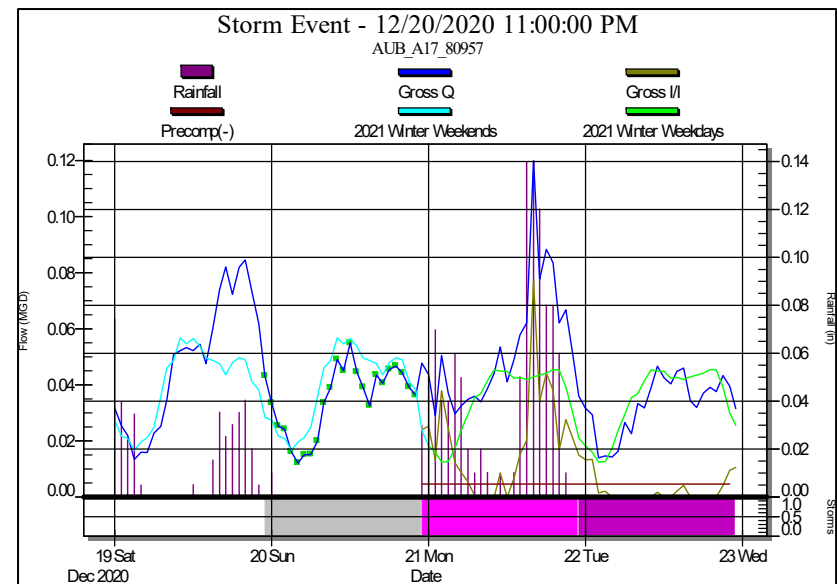
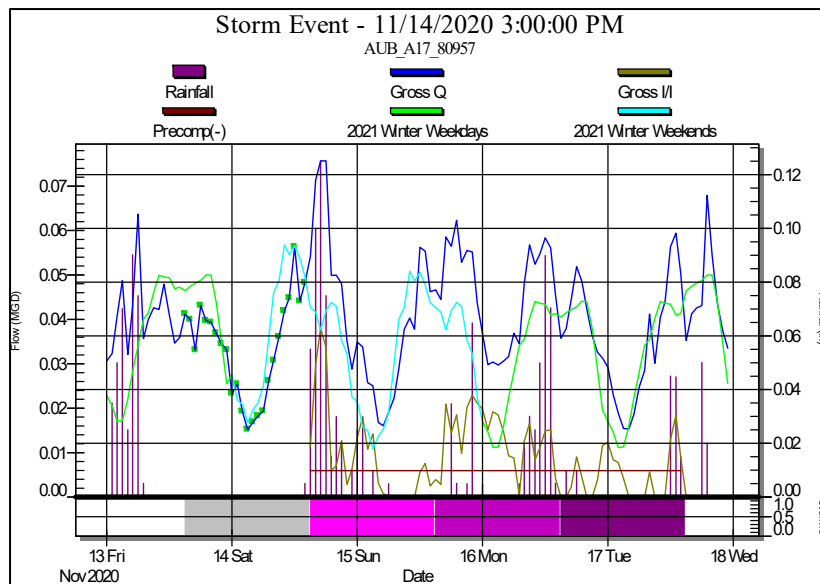
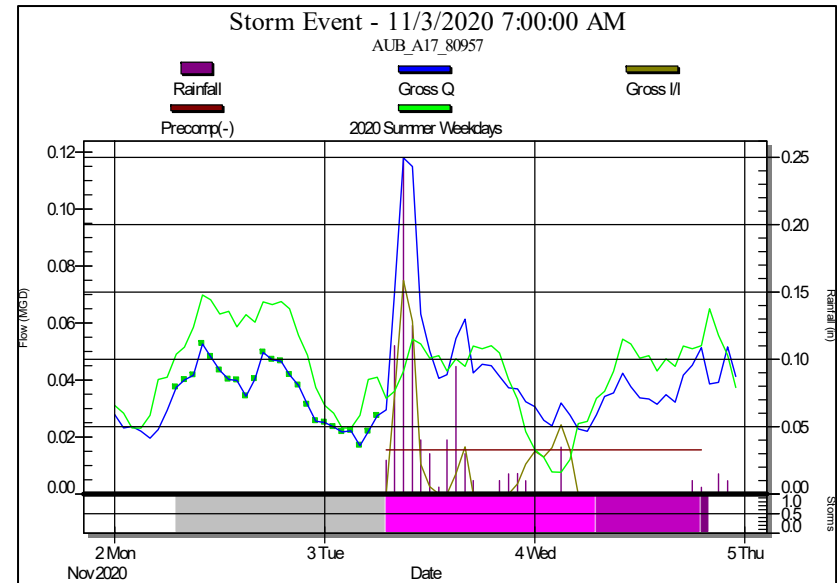
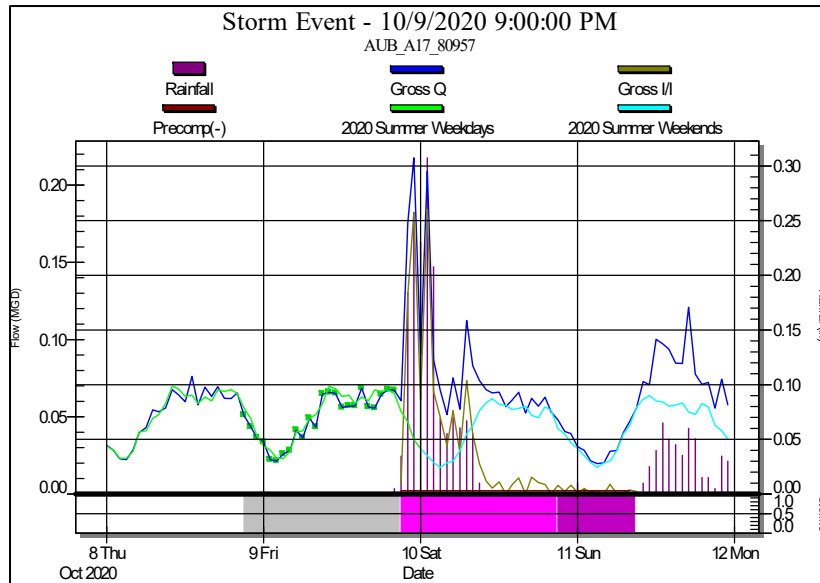


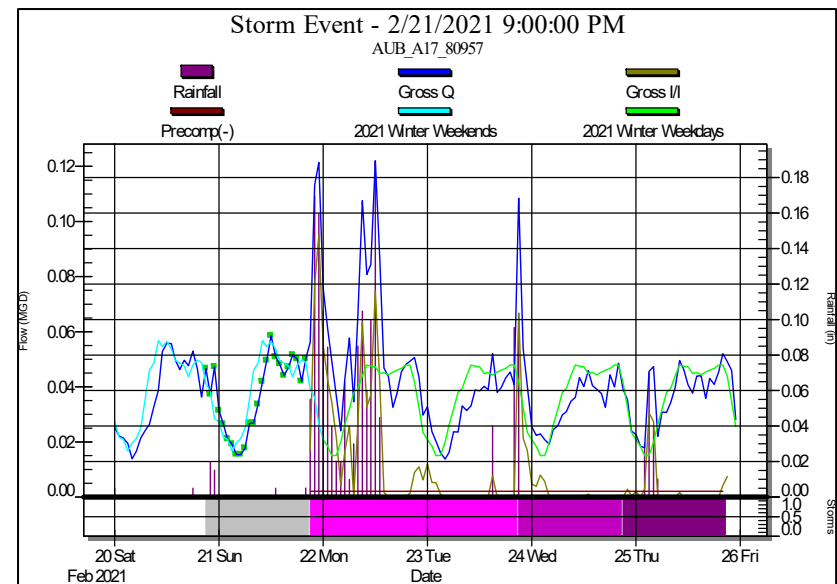
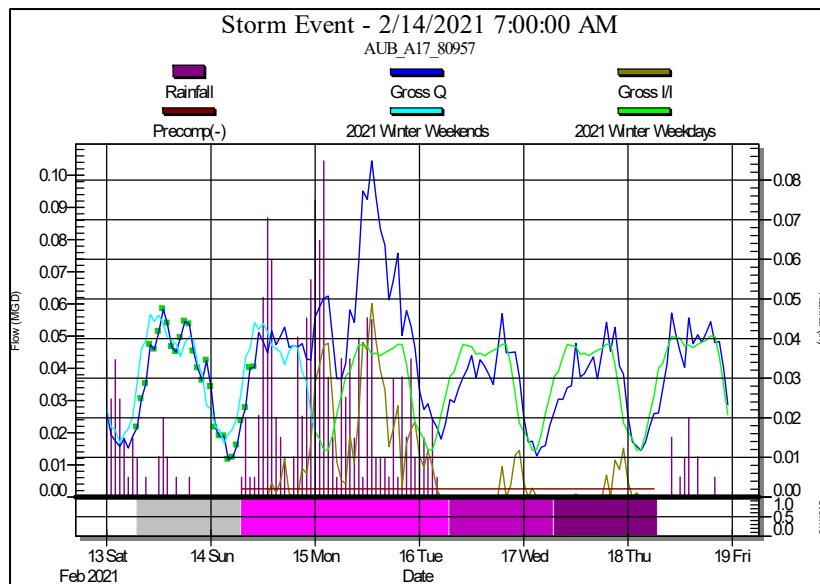
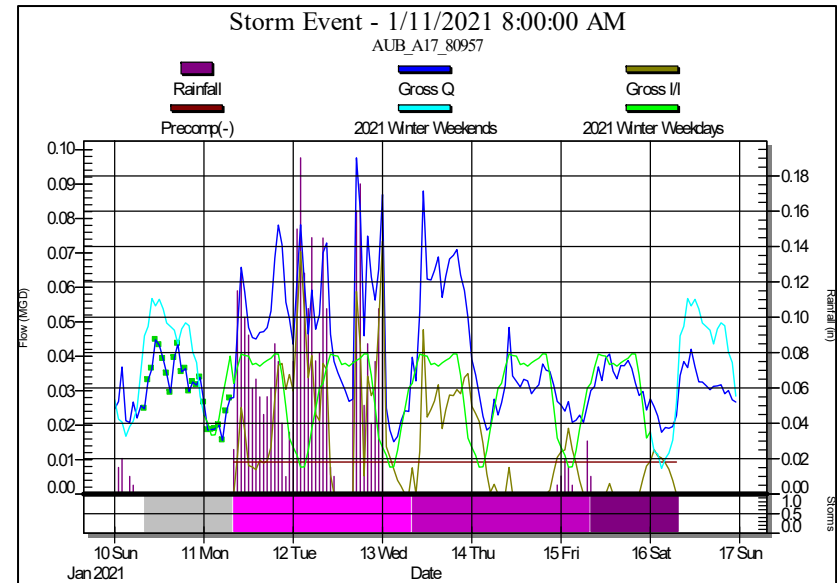
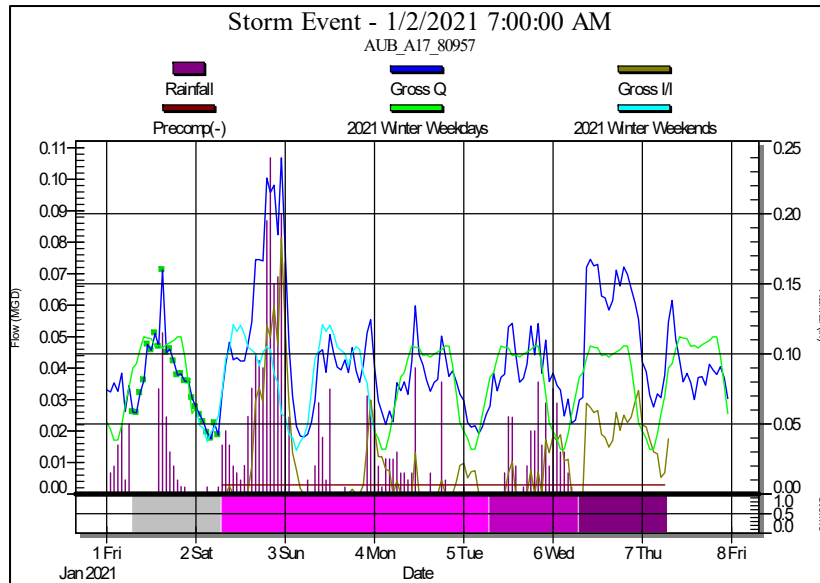


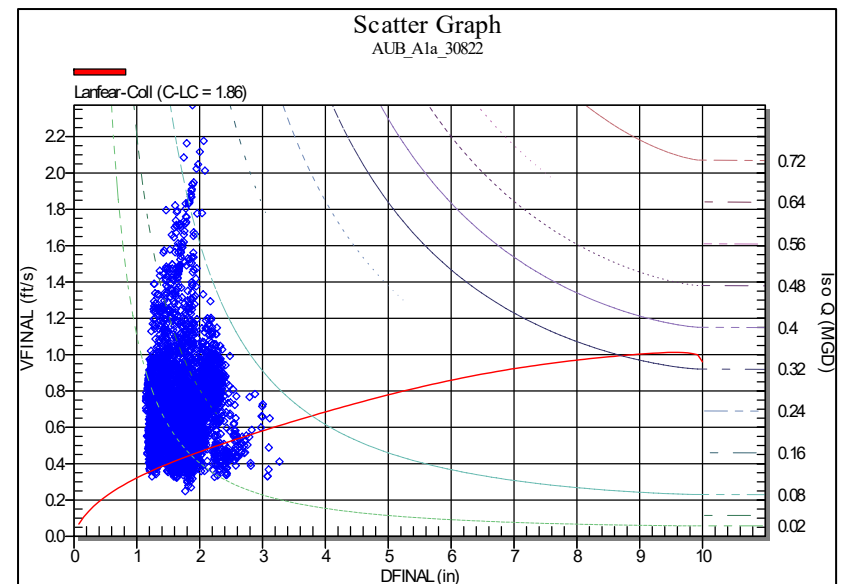
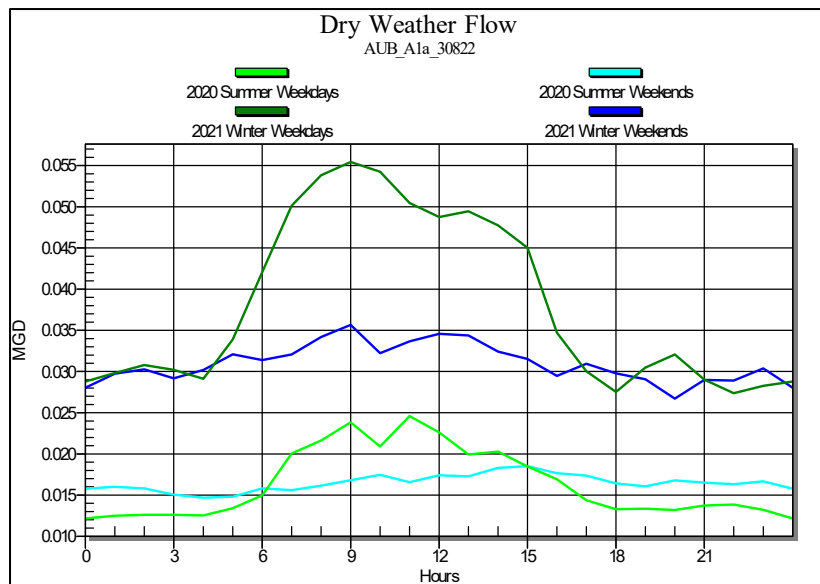
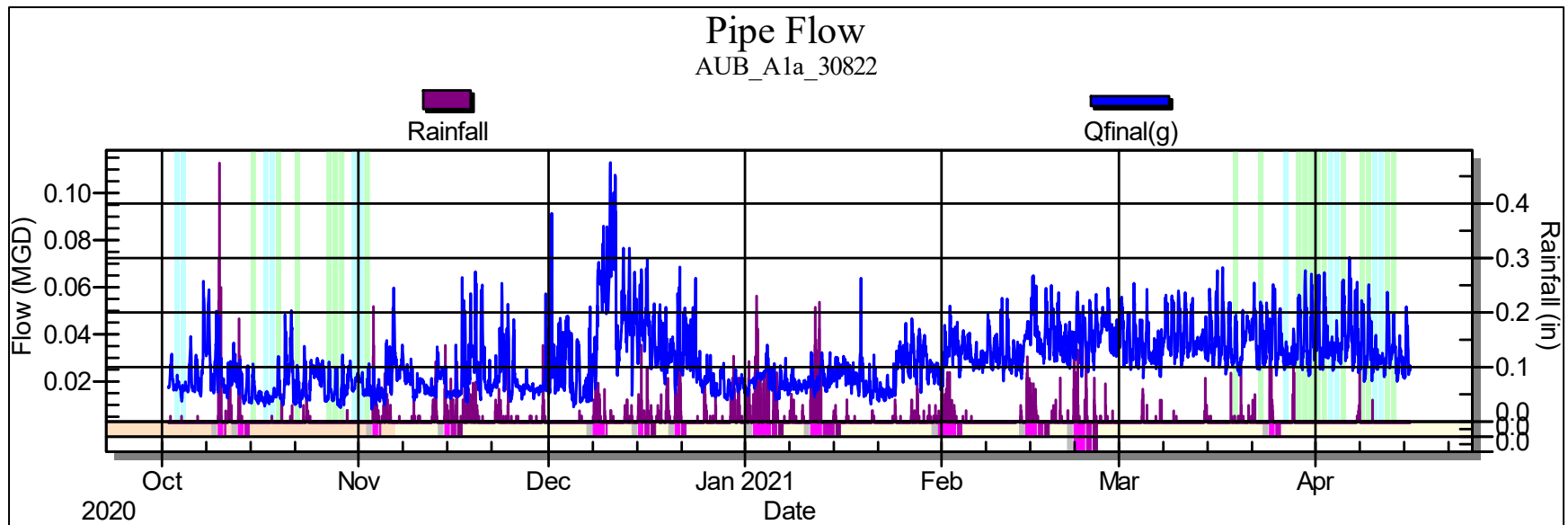


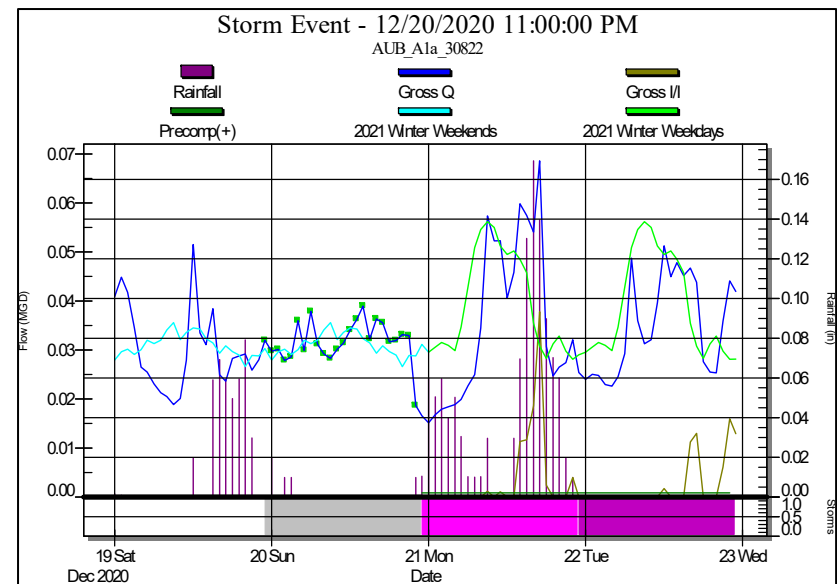
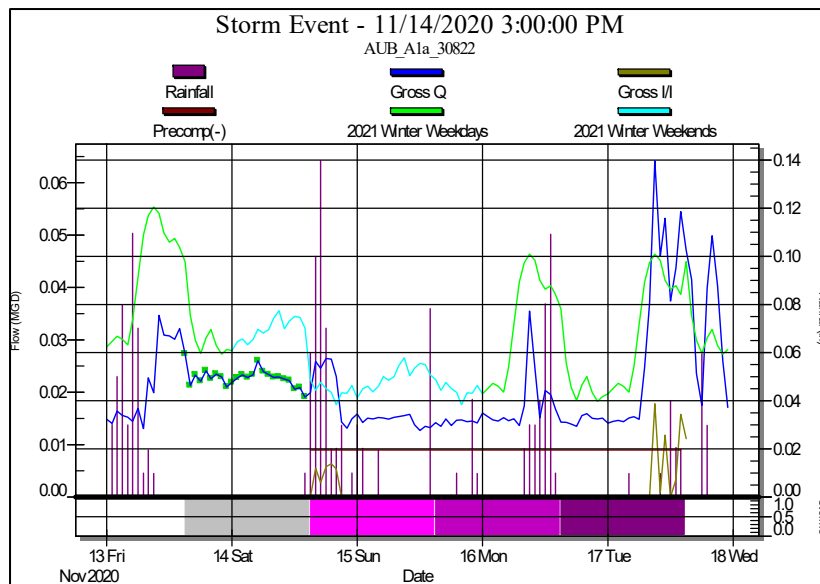
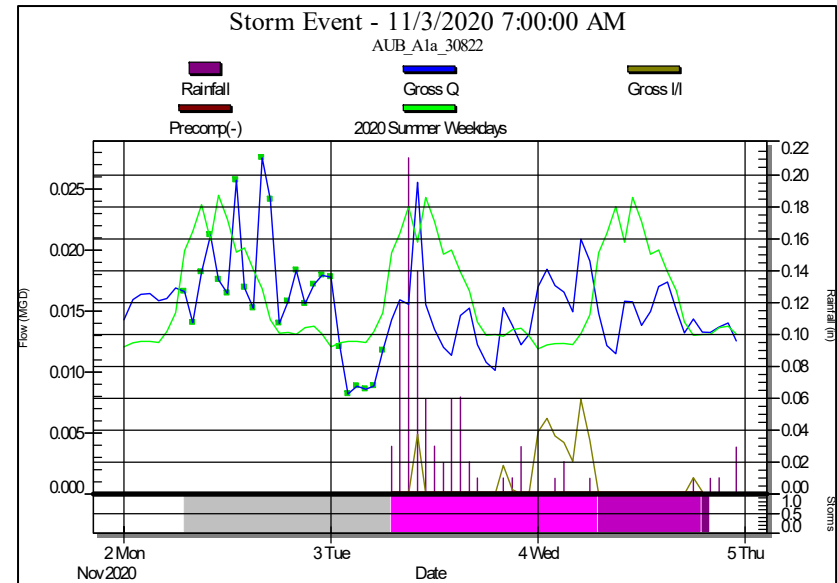
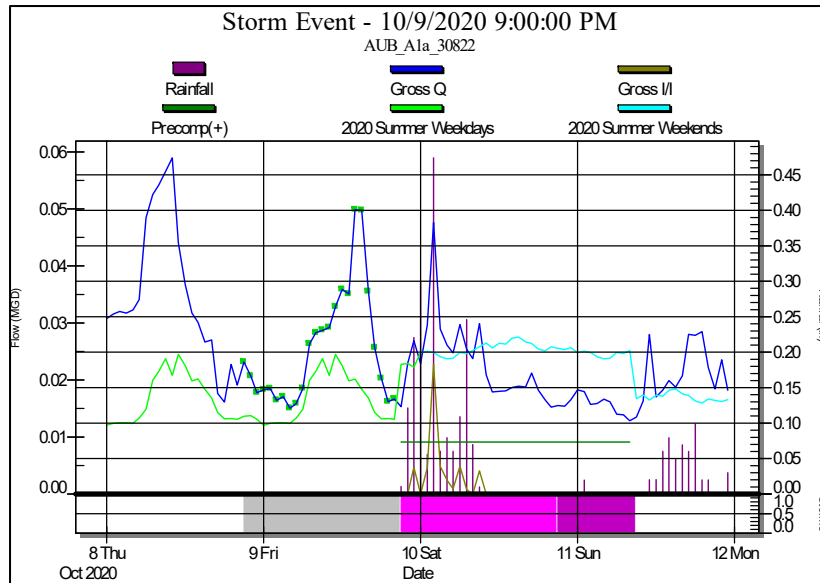


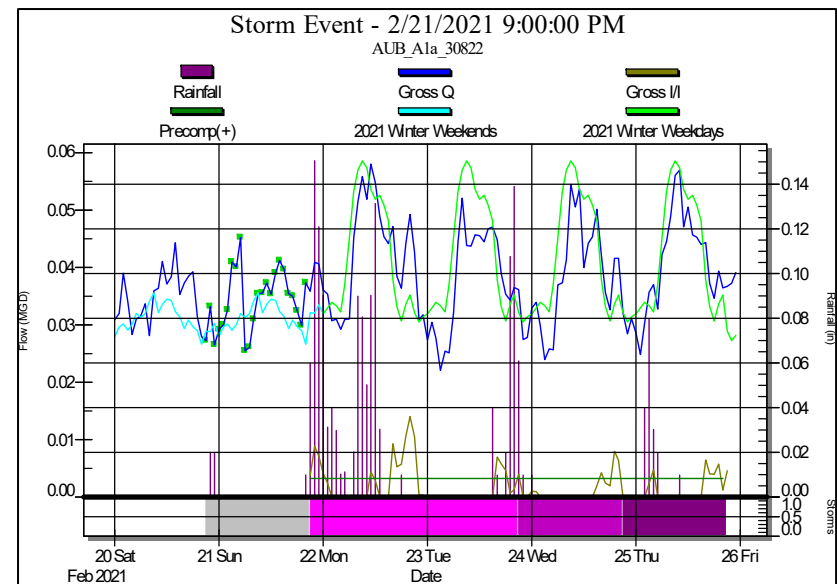
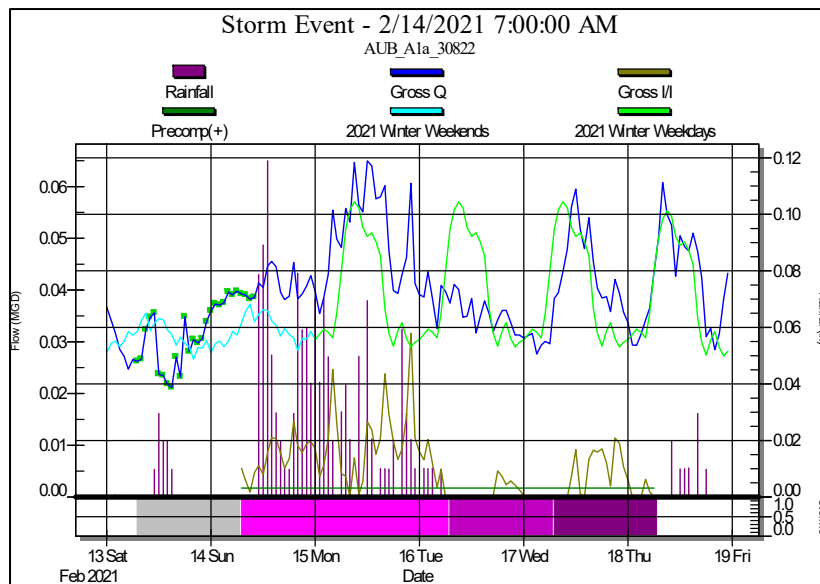
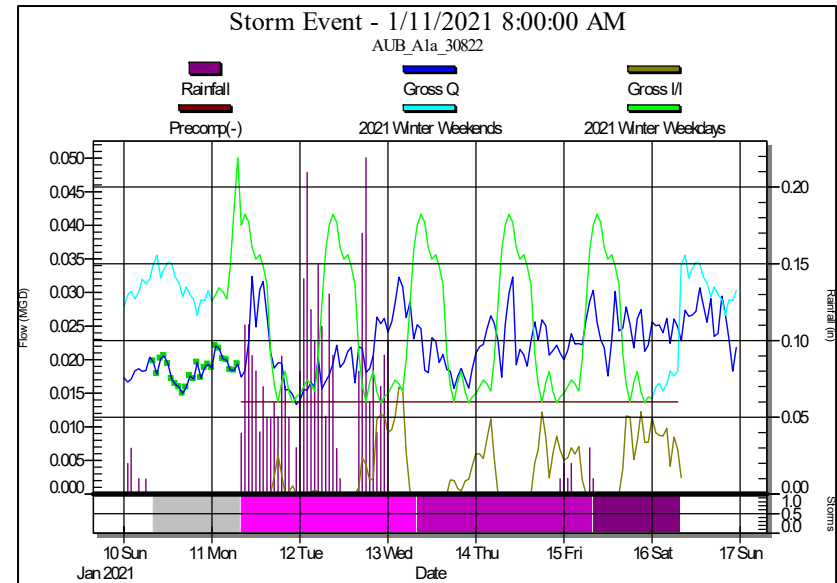
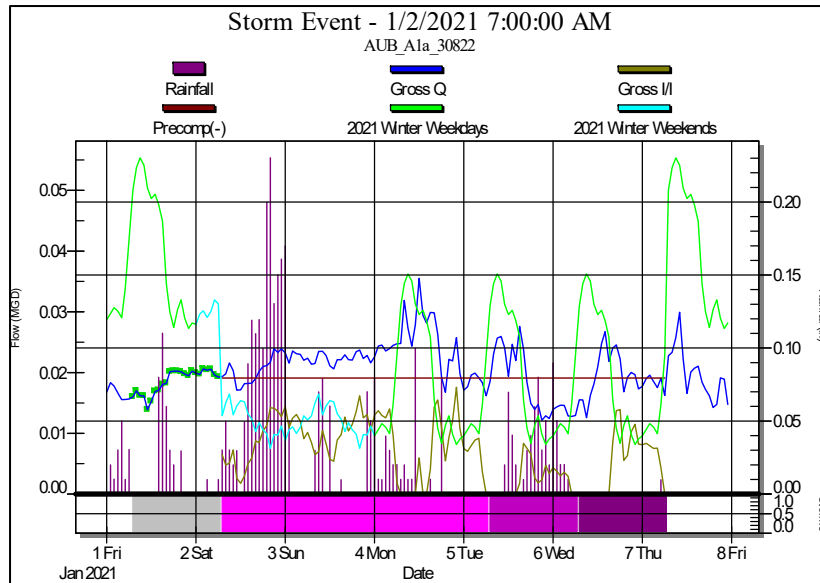


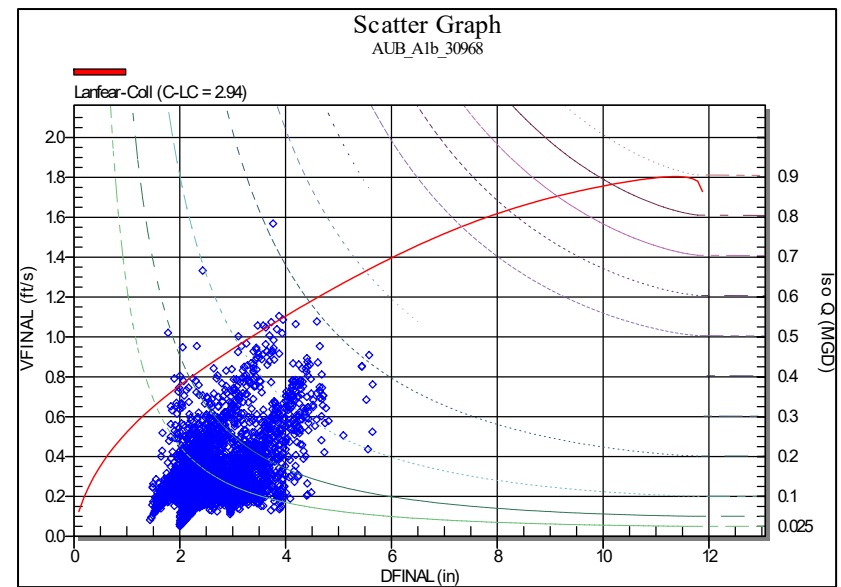
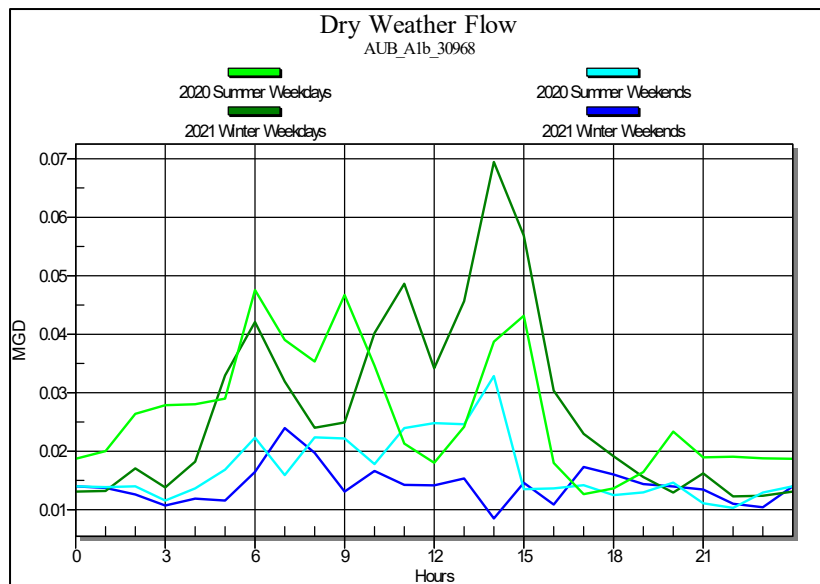
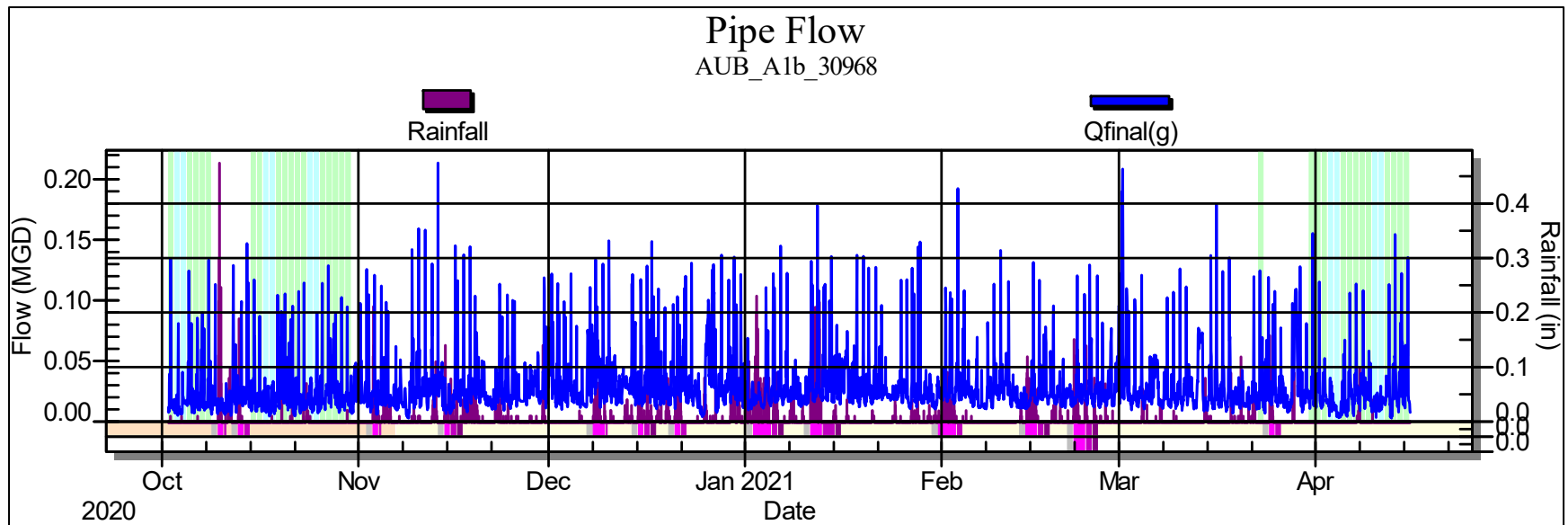


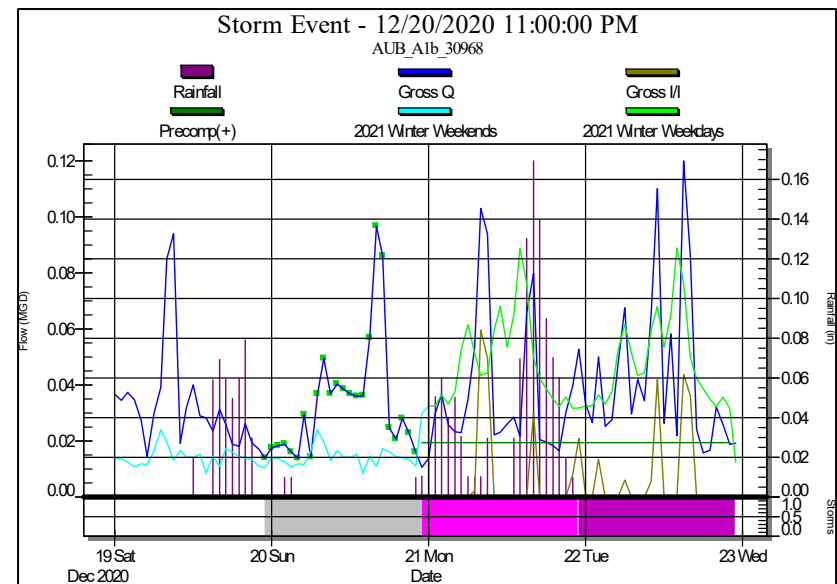
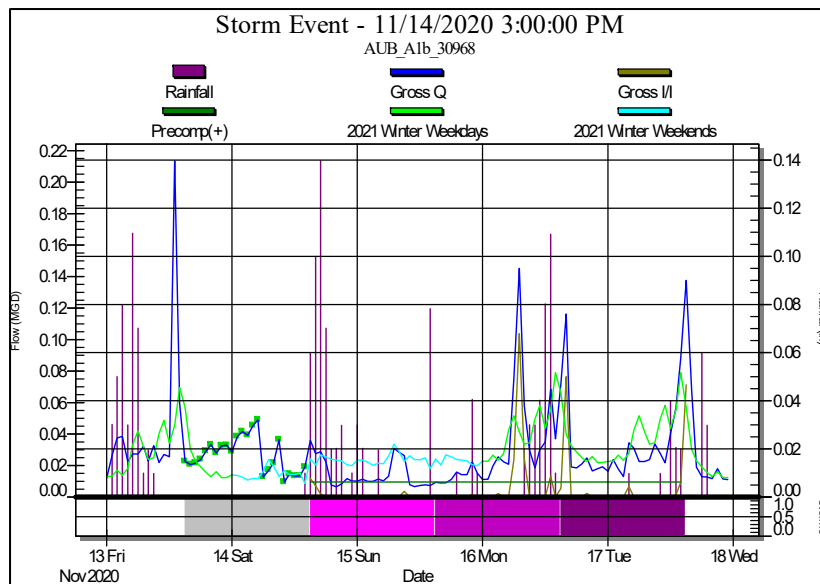
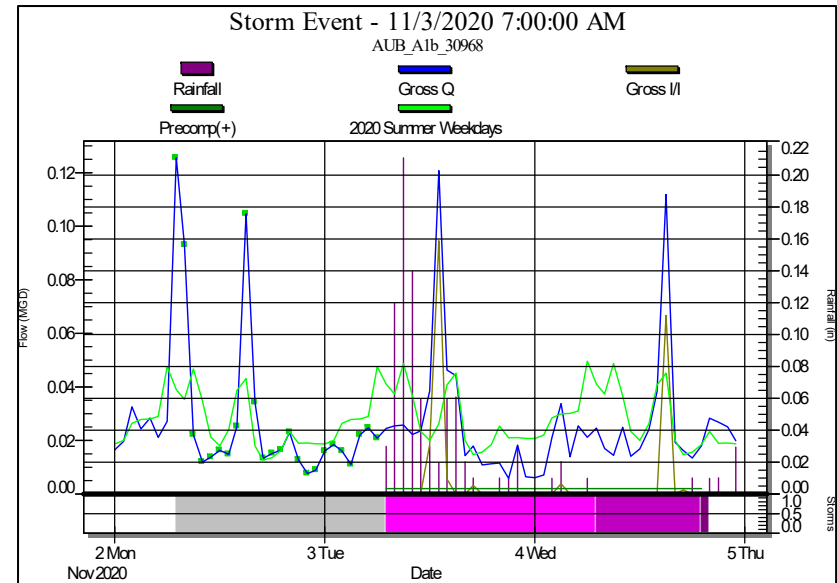
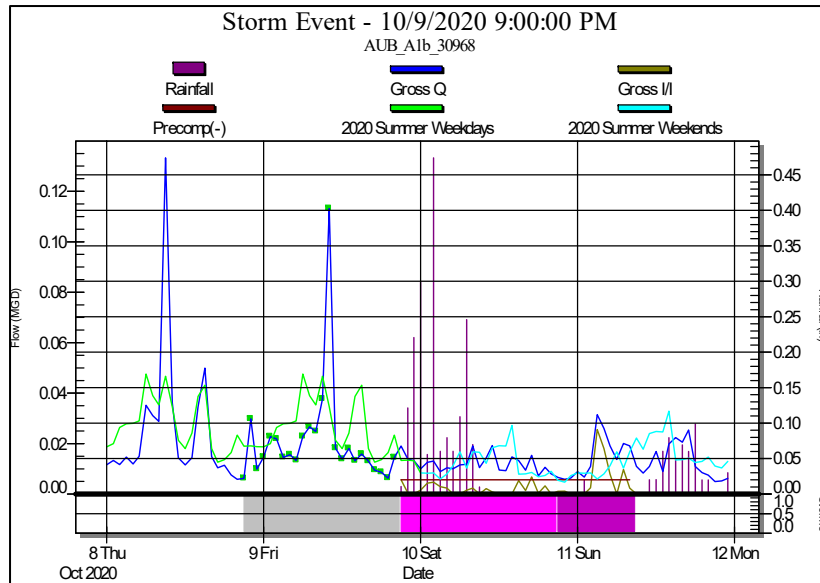


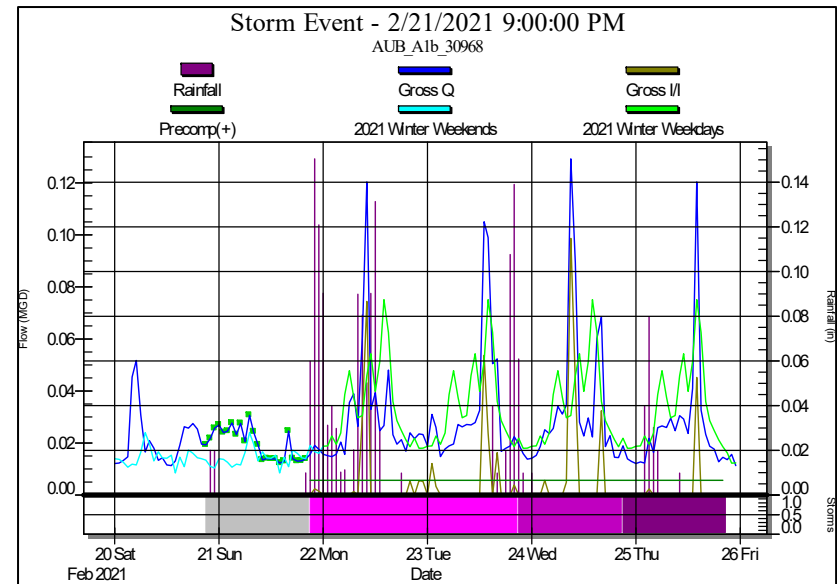
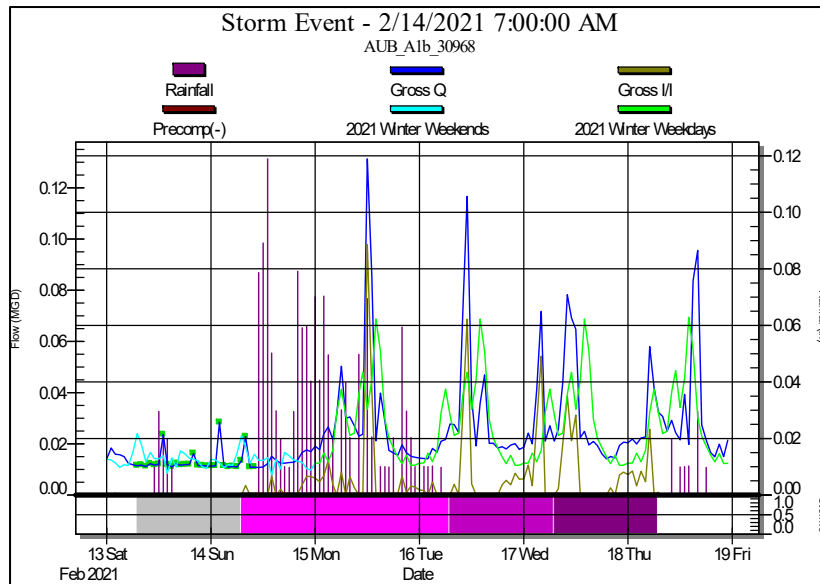
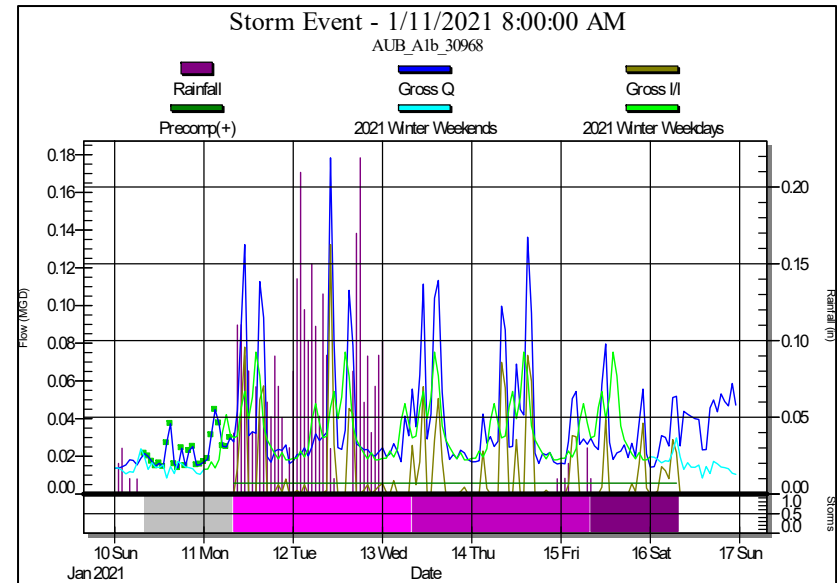
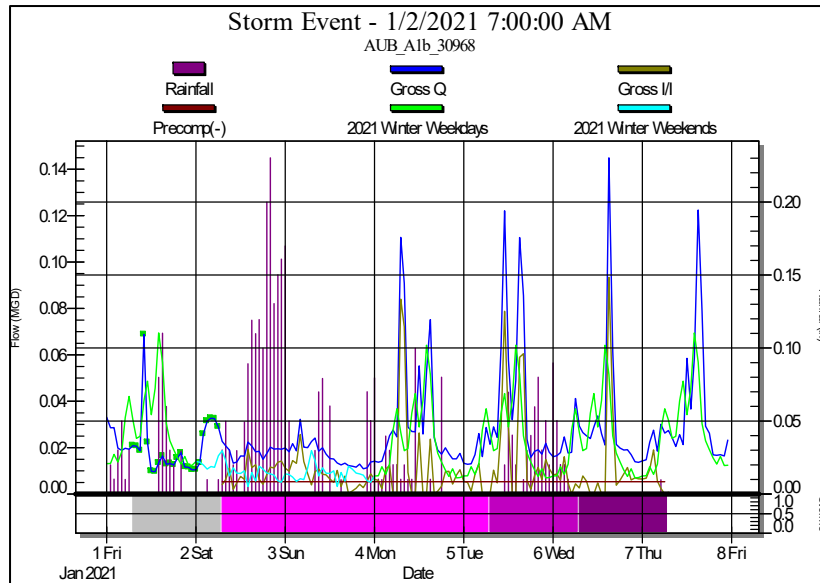


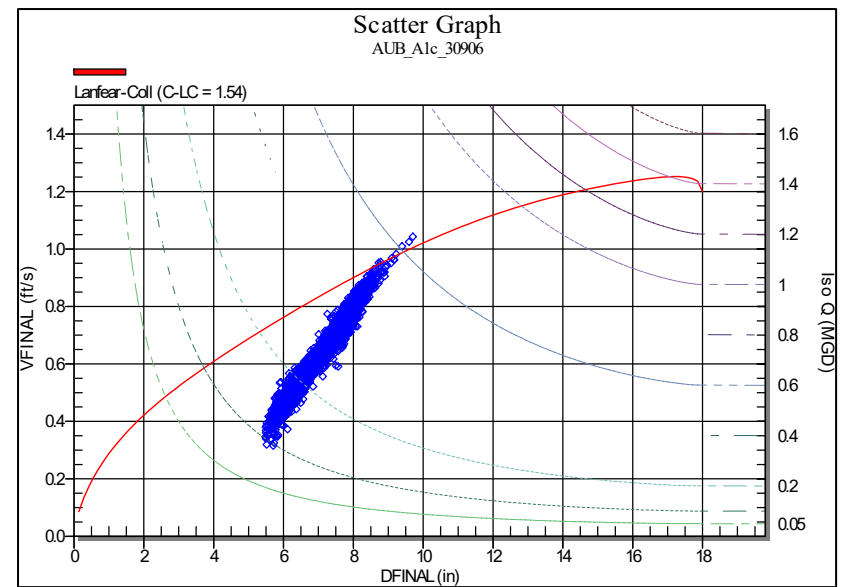
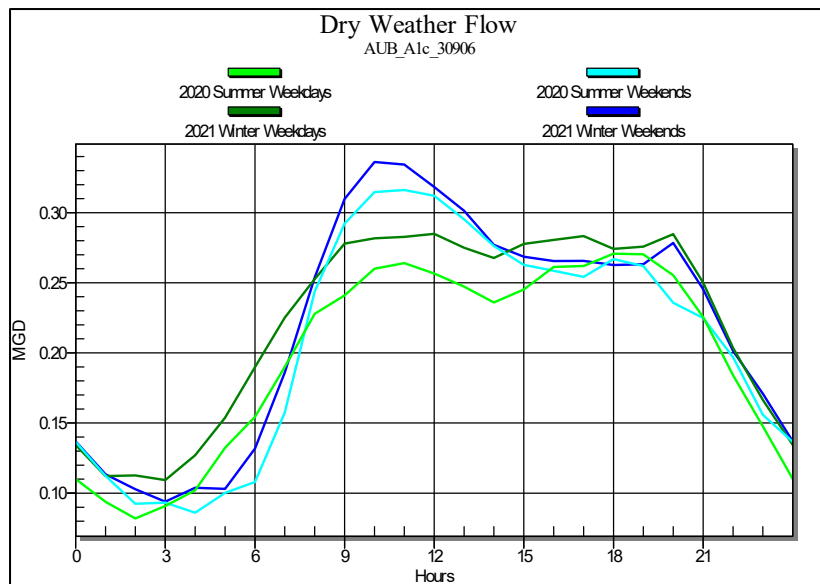
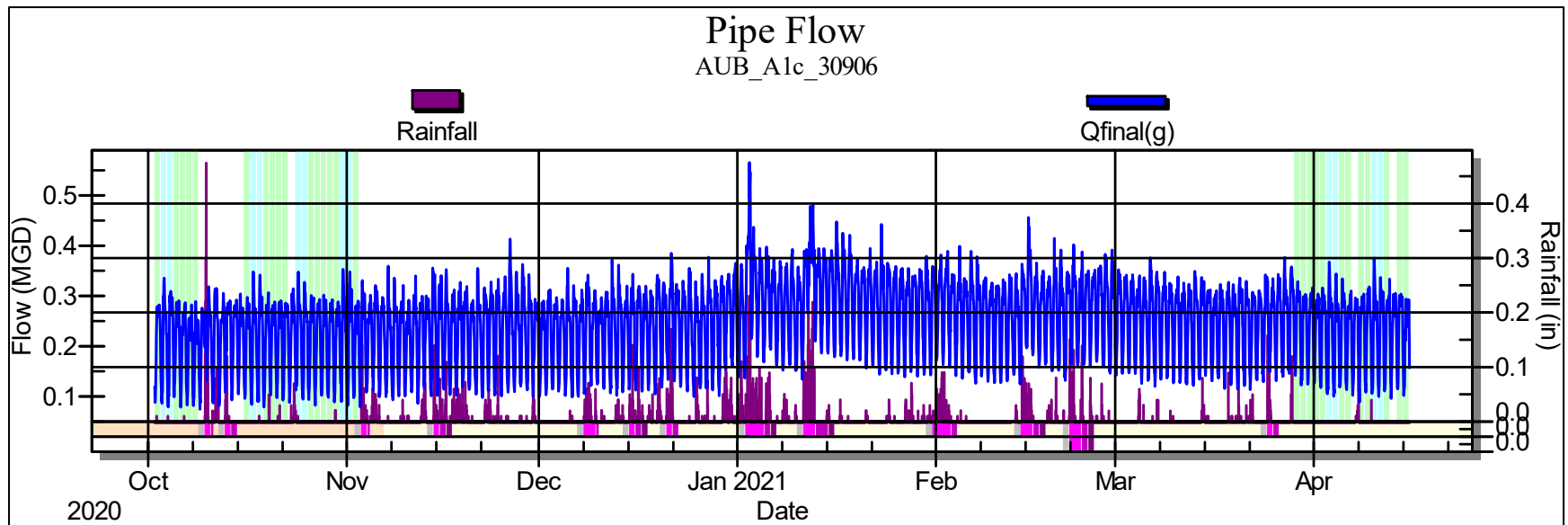


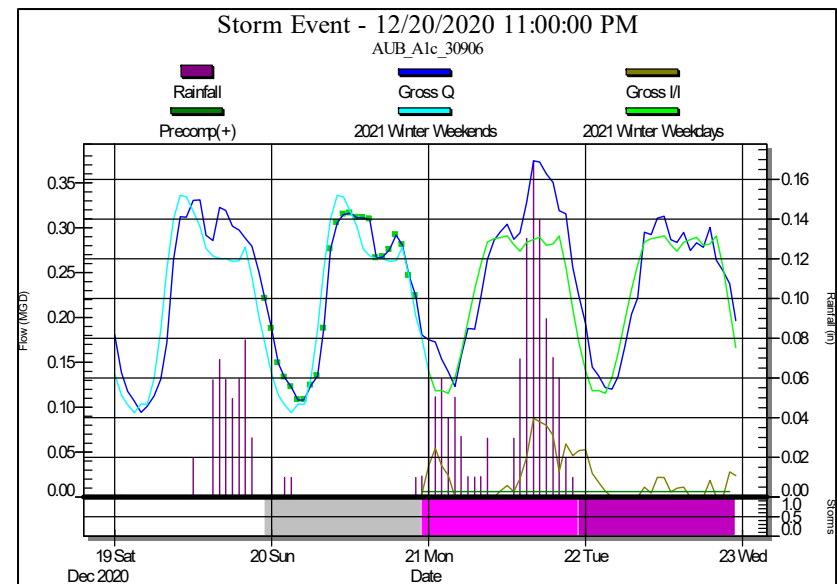
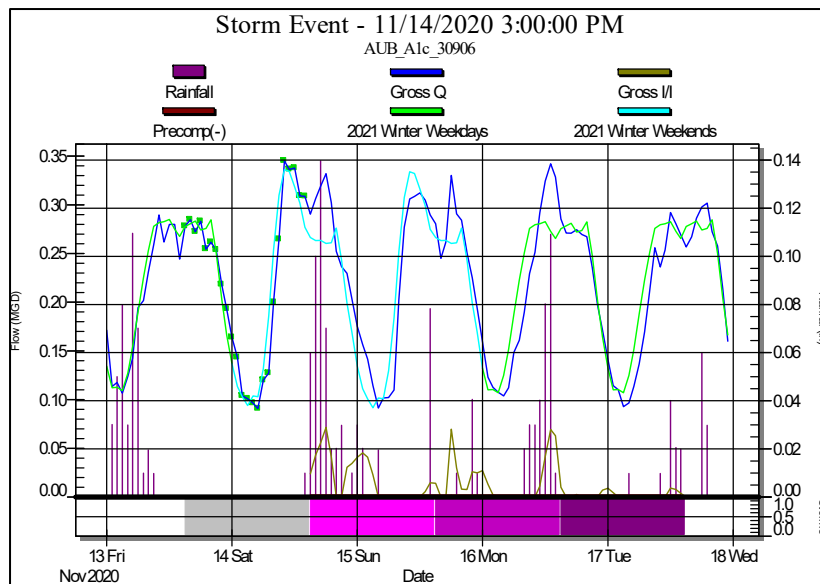
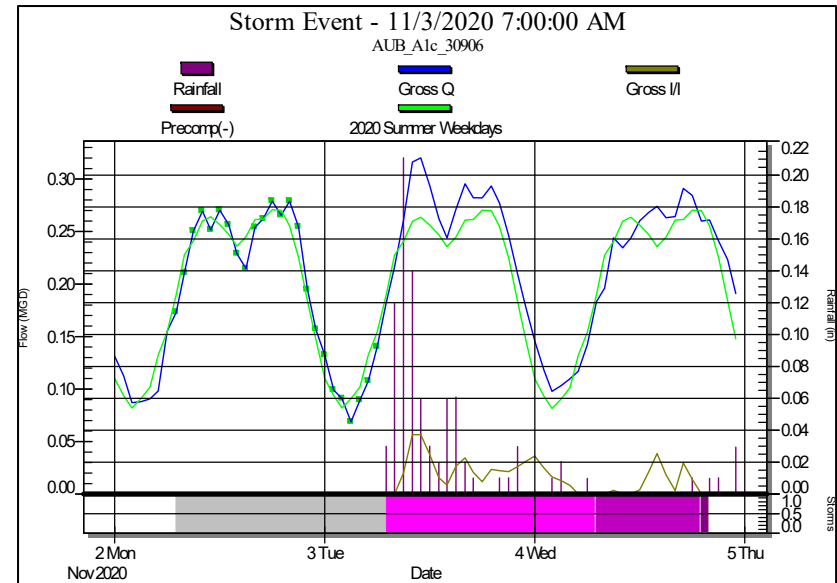
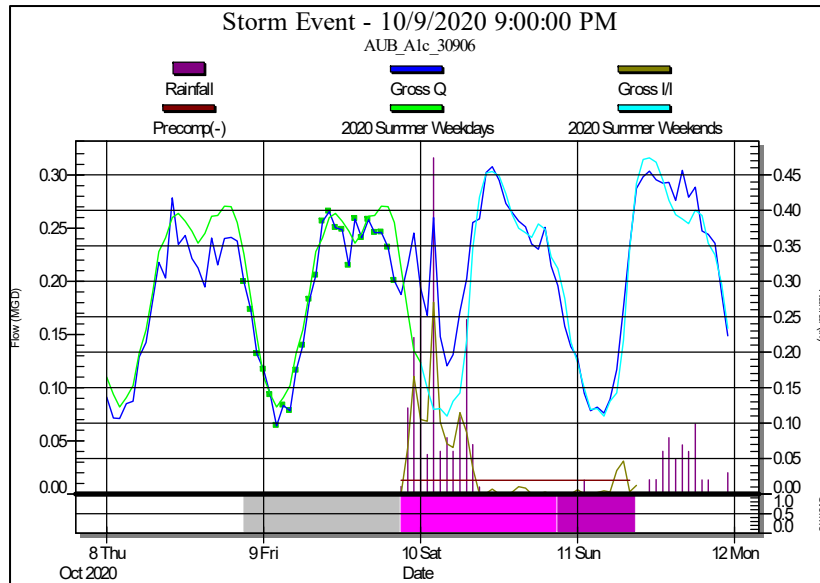


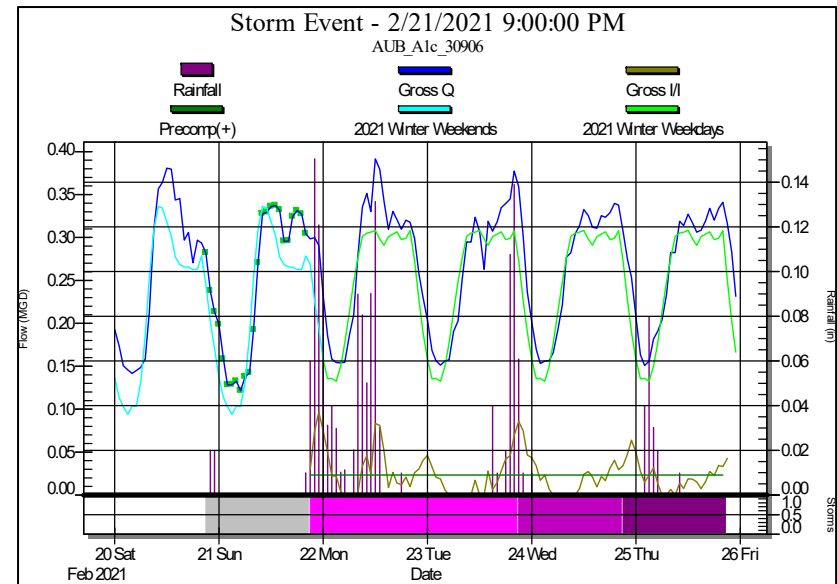
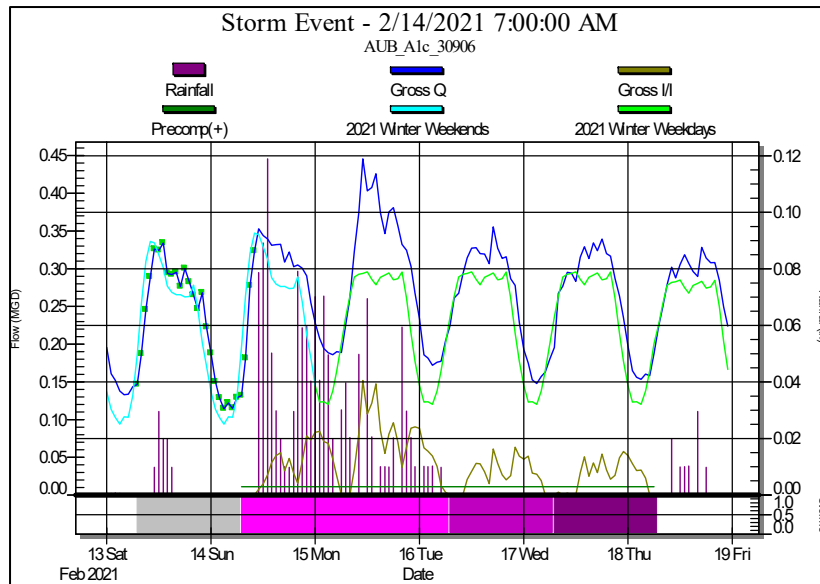
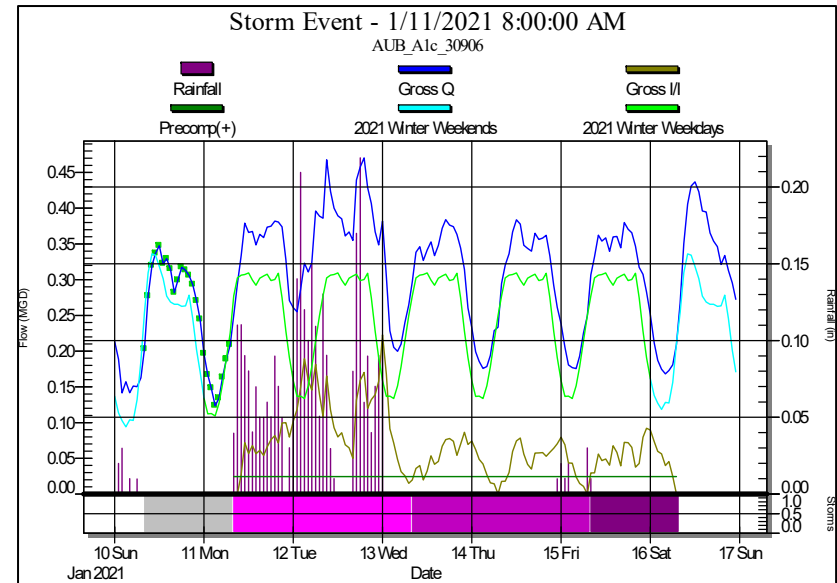
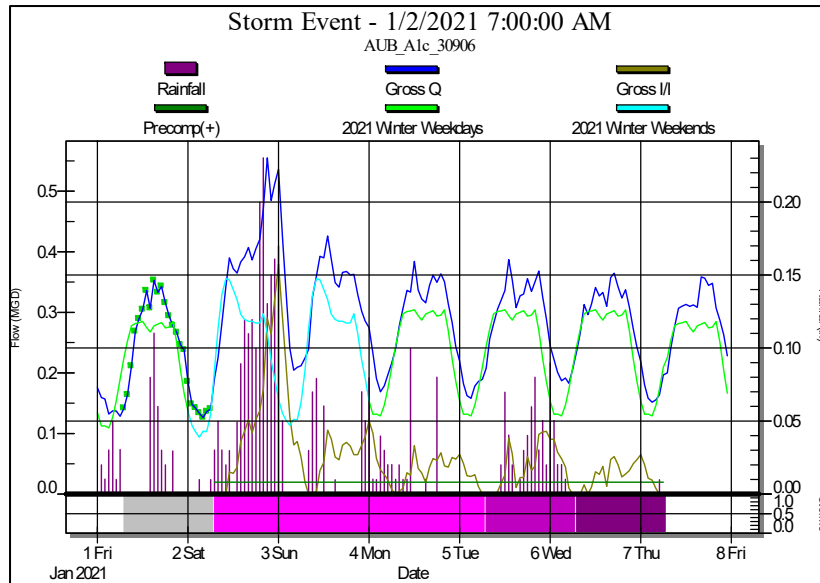


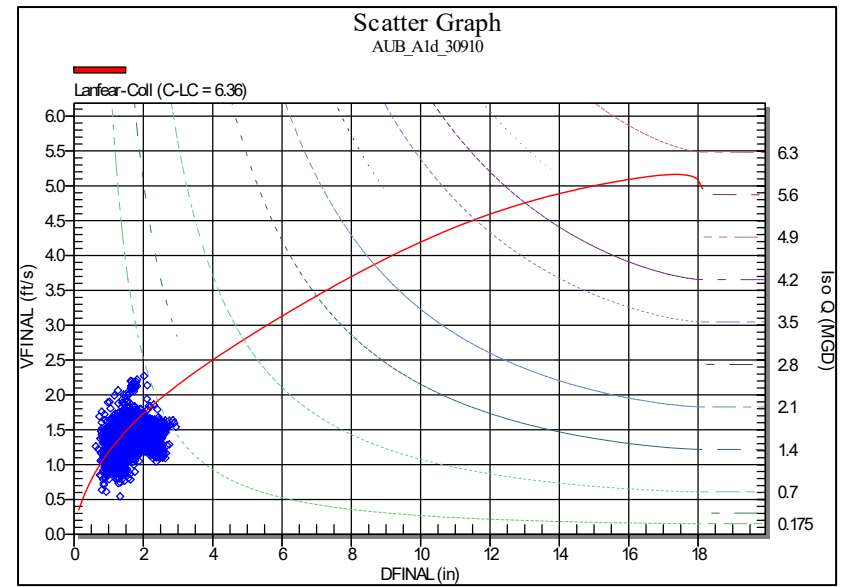
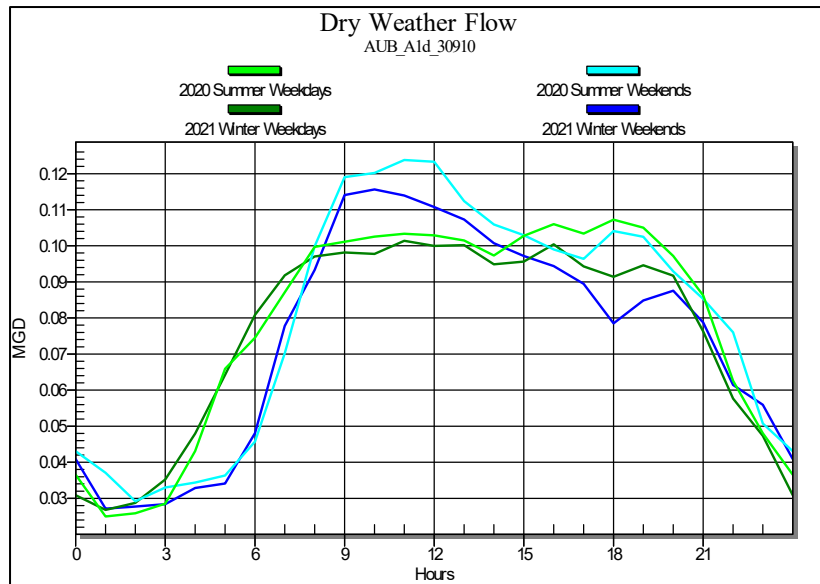
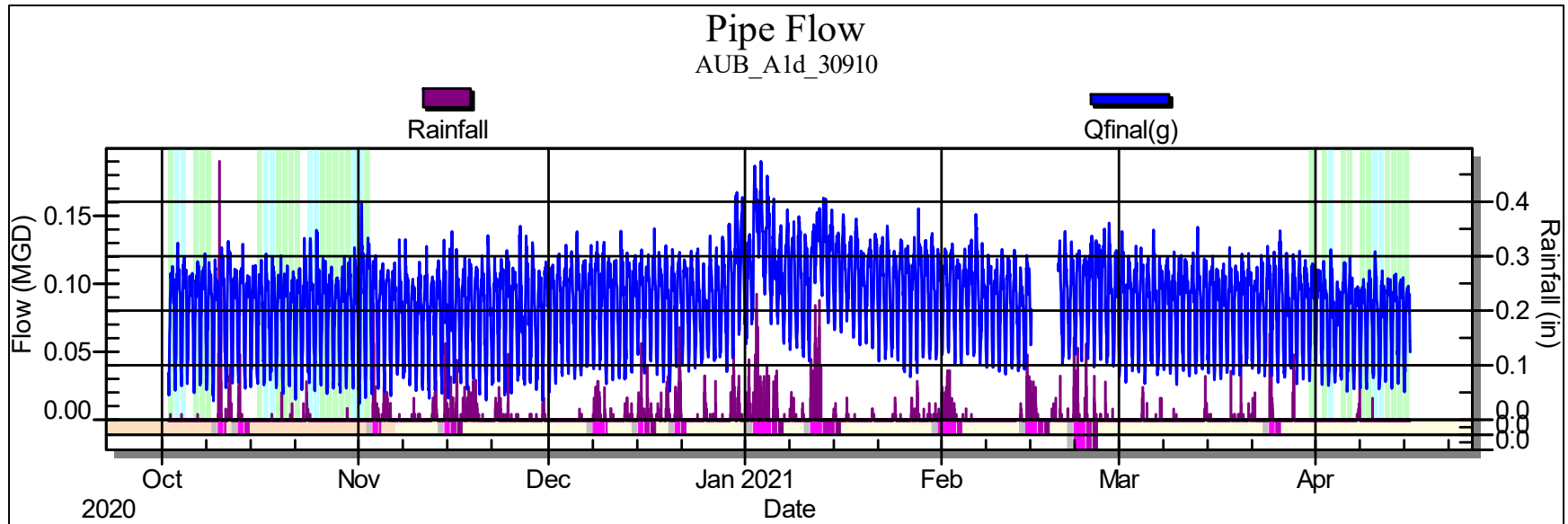


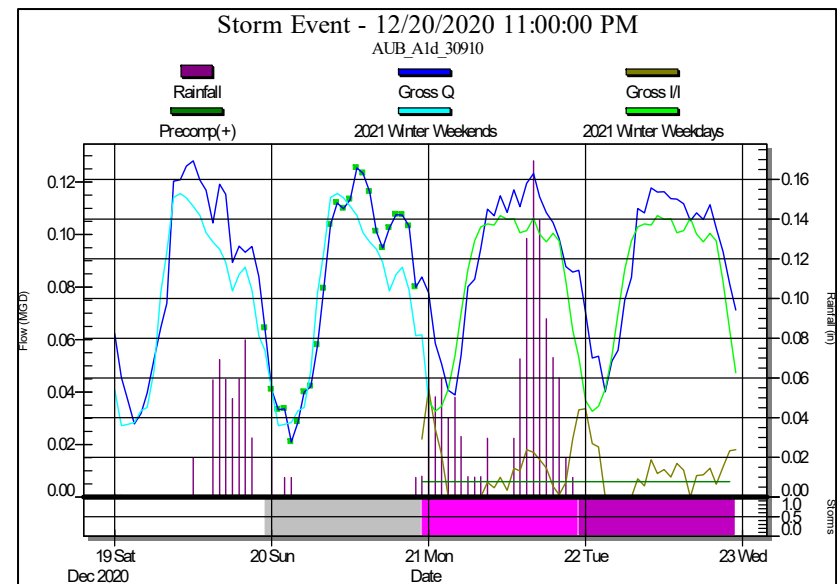
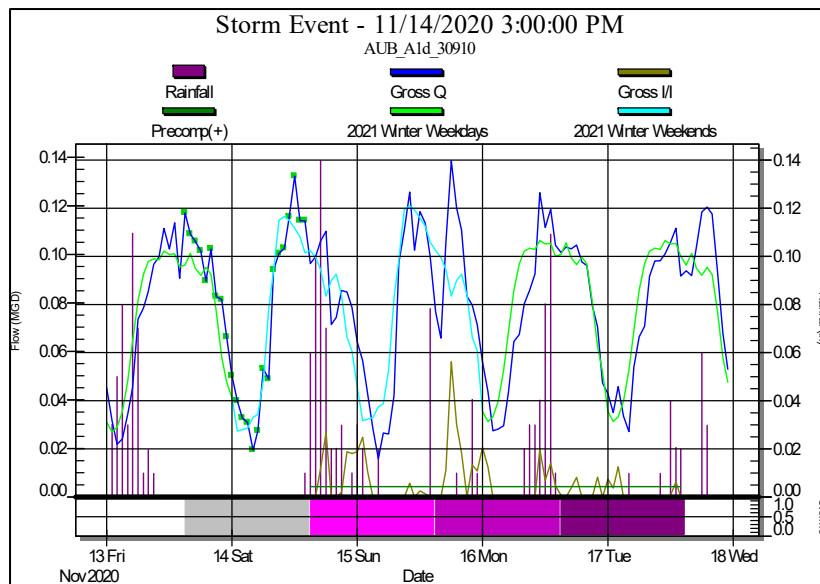
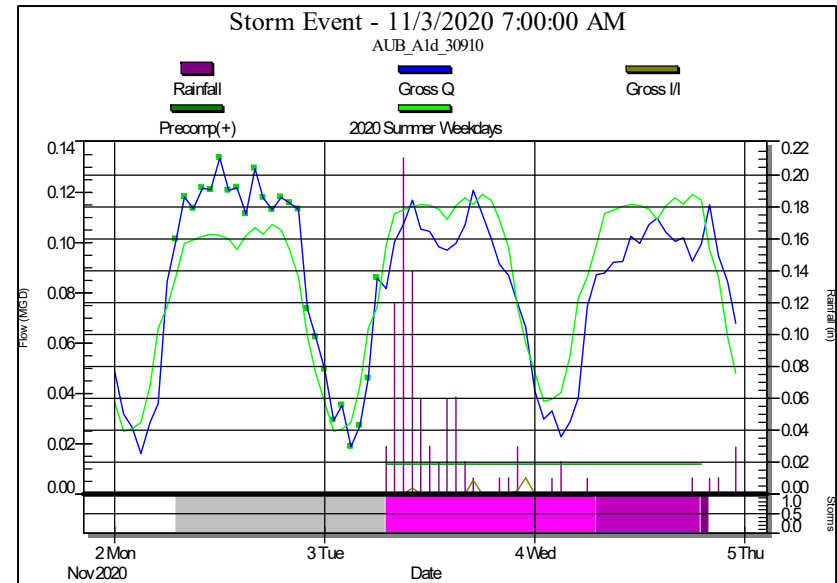
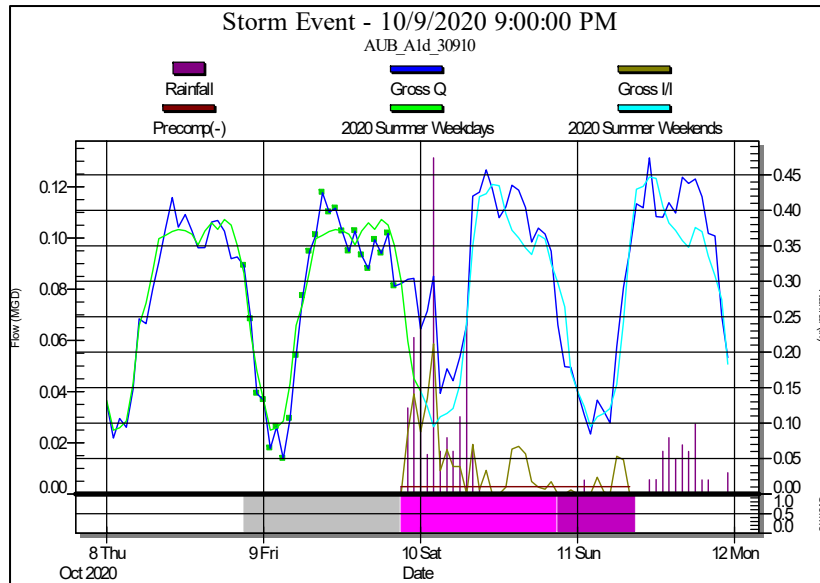


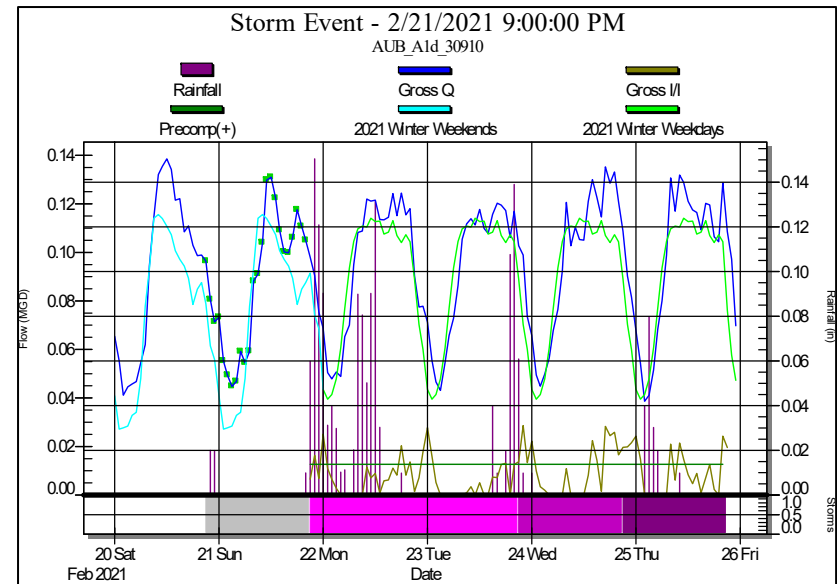
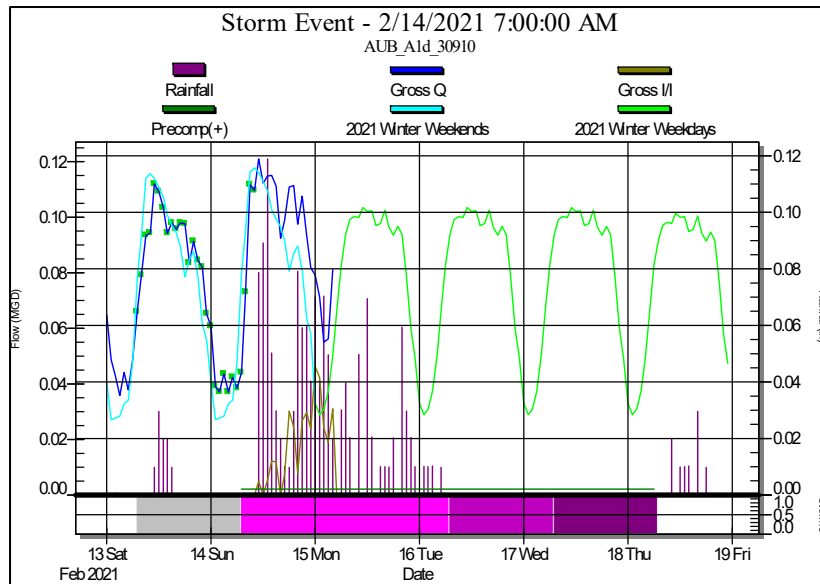
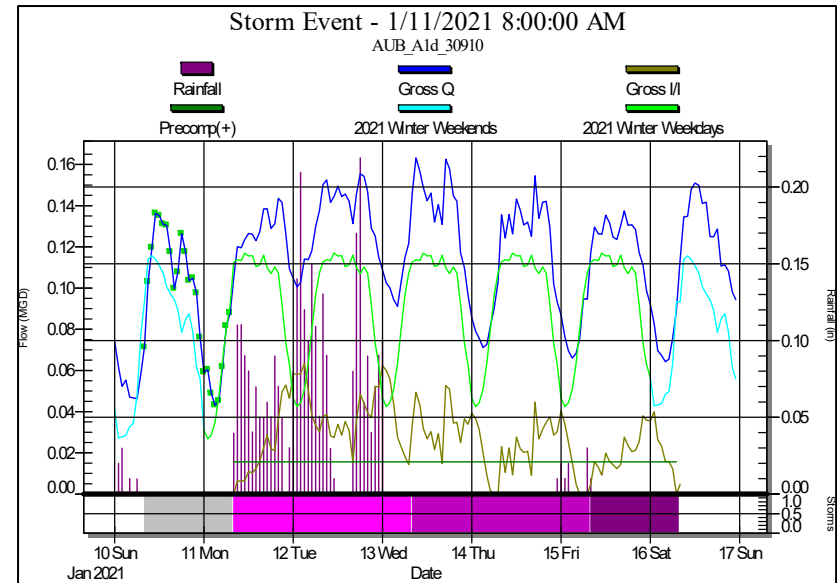
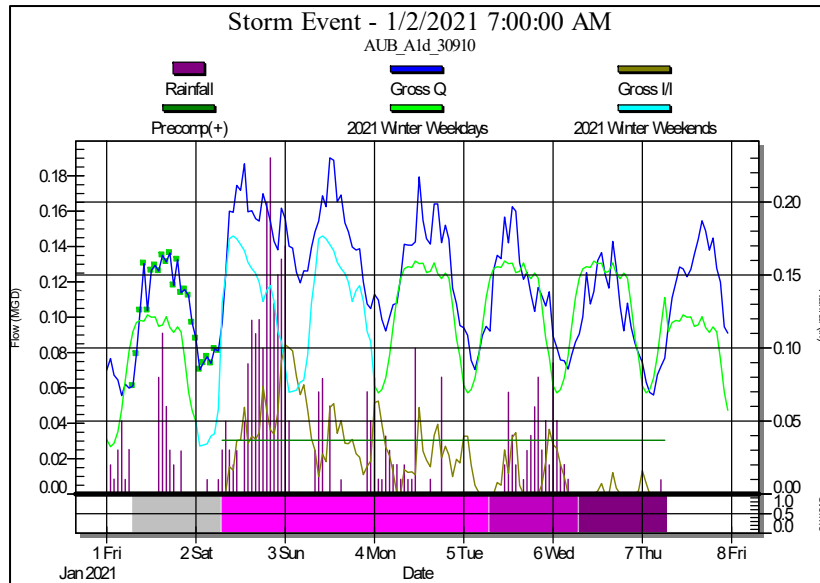


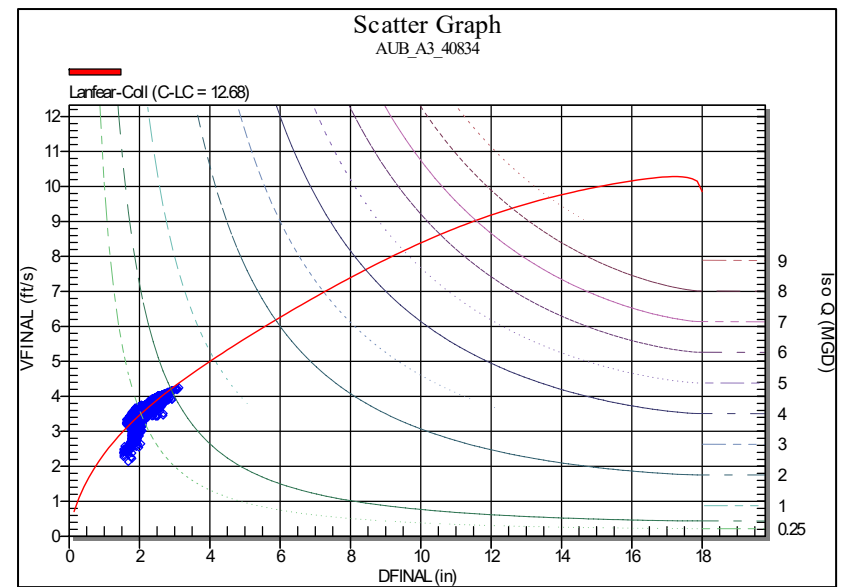
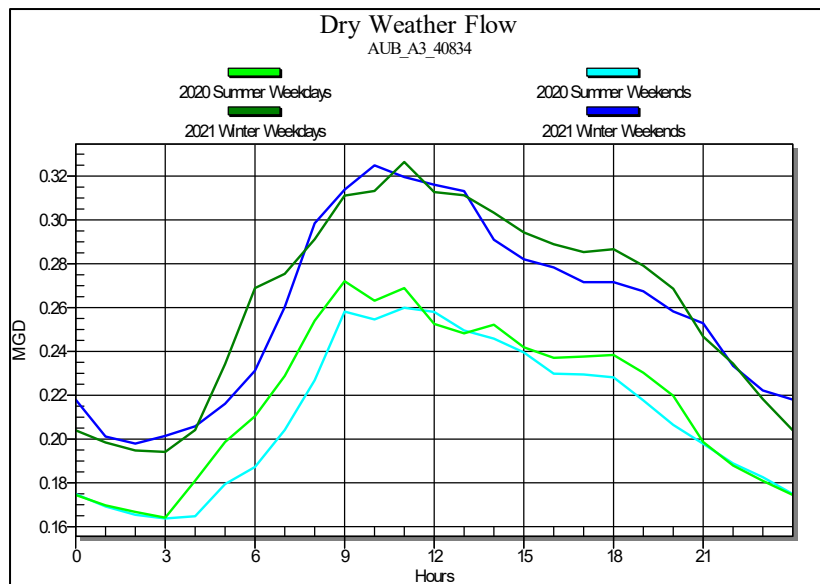
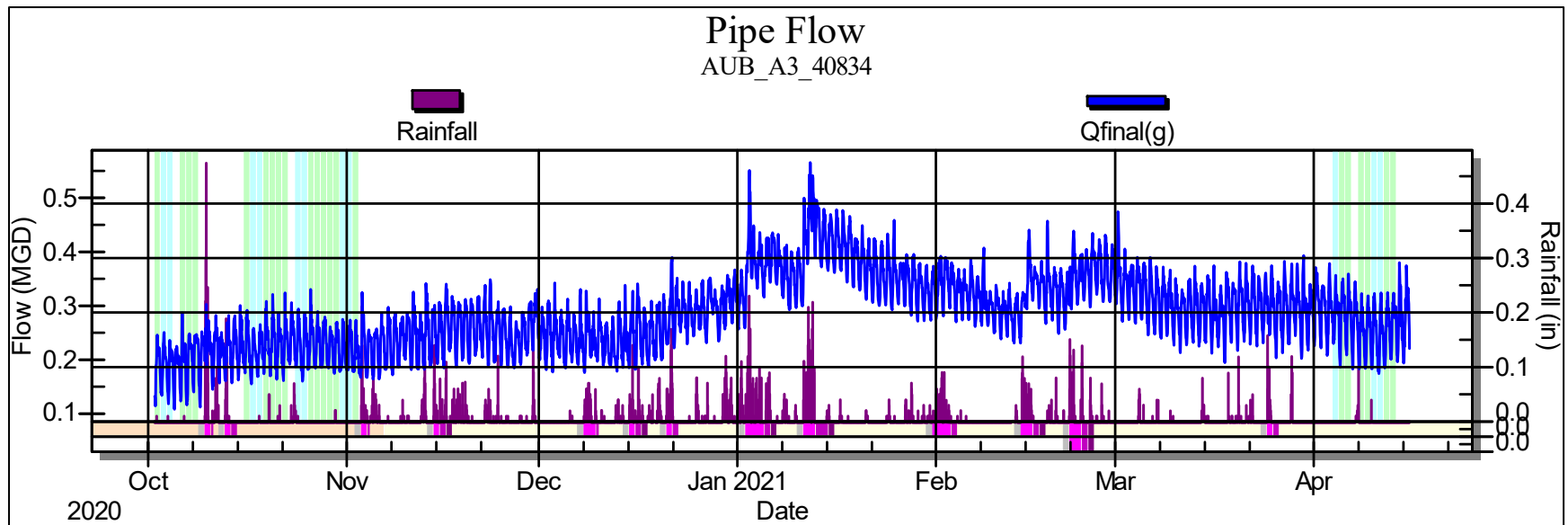


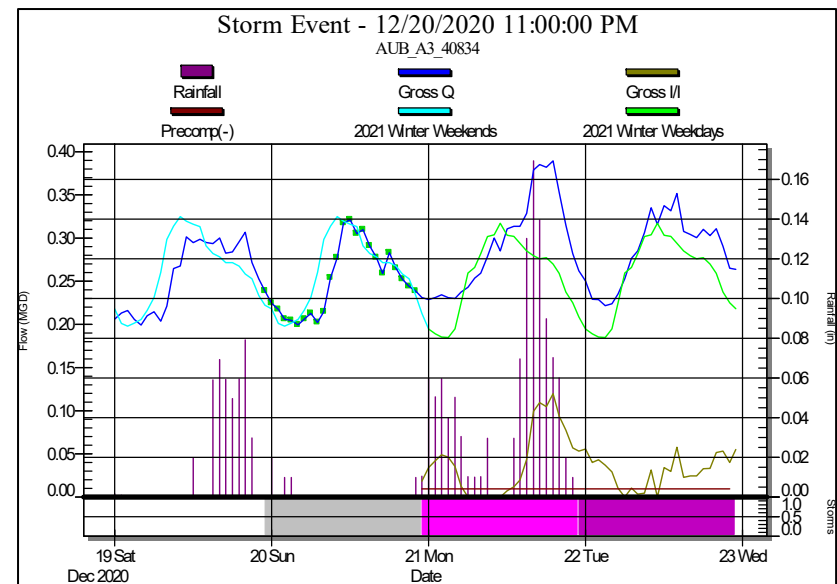
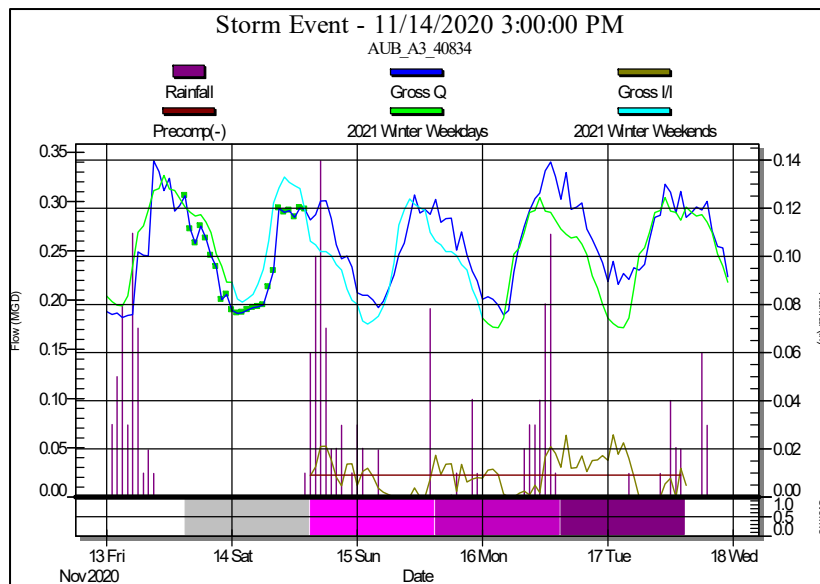
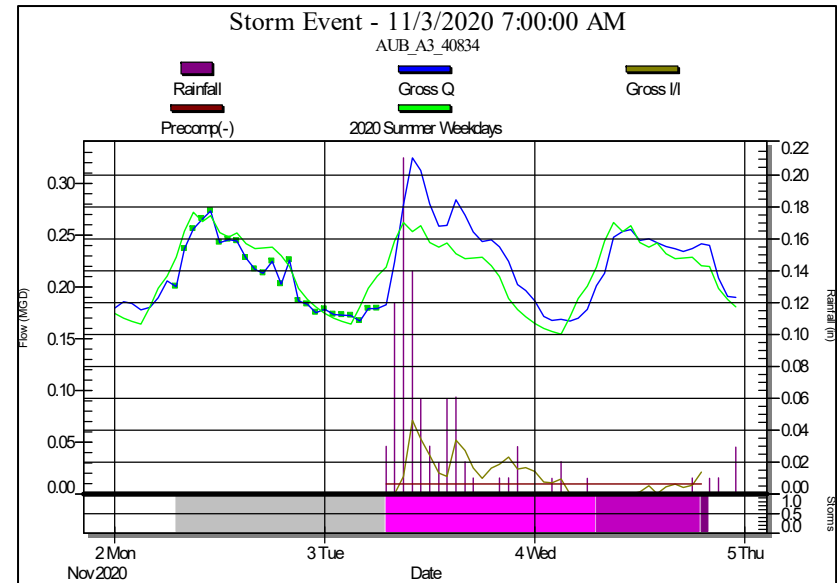
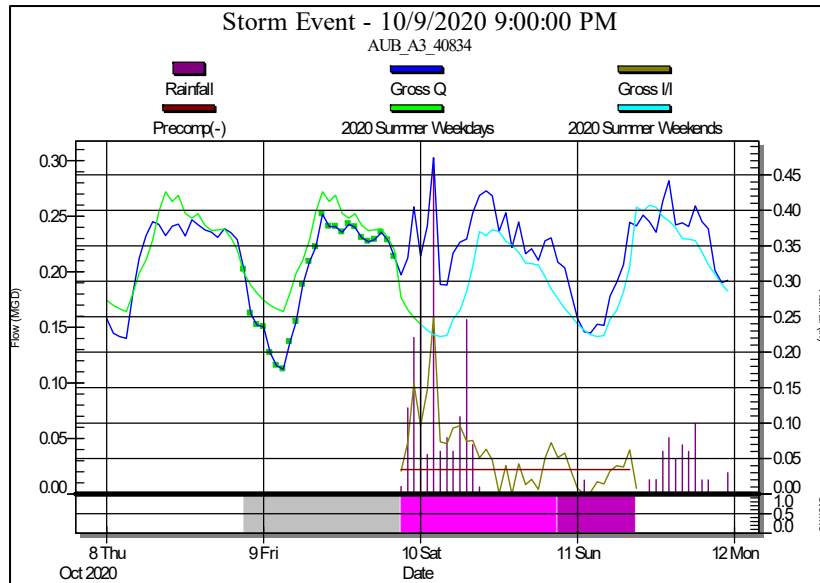


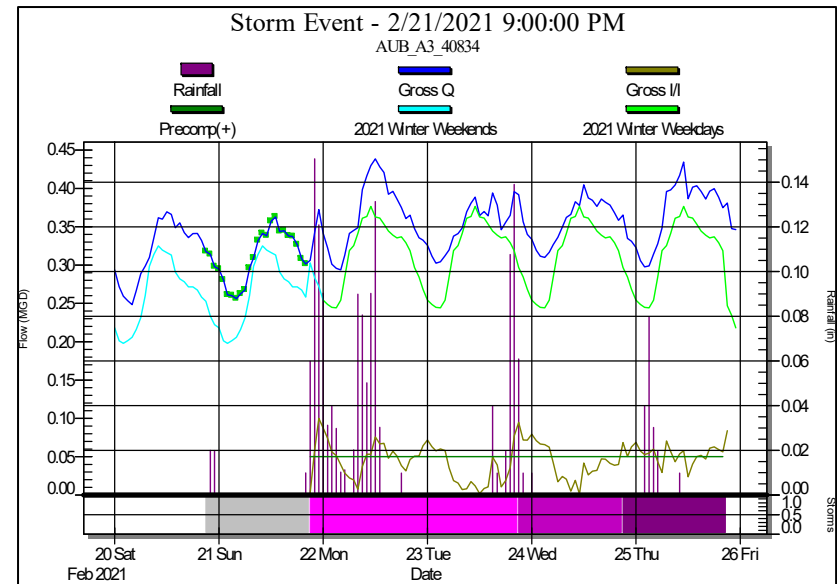
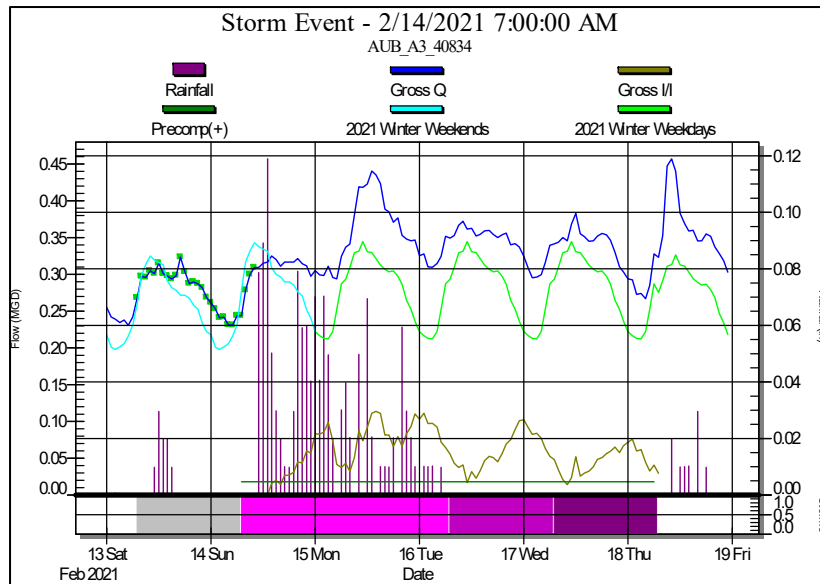
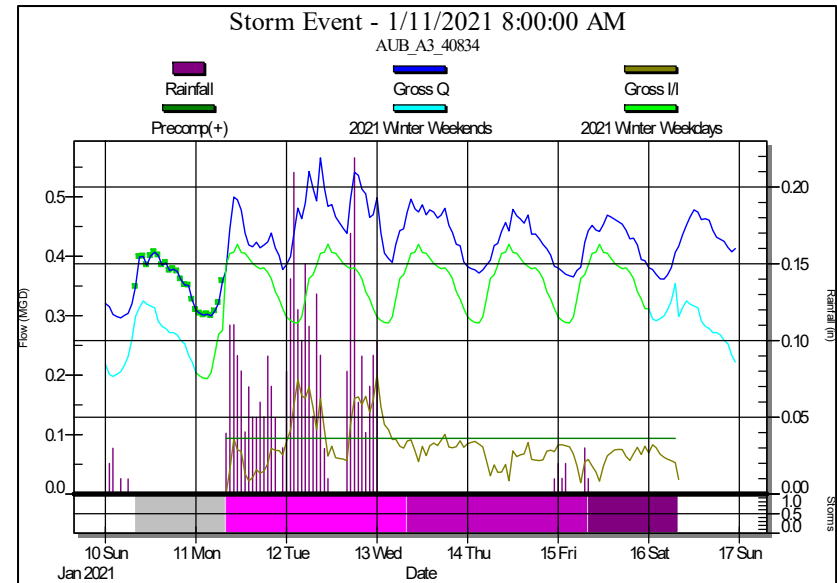
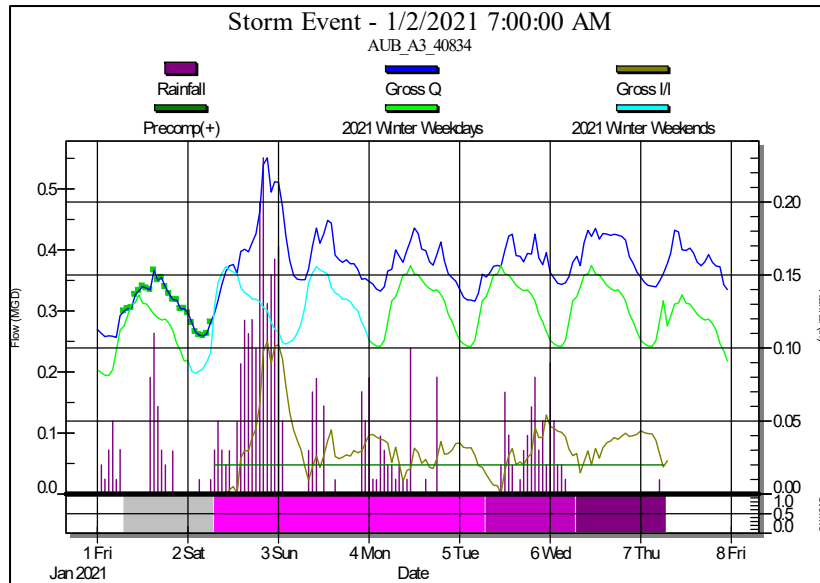


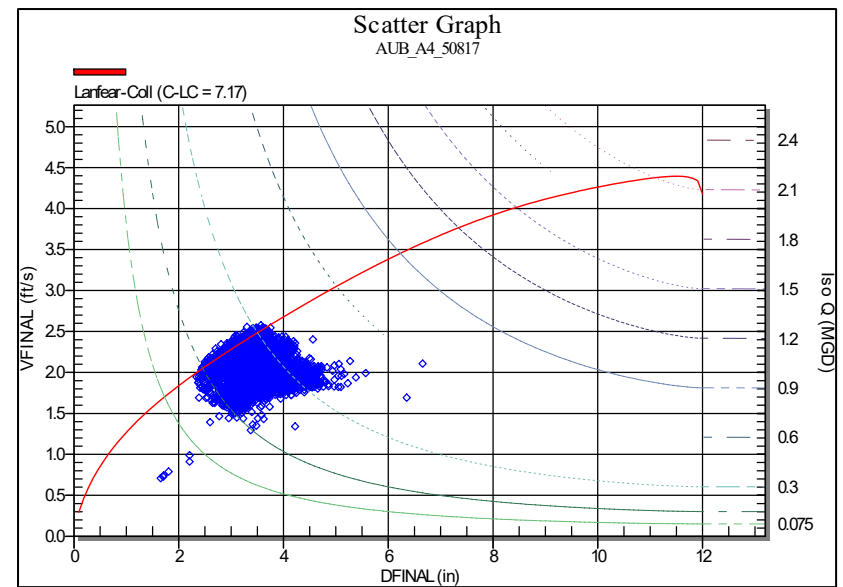
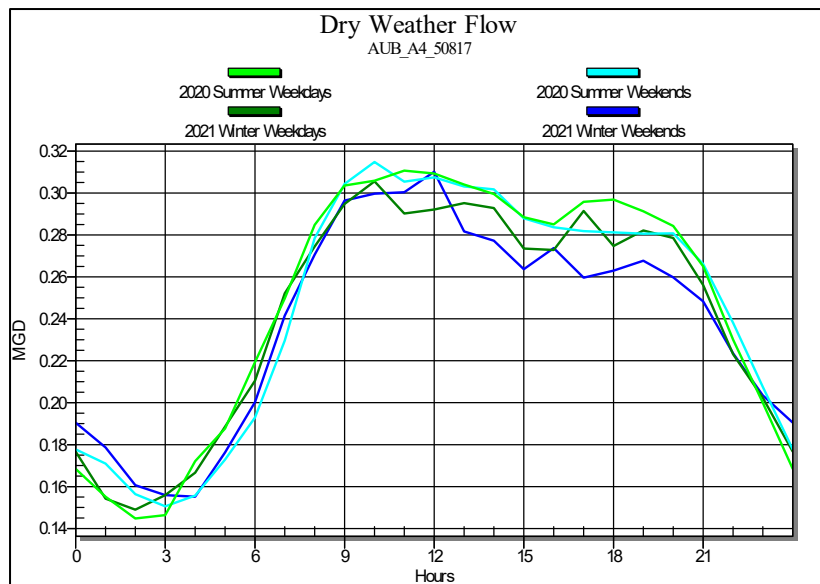
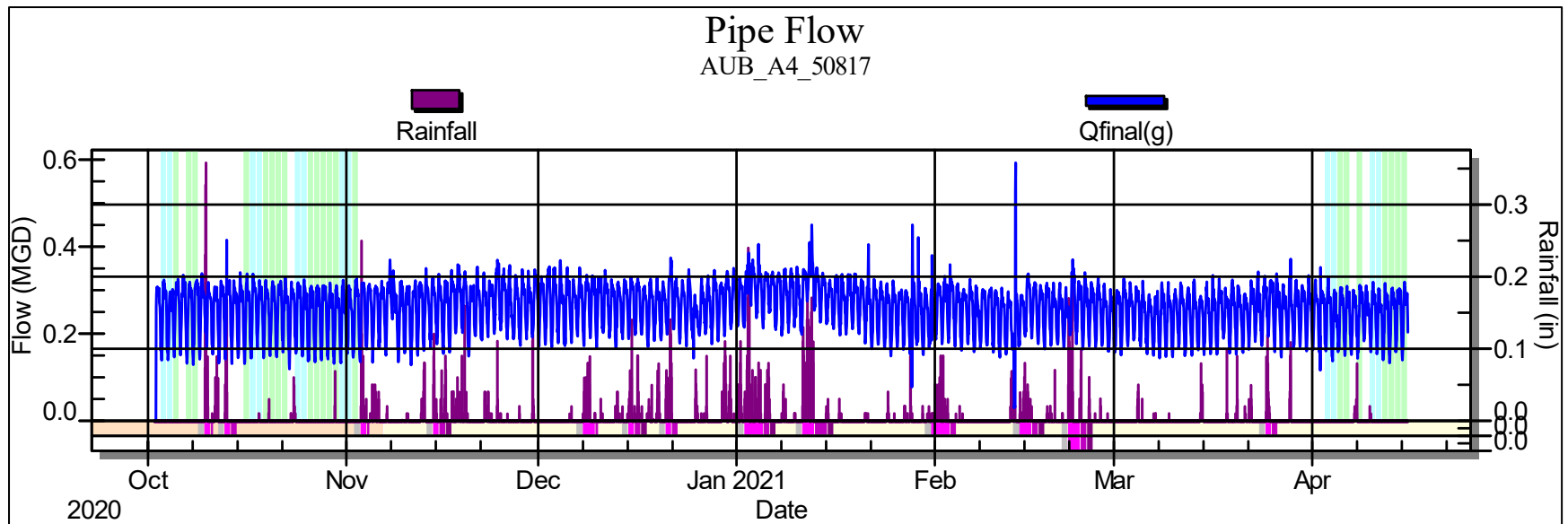


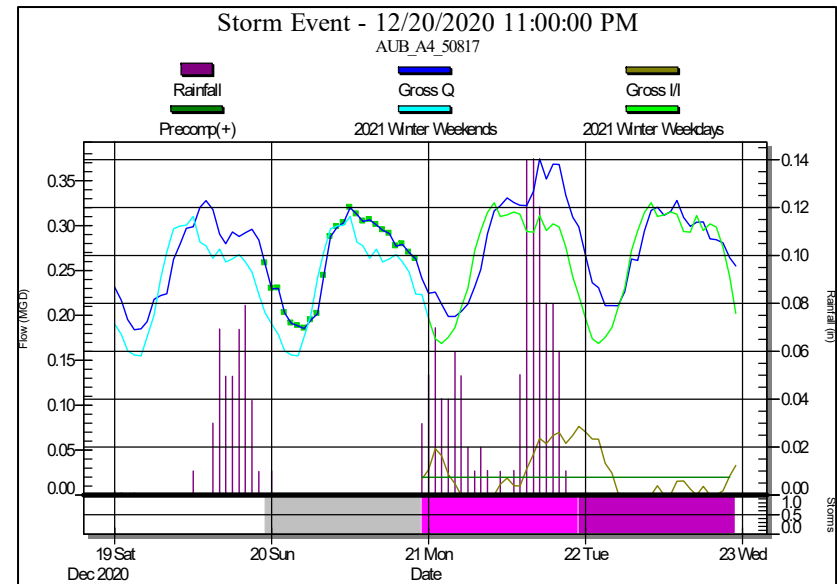
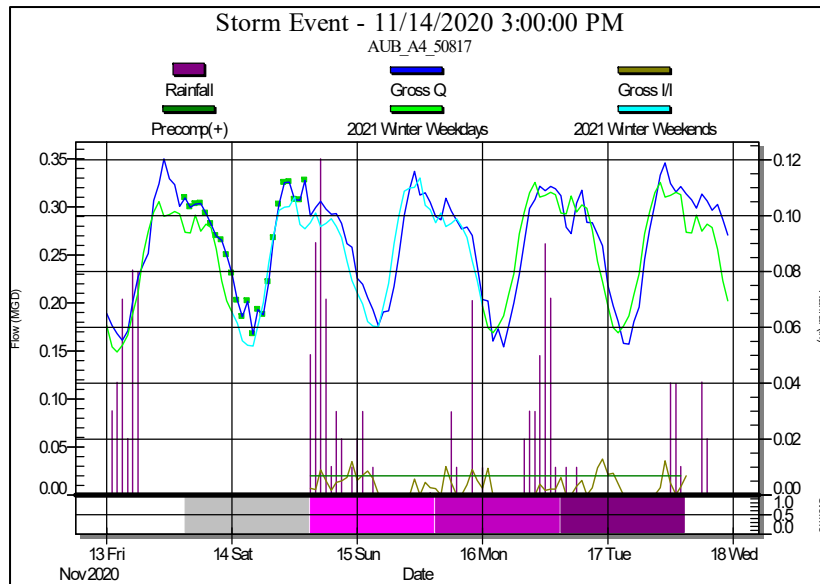
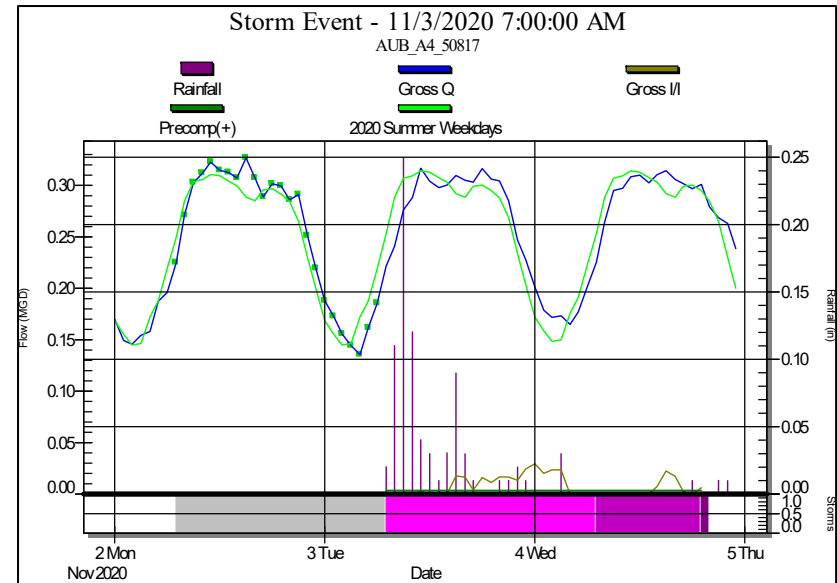
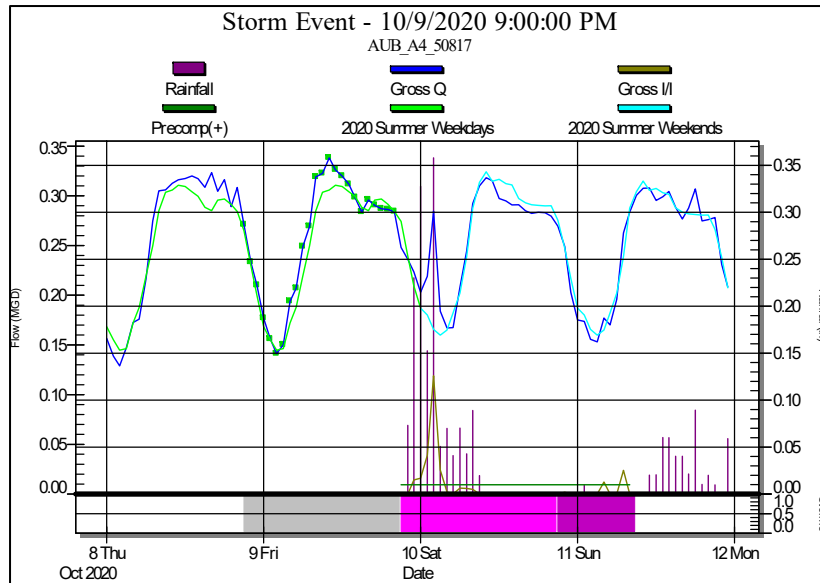


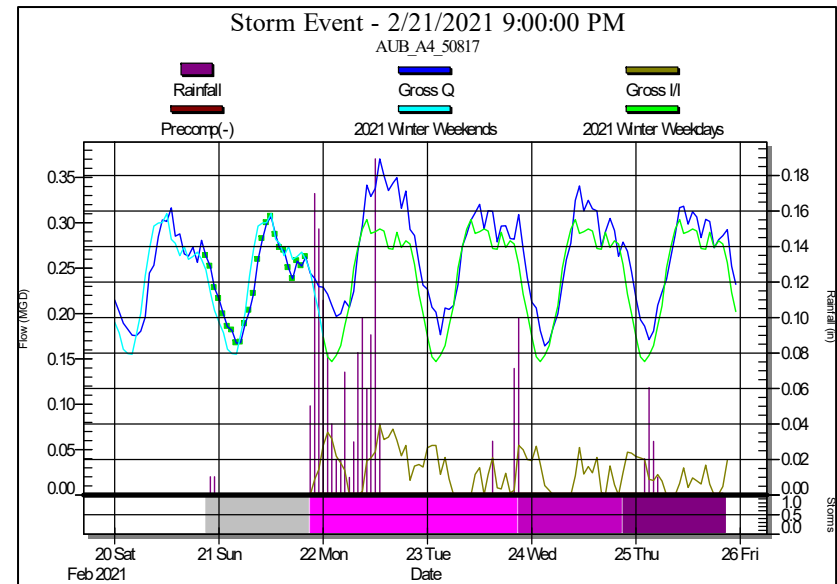
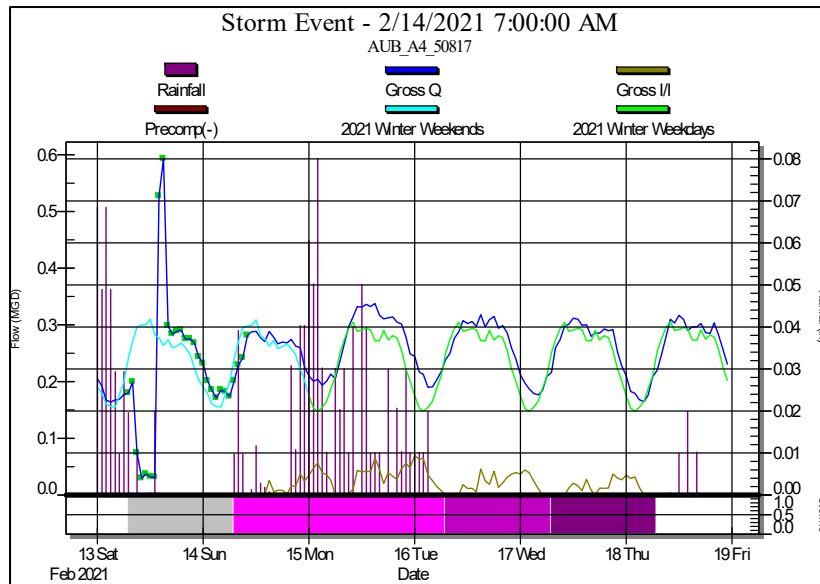
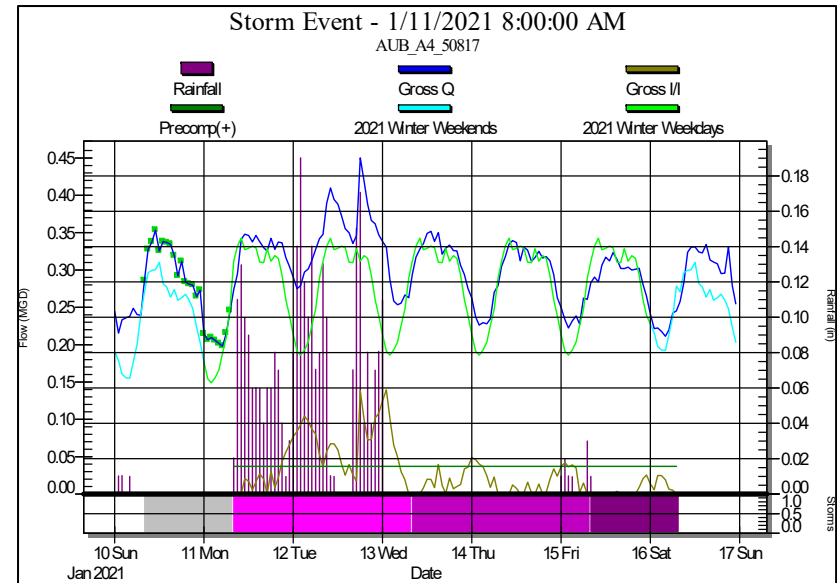
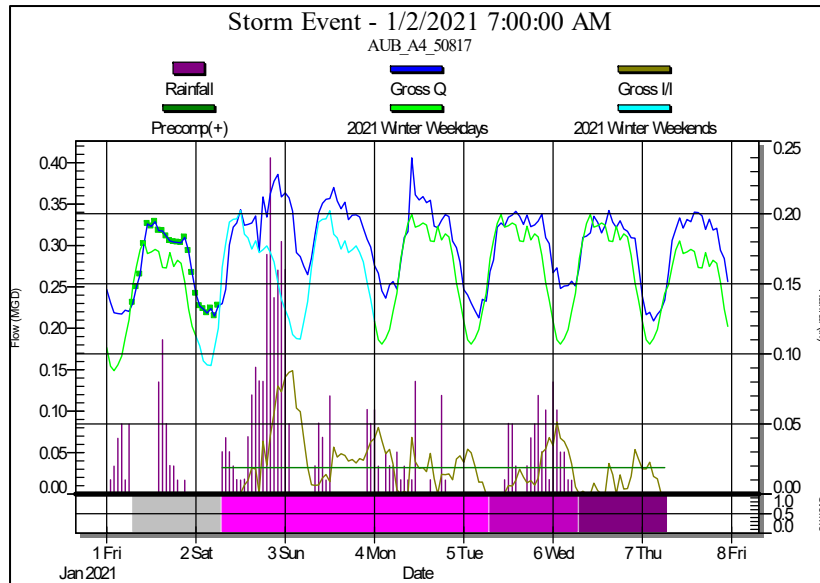


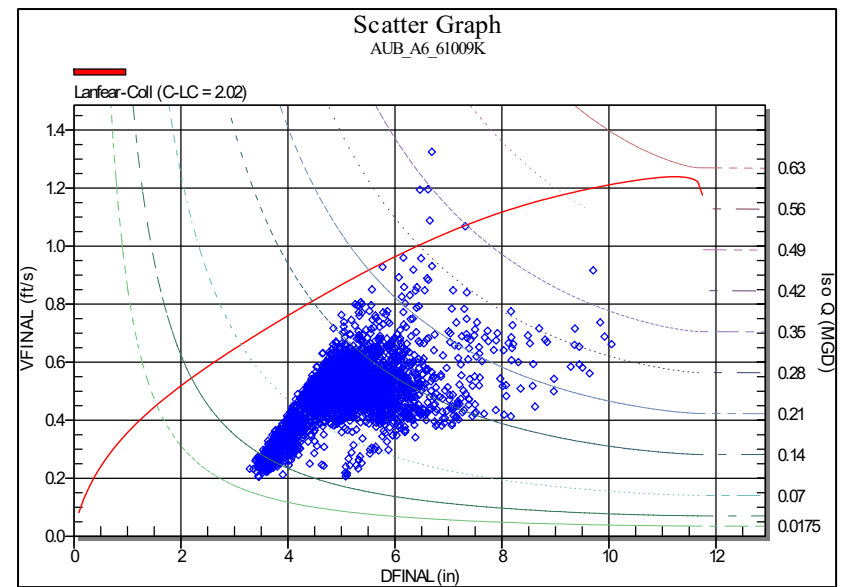
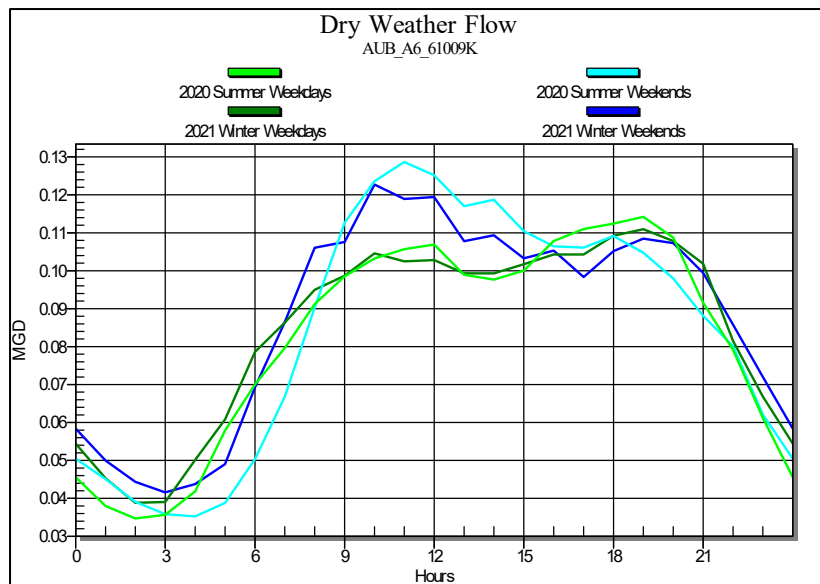
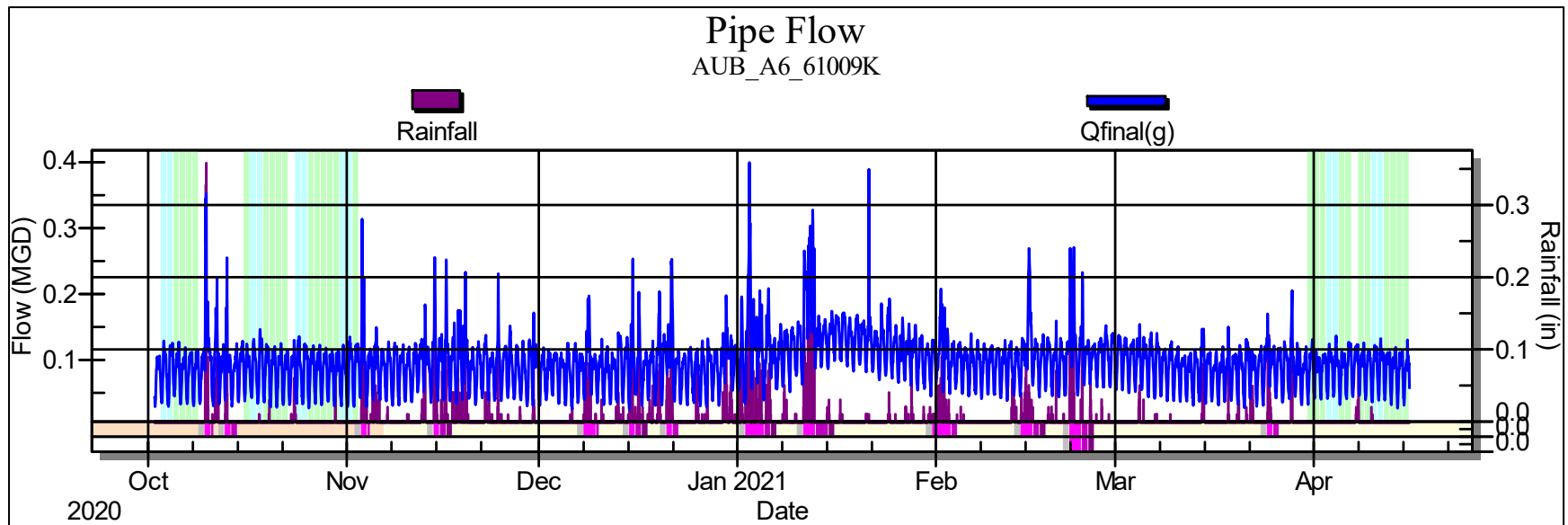


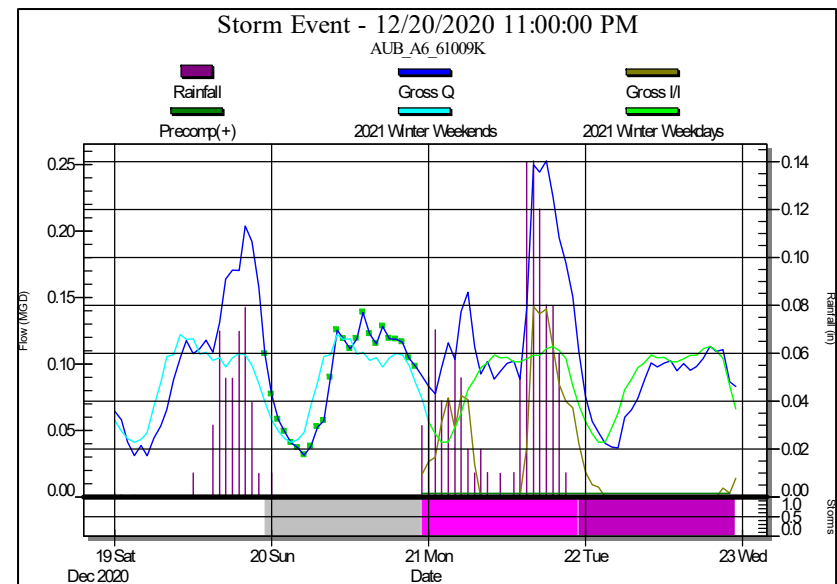
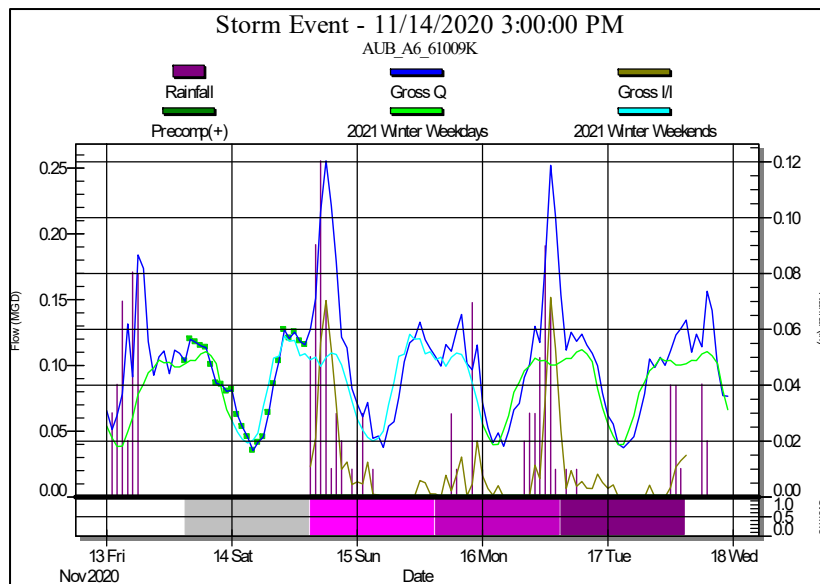
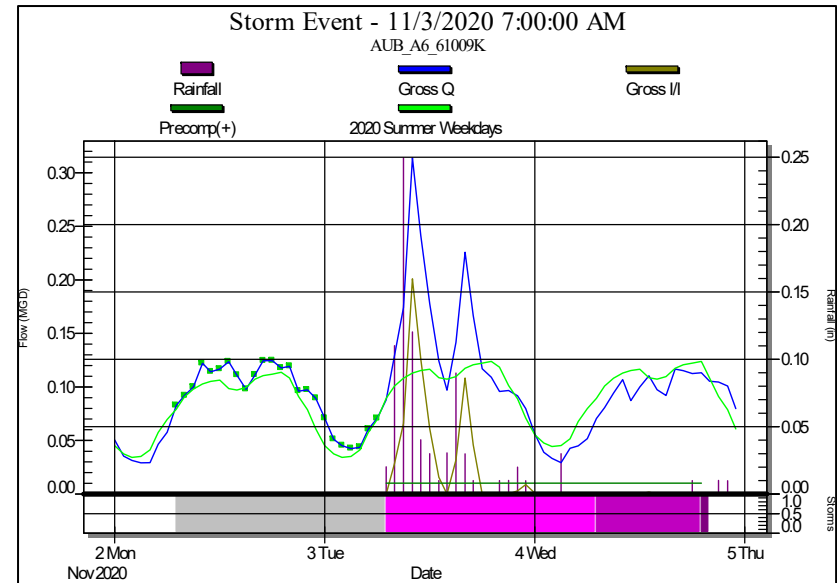
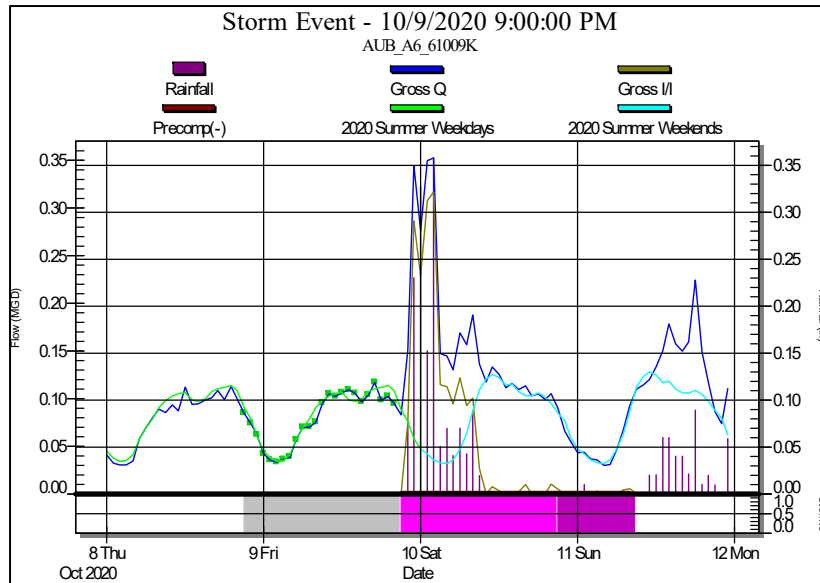


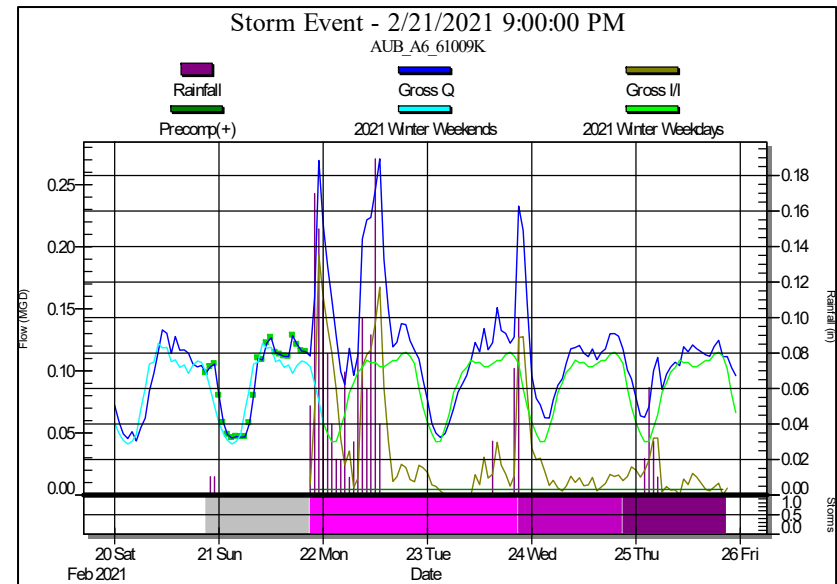
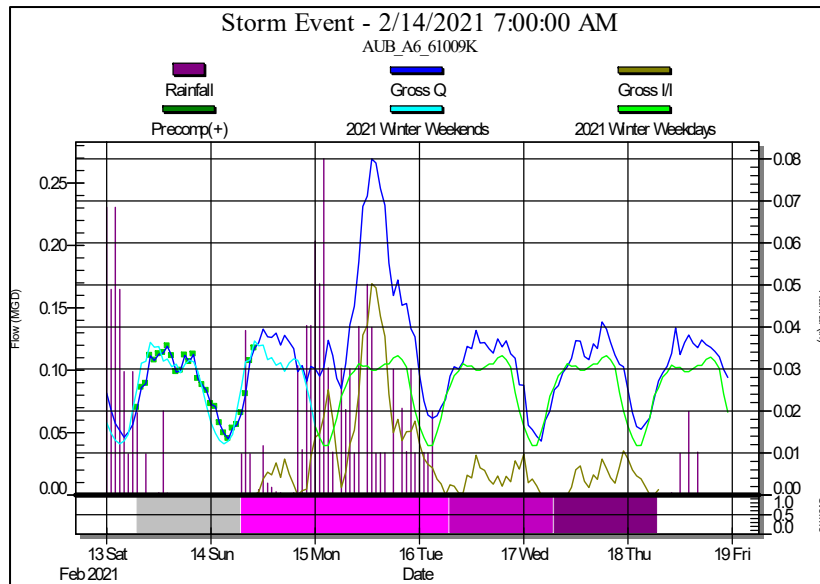
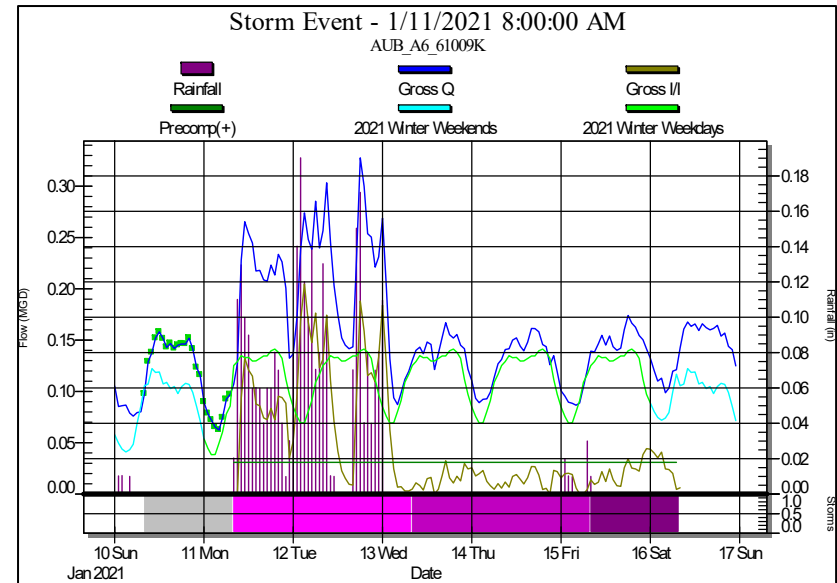
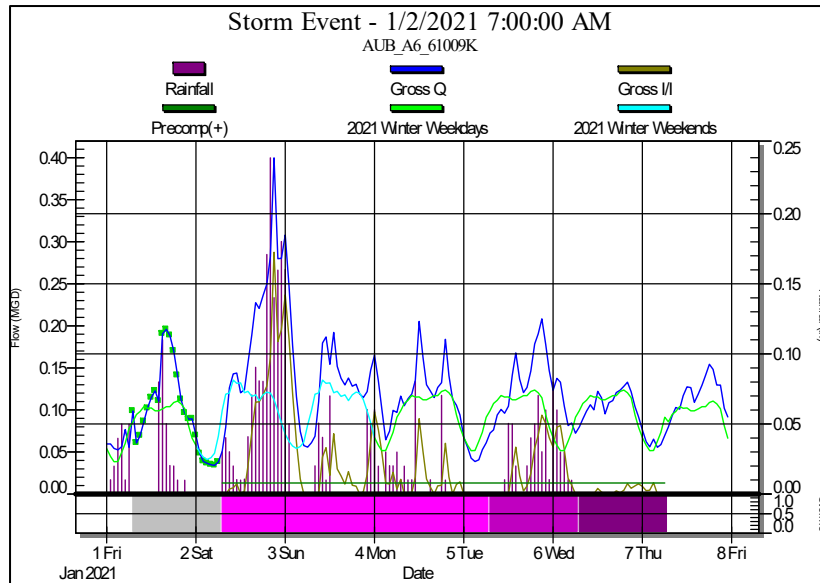


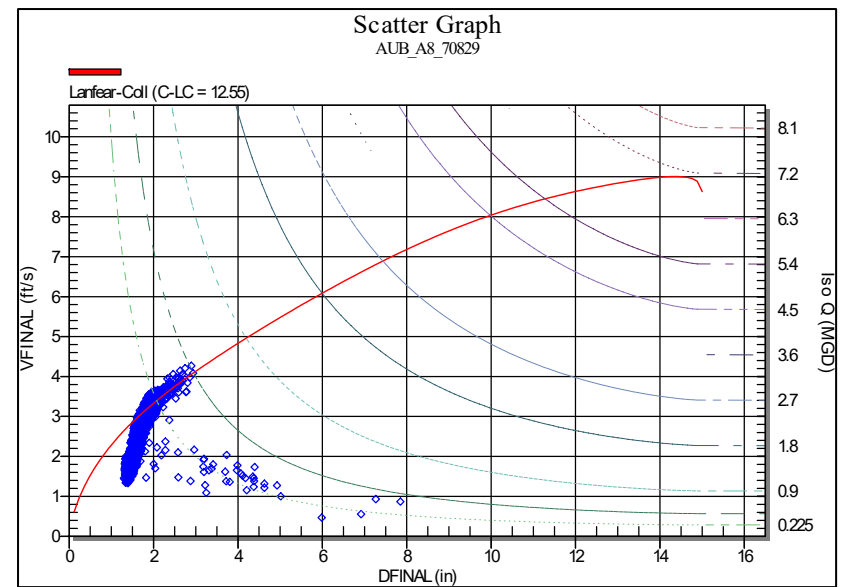
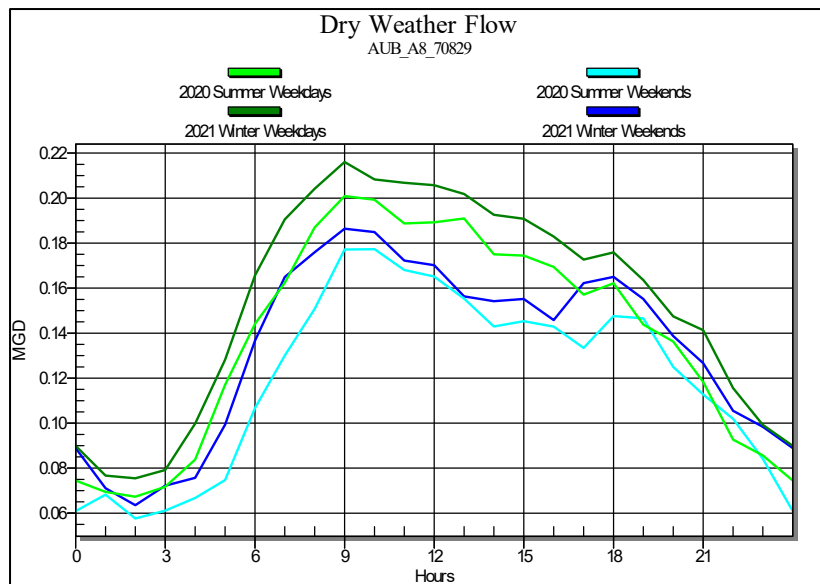
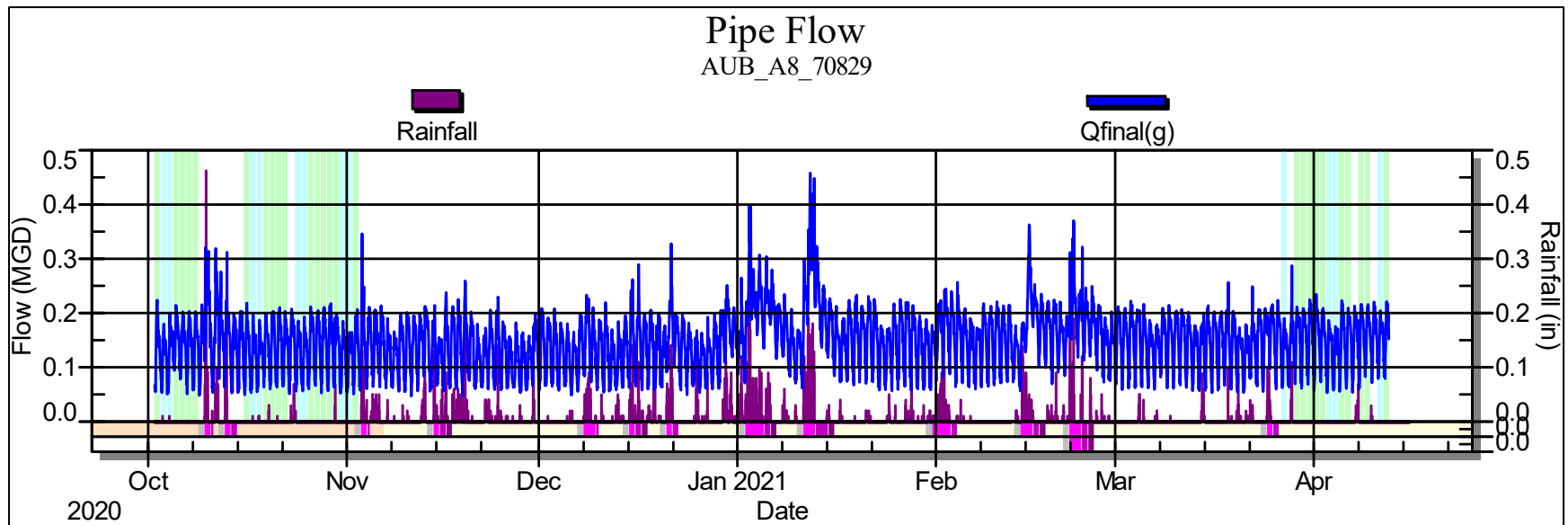


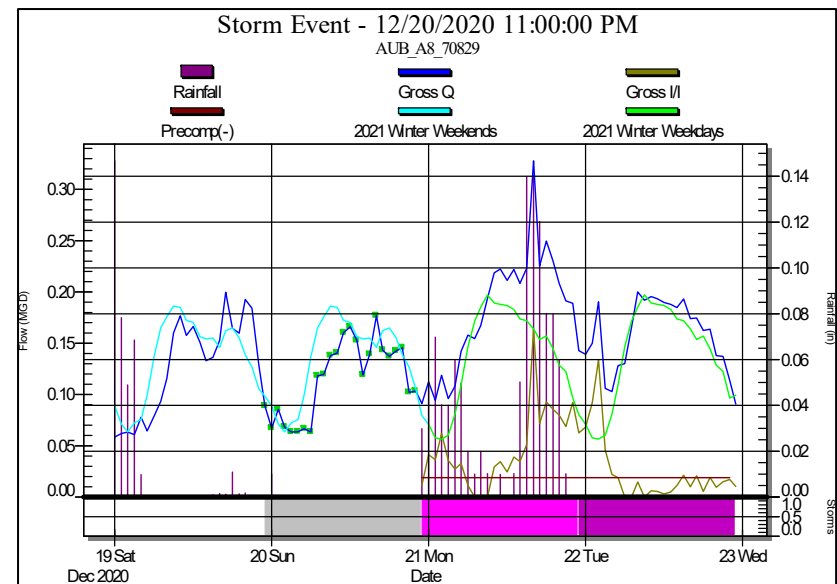
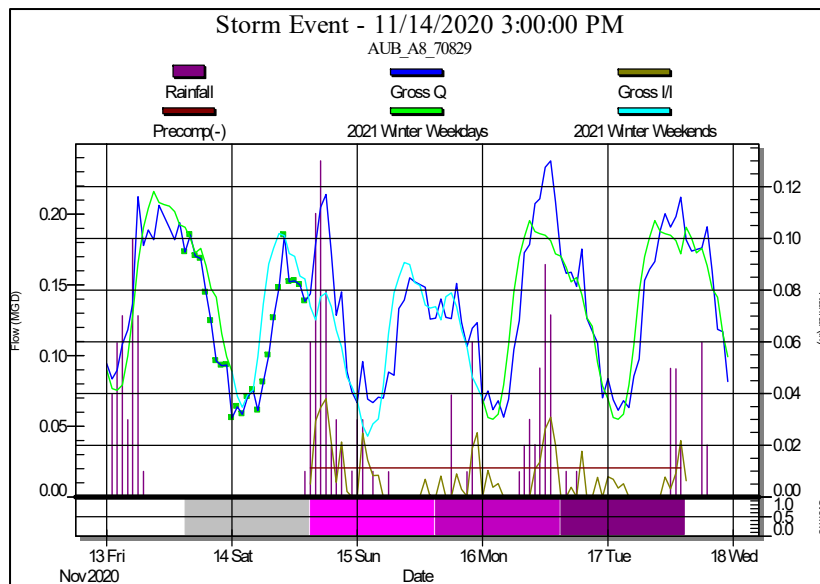
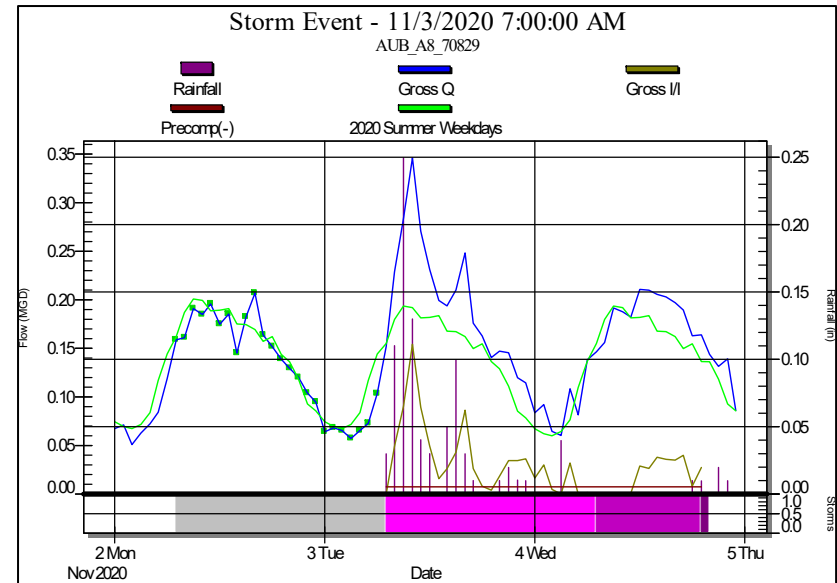
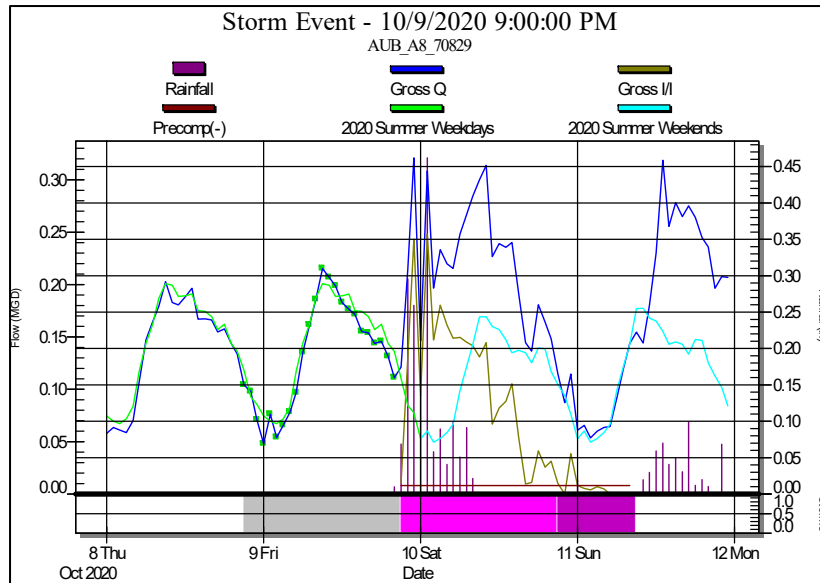


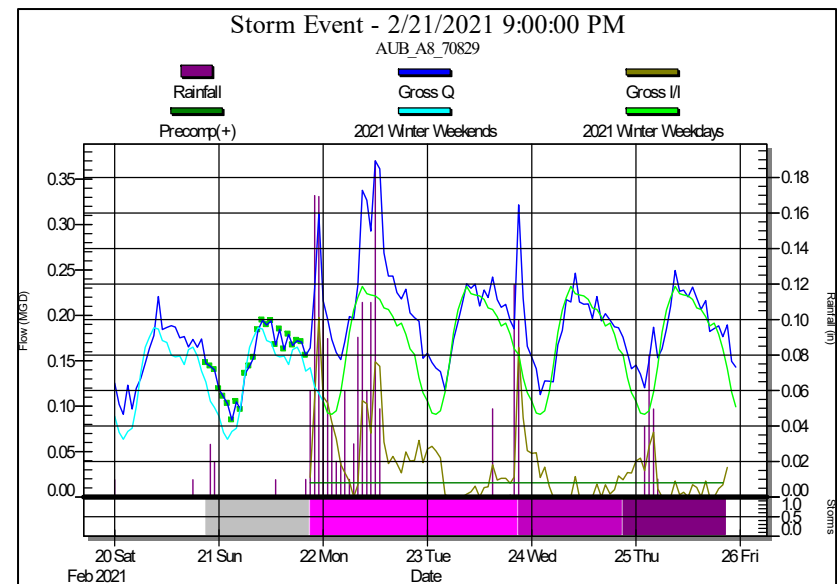
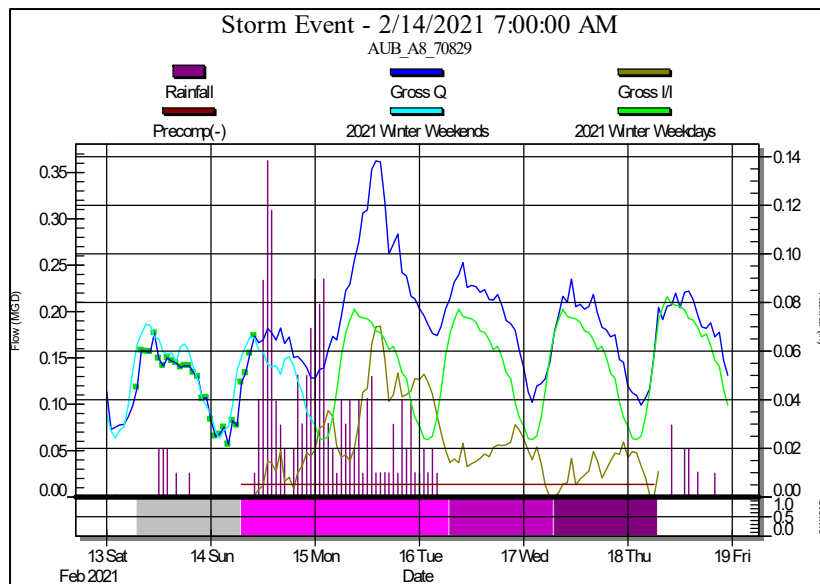
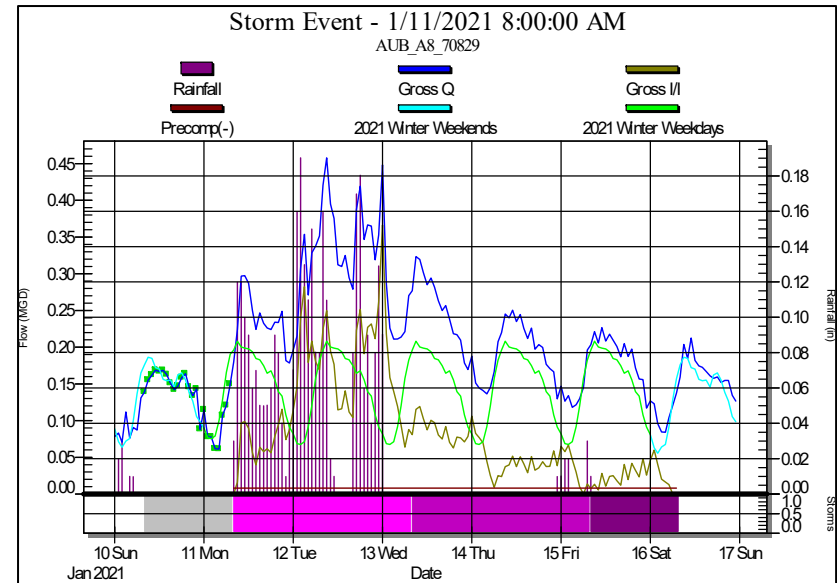
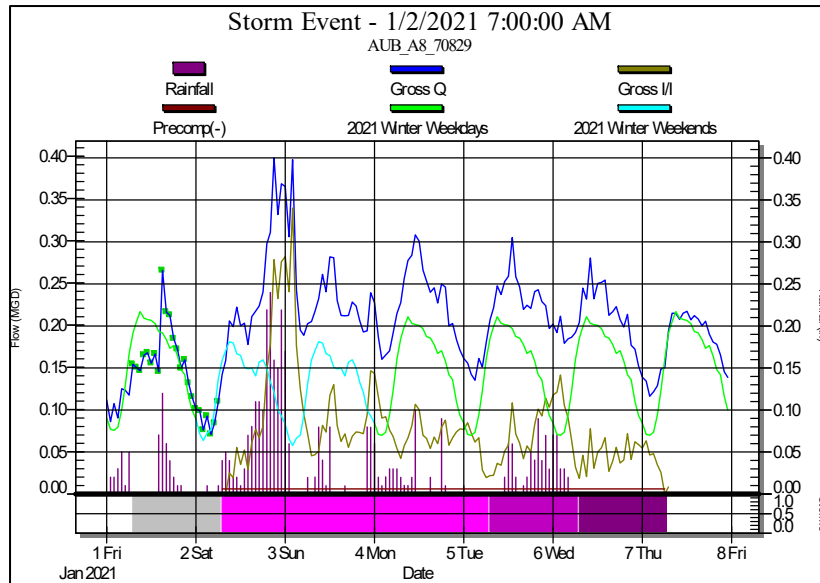


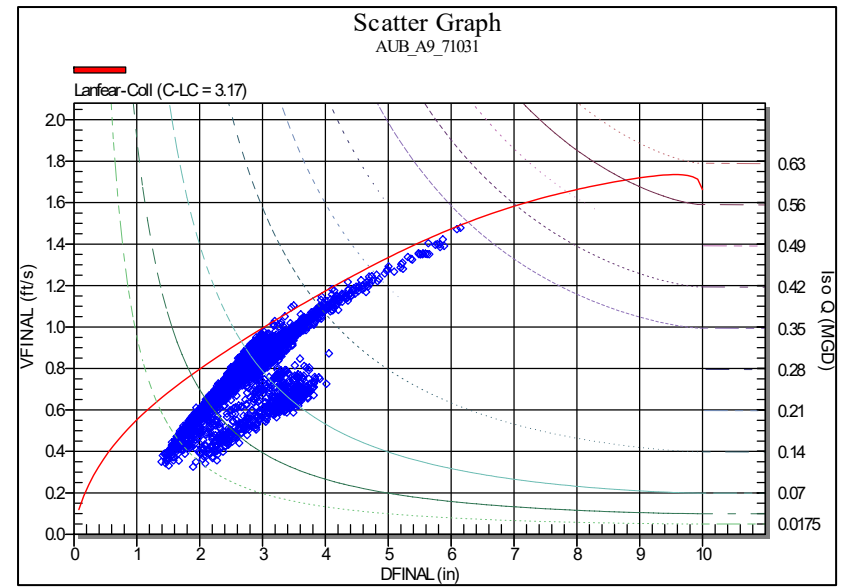
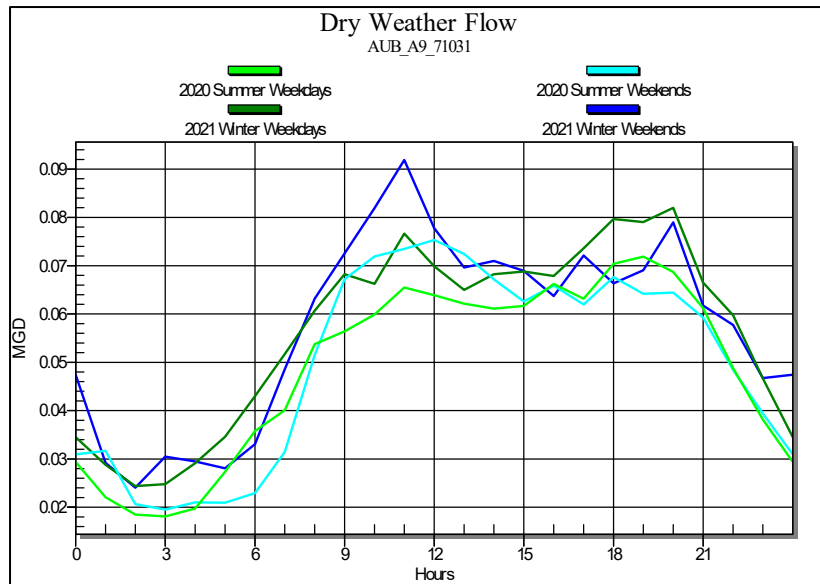
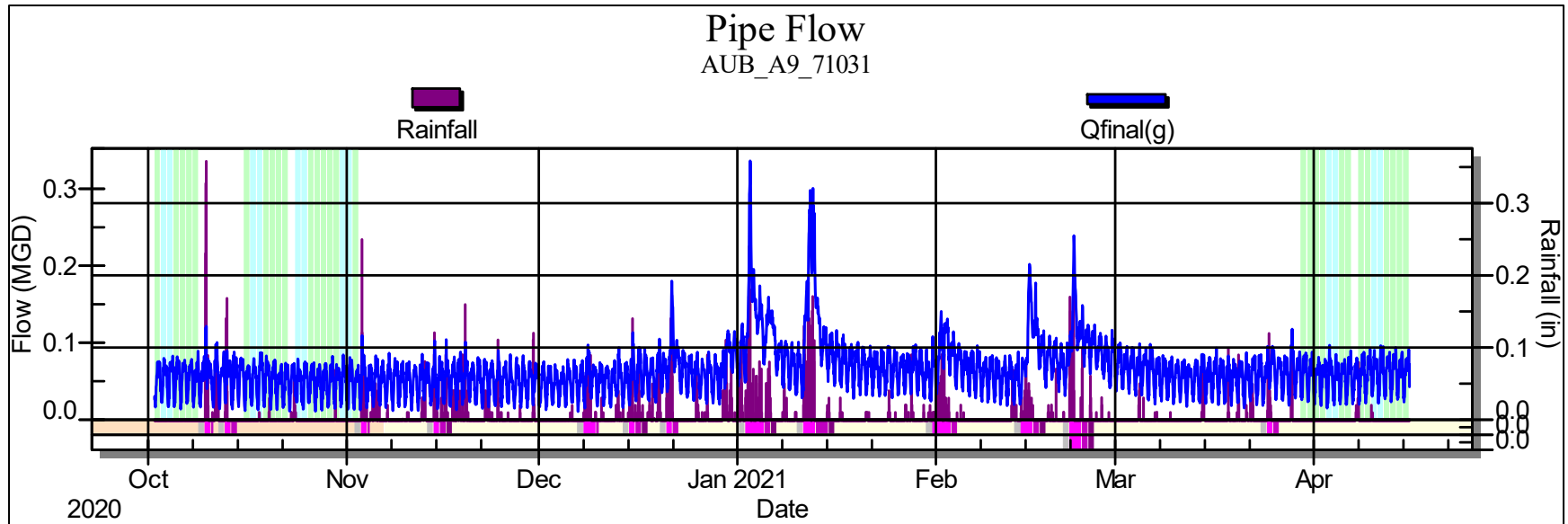


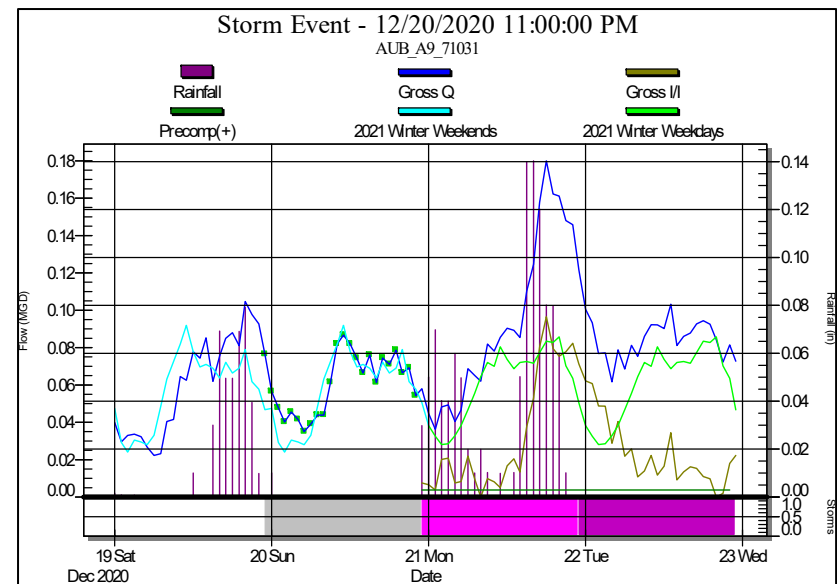
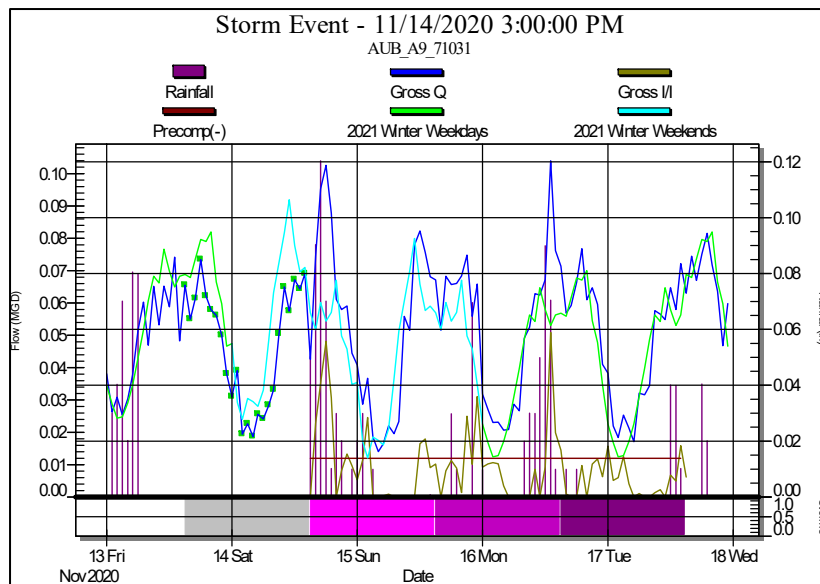
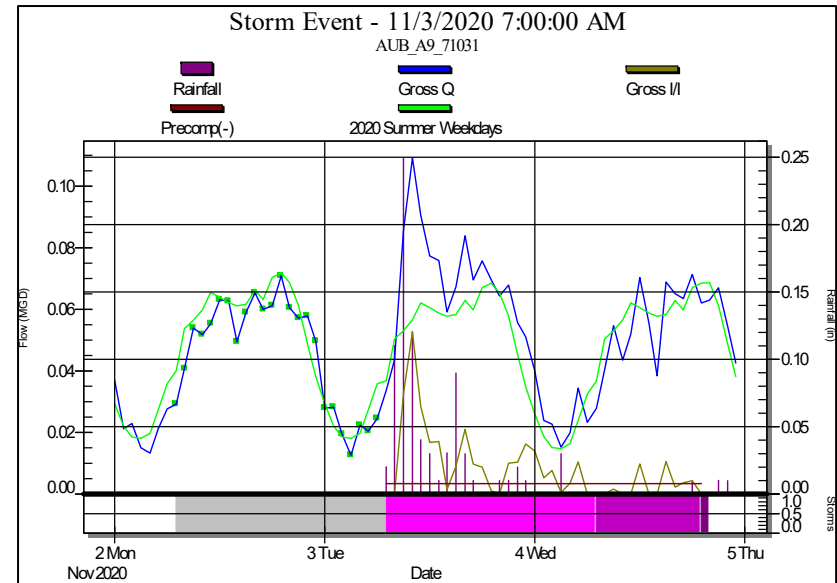
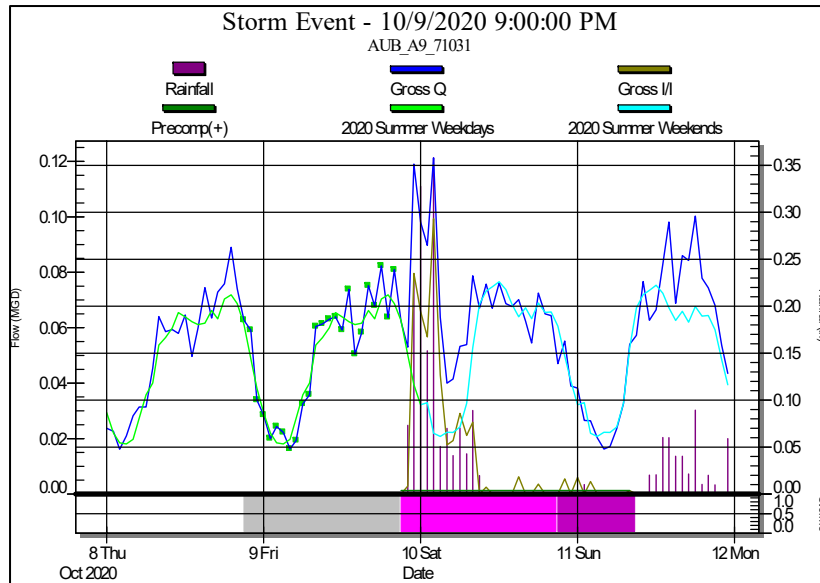


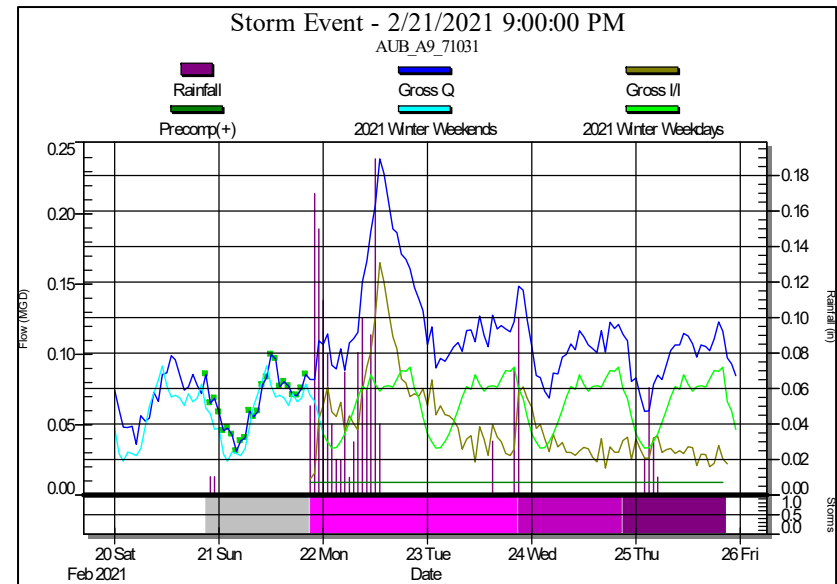
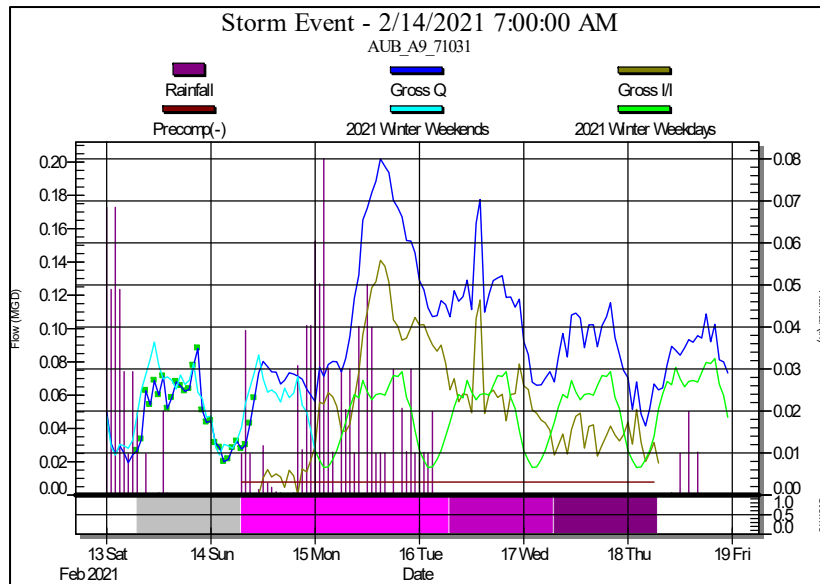
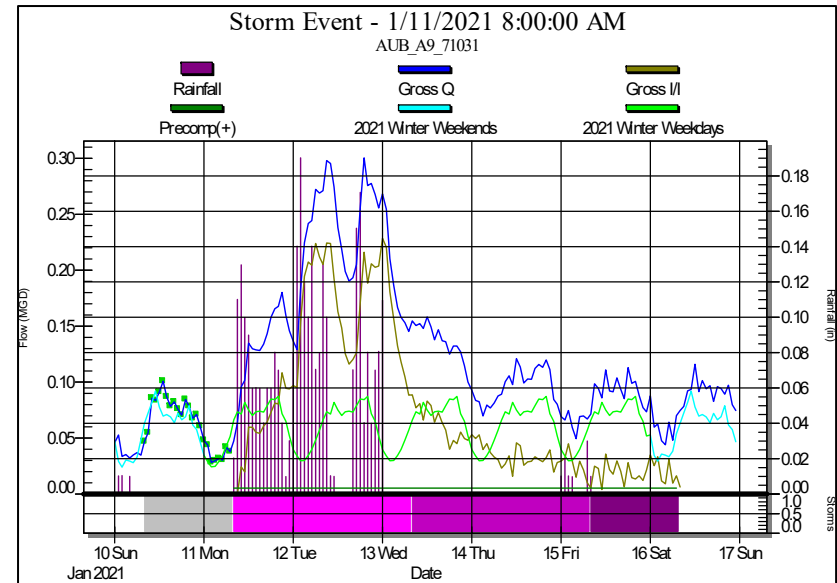
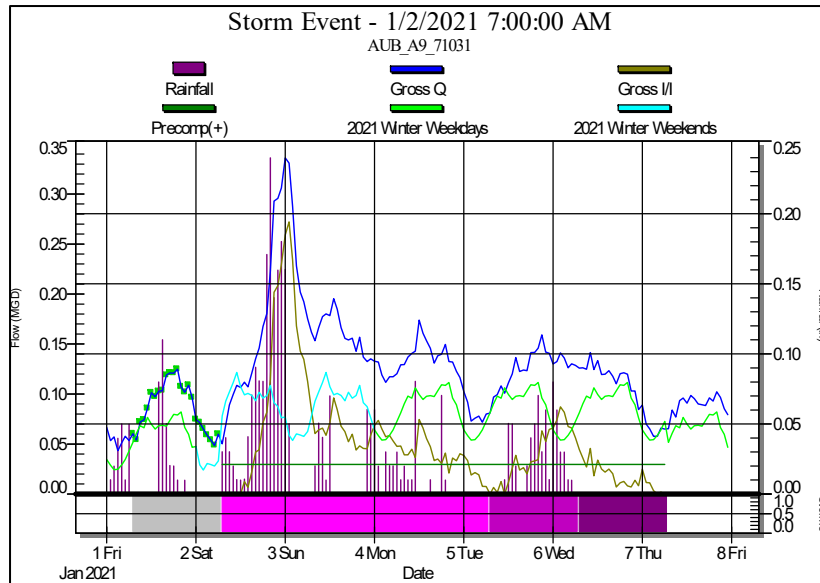


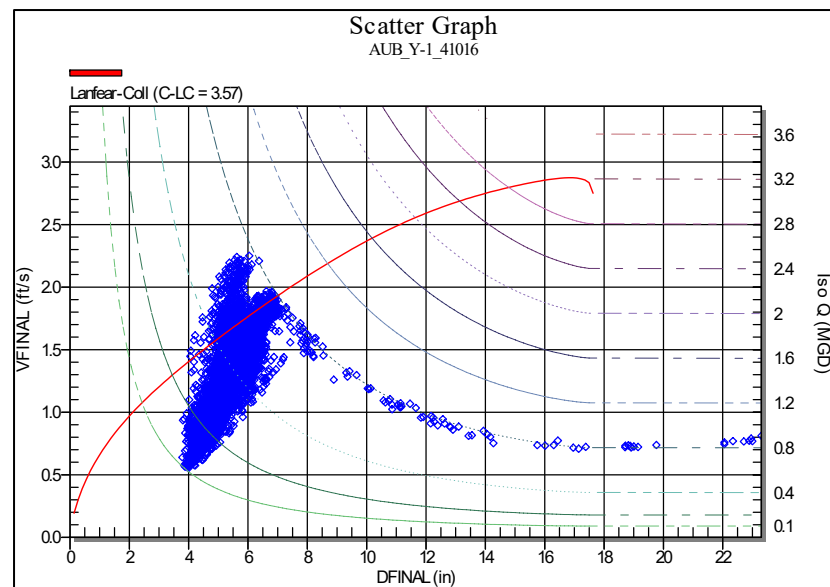
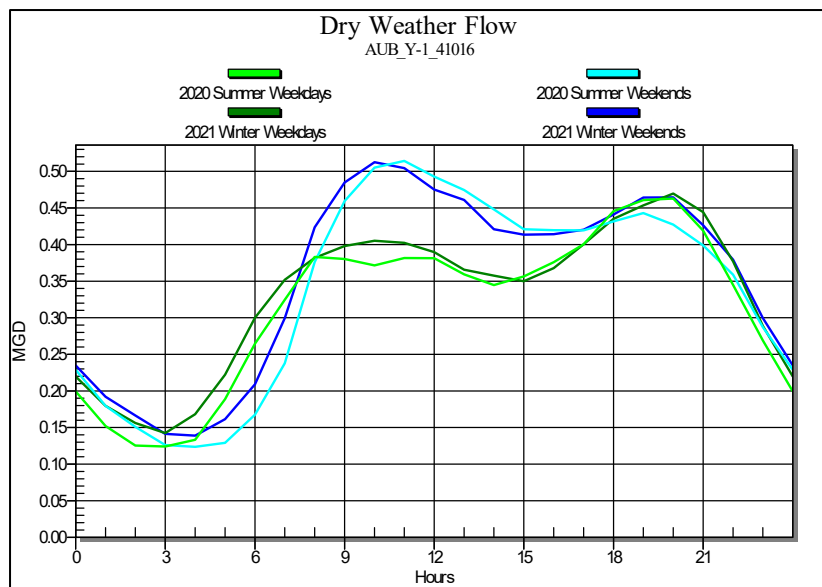
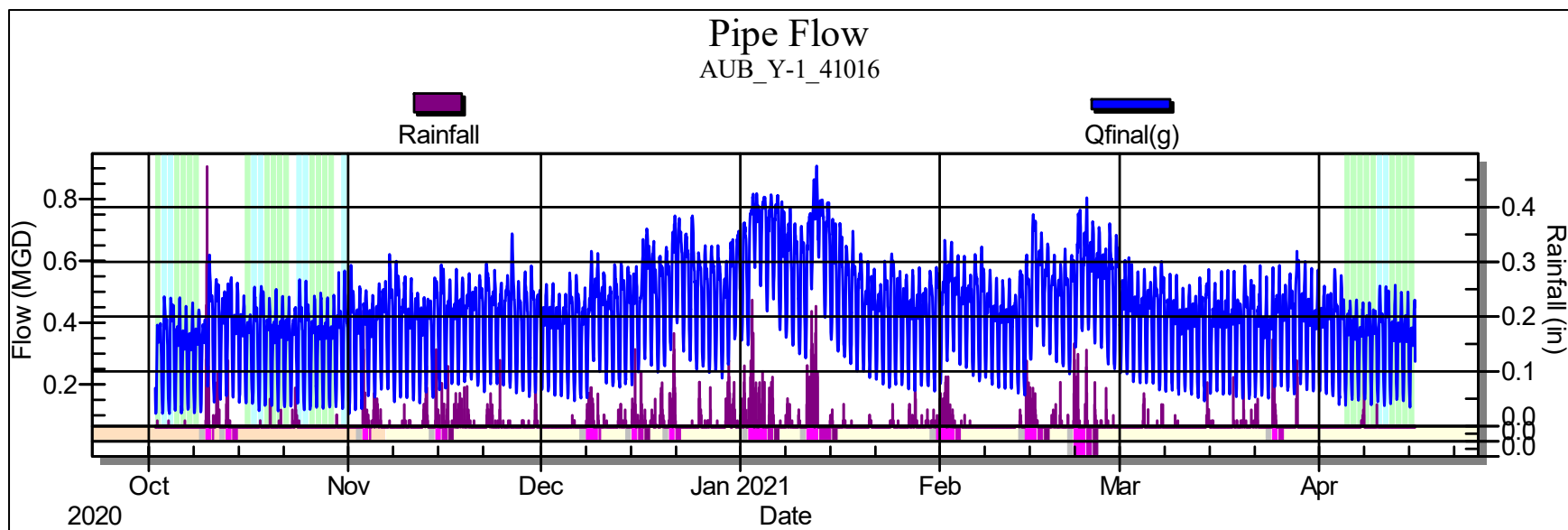


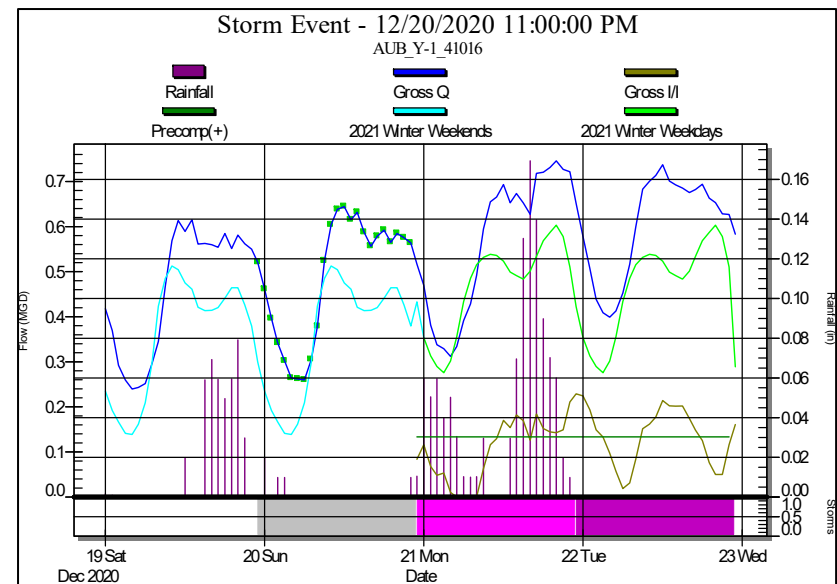
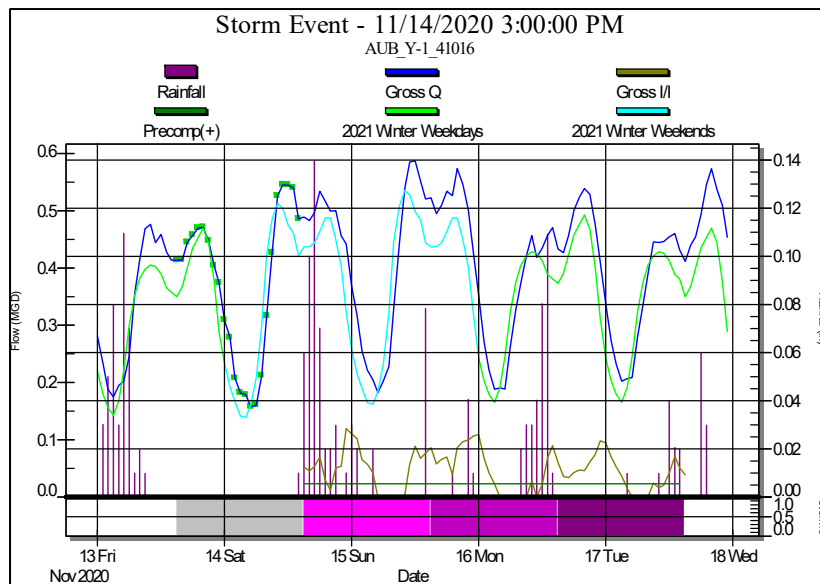
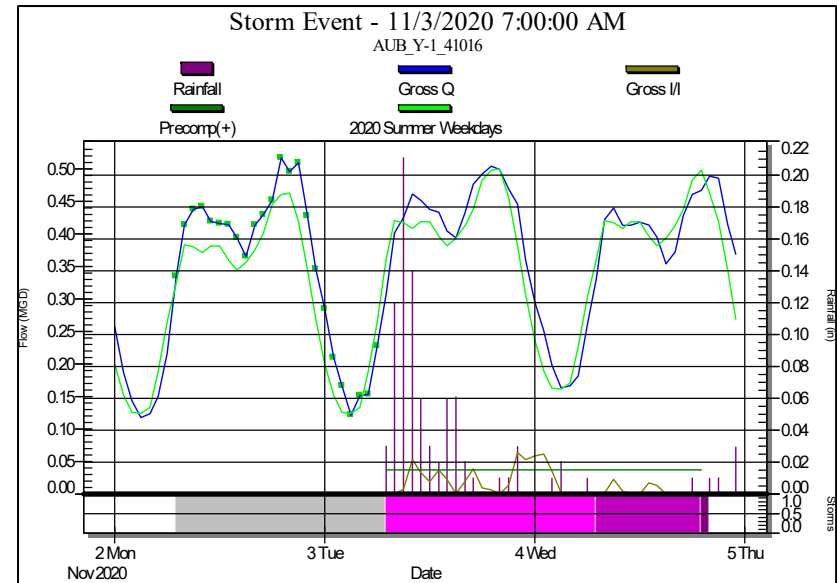
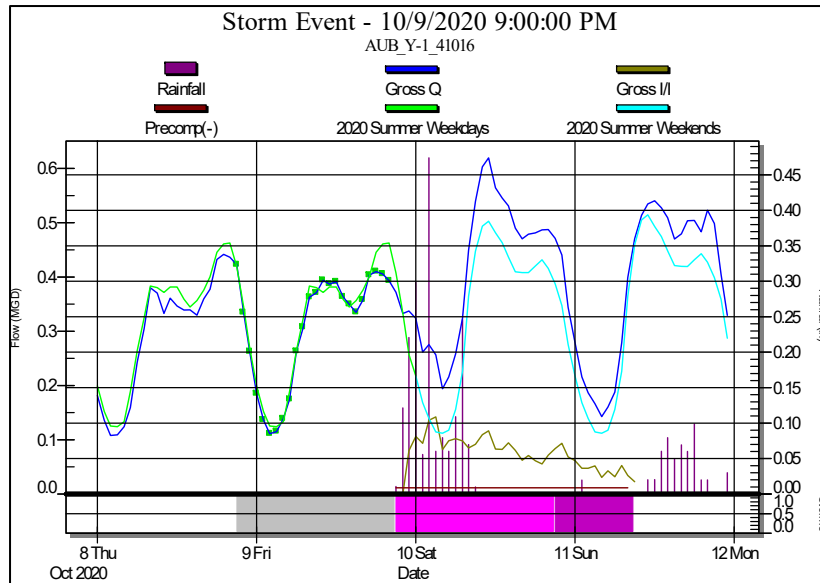


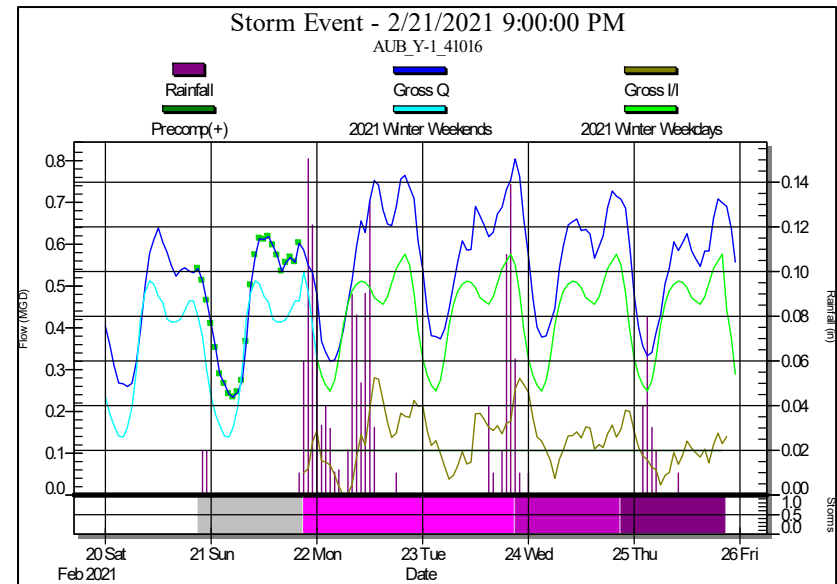
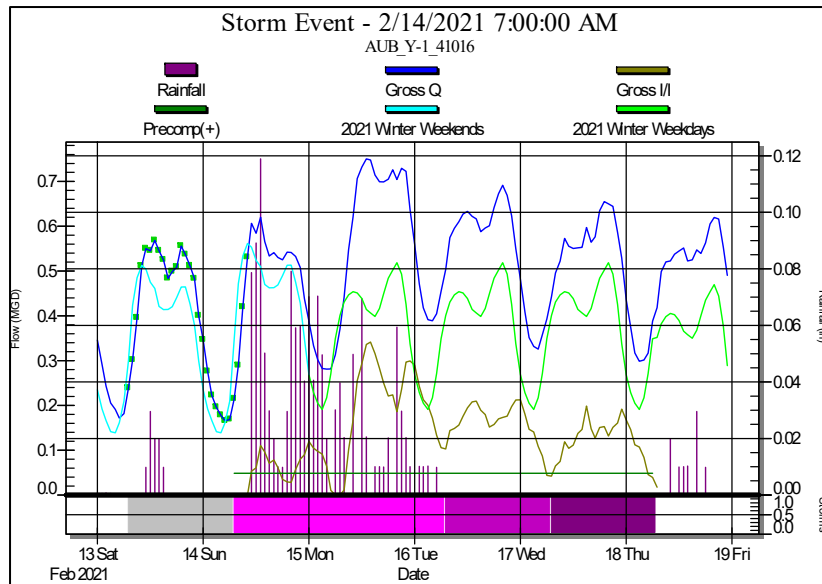
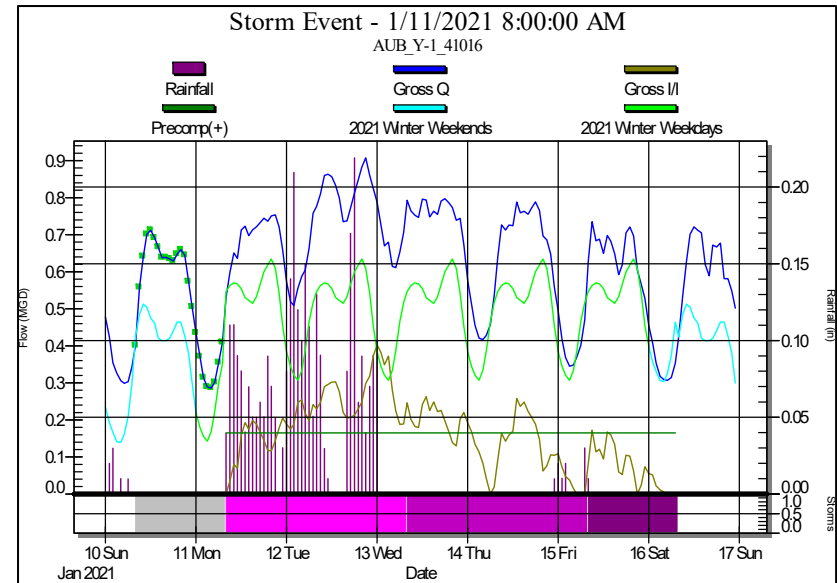
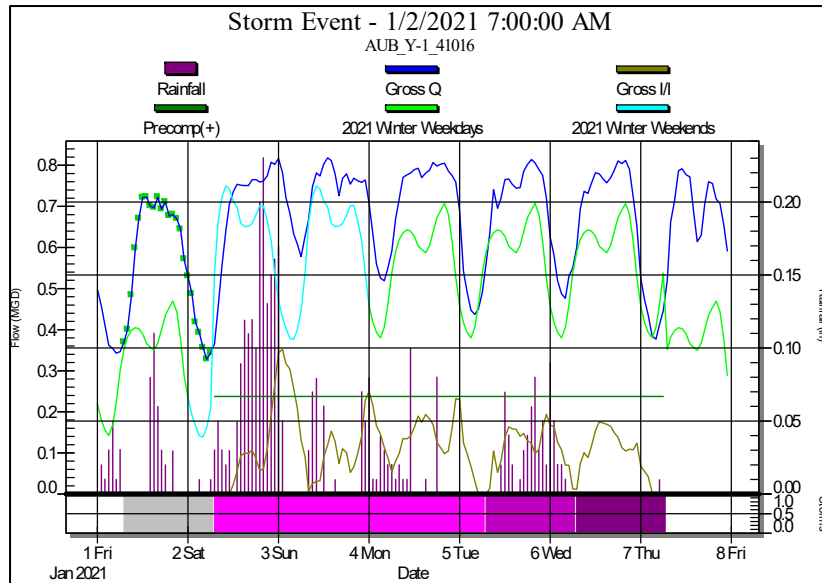


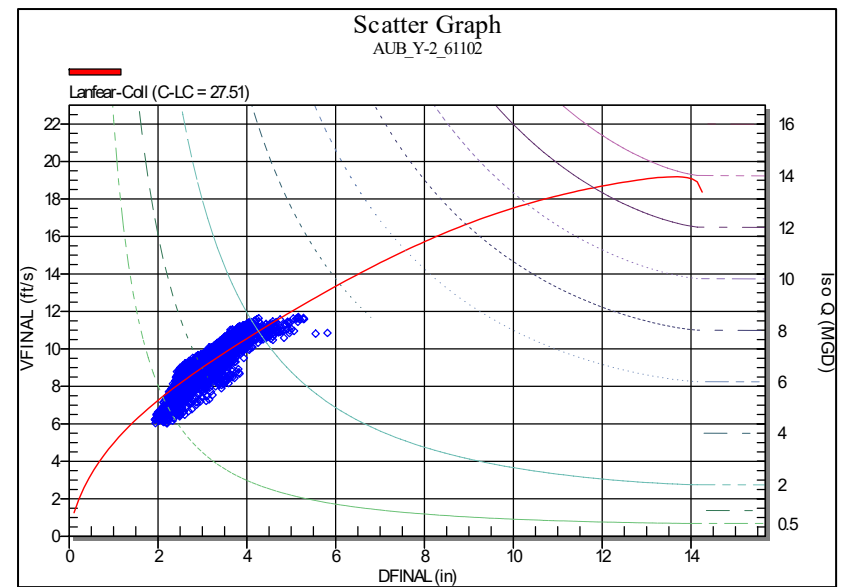
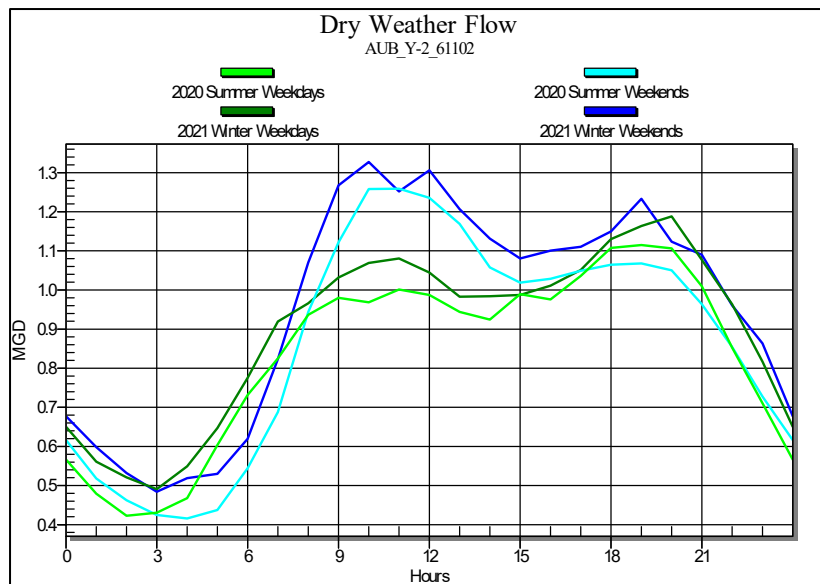
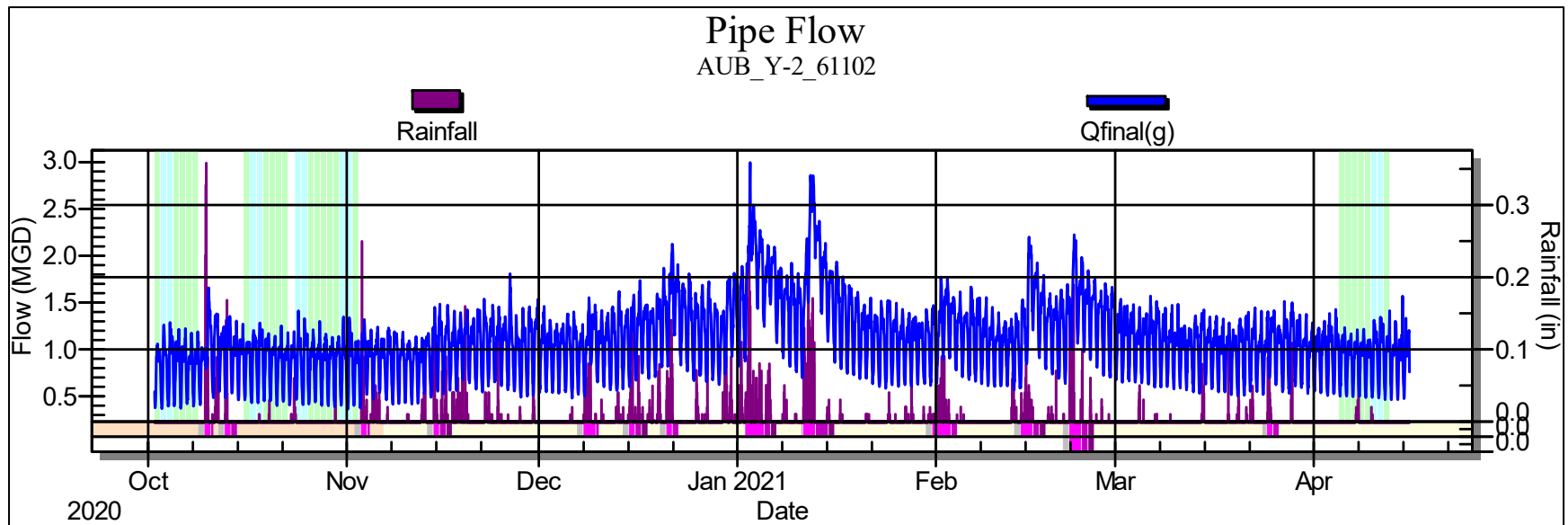


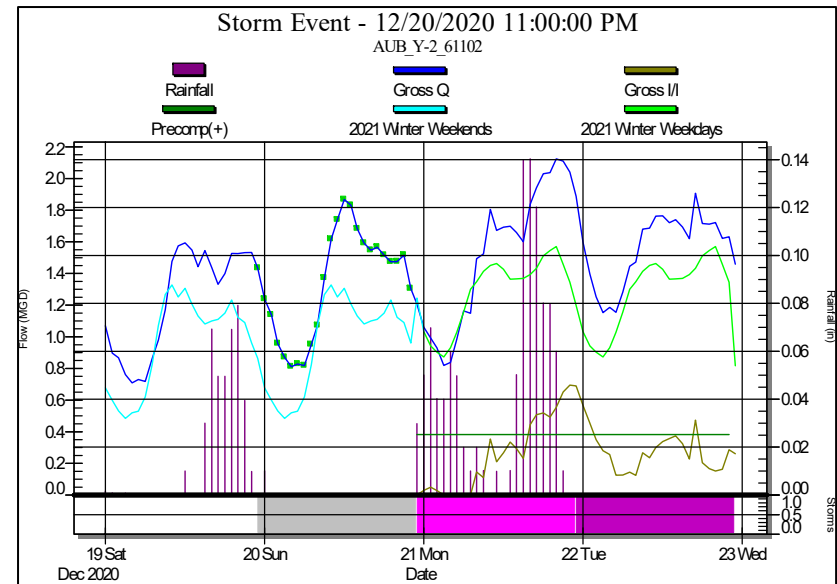
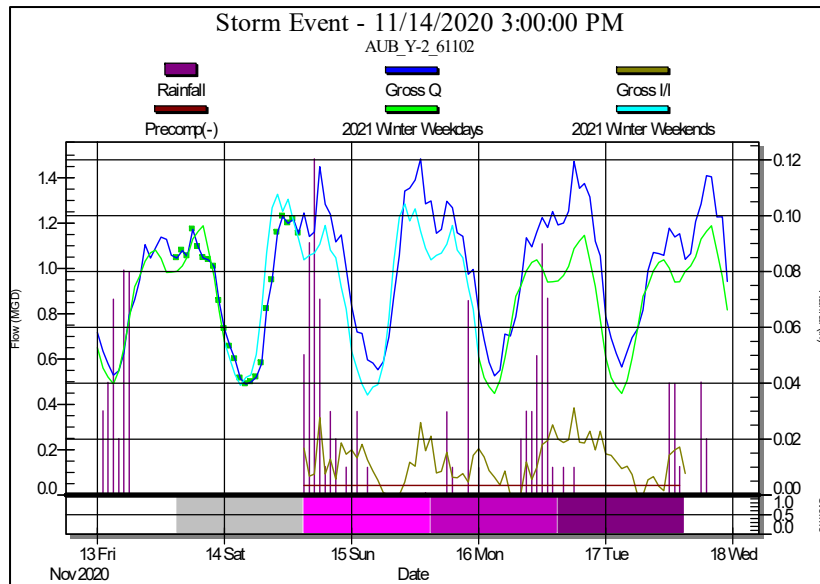
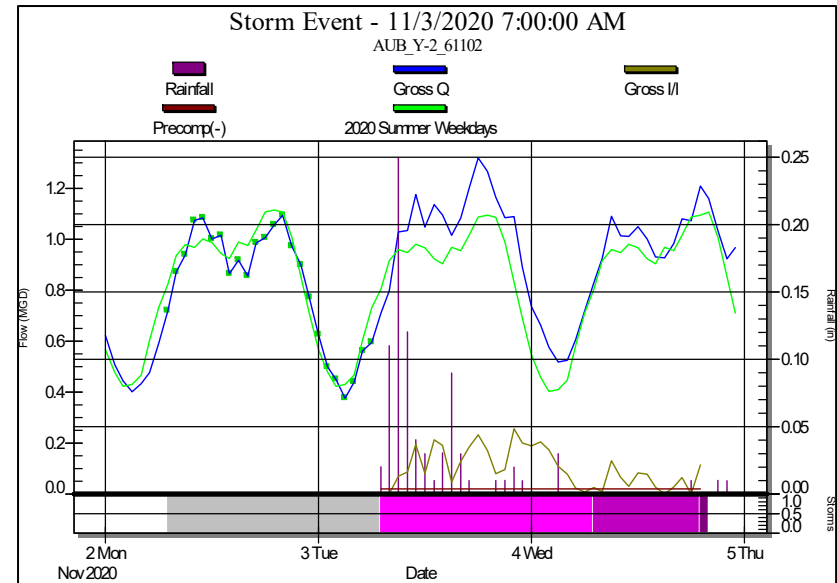
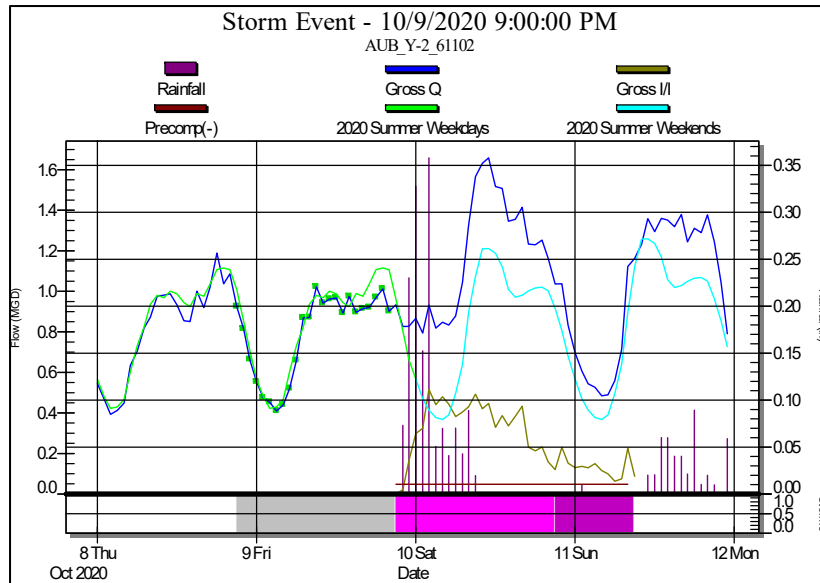


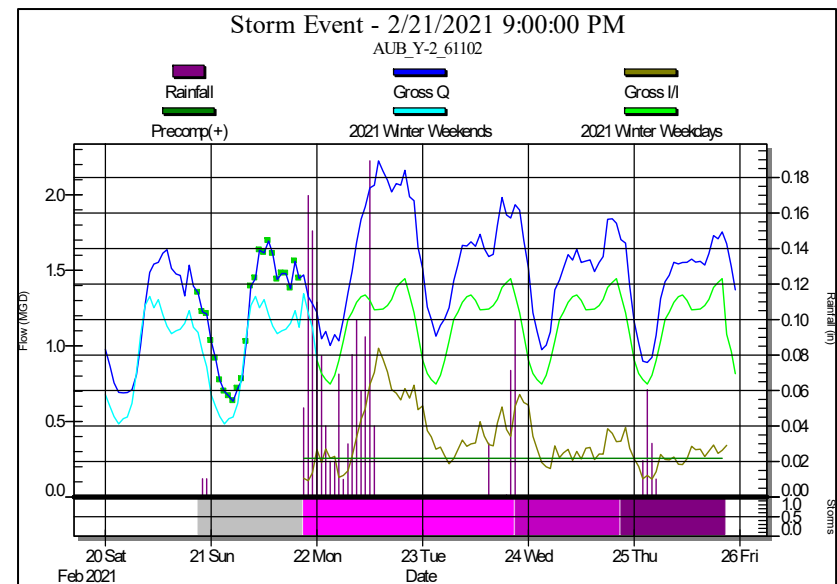
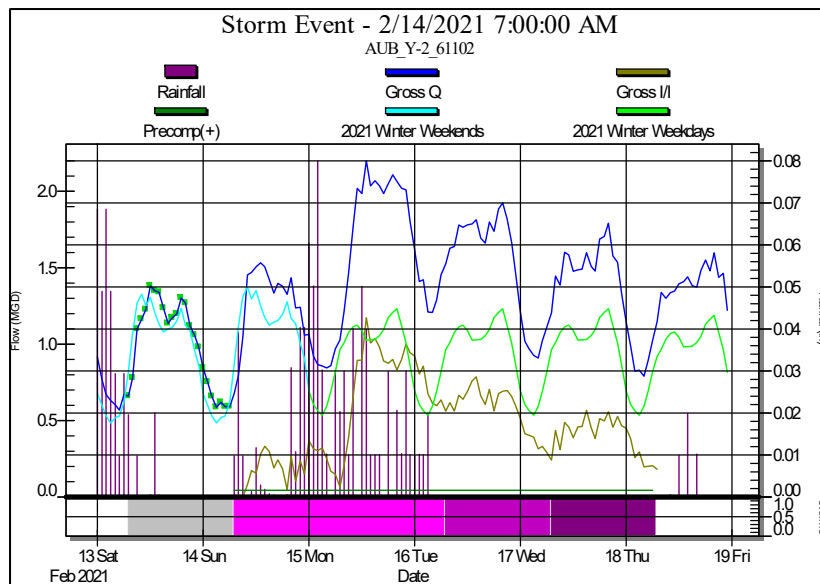
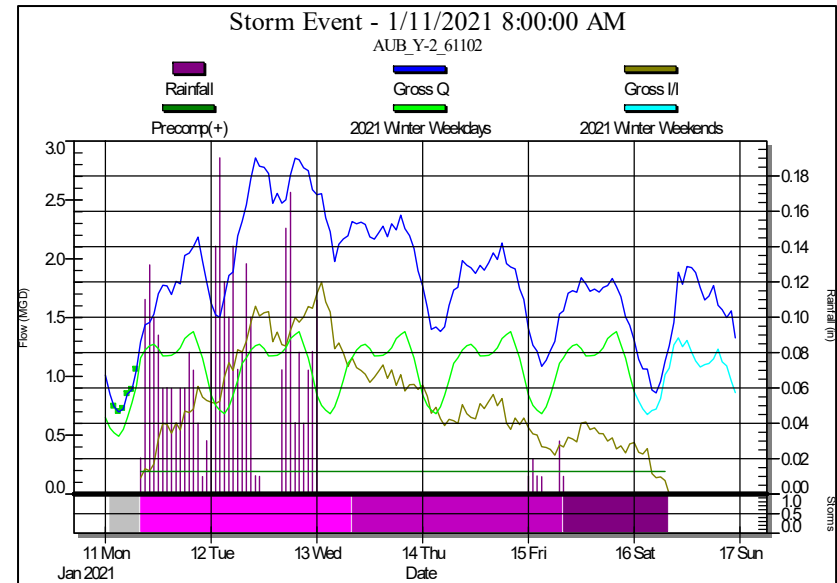
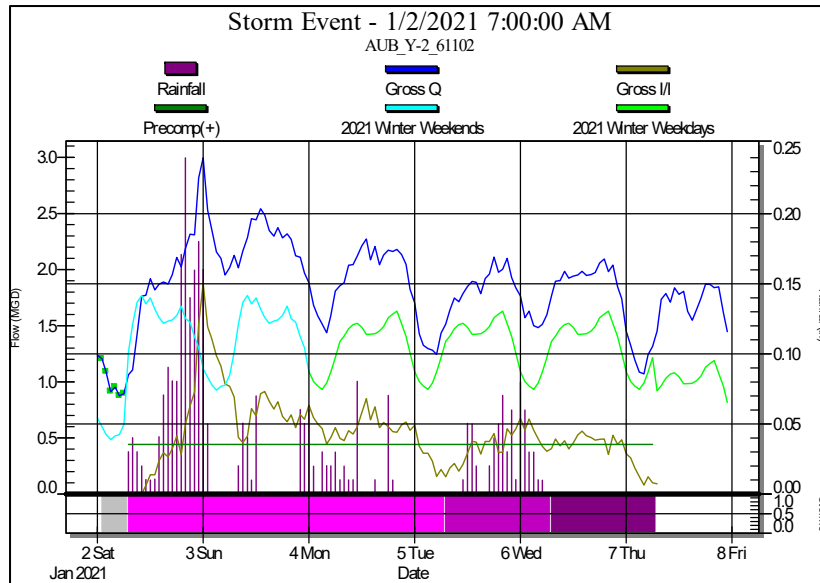


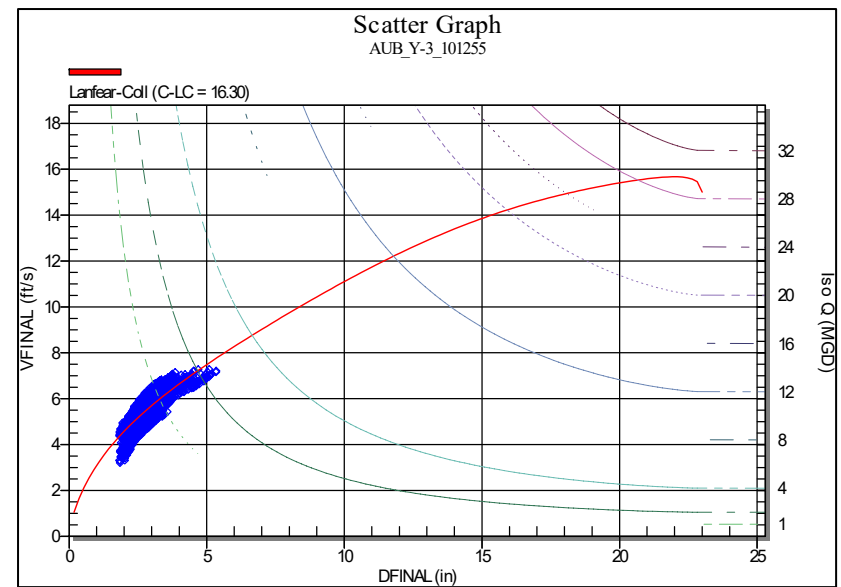
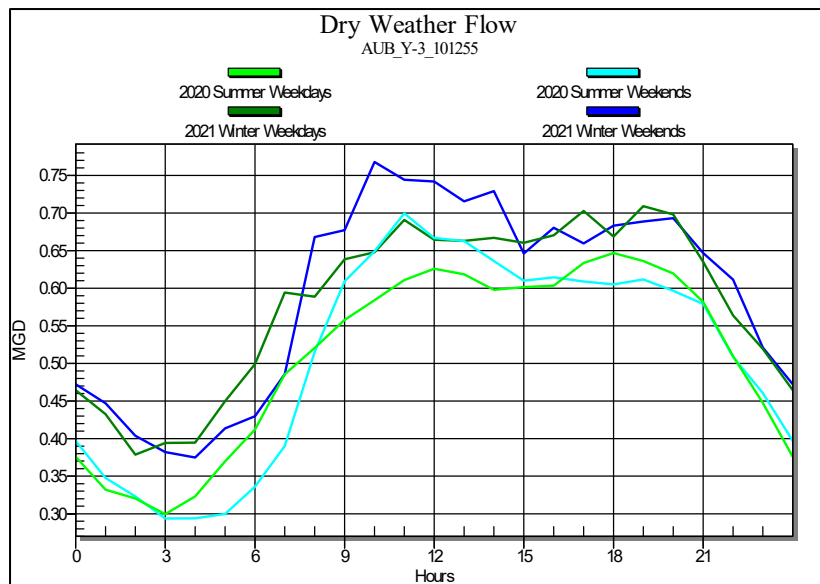
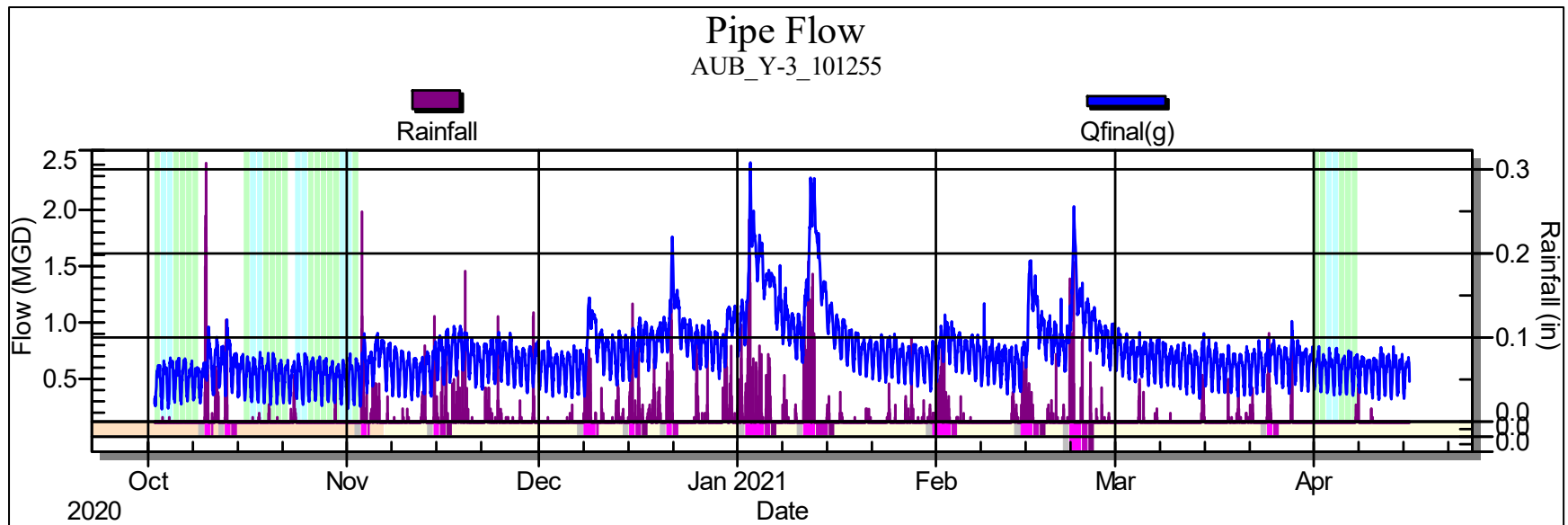


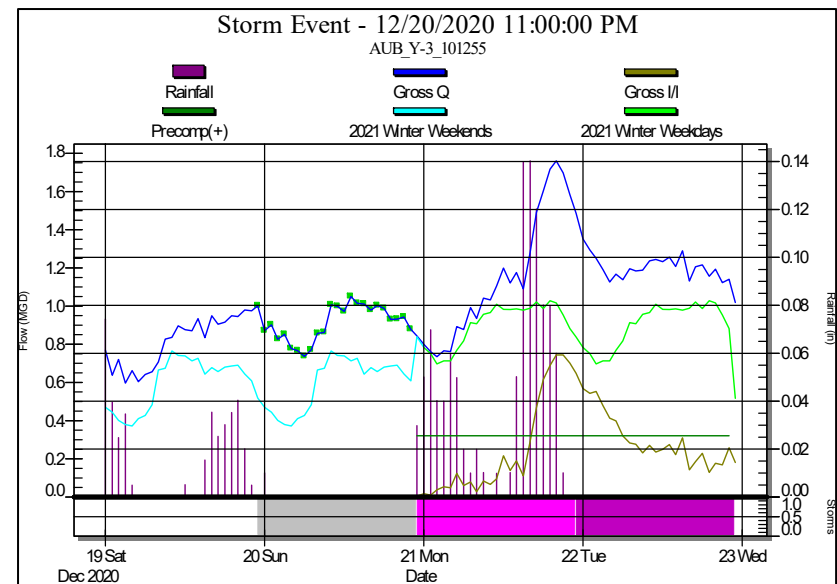
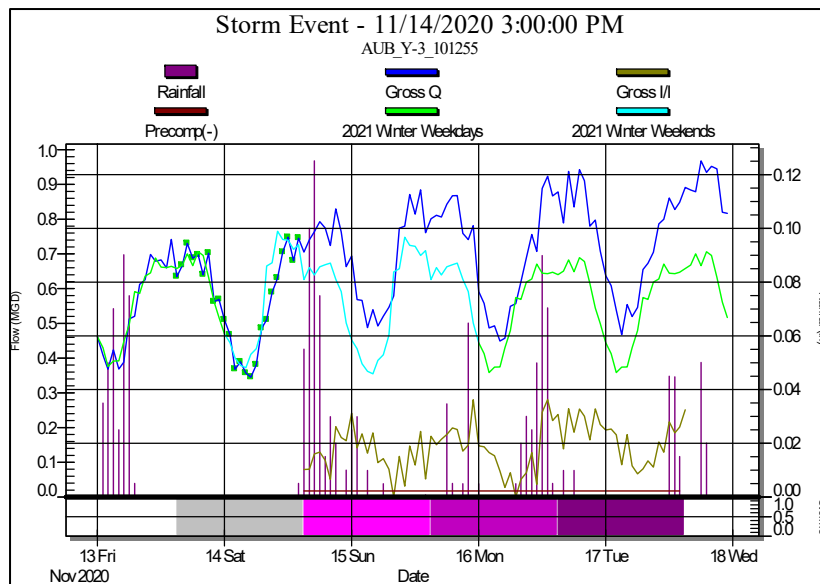
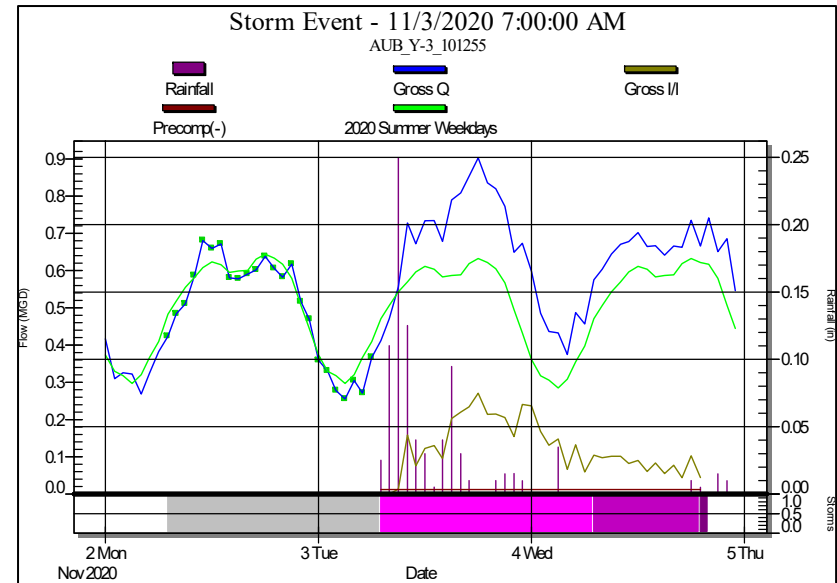
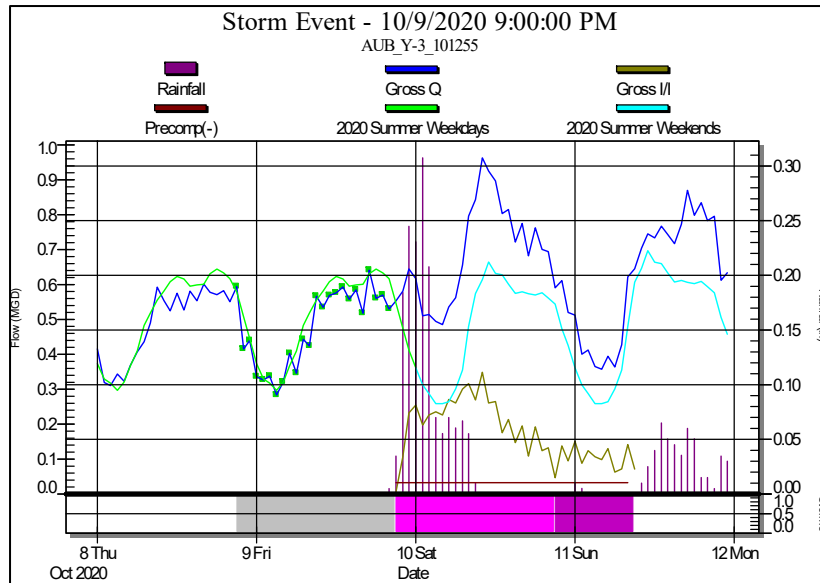


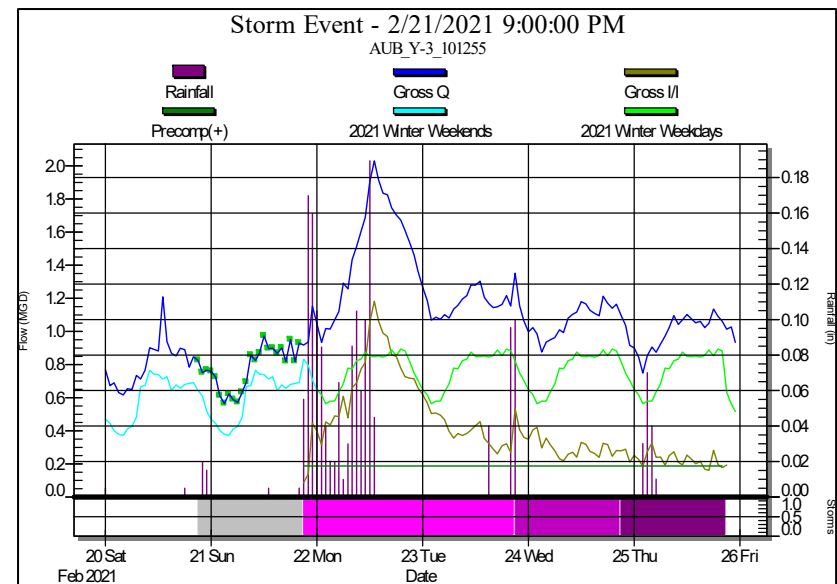
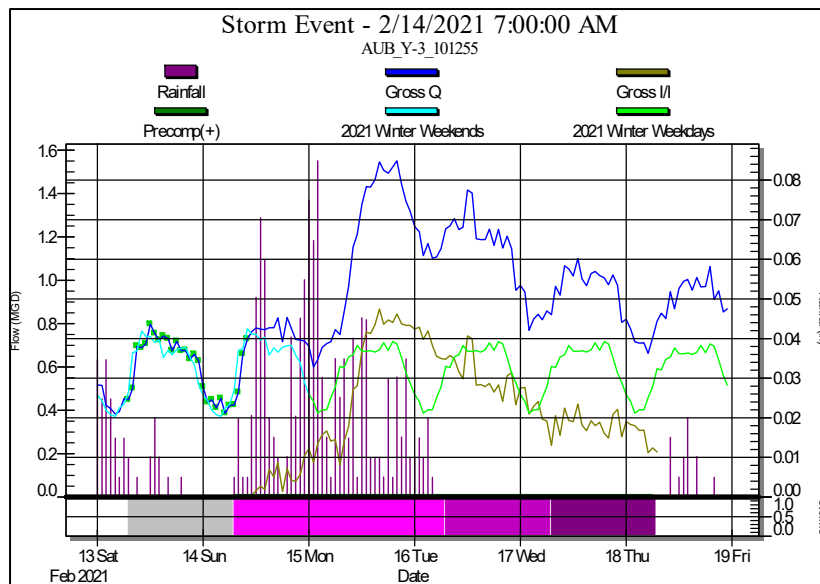
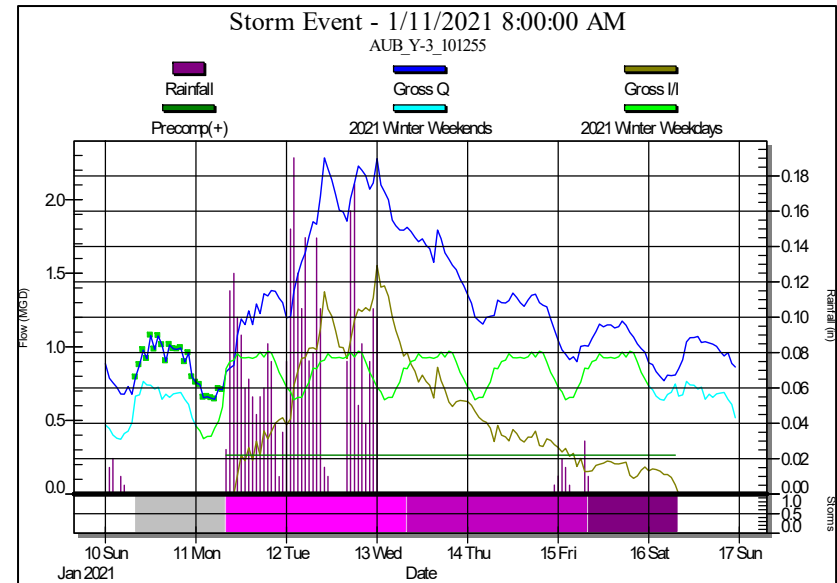
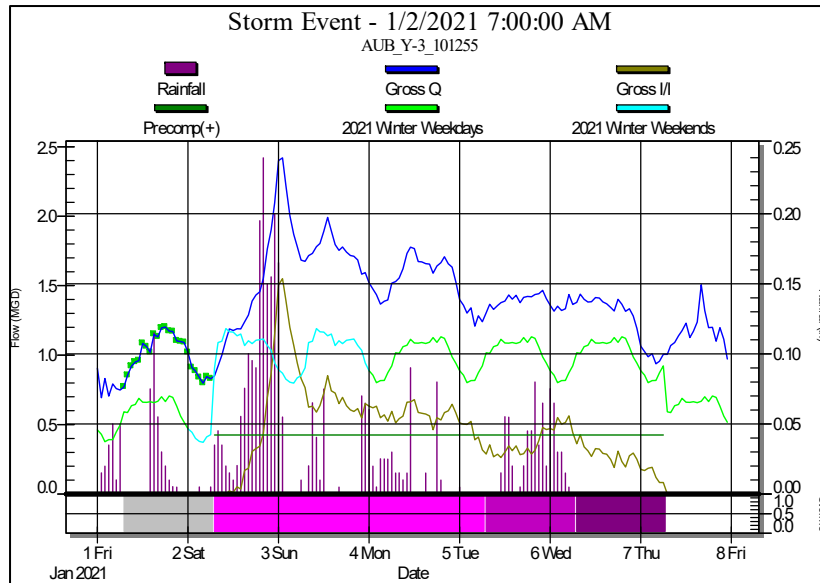


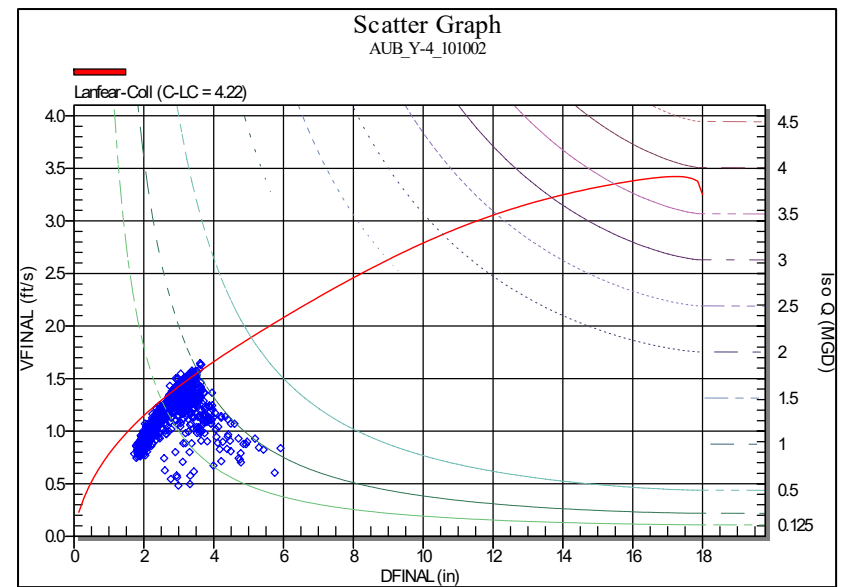
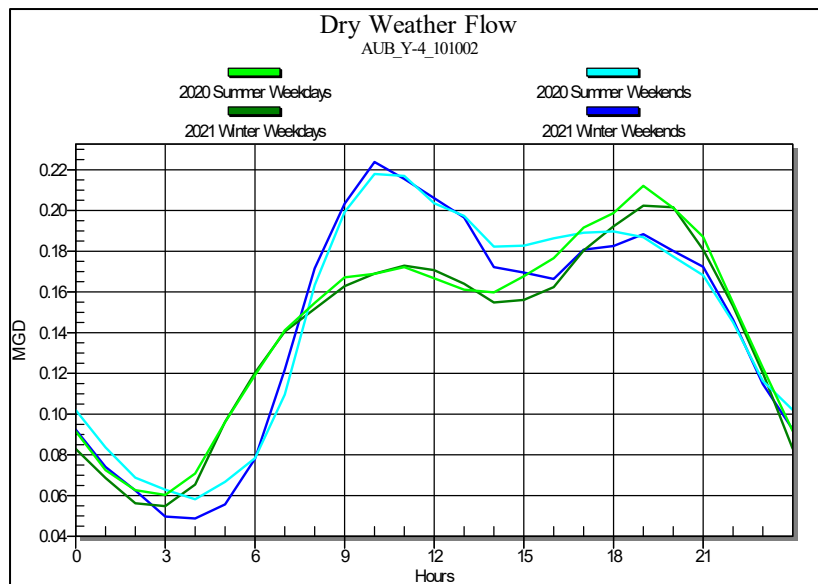
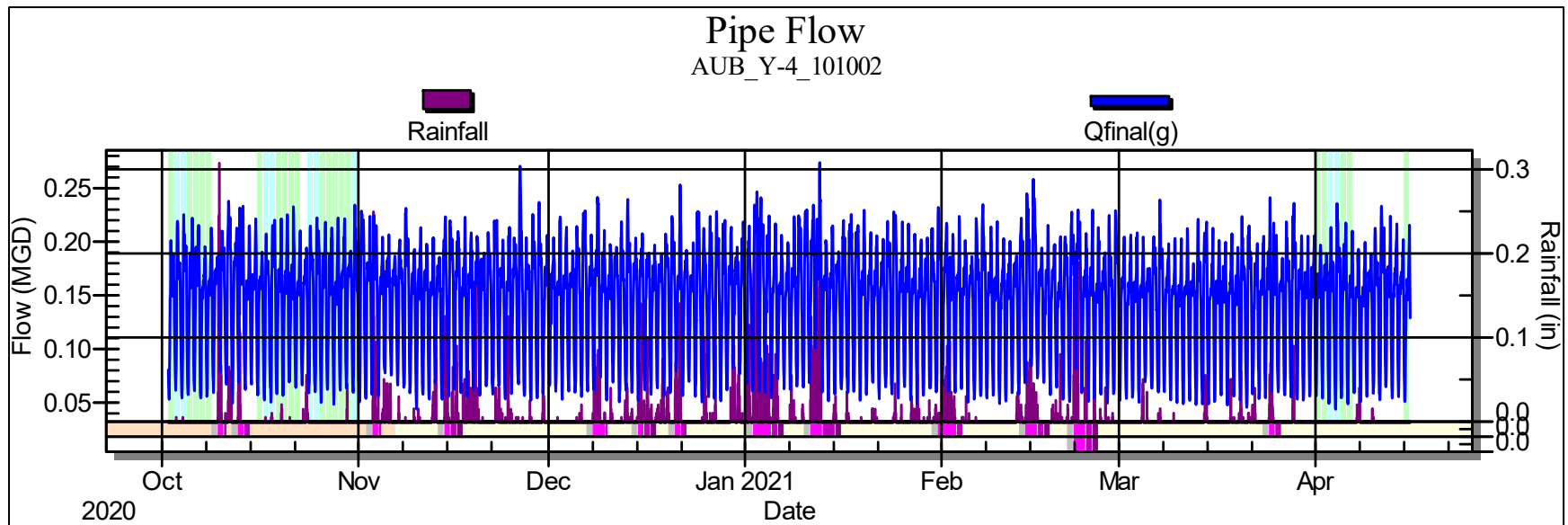


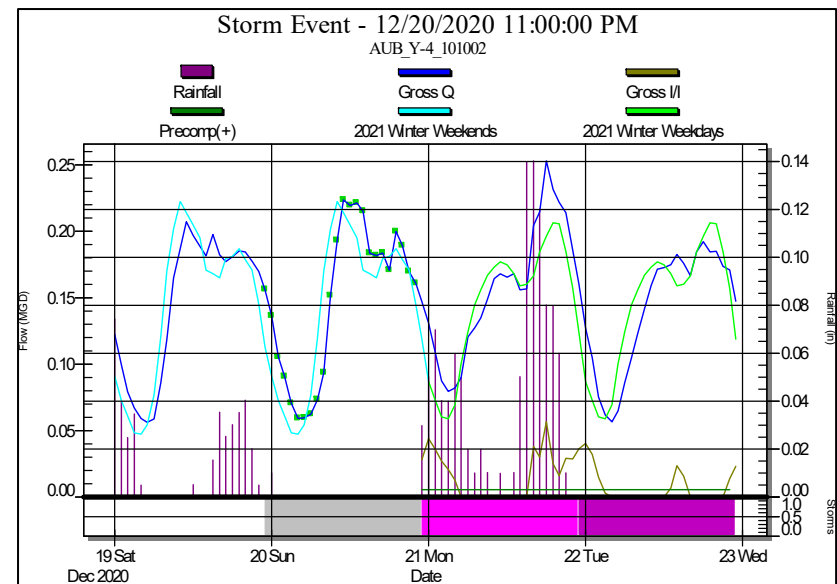
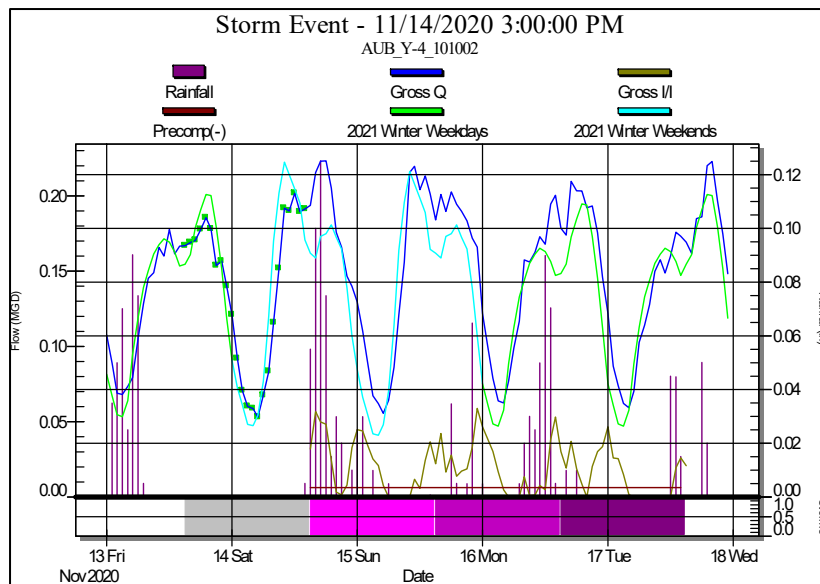
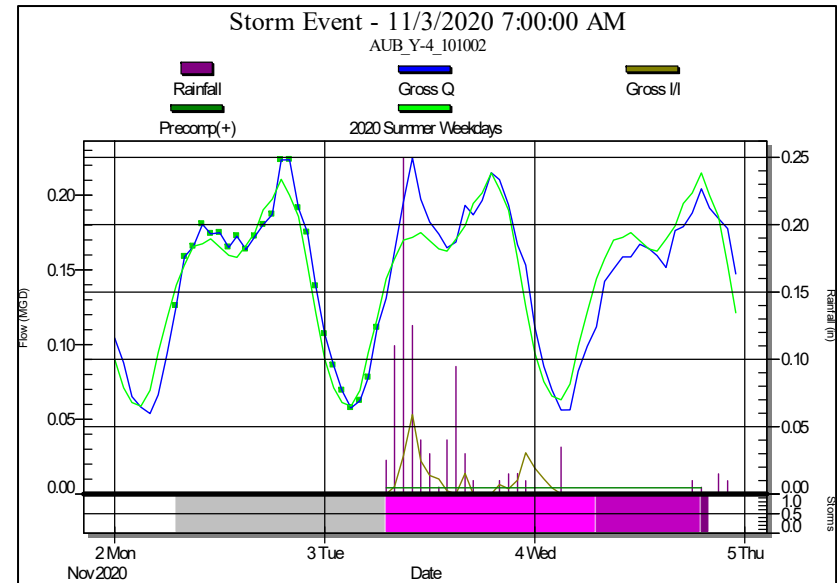
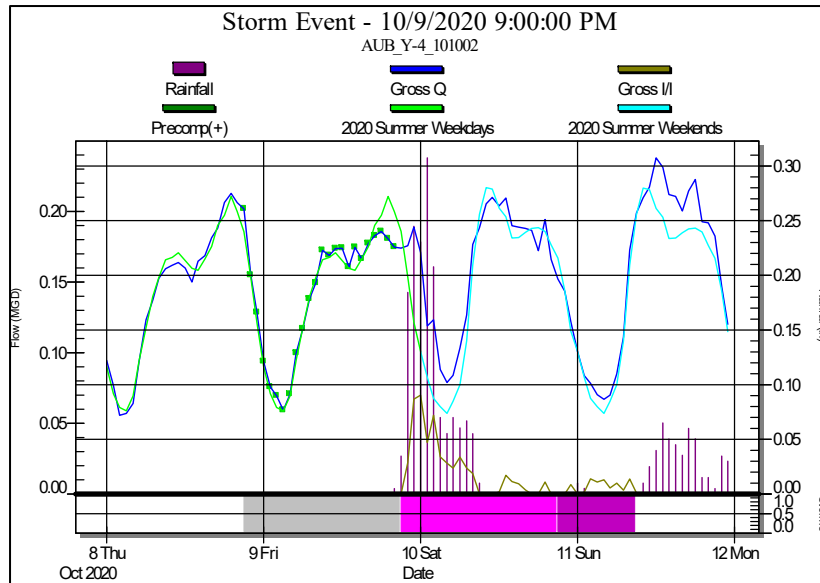


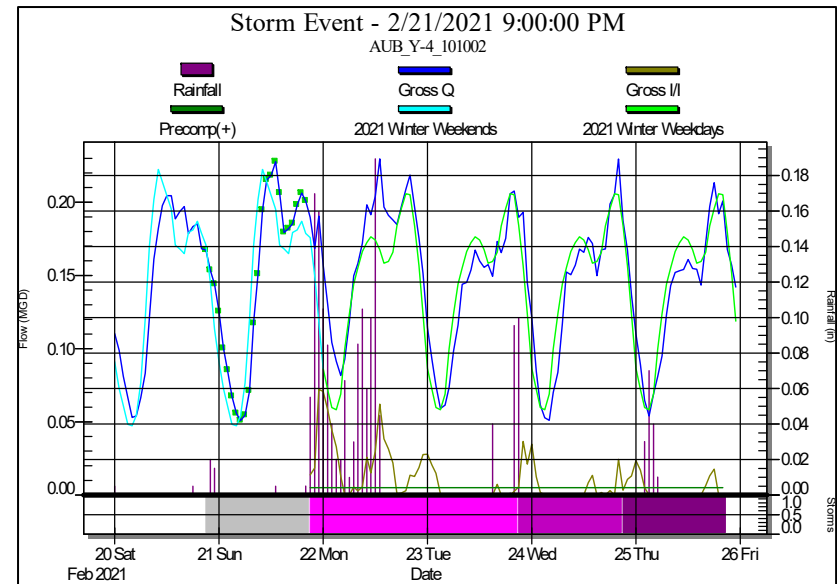
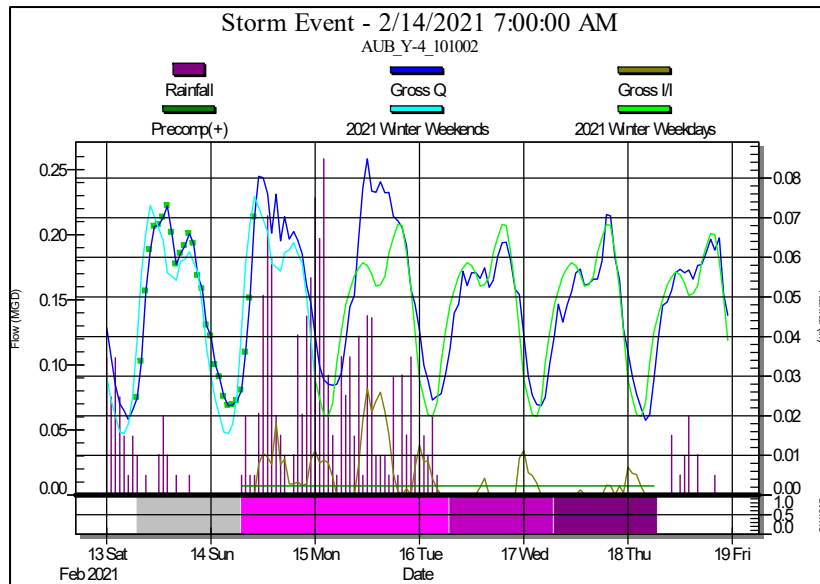
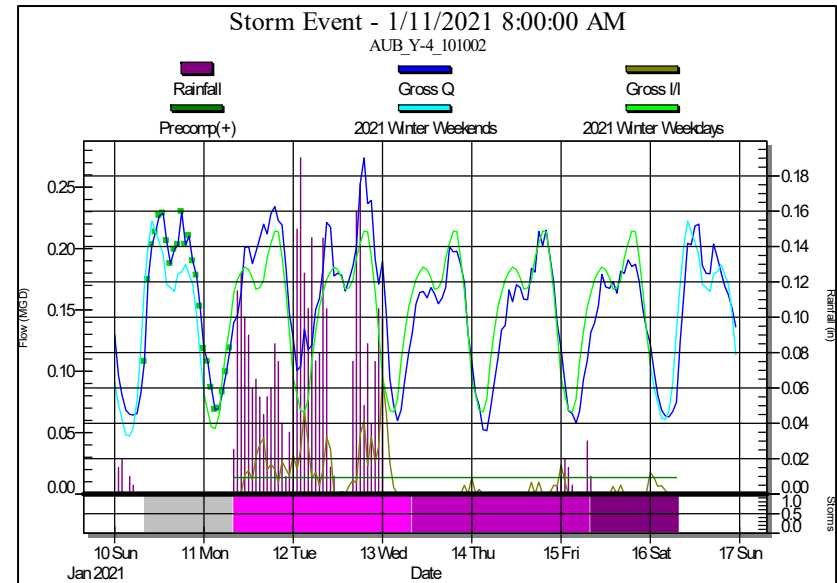
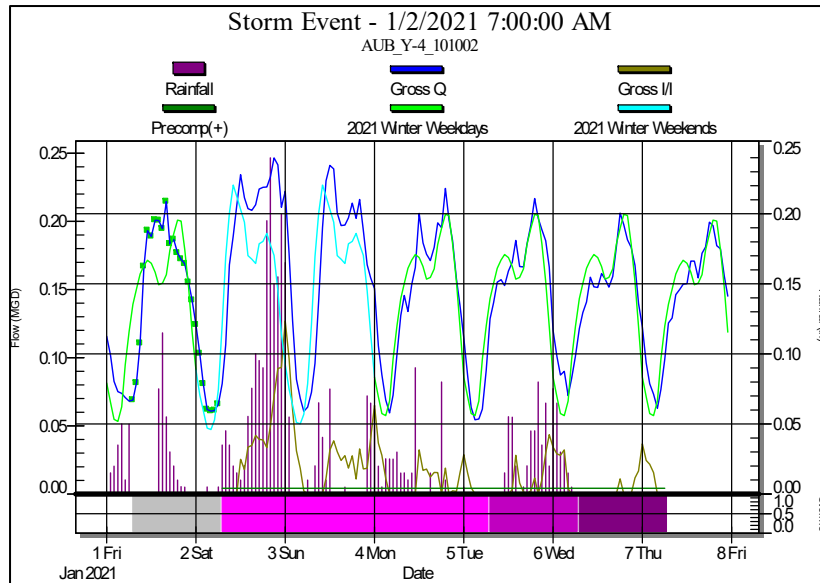


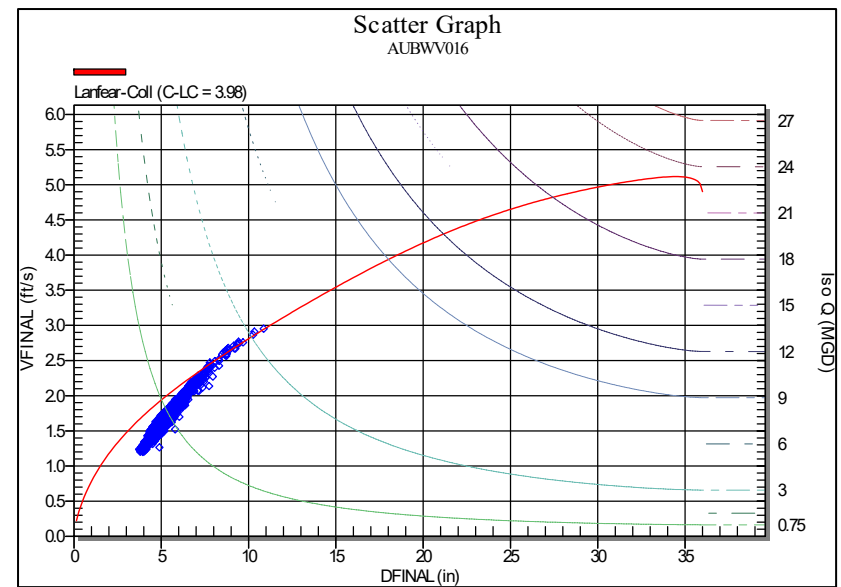
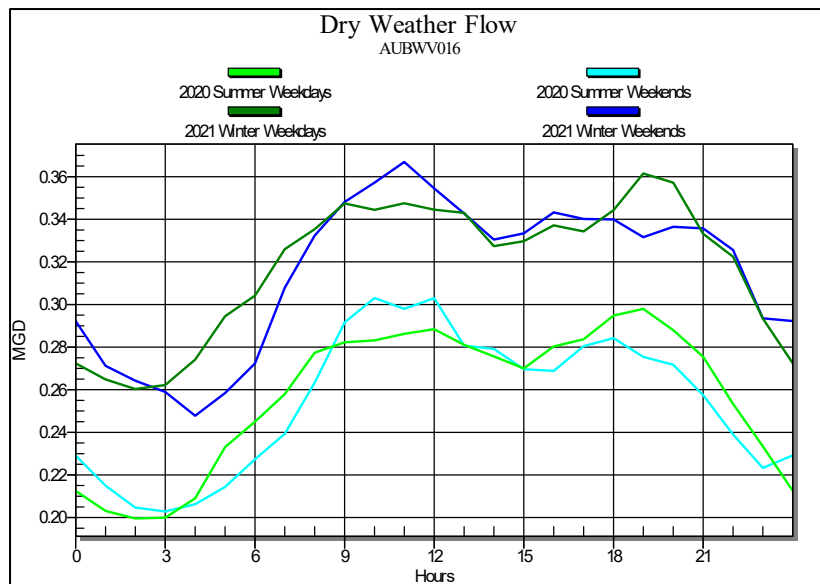
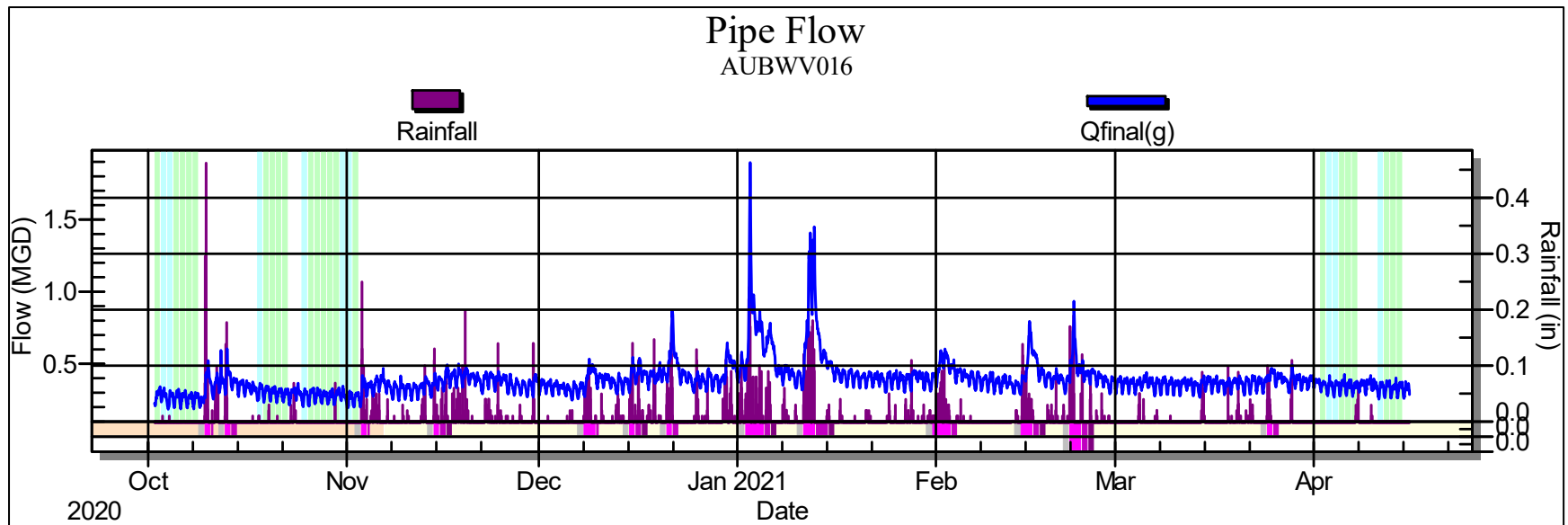


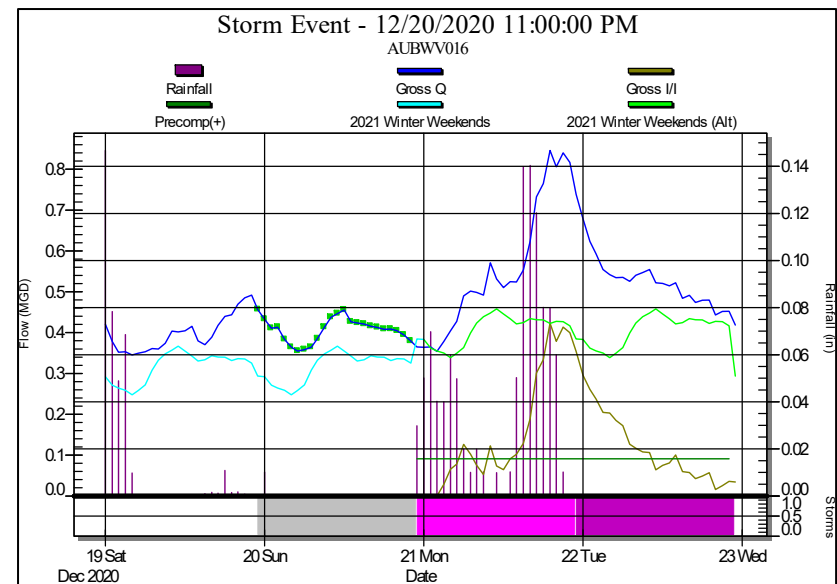
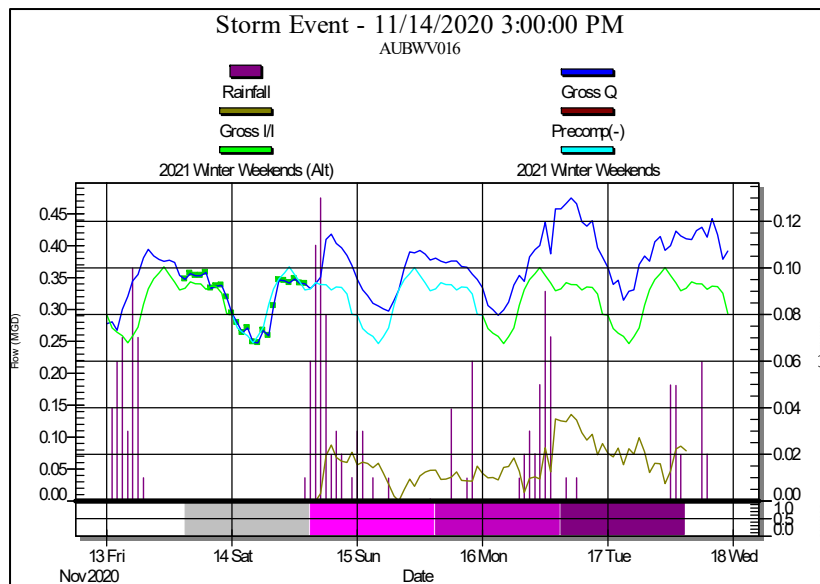
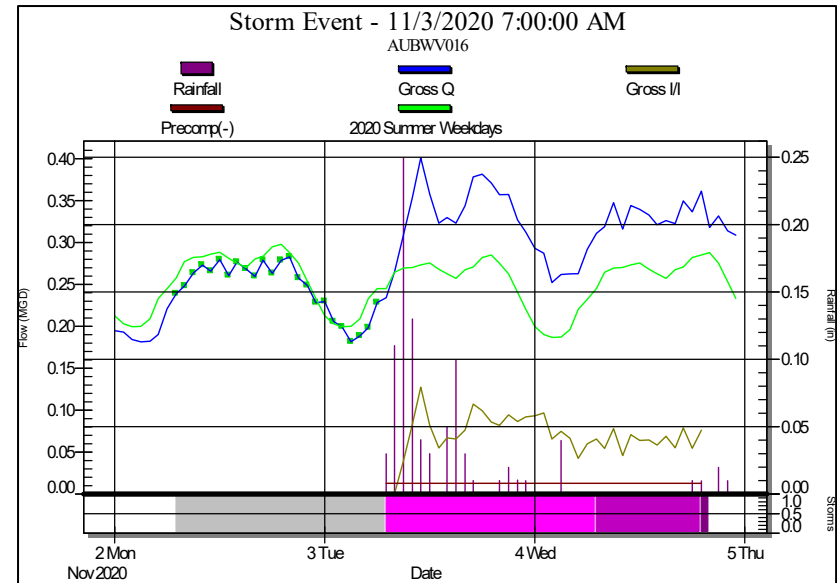
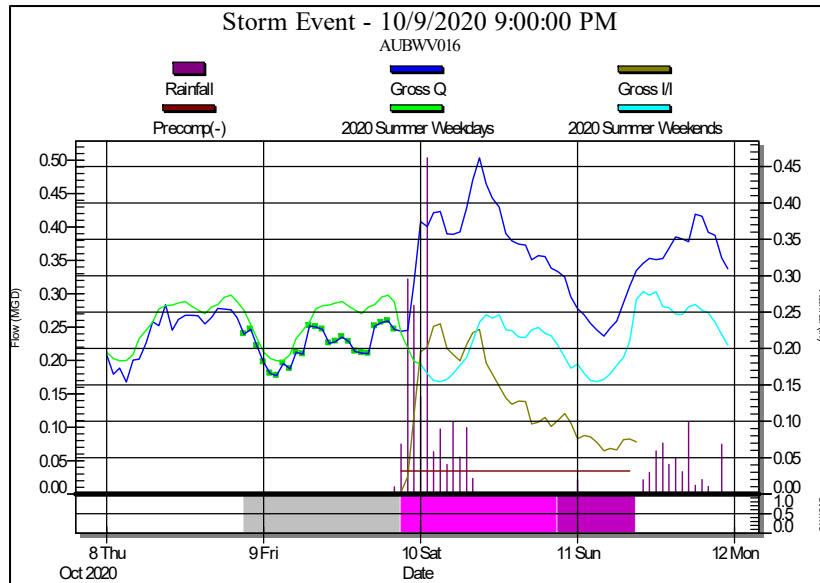


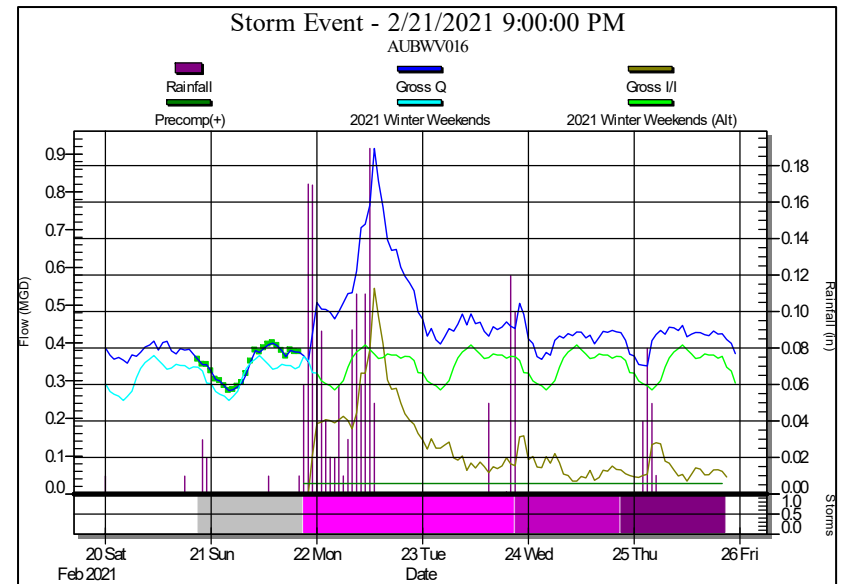
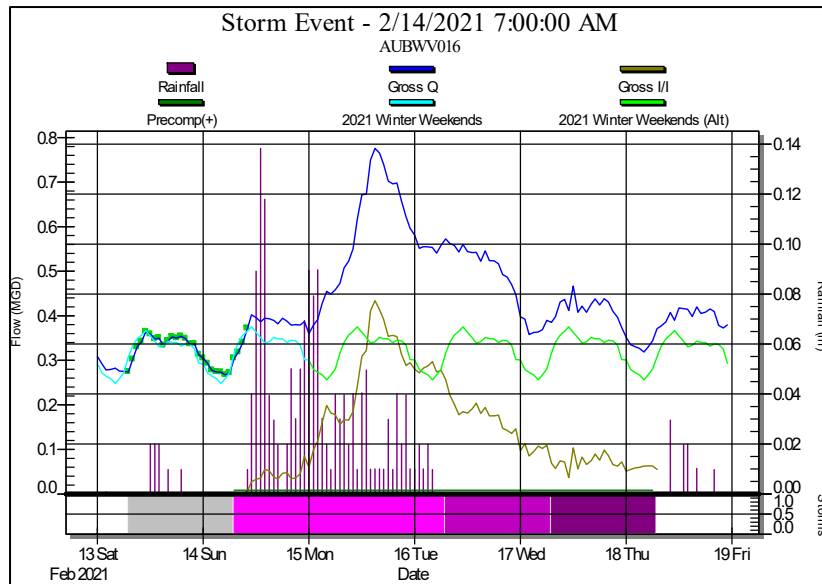
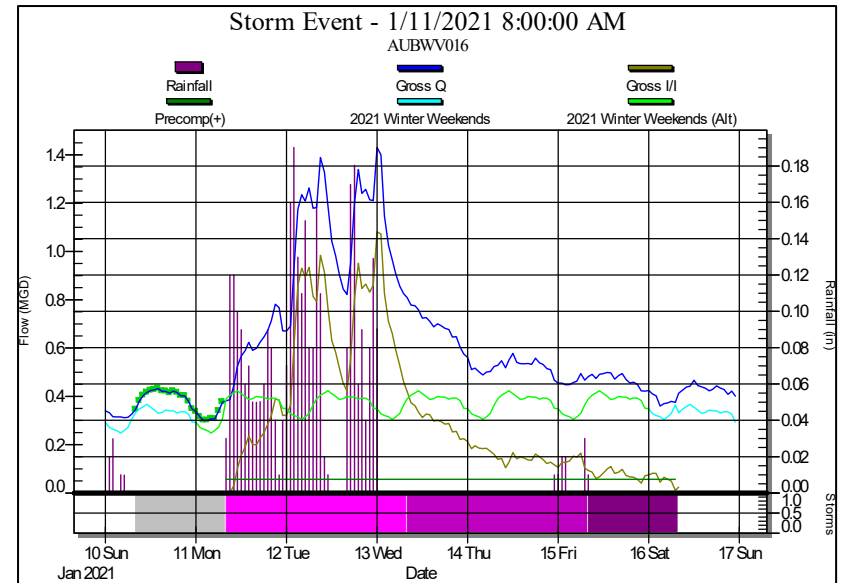
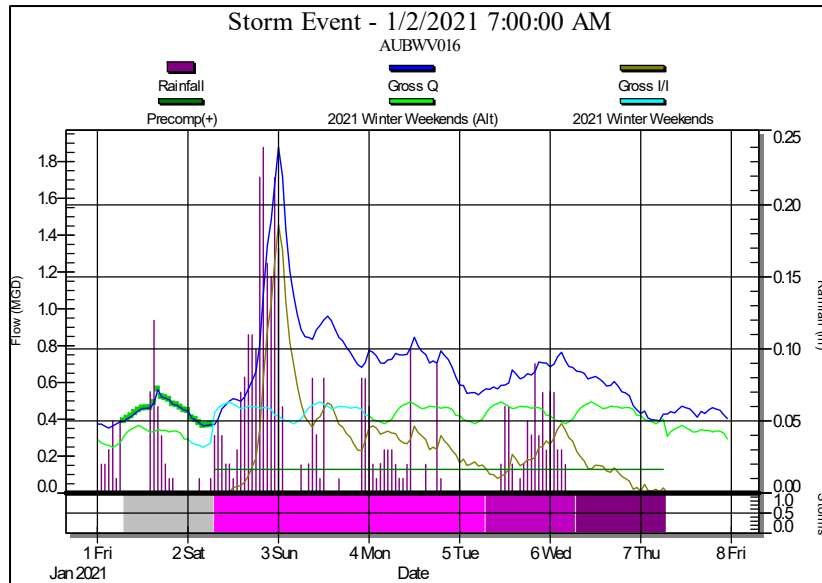


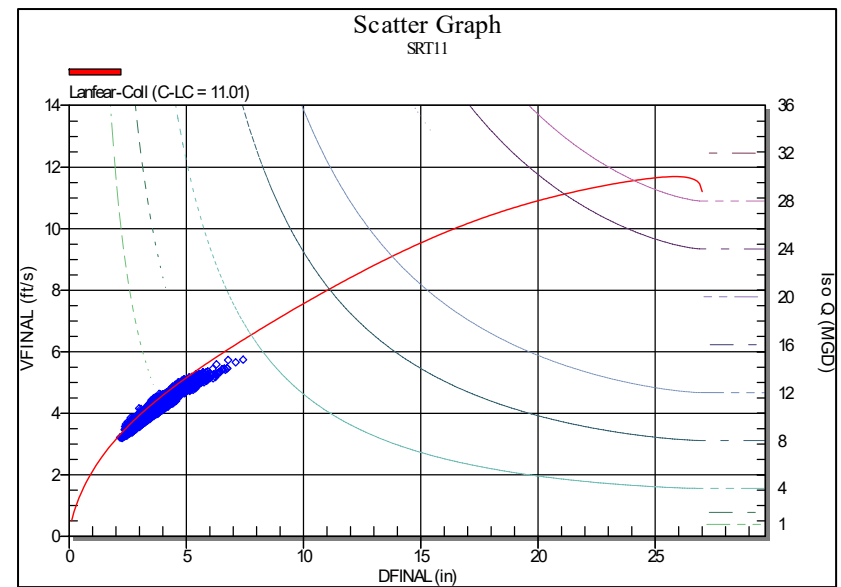
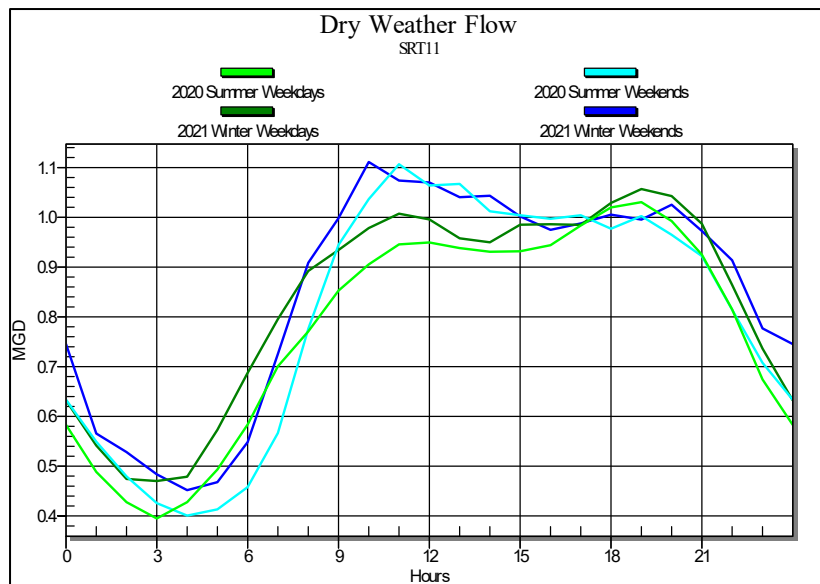
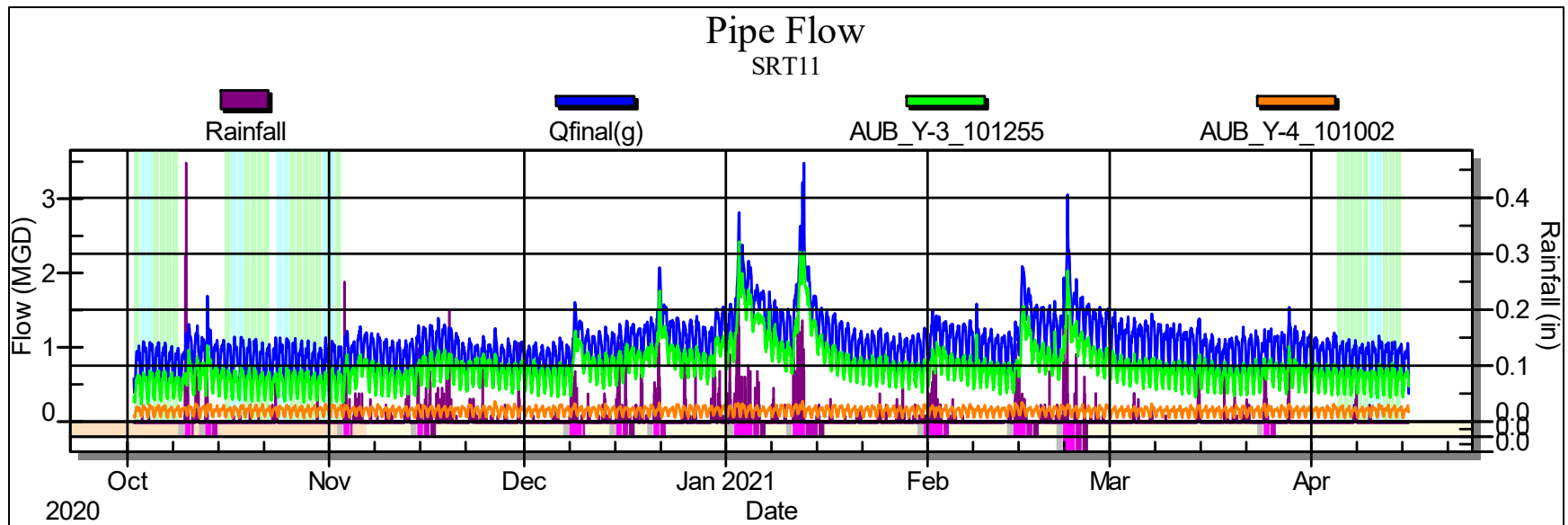


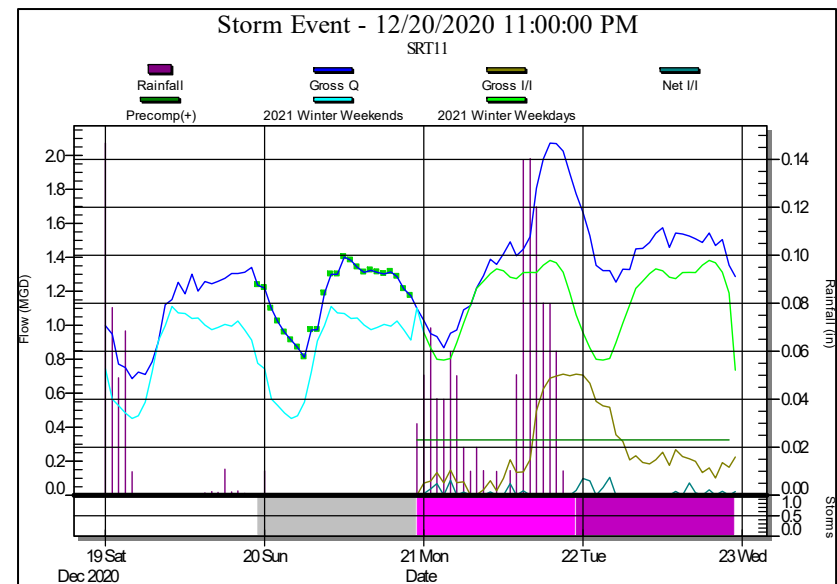
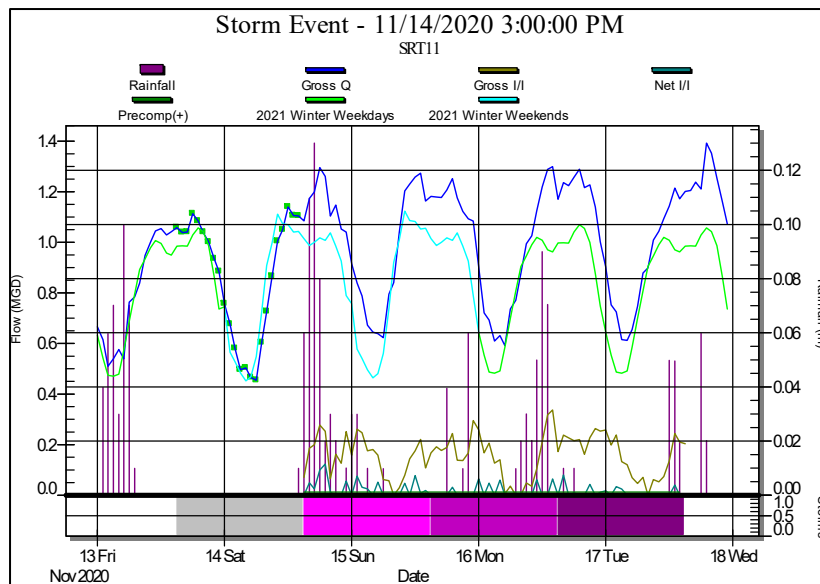
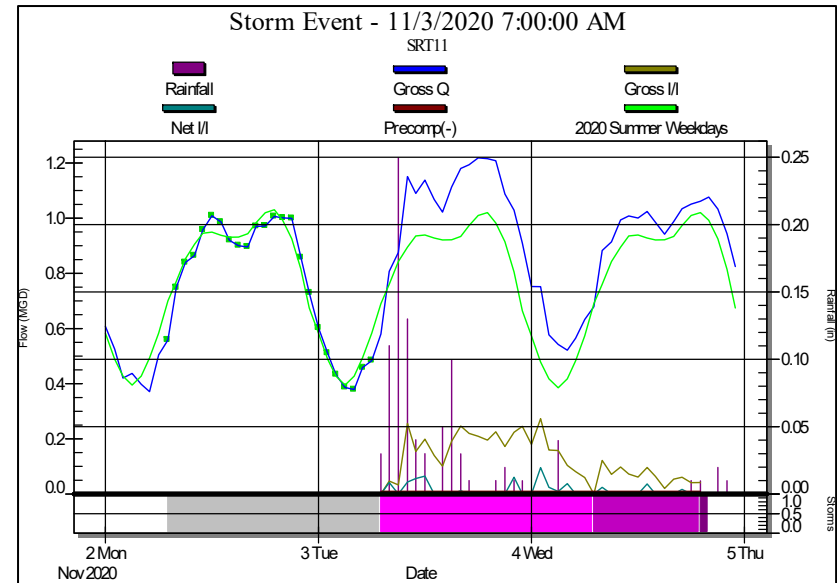
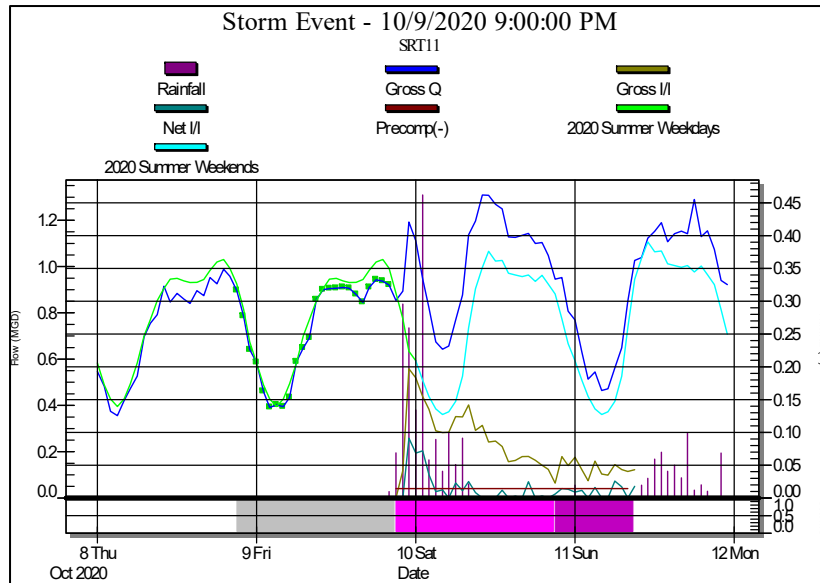


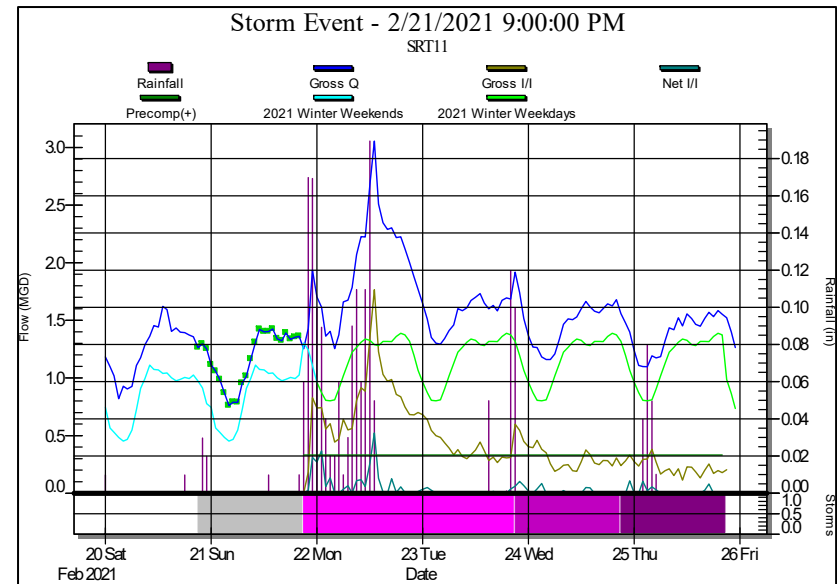
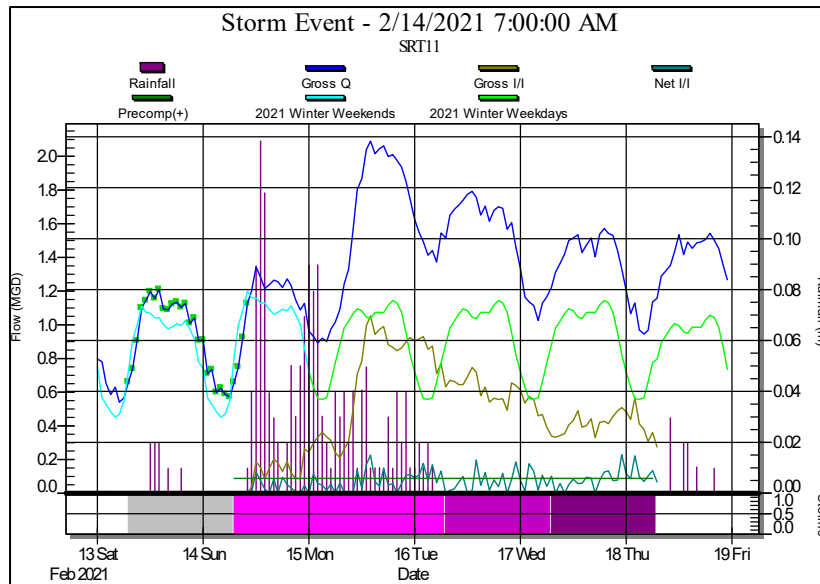
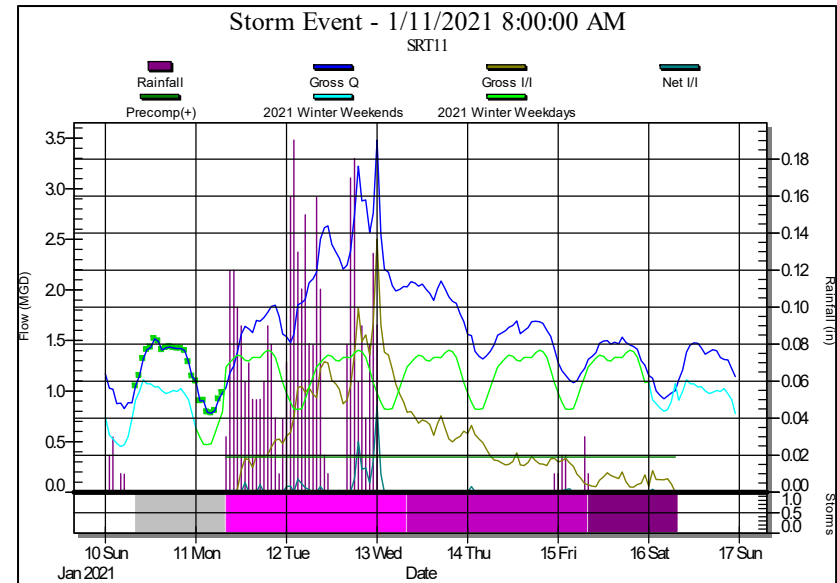
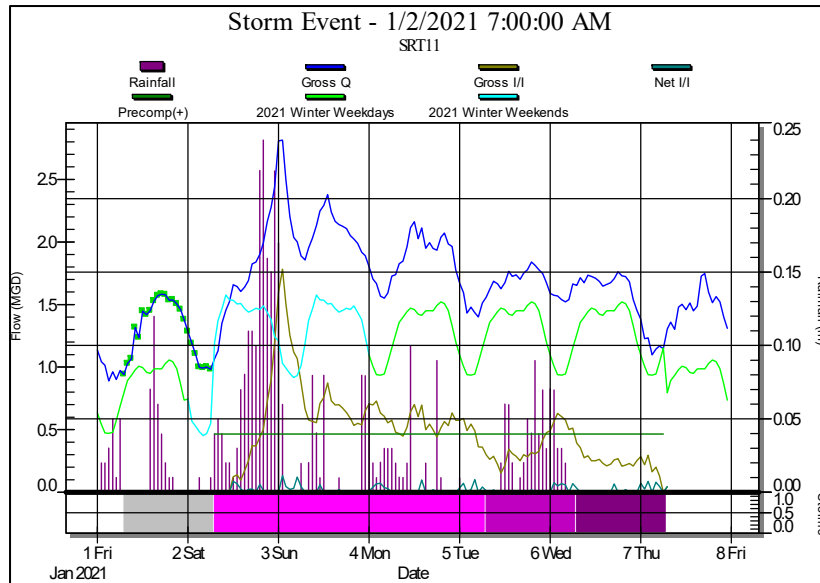


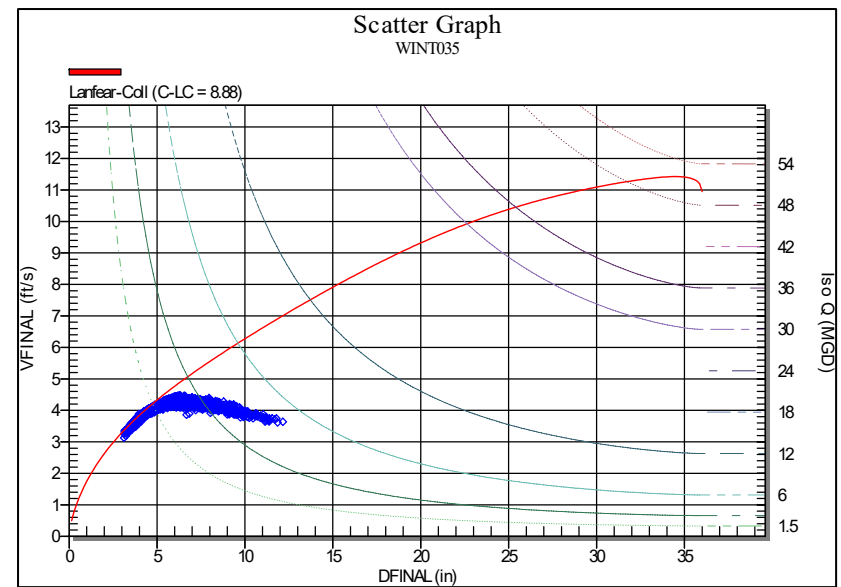
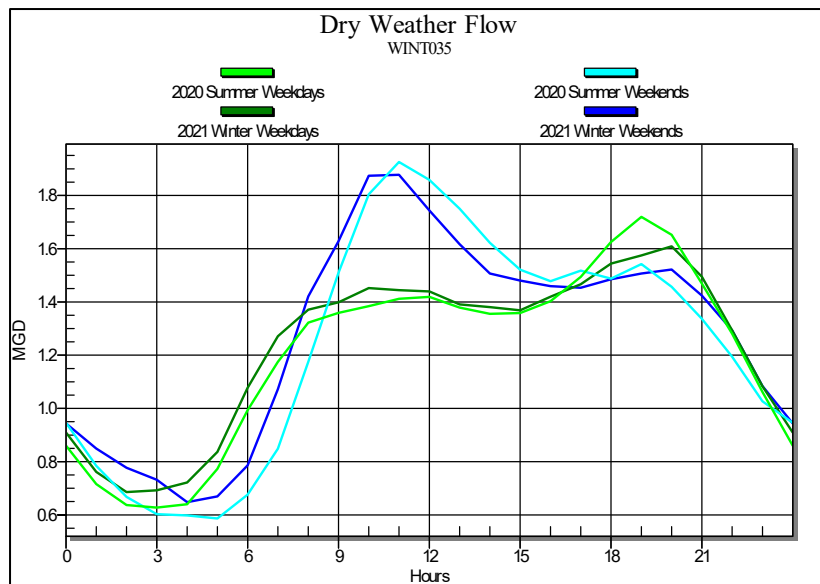
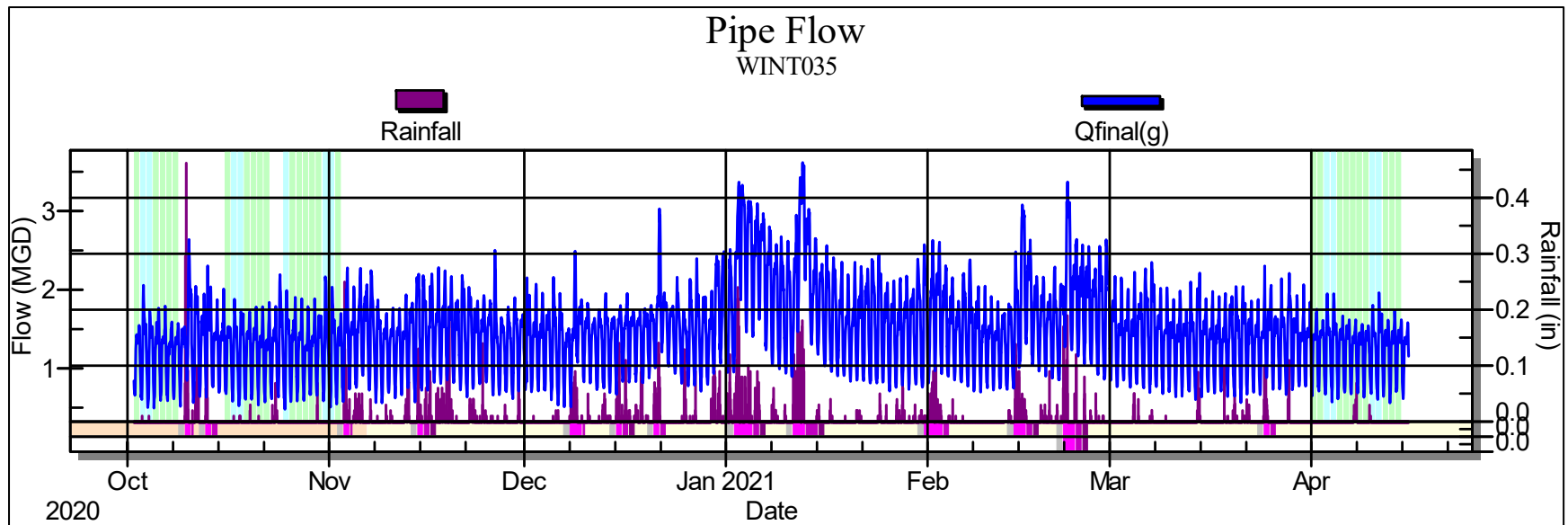


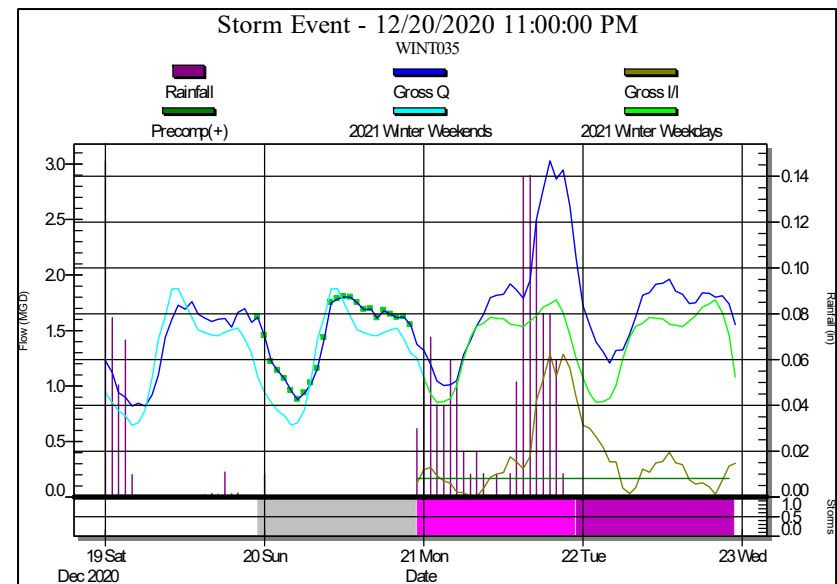
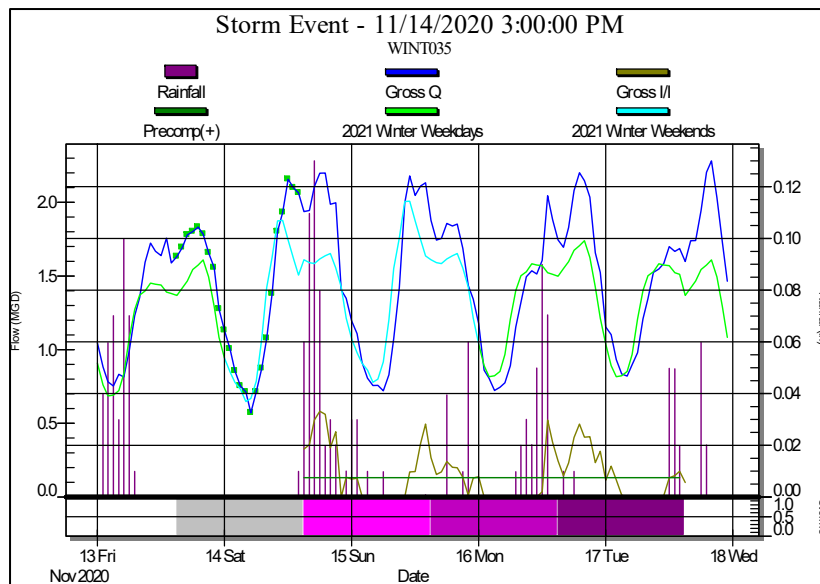
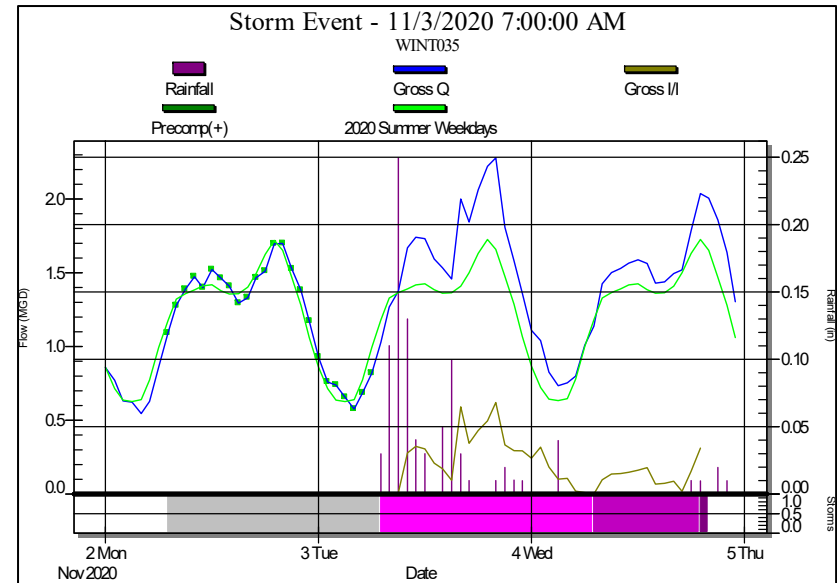
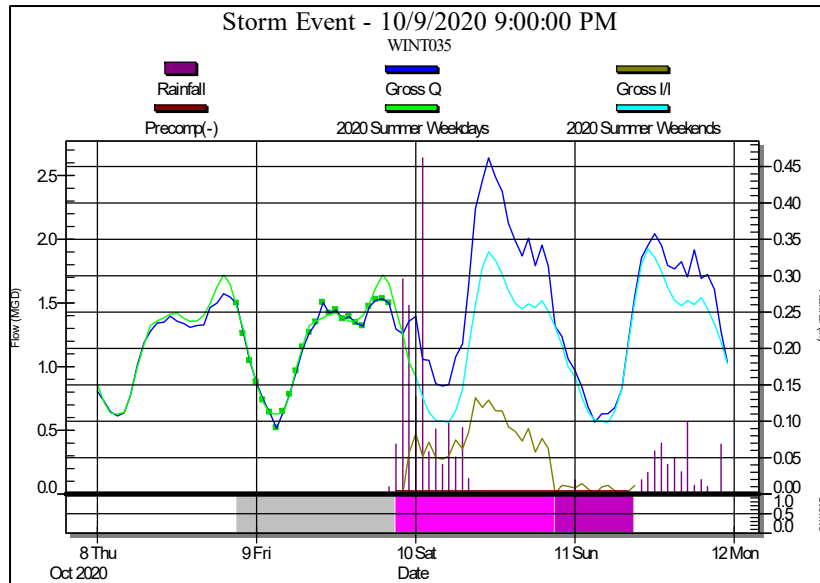


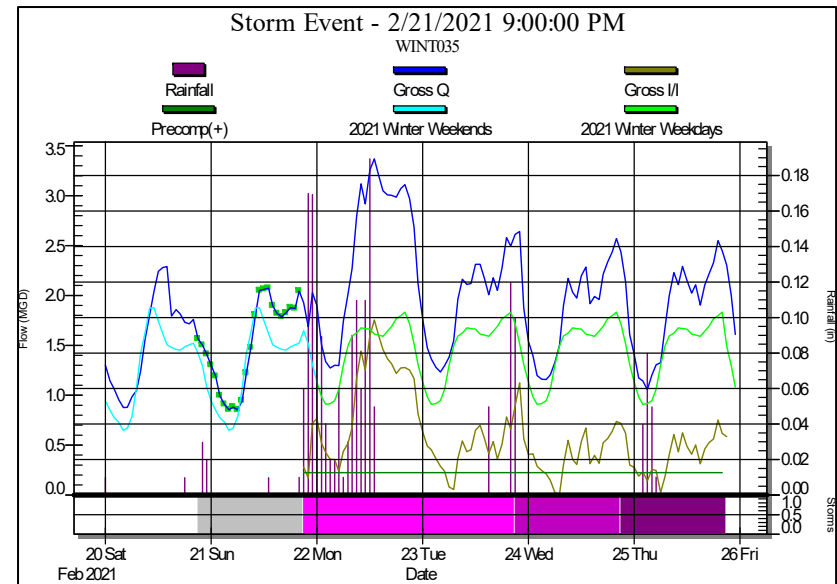
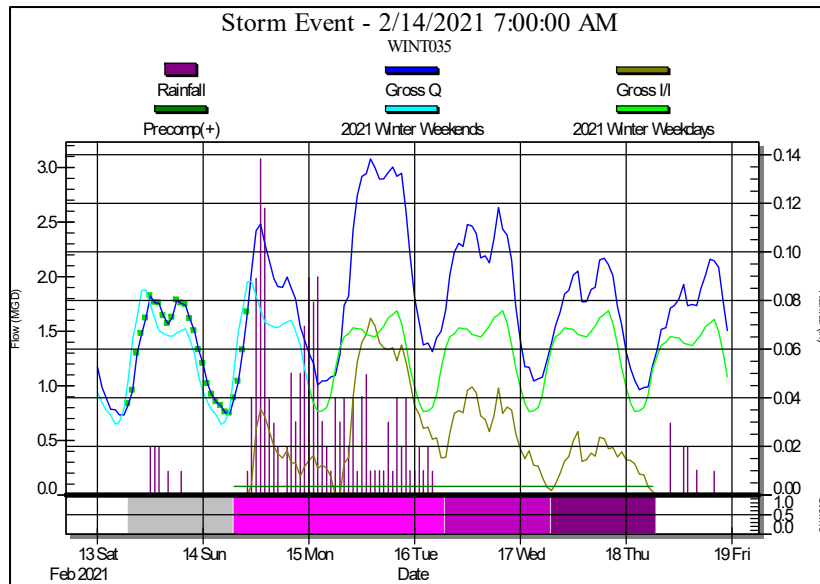
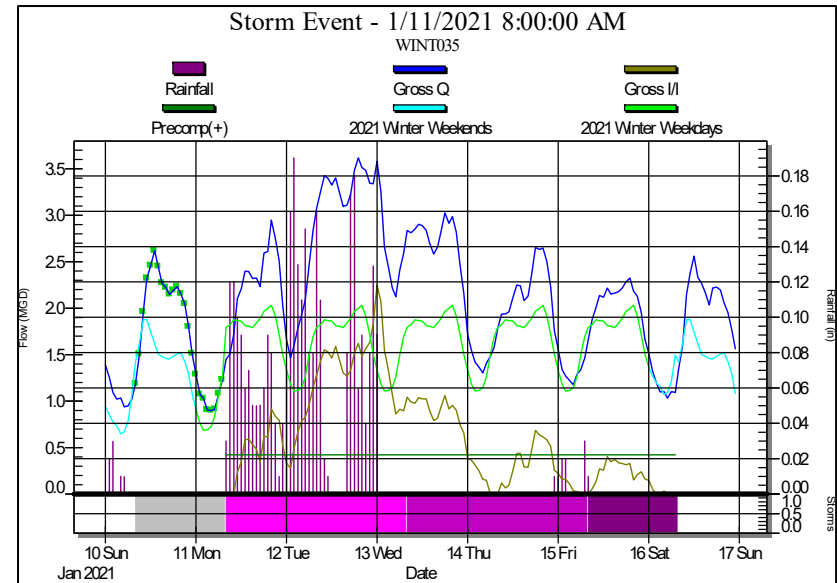
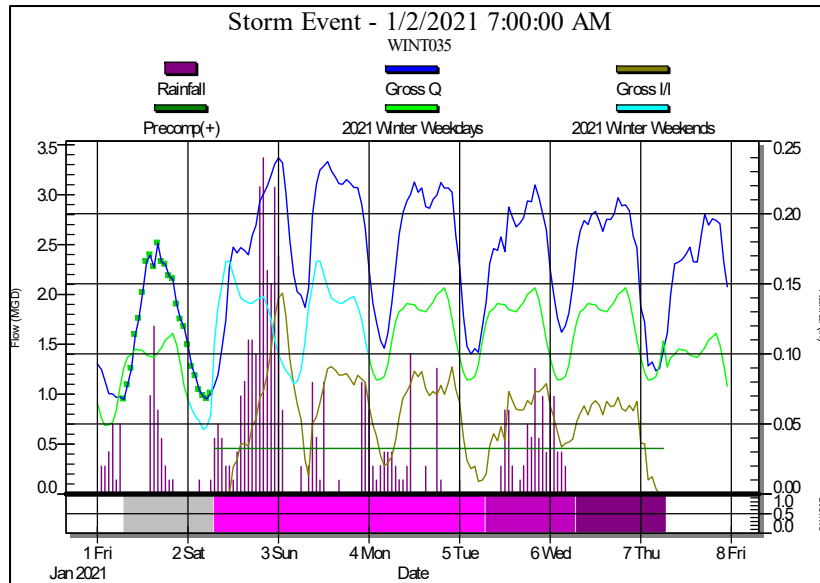


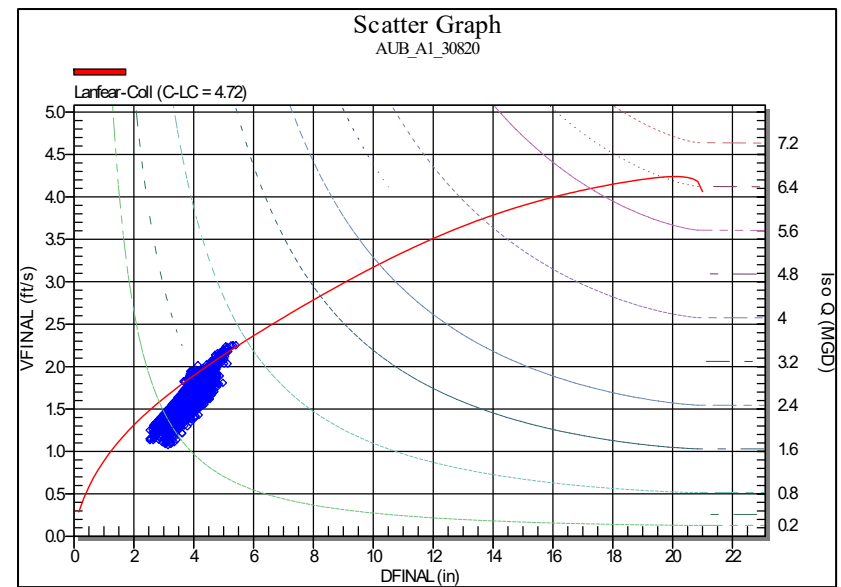
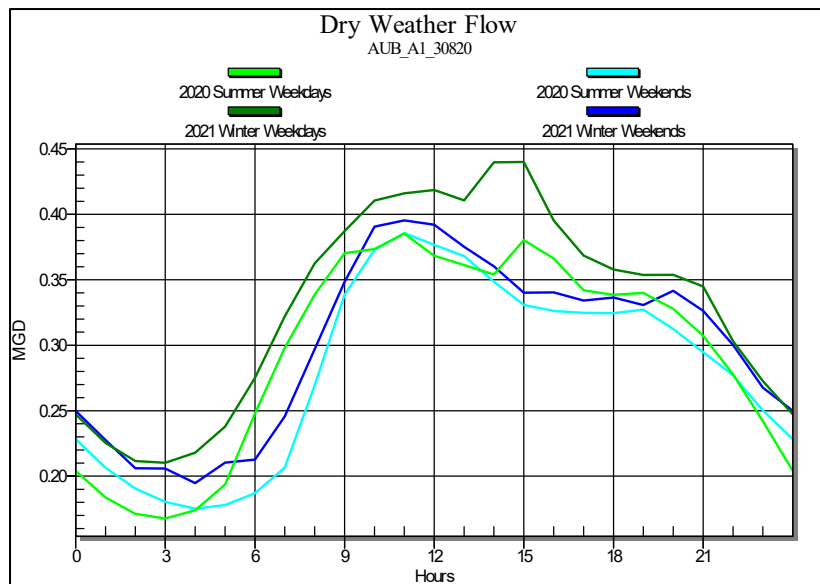
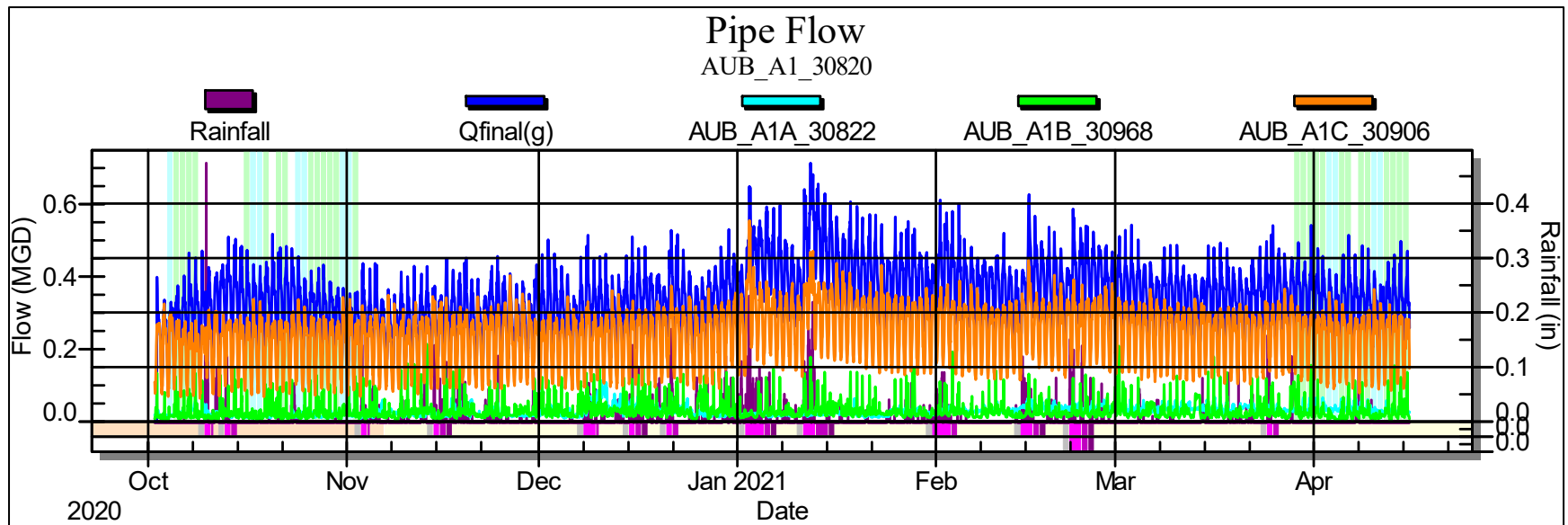


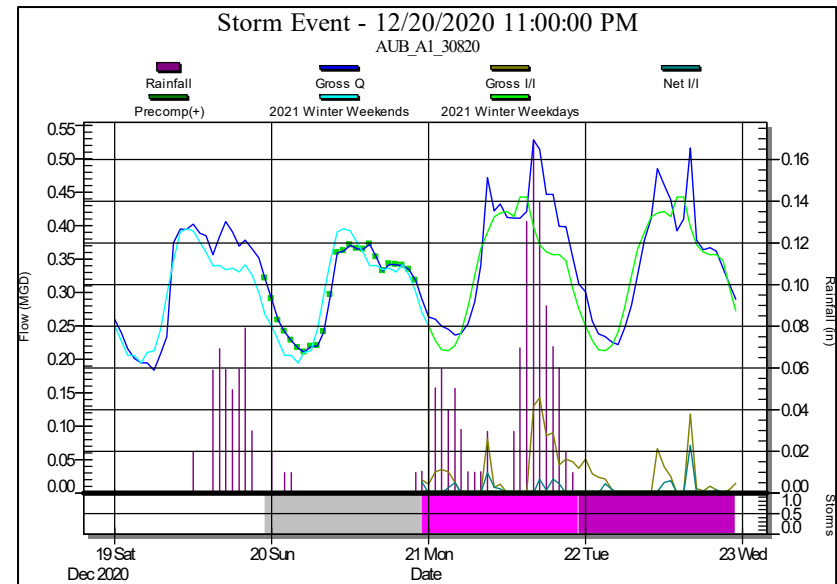
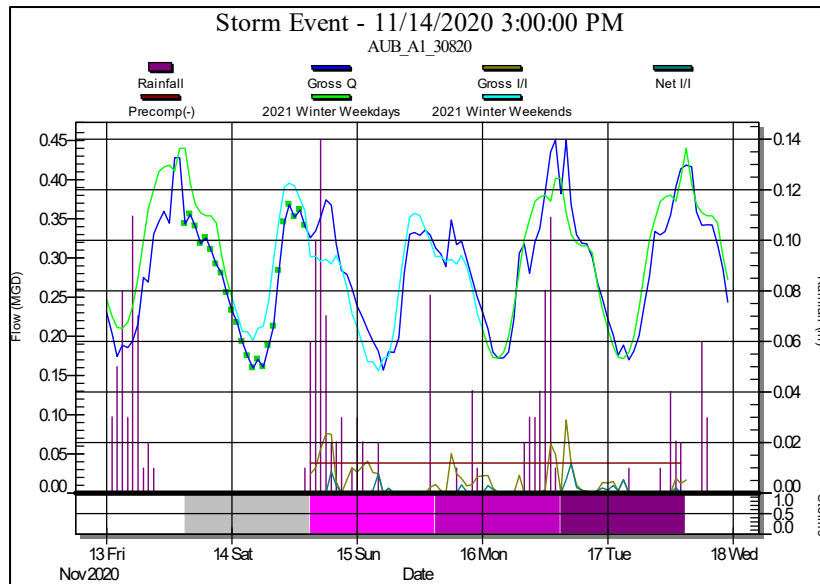
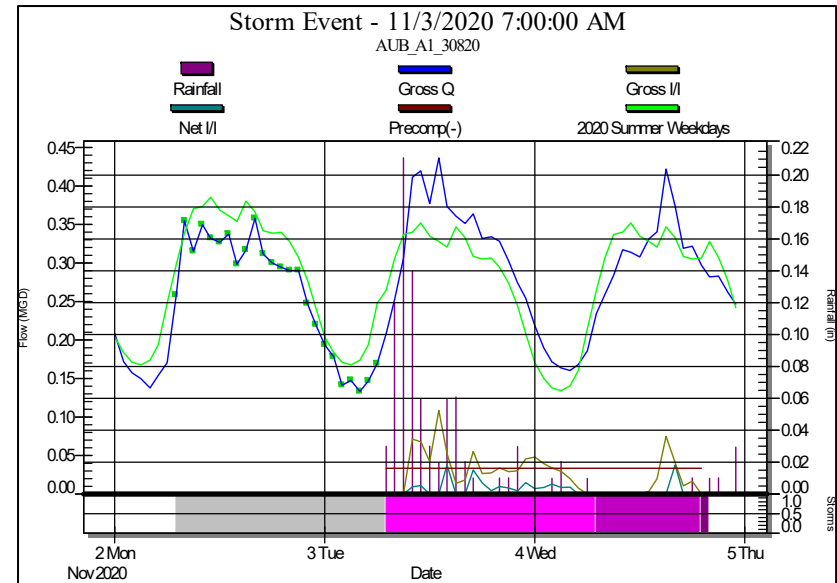
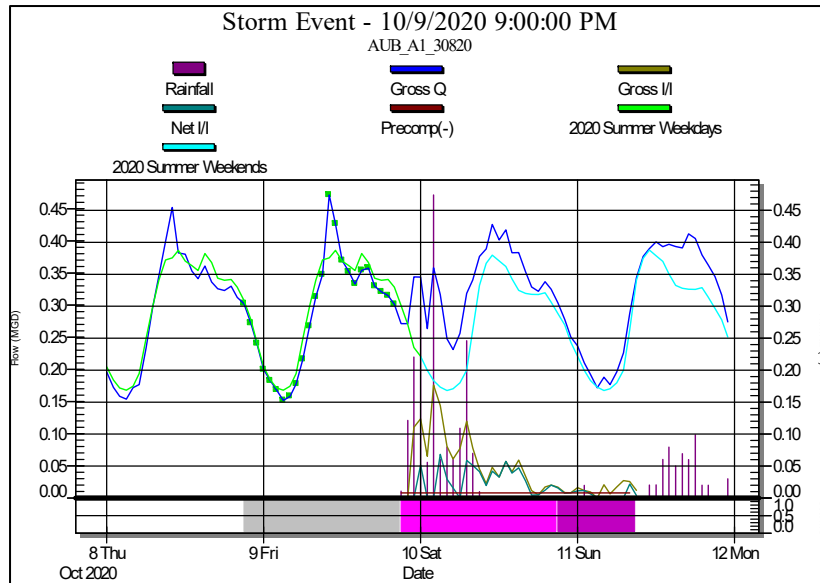


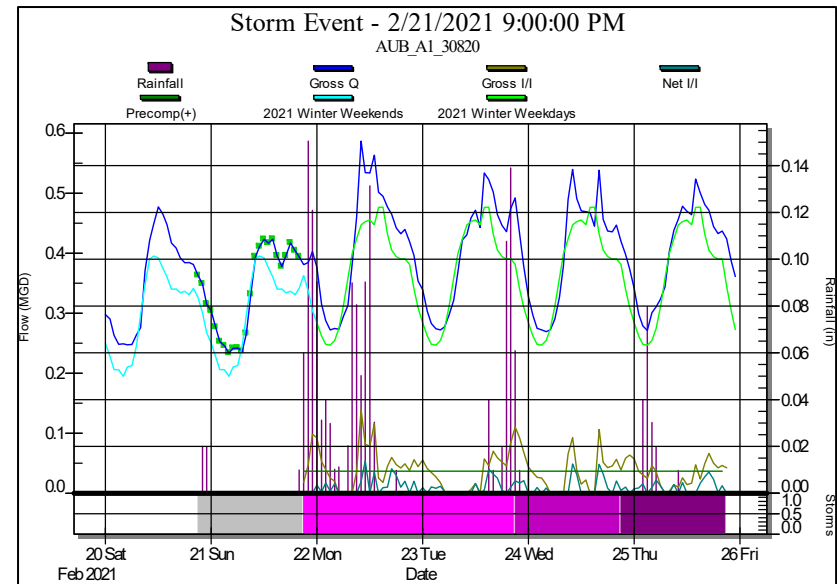
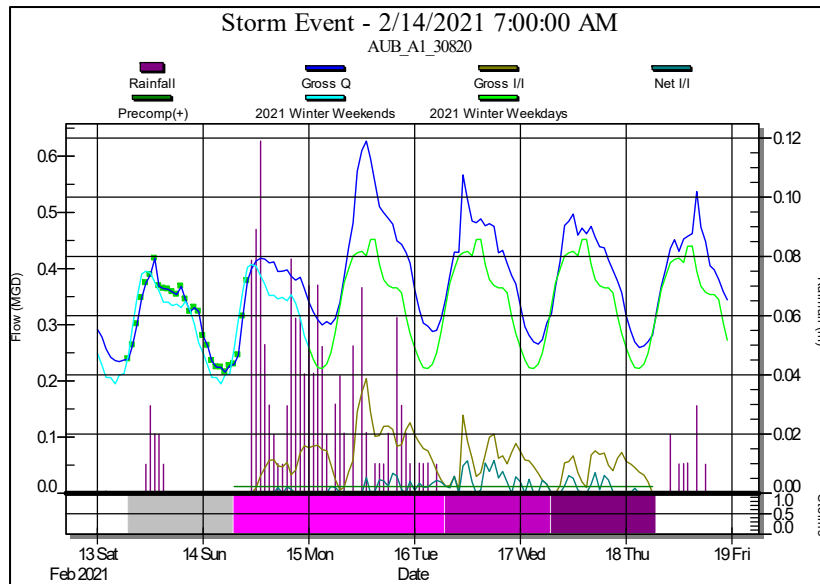
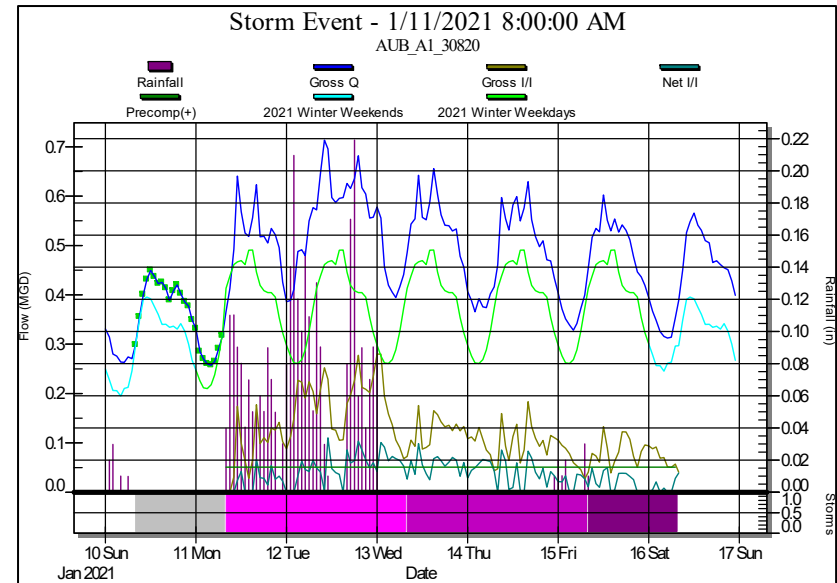
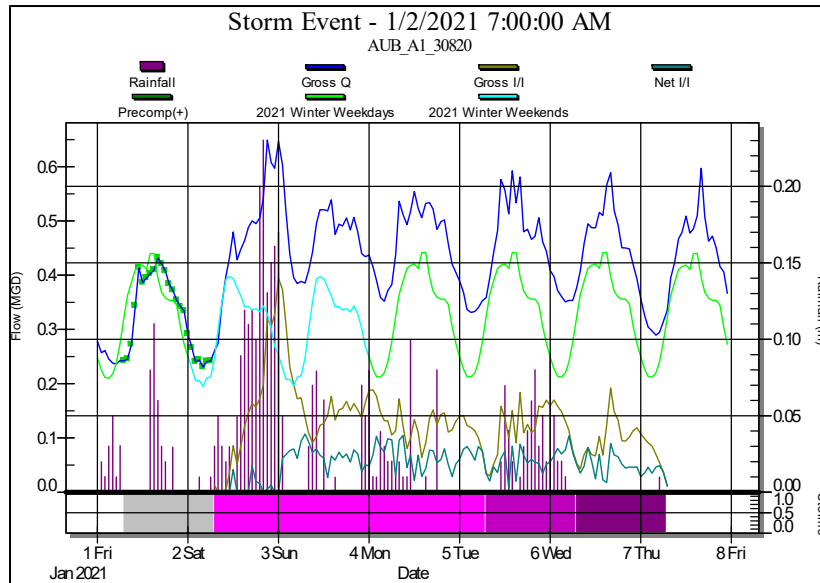


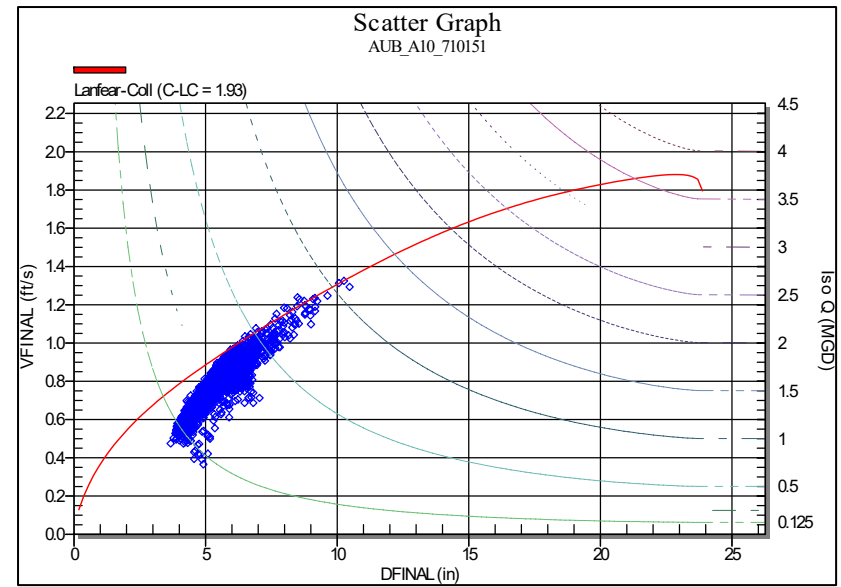
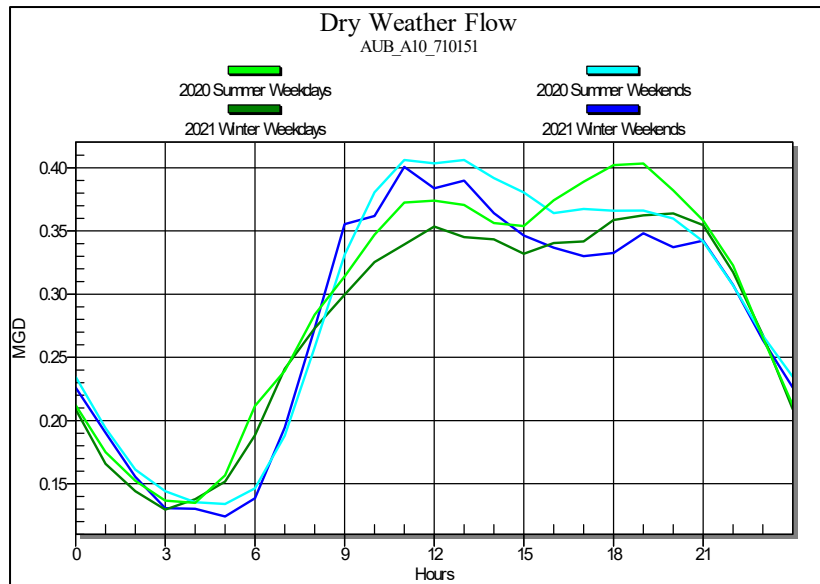
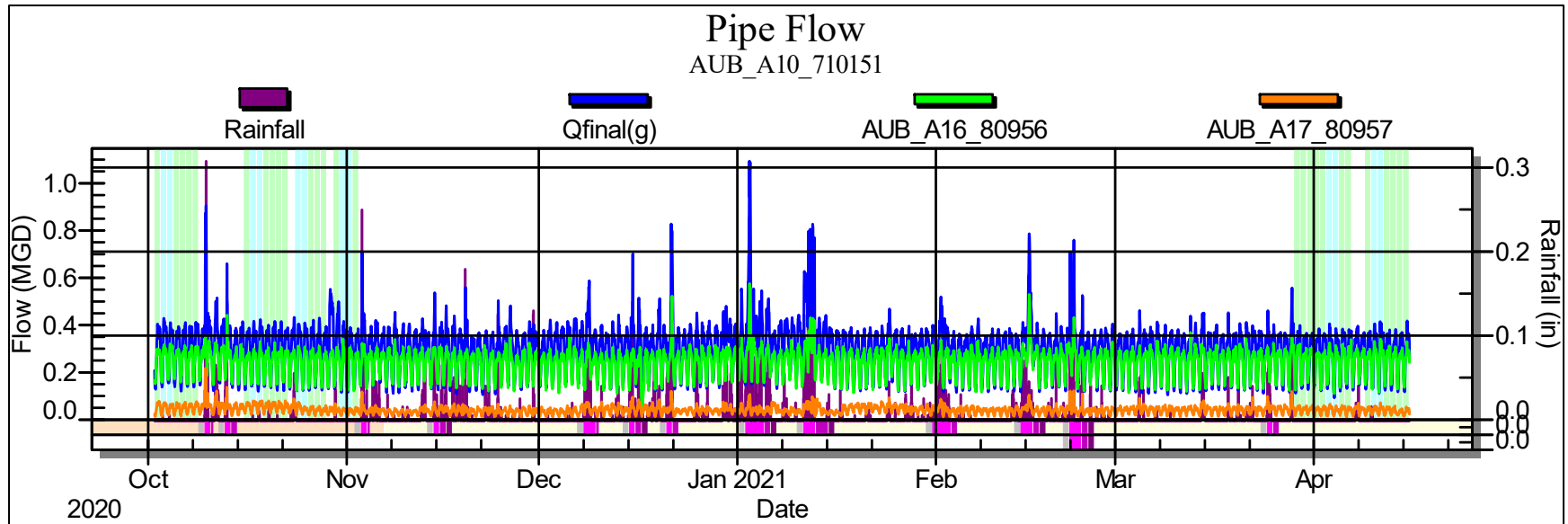


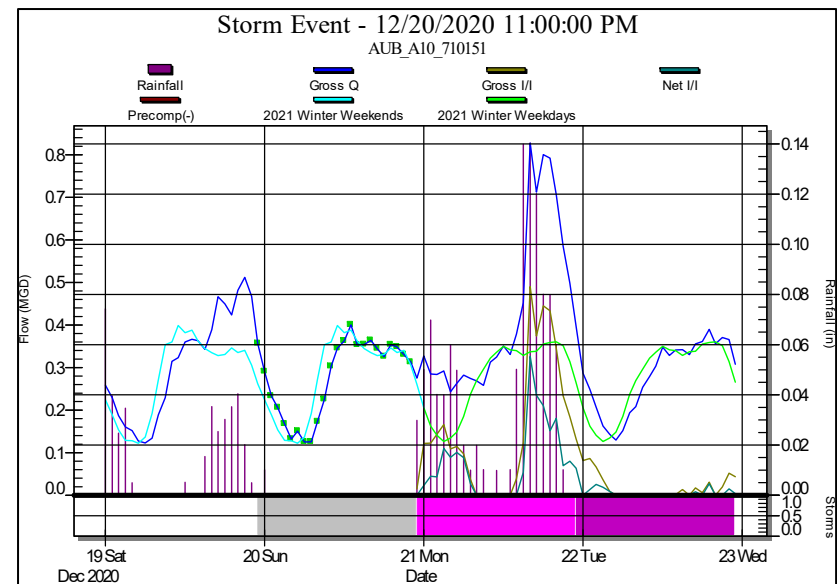
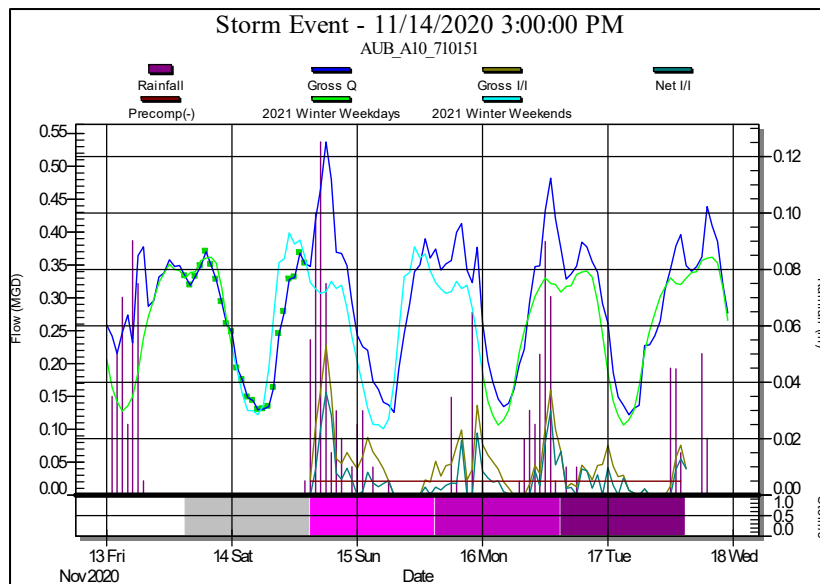
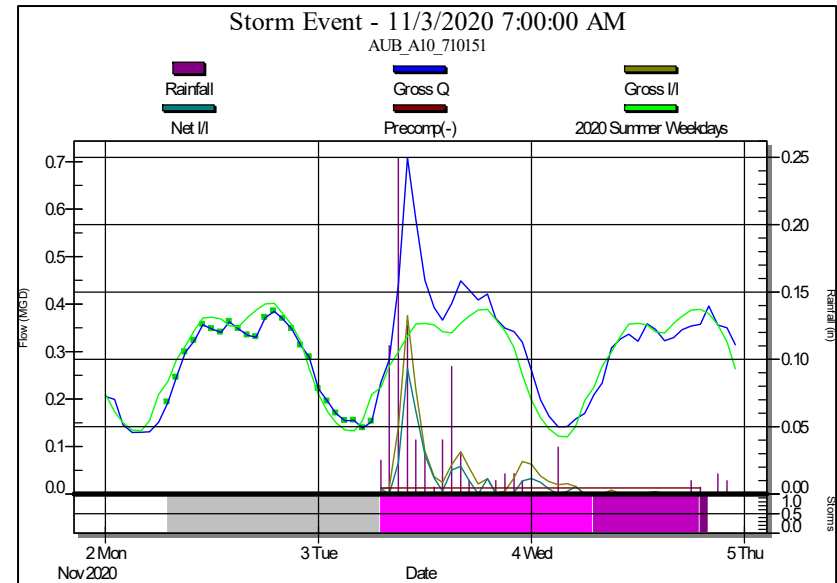
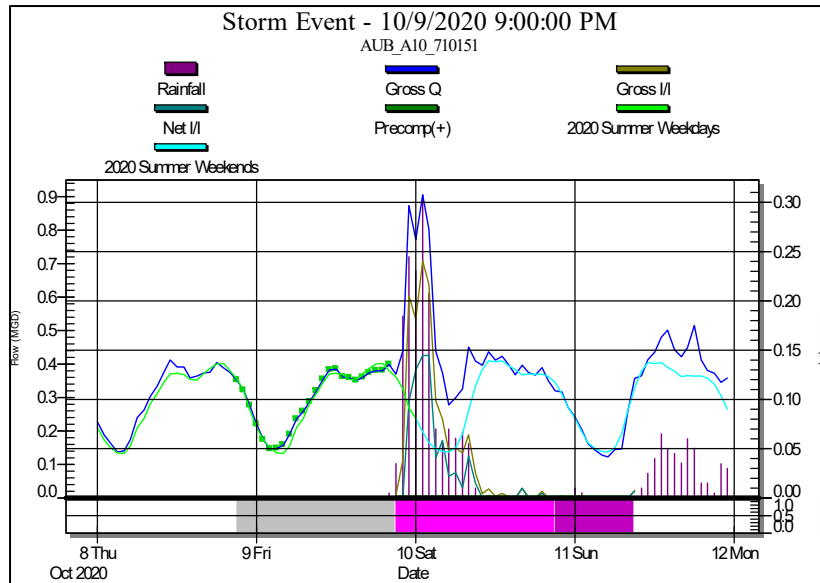


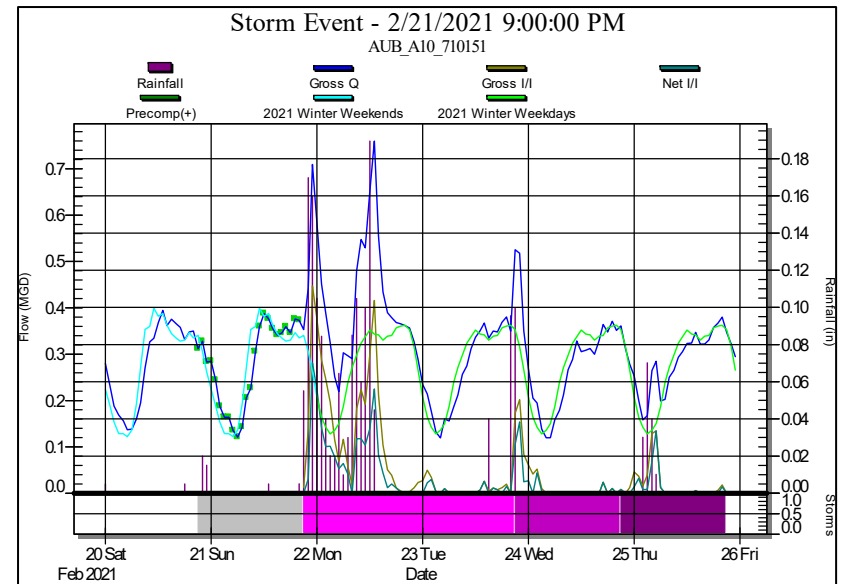
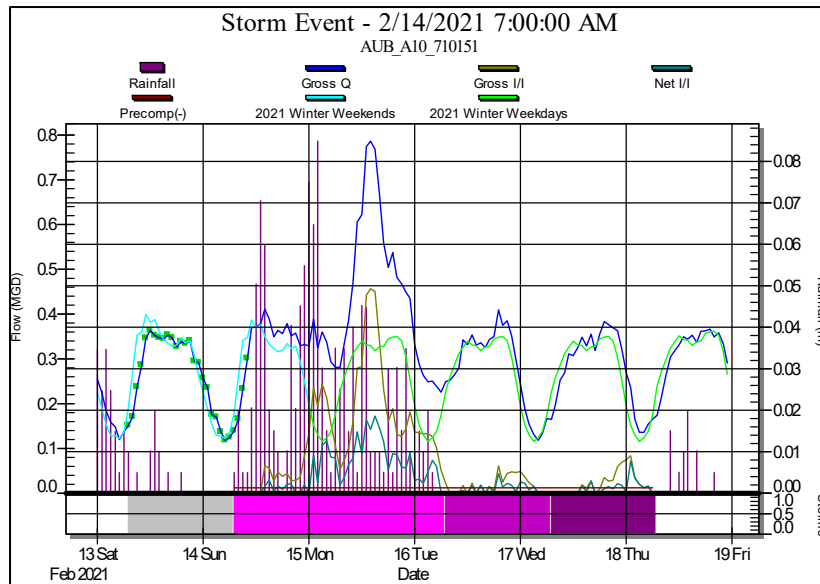
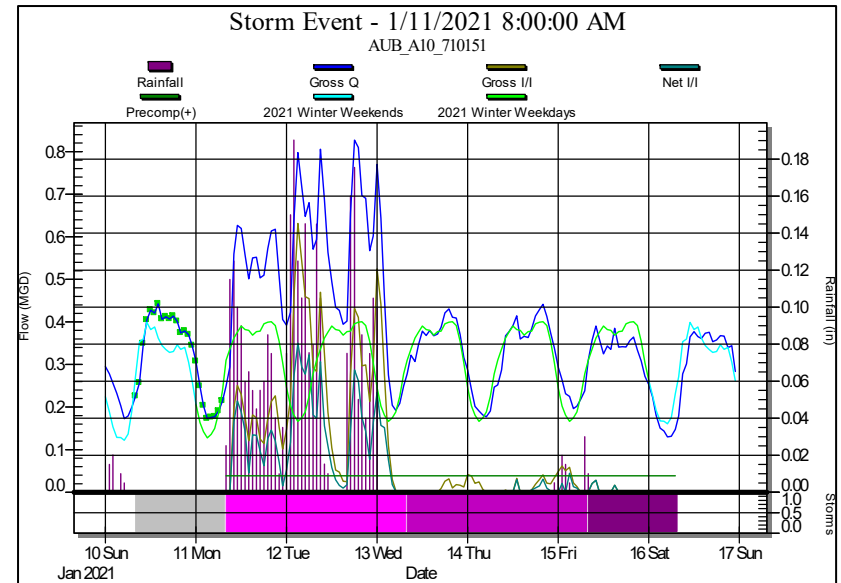
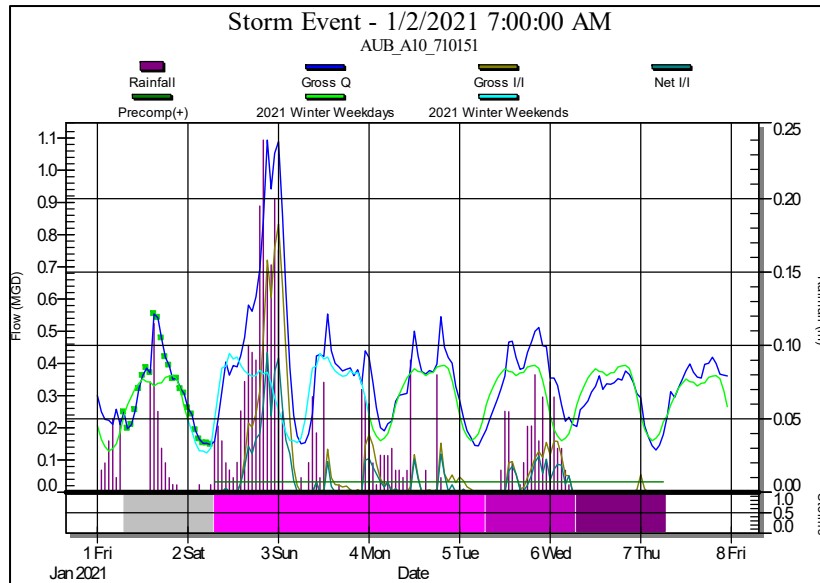


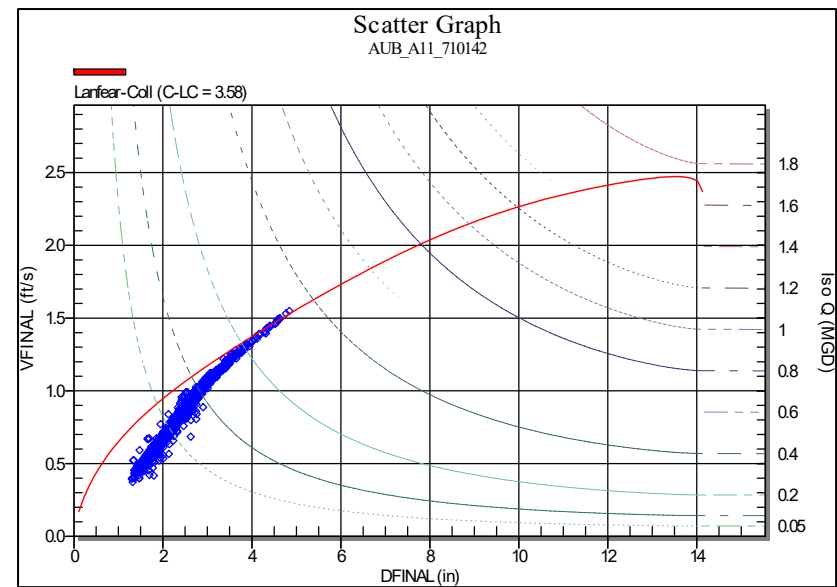
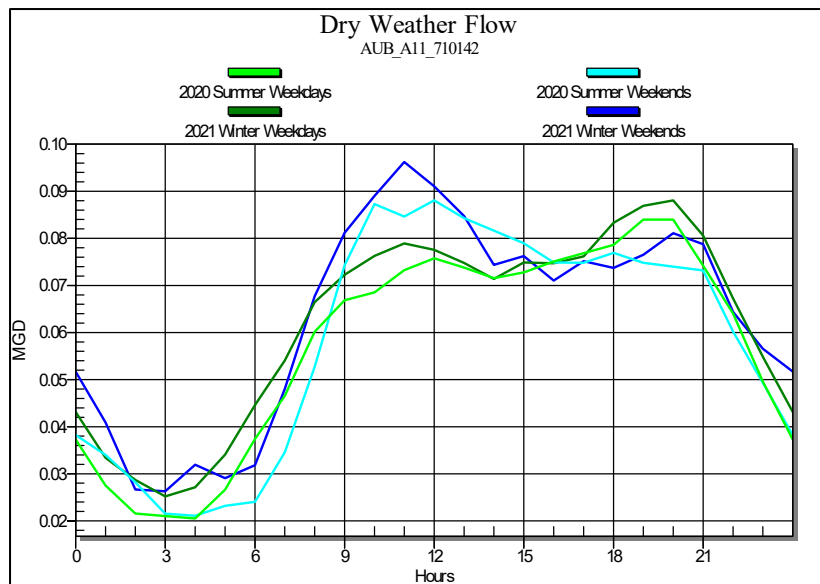
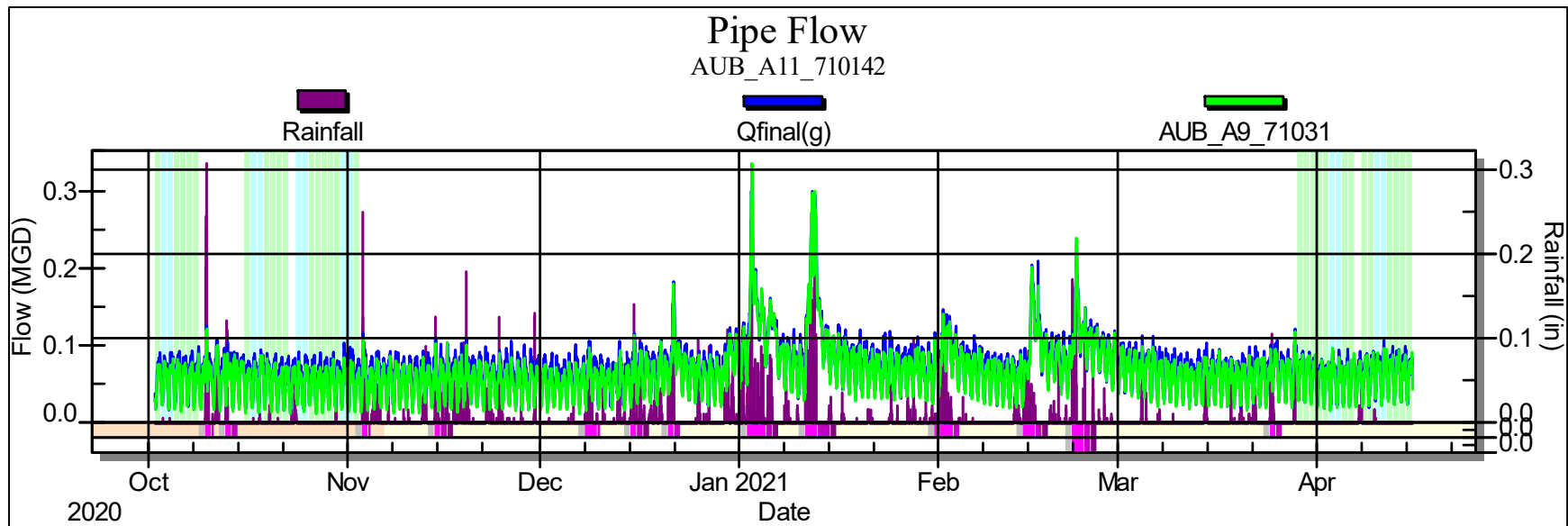


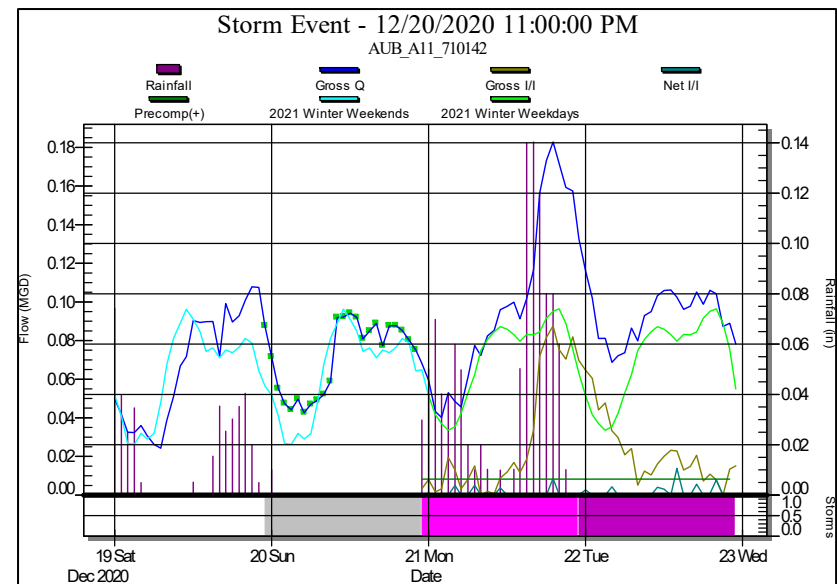
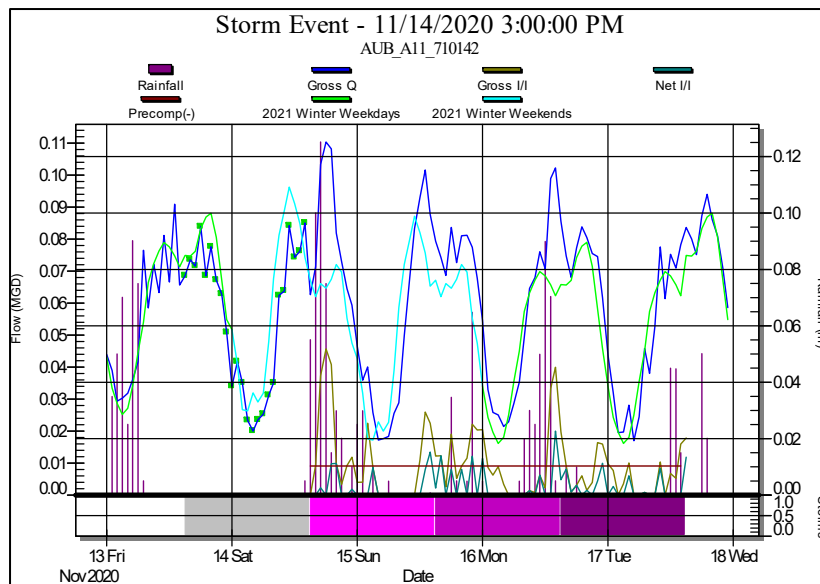
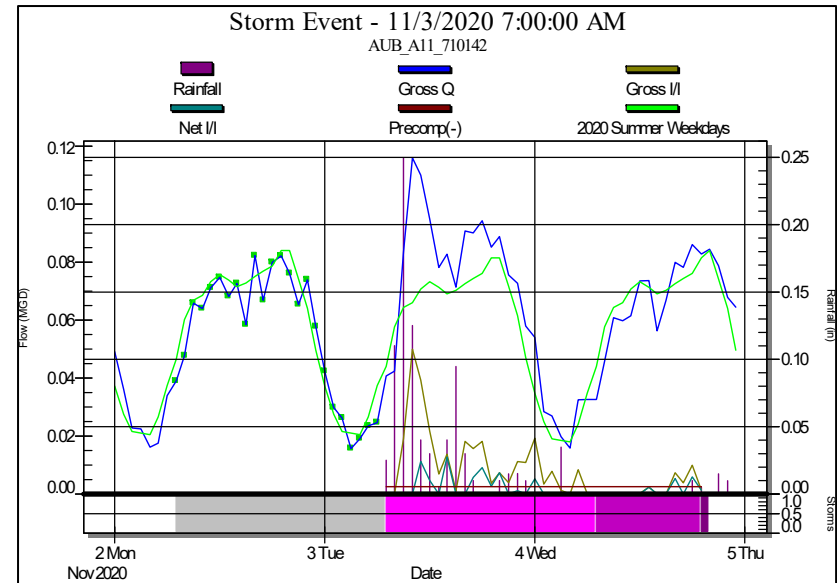
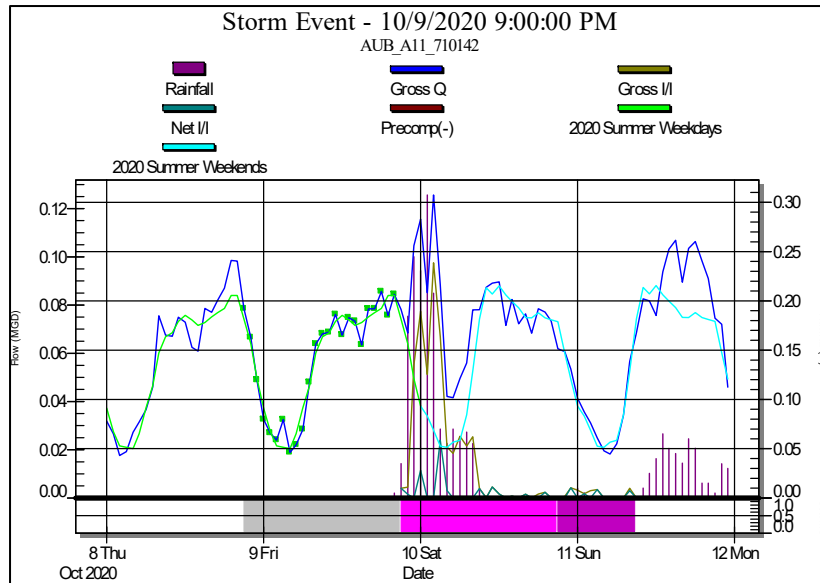


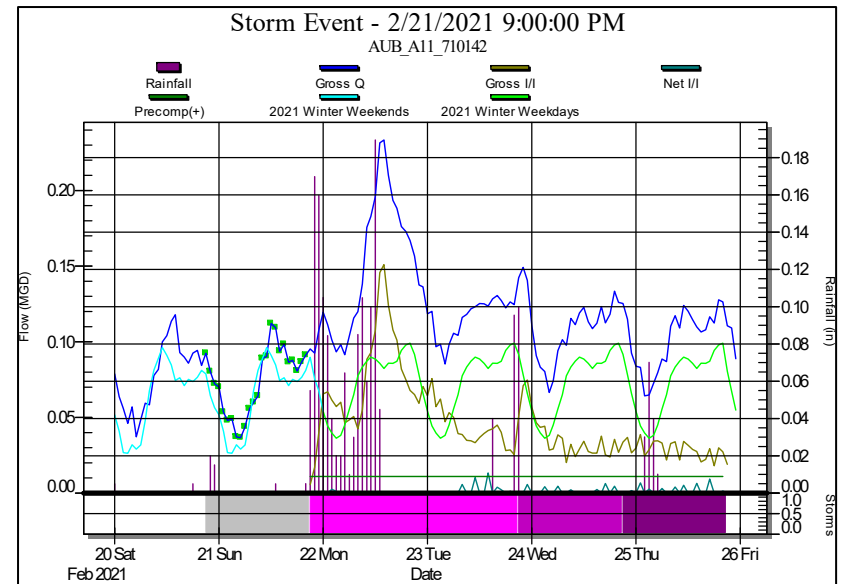
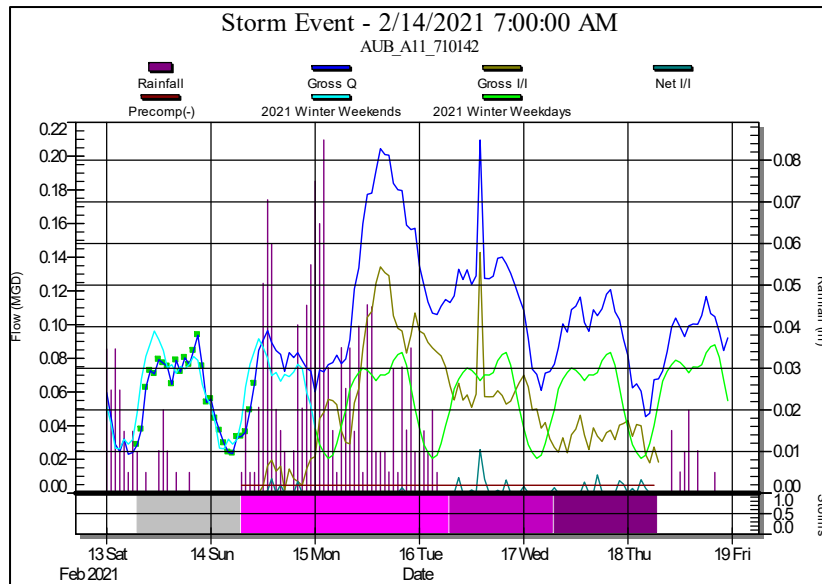
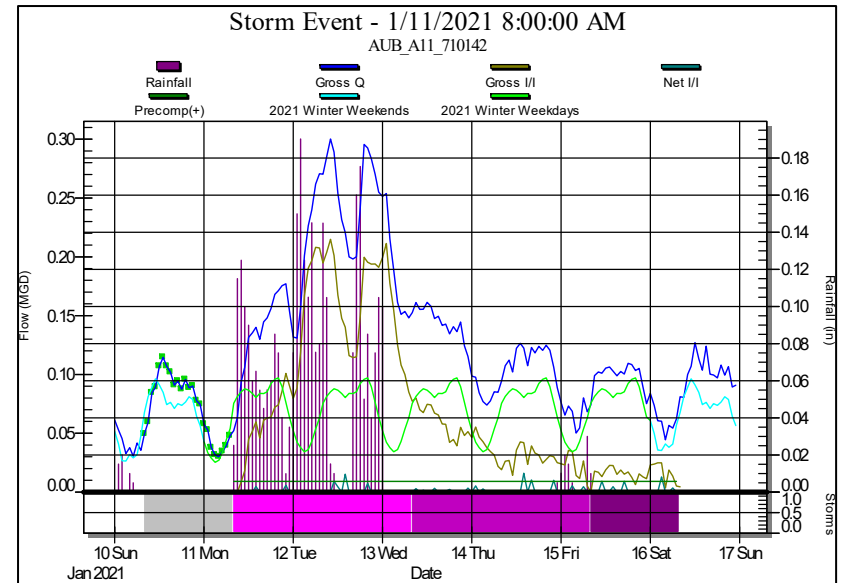
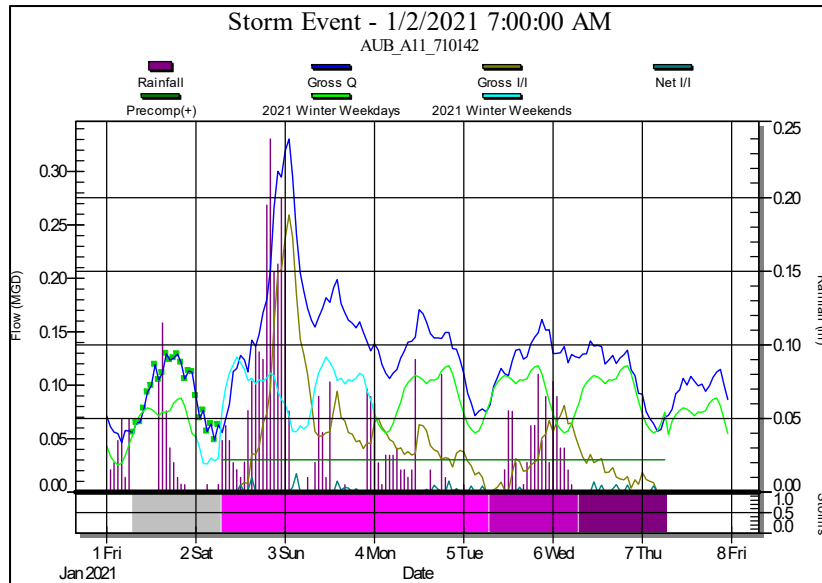


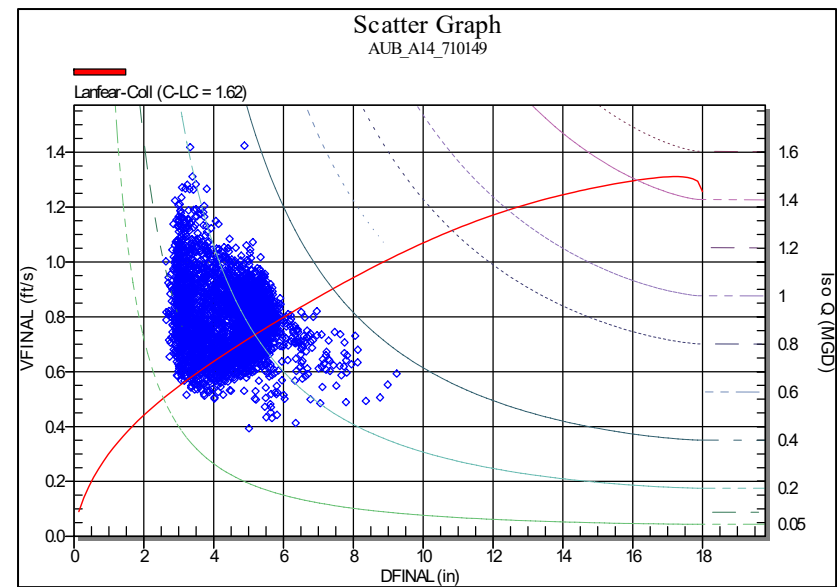
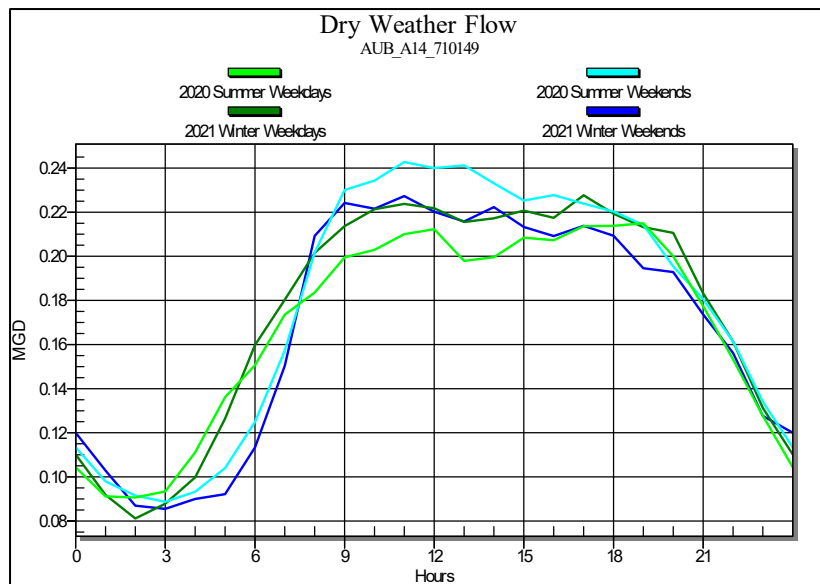
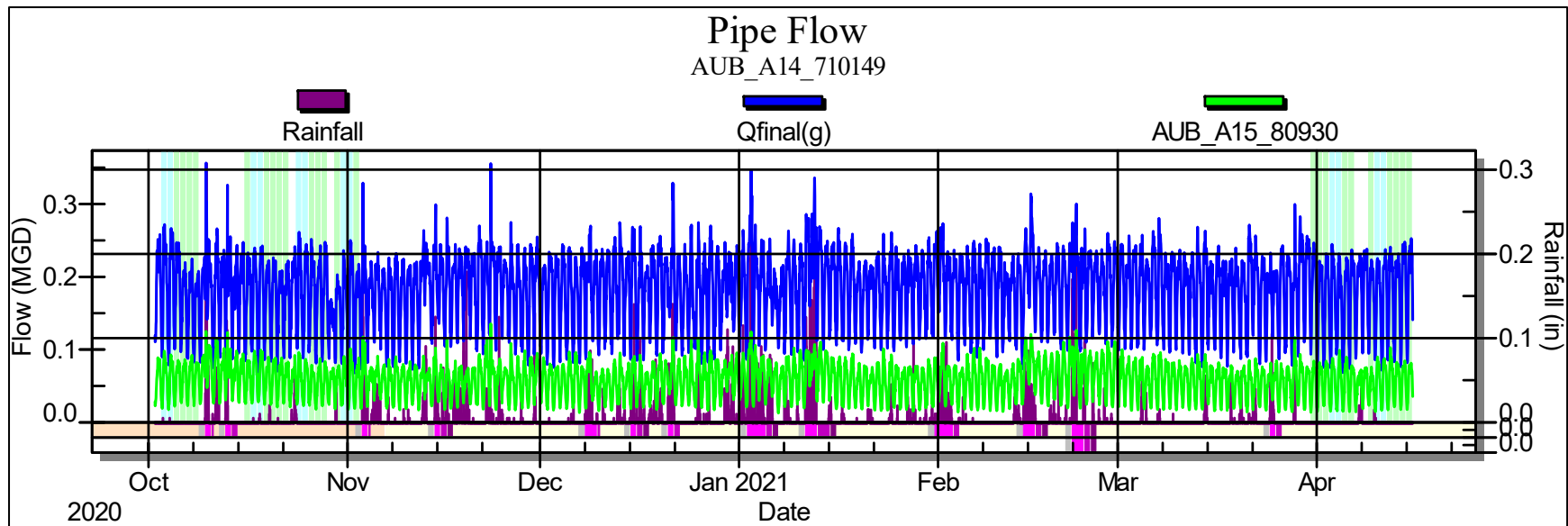


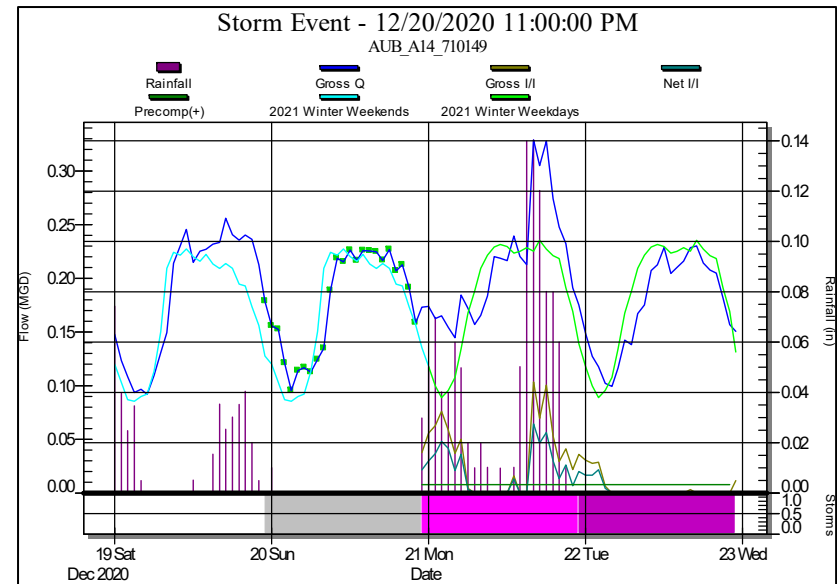
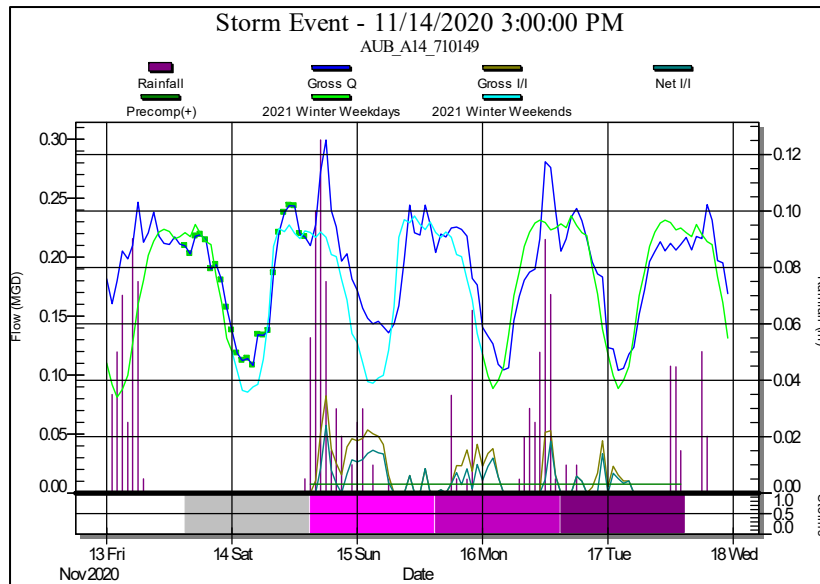
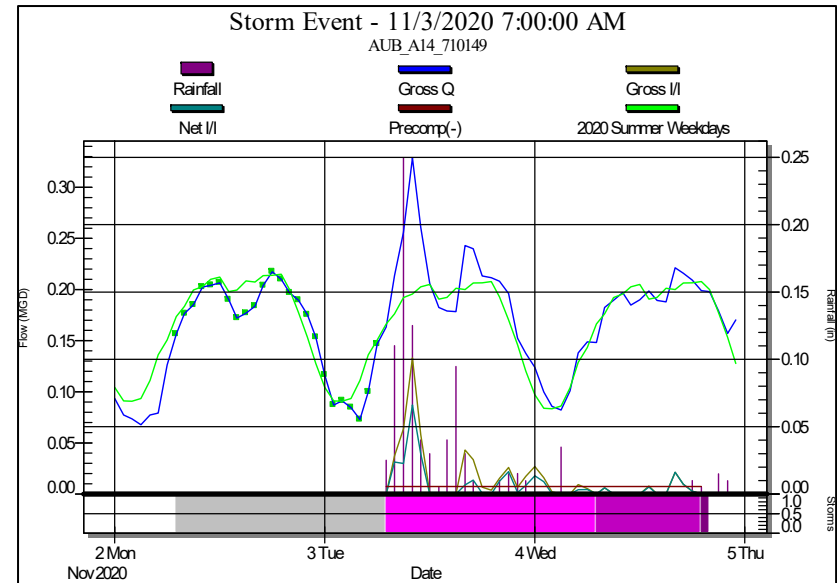
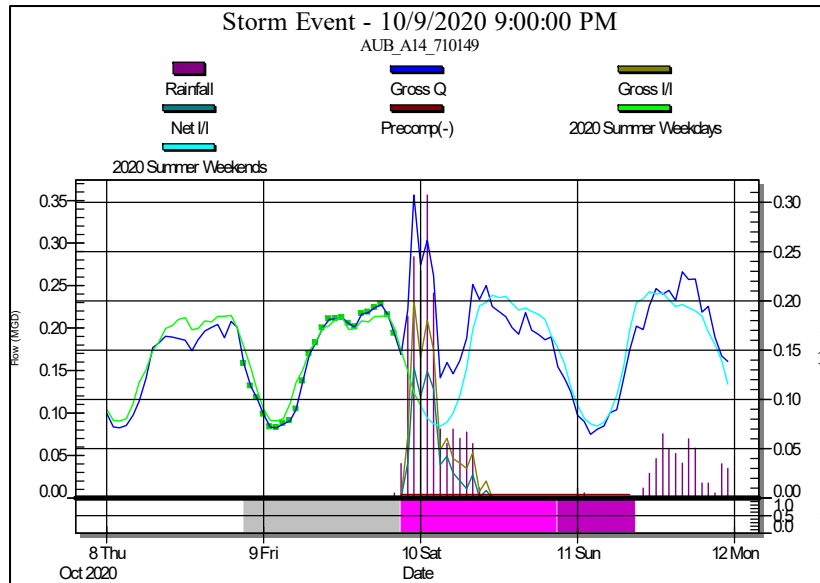


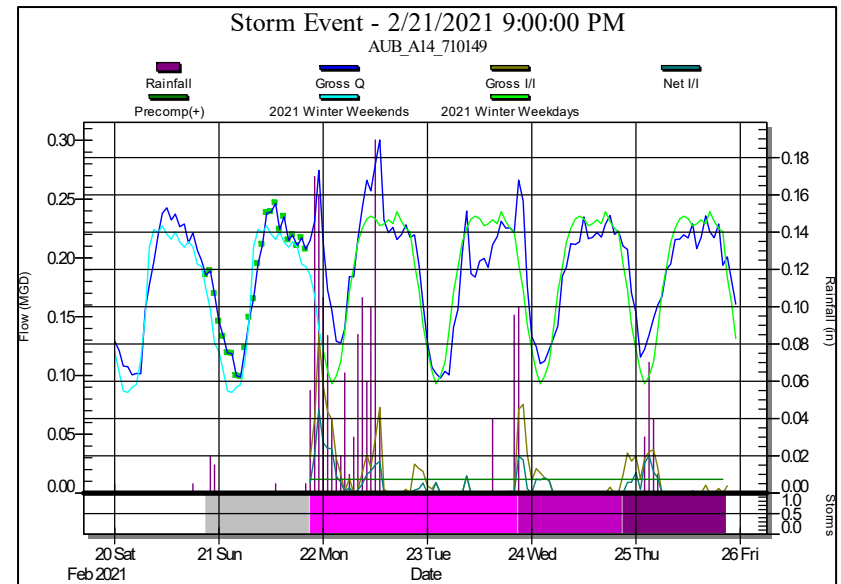
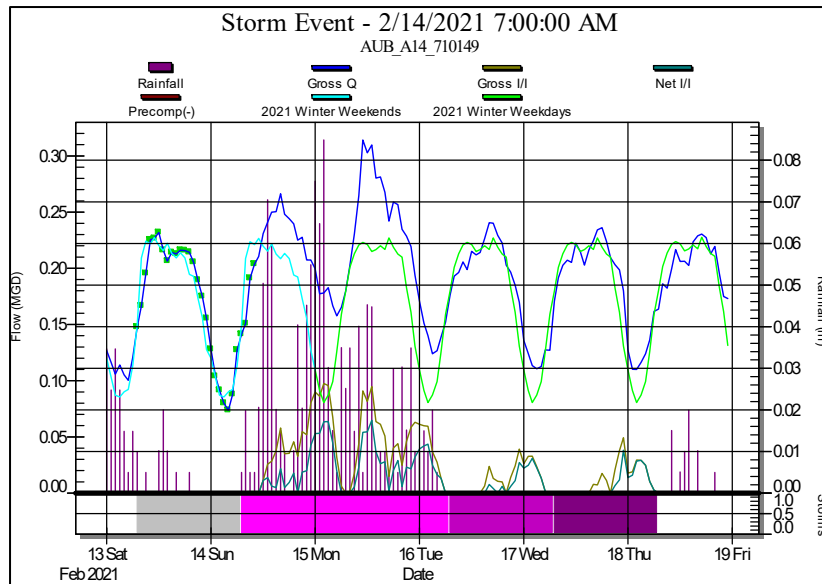
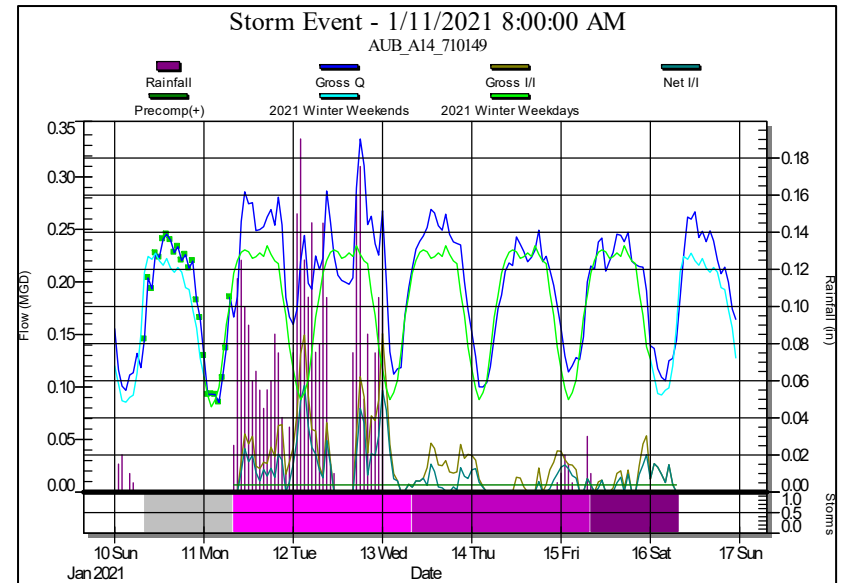
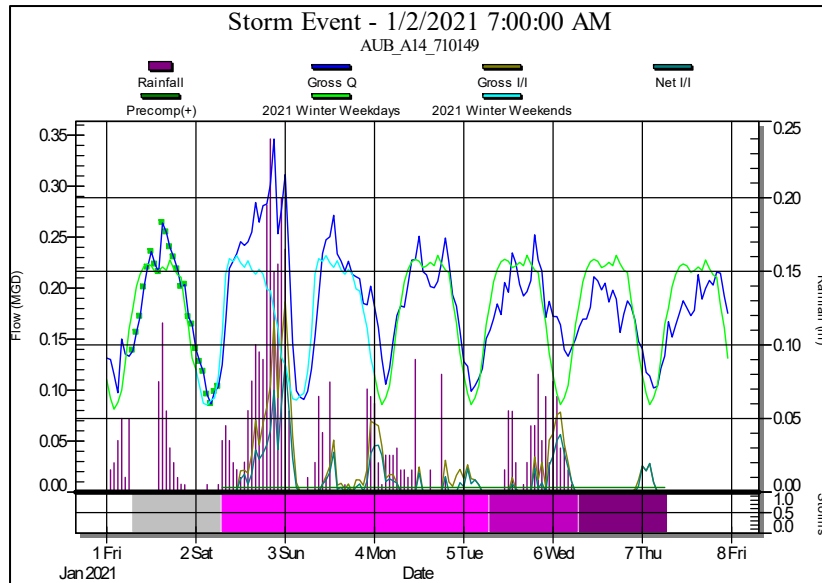


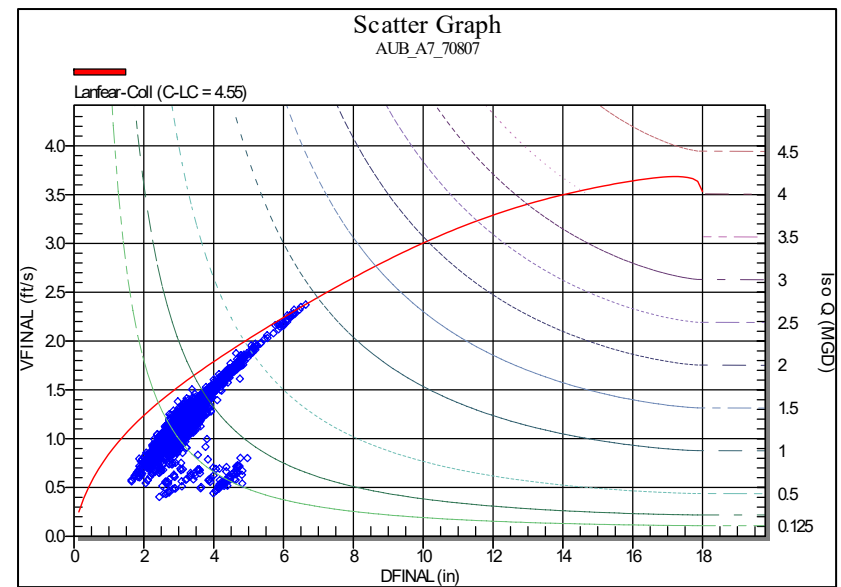
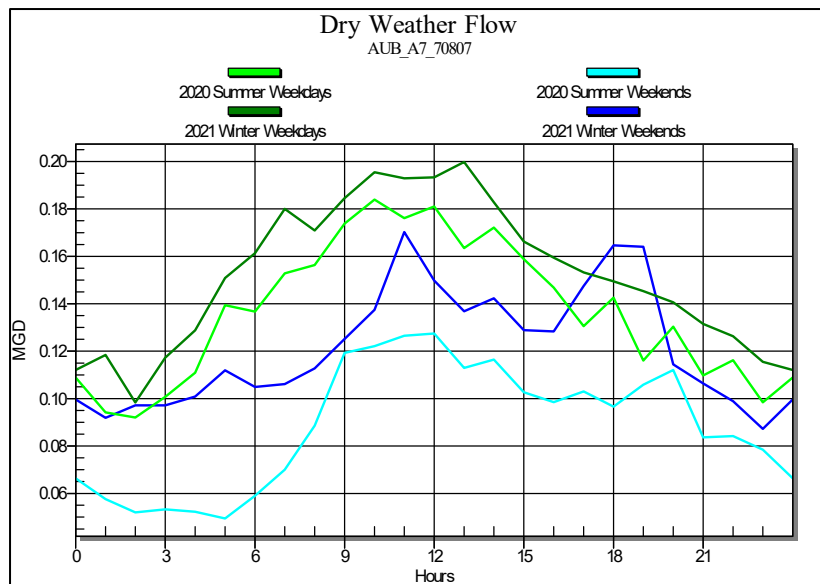
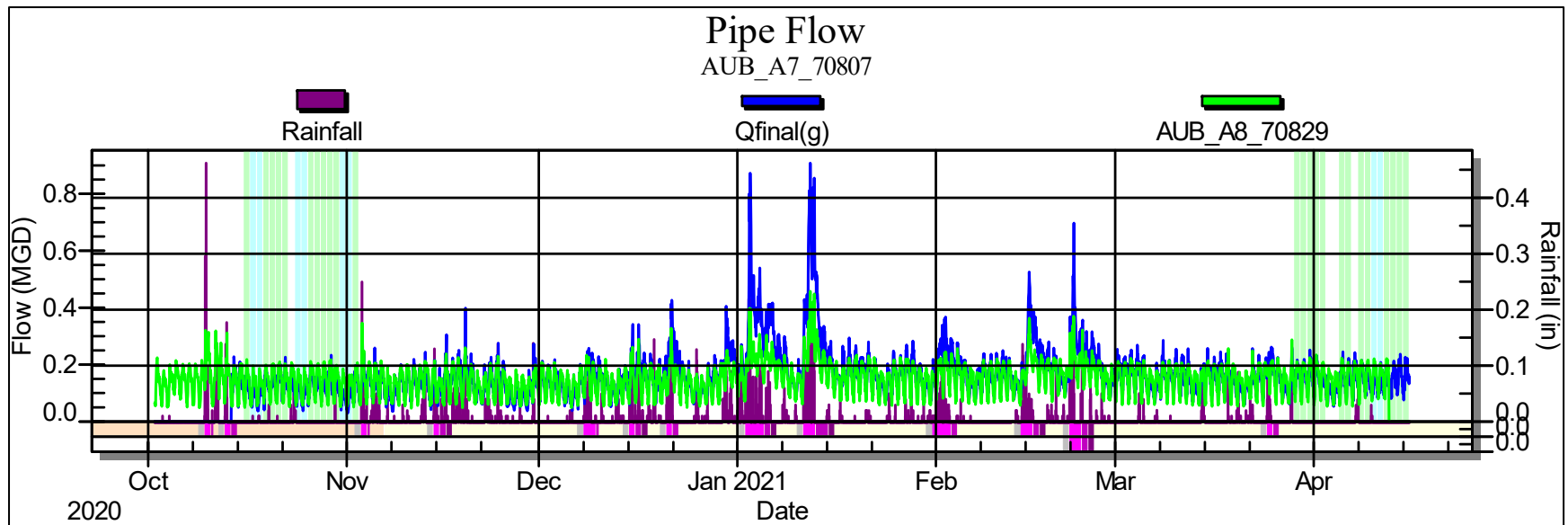


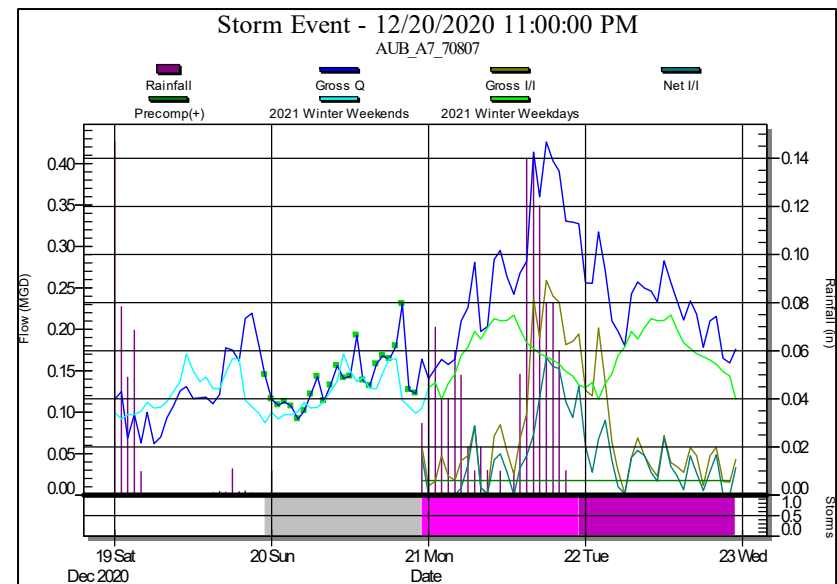
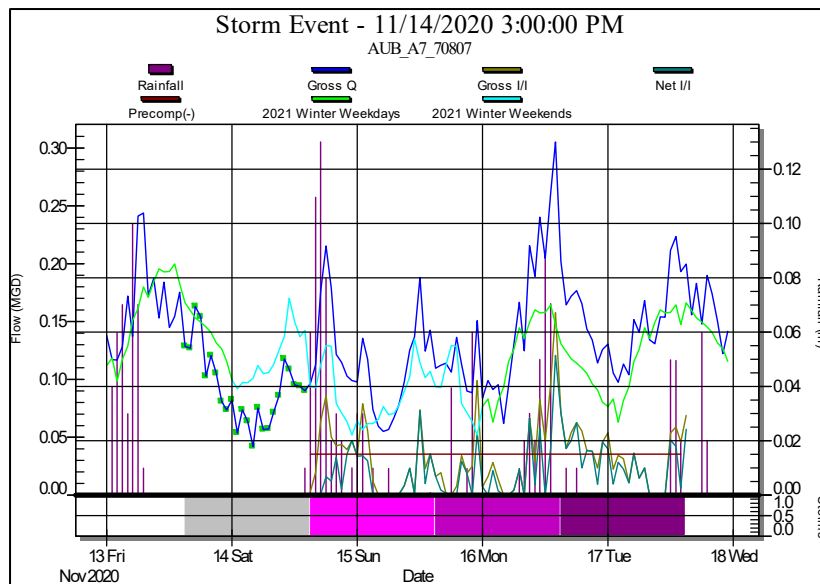
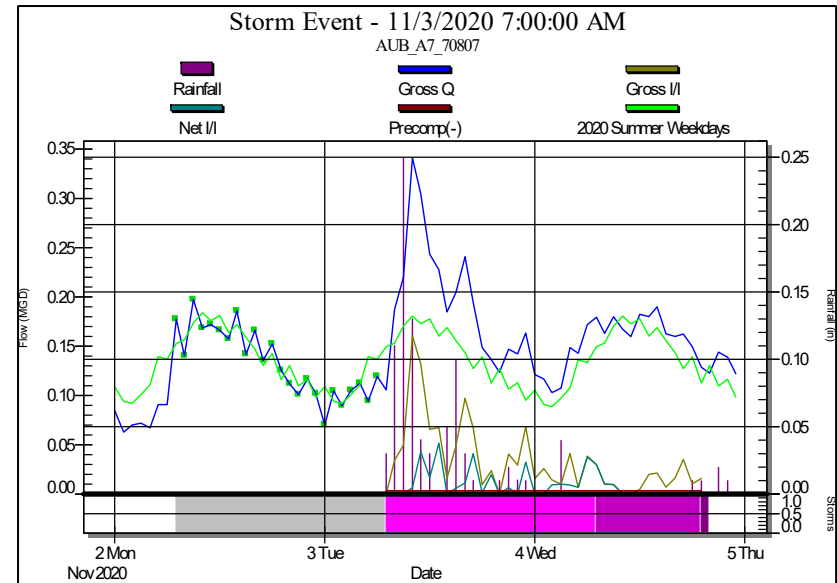
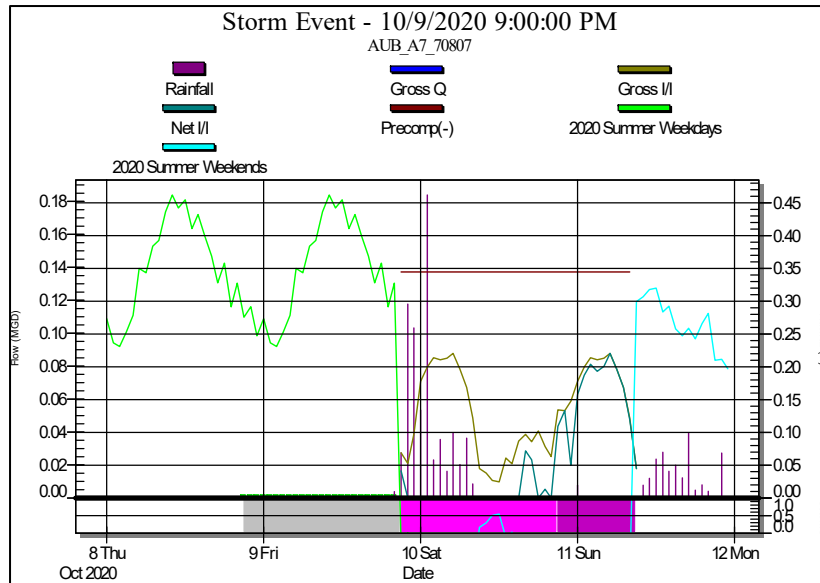


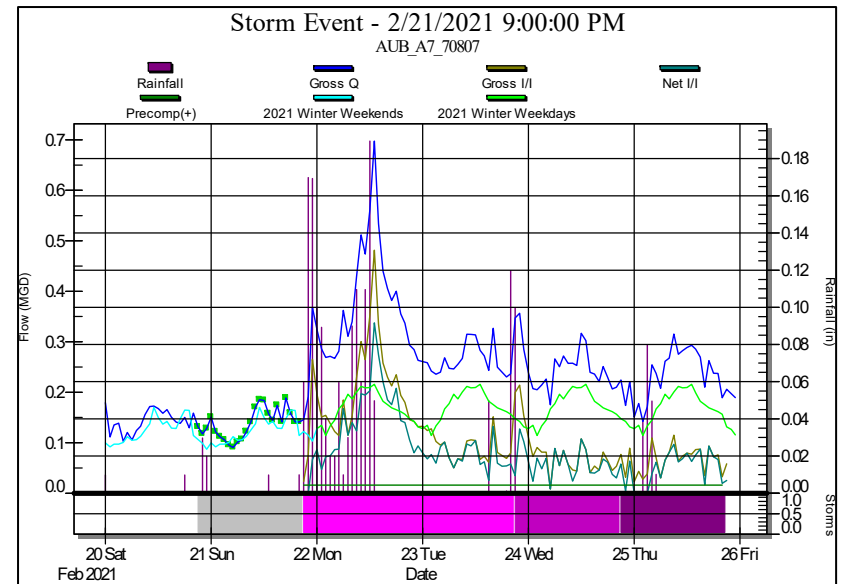
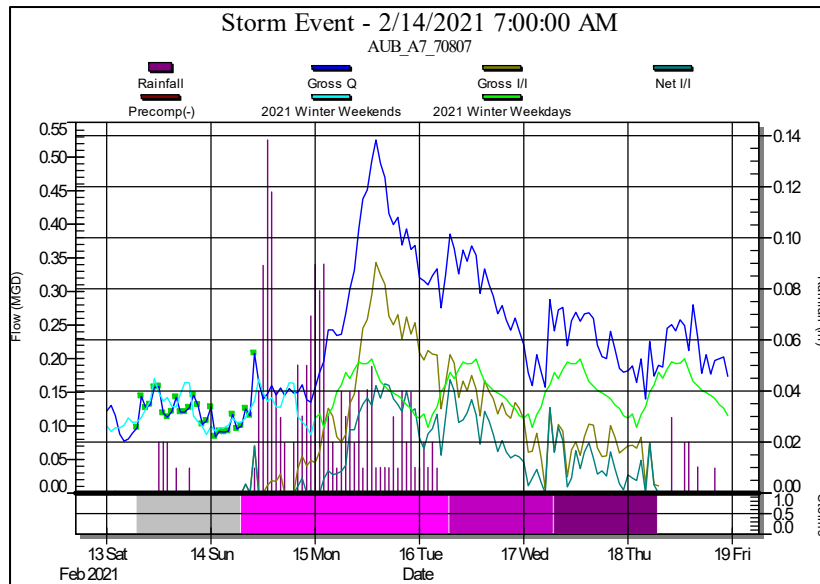
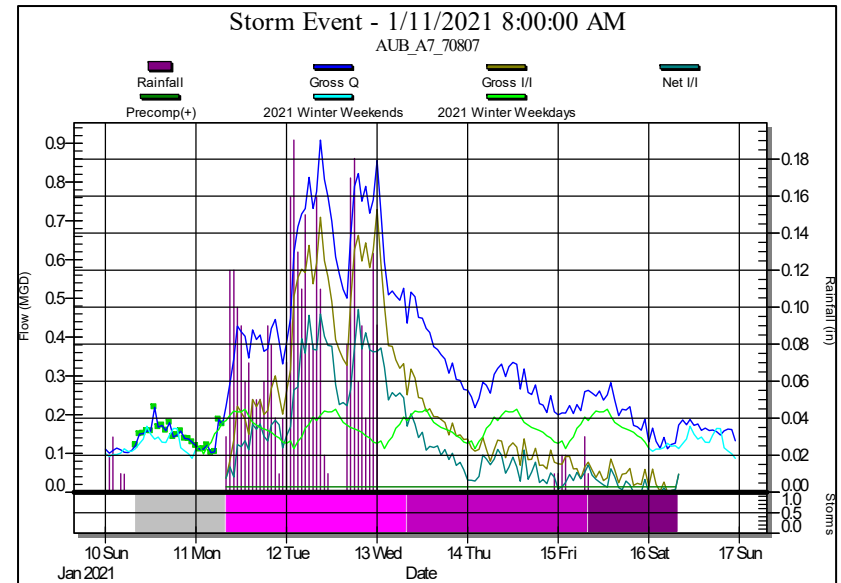
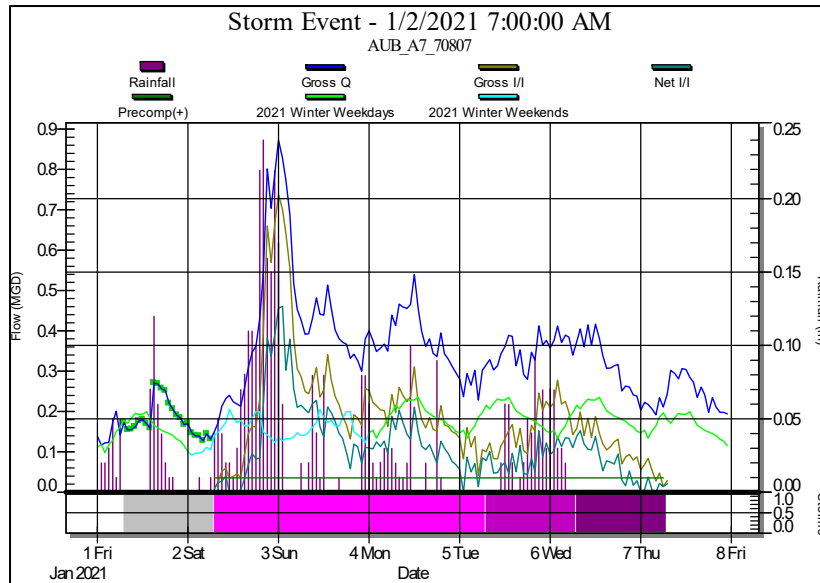


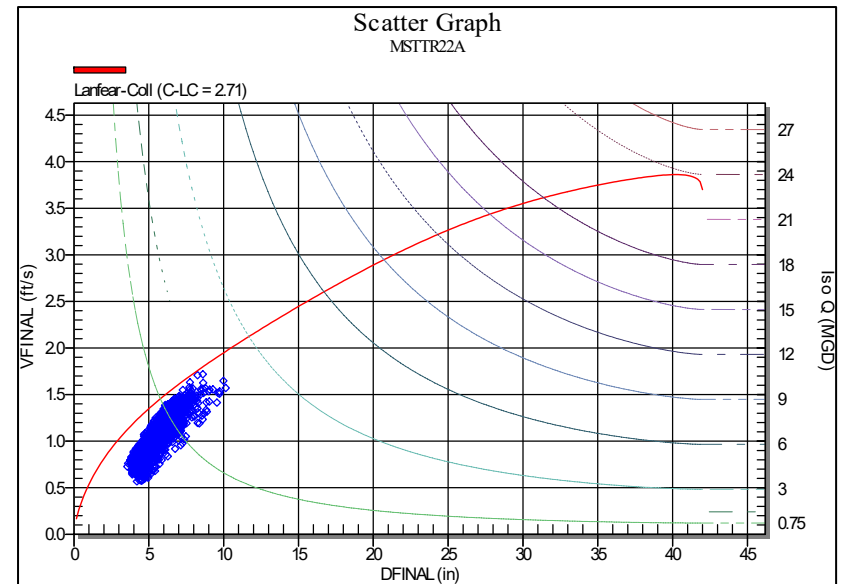
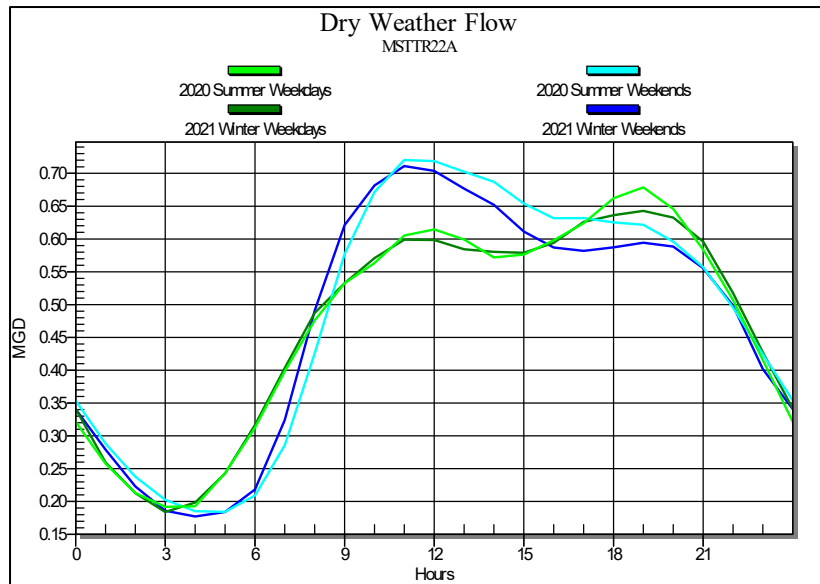
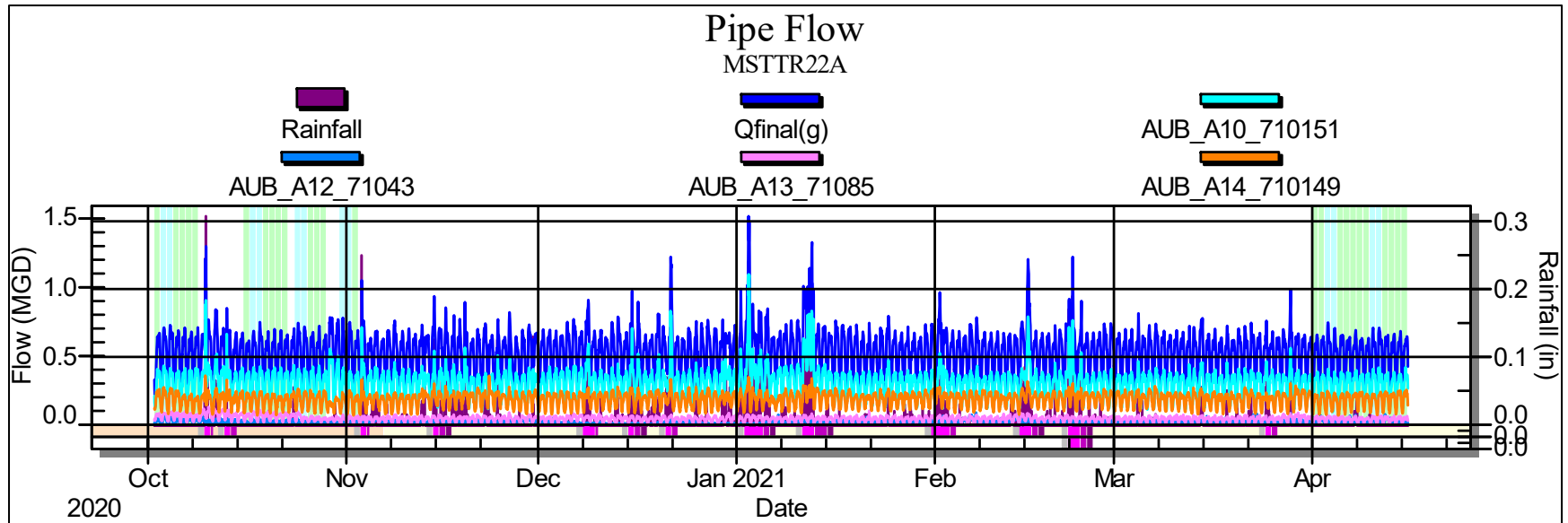


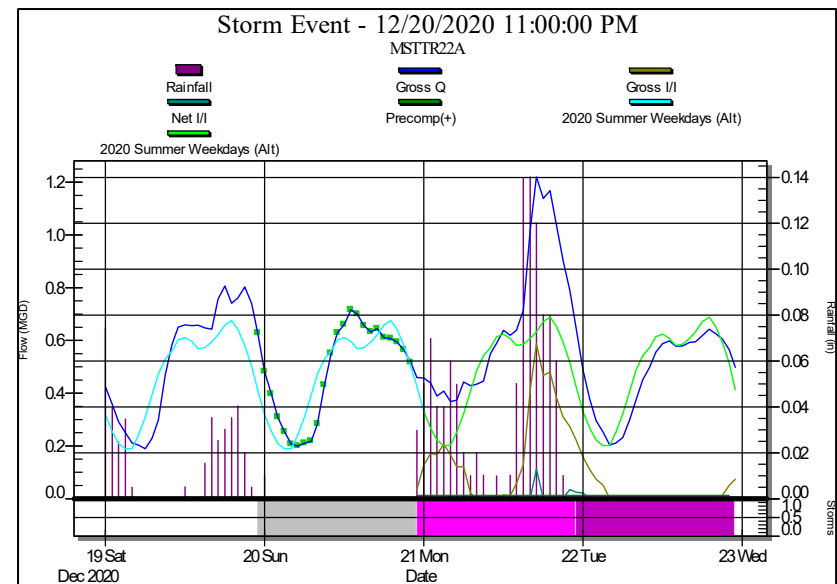
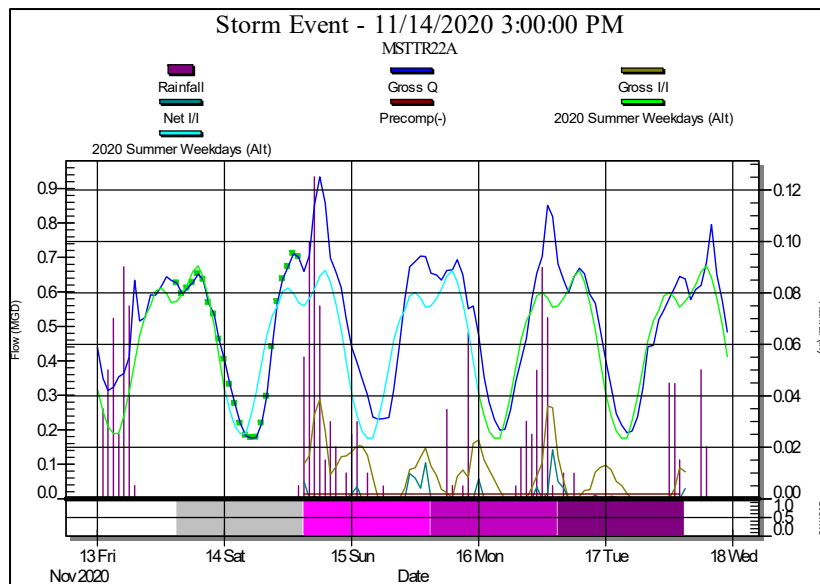
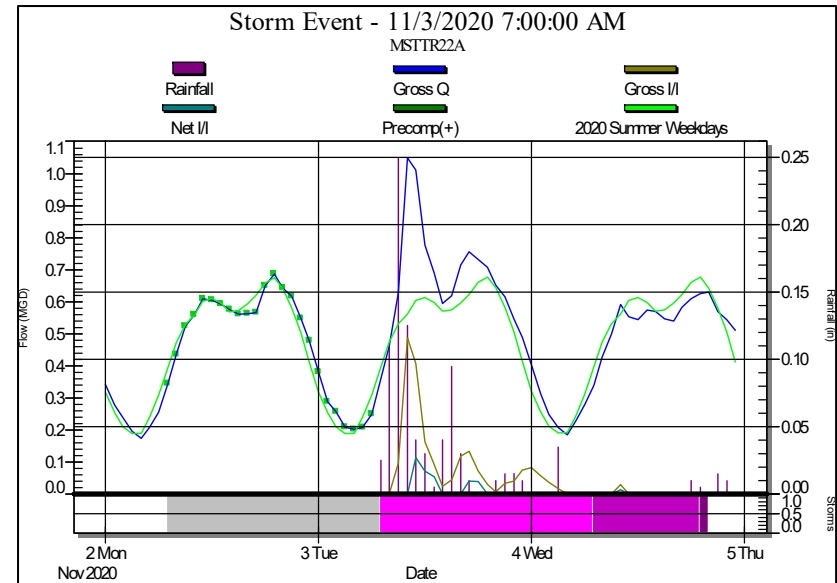
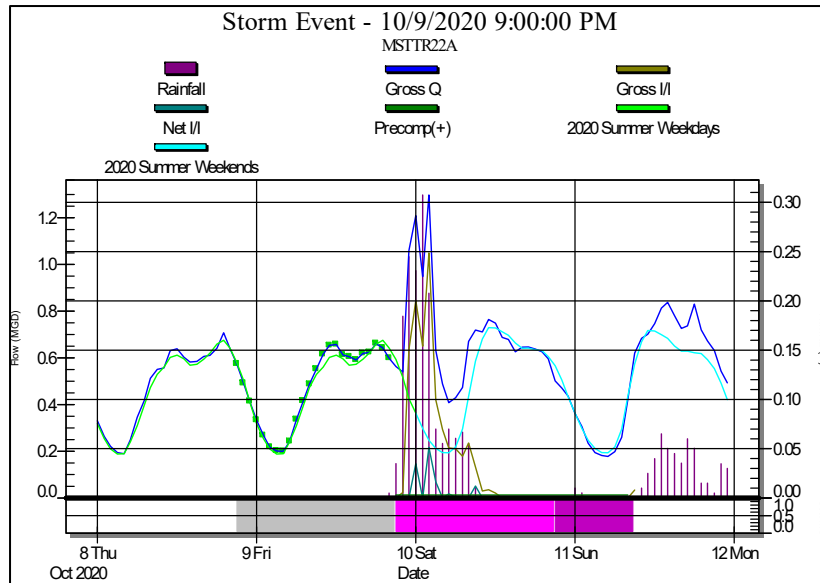


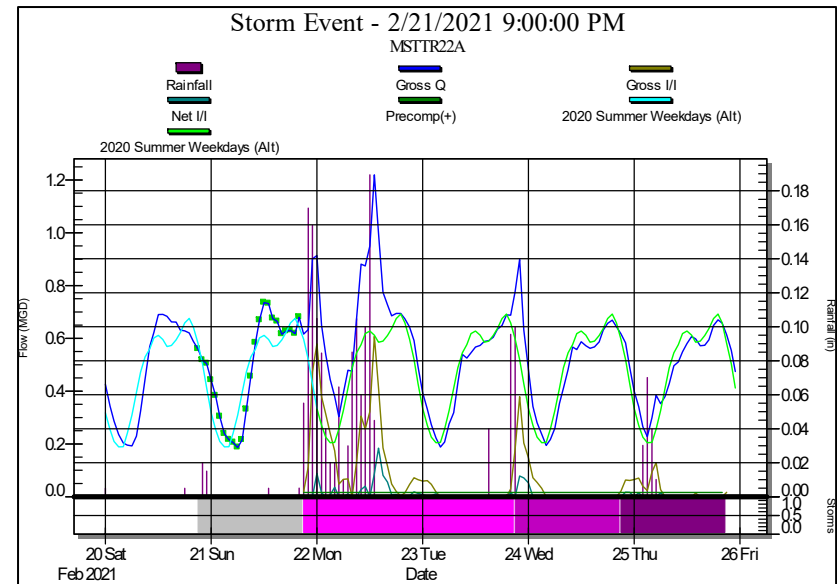
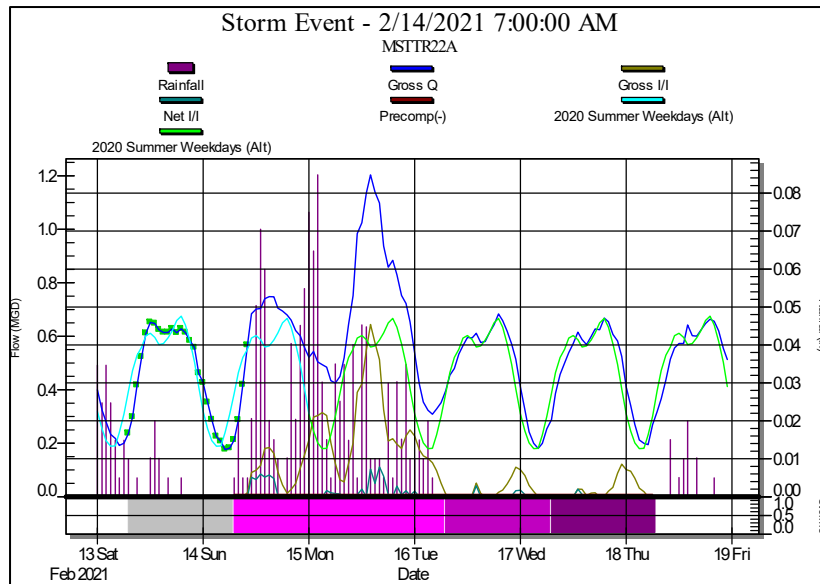
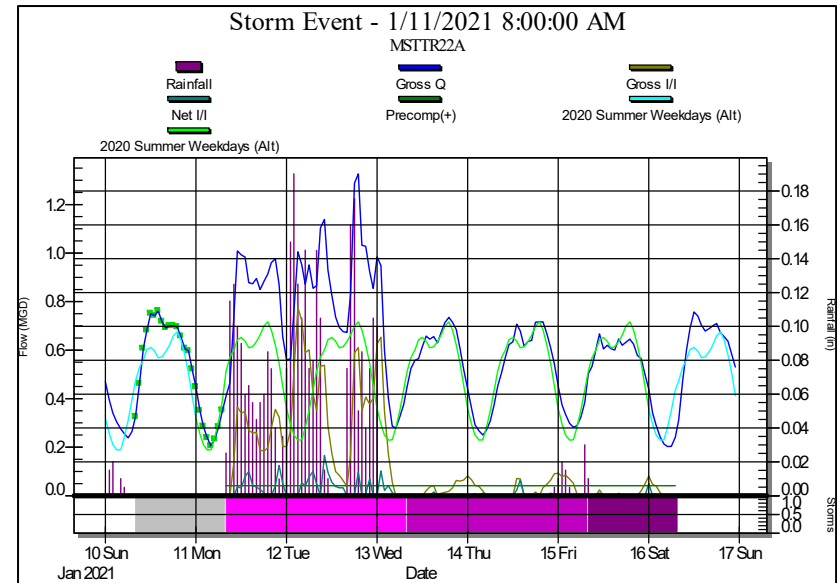
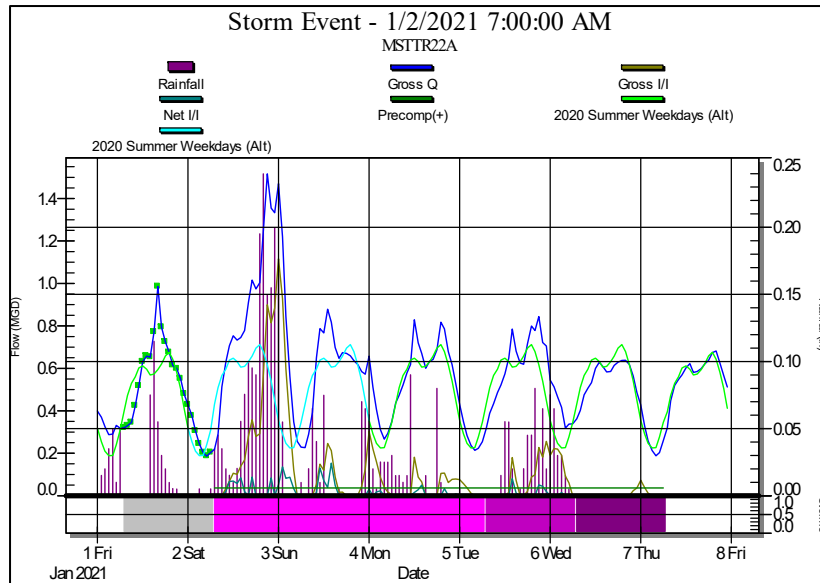


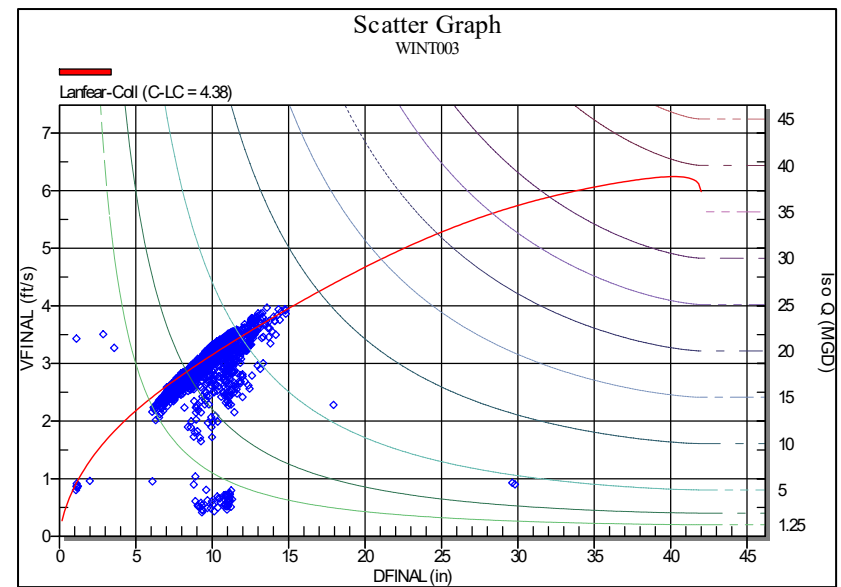
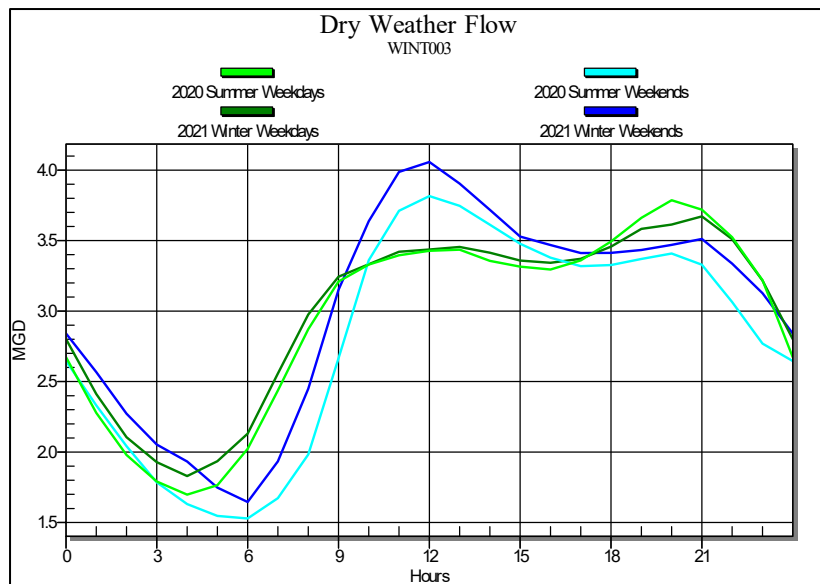
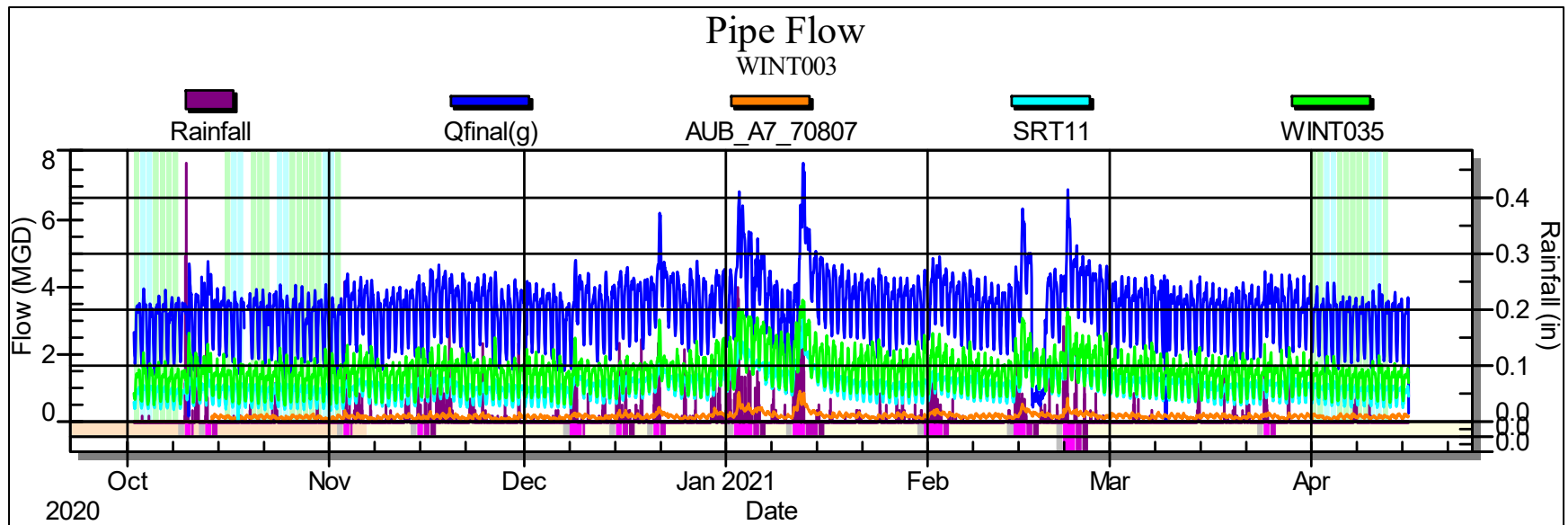


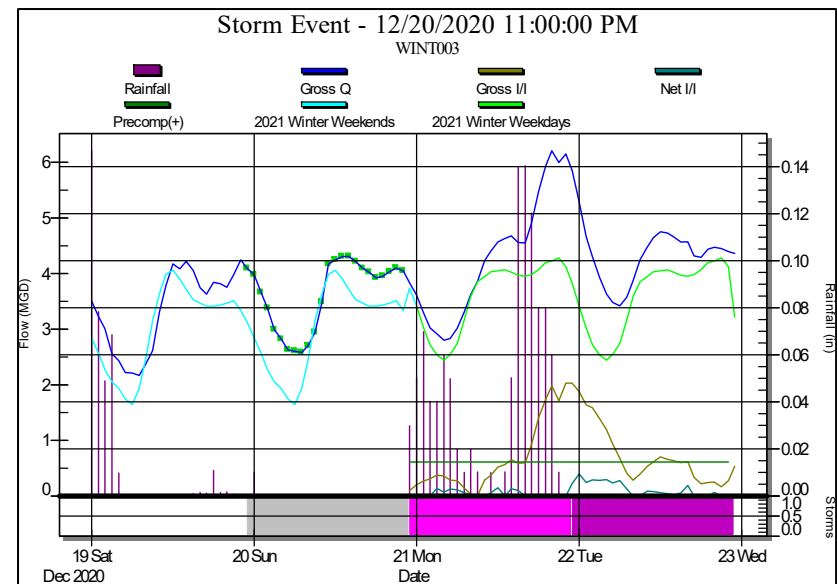
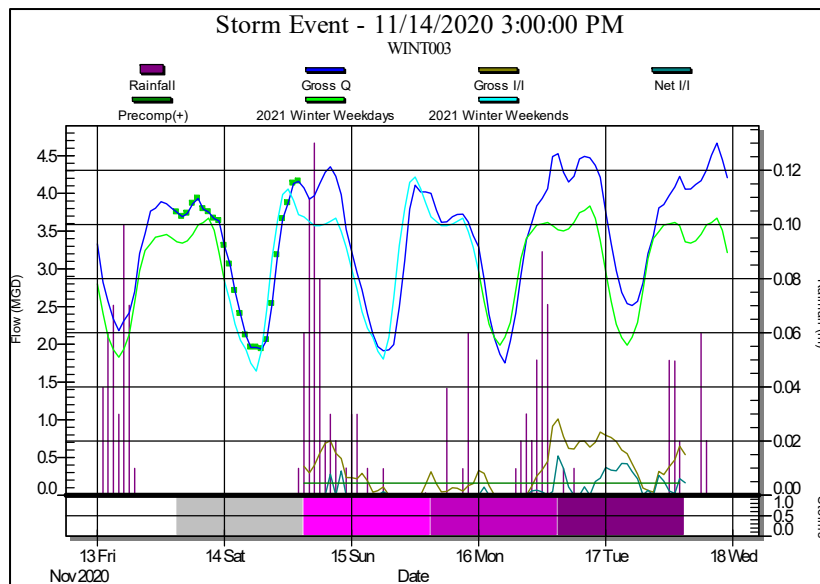
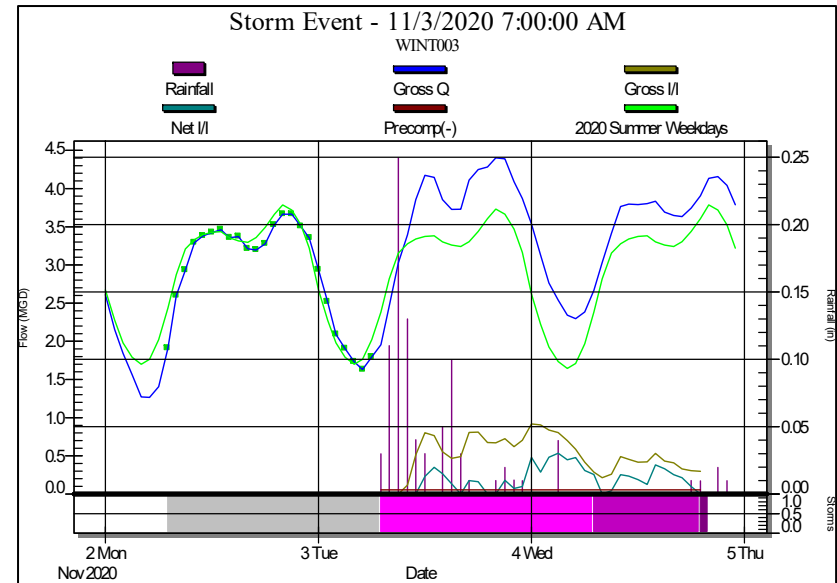
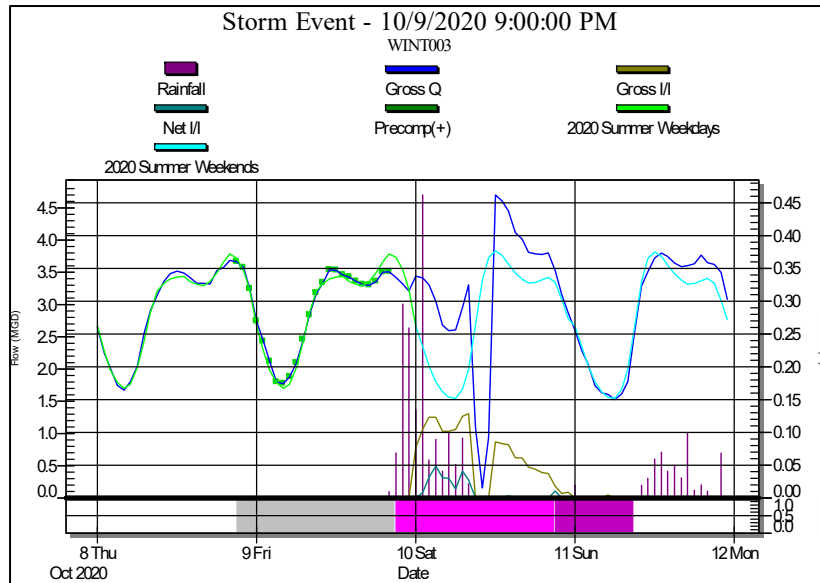


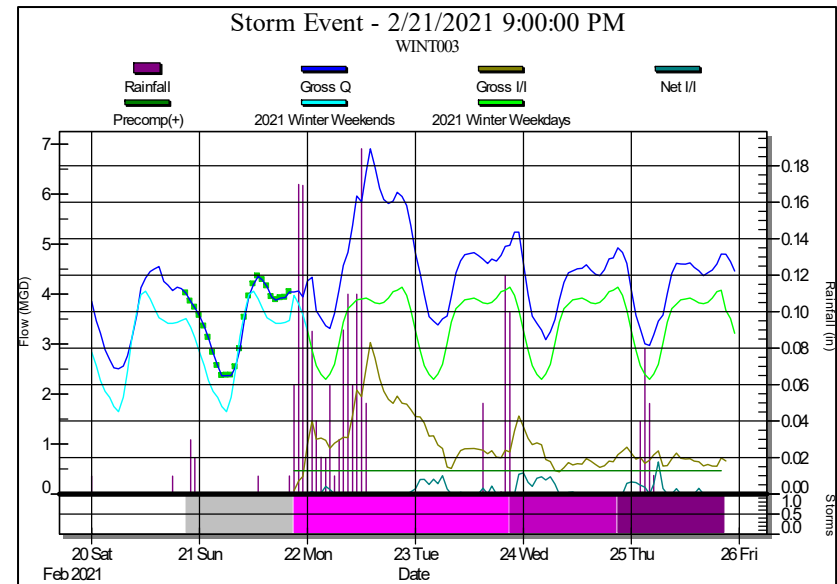
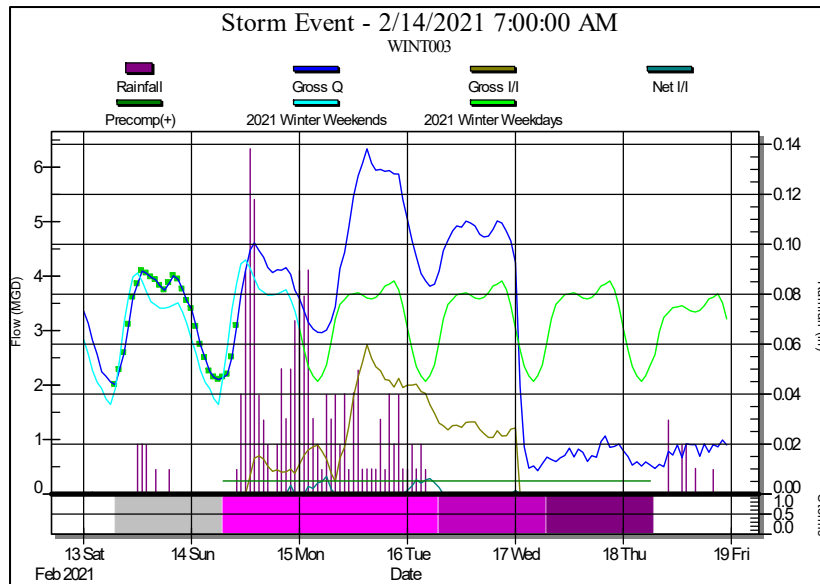
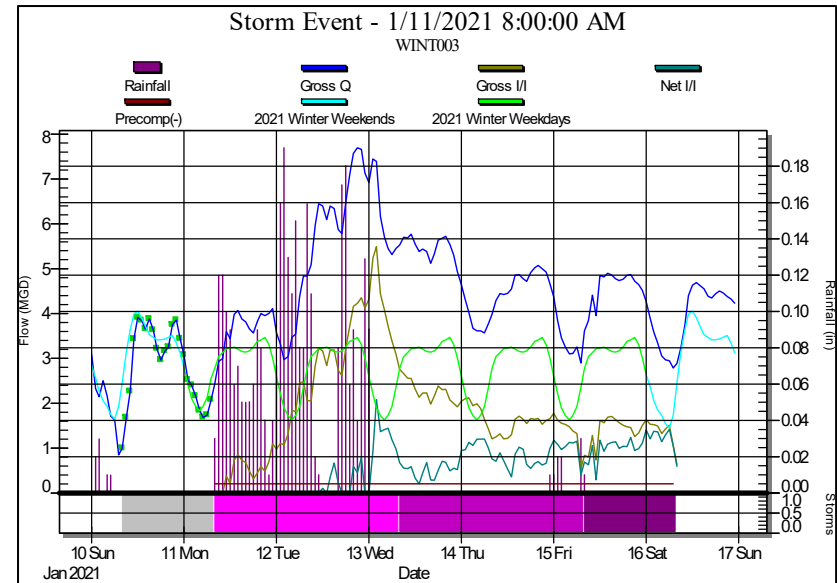
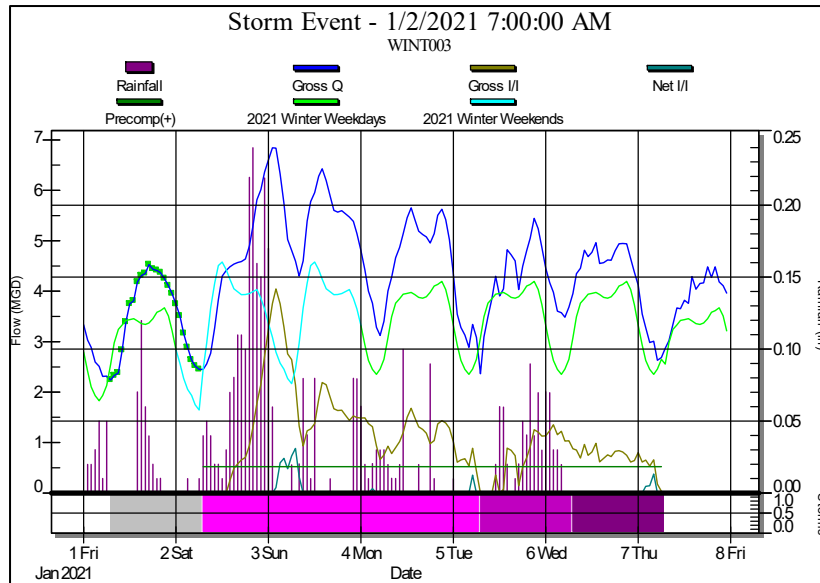


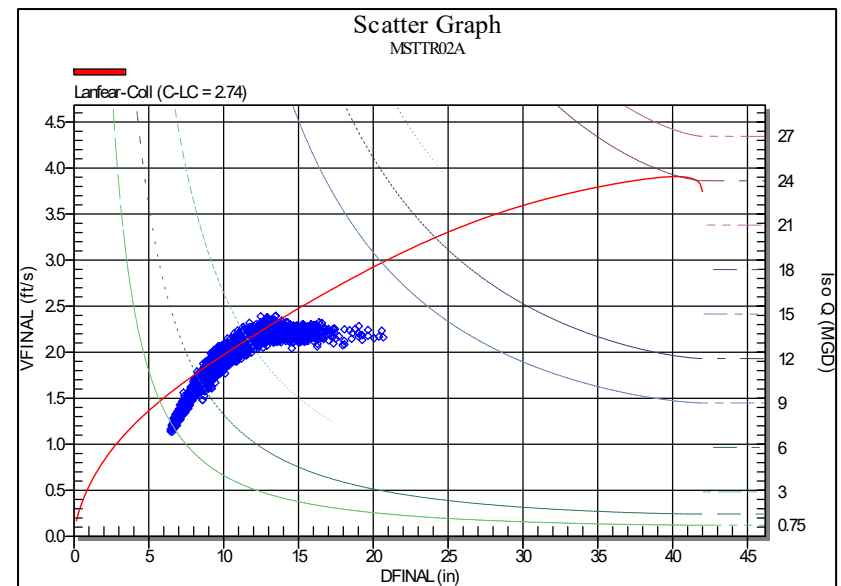
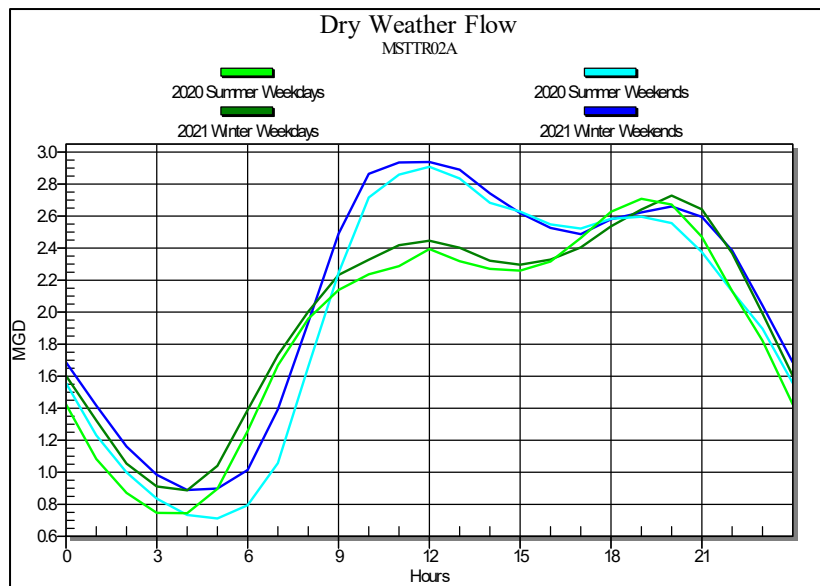
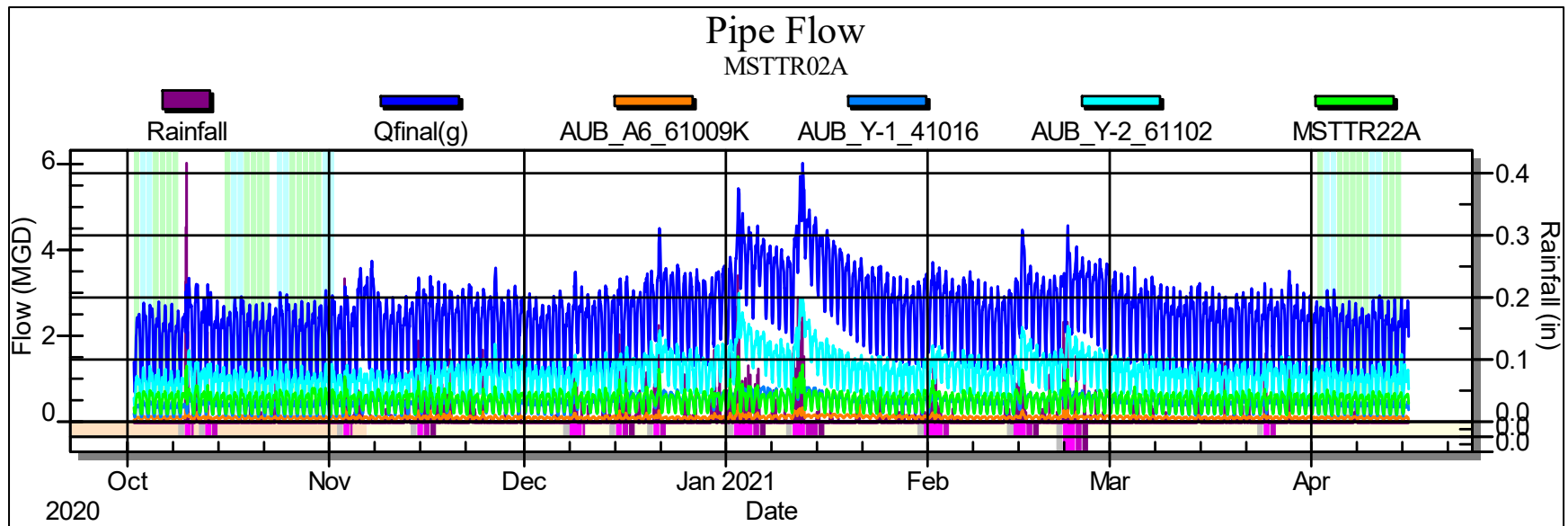


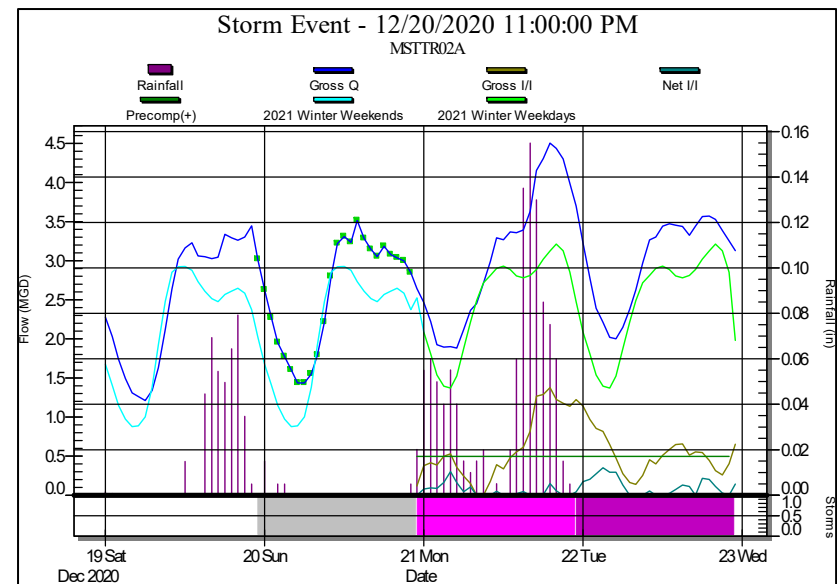
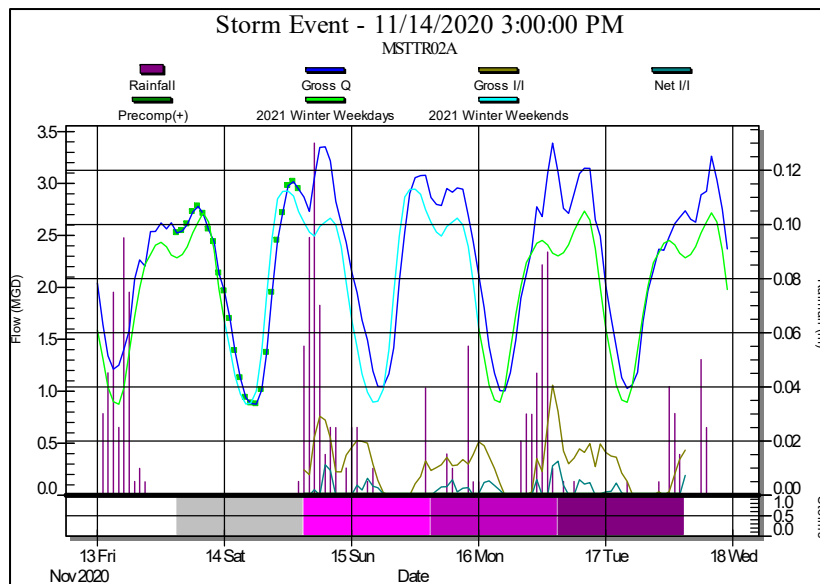
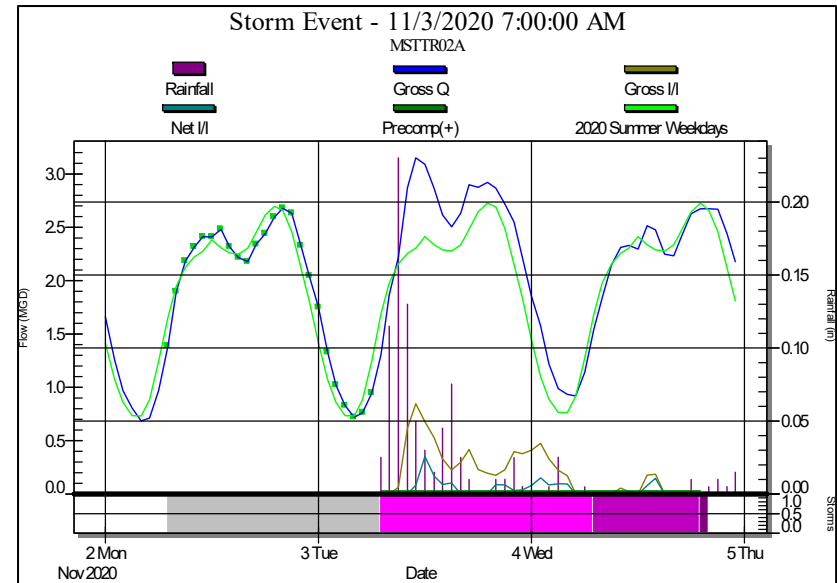
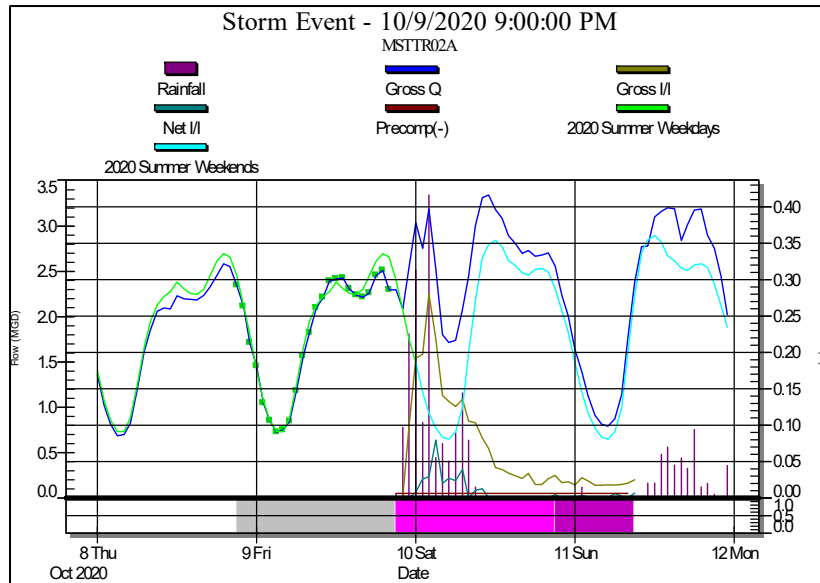


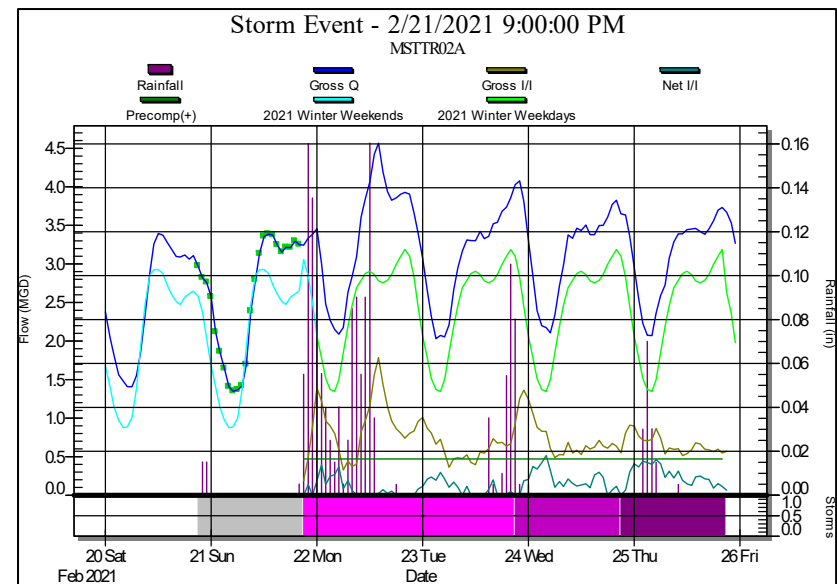
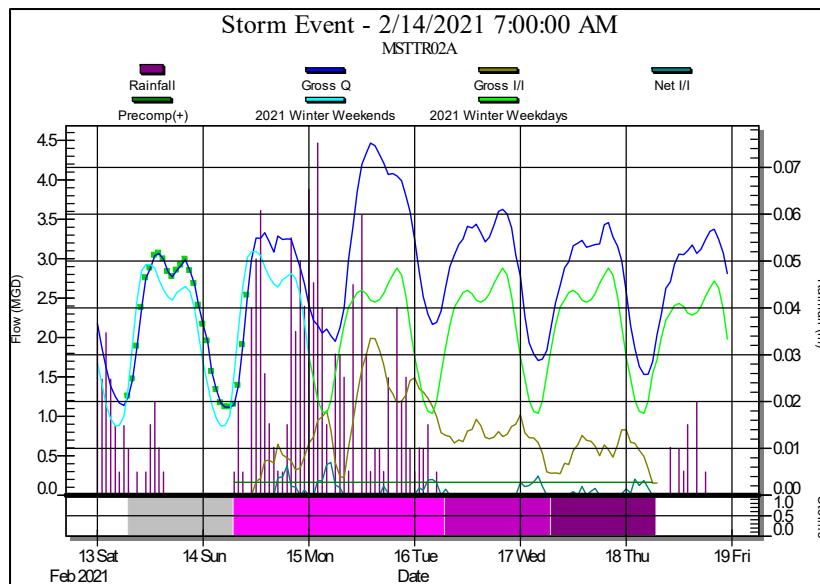
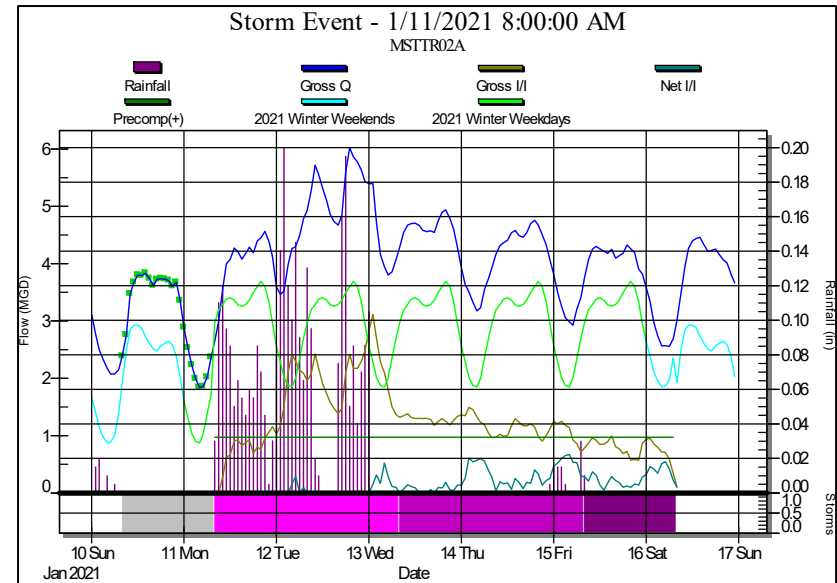
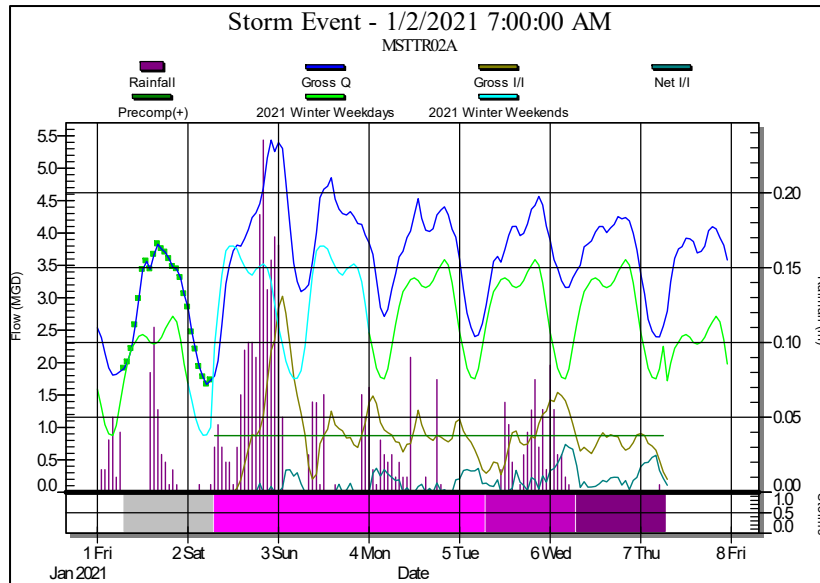


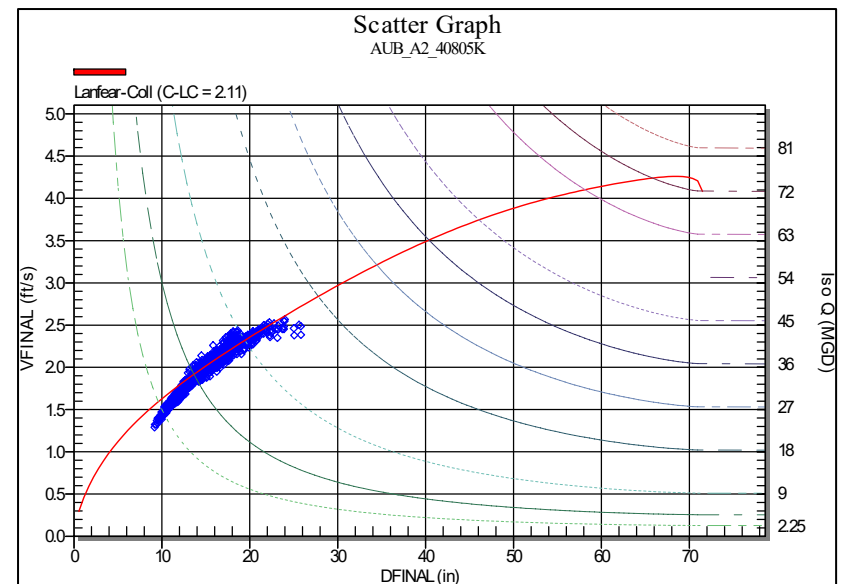
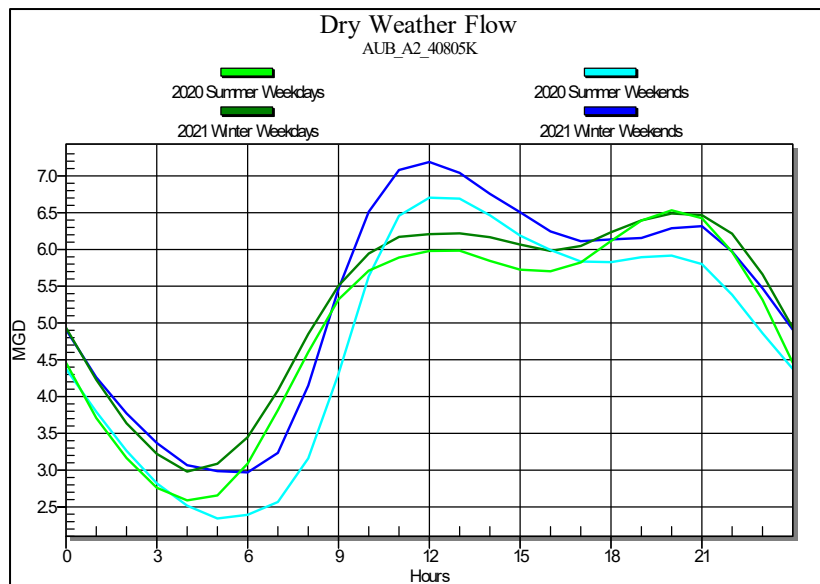
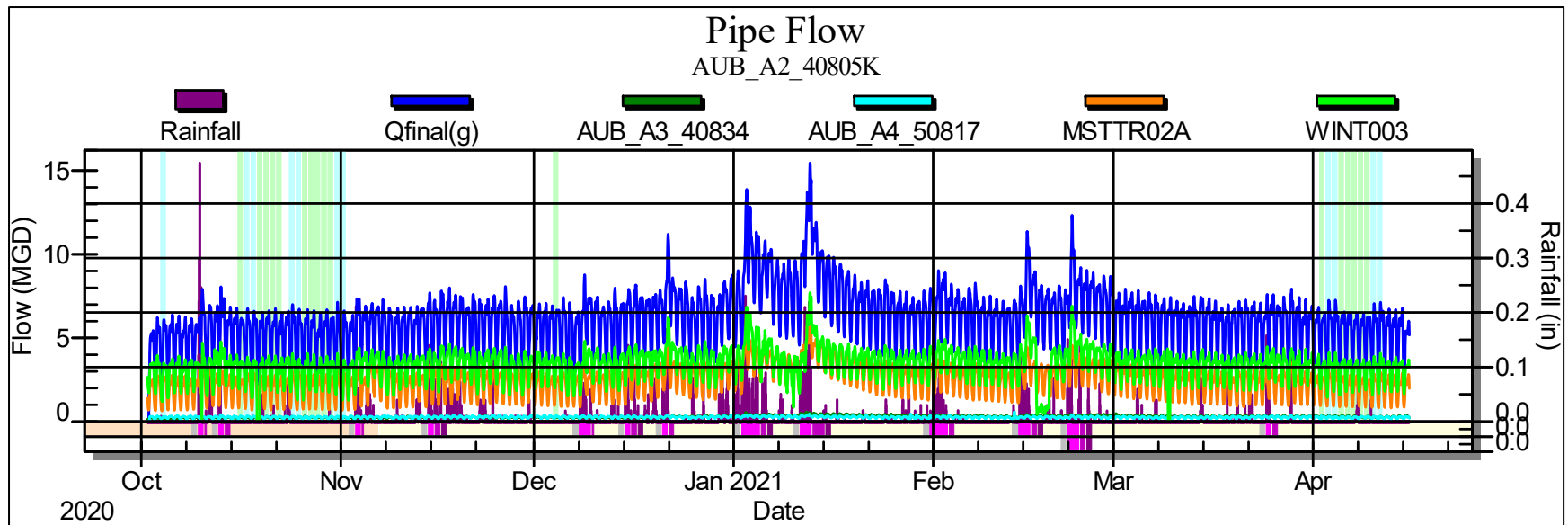


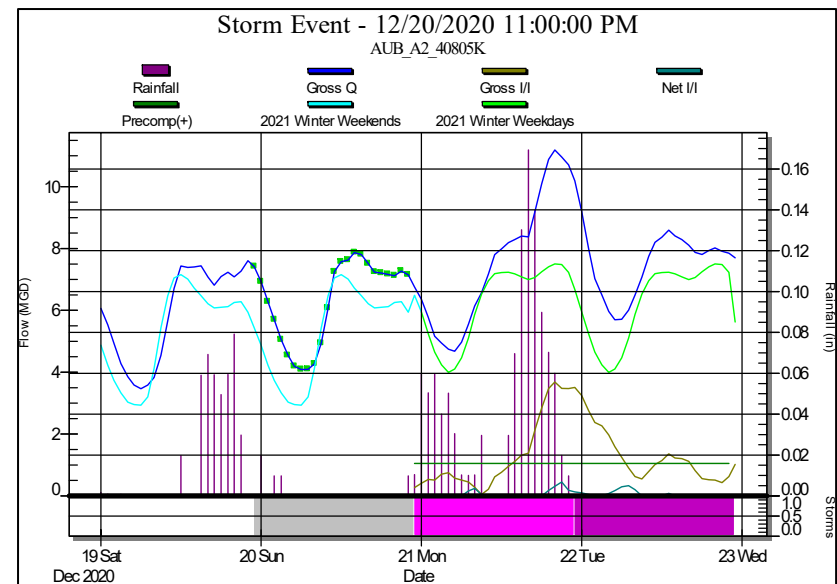
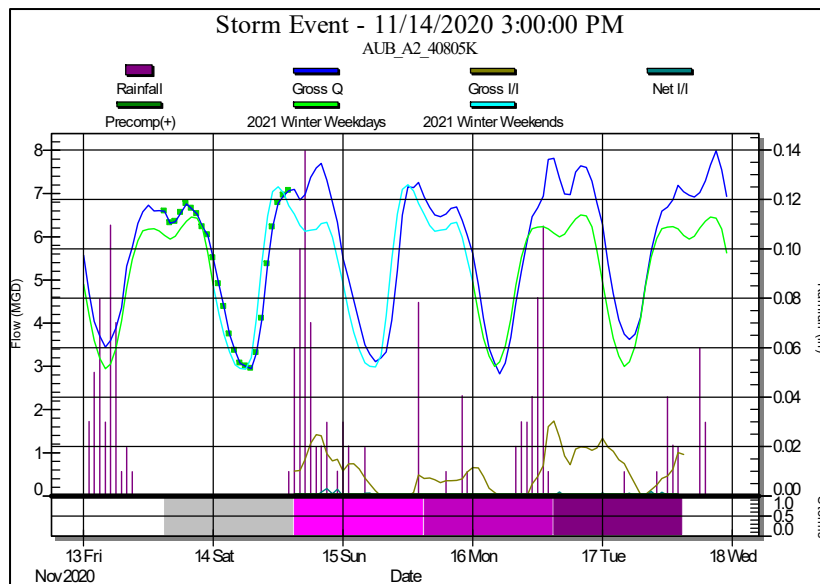
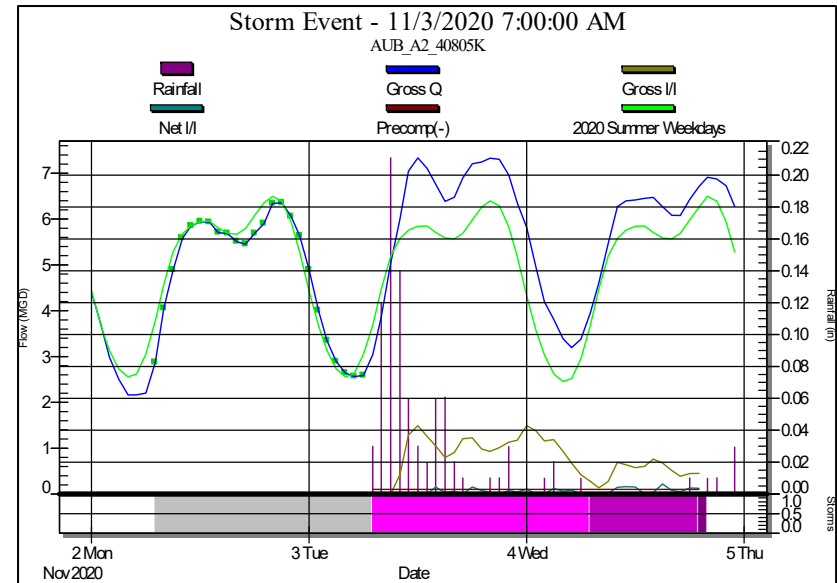
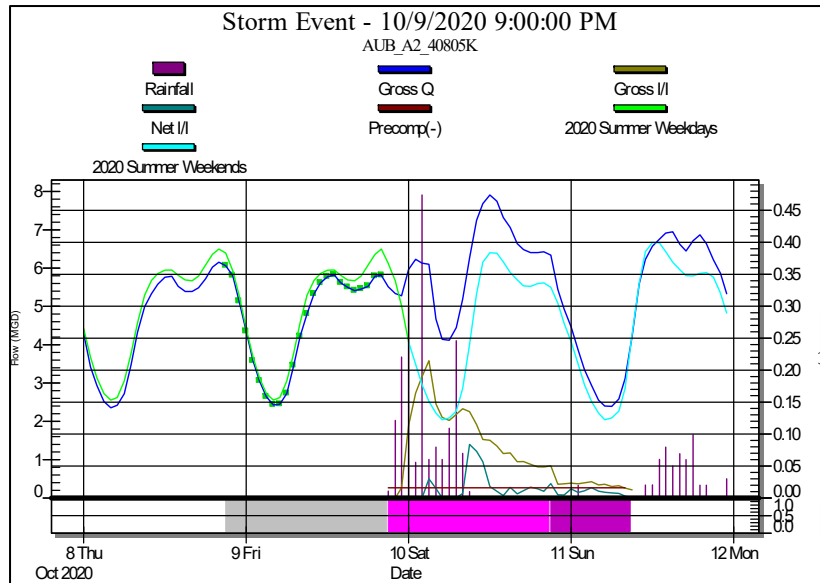


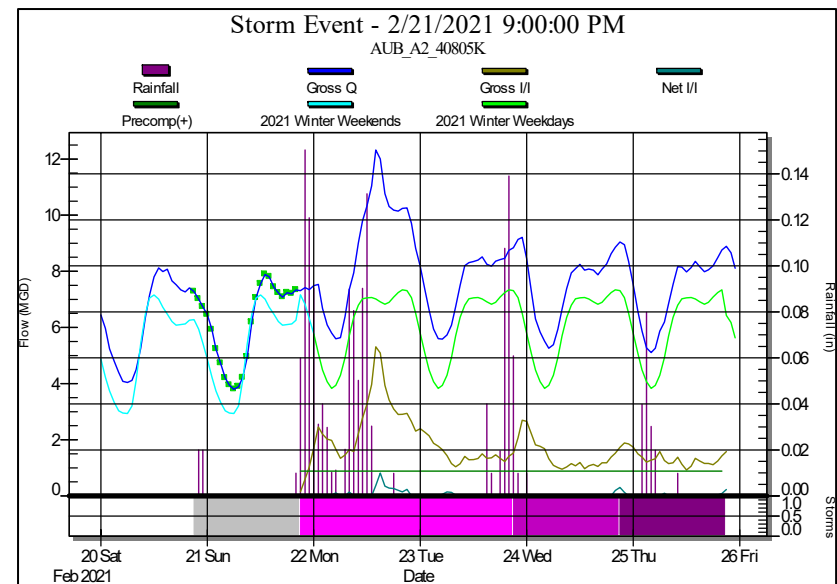
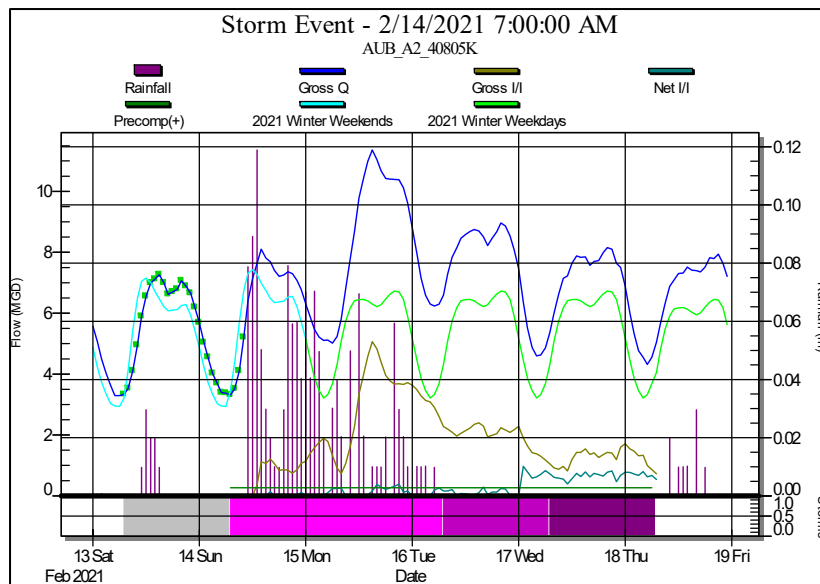
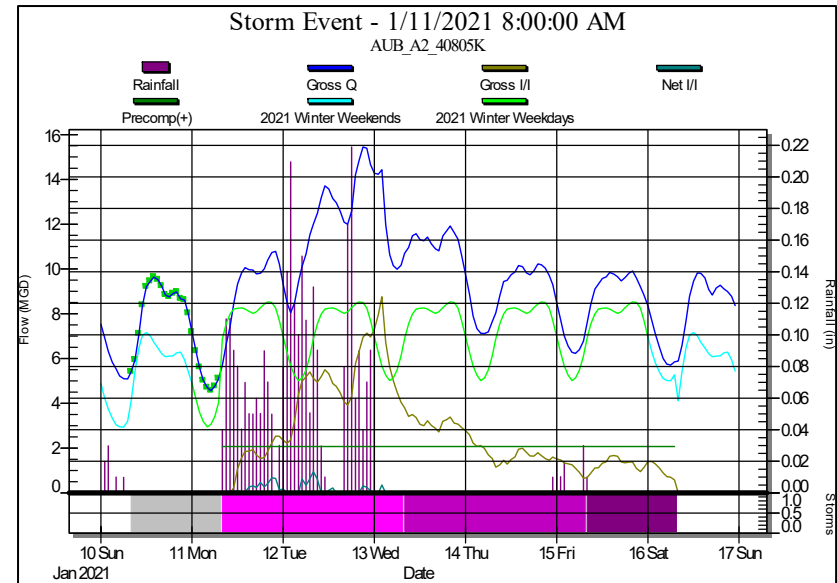
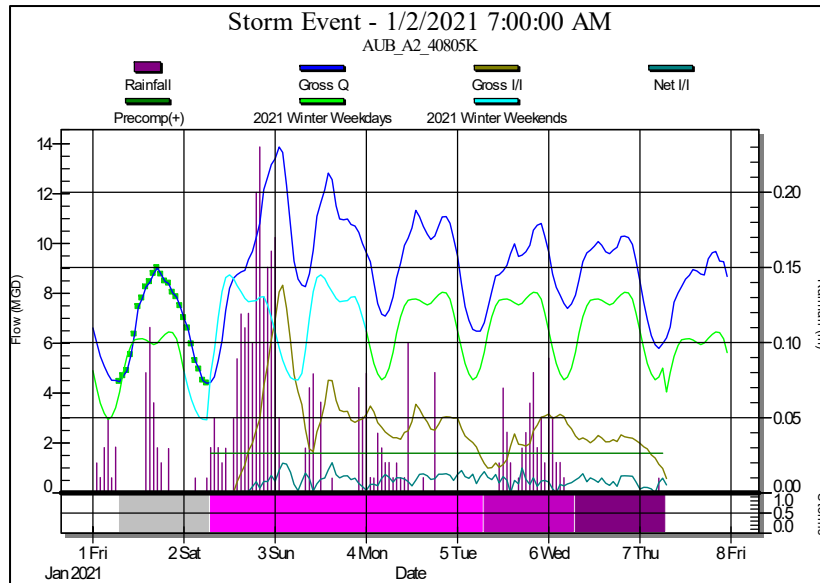










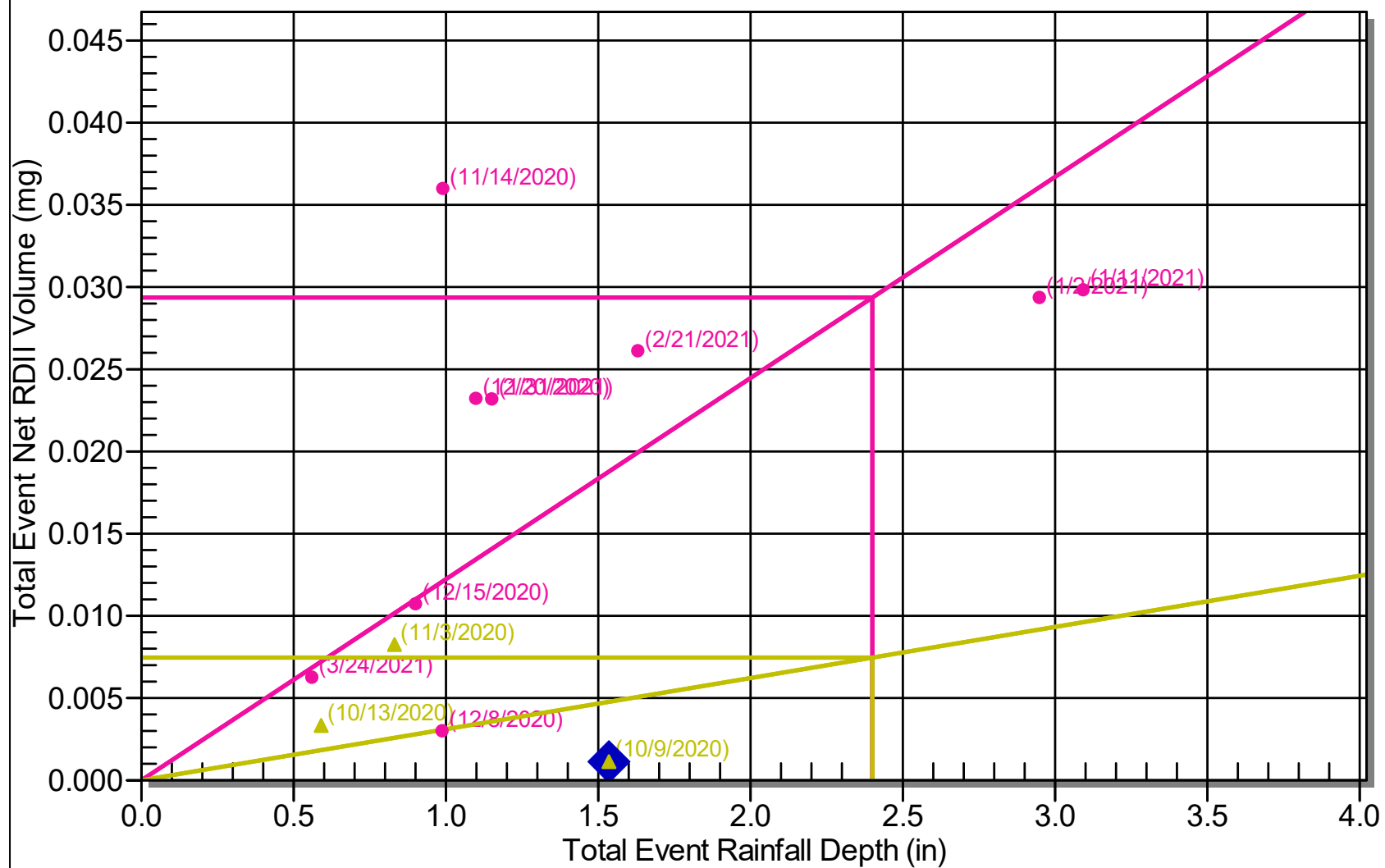


Q vs i - AUB_A12_71043

Total Event Net RDII Volume vs. Rainfall Depth

winter

summer

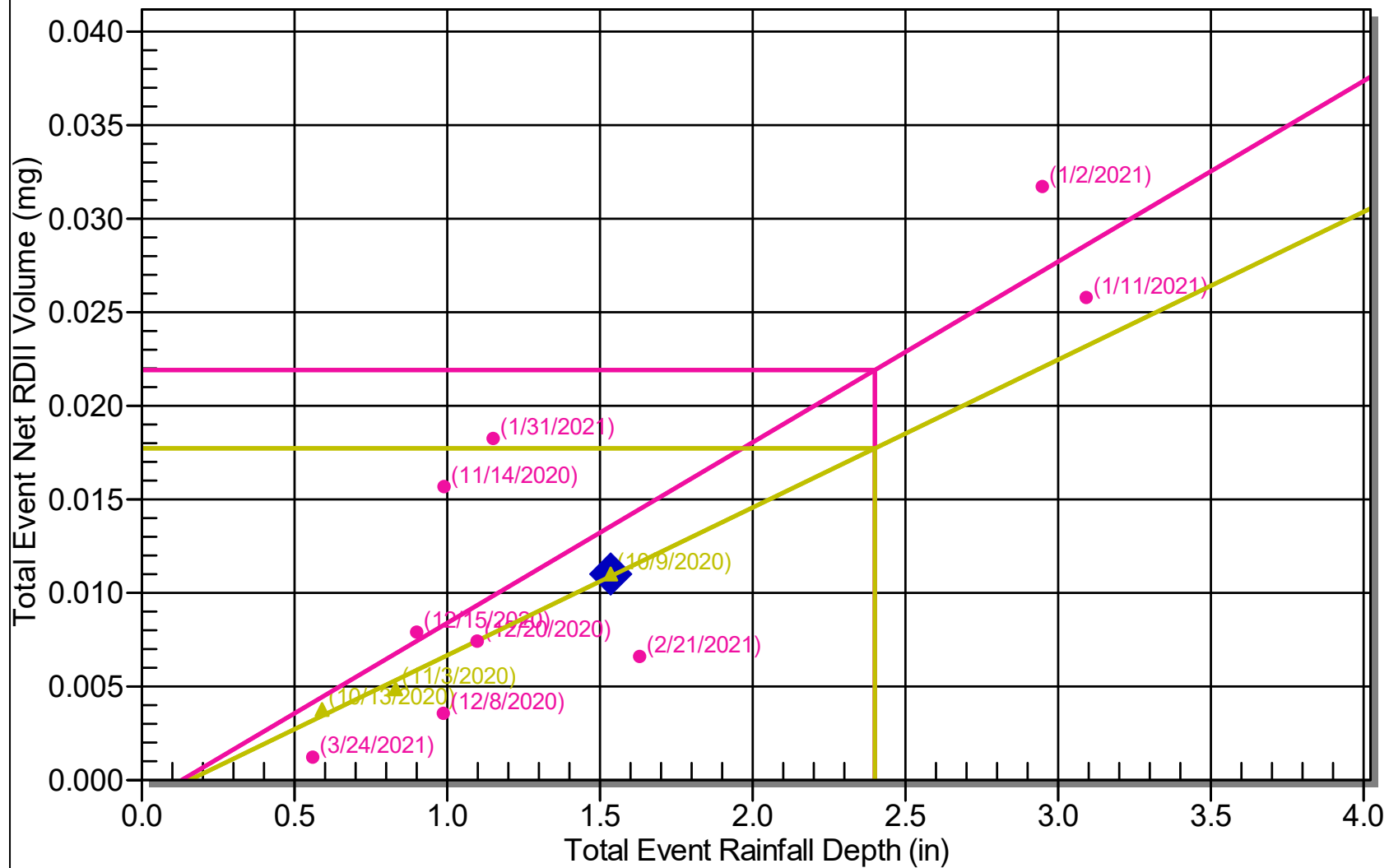


Q vs i - AUB_A13_71085

Total Event Net RDII Volume vs. Rainfall Depth

winter

summer



Q vs i - AUB_A15_80930

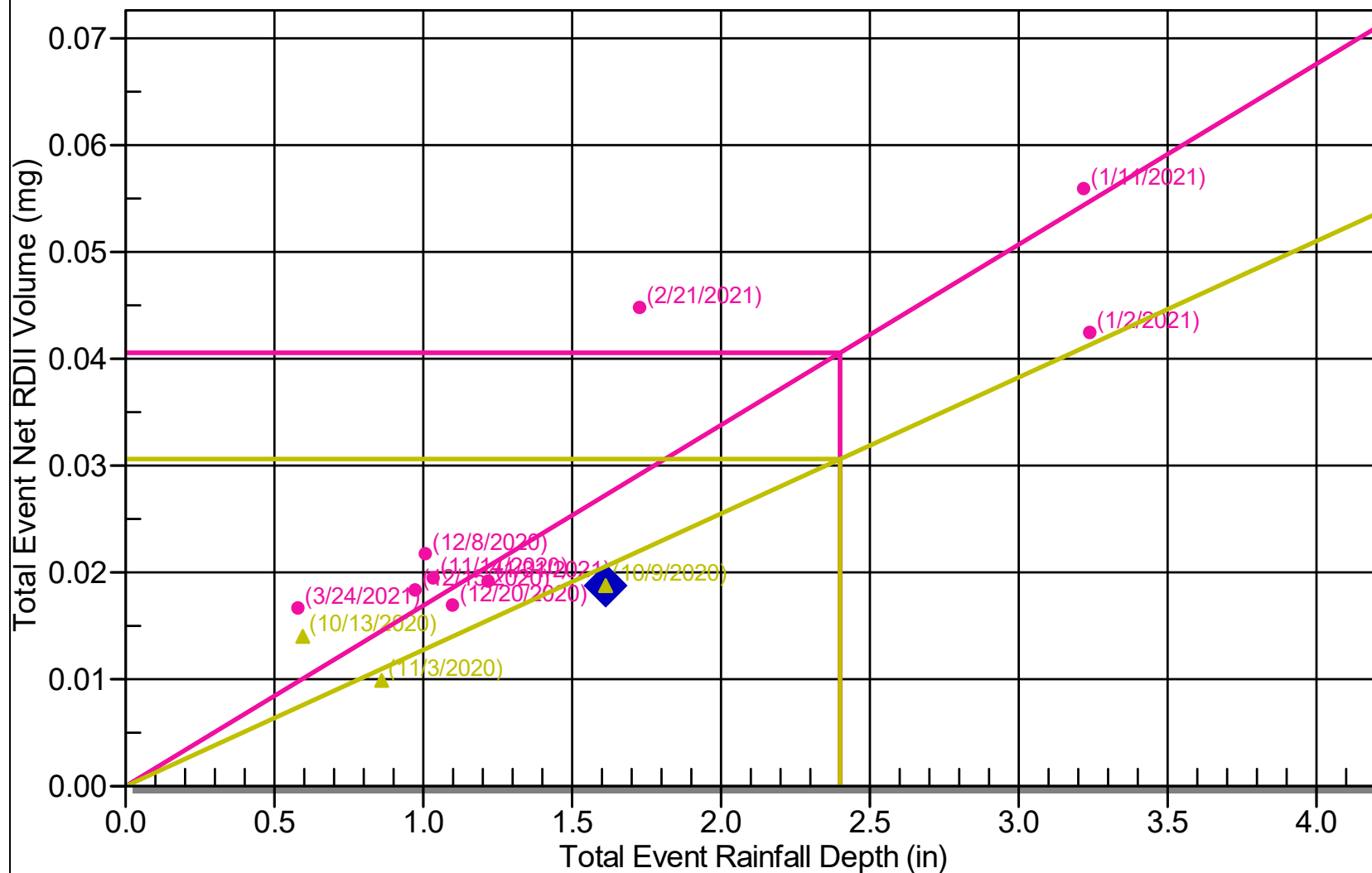
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A16_80956

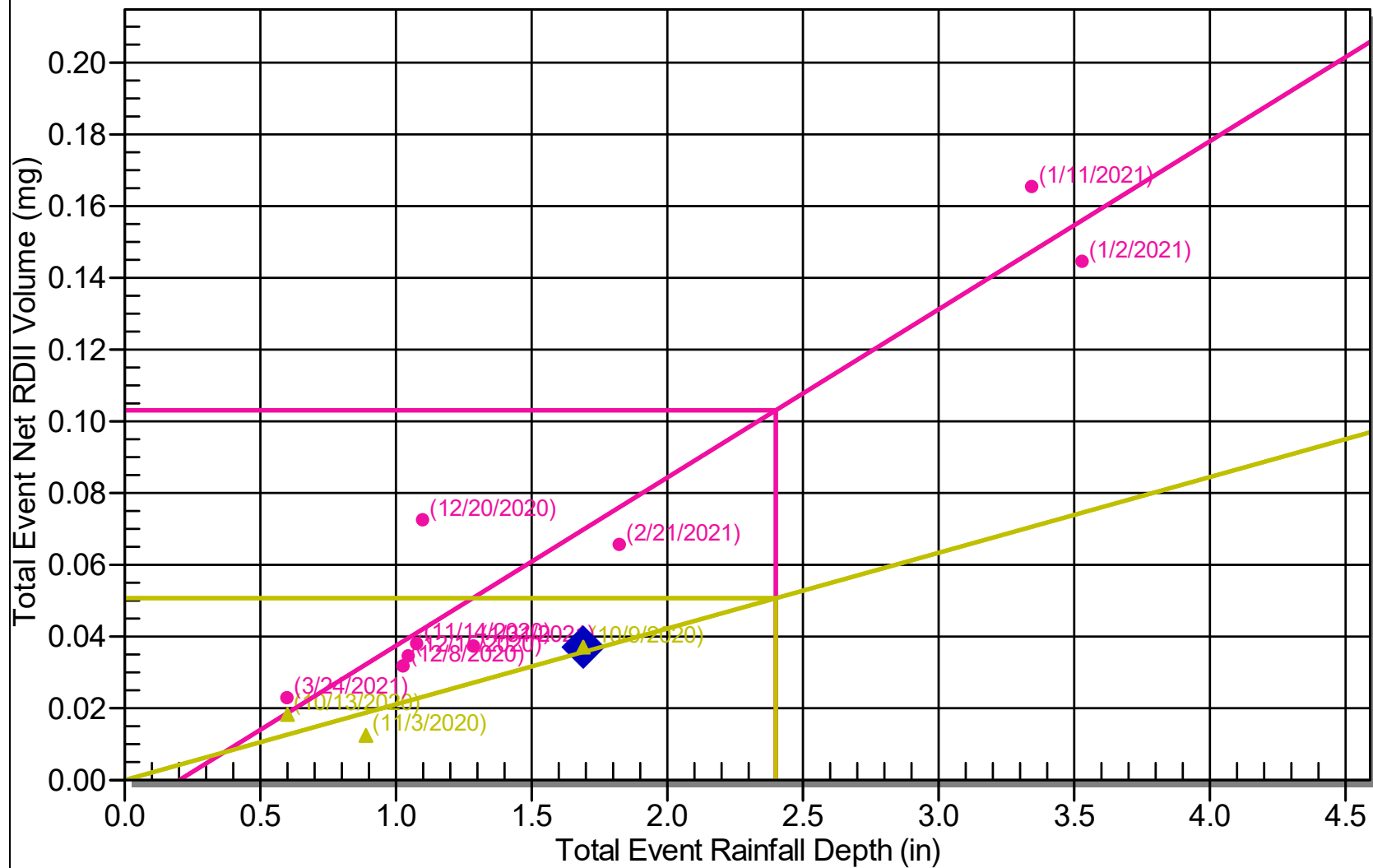
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A17_80957

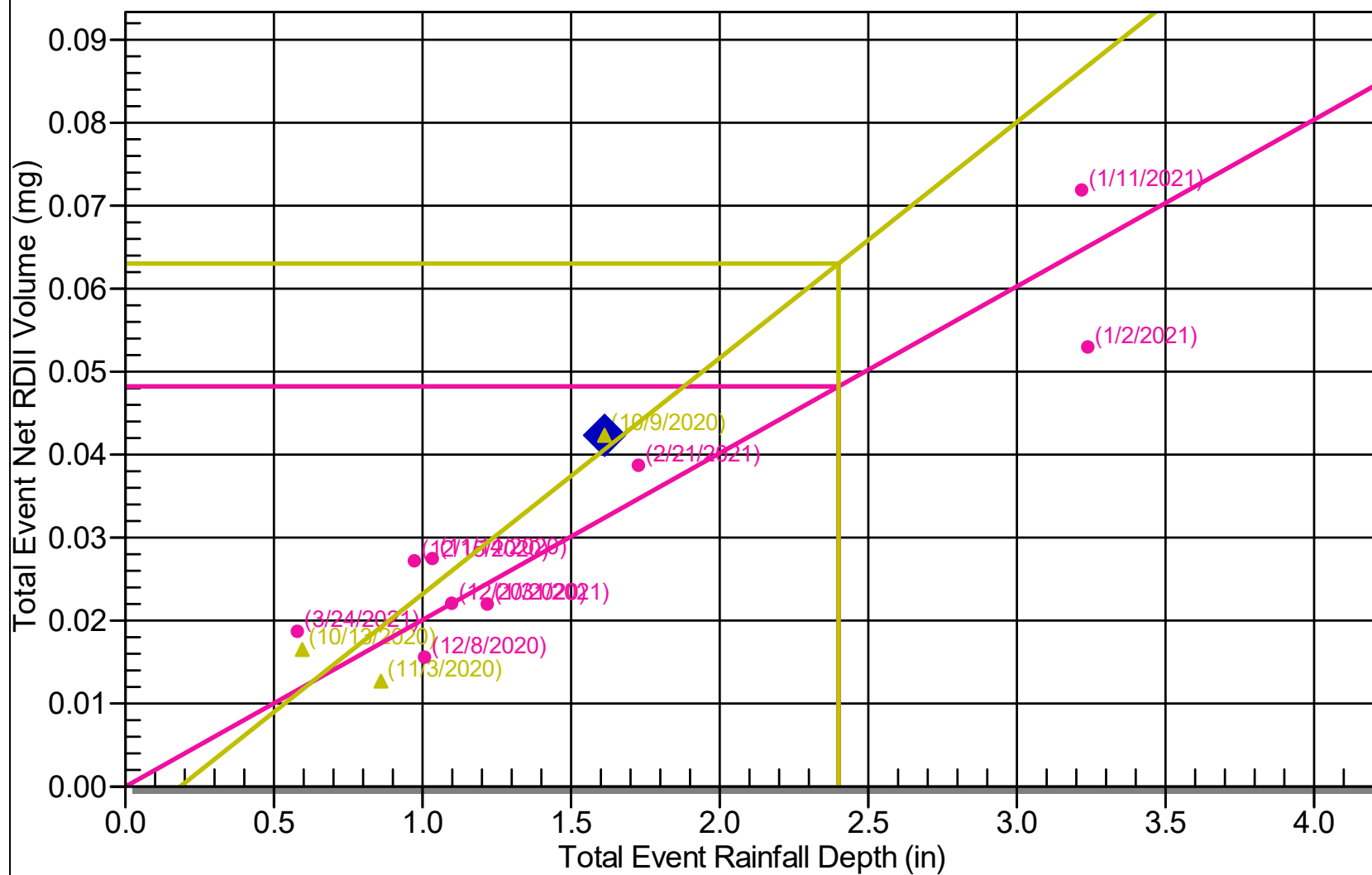
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer

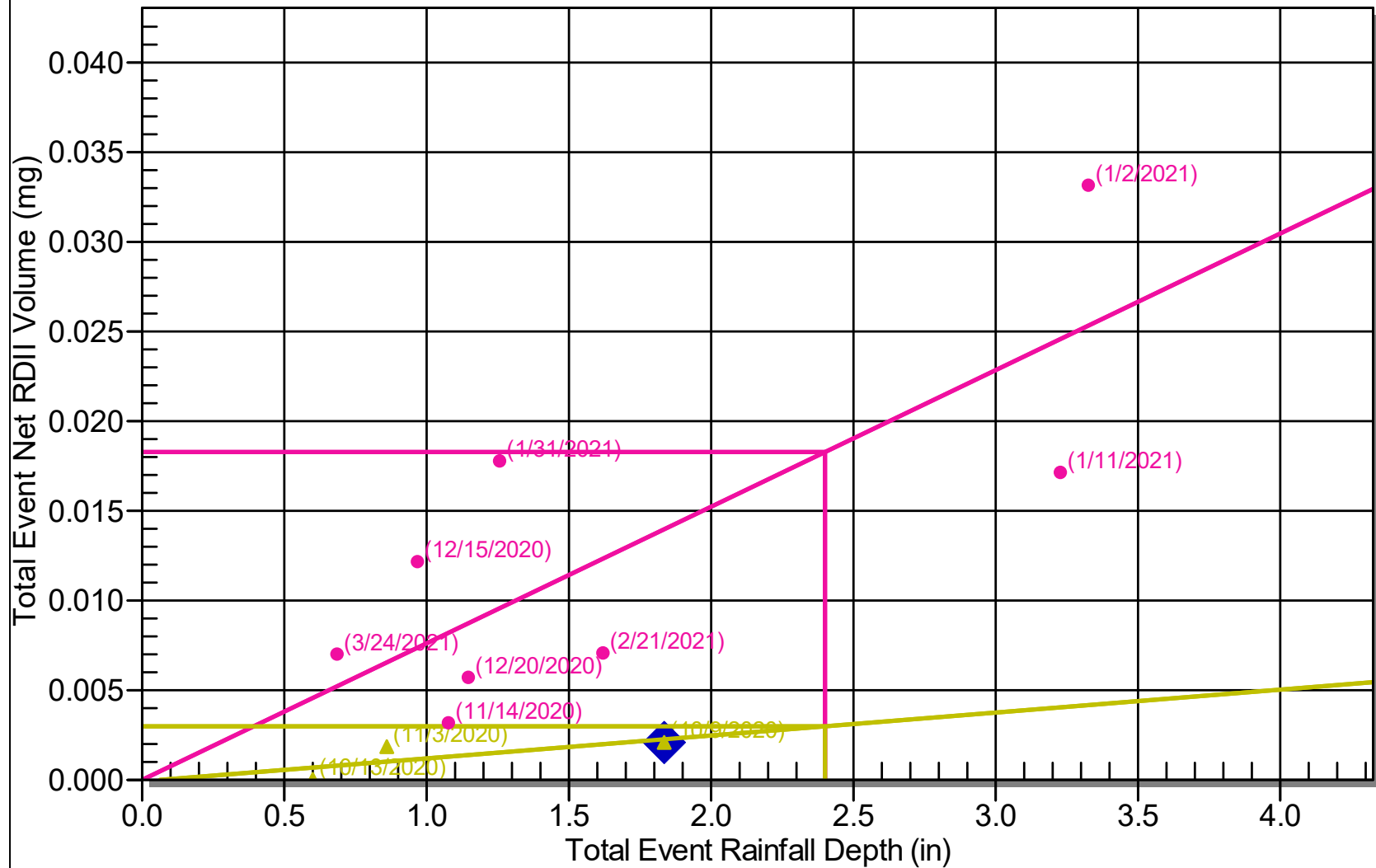


Q vs i - AUB_A1a_30822

Total Event Net RDII Volume vs. Rainfall Depth

winter

summer



Q vs i - AUB_A1b_30968

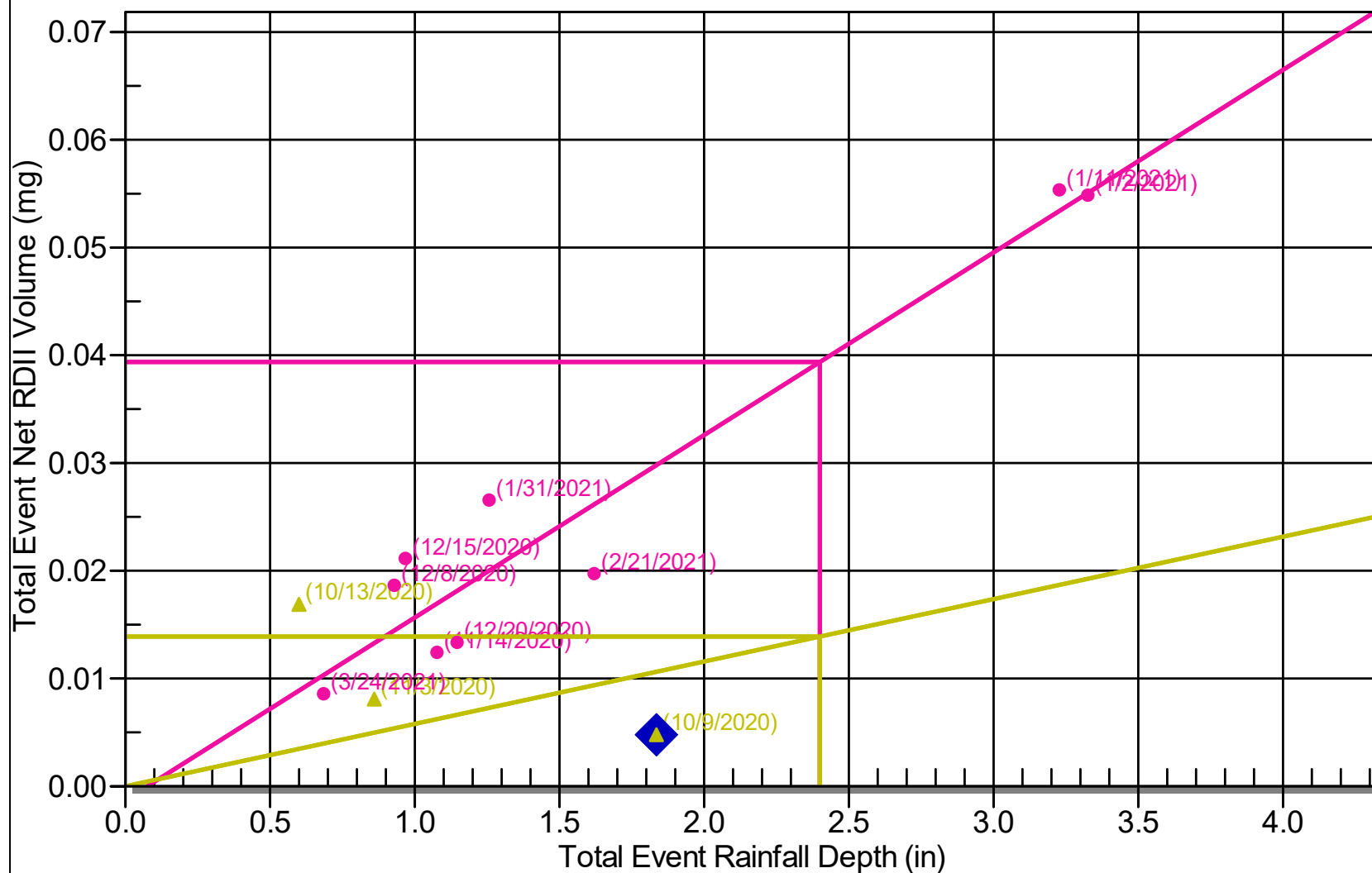
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A1c_30906

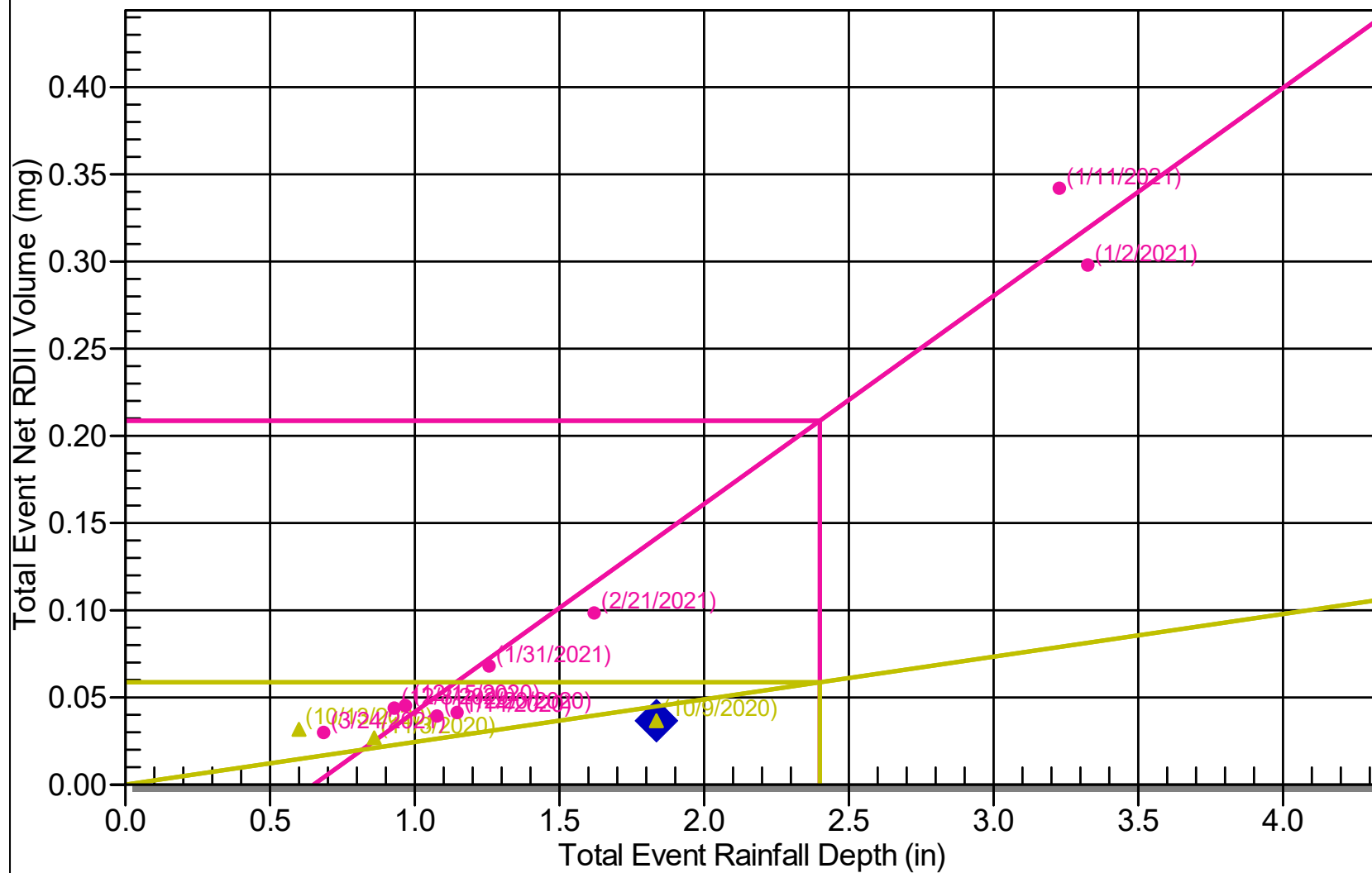
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_Ald_30910

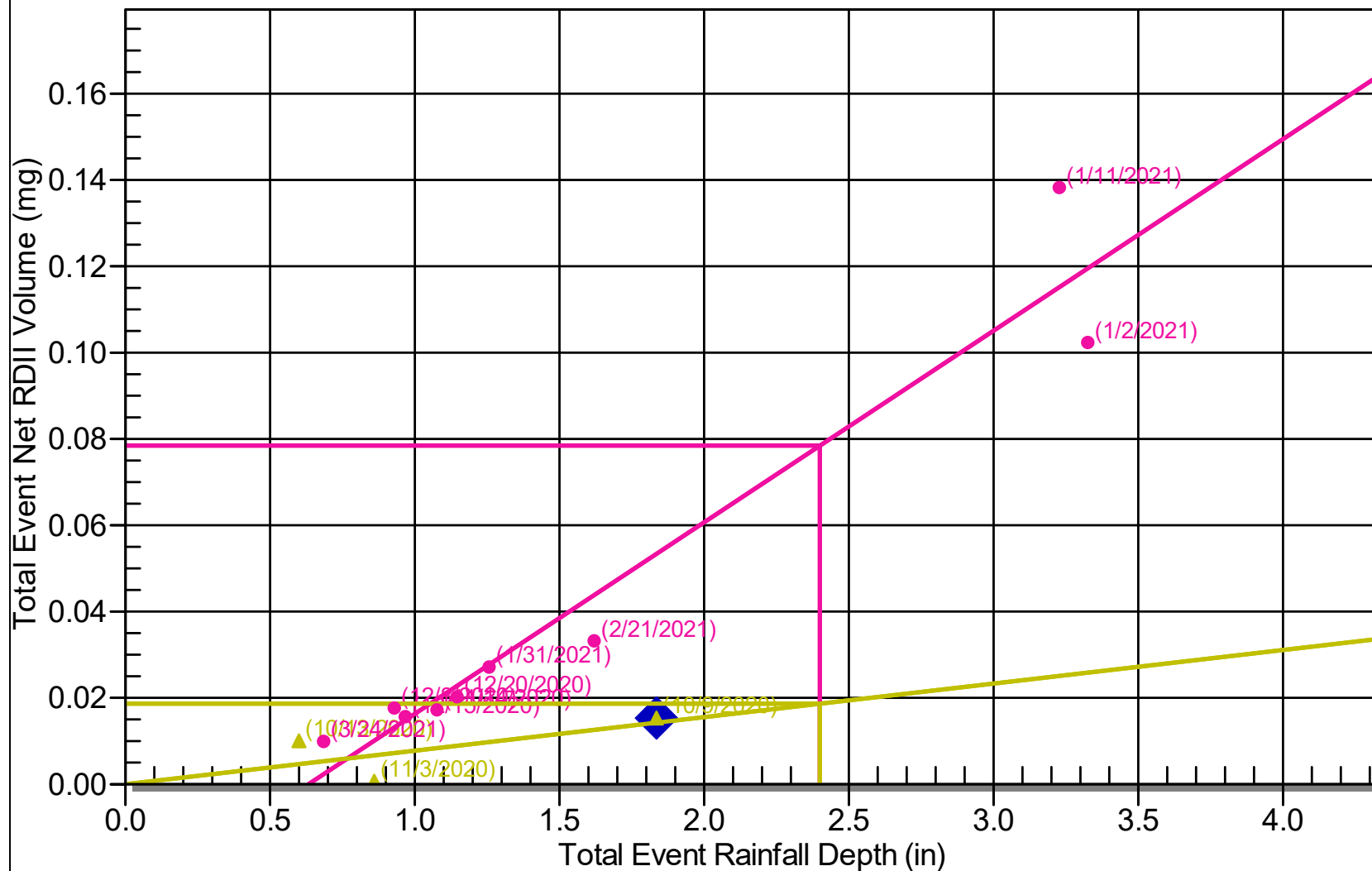
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A3_40834

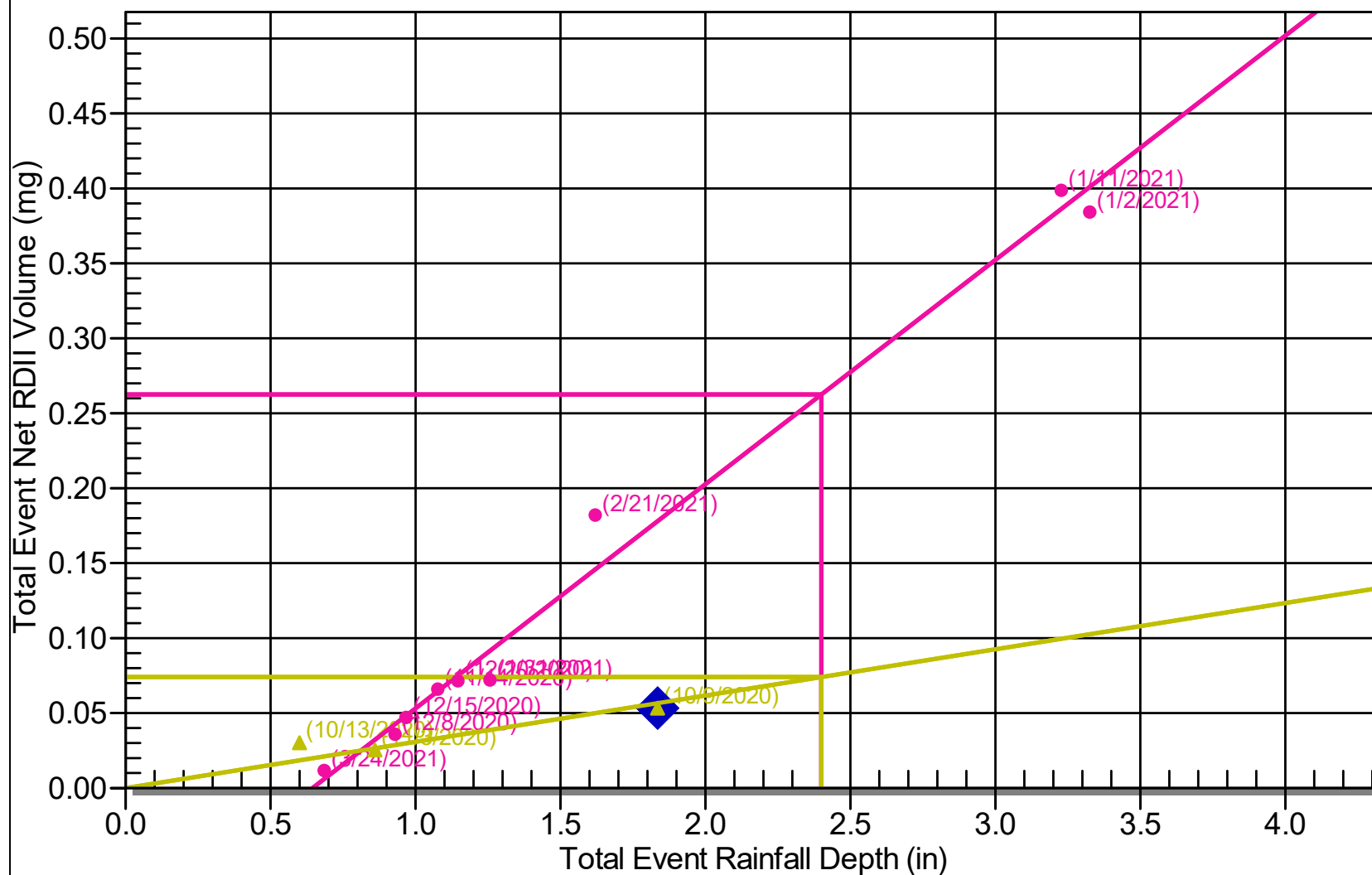
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer

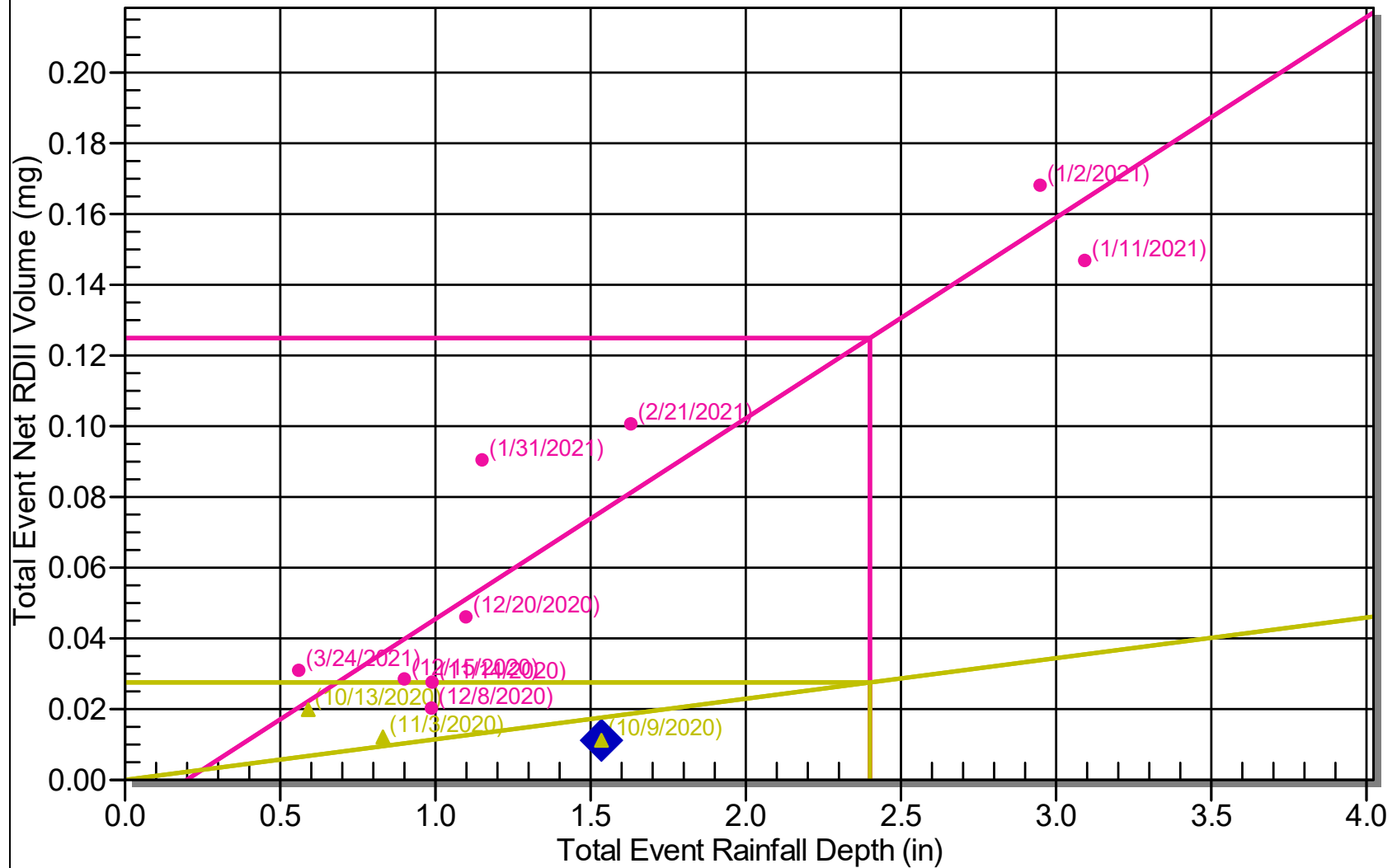


Q vs i - AUB_A4_50817

Total Event Net RDII Volume vs. Rainfall Depth

winter

summer



Q vs i - AUB_A6_61009K

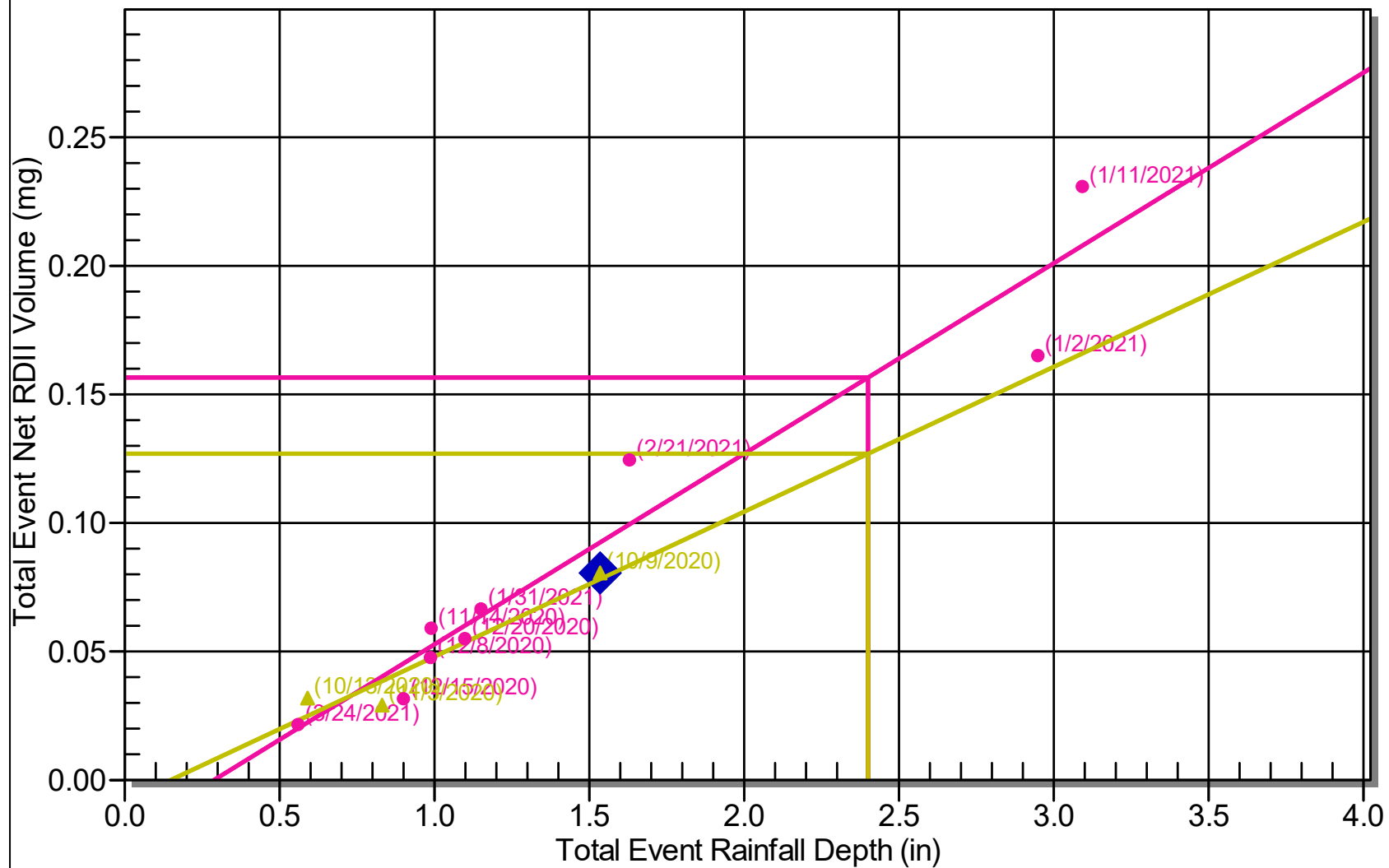
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A8_70829

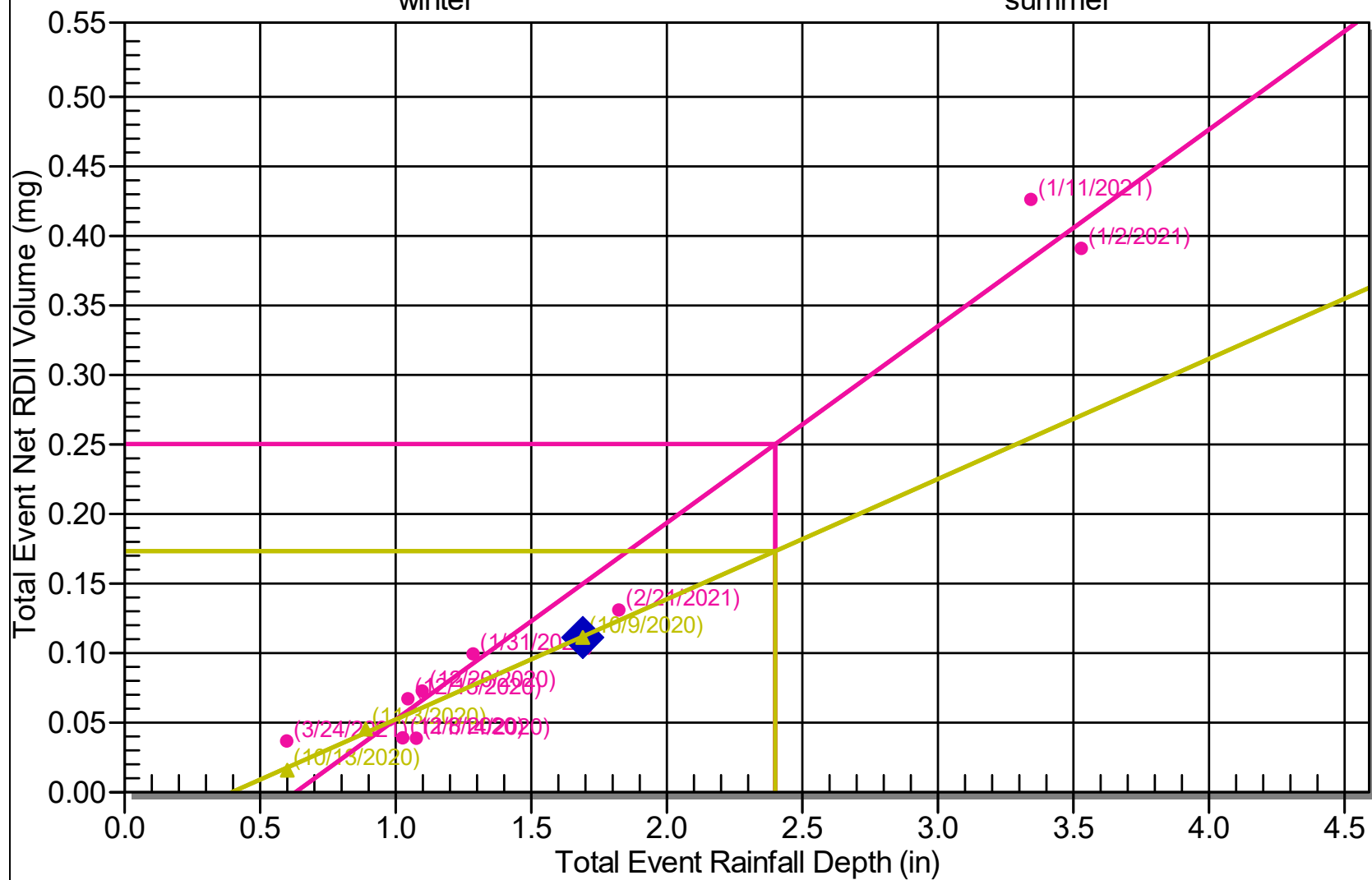
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A9_71031

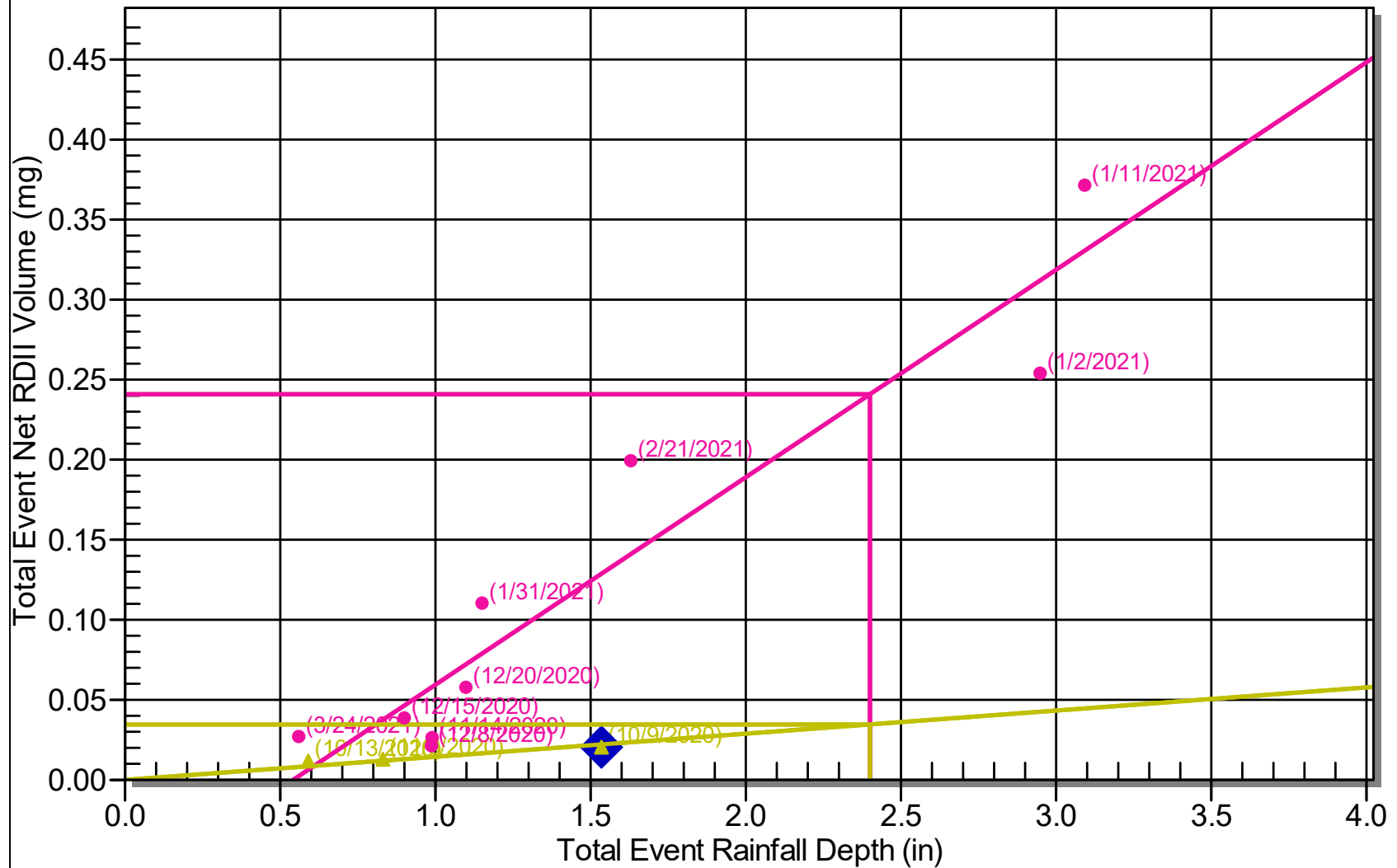
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_Y-1_41016

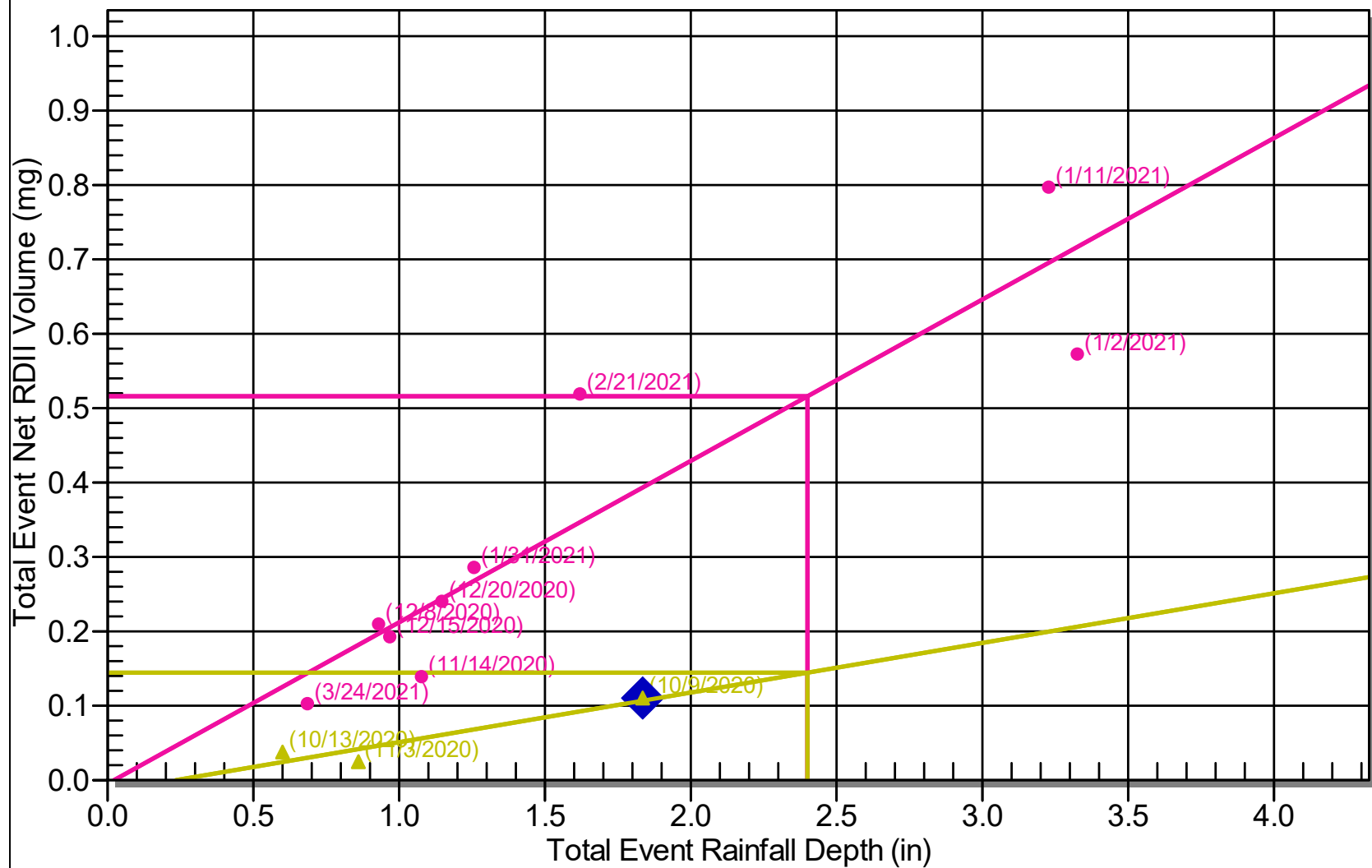
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_Y-2_61102

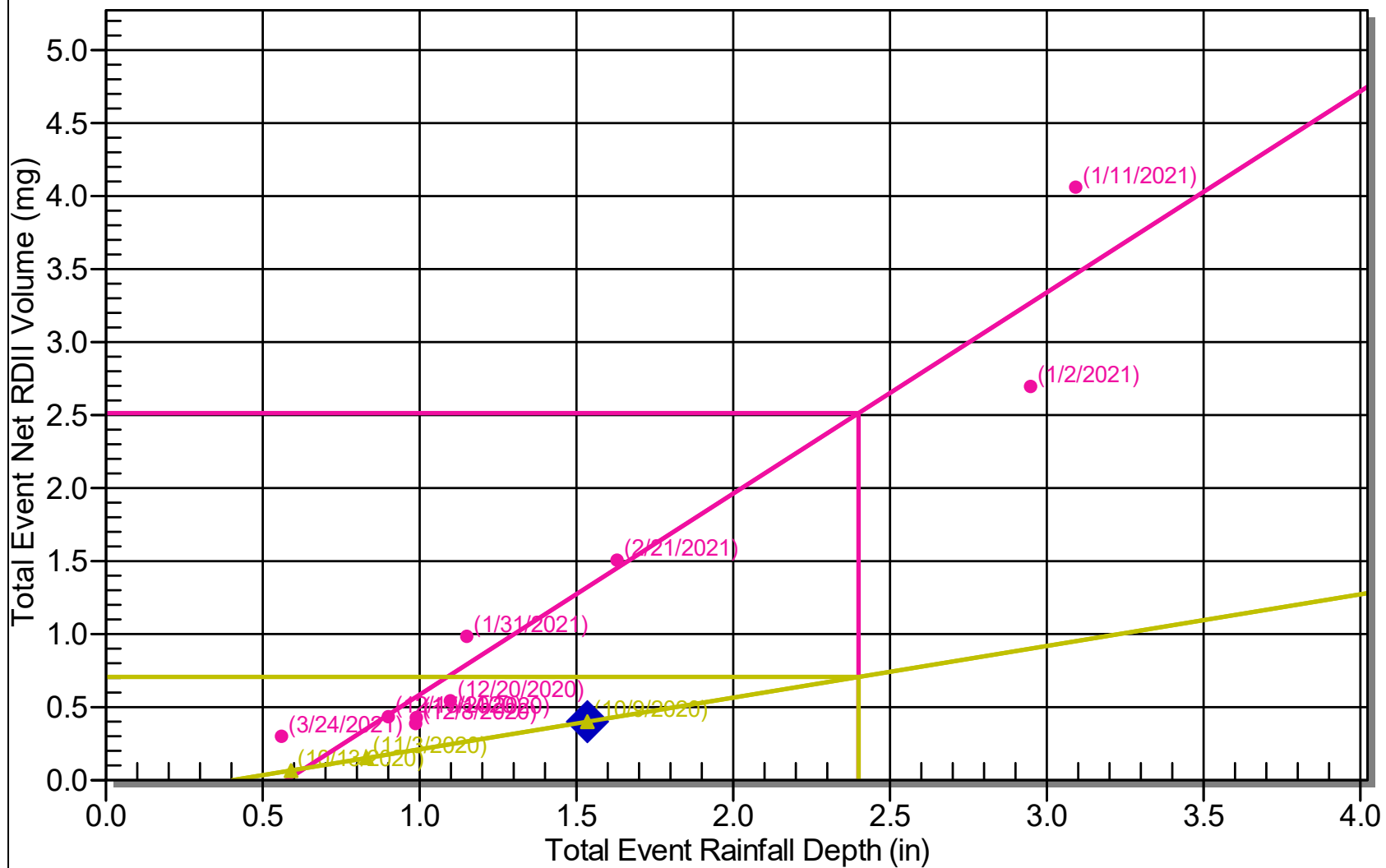
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_Y-3_101255

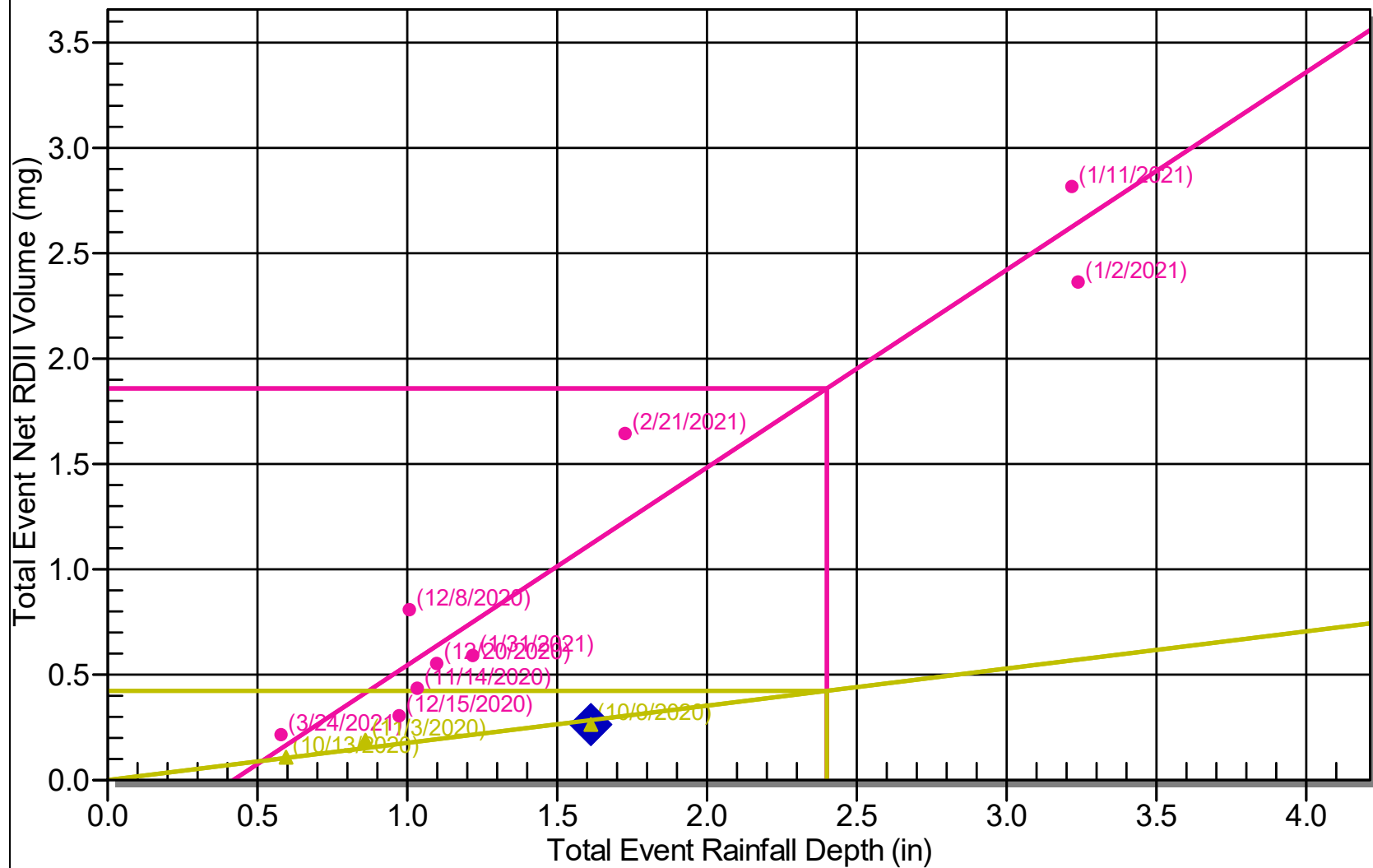
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_Y-4_101002

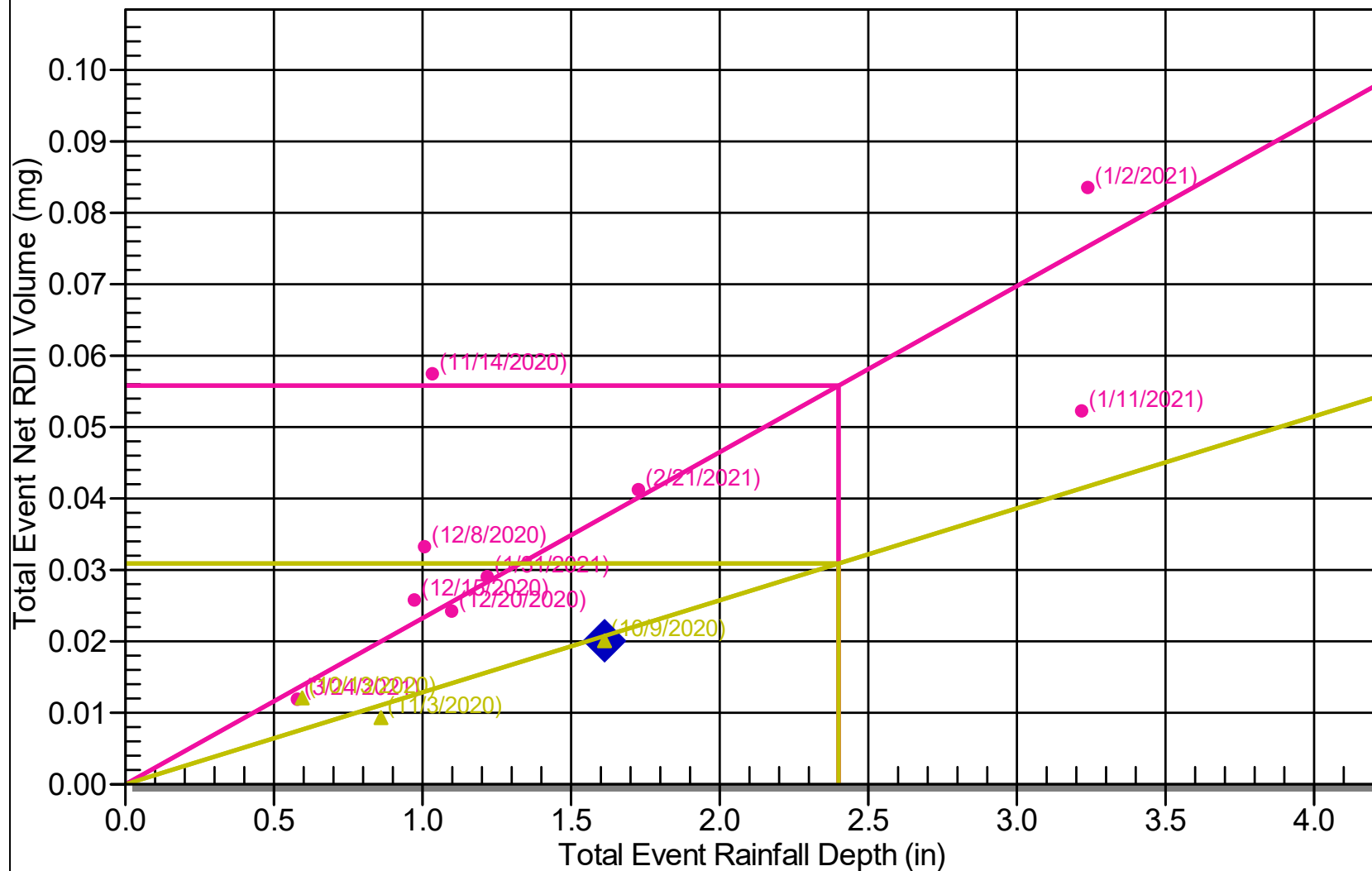
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUBWV016

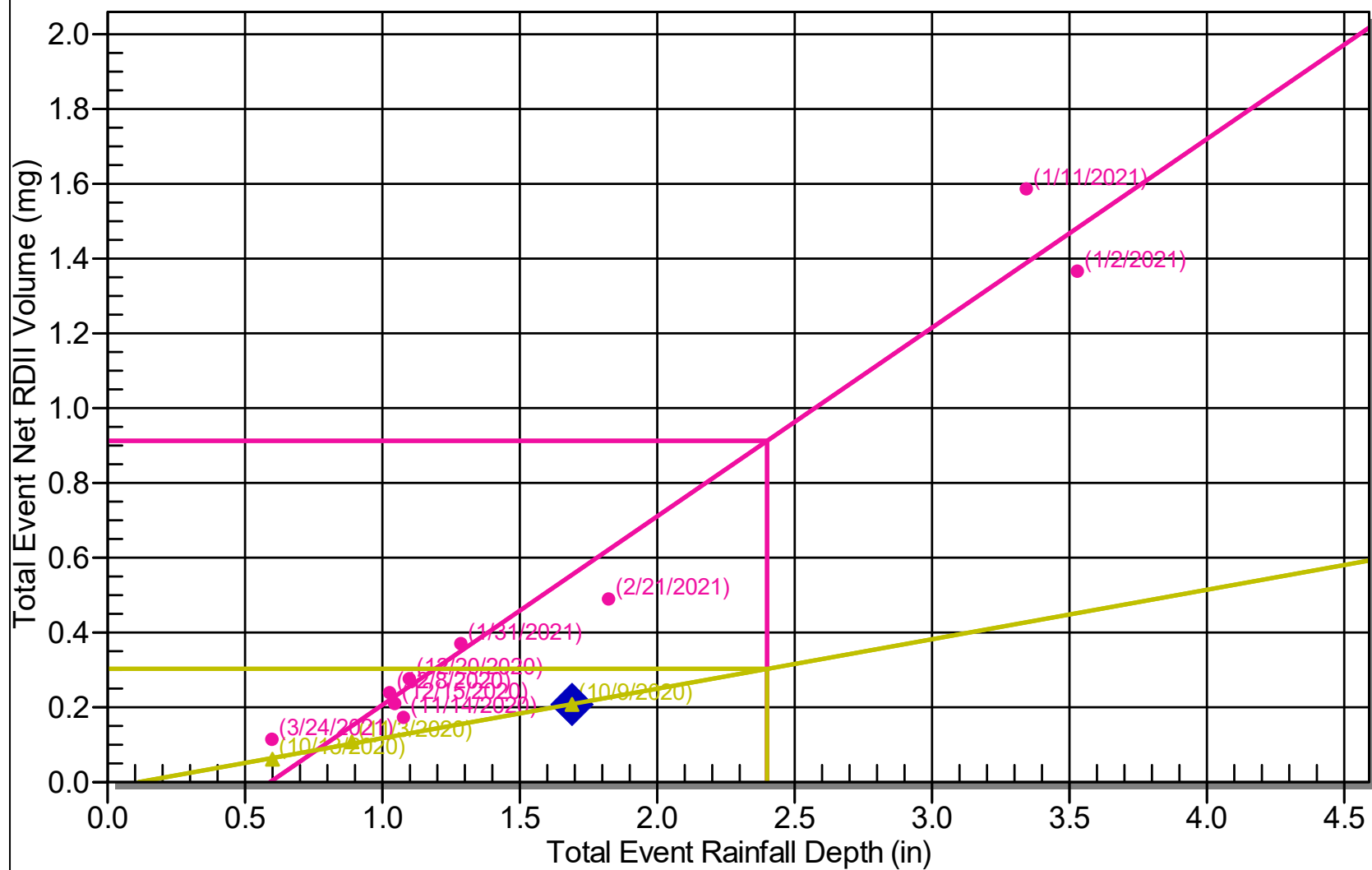
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer

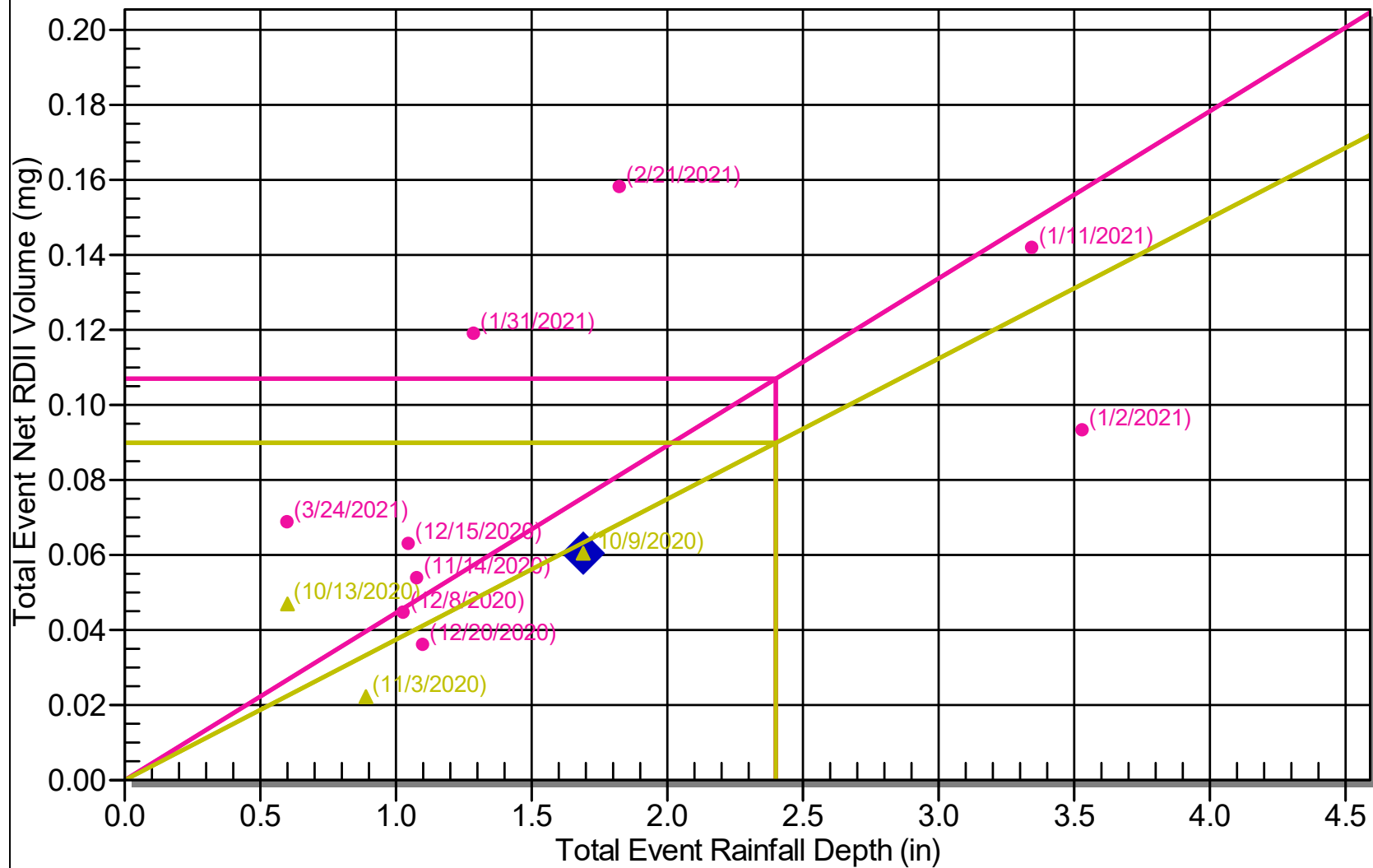


Q vs i - SRT11

Total Event Net RDII Volume vs. Rainfall Depth

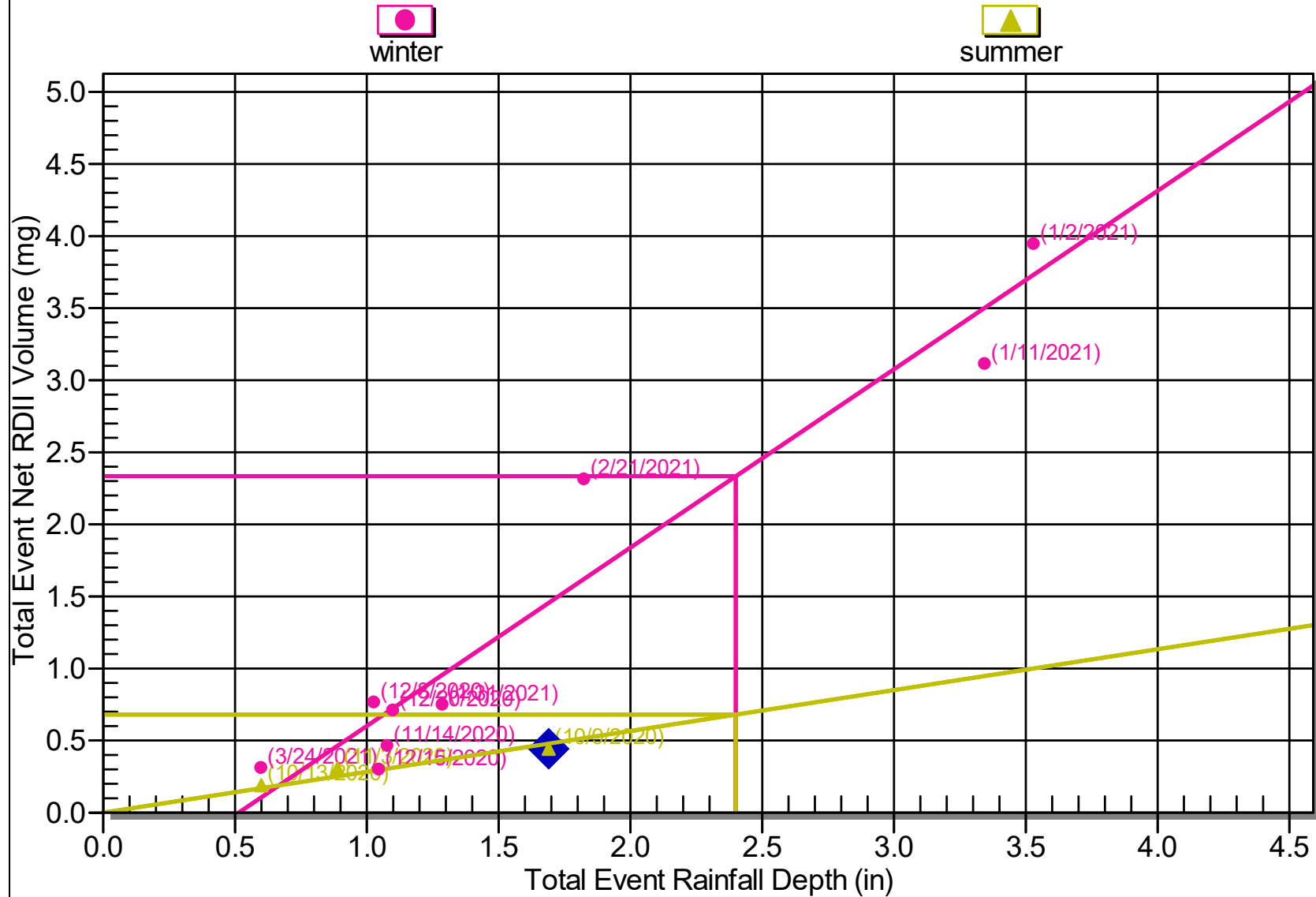
winter

summer



Q vs i - WINT035

Total Event Net RDII Volume vs. Rainfall Depth



Q vs i - AUB_A1_30820

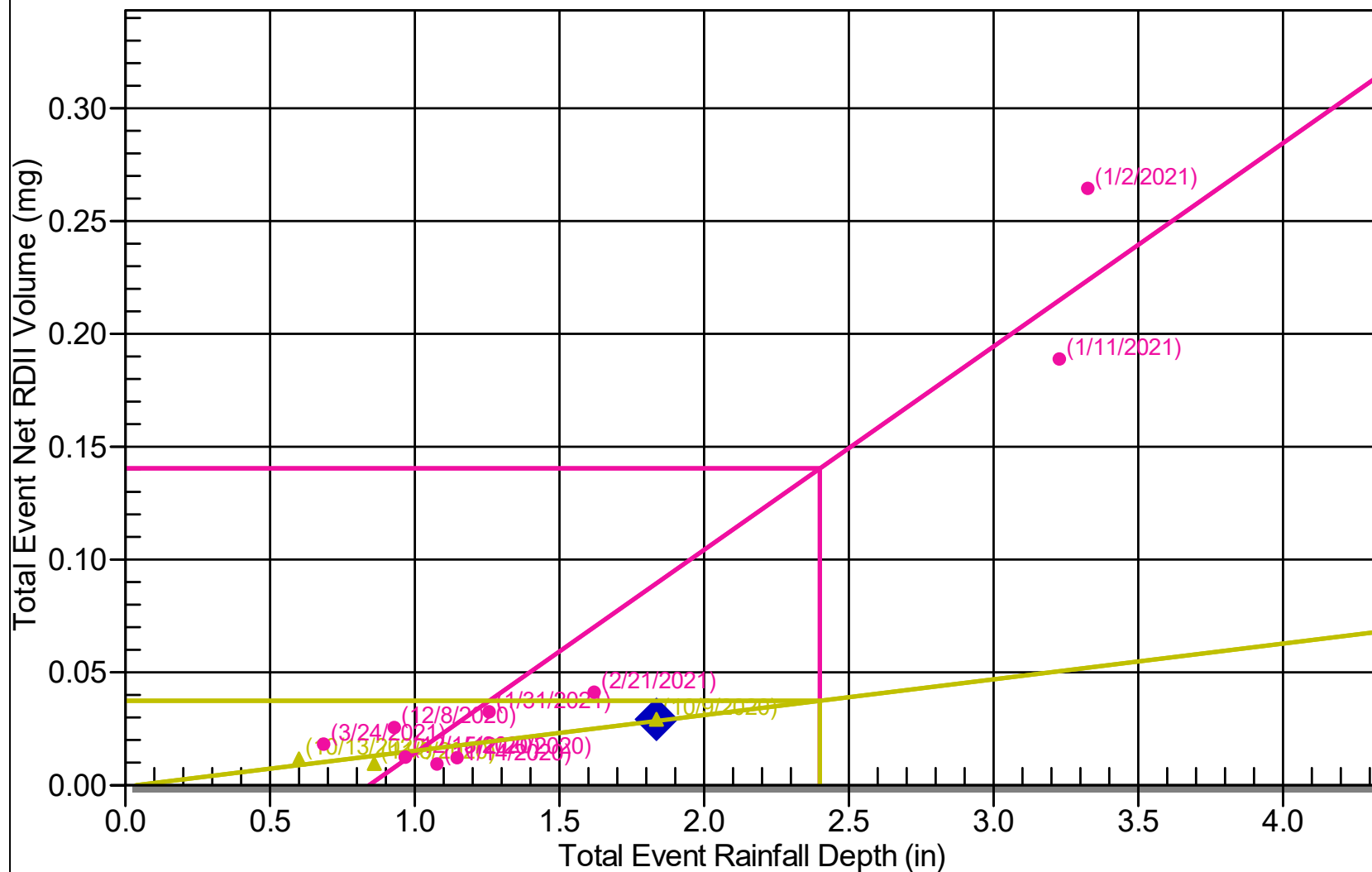
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A10_710151

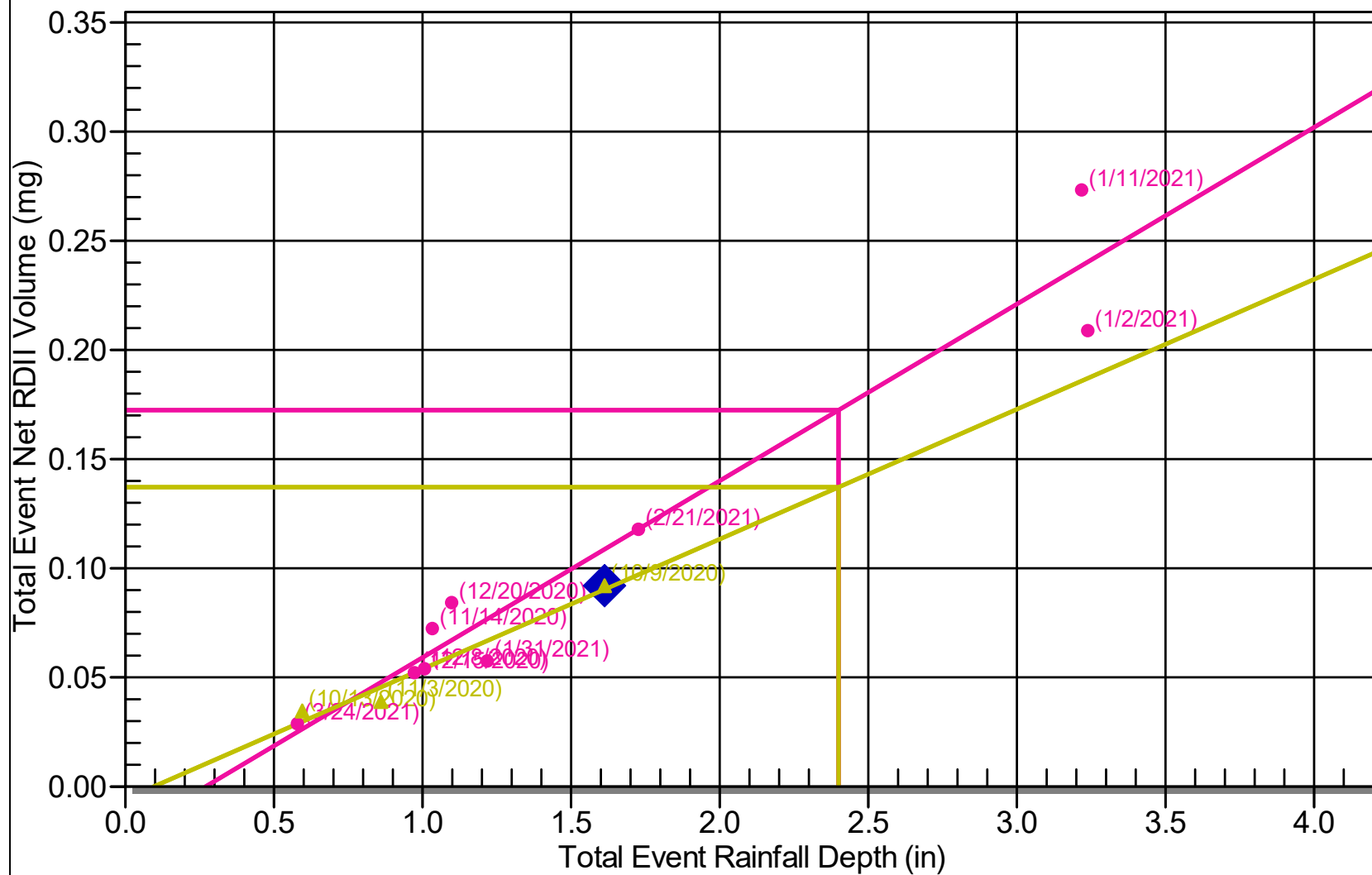
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer

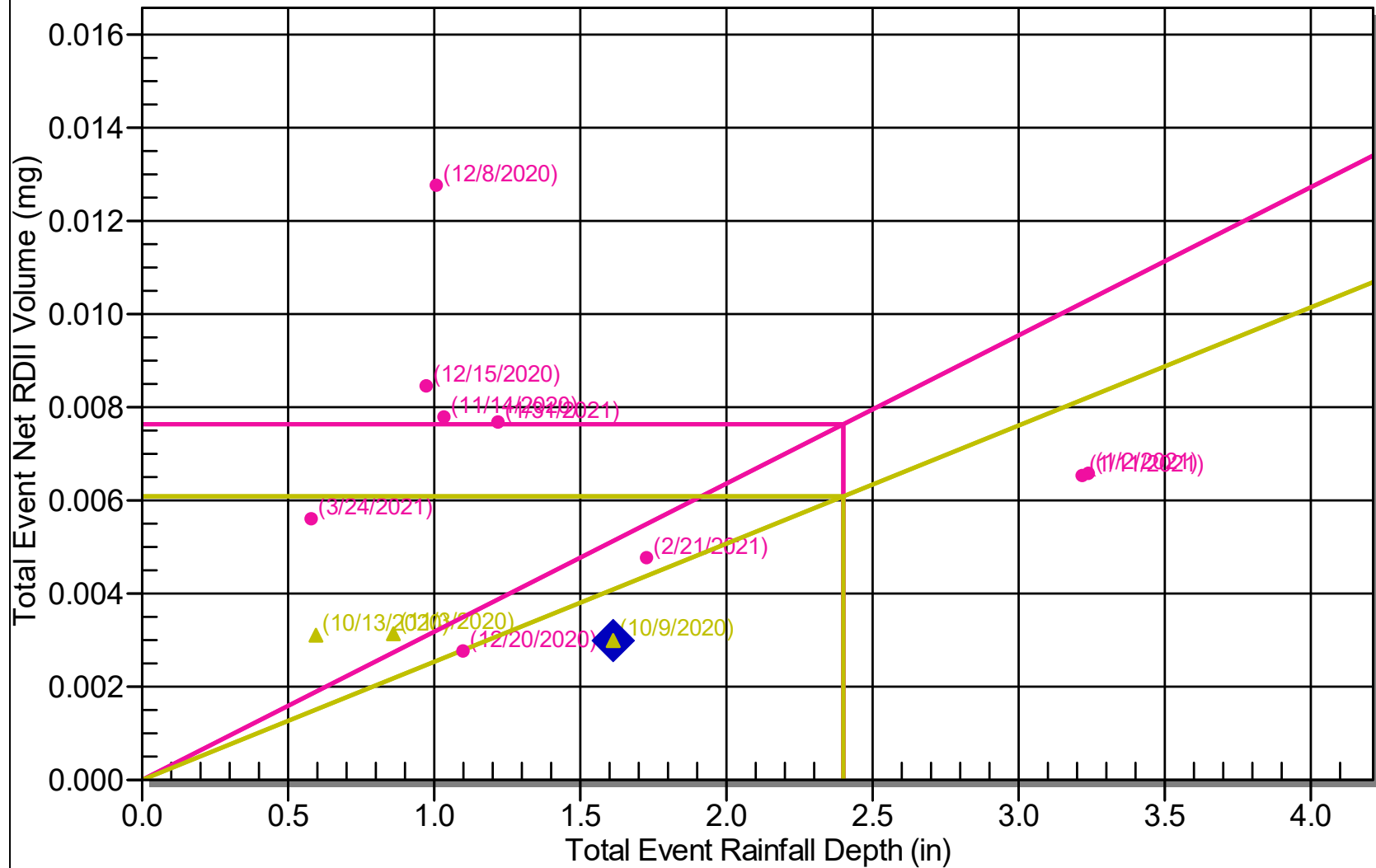


Q vs i - AUB_A11_710142

Total Event Net RDII Volume vs. Rainfall Depth

winter

summer



Q vs i - AUB_A14_710149

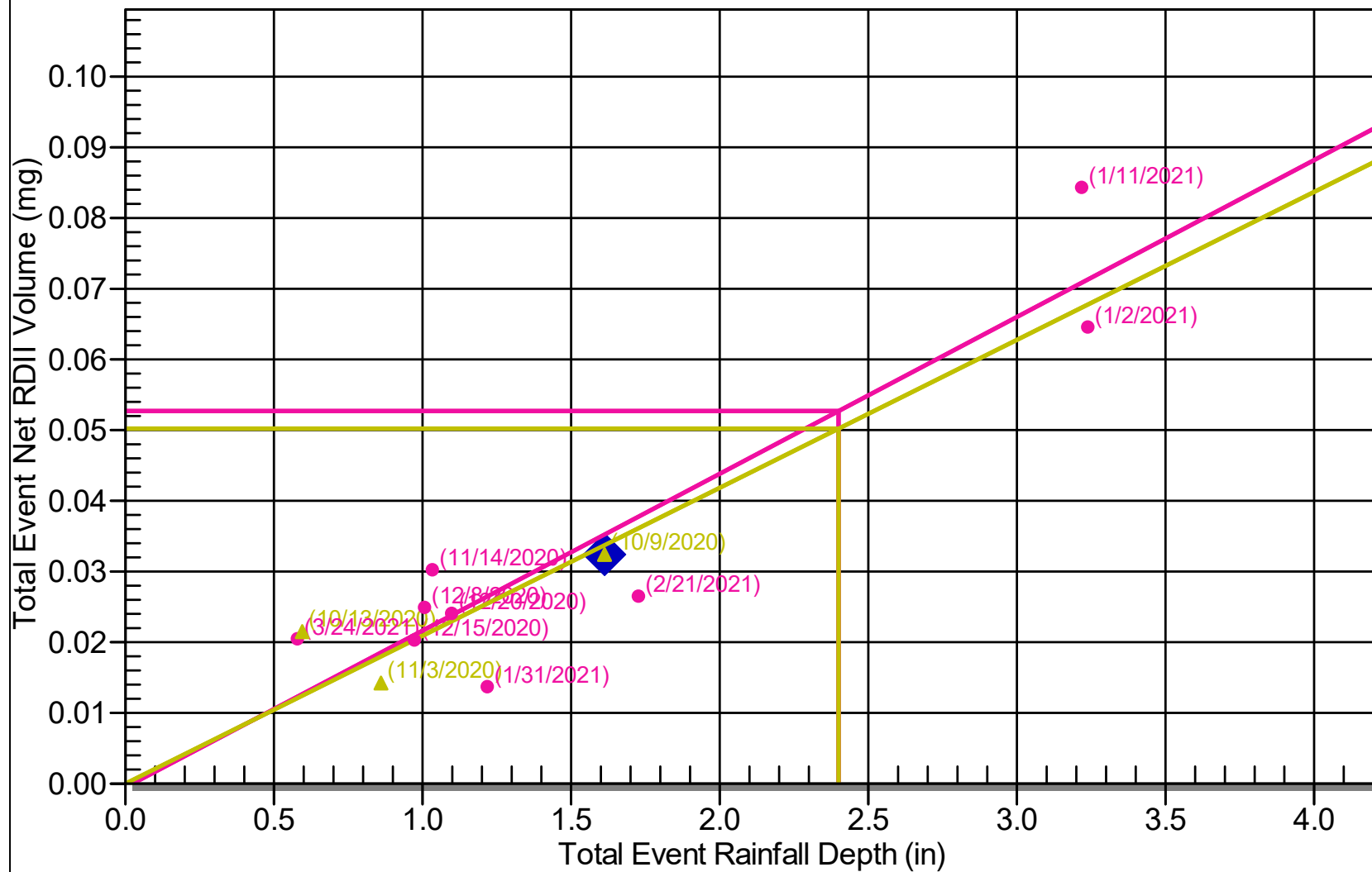
Total Event Net RDII Volume vs. Rainfall Depth



winter



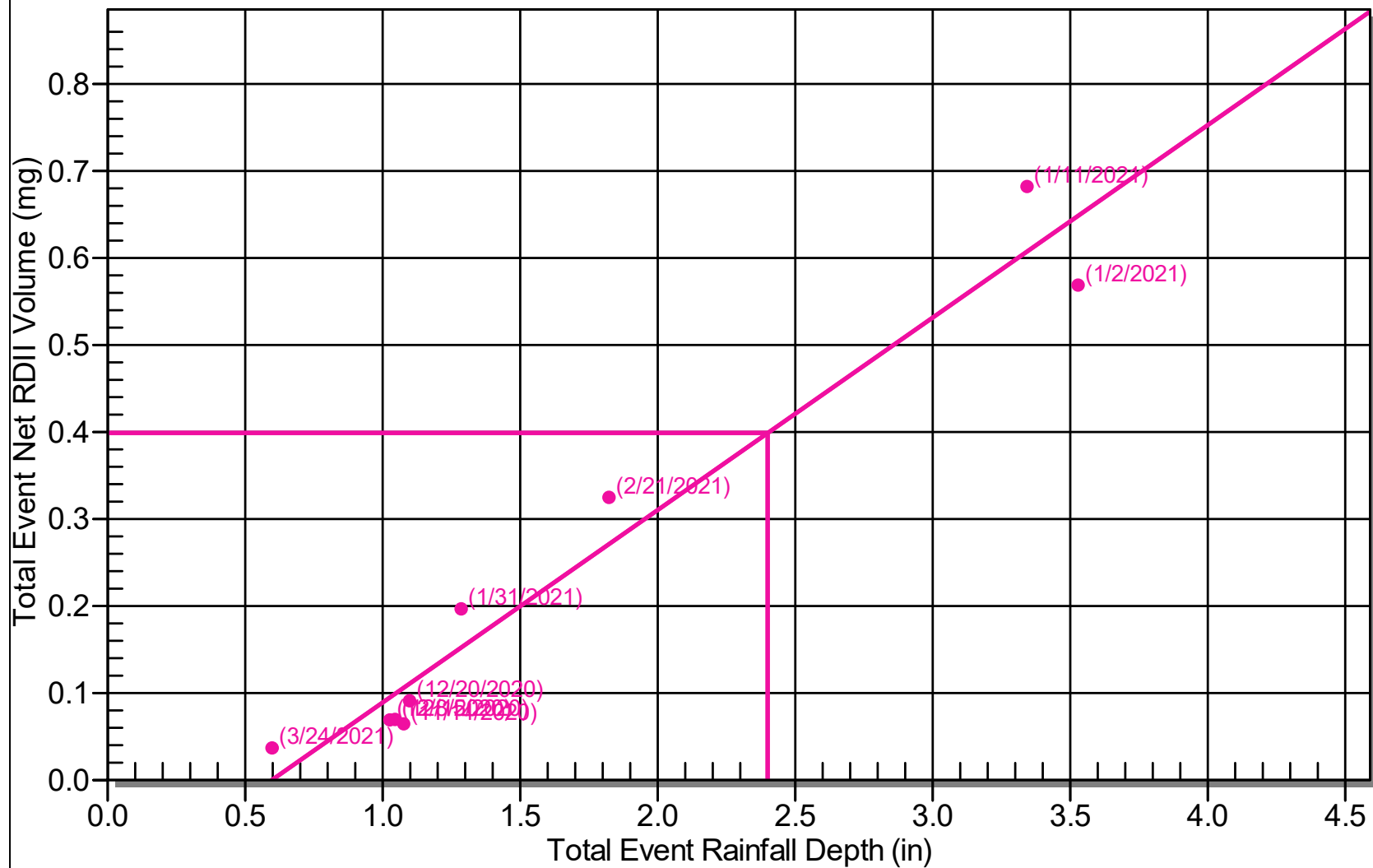
summer



Q vs i - AUB_A7_70807

Total Event Net RDII Volume vs. Rainfall Depth

 winter



Q vs i - MSTTR22A

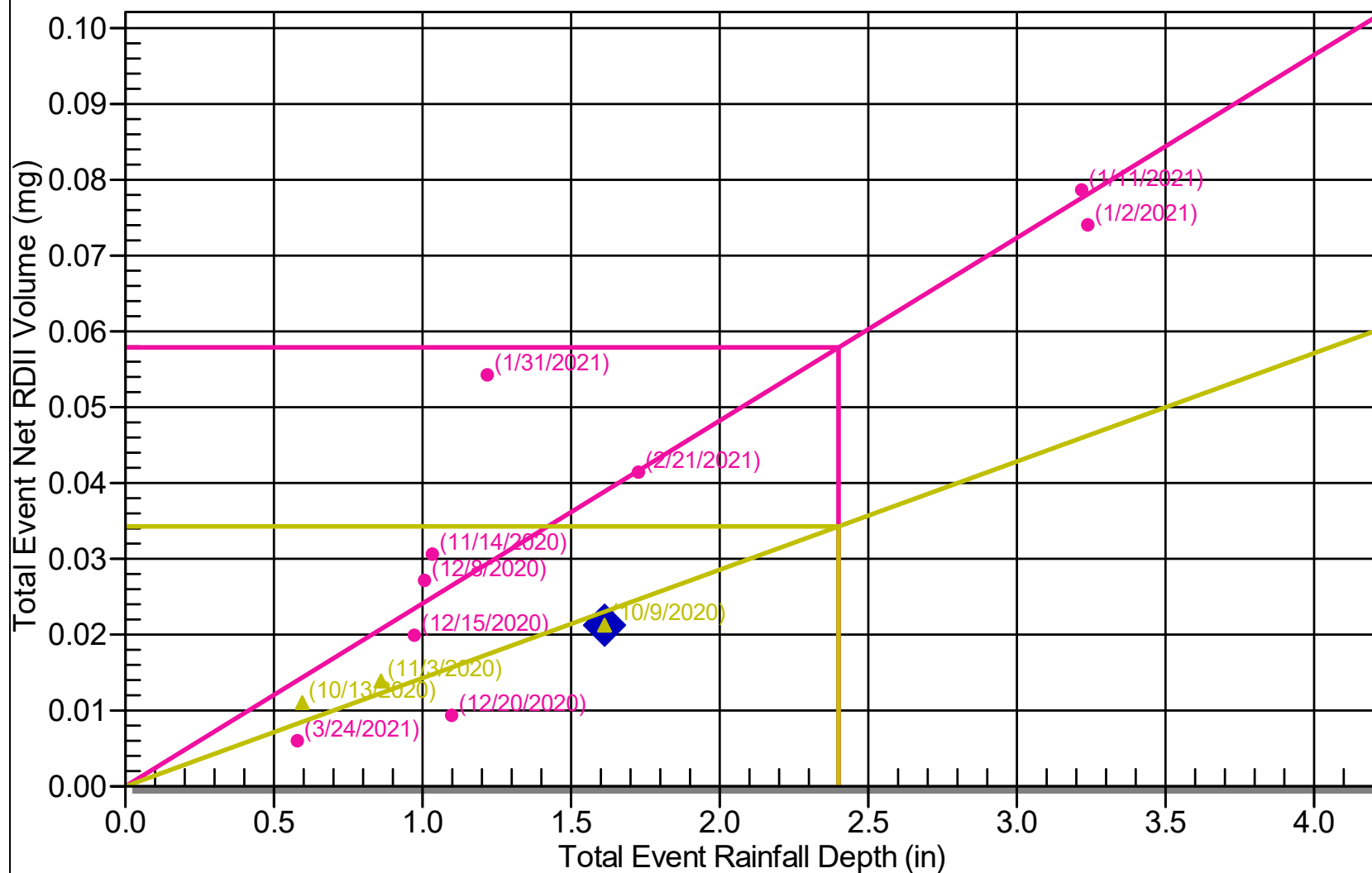
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - WINT003

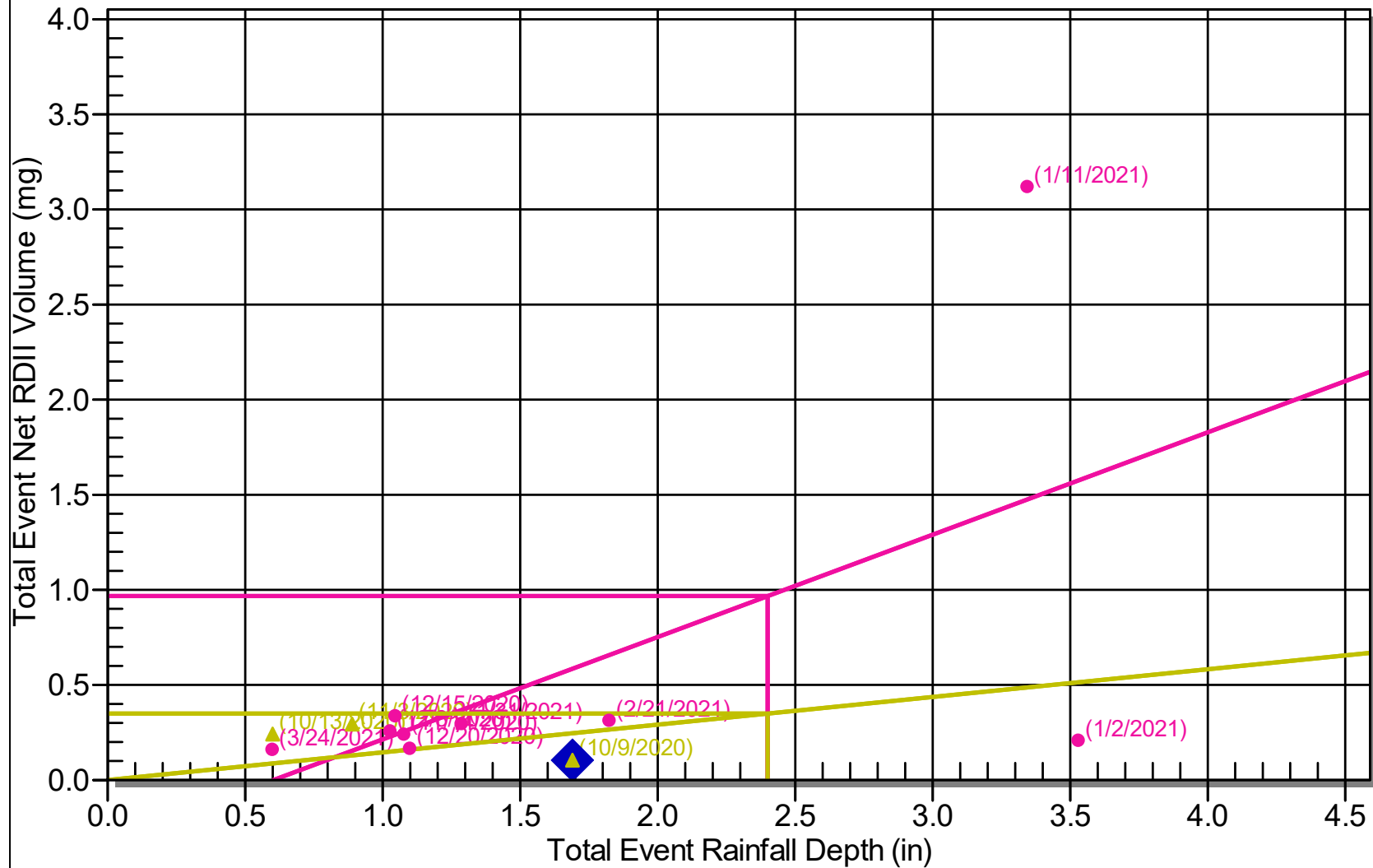
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - MSTTR02A

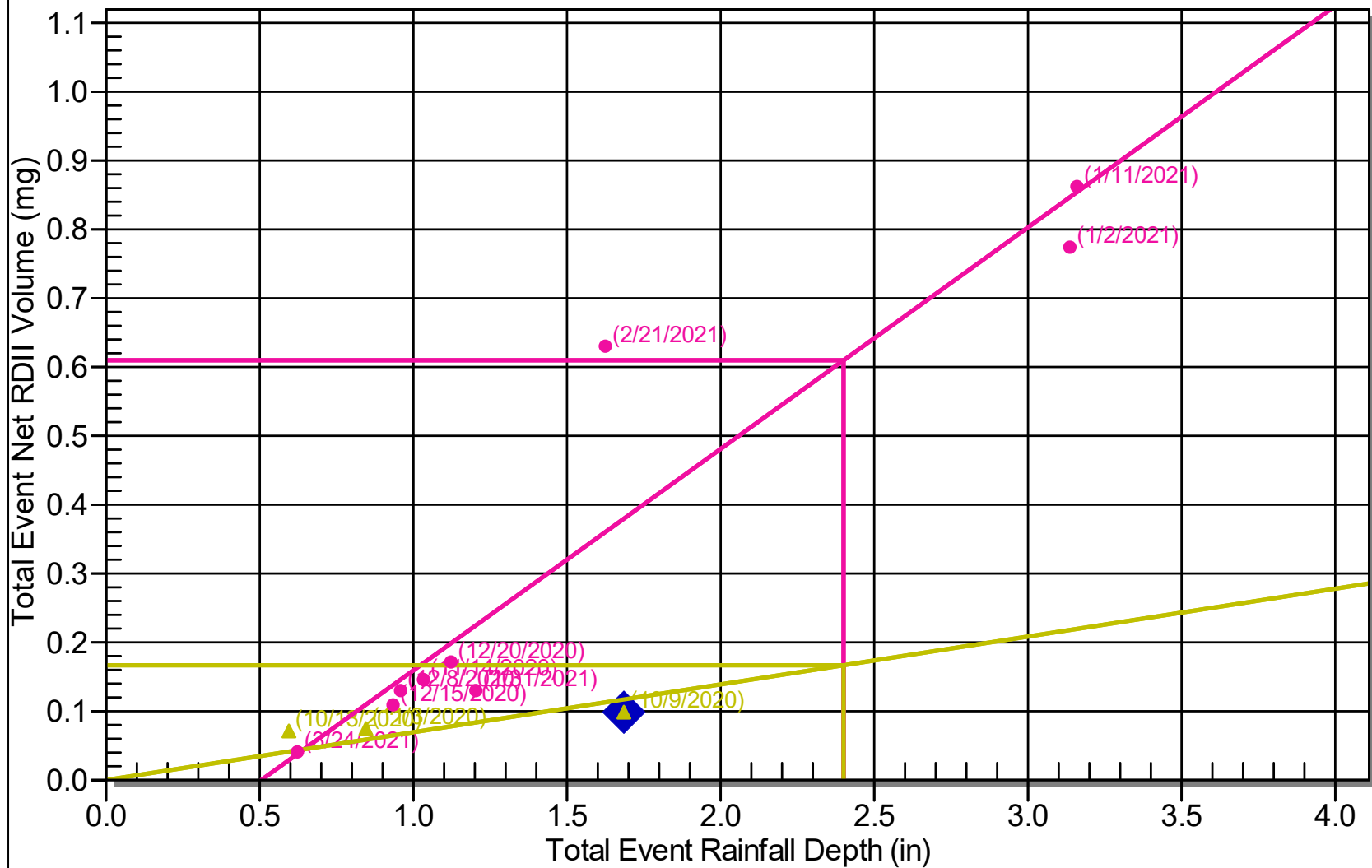
Total Event Net RDII Volume vs. Rainfall Depth



winter



summer



Q vs i - AUB_A2_40805K

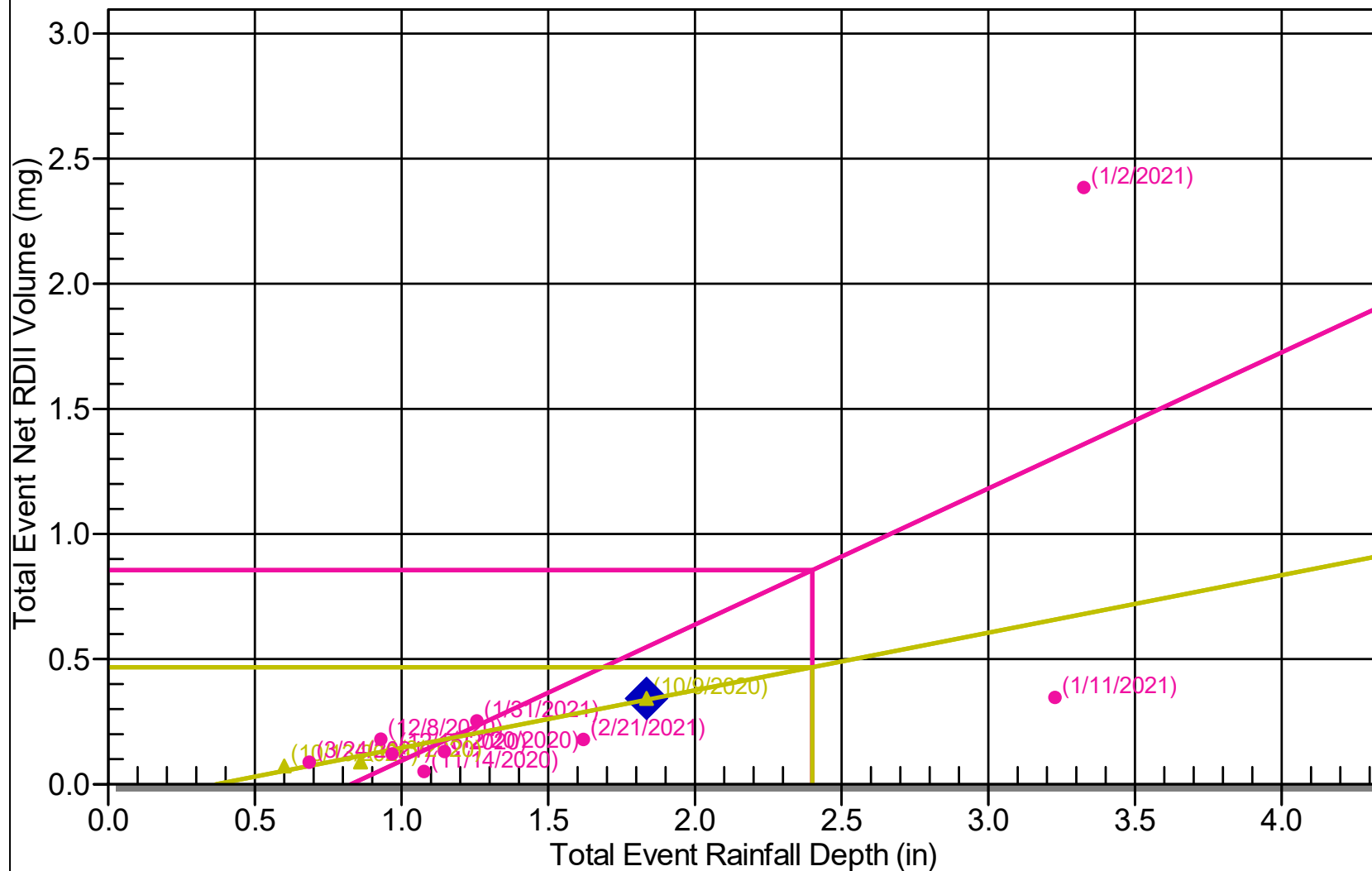
Total Event Net RDII Volume vs. Rainfall Depth



winter



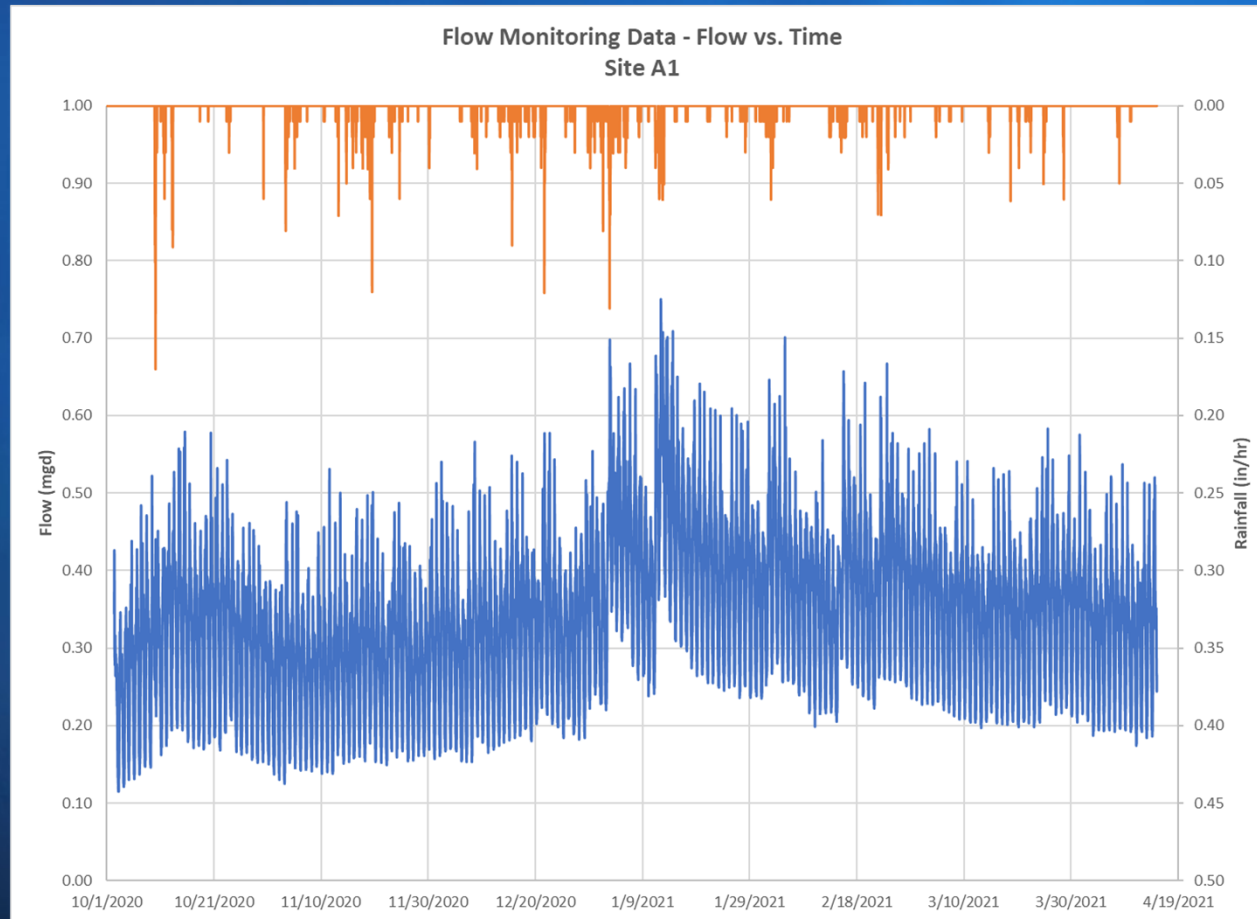
summer



ATTACHMENT 1B FLOW METER QUALITY REVIEW

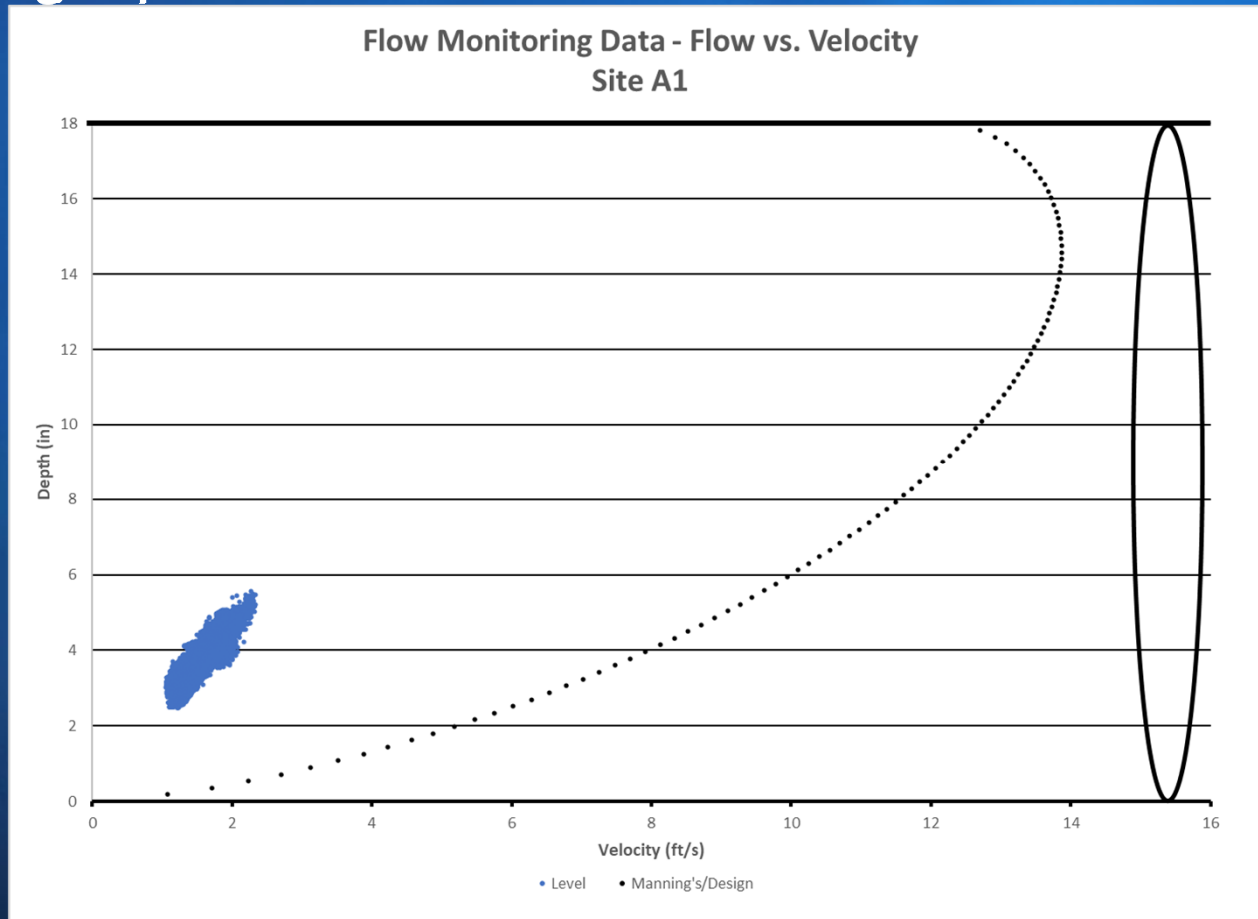
Meter AUB_A1

Flow vs Rainfall



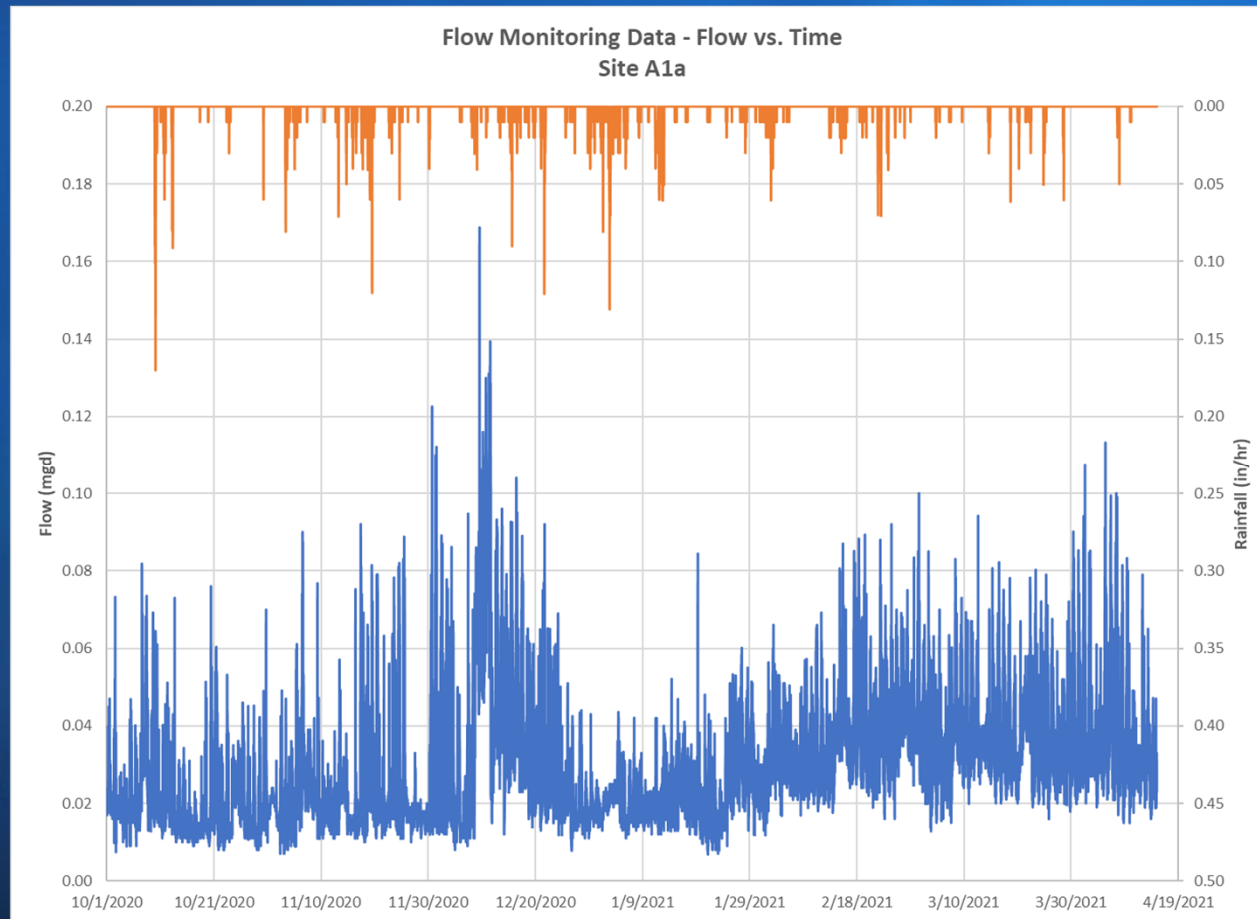
Meter AUB_A1

Scattergraph



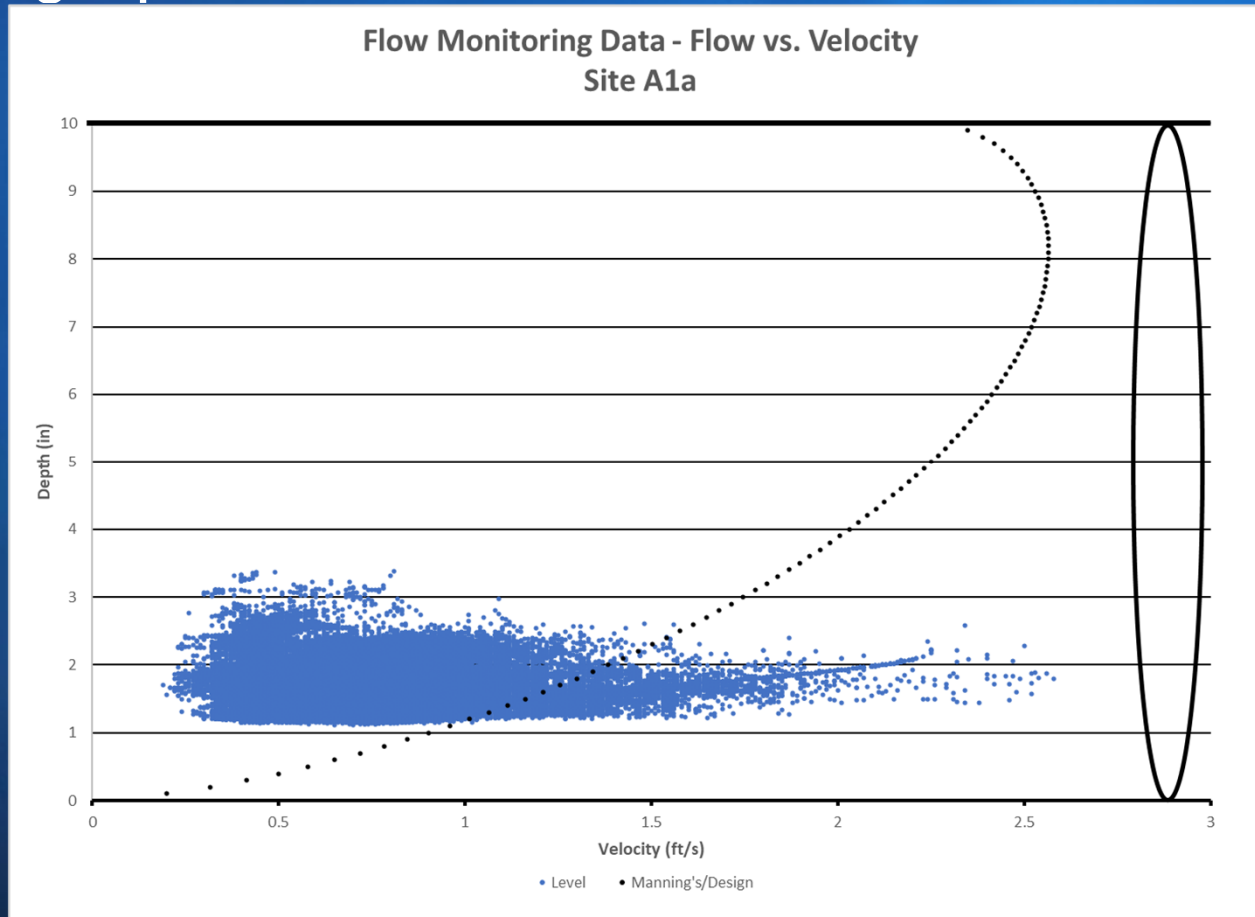
Meter AUB_A1a

Flow vs Rainfall



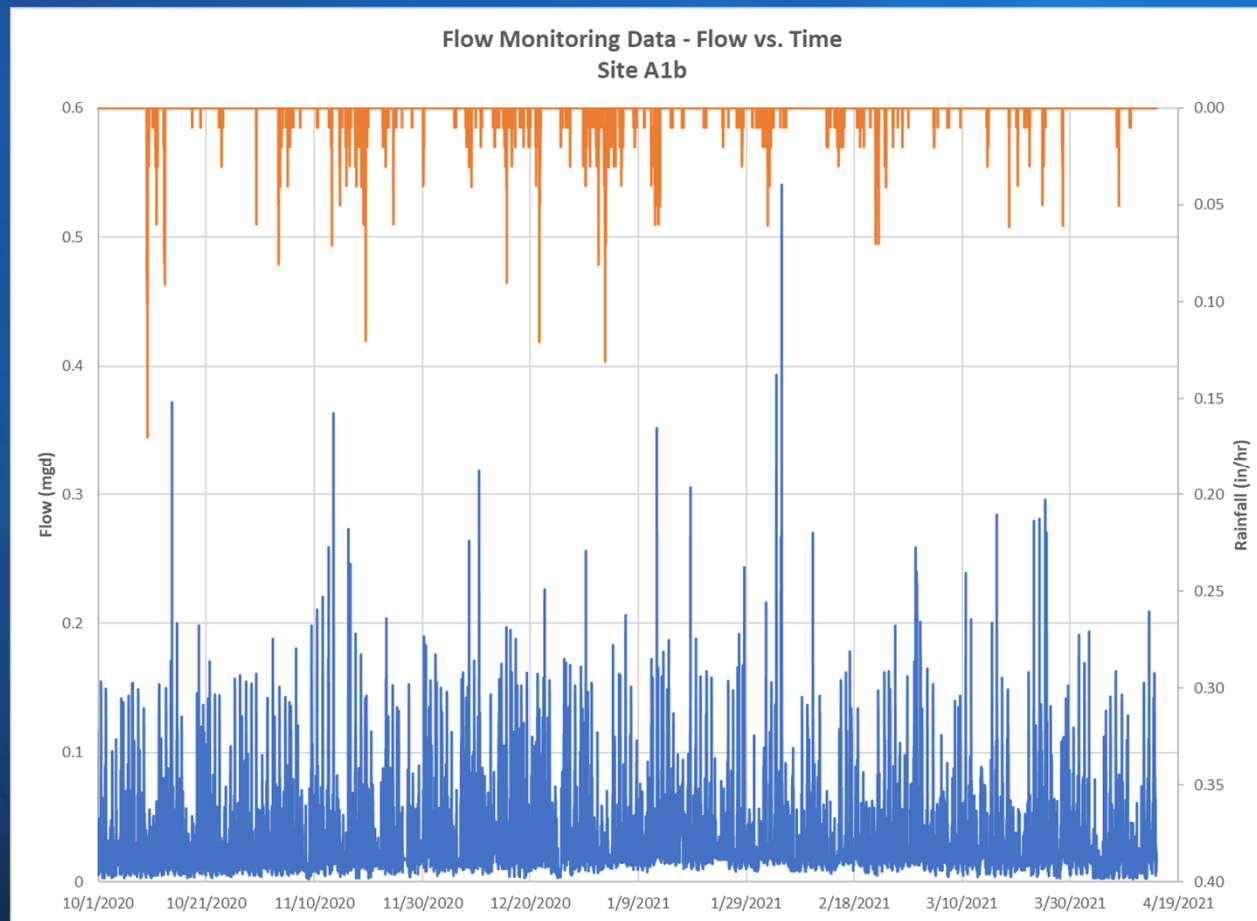
Meter AUB_A1a

Scattergraph



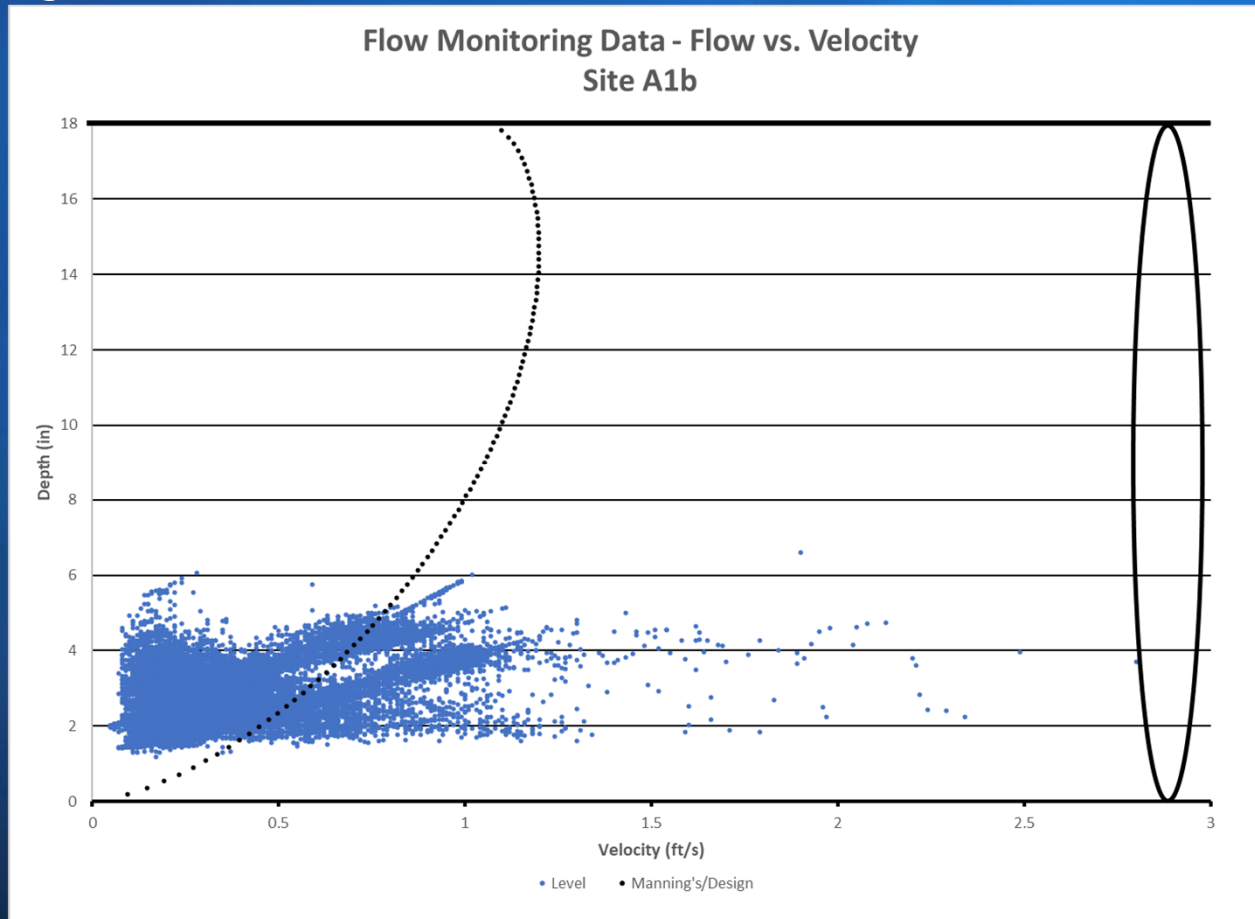
Meter AUB_A1b

Flow vs Rainfall



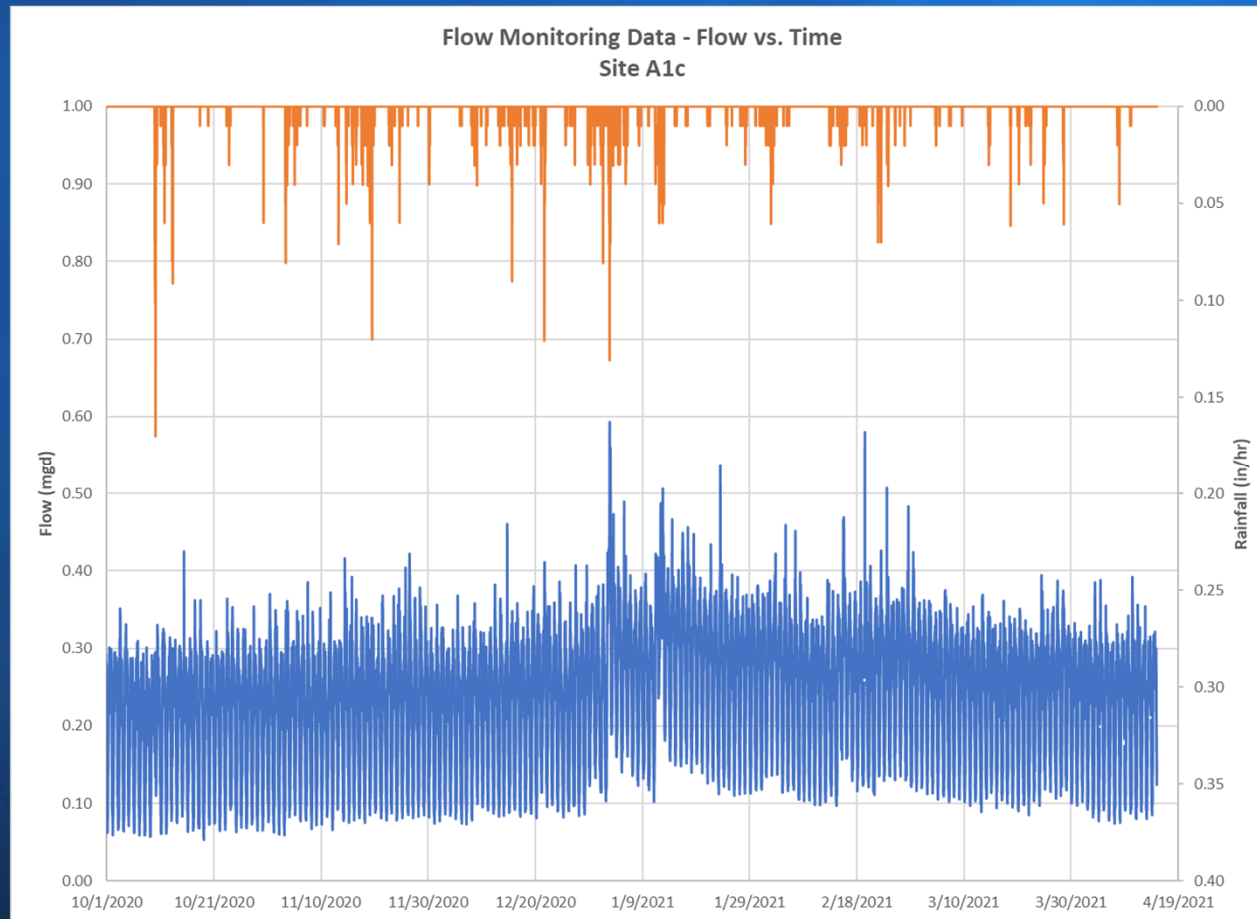
Meter AUB_A1b

Scattergraph



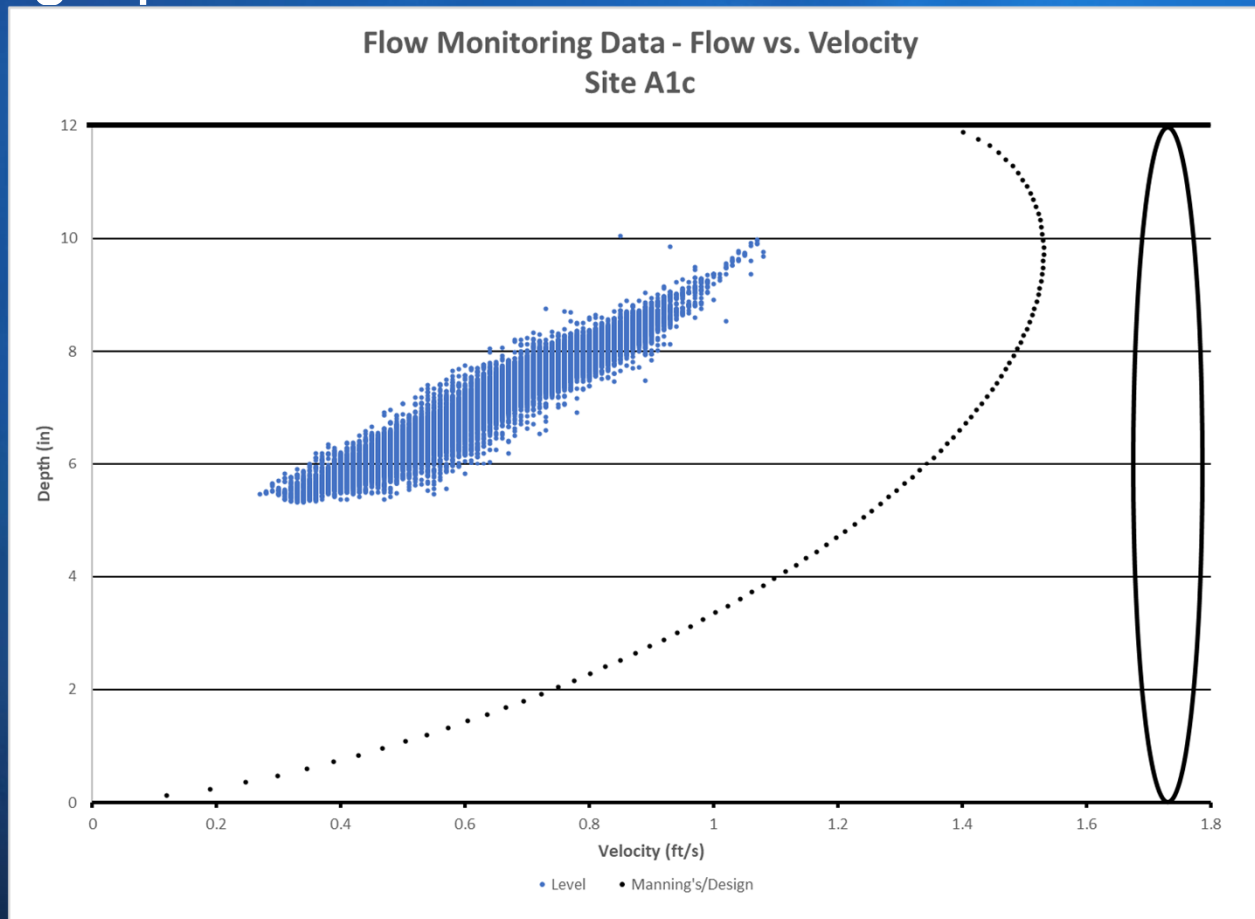
Meter AUB_A1c

Flow vs Rainfall



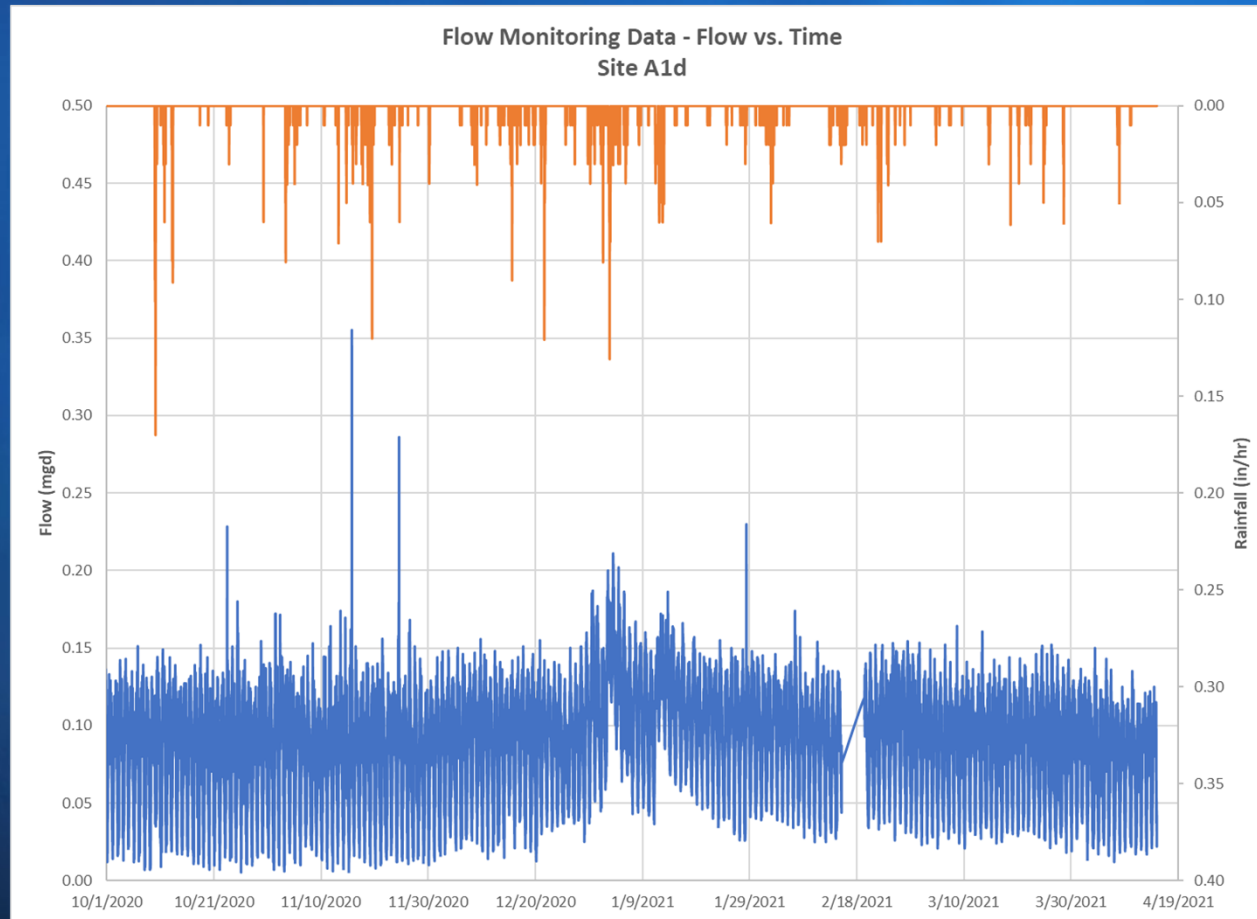
Meter AUB_A1c

Scattergraph

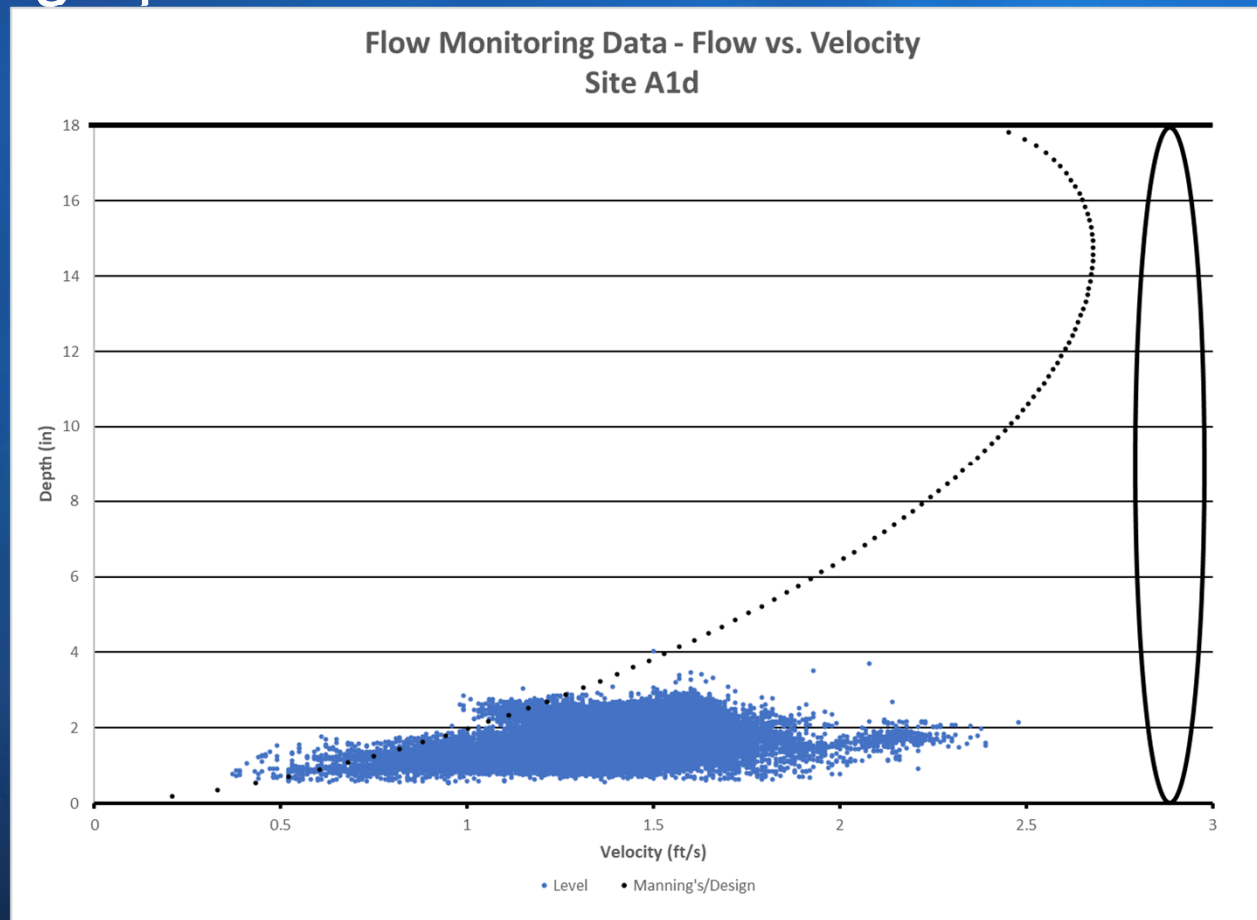


Meter AUB_A1d

Flow vs Rainfall

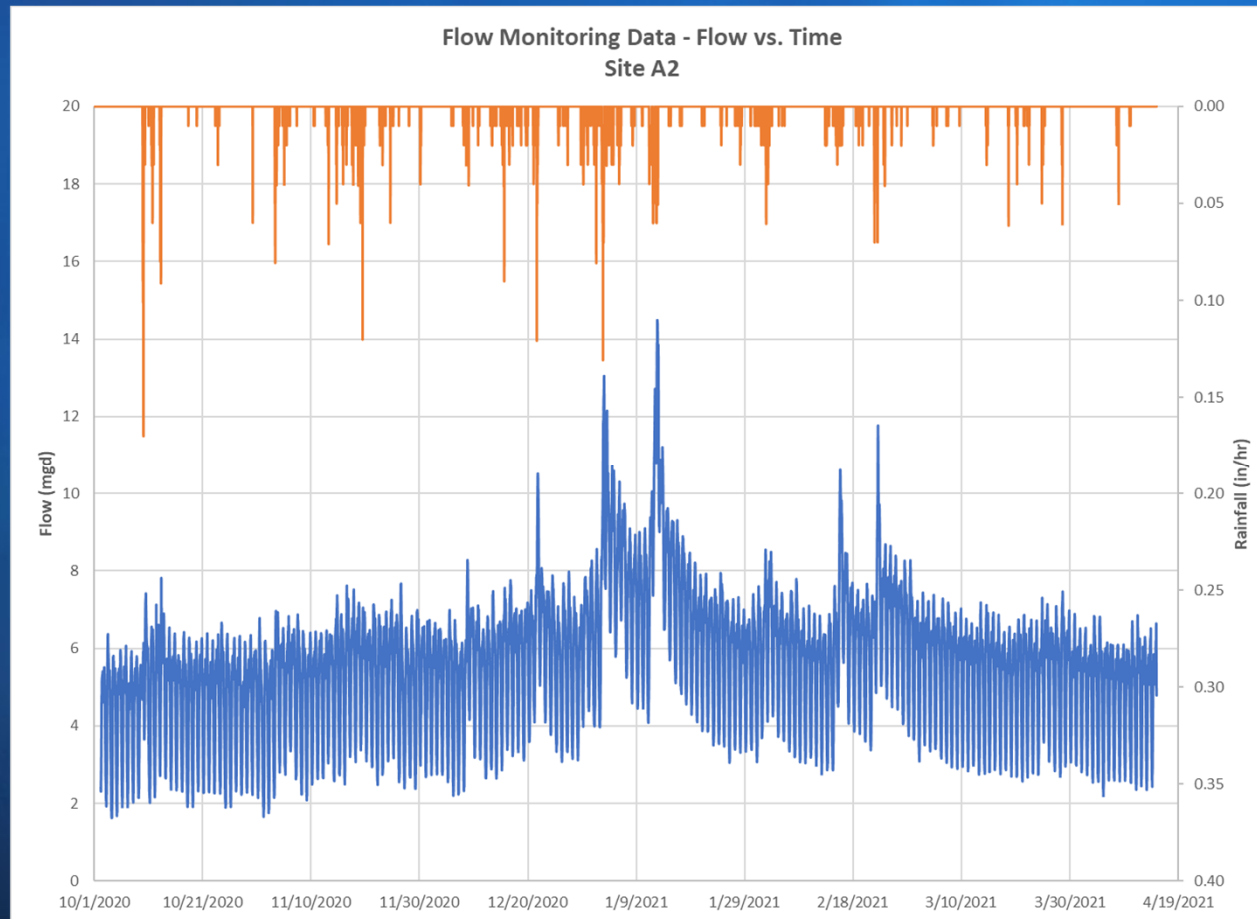


Meter AUB_A1d Scattergraph

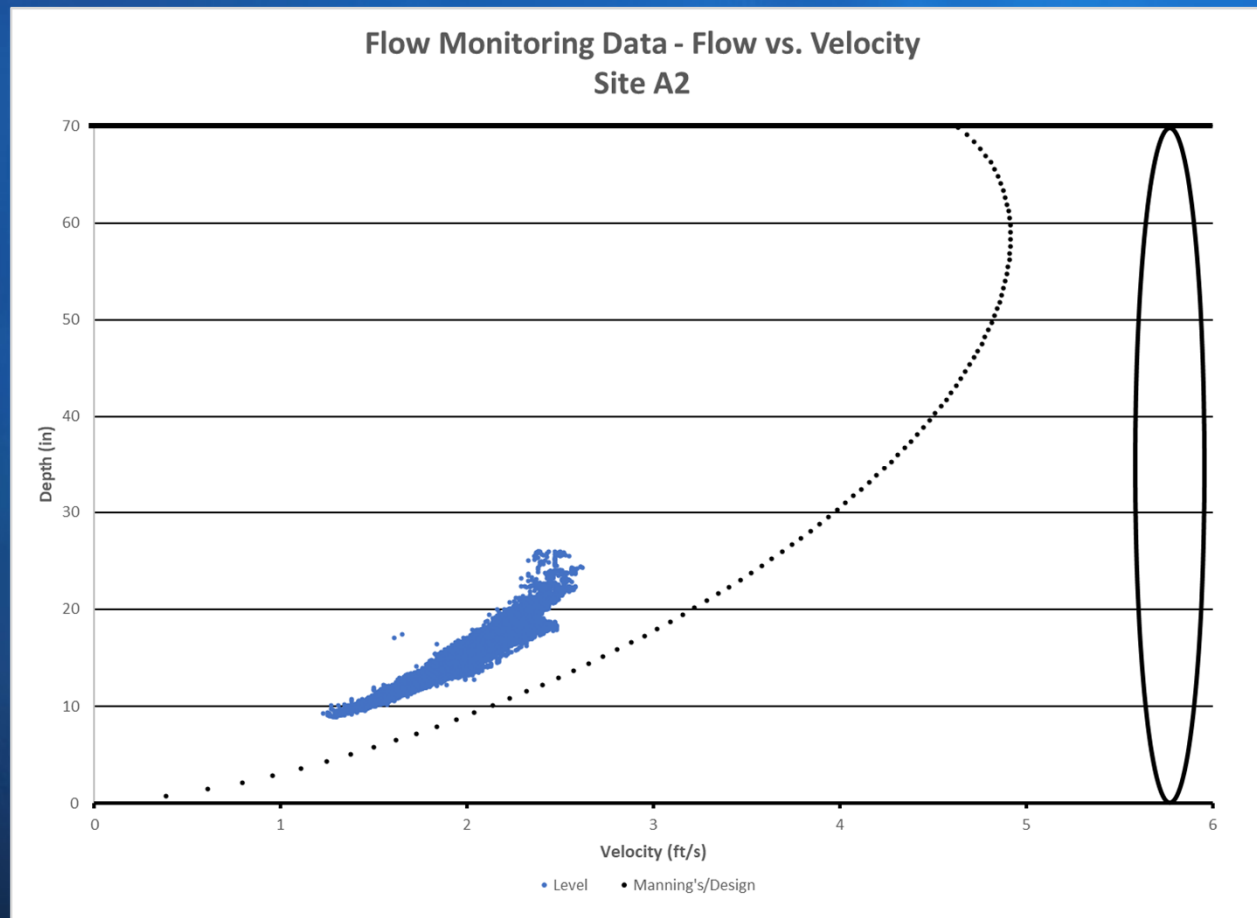


Meter AUB_A2

Flow vs Rainfall

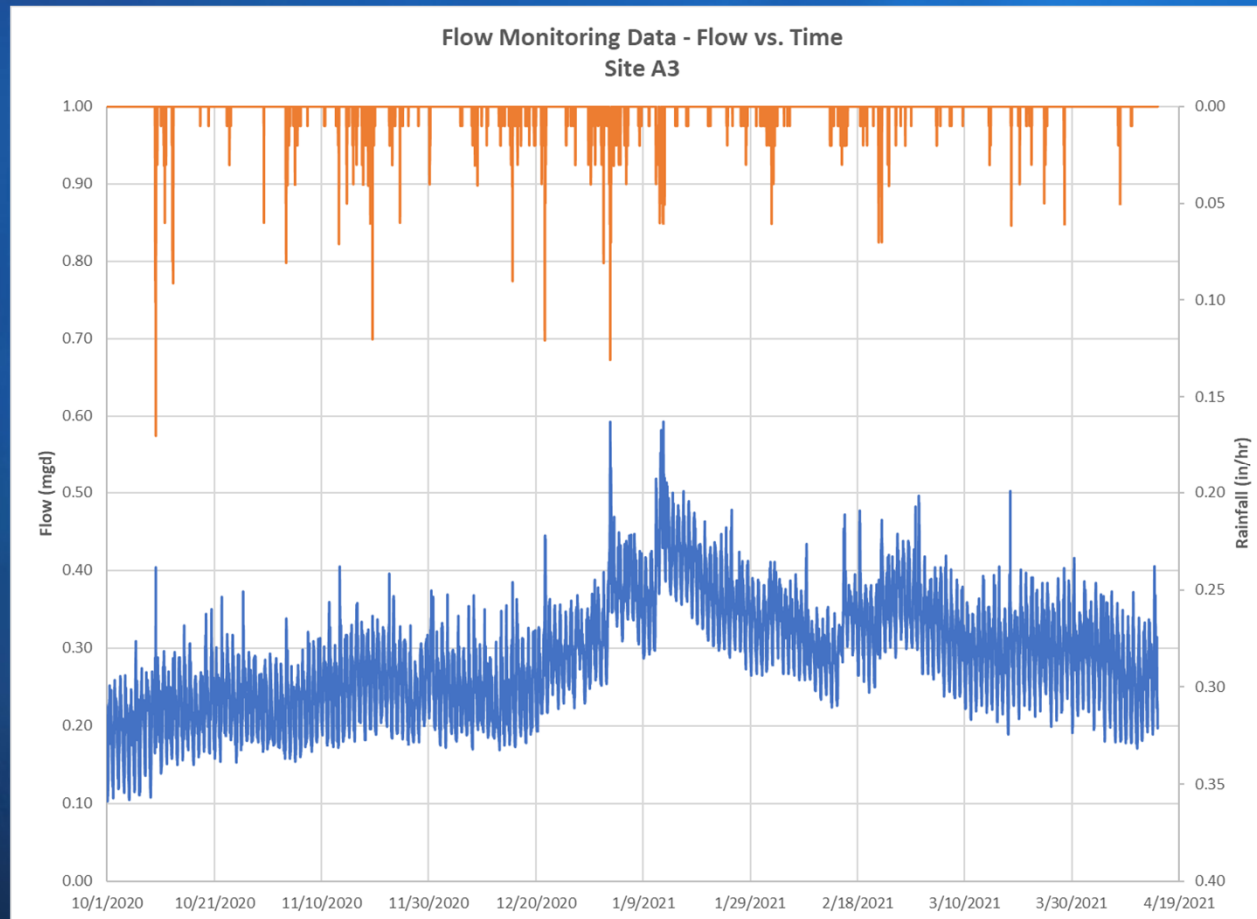


Meter AUB_A2 Scattergraph

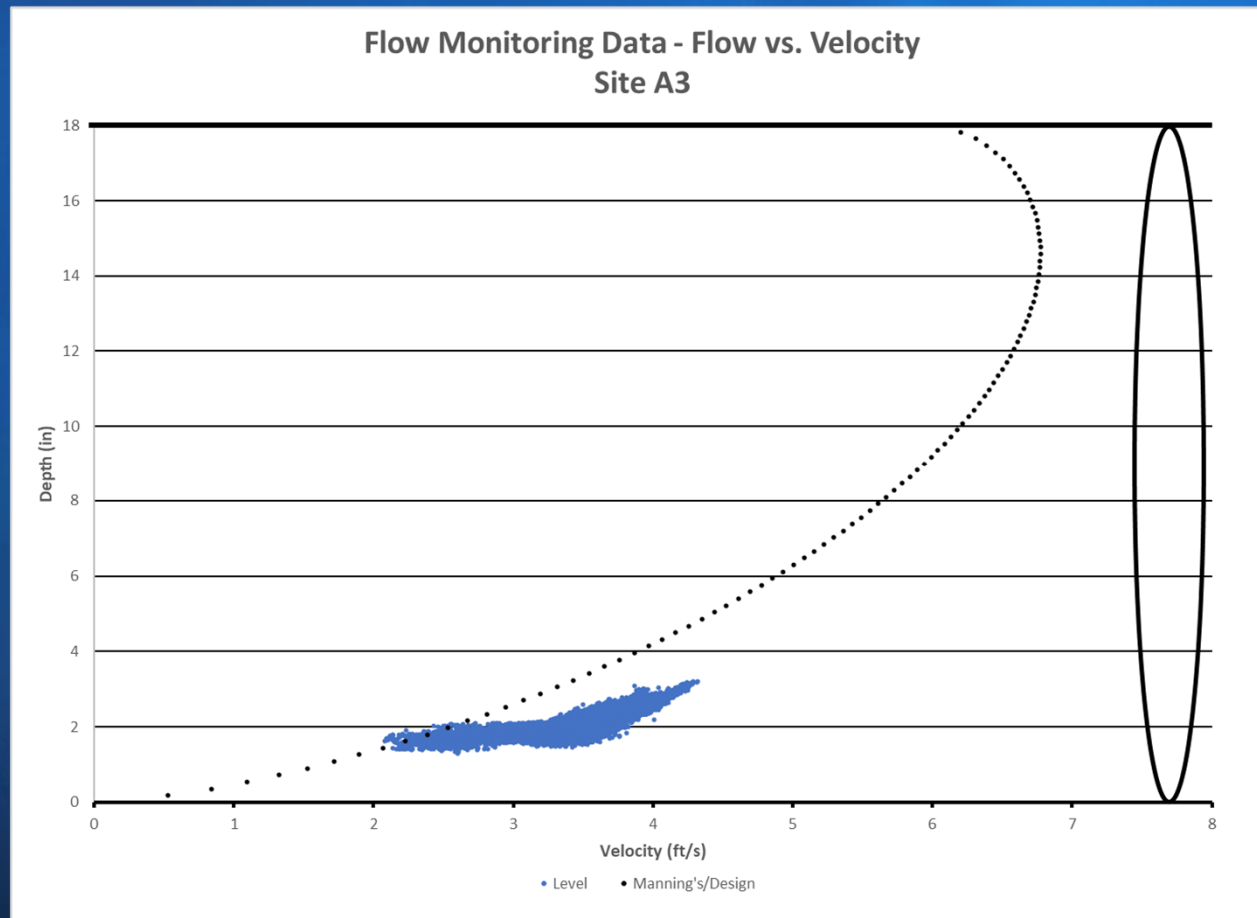


Meter AUB_A3

Flow vs Rainfall

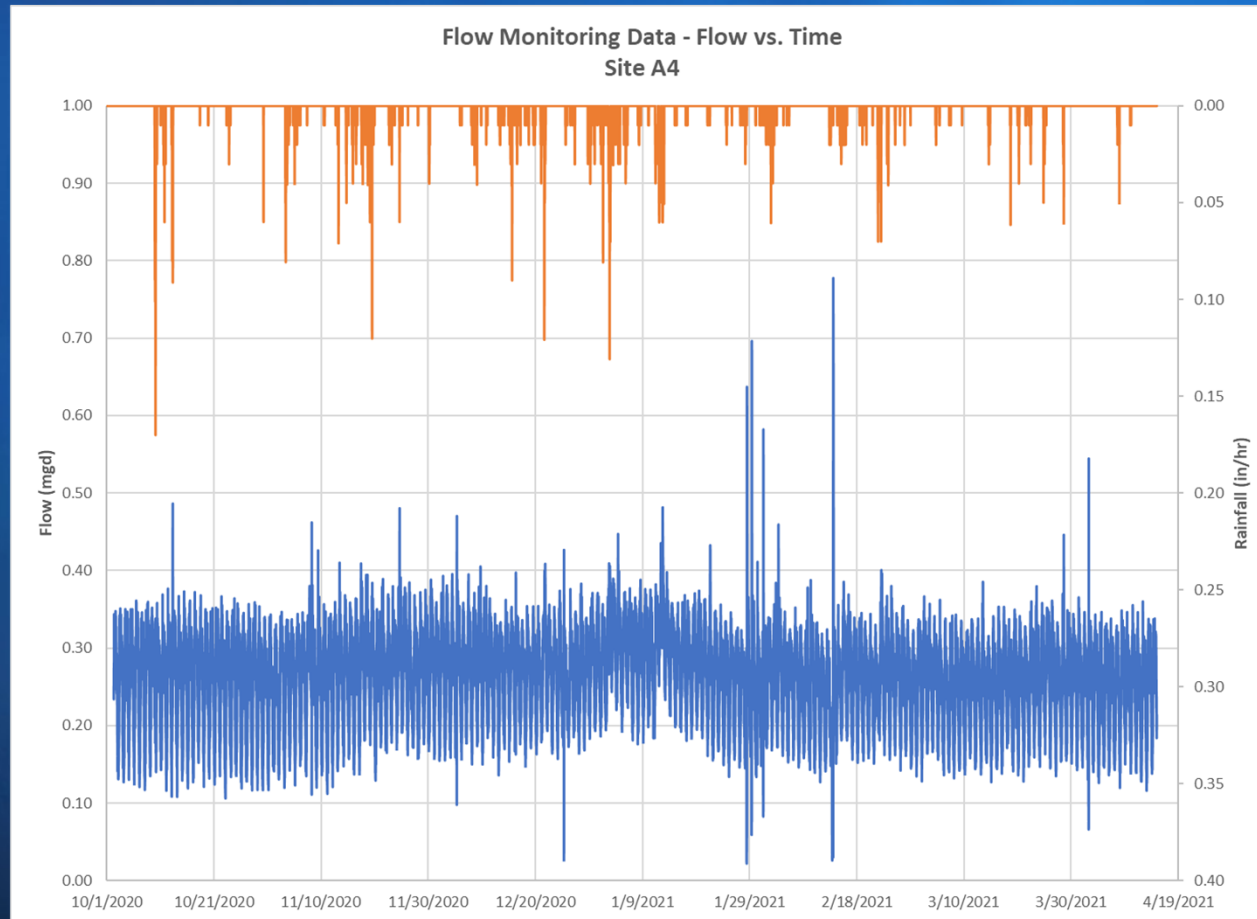


Meter AUB_A3 Scattergraph

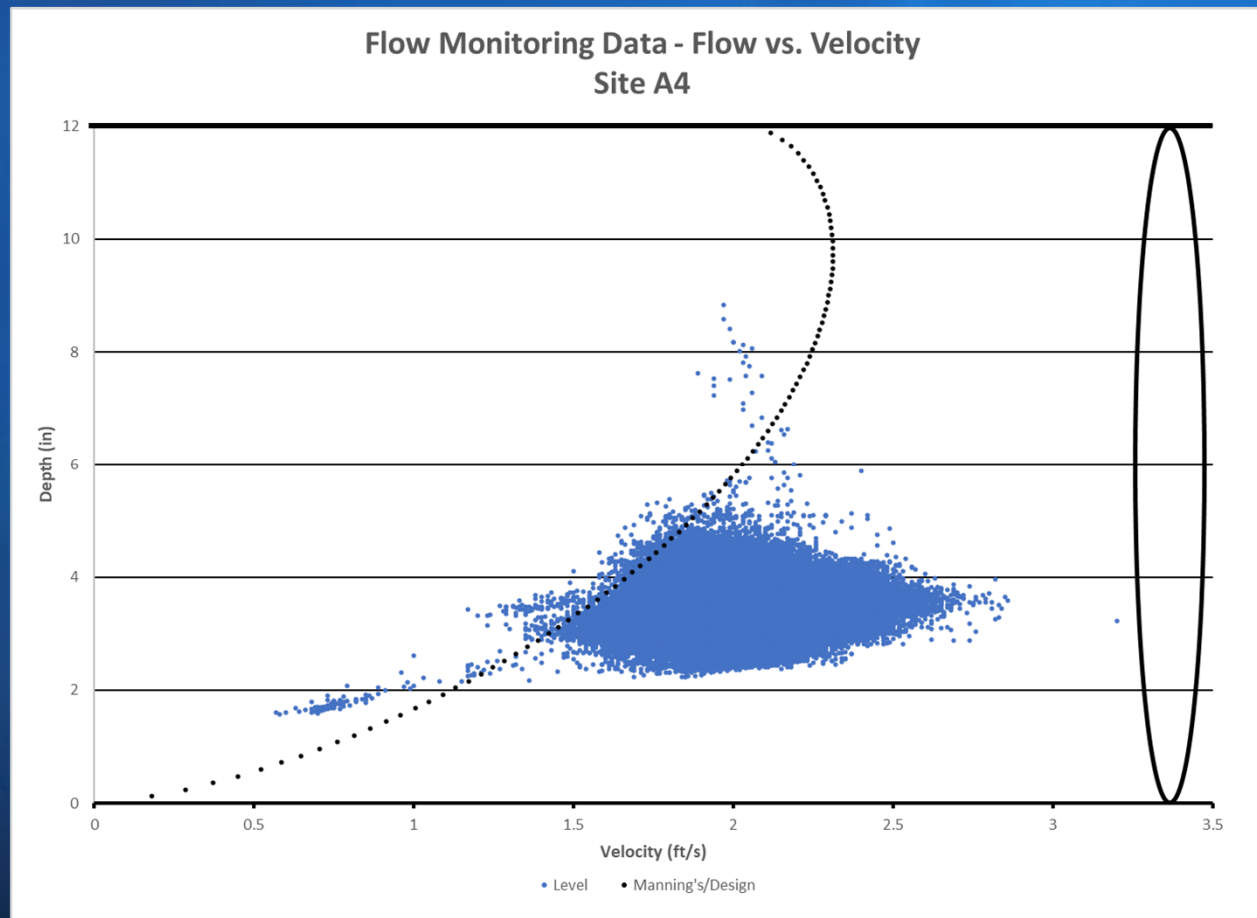


Meter AUB_A4

Flow vs Rainfall

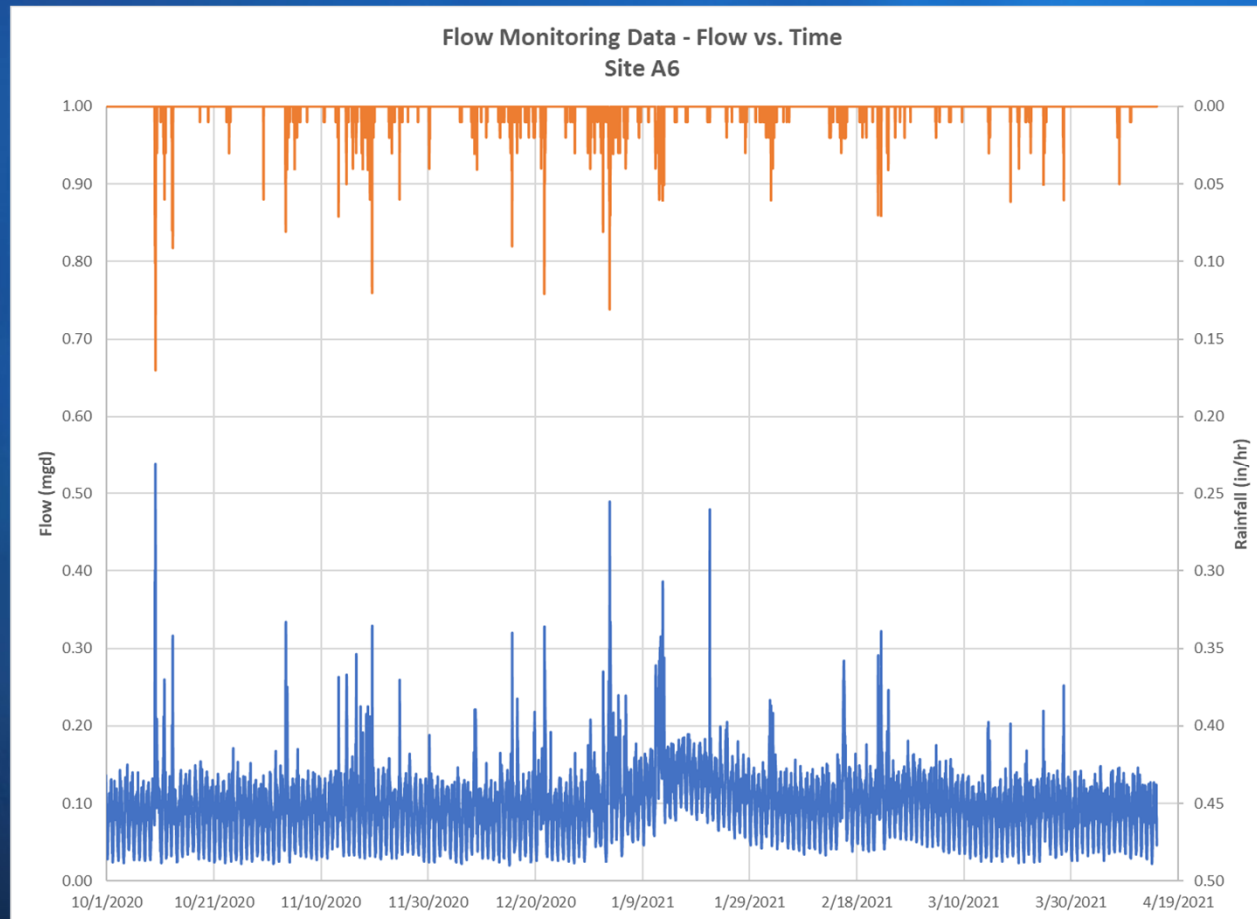


Meter AUB_A4 Scattergraph

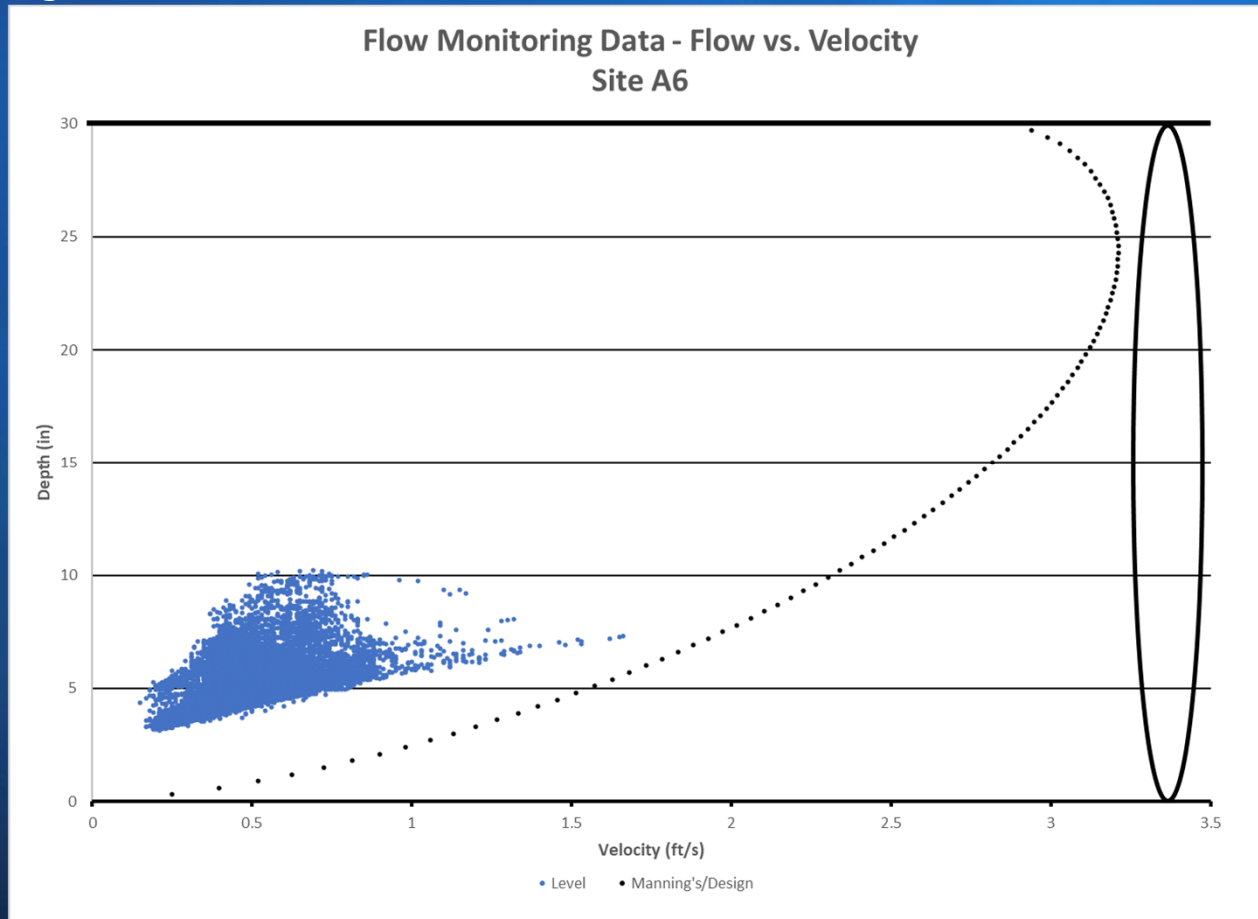


Meter AUB_A6

Flow vs Rainfall

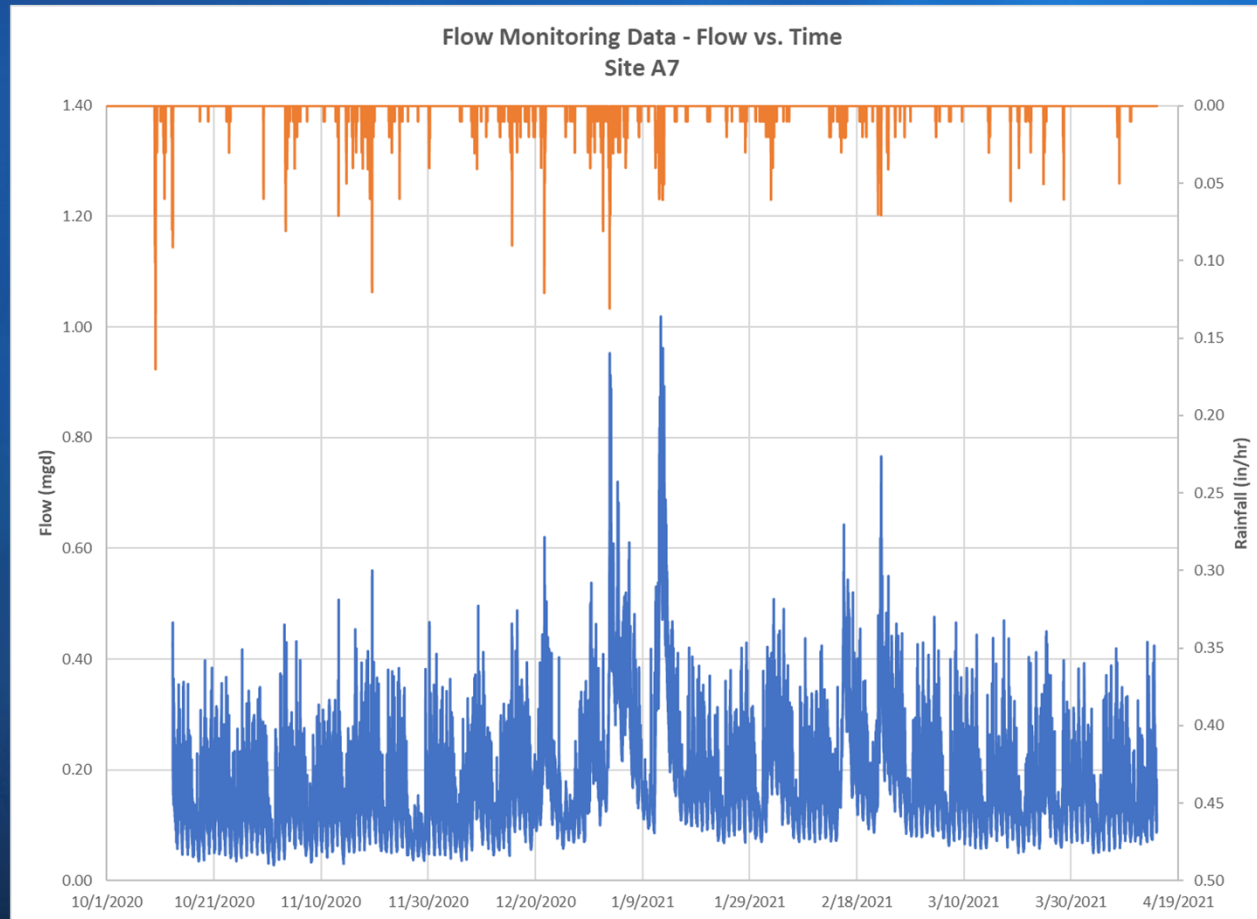


Meter AUB_A6 Scattergraph



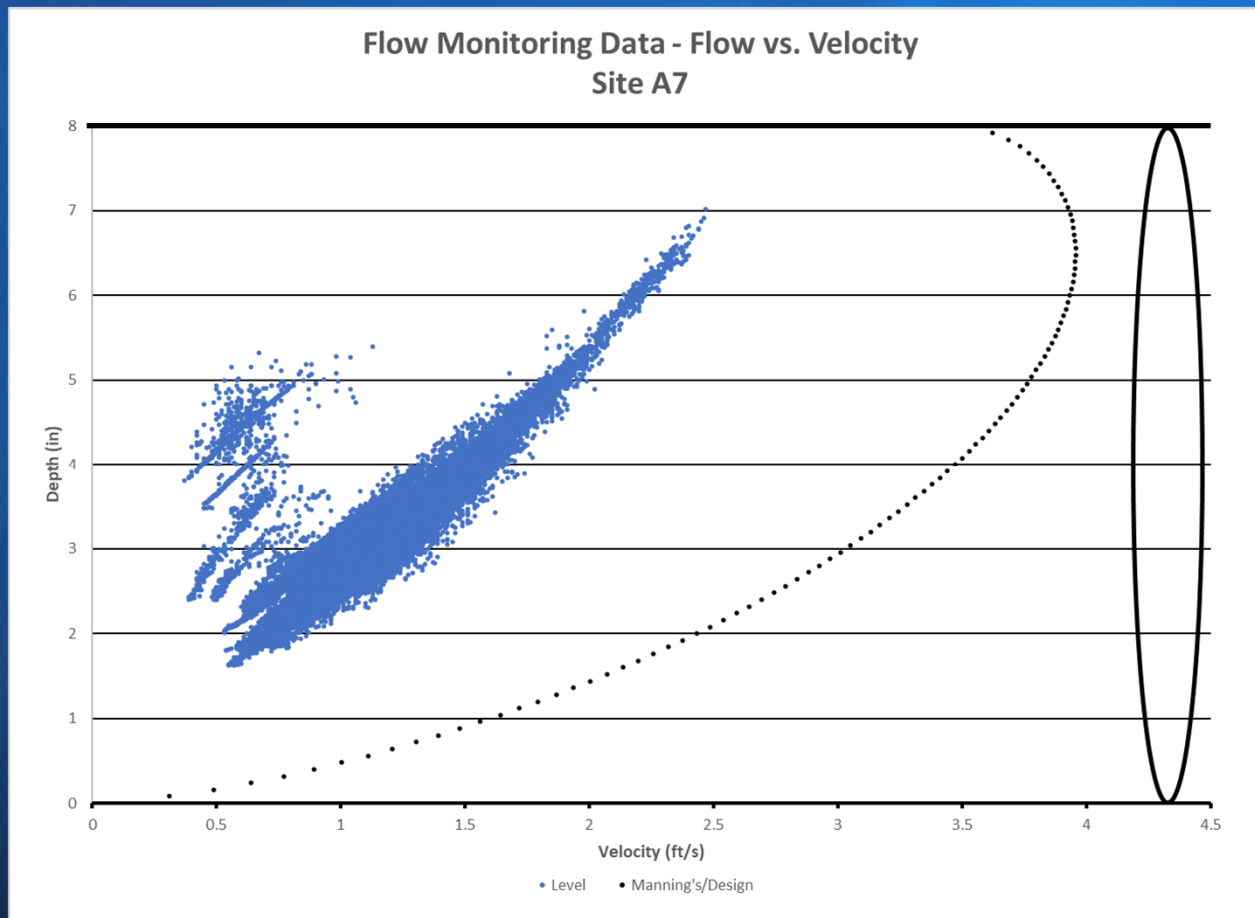
Meter AUB_A7

Flow vs Rainfall



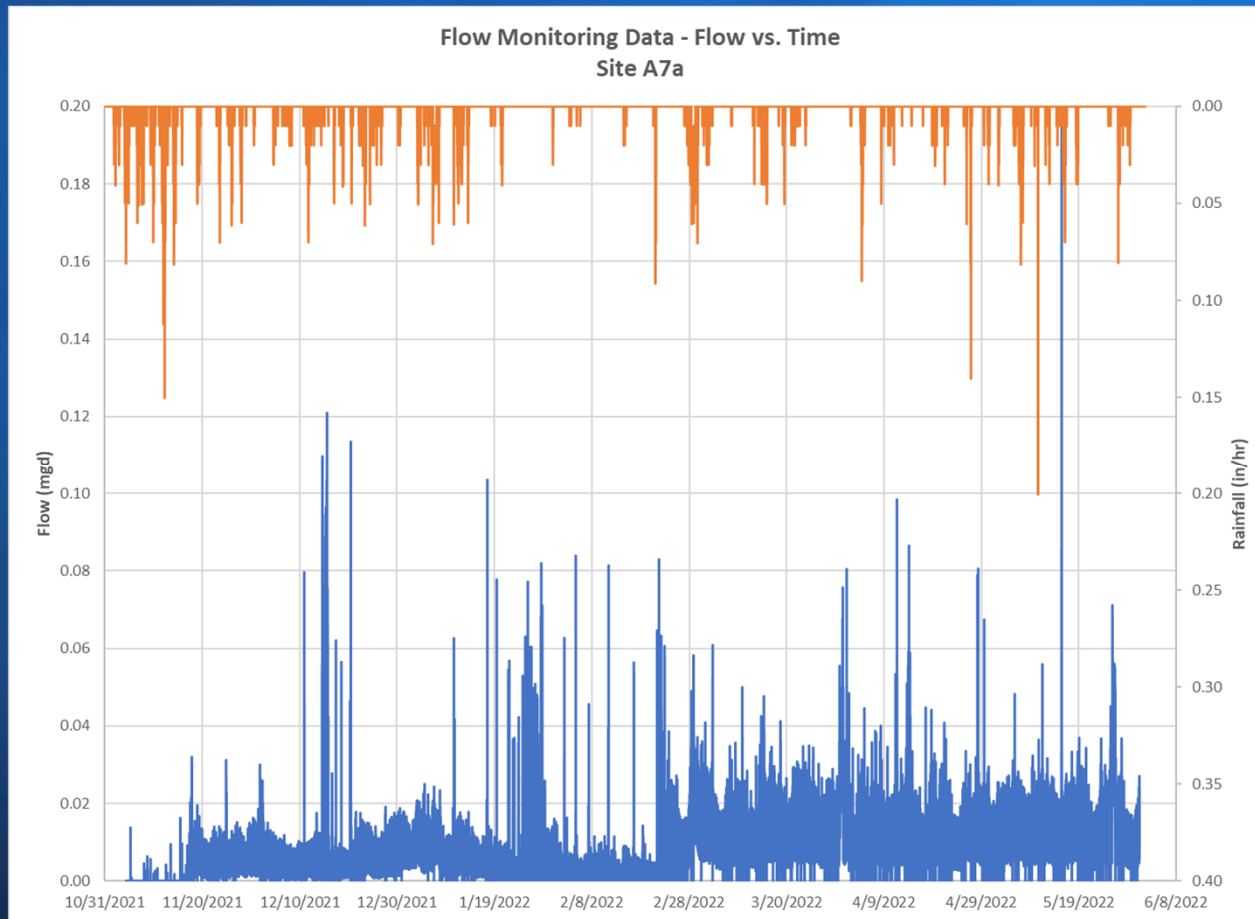
Meter AUB_A7

Scattergraph



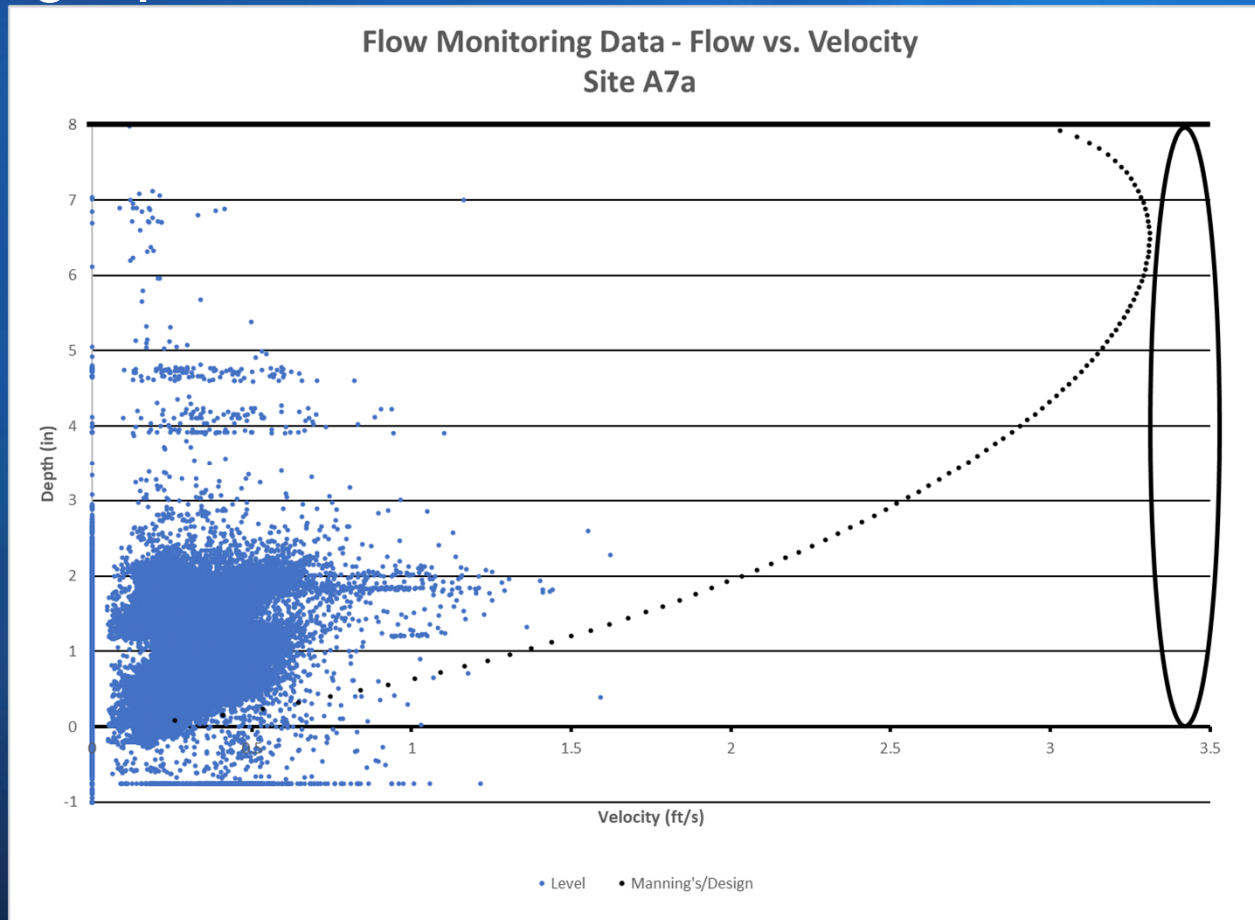
Meter AUB_A7a

Flow vs Rainfall



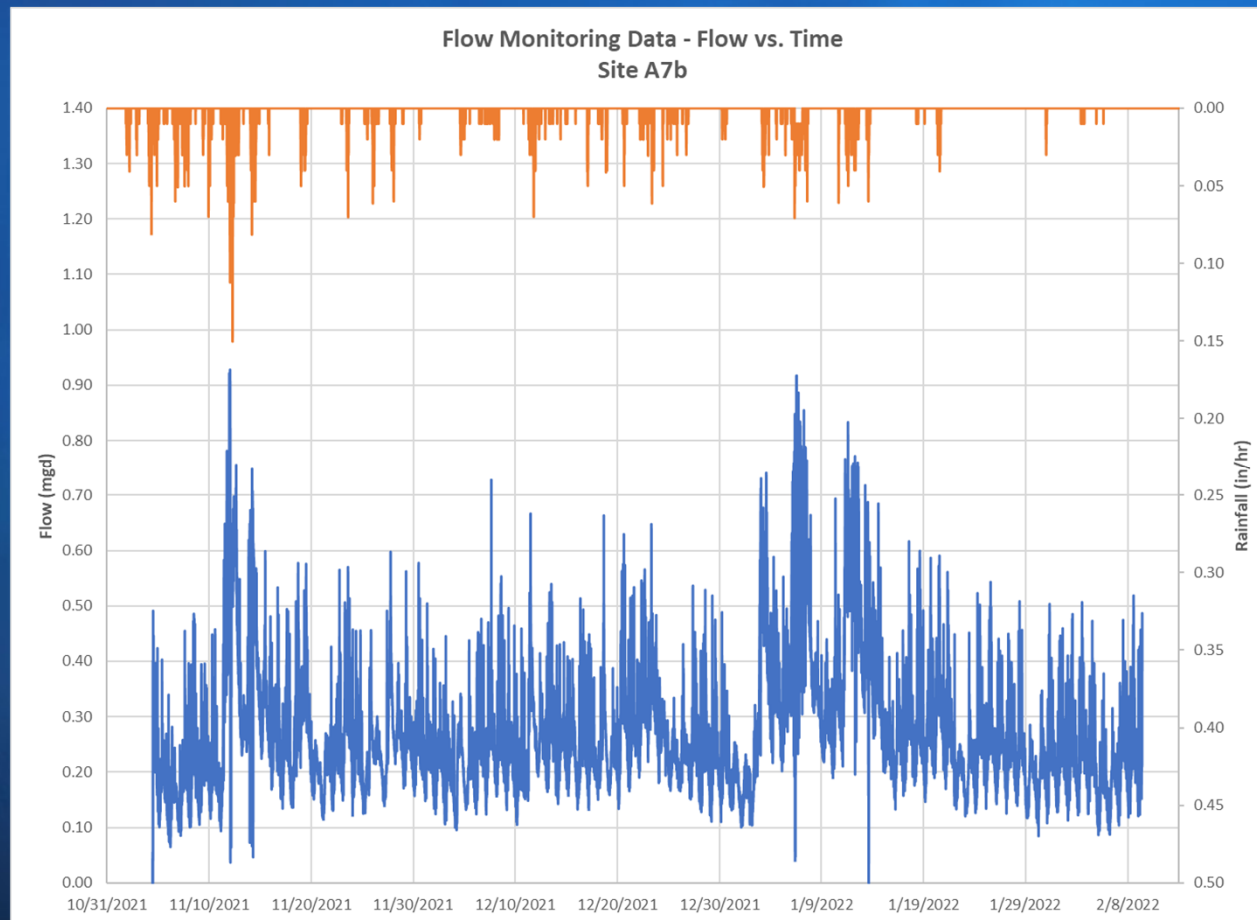
Meter AUB_A7a

Scattergraph



Meter AUB_A7b

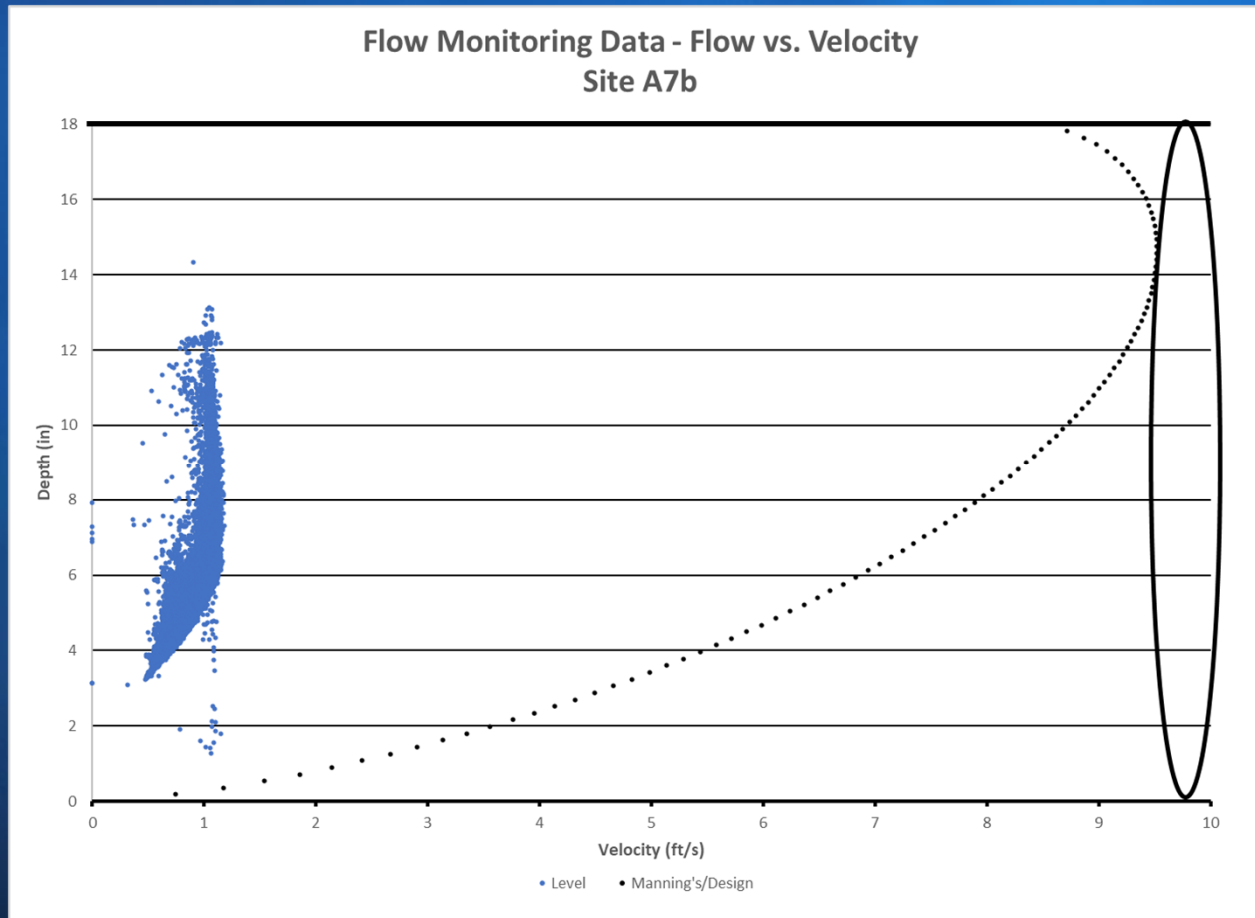
Flow vs Rainfall



Meter AUB_A7b

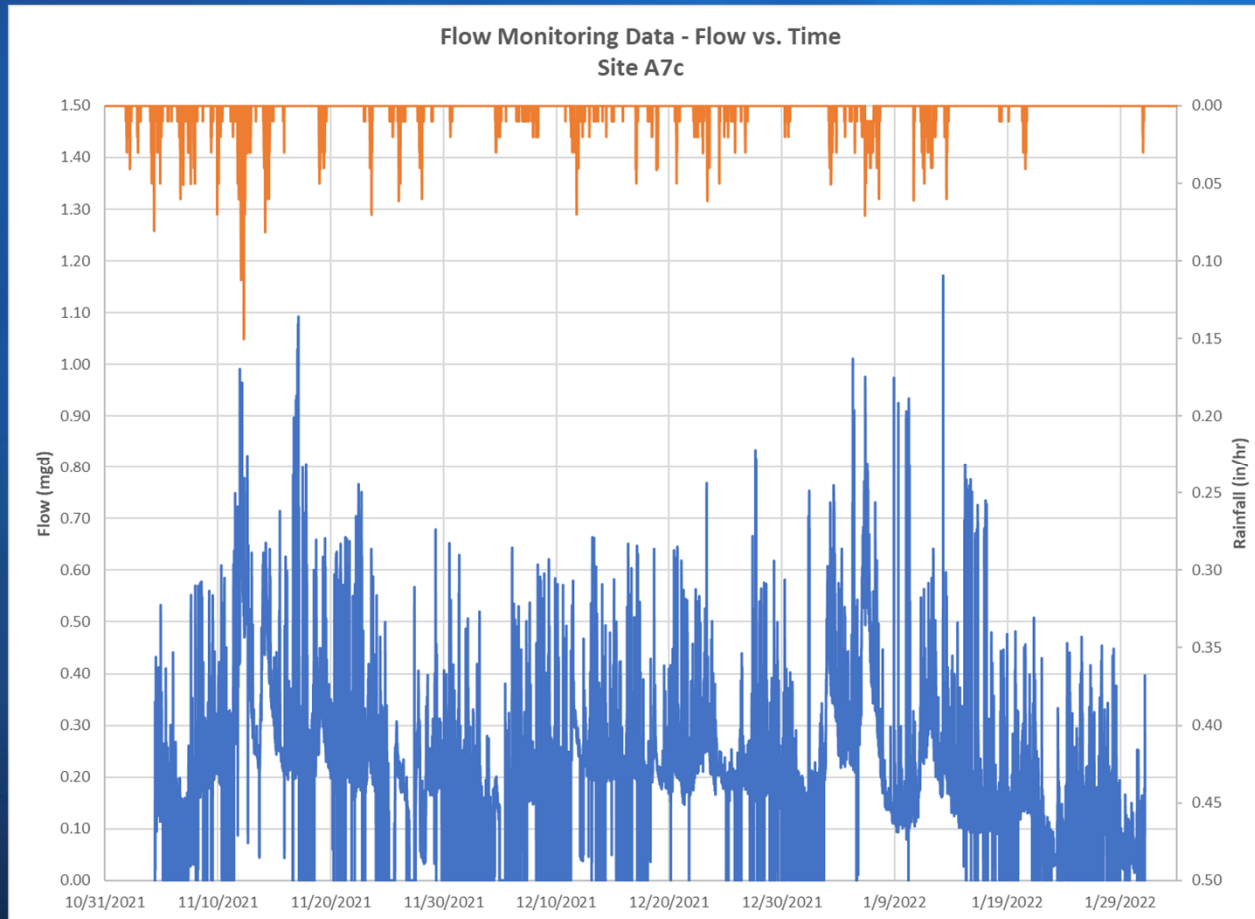
Scattergraph

Note: 3 data points with negative velocity, including 1 data point with negative depth



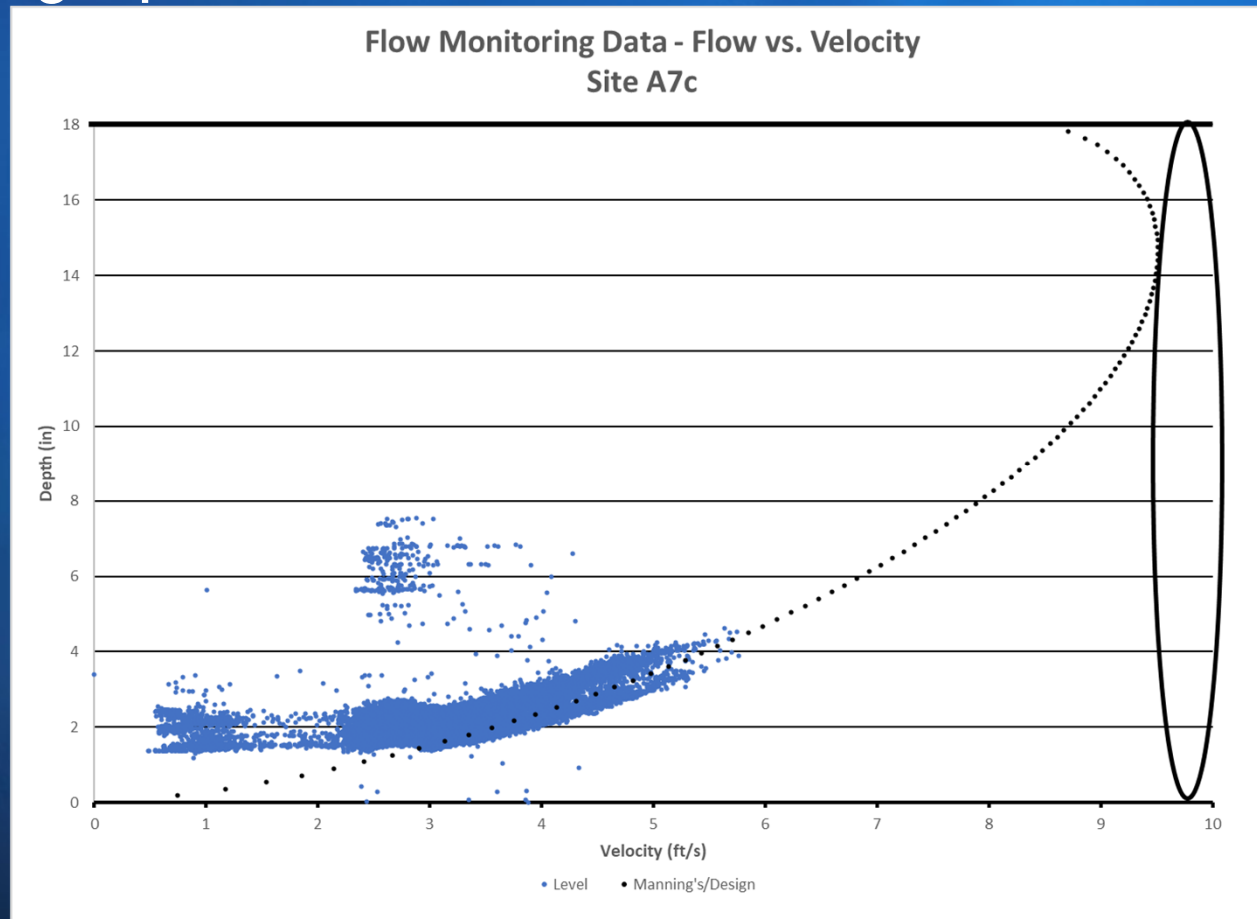
Meter AUB_A7c

Flow vs Rainfall



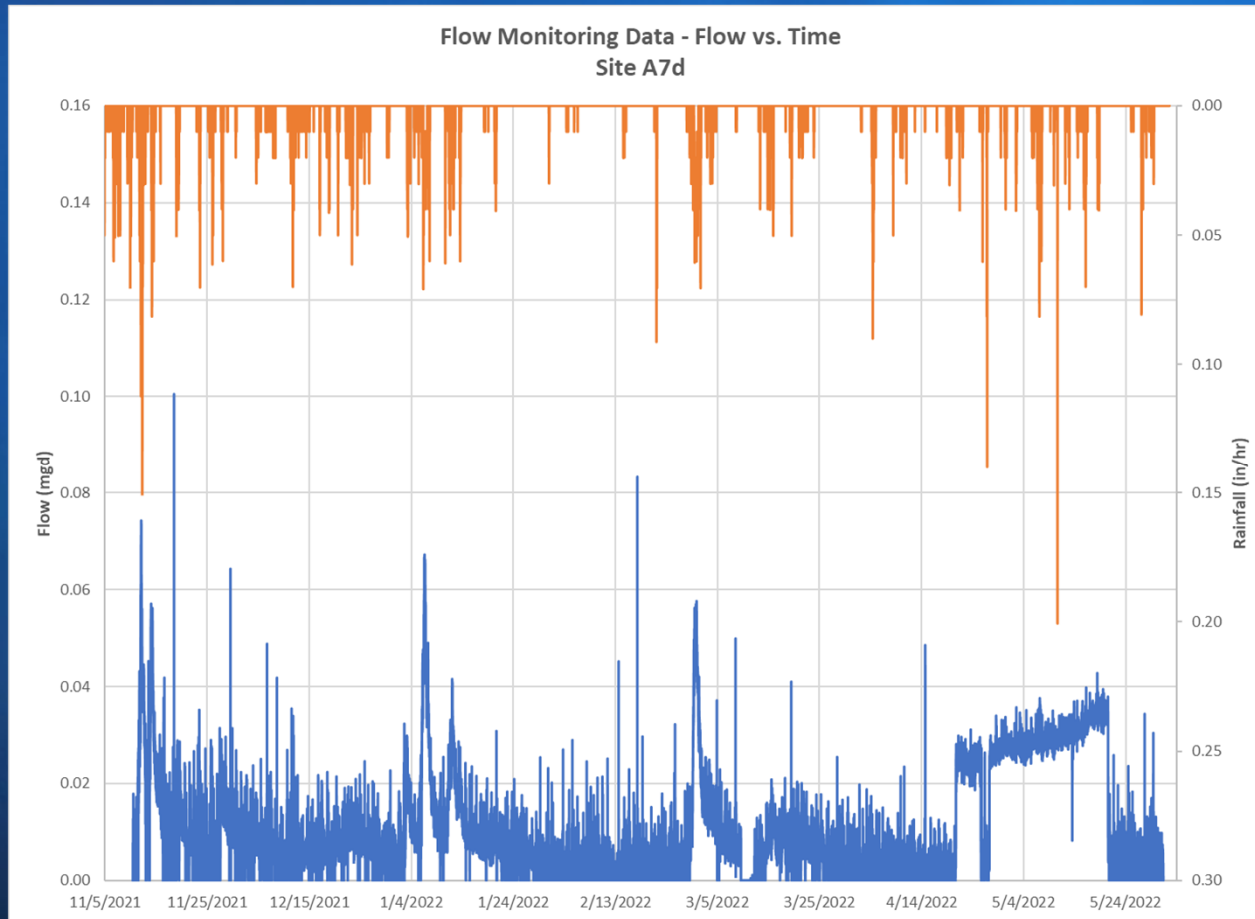
Meter AUB_A7c

Scattergraph

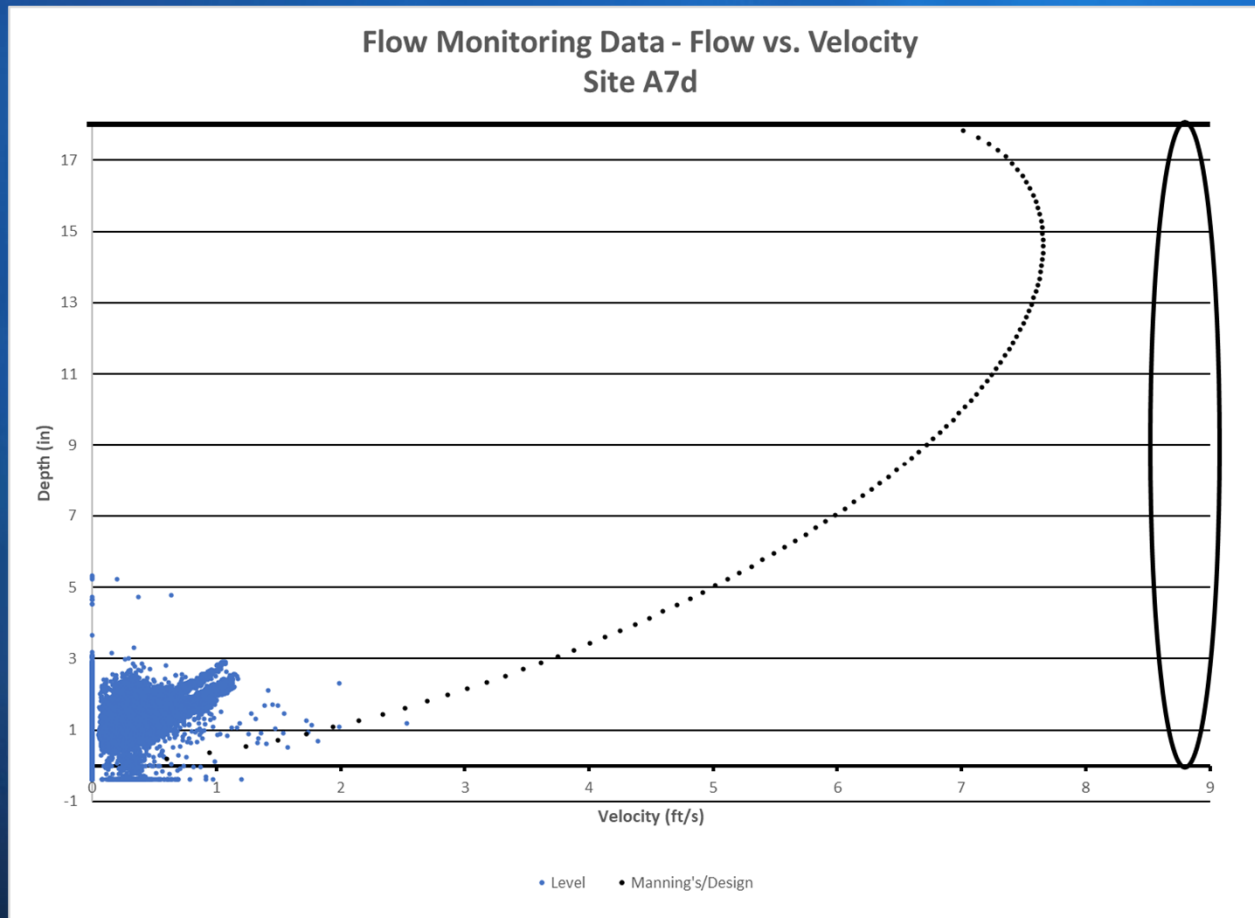


Meter AUB_A7d

Flow vs Rainfall

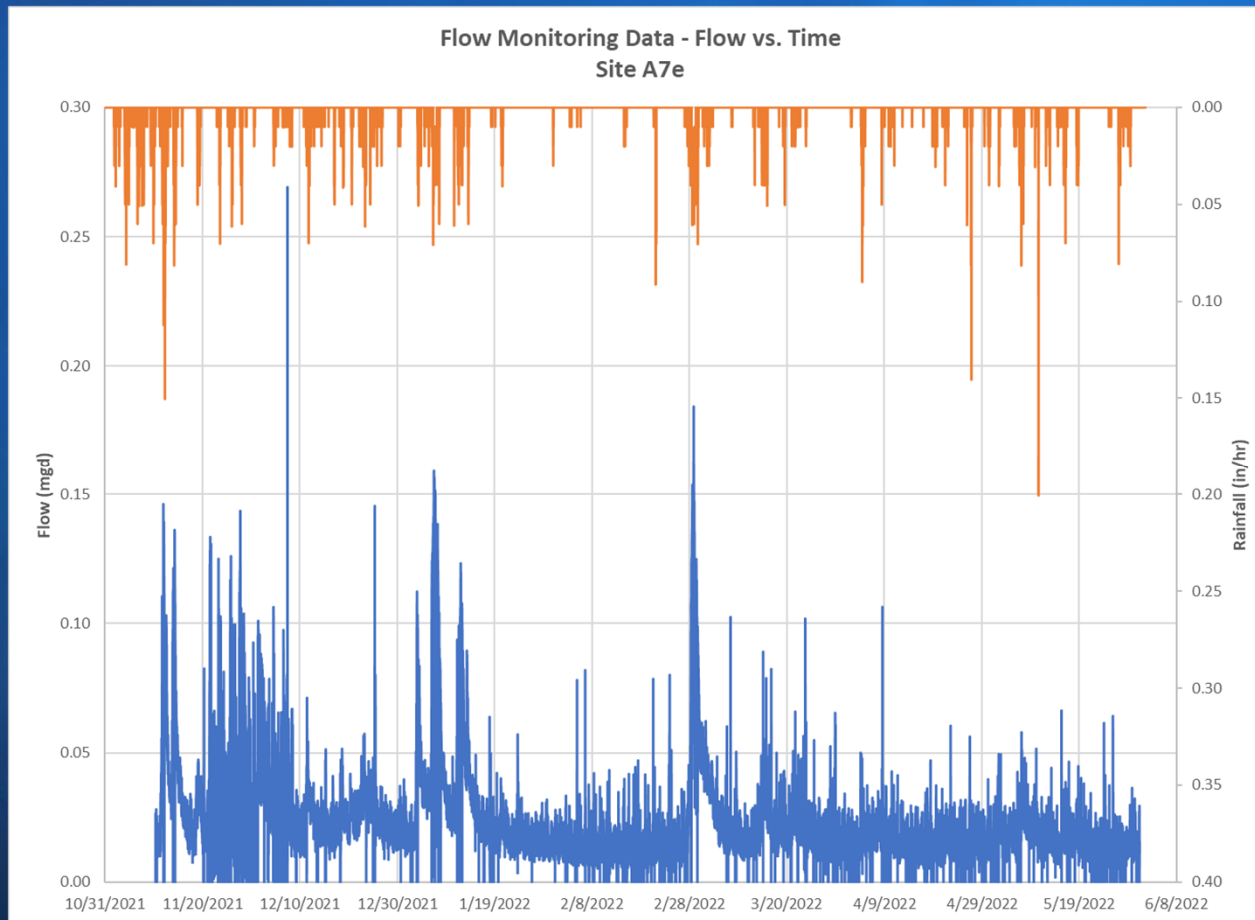


Meter AUB_A7d Scattergraph



Meter AUB_A7e

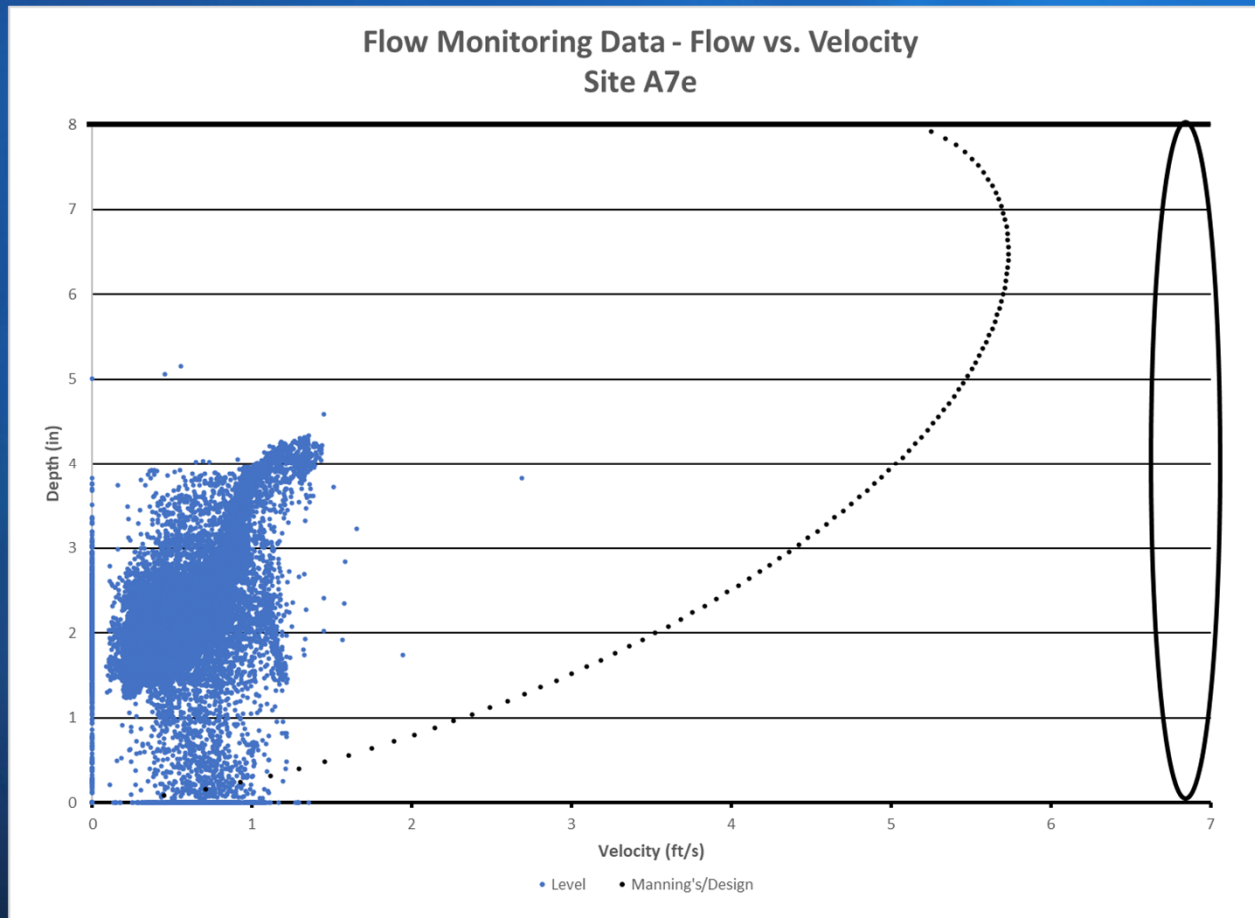
Flow vs Rainfall



Meter AUB_A7e

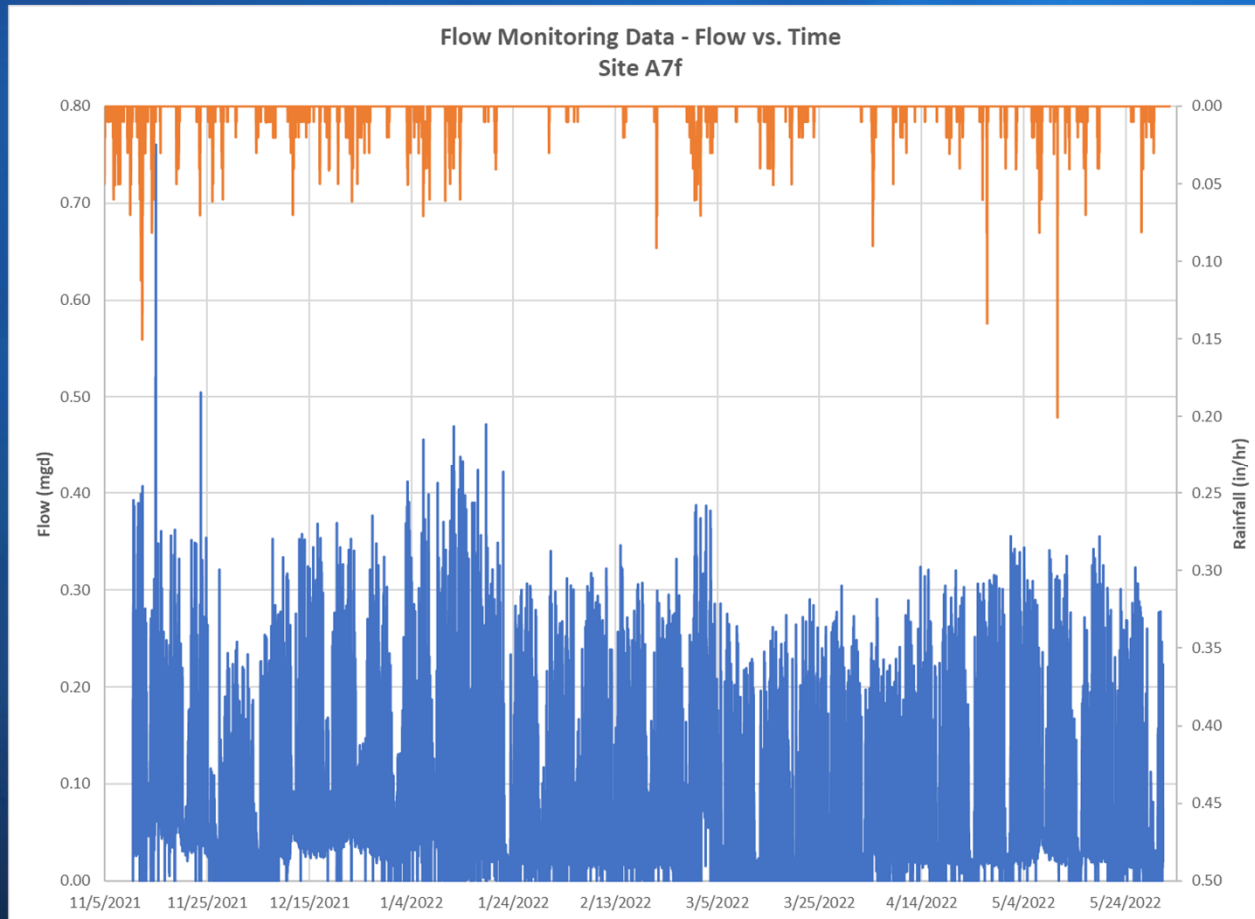
Scattergraph

Note: 1 data point
with negative
depth



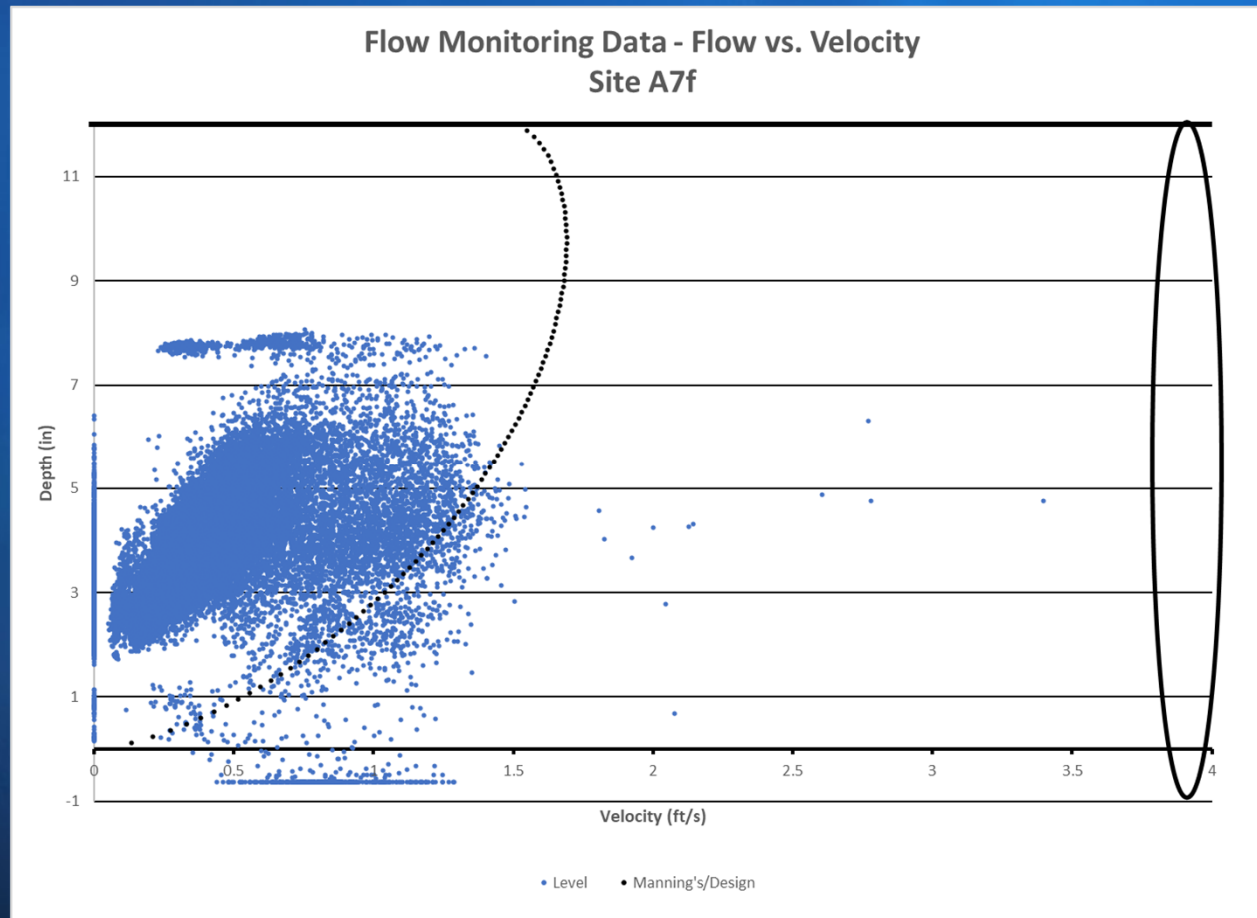
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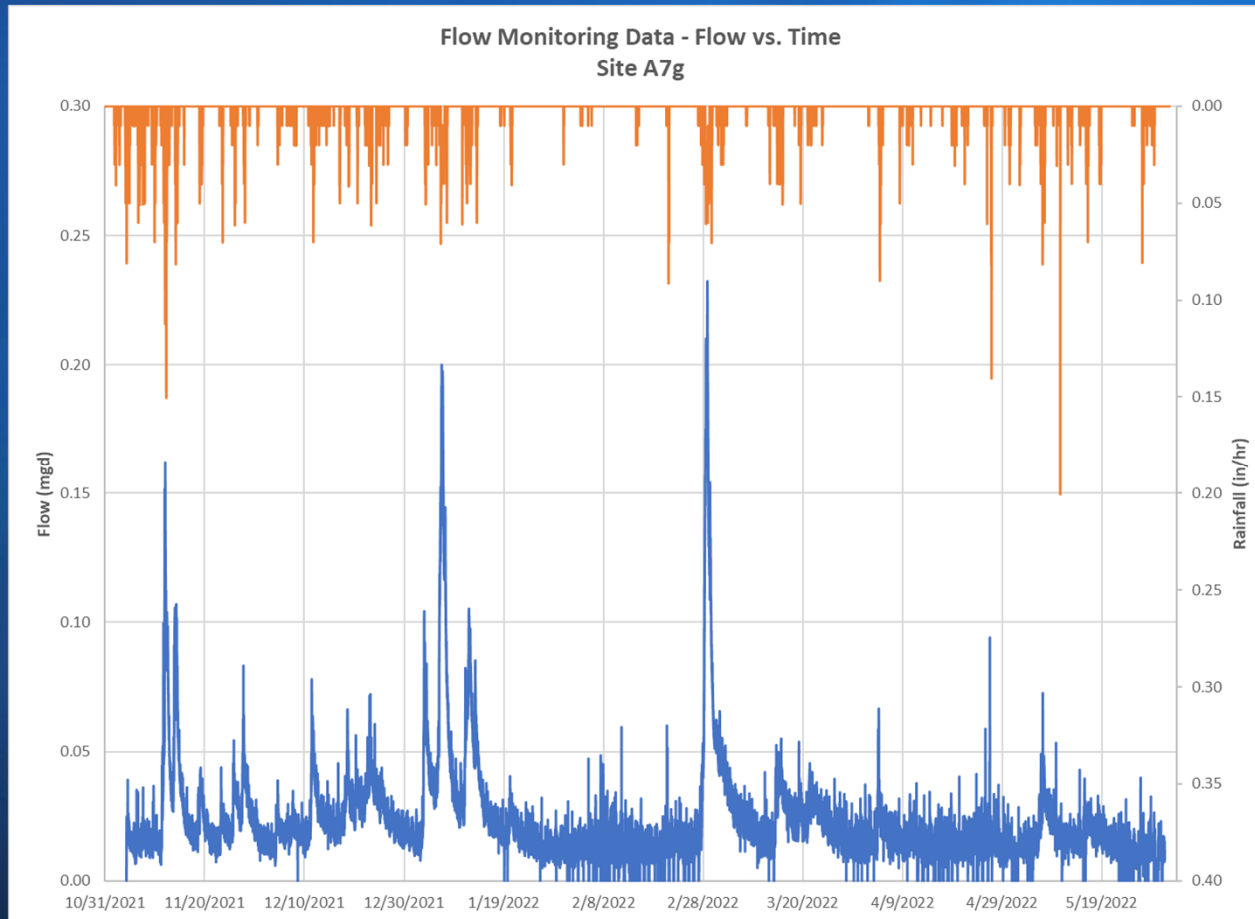
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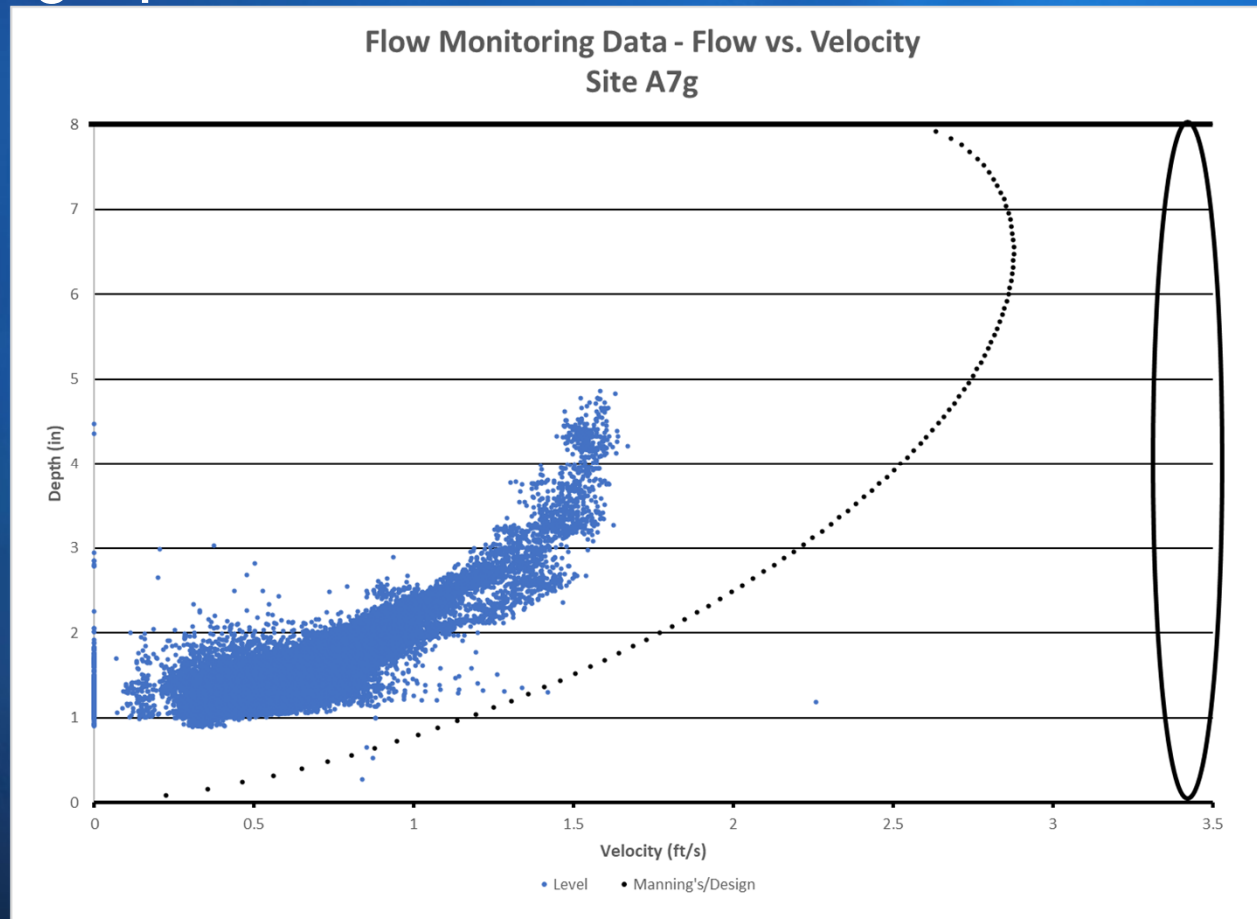


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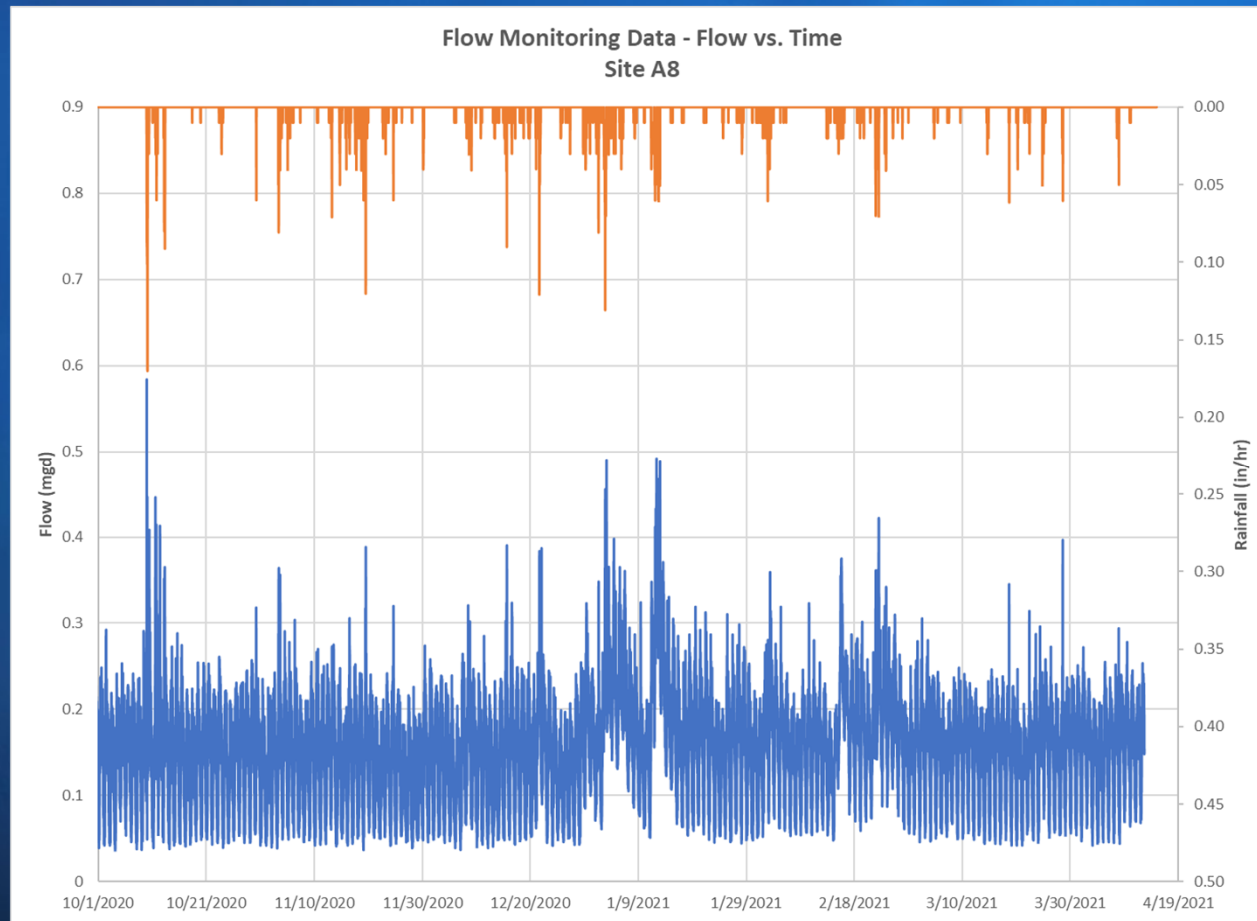


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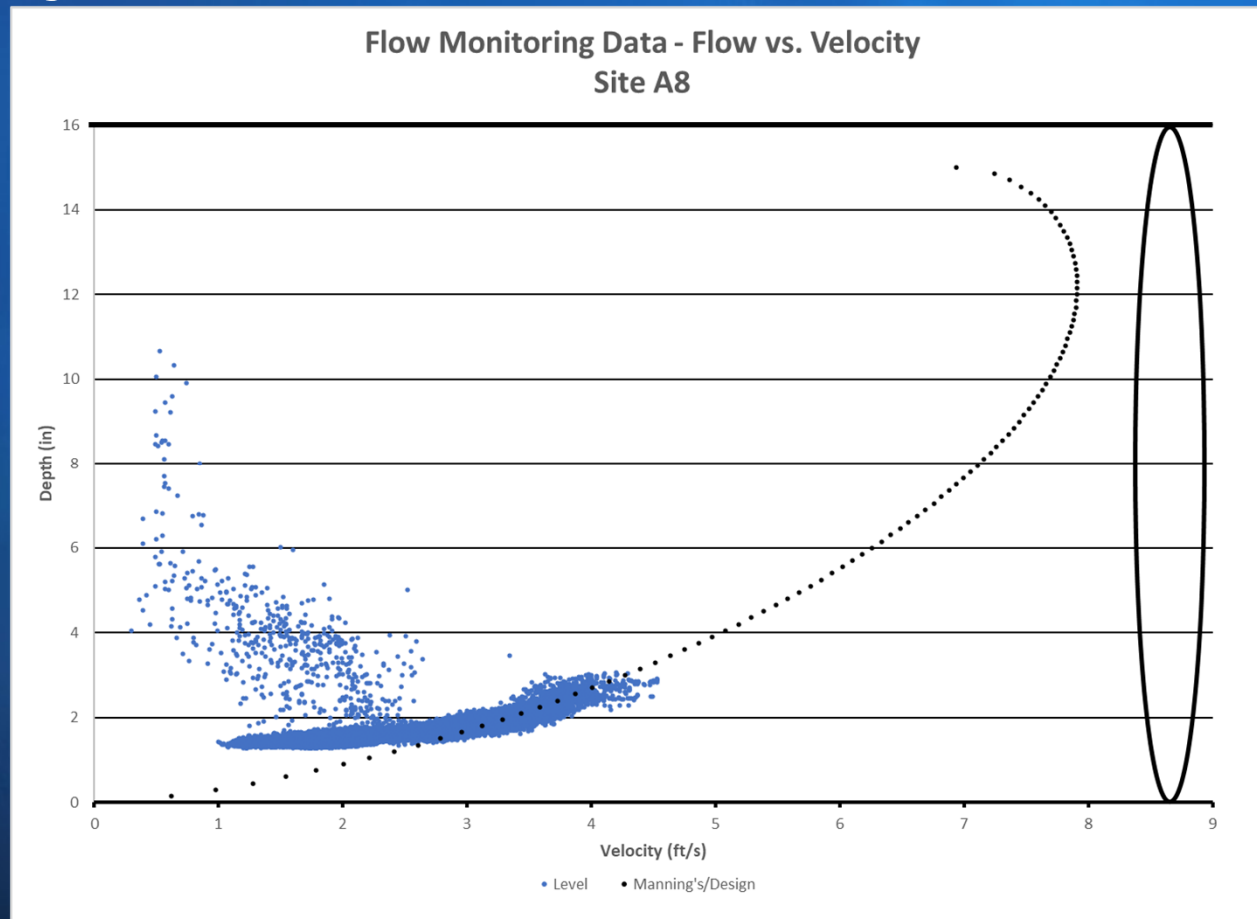


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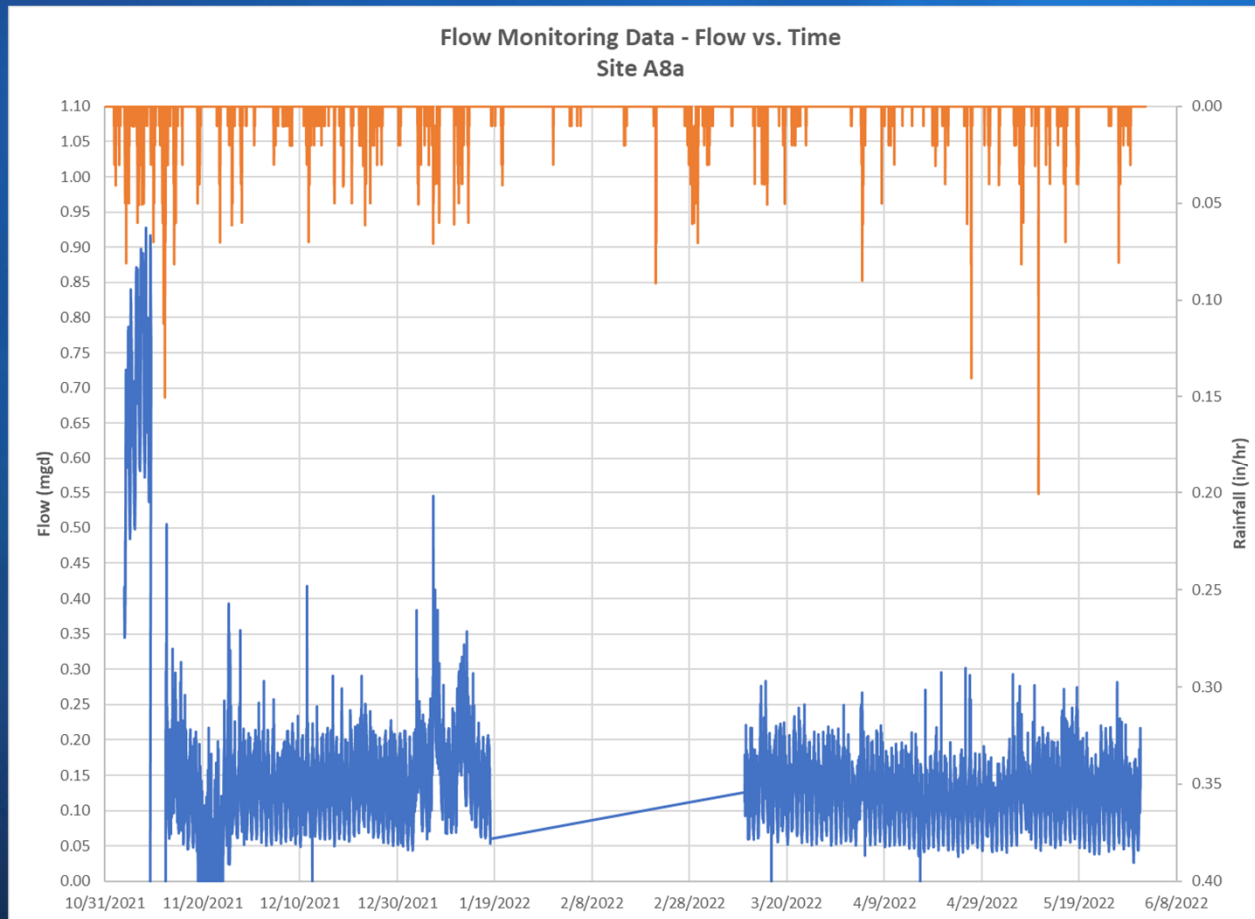


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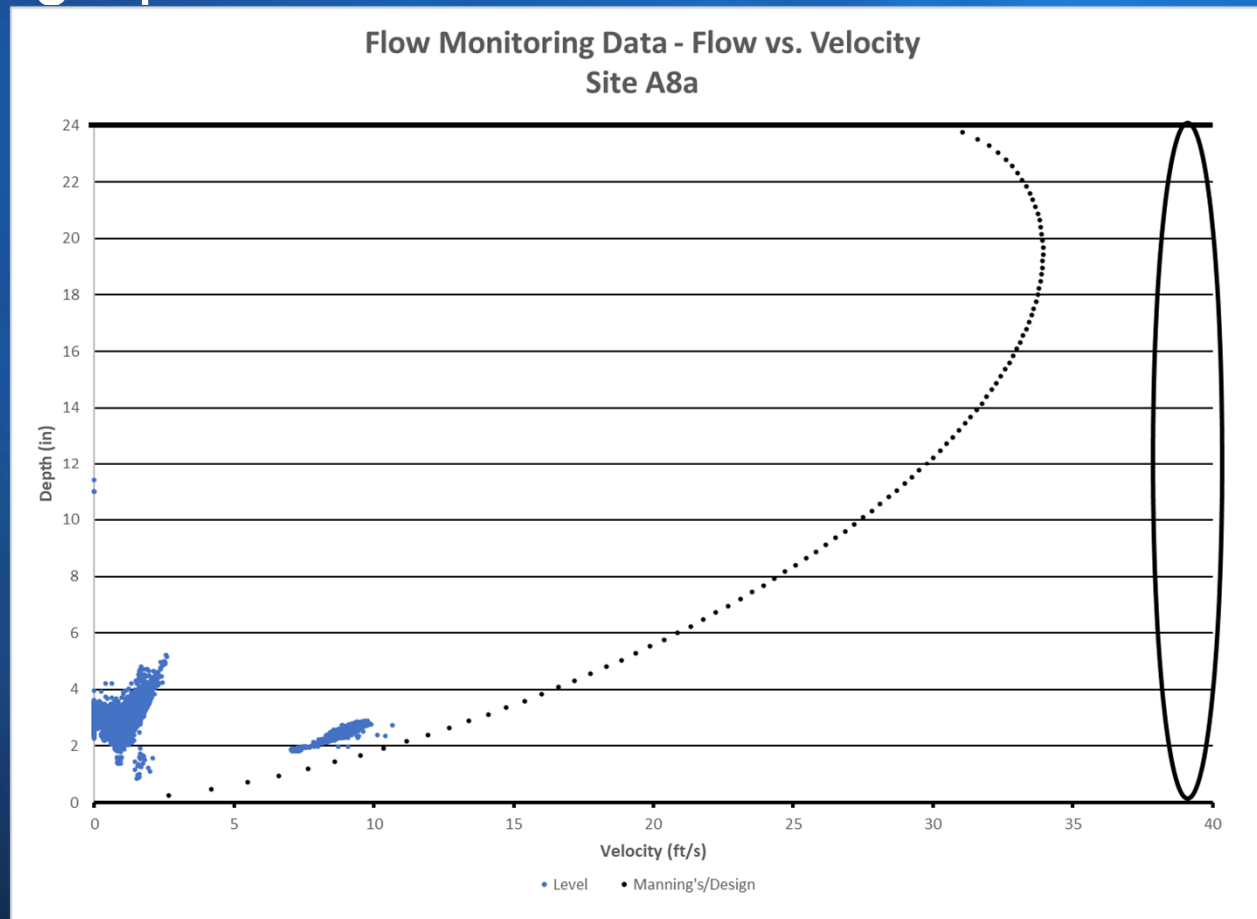
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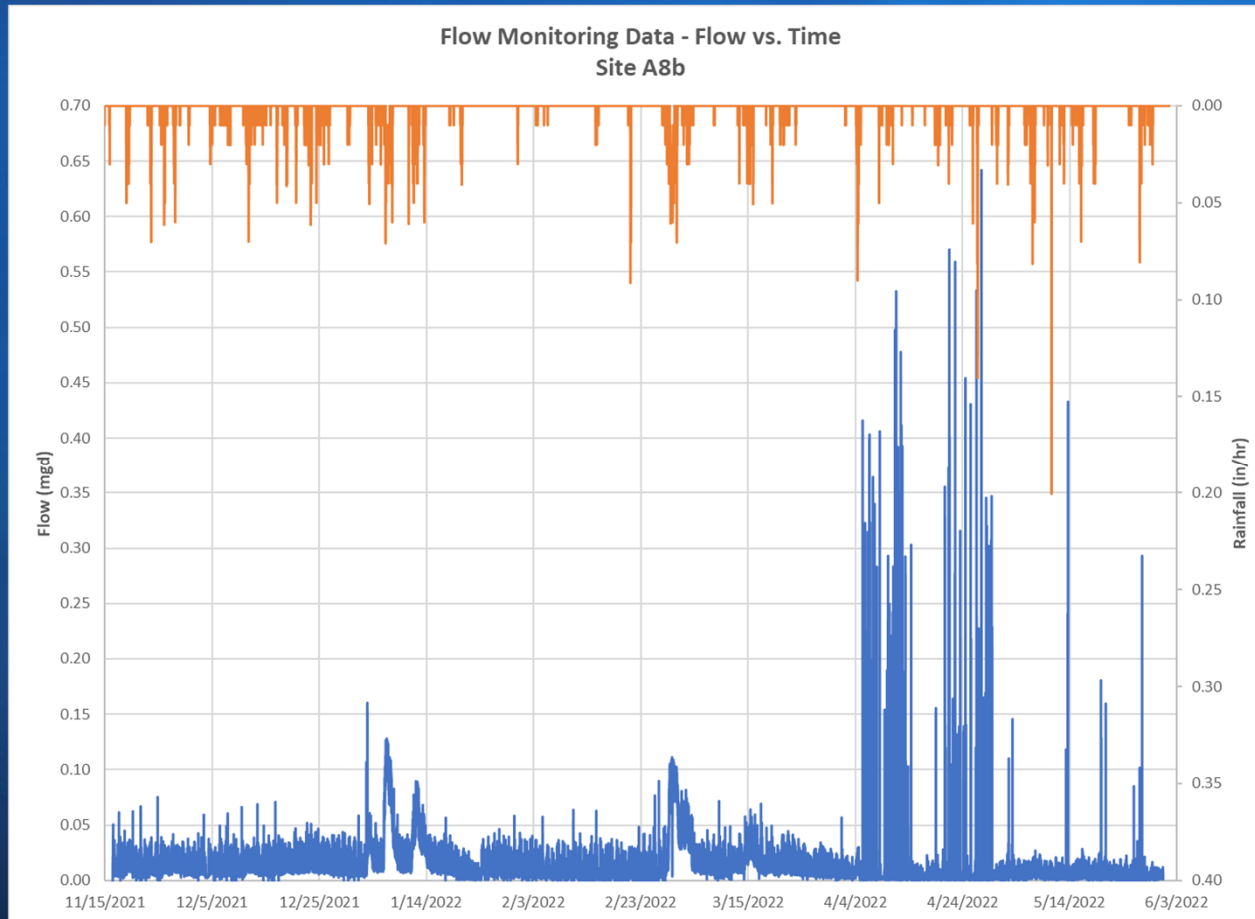
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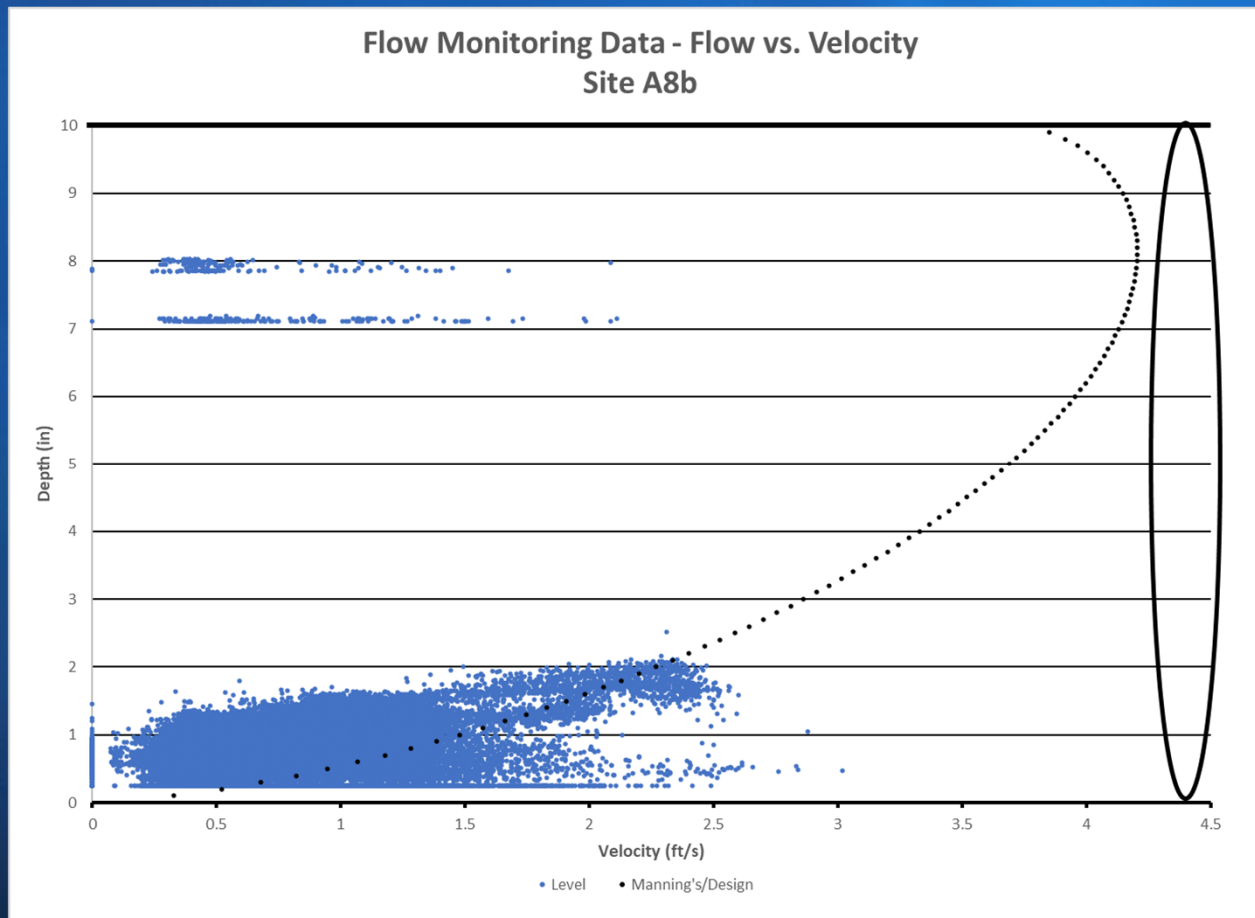
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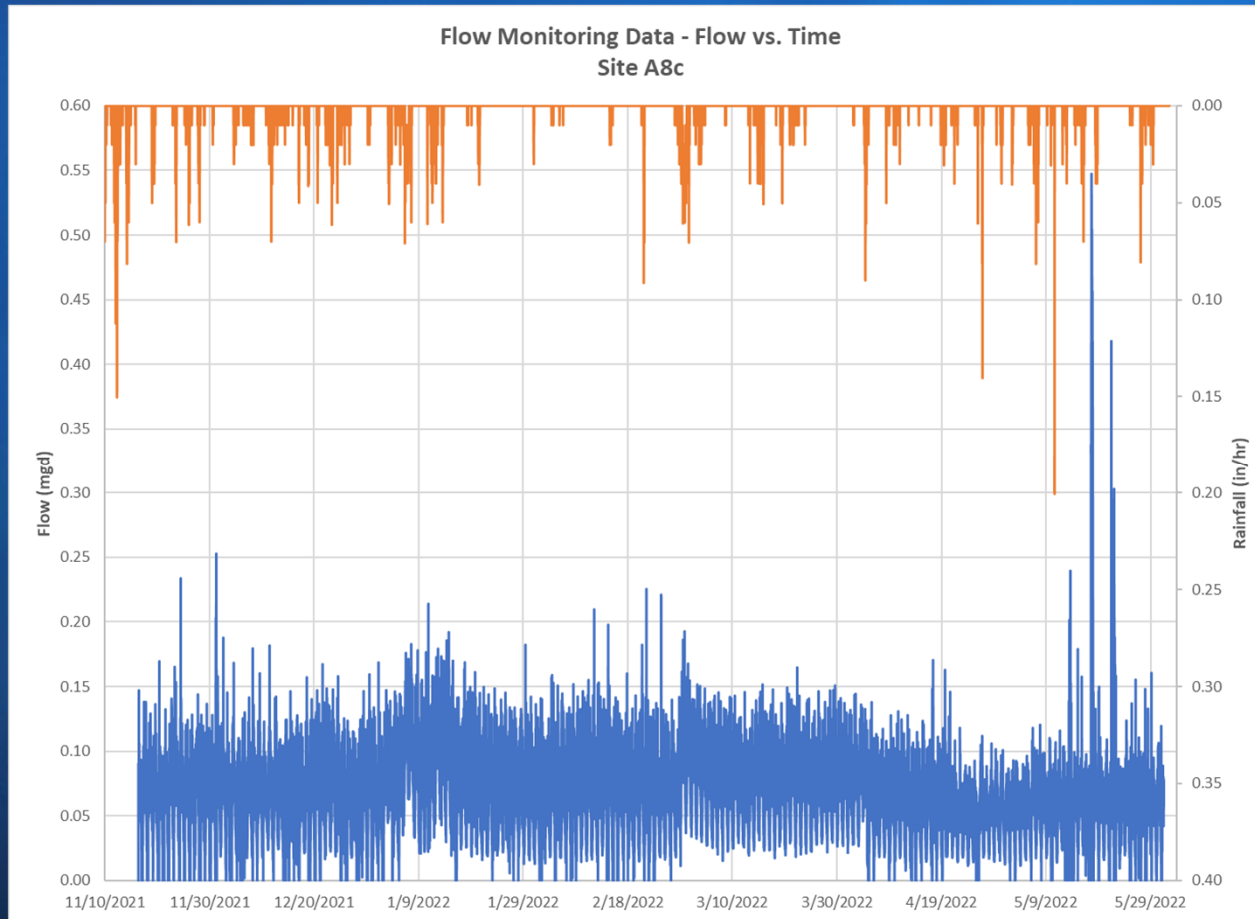
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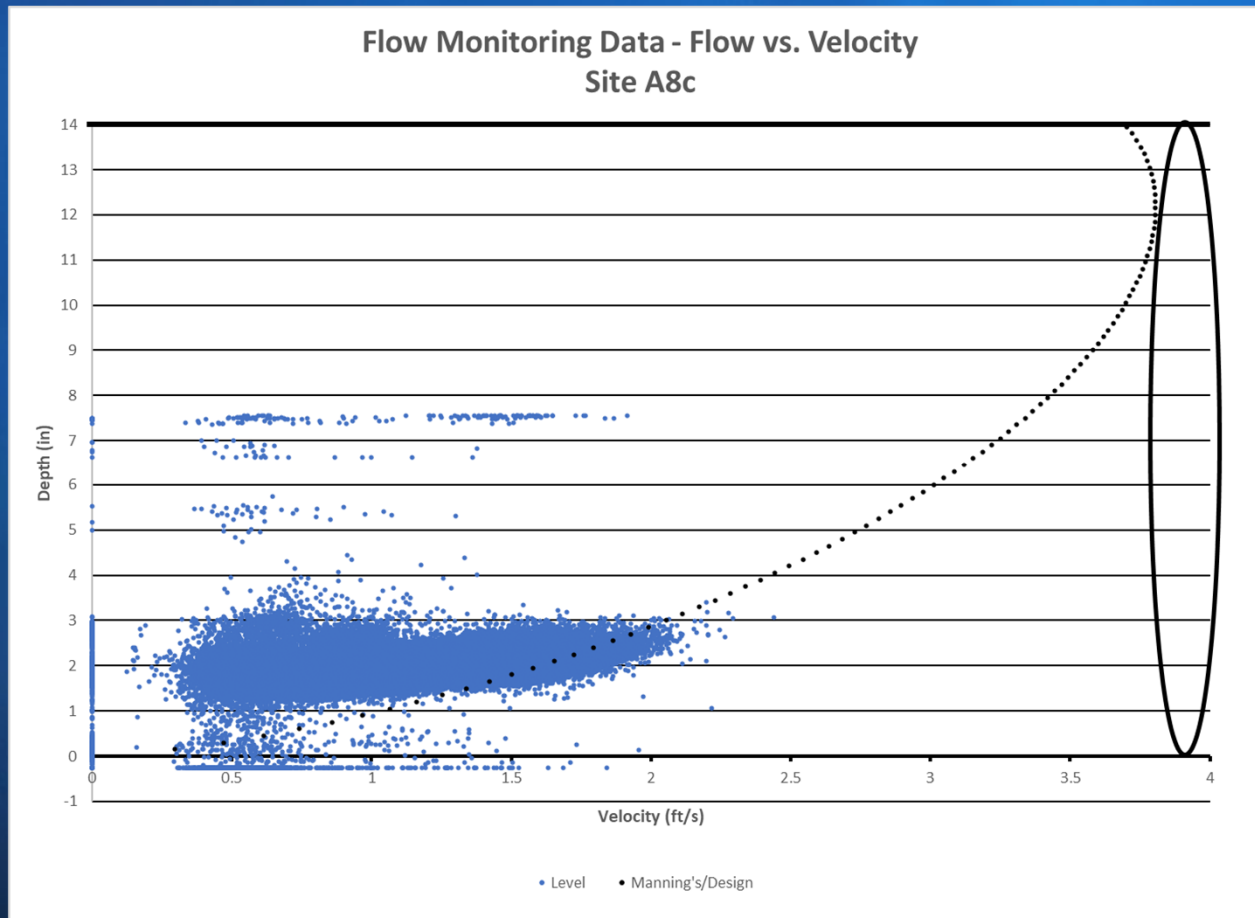
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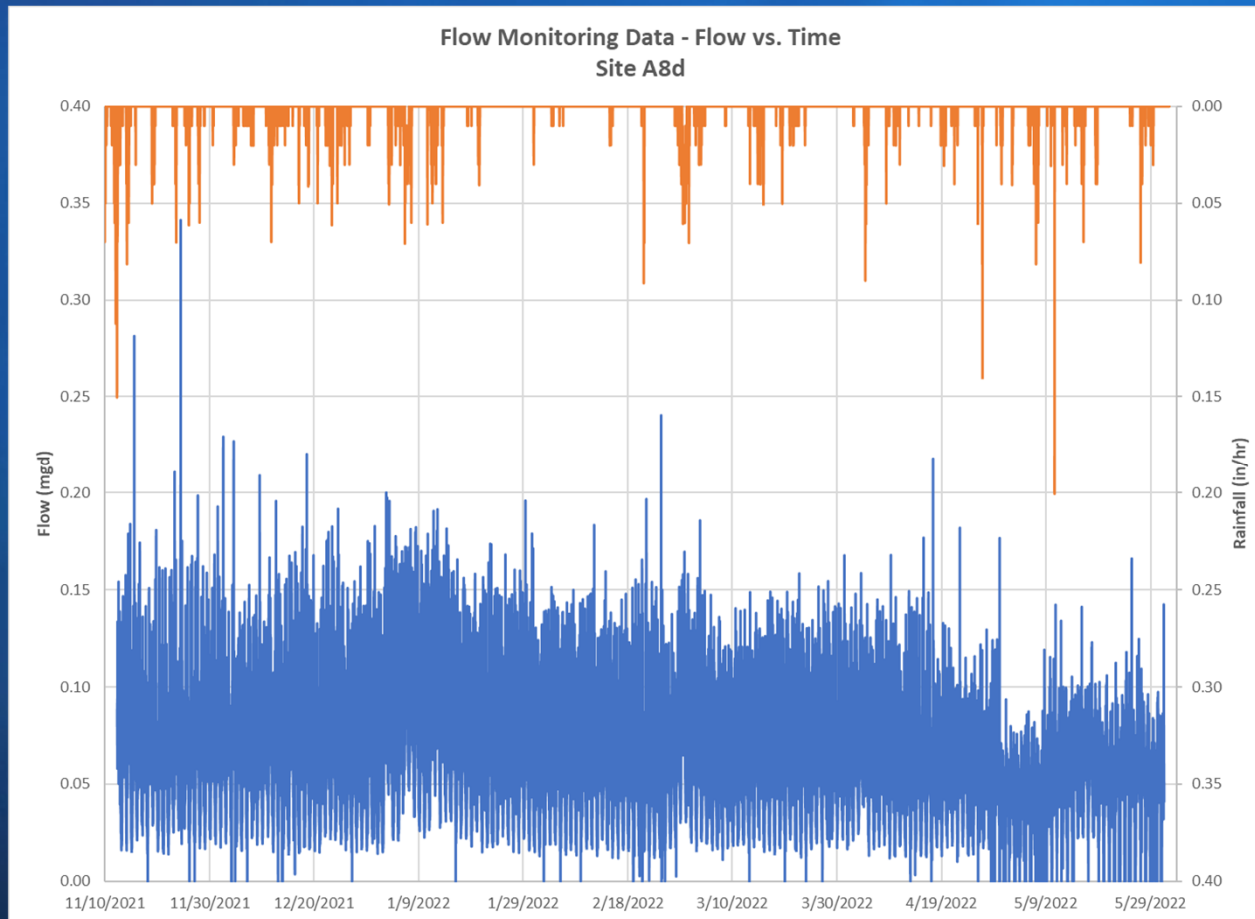
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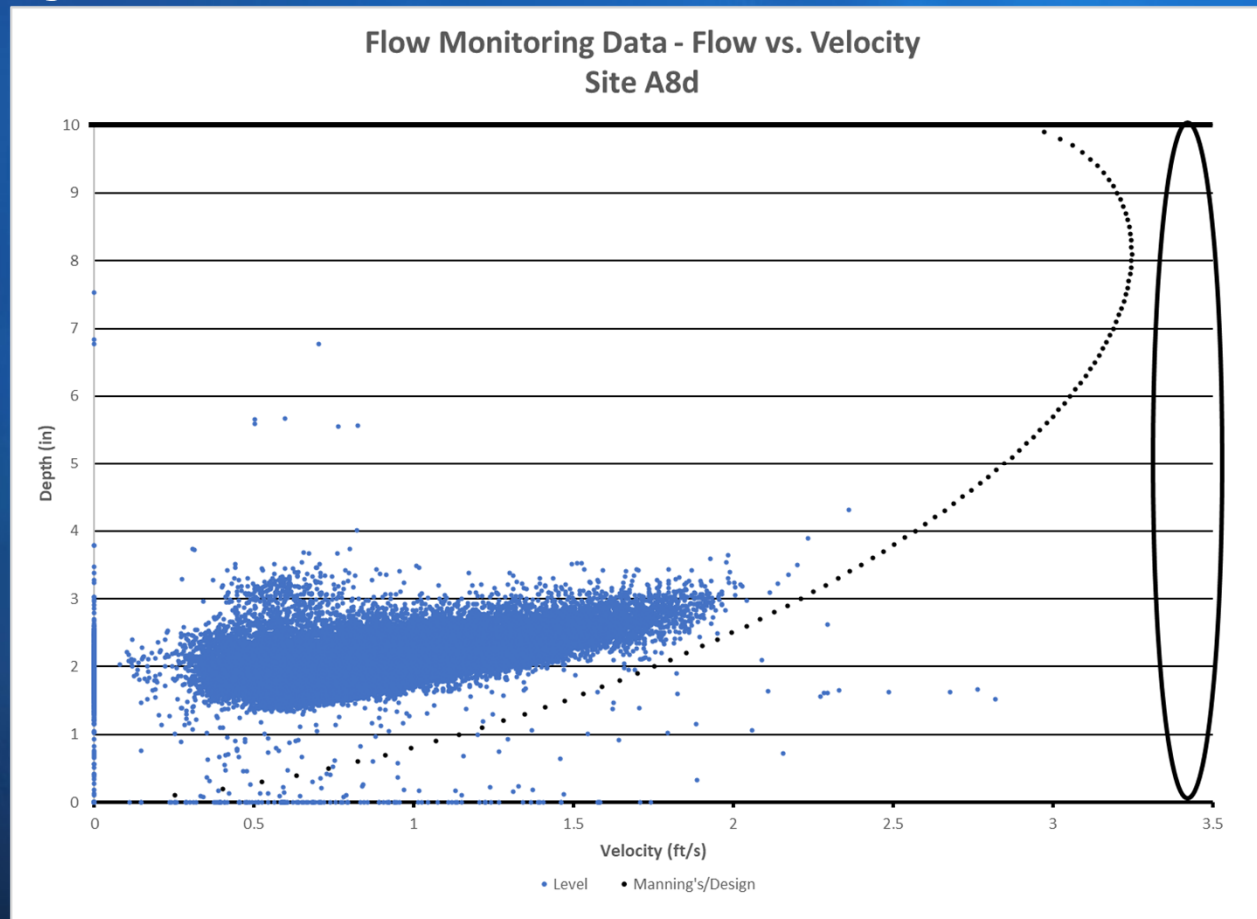


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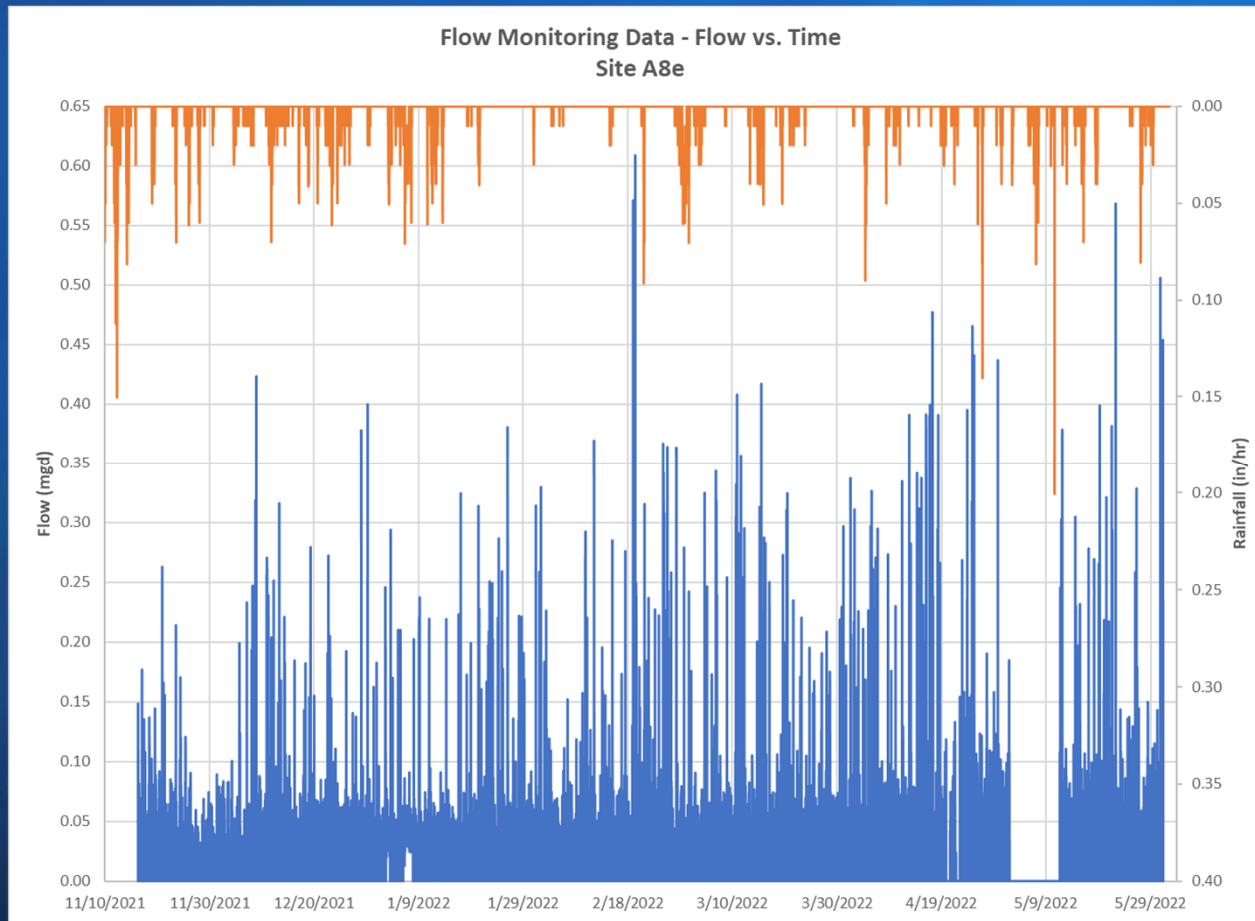


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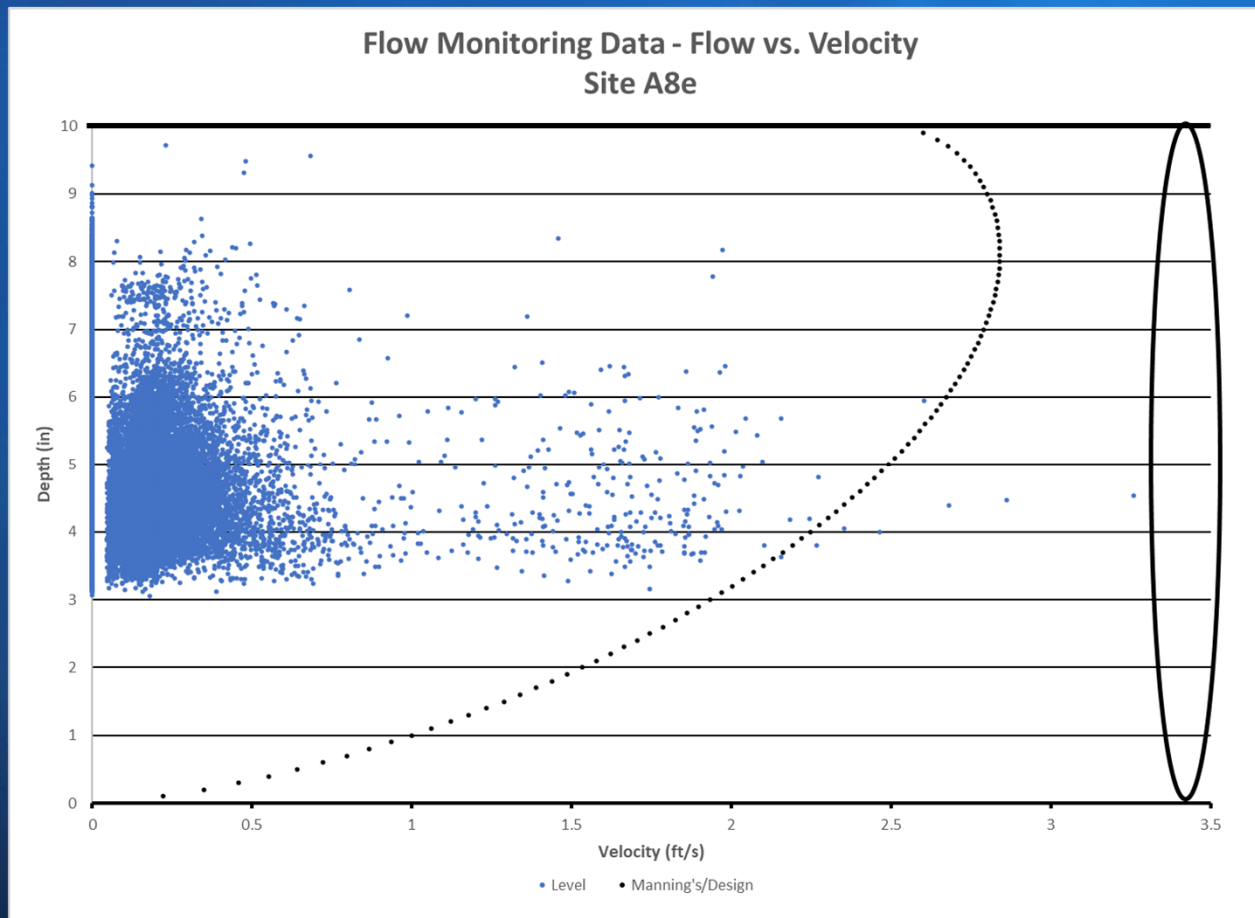
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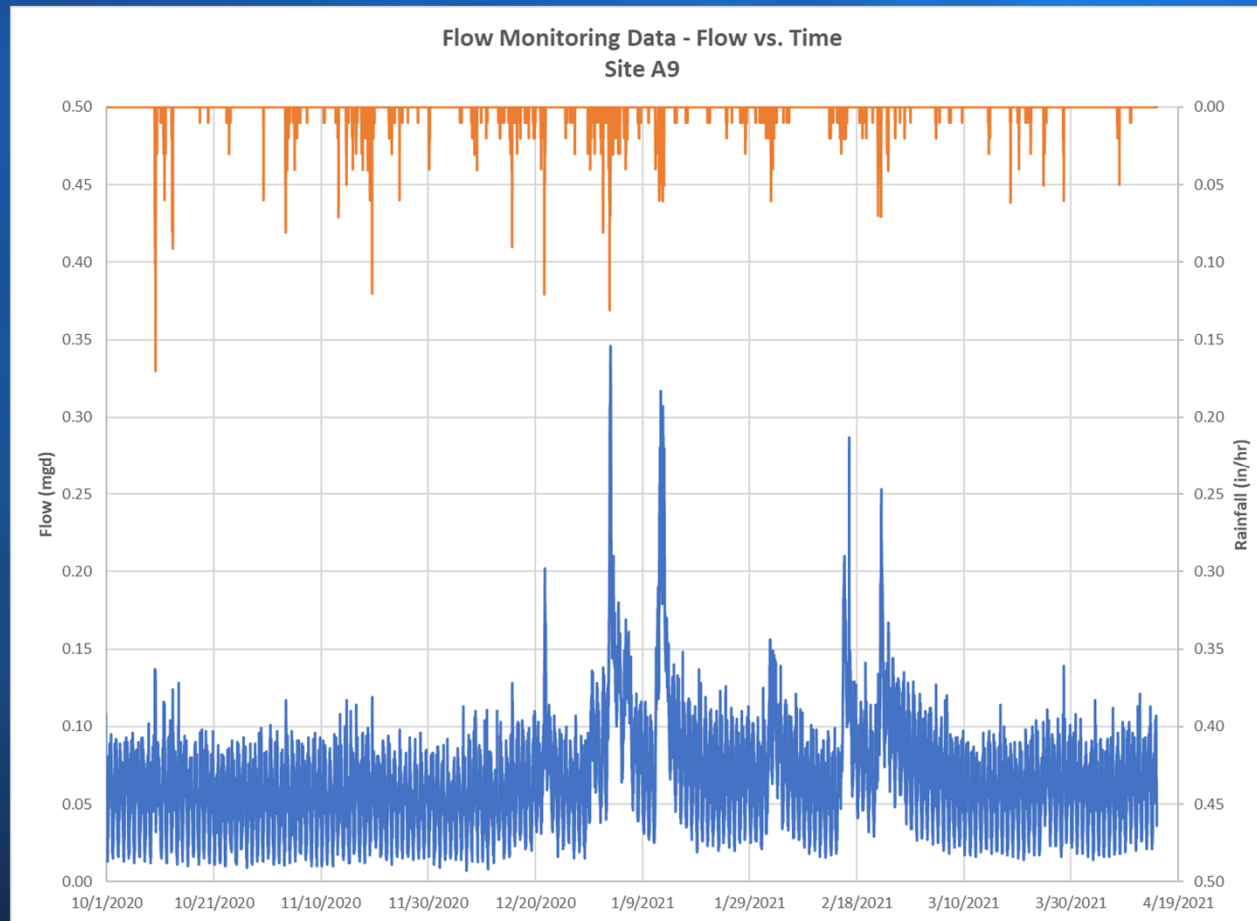
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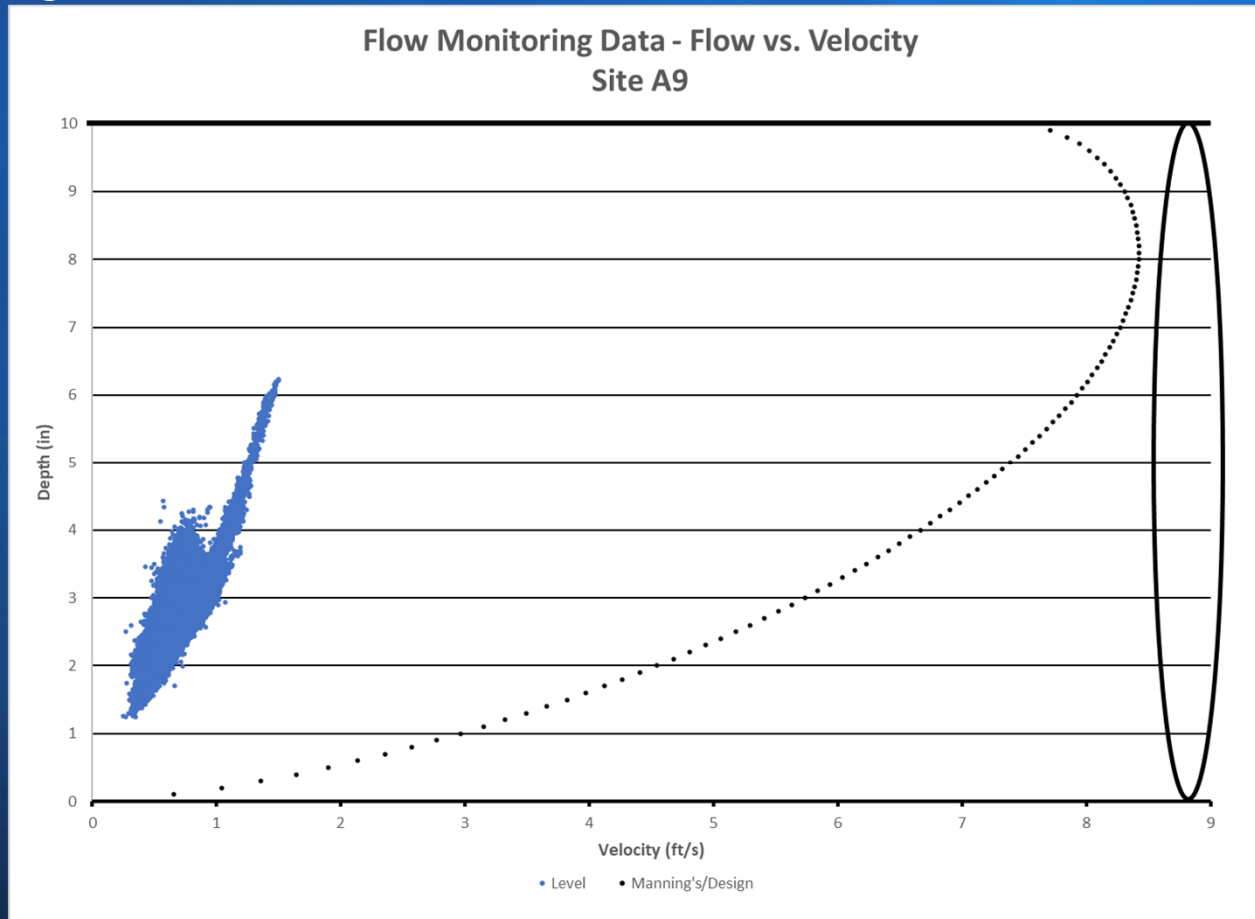
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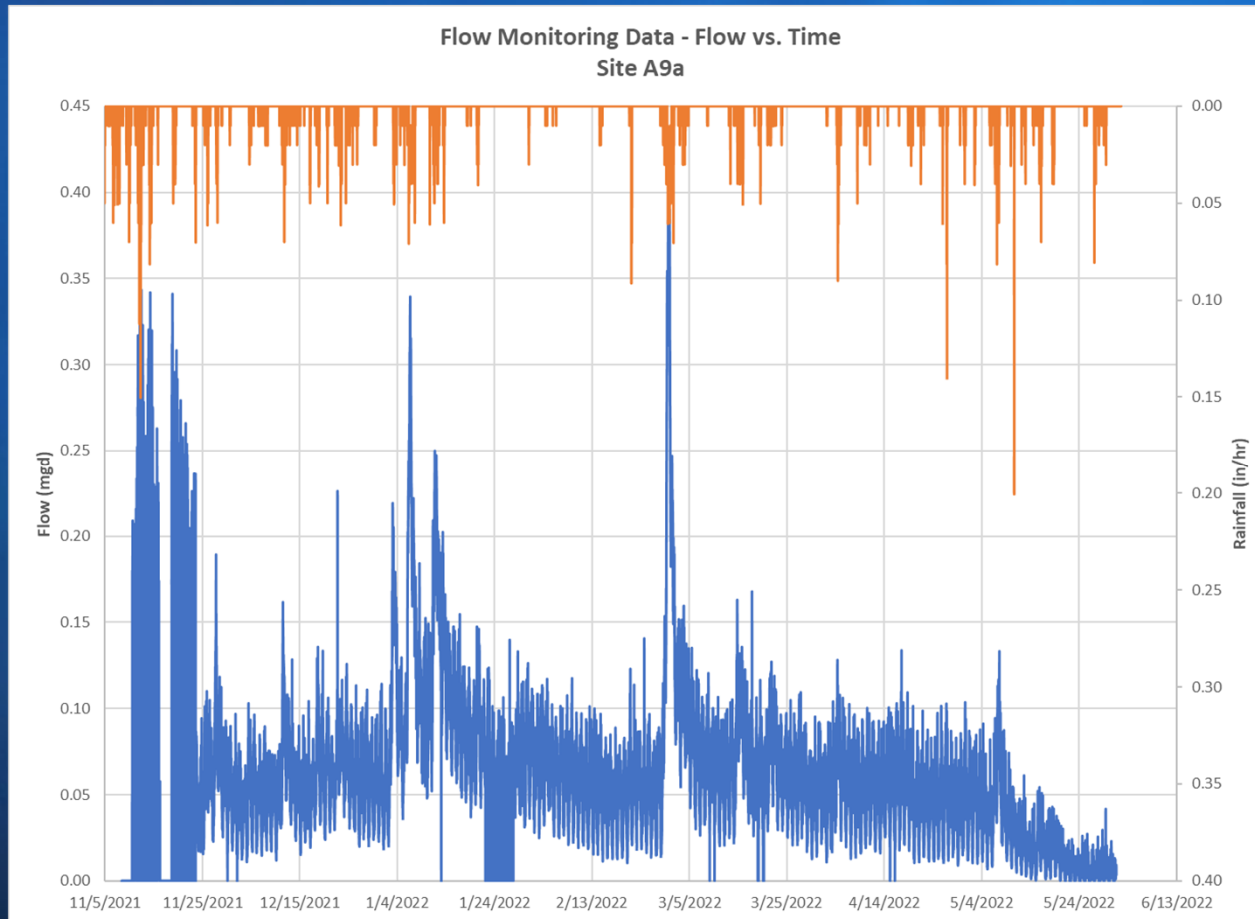
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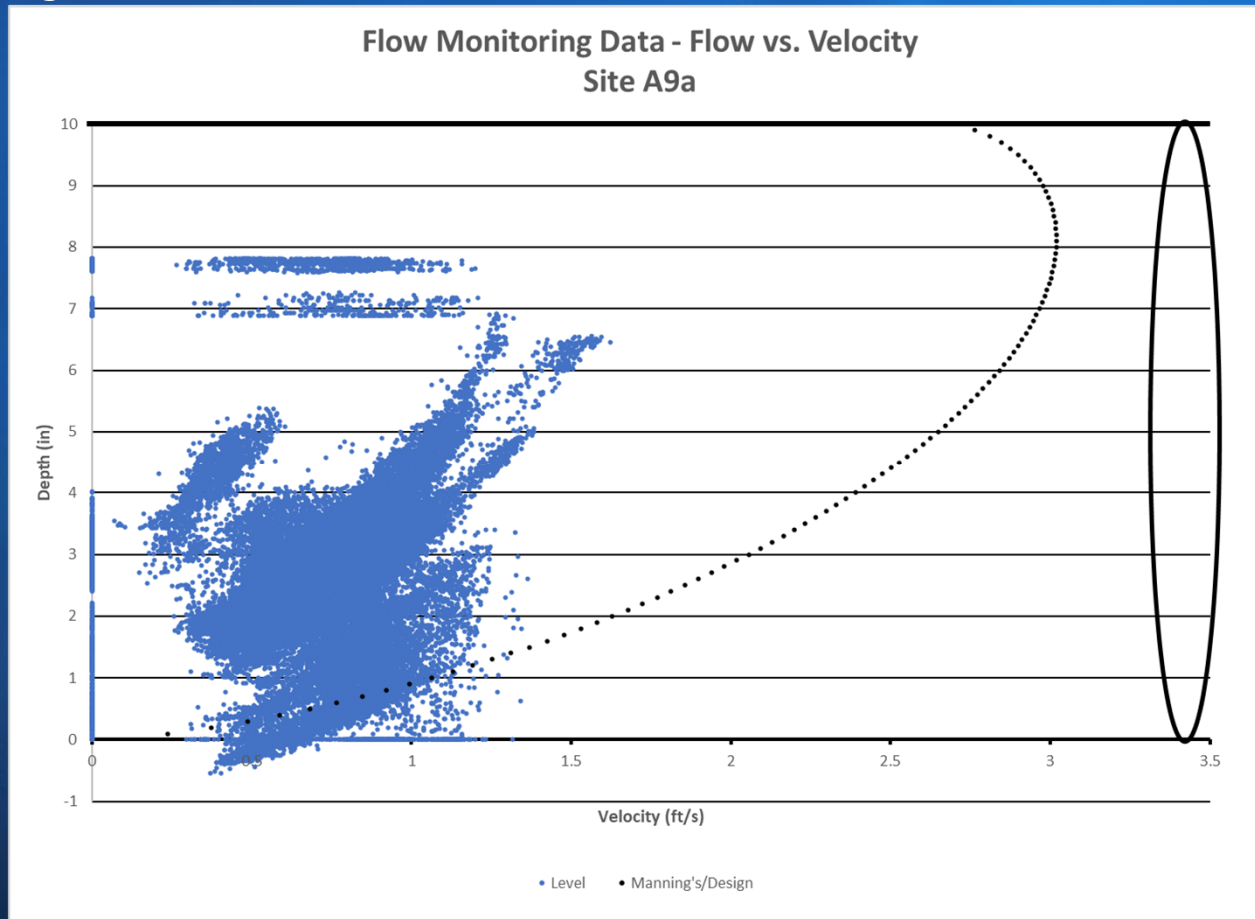
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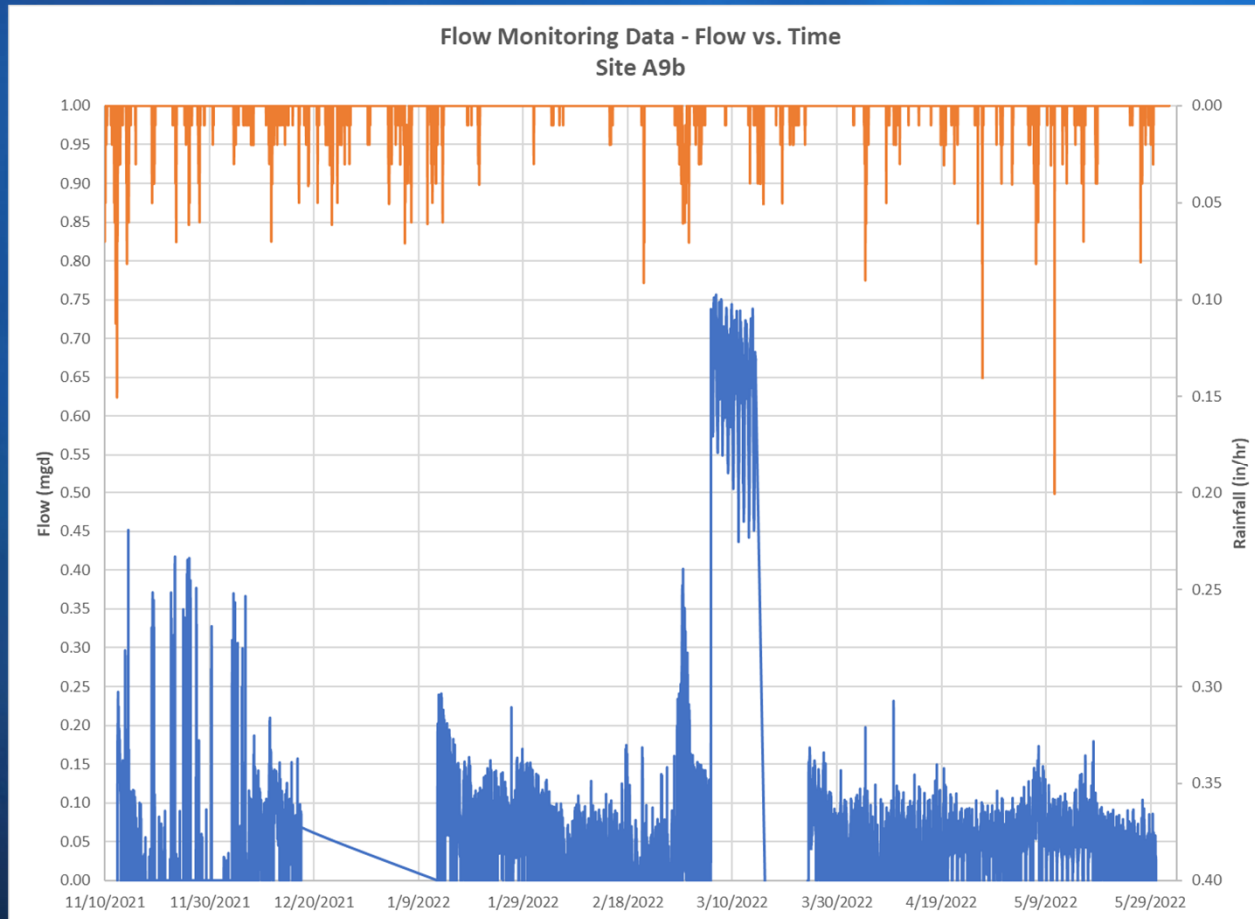
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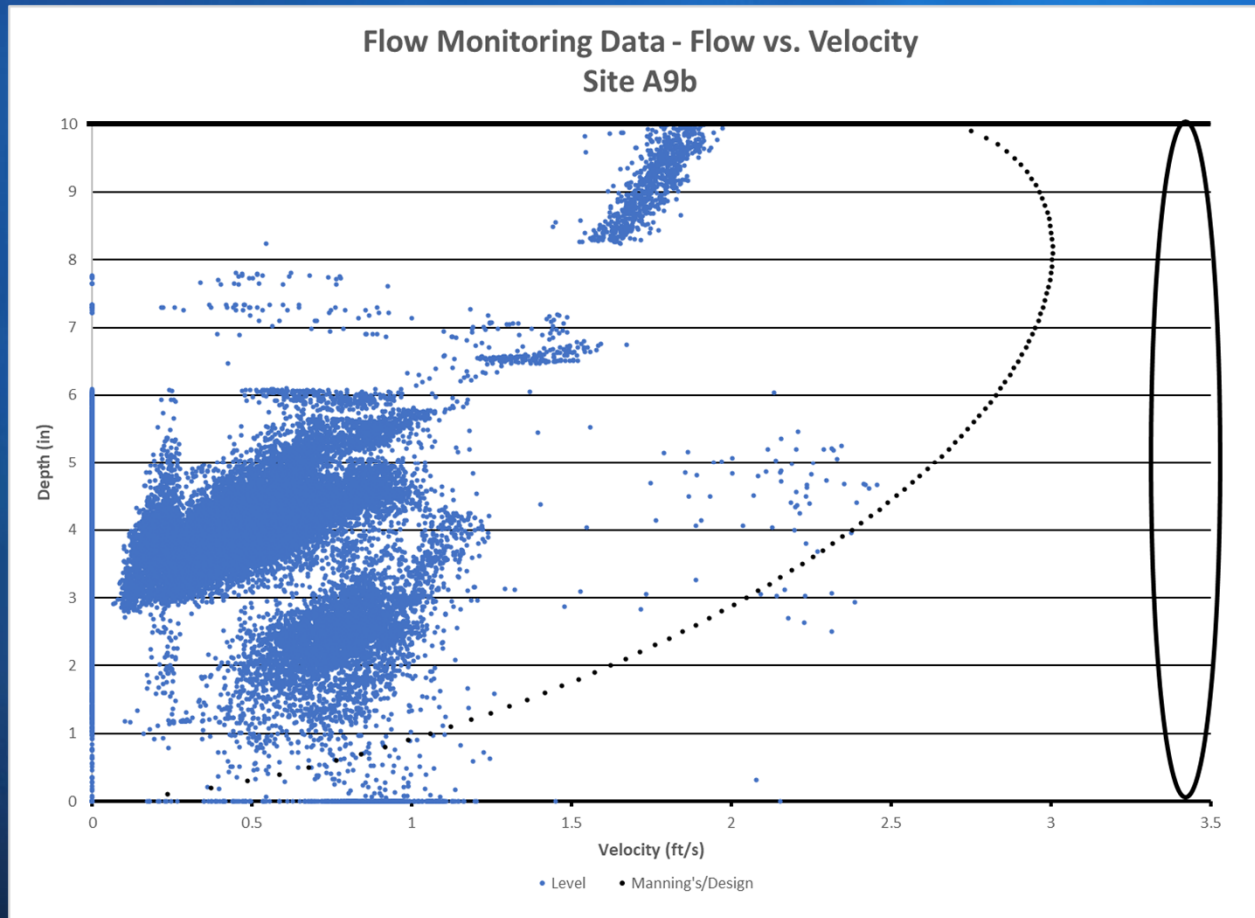
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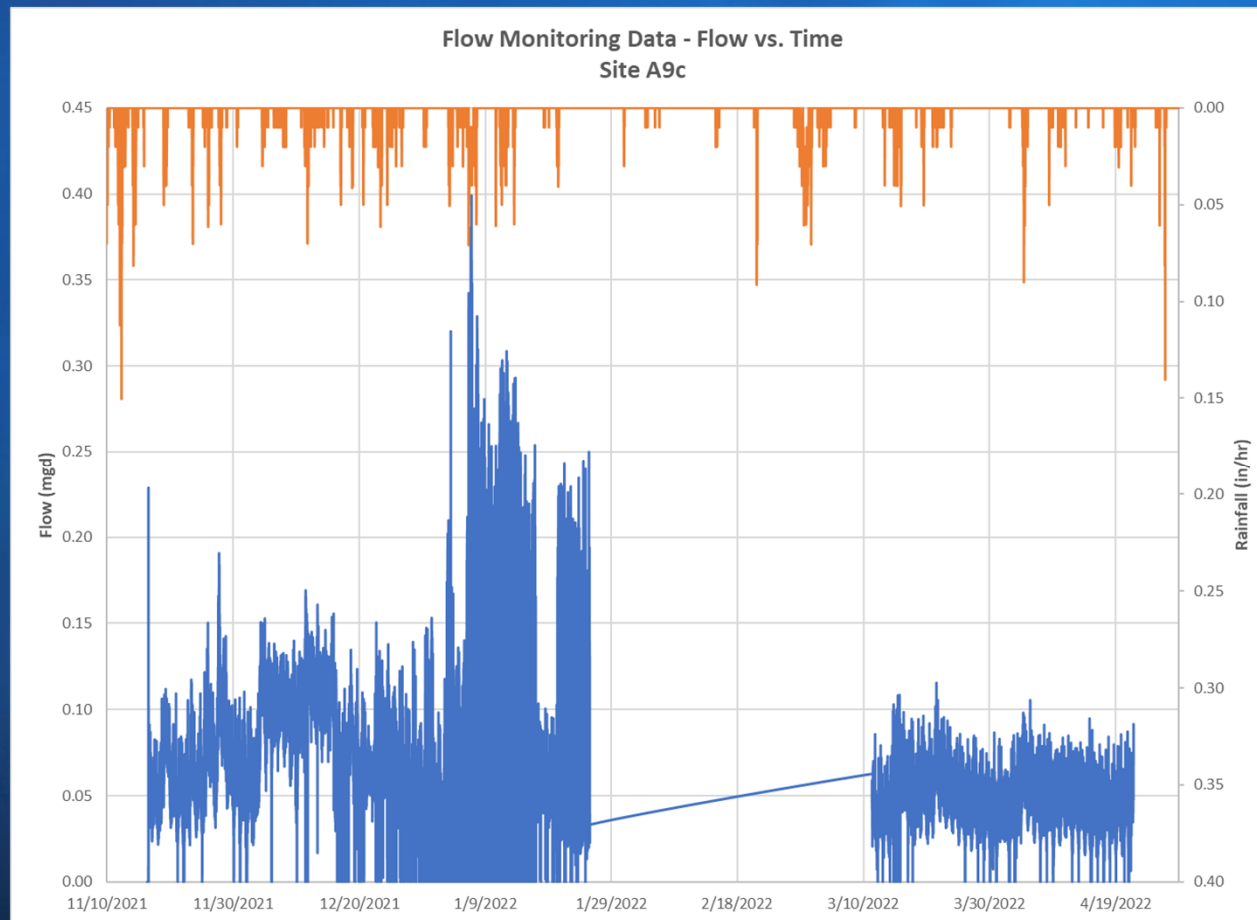
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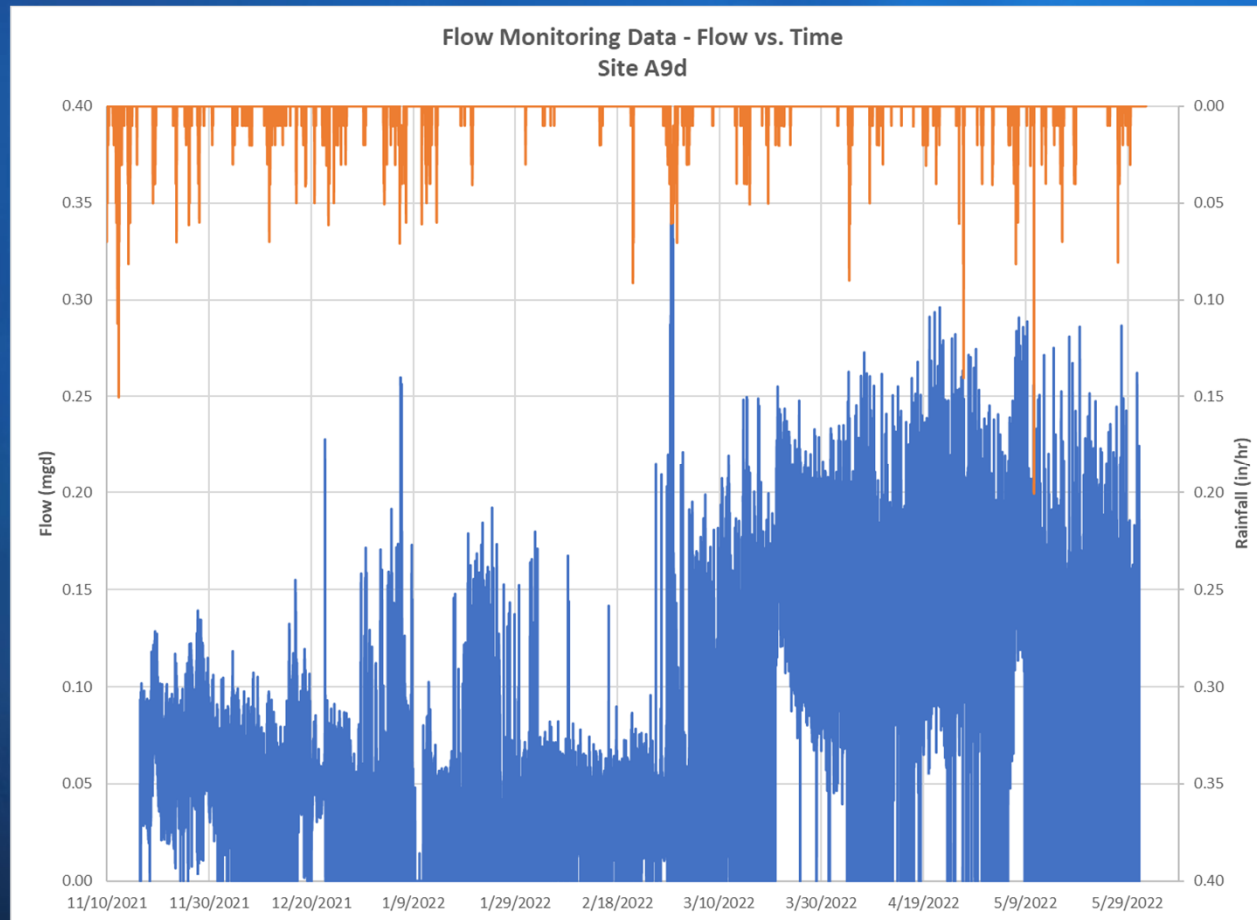
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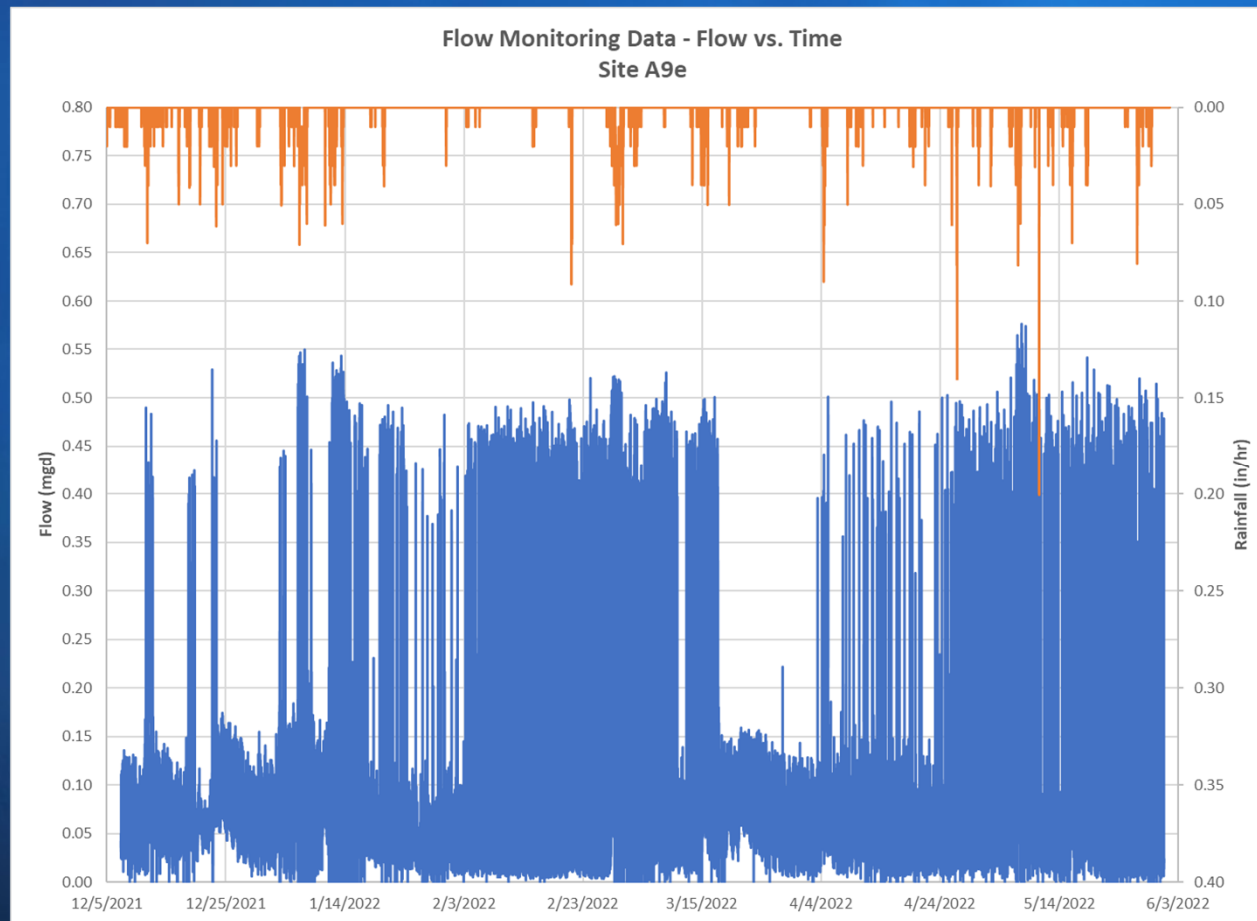
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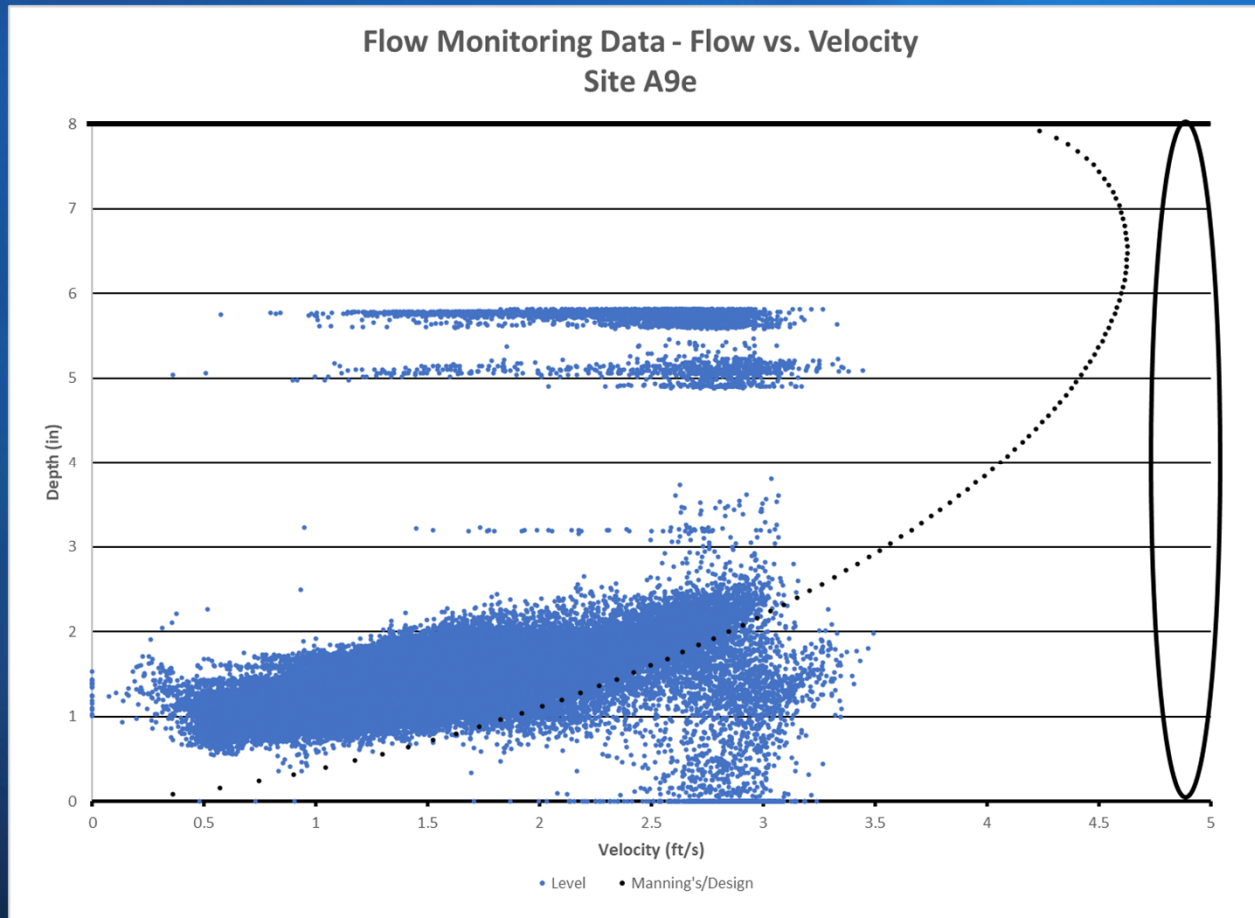
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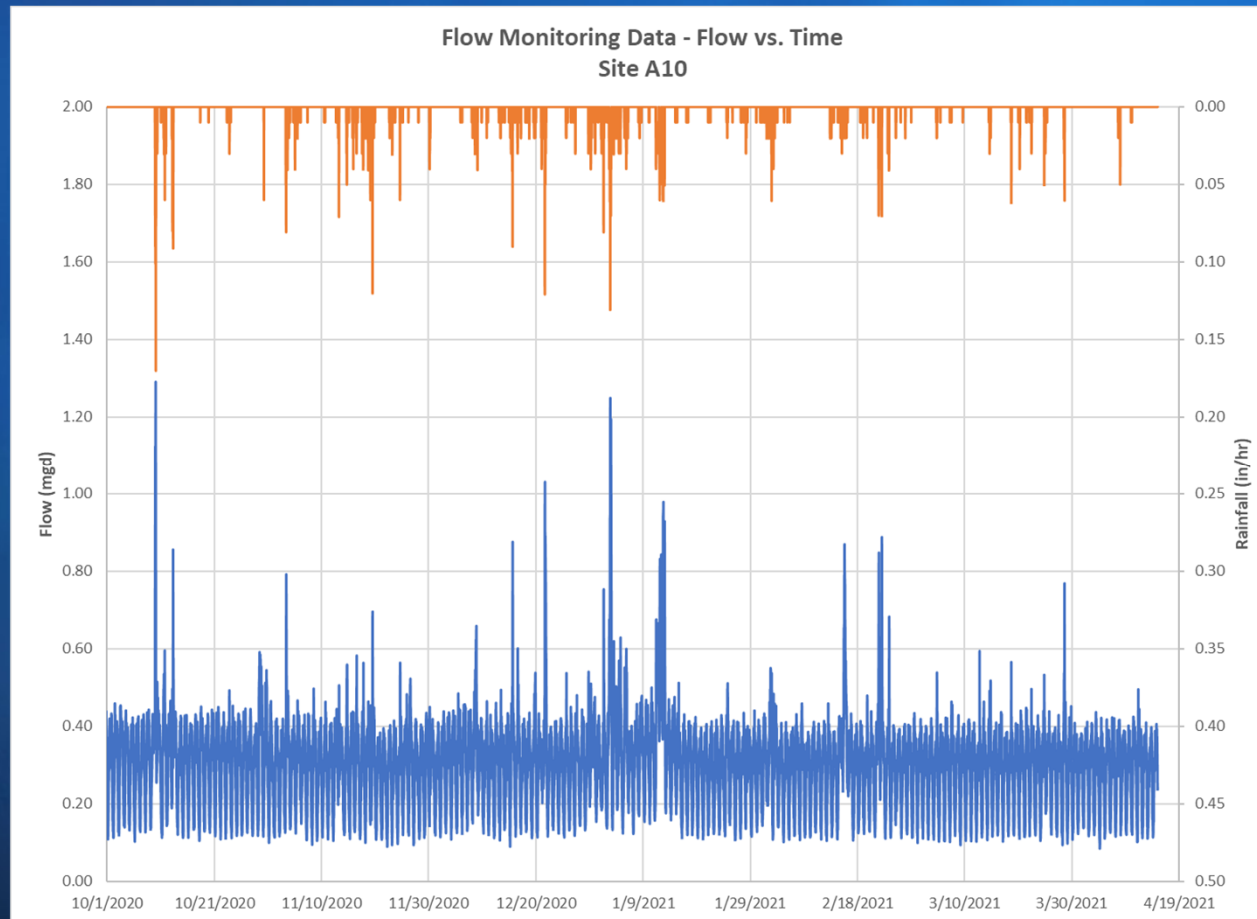
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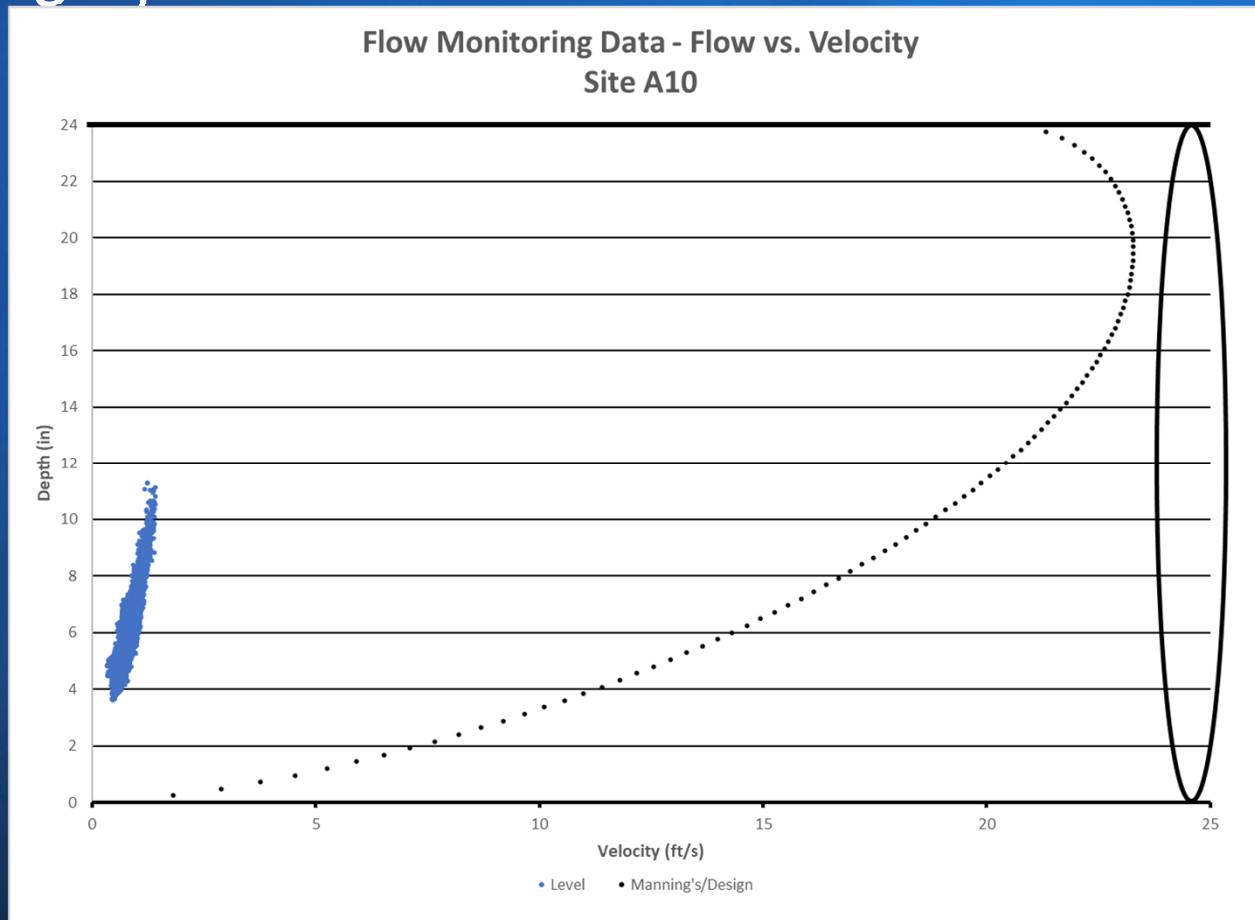
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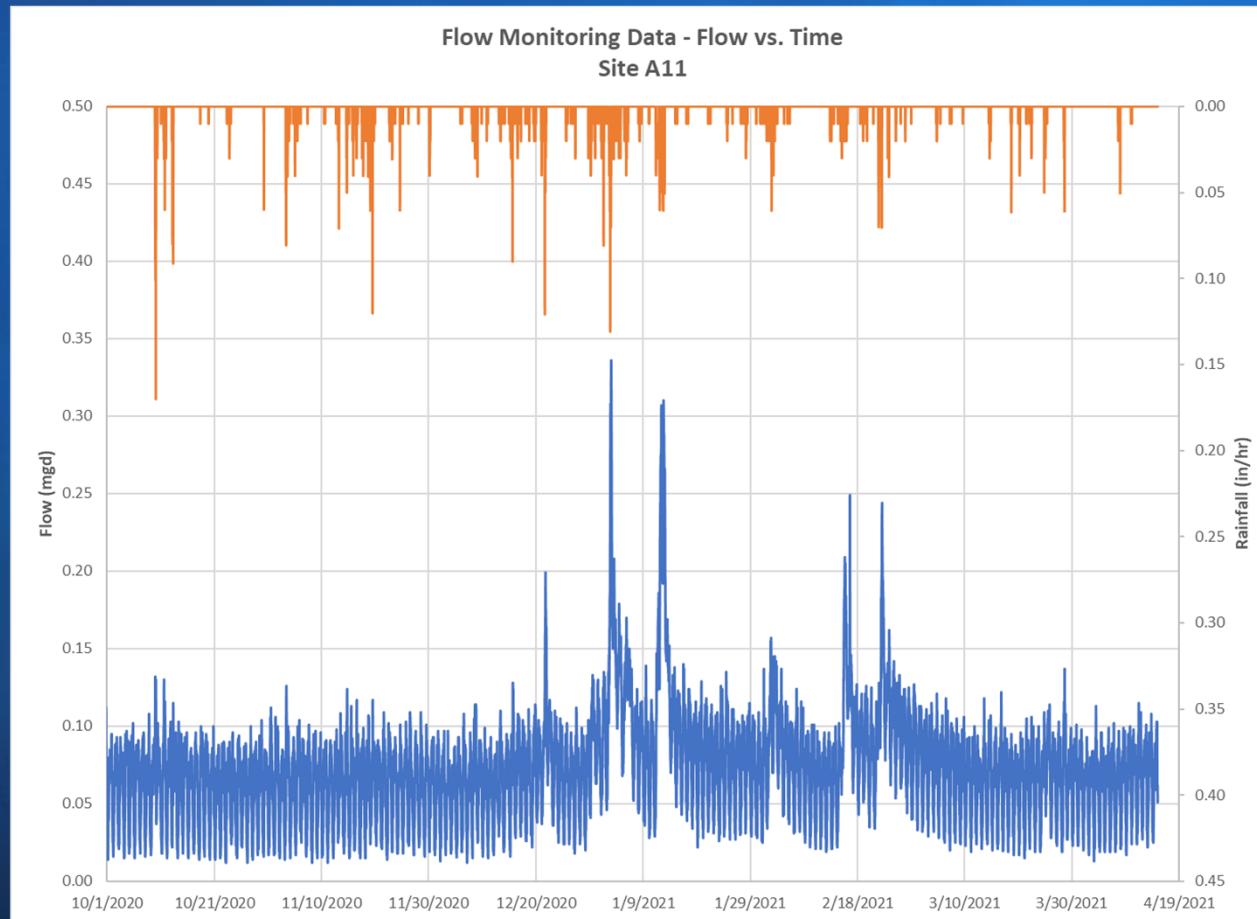
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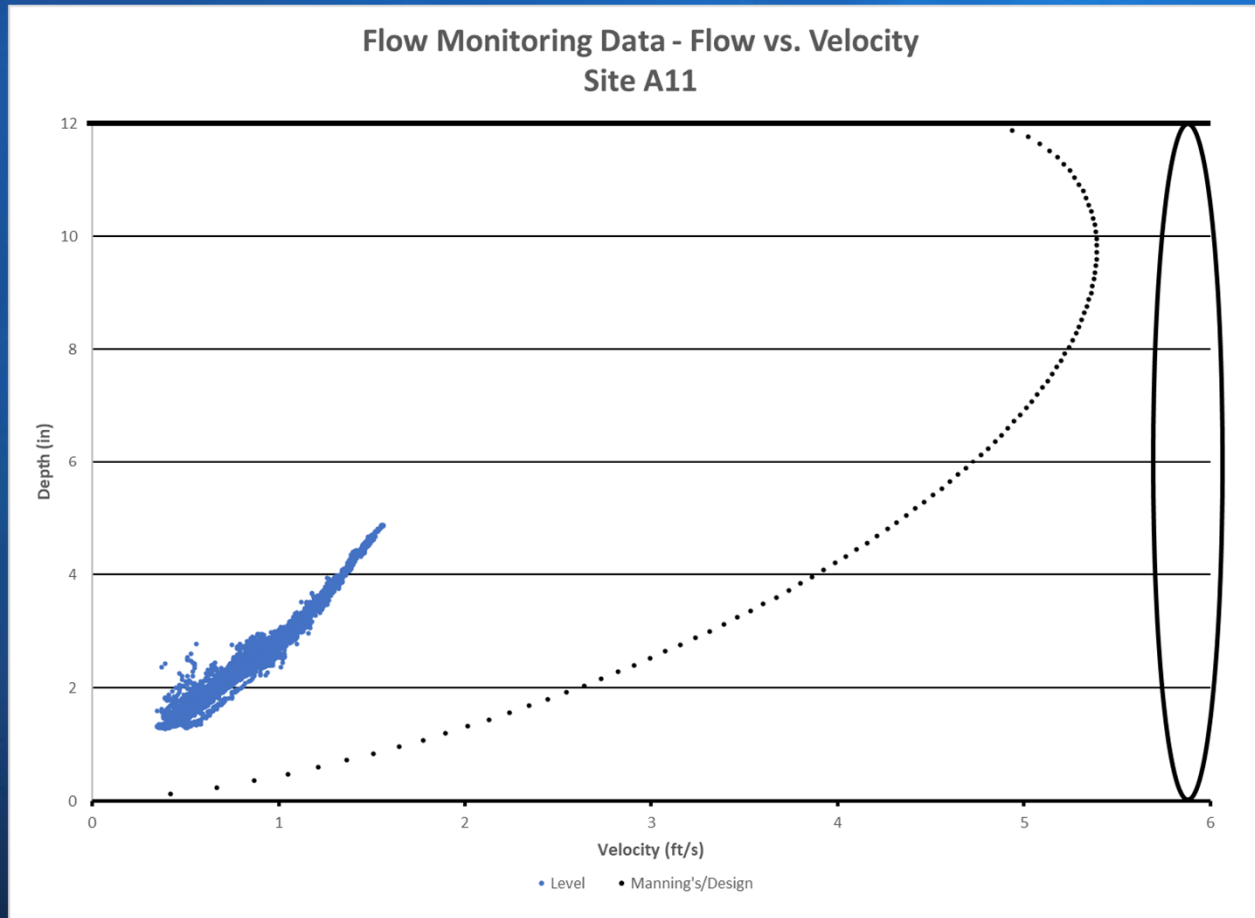
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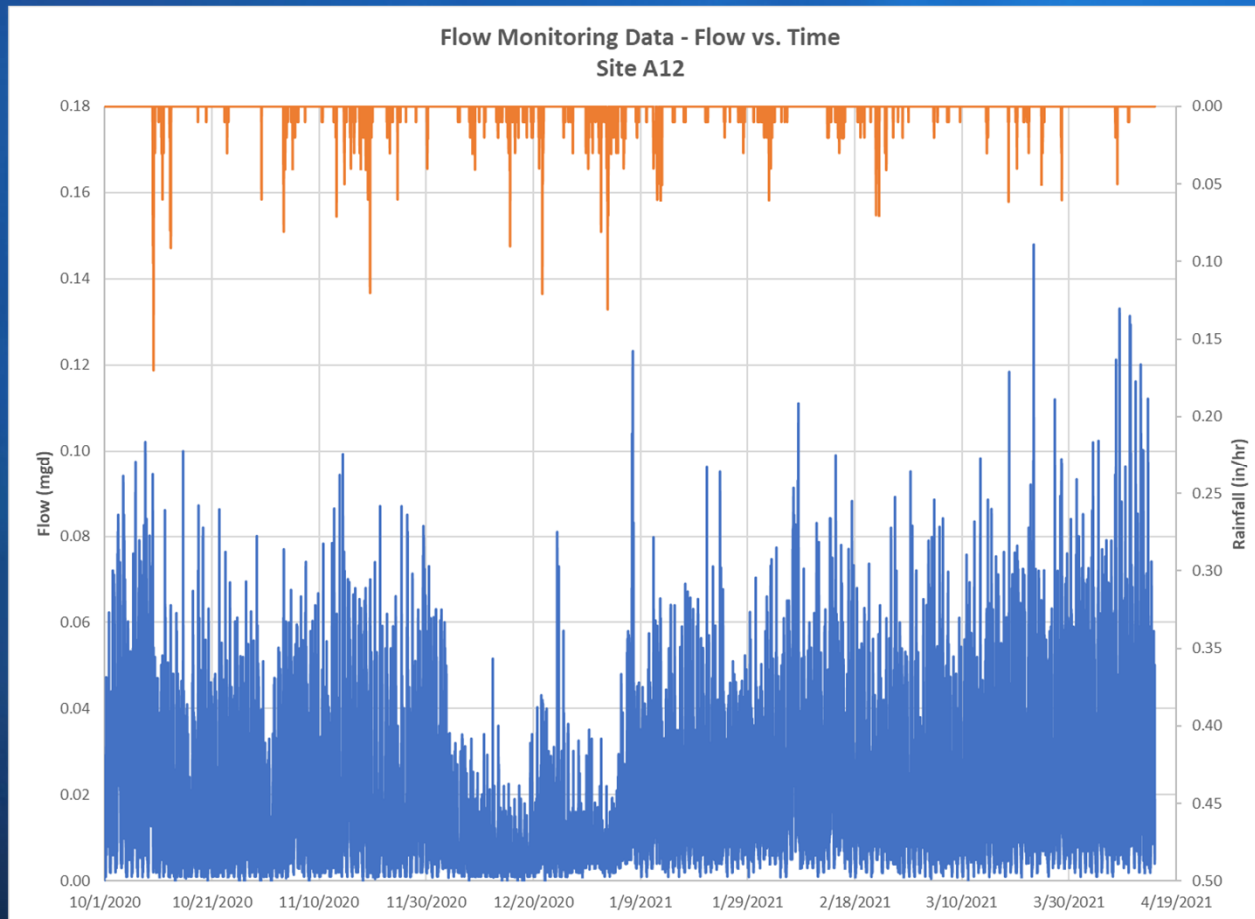
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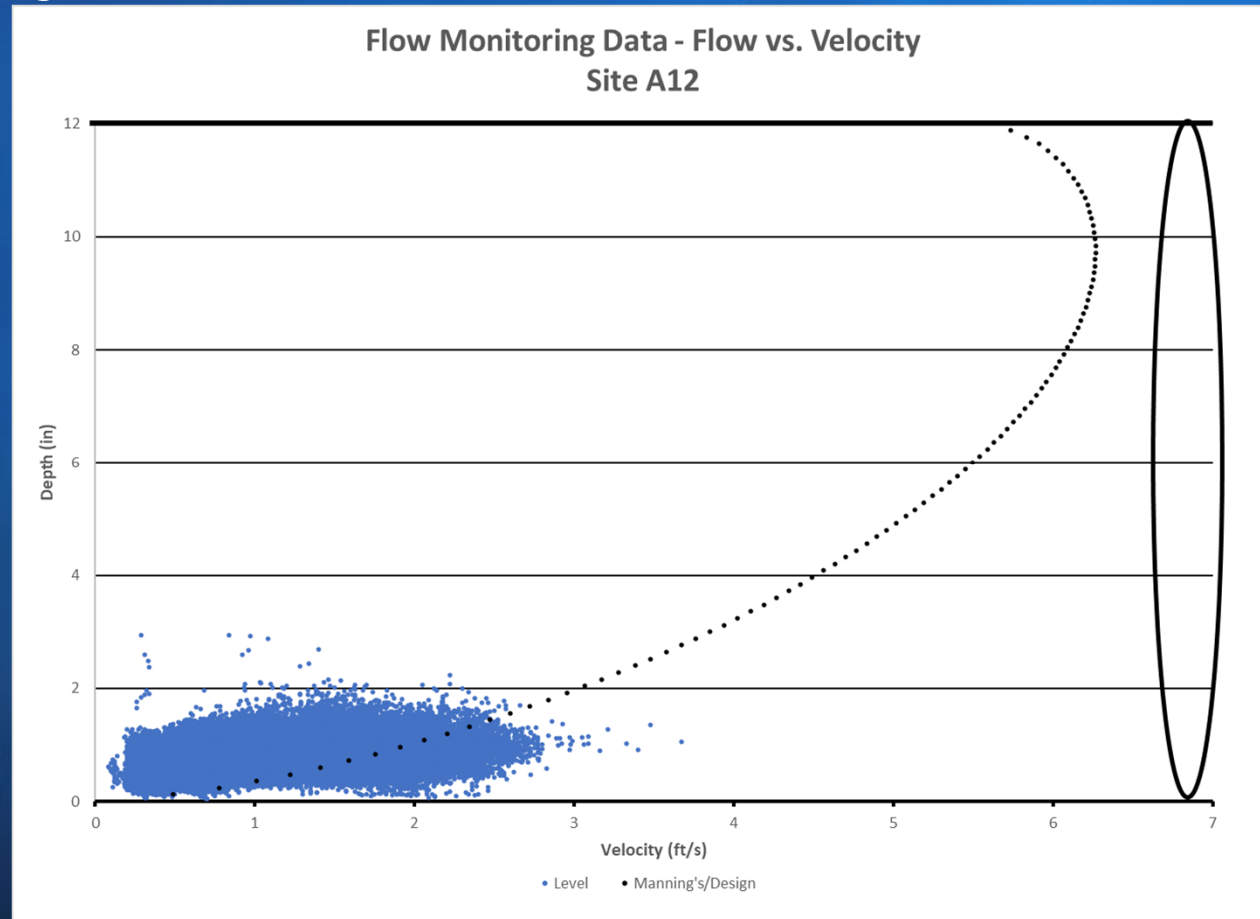
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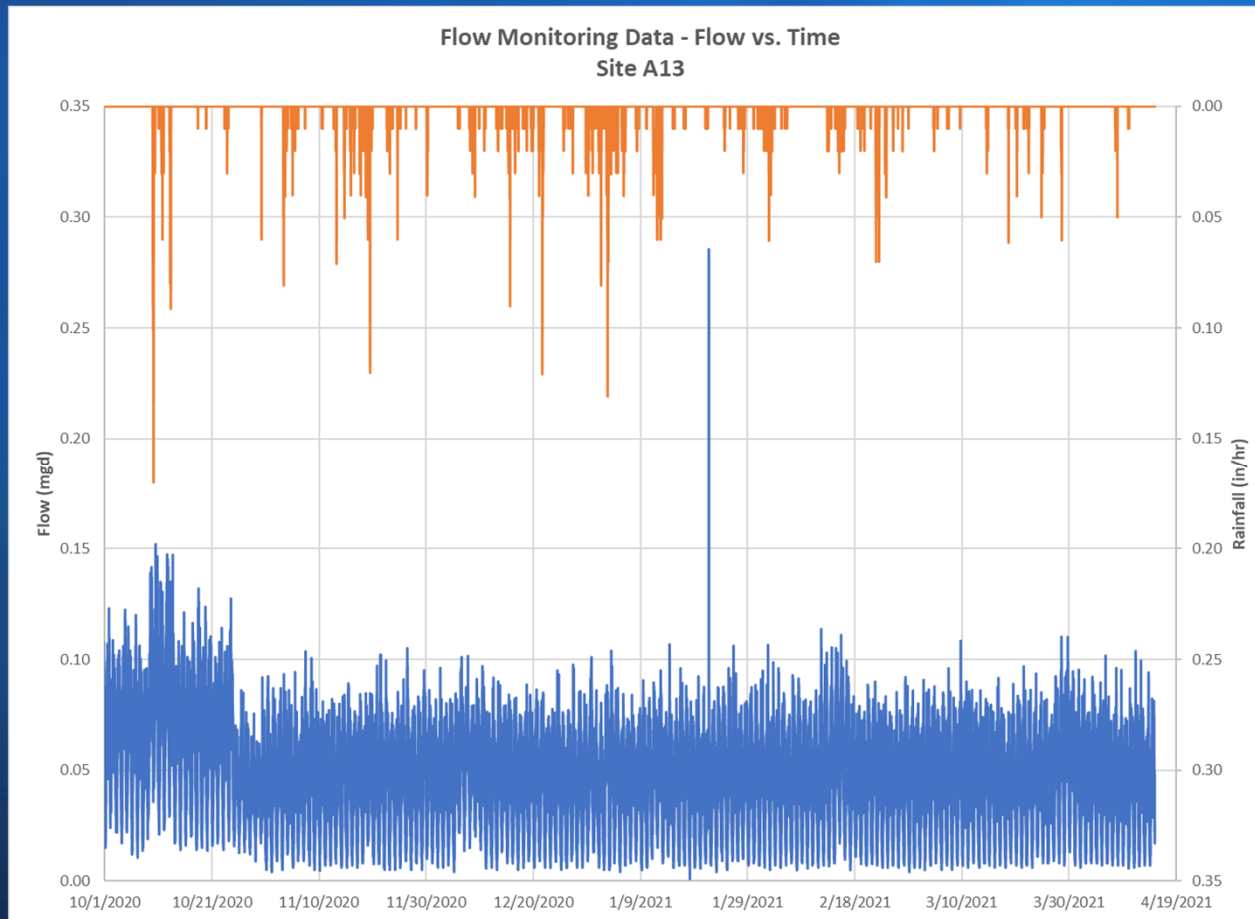
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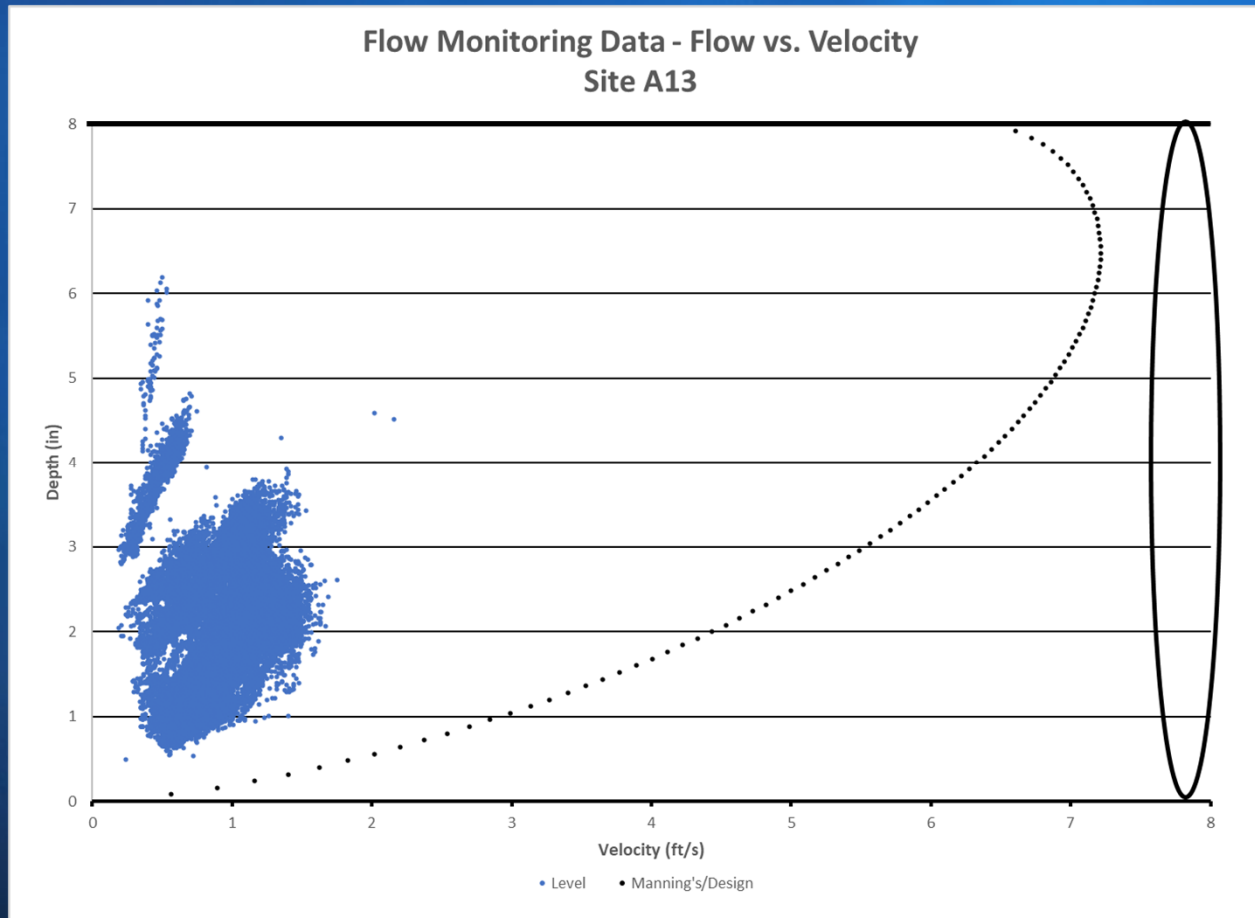
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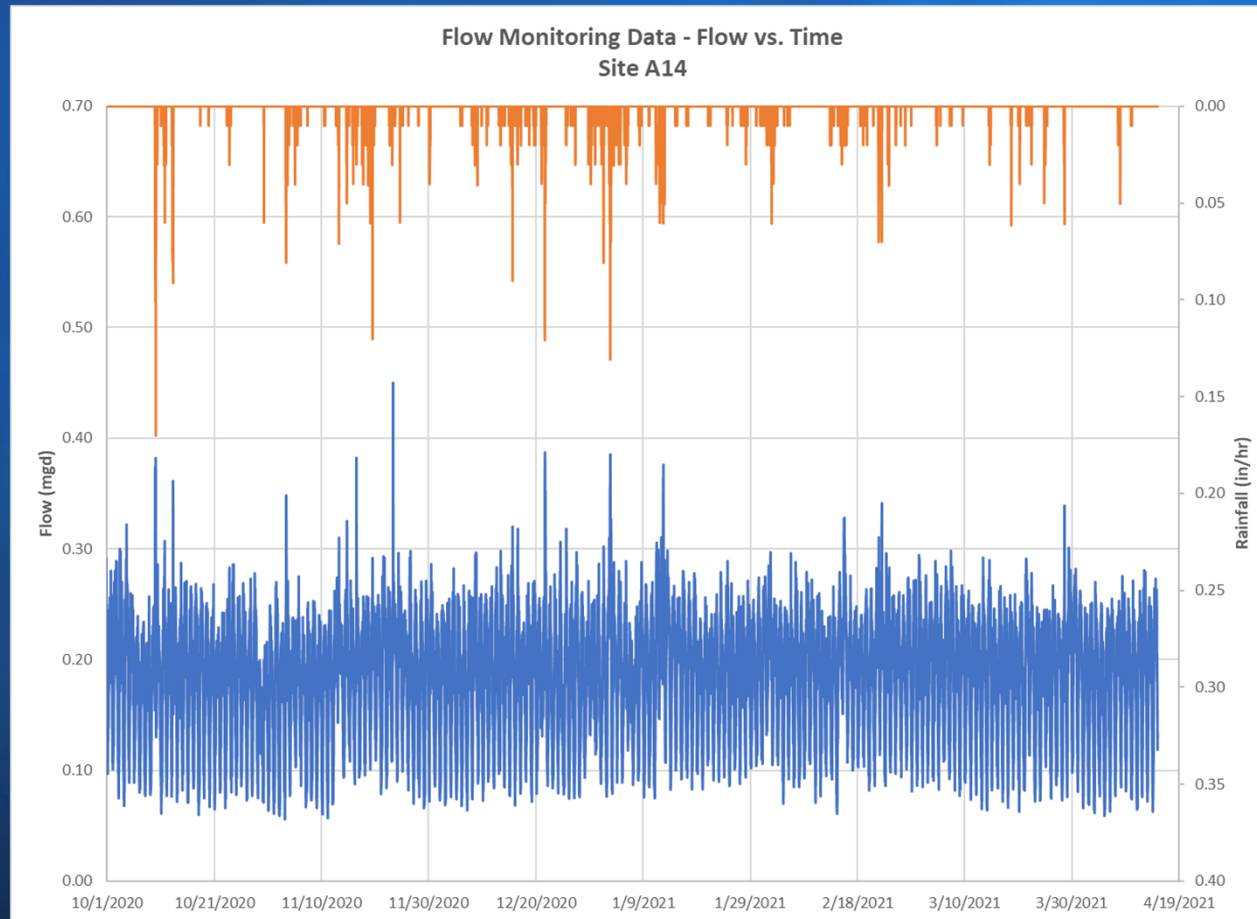
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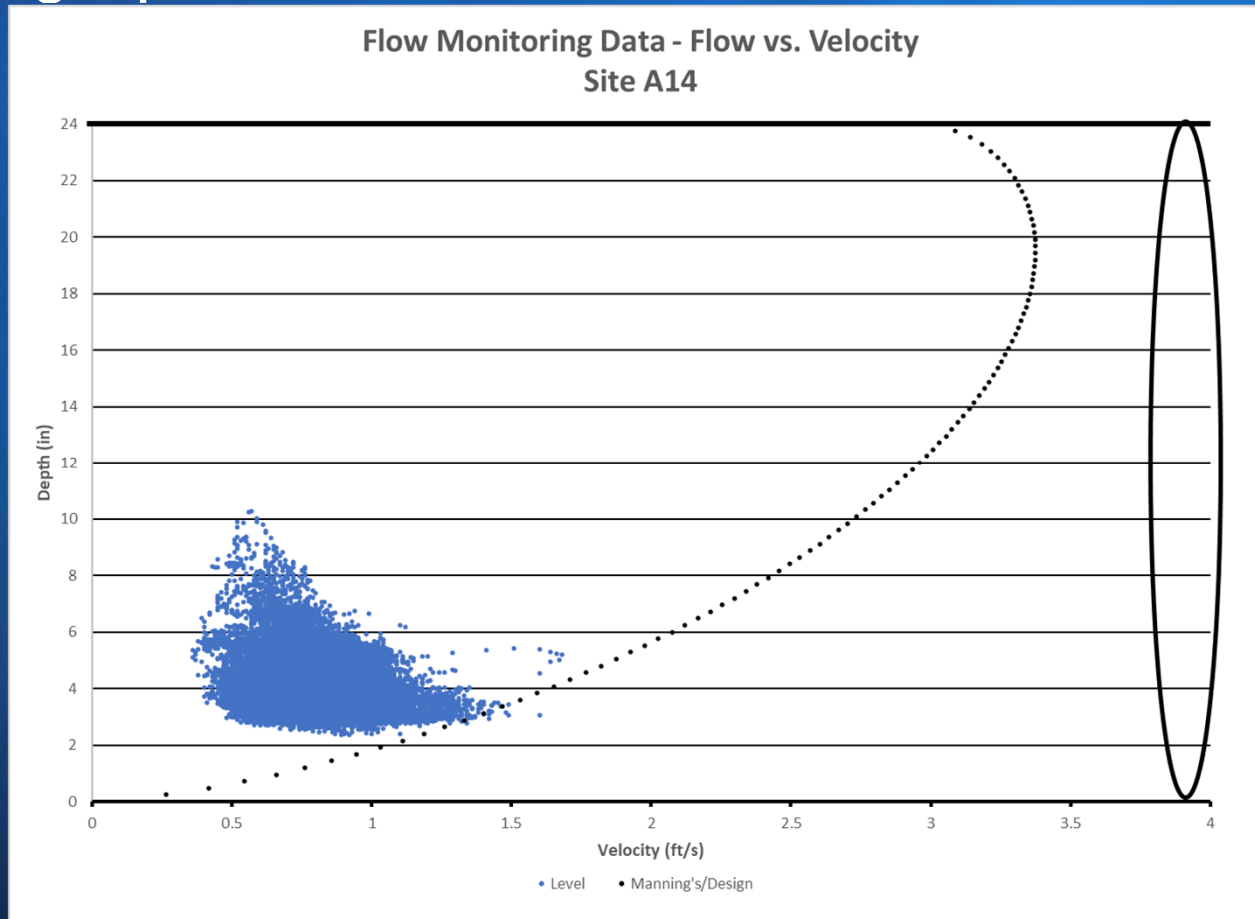
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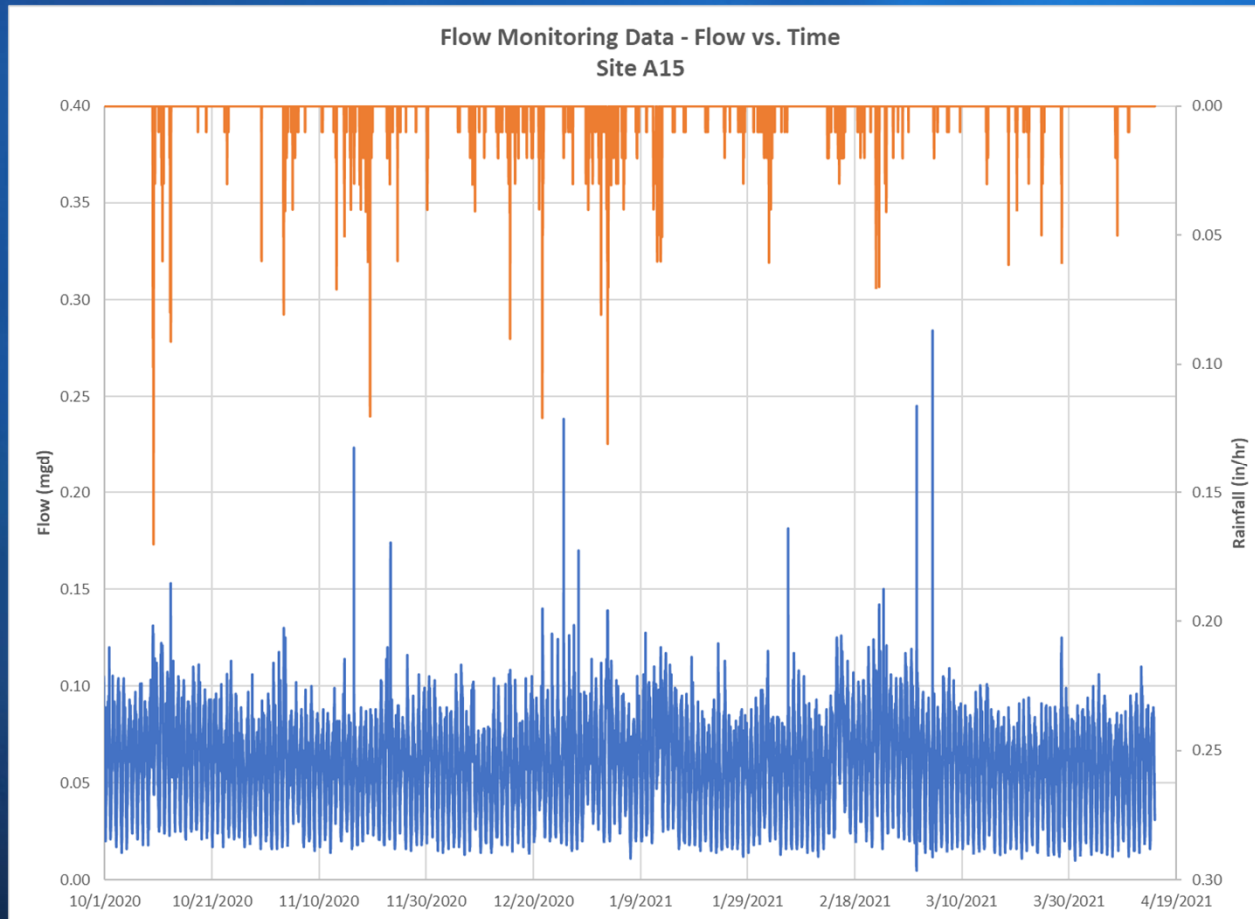
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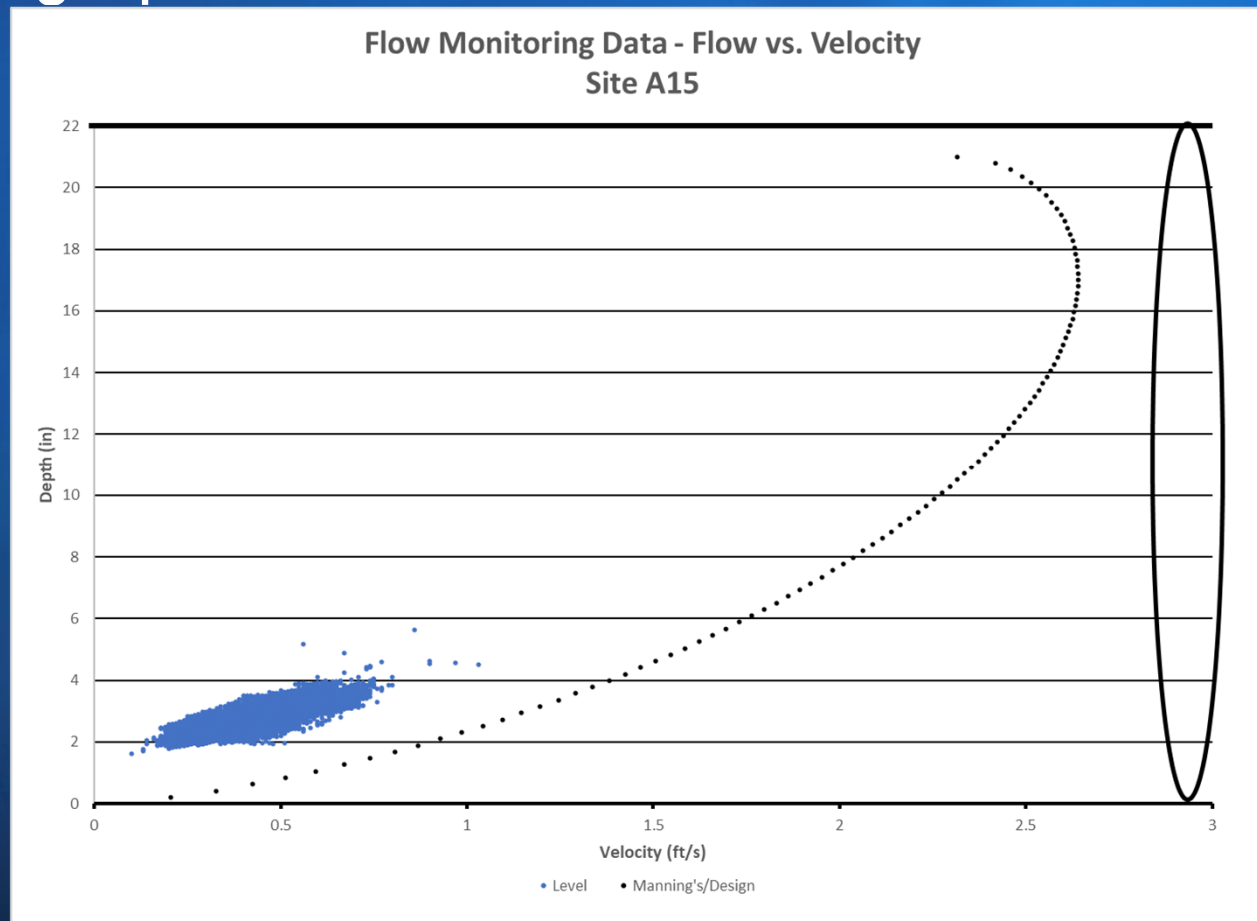
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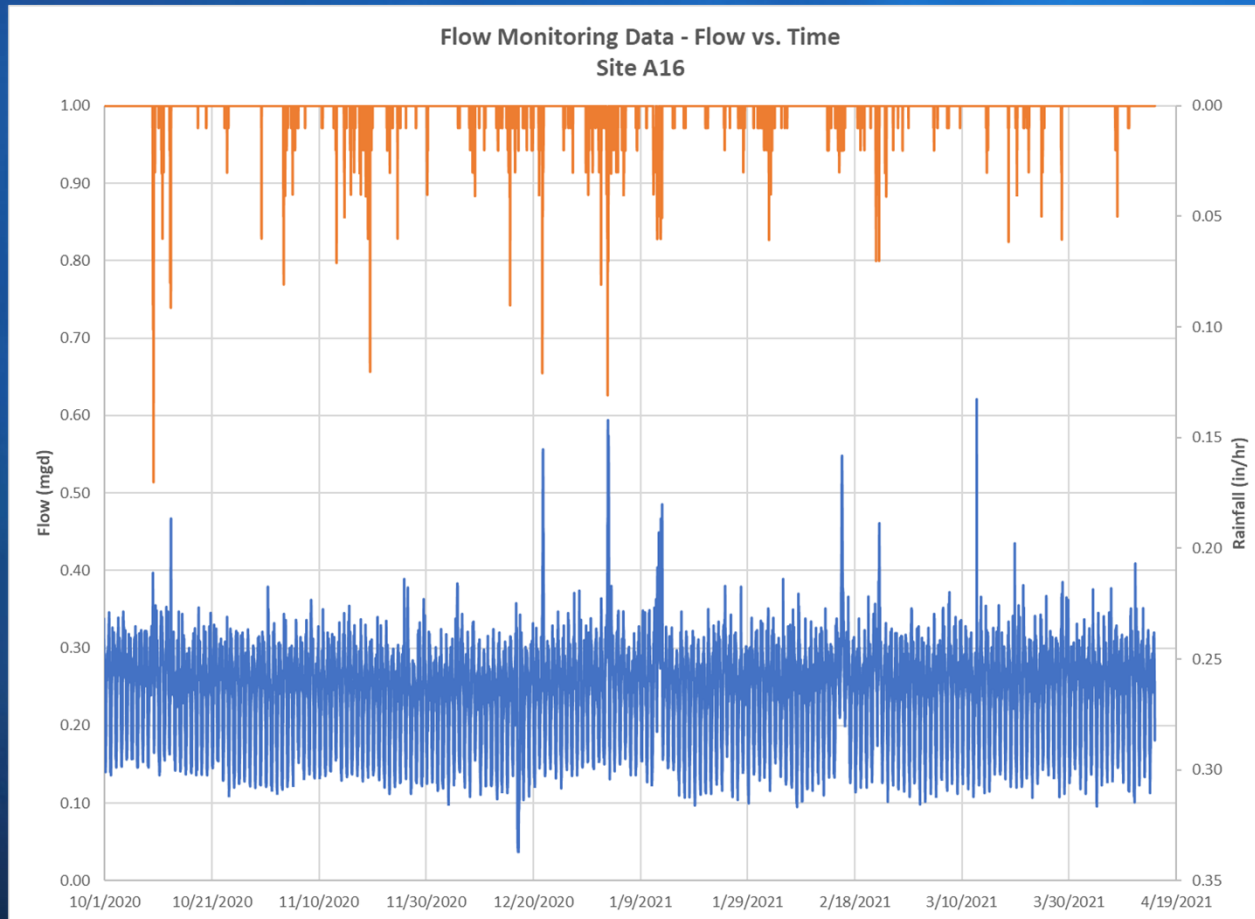
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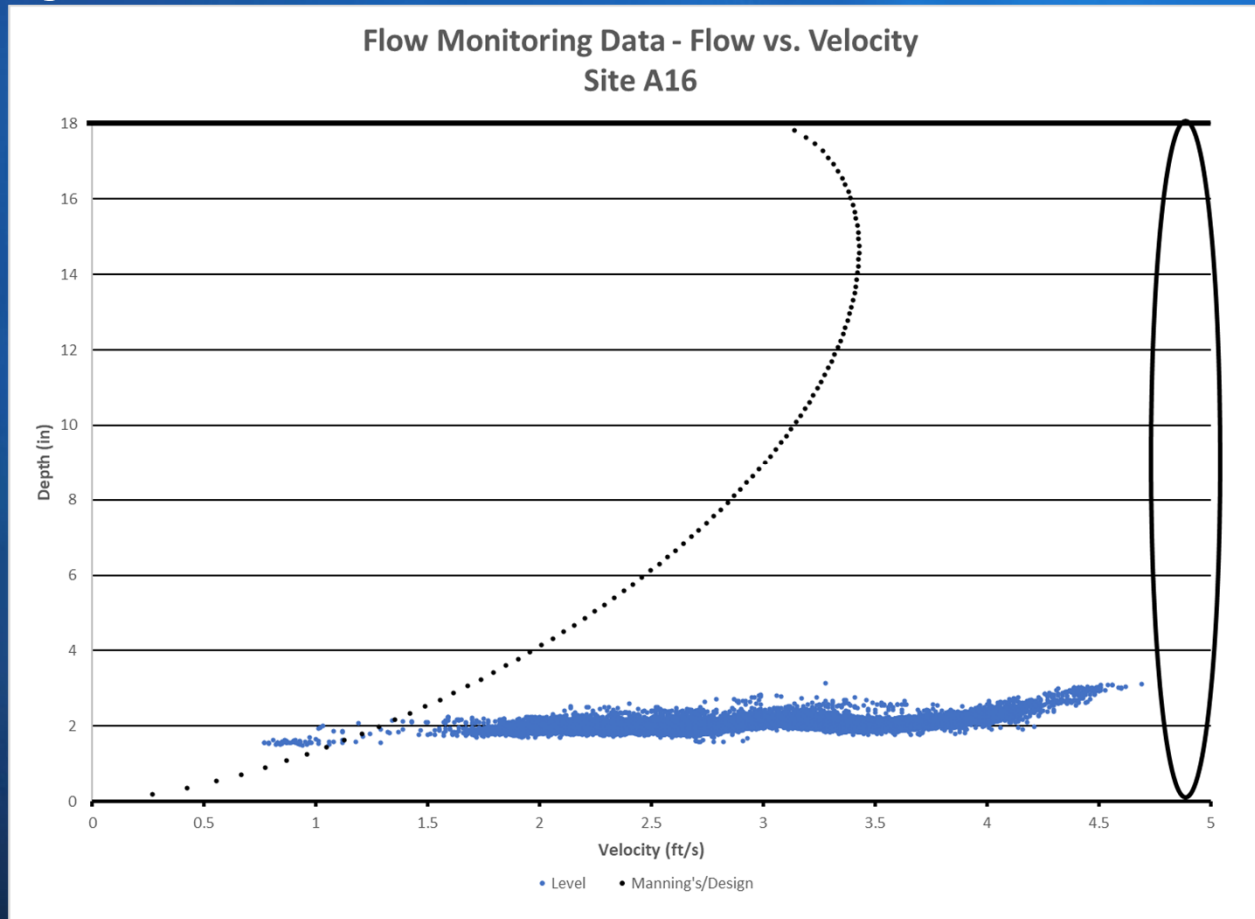
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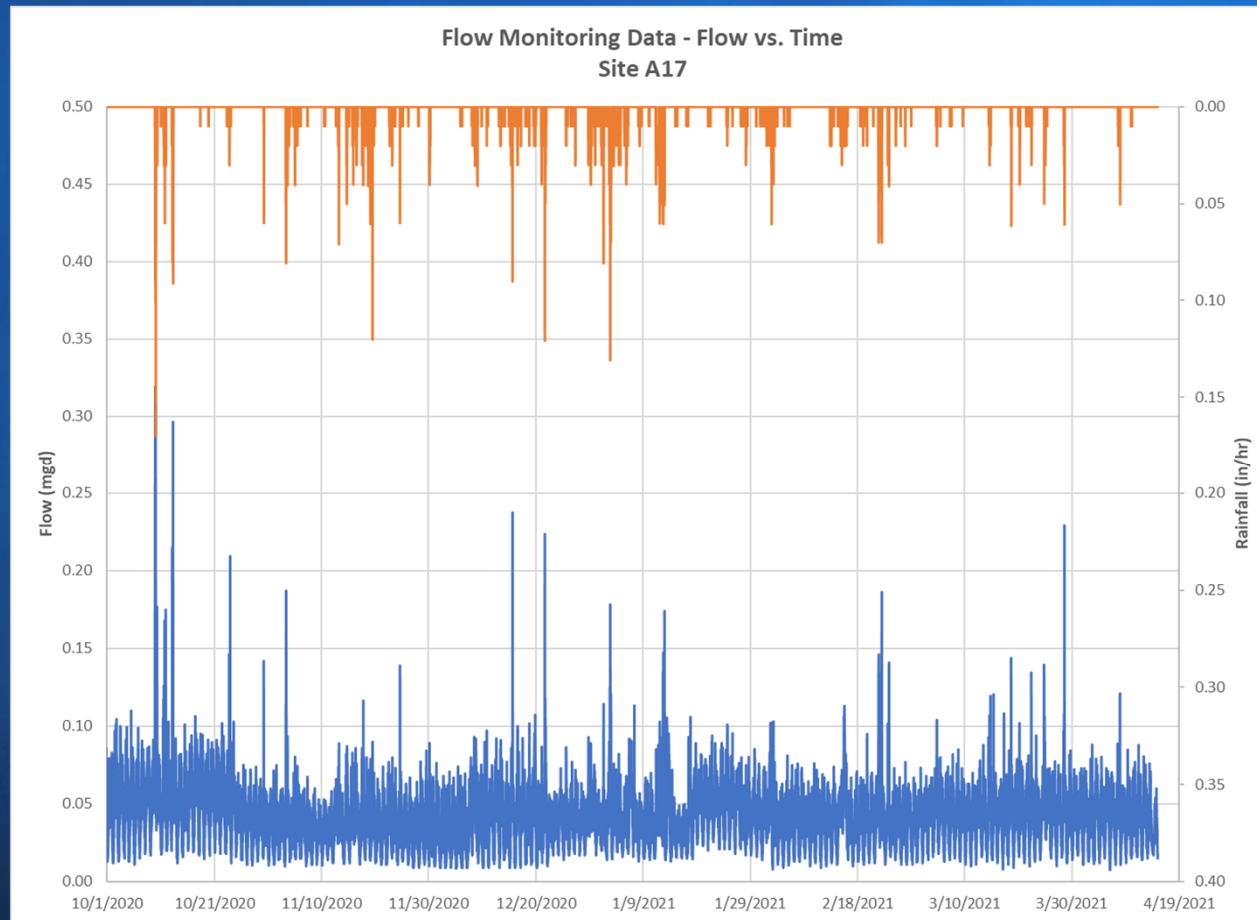
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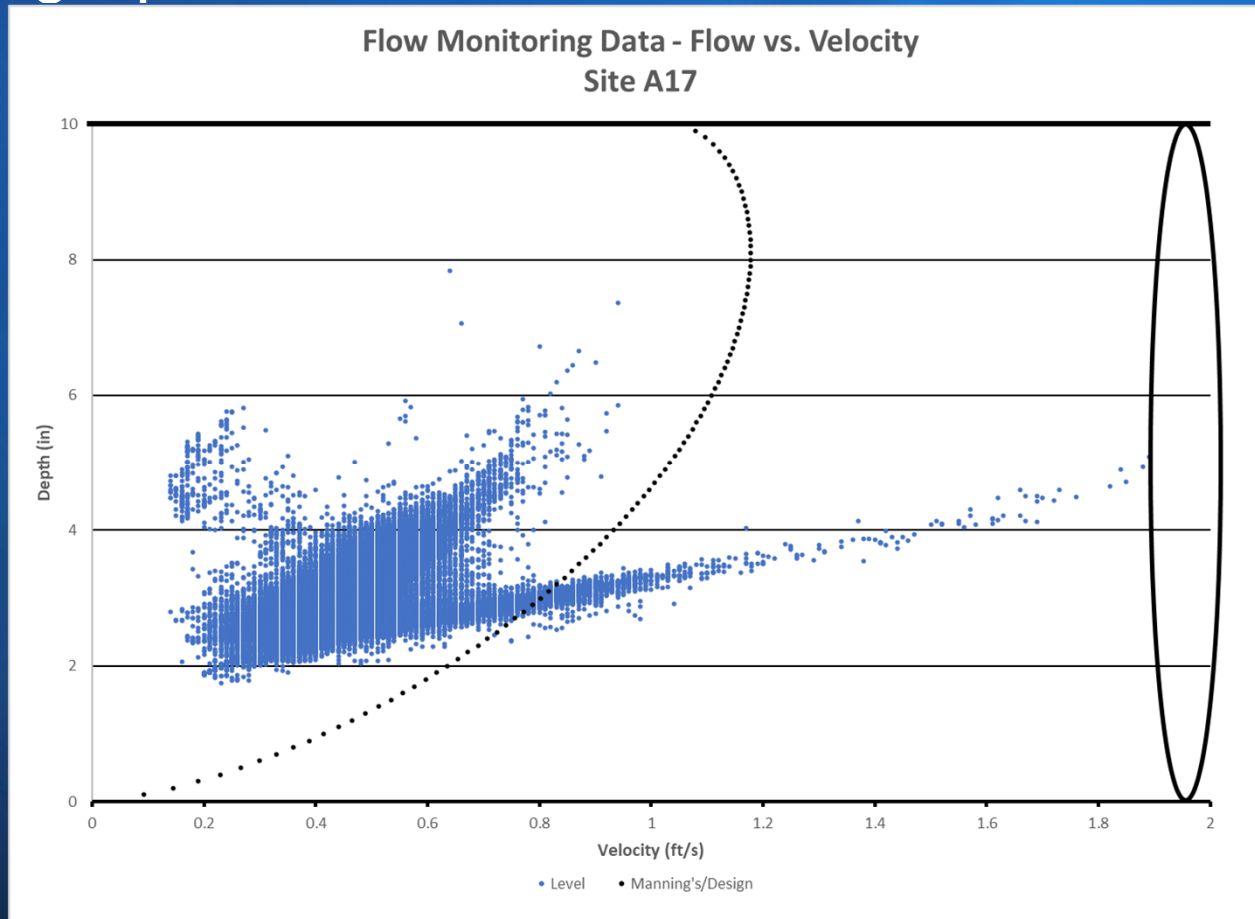
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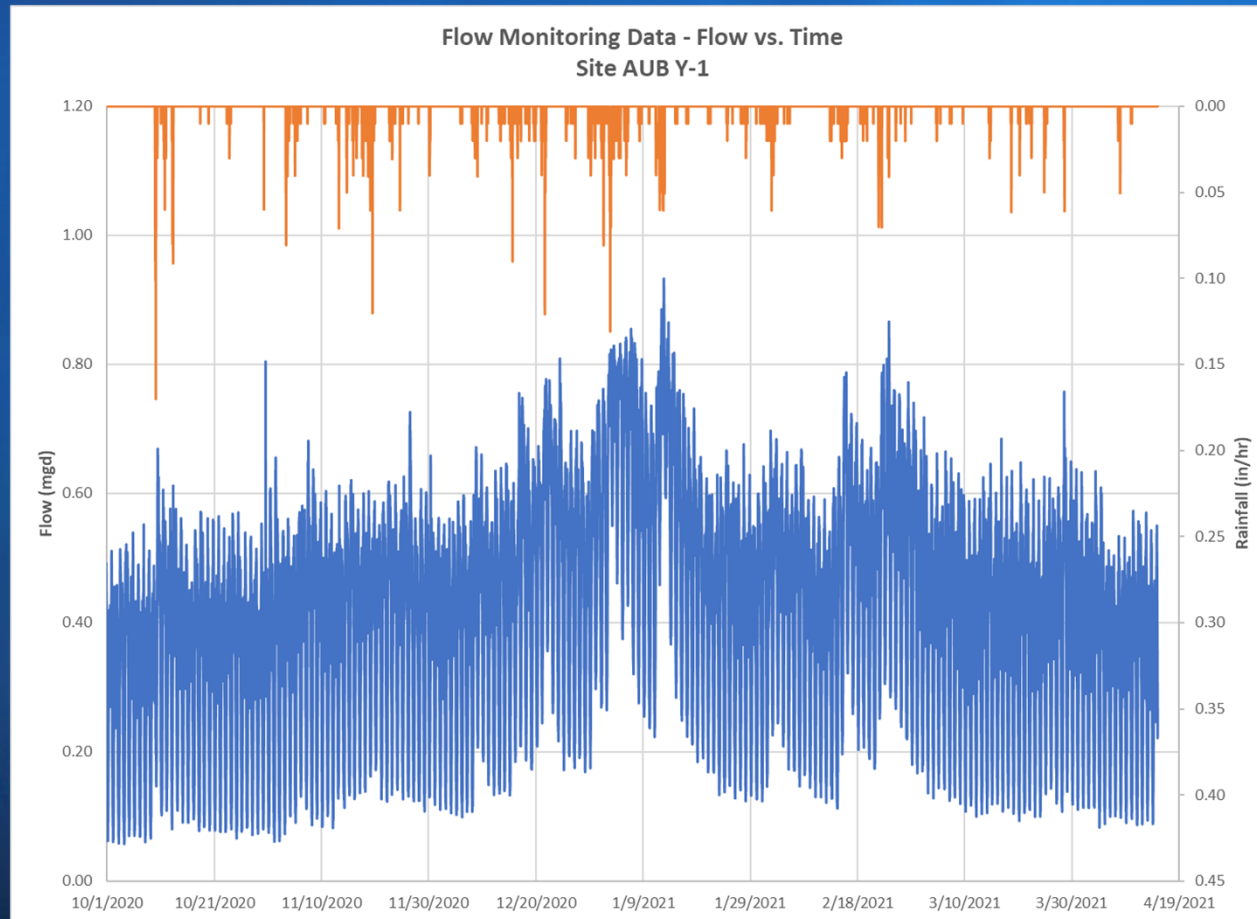
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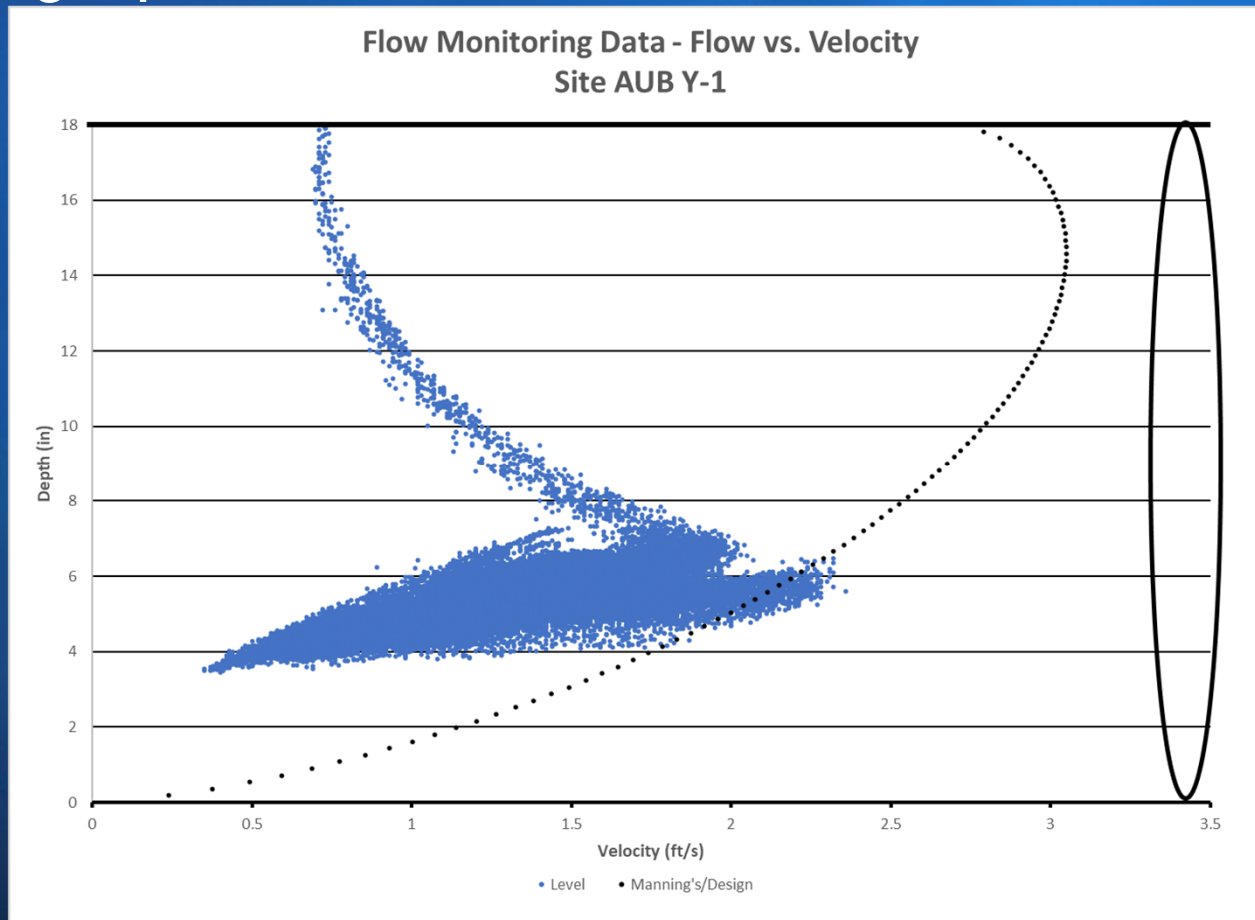


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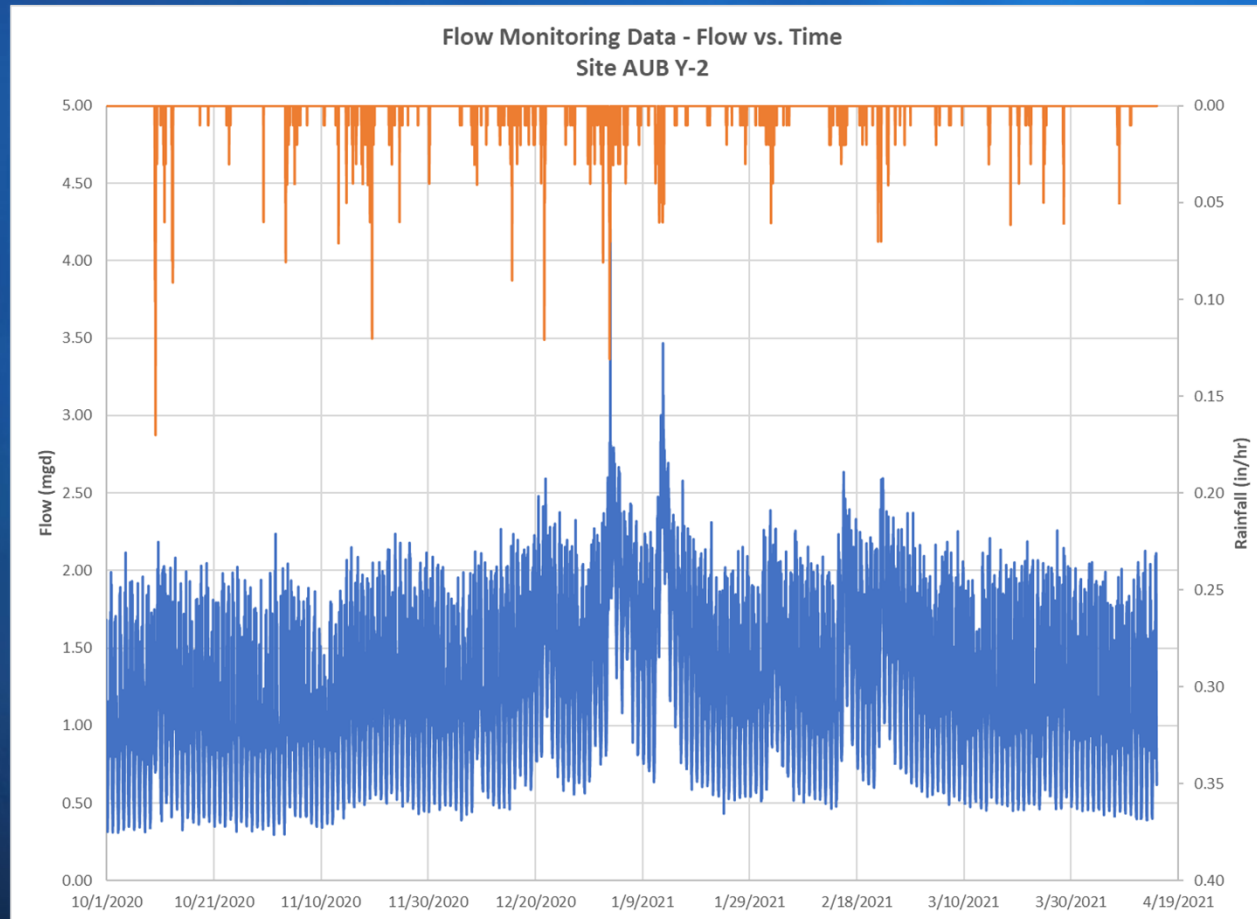


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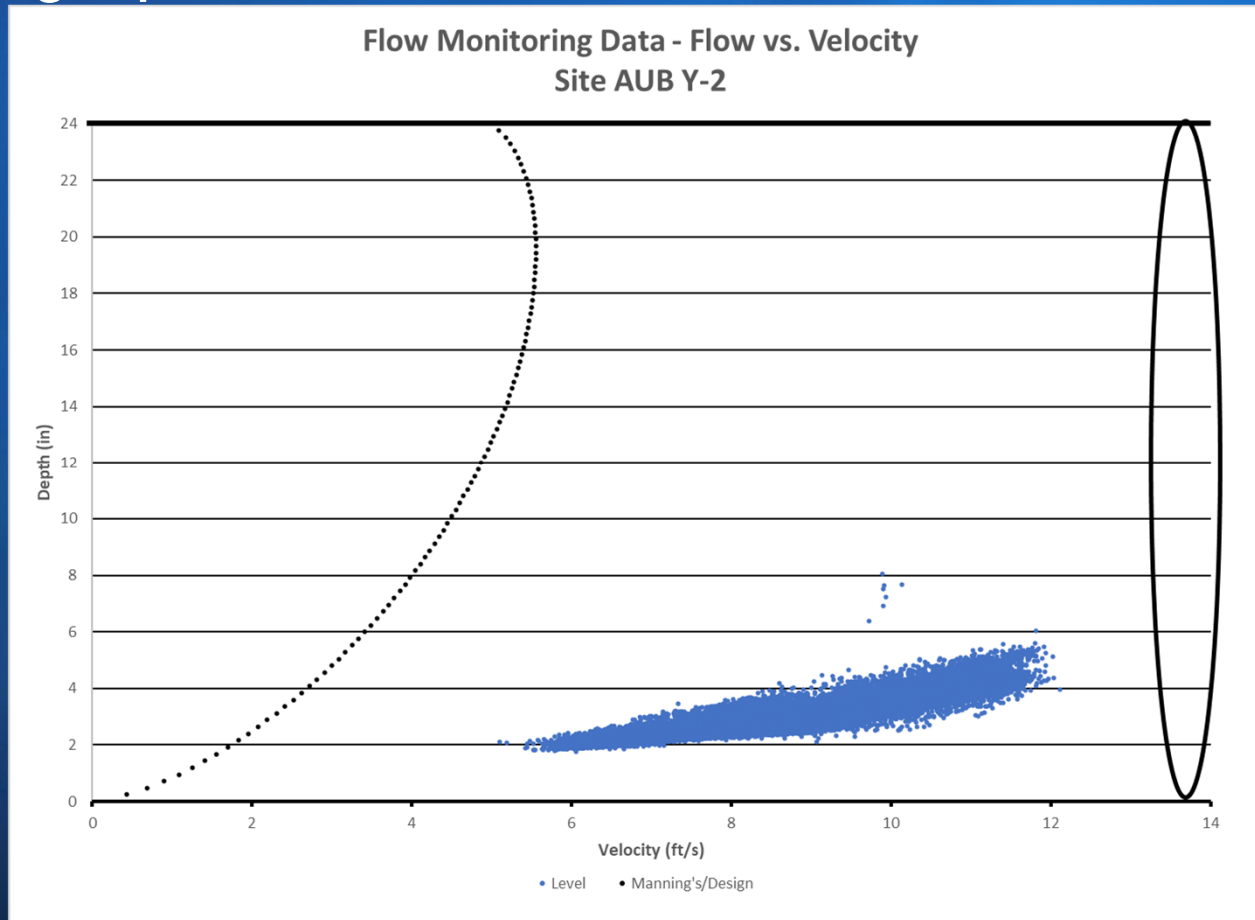
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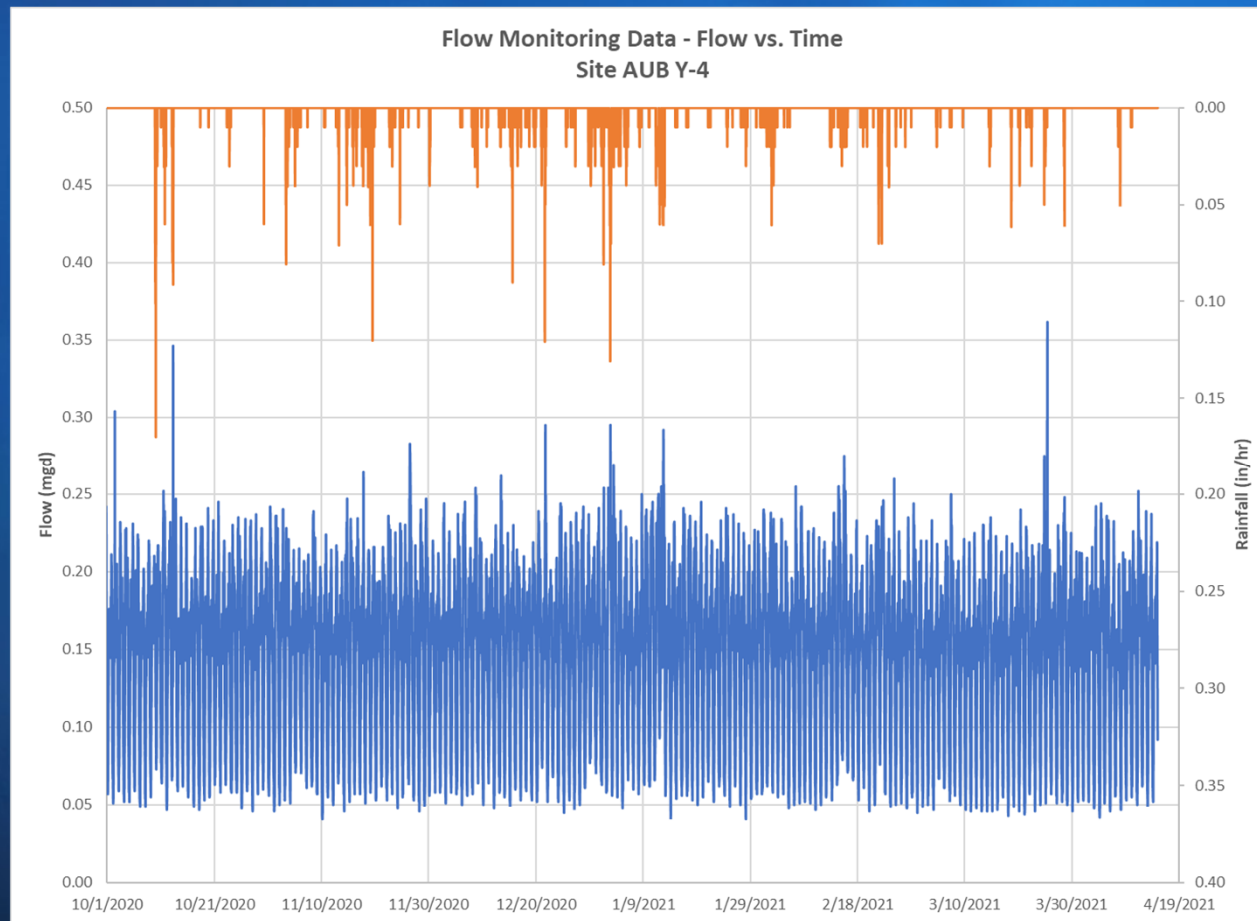
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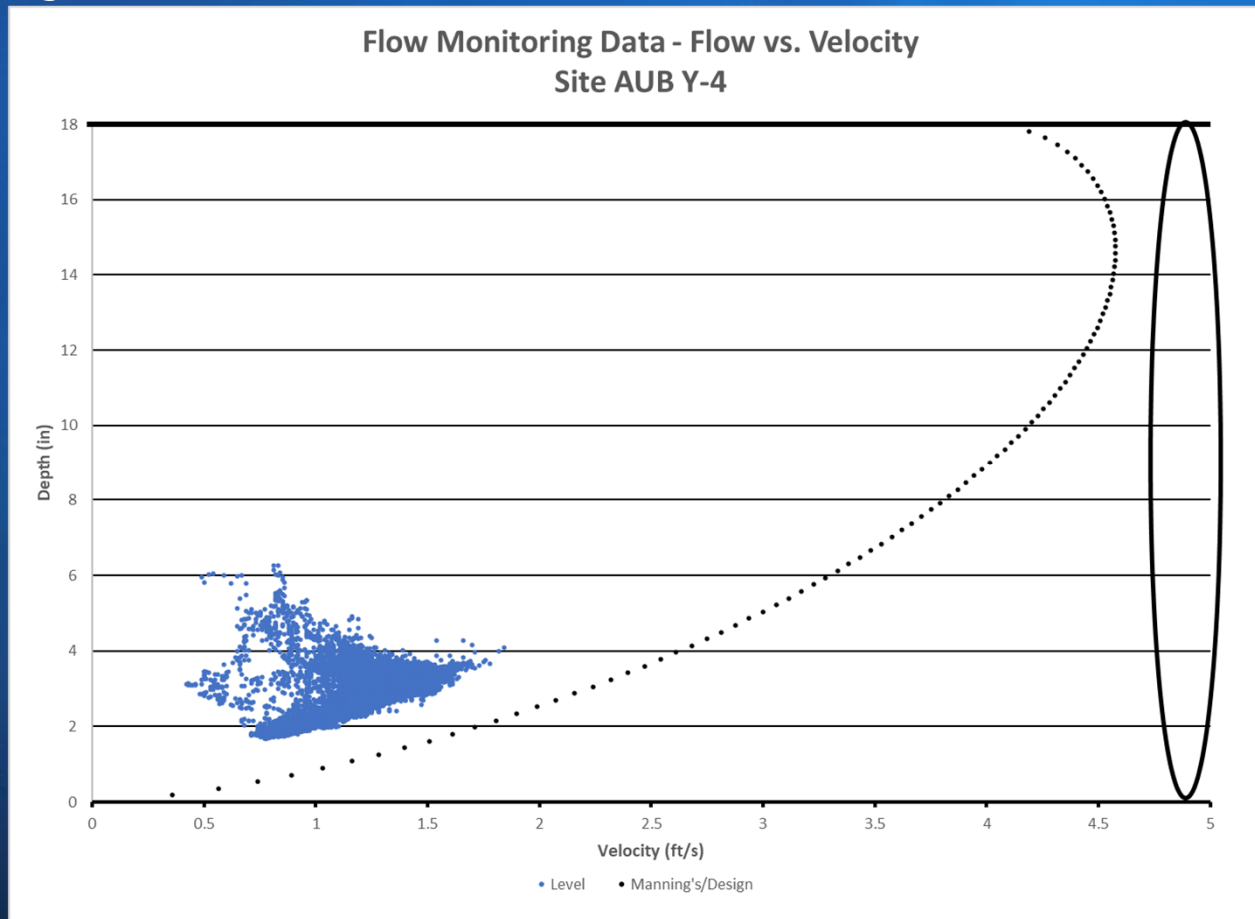
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Flow vs Rainfall



Meter AUB_Y-4

Scattergraph



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:

- Connectivity by multiple means to adjacent subdivisions, nearby commercial hubs, and parks and recreation facilities.
- Relationship to nearby existing or future transit service.
- Usable community amenities and spaces.
- Environmental protection and preservation of natural features.
- 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

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.

Nighborhood 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 in-fill 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 re-activate 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 conditional 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 non-conforming 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

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:
- Amendments to King and Pierce County Urban Growth Areas as specified in the King and Pierce County countywide policies
 - Discussions between Auburn and adjacent jurisdictions regarding POTENTIAL ANNEXATION AREA boundaries
 - Discussions with Pierce County concerning the designation of POTENTIAL ANNEXATION AREA boundaries
 - 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:
- 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.
 - Provide non-motorized access through the site in order to connect the adjacent land uses.
 - Housing size, type, and orientation shall be utilized as a means of providing harmonious transition of the built environment.
 - Provide a mix of townhomes, duplexes, cottage housing and small-scale multifamily housing.
- LU-130 Between multifamily and nonresidential
- 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.
 - Provide non-motorized access through the site in order to connect the adjacent land uses.
 - Provide a mix of townhomes, duplexes, cottage housing and small-scale multifamily housing.

- LU-131 Between single-family and nonresidential:
- 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.
 - 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, sub-areas, Impression Corridors, and Gateways within Auburn that warrant additional emphasis in planning, investments, and policy development. Each may be recognized separately within the Comprehensive Plan, as an Element of the Comprehensive Plan, or as a subarea plan (discussed below). There are a variety of reasons for designating and distinguishing a special planning area, and once designated, a variety of potential 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 associated major highway on- and off-ramps.
- Land use activities that warrant joint planning between the City and owner/operator. In addition to developing approaches and strategies 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 merchant live and conduct daily business and leisure. Neighborhoods may also be distinguished by physical setting, physical separations, and similarity over an area. Examples include downtown, Lea Hill, and Lakeland.
- Areas with a focused desire to create greater physical and economic cohesiveness. These may be large planned developments or clusters. 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 values 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.
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;
- Designated 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.

Districts (see Map 1.2)

- West Hill
- North Auburn
- Lea Hill
- Downtown
- South Auburn

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. Designated 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 sub-areas “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 two-fold: 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

dwelling 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 Areas 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 as 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 co-exist 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 development 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.

that greet residents and visitors as they enter the City or downtown center, opportunities for signage and monument features, and landscaping.

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-157 Maintain established gateways.

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.

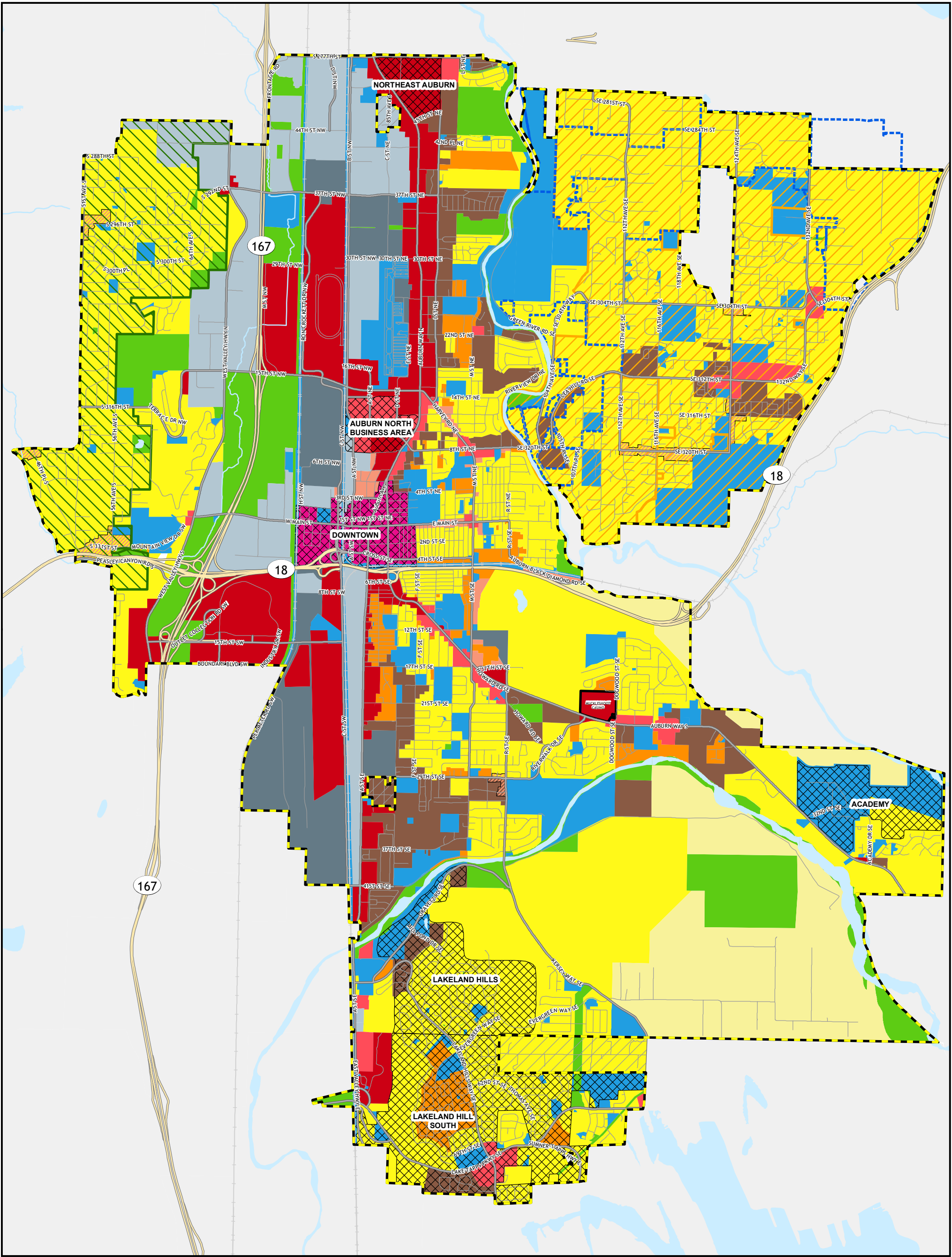
LU-153 Prioritize by rank all gateways and develop potential opportunities and designs for each location.

LU-154 Develop land use regulations that incorporate gateway priorities and concepts into private development proposals that are located at identified gateways.

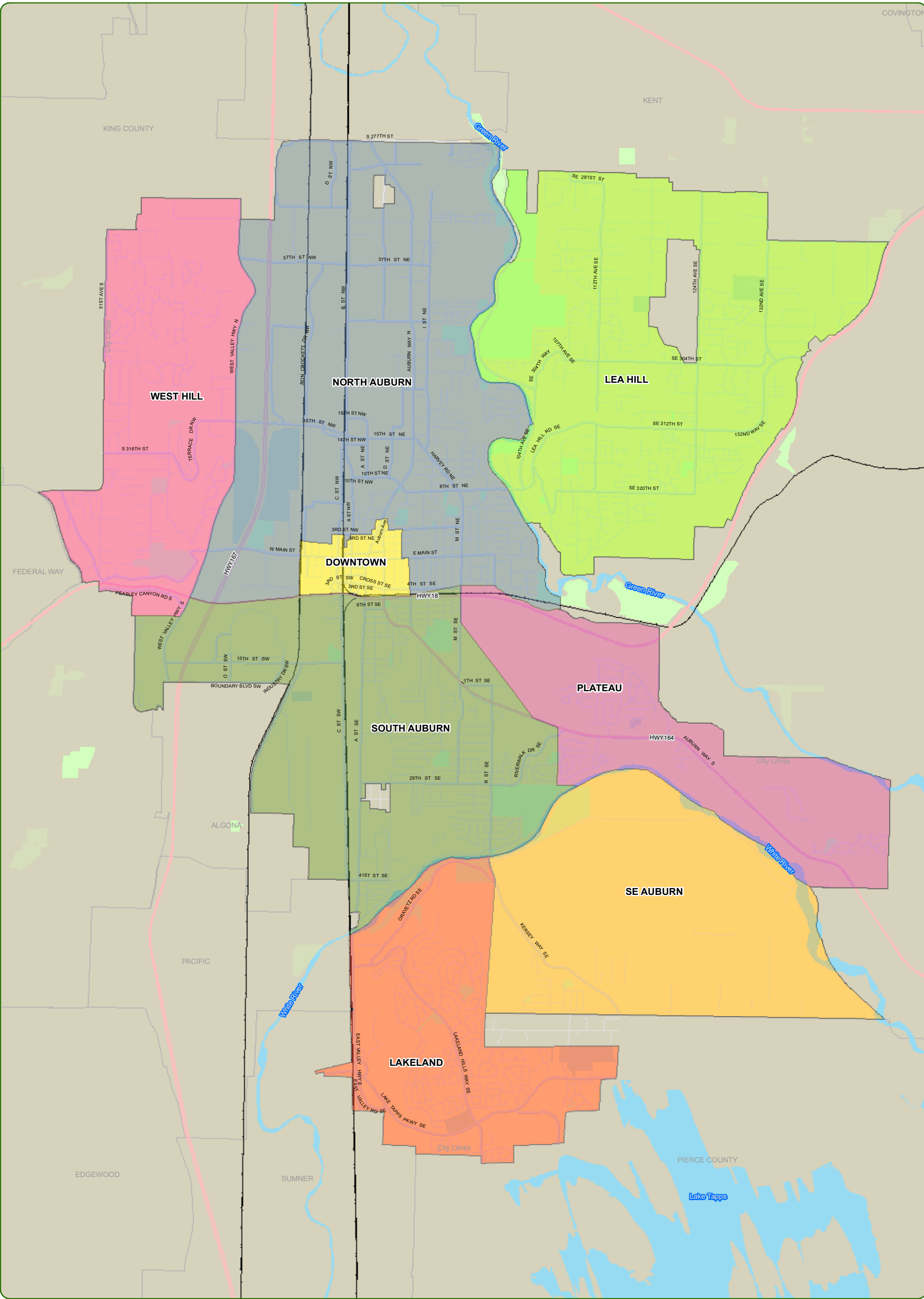
LU-155 Coordinate with the Washington State Department of Transportation to understand options and implement actions at gateway location. Many of the gateway locations are within the WSDOT right-of-way.

LU-156 Develop design layouts for gateway locations. Designs will identify key areas

City of Auburn Comprehensive Land Use



Adopted Areas	Light Commercial	Neighborhood Commercial Overlay	Auburn City Limits	Urban Separators Overlay	0 1,000 2,000 3,000 4,000 5,000 FEET
Downtown Urban Center	Light Industrial	Open Space	Potential Annexation Areas		 Printed On: 9/14/2022 Map ID: 6208
Heavy Commercial	Moderate Density Residential	Residential Conservancy	Water Features		
Heavy Industrial	Multiple-Family	Residential Transition Overlay	Lea Hill Overlay (Ordinance: 5346 & 6121)		
Public/Quasi-Public	Neighborhood Commercial	Single Family	West Hill Overlay (Ordinance: 6122)		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.
					Zoning map is current through Ordinance No. 6698, December 17, 2018



Districts

Special Planning Areas

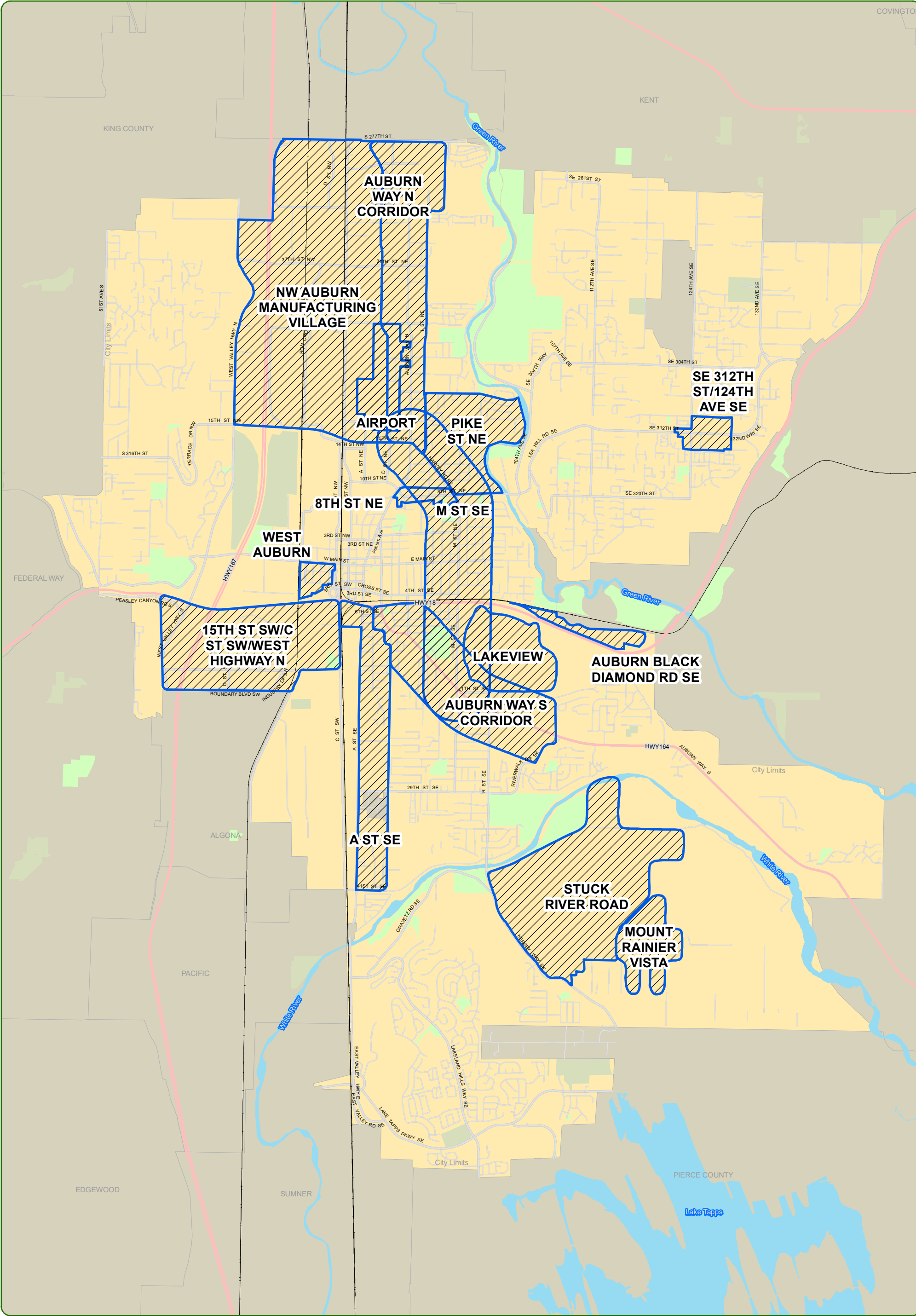
(Map 1.2)

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Printed Date: 1/9/2019
Map ID: 6094

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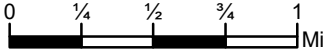
Map is current through Ordinance No. 6584 & 6698, December 17, 2018



 Designated Areas

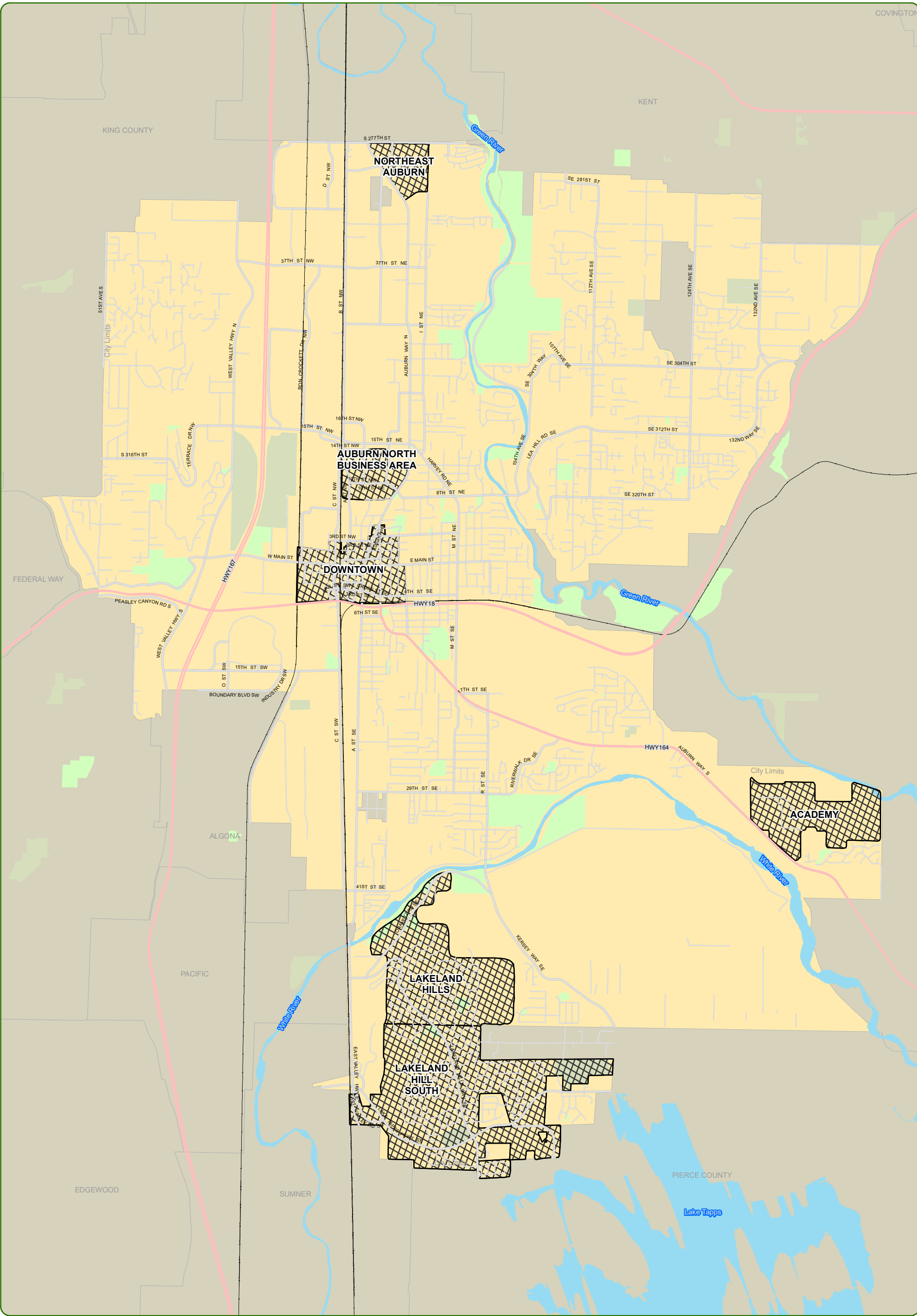
Designated Areas

Proposed Special Planning Areas
(Map 1.3)



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

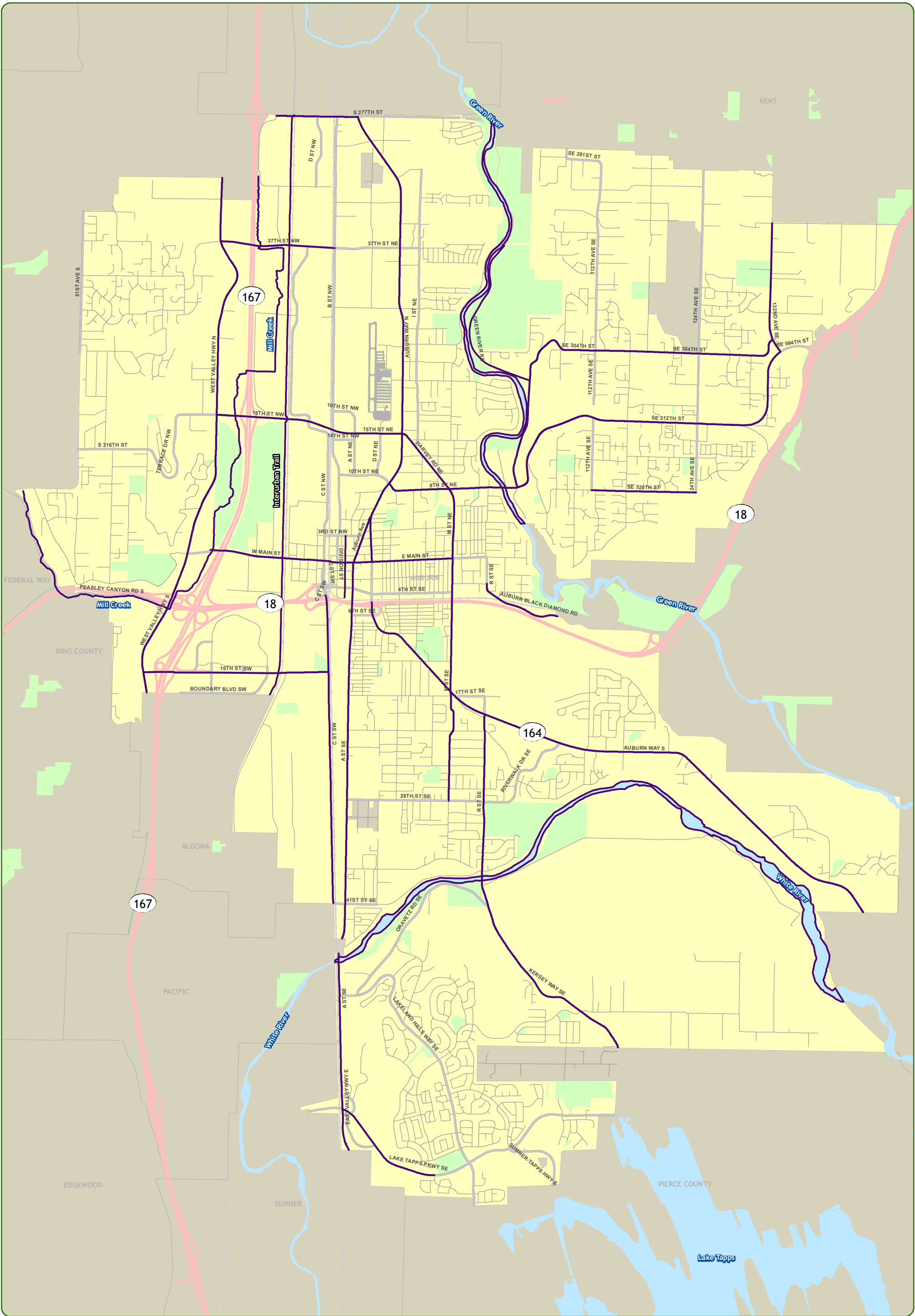
(Map 1.4)



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

Impression Corridors

Special Planning Areas

(Map 1.5)

N

E

W

S

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1/4

1/2

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1

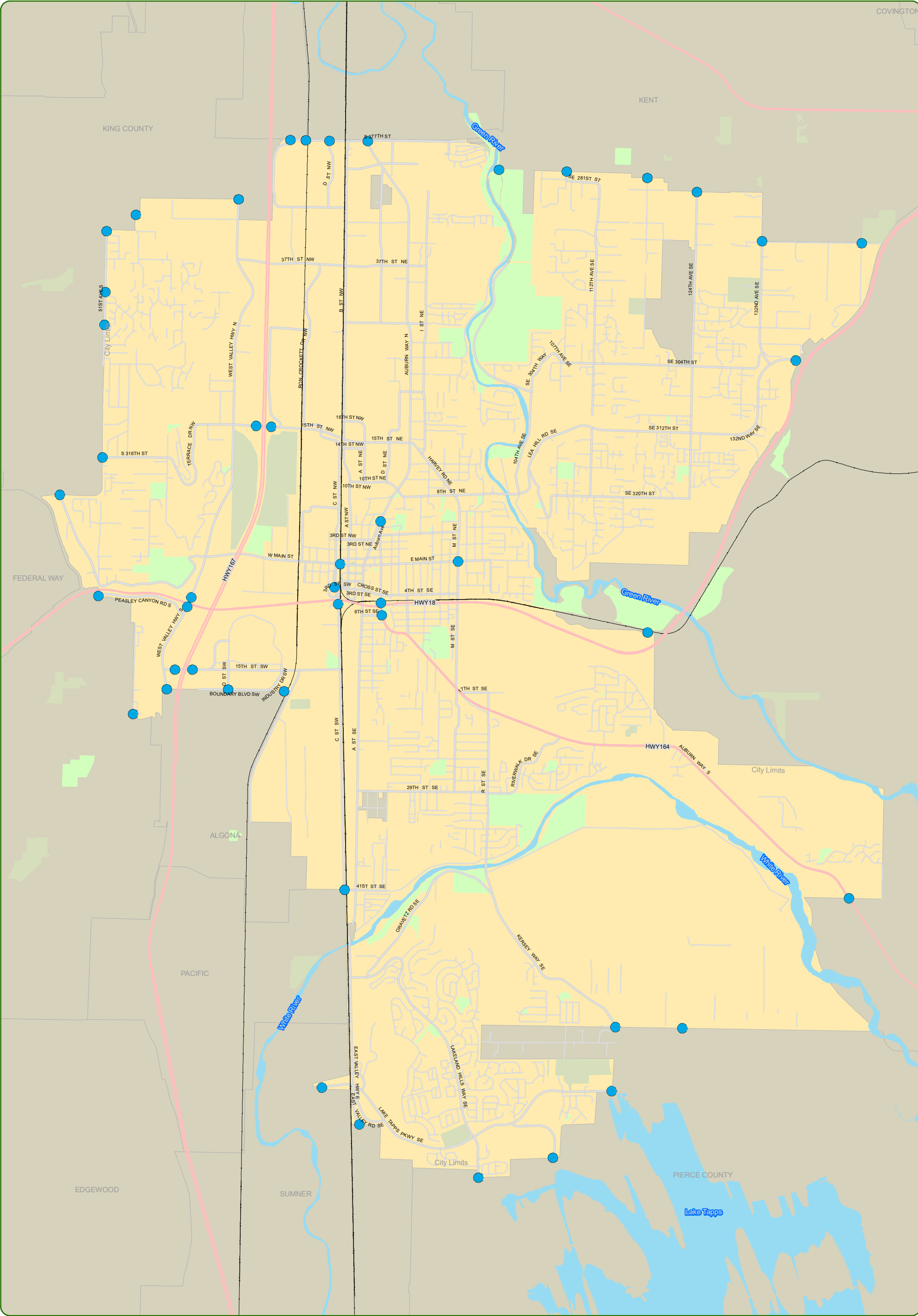
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Printed Date: 1/9/2019

Map ID: 6070

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Map is current through Ordinance No. 6698, December 17, 2018



● Gateways

Gateways

Special Planning Areas

(Map 1.6)



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

[illegible]

Table 2 - Planning Flow Factors

[illegible]

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	MSTTR02 A	AUBURN 53
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	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
A1

A10
A11

A12
A13
A14
A15

A16
A1c
A1d
A2
A3
A4
A6
A7
A9

AUB Y-2
AUB Y-3

AUB Y-4
AUBWV016

AUBY-1
MSTTR02A
SRT11
Unmetered
WINT035

FM_Basin_1st_Season
Unmetered

A1
AUB Y-2

AUBURN53
MSTTR02A
A16
A3

WINT035
A1c
AUBY-1
AUB Y-3
A13
A12
WINT003
SRT11
A1d

A10
A14

A7
A15

A6
AUB Y-4
AUBWV016
A9
A2
A11

ATTACHMENT 1E

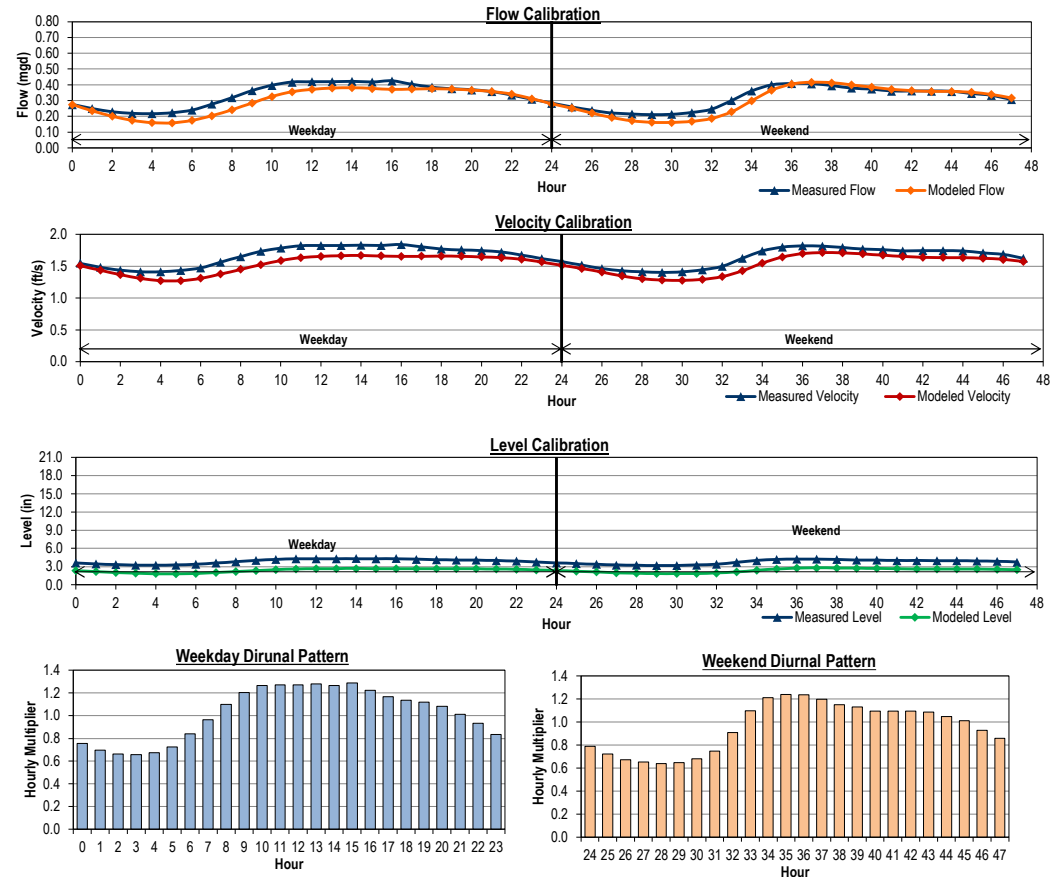
DRY WEATHER CALIBRATION SUMMARY SHEETS



City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A1 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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	0.38	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:											

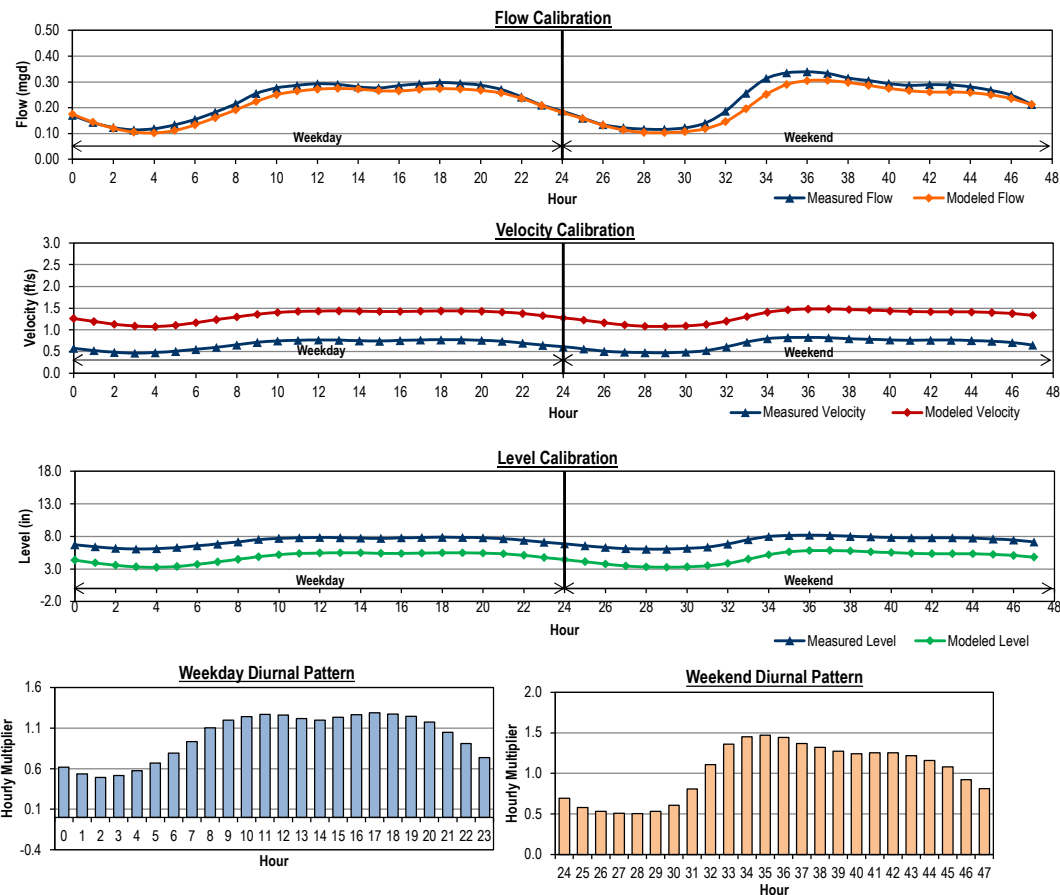




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A1c DRY WEATHER FLOW CALIBRATION



Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.17	6.70	0.58	0.18	4.35	1.26	2.35	0.62	0.62
	1	0.14	6.40	0.52	0.14	3.93	1.19	2.47	0.53	0.53
	2	0.12	6.17	0.48	0.12	3.57	1.13	2.60	0.49	0.49
	3	0.11	6.05	0.46	0.11	3.33	1.09	2.72	0.51	0.51
	4	0.12	6.11	0.48	0.10	3.25	1.08	2.86	0.58	0.58
	5	0.13	6.28	0.51	0.11	3.37	1.11	2.91	0.67	0.67
	6	0.15	6.54	0.55	0.13	3.69	1.17	2.85	0.79	0.79
	7	0.18	6.83	0.60	0.16	4.08	1.23	2.78	0.93	0.93
	8	0.22	7.15	0.65	0.19	4.47	1.30	2.68	1.11	1.11
	9	0.26	7.51	0.72	0.22	4.87	1.36	2.65	1.20	1.20
	10	0.28	7.69	0.75	0.25	5.18	1.40	2.50	1.24	1.24
	11	0.29	7.77	0.76	0.26	5.36	1.42	2.41	1.27	1.27
	12	0.29	7.82	0.77	0.27	5.45	1.43	2.37	1.26	1.26
	13	0.29	7.81	0.76	0.27	5.49	1.44	2.32	1.22	1.22
	14	0.28	7.73	0.75	0.27	5.47	1.43	2.26	1.20	1.20
	15	0.28	7.70	0.74	0.27	5.40	1.42	2.30	1.24	1.24
	16	0.29	7.76	0.76	0.26	5.38	1.42	2.39	1.27	1.27
	17	0.29	7.82	0.77	0.27	5.43	1.43	2.39	1.29	1.29
	18	0.30	7.86	0.77	0.27	5.48	1.44	2.38	1.27	1.27
	19	0.29	7.83	0.77	0.27	5.47	1.43	2.37	1.25	1.25
	20	0.29	7.78	0.76	0.27	5.41	1.43	2.37	1.17	1.17
	21	0.27	7.64	0.74	0.26	5.31	1.41	2.33	1.05	1.05
	22	0.24	7.39	0.70	0.24	5.08	1.38	2.31	0.91	0.91
	23	0.21	7.10	0.65	0.21	4.76	1.33	2.34	0.74	0.74
Weekend	24	0.19	6.86	0.61	0.18	4.42	1.28	2.44	0.69	0.69
	25	0.16	6.57	0.56	0.16	4.11	1.22	2.47	0.58	0.58
	26	0.13	6.30	0.51	0.13	3.75	1.16	2.54	0.53	0.53
	27	0.12	6.13	0.49	0.11	3.46	1.11	2.67	0.51	0.51
	28	0.12	6.04	0.48	0.10	3.30	1.08	2.74	0.50	0.50
	29	0.12	6.05	0.48	0.10	3.27	1.08	2.78	0.53	0.53
	30	0.12	6.15	0.49	0.11	3.32	1.09	2.82	0.61	0.61
	31	0.14	6.35	0.52	0.12	3.48	1.13	2.86	0.61	0.61
	32	0.19	6.83	0.61	0.15	3.86	1.20	2.97	1.11	1.11
	33	0.26	7.48	0.72	0.20	4.49	1.31	2.99	1.36	1.36
	34	0.31	7.97	0.80	0.25	5.17	1.40	2.80	1.45	1.45
	35	0.33	8.15	0.82	0.29	5.62	1.46	2.53	1.47	1.47
	36	0.34	8.19	0.83	0.30	5.81	1.48	2.38	1.44	1.44
	37	0.33	8.15	0.82	0.31	5.83	1.48	2.32	1.37	1.37
	38	0.32	8.01	0.80	0.30	5.75	1.47	2.26	1.32	1.32
	39	0.31	7.92	0.78	0.29	5.63	1.45	2.29	1.27	1.27
	40	0.29	7.83	0.77	0.28	5.51	1.44	2.32	1.24	1.24
	41	0.29	7.77	0.76	0.27	5.40	1.42	2.37	1.25	1.25
	42	0.29	7.77	0.77	0.26	5.34	1.42	2.43	1.25	1.25
	43	0.29	7.77	0.77	0.26	5.33	1.42	2.44	1.22	1.22
	44	0.28	7.72	0.75	0.26	5.31	1.41	2.41	1.16	1.16
	45	0.27	7.59	0.74	0.25	5.22	1.40	2.37	1.08	1.08
	46	0.25	7.44	0.71	0.24	5.06	1.38	2.38	0.92	0.92
	47	0.21	7.13	0.65	0.21	4.80	1.33	2.33	0.81	0.81
Average										
Weekday		0.23	7.23	0.67	0.21	4.73	1.32		0.99	0.99
Weekend		0.24	7.26	0.68	0.21	4.72	1.32		1.02	1.02
ADWF ⁽¹⁾		0.23	7.24	0.67	0.21	4.73	1.32		1.00	1.00
% Error										
Weekday					-9.9%		2.91			
Weekend					-9.5%		2.99			
Note:										

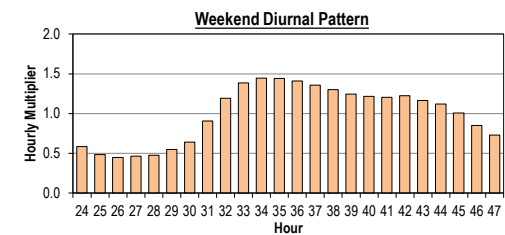
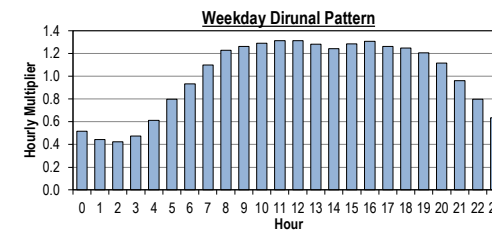
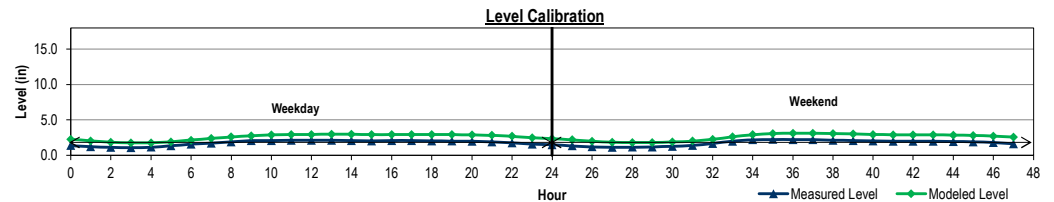
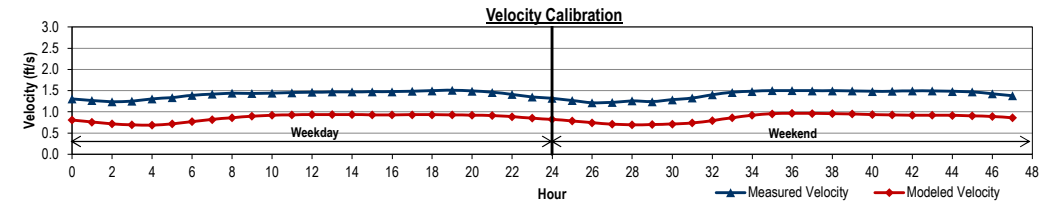
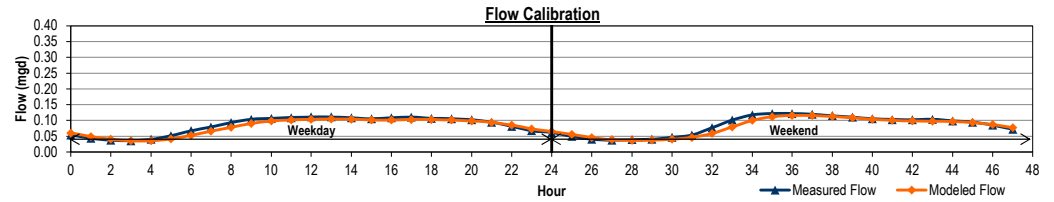




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A1d DRY WEATHER FLOW CALIBRATION



	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)		Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.05	1.39	1.31	0.06	2.28	0.81	-0.89	0.52	0.52
	1	0.04	1.22	1.27	0.05	2.06	0.76	-0.83	0.44	0.44
	2	0.04	1.12	1.24	0.04	1.88	0.72	-0.76	0.42	0.42
	3	0.04	1.08	1.26	0.04	1.77	0.69	-0.69	0.47	0.47
	4	0.04	1.15	1.30	0.04	1.77	0.69	-0.63	0.61	0.61
	5	0.05	1.34	1.34	0.04	1.91	0.72	-0.57	0.80	0.80
	6	0.07	1.57	1.39	0.05	2.16	0.77	-0.59	0.93	0.93
	7	0.08	1.72	1.42	0.07	2.39	0.82	-0.67	1.10	1.10
	8	0.09	1.91	1.44	0.08	2.60	0.86	-0.69	1.23	1.23
	9	0.10	2.07	1.44	0.09	2.78	0.90	-0.71	1.26	1.26
	10	0.11	2.10	1.45	0.10	2.89	0.92	-0.79	1.29	1.29
	11	0.11	2.12	1.45	0.10	2.94	0.93	-0.82	1.31	1.31
	12	0.11	2.14	1.46	0.10	2.97	0.94	-0.83	1.31	1.31
	13	0.11	2.13	1.47	0.10	2.98	0.94	-0.85	1.28	1.28
	14	0.11	2.09	1.47	0.10	2.97	0.94	-0.88	1.24	1.24
	15	0.11	2.04	1.48	0.10	2.93	0.93	-0.89	1.28	1.28
	16	0.11	2.09	1.48	0.10	2.93	0.93	-0.84	1.31	1.31
	17	0.11	2.11	1.49	0.10	2.96	0.94	-0.85	1.26	1.26
	18	0.11	2.04	1.50	0.10	2.96	0.94	-0.91	1.25	1.25
	19	0.11	2.01	1.51	0.10	2.93	0.93	-0.91	1.21	1.21
	20	0.10	1.98	1.49	0.10	2.89	0.92	-0.91	1.12	1.12
	21	0.09	1.91	1.46	0.09	2.82	0.91	-0.92	0.96	0.96
	22	0.08	1.76	1.41	0.09	2.69	0.89	-0.93	0.80	0.80
Weekend	23	0.07	1.59	1.35	0.07	2.50	0.85	-0.91	0.63	0.63
	24	0.06	1.52	1.32	0.07	2.37	0.82	-0.85	0.59	0.59
	25	0.05	1.34	1.27	0.06	2.19	0.79	-0.85	0.48	0.48
	26	0.04	1.20	1.22	0.05	1.99	0.75	-0.79	0.45	0.45
	27	0.04	1.14	1.23	0.04	1.85	0.71	-0.71	0.46	0.46
	28	0.04	1.15	1.26	0.04	1.80	0.70	-0.65	0.48	0.48
	29	0.04	1.19	1.24	0.04	1.82	0.70	-0.63	0.55	0.55
	30	0.05	1.29	1.29	0.04	1.89	0.71	-0.60	0.64	0.64
	31	0.05	1.40	1.33	0.05	2.01	0.74	-0.62	0.91	0.91
	32	0.08	1.69	1.40	0.06	2.26	0.79	-0.57	1.19	1.19
	33	0.10	2.00	1.46	0.08	2.62	0.86	-0.62	1.39	1.39
	34	0.12	2.20	1.48	0.10	2.92	0.92	-0.73	1.44	1.44
	35	0.12	2.24	1.50	0.11	3.08	0.96	-0.84	1.44	1.44
	36	0.12	2.23	1.50	0.12	3.13	0.97	-0.90	1.41	1.41
	37	0.12	2.21	1.50	0.12	3.12	0.97	-0.92	1.36	1.36
	38	0.12	2.15	1.50	0.11	3.08	0.96	-0.93	1.30	1.30
	39	0.11	2.10	1.49	0.11	3.03	0.95	-0.93	1.25	1.25
	40	0.11	2.04	1.48	0.10	2.97	0.94	-0.93	1.22	1.22
	41	0.10	2.00	1.49	0.10	2.91	0.93	-0.91	1.21	1.21
	42	0.10	1.99	1.49	0.10	2.89	0.92	-0.90	1.23	1.23
	43	0.10	2.00	1.50	0.10	2.88	0.92	-0.88	1.17	1.17
	44	0.10	1.95	1.48	0.10	2.87	0.92	-0.92	1.12	1.12
	45	0.09	1.91	1.47	0.09	2.81	0.91	-0.90	1.01	1.01
	46	0.09	1.80	1.43	0.09	2.72	0.89	-0.92	0.85	0.85
	47	0.07	1.64	1.38	0.08	2.57	0.86	-0.92	0.73	0.73
Average										
Weekday		0.08	1.78	1.41	0.08	2.58	0.86		1.00	1.00
Weekend		0.08	1.77	1.41	0.08	2.57	0.86		0.99	0.99
ADWF ⁽¹⁾		0.08	1.77	1.41	0.08	2.58	0.86		1.00	1.00
% Error										
Weekday						-5.4%			0.93	
Weekend						-4.7%			0.93	
Note:										

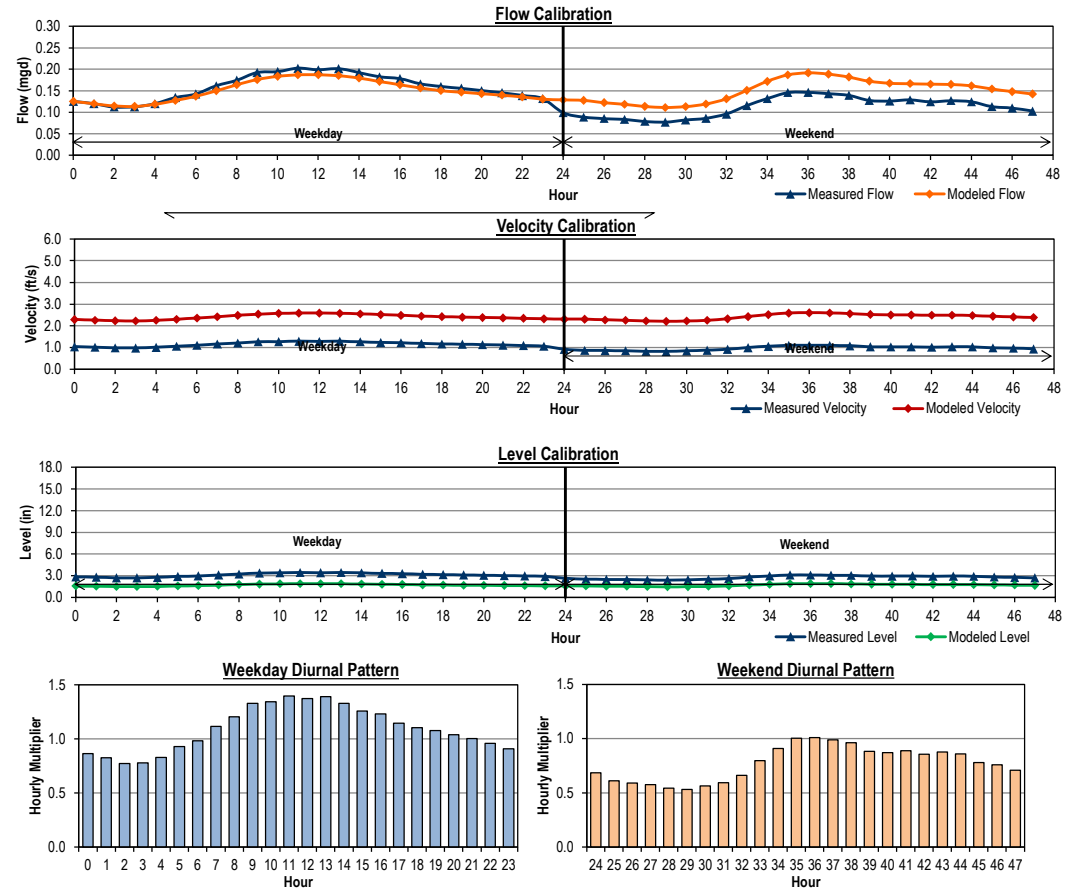




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A3 DRY WEATHER FLOW CALIBRATION



	Measured Data			Modeled Data			Level Diff	Diurnal		
	Hour	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)		Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.13	2.85	1.04	0.13	1.58	1.27	0.83	0.86	0.86
	1	0.12	2.80	1.02	0.12	1.55	1.25	0.77	0.83	0.83
	2	0.11	2.73	0.99	0.11	1.52	1.21	0.78	0.77	0.77
	3	0.11	2.72	0.99	0.11	1.51	1.22	0.83	0.78	0.78
	4	0.12	2.79	1.02	0.12	1.53	1.25	0.93	0.83	0.83
	5	0.13	2.91	1.07	0.13	1.58	1.33	0.98	0.93	0.93
	6	0.14	2.97	1.10	0.14	1.64	1.33	1.12	0.98	0.98
	7	0.16	3.13	1.17	0.15	1.71	1.42	1.20	1.12	1.12
	8	0.17	3.24	1.21	0.16	1.79	1.46	1.33	1.20	1.20
	9	0.19	3.38	1.27	0.18	1.85	1.53	1.34	1.33	1.33
	10	0.19	3.40	1.27	0.18	1.89	1.51	1.40	1.34	1.34
	11	0.20	3.46	1.30	0.19	1.90	1.55	1.37	1.40	1.40
	12	0.20	3.43	1.29	0.19	1.91	1.53	1.39	1.37	1.37
	13	0.20	3.46	1.29	0.19	1.89	1.56	1.33	1.39	1.39
	14	0.19	3.40	1.27	0.18	1.87	1.53	1.26	1.33	1.33
	15	0.18	3.33	1.23	0.17	1.83	1.50	1.23	1.26	1.26
	16	0.18	3.30	1.22	0.16	1.79	1.51	1.15	1.23	1.23
	17	0.17	3.21	1.19	0.16	1.75	1.46	1.10	1.15	1.15
	18	0.16	3.16	1.17	0.15	1.72	1.44	1.08	1.10	1.10
	19	0.16	3.13	1.16	0.15	1.70	1.43	1.04	1.08	1.08
	20	0.15	3.08	1.14	0.14	1.68	1.39	1.00	1.04	1.04
	21	0.15	3.03	1.12	0.14	1.66	1.37	0.96	1.00	1.00
	22	0.14	2.98	1.10	0.14	1.64	1.33	0.91	0.96	0.96
Weekend	23	0.13	2.91	1.07	0.13	1.61	1.29	0.86	0.91	0.91
	24	0.10	2.65	0.92	0.13	1.60	1.06	0.61	0.68	0.68
	25	0.09	2.54	0.88	0.13	1.59	0.94	0.59	0.61	0.61
	26	0.09	2.51	0.87	0.12	1.56	0.94	0.58	0.59	0.59
	27	0.08	2.48	0.85	0.12	1.54	0.94	0.54	0.58	0.58
	28	0.08	2.43	0.83	0.11	1.51	0.92	0.53	0.54	0.54
	29	0.08	2.42	0.82	0.11	1.49	0.93	0.56	0.53	0.53
	30	0.08	2.46	0.85	0.11	1.50	0.96	0.59	0.56	0.56
	31	0.09	2.51	0.88	0.12	1.53	0.98	0.66	0.59	0.59
	32	0.10	2.62	0.93	0.13	1.61	1.01	0.80	0.66	0.66
	33	0.12	2.83	1.00	0.15	1.71	1.11	0.91	0.80	0.80
	34	0.13	2.99	1.06	0.17	1.83	1.16	1.01	0.91	0.91
	35	0.15	3.12	1.10	0.19	1.90	1.22	1.01	1.01	1.01
	36	0.15	3.10	1.10	0.19	1.92	1.18	0.99	1.01	1.01
	37	0.14	3.08	1.10	0.19	1.91	1.17	0.96	0.99	0.99
	38	0.14	3.04	1.08	0.18	1.88	1.16	0.88	0.96	0.96
	39	0.13	2.96	1.04	0.17	1.83	1.12	0.87	0.88	0.88
	40	0.13	2.96	1.03	0.17	1.81	1.15	0.89	0.87	0.87
	41	0.13	2.98	1.04	0.17	1.80	1.18	0.86	0.89	0.89
	42	0.12	2.94	1.02	0.17	1.80	1.14	0.88	0.86	0.86
	43	0.13	2.96	1.04	0.16	1.79	1.17	0.86	0.88	0.88
	44	0.12	2.93	1.03	0.16	1.78	1.16	0.78	0.86	0.86
	45	0.11	2.83	0.99	0.15	1.74	1.09	0.76	0.78	0.78
	46	0.11	2.78	0.98	0.15	1.71	1.07	0.71	0.76	0.76
	47	0.10	2.72	0.94	0.14	1.68	1.04	0.68	0.71	0.71
Average		0.16	3.12	1.15	0.15	1.71	2.42	1.09	1.09	1.09
Weekday		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:										

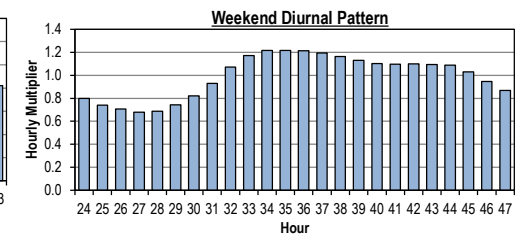
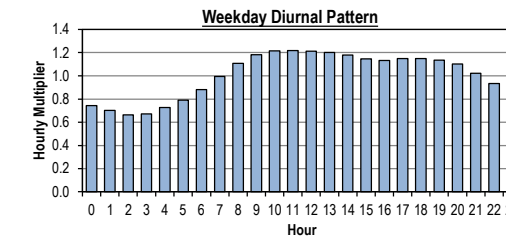
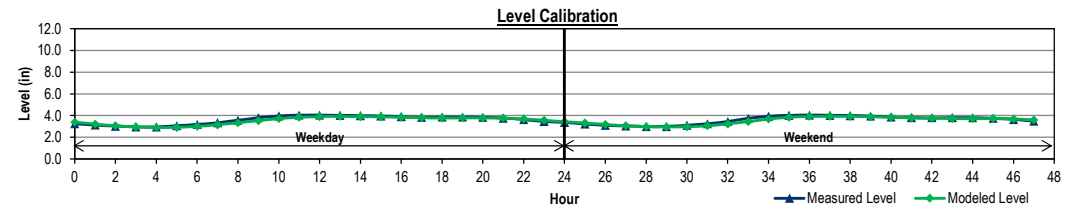
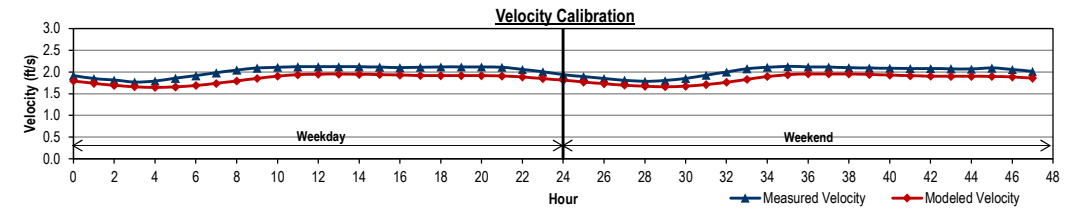
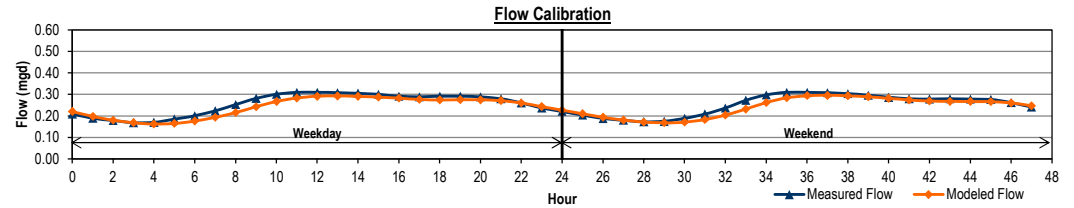




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A4 DRY WEATHER FLOW CALIBRATION



Hour	Measured Data			Modeled Data			Level Diff	Diurnal		
	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.21	3.26	1.92	0.22	3.40	1.79	-0.13	0.74	0.74
	1	0.19	3.12	1.85	0.20	3.21	1.74	-0.09	0.70	0.70
	2	0.18	3.03	1.81	0.18	3.06	1.69	-0.03	0.66	0.66
	3	0.17	2.97	1.77	0.17	2.96	1.66	0.01	0.67	0.67
	4	0.17	2.96	1.79	0.16	2.90	1.64	0.07	0.73	0.73
	5	0.18	3.06	1.86	0.16	2.92	1.65	0.15	0.79	0.79
	6	0.20	3.18	1.91	0.18	3.01	1.69	0.17	0.88	0.88
	7	0.22	3.35	1.98	0.19	3.15	1.74	0.20	0.99	0.99
	8	0.25	3.57	2.04	0.22	3.33	1.79	0.24	1.11	1.11
	9	0.28	3.80	2.09	0.24	3.54	1.85	0.26	1.18	1.18
	10	0.30	3.96	2.11	0.27	3.72	1.90	0.24	1.22	1.22
	11	0.31	4.03	2.12	0.28	3.84	1.93	0.19	1.22	1.22
	12	0.31	4.04	2.12	0.29	3.90	1.95	0.14	1.21	1.21
	13	0.31	4.02	2.12	0.29	3.91	1.95	0.11	1.20	1.20
	14	0.31	4.00	2.12	0.29	3.90	1.95	0.10	1.18	1.18
	15	0.30	3.96	2.11	0.29	3.88	1.94	0.08	1.15	1.15
	16	0.29	3.90	2.10	0.28	3.84	1.93	0.05	1.13	1.13
	17	0.29	3.85	2.11	0.28	3.80	1.92	0.05	1.15	1.15
	18	0.29	3.87	2.12	0.27	3.79	1.91	0.08	1.15	1.15
	19	0.29	3.87	2.12	0.28	3.79	1.92	0.08	1.13	1.13
	20	0.29	3.94	2.12	0.28	3.79	1.91	0.05	1.10	1.10
	21	0.28	3.77	2.11	0.27	3.76	1.91	0.01	1.02	1.02
	22	0.26	3.64	2.06	0.25	3.69	1.88	-0.05	0.93	0.93
	23	0.24	3.47	2.00	0.24	3.57	1.85	-0.10	0.82	0.82
Weekend	24	0.22	3.37	1.94	0.23	3.44	1.81	-0.07	0.80	0.80
	25	0.20	3.23	1.89	0.21	3.31	1.77	-0.08	0.74	0.74
	26	0.19	3.11	1.85	0.19	3.18	1.73	-0.07	0.71	0.71
	27	0.18	3.05	1.81	0.18	3.06	1.69	-0.02	0.68	0.68
	28	0.17	2.99	1.79	0.17	2.98	1.67	0.01	0.69	0.69
	29	0.17	3.00	1.80	0.17	2.94	1.66	0.06	0.74	0.74
	30	0.19	3.11	1.85	0.17	2.97	1.67	0.14	0.82	0.82
	31	0.21	3.25	1.92	0.18	3.07	1.71	0.18	0.93	0.93
	32	0.24	3.45	2.00	0.20	3.23	1.76	0.22	1.07	1.07
	33	0.27	3.74	2.07	0.23	3.45	1.83	0.29	1.17	1.17
	34	0.30	3.93	2.11	0.26	3.68	1.89	0.25	1.22	1.22
	35	0.31	4.02	2.13	0.28	3.84	1.94	0.18	1.22	1.22
	36	0.31	4.03	2.12	0.29	3.92	1.95	0.11	1.21	1.21
	37	0.31	4.03	2.11	0.30	3.93	1.95	0.09	1.19	1.19
	38	0.30	4.01	2.10	0.29	3.92	1.95	0.09	1.16	1.16
	39	0.30	3.95	2.09	0.29	3.89	1.94	0.06	1.13	1.13
	40	0.29	3.86	2.09	0.28	3.84	1.93	0.02	1.10	1.10
	41	0.28	3.81	2.08	0.27	3.79	1.91	0.02	1.10	1.10
	42	0.28	3.79	2.08	0.27	3.75	1.90	0.05	1.10	1.10
	43	0.28	3.81	2.07	0.27	3.73	1.90	0.07	1.09	1.09
	44	0.28	3.80	2.07	0.27	3.73	1.90	0.07	1.09	1.09
	45	0.28	3.75	2.09	0.27	3.72	1.90	0.03	1.03	1.03
	46	0.26	3.65	2.06	0.26	3.69	1.88	-0.04	0.96	0.96
	47	0.24	3.49	2.01	0.25	3.59	1.85	-0.10	0.87	0.87
Average										
Weekday										
Weekend										
ADWF ⁽¹⁾										
% Error										
Weekday										
Weekend										
Note:										

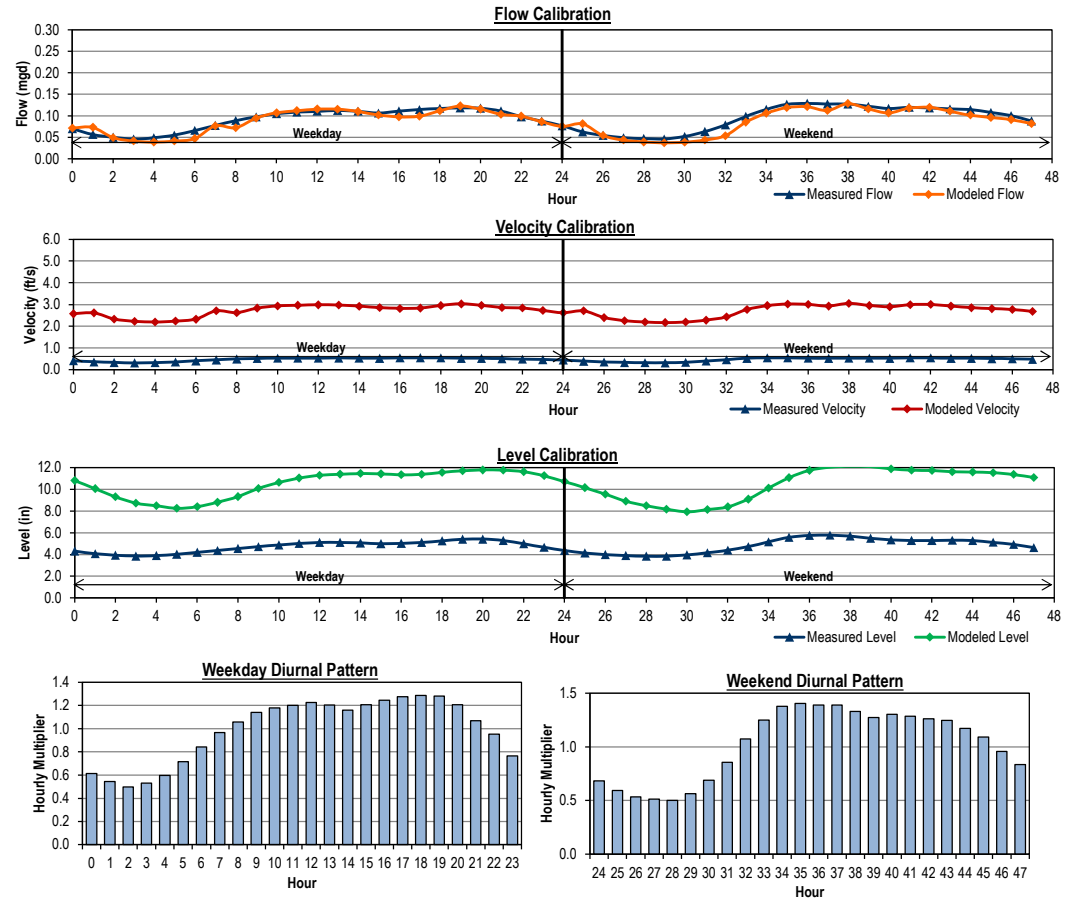




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A6 DRY WEATHER FLOW CALIBRATION



Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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
	1	0.06	4.07	0.36	0.07	10.07	2.62	-6.00	0.54	0.54
	2	0.05	3.94	0.33	0.05	9.30	2.34	-5.36	0.50	0.50
	3	0.05	3.85	0.31	0.04	8.73	2.23	-4.87	0.53	0.53
	4	0.05	3.90	0.33	0.04	8.48	2.20	-4.58	0.60	0.60
	5	0.05	4.01	0.36	0.04	8.25	2.24	-4.23	0.72	0.72
	6	0.07	4.20	0.41	0.05	8.39	2.33	-4.19	0.84	0.84
	7	0.08	4.37	0.46	0.08	8.80	2.71	-4.43	0.97	0.97
	8	0.09	4.55	0.50	0.07	9.33	2.63	-4.78	1.06	1.06
	9	0.10	4.73	0.52	0.09	10.08	2.84	-5.35	1.14	1.14
	10	0.10	4.88	0.53	0.11	10.63	2.94	-5.75	1.18	1.18
	11	0.11	5.00	0.54	0.11	11.03	2.97	-6.03	1.20	1.20
	12	0.11	5.10	0.53	0.12	11.29	2.99	-6.19	1.23	1.23
	13	0.11	5.11	0.54	0.12	11.39	2.98	-6.28	1.20	1.20
	14	0.11	5.06	0.54	0.11	11.45	2.92	-6.39	1.16	1.16
	15	0.11	4.99	0.53	0.10	11.42	2.86	-6.43	1.21	1.21
	16	0.11	5.02	0.55	0.10	11.33	2.82	-6.31	1.25	1.25
	17	0.11	5.10	0.55	0.10	11.38	2.84	-6.27	1.28	1.28
	18	0.12	5.26	0.54	0.11	11.55	2.95	-6.30	1.29	1.29
	19	0.12	5.41	0.53	0.12	11.70	3.03	-6.29	1.28	1.28
	20	0.12	5.42	0.52	0.12	11.78	2.96	-6.36	1.21	1.21
	21	0.11	5.28	0.51	0.10	11.75	2.86	-6.47	1.07	1.07
	22	0.10	4.98	0.49	0.10	11.63	2.84	-6.64	0.95	0.95
	23	0.09	4.65	0.47	0.09	11.25	2.73	-6.59	0.76	0.76
Weekend	24	0.08	4.37	0.45	0.08	10.71	2.63	-6.34	0.68	0.68
	25	0.06	4.14	0.39	0.08	10.14	2.71	-6.00	0.59	0.59
	26	0.05	4.00	0.36	0.05	9.54	2.40	-5.55	0.53	0.53
	27	0.05	3.89	0.33	0.04	8.91	2.26	-5.02	0.51	0.51
	28	0.05	3.84	0.32	0.04	8.49	2.20	-4.64	0.50	0.50
	29	0.05	3.84	0.32	0.04	8.16	2.17	-4.33	0.56	0.56
	30	0.05	3.97	0.34	0.04	7.92	2.20	-3.95	0.69	0.69
	31	0.06	4.15	0.40	0.04	8.13	2.28	-3.98	0.86	0.86
	32	0.08	4.38	0.46	0.05	8.38	2.43	-4.00	1.07	1.07
	33	0.10	4.72	0.53	0.09	9.09	2.77	-4.37	1.25	1.25
	34	0.11	5.16	0.55	0.11	10.11	2.95	-4.95	1.38	1.38
	35	0.13	5.57	0.54	0.12	11.07	3.02	-5.49	1.40	1.40
	36	0.13	5.76	0.53	0.12	11.74	3.01	-5.98	1.39	1.39
	37	0.13	5.77	0.52	0.11	12.03	2.93	-6.26	1.39	1.39
	38	0.13	5.69	0.53	0.13	12.12	3.06	-6.43	1.33	1.33
	39	0.12	5.50	0.53	0.12	12.08	2.95	-6.58	1.28	1.28
	40	0.12	5.35	0.53	0.11	11.97	2.90	-6.53	1.30	1.30
	41	0.12	5.29	0.55	0.12	11.75	3.00	-6.46	1.29	1.29
	42	0.12	5.29	0.54	0.12	11.72	3.00	-6.43	1.26	1.26
	43	0.12	5.31	0.53	0.11	11.61	2.93	-6.31	1.24	1.24
	44	0.11	5.27	0.53	0.10	11.59	2.85	-6.32	1.17	1.17
	45	0.11	5.12	0.51	0.10	11.53	2.81	-6.41	1.09	1.09
	46	0.10	4.92	0.50	0.09	11.36	2.77	-6.44	0.96	0.96
	47	0.09	4.62	0.48	0.08	11.09	2.68	-6.47	0.84	0.84
Average										
Weekday		0.091	4.7	0.47	0.087	10.5	2.72		0.99	0.99
Weekend		0.094	4.8	0.47	0.087	10.5	2.70		1.02	1.02
ADWF ⁽¹⁾		0.092	4.7	0.47	0.087	10.5	2.72		1.00	1.00
% Error										
Weekday					-3.8%			6.64		
Weekend					-7.9%			6.58		
Note:										

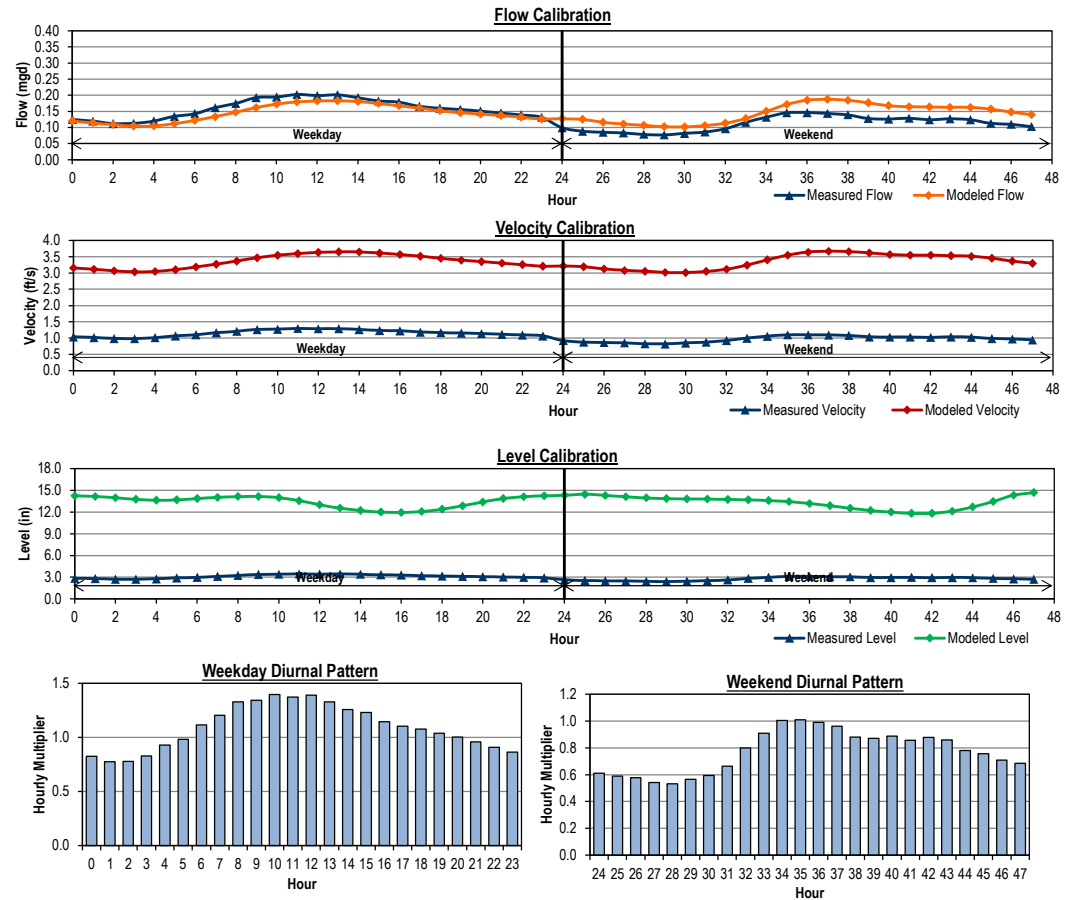




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A7 DRY WEATHER FLOW CALIBRATION



Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.13	2.85	1.04	0.12	14.23	3.16	-11.38	0.83	0.83
	1	0.12	2.80	1.02	0.11	14.14	3.11	-11.34	0.77	0.77
	2	0.11	2.73	0.99	0.11	13.96	3.07	-11.23	0.78	0.78
	3	0.11	2.72	0.99	0.10	13.76	3.03	-11.04	0.83	0.83
	4	0.12	2.79	1.02	0.10	13.62	3.04	-10.84	0.93	0.93
	5	0.13	2.91	1.07	0.11	13.68	3.10	-10.77	0.98	0.98
	6	0.14	2.97	1.10	0.12	13.86	3.18	-10.86	1.12	1.12
	7	0.16	3.13	1.17	0.13	14.02	3.27	-10.89	1.20	1.20
	8	0.17	3.24	1.21	0.15	14.13	3.37	-10.89	1.33	1.33
	9	0.19	3.38	1.27	0.16	14.14	3.47	-10.76	1.34	1.34
	10	0.19	3.40	1.27	0.17	14.00	3.54	-10.59	1.40	1.40
	11	0.20	3.46	1.30	0.18	13.56	3.59	-10.11	1.37	1.37
	12	0.20	3.43	1.29	0.18	13.00	3.63	-9.57	1.39	1.39
	13	0.20	3.46	1.29	0.18	12.54	3.65	-9.08	1.33	1.33
	14	0.19	3.40	1.27	0.18	12.22	3.64	-8.82	1.26	1.26
	15	0.18	3.33	1.23	0.17	12.00	3.61	-8.68	1.23	1.23
	16	0.18	3.30	1.22	0.17	11.95	3.56	-8.66	1.15	1.15
	17	0.17	3.21	1.19	0.16	12.07	3.51	-8.86	1.10	1.10
	18	0.16	3.16	1.17	0.15	12.40	3.45	-9.24	1.08	1.08
	19	0.16	3.13	1.16	0.15	12.86	3.39	-9.74	1.04	1.04
	20	0.15	3.08	1.14	0.14	13.38	3.35	-10.31	1.00	1.00
	21	0.15	3.03	1.12	0.14	13.86	3.30	-10.83	0.96	0.96
	22	0.14	2.98	1.10	0.13	14.11	3.25	-11.14	0.91	0.91
	23	0.13	2.91	1.07	0.13	14.23	3.21	-11.32	0.86	0.86
Weekend	24	0.10	2.65	0.92	0.13	14.31	3.21	-11.66	0.61	0.61
	25	0.09	2.54	0.88	0.13	14.45	3.19	-11.91	0.59	0.59
	26	0.09	2.51	0.87	0.12	14.30	3.12	-11.79	0.58	0.58
	27	0.08	2.48	0.85	0.11	14.10	3.08	-11.62	0.54	0.54
	28	0.08	2.43	0.83	0.11	13.95	3.05	-11.52	0.53	0.53
	29	0.08	2.42	0.82	0.10	13.85	3.02	-11.43	0.56	0.56
	30	0.08	2.46	0.85	0.10	13.80	3.01	-11.34	0.59	0.59
	31	0.09	2.51	0.88	0.11	13.78	3.05	-11.27	0.66	0.66
	32	0.10	2.62	0.93	0.11	13.74	3.12	-11.12	0.80	0.80
	33	0.12	2.83	1.00	0.13	13.68	3.24	-10.85	0.91	0.91
	34	0.13	2.99	1.06	0.15	13.57	3.40	-10.58	1.01	1.01
	35	0.15	3.12	1.10	0.17	13.43	3.55	-10.31	1.01	1.01
	36	0.15	3.10	1.10	0.18	13.18	3.64	-10.08	0.99	0.99
	37	0.14	3.08	1.10	0.19	12.87	3.67	-9.78	0.96	0.96
Average	Weekday	0.158	3.1	1.15	0.144	13.4	3.35		1.09	1.09
	Weekend	0.112	2.8	0.97	0.144	13.4	3.35		0.77	0.77
	ADWF ⁽¹⁾	0.145	3.0	1.10	0.144	13.4	3.35		1.00	1.00
	% Error									
	Weekday				-8.7%			11.38		
	Weekend				29.0%			11.98		
	Note:									

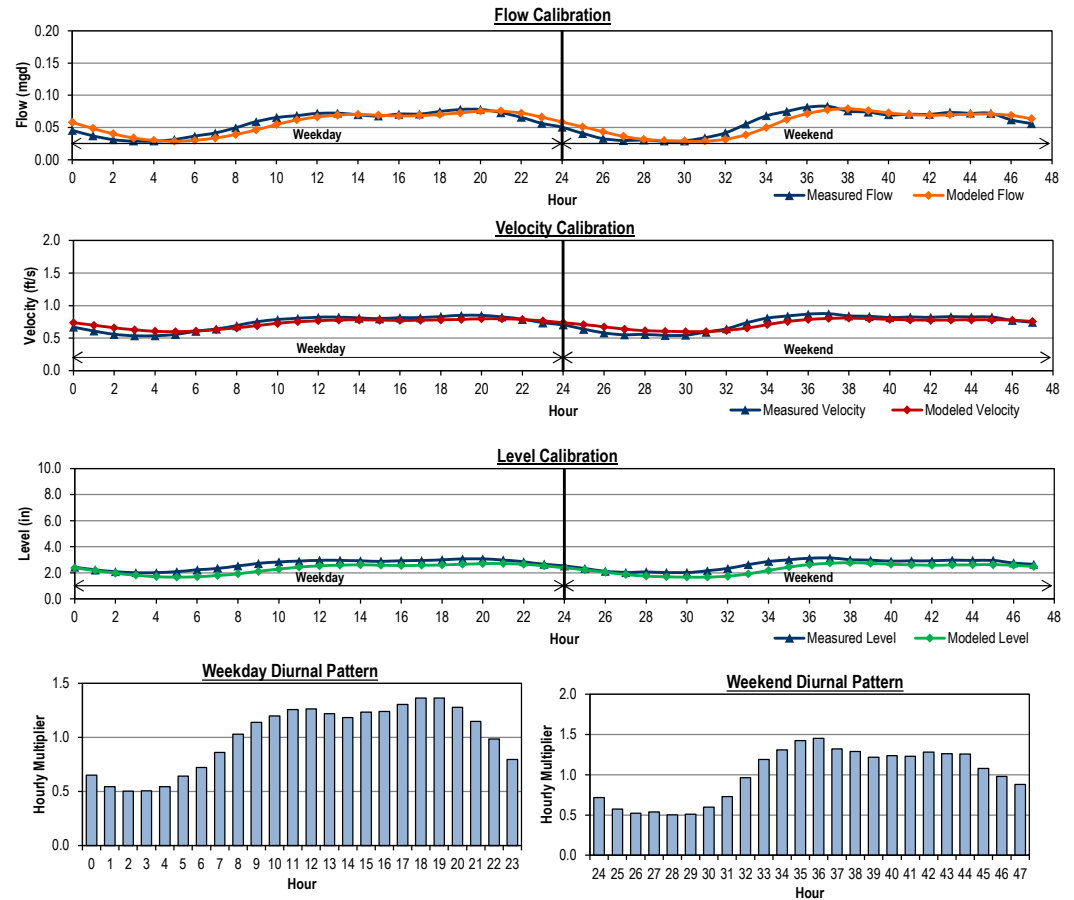




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A9 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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
Weekend	23	0.06	2.66	0.74	0.07	2.54	0.76	0.13	0.79	0.79	0.79
	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:											

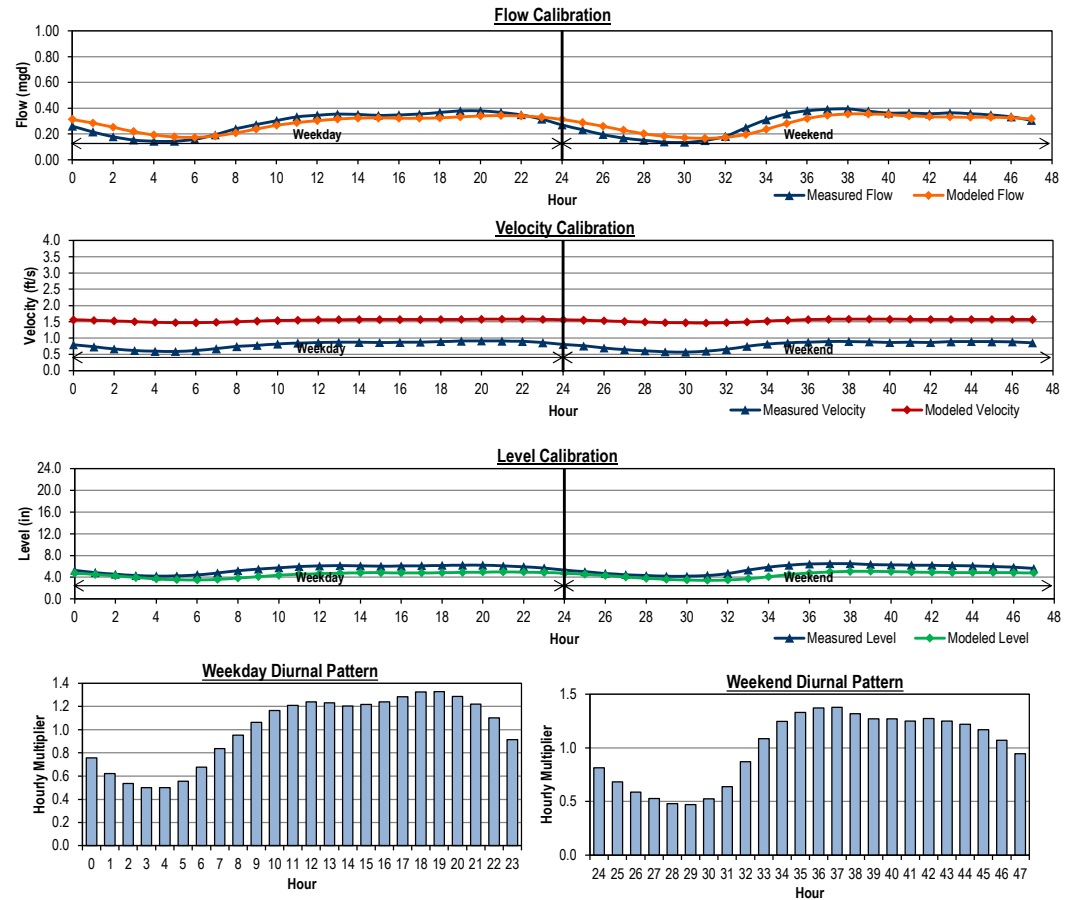




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A10 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	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	4.61	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
Weekend	23	0.31	5.67	0.86	0.33	4.86	1.57	0.81	0.92	0.92	0.92
	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	5.05	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:											

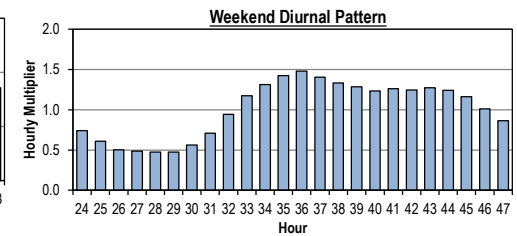
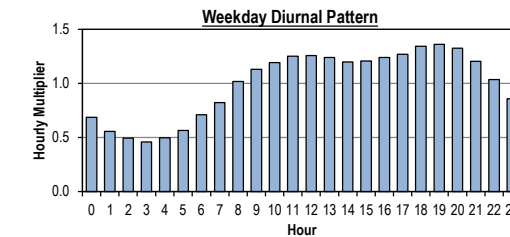
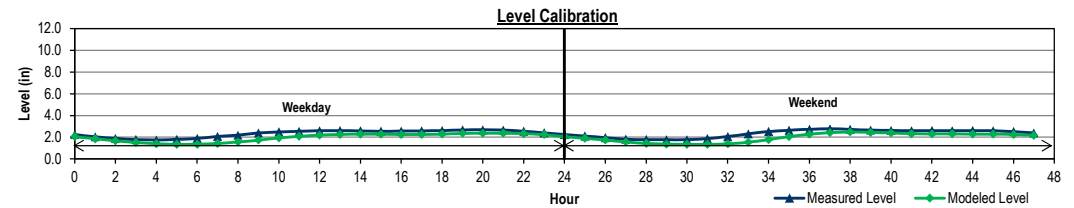
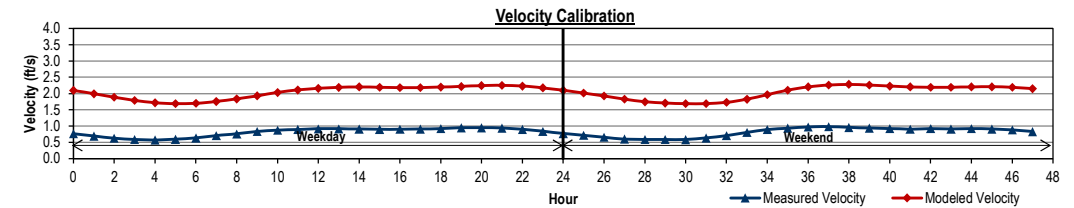
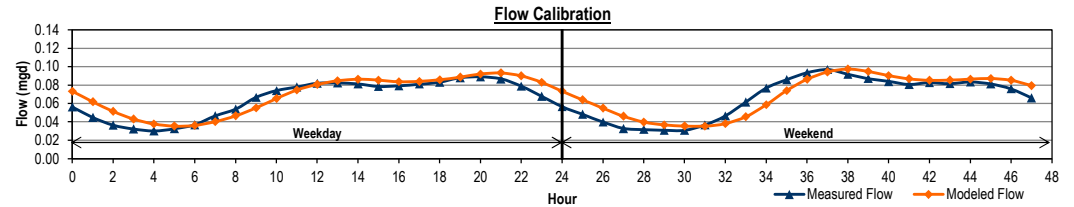




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A11 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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:											

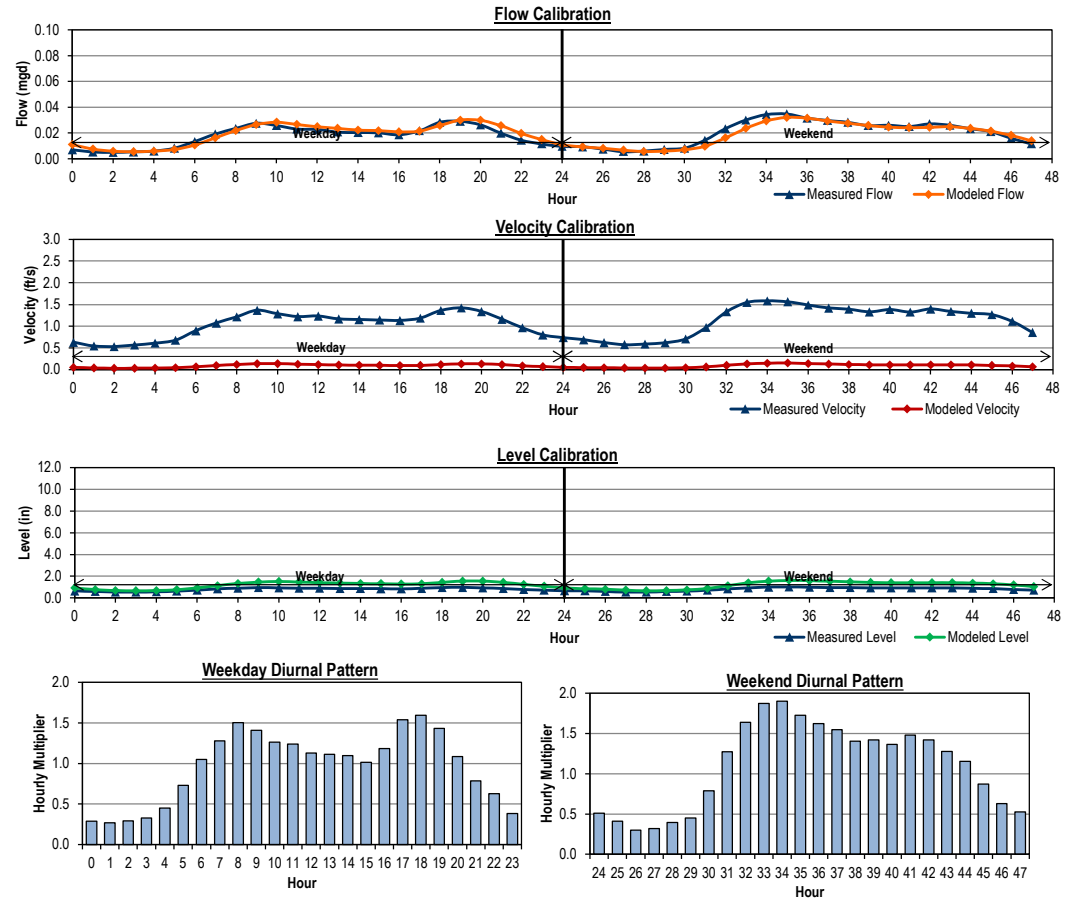




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A12 DRY WEATHER FLOW CALIBRATION



Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	Calibrated Diurnal
Weekday	0	0.01	0.64	0.63	0.01	0.92	0.05	-0.28	0.29	0.29
	1	0.01	0.58	0.55	0.01	0.76	0.04	-0.18	0.27	0.27
	2	0.00	0.55	0.53	0.01	0.67	0.03	-0.12	0.29	0.29
	3	0.01	0.54	0.57	0.01	0.65	0.03	-0.11	0.33	0.33
	4	0.01	0.56	0.61	0.01	0.68	0.04	-0.12	0.45	0.45
	5	0.01	0.63	0.68	0.01	0.75	0.05	-0.12	0.73	0.73
	6	0.01	0.72	0.90	0.01	0.91	0.07	-0.19	1.05	1.05
	7	0.02	0.84	1.08	0.02	1.14	0.10	-0.30	1.28	1.28
	8	0.02	0.90	1.22	0.02	1.32	0.12	-0.43	1.50	1.50
	9	0.03	0.94	1.37	0.03	1.46	0.14	-0.52	1.41	1.41
	10	0.03	0.93	1.29	0.03	1.51	0.14	-0.58	1.26	1.26
	11	0.02	0.89	1.22	0.03	1.46	0.13	-0.57	1.24	1.24
	12	0.02	0.89	1.23	0.02	1.41	0.12	-0.52	1.13	1.13
	13	0.02	0.86	1.17	0.02	1.37	0.11	-0.50	1.11	1.11
	14	0.02	0.86	1.15	0.02	1.33	0.10	-0.47	1.10	1.10
	15	0.02	0.85	1.14	0.02	1.31	0.10	-0.46	1.02	1.02
	16	0.02	0.83	1.13	0.02	1.29	0.10	-0.45	1.18	1.18
	17	0.02	0.88	1.19	0.02	1.30	0.10	-0.42	1.54	1.54
	18	0.03	0.95	1.36	0.03	1.43	0.12	-0.48	1.59	1.59
	19	0.03	0.97	1.42	0.03	1.55	0.13	-0.58	1.43	1.43
	20	0.03	0.93	1.34	0.03	1.55	0.13	-0.61	1.09	1.09
	21	0.02	0.85	1.16	0.03	1.43	0.12	-0.58	0.78	0.78
	22	0.01	0.77	0.97	0.02	1.25	0.09	-0.48	0.63	0.63
	23	0.01	0.72	0.80	0.01	1.06	0.07	-0.36	0.38	0.38
Weekend	24	0.01	0.66	0.74	0.01	0.92	0.05	-0.26	0.51	0.51
	25	0.01	0.65	0.69	0.01	0.84	0.05	-0.19	0.41	0.41
	26	0.01	0.60	0.63	0.01	0.80	0.05	-0.20	0.30	0.30
	27	0.01	0.54	0.58	0.01	0.72	0.04	-0.18	0.32	0.32
	28	0.01	0.53	0.59	0.01	0.66	0.04	-0.12	0.39	0.39
	29	0.01	0.60	0.62	0.01	0.68	0.04	-0.08	0.45	0.45
	30	0.01	0.62	0.71	0.01	0.74	0.05	-0.12	0.79	0.79
	31	0.01	0.71	0.97	0.01	0.88	0.06	-0.17	1.27	1.27
	32	0.02	0.82	1.33	0.02	1.14	0.10	-0.31	1.64	1.64
	33	0.03	0.92	1.55	0.02	1.38	0.13	-0.47	1.87	1.87
	34	0.03	1.00	1.59	0.03	1.54	0.15	-0.54	1.90	1.90
	35	0.03	1.01	1.56	0.03	1.61	0.15	-0.59	1.72	1.72
	36	0.03	0.99	1.49	0.03	1.59	0.14	-0.60	1.62	1.62
	37	0.03	0.95	1.42	0.03	1.53	0.13	-0.57	1.55	1.55
	38	0.03	0.95	1.39	0.03	1.48	0.12	-0.53	1.40	1.40
	39	0.03	0.93	1.33	0.03	1.43	0.11	-0.50	1.42	1.42
	40	0.03	0.91	1.39	0.02	1.39	0.11	-0.48	1.37	1.37
	41	0.02	0.93	1.32	0.02	1.38	0.11	-0.45	1.48	1.48
	42	0.03	0.93	1.40	0.02	1.39	0.11	-0.46	1.42	1.42
	43	0.03	0.92	1.34	0.02	1.40	0.11	-0.48	1.27	1.27
	44	0.02	0.89	1.30	0.02	1.37	0.11	-0.48	1.15	1.15
	45	0.02	0.85	1.27	0.02	1.30	0.10	-0.45	0.87	0.87
	46	0.02	0.78	1.11	0.02	1.20	0.09	-0.42	0.63	0.63
	47	0.01	0.71	0.86	0.01	1.05	0.07	-0.33	0.53	0.53
Average										
Weekday		0.018	0.8	1.03	0.019	1.2	0.09		0.96	0.96
Weekend		0.020	0.8	1.13	0.019	1.2	0.09		1.09	1.09
ADWF ⁽¹⁾		0.018	0.8	1.06	0.019	1.2	0.09		1.00	1.00
% Error										
Weekday					7.2%			0.61		
Weekend					-5.7%			0.60		
Note:										

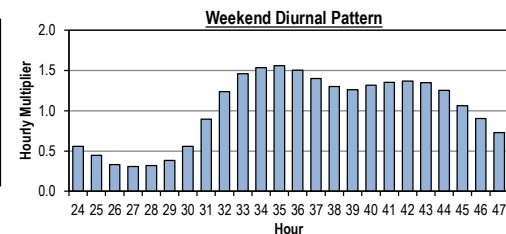
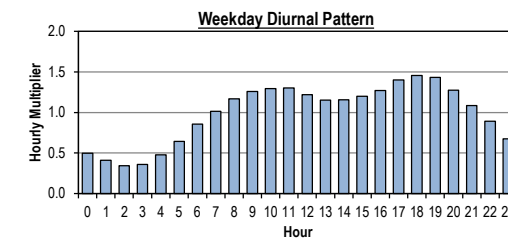
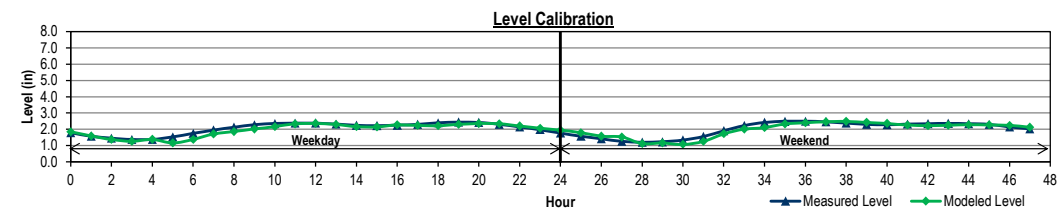
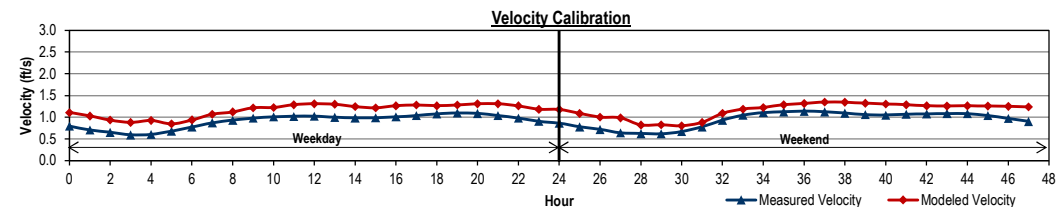
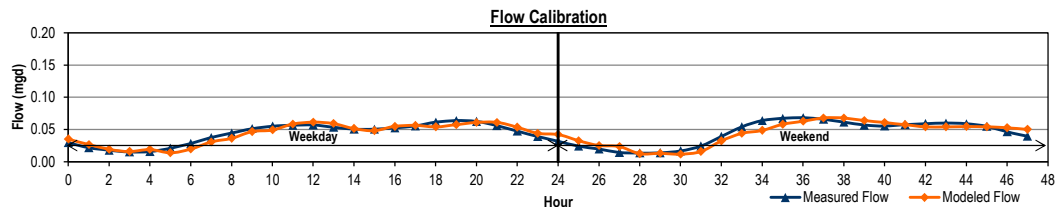




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A13 DRY WEATHER FLOW CALIBRATION



Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
	Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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
	1	0.02	1.57	0.71	0.03	1.59	1.03	-0.01	0.41	0.41
	2	0.02	1.46	0.65	0.02	1.38	0.93	0.08	0.34	0.34
	3	0.02	1.37	0.60	0.02	1.27	0.88	0.11	0.36	0.36
	4	0.02	1.38	0.60	0.02	1.39	0.93	-0.01	0.48	0.48
	5	0.02	1.54	0.68	0.01	1.17	0.85	0.37	0.65	0.65
	6	0.03	1.75	0.77	0.02	1.38	0.94	0.36	0.86	0.86
	7	0.04	1.96	0.87	0.03	1.72	1.07	0.24	1.02	1.02
	8	0.04	2.12	0.93	0.04	1.86	1.12	0.26	1.17	1.17
	9	0.05	2.28	0.98	0.05	2.02	1.22	0.26	1.26	1.26
	10	0.06	2.35	1.01	0.05	2.16	1.23	0.19	1.30	1.30
	11	0.06	2.38	1.02	0.06	2.33	1.29	0.05	1.30	1.30
	12	0.06	2.38	1.02	0.06	2.36	1.31	0.02	1.22	1.22
	13	0.05	2.32	1.00	0.06	2.30	1.30	0.02	1.15	1.15
	14	0.05	2.25	0.99	0.05	2.18	1.25	0.08	1.15	1.15
	15	0.05	2.22	0.99	0.05	2.15	1.22	0.07	1.20	1.20
	16	0.05	2.26	1.01	0.05	2.27	1.26	-0.01	1.27	1.27
	17	0.06	2.31	1.04	0.06	2.24	1.28	0.07	1.40	1.40
	18	0.06	2.40	1.08	0.05	2.22	1.26	0.18	1.46	1.46
	19	0.06	2.45	1.10	0.06	2.31	1.28	0.14	1.43	1.43
	20	0.06	2.43	1.09	0.06	2.36	1.31	0.07	1.28	1.28
	21	0.06	2.31	1.04	0.06	2.34	1.31	-0.03	1.08	1.08
	22	0.05	2.15	0.98	0.05	2.20	1.26	-0.05	0.89	0.89
	23	0.04	1.96	0.91	0.04	2.06	1.18	-0.09	0.67	0.67
Weekend	24	0.03	1.77	0.86	0.04	1.95	1.18	-0.18	0.56	0.56
	25	0.02	1.58	0.78	0.03	1.79	1.09	-0.21	0.45	0.45
	26	0.02	1.42	0.72	0.03	1.58	1.00	-0.16	0.33	0.33
	27	0.01	1.26	0.64	0.02	1.53	0.99	-0.26	0.31	0.31
	28	0.01	1.21	0.63	0.01	1.12	0.82	0.09	0.32	0.32
	29	0.01	1.24	0.62	0.01	1.15	0.83	0.08	0.38	0.38
	30	0.02	1.34	0.67	0.01	1.07	0.81	0.27	0.56	0.56
	31	0.02	1.55	0.78	0.02	1.26	0.88	0.30	0.89	0.89
	32	0.04	1.91	0.93	0.03	1.72	1.09	0.19	1.24	1.24
	33	0.05	2.23	1.05	0.04	2.01	1.19	0.22	1.46	1.46
	34	0.06	2.43	1.11	0.05	2.11	1.23	0.32	1.53	1.53
	35	0.07	2.49	1.13	0.06	2.33	1.29	0.16	1.56	1.56
	36	0.07	2.50	1.14	0.06	2.40	1.32	0.10	1.50	1.50
	37	0.07	2.46	1.12	0.07	2.47	1.35	-0.01	1.40	1.40
	38	0.06	2.38	1.10	0.07	2.49	1.35	-0.10	1.30	1.30
	39	0.06	2.31	1.06	0.06	2.43	1.32	-0.12	1.26	1.26
	40	0.06	2.28	1.05	0.06	2.35	1.31	-0.08	1.31	1.31
	41	0.06	2.32	1.07	0.06	2.26	1.29	0.05	1.35	1.35
	42	0.06	2.35	1.08	0.05	2.22	1.26	0.13	1.37	1.37
	43	0.06	2.36	1.08	0.05	2.25	1.26	0.11	1.35	1.35
	44	0.06	2.34	1.08	0.05	2.28	1.26	0.07	1.25	1.25
	45	0.05	2.30	1.04	0.05	2.27	1.26	0.03	1.06	1.06
	46	0.05	2.15	0.97	0.05	2.25	1.25	-0.09	0.90	0.90
	47	0.04	2.02	0.90	0.05	2.13	1.24	-0.11	0.73	0.73
Average										
Weekday		0.044	2.1	0.91	0.043	2.0	1.16		0.99	0.99
Weekend		0.044	2.0	0.94	0.044	2.0	1.16		1.02	1.02
ADWF ⁽¹⁾		0.044	2.0	0.92	0.043	2.0	1.16		1.00	1.00
% Error										
Weekday					-1.1%			0.37		
Weekend					-0.7%			0.32		
Note:										

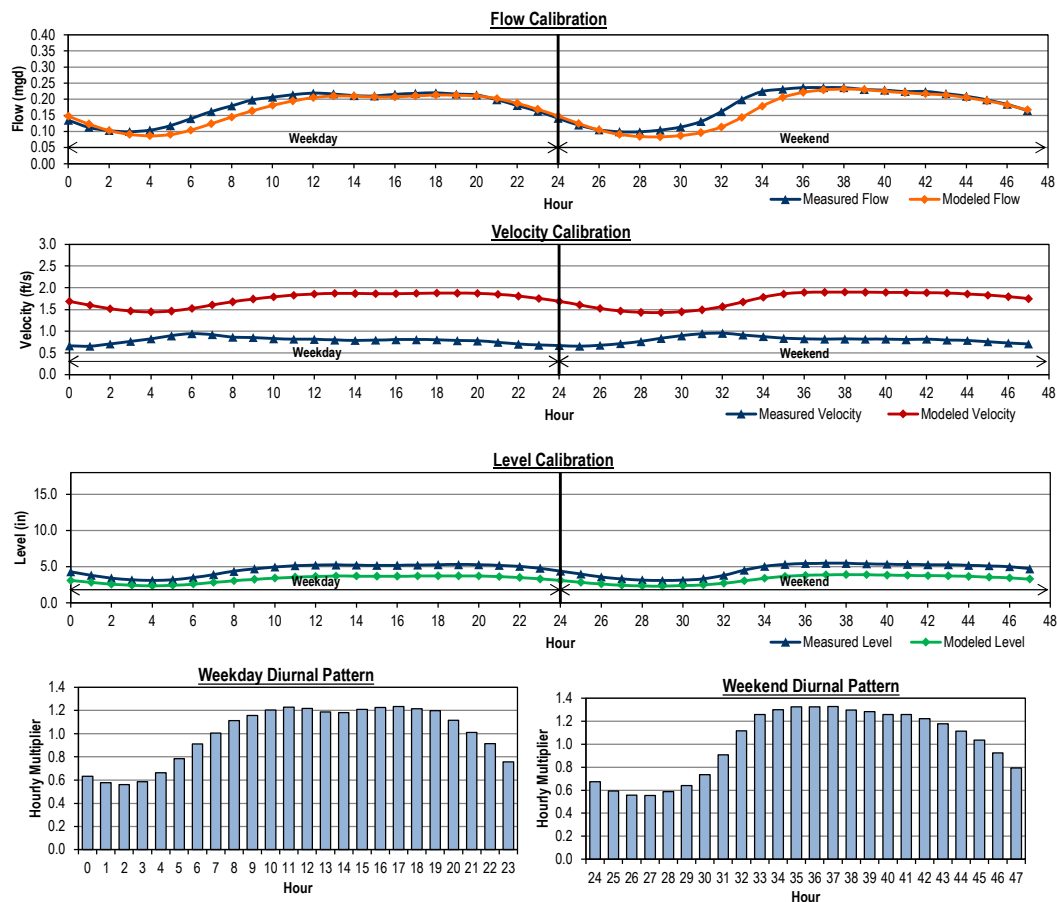




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A14 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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	2.58	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	3.86	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:											

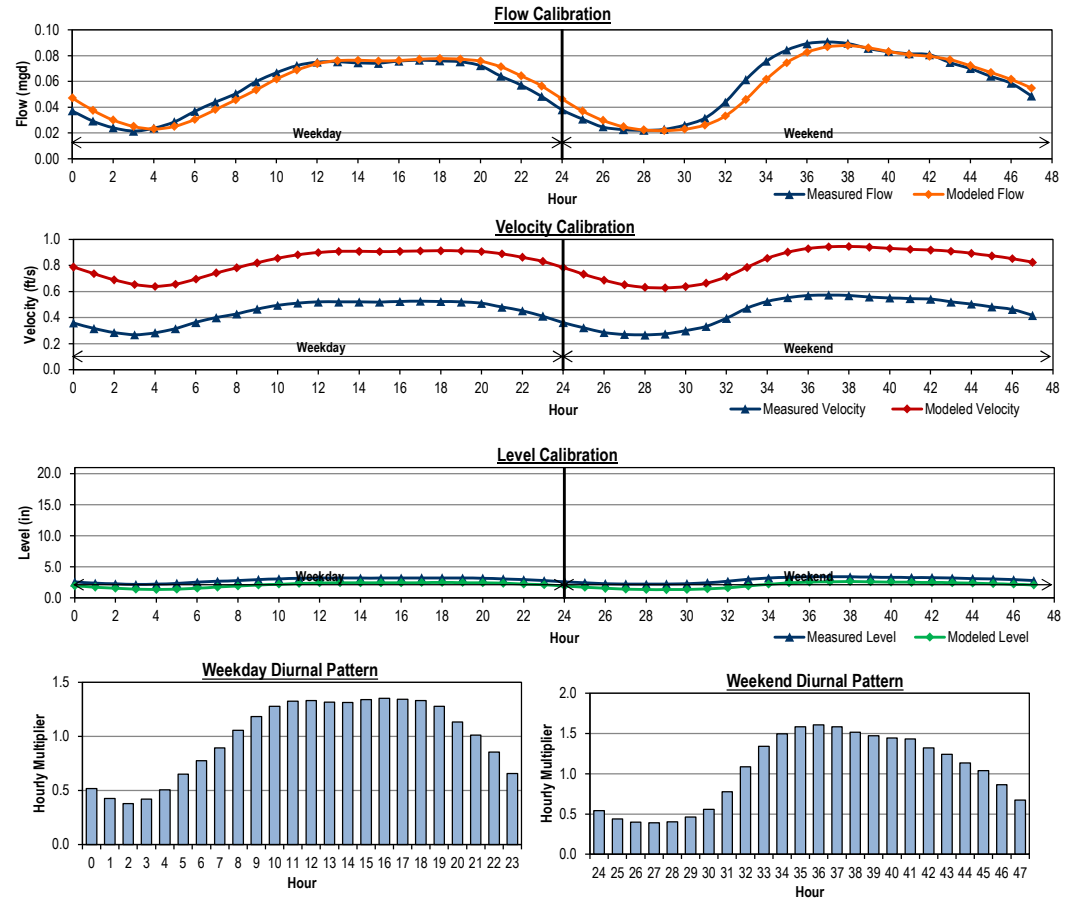




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A15 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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:											

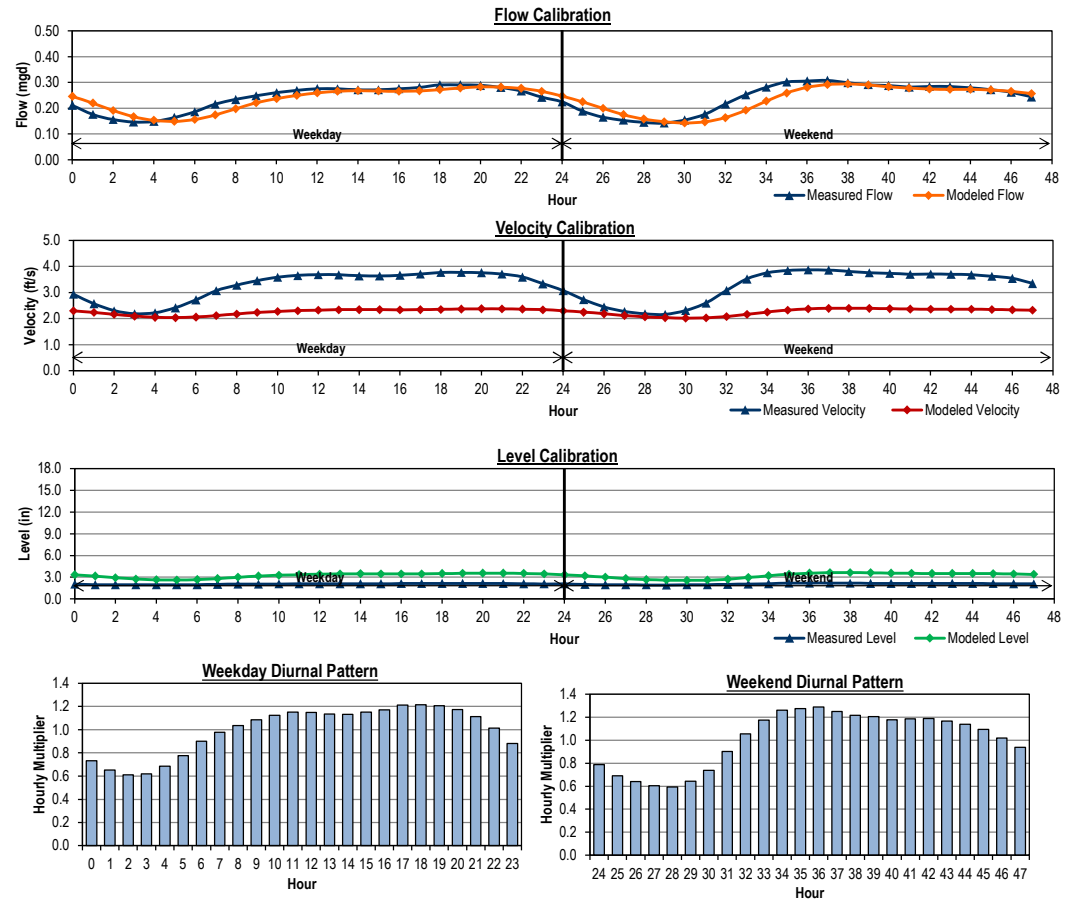




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE A16 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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:											

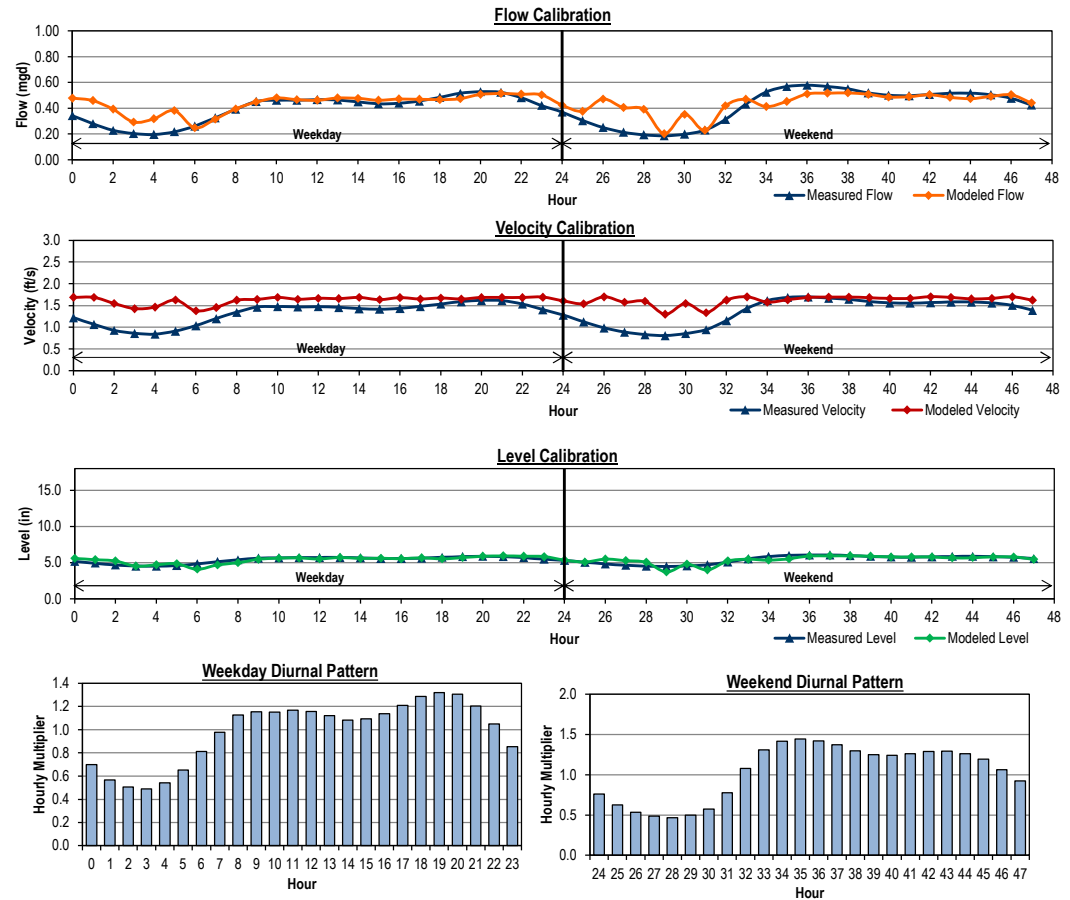




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-1 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	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
Weekend	23	0.42	5.48	1.41	0.50	5.63	1.69	-0.34	0.85	0.85	0.85
	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	0.48	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:											

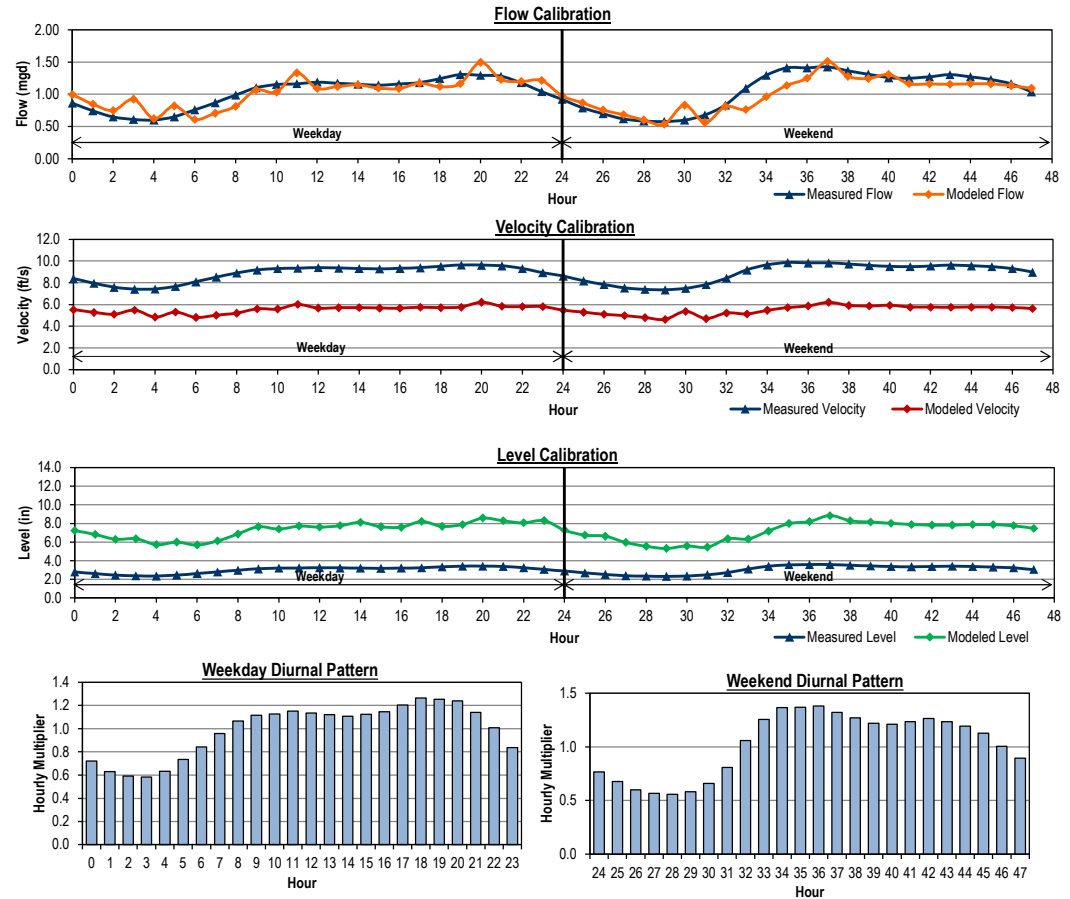




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-2 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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	0.96	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:											

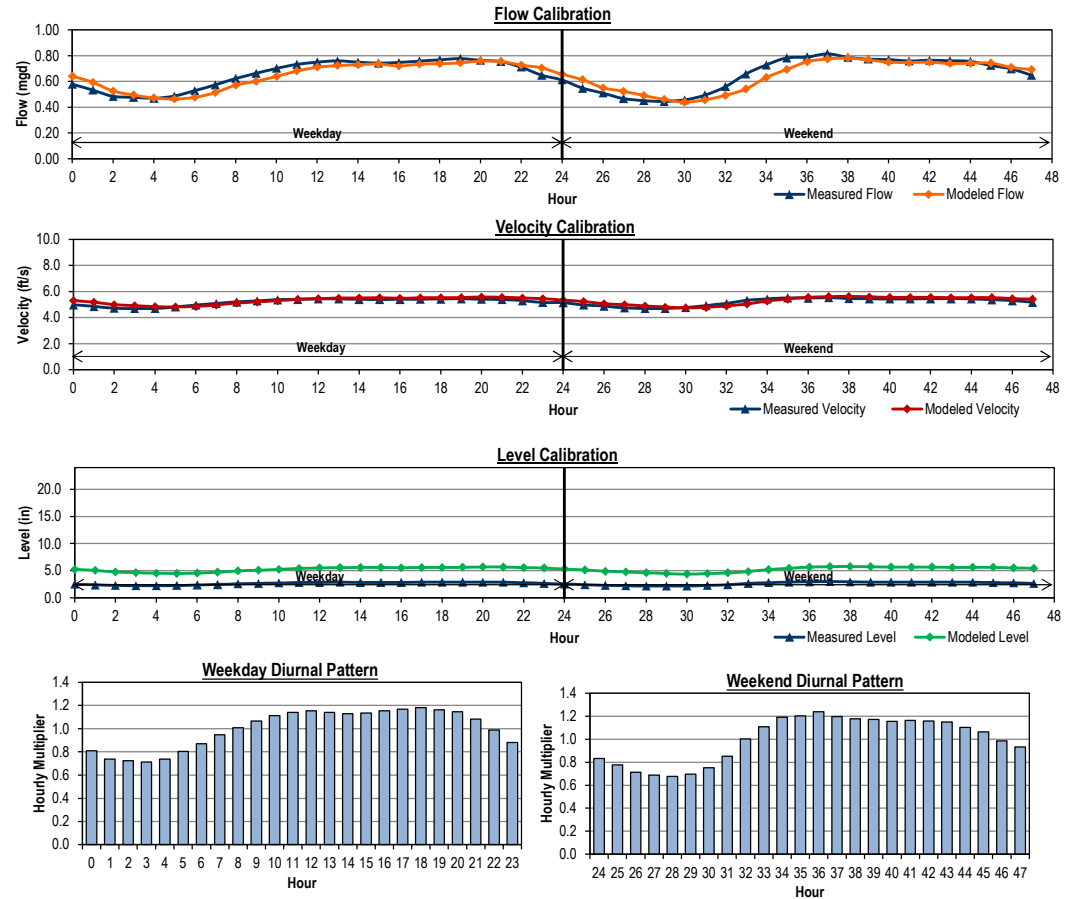




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-3 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	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:											

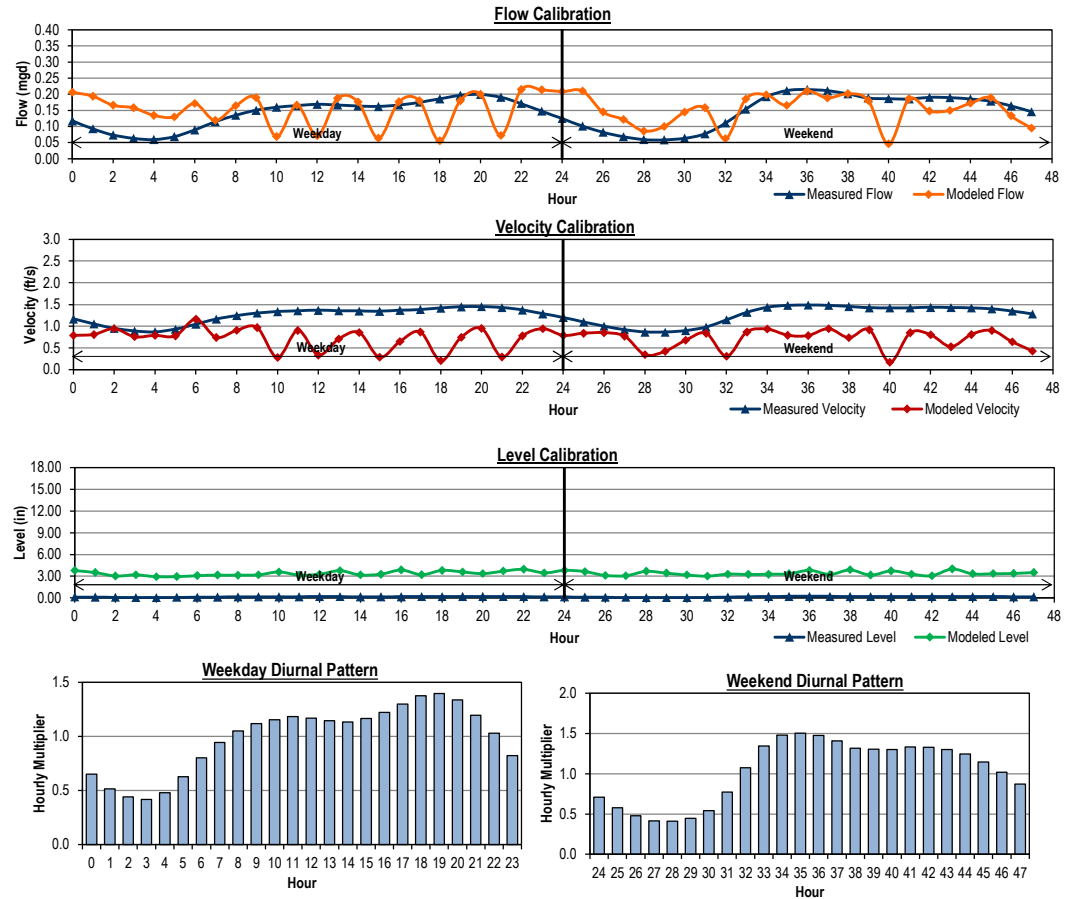




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE Y-4 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	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	3.25	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	3.45	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:											

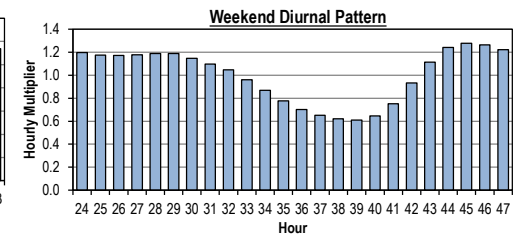
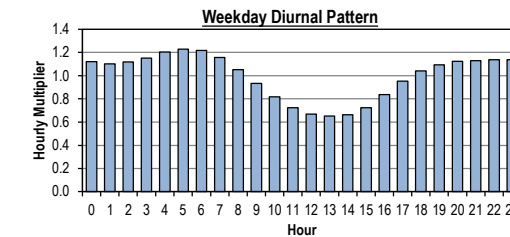
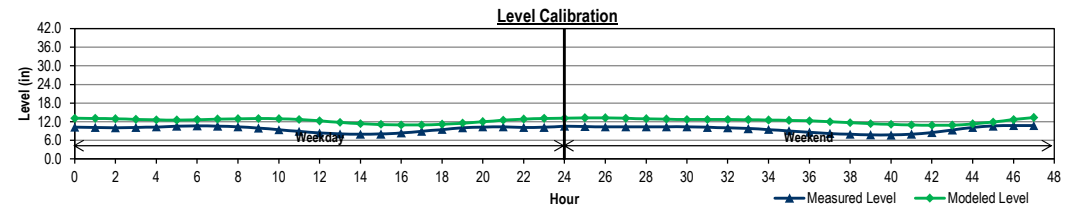
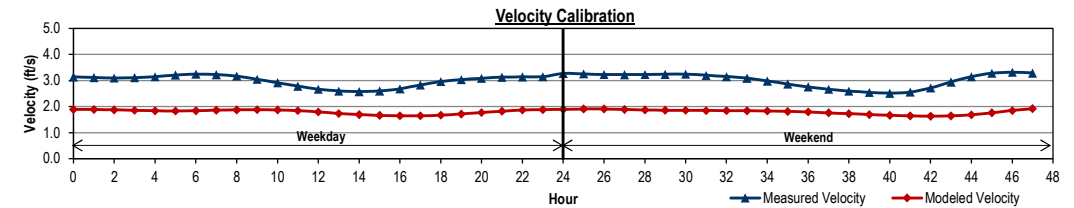
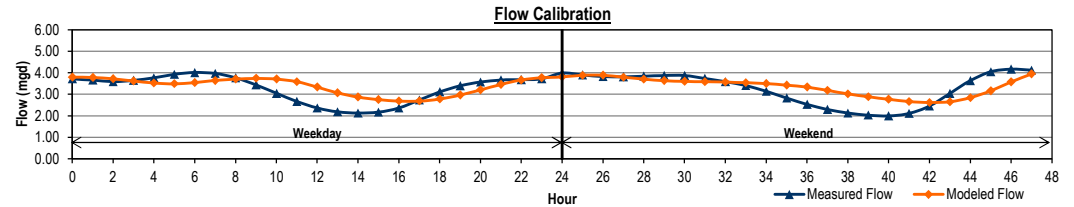




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE WINT003 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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	3.65	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	3.96	10.51	3.27	3.81	13.10	1.89	-2.99	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:											

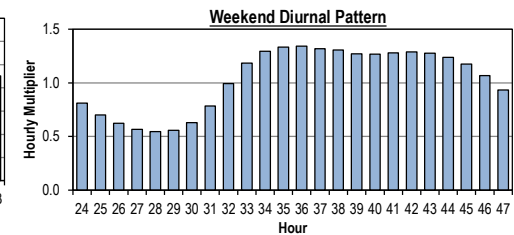
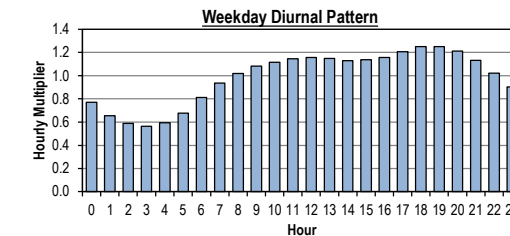
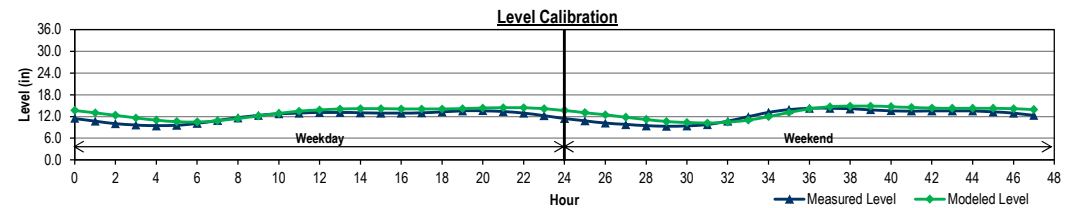
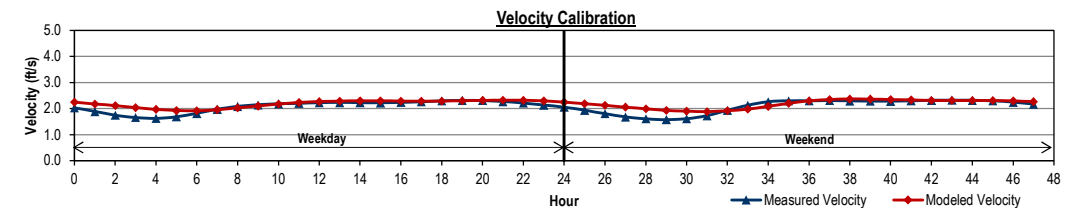
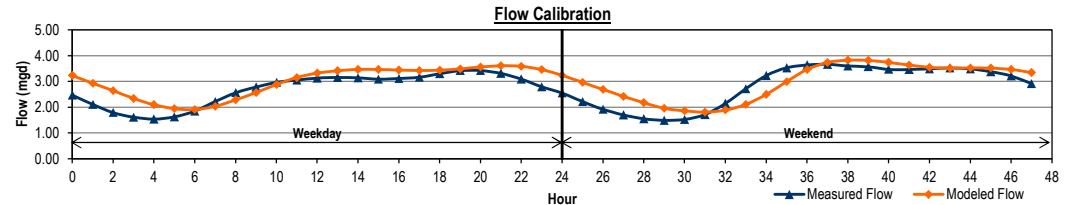




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE MSTTR02 DRY WEATHER FLOW CALIBRATION



	Hour	Measured Data			Modeled Data			Level Diff (in)	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		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:											

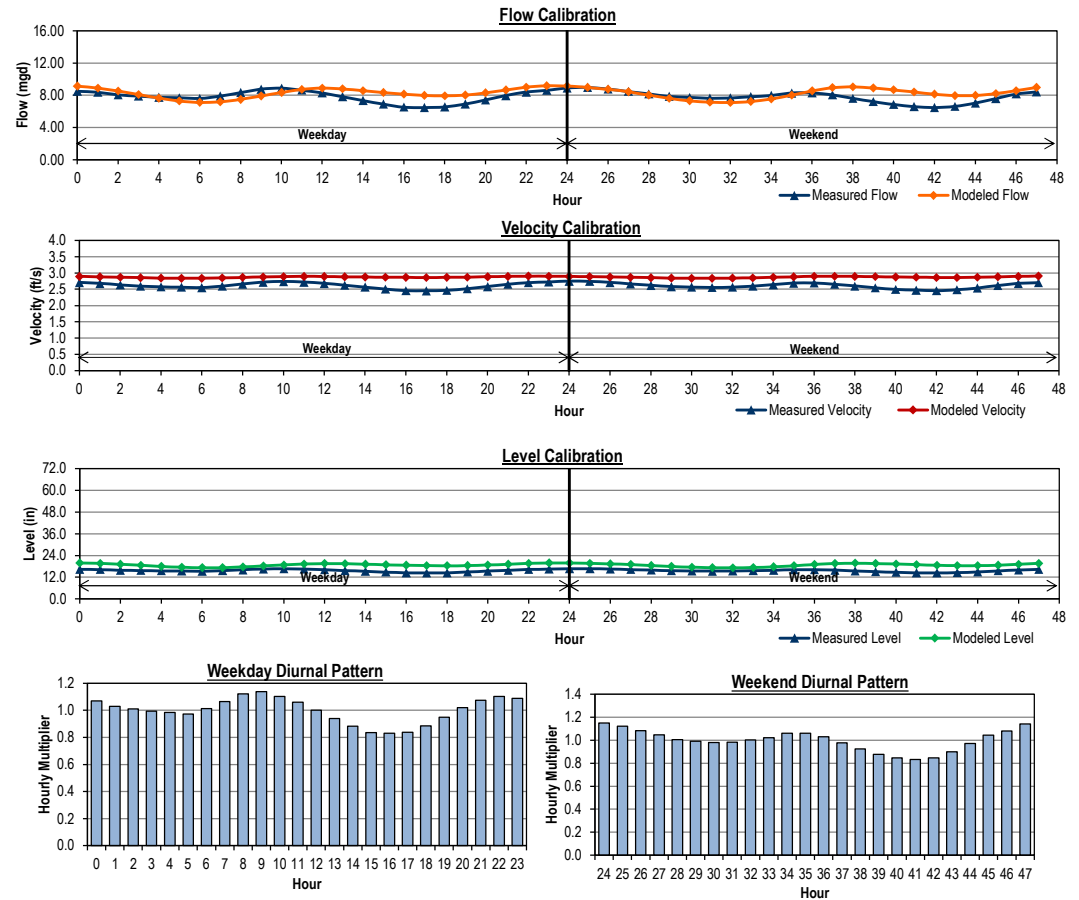




City of Auburn
Collection System Planning Project
FLOW MONITORING SITE AUBRN53 DRY WEATHER FLOW CALIBRATION



		Measured Data			Modeled Data			Level Diff	Diurnal		
		Flow (mgd)	Level (in)	Velocity (ft/s)	Flow (mgd)	Level (in)	Velocity (ft/s)		Initial Curve	Modified Curve	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	8.296	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)	Connecte d Imperviou s (acres)	Connected Pervious (acres)	Total Connecte d (acres)	Total Connecte d (%)
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	Impervio us (%)	Time of Concent ration (min)	Reductio n 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 deptn causing Baseflow	GW Deptn for Unit Capillary flux (GWLf1)
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

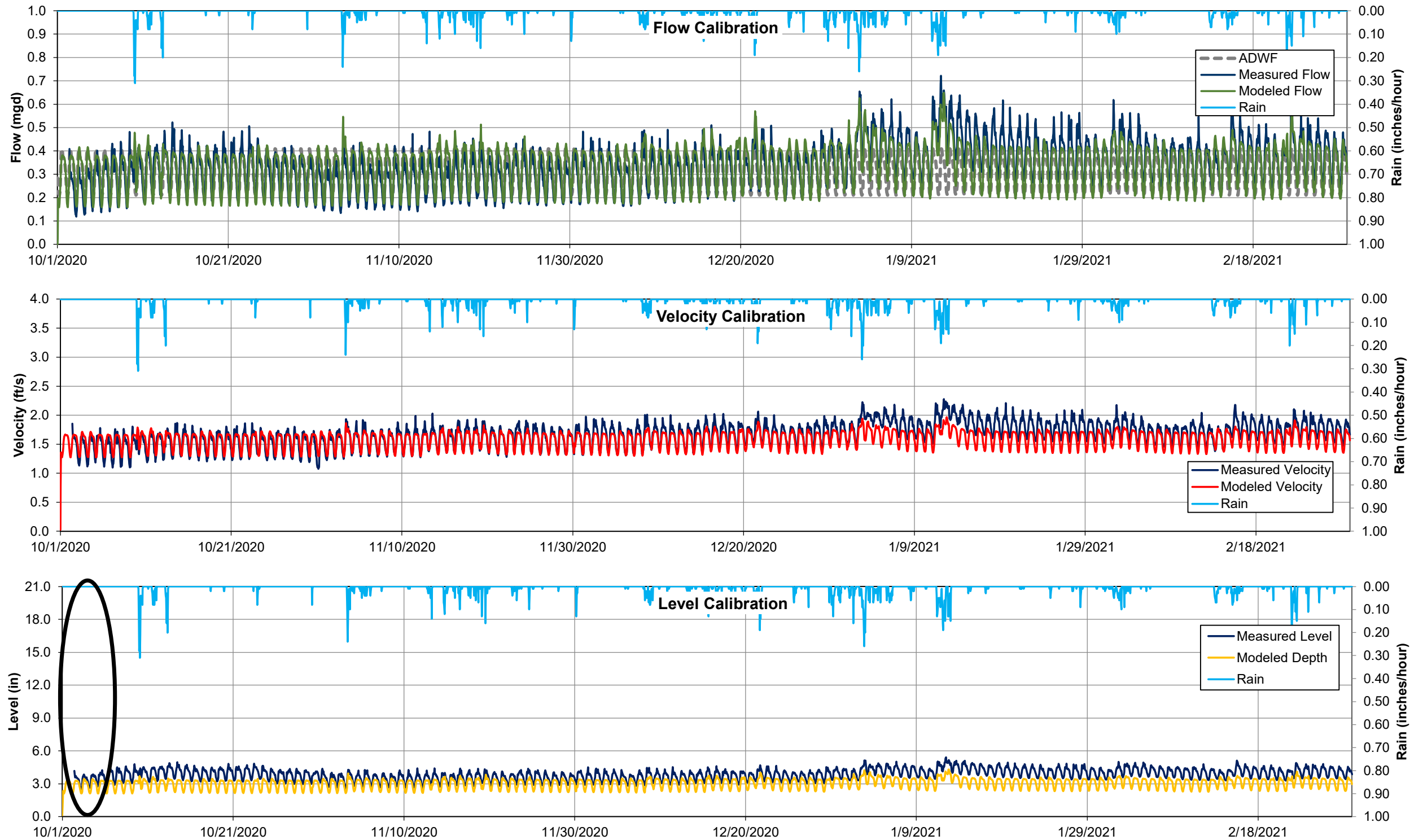
WET WEATHER CALIBRATION SUMMARY SHEETS



FLOW MONITORING A1 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A1
Pipeline diameter: 21"
City Manhole ID: 308-20

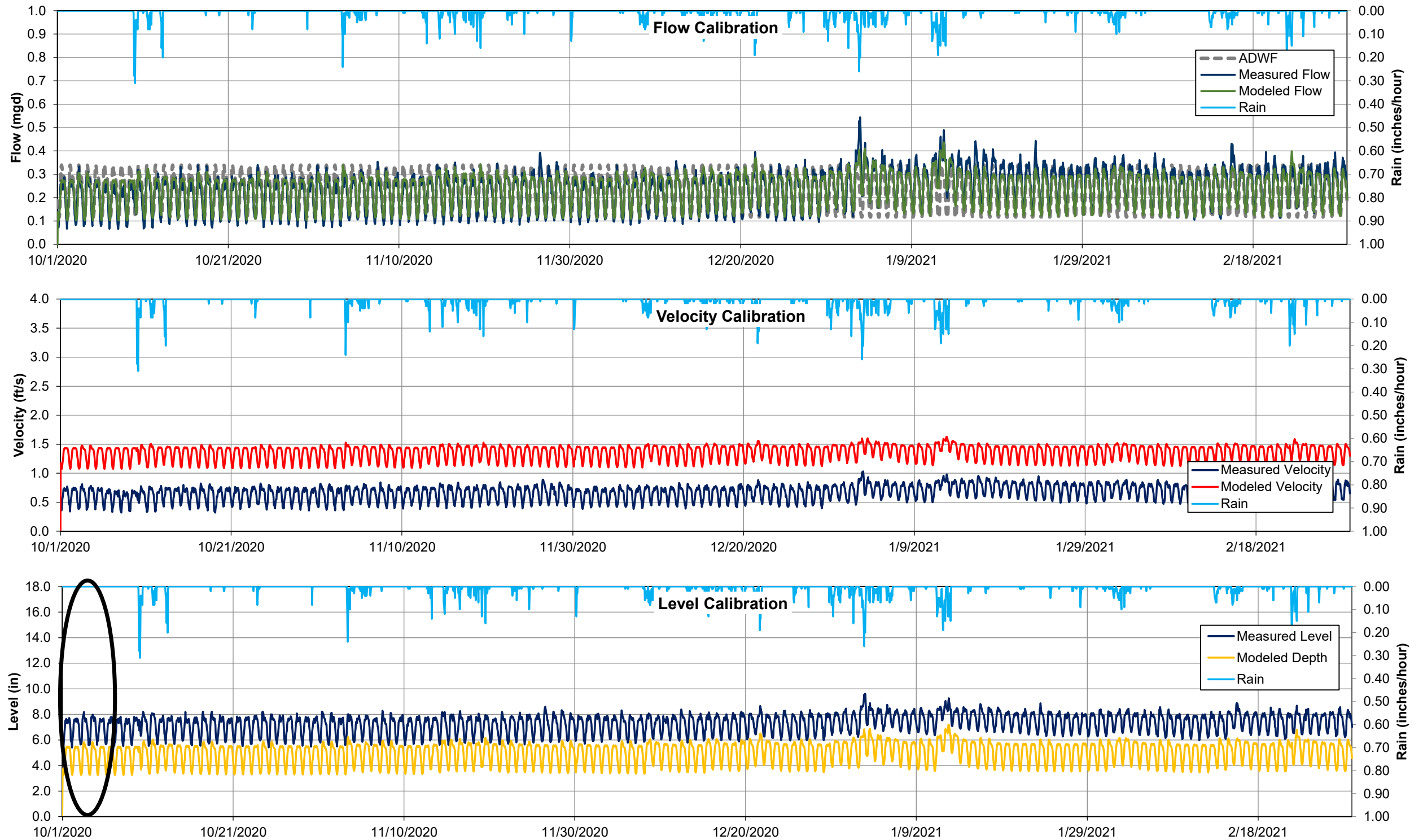




FLOW MONITORING A1c WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A1c
Pipeline diameter: 18"
City Manhole ID: 309-06

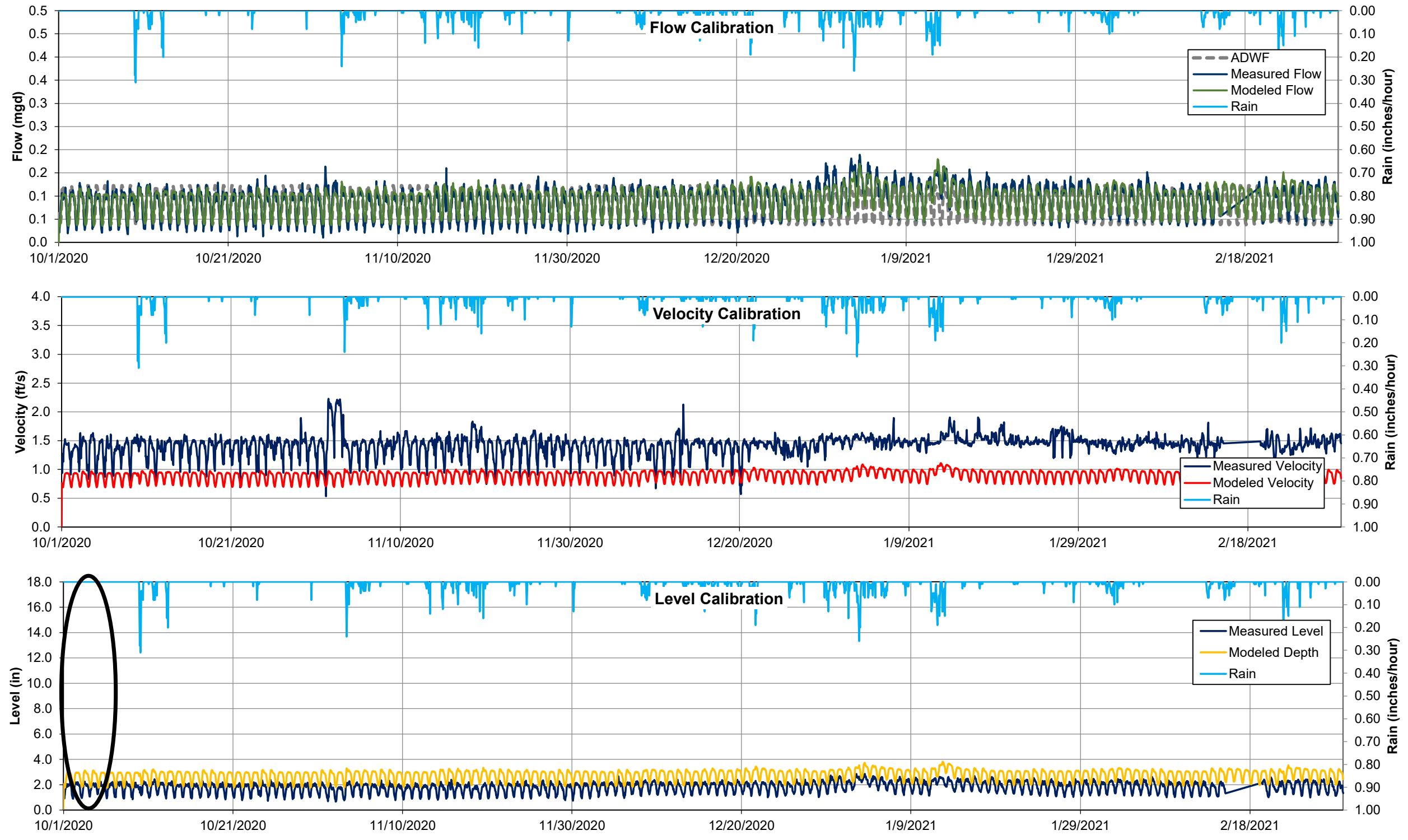




FLOW MONITORING A1d WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A1d
Pipeline diameter: 18"
City Manhole ID: 309-10

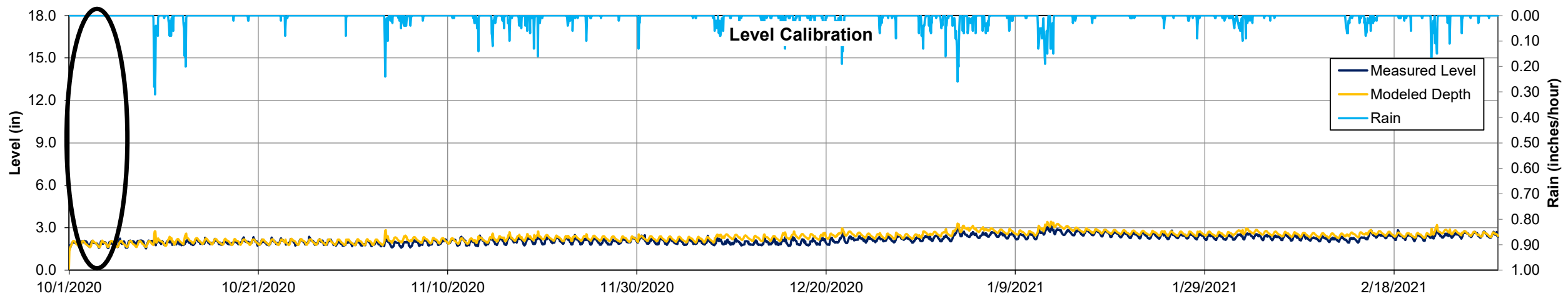
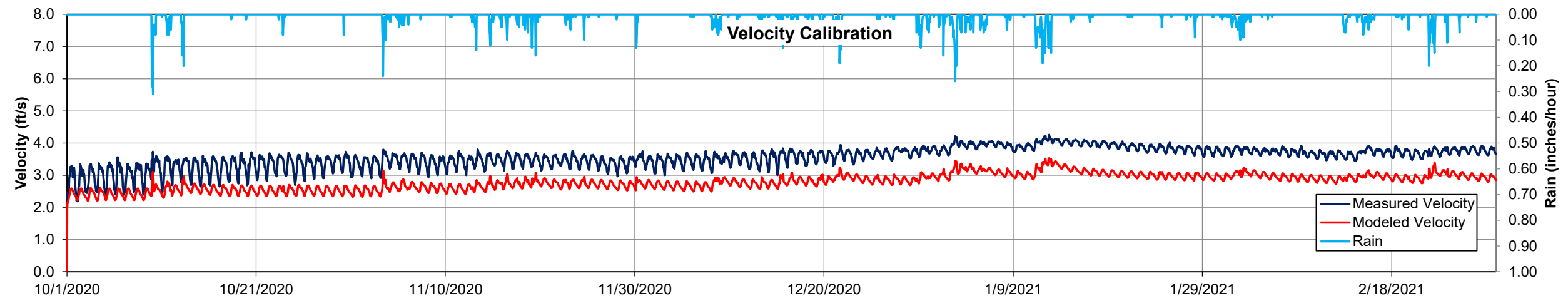
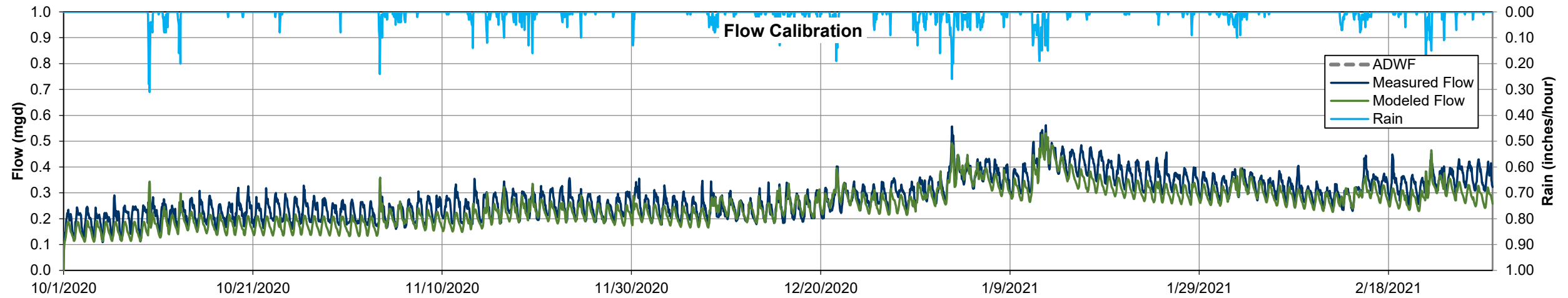




FLOW MONITORING A3 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A3
Pipeline diameter: 18"
City Manhole ID: 409-34

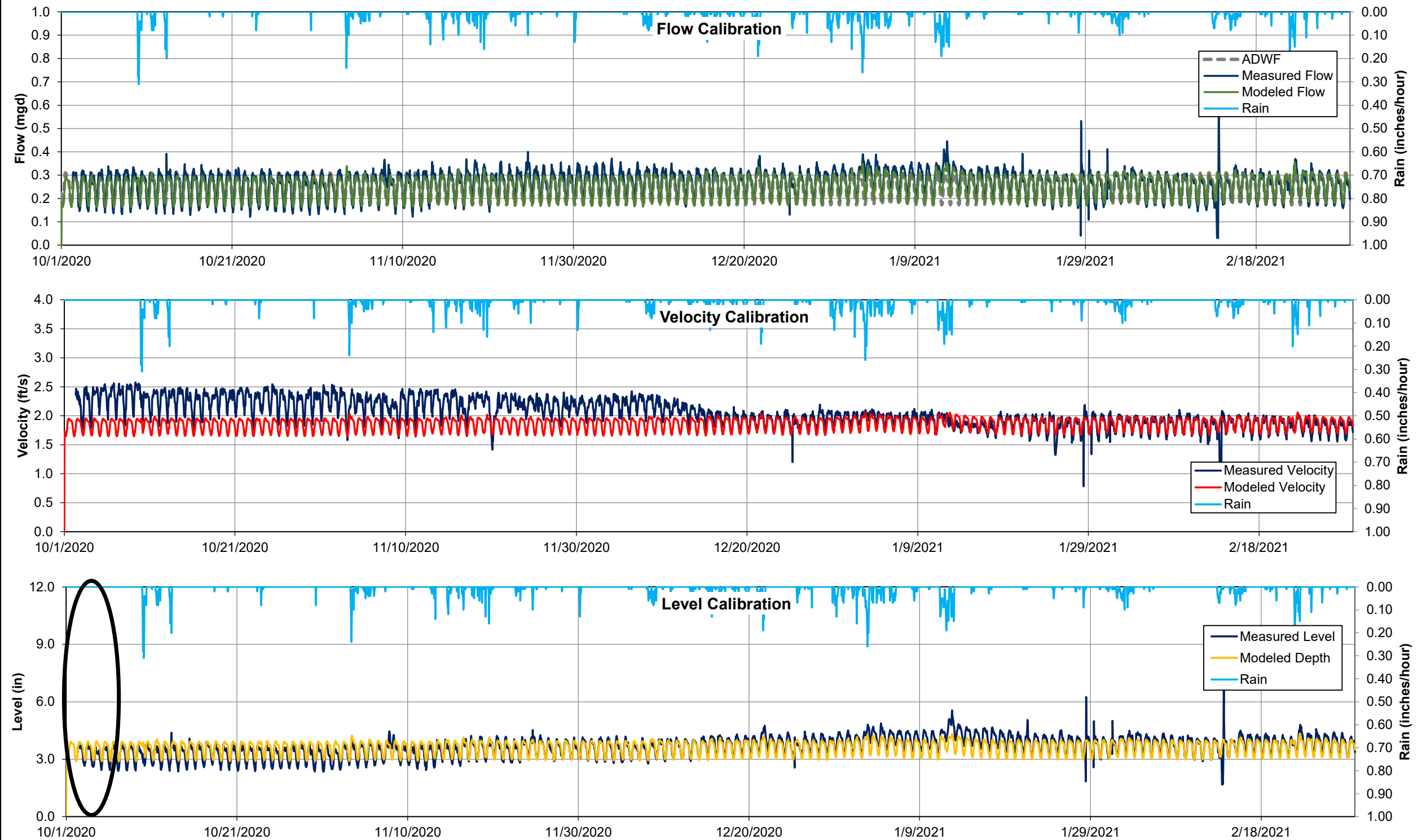




FLOW MONITORING A4 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A4
Pipeline diameter: 12"
City Manhole ID: 508-17

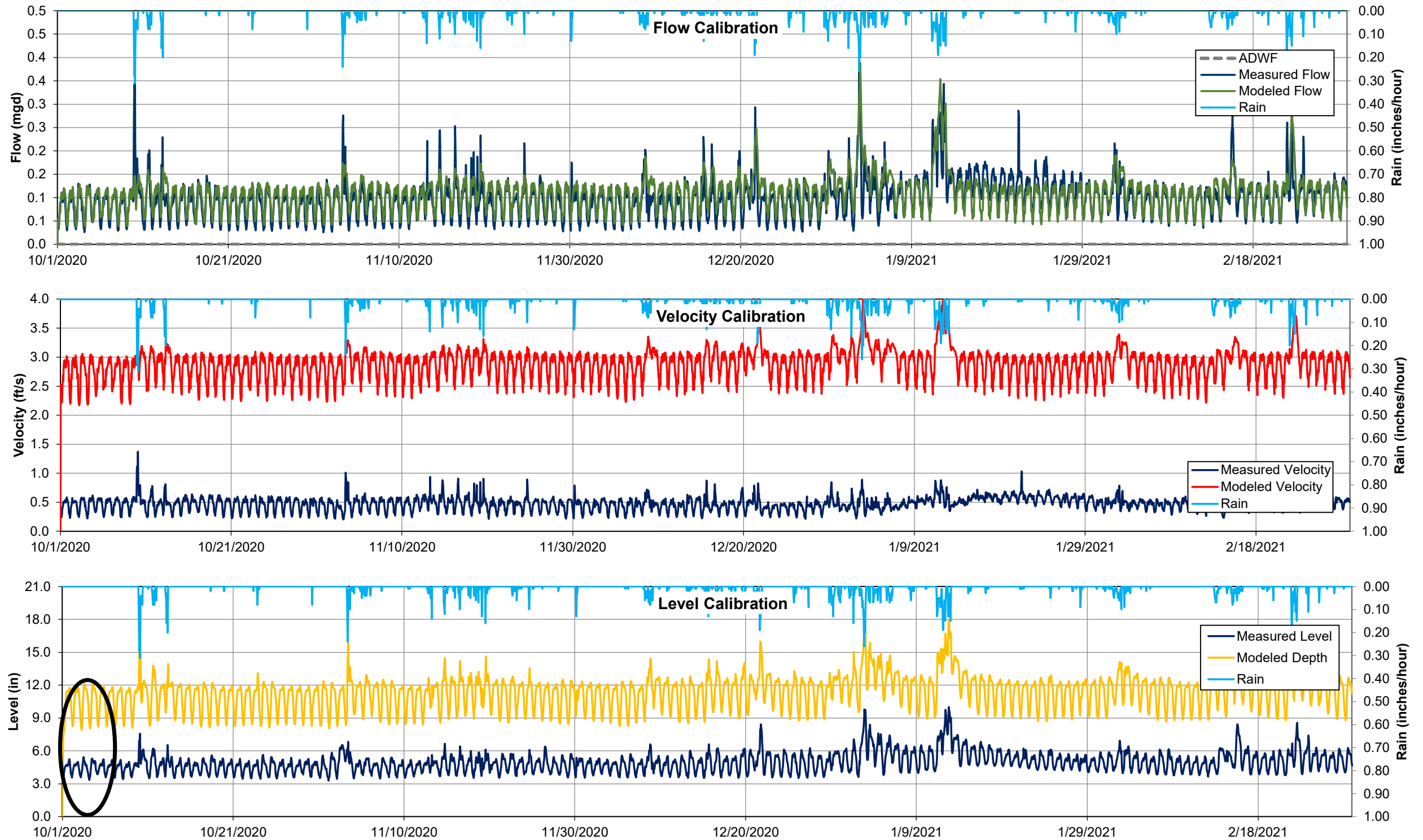




FLOW MONITORING A6 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A6
Pipeline diameter: 12"
City Manhole ID: 610-31

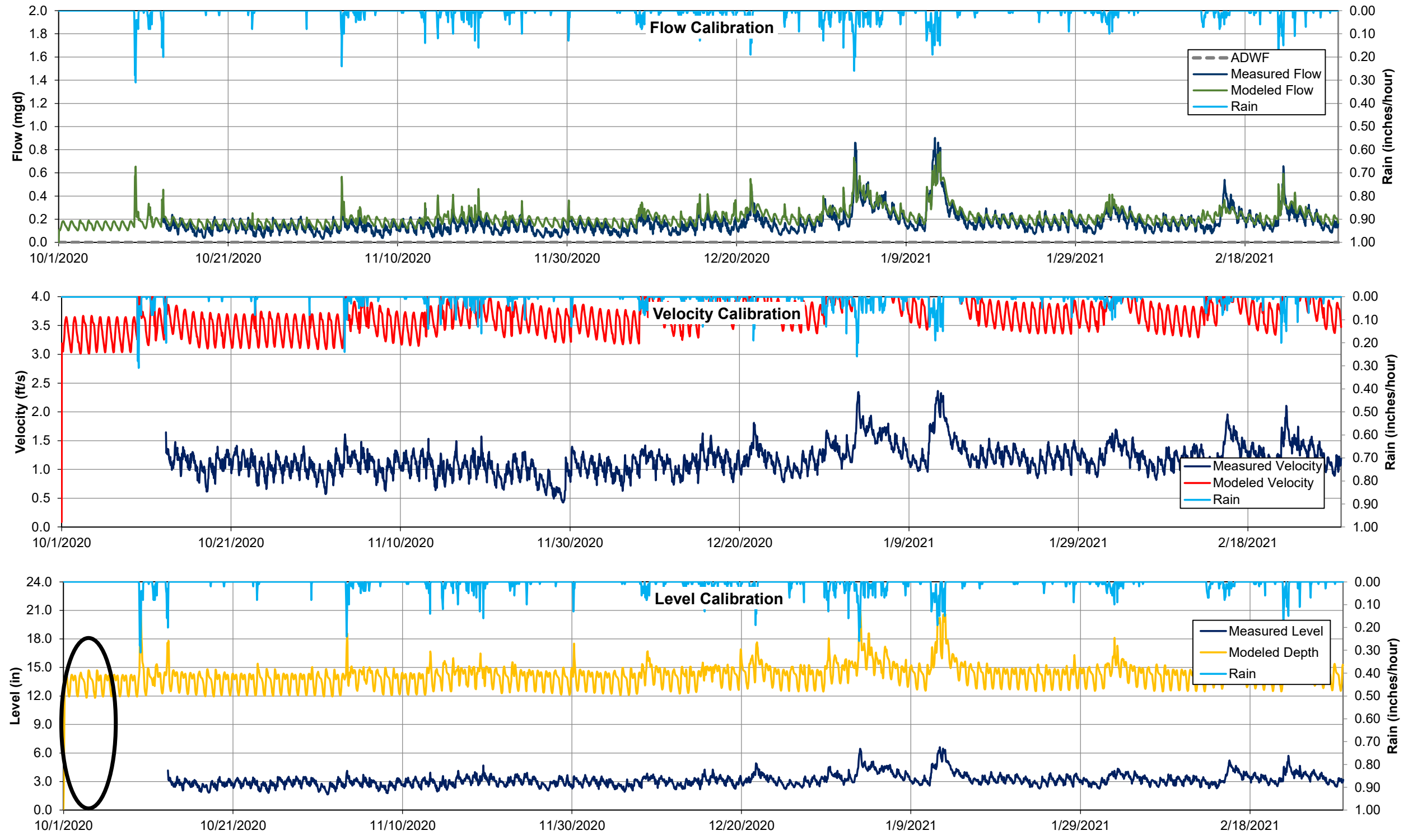




FLOW MONITORING A7 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



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

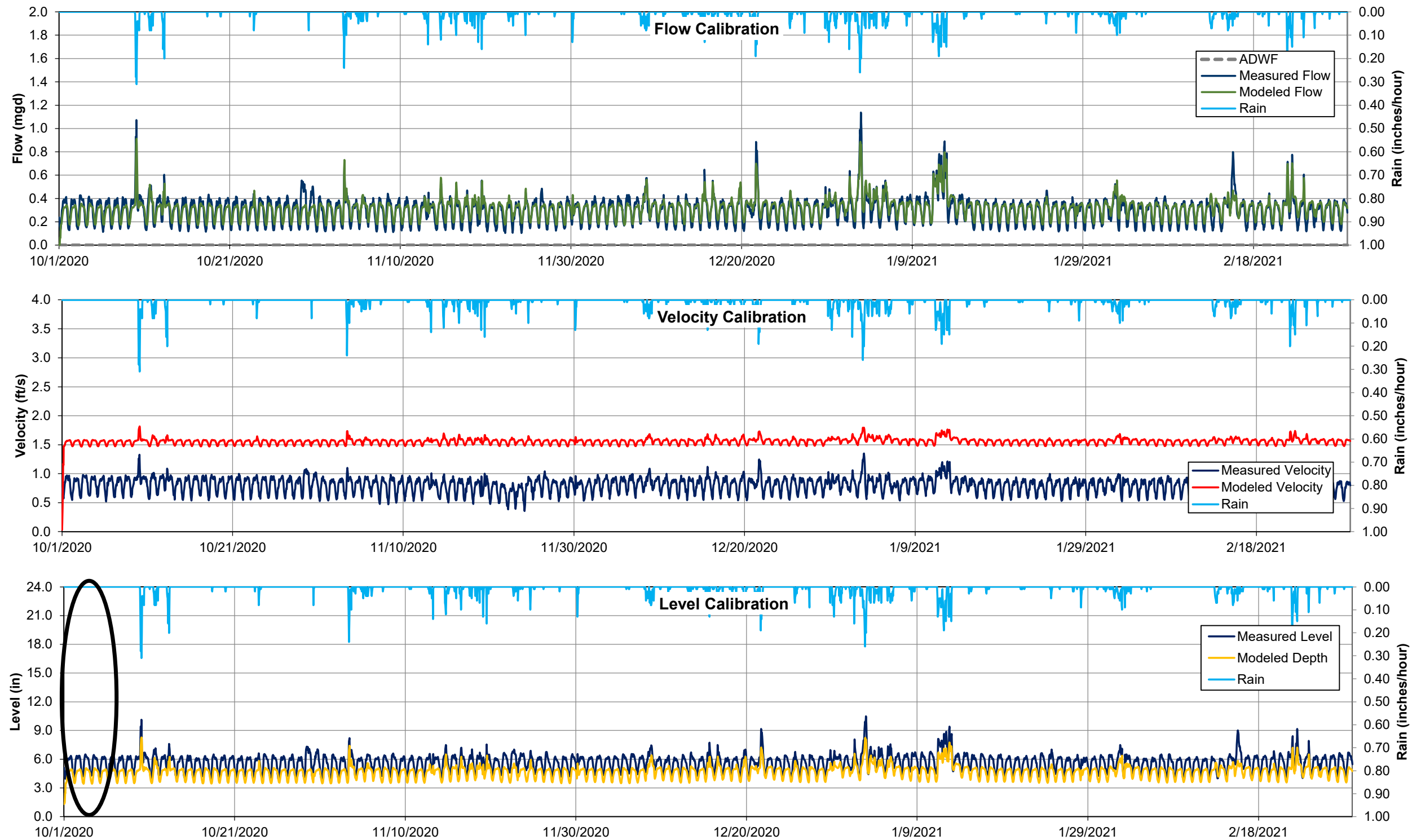




FLOW MONITORING A10 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A10
Pipeline diameter: 24"
City Manhole ID: 710-151

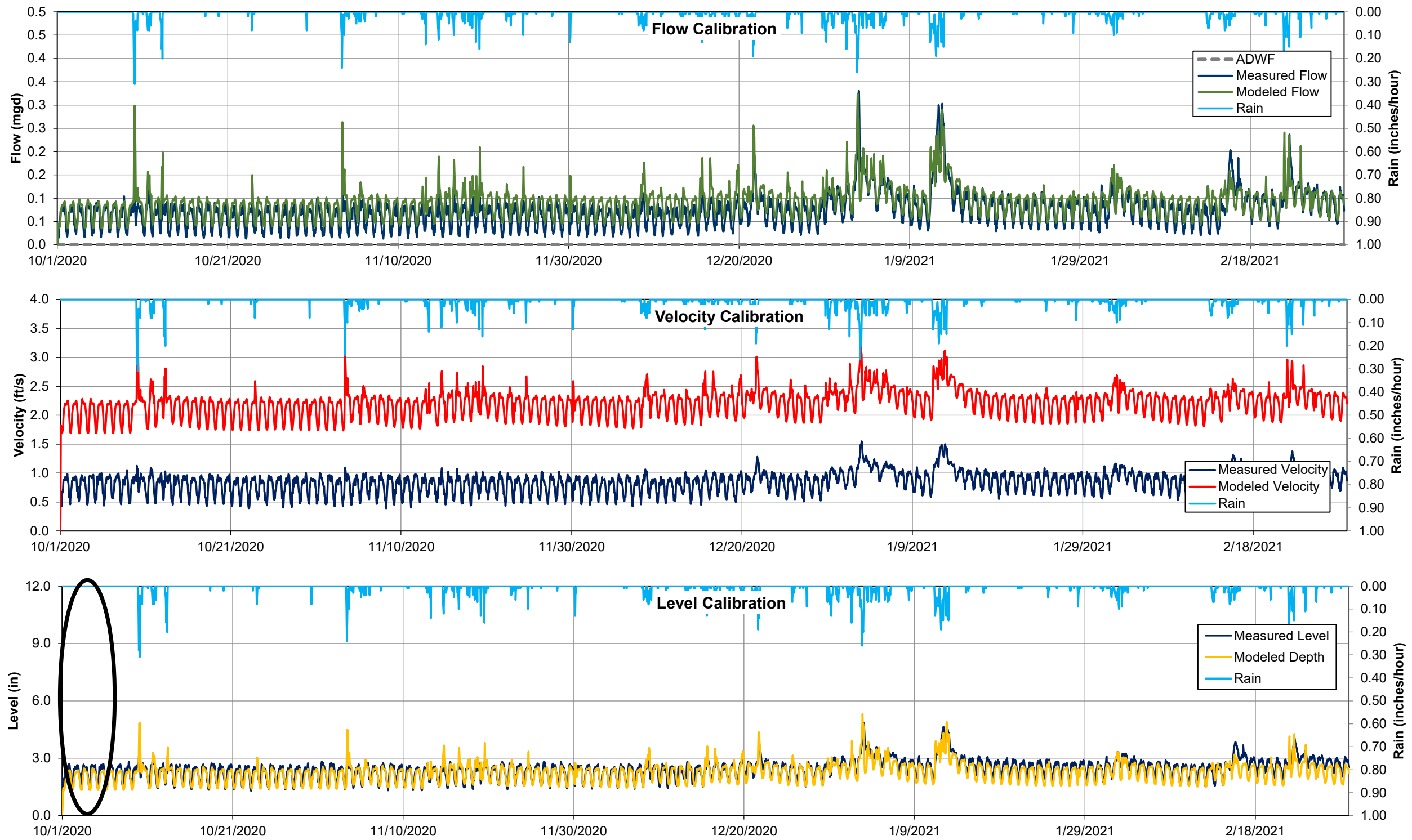




FLOW MONITORING A11 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A11
Pipeline diameter: 12"
City Manhole ID: 710-142

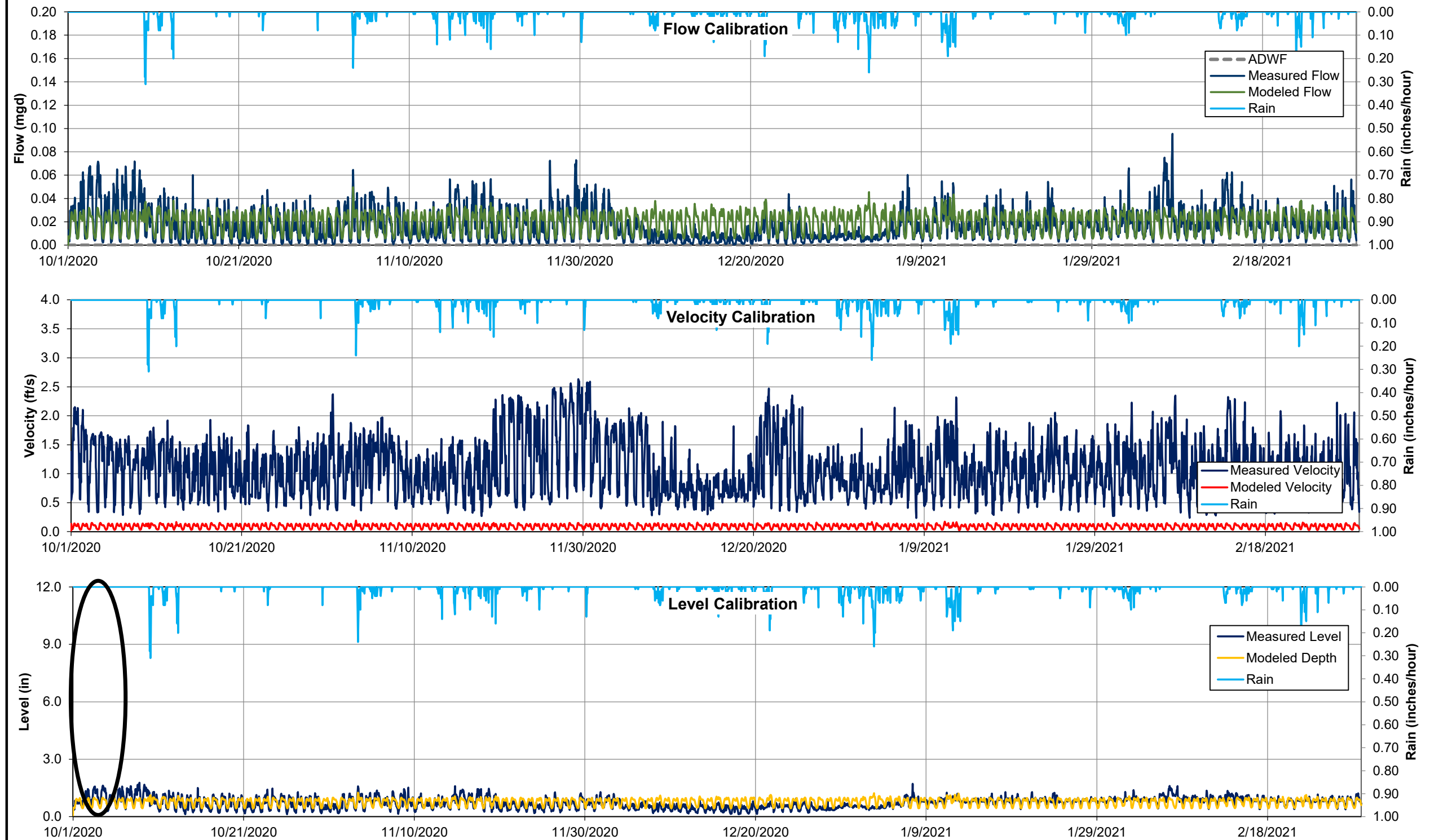




FLOW MONITORING A12 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A12
Pipeline diameter: 12"
City Manhole ID: 710-43

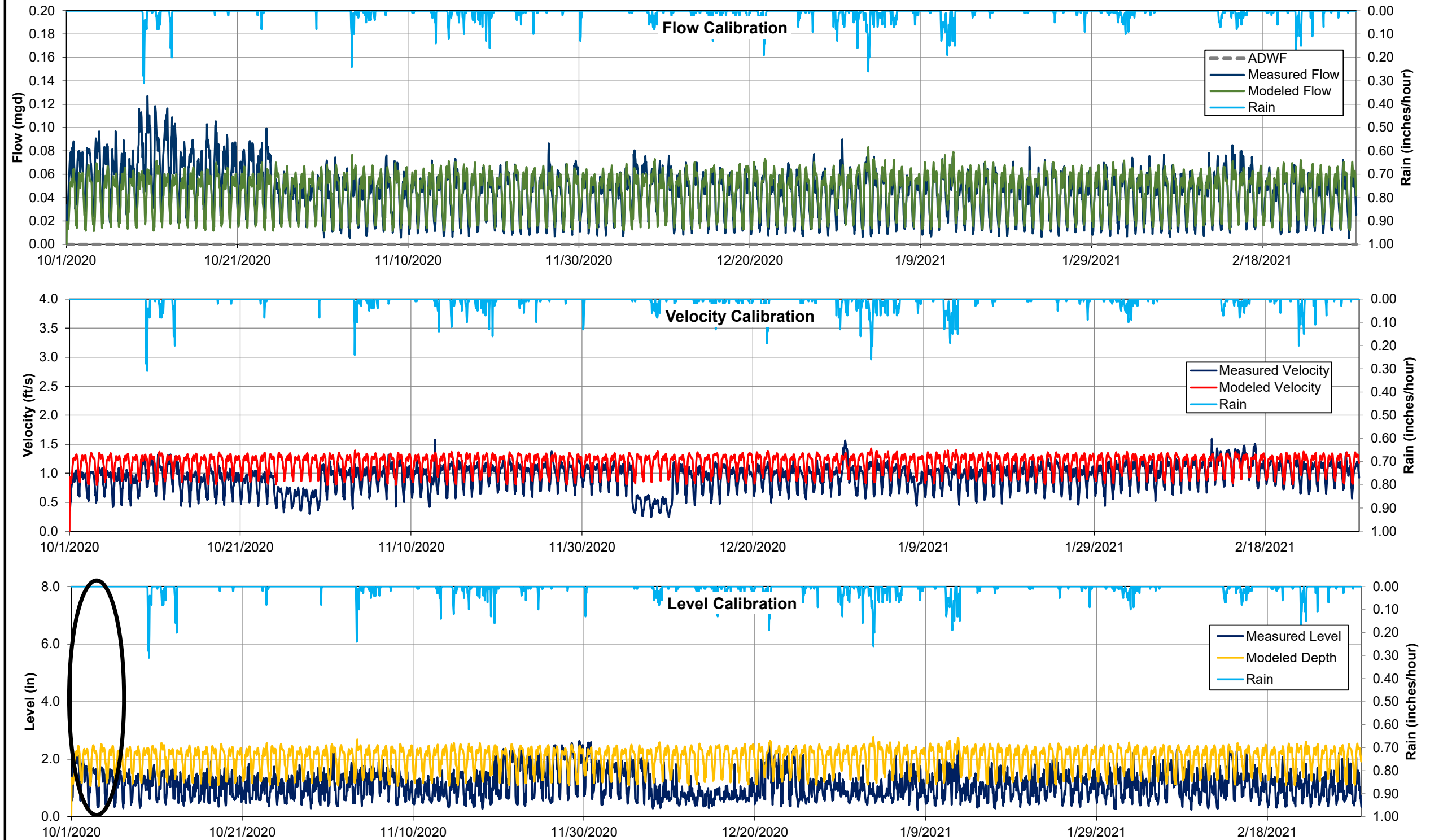




FLOW MONITORING A13 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A13
Pipeline diameter: 8"
City Manhole ID: 710-85

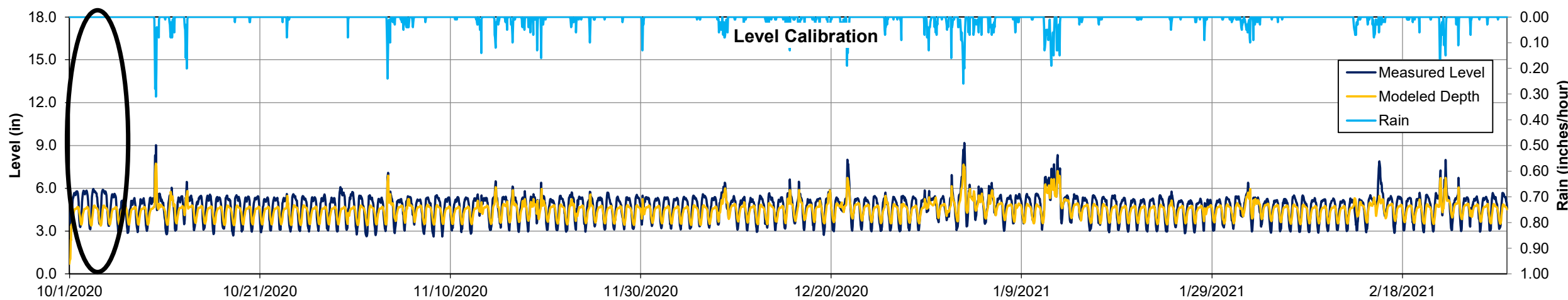
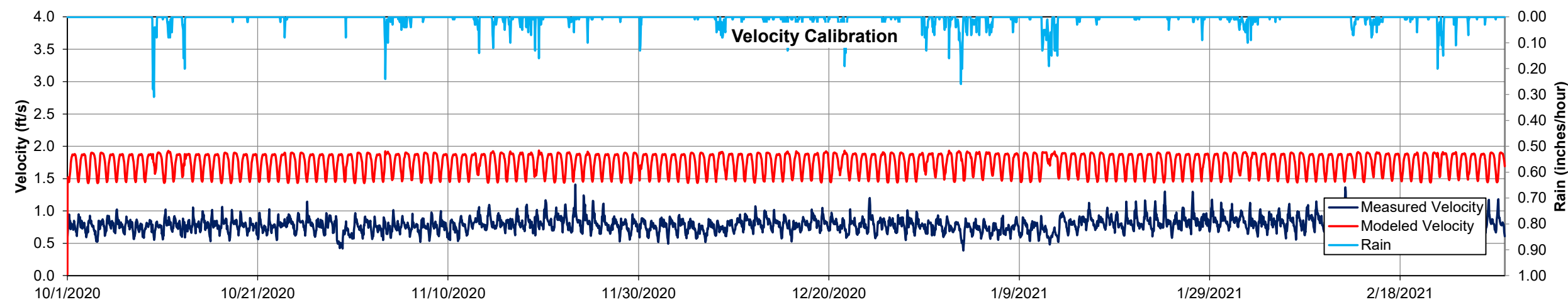
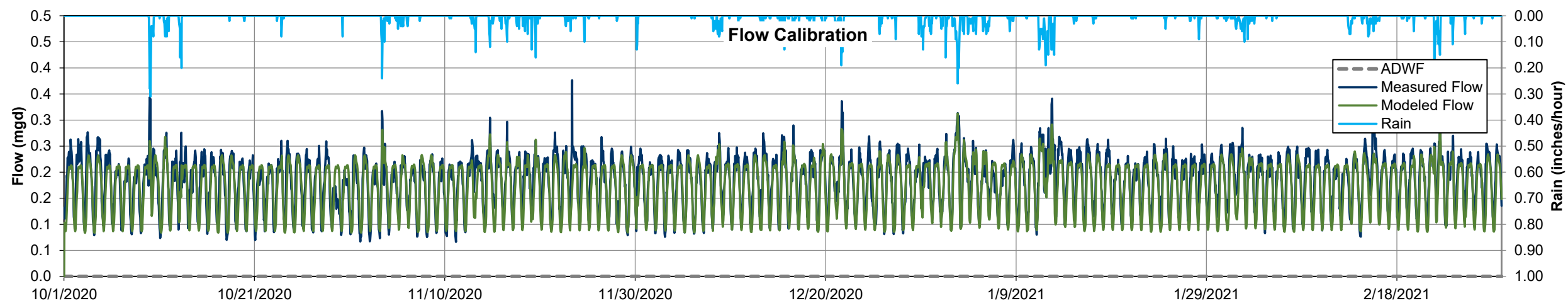




FLOW MONITORING A14 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A14
Pipeline diameter: 18"
City Manhole ID: 710-149

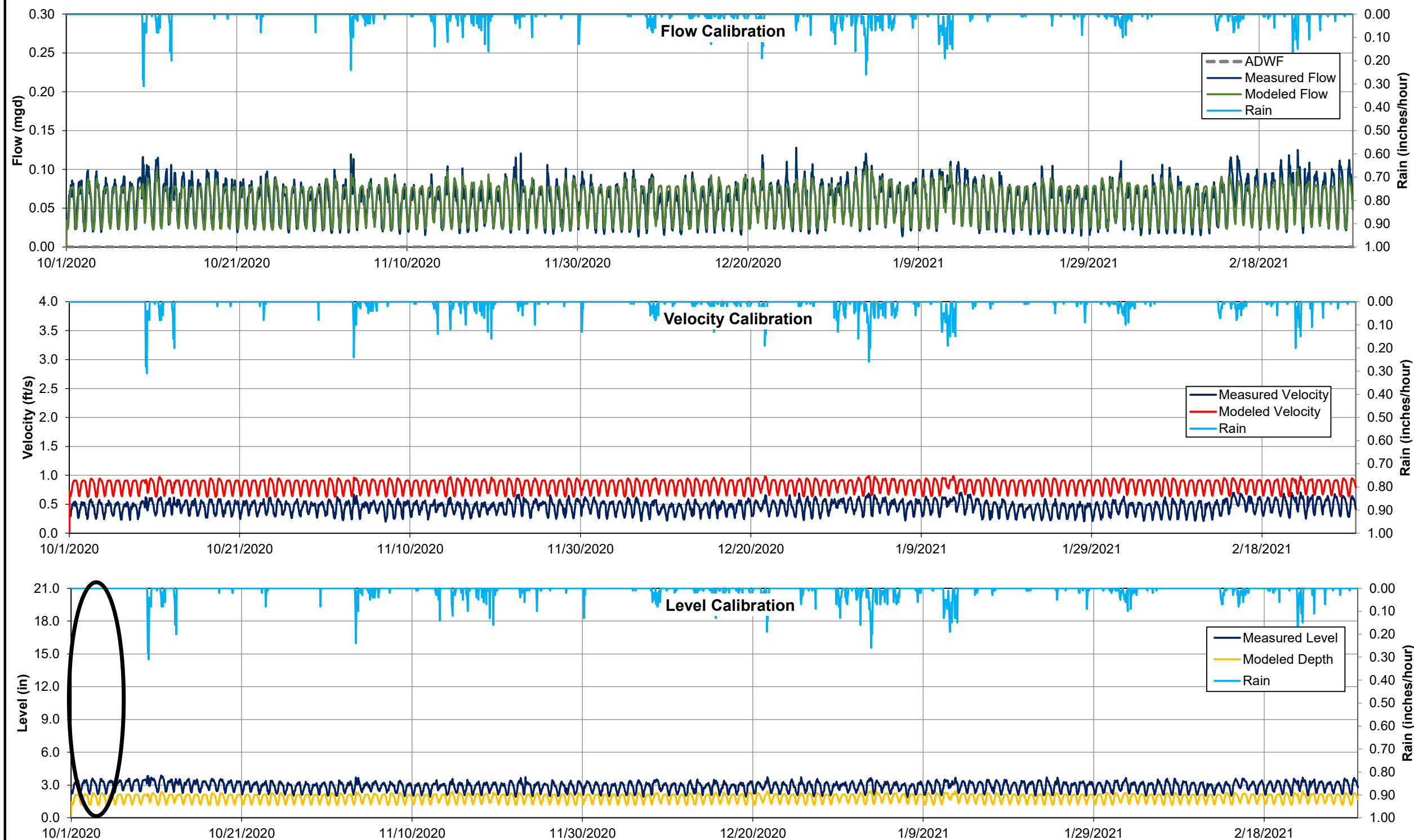




FLOW MONITORING A15 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A15
Pipeline diameter: 21"
City Manhole ID: 809-30

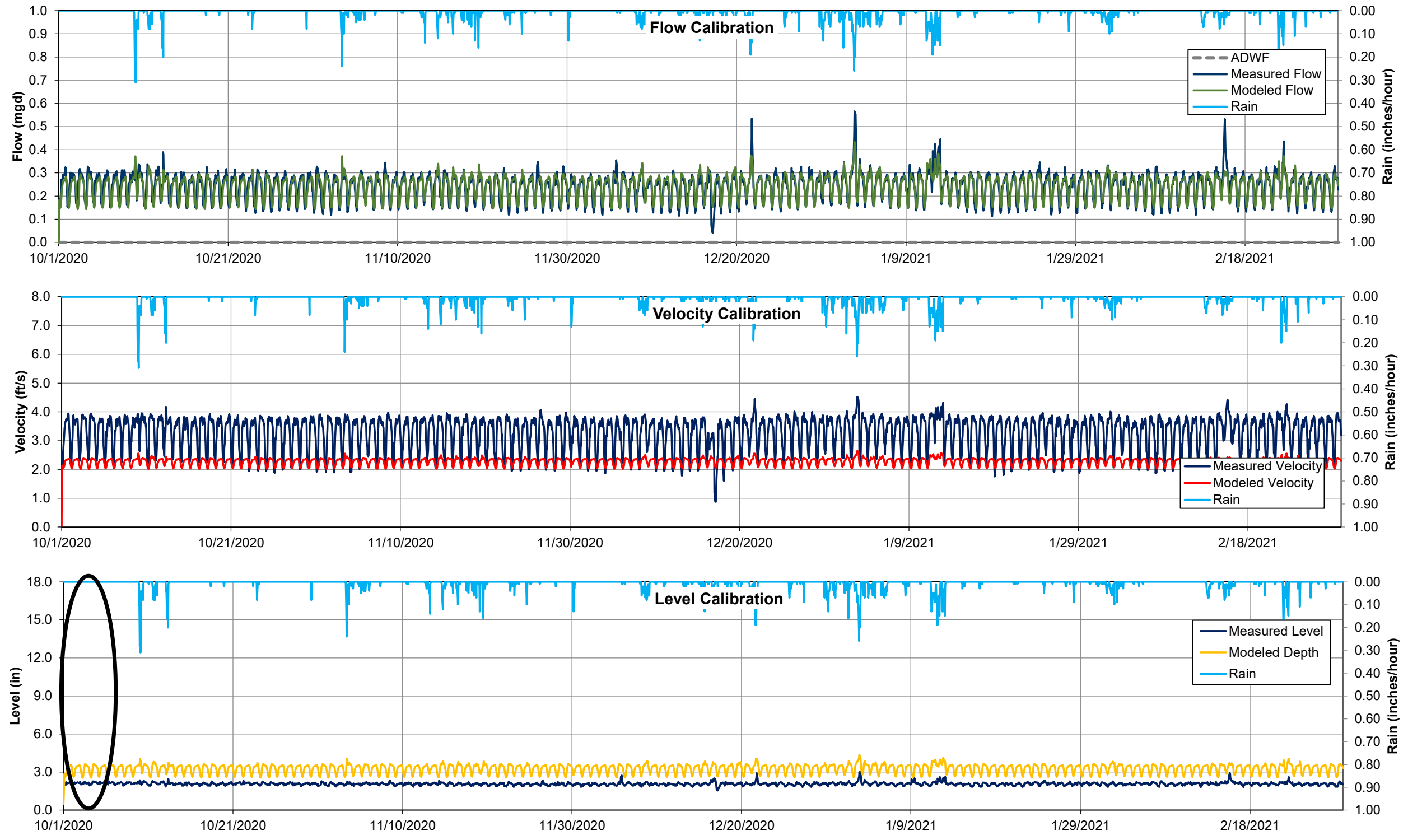




FLOW MONITORING A16 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: A16
Pipeline diameter: 18"
City Manhole ID: 809-56

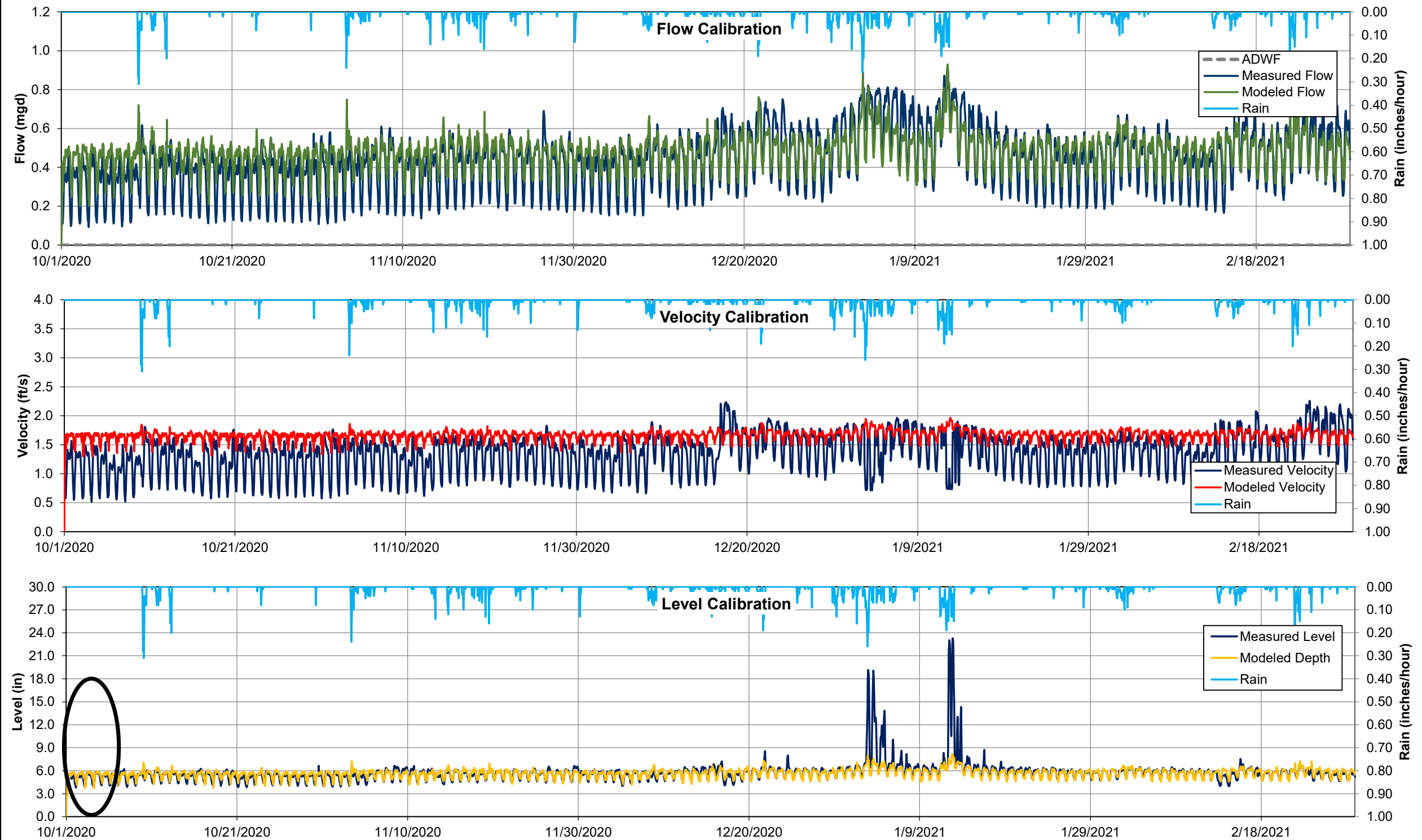




FLOW MONITORING Y-1 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: Y-1
Pipeline diameter: 18"
City Manhole ID: 410-16

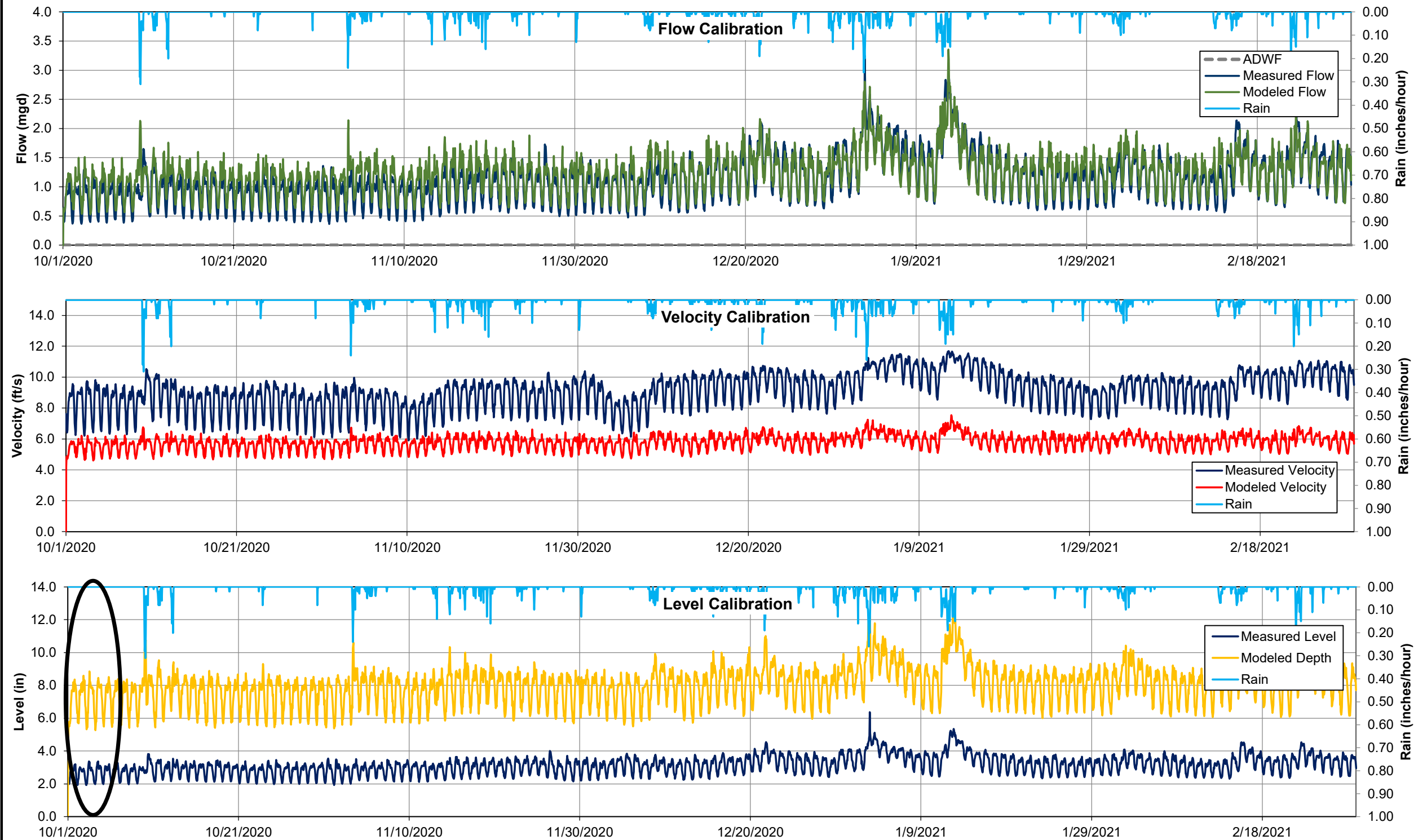




FLOW MONITORING Y-2 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: Y-2
Pipeline diameter: 14"
City Manhole ID: 611-02

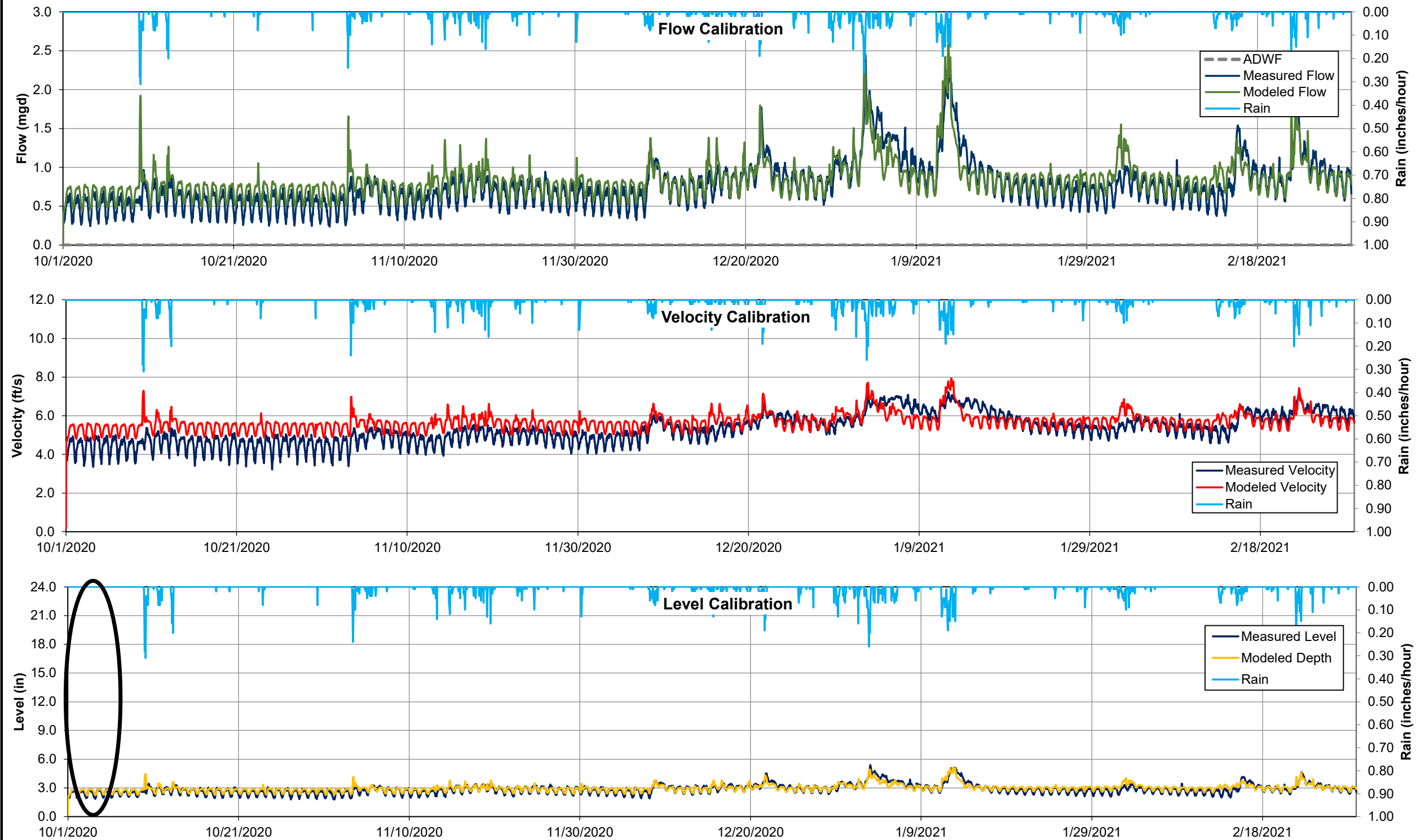




FLOW MONITORING Y-3 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: Y-3
Pipeline diameter: 24"
City Manhole ID: 1012-55

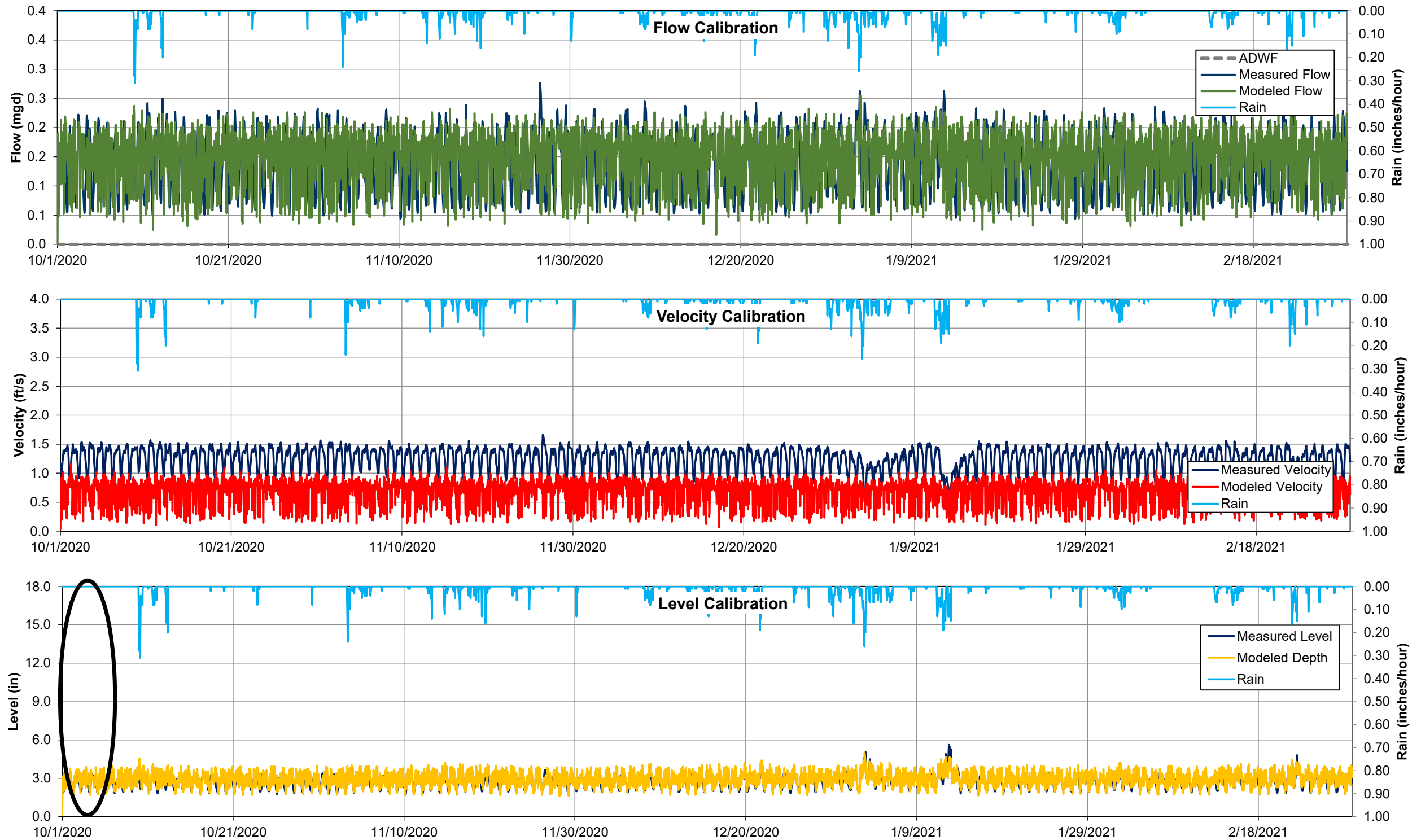




FLOW MONITORING Y-4 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: Y-4
Pipeline diameter: 18"
City Manhole ID: 1010-02

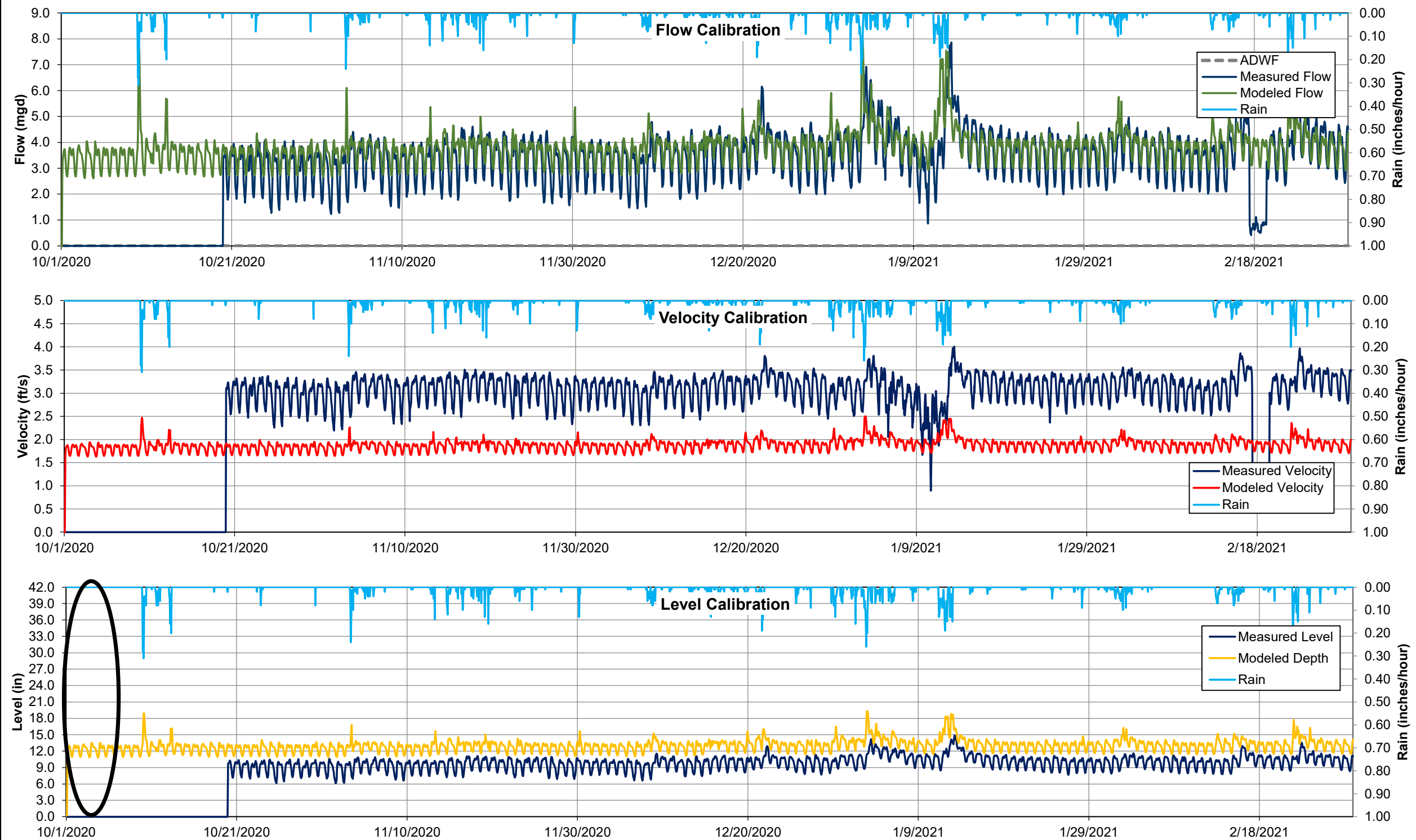




FLOW MONITORING WINT003 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: WINT003
Pipeline diameter: 42"
City Manhole ID: 508-02

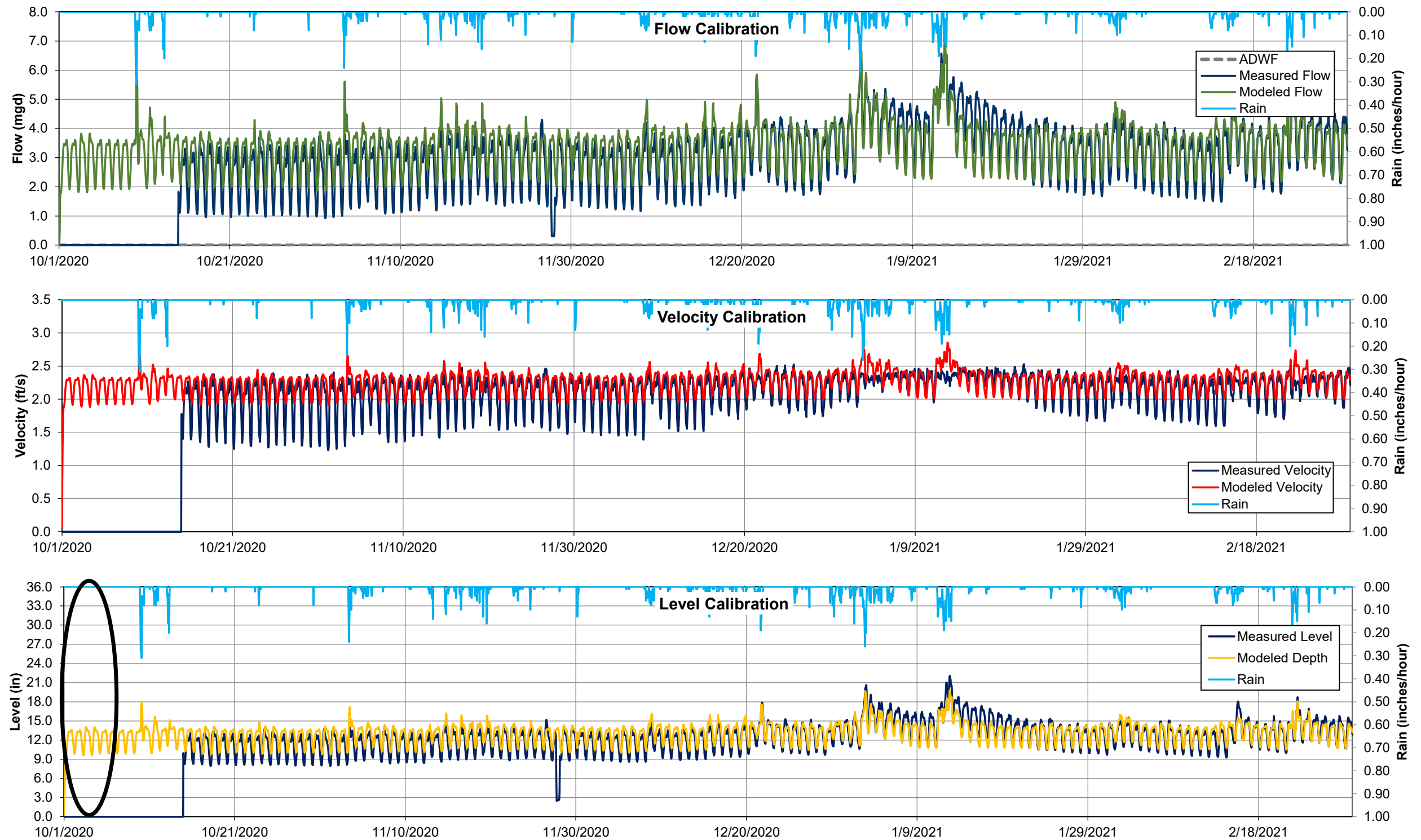




FLOW MONITORING MSTTR02 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



Location: MSTTR02
Pipeline diameter: 36"
City Manhole ID: 509-16

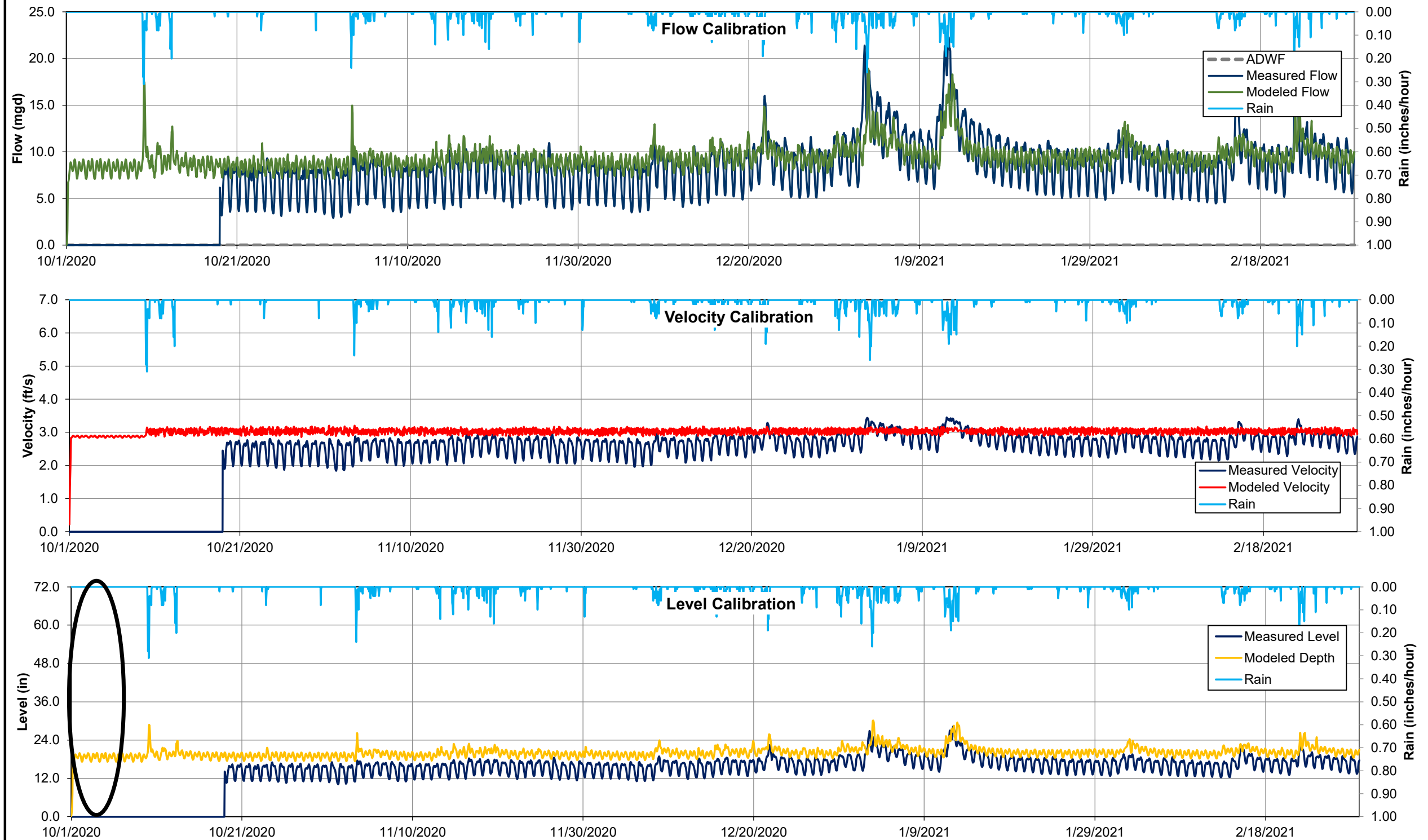




FLOW MONITORING AUBRN53 WET WEATHER FLOW CALIBRATION
Collection System Planning Project
City of Auburn



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 (ft²/ft)	Volume (ft³)	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				Local Equipment Representative				Local Equipment Representative			
All pump stations except 22nd Street Pump Station		22nd Street Pump Station		ADS Equipment				Ideal Pump			
Lenexa, Kansas 66215		Smith and Loveless		PO Box 81045				8625 219th SE			
Phone: 913.888.5201		Cornell Pumps 14040 Santa Fe Trail Drive, Portland, OR		Seattle, WA 98108				Woodinville, WA 98072			
				Phone: 206.763.3600				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

SEPA¹ 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 questions³](#)

- 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.**

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 questions⁷](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)

- 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](https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals)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 questions¹⁷](#)

- 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 questions¹⁸](#)

- 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: 

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



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.

Water System Name: City of Auburn
Date: 03/11/2024
PWS ID# 03350V
Contact: Senait Gebreyesus

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.

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.



AGENDA BILL APPROVAL FORM

Agenda Subject:

Comprehensive Transportation Plan (Gaub) (45 Minutes)

Department:

Public Works

Attachments:

[Presentation](#)

[2024 Final Draft CTP](#)

Date:

September 17, 2024

Budget Impact:

Current Budget: \$0

Proposed Revision: \$0

Revised Budget: \$0

Administrative Recommendation:

For discussion only.

Background for Motion:**Background Summary:**

The City is updating the Comprehensive Transportation Plan (CTP) in coordination with the update of the City's overall Comprehensive Plan. The purpose of this discussion is to provide Council with a review of the Final Draft CTP in preparation of its adoption with the overall Comprehensive Plan later this year.

Reviewed by Council Committees:

Councilmember: Tracy Taylor

Staff:

Ingrid Gaub

Meeting Date: September 23, 2024

Item Number:

PUBLIC WORKS DEPARTMENT

2024 COMPREHENSIVE TRANSPORTATION PLAN

JACOB SWEETING, CITY ENGINEER
CITY COUNCIL STUDY SESSION

SEPTEMBER 23, 2024

AUBURN
VALUES

S E R V I C E
E N V I R O N M E N T
E C O N O M Y
C H A R A C T E R
S U S T A I N A B I L I T Y
W E L L N E S S
C E L E B R A T I O N

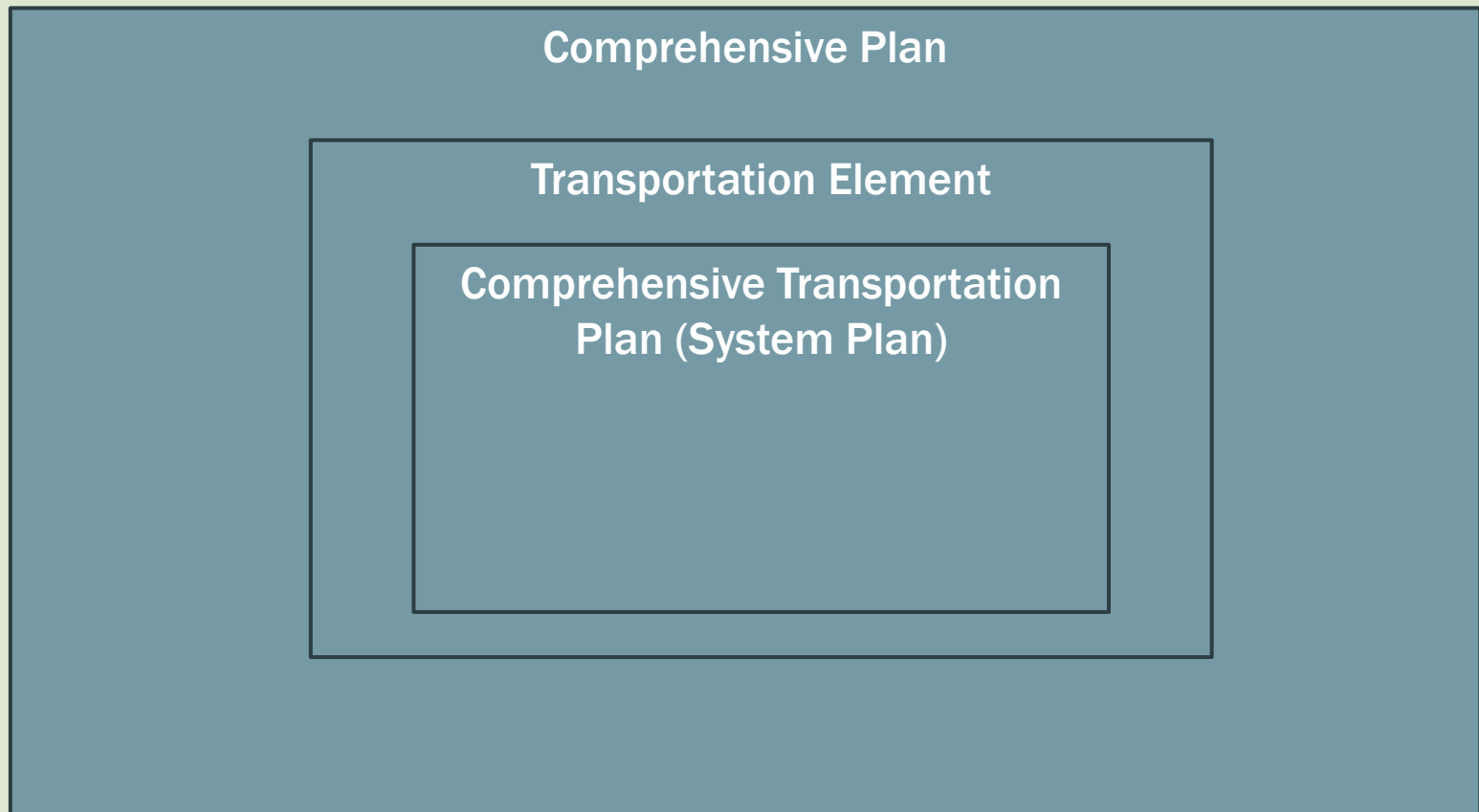
2024 COMPREHENSIVE TRANSPORTATION PLAN

■ Auburn Comprehensive Plan Elements

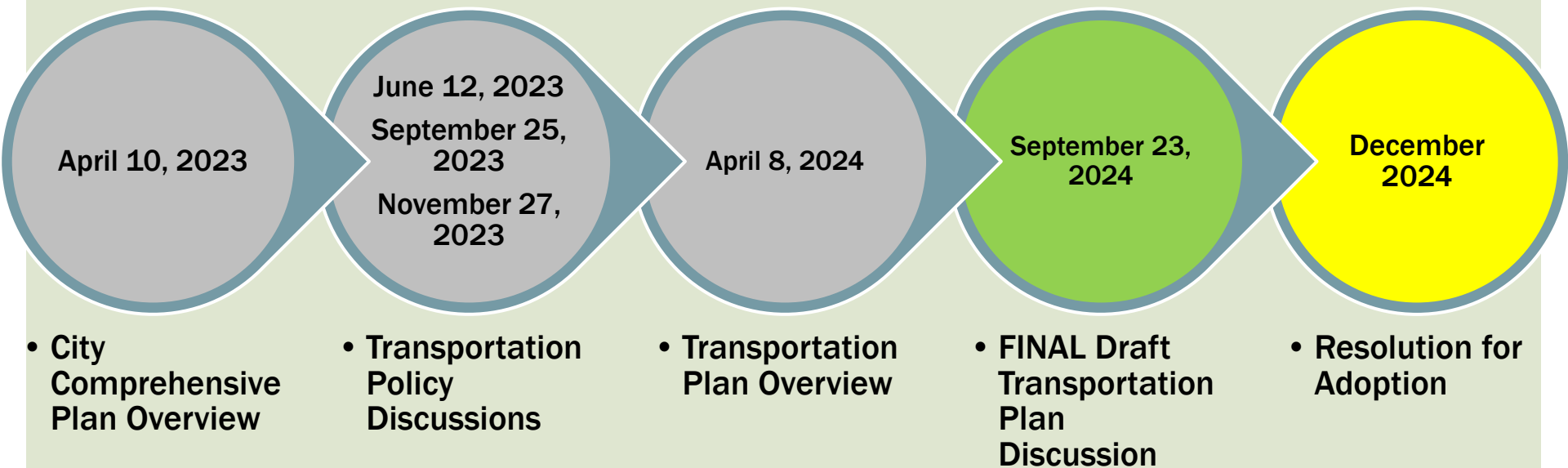
- Core Plan
- Land Use Element
- Housing Element
- Historic Preservation
- Climate Change – NEW
- Economic Development
- Capital Facilities Element
- **Transportation Element**
- Utilities Element
- Parks and Recreation (Parks)



2024 COMPREHENSIVE TRANSPORTATION PLAN



CITY COUNCIL SCHEDULE OVERVIEW



WHAT IS THE PURPOSE OF THIS UPDATE?

- **Regulatory Requirements and/or Alignment**
 - Growth Management Act
 - Puget Sound Regional Council Requirements
 - Americans with Disabilities Act Compliance
 - Title VI Compliance
 - House Bill 1181 (HB1181)
- **Update Existing Conditions/Inventory and Identify System Needs**
- **Evaluate Future Land Use and Identify System Needs**
- **Update Resource and Financial Planning**
- **Make Plan More Accessible and Useful**

FINAL DRAFT PLAN OVERVIEW

Chapter 1 Introduction

Chapter 2 Multimodal Network & Standards

Chapter 3 Safety

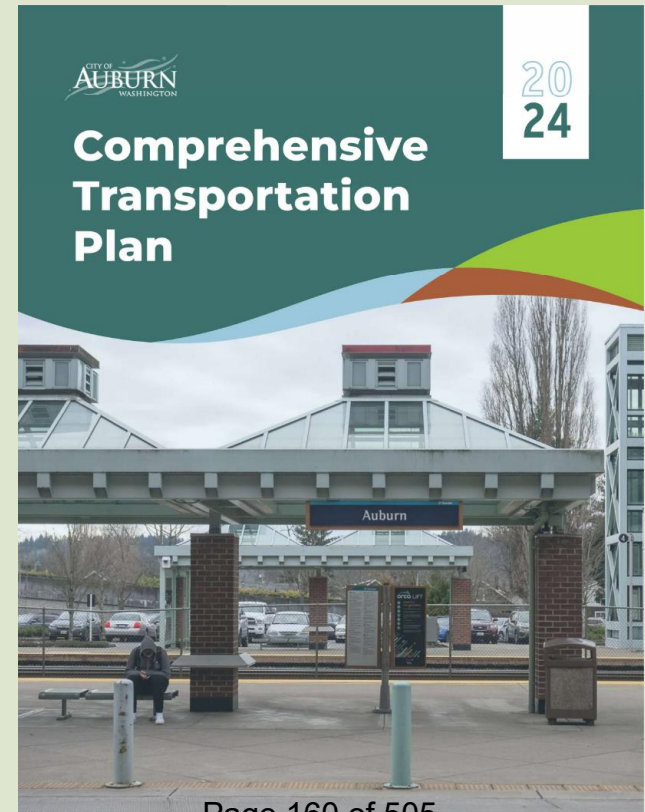
Chapter 4 Policies

Chapter 5 Maintenance & Operations

Chapter 6 Funding

Chapter 7 Monitoring & Evaluation

Maps and Appendices



CHAPTER 1 - INTRODUCTION



IN THIS CHAPTER

Plan Purpose, Goals, Policies, and Actions

Public Involvement

Regulatory Compliance

Agency Coordination

Land Use/Transportation Relationship



CHAPTER 2 – MULTIMODAL NETWORK STANDARDS



IN THIS CHAPTER

Multimodal Level of
Service Standards

Streets System

Active Transportation

Transit

Freight

Airport

MULTIMODAL LEVEL OF SERVICE STANDARDS

- Required by Regional Planning Policies (PSRC)
- Required by HB1181
- Level of Service (LOS) Standards:
 - Metrics that indicate how well transportation systems are moving people and goods
- Multi Modal (MM):

STREETS



Motorized vehicles
moving people
on streets

ACTIVE TRANSPORTATION



Pedestrians and
bicyclists

TRANSIT



Buses and trains
moving people

FREIGHT



Trucks and trains
moving goods

MULTIMODAL LEVEL OF SERVICE STANDARDS

- Provides framework for more equitable, sustainable, healthier, and environmentally balanced transportation system.
 - Metrics allow evaluation and planning to be focused on walking, biking, and transit to move people instead of just cars.
 - Standards developed to prioritize active transportation facilities that will best realize mode shift from vehicles to transit.
 - Provide mechanism to provide for growth and development to be mitigated by other means besides just expanding roadway capacity.

STREETS



Motorized vehicles
moving people
on streets

ACTIVE TRANSPORTATION



Pedestrians and
bicyclists

TRANSIT



Buses and trains
moving people

FREIGHT



Trucks and trains
moving goods

MULTIMODAL LEVEL OF SERVICE STANDARDS

Implications of Proposed Changes

- City programs and projects to address deficiencies in active transportation level of service
- Frontage improvements that include more robust active transportation facilities
- Traffic Impact Fee Program will Include Active Transportation – Mode Shift Projects
- Traffic Mitigation may result in more pedestrian and bike facilities to provide for capacity mitigation where transit service is available.

MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Vehicles



LOS A-C

Intersection Operation:

Free flow

Degree of Delay:

Negligible to moderate delays



LOS D

Intersection Operation:

Less stable flow

Degree of Delay:

Long delays



LOS E

Intersection Operation:

Unstable flow

Degree of Delay:

Substantial delays



LOS F

Intersection Operation:

Unpredictable flow/wait through multiple cycles

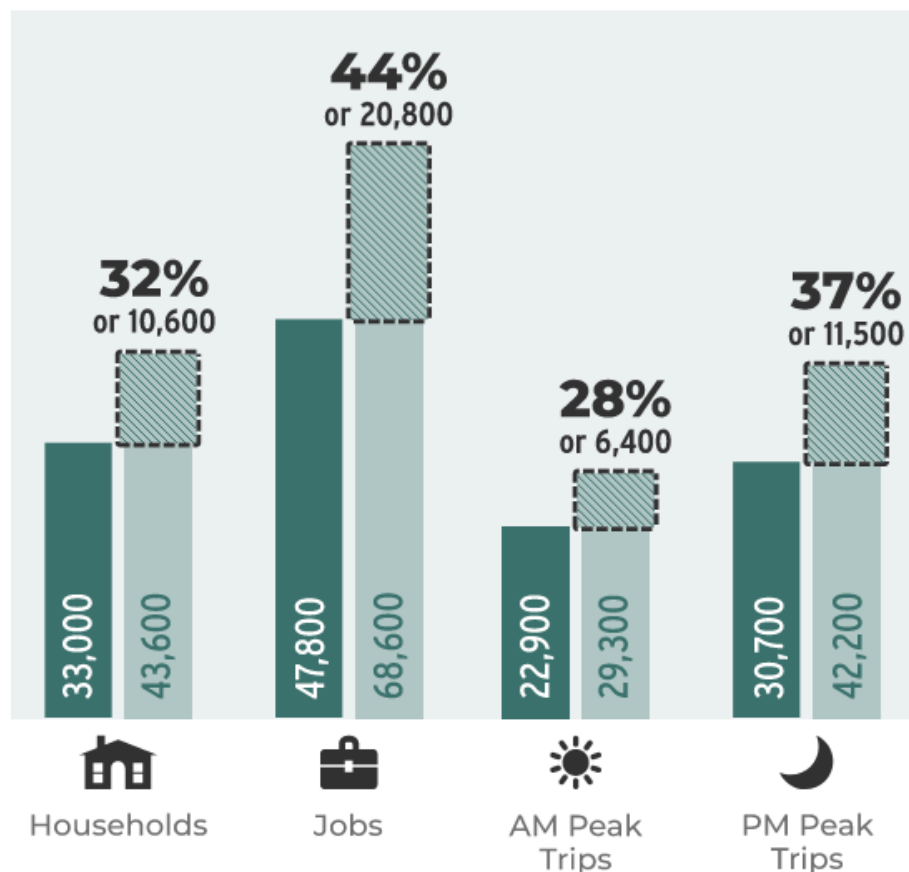
Degree of Delay:

Excessive delays

MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Vehicles

2022 Existing 2044 Preferred Change



EXISTING LOS

NUMBER OF INTERSECTIONS

OK	111
Approaching Standard	27
At Standard	6
Failed	13

FUTURE LOS

NUMBER OF INTERSECTIONS

OK	88
Approaching Standard	33
At Standard	19
Failed	22

MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Vehicles

COMP #	PROJECT	COST ESTIMATE
1	Auburn Way N & 45th St NE Intersection Improvements	\$ 1,900,000
2	Auburn Way N & 42nd St NE Intersection Improvements	\$ 100,000
3	I St NE Improvements (37th St NE - 45th St NE)	\$ 6,700,000
4	I St NE & 37th St NE Intersection Improvements	\$ 2,300,000
5	I St NE & 30th St NE Intersection Improvements	\$ 3,250,000
6	SE 304th St & 112th Ave SE Intersection Improvements	\$ 800,000
7	SE 304th St & 118th Ave SE Intersection Improvements	\$ 950,000
8	SE 304th St & 116th Ave SE Intersection Improvements	\$ 3,725,000
9	Lea Hill Corridor Improvements	\$ 14,675,000
10	116th Ave SE & SE 312th St Intersection Improvements	\$ 5,600,000
11	116th Ave SE & SE 320th St Intersection Improvements	\$ 3,150,000
12	Pike St NE & 8th St NE Access Management	\$ 50,000
13	8th St NE Improvements (Auburn Way N - Harvey Rd/M St NE)	\$ 8,200,000
14	10th St NE Improvements (A St NW - Auburn Way N)	\$ 2,300,000
15	15th St NW & M St NW Access Management	\$ 50,000
16	S 316th St & 56th Ave S Intersection Improvements	\$ 3,225,000
17	S 316th St & 51st Ave S Intersection Improvements	\$ 2,150,000
18	S 321st St & 44th Ave S/46th Pl S Intersection Improvements	\$ 3,750,000
19	A St NW & 3rd St NW Improvements	\$ 3,025,000
20	C St NW & 3rd St NW Intersection Improvements	\$ 1,900,000
21	M St SE By-Pass Rd (M St SE - Black Diamond Rd)	\$ 17,250,000
22	Auburn Way S, M St SE, 17th St SE Intersection Improvements	\$ 2,300,000
23	M St SE & 12th St SE Intersection Improvements	\$ 4,650,000
24	M St SE & 29th St SE Intersection Improvements	\$ 2,925,000
25	A St Corridor Improvements - 37th to White River Bridge	\$ 21,965,000
26	A St SE & 12th St SE Intersection Improvements	\$ 1,425,000
27	A St SE & 21st St SE Intersection Improvements	\$ 1,925,000
28	Lakeland Hills Way SE & Oravetz Rd SE Corridor Improvements	\$ 2,610,000
TOTAL \$		122,850,000

INTERACTIVE LINKS

[Roadway Information](#)

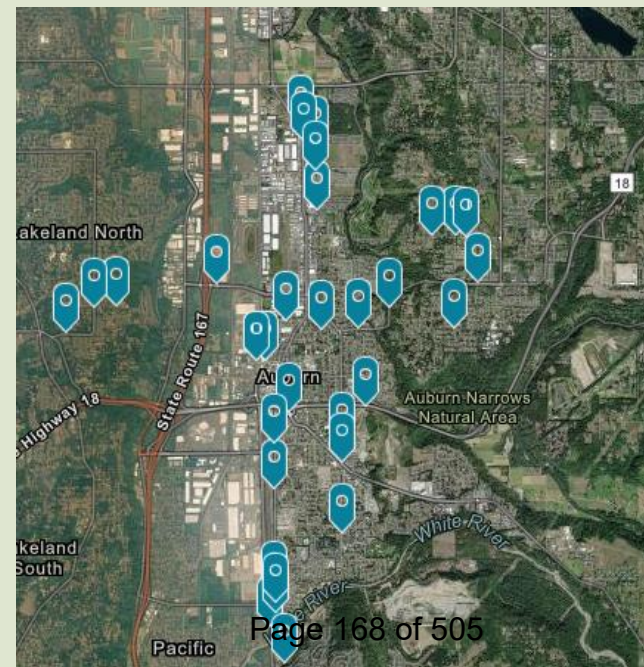
[Vehicle LOS - Intersection Delays](#)

[Sidewalk Inventory and Transit Level of Service](#)

[Bike Network Assessment Map](#)

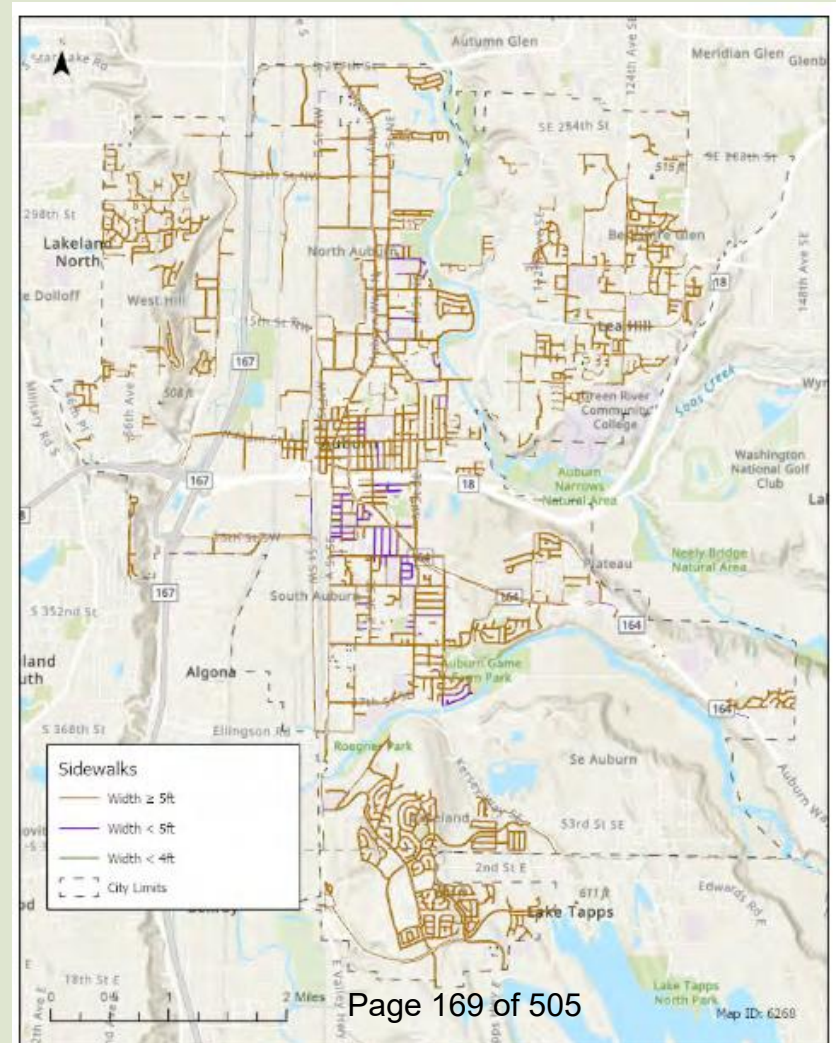
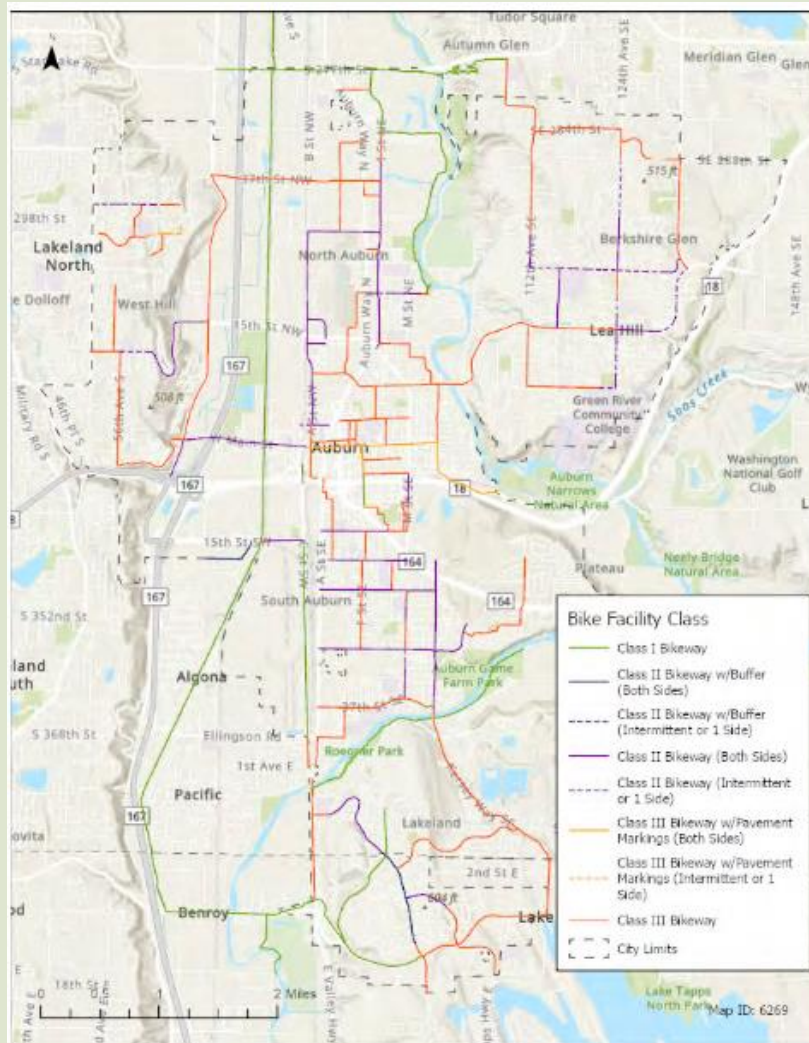
[Existing and Planned Bike Facilities Map](#)

[Conceptual Projects and Map](#)



MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Active Transportation



MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Active Transportation

LTS 1

Safe and comfortable for people of a wide range of ages and abilities.



LTS 2

Less comfortable than LTS 1, but tolerable for people of a wide range of ages and abilities.



LTS 3

Tolerable for confident, experienced bicyclists and pedestrians.



LTS 4

Uncomfortable for most people biking. Not suitable for pedestrians.



POSTED SPEED LIMIT (MPH)	ARTERIAL TRAFFIC VOLUME/FREIGHT CLASS	CLASS III BIKEWAY	CLASS III BIKEWAY W/ PAVEMENT MARKINGS	CLASS II BIKEWAY	CLASS II BIKEWAY W/BUFFER	CLASS I BIKEWAY
25/Not Posted	<3k	1	1	1	1	1
	3-7k	3	2	2	2	1
	≥7k	3	3	2	2	1
30	<15k	4	3	2	2	1
	≥15k	4	4	3	2	1
35	<25k	4	4	3	3	1
	≥25k	4	4	4	3	1
40+	Any Volume	4	4	4	4	1
Any	T-2* or Greater	4	4	4	4	1

ROADWAY CLASS	NO SEPARATE PEDESTRIAN FACILITY	5' SHOULDER	5' SHOULDER WITH PHYSICAL BARRIER	5' SIDEWALK	5' SIDEWALK WITH 5' SEPARATION	10' SIDEWALK
Alley	2	1	1	1	1	1
Local Rustic	2	1	1	1	1	1
Rustic Collector	3	2	1	1	1	1
Local	3	3	2	2	1	1
Collector	4	3	2	2	1	1
Local Industrial	4	4	3	3	2	1
Minor Arterial	4	4	4	3	2	1
Principal Arterial	4	4	4	3	2	1

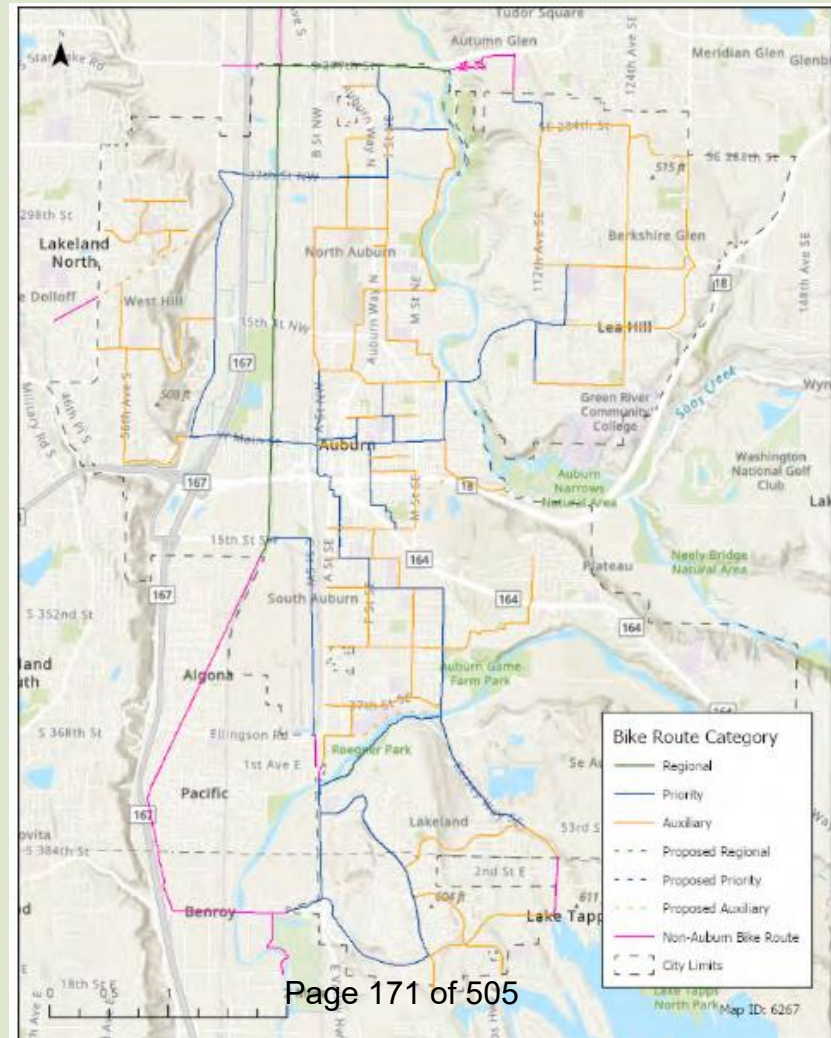
MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Active Transportation



INTERACTIVE LINKS

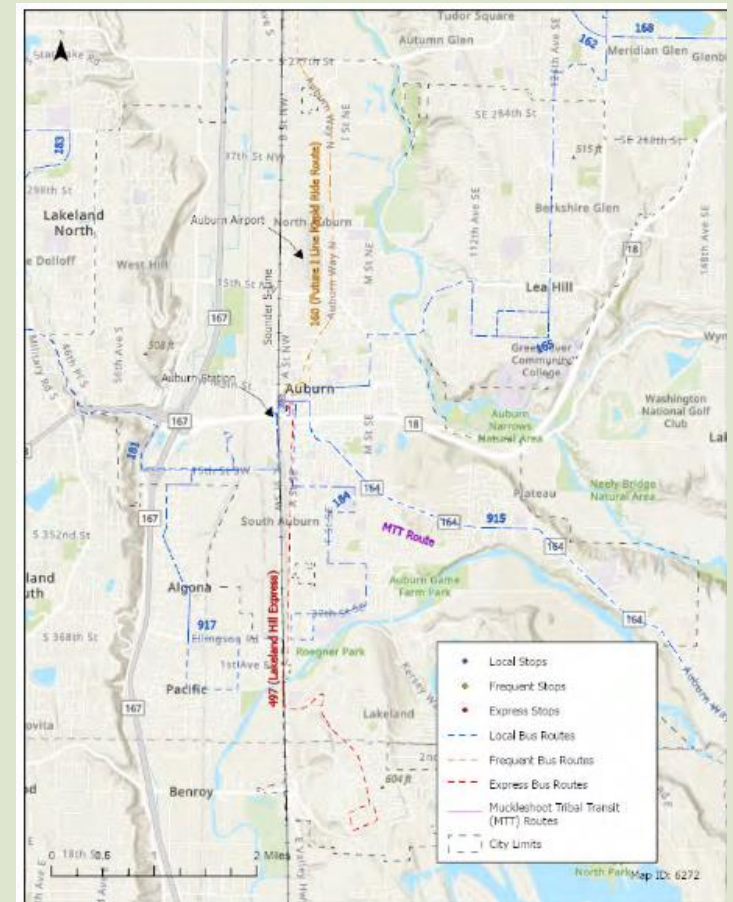
- [Roadway Information](#)
- [Vehicle LOS - Intersection Delays](#)
- [Sidewalk Inventory and Transit Level of Service](#)
- [Bike Network Assessment Map](#)
- [Existing and Planned Bike Facilities Map](#)
- [Conceptual Projects and Map](#)



MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Transit

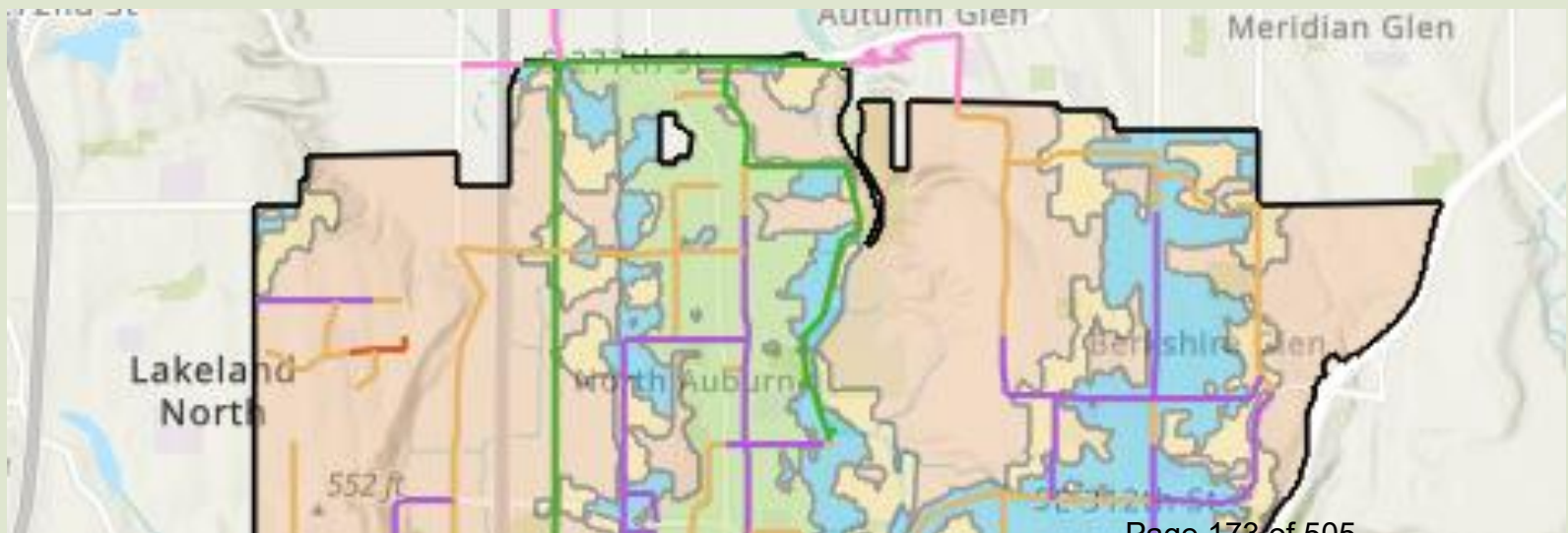
	 Level of Service	 Service/ Frequency	 Distance Between Stops
Frequent Routes BRT – Bus Rapid Transit (RapidRide) 	HIGHEST service frequency/ hours	< 15 MINS OR LESS headways during service hours Minimum 4 buses/hour during peak times (currently route 160)	STOPS EVERY 1/2 MILE
Local Routes 	MEDIUM service frequency/ hours	≤ 30 MINS headways during peak hours ≤ 60 MINS during service hours outside of peak hours (currently routes 181, 184, Muckleshoot Tribal Transit)	STOPS EVERY 1/4 MILE
DART & Express Routes 	LIMITED service frequency/ hours	Service with few stops between destinations, intended to take riders quickly to the key destinations. - Express routes are currently routes 497, 566, and 578 - Dial-A-Ride Transit Service (DART) routes are currently routes 915 and 917	STOPS EVERY 1/4 MILE



MULTIMODAL LEVEL OF SERVICE STANDARDS

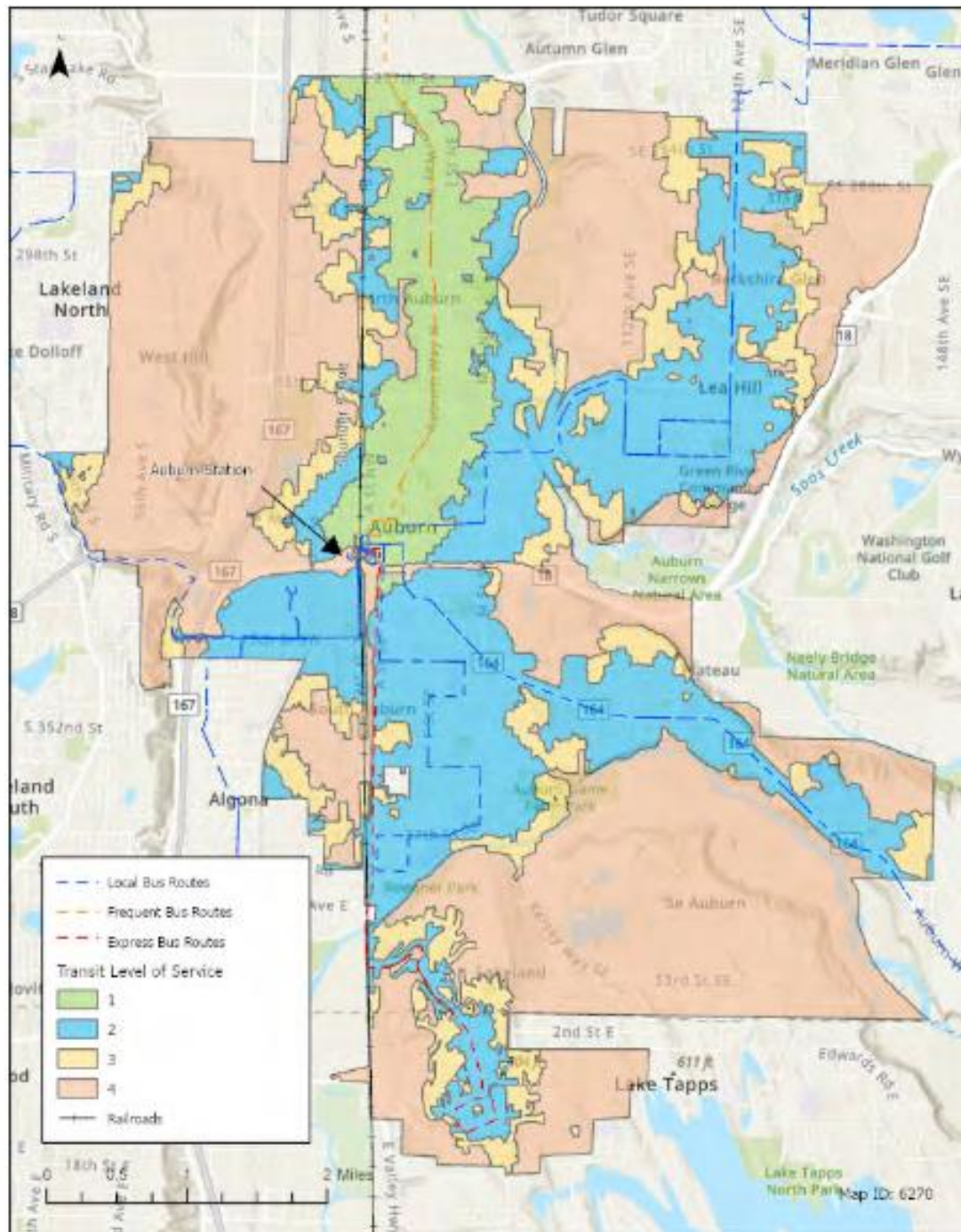
Existing and Future Conditions: Transit

TYPE OF TRANSIT SERVICE	>1 MILE WALKSHED	1 MILE WALKSHED	¾ MILE WALKSHED	½ MILE WALKSHED	¼ MILE WALKSHED
Auburn Station	4	3	2	1	1
Frequent	4	3	2	1	1
Local	4	4	3	2	2
Express and Dart	4	4	4	3	2



MMLOS – TRANSIT

- Advocate for expanded and improved transit services in areas of low Transit LOS
- Prioritize active transportation investments in areas of high Transit LOS



MULTIMODAL LEVEL OF SERVICE STANDARDS

Existing and Future Conditions: Freight

T4 100,000 - 300,000 Tons Annually

T3

300,000 - 4
Million Tons

T2

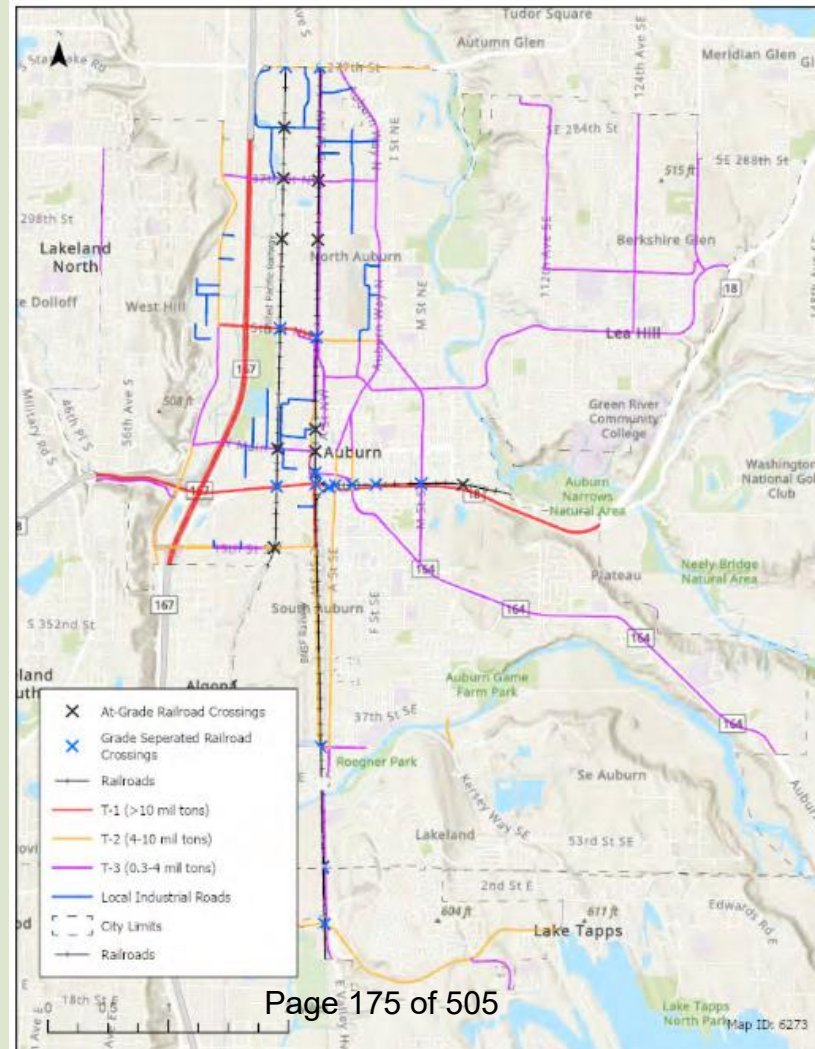
4 - 10
Million Tons

T1

> 10
Million Tons

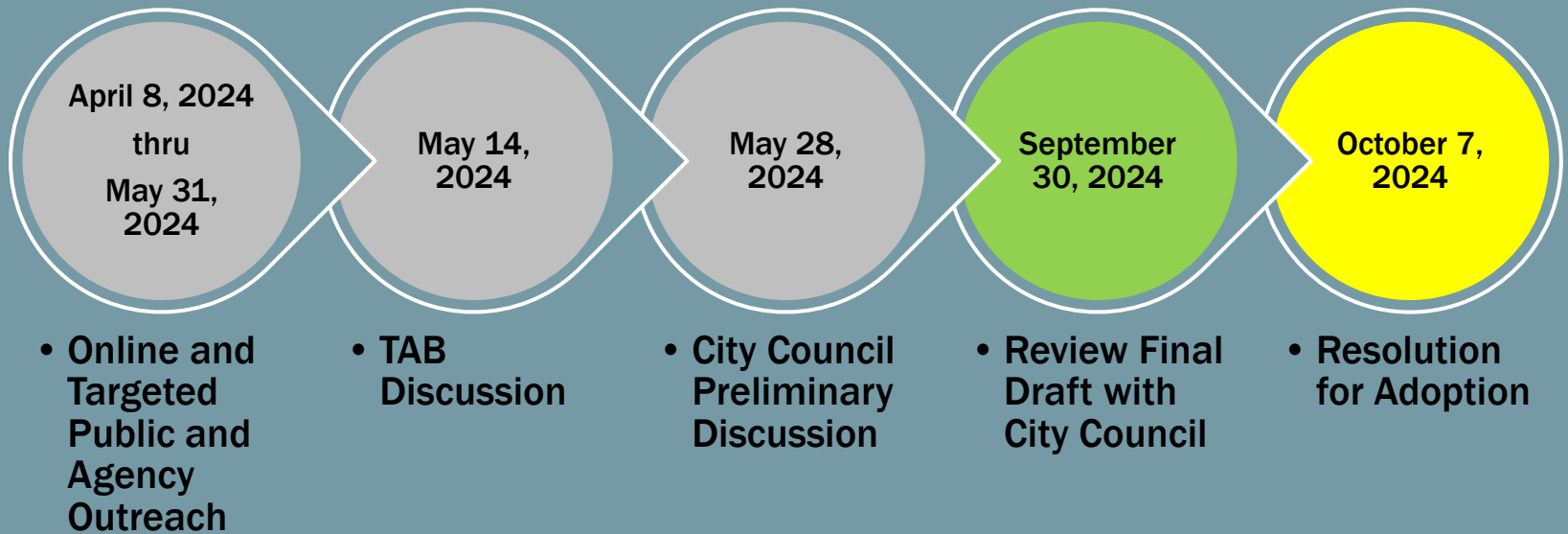
T5 < 100,000 Million Tons, or at
least 20,000 Tons per 60 Days

- Vehicle LOS Applies
- Design for trucks on truck routes: intersections, pavement, driveways, land use.
- Discourage trucks from using non-truck routes
- Help address regional truck parking shortage



CHAPTER 3 - SAFETY

Comprehensive Safety Action Plan



CHAPTER 4 - POLICIES

Goals

- Broad statements indicating a general aim or purpose to be achieved.

Policies

- Topic-specific statement providing guidelines for current and future decision-making.

Actions

- Initiatives, projects, or programs to put policy into motion.

CHAPTER 4 - POLICIES



GOAL 1



Planning: Plan, expand, and improve the transportation system.

GOAL 2



Equity: Plan and implement the City's transportation system to support system wide equity.

GOAL 3



Safety: Significantly reduce or eliminate traffic fatalities and serious injuries through a safe systems approach.

GOAL 4



Environmental: Comply with environmental laws and regulations.

CHAPTER 4 - POLICIES

Goals

Policies

Actions

GOAL 5



Multimodal Accessible Network: Ensure Auburn's transportation system is designed to be comprehensive, integrated, accessible for all.

GOAL 6



Multimodal Level of Service: Establish multimodal level of service (MMLOS) for all City streets, active transportation facilities, and access to transit.

GOAL 7



Multimodal Concurrency: Ensure transportation systems and facilities are adequate to serve development.

GOAL 8



Demand & System Management: Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies.

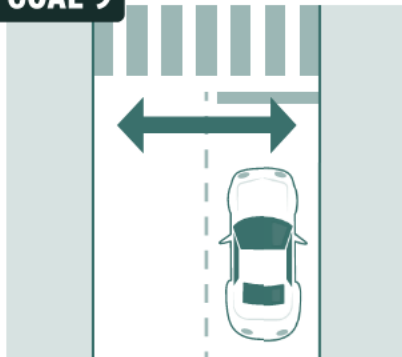
CHAPTER 4 - POLICIES

Goals

Policies

Actions

GOAL 9



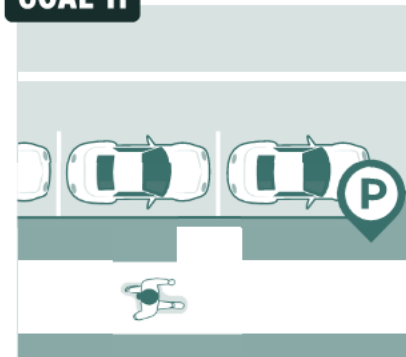
Right-of-Way: Retain and preserve existing Right-of-Way (ROW) and identify and acquire new ROW as needed.

GOAL 10



Asset Management: Design, construct, preserve, and maintain the City's transportation system in the most cost-effective manner.

GOAL 11



Parking: Ensure a balance between on-street and off-street parking.

CHAPTER 5 – MANAGEMENT, MAINTENANCE, OPERATIONS



IN THIS CHAPTER

Staffing

Equipment/Fleet

Facilities

Asset Management

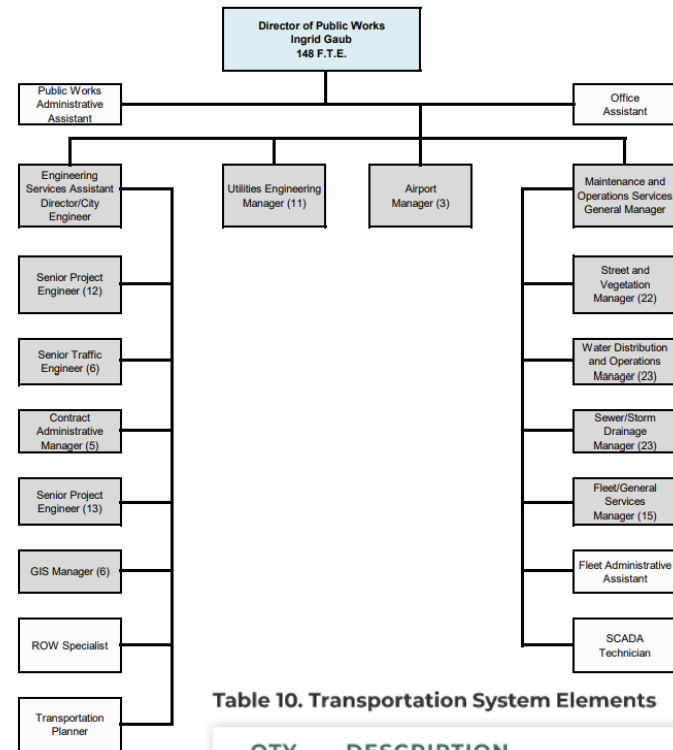


Table 10. Transportation System Elements

QTY	DESCRIPTION
248.69	Miles of Streets
17	Bridges
11,000	Street Signs
13,389	Feet of Guardrail
96	Traffic Signals
31	Rapid Rectangular Flashing Beacons
3,684	Street Lights - City Owned
2,261	Street Lights - PSE Owned
53	School Zone Flashing Beacons

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CHAPTER 6 – FUNDING



IN THIS CHAPTER

Financial Summary

Financial Planning & Programming

Funding Sources

Revenue Shortfall Contingency

Funding Strategies, Project Prioritization

Table 13. 2024 to 2044 Expense and Revenue Forecast

OPERATIONS	
Labor, Materials, Facilities Operations, Equipment Maintenance	\$ (336.6 Million)
Facilities Expansion, Additional Equipment	\$ (20 Million)
Motor Vehicle Excise Tax Revenue	\$ 18.9 Million
General Fund	\$ 337.7 Million
OPERATIONS FUNDING REMAINDER/(SHORTFALL)	\$ 0
CAPITAL	
Plan Projects/Programs Expense	\$ (320 Million)
Traffic Impact Fees Revenue	\$ 25.86 Million
Transportation Benefit District Revenue	
0.1% Sales Tax	\$ 47.5 Million
\$20 Car Tabs*	\$ 11.7 Million
Utility Taxes Dedicated to Transportation	
1.0% on Non-City Utilities	\$ 40.98 Million
2.5% on City Utilities	\$ 26.61 Million
Motor Vehicle Excise Tax Revenue	\$ 10.6 Million
Multimodal Transportation	\$ 2.5 Million
Interest Earning and Investment Income	\$ 2.73 Million
Utility Revenues for Local Street Impacts	\$ 3 Million
Other (Developer and/or Other Contributions/Payments)	\$ 12.6 Million
Grants, Loans, and Partnerships Revenue**	\$ 106 Million
Real Estate Excise Tax Revenue	\$ 29.7 Million
OVERALL FUNDING CONTINGENCY/(SHORTFALL)	\$ 0.22 Million

CHAPTER 6 – FUNDING

Table 14. Capital Project and Program Cost Summary and Revenue Forecast

DESCRIPTION	SUMMARY		2024 – 2044 TOTAL
Comprehensive Plan Projects (Comp-X) from Appendix B	See Appendix B	\$	123 Million
Asset Preservation, Repair, Replacement Projects/Programs	Traffic Signals Maintenance	\$200,000 / Year	\$ 162 Million
	Traffic Signal Replacements	\$150,000 / Year	
	Sidewalk Repair and Replacement Program	\$250,000 / Year	
	Arterial Street Preservation	\$5 Million / Year	
	Local Street Preservation	\$2 Million / Year	
	Bridge Repair & Maintenance	\$100,000 / Year	
	Channelization and Pavement Markings	\$400,000 / Year	
Active Transportation Projects/Programs	Active Transportation Mode Shift Projects	\$1 Million / Year	\$ 20 Million
Safety Projects/Programs	Street Lighting	\$50,000 / Year	\$ 11 Million
	Traffic Safety Programs	\$500,000 / Year	
Other	Transit Partnership Routes	\$200,000 / Year	\$ 4 Million
TOTAL			\$ 320 Million

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CHAPTER 7 – MONITORING & EVALUATION



IN THIS CHAPTER

Annual Updates

Multi-Year Updates

Accomplishments Since the
Last Plan Update (2019)

2024 COMPREHENSIVE TRANSPORTATION PLAN

Questions?

Comprehensive Transportation Plan



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Plan Overview

CH.1

Introduction

Overall purpose, goals, policies, and actions of the Comprehensive Transportation Plan. Summary of other Plan elements, including public outreach efforts and agency coordination, regulatory compliance, and the relationship between land use and transportation.

CH.2

Multimodal Network

Multimodal level of service (LOS) standards. Streets system and functional classification of City streets. Existing and future LOS conditions. Transportation demand management strategies.

CH.3

Safety

Where to find additional safety information, with reference to the City's Comprehensive Safety Action Plan.

CH.4

Policies

Goals, policies, and actions to establish the framework for Auburn's transportation system vision.

CH.5

System Management, Maintenance, and Operations

Overview of existing and needed staffing and resources to manage, maintain, and operate Auburn's transportation system.



CH.6**Funding**

Planning tools and funding mechanisms available to the City to finance the maintenance and improvement of Auburn's transportation system.

CH.7**Monitoring & Evaluation**

Strategy to regularly re-evaluate and update the Comprehensive Transportation Plan to incorporate changes and ensure consistency with other plans.



CHAPTER 1

Introduction



IN THIS CHAPTER

Plan Purpose, Goals, Policies, and Actions

Public Involvement

Regulatory Compliance

Agency Coordination

Land Use/Transportation Relationship



The transportation system is a vital component of Auburn's social, economic, and physical structure. The primary purposes of the transportation system is to support the movement of people and goods within the City and connect the City to the broader region. The transportation system influences patterns of growth, development, and economic activity by providing access to adjacent land uses. Planning for the development and maintenance of the transportation system is a critical activity promoting the efficient movement of people and goods, ensuring emergency access, and optimizing the role transportation plays in attaining other community objectives.

1.1. PURPOSE

Auburn's Comprehensive Transportation Plan ("the Plan or CTP") evaluates the transportation system by identifying key assets and improvement needs, which guides the future of the transportation system.

This Plan is multimodal, addressing multiple forms of transportation in Auburn including streets, active transportation, transit, and freight. Evaluating all modes enables the City to address its future

transportation needs in a comprehensive and balanced manner.

The Plan provides policy and technical direction for development of the City's transportation system through the year 2044. Major updates are required every 10 years, with an implementation report required every five years.

1.2. GOALS, POLICIES, AND ACTIONS

Transportation goals, policies, and actions establish the framework for realizing the City's vision of its transportation system. Policies provide guidance for the City, other governmental entities, and private developers, enabling the City to achieve its goals in accordance with the Plan. Adopted goals, policies and actions to support them are included in [Chapter 4](#). The policies presented in the Plan will be followed by the City in its evaluation of individual

projects, programs, and other actions to address its transportation infrastructure needs. The goals, policies, and actions make reference to the City of Auburn Engineering Design Standards (EDS) that provide specific guidelines and standards for design of the City's transportation system.

The Plan reflects the current and future needs of the Auburn community and, in doing so, seeks to:

- Enhance the quality of life for all Auburn residents
- Encourage a healthy, sustainable, and equitable community through active transportation
- Promote a transportation system that supports local businesses and enhances economic development opportunities
- Create a transportation system that is efficient, uncomplicated, and welcoming to visitors
- Provide a balanced, multimodal transportation system that addresses both local and regional needs





1.3. PUBLIC INVOLVEMENT

Public outreach is a critical component of the comprehensive planning process. Throughout years 2023 and 2024, City staff attended several public events and provided a webpage with a survey for public participation. The information provided on the webpage was available in English, Spanish, Ukrainian, Russian, and Tagalog, which are prevalent languages in Auburn.

As part of the adoption process, the Plan is also reviewed by the Transportation Advisory Board and the Planning Commission. Detailed description of the public involvement and comments received is in [Appendix D](#).

1.4. REGULATORY COMPLIANCE

1.4.1. GMA and PSRC Requirements

Washington State's 1990 Growth Management Act (GMA) requires that transportation planning be directly tied to the City's land use decisions and financial planning. This is traditionally accomplished through the adoption of the Transportation Element of the Comprehensive Plan.

The City of Auburn is a member of the Puget Sound Regional Council (PSRC), the regions Metropolitan Planning Organization (MPO). PSRC is responsible for developing a long-range regional transportation plan and near-term regional transportation improvement program. PSRC establishes policies, procedures, and programs for award of Federal Highway

Auburn fulfills this mandate by adopting the Comprehensive Transportation Plan as the Transportation Element of the City's Comprehensive Plan.

Administration (FHWA) and other federal funding. PSRC has established requirements for agency comprehensive transportation plans that must be met to maintain eligibility for PSRC managed grant funding.

[Appendix C](#) includes a list of GMA and PSRC

requirements and provides page/policy references where the requirement is satisfied in the Plan, the goals, policies, and or actions.

1.4.2. ADA Compliance

The Americans With Disabilities Act (ADA) went into effect on January 26, 1992. ADA requires that all facilities constructed after this date are readily accessible and usable by persons with disabilities. The City is committed to providing public infrastructure without barriers to those with disabilities and achieving compliance with ADA.

In 2020, the City adopted its first ADA Transition Plan for facilities in the public right-of-way. This document guides the process to reach full compliance with the ADA requirements for facilities in the public right-of-way. It addresses pedestrian pathways such as sidewalks, trails, curb ramps, and cross walks and traffic control devices such as pedestrian pushbuttons and pedestrian signals.

The ADA Transition Plan includes the following elements:

- Overview and Background
- Self-Evaluation
- Policies and Procedures

The ADA transition plan will be updated regularly to reflect new data and the progress towards full ADA

compliance. Public comments are accepted and will be considered during the updates.

The City will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all its programs, services, and activities.

The City's current ADA Transition Plan is available [here](#) and included as part of this Plan by reference.

1.4.3. Title VI Compliance

In accordance with Title VI of the Civil Rights Act of 1964 (Title VI), the City assures that no person shall, on the grounds of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity funded directly or indirectly with federal funds. The City further assures every effort will be made to ensure non-discrimination in all its programs and activities, whether those programs and activities are federally funded or not.

The City works closely with the Washington State Department of Transportation (WSDOT) Office of Equal Opportunity to provide required Title VI assurances, plan, and annual reporting.

The City's Title VI information and reports are available [here](#).

1.5. AGENCY COORDINATION

Auburn's transportation system is influenced by what happens outside its jurisdiction and/or boundaries: growth in neighboring communities, infrastructure maintenance by regional agencies, new capacity projects, and competing needs for transit service.

The Plan calls for effective inter-jurisdictional collaboration to address shared transportation issues. The Plan also recognizes that other jurisdictions, particularly state agencies and transit providers, are responsible for a major share of the transportation facilities serving Auburn.

1.5.1. Tribe



The **Muckleshoot Indian Tribe (MIT)** is situated in the southeastern portion of the City and in unincorporated King County, generally to the east of Auburn Way South (SR 164) and

south of SR 18. MIT owns significant attractions in or near Auburn including the Emerald Downs Racetrack, Muckleshoot Bingo, the Muckleshoot Casino Hotel and Resort, and the White River Amphitheatre. These activity centers generate a relatively large number of vehicle trips. Residential, industrial, and commercial development on tribal lands is expected to increase in the future and must be evaluated during transportation planning efforts.

The City and MIT coordinate on a variety of transportation planning issues to accommodate the capacity needs derived from traffic generated by tribal land uses and to ensure the tribe has a functioning transportation system for its members. The City and the MIT have established a Memorandum of Understanding (MOU) to partner on pedestrian improvement projects along the Auburn Way South corridor. The partnership has provided for pedestrian access and safety improvements on, and along, the Auburn Way South corridor.

During July 2015, the State Legislature passed a

transportation package which included \$15 million for the SR 164 East Auburn Access project along SR 164 between SR 18 and the Auburn plateau area, which was intended to create and develop an affordable, long-term improvement to congestion and safety issues, while also planning to accommodate future growth in the area. MIT is the lead agency on the project and the City has been involved in the alternatives development and evaluation process. The current status of the project is unknown and the City's traffic modeling does not include project improvements. The City's traffic modeling and planning approaches will be updated, as needed, to address progress on this project by MIT.

1.5.2. State



The **Washington State Department of Transportation (WSDOT)**

has jurisdiction over three major routes connecting Auburn to the region: SR 167, SR 18, and SR 164 (Auburn Way South). SR 164 is considered a City of Auburn street and a state route and is subject to the City Streets as Part of State Highways Guidelines agreement. SR 164 is also designated by the State as a Highway of State Significance, which has implications regarding applicable level of service standards and concurrency. **Chapter 2** includes additional information regarding SR 164 and other State transportation facilities in Auburn. Auburn coordinates with WSDOT to study these corridors and implement roadway improvements. WSDOT also serves an important role as administrator of federal and state transportation funds.

1.5.3. Transit Agencies



SOUNDTRANSIT



King County



Sound Transit

provides a variety of regional transit services for King, Snohomish, and Pierce counties. In Auburn, Sound Transit provides

commuter rail, parking, and express bus service. Auburn Station also serves as a hub and transfer station for local transit service provided by **King County Metro Transit** and **Pierce Transit**.

The transit chapter provides more detail on current Sound Transit services, remaining needs for regional transit service, and the role Auburn plays in coordinating with the agency.

King County Metro Transit (KC Metro) provides local bus, Metro Flex, vanpool, and paratransit services

for the Auburn area. Planned service for the City of Auburn is described in the Metro Strategic Plan for Public Transportation 2021-2026, and in Metro Connects Long Range Public Transportation Plan, which was adopted by the King County Council in 2021. The City has developed an employee Commute Trip Reduction (CTR) program in cooperation with WSDOT. Details of the CTR program are summarized in the [Active Transportation](#) and [Transit](#) chapters of this plan.

Pierce Transit operates the 497 Lakeland Hills Express route which provides AM and PM direct service between Lakeland Hills and Auburn Station. This is a partnership route with the City, KC Metro, and Pierce Transit providing funding through an inter-local agreement.

1.5.4. Counties

King County Road Services Division is responsible for maintaining and regulating the roadway network in King County, including the Totem and Klump portions of King County, which are islands of unincorporated King County within the greater jurisdictional boundary of Auburn. King County Road Services has a number of programs and plans in place that regulate development and other activities affecting their roadway network.

Under the GMA, King and Pierce Counties have adopted Countywide Planning Policies to guide development in both incorporated and unincorporated areas of their jurisdictions. The policies support county and regional goals to provide a variety of mobility options and establish LOS standards that emphasize the efficient movement of people and not just vehicles. The Countywide Planning Policies are also important because they provide direction for planning and development of potential annexation areas.

1.5.5. Regional Government



Puget Sound Regional Council

The **Puget Sound Regional Council (PSRC)** sets policy for King, Pierce, Kitsap, and Snohomish

Counties through its long-range planning document, Vision 2050, and its regional transportation plan, Transportation 2040. Auburn's transportation plan is required to be consistent with PSRC's regional planning documents and policies. PSRC encourages future growth to be concentrated in regional growth centers. Regional growth centers are locations with significant business, governmental, and cultural facilities, and serve as focal points

for planned growth, economic development, and transportation infrastructure investments.¹ The PRSC Planning documents seek to provide a multimodal transportation system that serves all travel modes, creating opportunities for the use of alternatives to single occupant vehicles. Other important PRSC policy themes are a focus on maximizing the efficiency of the transportation system through transportation demand management (TDM) and transportation system management (TSM) strategies, as well as completing critical links in the network.

1.5.6. Neighboring Cities



The **City of Kent** shares Auburn's northern border and

several regional transportation corridors including S 277th Street, SR 167, Auburn Way North/Central, and West Valley Highway. Most recently, Auburn has completed coordination with Kent on the annexation of S 277th Street from Auburn Way North to the

Green River into the City of Auburn to allow the widening of S 277th Street between Auburn Way N and L Street NE.

The **City of Federal Way** is located west of Auburn. Several roadways, most notably SR 18, connect Auburn and Federal Way. Auburn and Federal Way regularly coordinate on both vehicular and active transportation improvements affecting both jurisdictions.

The City partners with its southern neighbors in many respects, including street system planning, transit planning, and regional trail planning. Auburn is also working with **Sumner, Pacific, and Algona** on roadway improvement projects, including the financial support of the Sumner and Pacific projects to widen Stewart Road. The City coordinates primarily with **Bonney Lake** for provision of water service in the Pierce County portion of the City. However, efforts to coordinate transportation systems and services will likely occur in the future. Partnerships with neighboring cities will continue to be an important factor in successful transportation planning.

1.6. LAND USE/TRANSPORTATION RELATIONSHIP

Land use and the transportation system are intertwined, each influencing the needs and development of the other. Therefore, it is necessary to evaluate how existing transportation systems can be improved to best support both existing and proposed land uses.

It is equally important to consider potential transportation system needs when developing future land use plans. This 2024 Comprehensive Transportation Plan was developed concurrently with the City's Comprehensive Plan that included reviewing, evaluating, and revising projected land use throughout the City.

1.6.1. Land Use Characteristics and Transportation Systems

A broad overview of Auburn's existing land use designations shows industrial (light and heavy) designations in the west side of the valley

floor portion of the City, extensive commercial development (light and heavy) located along Auburn Way N, Auburn Way S, and A Street SE, and sizable heavy commercial designated areas near the SR 18 and 15th Street SW interchange and between 15th Street NW and 37th Street NW (Emerald Downs). Residential development generally exists along the east side of the valley floor and the surrounding hillsides of West Hill, Lea Hill, and Lakeland Hills. A major land use activity in Lea Hill to the east includes the Green River College located on SE 320th Street.

The existing land use element identifies Industrial as the City's second most predominant zoning designation (Residential being first). Consequently, the City's land use plan establishes a development pattern that has traffic generated by these industrial uses directed towards the State Highway System.

Another key feature in the land use element is a Heavy Commercial designation at 15th Street SW, adjacent to SR 167 and SR 18. This commercial designation is the site of The Outlet Collection. The Outlet Collection generates high volumes of local and regional traffic that utilize State highways and City streets. Auburn's "Auto Row", along Auburn Way N, to the north of downtown also generates large volumes of local and regional traffic.

¹ PSRC, <https://www.psrc.org/our-work/centers>

Downtown Auburn is near the geographic center of the City, located generally east of the Interurban Trail, north of SR 18, west of F Street SE/NE, and south of 3rd Street NW/NE and 4th Street NE. Downtown Auburn is designated as a Regional Growth Center by the PSRC as part of Vision 2050. Designated regional growth centers are identified for housing and employment growth, as well as being eligible for regional transportation funding. Downtown Auburn contains a mix of land uses including residential, commercial, and industrial uses. Commercial uses in Downtown are focused along Main Street, Auburn Way, and A Street SE. Historically, this commercial development has served predominantly local needs. However, the presence of Auburn Station, MultiCare, City Hall, and new development projects, combined with regulations and policies that encourage transit-oriented developments (TODs), downtown commercial development will serve a broader range of needs in the future. Downtown Auburn also has the City's most robust active transportation infrastructure, including both extensive pedestrian and bicycle facilities. This provides the opportunity for both residents and employees to rely on proximate transit services at Auburn Station, combined with a robust active transportation system for a portion of their transportation needs.

The City's Comprehensive Plan land use map focuses residential development in the eastern portion of the valley and in the West Hill, Lea Hill, and the Lakeland Hills area. Access to the State Highway System in Lea Hill is limited to SR 18 at SE 304th Street. Future impacts on the State Highway System in the Lea Hill area will primarily be commuter traffic due to the predominance of residential comprehensive plan designations in that area, and continued growth of Green River College. The development of Lakeland Hills will also principally result in increased commuter traffic.

1.6.2. Future Land Use

The Washington Office of Financial Management (OFM) produces population and employment forecasts for each county which are then allocated to cities through the Countywide Planning Policies. Cities must plan to accommodate the required levels of housing and employment growth allocated through this process. King and Pierce Counties have allocated Auburn a combined target of 12,096 new housing units (12,000 in King County and 96 in Pierce County) and 19,520 new jobs (all in King County) between the baseline of 2019 and 2044.

Based on the available land capacity as zoned in 2023, Auburn showed a deficit of capacity for both the 2044 housing unit and jobs targets. The future land use map developed with the 2024 Comprehensive Plan was developed to accommodate the 2044 housing



and jobs targets through new zoning and land uses in various corridors and nodes throughout Auburn, and in the Downtown area in particular. Development of the future land use map involved evaluating alternative land use scenarios and testing them against various factors. Further information regarding this process is included in the Comprehensive Plan.

This Comprehensive Transportation Plan is based on the Preferred Land Use Alternative documented in the Comprehensive Plan. This land use alternative was a combination of two alternatives that each focused on centralizing housing and employment growth with either corridors or centers approach. Both alternatives included intense housing and employment growth focused in the Downtown area by expanding and increasing development density and intensity. The combined alternative targets employment and housing along the Auburn Way North and I Street NE corridors where frequent transit is planned to start operating in 2026. Focused growth in employment and housing was also identified at locations of known future development plans. These areas include the Outlet Collection Mall area along 15th Street SW, the Icon Materials mining operations and adjacent lands along the east side of Kersey Way (known as the Segale development area), and at vacant or underdeveloped land areas on Lea Hill and West Hill.

CHAPTER 2

Multimodal Network



IN THIS CHAPTER

Multimodal Level of Service Standards

Streets System

Active Transportation

Transit

Freight

Airport



The transportation network includes facilities for several modes of transportation, which must integrate well together, and support or complement each other, to provide the best possible mobility options throughout the city. While it is important to limit vehicle congestion and traffic delays, it is equally important to provide alternative transportation options, which can encourage active transportation and reduce the need to increase vehicle capacity on the roadways.

The availability of transit service, bike facilities, and sidewalks will become more important to achieve a comprehensive multimodal transportation network, which is composed of the vehicular traffic network (roads) which serves cars, trucks, and buses, and the active transportation network, which includes bike and pedestrian facilities. Some roads are more heavily used by trucks, and are identified in the freight network. Transit routes are also identified. Based on the primary function of the roads, special considerations are made to carefully prioritize specific modes, and protect other modes where there are overlaps, such as freight corridors along bikes routes.

2.1. MULTIMODAL LEVEL OF SERVICE STANDARDS

Transportation level of service (LOS) standards are metrics that indicate how well transportation facilities are moving people and goods.

Prior to this Plan, as with comprehensive transportation plans for most other agencies in Washington, the City of Auburn's Comprehensive Transportation Plan only included LOS standards for motorized vehicles (vehicle LOS). Without adopted multimodal LOS standards (MMLOS), there were no metrics by which the effectiveness of the active transportation and transit systems could be measured and evaluated. With MMLOS, the City of Auburn can ensure that transportation system improvements are planned, funded, and implemented to develop a comprehensive,

connected, and versatile transportation system.

One of the main goals of MMLOS is to realize a transportation system that doesn't rely on adding more vehicular capacity alone to address growing needs to move people and goods. The MMLOS approach supports providing other transportation modes including walking, bicycling, and transit to address these needs. The City of Auburn's MMLOS have been developed with the strategic and focused intent of maximizing potential mode shifts from driving cars to walking, biking, and riding transit. The standards work towards this by setting higher level of service standards for walking and biking in areas where doing so will best support existing and planned transit service.

These principles, many of which can be promoted by thoughtful transportation systems planning, encourage healthier communities by increasing physical activity and decreasing air pollution caused



In 2023, Washington enacted House Bill (HB) 1181 which required agencies to develop MMLOS. MMLOS expand the transportation system metrics to include other travel modes such as transit, walking, and biking.

Auburn's multimodal transportation network primarily includes the **modes of travel highlighted below**, which are explained and assessed in more detail throughout the Plan.

Separate sections have been included in the Plan that address the following elements for each mode:

- General description and overview
- Existing facilities and/or services
- LOS standards
- Existing LOS evaluation and existing deficiencies
- Future LOS evaluation and future deficiencies
- Strategies, projects, and programs to address existing and future deficiencies

The City of Auburn envisions a transportation system that will help promote healthy community principles by coordinating land use, the active transportation system, and transit in a manner that encourages walking and bicycling. PSRC has identified several elements that contribute to the desirability of walking, bicycling, and transit use in their Vision 2050 "Update Paper on Health":

- **Concentrating complementary uses** such as restaurants, retail, and grocery stores proximate to residences and employment.
- **Linking neighborhoods** by connecting streets, sidewalks, and trails.
- **Designing for safe and welcoming pedestrian and bicycle facilities.**
- **Enhancing transit opportunities and active transportation connections** to transit facilities.
- **Reducing and mitigating the effects of parking.**

STREETS



Motorized vehicles moving people on streets

ACTIVE TRANSPORTATION



Pedestrians and bicyclists

TRANSIT



Buses and trains moving people

FREIGHT



Trucks and trains moving goods

by vehicle emissions. Auburn has historically planned for a transportation system that incorporates many healthy community principles, such as transit facility planning and regional trail planning. In addition, the Downtown Plan calls for a mixed-use, high density, pedestrian-oriented downtown. Improving the active transportation system also helps address the findings of the citywide Health Impact Assessment process, which recommended that the City improve sidewalk connectivity; improve the pedestrian environment; eliminate natural and man-made mobility barriers for pedestrians and bicyclists; improve access to transit; and improve vehicle safety, and pedestrian safety.

In the future, Auburn shall continue to promote these principles through long-range planning efforts, capital facility improvements, development review, and community activities involving active lifestyle elements.

MMLOS is vital to providing an equitable, effective, sustainable, and environmentally balanced transportation system. MMLOS allows a more strategic approach towards moving people and goods as compared to the historic approach of only

using vehicle LOS standards. Products of the historic approach are visible all around us where we see wide multi-lane roadways with narrow or missing sidewalks, neighborhoods and commercial areas with little to no transit services, and an incomplete, often sporadic bicycle network. These deficiencies in the transportation system are understandable given that LOS standards are used to identify where the transportation system is not adequately functioning and, subsequently, used to plan and prioritize improvements to address those issues. If vehicle LOS is the only standard in place, the resulting transportation investments are focused on moving goods and people with motorized vehicles while other modes receive little funding relative to vehicle capacity.



2.2. STREETS SYSTEM

The City has 249 centerline miles of public roadways. The City's planned arterial street network is mostly established with existing roadways with only a few new arterials that have yet to be constructed. Many of the City's arterial and other streets were not built to current City design standards as the network itself is a product of almost a century of evolving standards and design approaches. Many older roads, including those inherited through several annexations, do not include robust pavement sections and do not accommodate active transportation users. The annexed county road networks present a challenge as they were originally set to provide access to rural areas and not to accommodate existing and future planned higher density housing and commercial areas. The network challenges are most prevalent on the City's West Hill and Lea Hill areas where connectivity is mostly provided by two-lane county roadways that don't form a fully connected network. Constructing new roadways or re-aligning existing roads to improve the network connectivity is heavily constrained by topography, environmentally sensitive areas, existing development, and jurisdictional boundaries.

Almost 400,000 vehicle trips use Auburn's streets everyday. Most of the City's arterial and collector roadways have adequate vehicle capacity on sections of roadways without intersections. Where capacity issues do occur, they are mostly at controlled intersections of arterial and/or collector streets.

An inventory of the City's street system is maintained using the City's asset management software and geographic information systems (GIS). The inventory includes spatially referenced roadway segments generally delineated between roadway centerline intersections. Each roadway segment includes a set of data associated with it such as roadway width, number of lanes, classification, posted speed, pavement condition index, and initial construction, maintenance/repair, and replacement history. This data is used to generate the maps included in [Appendix A](#).

2.2.1. Functional Classification of City Streets

The street system functions as a network. Functional classification is the hierarchy by which streets and highways are defined according to the service they provide. There are three main classes of streets in Auburn: **arterials**, **collectors**, and **local streets**.



[Map 7. 2024 Roadway Classifications in Appendix A](#) provides the currently adopted classification of Auburn's existing and planned streets. Streets are classified using the Federal Functional Classification system guidelines, as shown in [Map 9. 2024 Federal Functional Classifications in Appendix A](#).

The Auburn EDS establishes typical roadway cross sections for each City street classification. Some City streets have specific cross sections and other design elements that have been established through specific studies and/or design efforts. The following City studies or standards are included in this Plan by reference and establish roadway cross sections and other design elements for the studied roadways:

- R Street SE Corridor Study
- Lea Hill Road Corridor Study
- BNSF Railway and A Street SE Crossing Study
- Downtown Division Street Promenade Project
- Downtown Urban Standards as Presented in the EDS
- Other studies that have, or will be prepared and approved, by the City Engineer with consultation and input provided by the Transportation Advisory Board (TAB) and the City Council

Designation of functional classifications allows for the preservation of the right-of-way for future transportation corridors, whether the corridor provides access to car, transit, bike, or pedestrian use. Functional classification helps establish corridors that will provide for the future movement of people and goods, as well as emergency vehicle access. Proper designation is crucial to the planning effort; as development occurs, accommodation for the appropriate transportation corridors should be incorporated into development plans.

The following describes the different classifications used by the City, in order from highest classification to lowest:

Principal Arterials are designed to move traffic between locations within the region and connect with the freeway system. Design emphasis is placed on providing movement for both inter- and intra-City traffic. As such, these facilities typically carry the highest traffic volumes and are designed to accommodate longer-distance trips, provide the highest level of mobility, and have the highest speed limits of all City streets. Principal arterials will generally carry moderate to high level of large truck traffic. Direct access to adjacent land uses is permitted, although these streets are most likely to have limited or managed access in an effort to enhance safety and preserve capacity. Active modes also use these streets, but rely on sidewalks and other dedicated facilities to safely navigate vehicle traffic.

Principal arterials are the framework street system for the City and usually extend beyond the City limits, connecting with neighboring jurisdictions. Principal arterials are heavily utilized as bus routes, carrying both local and regional service.

Minor Arterials connect collector and local industrial streets to principal arterials and freeways. They serve moderate length trips, provide slightly less mobility than principal arterials, and distribute traffic to smaller geographic areas. Minor arterials may serve secondary traffic generators such as business centers, neighborhood shopping centers, major parks, multifamily residential areas, medical centers, larger religious institutions, and community activity centers.

Minor arterials will generally carry moderate to low levels of large truck traffic. Direct access to adjacent land use is permitted but may sometimes require limited or managed access in an effort to enhance safety and corridor capacity. Active modes also use these streets, and often rely on sidewalks and other dedicated facilities to safely navigate vehicle traffic.

Collectors and Rustic Collectors carry traffic originating from local streets, neighborhoods, and recreational areas to minor and principal arterials. Collectors typically serve only local truck trips and are not typically intended for use by large trucks. Collectors are intended to have a residential neighborhood feel and encourage active transportation. Collectors may accommodate some local transit routes.

Rustic collectors are located in areas with less intensive land uses associated with the Residential Conservancy land-use designation and along environmentally sensitive corridors such as Green River Road. Rustic collectors are intended to have a less urban feel and generally don't have separate bike or pedestrian facilities. Rustic collectors do not typically carry fixed route transit services.

Local, Local Industrial, and Local Rustic primarily provide direct access to adjacent land uses and connect with other local streets to eventually connect to collectors and arterials. Local streets are not intended to connect traffic between collector and arterial streets, also known as cut-through traffic. Local street networks generally consist of shorter roadway segments between intersections with collectors and arterials and often have cul-de-sacs and looping configurations. Local streets generally do not serve fixed route transit. Local streets are the most common streets in the City and are intended to have a residential neighborhood feel with relaxed and comfortable driving, biking, and walking experiences. Local streets are not intended to serve large truck traffic.

Rustic residential streets are a type of local street that serve areas associated with the Residential Conservancy zoning designation. Rustic residential streets are intended to have a less urban feel and typically do not have separate walking and biking facilities.

Local industrial streets serve primarily industrial and manufacturing land uses. They are intended to accommodate large trucks and provide a more urban or industrial setting.

Alleys are the lowest classification of City street and provide vehicular access to abutting properties generally from the rear or side. Alleys also provide access for garbage collection and emergency vehicles and serve as corridors for city and non-city utilities. Alleys can also serve additional purposes including access management and the alleviation of traffic operations issues on streets with higher classifications (not related to level of service issues). Alleys generally connect to local streets and are short in length without separate walking or biking facilities.

2.2.2. City Street Classification Changes

In preparing the Plan, the roadway classifications and street network were reviewed to evaluate if revisions were needed to reflect current and future needs. Previously, the City classified its local and collector streets as being either residential, non-residential, or rustic. There was some ambiguity and inconsistency in the non-residential designation as the name implied that the classification was intended for all commercial, industrial, and non-rustic streets. However, the typical roadway cross sections in the EDS for non-residential streets included wide vehicle travel lanes to accommodate large trucks. The EDS also specified a pavement section for non-residential roads that was very robust, again, intended to serve large trucks. Throughout the City, roads previously classified as non-residential included roads serving

multi-family housing, commercial areas, multi-use areas, and industrial areas. Except some heavy commercial and industrial areas, the wide lanes and robust pavement section specified in the EDS were generally not desirable for these roadways. To address this issue, the decision was made to discontinue the use of the non-residential collector classification. Streets previously classified as non-residential collectors were updated to be reflect the new classification approach. The local street classifications were updated to be either local, local industrial, or local rustic. Streets previously classified as local non-residential streets that serve industrial areas and large volumes of truck traffic were updated to be local industrial streets. Streets that were not local rustic or local industrial were classified as local streets. In addition to the change in roadway classification categories, the assigned classification to various City streets were updated to reflect current and future land-use, traffic volumes, and other factors. A summary of these changes is provided in [Appendix E](#).

2.2.3. State Highways

State highways include **SR 18**, **SR 167**, and **SR 164**. A description of each highway is provided in **Table 1**.

2.2.4. Private Streets and Shared Driveways

Private Streets can be appropriate for local access in very limited usage. They provide direct access to City streets and are not intended to connect between two or more public streets immediately adjacent properties.

Shared Driveways, sometimes referred to as access tracts provide public right-of-way access for one or more properties. A driveway serving only one property but utilizing an access easement or tract across another property for access to the public right-of-way is also considered a shared driveway. They are most common in panhandle lots or rear lots that do not have street or alley access. Shared driveways have become very common in subdivision projects that are trying to meet density requirements while also working around critical areas and other constraints. Access tracts are privately owned and maintained.

2.2.5. City Streets LOS

Streets are based on the amount of delay experienced by drivers at intersections and how the queue of vehicles waiting at those intersections may block other intersections, driveways, and travel lanes. Previously, the City also included corridor delay as a vehicle LOS standard. Corridor LOS is no

Table 1. State Highways

ROUTE	
	• Connects I-5 to I-90 through Auburn • Within the City limits, has interchanges with SR 167, West Valley Highway, C Street SW, SR 164/Auburn Way S, Auburn Black Diamond Road, and SE 304th Street providing access to downtown Auburn and Lea Hill • Classified as both a Highway of Statewide Significance (HSS) and a National Highway System (NHS) route for the entire corridor segment • A full control limited access highway, allowing access only at interchanges within the City limits
	• Also known as the Valley Freeway • Serves as an alternative to I-5, connecting south King and north Pierce Counties to the I-405 corridor to the north • Designated as both HSS and NHS • Within the City limits, SR 167 has interchanges with SR 18, S 277th Street, 15th Street NW, and 15th Street SW • A full control limited access highway, allowing access only at interchanges within the City limits
	• Also known as Auburn Way South • A 15-mile roadway corridor beginning at the SR 18 interchange with Auburn Way S • The corridor is aligned southeast through the City, connecting through the Muckleshoot Indian Tribe lands and unincorporated King County before terminating in the City of Enumclaw at its junction with SR 410 • A City street which is part of a state highway • Functionally classified as an urban other arterial by WSDOT, and also a Highway of State Significance (HSS) • Subject to WSDOT Complete Streets requirements

longer considered because intersections generally control how well the roadway network functions. If a roadway corridor is congested, most often it is the result of delays and queuing at the intersections along the corridor. The City's established policies and actions related to providing an efficient and effective multimodal network include provisions to support efficient, effective, and resilient roadway corridors. Previously the City vehicle LOS standards

also included reference to other factors like pavement degradation, safety impacts, and general roadway geometry. Since those factors don't have a metric or rating that can be used to determine how well a facility is functioning, they are no longer included as a vehicle LOS standard. Instead, those are addressed with other goals and policies throughout the Plan and provided for with standards established in the EDS.

The vehicle LOS methodology used in the City of Auburn for intersection delay is based on the current

edition of the Highway Capacity Manual (HCM) which assigns intersections with a letter designation from 'A' through 'F' based on control delay. Control delay is the total elapsed time from a vehicle joining the intersection queue until its departure from the stopped position at the head of the queue. This includes the time required to decelerate into the queue and accelerate back to free-flow. **Table 2** shows the LOS ratings for intersections based on the type of intersection control and maximum expected delay times. The Plan policies establish LOS "D" as

Figure 1. Vehicle LOS - Illustration of Roadway Delay

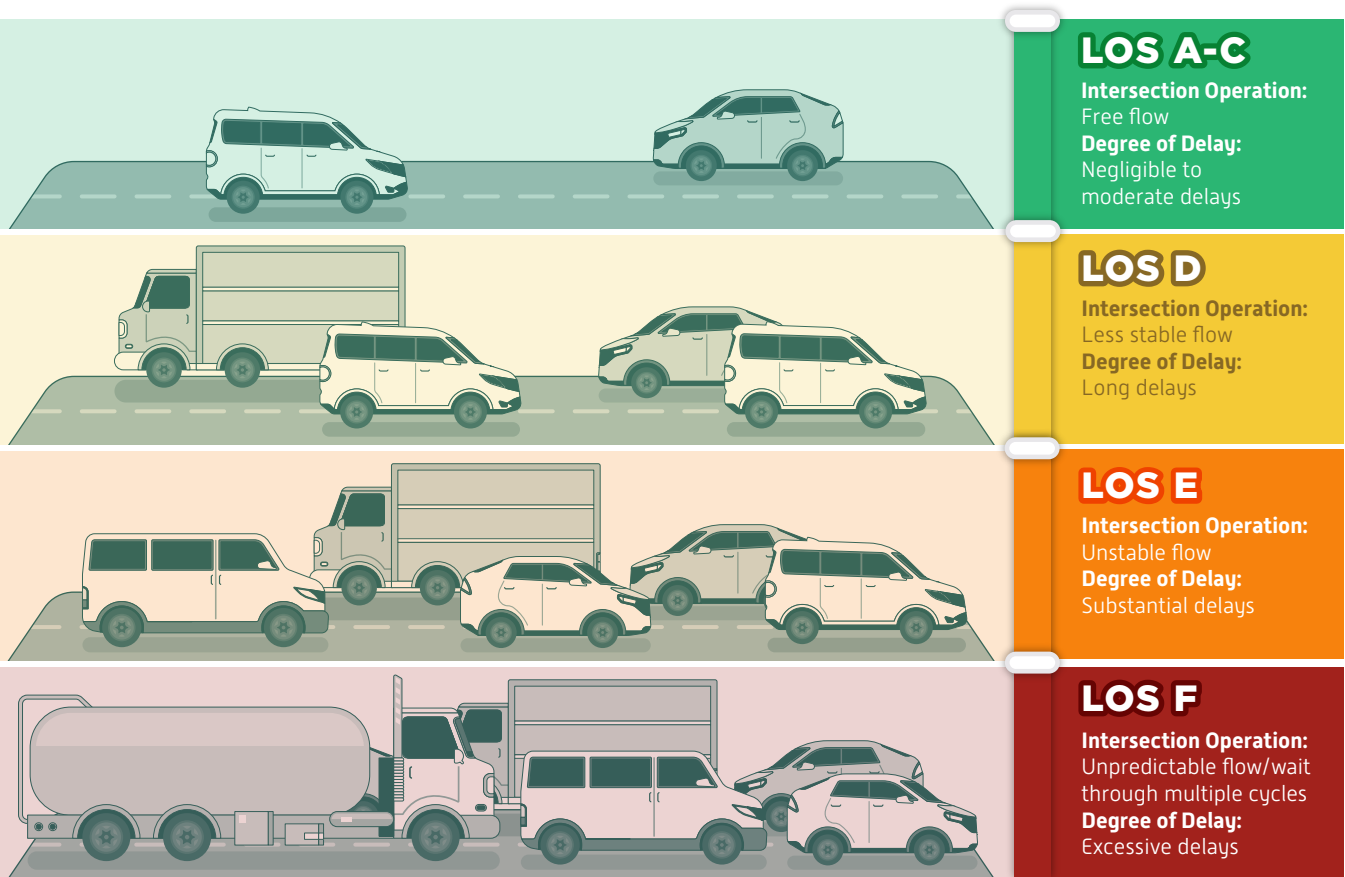


Table 2. Vehicle Intersection Delay LOS Table

INTERSECTION TYPE	LEVEL OF SERVICE					
	A	B	C	D	E	F
	AVERAGE CONTROL DELAY (SECONDS PER VEHICLE)					
Stop Control*	0 – 10	>10 – 15	>15 – 25	>25 – 35	>35 – 50	> 50
Traffic Signal or Roundabout Control**	0 – 10	>10 – 20	>20 – 35	>35 – 55	>55 – 80	>80

* LOS for stop-controlled intersections with one or more uncontrolled approaches is evaluated based on the movement with the highest delay.
 ** Intersections with roundabouts are also evaluated using V/C ratio.
 Source: Highway Capacity Manual, 6th Edition

the minimum standard for most intersections with the exception being signalized intersections of two or more principal arterial roadways which have a LOS "E" minimum standard. Intersections with roundabout control are evaluated using both the letter designation "A" through "F" grade for control delay and the volume/capacity ratio (V/C ratio). The City has adopted WSDOT's Measures of Effectiveness (MOE) approach for roundabouts and established 0.90 as the maximum allowed V/C for each lane group.

Another metric used for Vehicle LOS standards in Auburn is based on the length of the queue of vehicles backed up at an intersection. This is a pass/fail metric based on whether or not all intersection approaches fit within the available queue storage under projected 95th percentile queue lengths. If any approach does not fit within the available storage, the intersection queuing LOS standard is "failed." If all approaches fit within available storage, the intersection queuing LOS standard is "pass." As outlined in the Plan policies, the queuing standard is that the 95th percentile queue shall not extend across an adjacent driveway, alley, or street intersection, except if the driveway, alley, or street intersection is within the functional intersection boundary of the queue in which case the queue may extend to the limit of the functional intersection boundary. Additionally, queuing for a designated turn lane shall not exceed the turn-lane storage area and cause a blockage of adjacent lane(s).

2.2.6. Vehicle LOS Standards - State Highways

Amendments to the GMA in 1998 added new requirements for local jurisdictions to address state-owned transportation facilities, as well as local transportation system needs in their comprehensive plans (RCW 47.06.140). House Bill 1487, adopted by the Washington State Legislature in 1998, requires that the transportation element of local comprehensive plans include the LOS standards for HSS. HB 1487 clarified that the concurrency requirement of the GMA does not apply to HSS or other transportation facilities and services of statewide significance. HB 1487 also requires local jurisdictions to estimate traffic impacts to state-owned facilities resulting from land use assumptions in the Comprehensive Plan.

WSDOT has identified a LOS D standard for all urban HSS, according to the State Highway System Plan (HSP). All state highways within the City of Auburn, including SR 18, SR 167, and SR 164, are classified as urban HSS, and therefore have a LOS D standard.

2.2.7. Transportation Demand Management (TDM)

In 1991, the State of Washington adopted its Commute Trip Reduction (CTR) law. The law's intent is to reduce traffic congestion and air pollution by shifting drive-alone commutes to other modes. Today, more than 1,000 worksites take part in the CTR program statewide and the program is well known nationally as an example of impactful TDM.

The law requires local jurisdictions to adopt ordinances detailing requirements for employers to implement employee commute trip reduction programs that encourage the reduction of the number of trips and miles people drive alone to work. In 2010, City of Auburn adopted Ordinance 6218, codified by Auburn City Code Chapter 10.02, which provides these requirements for employers within the City limits.

Reducing congestion includes strategies to reduce demands on the transportation system. The State of Washington emphasized the importance of TDM by adopting a CTR law. That law requires all major employers, with over 100 employees at a single site and arriving between the hours of 6:00 and 9:00 AM, to develop programs and strategies to reduce the number of commuter automobile trips made by their employees. Transportation demand management reduces demand on the street system. While TDM and TSM employ different strategies, they share many of the same benefits. Both reduce the peak vehicle demand, increase the efficiency of the transportation system, reduce the need for costly capacity expansions, help improve LOS, and contribute to an enhanced quality of life for those who use and benefit from the transportation system.

TDM strategies include those shown in **Figure 2** on the next page.

The City of Auburn will continue to encourage drivers of single occupancy vehicles to consider alternate modes of travel such as carpools, vanpools, transit, active transportation travel, and alternative work schedules, and has identified mode split goals for the Regional Growth Center. The goals were developed in consideration of the current mode splits for the Auburn Regional Growth Center, the current mode splits for all designated Regional Growth Centers, and the 2040 mode split targets identified by PSRC for all designated Regional Growth Centers. The existing and 2035 mode split goals for the Auburn Regional Growth Center are summarized in **Figure 3** on the next page.

The mode split goals for the Regional Growth Center reflect the desire to significantly reduce automobile travel as a share of work trips, with the most significant increase in transit trips. The reduction in the vehicle mode split will be the result of the right

mix of land use changes, transportation investments, and roadway pricing tools. Additionally, factors such as shifting demographic trends, preferences, and technology may contribute to mode shifts above and beyond the identified goals.

Figure 2. TDM Strategies

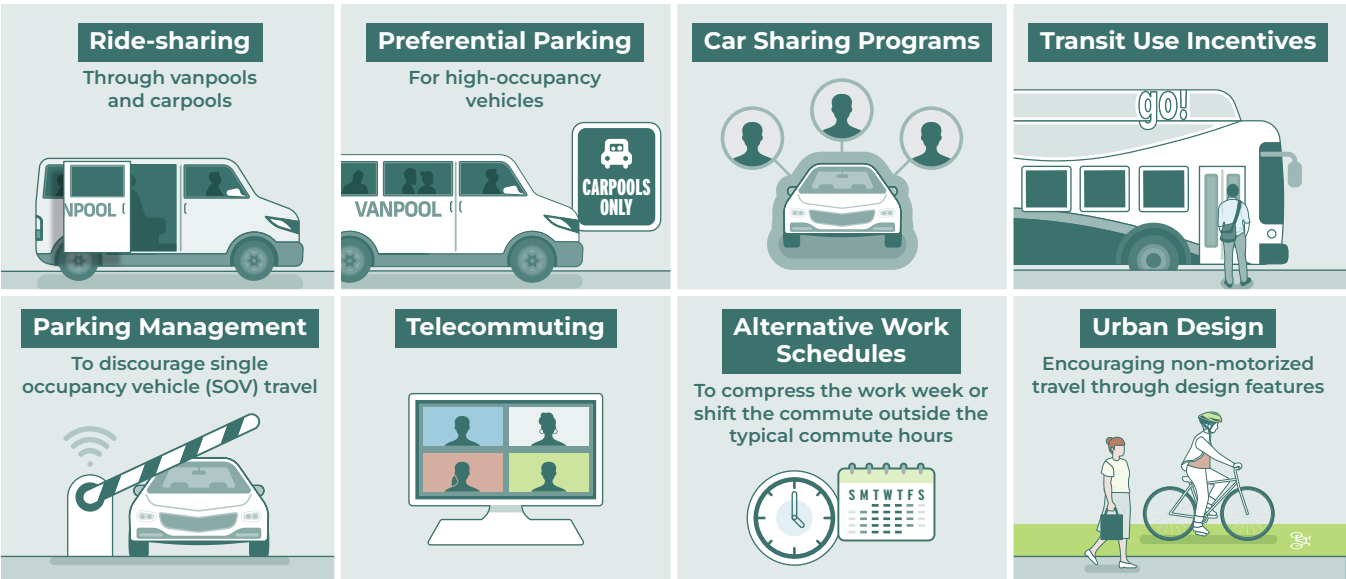
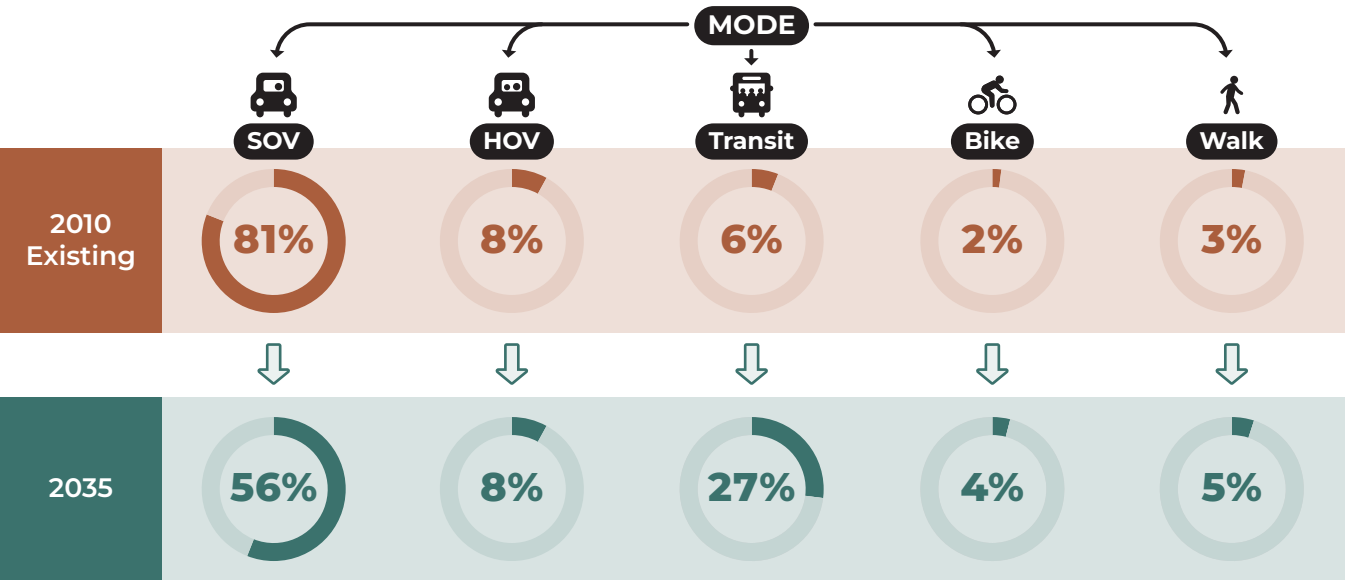


Figure 3. Regional Center Mode Split Goals



2.2.8. Existing and Future Vehicle LOS Conditions

Existing Conditions

In 2022, the City collected average daily traffic counts from arterial and collector streets and peak hour turning movement counts at 157 intersections in Auburn. These observations formed the basis for the existing conditions analysis of traffic operations in Auburn. Existing turning movement counts were analyzed using Synchro traffic operations software to calculate the LOS at each study intersection for the busiest hour during the weekday AM (7:00 - 9:00 am) and PM (4:00 - 6:00 pm) peak periods. Wherever possible, HCM 6th edition analysis was used. In some cases, due to incompatible intersection channelization and/or phasing settings, HCM 2000 was applied. Of the 157 intersections evaluated, the 11 (or 8%) shown in **Table 3** are currently operating below the City's adopted LOS standard. **Figure 4** displays the existing LOS standard of evaluated intersections and numbered intersections currently operating below the LOS standard.

The majority of intersections operating below adopted level of service standards or failing intersections have two-way stop-control; of the 13 failed intersections, three are signalized, one has all-way stop-control, and eight have two-way stop-control. The PM peak hour period is also when the network is under most strain: seven intersections are failing only during the PM peak hour, while only four intersections are failing only during the AM peak hour, and two intersections are failing during both AM and PM peak hours. In addition to current failures, five intersections are operating near the threshold of failure in the AM and three are approaching the City's standard in the PM, indicating that future growth could cause the level of service to drop below standards.

Many of the intersections with existing level of service issues are on Lea Hill or West Hill. Multiple intersections along Auburn Way South (SR 164), M Street SE, and A Street SE carry heavy volumes of both local and regional traffic and are close to or failing City and/or state LOS standards.

Future Conditions (2044 Preferred)

To forecast what travel patterns might be in 2044, the City's VISUM-based travel demand model was applied. Developing these forecasts required validation of the model to confirm it could replicate existing traffic volumes (with model inputs reflecting 2022 roadway and land use conditions throughout Auburn). Then, the model was updated to reflect land use and transportation conditions expected under the 2044 preferred land use scenario from the City's

Table 3. Intersections Operating Below the LOS Standard per 2022 Traffic Counts

INTERSECTION	
1	116th Ave SE & SE 304th St
2	46th PL S / 44th Ave S & S 321st St / 51st Ave S
3	51st Ave S & 316th Ave
4	A St SE & 44th St SE
5	Auburn Way North & 45th St NE
6	Auburn Way South & 17th St SE
7	C St SW & 3rd St NW
8	Henry Rd NE / Pike St NE & 8th St NE
9	Lakeland Hills Way SE & Oravetz Rd SE
10	M St SE & 12th St SE
11	M St SE & AWS
12	R St SE & 33rd St SE
13	Howard Rd / 21st St SE

EXISTING LOS	NUMBER OF INTERSECTIONS
● OK	111
● Approaching Standard	27
● At Standard	6
● Failed	13

Comprehensive Plan Land Use Element. **Table 4** lists the projects included in the Initial 2044 Preferred Land Use Future model. The table also indicates what the current project status is and what are the next steps planned for the project. The next steps indicate whether or not the project will be retained or removed from the Plan project list included in [Appendix B](#).

Figure 4. Existing Intersection Level of Service

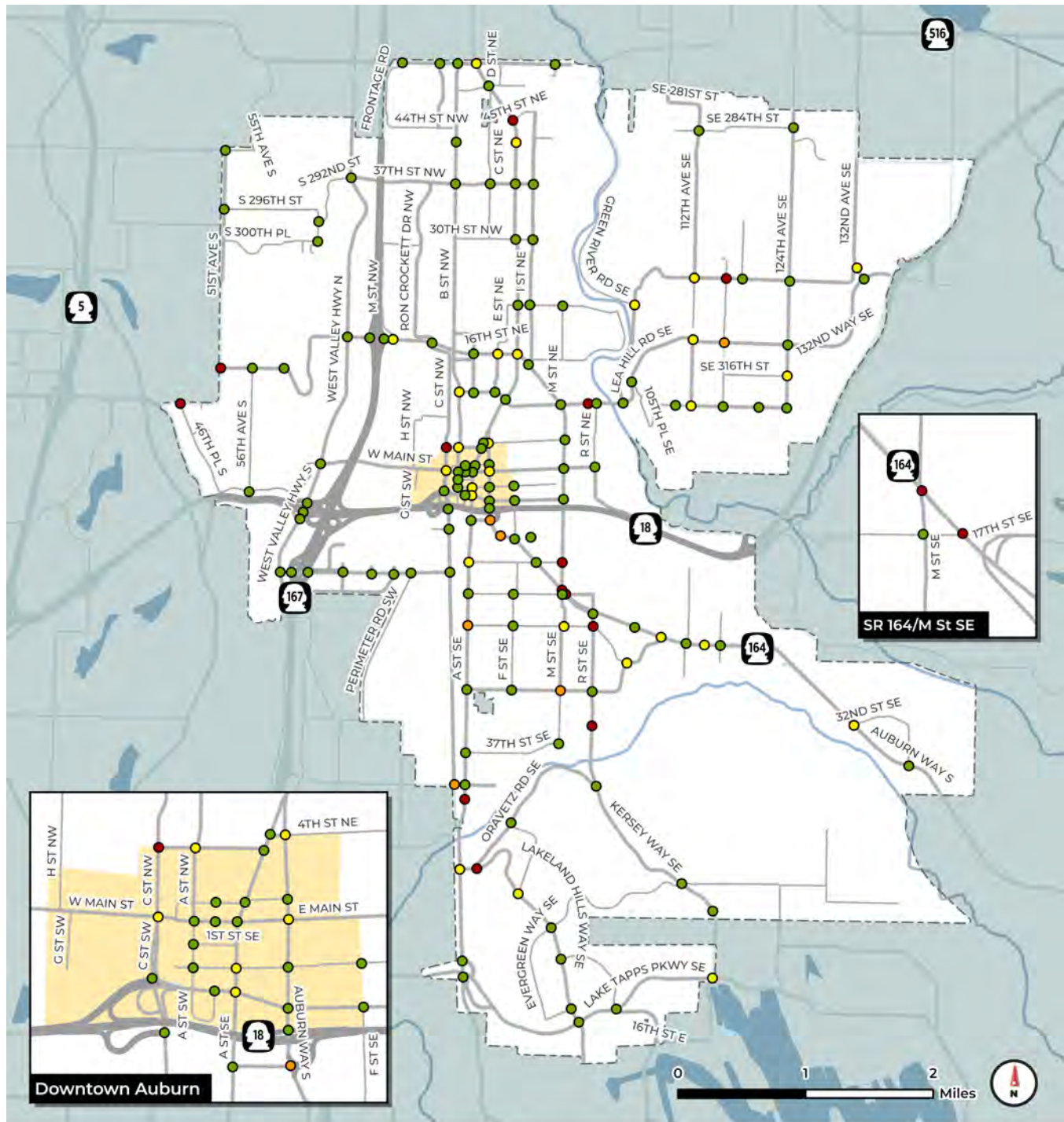


Table 4. Improvement Projects in the Initial 2044 Preferred Land Use Future Model

2024-2029 TIP ID	IMPROVEMENT PROJECT	PROJECT STATUS	NEXT STEPS
I-6	Lea Hill Road SE & 112th Avenue SE Roundabout	Design Programmed for 2027, Construction Not Yet funded.	Retain in 2024 CTP Project List
I-10	R Street SE & 21st Street SE Road Roundabout	Design Underway, Construction Programmed for 2025	Retain in 2024 CTP Project List
I-11	SR 164 & 6th Street SE Improvement	Design Programmed for 2025, Construction Not Yet Funded	Effectiveness of Project in Mitigating LOS questionable. Remove project from TIP and CTP.
I-12	Lea Hill Road SE & 104th Avenue SE Roundabout	Design Underway, Construction Not Yet Funded	Seek Construction Funding. Retain in 2024 CTP List.
I-15	10th Street NW & A Street NW Signal	Design Underway, Construction Programmed for 2024	Project to be substantially complete by end of 2024. Remove from 2024 CTP list.
I-16	SR 167 NB Ramps & 15th Street NW Improvement	Removed from TIP. Design and Construction Not Funded	Alternate Project Developed to Address LOS issue. Remove from 2024 CTP List.
R-2	Stewart Road Widening (City of Sumner)	Design Underway, Construction Programmed for 2025	Project By Others and Outside City of Auburn. Remove from 2024 CTP Project List.
R-4	A Street Loop	Construction underway	Project to be substantially complete by end of 2024. Remove from 2024 CTP list.
R-5	A Street NW & 3rd Street NW Improvement	Design and Construction Not Yet Funded	Retain in 2024 CTP Project List
R-6	Auburn Way S Widening (Hemlock Street to Poplar St)	Design Underway, Construction Programmed for 2024	Project will still be in construction by end of 2024. Retain in 2024 CTP Project List.
R-7	M Street NE Widening (Main Street to 4th Street NE)	Design Underway, Construction Programmed for 2025	Retain project in 2024 CTP Project List.
R-13	R Street SE Widening (22nd to 33rd)	Design Underway, Construction Not Yet Funded	Retain project in 2024 CTP Project List.

(Continued on next page)

2024-2029 TIP ID	IMPROVEMENT PROJECT	PROJECT STATUS	NEXT STEPS
R-16	RGC Access Improvements	Design Underway, Construction Programmed for 2024	Project to be substantially complete by end of 2024. Remove from 2024 CTP Project List.
R-26	E Valley Highway Widening	Design Underway, Construction Not Yet Funded	Seek construction funding. Retain in 2024 CTP Project List.
R-27	Garden Avenue Realignment	Design Underway, Construction Programmed for 2024	Project to be substantially complete by end of 2024. Remove from 2024 CTP Project List.
P-3	10th Street NE Improvements	Design and Construction Not Yet Funded	Retain in 2024 CTP Project List
2019 COMP PLAN ID	IMPROVEMENT PROJECT	PROJECT STATUS	NEXT STEPS
2	I Street NE Extension (45th Street NE to S 277th St)	Complete	Remove from 2024 CTP Project List
11	116th Avenue SE & SE 320th Street Roundabout	Not funded	Retain in 2024 CTP Project List
16	M Street SE Widening (8th Street SE to Auburn Way S)	Not funded	Combine with M/12th signal project in 2024 CTP Project List
19	116th Avenue SE & SE 312th Street Roundabout	Not funded	Retain in 2024 CTP Project List
22	M Street SE & 12th Street SE Signal	Not funded	Combine with M Street SE Widening
23	M Street SE & 29th Street SE Roundabout	Not funded	Retain in 2024 CTP Project List
30	R Street Bypass (M Street SE to SR 18)	Not funded	Retain in 2024 CTP Project List
WSDOT	IMPROVEMENT PROJECT	PROJECT STATUS	NEXT STEPS
n/a	SR 167 HOV Widening (15th Street SW to SR 410)	Construction Programmed for 2025	Project by Others. Remove from 2024 CTP Project List.

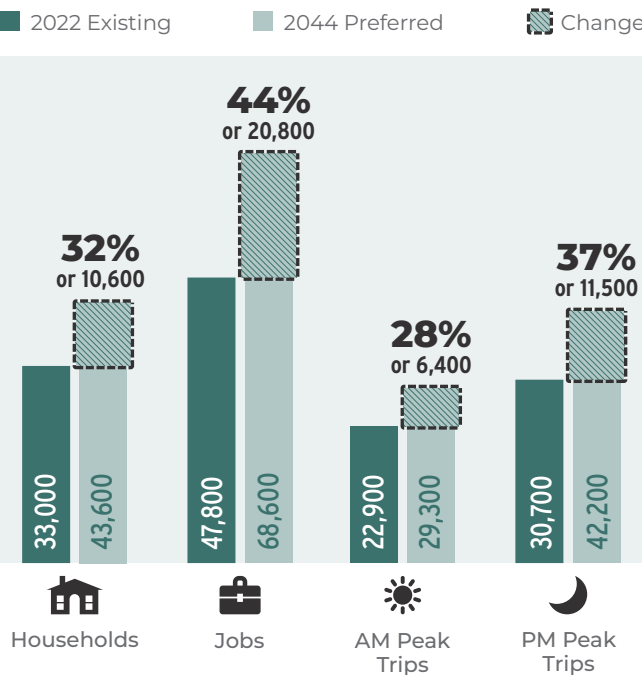
The initial 2044 Preferred Land Use Future Model was used to generate future travel demand volumes and turning movement counts at 162 study intersections² throughout the city during the busiest hour of the weekday AM (7:00 - 9:00 am) and PM (4:00 - 6:00 pm) peak periods.

Figure 5 shows the forecast 32% increase in households and 44% increase in jobs in the City of Auburn between 2022 and 2044. AM peak hour trips are forecast to increase by 28% (from 22,900 trips today to 29,300 trips in 2044). PM peak hour trips are forecast to increase by 37% (from 30,700 trips today to 42,200 trips in 2044).

Forecast volumes from the preferred land use alternative model were then applied to study intersections using Synchro software to test future LOS.

In the preferred land use alternative, 162 intersections were analyzed. Of these, 22 intersections are forecast to operate below City or state LOS standards in 2044. These intersections are listed in **Table 5**. Of the intersections forecast to fail, 10 currently do not meet the adopted LOS standards. These 10 intersections are highlighted in pink in **Table 5**. **Figure 6** shows a map of intersection LOS across the City.

Figure 5. Changes in Trip Generation Between 2022 Existing Condition and the Preferred Land Use 2044 Alternative



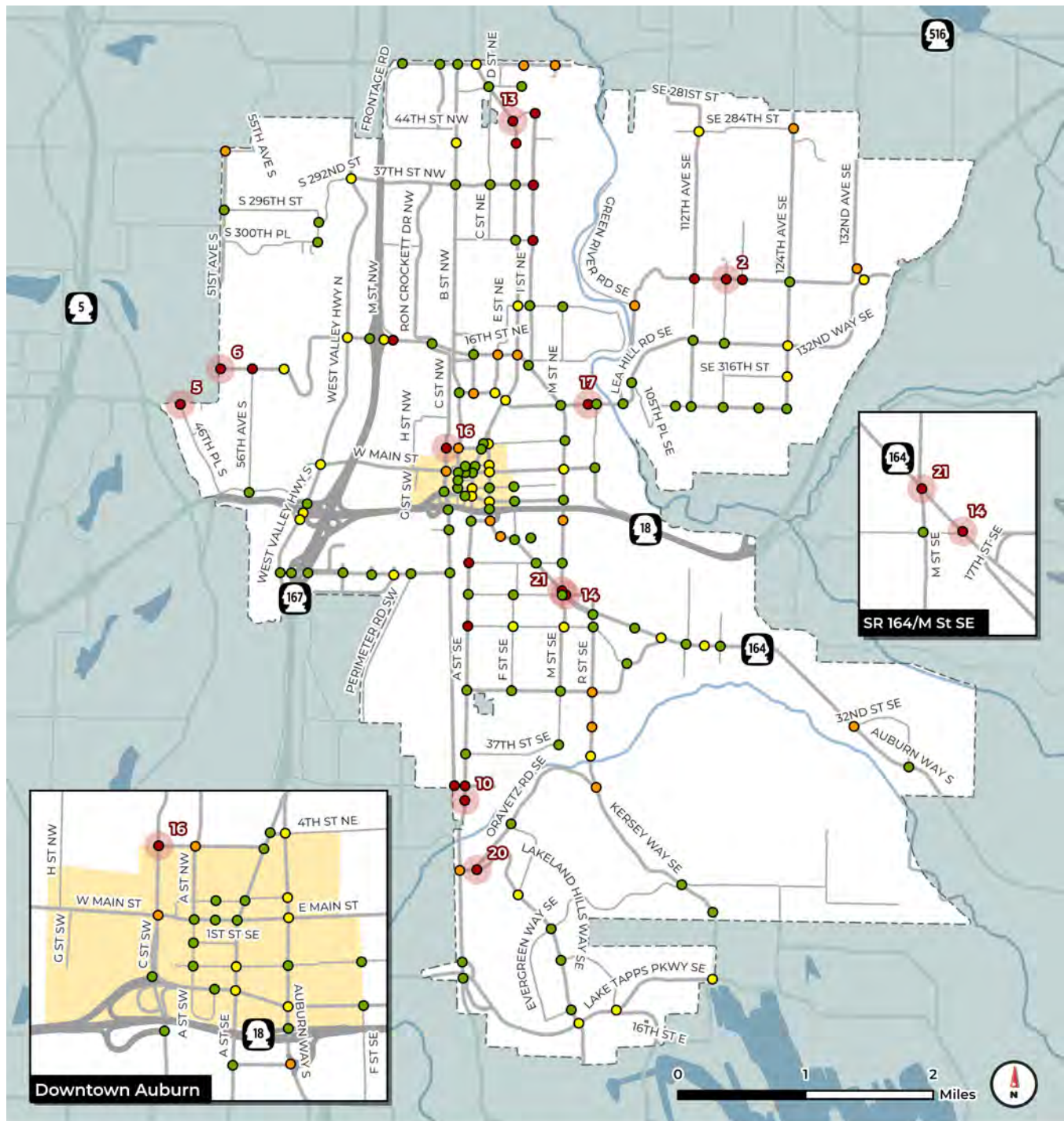
² Note that the future scenario includes five intersections that do not exist today.

Table 5. Intersections Operating Below the LOS Standard

INTERSECTION	
1	112th Ave SE & SE 304th St
2	116th Ave SE & SE 304th St
3	15th St NE & M St NE
4	30th St NE
5	46th PL S / 44th Ave S & S 321st St / 51st Ave S
6	51st Ave S & 316th Ave
7	56th Ave S & S 316th Ave
8	A St SE & 12th St SE
9	A St SE & 21st St SE
10	A St SE & 44th St SE
11	A St SE & Ellingson Rd / 41st St SE
12	Auburn Way North & 42nd St NE
13	Auburn Way North & 45th St NE
14	Auburn Way South & 17th St SE
15	C St SE & Ellingson Rd
16	C St SW & 3rd St NW
17	Henry Rd NE / Pike St NE & 8th St NE
18	I St NE & 37th St NE
19	I St NE & 45th St NE
20	Lakeland Hills Way SE & Oravetz Rd SE
21	M St SE & AWS
22	SE 304th St & 118th Ave SE

FUTURE LOS	NUMBER OF INTERSECTIONS
OK	88
Approaching Standard	33
At Standard	19
Failed	22

Figure 6. Intersection Level of Service in the 2044 Future Preferred Land Use Alternative



- Ok
- Approaching Standard
- At Standard
- Failed
- Intersections Operating Below LOS Standard in Existing Conditions
- City Boundary
- Downtown Urban Center

Of the intersections forecast to operate below LOS standards by 2044, the vast majority have two-way stop-control; only three failing intersections are signalized, four have all-way stop-control, and 14 have two-way stop-control. More of the intersections are impacted during the PM peak hour than in the morning, similar to existing conditions. In addition to the 21 intersections that are expected to fail city or state standards by 2044, 14 intersections are forecast to operate at the City's LOS standard, two in both the AM and PM, three in the AM and nine in the PM peak hour, signaling that increased growth could test the capacity on more of the road network in Auburn.

With some exceptions, Vehicle LOS issues associated with the preferred land use alternative are concentrated along five corridors, where multiple intersections will fail to meet City or state LOS standards:

- **East:** SE 304th Street corridor on Lea Hill
- **North:** I St corridor and Auburn Way N
- **West:** 51st Ave S / S 321st Street Corridor on West Hill
- **South:** A Street SE corridor

2.2.9. Addressing Vehicle LOS Deficiencies

Projects to Address Existing and Forecast LOS Issues

Where the future analysis indicated that an intersection would not meet adopted LOS standards in 2044, measures to address the deficiency were identified, evaluated, and costed. City transportation policies, goals, site characteristics, and adjacent planned or underway projects were considered to identify effective and desirable improvements. The types of improvements considered included roundabouts, re-channelization of intersections, access management, turning restrictions, and signalization. Where a signalized intersection was deemed a desirable solution, MUTCD 11th Edition signal warrants were applied to determine if forecast volumes would warrant signalization of the intersection. In instances where a failing intersection would not meet MUTCD signal warrants, non-signalized mitigation measures, such as channelization and access management, were considered. All improvements were analyzed using Synchro traffic operations software to ensure the recommended measure would facilitate the intersection meeting the adopted level of service standards in the 2044 preferred land use alternative. Projects to implement these improvements are included in the project list in [Appendix B](#).

Trip Reductions

The Preferred scenario includes reductions to vehicle trip generation rates to reflect shifts to other travel models due to increased density and mixed-use development projects, focused land use growth and increased access to additional active transportation facilities, transit service, increased vehicular travel costs, and demographic changes. The reduction percentages were determined based on results from PSRC's regional travel demand for travel behavior changes in the City of Auburn. Reductions were applied across the City based on the Transit LOS rating. This metric is based on walking proximity to transit. Reductions were only applied in areas with level of transit service 1 and 2, the highest quality transit options in the City: within the walkshed of Auburn Station and frequent transit routes (BRT and routes with less than 30 minute headways). The reductions in vehicle trip rates ranged from 1.5 to 8.0 percent based on trip type (commute vs. non-commute) and transit area type.

Regional Capacity Projects

In addition to projects that provide additional vehicle capacity to meet City vehicle LOS standards, a set of projects have been identified that would provide regional system-wide capacity benefit. These projects are included in the Regional Transportation Plan (RTP), by the Puget Sound Regional Council (PSRC) and are listed below:

- **Auburn Way South - Hemlock to Poplar** (currently in construction)
- **Auburn Way South: 32nd St to City Limit** (candidate project)
- **Auburn Way South - Poplar to 32nd St** (candidate project)
- **E Valley Highway Widening** (currently in design w/planned construction start in 2028)
- **M Street NE Widening, E Main St to 4th St NE**, (currently in design w/planned construction start in 2025/2026)
- **M Street SE Corridor Improvements** (8th St SE to Auburn Way S)

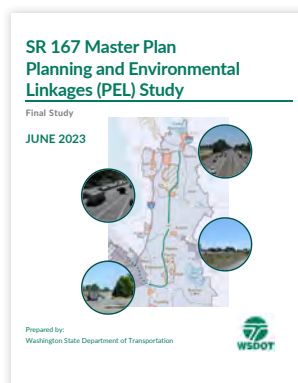
See Project Comp-20 in [Appendix B](#). For more information regarding these projects, please refer to the **PSRC Regional Transportation Plan** available at <https://www.psrc.org/planning-2050/regional-transportation-plan>.

SR 167 Master Plan

The SR 167 Master Plan update includes recommendations to address the significant congestion and impact on local roadways from regional traffic flowing through the SR 167 corridor.

The plan calls for an additional express toll lane in each direction and interchange improvements on SR 167 at 15th Street NW, SR 18, and 15th Street SW to reduce bottlenecks and queuing issues. These changes are complemented by a suite of transit improvements and active mode access improvements in the surrounding area. Additionally, the master plan also includes support for reconstructing the BNSF freight railway over Ellingson Road to reduce bottleneck and impacts to traffic.

For further review of the SR 167 master plan, visit the [WSDOT project website](#).



[SR 167 PEL Study](#)

2.3. ACTIVE TRANSPORTATION

Active transportation is an integral component of Auburn's transportation system. Active transportation includes walking, bicycling, and rolling. The City seeks to enhance the active transportation travel environment both for recreational travel and trips that might otherwise be taken via a car to improve mobility and environmental health.

The City recognizes that the past development of the transportation system has prioritized the automobile as the primary travel mode. A side effect of this has been conditions less conducive to active transportation travel. The City seeks to redress the balance by enhancing conditions in which active transportation modes are a realistic and attractive travel option.

Over the last 15 years, there have been significant improvements to active transportation facilities in Auburn's Regional Growth Center (Downtown Auburn). Sidewalk, ADA, and lighting improvements have been made to Main Street, S Division Street Promenade, City Hall Plaza and Plaza Park, and behind the shops on East Main Street. Growth in the downtown core has resulted in the development of multi-story residential and office buildings and senior housing, helping renew the pedestrian infrastructure and creating a need for continued effort to maintain and improve the sidewalk system. In addition, the Sounder Auburn Station and transit hub at West Main Street and C Street SW provide pedestrians more options for connecting to regional destinations.



These improvements contribute to a more hospitable environment for pedestrians. Despite the progress that has been made over the past several years, there are still many areas of need and gaps in active transportation systems in Downtown Auburn and in other areas throughout the city.

Commercial development outside the downtown exists primarily along arterials and is dominated by strip development and auto-oriented businesses. Although sidewalks are provided on most arterials, pedestrians may feel exposed to the traffic. Surface parking lots border the sidewalks, and driveways interrupt the continuity of the sidewalk system. The high volumes of vehicular traffic and wide streets along arterials, such as Auburn Way, pose a barrier for pedestrians crossing the roadway.

Residential areas, such as southwest Lea Hill, were built under King County's jurisdiction and sidewalk construction was not required. Breaks in the sidewalk network require pedestrians to maneuver around parked cars, into private yards, or into the street. In newer neighborhoods such as Lakeland Hills,

sidewalks built to the city standards applicable at the time of their construction are provided on both sides of the street.

The Lea Hill and West Hill neighborhoods have a sporadic and often disconnected sidewalk system. Most newer residential developments have sidewalks, but many of the older residential areas and arterial streets are missing large segments of sidewalk, resulting in an inconsistent pedestrian environment.

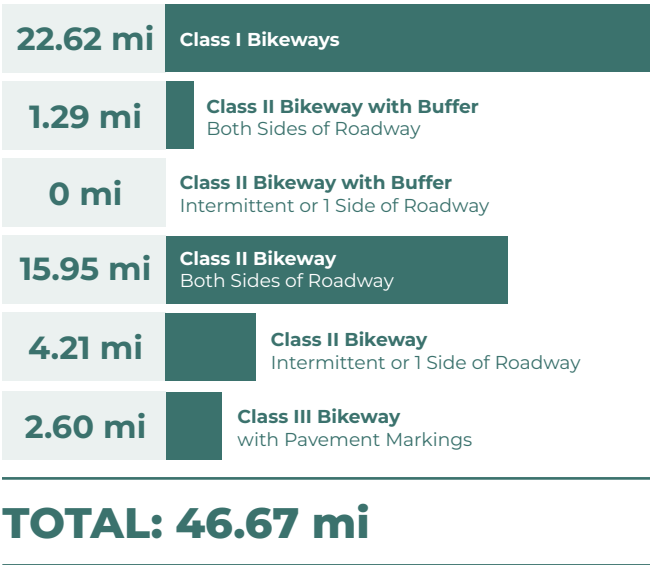
The Auburn Valley is flat and conducive to cycling for a range of skill levels and has a good network of existing or planned north-south biking routes and trails. Areas along the Green and White Rivers provide opportunities for multi-use trails that accommodate bicyclists and pedestrians. The Interurban Trail is part of a major north-south regional trail system. The Green River trail is also an extension of a north-south regional trail. Conversely, there are few existing east-west connections between the West Hill and Lea Hill areas of Auburn which are more challenging due to steep topography. Many bicycle lanes existing throughout the City but often have gaps before forming a fully connected network or connection to transit and trails.

Planning and developing a strong active transportation network supports several state and national acts including Washington’s GMA, CTR Act, the federal Clean Air Act, the ADA, and the Move Ahead for Progress in the 21st Century Act (MAP-21) and its successors. Supporting the active transportation system helps ensure compliance with these initiatives and the healthy community principles espoused by PSRC through Vision 2050. It also increases funding opportunities for City projects. Improving the active transportation system also helps address the findings of the citywide Health Impact Assessment, which recommended that the City improve sidewalk connectivity; improve the pedestrian environment; eliminate natural and man-made mobility barriers for pedestrian and bicyclists; improve transit access; and improve traffic safety, and pedestrian safety.

As a regional growth center, the City encourages transportation planning that emerges from a clear land use plan based on a community vision and the values expressed in Imagine Auburn. In this vision, Auburn supports higher density housing in the downtown; neighborhood commercial districts; and landscaped, pedestrian-oriented street and sidewalk design. This pattern of development reinforces a positive walking and biking environment.

Auburn’s developing trail network provides local and regional connections for both recreational use and commuting. The regional trails that have been developed include the Interurban Trail and portions of the Green River and White River Trails. The Lakeland Hills Trail network provides connections to neighborhood parks, community center, and to

Figure 7. Existing Bike Facility Statistics as of January 2024



the Sumner Link Trail via a tunnel under the BNSF railway. [Map 2. 2024 Bike Route Network in Appendix A](#) illustrates the existing and proposed trail network within the City.

In 2024, the City’s existing bike facilities were mapped using aerial photography and field verification. All roads in the City of Auburn are considered Class III Bikeways. However, only bike facilities of Class III Bikeways with Pavement Markings level and higher were included in the inventory. The inventory is depicted in [Map 3. 2024 Existing Bike Facilities in Appendix A](#) and yielded the statistics shown in **Figure 7**.

A citywide sidewalk inventory was completed in 2022. This initial inventory collected the following information for city sidewalks:

- Location
- Surface type (concrete, asphalt, brick)
- Width
- Length
- Surface area

The inventory was collected prior to the development of the Pedestrian Level of Traffic Stress (LTS) standards and for many sidewalks, doesn’t include all information needed to determine the Pedestrian LTS. An ongoing effort is underway to collect this additional information that will then be used to evaluate and document where existing sidewalks meet or don’t meet pedestrian LOS standards.

The total length of City sidewalks inventoried in 2022 was **298 Miles**.

2.3.1. Active Transportation Level of Service Standards

The Plan policies establish active transportation LOS standards based on the LTS, shown in **Figure 8**. This approach is consistent with Washington State, Pierce County, and King County policies and standards. LTS describes how comfortable a pedestrian or bicycle route feels to its users based on a variety of variables including posted speed limit, traffic volumes, whether or not the roadway is a truck route, and the type of active transportation facility provided. Active transportation facilities in, or along, roadways with higher vehicle speeds and volumes generally have higher LTS scores because the vehicle traffic makes it less comfortable for bicyclists and pedestrians to use those facilities. Facilities that provide more separation between active transportation modes and adjacent roadway vehicular traffic and/or on lower speed roadways are more comfortable for bikes and pedestrians and therefore have a lower LTS. The City rates the LTS of its bicycle and pedestrian facilities on a scale of "1" to "4" with "1" being the

most comfortable facilities and are the most likely to be used by people with a wide range of ages and abilities and "4" is the least comfortable and are likely to be used by only a select group of people and may present a barrier to the general walking and biking community.

2.3.2. Walking LOS Standards

The City's pedestrian network consists mostly of sidewalks and roadway shoulders. Trails and alleys also provide pedestrian connectivity in some areas. The City utilizes the Pedestrian Facility LTS Table shown in **Table 6** to identify the LTS scores for pedestrian facilities. The Plan policies establish an LTS of "2" as the minimum standard for new and upgraded pedestrian facilities. The Plan policies also establish that new and upgraded pedestrian facilities will meet current ADA requirements. The Plan policies support actions to identify, prioritize, and plan improvements to existing pedestrian facilities to meet current LTS standards and ADA requirements.

Figure 8. Level of Traffic Stress (LTS)



Table 6. Pedestrian Facility LTS Table

ROADWAY CLASS	NO SEPARATE PEDESTRIAN FACILITY	5' SHOULDER	5' SHOULDER WITH PHYSICAL BARRIER	5' SIDEWALK	5' SIDEWALK WITH 5' SEPARATION	10' SIDEWALK
Alley	2	1	1	1	1	1
Local Rustic	2	1	1	1	1	1
Rustic Collector	3	2	1	1	1	1
Local	3	3	2	2	1	1
Collector	4	3	2	2	1	1
Local Industrial	4	4	3	3	2	1
Minor Arterial	4	4	4	3	2	1
Principal Arterial	4	4	4	3	2	1

2.3.3. Biking LOS Standards

The planned and existing routes making up the City's bicycle transportation network have been classified as either Regional, Priority, or Auxiliary Routes and are shown on [Map 2. 2024 Bike Route Network in Appendix A](#). These classified bicycle routes, both existing and planned, support general movement of cyclists throughout the City and have been identified to provide connectivity between neighborhoods and commercial areas to transit stops, regional trail connections, and the downtown urban center. Streets and trails not identified as Regional, Priority, or Auxiliary routes provide important connections between local destinations, recreational use, and access to the bicycle transportation network.

- **Regional routes** provide connectivity through the City to areas outside the City
- **Priority routes** provide connectivity from Auxiliary Routes to Regional Routes, frequent transit stops, and Auburn Station
- **Auxiliary routes** provide connectivity to Priority Routes from neighborhoods, commercial areas, schools, services, and non-frequent transit stops

The Plan policies establish standards that require Regional Routes to have the lowest LTS of "1", Priority Routes to have a slightly higher LTS of "2" or less, and Auxiliary Routes to have an LTS of no more than "3". Bicycle facilities not identified as being Regional, Priority, or Auxiliary do not have assigned LTS standards and are designed in accordance with the standard roadway cross sections by street classification in the EDS.

The City utilizes the Bicycle Facility LTS Table shown in **Table 7** to identify the LTS scores for bicycle

facilities. The table represents a simplified approach towards evaluating bicycle level of traffic stress. In some cases, factors not shown in the table may need to be considered and could necessitate the use of a more robust bike facility than is shown on the table to achieve the level of traffic stress standard. Standards for Class I, II, and III Bikeways are included in the EDS, shown in **Figure 9**.

The EDS will be periodically updated to reflect current and emerging approaches towards achieving LTS standards with differing treatments and approaches.

Although a bike network route is not identified on SR 164, this state route is subject to WSDOT complete streets requirements. Per these standards, SR 164 would require a minimum of a separated trail (Class I Bike Facility) to meet WSDOT level of traffic stress requirements. The City will look for opportunities to improve SR 164 to include these facilities where feasible with capital and development project improvements and in partnership with the Muckleshoot Indian Tribe.

2.3.4. Sidewalk Facility Gap Analysis

The inventory of existing sidewalks was used to identify gaps in the City's sidewalk network. Improvements to address gaps and to address safety, accessibility, and level of traffic stress deficiencies have been, or will be, identified and included projects in this plan or addressed with future projects and programs.

Figure 9. Bikeway Standards

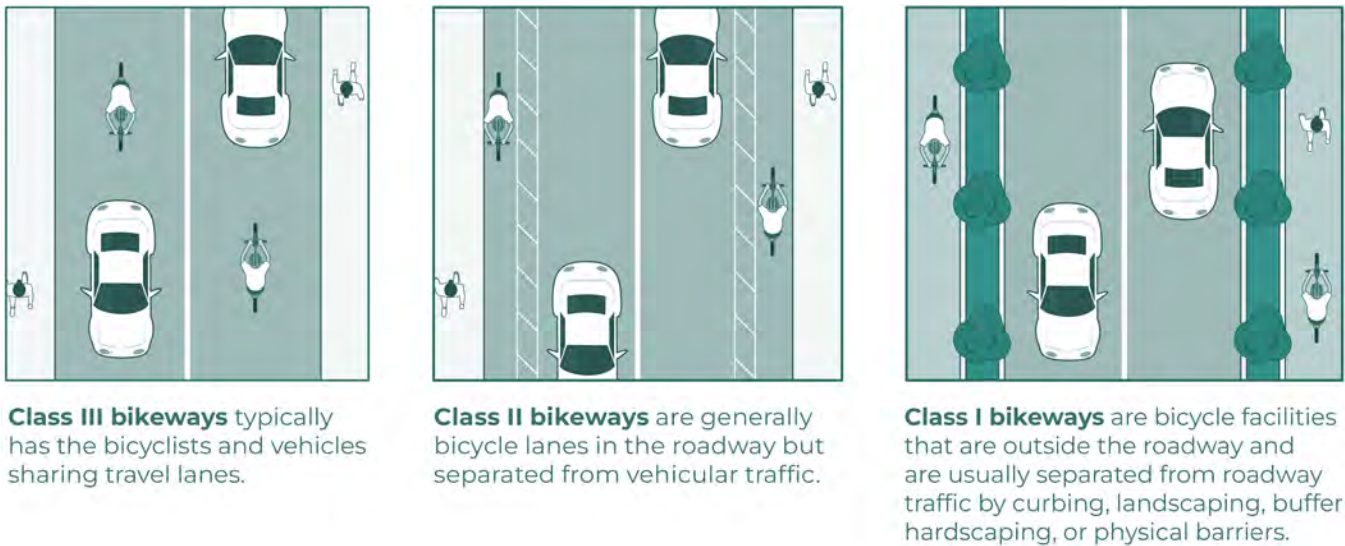


Table 7. Bicycle Facility LTS Table

POSTED SPEED LIMIT (MPH)	ARTERIAL TRAFFIC VOLUME/ FREIGHT CLASS	CLASS III BIKEWAY	CLASS III BIKEWAY W/ PAVEMENT MARKINGS	CLASS II BIKEWAY	CLASS II BIKEWAY W/BUFFER	CLASS I BIKEWAY
25/Not Posted	<3k	1	1	1	1	1
	3-7k	3	2	2	2	1
	≥7k	3	3	2	2	1
30	<15k	4	3	2	2	1
	≥15k	4	4	3	2	1
35	<25k	4	4	3	3	1
	≥25k	4	4	4	3	1
40+	Any Volume	4	4	4	4	1
Any	T-2* or Greater	4	4	4	4	1

2.3.5. Bike Facility Gap Analysis

The inventory of existing bike facilities was evaluated using the LTS Table to determine the LTS for existing facilities.

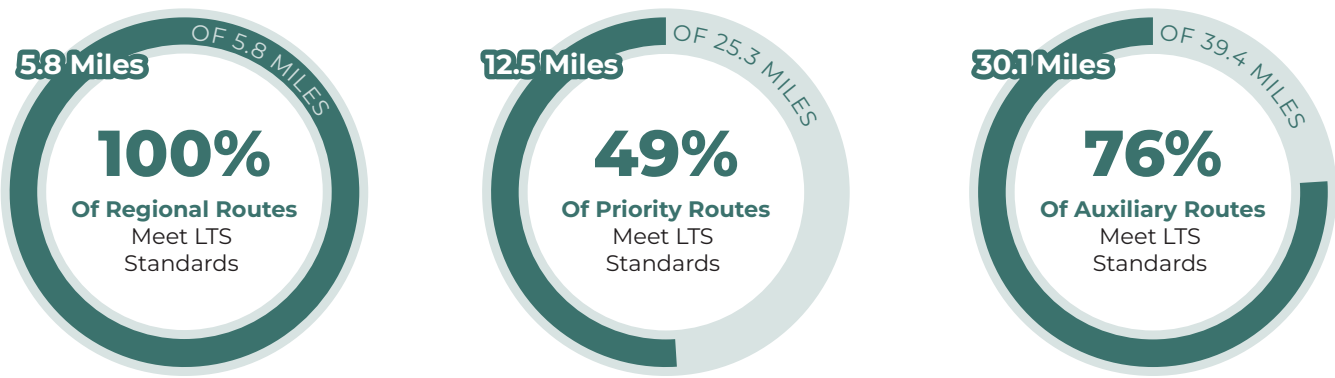
The existing bike facilities LTS data was compared to the [Map 2. 2024 Bike Route Network in Appendix A](#) of regional, priority, and auxiliary routes to identify gaps in the planned bike network and existing bike facilities that do not currently meet the LTS standards. The comparison yielded the following statistics shown in **Figure 10**.

Bike facilities not located on the City's bike network do not have an LTS standard and were therefore not

assessed for a gap between the provided LTS and the LTS standard.

Completing gaps in the bike network and upgrading bike facilities to meet or exceed LTS standards in areas closer to transit services and where those transit services are more frequent and convenient (level of transit service "1" or "2", see [Section 2.4.2. Transit LOS Standards](#)) is more likely to encourage a mode shift from cars to bikes and transit. These projects would help relieve vehicle congestion and reduce needs for increased vehicle capacity and are therefore eligible to be funded with a per person trip transportation impact fee program. These projects are listed in [Appendix B](#).

Figure 10. Bikeway Network Assessment Statistics as of January 2024



2.4. TRANSIT

2.4.1. Existing Transit Services

Figure 11 provides a brief summary of the public transportation services offered in Auburn. Existing transit service for the Auburn area is identified in [Map 5. 2024 Transit Bus Routes/Stops in Appendix A](#). The service levels outlined in this section are for normal operations as of January 2024.



Auburn Station

Transit service is a key component of Auburn's transportation system, providing mobility within the City and access to and from the City. Unlike the street and active transportation systems, Auburn does not directly administer transit service. Rather, the City works with local and regional transit agencies to coordinate service. The transit agencies are publicly funded and are responsible for providing transit service within their individual service boundaries.

Today, Auburn is served by local and regional bus service and commuter rail.

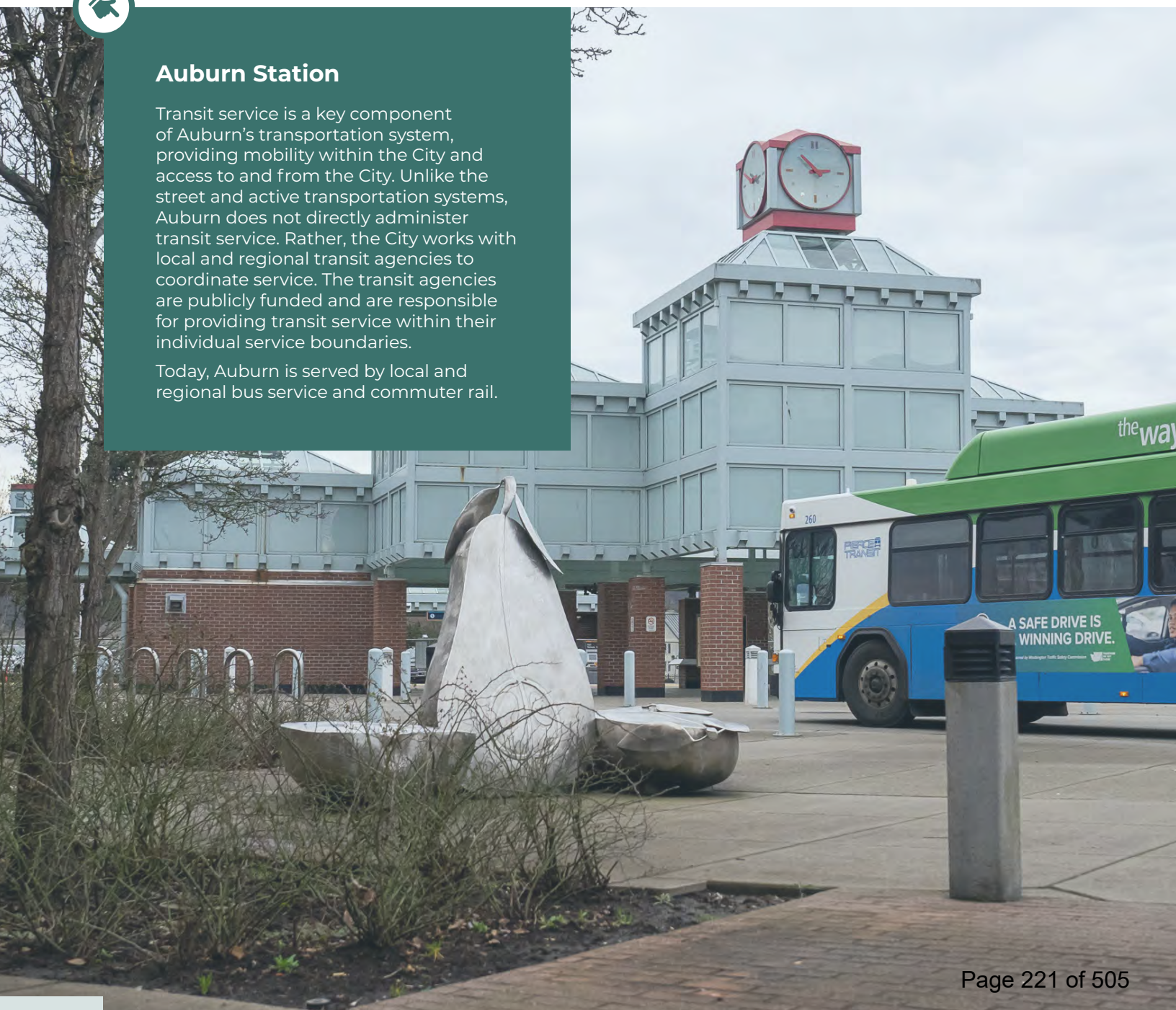
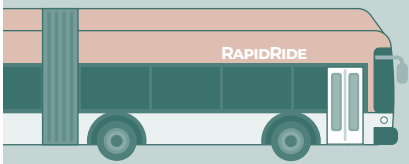
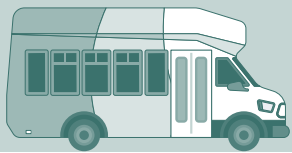


Figure 11. Types of Transit Services in Auburn

AUBURN STATION (MANY TRANSIT OPTIONS AVAILABLE)			
• Sound Transit Sounder commuter rail service • Sound Transit express bus service • KC Metro frequent route service • KC Metro and Muckleshoot Tribal Transit local route service • KC Metro DART service • Pierce Transit express route service			
	 Level of Service	 Service/ Frequency	 Distance Between Stops
Frequent Routes BRT – Bus Rapid Transit (RapidRide) 	HIGHEST service frequency/ hours	< 15 MINS OR LESS headways during service hours Minimum 4 buses/hour during peak times (currently route 160)	STOPS EVERY 1/2 MILE
Local Routes 	MEDIUM service frequency/ hours	≤ 30 MINS headways during peak hours ≤ 60 MINS during service hours outside of peak hours (currently routes 181, 184, Muckleshoot Tribal Transit)	STOPS EVERY 1/4 MILE
DART & Express Routes 	LIMITED service frequency/ hours	Service with few stops between destinations, intended to take riders quickly to the key destinations. • Express routes are currently routes 497, 566, and 578 • Dial-A-Ride Transit Service (DART) routes are currently routes 915 and 917	STOPS EVERY 1/4 MILE

King County Metro Transit (KC Metro)

KC Metro offers a network of bus service in Auburn, connecting the city to the region. KC Metro adopted and implemented changes to its network in September 2020, via the Renton-Kent-Auburn Area Mobility Plan (RKAAMP), and some routes were affected. These changes were in part to accommodate the planned RapidRide I Line, which would replace a portion of Route 160, and provide frequent, reliable, and extended (early mornings to late night) service from Auburn Station, along the Auburn Way N corridor, connecting Auburn, Kent, and Renton transit stations.

Route 160 provides connection between Auburn Station, Kent Station, and the Renton Transit Center with very limited stops in between. It provides a maximum of 15-minute service during peak hours and 30-minute service during off-peak, and operates from 4 am to 3 am on weekdays and from 5 am to 3 am on weekends. This route will become the RapidRide I Line in 2026 and will provide service every 10 to 15 minutes.

Route 165 provides regional service between Kent, Auburn, and Green River College. It connects with Route 181 at Green River College. This route provides 20-minute service during peak hours and 30- to 60-minute service during off-peak, operating from 5 am to 12 am on weekdays and 6 am to 12am on weekends.

KC Metro provides frequent, local, and DART bus services linking destinations within the community and providing regional connections to the Auburn Station.

Route 181 provides daily service between the Twin Lakes Park-and-Ride, Federal Way Commons Mall, Federal Way Transit Center, the Outlet Collection, Auburn Station, and Green River College. It provides 15- to 30-minute service during peak hours and 30- to 60-minute service during off-peak, operating from 5 am to 11:30 pm on

weekdays and 6:45 am to 11:30 pm on weekends.

Route 184 provides daily service from Auburn Station to south Auburn. It provides 20- to 30-minute service during the day, and 30- to 60-minute service during nights and weekends, and operates from 4:30 am to 1:30 am on weekdays and 5:30 am to 2 am on weekends.

Route 915 provides weekday and Saturday service between Auburn Station and Enumclaw via Auburn Way South. The route also includes a small portion of DART service with limited, variable routing in response to rider requests in downtown Enumclaw and the northern part of the Auburn Downtown Urban Center around the MultiCare Auburn Medical Center. This route provides 40- to 60-minute service, operating from 4:30 am to 7:45 pm, during weekdays, and 90-minute service, operating from 10 am to 6:30pm, on weekends.



Route 917 provides weekday and Saturday service between A St SE, 41st St SE, Algona, the Outlet Collection, and Auburn Station. The route offers DART service (limited variable route) in portions of Pacific. This route provides 25- to 40-minute service on weekdays, and 60-minute service on weekends. It operates from 5 am to 7 pm on weekdays and from 8:30 am to 5:45 pm on weekends.

Metro Flex

Metro Flex is an on-demand neighborhood ride share service, allowing transit users to ride anywhere within its service area at the same cost as a KC Metro bus trip. Metro Flex provides service in places that are not near frequent bus or rail service, helping to fill transit gaps in the areas that it serves. While Auburn is not currently within a Metro Flex service area, it is on the short list for expansion of the program.

ACCESS

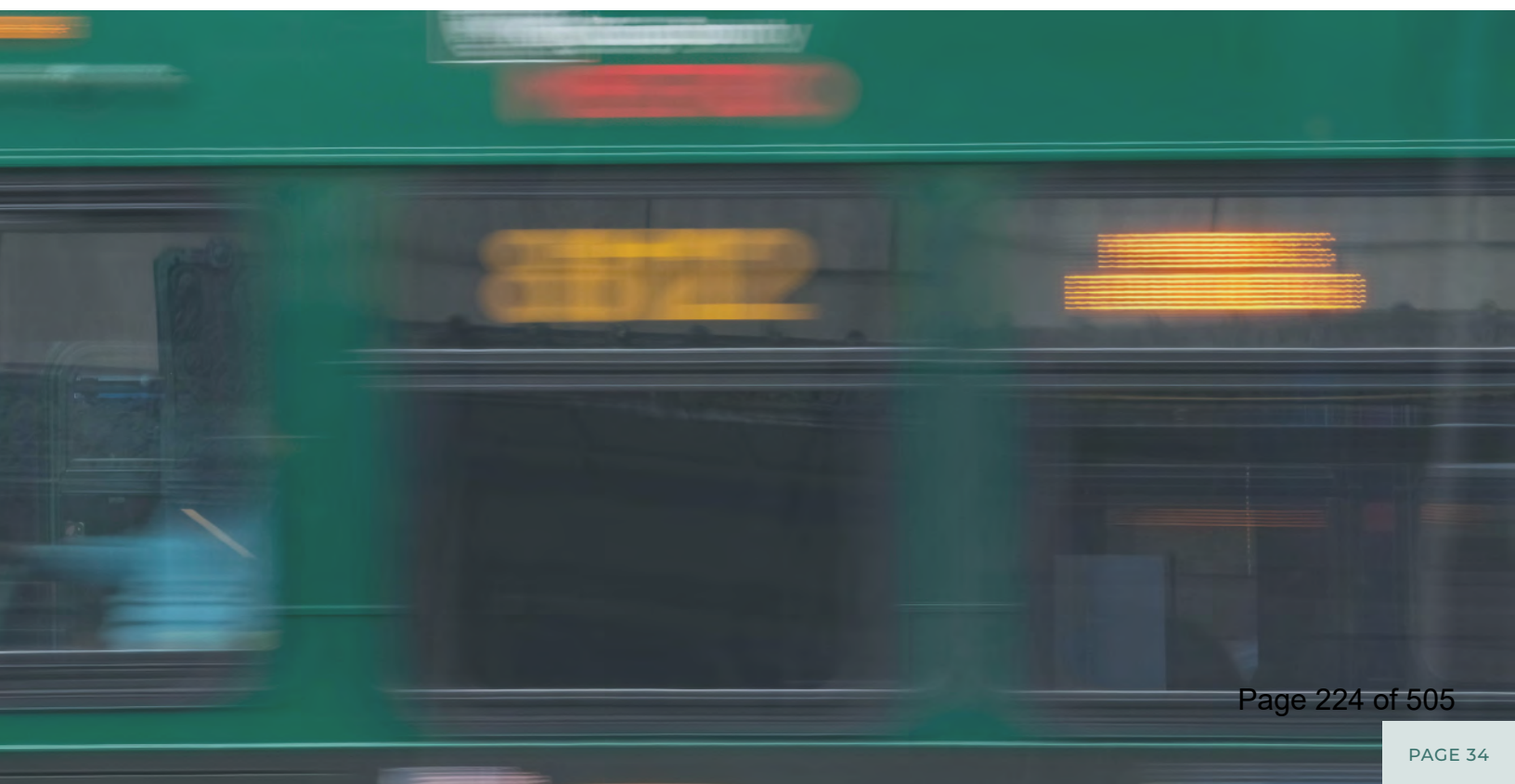
ACCESS Transportation is a KC Metro paratransit service, providing door-to-door, shared-ride van transportation within most of King County. The ADA requires door-to-door paratransit service for persons whose disabilities prevent use of accessible fixed-route bus service.

Vanpool Services

KC Metro sponsors vanpool services that serve residents and employees in Auburn. Vanpool is a shared-ride service that provides group transport for commuters with proximate origins and destinations. Vanpool is a popular and flexible service that provides commuters with an alternative to driving alone and fixed-route transit service. Vanpool will continue to be an important strategy for mitigating peak period congestion throughout Auburn and the region.

Metro Transit Facilities

KC Metro owns and operates the Auburn 15th Street NW Park-and-Ride with approximately 150 surface parking stalls. KC Metro also operates into Auburn Station, which is managed by Sound Transit.



Pierce Transit

Route 497 is operated by Pierce Transit in partnership with the City of Auburn and KC Metro. It operates peak hour weekday service between Lakeland Hills and Auburn Station. As a morning and evening service meeting Sounder commuter rail schedule, Route 497 is a commuter-oriented route, but is open to all riders. Route 497 primarily serves Sounder passengers and significantly reduces the demand for commuter parking at the Auburn Station parking garage managed by Sound Transit.

Vanpool Services are provided by Pierce Transit similar to those offered by KC Metro.

Sound Transit

Sound Transit is the regional transit provider for the many parts of the Puget Sound region. It provides limited-stop transit services linking Auburn to major regional destinations in King and Pierce Counties. The agency offers Sounder commuter rail and regional express bus services in Auburn.

Sounder Commuter Rail

Sound Transit operates the Sounder commuter rail service on the Lakewood to Tacoma to Seattle route (S Line) via the BNSF Railway. The S Line provides weekday peak hour trips northbound to Seattle in the morning and southbound from Seattle to Tacoma to Lakewood in the afternoon. Limited reverse direction trips are also provided in each peak hour, as well as limited midday service. Some connections are available between S Line Sounder trains, which terminate in Seattle, and N Line Sounder trains from Everett to Seattle. Additional special event service to and from Seattle for Mariners, Seahawks, and Sounders games on some weekends.

Currently, nine trains operate northbound to Seattle in the morning peak, and ten trains return southbound during the evening peak. Three trains operate southbound to Tacoma/Lakewood in the morning and northbound to Seattle in the evening. There is currently one midday train running northbound to Seattle.

Due to shifts in ridership since the COVID-19 pandemic and changes in many commuters' work schedules, particularly the increase in telework, Sound Transit is re-examining the priorities from the 2020 Sounder South Strategic Plan. Prior to the pandemic, near capacity ridership growth was expected during peak periods, resulting in the plan prioritizing longer trains (from seven cars to ten cars) during the peak periods. However, since the pandemic, peak ridership has lowered, leading Sound Transit to consider prioritizing new trips, including more trips during off-peak hours, over longer trains.



Any new trips, however, will require approval from BNSF Railway, which owns most of the tracks the Sounder runs on.

As part of its re-examination of its priorities, Sound Transit conducted public engagement around the question of longer trains during peak hours versus more trips. The survey results showed that approximately 90% of respondents preferred adding new trips over longer trains. Sound Transit will use the feedback from its public engagement, along with other research, to inform Sound Transit Board discussions regarding its Sounder S-Line priorities.

Regional Express Bus Service

Route 566/567 offers daily weekday, limited-stop service between Auburn Station, Kent Station, Renton Transit Center, Bellevue Transit Center, and Overlake Transit Center. It provides 20- to 30-minute service northbound during the morning peak from 5:30 am to 11 am, and 20- to 30-minute service southbound during the evening peak from 1:40 pm to 8 pm.

Route 577/578 offers daily limited-stop service between Puyallup, Sumner, Auburn, Federal Way, and Seattle. Route 577 provides service between the Federal Way Transit Center and Seattle during the peak periods when the Sounder train is in operation. The 578 provides service between Puyallup and Seattle during the off-peak hours when train service is not currently provided. Route 578 provides 30- to 60-minute service on weekdays. On weekends, Route 578 provides hourly service.

Auburn Station

Sound Transit owns and operates Auburn Station located in downtown Auburn. This full-service multimodal facility provides parking for a total of 633 vehicles in a six-story parking garage and a surface parking lot. A new parking garage is expected to be available for transit users in 2027, offering an additional 525 parking stalls. A number of parking stalls are reserved for carpool/vanpool, and a number of stalls are reserved for paying single-occupant vehicles.

The facility currently handles approximately 470 daily bus trips. Approximately 3,000 passengers ride bus service to/from the station on a daily basis. Boardings at Auburn on the Sounder commuter rail are approximately 1,300 per day.

Muckleshoot Tribal Transit

MIT currently operates the Muckleshoot Tribal Transit (MTT) services that offers two publicly available transit routes. The Reservation Hot Lap provides local service between SE 384th Street and SE 416th Street with 30- to 60-minute service from 7 am to 8 pm on weekdays. The Reservation Route serves the SR 164 corridor generally between SE 416th Street, Downtown Auburn, and the Outlet Collection with 30-minute service from 5:30 am to 8:30 pm on weekdays, and 30-minute service from 10 am to 4:30 pm on Saturdays and holidays. MTT shares many stop locations with KC Metro and is a valuable resource to the community as the service is free to all passengers.



2.4.2. Transit LOS Standards

Different agencies take different approaches towards transit LOS standards. Unlike facilities and services for other transportation modes, the City of Auburn does not own or operate transit facilities and does not directly provide transit services. It follows that the City evaluates and utilizes transit LOS standards differently than transit service providers (KC Metro, Pierce Transit, Muckleshoot Indian Tribe, and Sound Transit). Agencies that provide transit service typically utilize transit LOS standards to identify deficiencies in transit services and plan for expanded or improved transit services and facilities.

The City of Auburn's approach utilizes transit LOS standards to identify and prioritize investments in other transportation modes that would best encourage people to use transit services instead of driving.

This approach utilizes transit LOS as a gauge to evaluate the likelihood that people would choose transit over driving. The variables used to evaluate transit LOS by the City are proximity to transit services and the type of transit services available to the area. People in areas that are within closer walking and biking distances to transit services are more likely to use those services and therefore those areas have a higher transit LOS than areas further from transit services. Similarly, people are more likely to use transit services that offer more frequent and connected services and therefore areas served by more frequent and connected services have a higher transit LOS than areas with less frequent, less connected services.

Using the transit LOS in **Table 8**, a transit LOS rating ranging from "1" to "4" can be assigned for any location in the City using a combination of the walking distance from the location to transit service and the type of transit service available. A transit LOS rating of "1" is the highest rating which indicates an area is within a comfortable walking or biking distance to the most frequent and convenient transit services (frequent transit and/or transit hubs like Auburn Station). A transit LOS rating of "4" is the lowest rating and indicates an area is not within a short walking or biking distance to even the most basic transit services.

[Map 6. 2024 Level of Transit Service in Appendix A](#) shows level of transit service ratings throughout the City. Transit LOS is estimated using the walkshed distance to current and near-term planned transit stops based on the existing street network and does not account for whether or not those streets have active transportation facilities that meet current LOS pedestrian and bike standards. The City utilizes transit LOS to help prioritize investments in active transportation facilities intended to reduce the transportation system's need for vehicular capacity. Placing a new sidewalk, bike lane, or trail in a location with a transit LOS of "1" is more likely to encourage mode shift from vehicle to transit than placing the new facility in a location with a transit LOS of "4". Additionally, mitigation of potential vehicular LOS impacts caused by development is more likely realized with active transportation improvements in areas with higher transit LOS ratings. [Map 6. 2024 Level of Transit Service in Appendix A](#) is also used by the City in its coordination efforts with transit agencies to help identify service needs and gaps. It is the City's intention to improve overall transit LOS in the City by coordinating with transit agencies to encourage and support improved services, planning growth in the City near areas served by transit, and prioritizing investments in active transportation facilities that provide connectivity to transit services.

Table 8. Transit LOS Table

TYPE OF TRANSIT SERVICE	>1 MILE WALKSHED	1 MILE WALKSHED	¾ MILE WALKSHED	½ MILE WALKSHED	¼ MILE WALKSHED
Auburn Station	4	3	2	1	1
Frequent	4	3	2	1	1
Local	4	4	3	2	2
Express and Dart	4	4	4	3	2

2.4.3. Transit Needs and Gaps

The City serves as a community voice and advocate to transit providers to maintain and expand transit services to meet community needs. However, the City is not in full control of these services, therefore, the City's approach towards addressing transit level of service issues in order to improve that level of service where the City has control is to focus on providing access to existing and planned transit services. Those efforts are centered on improving sidewalk and bicycle facilities to provide connections to transit services and are described in the active transportation sections of this plan. This section summarizes the gaps and needs in the existing transit services in Auburn and provides recommendations on how those gaps and needs may be filled. The City will continue to communicate and coordinate with transit agencies to advocate for these needs.

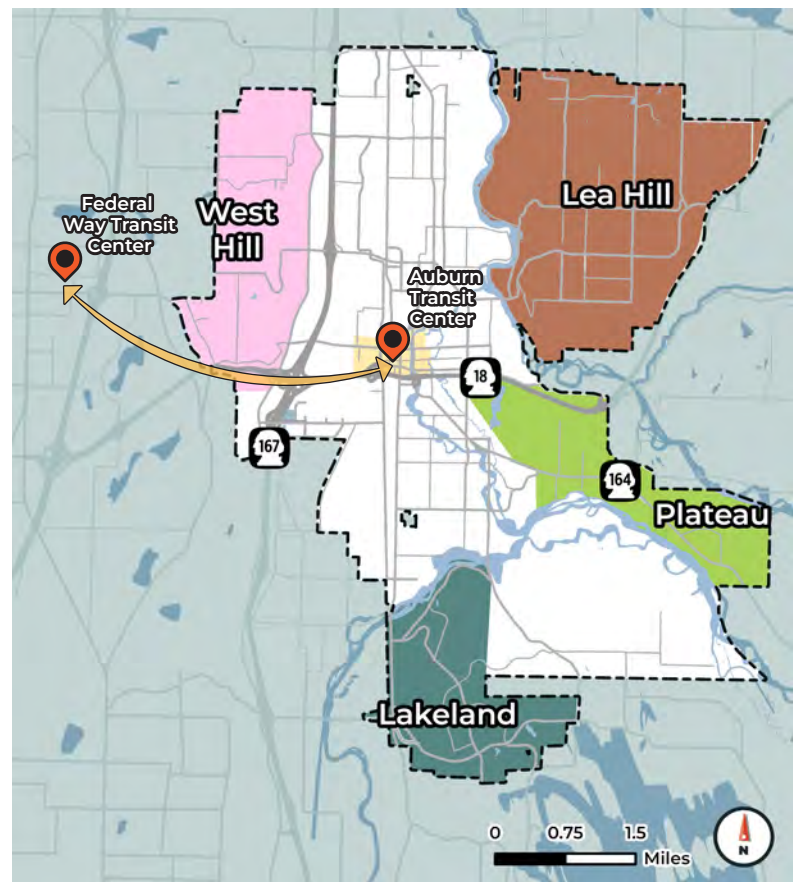
West Hill

The West Hill of Auburn is generally the area bound on the west by 56th Ave S, Peasley Canyon Rd, 51st Ave S and 46th Place S (City limits), on the east by West Valley Highway, on the south by the S 348th St alignment (City limits), and on the north by the S 284th St alignment (the City limits approximately ½ mile south of S 277th St). Auburn's West Hill is not directly served by any transit services making its 7,500 residents the least transit served people in Auburn. Auburn's West Hill is also unique in that it sits between the Auburn Station and the Federal Way Transit Center. This presents an opportunity to provide transit connections from West Hill to the Federal Way Transit Center, Auburn Station, or both. These connections could come in the form of new routes or by modifying existing routes. KC Metro Route 183 could be modified to expand into portions of the West Hill to provide connection to the Federal Way Transit Center. KC Metro Route 181 could be modified to pass through a portion of West Hill to provide access to both the Federal Way Transit Center and Auburn Station. Another recommended solution would be to provide Metro Flex services to the West Hill and other parts of Auburn that lack transit services.

Connection Between Auburn Station and Federal Way Transit Center

With the Link Light Rail expanding south to Federal

Figure 12. Auburn Neighborhoods with Transit Needs and Gaps



Way with an expected opening in 2026, there is an opportunity and need to improve Auburn's overall access to regional transit systems by providing frequent and efficient transit services between the Federal Way Link Station and Auburn Station. When the Link Light Rail is complete to the Federal Way Transit Center, the demand for this route is likely to increase significantly. The City of Auburn strongly supports and advocates for the expansion to frequent services and/or conversion of the existing Route 181 to a RapidRide line to enhance the connection between Auburn Station and the Federal Way Transit Center.

Lea Hill

The Lea Hill area of Auburn is bound on the west and south by the Green River, on the east by SR 18, and on the north by the City limits along S 282nd St and S 288th St. Lea Hill, a predominantly residential community, has two transit routes that predominantly serve Green River College, leaving a large portion of the residents unable to walk or bike to a transit route. In 2014, a license plate survey of the Auburn Station garage indicated that a substantial

number of Lea Hill residents utilize transit service at Auburn Station. This suggests that a commuter-oriented shuttle serving Lea Hill, similar to the Route 497 shuttle implemented in Lakeland Hills, could be successful. Another recommended solution would be to provide Metro Flex services to the Lea Hill and other parts of Auburn that lack transit services.

Plateau

The area along Auburn Way South (SR 164) between Riverwalk Drive, east to the City limits is referred to as the Plateau and is currently served by KC Metro Route 915 and Muckleshoot Tribal Transit. With both of these routes running, headway time ranges from 30 to 60 minutes. The City will continue to encourage partnership between KC Metro and Muckleshoot Tribal Transit to improve transit services to/from the



Other Transit Needs and Suggested Improvements



Residential areas of east Auburn, east of M St NE and south of 8th St NE, and parts of northeast Auburn, east of I St NE, are located more than 1/4 mile from fixed-route bus service. It is difficult for these areas to access transit, both for local and regional trips.



The design of KC Metro's local bus routes in Auburn should be reviewed in relation to future changes in Sound Transit's Sounder commuter rail and regional express bus services to identify opportunities and priorities for productive improvements to transit coverage, frequency, and hours of operation.



To maximize the investment in public transit service in Auburn, it is recommended that both Sound Transit and KC Metro conduct an evaluation of their schedules with a focus on improving service to major employers in the Auburn area.



Sounder Commuter Rail operates bi-directionally in the peak periods. Most of the trips are operated in the peak direction: northbound during the weekday AM peak and southbound during the weekday PM peak. No midday, evening, or weekend regular service is currently provided, except for the special events times. These services are needed, as is additional capacity on some of the currently most popular runs. The City encourages Sound Transit to institute midday Sounder service to and from Tacoma/Lakewood and Seattle, and plan for evening and weekend service in the near future.



The City will continue to work with Sound Transit as it designs and builds the second parking garage for the Auburn Station.



The City will utilize the CTR commuter surveys and employer program reports and continue to develop partnerships with CTR businesses to better understand the transit needs and gaps with the major employers in Auburn.



The City will continue to work with transit providers to ensure that transit stops are clean, secure, and meet safety requirements.



Auburn encourages Amtrak to consider implementing more intercity rail stations in the high density and traffic congested areas of Puget Sound, such as at Auburn Station. A new Auburn stop would have great ridership benefits since it is at a station with available overnight parking and is in close proximity to hundreds of thousands of potential new customers.

plateau to shorten headways along Auburn Way South. Another recommended solution would be to provide Metro Flex services to the Plateau and other parts of Auburn that lack transit services.

Lakeland Hills

Lakeland Hills, a planned residential community with approximately 3,800 homes, has peak-hour service to downtown Auburn, but lacks all-day service. The City will continue to work with Pierce Transit, KC Metro, and Sound Transit to preserve Route 497 and add service to the route to meet all existing and future Sounder trains. In its Destination 2040 Long Range

Plan, Pierce Transit lists an unfunded project that would expand Route 497 to become Route 498 that would run between Auburn and Fife. The City will continue to coordinate with Pierce Transit when, or if, this route expansion project starts to move forward. Another recommended solution would be to provide Metro Flex services and/or Pierce Transit Runner services to Lakeland Hills.

Additionally, during the public outreach efforts for development of this Plan, the City heard a suggestion from multiple people to expand KC Metro Route 184 into Lakeland to replace or augment Route 497. The City will discuss and potentially advocate for this, or similar concepts, with KC Metro and Pierce Transit.

2.5. FREIGHT

The efficient movement of freight, through and within the City, is critical to local and regional economic stability. Both rail and truck freight, originating largely in the Ports of Tacoma and Seattle, pass through Auburn regularly.

Within Auburn, freight, or the movement of goods, occurs mostly with trucks on state routes and City streets or on railroad facilities. These facilities benefit the City as they provide regional connectivity and access. The state routes present challenges as they create barriers to other roadways and active transportation facilities. Multiple railroad corridors pass through Auburn and provide regional benefit as they provide freight movement and, in the case of the BNSF Railway north-south corridor, also local benefit as it provides commuter rail line service. However, like

the state routes, in many areas throughout the valley area of the City, the railroads obstruct neighborhood access and transportation network connectivity. A strength of the railroad network is that 11 of the 21 mainline rail crossings of City trails and roadways are grade separated. All non-grade separated mainline rail crossings have gates and warning lights. An opportunity to greatly improve neighborhood access and overall transportation network connectivity exists in working to create more grade separated crossings for active transportation modes. A significant amount of freight also moves throughout the City on City streets. Based on actual truck usage data, there are currently 49 centerline miles of T-1, T-2, and T-3 truck routes in Auburn.



2.5.1. Truck

The City has designated truck routes for through freight movement in an effort to maximize the efficiency of and protect the roadway infrastructure. Current City of Auburn truck routes are shown in [Map 10. 2024 Freight Network in Appendix A](#). Truck routes, established by City ordinance, are designated for roadways that incorporate special design considerations such as street grades, continuity, turning radii, street and lane widths, pavement strength, and overhead obstruction heights.

In addition, the Washington State Freight and Goods Transportation System (FGTS) is used to classify roadways, freight railroads, and waterways according to the annual freight tonnage they carry as directed by RCW 47.05.021. [Map 10. 2024 Freight Network in Appendix A](#) shows the 2023 classifications of City streets. The FGTS is primarily used to establish funding eligibility for Freight Mobility Strategic Investment Board (FMSIB) grants, fulfill federal reporting requirements, support transportation planning process, and plan for pavement needs and upgrades. The FGTS classifies roadways using the categories shown in **Figure 13**.

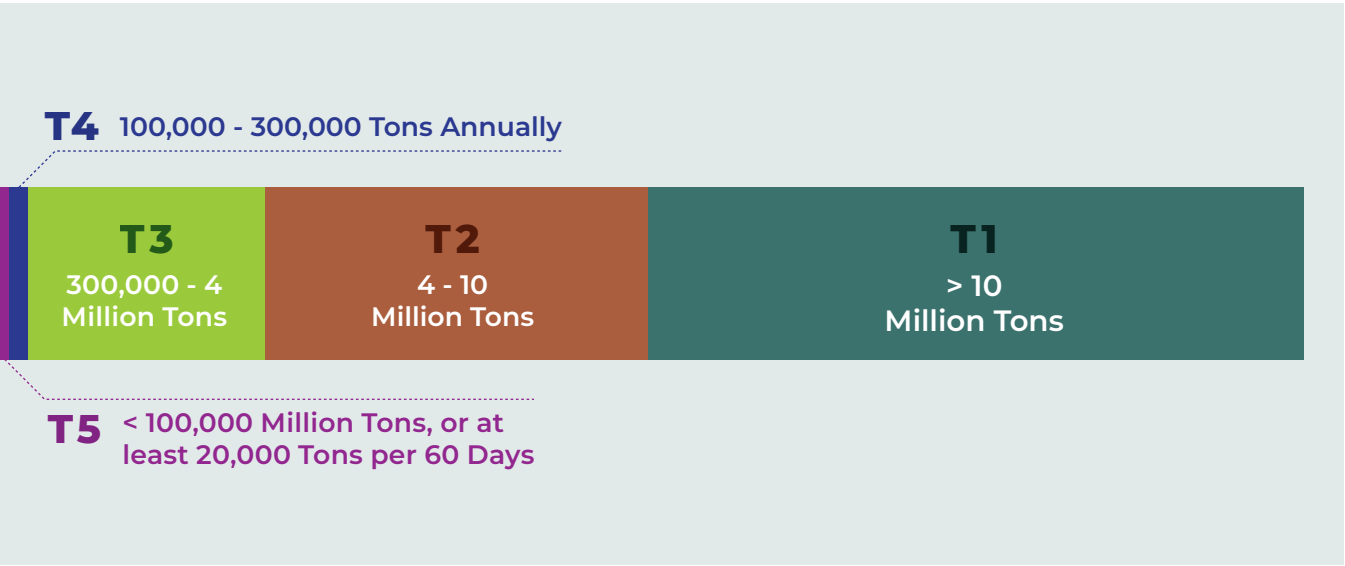
Truck freight tonnage values are derived from actual or estimated truck traffic counts and converted into average weights by truck type.

The City expects that the majority of regional truck trips will take place on state highways. However,

recognizing that trips through the City are sometimes necessary, Auburn has designated a network of north-south and east-west corridors as truck routes, which are built to truck standards. In addition, the City has designated future truck routes, which will be designed and constructed to accommodate truck traffic, as opportunities arise. FMSIB has expressed an interest in these first and last mile connectors which provide access between these classified freight facilities and port, rail yard, distribution centers, and truck terminals.

Auburn has significant industrial and commercial development throughout the City. The City encourages local delivery trucks to use the designated truck network as much as possible, but recognizes that trips on non-truck routes are necessary. The City is committed to supporting local industry and recognizes that the ability to ship and receive freight is essential to the success of many businesses. To implement this policy, the City will collaborate with local businesses to improve freight access, while maintaining the roadway infrastructure whenever possible. This may include adopting City Code and updating the Auburn Engineering Design and Construction Standards in a manner that favors these priorities. However, in a limited number of key locations, trucks may be prohibited due to existing design elements which do not support trucks, protecting sensitive areas such as downtown and residential neighborhoods, and to extend pavement life.

Figure 13. FGTS Truck Route Classification



2.5.2. Rail

The Union Pacific Railroad (UP) and Burlington Northern Santa Fe Railway (BNSF) have rail lines running through Auburn. The UP line runs north-south, to the east of the Interurban Trail. BNSF has a triple-track, federally designated, high-speed railroad line running north-south. The BNSF Stampede Pass line runs east-west through downtown Auburn, entering Auburn at the east end of town near Auburn-Black Diamond Road, and merges with the north-south line just south of Auburn Station.

In addition, BNSF operates a rail yard between A Street SE and C Street SW, south of SR 18. In the future, this area may develop as a multimodal rail yard, prompting the need to mitigate increased truck traffic through capacity improvements. BNSF also has plans to increase traffic on the Stampede Pass line, the east-west rail line running through Auburn. To accommodate this increase, the City completed the grade separation of M Street SE. Both the BNSF north-south line and the Stampede Pass line are handling an increase in rail freight traffic. BNSF handles a number of unit (solid) coal trains traveling to terminals in northwest Washington state, as well as unit oil trains carrying crude oil to northwest Washington state refineries. While loaded coal and oil trains are usually handled on the north-south line, some of these empty trains return east to Wyoming or North Dakota via the Stampede Pass line.

At-grade railroad crossings create conflict points between vehicles and active transportation road users and rail traffic. Auburn has several at-grade railroad crossings: the Union Pacific tracks cross 44th St NW, 37th Street NW, 29th Street NW, West Main Street, and 15th Street SW. The BNSF tracks cross 37th Street NW, 29th Street NW, 3rd Street NW, W Main Street, and Auburn-Black Diamond Road. There are also at-grade crossings of spur tracks at various locations throughout the City.

With as many as 75 trains passing through the City each day, the City has many at-grade crossings, each with unique safety implications. The City coordinates with railroad operators and the State to upgrade the crossings whenever possible. For instance, the project to grade separate M Street SE at the BNSF Stampede Pass tracks by lowering M Street SE under the railroad overpass was completed during 2013.

Upgrades include the construction of a pre-signal where 37th Street NW crosses the BNSF tracks, to stop westbound vehicles on 37th Street NW to the west of the grade crossing in advance of the traffic signal at B Street NE. The pre-signal will prevent vehicles from stopping on the crossing.

BNSF recently constructed a third rail mainline between Seattle and Auburn to improve service and reliability for passenger rail. The new mainline is located on the west-side of the existing tracks. The third mainline reduces vehicle storage for westbound vehicles on W Main Street and 3rd Street NW



between the tracks and traffic signals with C Street NW.

Vehicle delays and queuing at the remaining at-grade crossings are anticipated to worsen in the future due to increased vehicle demands at the crossings, combined with increased rail and longer trains, resulting in more frequent, and longer duration, closures.

2.5.3. Freight LOS Standards

Within Auburn, freight, or the movement of goods, occurs mostly with trucks on state routes and City streets or on railroad facilities. The City of Auburn’s freight LOS standards focus on elements of the freight network that the City owns, operates, or has regulatory authority to control such as City streets and intersections. The standards are intended to provide a network of roadways to carry freight traffic to/from freight oriented land use within the City to/from state highways and other regional truck routes. The standards are also intended to facilitate local deliveries using truck routes in the City. Unlike other LOS standards, freight LOS standards do not apply to all City streets. Instead, the standards are applied to truck routes in the City as designated in the Plan policies and shown on [Map 10. 2024 Freight Network in Appendix A](#). Generally, truck routes include T-1, T-2, or T-3 routes, except as designated otherwise by the City Code or as posted by the City Engineer. In addition, the City recognizes local industrial roads, which are other key connections between truck routes and industrial properties. The freight LOS standards are established in the Plan policies and are summarized in **Table 9**.

Table 9. Freight LOS Standards

LOS STANDARD	
1	Freight LOS standards for intersection delay and queuing on truck routes match vehicle LOS standards.
2	Intersections of truck routes shall be designed to accommodate turning trucks such that the trucks do not interfere or obstruct with other travel modes or cause damage to adjacent property and facilities.
3	Roadway pavement on truck routes shall be designed with a minimum 20-year service life with truck loading.
4	Driveways serving trucks and lane widths on the adjacent truck routes shall be designed such that trucks accessing the driveways do not enter into opposing roadway or driveway lanes. Driveways with excessive width may be required to provide mitigation treatments for bicyclists and pedestrians crossing the driveway.
5	Truck oriented land-uses shall provide on-site parking area for truck loading and unloading and shall accommodate truck access and on-site turn-around. Development anticipating regular truck deliveries or services shall provide a delivery plan that identifies the trucks size, frequency, and delivery or service duration and demonstrates how, when, and where the trucks will make deliveries or services without causing impacts to vehicles, bicycles, and pedestrians in the roadway corridor.



2.6. AIRPORT

The Auburn Municipal Airport was founded in 1969. It is a division within the Public Works Department, is operated by three full-time City staff and is supported by other City of Auburn departments. The Airport is guided by seven volunteers on the Airport Advisory Board who advise the City Council regarding operations, master planning, facilities improvements, leasing, rental fees, and other aviation concerns. The airport is comprised of 113 acres. This includes 1,330,436 total square feet of pavement which is maintained by staff. The Airport has 254 hangar units (145 are City-owned), and 140 tie downs. In 2021, the City undertook an update to the City's Zoning regulations to address the need to discourage incompatible uses near the airport. The revised Auburn City Code Chapter 18.39, LF Airport Landing Field District, Overlay, and FAR Part 77 Surfaces, provides zone regulations specific to development near the airport that include restrictions, performance standards and requirements of development within the overlay areas. Airport planning is specifically addressed in a separate document, [Auburn Municipal Airport – Airport Master Plan](#).



[Auburn Municipal Airport – Airport Master Plan](#)

CHAPTER 3

Safety



IN THIS CHAPTER

Where to Find Additional
Safety Information



The City's safety goal statement, policies and related actions are included in **Chapter 5**.

For additional safety information, refer to the City's **Comprehensive Safety Action Plan**, under separate cover, which is incorporated by reference into the Plan.



CHAPTER 4

Policies



IN THIS CHAPTER

Goals, Policies and Actions



Transportation goals, policies, and actions establish the framework for realizing the City's vision of its transportation system. Policies provide guidance for the City, other governmental entities, and private developers, enabling the City to achieve its goals in accordance with the Plan. The policy framework presented in this chapter is a guideline, which the City will use to evaluate individual projects, programs, actions, and other actions to address its infrastructure needs. The goals, policies, and actions make reference to the City of Auburn Engineering Design Standards (EDS) that provide specific guidelines and standards for design of the City's transportation system.

4.1. GOALS

GOAL 1



Planning: Plan, expand, and improve the transportation system.

GOAL 2



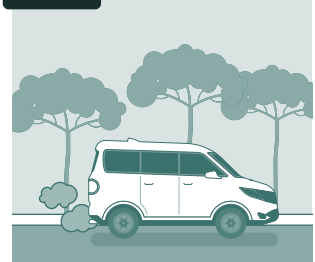
Equity: Plan and implement the City's transportation system to support system wide equity.

GOAL 3



Safety: Significantly reduce or eliminate traffic fatalities and serious injuries through a safe systems approach.

GOAL 4



Environmental: Comply with environmental laws and regulations.

GOAL 5



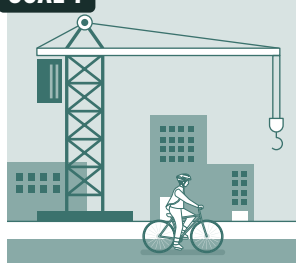
Multimodal Accessible Network: Ensure Auburn's transportation system is designed to be comprehensive, integrated, accessible for all.

GOAL 6



Multimodal Level of Service: Establish multimodal level of service (MMLOS) for all City streets, active transportation facilities, and access to transit.

GOAL 7



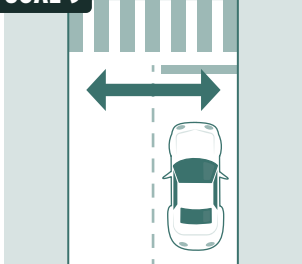
Multimodal Concurrency: Ensure transportation systems and facilities are adequate to serve development.

GOAL 8



Demand & System Management: Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies.

GOAL 9



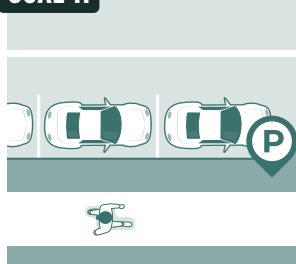
Right-of-Way: Retain and preserve existing Right-of-Way (ROW) and identify and acquire new ROW as needed.

GOAL 10



Asset Management: Design, construct, preserve, and maintain the City's transportation system in the most cost-effective manner.

GOAL 11



Parking: Ensure a balance between on-street and off-street parking.

GOAL 1**Planning**

Plan, expand, and improve the transportation system in cooperation and coordination with adjacent and regional jurisdictions to ensure concurrency compliance with the Growth Management Act, and to improve the safety and efficiency of the multimodal system to meet the community needs, facilitate the land use plan, and reduce vehicle miles traveled and greenhouse gas emissions.

Planning Policies

The City's long range planning tool for its transportation systems shall be the Comprehensive Transportation Plan that will comply with State Law (RCW 36.70A.070).

TRI-1. The City's short range (6-year) planning tool for transportation system capital projects and programs, shall be the Transportation Improvement Program (TIP) that will comply with State Law (RCW 35.770.010).

TRI-2. The TIP shall be financially constrained to align planned project and programs expenditures with anticipated available funding.

TRI-3. The City shall identify transportation facilities or services that are below established multimodal level of service standards and develop projects and programs and engage in coordination activities that support improving those facilities or services to meet level of service standards.

TRI-4. City transportation planning will focus system improvements to connect centers and support existing and planned development as allocated by the Regional Growth Strategy.

SUPPORTING ACTIONS

- Evaluate and amend the Comprehensive Transportation Plan regularly to ensure it is technically accurate, consistent with state, regional, and other local plans, and in keeping with the City's vision of the future transportation system.
- Prepare a 5-year Comprehensive Transportation Plan intermediate progress report in 2029.
- Prepare a periodic update to the Comprehensive Transportation Plan to be adopted by Council in 2034 or date required by the State, whichever is earlier.
- Coordinate transportation planning and improvements with other transportation authorities and governmental entities (cities, counties, tribes, state, federal) to address transportation issues and to ensure that Auburn and its adjacent jurisdictions do not unreasonably preclude each other from implementing their planned improvements.
- Prepare, amend, and update a 6-year Transportation Improvement Program that is reviewed and adopted by the City Council in accordance with RCW 35.77.010. The TIP will include the following elements:
 - *Proposed road and bridge construction work and other transportation facilities and programs deemed appropriate.*
 - *Any new or enhanced bicycle or pedestrian facilities identified pursuant other applicable changes that promote nonmotorized transit.*
 - *Identify projects of regional significance for inclusion in the regional TIP.*
 - *Revise the TIP before July 1st of each year to encompass the ensuing six calendar years to update the included projects, programs, and associated funding to reflect transportation system priorities and available funding.*
- Coordinate transportation improvements with City utilities to provide efficiency and cost-effective solutions for both planned transportation improvements and planned utility improvements.
- Identify and fund capital projects and programs that address existing and emerging system needs to meet MMLOS standards and to support safety goals.

GOAL 2**Equity**

Plan and implement the City's transportation system to support system wide equity.

Equity Policies

TR2-1. Transportation system improvements shall be planned such that they minimize and mitigate potential impacts, as well as past impacts, to historically under-represented and under-served communities.

TR2-2. The transportation system will be planned, built, and operated to provide equitable levels of access to transportation systems based on the needs of the populations being served, particularly populations that are traditionally underserved.

TR2-3. Encourage the involvement of residents, business and property owners in the planning process, including the participation of vulnerable populations and overburdened communities, and ensure coordination with other agencies to reconcile conflicts.

TR2-4. In the development of projects, the city shall identify opportunities to remove barriers created by past transportation programs or improvements.

SUPPORTING ACTIONS

- Develop and implement a process during project/program planning to review demographic information and identify potential impacts to historically under-represented and under-served communities and identify potential mitigation measures.
- Develop and implement equity tools to assist in transportation system planning, construction, and operations.
- For the communities adjacent to the project locations, or served by the projects and programs, research how to best engage with them, and develop outreach and information tools.



GOAL 3**Safety**

Significantly reduce or eliminate traffic fatalities and serious injuries through a safe systems approach.

Safety Policies (General)

TR3-1-1. The City shall apply the Safe System Approach for pursuing its transportation safety goal through the different elements associated with the safety of the City's transportation system which the City has the ability to influence including: roadways, roadway users, speeds, vehicles, and post crash care.

TR3-1-2. The City shall study, plan, and implement safety improvements prioritized by the occurrence of fatal and serious injury crashes and/or the presence of systemic characteristics indicative of serious or fatal crash risk.

TR3-1-3. The City will seek internal and external funding to both implement safety strategies and on-going maintenance of improvements.

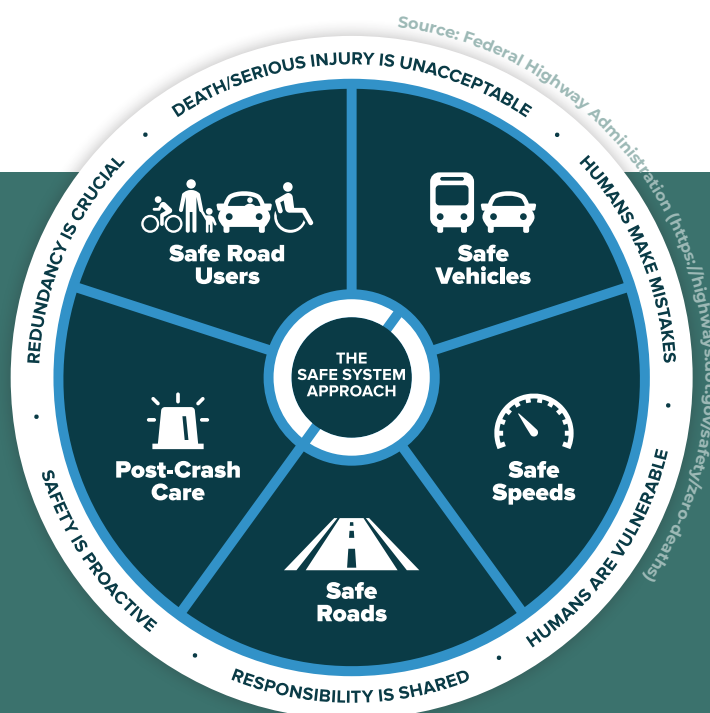
SUPPORTING ACTIONS (GENERAL)

- Implement, maintain, and regularly update the Local Road Safety Plan (LRSP) and Comprehensive Safety Action Plan (CSAP).
- The LRSP/CSAP will include documentation of the progress towards actions and performance metrics identified in the plans.
- Establish a transportation program in the Transportation Improvement Plan and funding that provides for safety data collection, study, planning, and implementation.
- Identify, evaluate, and pursue grant funding and other outside funding sources for safety programs and improvements.

**What is the Safe Systems Approach?**

Founded on the belief that death and serious injuries on city streets are preventable, the Safe System Approach considers how the transportation system as a whole can be improved to avoid serious and fatal crashes. It is organized into five categories: Safe Roads, Safe Speeds, Safe Vehicles, Safe Road Users, and Post Crash Care.

To learn more, please visit highways.dot.gov/safety/zero-deaths



Safety Policies (Roadways)

TR3-2-1. The City will integrate the Safe System Approach into roadway design standards and related policies, and project development processes and be consistent with industry best practice.

TR3-2-2. Roadway design shall consider safety and multi-modal level of service standards to meet both transportation level of service goals and safety goals to the greatest extent feasible. However, safety of active transportation users shall be prioritized over vehicle level of service standards.

TR3-2-3. In making changes to existing roadways, including horizontal or vertical re-alignment, re-channelization, additional lanes, new or modified intersections, and new or modified driveways, design speeds for safety related design elements shall not be less than the 85th percentile speeds of existing vehicle traffic except where roadway changes include traffic calming measures that will reduce vehicle speeds.

TR3-2-4. The City shall fund and implement the neighborhood traffic safety program that will take a pro-active, area wide approach towards traffic calming through studying streets in residential areas to identify safety concerns. The program will identify and implement physical measures per the EDS and as funding allows address identified concerns.

TR3-2-5. Safety countermeasures will be incorporated into roadways as recommended by the Federal Highway Administration and as appropriate to City roadways as funding allows to potentially reduce roadway fatalities and serious injuries.

Safety Policies (Road Users)

TR3-3-1. Seek and utilize opportunities to provide the community with information to educate and encourage safe driving, biking, and walking practices.

TR3-3-2. Implement and operate, as appropriate and funding allows, systems to provide information to roadway users that could help improve safety.

SUPPORTING ACTIONS (ROADWAYS)

- Periodically review and update City EDS to integrate current and emerging Safe System Approaches and safety countermeasures.
- In identifying projects for inclusion in the Plan and TIP, develop and implement approaches to consider all travel modes and to specifically address risk factors identified in the CSAP in the project scope.
- At locations with a high number of risk factors identified in the CSAP, identify potential safety countermeasures to reduce the potential for fatality and serious injury crashes. Seek funding to implement countermeasures and implement as funding is available.
- Establish standards for physical improvements implemented with the neighborhood traffic calming program, including, but not limited to, speed cushions, traffic circles, raised crosswalks, and tabletop intersections.

SUPPORTING ACTIONS (ROAD USERS)

- Establish and implement approaches towards education, outreach, and other measures as appropriate to encourage safe behaviors.
- Regularly communicate rules of the road and other safer travel strategies to the general public via various mediums such as signage, social media, public service announcements, flyers, articles, and mailers.

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Safety Policies (Road Users)

TR3-3-3. City employees are responsible for operating City vehicles responsibly and safely, according to all state and local laws and City administrative policies.

TR3-3-4. Support equitable, unbiased enforcement to enhance overall public safety.

Safety Policies (Speeds)

TR3-4-1. Posted and design speeds of new roadways shall consider context, including adjacent land use, presence and proximity of active transportation, traffic volumes, and geometric design constraints.

TR3-4-2. The 85th percentile speed of vehicular traffic shall be used to evaluate speed compliance and to determine appropriate traffic calming measures as established by thresholds and considerations in the EDS. Traffic calming measures will be prioritized and implemented as funding is available.

TR3-4-3. The City will implement automated speed enforcement that encourages speed compliance as allowed by state law.

SUPPORTING ACTIONS (ROAD USERS)

- Coordinate with appropriate partners such as local, county, and state law enforcement, local and regional hospitals, school districts, and large employers to create and distribute safety messages and materials.
- Regularly coordinate with law enforcement regarding the road user behaviors and/or street locations being targeted for enforcement to encourage equitable, unbiased enforcement that uses practices to enhance overall public safety, including use of automated enforcement technologies.
- Explore, identify, evaluate, and as appropriate and funding allows, implement systems such as dynamic message signs that provide roadway conditions and other information to drivers.

SUPPORTING ACTIONS (SPEEDS)

- Establish criteria in the EDS for when physical traffic calming measures may be appropriate to encourage safer speeds.
- Implement automated school speed zone enforcement. Modify and/or expand program as needed to address compliance issues and other concerns. Provide annual reporting as required by law.
- Identify, evaluate, and implement automated speed enforcement in non-school zone areas as allowed by law and as determined to be appropriate to address speed compliance concerns.
- As issues and concerns arise, as part of specific speed studies, and/or as part of public improvement project designs, the City will review roadways to identify existing and desired posted speeds based on classification, land use context, types of road users, and degree of separation or conflict management between vehicles and active transportation users. The review will identify changes needed to posted speeds, if any, and any new or modified roadway features needed to align desired speeds and posted speeds.

Safety Policies (Vehicles)

TR3-5-1. The City shall advocate for vehicle and device safety enhancements that make traveling in Auburn safer.

TR3-5-2. Seek opportunities to provide the community with information to educate and encourage vehicle safety practices.

TR3-5-3. City shall continue to implement vehicle safety practices on its fleet.

TR3-5-4. New or modified vehicle types and emerging vehicle technology shall be evaluated and measures may be taken to promote, prohibit, or restrict their use in the City transportation network as appropriate to support adopted goals and policies.

Safety Policies (Post Crash Care)

TR3-6-1. Maintain the transportation system to support entities providing emergency response services to crashes.

TR3-6-2. Prioritize emergency vehicle routes and access to hospitals and trauma care centers.

TR3-6-3. Actions will be taken, as applicable, after crashes involving serious injury or fatality, to reduce or eliminate the possibility of repeat crashes at the location due to malfunctioning or failing traffic control devices.

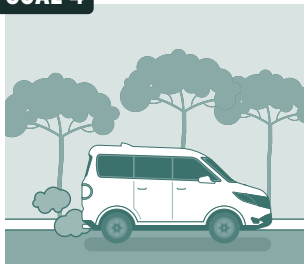
SUPPORTING ACTIONS (VEHICLES)

- Coordinate with other local, regional and state agencies to advocate for vehicle safety enhancements for commercial motor vehicles as well as technologies used in private automobile industry, and vehicle inspections.
- Review, update, and maintain local ordinances regarding the appropriate use of new or modified vehicle types and emerging vehicle technology.
- Ensure City vehicles are regularly inspected and maintained, and include regulatory required appropriate safety enhancing technologies, and are equipped with appropriate emergency equipment and tools.

SUPPORTING ACTIONS (POST CRASH CARE)

- Coordinate with entities providing emergency response services to crashes with the purpose of maintaining appropriately managed routes, access and facilitate wayfinding to hospitals and trauma care facilities.
- Continue to maintain emergency vehicle pre-emption technology at traffic signals throughout the City prioritizing emergency vehicle routes and access to hospitals and trauma care centers, and emergency response to crashes.
- When notified by Police, City Public Works staff perform post crash investigations where a serious injury or fatality crash occurs at a traffic signal or stop controlled intersection, in a marked and/or enhanced cross walk, involves a pedestrian during non-daylight hours where street lighting is present, or other situations that warrant verification that transportation systems are functioning as intended.



GOAL 4**Environmental**

Comply with environmental laws and regulations.

Environmental Policies

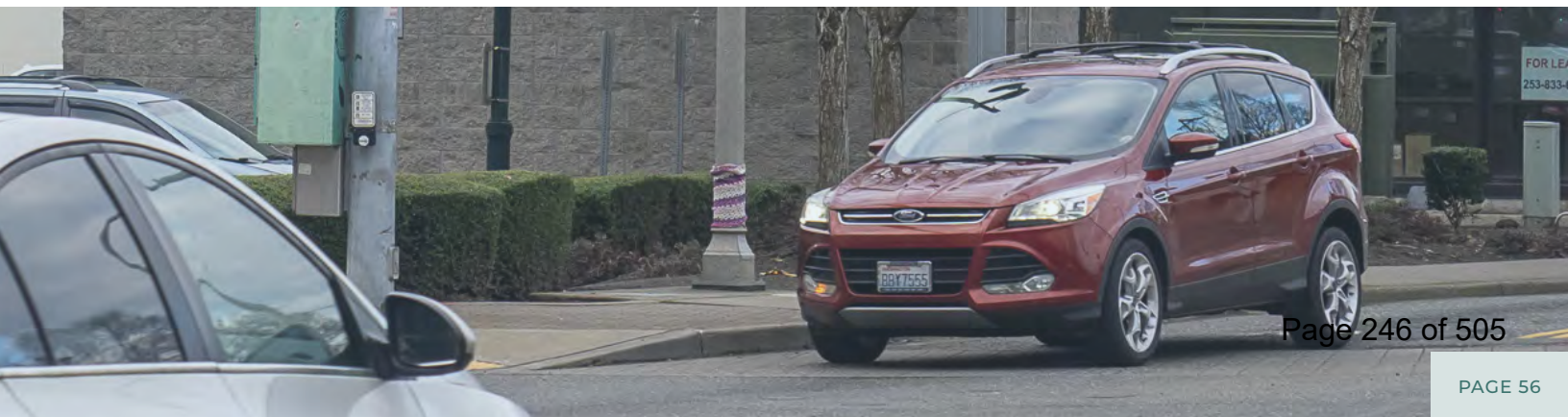
TR4-1. The impacts of transportation projects shall be evaluated, and the appropriate mitigation measures identified in accordance with the applicable environmental laws and regulations.

TR4-2. The multimodal transportation systems shall be designed efficiently and support reductions in greenhouse gas emissions and per capita miles traveled, protect and enhance environmental, economic, and human health and safety, and advance environmental justice, and are based on regional priorities and coordinated with other comprehensive plans.

TR4-3. In planning transportation facilities and programs, the City will seek to reduce stormwater pollution from transportation facilities and improve fish passage.

SUPPORTING ACTIONS

- Incorporate environmental factors into transportation decision-making, including attention to human health and safety.
- Review and implement guidance from the Department of Commerce pertaining to measures that cities may implement to reduce greenhouse gas emissions. These guidelines will prioritize measures that benefit overburdened communities that have experienced disproportionate harm due to air pollution and be consistent with environmental justice assessment pursuant to RCW 70A.02.060.



GOAL 5**Multimodal Accessible Network**

Ensure Auburn's transportation system is designed to be comprehensive, integrated, accessible for users of all abilities, and facilitates different types of traffic flows, including pedestrians, bicyclists, motorists, transit riders and operators, truck operators and aviation users.

Multimodal Accessible Network Policies (General)

TR5-1-1. The network of sidewalks, bicycle facilities and roadways shall be interconnected to encourage active transportation between neighborhoods, activity centers, community resources, and transit.

TR5-1-2. Ensure that the city's standards and development requirements align with the complete streets policies.

TR5-1-3. Context and flexibility in balancing user needs for all travel modes shall be considered in the planning and design of all projects and, if necessary, a deviation from the EDS may be considered to ensure the Complete Streets Goal and supporting policies are achieved.

TR5-1-4. The development of the multimodal transportation system shall balance safety and convenience to accommodate all users of the transportation system to safely, reliably, and efficiently provide access and mobility to people and goods.

SUPPORTING ACTIONS (GENERAL)

- Plan for and develop a balanced transportation system, which provides safer access and connectivity to transportation facilities for users of all ages and abilities, including pedestrians, bicyclists, motorists, transit users and operators, and truck operators.
- Plan for, design, and construct all transportation projects, whether City led or development driven, to provide appropriate accommodation for bicyclists, pedestrians, and transit users in a manner consistent with the Comprehensive Plan, except in situations where the establishment of such facilities would be contrary to public health and safety or the cost would be excessively disproportionate to the need
- Ensure the transportation system meets the requirements outlined in the ADA and the ADA Transition Plan for Facilities in the Public Right-of-Way and its policies.
- Ensure the EDS requirements support the policies and guidance for complete streets, bicycle LTS, and pedestrian facilities.



Multimodal Accessible Network Policies (Streets)

TR5-2-1. City streets shall be classified as arterial, collector, local, or alley to support the goals and policies of the Plan. The EDS may establish more detailed classifications as needed to serve the needs of the transportation system.

TR5-2-2. The City Functional Roadway Classifications Map shall serve as the adopted standard for identifying classified streets in the City of Auburn.

TR5-2-3. The City shall pursue federal classification of all eligible streets and prioritize federal classification as funding needs and regulatory requirements are identified.

TR5-2-4. Street standards in the EDS shall reflect the street classification system and function.

TR5-2-5. The design and management of the street network shall seek to improve the appearance of existing street corridors. The EDS shall include provisions for streetscaping to enhance the appearance of City street corridors, where appropriate.

TR5-2-6. The classification standards adopted in the EDS are considered the City's minimum standards for new streets. The standards do not limit or prevent developers or the City from providing facilities that exceed the City's standards.

TR5-2-7. The standards for residential streets may be modified in cross section to provide better relationships between the different components of the street including, but not limited to, on-street parking, the landscape strip, and the sidewalk. Among other objectives, this may be done to balance the need to provide adequate parking and buffer pedestrians from traffic.

TR5-2-8. The city shall designate new arterials and collectors to serve developing areas concurrent with approval of such development. These new roadways shall be spaced in compliance with transportation network planning principles and support the importance of overall system circulation.

SUPPORTING ACTIONS (STREETS)

- The EDS will include cross section standards for the various city roadway classifications and established more detailed sub-classifications as appropriate.
- To achieve access control to meet city policy, the City:
 - *Adopts and supports the State's controlled access policy on all state highway facilities;*
 - *May acquire access rights along some arterials and collectors;*
 - *Adopts design standards that identify access standards for each type of functional street classification;*
 - *Encourages consolidation of access in developing commercial and high-density residential areas through shared use of driveways and local access streets; and*
 - *Will establish standards for access management, develop a planning process to work with the community, and implement access management solutions on arterial corridors.*

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Multimodal Accessible Network Policies (Streets)

TR5-2-9. The City will seek consolidation of access points to state highways, arterials, and collectors as appropriate to benefit the highway and city street system, reduce interference with traffic flows on arterials, and discourage through traffic on local streets.

TR5-2-10. ROW access shall be provided in a manner that minimizes operational impacts to the City street system, reduces or eliminates safety impacts to the ROW, and provides for access needs of the property. Shared driveways in access tracts or easements may be allowed as specified in the EDS to reduce access points to the ROW.

TR5-2-11. Intersections controlled with roundabouts are preferred over signalized intersections. Where necessary to meet level of service standards, roundabout control shall be implemented over signalization or all-way stop-control, unless determined to be infeasible.

TR5-2-12. Conversion of an intersection to all-way stop-control as mitigation for existing intersection level of service deficiencies shall only be allowed as a temporary measure where permanent measures such as a traffic signal or roundabout are planned.

TR5-2-13. New all-way stop-control intersections shall be discouraged. In evaluating improvements to existing intersections, roundabout or signalization are preferred over all-way stop-control.

TR5-2-14. The local street network shall be developed to maximize the efficiency of the transportation network in residential areas and minimize through traffic in neighborhoods.

TR5-2-15. The street network should be developed and maintained to increase resiliency and support security and emergency management.

TR5-2-16. Private streets are discouraged, but may be permitted on a discretionary basis, as regulated by City code and the EDS. Private streets are not intended to connect between two public streets and shall be built to public street standards. The properties benefiting from the private street are responsible for its maintenance.

SUPPORTING ACTIONS (STREETS)

- To maximize the efficiency of the transportation network in residential areas and minimize through traffic in neighborhoods, the EDS will incorporate requirements such that:
 - *The internal local residential street network for a neighborhood discourages regional through traffic and non-residential traffic from penetrating the neighborhood or adjacent neighborhoods.*
 - *Streets shall be planned, designed, and constructed to connect to future development as appropriate to support the goals and policies of the Plan.*
 - *Residential developments should be planned in a manner that minimizes the number of local street access points to arterials and collectors.*
 - *To promote efficient connectivity between areas of the community, existing stub end streets shall be linked to other streets in new development whenever the opportunity arises and the resulting traffic volumes are not likely to exceed acceptable volumes per the street classification as identified in the EDS.*
- Design criteria for roundabouts, including feasibility criteria, will be incorporated into the EDS.
- The City will coordinate with the WSDOT, counties, and adjacent cities to facilitate the movement of traffic through the City, to construct improvements needed to the state and county arterial and freeway systems, and to develop through routes that minimize the impact of through traffic on Auburn's residential neighborhoods.

Multimodal Accessible Network Policies (Active Transportation)

TR5-3-1. The City's active transportation facilities include bicycle and pedestrian networks and shall be planned and built in accordance with the active transportation level of service standards.

TR5-3-2. City investment in active transportation facilities will prioritize facilities that: 1) Encourage mode shifts from vehicle to active transportation and transit; 2) Provide access to key destinations, such as schools, parks, community services, transit stops, commercial areas, and the Downtown Urban Center; 3) Encourage and support bicycle and pedestrian safety; and 4) Serve disadvantaged and historically underserved communities.

TR5-3-3. City bicycle routes shall be classified as Regional, Priority, or Auxiliary to support the goals and policies of the Plan.

TR5-3-4. The City shall seek external funding and prioritize investments to develop the bicycle network identified in the bicycle priority map, and to build the associated projects listed in Comprehensive Transportation Plan.

TR5-3-5. Active transportation facilities shall be designed to reduce modal conflicts, with greater separation from vehicle traffic along roadways with higher classification, expecting higher vehicle volume and speed.

TR5-3-6. Bicycle and pedestrian crossings of vehicular travel ways shall be placed to align with desired crossing lines and in accordance with the EDS.

TR5-3-7. Pedestrian facilities shall be designed consistent with ADA guidelines and the existing infrastructure shall be updated per the city's ADA Transition Plan for facilities in the Public Right-of-way, to accommodate users of all ages and abilities.

TR5-3-8. Wayfinding elements may be constructed to guide travelers along major active transportation routes.

SUPPORTING ACTIONS (ACTIVE TRANSPORTATION)

- The City shall schedule, plan, and co-sponsor events that support recreational walking and bicycling. These events should emphasize their recreational and health values and introduce people to the transportation capabilities of bicycling and walking.
- Develop programs and publications, and work with local employers to encourage citywide bicycle commuting.
- Work with the Community Development Department to establish guidelines and building code requirements to require convenient and secure bicycle storage facilities in all large public and private developments.
- The City will develop, and periodically update, a Bicycle Route Map that defines the bicycle network in Auburn and classifies bicycle routes throughout the City as either Regional, Priority, or Auxiliary. The network of classified bicycle routes will focus on connectivity from non-classified routes in neighborhoods and commercial areas to auxiliary, priority, and regional routes.
- Develop and maintain an official Auburn Bicycling Guide Map.
- Evaluate transportation projects and identify opportunities to include sidewalk and bicycle facilities based on the identified priority locations.
- Seek ways to provide pedestrian amenities such as streetlights, trees (within the downtown and on local residential streets), signage, and public art along appropriate pedestrian travel routes.
- Encourage the formation of Local Improvement Districts to develop pedestrian pathways and other active transportation amenities throughout the City. Partner with the local school districts to improve Safe Walking Routes to School.
- Actively seek to acquire land along corridors for planned bike routes as identified in the Bicycle Route Map and for pedestrian facilities needing more property to meet LOS standards.

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Multimodal Accessible Network Policies (Active Transportation)

TR5-3-9. Active transportation routes shall be constructed to accommodate emergency vehicle access and be amenable to law enforcement.

TR5-3-10. When applicable, active transportation paths shall be provided at the end of dead end streets to shorten walking distances to an adjacent arterial or public facility including, but not limited to, schools and parks.

Multimodal Accessible Network Policies (Transit)

TR5-4-1. Active transportation improvements shall be prioritized based on transit level of service with higher priority placed on improvements in areas with higher transit level of service.

TR5-4-2. Improvements that optimize intersections and corridors to facilitate speed and reliability of transit service will be encouraged and supported as appropriate and will be balanced with the needs of the other travel modes.

TR5-4-3. The City shall cultivate partnerships with transit agencies and WSDOT to help with, or support the development of a robust transit network, to serve trip generators such as colleges, commercial areas, and community resources, to expand transit service within the underserved areas of Auburn, and to achieve a transit network that is convenient and provides a viable alternative to driving.

TR5-4-4. The City shall advocate for adequate off-street parking supply to accommodate demand associated with transit facilities in Auburn, where no alternative options are provided by transit agencies to access transit service that meet the needs of the transit riders.

TR5-4-5. The City shall encourage development projects to provide access improvements to transit stops located within priority transit walksheds.

TR5-4-6. The City shall establish parking restrictions in areas where transit parking impacts nearby residential areas to mitigate the impact of overflow transit parking.

TR5-4-7. The City shall seek partnership opportunities with transit agencies for grant applications and cost sharing to improve access to transit for active transportation facilities, supporting safety, equity, and sustainability.

SUPPORTING ACTIONS (TRANSIT)

- Evaluate intersections and identify opportunities to improve speed and reliability of transit service.
- Partner with transit agencies to support transit service in the City.
- Work proactively with Sound Transit, KC Metro, and Pierce Transit to ensure the adequate supply of transit parking capacity in Auburn.
- Expand the areas included in the Restricted Parking Zones and other parking restrictions as needed to mitigate impacts from transit parking.

Multimodal Accessible Network Policies (Freight)

TR5-5-1. City transportation planning efforts will seek to facilitate the movement of freight and goods through Auburn with minimal adverse traffic and environmental impacts.

TR5-5-2. The movement of freight and goods that serve largely national, state, or regional needs should take place in such a way so that the impacts on the local transportation system are minimized. These movements should take place primarily on state highways, interstates, or on rail corridors with grade separated roadway crossings to minimize the local impacts.

TR5-5-3. All through truck trips and the majority of local trips shall take place on designated truck routes. This policy shall not apply to developments and uses operating under existing ROW use permits, traffic mitigation agreements, or equivalent agreements directly related to the regulation of permitted haul routes.

TR5-5-4. Prioritize improvements that facilitate truck movements along and connecting to future and existing truck routes to accommodate truck traffic and minimize impacts to infrastructure.

TR5-5-5. Development shall be required to mitigate the impacts of development project generated truck traffic on the City's transportation system, based on the City's vehicle LOS standard.

TR5-5-6. Temporary haul routes for overweight or oversized vehicles shall be permitted under circumstances acceptable to the City and with appropriate mitigation. A temporary haul permit must be obtained prior to the hauling of oversized or overweight freight.

TR5-5-7. Truck traffic in residential neighborhoods shall be prohibited, except for local deliveries within said neighborhood, unless no other possible route is available, in which case mitigation may be required.

SUPPORTING ACTIONS (FREIGHT)

- Evaluate intersections and identify opportunities to reduce delays along freight corridors.
- Seek public and private partners to leverage funds for freight improvement projects and associated mitigation.
- Work with local and regional groups to ensure regional freight needs are met and local impacts are mitigated.
- The City will coordinate and communicate with railroad purveyors in Auburn (United Pacific Railroad and Burlington Northern Santa Fe Railway) regarding safety and operational concerns at railroad crossings, along railroad corridors, and near rail yards.

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Multimodal Accessible Network Policies (Freight)

TR5-5-8. As roadway reconstruction projects are identified, opportunities to reconstruct roadways adapted to heavy truck traffic shall be evaluated along T-1 and T-2 freight corridors, to prevent accelerated damage to these facilities.

TR5-5-9. Grade separation of roadway and active transportation facilities from railroad tracks and T-1 Truck Routes (such as SR 167 and SR 18) is preferred over at-grade crossings. The City shall plan its multimodal networks to utilize existing grade separated crossings and identify where future grade separation improvements are desired.

TR5-5-10. The City shall maintain its transportation systems to be compliant with Washington Utilities and Transportation Commission requirements regarding railroad crossings and shall work diligently to address any identified deficiencies.

Multimodal Accessible Network Policies (Air Transportation)

TR5-6-1. Continue to develop the Auburn Municipal Airport in accordance with the Airport Master Plan as adopted or amended.

TR5-6-2. The airport shall be managed as a general aviation facility. General aviation includes all civilian flying except scheduled passenger airline service.

TR5-6-3. When siting new or revised facilities or operations at the airport, the impacts on neighborhoods such as increased noise generated from the use of those facilities shall be considered.

TR5-6-4. Use of the airport by non-conventional aircraft, such as ultra lights, is discouraged.

TR5-6-5. Minimize or eliminate the potentially adverse effects of light, glare, and obstructions on the operation of the Auburn Airport.

TR5-6-6. Insure that uses surrounding the Airport are compatible with the operations of the Airport as development occurs.



SUPPORTING ACTIONS (AIR TRANSPORTATION)

- Review existing and planned uses near Auburn Municipal Airport through development actions and review ACC18.38 regulations periodically to continue to discourage incompatible uses near the airport.
- Coordinate planning efforts to optimize the effectiveness of the aviation system while minimizing health, air quality, and noise impacts to surrounding communities, including historically marginalized communities.

GOAL 6**Multimodal Level of Service (MMLOS) Standards**

Establish multimodal level of service standards for all City streets, active transportation facilities, and access to transit service to serve as a gauge to judge performance of the system and success in helping achieve the comprehensive plan goals consistent with environmental justice.

The MMLOS policies under Goal 6 for bicycle and pedestrian facilities, including access to transit, are intended to provide guidance to evaluate the multimodal facilities, identify deficiencies, and prioritize projects to eventually reach a complete multimodal network that can support and promote mode shift, reducing the vehicle capacity demand on the roadways.

MMLOS Standards Policies (Vehicles)

TR6-1-1. The City adopts the following vehicle LOS standards for the AM and PM peak periods per the Highway Capacity Manual:

- **Signalized:** The LOS standard for signalized intersections is "D", with the following exceptions: for signalized intersections of two principal arterial roads the LOS standard is "E."
- **Stop Controlled:** The LOS standard for stop controlled intersections is "D."
- **Roundabout:** The LOS standard for roundabout controlled intersections is "D" and a V/C ratio for each lane group of less than 0.90.
- **Queuing:** The LOS standard for intersection queuing is the 95th percentile queue shall not extend across an adjacent driveway, alley, or street intersection, except if the driveway, alley, or street intersection is within the functional intersection boundary of the queue in which case the queue may extend to the limit of the functional intersection boundary. Additionally, queuing for a designated turn lane shall not exceed the turn lane storage area and cause a blockage of through lane(s).

SUPPORTING ACTIONS

- Regularly conduct traffic counts, observations, and modeling to evaluate current and future Vehicle LOS and identify projects to address deficiencies.

MMLOS Standards Policies (Active Transportation)

TR6-2-1. The City adopts the following bicycle LOS standards:

- **Bicycle LOS shall be based on Bicycle Level of Traffic Stress (LTS) ranging from "1" to "4" as follows:** "1" – minimal traffic stress and high comfort facilities that accommodate bicyclists of all ages and skill levels; "2" – some traffic stress and moderate comfort facilities that accommodate average bicyclists; "3" – moderate to high traffic stress and moderate to low comfort facilities that accommodate mostly experienced bicyclists; "4" – high traffic stress and low comfort facilities that accommodate mostly bicycle enthusiasts with advanced experience and skill levels.
- The **Bicycle LTS standard** for Auxiliary bicycle routes is "3."
- The **Bicycle LTS standard** for Priority bicycle routes is "2."

SUPPORTING ACTIONS (ACTIVE TRANSPORTATION)

- The EDS will be updated to include standards for various types of bicycle facilities intended to meet level of service standards as defined in the Plan.
- Standards will be developed and incorporated within the EDS to establish typical cross sections by roadway classification to meet the pedestrian LTS standards.

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MMLOS Standards Policies (Active Transportation)

- The **Bicycle LTS standard** for Regional bicycle routes is "1."
- **Minimum Bicycle LTS standards** for City streets without Regional, Priority, or Auxiliary bicycle routes shall be per the standard roadway cross sections by street classification in the EDS.
- **Streets may be designed with Bicycle LTS higher than the minimum standard** to accommodate local needs such as parks, schools, and other uses.

TR6-2-2. The City adopts the following pedestrian LOS standards:

- **Pedestrian LOS** shall be based on Pedestrian Level of Traffic Stress (LTS) ranging from "1" to "4" as follows: "1" – minimal traffic stress and high comfort facilities; "2" – some traffic stress and moderate comfort facilities; "3" – moderate to high traffic stress and moderate to low comfort facilities; "4" – high traffic stress and low comfort facilities.
- The **pedestrian LTS standard for City streets** is "1" except streets classified as "rustic" or alleys have a Pedestrian LTS standard of "2."
- **Streets may be designed with pedestrian LTS higher than the minimum standard** to accommodate local needs such as parks, schools, and other uses.

MMLOS Standards Policies (Transit)

TR6-3-1. Transit LOS is defined as the accessibility, frequency, comfort, reliability, and connectivity of available transit services using active transportation modes. A Transit LOS score ranging from "1" to "4" can be estimated for any location in the City using a combination of the walking shed distance from the location to transit services and the type of available transit service as defined in the Plan.

TR6-3-2. Active transportation improvements shall be prioritized based on transit level of service with higher priority placed on improvements in areas with higher transit level of service.

SUPPORTING ACTIONS (ACTIVE TRANSPORTATION)

- The Street cross sections included in the EDS will be updated to include active transportation facilities that provide at least minimum level of service requirements.

SUPPORTING ACTIONS (TRANSIT)

- Coordinate regularly with transit operators to understand service plans.
- Maintain a map that reports transit service levels citywide based on transit service plans and walksheds.
- Prioritize eliminating gaps in active transportation routes and improving sub standard active transportation facilities in areas of transit levels of service "1" and "2".
- Develop tools to assess current and future planned transit level of service throughout the City and identify active transportation gaps and substandard active transportation facilities.
- Advocate for, and support, transit speed and reliability improvements.

MMLOS Standards Policies (Freight)

TR6-4-1. The City adopts the following Freight LOS standards:

- **LOS for freight movement** follows the vehicle LOS standards.
- **Principal Arterial, Minor Arterial, Non-Residential, and other streets** identified as T-1, T-2, or T-3 routes are considered truck routes except as designated otherwise by the City Code or as posted by the City Engineer.
- **Intersections of truck routes** shall be designed to accommodate turning trucks such that the trucks do not interfere or obstruct with other travel modes or cause damage to adjacent property and facilities.
- **Roadway pavement on truck routes** shall be designed with a minimum 20-year service life with truck loading.
- **Driveways serving trucks and lane widths on the adjacent truck routes** shall be designed such that trucks accessing the driveways do not enter into opposing roadway or driveway lanes. Driveways with excessive width may be required to provide mitigation treatments for bicyclists and pedestrians crossing the driveway.
- **Truck dependent land-uses** shall provide on-site parking area for truck loading and unloading and shall accommodate truck access and on-site turn-around.
- **Development anticipating regular truck deliveries or services** shall provide a delivery plan that identifies the trucks size, frequency, and delivery or service duration and demonstrates how, when, and where the trucks will make deliveries or services without causing impacts to vehicles, bicycles, and pedestrians in the right-of-way.

SUPPORTING ACTIONS (FREIGHT)

- Maintain a map of Auburn streets that overlap with the WSDOT Freight and Goods Movement Transportation System and ensure that transportation projects that overlap with T-1, T-2, and T-3 routes include adequate space for large vehicle turns.
- Update the EDS to ensure they adequately consider the needs of freight vehicles in terms of intersection turning movements, mid-block turning movements into driveways, loading docks, and alleys, and entrance to, navigation of, and exit from traffic circles and roundabouts.
- Identify truck routes that do not meet current freight level LOS standards and prioritize investments to address deficiencies based on level of impact and available funding.



GOAL 7

Multimodal Concurrency

Ensure that those transportation system facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy without decreasing current service levels below established minimum standards.

Concurrency Policies

TR7-1. The City will not approve development activity if the development causes the vehicle level of service on a transportation facility to decline below level of service standards or if the development negatively impacts a transportation facility currently operating below vehicle level of service standards (any increase in intersection delay where intersection delay standard is already exceeded or any increase to queue length of an existing queue length that does not meet standards). Strategies that may allow a development to proceed, include, but are not limited to, one or more of the following:

- Concurrent with the development, Developer constructs **street improvements** to address the vehicular level of service impacts of the development.
- Concurrent with the development, Developer provides **active transportation** facility improvements, increased or enhanced **public transportation** service, **ride-sharing** programs, **demand management**, and other transportation systems management strategies that demonstrate a mode shift from vehicle to active transportation and/or transit modes such that the development vehicular level of service impacts are mitigated.
- If the City's Transportation Improvement Program includes a **project that is not fully funded (for instance, the funding includes unsecured grants)** that will mitigate the impacts of the development and is scheduled to be complete concurrent to the development, the City may allow the developer to provide funds to fully fund the project so that it may proceed concurrent to the development.
- If the City's Transportation Improvement Program or Comprehensive Transportation Plan includes a project that would **mitigate the impacts** of the development, the City may allow the developer to fund (all or in-part) and build the project concurrent to the development.
- Development project scope is **reduced**.

SUPPORTING ACTIONS

- Include standards in the EDS that require development projects to conduct a traffic impact analysis (TIA) when certain thresholds are met. Thresholds will be intended to require a TIA when it is likely that a development could cause transportation facilities to operate below level of service standards or when then development is likely to have negative impact on transportation facilities already operating below level of service standards. The TIA scope will be scalable based on the development project and its potential impacts on the transportation system. The TIA will identify impacts and associated mitigation actions proposed to address the impacts.
- The City will review transportation impact analyses for developments outside the City through SEPA to identify if there may be potential impacts to City systems.
- The City will provide transportation impacts analyses for developments within the City that may impact other agencies so that those agencies may identify if there are potential impacts to their facilities.
- The City will update the per-person trip traffic impact rate for the following calendar year based on the traffic impact fee funding need identified in the TIP and revise the fee schedule based on this per-person trip rate for adoption as part of the City's overall fee schedule.

(Continued on next page)

- Development project is **phased or delayed**.
- Establish a **lower vehicle level of service standard** via the City Council adoption of an amended Comprehensive Transportation Plan. The denial of a development in order to maintain concurrency may be grounds for the City declaring an emergency for the purpose of amending the Comprehensive Transportation Plan outside of the annual amendment cycle.

For the purposes of this policy **“concurrent with the development”** means that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years.

TR7-2. The City may afford a developer that funds and/or constructs improvements that provide mitigation beyond the impacts of the development activity a credit against the traffic impact fees due for the project.

TR7-3. Development activity generating people trips shall pay a transportation impact fee that is used by the City to make system wide capital improvements and programs that provide vehicular capacity and encourage a mode shift from vehicles to active transportation and/or transit.

TR7-4. Development activity shall make improvements along project right-of-way frontages to provide for vehicle, pedestrian, bicyclist, transit, and freight trips to/from the project. Improvements shall be in accordance with multimodal level of service standards and the EDS.

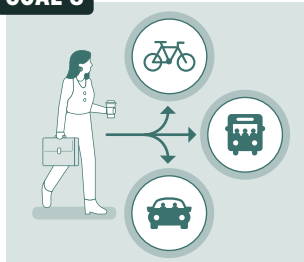
TR7-5. The City may enter into latecomer (payback) agreements where transportation investments are made by one party that legitimately should be reimbursed by others, agreements will be at the discretion of the City Council. Latecomer or payback agreements do not apply to situations in which a property owner is required to construct improvements per an existing city code provision, such as in the case of half-street and other required improvements.

TR7-6. The City may make transportation improvements that would be required for an undeveloped or underdeveloped private property to develop or redevelop with a City funded capital project and re-coup the costs of those improvements assessed through a payback requirement on the private property.

TR7-7. Conversion of an intersection to all-way stop-control as mitigation for intersection level of service deficiencies shall only be allowed as a temporary measure where permanent measures such as a traffic signal or roundabout will be constructed concurrent to the development activity triggering the mitigation requirement.

SUPPORTING ACTIONS

- On an annual basis, the City will develop a per person transportation impact fee based on the number of people trips anticipated over the next six-year period of the TIP and the impact fee funding needed to implement projects to accommodate those trips. Projects include those that increase vehicular capacity or provide mode shift from vehicle to active transportation and transit, thereby reducing the need for vehicle capacity.
- In planning expenditure of transportation impact fees, the City will seek to support development concurrency by prioritizing projects that address vehicular level of service issues related to recent and anticipated development activity.
- The EDS will define frontage improvements (half-street improvements) required to be provided by development activities.
- The City will seek grant, loan, and partnership funding for system capacity and mode shift projects that would help reduce traffic impact fee rates required to maintain concurrency.

GOAL 8**Demand and System Management**

Use Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies to reduce capacity demand on the transportation system.

Demand and System Management Policies

TR8-1. TSM strategies shall be utilized to efficiently operate the existing transportation system, thereby maximizing resources, and reducing the need for physical system capacity expansion.

TR8-2. TDM strategies, such as the Commute Trip Reduction (CTR) program or other strategies that reduce single occupant vehicle travel shall be utilized, when possible, to lessen the impact on transportation system capacity.

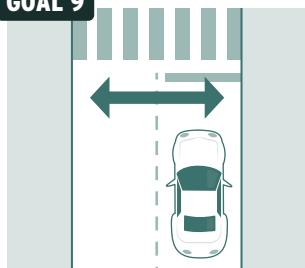
TR8-3. Reduce the need for new capital improvements through investments in operations, pricing programs, demand management strategies, and system management activities that improve the efficiency of the current system.

TR8-4. Emphasize transportation investments that provide alternatives to single occupancy vehicle travel, increase travel options, especially to and within centers, and support compact, pedestrian- and transit-oriented densities and development.

SUPPORTING ACTIONS

- Identify and map prioritized intelligent transportation system (ITS) improvements, based on available funding and existing infrastructure.
- Coordinate with transit agencies to enhance CTR programs for CTR employers in Auburn.
- Improve the CTR Program for City employees.



GOAL 9**Right-of-Way (ROW)**

Retain and preserve existing right-of-way and identify and acquire new right-of-way as needed to provide for the existing and planned transportation system.

ROW Policies

TR9-1. Seek opportunities to obtain right-of-way along roadways and at intersections in accordance with adopted standards and comprehensive planning.

TR9-2. The City may acquire right-of-way, development rights, easements, and other property rights in accordance with the uniform act and other local, state, and federal law.

TR9-3. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.

TR9-4. Right-of-way that has the potential for future transportation system needs shall be retained and right-of-way that has no potential future transportation system needs shall be considered for vacation.

TR9-5. When triggered by City code, require the dedication of right-of-way to accommodate the build-out of half street improvements based on the roadway classification and active transportation facilities identified in this Plan.

TR9-6. Permanent use or encroachment of right-of-way for non-City transportation system purposes shall be prohibited, restricted, or regulated to preserve the City's existing and planned use of the right-of-way for City transportation system purposes.

SUPPORTING ACTIONS

- Preserve and protect existing right-of-way through the issuance of permits such as Construction Permits, right-of-way Use Permits and franchise agreements.
- Monitor and address right-of-way encroachments.
- Acquire additional right-of-way as necessary to implement the Comprehensive Plan.
- As budgeted funds allow, purchase property when it is available on the market as a voluntary protective purchase rather than under threat of use of eminent domain.



GOAL 10



Asset Management

Design, construct, preserve, and maintain the City's transportation system in the most cost-effective manner.

Asset Management Policies

- TR10-1.** The target average Pavement Condition Index (PCI) for all streets is 70.
-
- TR10-2.** The minimum design service life for new and re-built roadways is 20 years.
-
- TR10-3.** The City shall take and require actions by others that minimize and mitigate impacts to the roadway surfaces by utility work and other construction activities.
-
- TR10-4.** Pursue and secure other funding sources, such as grants, partnerships, and revenue mechanisms to fund pavement preservation projects.
-
- TR10-5.** To the extent allowed by available preservation funding, the City shall prioritize the preservation of streets prior to the existing pavement degrading to the point where reconstruction of the roadway becomes the appropriate treatment.
-
- TR10-6.** Non-residential roadways requiring full pavement replacement shall be prioritized based on vehicle volumes and classifications with higher volumes of vehicles, heavy trucks, and transit routes being higher priorities than those with less.
-
- TR10-7.** Local Street Preservation program shall focus on preserving and re-building roadways classified as local residential, local industrial or rustic residential.
-
- TR10-8.** The Arterial Street Preservation program shall focus on preserving and re-building roadway systems classified as arterials or collectors.
-

SUPPORTING ACTIONS

- EDS prohibit trenching or cutting into newly constructed pavement surfaces (within five years) or require additional pavement replacement area where trenching or cutting in newly constructed pavement surfaces cannot be avoided.
- Notify and coordinate with private and public utilities when planning to complete pavement overlays or reconstruction.
- Identify City streets that are nearing a deterioration level that would require complete roadway re-build for inclusion in the pavement preservation program.
- Require roadways to be built per the requirements in the adopted EDS.
- Evaluate options to meet funding gaps that may include revenue mechanisms available through the Transportation Benefit District for consideration and potential implementation.
- Maintain a Computerized maintenance management system (CMMS) to record response to customer service calls.

(Continued on next page)

TR10-9. Prioritize the maintenance and replacement of pedestrian facilities to address deficiencies and to meet ADA requirements.

TR10-10. Prioritize maintenance of bicycle facilities to keep them visible with signage and markings, and clear of encroachments and debris.

TR10-11. Prioritize maintenance, repairs, and replacement of traffic control systems (signals, dynamic message signs, rapid rectangular flashing beacons) at a level consistent with optimizing system reliability, asset economic life, and system performance .

TR10-12. Ensure adequate resources to maintain, per USDOT, MUTCD, and other regulatory requirements and best practices, other elements of the street system such as signage, street lighting, and roadway markings.

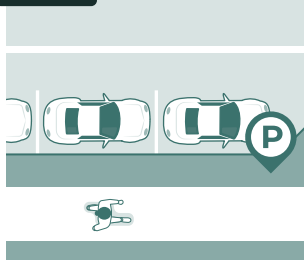
TR10-13. Bridge inspection and maintenance shall follow State, Federal, and other applicable regulatory requirements.

TR10-14. Intelligent Transportation Systems (ITS) will be managed and maintained to be secure, reliable, and effective.

TR10-15. Prepare for changes in transportation technologies and mobility patterns.

SUPPORTING ACTIONS

- Assign industry standard design lives for control systems. Seek to repair or replace system assets before they exceed their economic life and minimize the number of high-criticality assets beyond their economic life.
- Take measures to ensure system security for traffic control systems.
- Incorporate repair and replacement of sidewalks and other street assets into pavement preservation projects as appropriate and as resources allow.

GOAL 11**Parking**

Ensure a balance between on-street and off-street parking provided to meet the needs of existing land use, development, and other community needs and as allowed by law.

Parking Policies

TR11-1. On-street parking should be allowed only when consistent with the classification and intended function of the street.

TR11-2. New developments shall provide adequate off-street parking to meet the needs of their development unless otherwise precluded by law.

TR11-3. Within high density areas, such as Regional Growth Center, evaluate and address the need for passenger and/or commercial loading zones.

**SUPPORTING ACTIONS**

- Take an active approach to managing on- and off-street parking in commercial and high-density residential areas to minimize land dedicated to parking and ensure right-of-way balancing parking with other community needs.
- Explore the feasibility of parking management programs, shared parking strategies, and/or subsidized ORCA cards programming as new low-income housing units are being developed; addressing the transportation needs as development occurs.
- Encourage new development to incorporate appropriate design features such as: Preferential parking for carpools and vanpools; Special loading and unloading facilities for carpools and vanpools; Transit passenger facilities, including comfortable bus stops and waiting areas that may be integrated in the building design; and secure and covered bicycle parking, showers, lockers, and related facilities to support bicycle commuters. Where applicable, encourage convenient short-term bicycle parking for customers or other visitors.
- Develop guidance for the creation of parking facilities for bicycles, scooters, and other active transportation vehicles that help promote mode shift away from motorized vehicles.



CHAPTER 5

System Management, Maintenance, and Operations



IN THIS CHAPTER

- [Staffing](#)
- [Equipment/Fleet](#)
- [Facilities](#)
- [Asset Management](#)





Efficient and effective management, maintenance, and operations of the City's transportation systems relies on strategic planning and implementation. These efforts require identification of current and future assets and the financial, equipment, facilities, and personnel resources required to maintain and operate them. This chapter summarizes current and anticipated future staffing, equipment, and facilities needs and describes management of key transportation systems and elements such as pavement, street signal, sidewalks, and signage.

5.1. STAFFING

The staffing for the City's transportation system is broken down into four areas: Transportation Engineering and Planning, Traffic Signal Operation and Maintenance, Street Maintenance and Vegetation Maintenance.

5.1.1. Transportation Engineering and Planning

This area is responsible for the development, management, and administration of the Plan, Transportation Improvement Plan, Traffic Impact Fee program, street payback agreements, development review and permitting related to transportation requirements on all types of developments, traffic studies, citywide traffic count program, citywide channelization and pavement marking program, franchises, right-of-way use permits, community banner program, adopt a street program, right-of-way vacations, Americans with disabilities transition plan for right-of-way, commute trip reduction program for all large employers within Auburn, pavement preservation, capital project grants, neighborhood traffic calming program, on-street parking management, photo enforcement program, and regional coordination on transportation issues. There are currently five full-time equivalent (FTE) employees to manage these responsibilities.

5.1.2. Traffic Signal Operations and Maintenance

This area is responsible for the operation and maintenance of the City's traffic signals including programming and signal timing, electronic traffic control and warning devices, dynamic message signs, traffic cameras, school zone flashing beacons, and the ITS including fiber optic cable. There are currently five FTE's to manage these responsibilities.

5.1.3. Street Maintenance

This area is responsible for the maintenance of the roadway system including signage, street lighting, guardrails, walls, pavement, sidewalks, curbing, and delineators. There are currently 10.5 FTE's to complete this work.

Litter management is contained within the Solid Waste program through contracted services.

5.1.4. Vegetation Maintenance

This area is responsible for maintenance of roadside and pond vegetation, hardscape medians located along the roadways of the city, and provides street sweeping services on all roadways. The Parks Department maintains the landscaped medians within the roadway corridors of the City. There are currently 11.5 FTE's to complete this work, however, 5.1 FTE's are funded by the Storm Drainage Utility and provide for the vegetation maintenance of the Storm properties and facilities and therefore only 6.4 FTE's are dedicated to the street vegetation maintenance functions.

The City's transportation system elements are shown in **Table 10**.

Table 10. Transportation System Elements

QTY	DESCRIPTION
248.69	Miles of Streets
17	Bridges
11,000	Street Signs
13,389	Feet of Guardrail
96	Traffic Signals
31	Rapid Rectangular Flashing Beacons
3,684	Street Lights - City Owned
2,261	Street Lights - PSE Owned
53	School Zone Flashing Beacons
19	Speed Radar Feedback Signs
89	Traffic Cameras
12	Speed Photo Enforcement Locations (School Zones)
4	Dynamic Message Signs
43.86	Miles of Fiber Optic Systems
2	Community Banner Locations

As the City's transportation systems grow and new regulatory requirements are enacted, the resources needed to complete necessary maintenance and operations must be evaluated and adjusted to ensure adequate resources to meet the growing needs of the system and continue to maintain the system in a state of good repair. Unfortunately, because not all agencies provide the same services and functions, there are no reliable national standards to look at to determine level of staffing needed for a transportation system with the exception of signal maintenance.

The Federal Highway Administration and Institute of Transportation Engineers recommends a ration of between 25-50 traffic signal/field devices per technician. The City of Auburn has three signal technicians and one supervisor which results in a ratio of 76:1 and is therefore under resourced for the current number of systems that they are responsible for. This plan has identified a need for potentially ten to 12 new traffic signals and several RRFB's associated with projects and programs to improve pedestrian access and safety. In addition, there is the potential for future expansion of the photo enforcement program which should also be considered when determining future staff resources needed.



5.2. EQUIPMENT/FLEET

The City currently has the equipment resources for use in the maintenance of transportation systems shown in **Table 11** and **Table 12**.

Similar to the staff resource discussion above, there are no national statistics on the amount of equipment needed for the size of a transportation system because there are too many differences between agency responsibilities and levels of service. The current resources allow for adequate maintenance of the City's systems and as staffing

resources grow, equipment resources will be need to increase accordingly.

In addition, in 2024 the City will be implementing an all electric street sweeper which was made possible through a grant from the Department of Ecology. In order to reduce the cities greenhouse gas emissions, replacement of fleet equipment and purchase of new equipment will consider the ability for electric vehicles, hybrid vehicles, or alternative fuels to be used as these technologies develop and improve.

Table 11. Equipment Assigned to Street Division or Traffic Signal Division

QTY	EQUIPMENT DESIGNATION	TYPE
4	6402E, 6403F, 6404B, 6412E	1 Ton Truck
1	6415C	F 350 Light Truck
1	6418D	Sign Truck
2	6113D, 6114D	Signal Transit Van
1	6116D	Signal Bucket Truck
1	6116D	Engineering SUV
4	6413D, 6414C, 6114C, 6113D	Staff Vehicles
2	6450A, 6450B	Bucket Trucks
1	6426D	Patching Truck
3	6411C, 6425C, 6425D	International Dump Truck
6	A402A, A402B, A901A, A408A, A404A, A501D	Plow Attachments
3	A403A, A405A, A401A	Sander Attachments
2	A904A, A407A	Deicer Attachments
1	A411A	1650 Gallon Tank
1	6423D	NorAm Grader
1	6420C	Johne Deere Loader
1	6432D	CAT Roller
1	6436A	Wacker Roller
1	6934A	Trverus Sidewalk Cleaner
1	N/A	ACCUBRINE Brine Maker

Table 12. Additional Equipment Available for all M&O Teams

QTY	EQUIPMENT DESIGNATION	TYPE
1	6940C	Case Skid Steer
1	A428E	30" Cold Grinder
1	N/A	84" Angle Broom attachment-seria
1	6523C	Backhoe/Extendahoe
1	6900	Backhoe
2	6635A, 6930A	Yanmar Excavator
1	6601A	John Deere Excavator
3	6911B, 6910C, 6505B	International Dump Truck
4	A904A, A905A, A406A, (6910D)	Plow
4	A903A, A902A, A502A, (6910D)	Sander
1	6910D	Kenworth Dump Truck
1	6911A	Mack Dump Truck
1	6420C	Johne Deere Loader
1	6432D	CAT Roller
1	6436A	Wacker Roller
1	6934A	Trverus Sidewalk Cleaner
1	N/A	ACCUBRINE Brine Maker

5.3. FACILITIES

Management, maintenance, and operations of the City's transportation systems are provided from two locations:

- **1 East Main Street** – City Hall Annex, Transportation Engineering Services
- **1305 C Street SW** – Maintenance and Operations Shops, Street Division, Vegetation Division, Traffic Signals Division

Other facilities also used for the Transportation system include the following

- **Sand and salt storage** – five locations citywide
- **Vegetation sorting facility** – Jacobson Tree Farm
- **Storage** – City's GSA Property on C Street SW

In 2020, the City undertook a study, the Facility Master Plan, to determine the space needs for the Public Works, Parks and Police departments. The recommendation of that study as it relates to the transportation system was to continue to provide maintenance and operations services from the 1305 C Street SW location but to expand the facilities with the construction of approximately 13,100 SF crew building, expansion of the fleet shops, relocation of the employee parking, completion of a driveway connection to 15th Street SW, and construction of covered parking for high valued fleet. This plan and its recommendations were adopted by the City Council in 2021 with Resolution 5595.

In 2024 construction is anticipated in the first phase of the Facility Master Plan for Public Works which is the expansion of the fleet shop facilities. As part of this work in the first phase, the City is improving the electrical service to the property to accommodate future charging stations for the electric street sweeper and future electric and/or hybrid fleet vehicles. In 2024/2025 it is anticipated that planning work will be done in the second phase of the identified improvements which for Public Works includes improvements at the Maintenance and Operations Shops to address the need for more crew space and warehousing space.

In 2024/2025 the City will be increasing the ability for the City to handle inclement weather events in the future by adding an additional sand and salt storage location. Planning efforts are also underway to relocate the vegetation sorting facility, which allows debris from operations to be separated and dried before disposal thereby reducing the costs of disposal is completed, from the Jacobson Tree Farm Property. This is due to the future plans of the City to build a Community Park on the tree farm site.

In 2024, the City is also completing a remodel at the City Hall Annex facility to provide the necessary office space for the future growth of the Public Works, Community Development and Finance departments located on the second floor and will provide necessary space for the transportation staff located there.



5.4. ASSET MANAGEMENT

Asset management involves the balancing of costs, opportunities and risks against the desired performance of assets to achieve objectives of the transportation system. The City currently uses an asset management system for its transportation and utility infrastructure and integrates this information with its GIS. This system allows the City to track requests for services both internally and from the community, assign specific tasks both reactionary and preventative to the maintenance of our facilities, and track information on specific assets defined within the system. The City has been implementing this system since 2007 and continues to improve the asset data sets and mapping to provide resources for our planning of system improvements as well as the day to day work of maintaining the systems.

5.4.1. Street Pavement

The City's Streets Division completes temporary and permanent pavement patching as needed in response to requests and complaints on all roadway corridors up to 6' x 10' in size. Areas that require more extensive patching or full pavement replacement are incorporated into the pavement preservation programs and implemented as capital projects managed by the Public Works Engineering services.

As of December 2022, City streets have an overall average pavement condition index of "67" on a scale of "0" to "100" where "0" is a completely deteriorated roadway surface and "100" is a new roadway surface. The City's goal is to achieve and maintain an average 70 pavement condition index which reflects a "good" surface condition.

An annual report is published to document the pavement rating throughout the City.

In November 2004, Auburn residents approved Proposition 1, Save Our Street Program, which created a dedicated local street fund. This money was set aside for repair and maintenance of local roadways which can sometimes also include sidewalk repair and rebuild. In 2013, the City Council modified the funding source for this program to be from construction sales tax revenues and no longer from property taxes. In 2018, the City Council modified the funds for this program, to be temporarily provided by real estate excise tax (REET) Revenues until a permanent and sustainable source could be established. Beginning in 2023, the City Council reallocated the existing 1% tax on utilities previously used to fund the arterial street preservation program to the fund the local street preservation program (formerly known as the Save Our Streets Program).

Figure 14. Local Residential Street Before and After SOS Rebuild

BEFORE



AFTER



This re-allocating established \$2 million annually to the local streets preservation program, which is the funding level estimated (in 2022 dollars) needed to achieve and maintain the City's average pavement condition index (PCI) goal of 70.

In 2008, the City created a similar program to fund the repair and maintenance of arterials and collector streets. Through 2022, this program was funded with a 1% utility tax, which was supplemented by grant funds, which provided an average of approximately \$3.3 million per year. Analysis shows that approximately \$5 million per year (in 2022 dollars) is needed to improve our arterial and collector streets to the PCI average target of 70 within the next 10-15 years, and then maintain them at that level.

Besides preserving, repairing, and replacing pavement surfaces, the street preservation programs also address non-ADA compliant curb ramps on-streets being re-paved or re-built when required per the criteria established in the City's ADA Transition Plan. The programs also address damaged or lifted sidewalks that may present an ADA obstruction or concern on streets it is re-paving or re-building.

In 2022, the City Council took actions to work towards reaching and sustaining the needed funding for both programs. Starting in 2023 the 1% utility tax revenue was moved to the local streets preservation program and a 1.5% tax on City Utilities was enacted to provide funding for the arterial streets preservation program. Additionally, as the City's Transportation Benefit District, the City Council enacted a 0.1% sales tax to provide funding for the arterial street preservation program. These new revenue streams, combined with grants, and fund balance are projected to get the City closer to the \$5 million needed per year for the arterial street preservation program. The analysis in 2022 also identified that the City may need to consider the implementation of a \$20 car tab fee through the Transportation Benefit District depending on future grant revenues. Current grant programs provide funding opportunities based on eligibility and scoring that exclude many City streets and the number of streets that are eligible and score well for the grants that have not already been repaired and preserved is diminishing. Therefore, the future level of grant revenues for pavement preservation is uncertain.

5.4.2. Active Transportation Facilities

Sidewalk Repair and Accessibility Program

The City of Auburn has an Annual Citywide Sidewalk Repair and Accessibility Program to repair damaged sidewalks, install/replace curb ramps that do not meet ADA standards, and to complete missing links in the sidewalk network.

These funds are essential for promoting active transportation travel and can be used to leverage other funding sources, such as state and federal grants or other city capital projects.

Auburn has identified three principal areas in which sidewalk improvements should be prioritized: corridors that provide access to and within the downtown, school zones, and parks, with a focus on addressing areas of known concern and complaints. Additional criteria for priority access improvement could include, but are not limited to, areas with high concentrations of senior citizens or disabled citizens, areas with high volumes of pedestrian-transit interaction, areas where private improvements such as trees have damaged the public infrastructure,



and areas where property owners are willing to financially participate in the construction of sidewalk improvements through payment into the City's sidewalk repair program. This program may also include the completion of sidewalk improvements using Community Development Block Grant funding to address areas that are within a qualified census tract as defined by HUD.

5.4.3. Street Lights

In 2021, the City completed the conversion of all of its City-owned standard Cobrahead style street lights from sodium halide to LED lighting and implemented a control system that provides information on the use of the system and can provide notifications when lights are not working. Beginning in 2021, the City created a Street Lighting Improvement program to complete the conversion of PSE-owned lights within the City to LED and to provide funds to add street lights where lighting does not meet the City's current design standards. More significant lighting projects are included in the transportation improvement plan as funding allows.

5.4.4. Traffic Signal Systems

The City completes annual preventative maintenance on its traffic signal systems. Every eight to ten years, the City also completes the re-lamping of signal heads. Each capital project that may impact an existing traffic signal is also reviewed for improvements and/or equipment replacements that may be needed for signal operations. In addition, as a traffic signal system reaches the end of its useful service life, it is included in the transportation improvement plan for replacement as funding allows. Often, development or capital projects re-build all, or portions, of existing traffic signal systems. Generally, to keep up with the general useful service lifetime of the City's traffic signals, a complete signal system must be replaced every three to four years.

5.4.5. Street Landscaping/Vegetation

The City's street standards require landscape strips along some roads classified as local residential or collector. City code establishes that the landscape strips are the responsibility of the adjacent property owner to maintain. Medians that include landscape treatments are maintained by the City's Parks Department through a contract with a landscape maintenance company. Roadside vegetation is maintained by the City's Vegetation Division where formal landscape strips do not exist and where vegetation within the right-of-way may create potential hazards or sight distance concerns.

5.4.6. Transportation System Management (TSM) and ITS

TSM techniques, which make more efficient use of the existing transportation facilities, can reduce the need for costly system capacity expansion projects. These techniques can also be used to improve reduce congestion and delays at intersections and along corridors to help meet City LOS standards. TSM techniques used by the City include:

- Re-channelization/restriping, adding turn lanes, adding
- Signal interconnect and optimization
- Turn movement restrictions
- Access Management
- ITS, including Dynamic Message Signs (DMS)
- Traffic monitoring with PTZ cameras
- Signal battery backups on all major intersections



The City will continue to use these TSM techniques to maximize the efficiency of the existing street network. Of the various TSM strategies available, the City continues to invest in and expand its ITS infrastructure as a cost-effective means of increasing system capacity. The ITS system enables the City to change traffic signals in phasing and timing real-time, thereby accommodating unexpected increases in traffic or traffic obstacles such as event related traffic and crashes. For example, ITS has proven to be a useful tool in helping to manage the impact of event traffic traveling south on Auburn Way South, often during the PM peak, to the White River Amphitheatre. The City will continue to roll out ITS capabilities on corridors around the City, as referenced in [Map 8. 2024 Intelligent Transportation Systems \(ITS\) in Appendix A](#).

In addition to TSM strategies, the City strives to provide viable alternatives for travelers to encourage mode shifts away from single occupancy vehicles to transit, biking, and walking,

5.4.7. Signage and Channelization

The City maintains street signage per the Manual of Uniform Traffic Control Devices (MUTCD) as adopted by WSDOT. This includes the replacement of signage as necessary due to knock downs or when reflectivity is below standards. Reflectivity requirements are established in the MUTCD.

The City re-paints roadway and curb striping on an annual basis. A database of the locations of all thermoplastic roadway markings is currently being created to facilitate a programmatic approach to the refreshing of these markings on a one to five-year basis. In addition, this data set will include the locations of raised pavement markers (RPMs) as new regulatory requirements within the MUTCD call for these RPM's to be updated/replaced on streets without street lighting and meeting other criteria.

5.4.8. Bridges

The City completes bridge inspections as required by the FHWA on an annual or bi-annual basis as determined in the prior inspection report. Inspection reports identify if there are maintenance, repairs, rehabilitation or replacement that is needed for the bridges within the City. The City Bridge program provides for minor cost repairs that are identified in the annual inspections on an annual or bi-annual basis depending on the work identified within each bridge inspection report. When larger items of work are identified, the City includes specific projects within the Transportation Improvement Plan as funding allows. The City also typically applies for grants through WSDOT's Local Bridge Grant Program and has secured funding for bridge maintenance and repairs.



CHAPTER 6

Funding



IN THIS CHAPTER

[Financial Summary](#)

[Financial Planning & Programming](#)

[Funding Sources](#)

[Revenue Shortfall Contingency](#)

[Funding Strategies, Project Prioritization](#)



The ability to finance the maintenance and enhancement of the transportation system is critical to the implementation of this plan and the success of the future transportation system. This chapter details the financial planning tools and funding mechanisms available to accomplish these goals.

6.1. FINANCIAL SUMMARY

The summary below provides an overview of the 20-year financial outlook for the City's transportation systems. Forecasts are based on current funding levels for City funds and based on past trends for grants and partnerships. All amounts shown are shown in current dollars (2024) without discount rate adjustments to current value.

Table 13. 2024 to 2044 Expense and Revenue Forecast

OPERATIONS		
Labor, Materials, Facilities Operations, Equipment Maintenance	\$	(336.6 Million)
Facilities Expansion, Additional Equipment	\$	(20 Million)
Motor Vehicle Excise Tax Revenue	\$	18.9 Million
General Fund	\$	337.7 Million
OPERATIONS FUNDING REMAINDER/(SHORTFALL)	\$	0
CAPITAL		
Plan Projects/Programs Expense	\$	(320 Million)
Traffic Impact Fees Revenue	\$	25.86 Million
Transportation Benefit District Revenue		
0.1% Sales Tax	\$	47.5 Million
\$20 Car Tabs*	\$	11.7 Million
Utility Taxes Dedicated to Transportation		
1.0% on Non-City Utilities	\$	40.98 Million
2.5% on City Utilities	\$	26.61 Million
Motor Vehicle Excise Tax Revenue	\$	10.6 Million
Multimodal Transportation	\$	2.5 Million
Interest Earning and Investment Income	\$	2.73 Million
Utility Revenues for Local Street Impacts	\$	3 Million
Other (Developer and/or Other Contributions/Payments)	\$	12.6 Million
Grants, Loans, and Partnerships Revenue**	\$	106 Million
Real Estate Excise Tax Revenue	\$	29.7 Million
OVERALL FUNDING CONTINGENCY/(SHORTFALL)	\$	0.22 Million

* Assumes 13 years of collection at \$900k collected per year.

** Based on historic average of \$4.25 million awarded per year + \$20 million grant for BNSF/A Street Access Project.

6.2. FINANCIAL PLANNING & PROGRAMMING

The City uses the Transportation Improvement Program (TIP) and Capital Facilities Plan (CFP) to develop a financial plan for capital improvements in Auburn, thus enabling the City to fulfill the GMA requirement of having a multi-year financing plan based on the identified transportation needs.

6.2.1. Transportation Improvement Program

The TIP is a six-year fiscally constrained plan which lists programmed transportation improvements in the following categories: roadway improvement projects, intersection improvement projects, active transportation and transit projects, preliminary engineering and miscellaneous projects, and preservation projects. Transportation needs are identified by examining the latest information concerning safety and crash history, growth trends, the traffic model, traffic studies, and the projects identified in the Plan. The City adopts an updated TIP annually, including a revenue forecast and analysis of available funding. Projects are then prioritized according to a number of factors including safety, capacity needs, access needs, and the likelihood of securing funding. The first three years of the TIP must

be financially constrained, however, the City utilizes financial constraint on the full TIP period so project programming is often limited due to anticipated funding limitations.

The TIP is an important tool for identifying funding and developing a financial plan for project implementation. This planning document is incorporated into the CFP and used to influence the City's adopted budget.

6.2.2. Capital Facilities Plan

The CFP is the Comprehensive Plan element which identifies the financial plan for implementing all capital improvements in Auburn. Transportation improvements are included in the CFP, which is amended with each Biennial Budget. The CFP enables the City to fulfill the GMA requirement of having a multi-year financing plan based on identified transportation needs. It also enables the City to make informed decisions about its investment of public dollars and make timely decisions about maintaining LOS's in accordance with the Comprehensive Plan standards. The 2024-2044 Plan capital projects and program costs are summarized in **Table 14** on the next page.



Table 14. Capital Project and Program Cost Summary and Revenue Forecast

DESCRIPTION	SUMMARY		2024 – 2044 TOTAL
Comprehensive Plan Projects (Comp-X) from Appendix B	See Appendix B	\$	123 Million
Asset Preservation, Repair, Replacement Projects/Programs	Traffic Signals Maintenance	\$200,000 / Year	\$ 162 Million
	Traffic Signal Replacements	\$150,000 / Year	
	Sidewalk Repair and Replacement Program	\$250,000 / Year	
	Arterial Street Preservation	\$5 Million / Year	
	Local Street Preservation	\$2 Million / Year	
	Bridge Repair & Maintenance	\$100,000 / Year	
	Channelization and Pavement Markings	\$400,000 / Year	
Active Transportation Projects/Programs	Active Transportation Mode Shift Projects	\$1 Million / Year	\$ 20 Million
Safety Projects/Programs	Street Lighting	\$50,000 / Year	\$ 11 Million
	Traffic Safety Programs	\$500,000 / Year	
Other	Transit Partnership Routes	\$200,000 / Year	\$ 4 Million
TOTAL			\$ 320 Million

6.3. FUNDING SOURCES

The City uses a combination of public and private funding sources to implement transportation improvements in Auburn, both for maintenance activities and capital improvements.

6.3.1. General Tax Revenues

The City receives tax revenues from a variety of state, regional, and local sources including the Real Estate Excise Tax, sales tax, property tax, and the motor vehicle fuel tax (MVFT).

In addition, the City has implemented a utility

tax on all utilities within the City and allocated a portion of these revenues specifically to the City's transportation system for improvements. This includes a 1% tax on all non-City utilities such as gas, power, telecommunications, and cable and a 2.5% tax on City utilities including water, sanitary sewer, storm drainage, and solid waste.

In 2023, the City began operation of a school zone photo enforcement program that may provide revenues for future transportation related projects.

6.3.2. Transportation Benefit District

Chapter 36.73 of the Revised Code of Washington provides for the establishment of Transportation Benefit District (TBD) by cities and counties to levy

and impose various taxes and fees to generate revenues to support transportation improvements within the district. A TBD is a quasi-municipal corporation and independent taxing district created for the sole purpose of acquiring, constructing, improving, providing, and funding transportation improvements within the district. The State Legislature provided local governments with the tools of the TBD because inflation has eroded the local share of gas tax and a series of statewide ballot initiatives passed over the last 12 years have eliminated other traditional sources of funding for local transportation needs.

In 2011, the City of Auburn implemented a TBD to provide adequate levels of funding for transportation improvements that are consistent with existing state, regional, and local transportation plans, and are necessitated by existing or reasonably foreseeable congestion levels.

The geographic boundaries of the Auburn TBD is the municipal limits of the City of Auburn as they currently exist. The Auburn TBD geographic boundaries would expand with any future annexations.

In December 13, 2016, there was an approval to implement an annual vehicle license fee of \$20.00 for qualifying vehicles in the district. However, in September 19, 2017, the action was rescinded and therefore, no vehicle license fees were put into effect and no fees have been collected.

In 2022, the City Council completed a review of the needs for the preservation of the City's streets and determined that \$5 Million was needed annually to preserve the City's arterial and collector streets and \$2 Million was needed annually for local streets. As a result of that the Council developed three recommendations to provide funding for preservation of the City's roads. Two of the recommendations utilize the authorities granted to the TBD by the State Legislature. The first one was approved by the City Council on October 3, 2022, with the adoption of Ordinance No. 6881 which added a new section to the Auburn City Code (Chapter 3.23) imposing a Transportation Benefit District 0.1% Sales and Use Tax as authorized by RCW 84.55 and RCW 36.73. This tax became effective on January 1, 2023 and may be used for transportation improvements with a focus on preservation of the City's arterial and collector roadways. The second TBD consideration is a future implementation of a \$20 Car Tabs at such time as the City is unable to obtain the grant funding to supplement the revenues for arterial and collector street preservation to meet the annual budget need of \$5 Million. Based on the projected need of this Plan, it is anticipated that the \$20 Car Tab's may be required to be implemented between 2031 and 2032. In addition, the 0.1% Sales and Use tax is enacted for a 10 year period and the City will need to consider

The TBD is provided the authority to:

- Establish and implement district policies, programs and procedures
- Borrow money and incur indebtedness
- Provide for investment of district funds
- Create advisory committees (limited to seven City residents)
- Other powers consistent with state law

continuing that tax every 10 years to continue to receive the revenues forecast in this plan.

6.3.3. Grants

The City has an active grant program and continually seeks grants, both private and public, to improve Auburn's transportation system. The following is a list of some of the grants the City has historically applied for and will likely apply for again in the future.

Federal Legislation

In 2021, the Federal Legislature approved the new Surface Transportation reauthorization bill called the Infrastructure Investment and Jobs Act (IIJA). This is the largest long-term investment in infrastructure and provides \$550 billion over fiscal years 2022 through 2026 in new federal funding. This is also known as the Bipartisan Infrastructure Law (BIL).

State Legislation

In 2015 and 2022, the Washington State Legislature passed two separate transportation funding packages called Connecting Washington and Move Ahead Washington. These programs also increased potential funding available to existing grant programs within the State and each identified specific regional projects to be funded by the programs.

Freight Mobility Strategic Investment Board (FMSIB)

The mission of the FMSIB is to create a comprehensive and coordinated state program to facilitate freight movement between and among local, national, and international markets which enhances trade opportunities. FMSIB is also charged with finding solutions that lessen the impact of the movement of freight on local communities.

FMSIB obtains funding directly from legislative appropriations and has contributed funds to the 3rd Street SW Grade Separation, the S 277th Street Grade Separation, M Street NE Widening 8th to 4th, and the M Street Underpass projects.

There are a multitude of other potential federal grant programs through the IJA that are evaluated as calls for projects are issued. PSRC has published a summary of the numerous grant programs available at <https://www.psrc.org/media/7292>.

Potential Grant Programs for Consideration

From these state and federal actions, there are a number of grant programs available to local agencies related to transportation infrastructure improvements, as shown in **Table 15**.

Table 15. Potential Grant Program for Consideration

PROGRAM	DESCRIPTION
Transportation Alternatives Program (TAP)	TAP funds projects designed to strengthen the cultural, aesthetic, and environmental aspects of the inter-modal transportation system. The program provides for the implementation of a variety of non-traditional projects, including the restoration of historic transportation facilities, the construction of bicycle and pedestrian facilities, landscaping and scenic beautification, and the mitigation of water pollution from highway runoff.
Surface Transportation Program (STP)	STP provides flexible funding that may be used by states and localities for projects on any federally classified public road, active transportation improvements, bridge, and transit capital project.
Safety Program	A federal program targeted at reducing crash rates at intersections and along corridors, particularly at those locations with higher than average fatality and injury rates. Funds come from the Highway Safety Improvement (HSIP) Program . HSIP requires that states program and spend safety funds according to their Local Road Safety Plan. Washington State's plan is called Target Zero.
Congestion Mitigation and Air Quality (CMAQ)	A federally funded program administered through PSRC. CMAQ funds projects and programs in air quality non-attainment and maintenance areas, which reduce transportation related emissions.
Safe Routes to Schools Program	A state and federally funded program that aims to protect children from traffic related deaths and injuries and promotes a healthy lifestyle by encouraging bicycling and walking to school.
Pedestrian and Bicycle Safety Grant	A state funded program that funds active transportation safety improvements.
Transportation Improvement Board (TIB)	TIB administers annual grant programs that fund roadway and active transportation projects that improve safety, mobility, capacity, and promote economic development. The TIB offers several programs, each of which emphasizes different funding criteria. In addition, they offer a Complete Streets program.

(Continued on next page)

PROGRAM	DESCRIPTION
Community Economic Revitalization Board (CERB)	A state funded program that provides low-cost financing for public facility improvements. Public entities are eligible to apply for and receive loans and grants for public facilities linked to economic development outcomes such as private business investment and job creation. CERB also finances site-specific studies and plans.
Regional Mobility Grant Program	A State managed program to improve connectivity between counties and regional population centers and reduce transportation delay. There are four project types: vehicle and equipment purchases, capital construction, operations, and transportation demand management.
Local Bridge Grant Program	A State managed program to preserve and improve the condition of bridges that are physically deteriorated or structurally deficient through replacement, rehabilitation and systematic preventative maintenance.
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	A discretionary program funding to complete critical freight and passenger transportation projects.
Safe Streets and Roads For All (SS4A)	A discretionary program funding regional, local, and Tribal initiatives to prevent roadway deaths and serious injuries.
Reconnecting Communities and Neighborhoods (RCN)	RCN provides funding to prioritizing disadvantaged communities, aiming to improve access to daily needs such as jobs, education, healthcare, food, and recreation, fosters equitable development and restoration, and reconnects communities by removing, retrofitting, or mitigating highways or other transportation facilities that create barriers to community connectivity, including to mobility, access, or economic development.

6.3.4. Loans

Low-interest loans are also available to municipalities. For example, the Washington State Department of Commerce Public Works Board offers low-interest loans (PWTF) for local governments to finance public infrastructure construction and rehabilitation. Eligible projects must improve public health and safety, respond to environmental issues, promote economic development, or upgrade system performance. Roads, streets, and bridges are eligible for these loans. The loans can be strategically employed to leverage grant funding by providing a local match, enabling the City to compete for funding for public infrastructure projects. In addition, the City has the option of issuing bonds for public infrastructure projects. The City may also pursue financing airport improvements through the Community Aviation Revitalization Board (CARB) loan program.

Table 16. 2024-2044 Forecast

CURRENT LOANS & INDEBTEDNESS			
Harvey Road/8th Street NE Intersection Improvements	Remaining Debt Payments 2024 – 2028	\$	407,933
M Street SE Undercrossing Improvements	Remaining Debt Payments 2024-2041	\$	2,155,891
Auburn Way South Widening (Hemlock St SE to Poplar St SE)	Anticipated Payback Period 2025-2045	\$	3,000,000 + Interest

6.3.5. Transportation Impact Fees

The City has an established traffic impact fee system based on the Institute of Traffic Engineers (ITE) guidelines, as amended by the City Council. The fee system estimates the amount of traffic each development is anticipated to create, based on the land use type and size. Traffic impact fees compensate the City for the capacity improvements needed to accommodate the new trips generated by new development. In turn, the City uses the revenues to expand the street network through the capacity projects included in the TIP. The fees are based on the costs of the capacity project included in the TIP and forecast growth throughout the City. The fees are updated annually following the adoption of the TIP by City Council. Payment of the impact fee does not relieve developers of their codified obligation to construct half-street improvements, nor the need to mitigate project impacts identified through the SEPA process, which may include the construction of an identified TIP project (and a credit for the impact fee contribution towards that project).

The City also charges a truck impact fee for certain land-use types which are associated with significant truck traffic generation, such as commercial and industrial uses. These fees are used to address impacts on the City's truck routes and other truck-related infrastructure.

With the adoption of this plan, the City will be updating its transportation impact fee schedule to be based on a per person trip approach. The impact fees generated from this revised approach will be used for both vehicle capacity projects and active transportation projects that support mode shift away from vehicles (and therefore reduce need for vehicle capacity).

6.3.6. Funding Partnerships

The City has successfully formed several funding partnerships, which have enabled it to leverage its resources in implementing transportation improvements.

The Muckleshoot Indian Tribe (MIT) has graciously provided easements, funding, and other support to the City for several transportation projects and programs. In 2020, the City and MIT entered into a Memorandum of Understanding (MOU) where both parties agreed to work together to identify needs and provide solutions to gaps in active transportation facilities on, and along, SR 164/Auburn Way South. Subsequently, the MIT and City have entered into funding agreements for specific projects where MIT has provided funding for projects implemented by the City.

The City anticipates continuing to partner with WSDOT on funding projects involving the state routes through the City.

Local Improvement Districts (LIDs) enable City investment in a specified area by leveraging City funds, when available, with contributions from property owners in the district. LIDs are a means of using limited city resources to improve neighborhood quality through improvement of streets, sidewalks, and other features of the roadway. Historically, LIDs were often implemented to construct public improvements associated with new commercial and residential neighborhoods. It has been over 15 years since the City has last implemented an LID. This is presumably due to the high costs that LIDs would require the benefited property owners to pay. Additionally, most new residential and commercial developments trigger the requirement for public improvements such as streets, sidewalks, and street lighting to be built by the development at the time of the development rather than being built through LID. For these reasons, the City has not included any LID constructed improvements or funding in its future projections.

In 2022, the City implemented a new Sidewalk Repair Program to address situations where adjacent property owners are financially responsible for the correction of damaged sidewalks within the City. This program allows for a property owner to pay the City a pre-determined fee to complete the work on their behalf in the next regularly scheduled sidewalk improvement project.

Street Deferral agreements or Fee In Lieu payments are allowed per Auburn City Code 12.64A where property owners responsible for the construction of frontage improvements along their properties can pay the City for the completion of the work where a planned improvement project has been identified in the City's Transportation Improvement Plan and/or adopted budget.

6.4. REVENUE SHORTFALL CONTINGENCY

Revenue forecasts for City funds are considered to be relatively secured. Other revenue such as grants and partnership funding can be slightly more unpredictable. While all the revenue currently forecast is anticipated to fully fund the transportation plan, if shortfalls arise the City will have to take one or more of the following actions to maintain compliance with GMA concurrency requirements:

- Supplant the projected budget shortfall with other existing City funds.
- Enact new sources of revenue.
- Revise the Land Use Plan to reduce development capacity and resultant need for additional transportation improvements.
- Lower the LOS Standard sufficiently to reduce the need for additional transportation improvements.
- Impose restriction (moratorium) on further development with impacts to areas not meeting LOS standards until the current LOS standard is met.

6.5. FUNDING STRATEGIES, PROJECT PRIORITIZATION

The City uses a variety of criteria to prioritize transportation projects, including safety, mobility, and overall community benefit. In addition, the City also considers the availability of funding and the ability to leverage City dollars to raise addition funds. For example, grants are often available for specific types of capital investments, whereas they are more limited for maintenance/preservation. Hence, the City often needs to budget for maintenance/preservation through tax revenues. Capital improvements may be financially secured through a combination of public

and private investment. Hence, project prioritization for capital improvements is often partially dependent on the ability to secure outside funding. Likewise, maintenance and preservation are highly dependent on the limited tax revenues available to the City. In the future, the City will need to continue lobbying for its share of federal, state, and county tax revenues, seek creative avenues for securing private investment dollars and grant funds, and potentially implement new funding strategies such as car tabs or additional tax implementation when allowed.



CHAPTER 7

Monitoring & Evaluation



IN THIS CHAPTER

[Annual Updates](#)

[Multi-Year Updates](#)

[Accomplishments Since the
Last Plan Update \(2019\)](#)



The Comprehensive Transportation Plan, a long-range plan with the horizon year 2044, predicts the needs and conditions of the future transportation system, enabling the City to anticipate its future needs. Nonetheless, the transportation network is dynamic, constantly evolving due to circumstances beyond the scope and influence of this plan. Hence, regular updates are necessary to ensure the Plan remains current and relevant.

7.1. ANNUAL UPDATES

The Plan can be amended annually as part of the City's regular Comprehensive Plan amendment cycle, which ensures proposed changes go through a public review process before the amended plan is adopted by the City Council at the end of the calendar year. In preparation for the annual amendment cycle, the City will review the plan and propose updates as needed. These proposed updates may be due to changes to City priorities, the availability of new information, or the relevance of certain plan components.

7.1.1. Re-Evaluation

The annual re-evaluation process provides an opportunity for the City to identify progress made in implementing the Plan, as well as identify new needs that have arisen since the previous update. The update will consider the street, active transportation, and transit systems, and assess whether the Plan adequately addresses the implementation strategies necessary to ensure the transportation infrastructure continues to grow in line with the City's objectives.

As part of this process, the City will review its future projects list and update the TIP and the CPF as appropriate. It will also review and update the [Policies](#) and [Funding](#) chapters in order to remain consistent with the City's vision and current with potential funding strategies.

7.1.2. Technical Information

The Plan contains a range of technical data, much of which informs other elements of the Plan. As part of the annual amendment cycle, technical information,

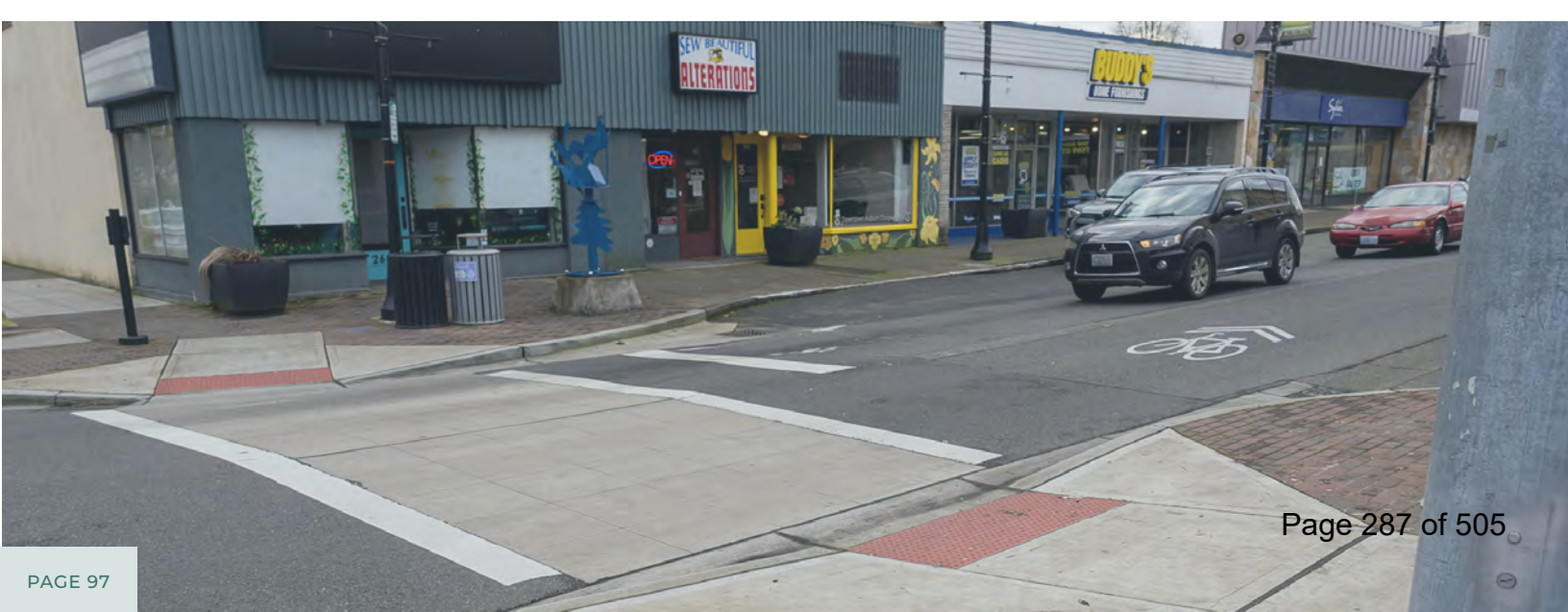
such as traffic volumes, existing LOS, roadway classifications, and transit route and ridership information, will be updated as appropriate. Updated information will inform much of the evaluation process, enabling the City to quantify system changes over time and make appropriate decisions in planning the future system.

7.1.3. Model Updates

The City's traffic model shall be updated on a regular basis, every few years, as new land use, employment, and housing data becomes available. Model updates are important as they ensure the City has an accurate understanding of how land use patterns, employment, and other factors impact future transportation conditions, enabling the City Council to make informed policy decisions. The model also provides an understanding of the impacts associated with different projects, allowing the City to devise a revised list of future projects to improve capacity and safety, as well as achieve other priorities.

7.1.4. Comprehensive Plan Consistency

The annual evaluation process is an opportunity to ensure the Plan is consistent with other elements of the City's Comprehensive Plan, including the land use and economic development elements; Auburn Parks, Recreation and Open Space Plan, Transportation Improvement Program; and CFP. Hence, as part of the annual amendment cycle, the City will ensure these plan components are consistent with and supportive of each other.



7.2. MULTI-YEAR UPDATES

The City has the opportunity to perform annual updates to the Plan on an as-needed basis to account for significant changes which have occurred during the previous year. A more exhaustive process is periodically necessary; hence, a thorough rewrite of the Plan shall be conducted every five to eight years. This endeavor will include a broad public outreach

effort with input from neighboring jurisdictions, state and regional agencies, and Auburn residents and businesses. Much like the process for the 2024 update, it will present an opportunity to holistically examine the current transportation system and lay the framework for development of the future system.

7.3. ACCOMPLISHMENTS SINCE THE LAST PLAN UPDATE (2019)

Since 2019, the City has completed numerous transportation improvements, with an emphasis on providing new road capacity, improving pedestrian and bicycle safety, preservation of existing infrastructure, and providing better access to regional transit services including commuter rail.

In addition to the completed planned capacity projects, additional projects were completed, such as the I Street extension to South 277th Street, the Auburn Way South sidewalk additions from Dogwood to Hemlock, Riverwalk Drive Sidewalks Expansion, and numerous pavement preservation projects.



APPENDIX A

Maps & Interactive Links



IN THIS APPENDIX

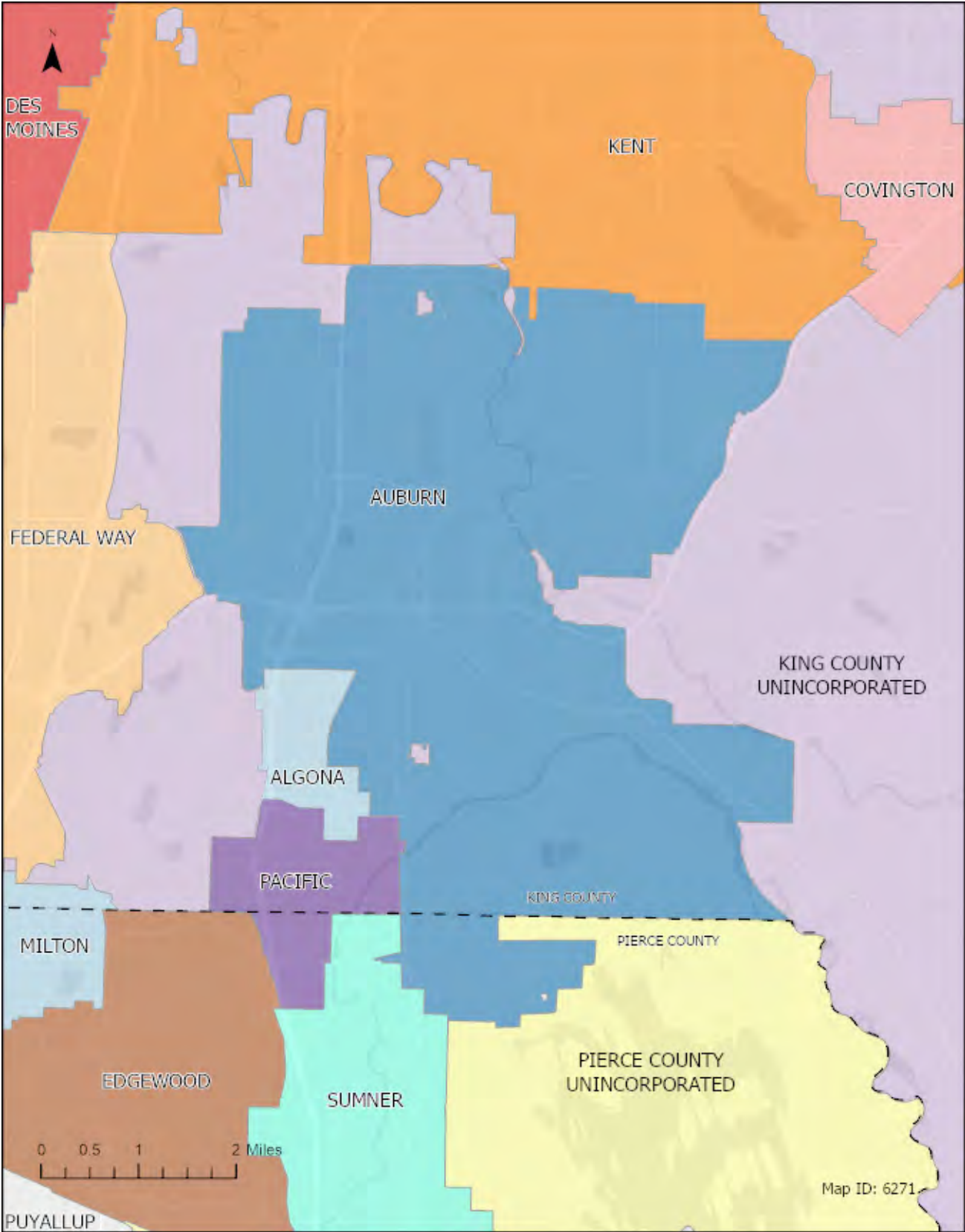
- [Map 1. 2024 Adjacent Cities and Counties](#)
- [Map 2. 2024 Bike Route Network](#)
- [Map 3. 2024 Existing Bike Facilities](#)
- [Map 4. 2024 Existing Sidewalks](#)
- [Map 5. 2024 Transit Bus Routes/Stops](#)
- [Map 6. 2024 Level of Transit Service](#)
- [Map 7. 2024 City of Roadway Classifications](#)
- [Map 8. 2024 Intelligent Transportation Systems \(ITS\)](#)
- [Map 9. 2024 Federal Functional Classifications](#)
- [Map 10. 2024 Freight Network](#)

INTERACTIVE LINKS

- [Roadway Information](#)
- [Vehicle LOS - Intersection Delays](#)
- [Sidewalk Inventory and Transit Level of Service](#)
- [Bike Network Assessment Map](#)
- [Existing and Planned Bike Facilities Map](#)
- [Conceptual Projects and Map](#)



Map 1. 2024 Adjacent Cities and Counties

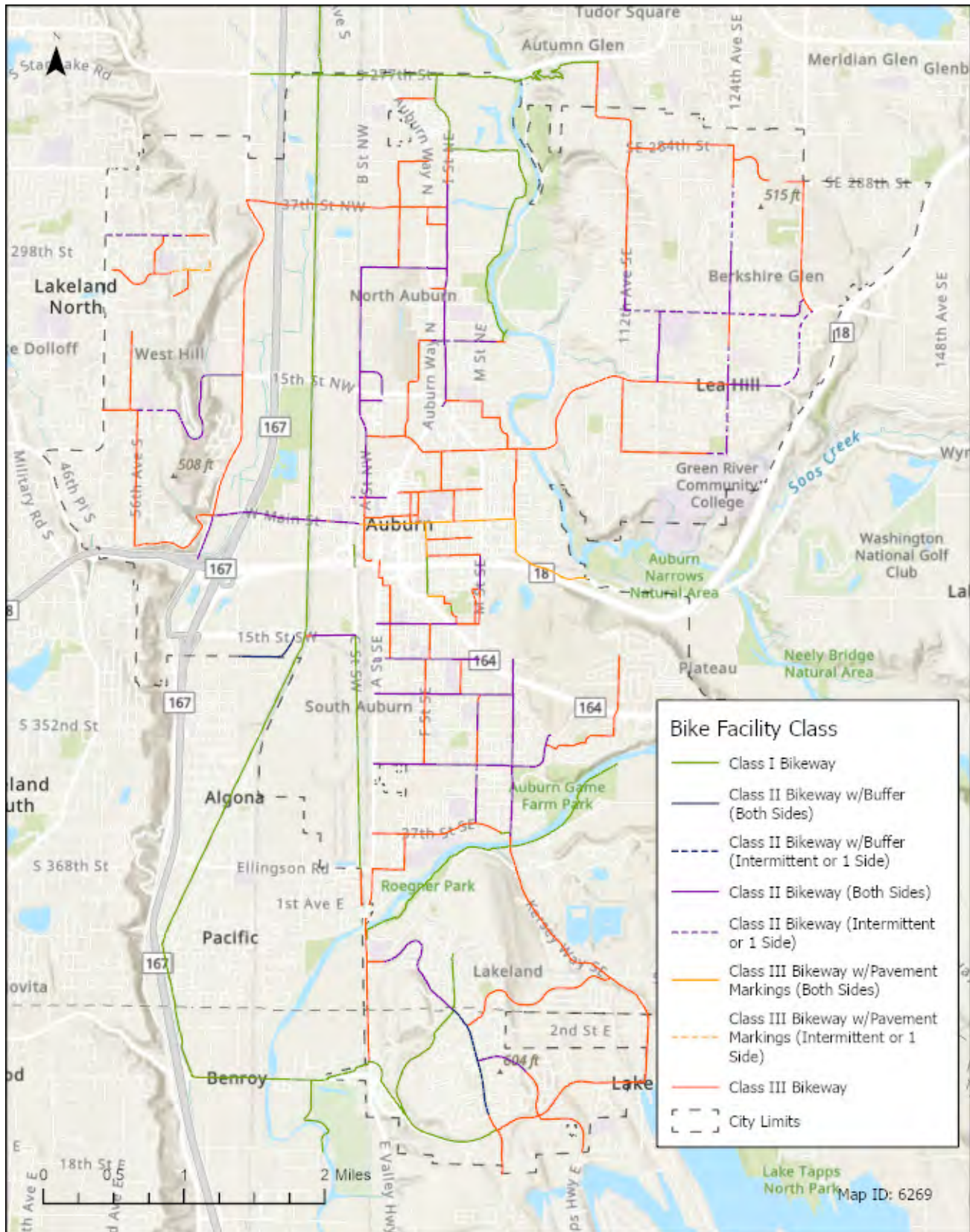


Bike Route Category

- Regional
- Priority
- Auxiliary
- Proposed Regional
- Proposed Priority
- Proposed Auxiliary
- Non-Auburn Bike Route
- City Limits

Map ID: 6267

Map 3. 2024 Existing Bike Facilities

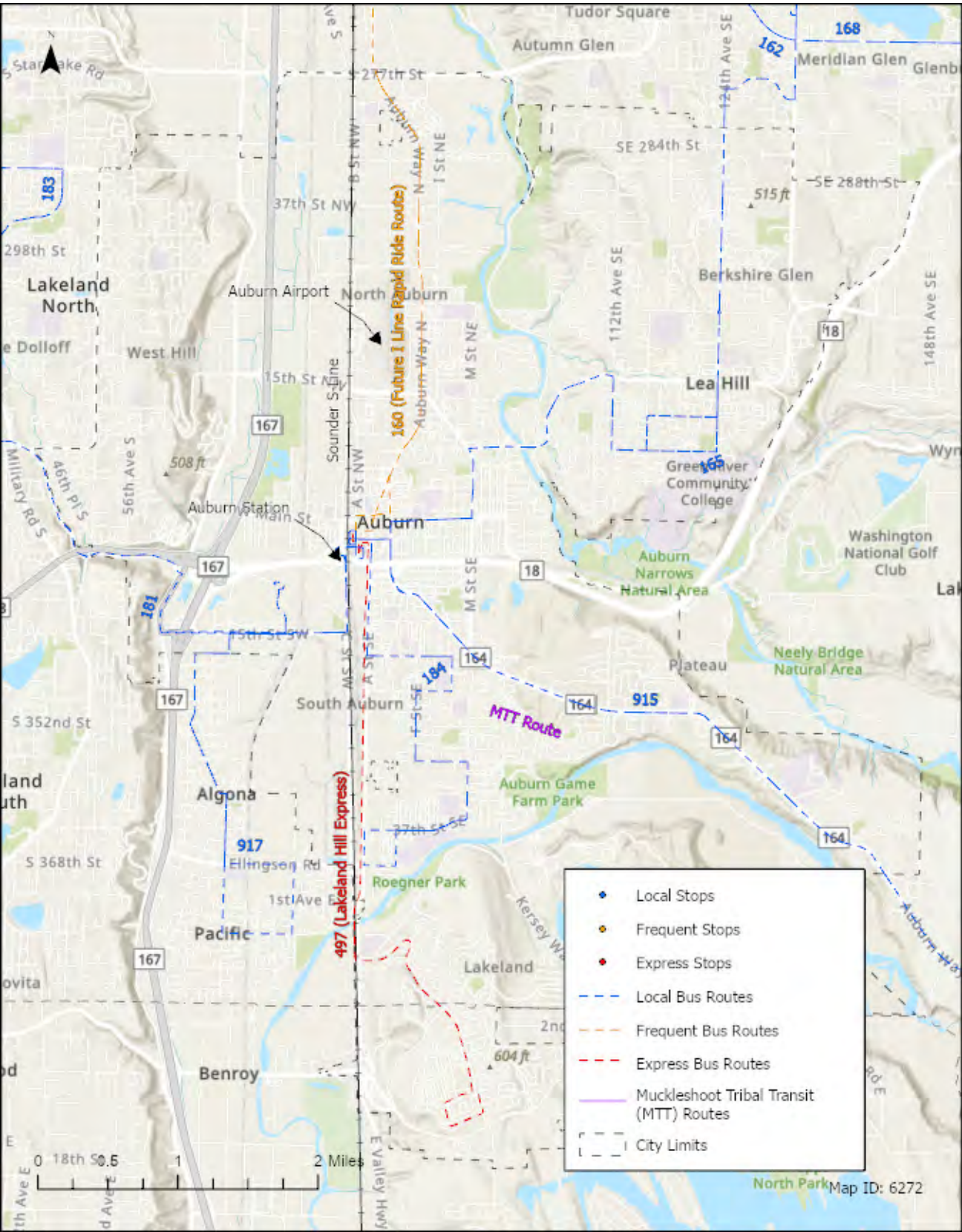


Sidewalks

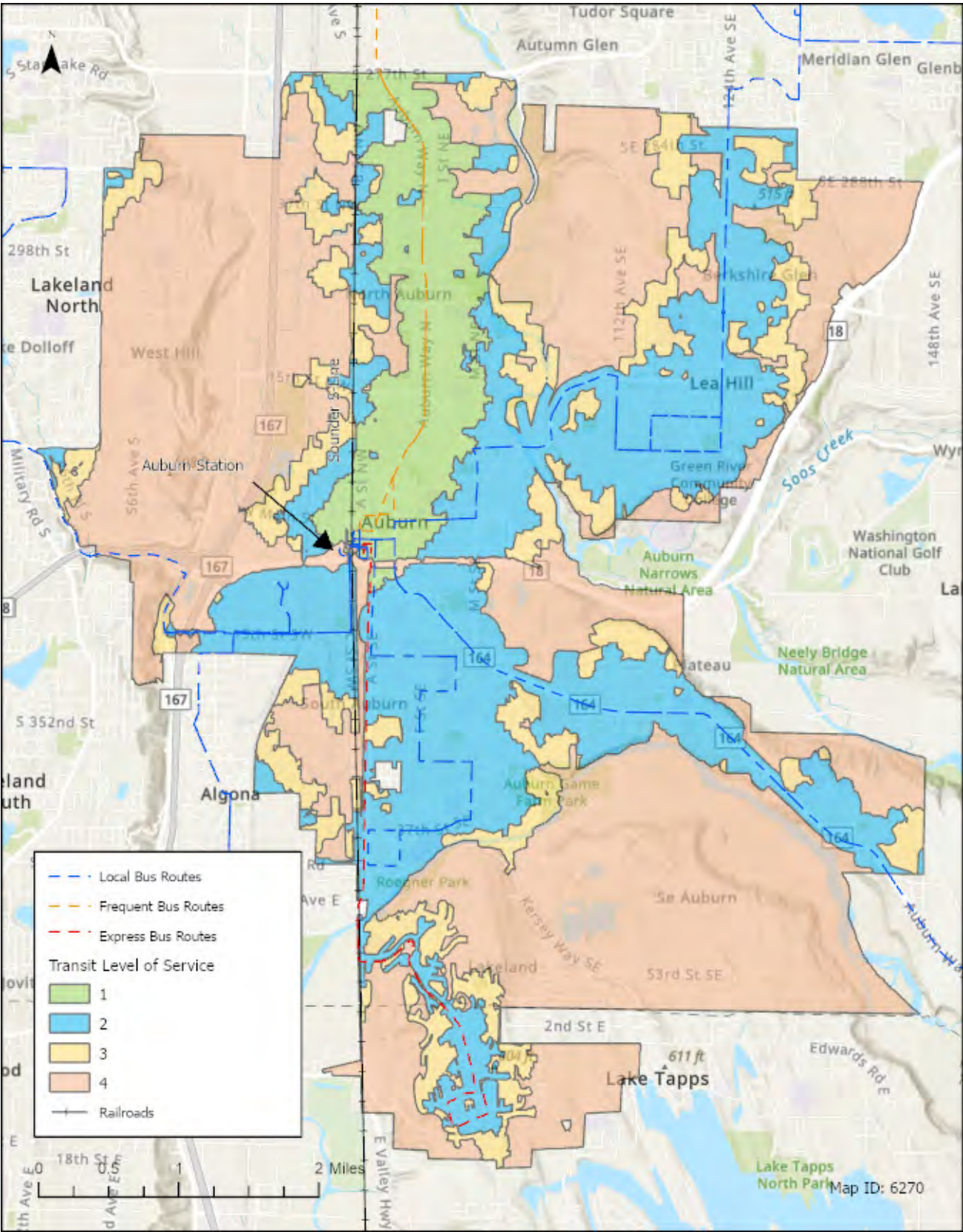
- Width $\geq$ 5ft
- Width $<$ 5ft
- Width $<$ 4ft
- City Limits

Map ID: 6268

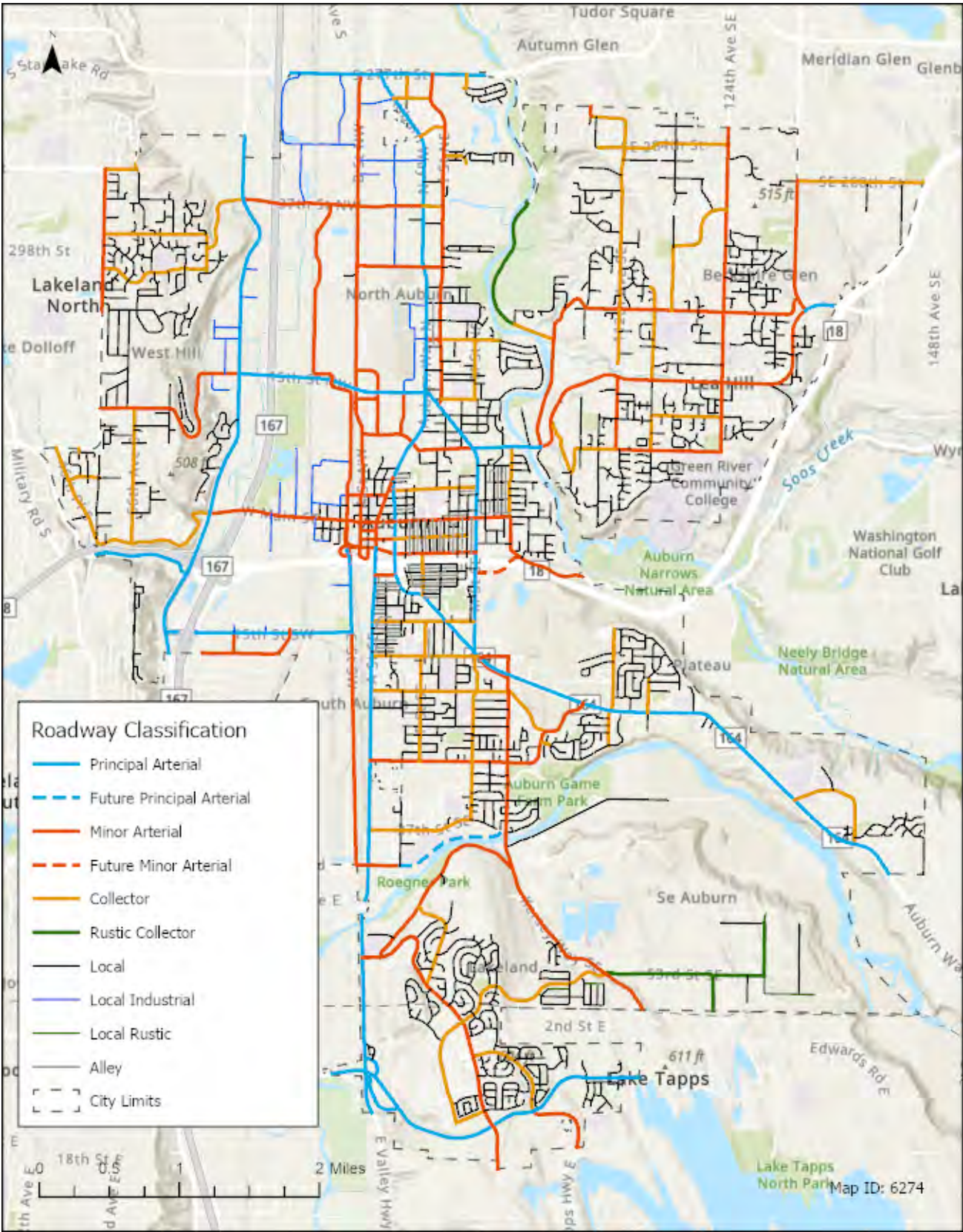
Map 5. 2024 Transit Bus Routes/Stops



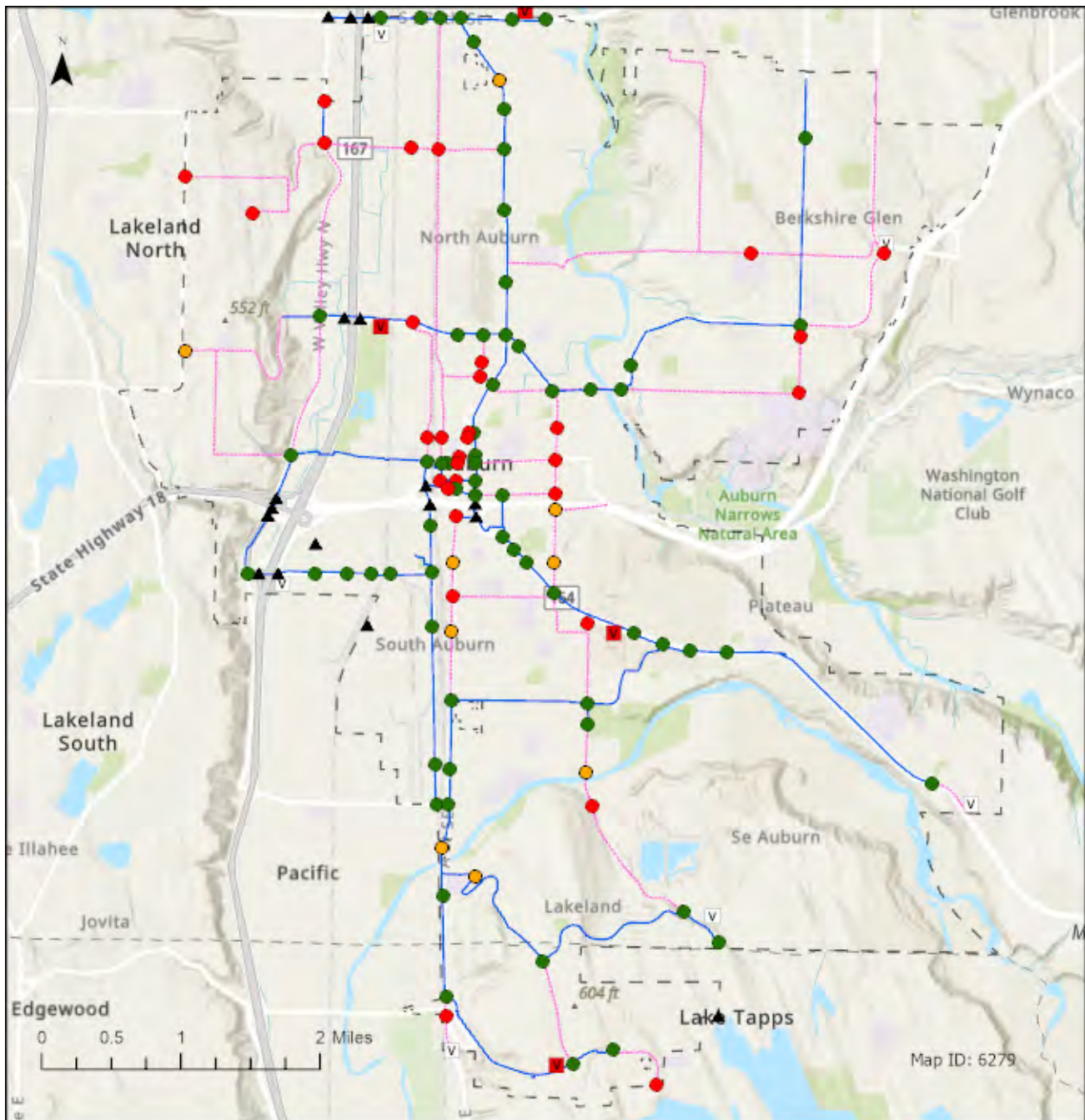
Map 6. 2024 Level of Transit Service



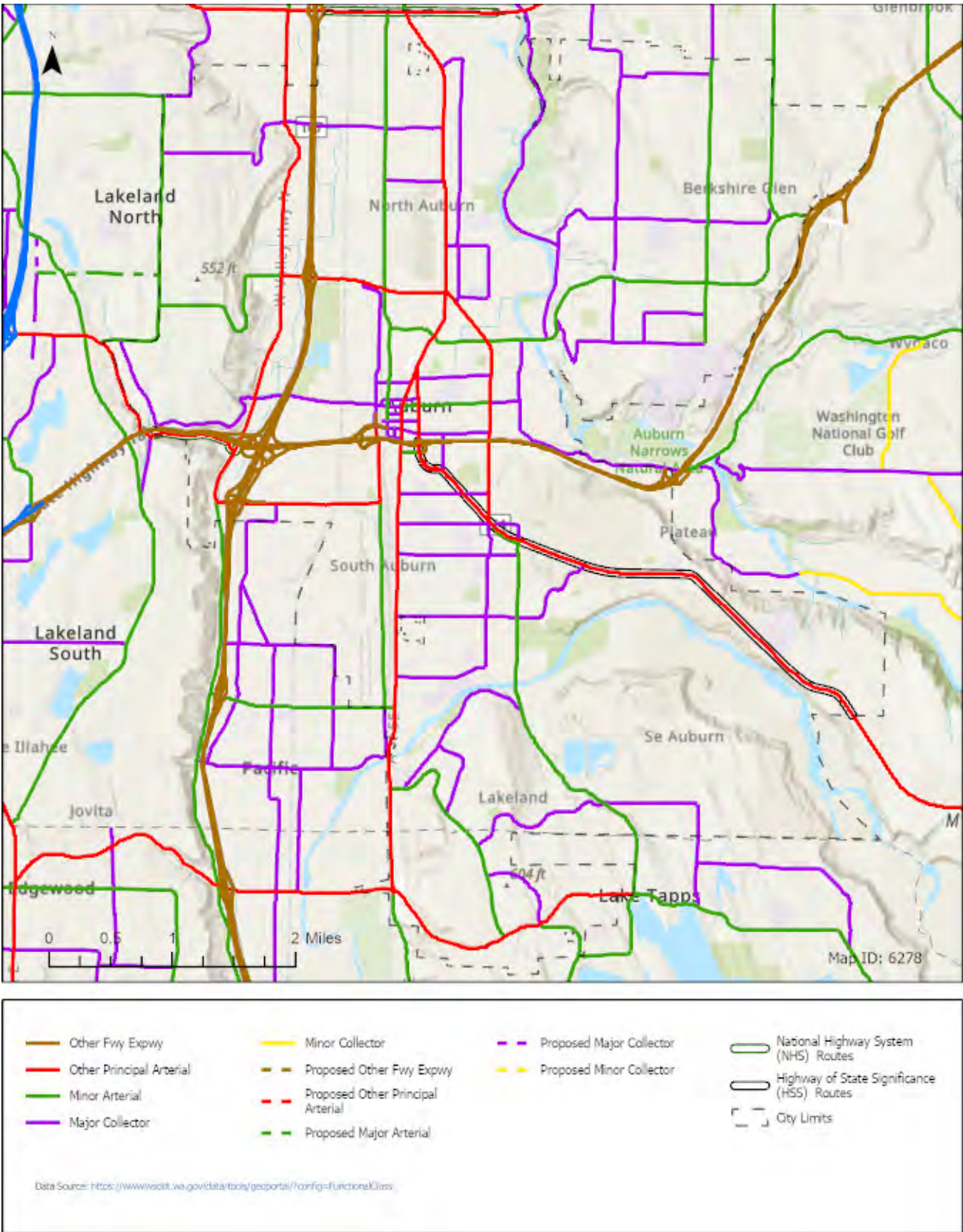
Map 7. 2024 Roadway Classifications



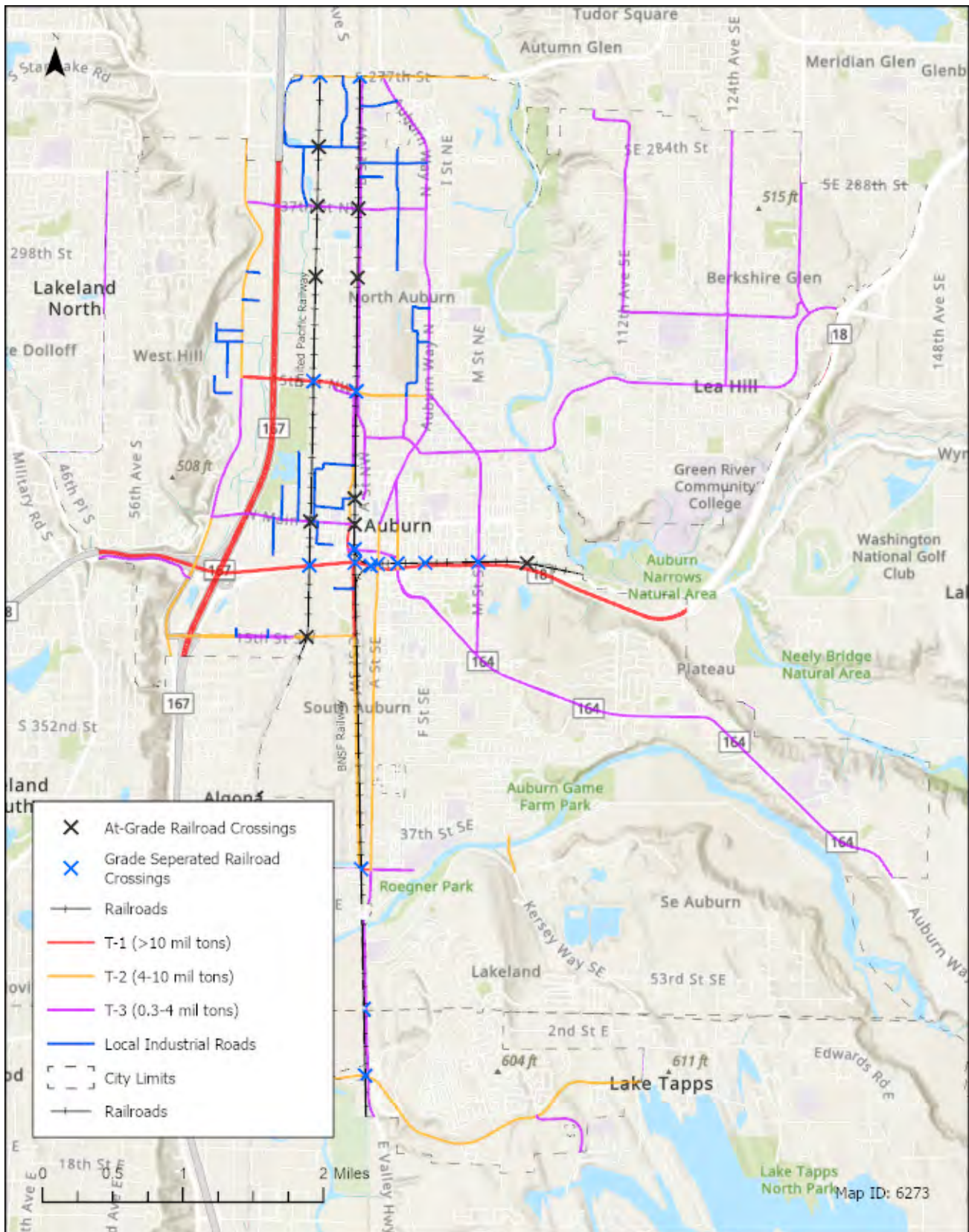
Map 8. 2024 Intelligent Transportation Systems (ITS)



Map 9. 2024 Federal Functional Classifications



Map 10. 2024 Freight Network



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APPENDIX B

Project Summaries



IN THIS APPENDIX

Summary Table of Planned Projects and Programs

Project Summaries: Purpose, Concept, Planning Level Cost

List of Bike Improvements to Encourage Mode Shift

CITY OF AUBURN

MAIN STREET
THRIFT
STORE



PLANNED PROJECTS & PROGRAMS

Interactive Map: <https://storymaps.arcgis.com/stories/2d9fe1e0980044fbb4bf78c2056450eb>

Click on a linked **COMP #** in the summary table below to view that specific project summary.

COMP #	PROJECT		COST ESTIMATE
1	Auburn Way N & 45th St NE Intersection Improvements	\$	1,900,000
2	Auburn Way N & 42nd St NE Intersection Improvements	\$	100,000
3	I St NE Improvements (37th St NE - 45th St NE)	\$	6,700,000
4	I St NE & 37th St NE Intersection Improvements	\$	2,300,000
5	I St NE & 30th St NE Intersection Improvements	\$	3,250,000
6	SE 304th St & 112th Ave SE Intersection Improvements	\$	800,000
7	SE 304th St & 118th Ave SE Intersection Improvements	\$	950,000
8	SE 304th St & 116th Ave SE Intersection Improvements	\$	3,725,000
9	Lea Hill Corridor Improvements	\$	14,675,000
10	116th Ave SE & SE 312th St Intersection Improvements	\$	5,600,000
11	116th Ave SE & SE 320th St Intersection Improvements	\$	3,150,000
12	Pike St NE & 8th St NE Access Management	\$	50,000
13	8th St NE Improvements (Auburn Way N - Harvey Rd/M St NE)	\$	8,200,000
14	10th St NE Improvements (A St NW - Auburn Way N)	\$	2,300,000
15	15th St NW & M St NW Access Management	\$	50,000
16	S 316th St & 56th Ave S Intersection Improvements	\$	3,225,000
17	S 316th St & 51st Ave S Intersection Improvements	\$	2,150,000
18	S 321st St & 44th Ave S/46th Pl S Intersection Improvements	\$	3,750,000
19	A St NW & 3rd St NW Improvements	\$	3,025,000
20	C St NW & 3rd St NW Intersection Improvements	\$	1,900,000
21	M St SE By-Pass Rd (M St SE - Black Diamond Rd)	\$	17,250,000
22	Auburn Way S, M St SE, 17th St SE Intersection Improvements	\$	2,300,000
23	M St SE & 12th St SE Intersection Improvements	\$	4,650,000
24	M St SE & 29th St SE Intersection Improvements	\$	2,925,000
25	A St Corridor Improvements - 37th to White River Bridge	\$	21,965,000
26	A St SE & 12th St SE Intersection Improvements	\$	1,425,000
27	A St SE & 21st St SE Intersection Improvements	\$	1,925,000
28	Lakeland Hills Way SE & Oravetz Rd SE Corridor Improvements	\$	2,610,000

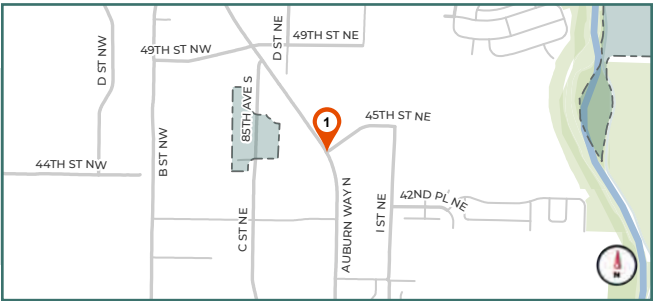
TOTAL \$ 122,850,000

COMP-1
AUBURN WAY N & 45TH ST NE INTERSECTION IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

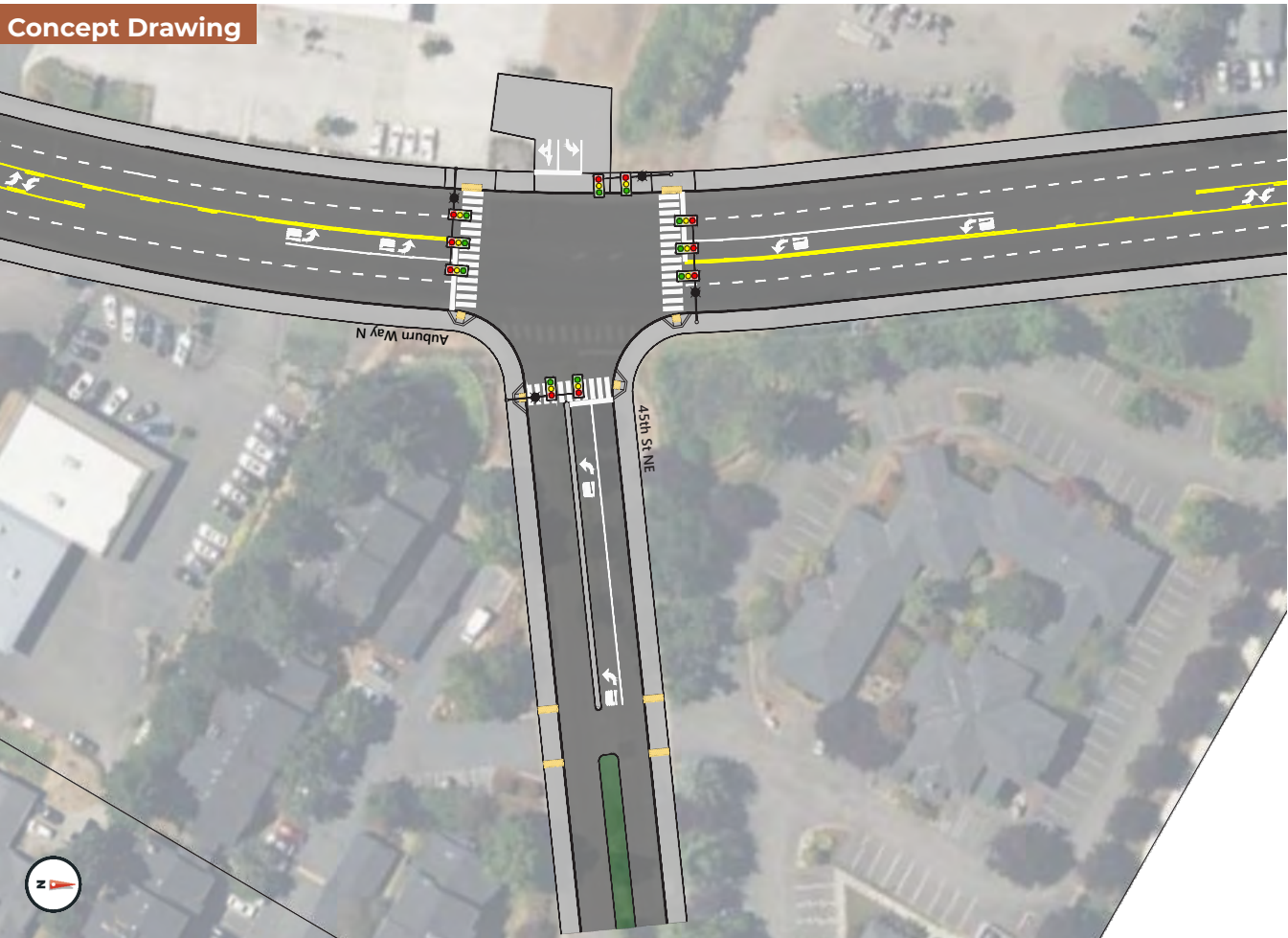
Intersection delays will be reduced through the replacement of the stop control with construction of a new traffic signal.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Fails
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/Design	\$ 700,000
Right of Way	\$ 0
Construction	\$ 1,200,000
Total	\$ 1,900,000

Concept Drawing

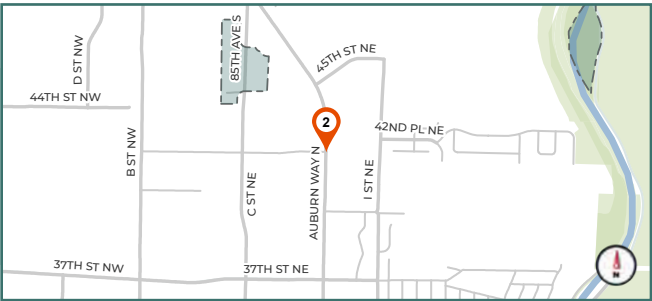


COMP-2
AUBURN WAY N & 42ND ST
NE INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

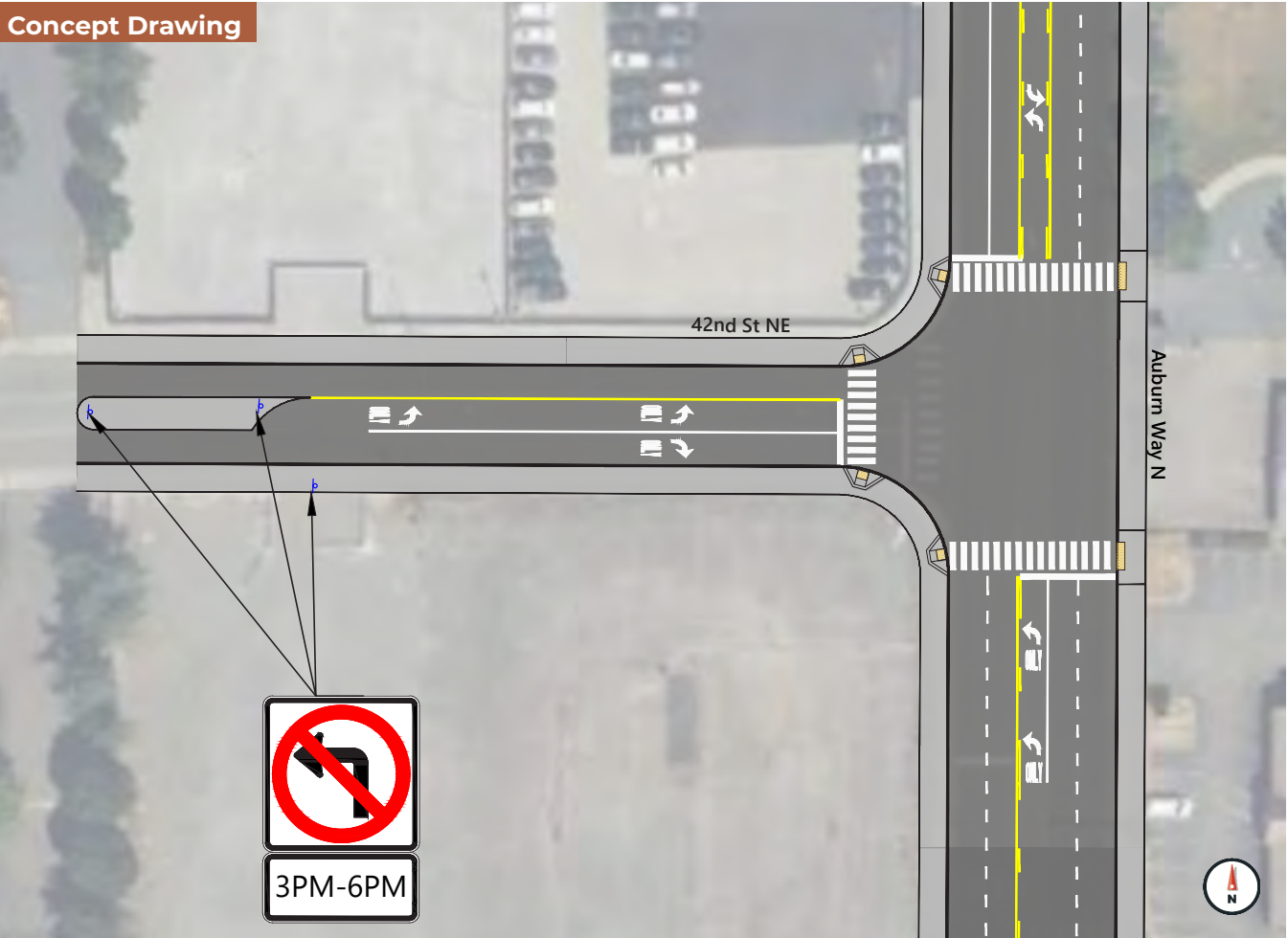
Intersection delays will be reduced through the restriction of left turns from 42nd St NE to Auburn Way N during PM peak hours with signage installed on a new raised median.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Meets	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 25,000
Right of Way	\$ 0
Construction	\$ 75,000
Total	\$ 100,000

Concept Drawing



COMP-3
I ST NE IMPROVEMENTS
(37TH ST NE - 45TH ST NE)

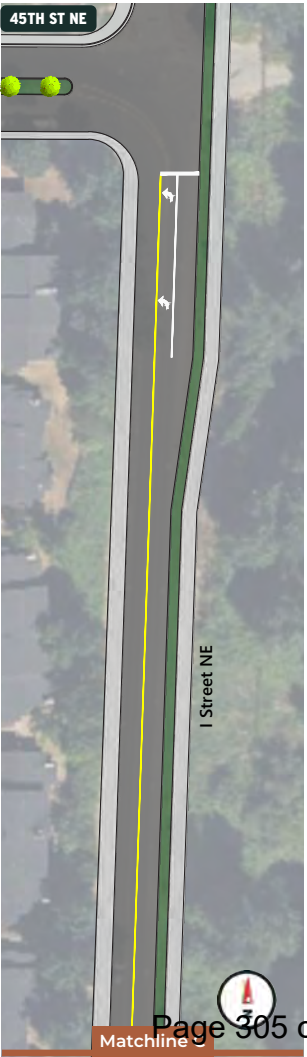
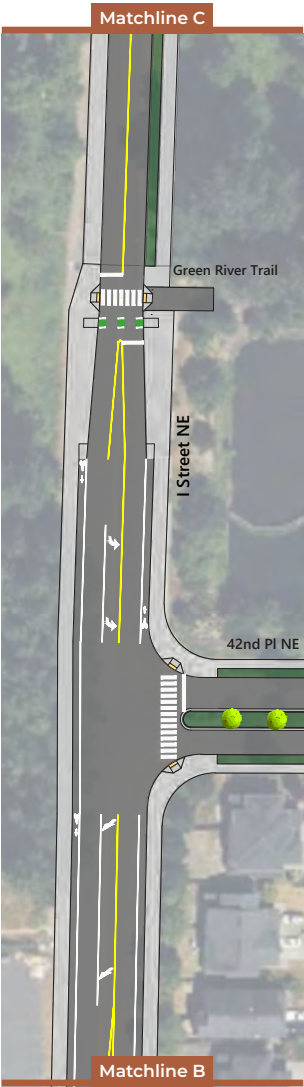
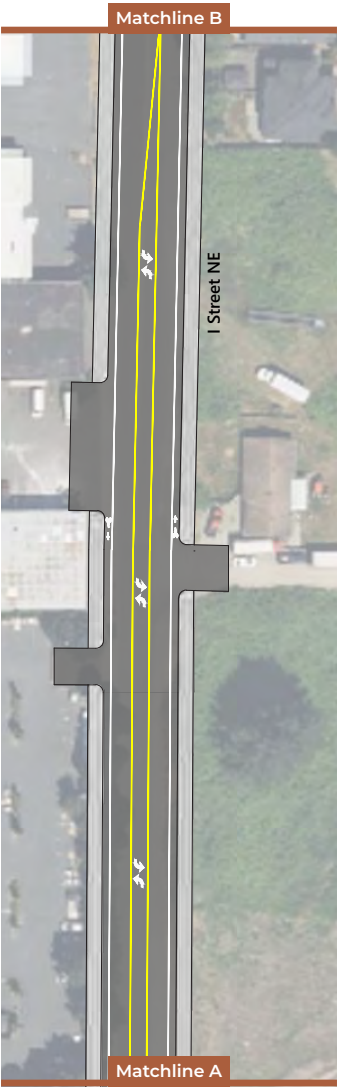
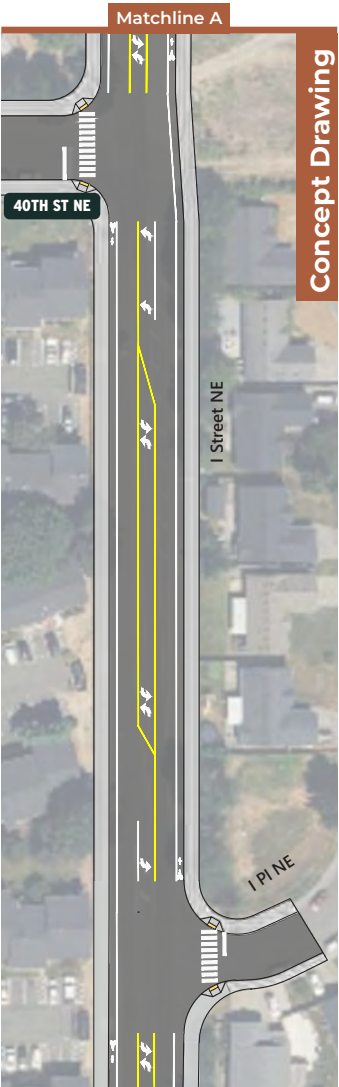
Project Origin: New 2024 CTP Project
Primary Need: Safety/Active Transportation/
Mode Shift

Description:

The I St NE Corridor provides access to several neighborhoods and commercial properties. To improve multi-model safety, and meet city roadway standards, bicycle and pedestrian improvements are proposed between 37th St NE and 45th St NE.



PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 2,000,000
Right of Way	\$ 1,000,000
Construction	\$ 3,700,000
Total	\$ 6,700,000

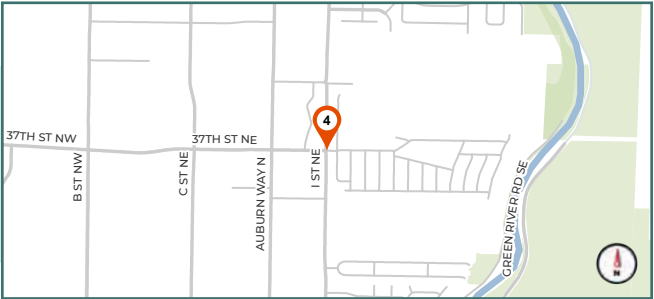


COMP-4
I ST NE & 37TH ST NE
INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

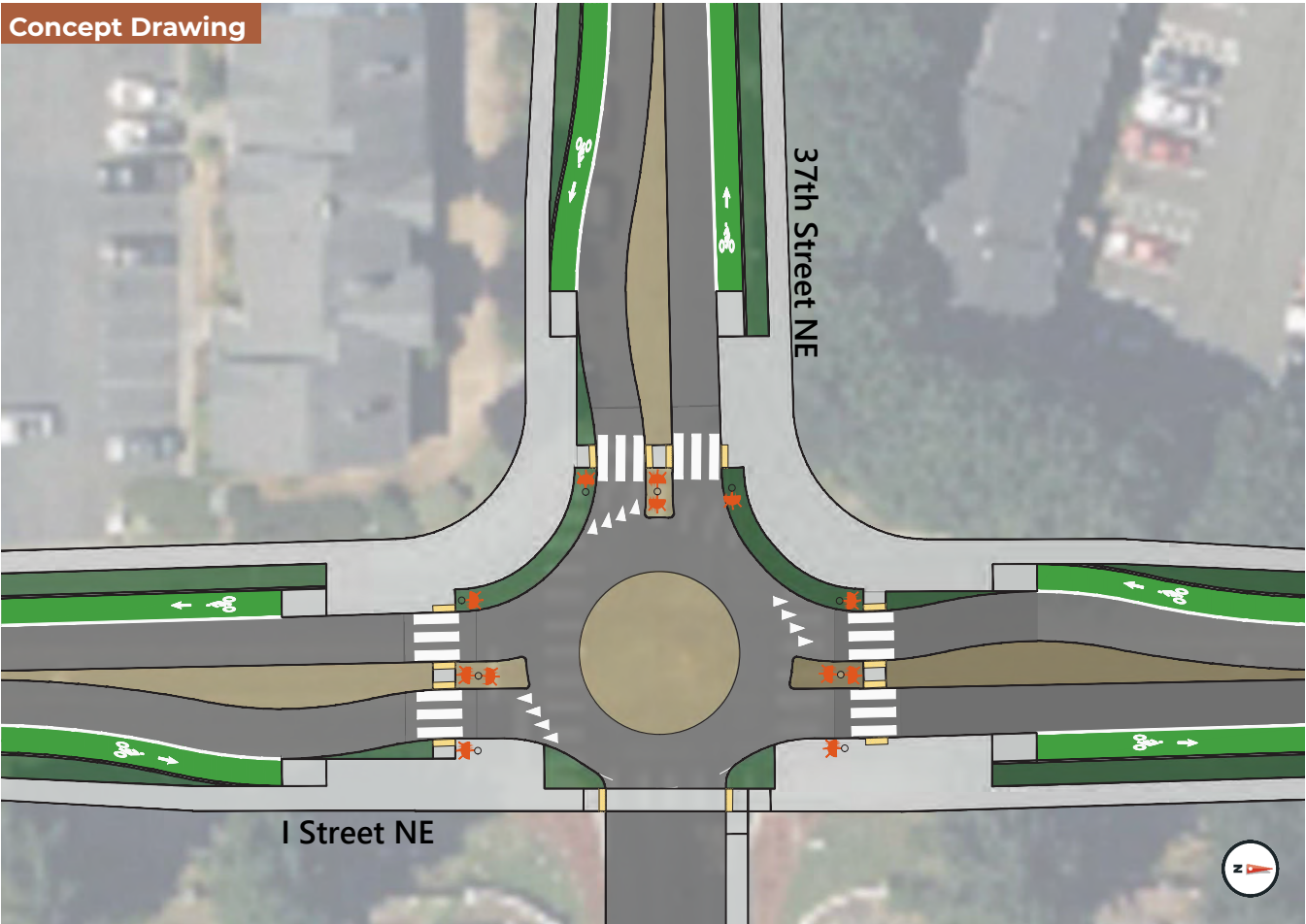
Description:

Intersection delays will be reduced through the construction of a single-lane roundabout.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Meets	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 800,000
Right of Way	\$ 100,000
Construction	\$ 1,400,000
Total	\$ 2,300,000

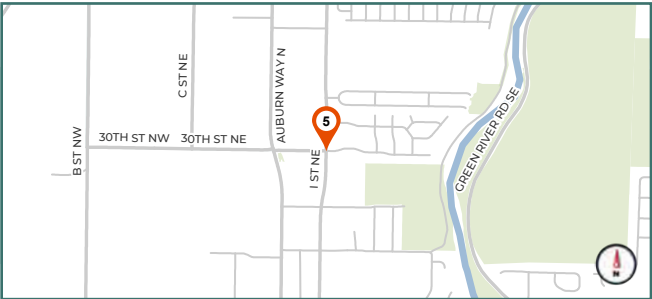


COMP-5
I ST NE & 30TH ST NE
INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

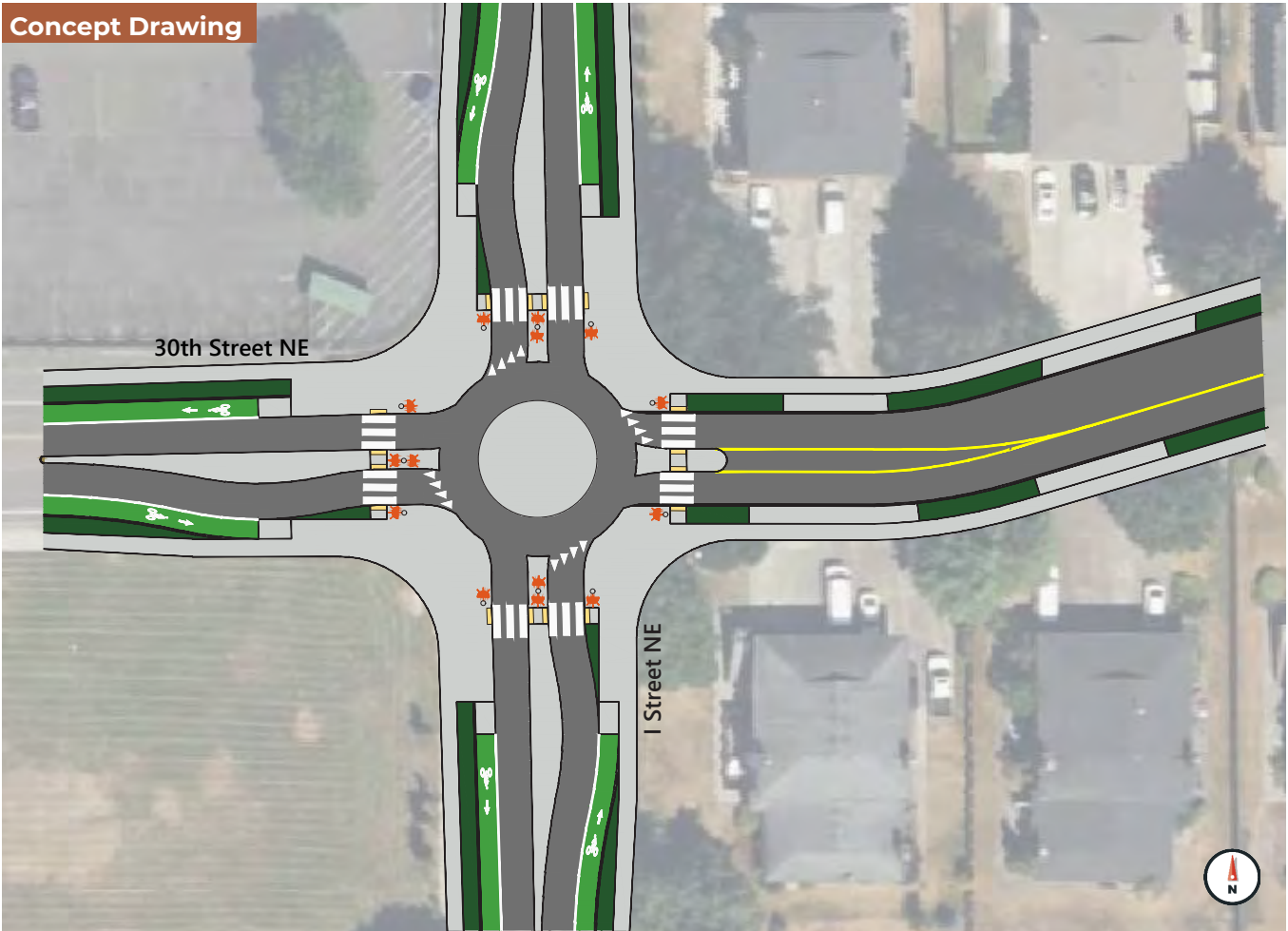
Intersection delays will be reduced through the construction of a single-lane roundabout.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Meets	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 1,100,000
Right of Way	\$ 50,000
Construction	\$ 2,100,000
Total	\$ 3,250,000

Concept Drawing

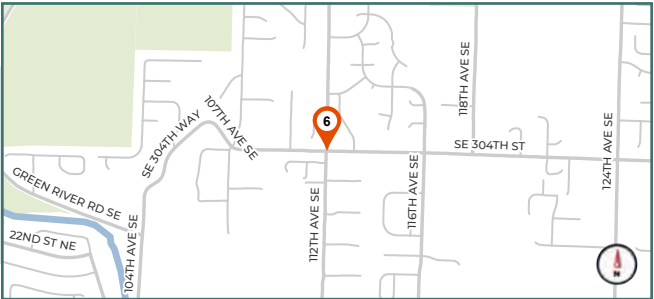


COMP-6
SE 304TH ST & 112TH AVE
SE INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

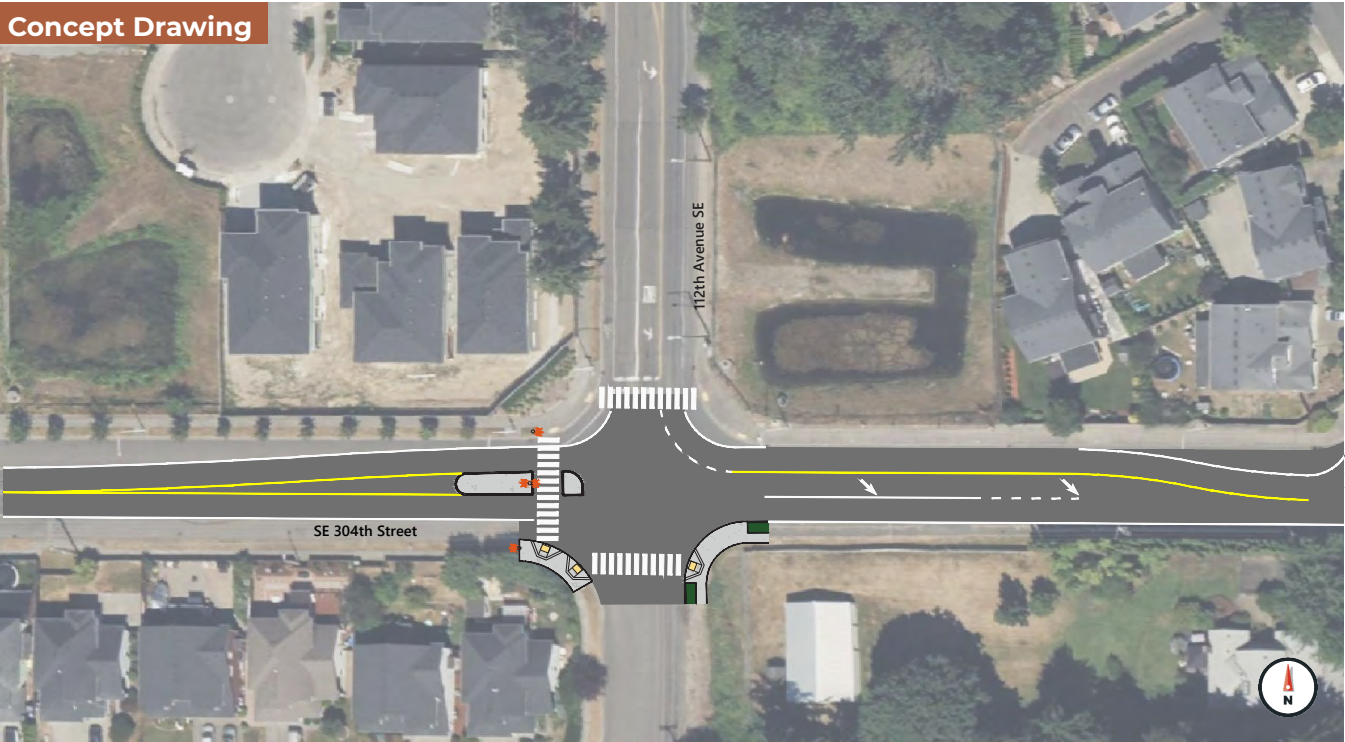
Intersection delays will be reduced through the construction of a new two-stage left turn lane on SE 304th St that will assist motorists turning from 112th Ave SE. A pedestrian refuge island and flashing beacons will be provided to enhance pedestrian crossing safety.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Meets	Fails

PROJECT PHASE	COST ESTIMATE*
Planning & Engineering/ Design	\$ 300,000
Right of Way	\$ 0
Construction	\$ 500,000
Total	\$ 800,000

*\$ mil. **2024 dollars



COMP-7
SE 304TH ST & 118TH AVE SE
SE INTERSECTION
IMPROVEMENTS



Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

Intersection delays will be reduced through the construction of a raised median on SE 304th St that will restrict left turns from 118th Ave SE.

VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 300,000
Right of Way	\$ 50,000
Construction	\$ 600,000
Total	\$ 950,000

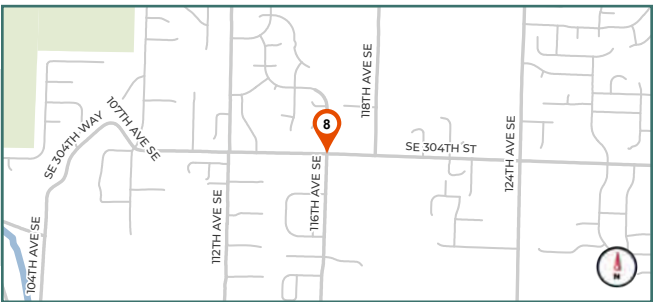


COMP-8
SE 304TH ST & 116TH AVE
SE INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

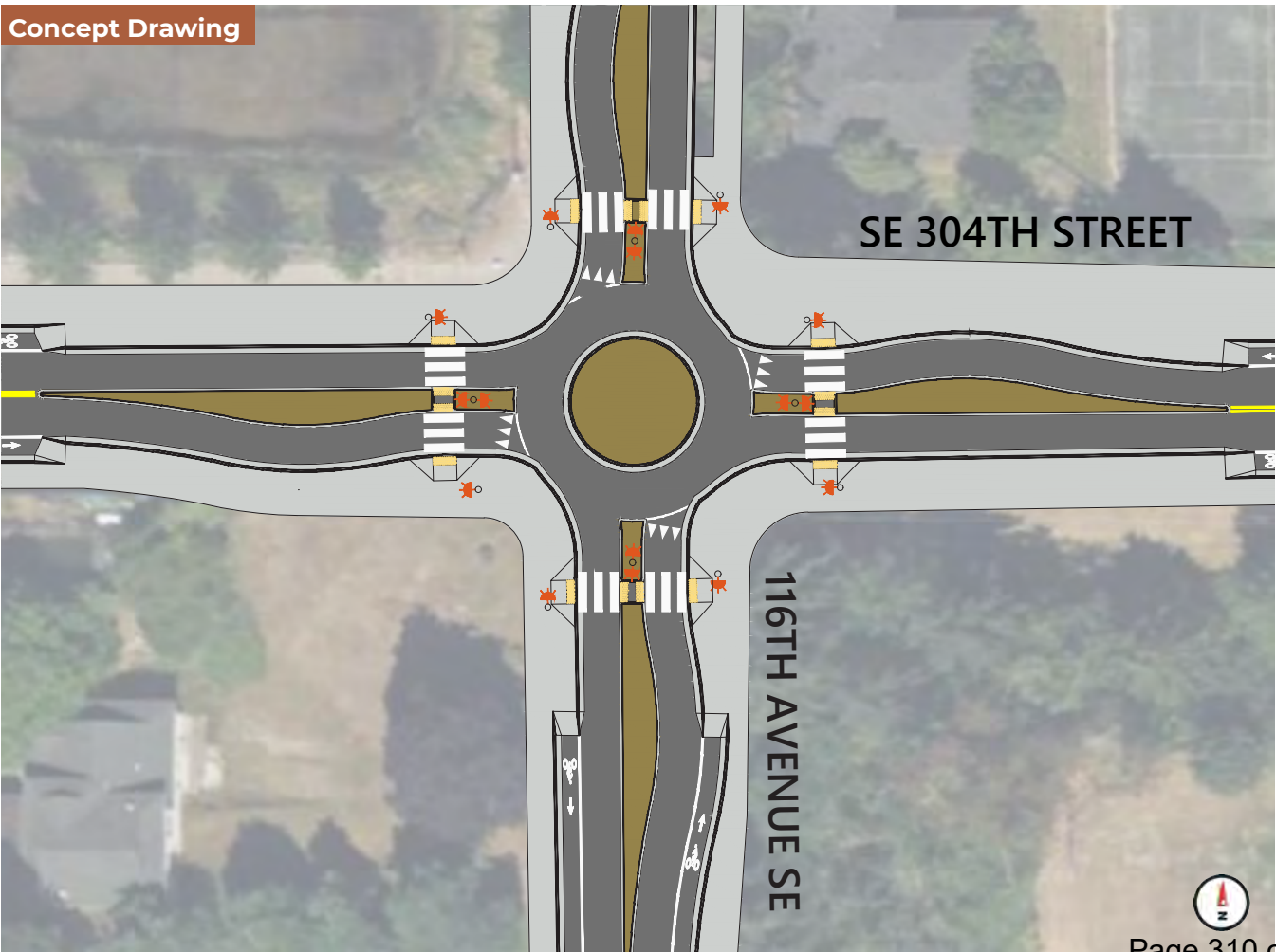
Description:

Intersection delays will be reduced through the construction of a single-lane roundabout.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Fails	Meets
2044 Future	Fails	Meets

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 1,200,000
Right of Way	\$ 325,000
Construction	\$ 2,200,000
Total	\$ 3,725,000



COMP-9
LEA HILL CORRIDOR
IMPROVEMENTS

Project Origin: Lea Hill Corridor Study (2020)

Primary Needs: Vehicle Capacity, Mode Shift, Active Transportation, Safety

Description:

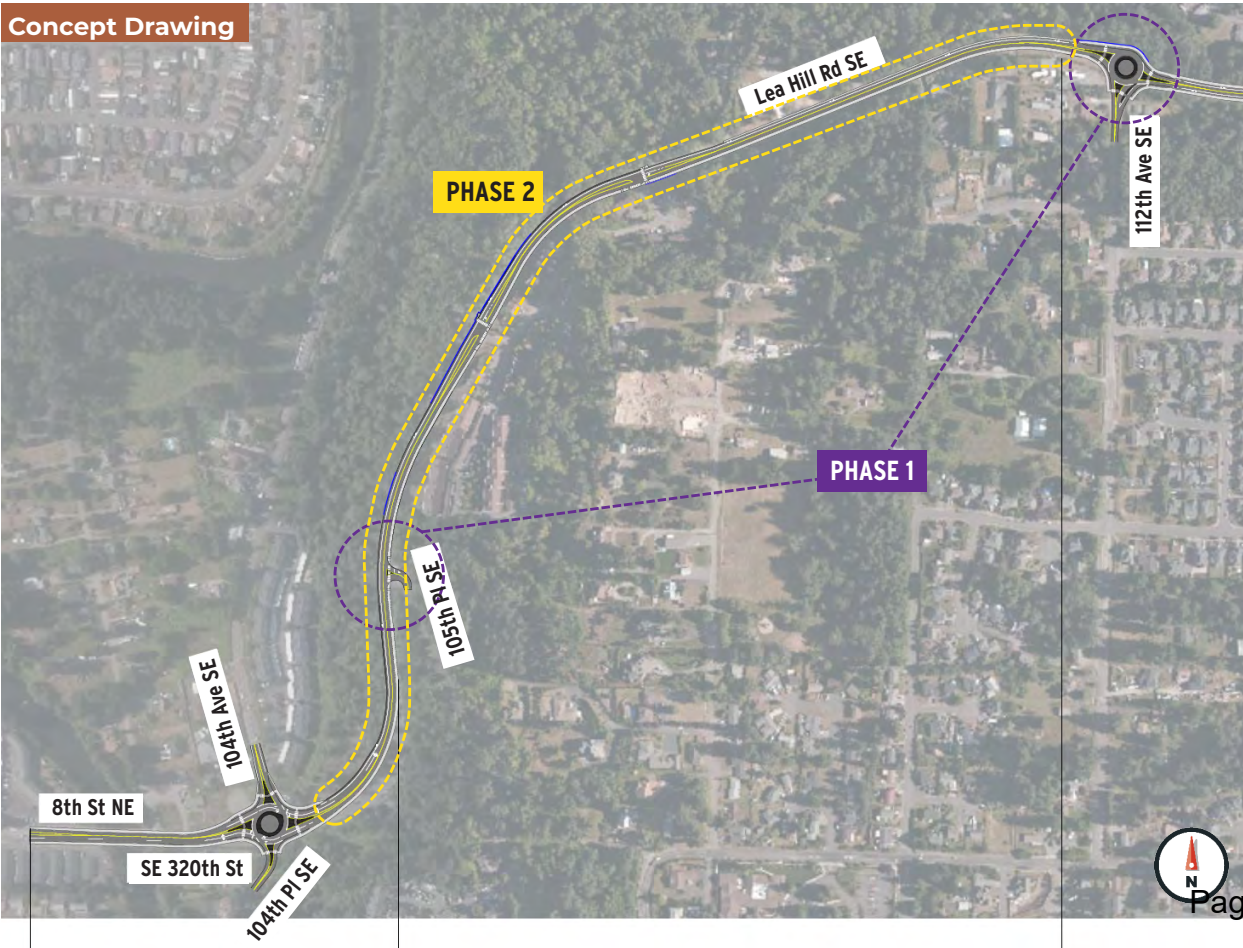
This project will reduce intersection delays, improve vehicle and active transportation safety, and support mode shift through the construction of the following improvements that would likely be implemented as two separate phased projects:

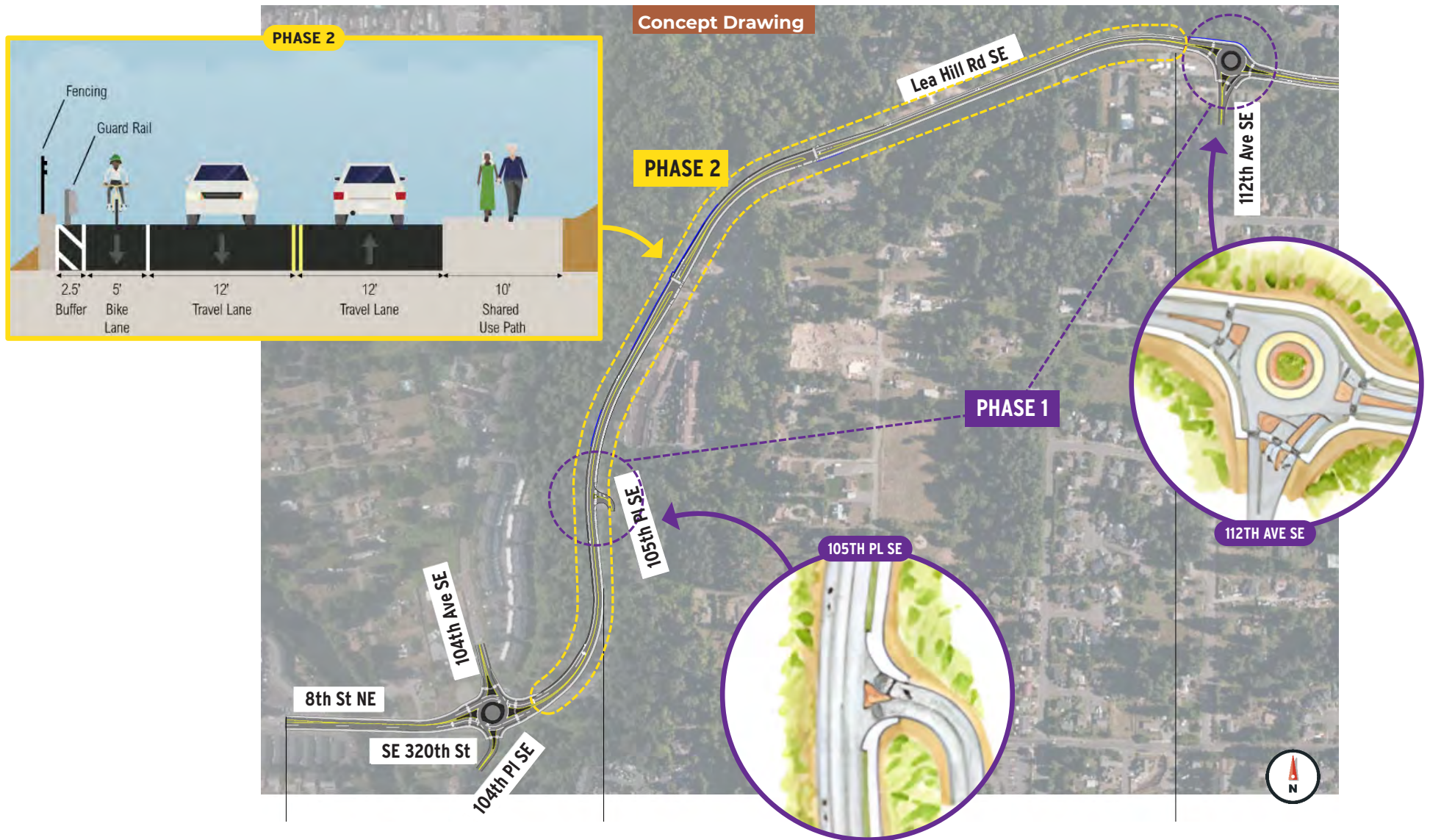
- Phase 1 -
New single lane roundabout at the intersection of Lea Hill Road and 112th Ave SE and removal of the existing traffic signal at the intersection of Lea Hill Road and 105th Ave SE. A raised media would restrict left turning movements at 105th Ave SE.
- Phase 2 -
New multi-use shared path along east side (uphill) and bike lane along west side (downhill) of Lea Hill Road from the new roundabout at 104th Ave SE (previously constructed as a separate project), to the new roundabout at 112th Ave SE (constructed with Phase 1 of this project).



PROJECT PHASE	COST ESTIMATE
Phase 1: Lea Hill Corridor - 112th Ave SE & 105th Pl SE Intersections Improvements	\$ 5,175,000
Phase 2: Lea Hill Rd Corridor - Non-Motorized Improvements from 104th Ave SE to SE 312th St	\$ 9,500,000
Total	\$14,675,000

Concept Drawing



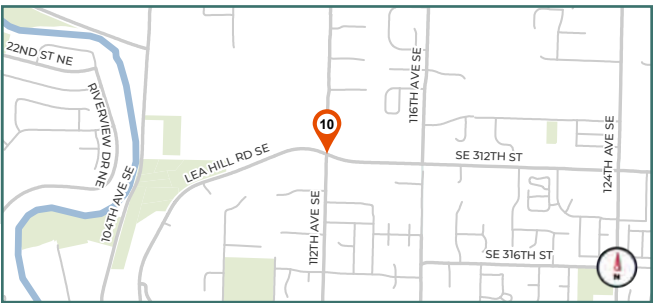


COMP-10
116TH AVE SE & SE 312TH ST
IMPROVEMENTS

Project Origin: Lea Hill Corridor Study (2020)
Primary Need: Vehicle Capacity

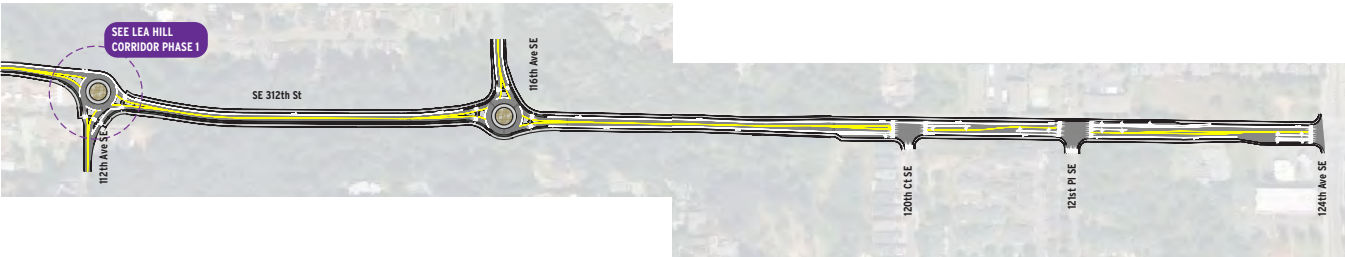
Description:

This project will reduce intersection delays, address bike and pedestrian LTS deficiencies, and provide overall safety improvements on Lea Hill Road/SE 312th Street from a new roundabout to be constructed with a separate project at the intersection of 112th Ave SE to the intersection of 124th Ave SE. Improvements include a new single lane roundabout at the intersection of 116th Ave SE, a bike lane along the north side of Lea Hill Road/SE 312th Street, a separated multi-use shared trail along the south side of Lea Hill Road/SE 312th Street between 112th Ave SE and 116th Ave SE, and completing gaps in sidewalks and bike lanes on both sides of Lea Hill Road/SE 312th Street between 116th Ave SE and 124th Ave SE.

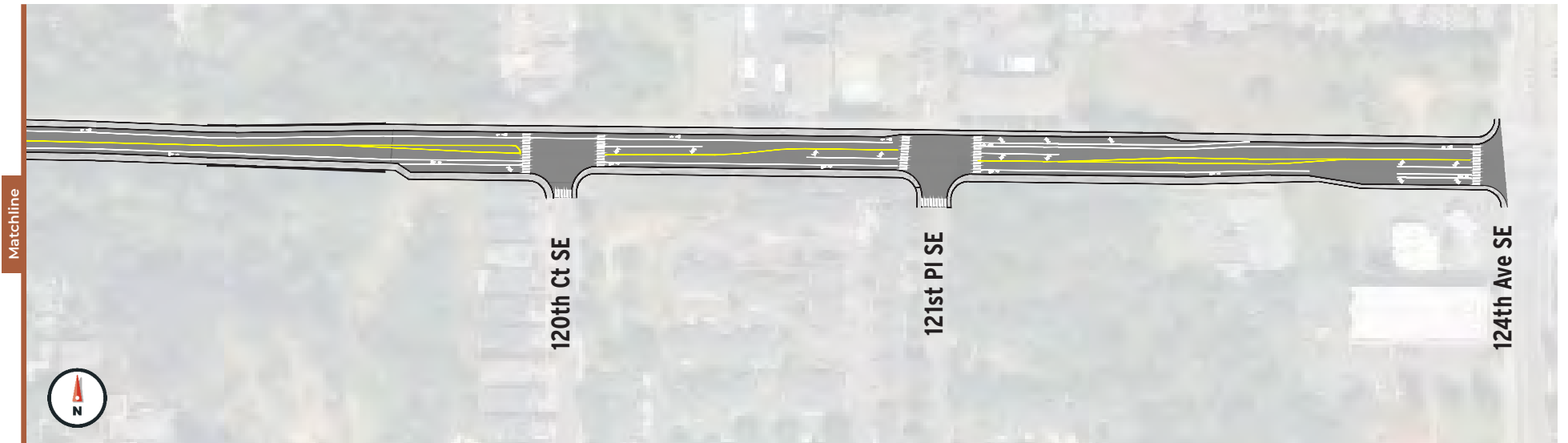
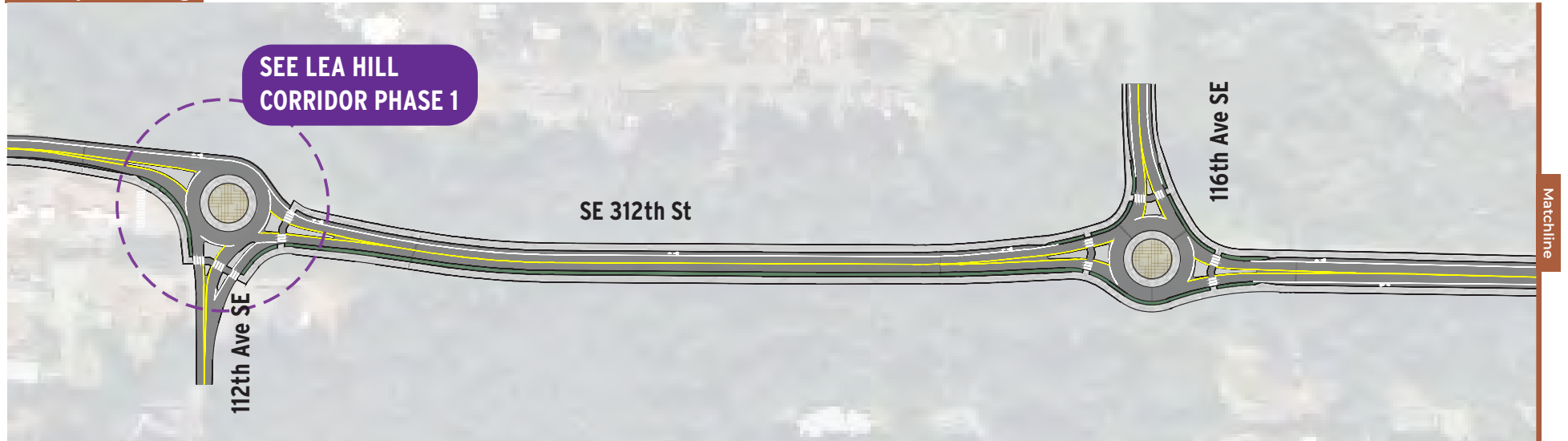


PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 550,000
Right of Way	\$ 50,000
Construction	\$ 5,000,000
Total	\$ 5,600,000

Concept Drawing



Concept Drawing



COMP-11
116TH AVE SE & SE 320TH ST INTERSECTION IMPROVEMENTS



Project Origin: 2019 Comprehensive Transportation Plan

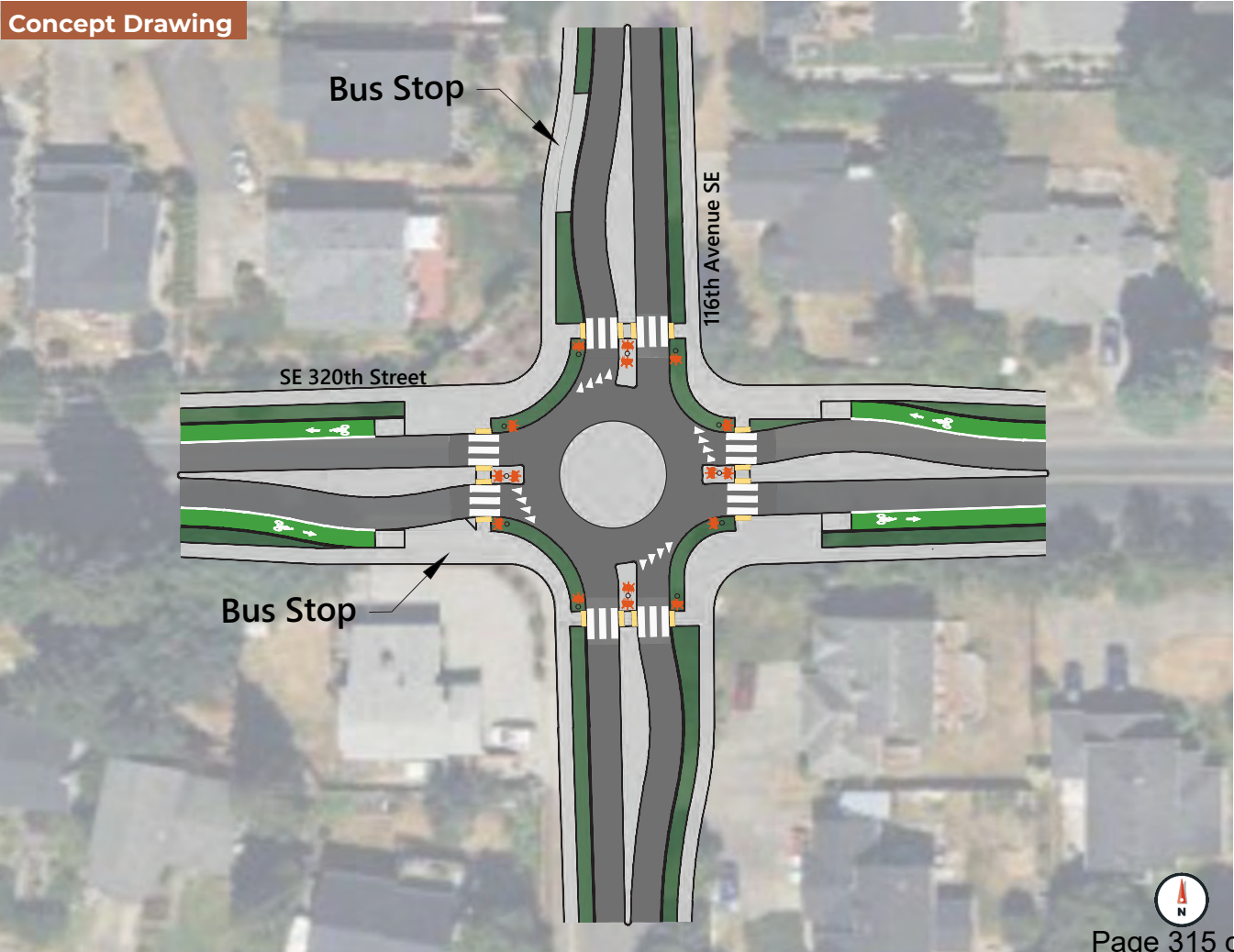
Primary Needs: Safety, Active Transportation

Description:

This project will improve vehicle and active transportation safety at the intersection with the construction of a single lane roundabout. This project may be expanded to complete gaps in sidewalks and bike lanes on SE 320th Street.

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 1,100,000
Right of Way	\$ 50,000
Construction	\$ 2,000,000
Total	\$ 3,150,000

Concept Drawing



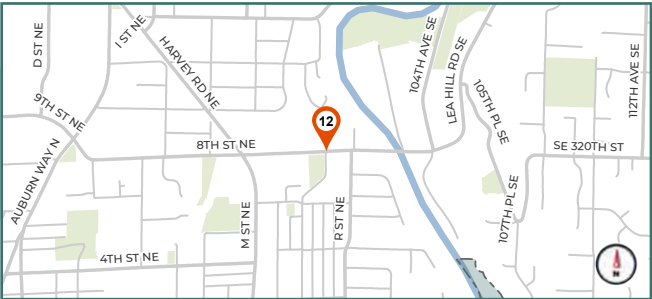
COMP-12
PIKE ST NE & 8TH ST NE
ACCESS MANAGEMENT

Project Origin: New 2024 CTP Project

Primary Need: Vehicle Capacity

Description:

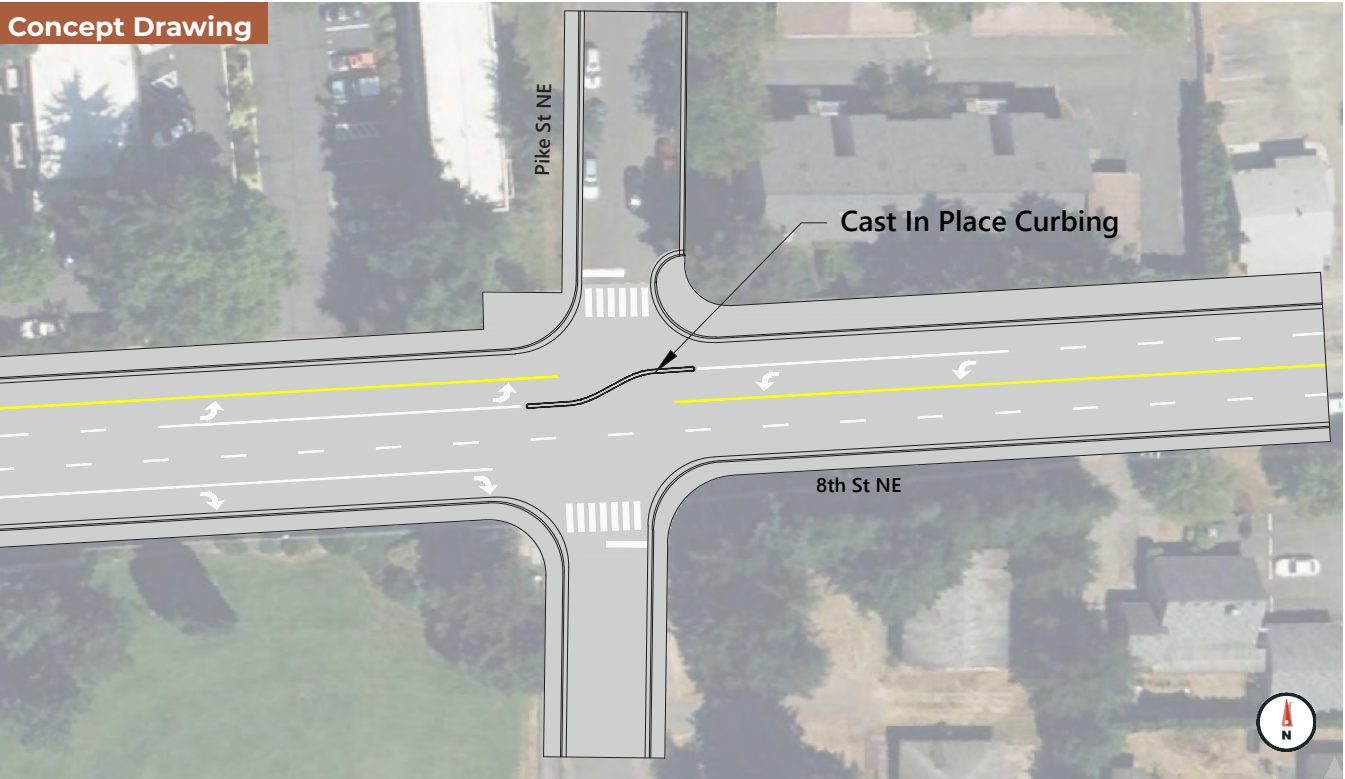
Intersection delays will be reduced by restricting left turns from both northbound and southbound Pike St NE on to 8th St NE.



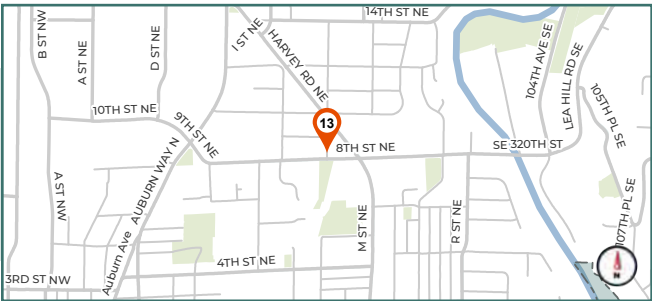
VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Fails
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 15,000
Right of Way	\$ 0
Construction	\$ 35,000
Total	\$ 50,000

Concept Drawing



COMP-13
8TH ST NE
IMPROVEMENTS PROJECT
(AUBURN WAY N - HARVEY RD/M ST NE)



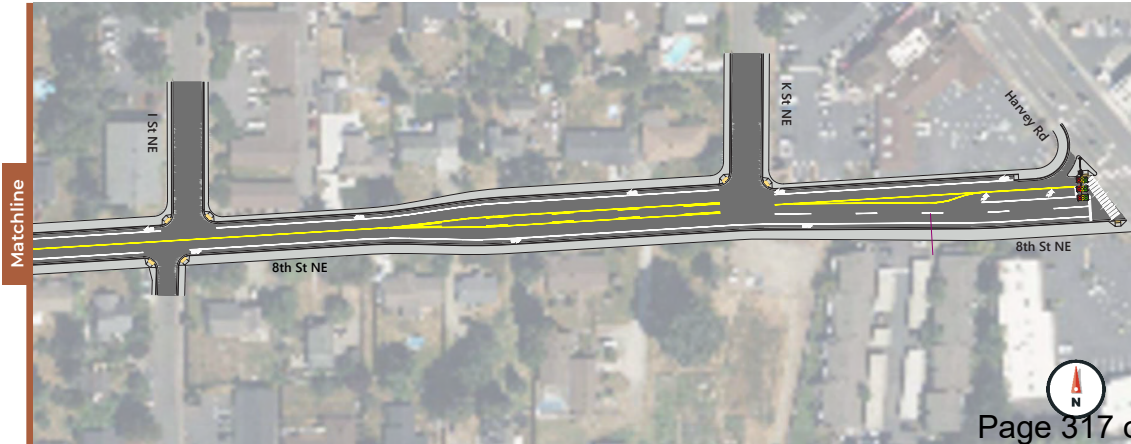
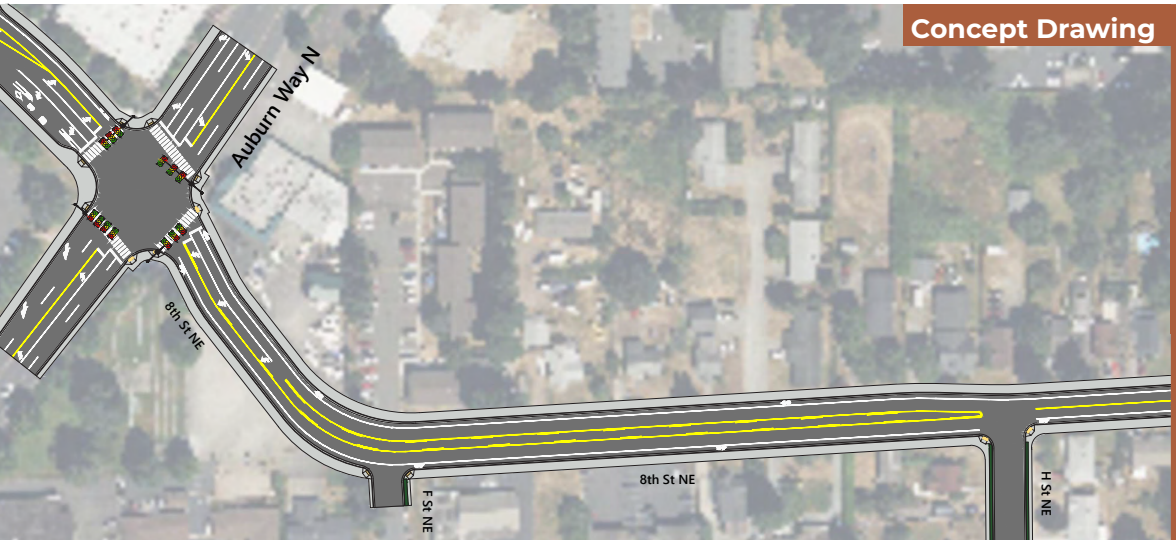
Project Origin: 2024 CTP New Project
Primary Needs: Mode Shift/Active Transportation/Safety

Description:

Residents from the neighborhoods along 8th Street NE currently must walk or ride along narrow shoulders to get to shopping, social services, recreation, and transit along Auburn Way North and M Street NE/Harvey Rd. This route is part of the City’s designated bike route network (as shown in Map 2 - Bike Network) and is a critical connection to Downtown Auburn and regional transit and bike facilities. This project will improve the roadway to provide comfortable walking and biking facilities that meet or exceed the City’s active transportation level of service standards. The project concept currently includes a center turn lane but whether or not the lane is included in the final project design will depend on detailed design considerations, including right of way needs.

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/Design	\$ 2,300,000
Right of Way	\$ 1,800,000*
Construction	\$ 4,100,000
Total	\$ 8,200,000

* ROW costs assume no relocation is required.



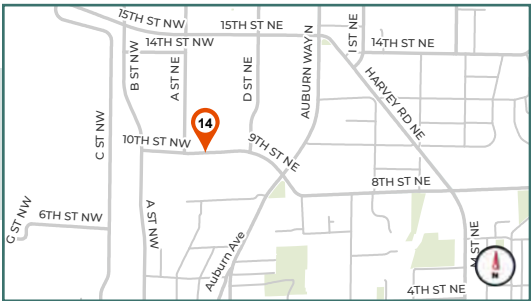
COMP-14
10TH ST NE IMPROVEMENTS
(A ST NW - AUBURN WAY N)

Project Origin: 2024 Comprehensive Transportation Plan

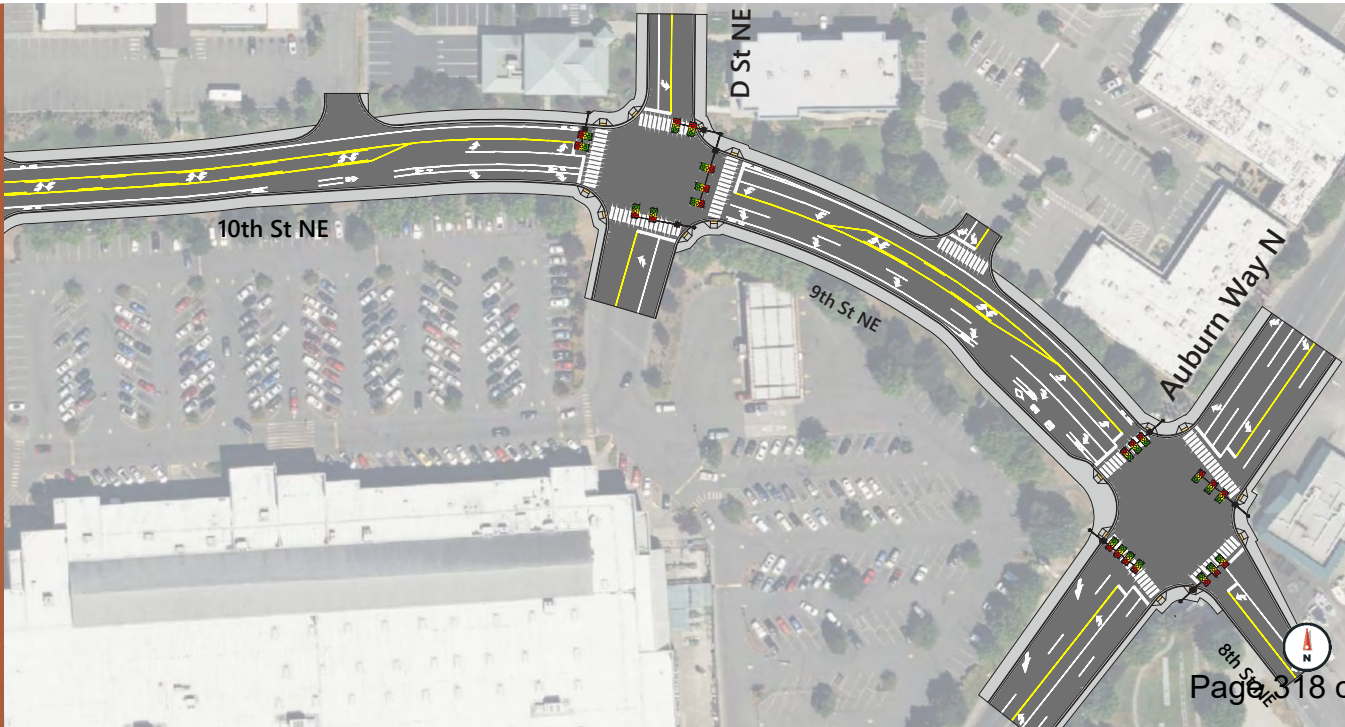
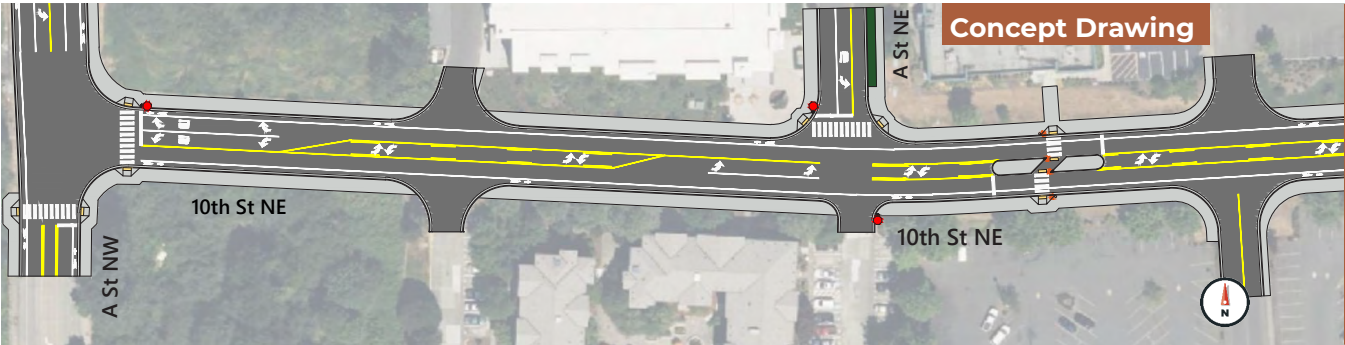
Primary Needs: Safety, Active Transportation, Mode Shift

Description:

This project will provide bicycle facilities that meet or exceed City LTS Standards and improve vehicle and pedestrian safety measures on 10th Street NE between A Street NW and Auburn Way North. Improvements include addition of bike lanes, a road-diet to convert two lanes in each direction to one lane in each direction with a center turn lane, removal of stop-control at the intersection of A Street NE, and installation of an enhanced pedestrian crossing. The project provides active transportation facilities that connect housing and commercial areas to frequent transit on Auburn Way North.



PROJECT PHASE	COST ESTIMATE
Planning & Engineering/Design	\$ 800,000
Right of Way	\$ 0
Construction	\$ 1,500,000
Total	\$ 2,300,000

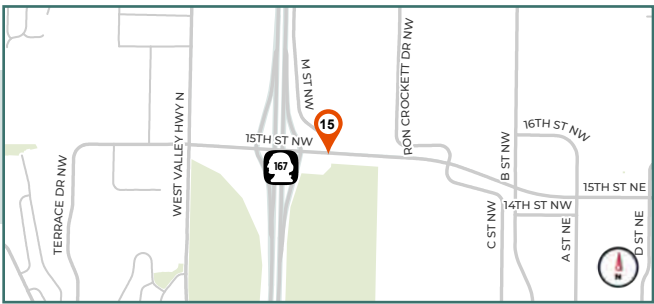


COMP-15
15TH ST NW & M ST NW
ACCESS MANAGEMENT

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

Intersection delays will be reduced by restricting left turns from southbound M St NW to eastbound 15th St NW during peak travel demand periods.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 10,000
Right of Way	\$ 0
Construction	\$ 40,000
Total	\$ 50,000



COMP-16
S 316TH ST & 56TH AVE S
INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

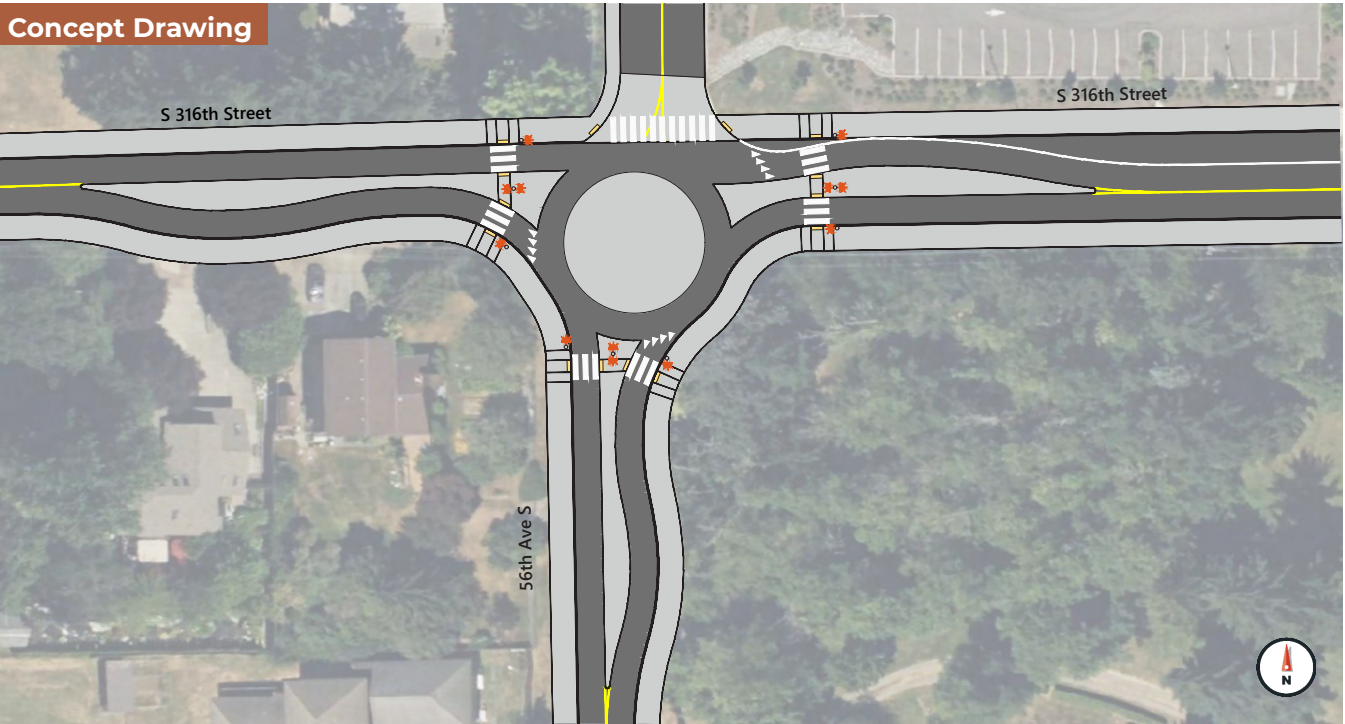
Intersection delays will be reduced through the construction of a single-lane roundabout.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Meets	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 1,100,000
Right of Way	\$ 125,000
Construction	\$ 2,000,000
Total	\$ 3,225,000

Concept Drawing

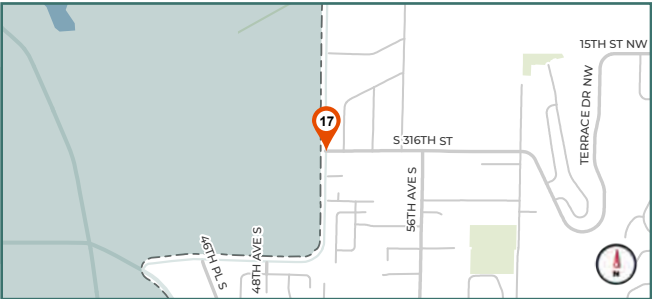


COMP-17
S 316TH ST & 51ST AVE S
INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

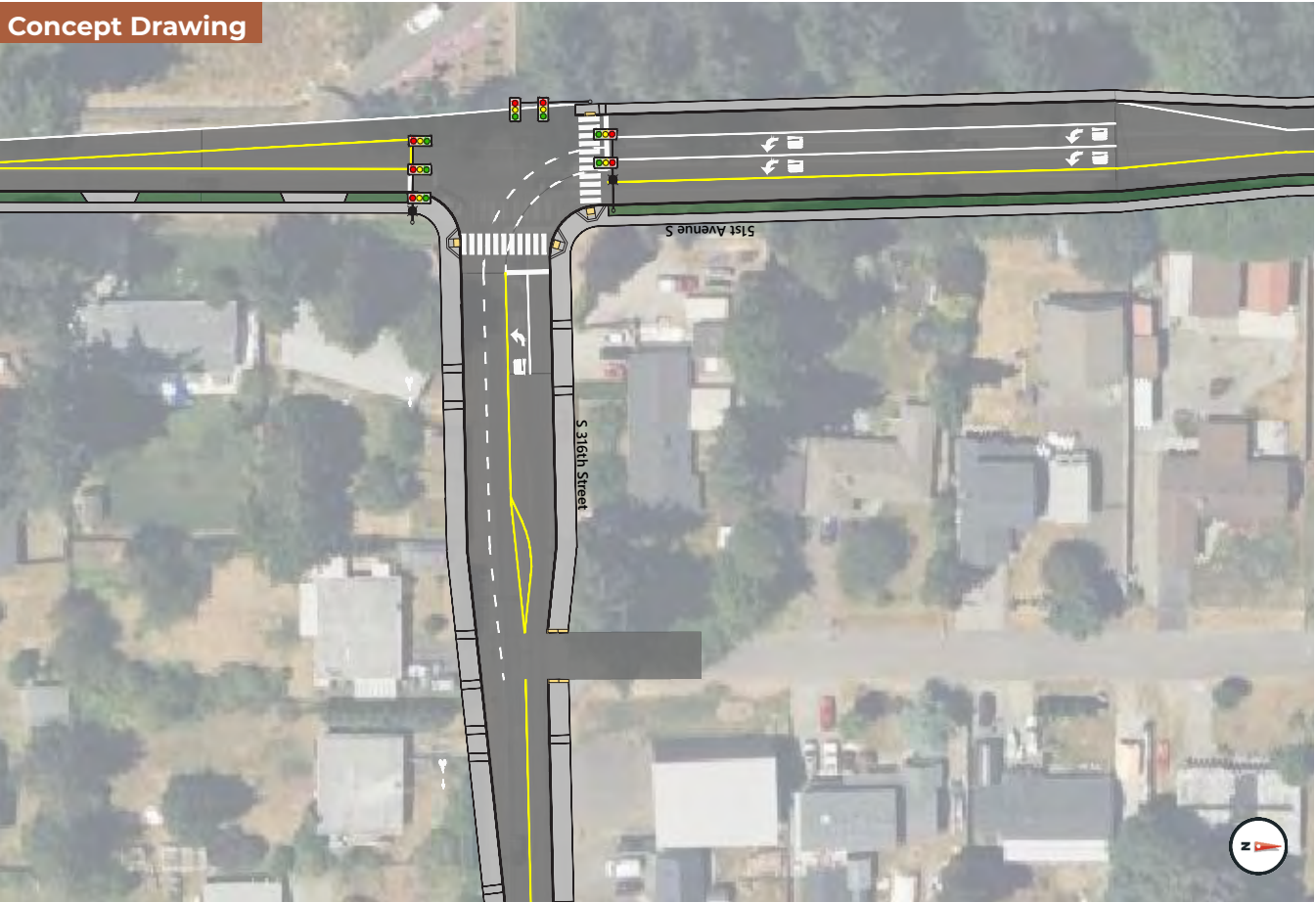
Intersection delays will be reduced through the replacement of the stop controls with construction of a new traffic signal. This intersection is outside City limits in King County. Coordination with King County will be required to fund and implement this project.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Fails
2044 Future	Meets	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/Design	\$ 700,000
Right of Way	\$ 150,000
Construction	\$ 1,300,000
Total	\$ 2,150,000

Concept Drawing



COMP-18
S 321ST ST & 44TH AVE S/
46TH PL S INTERSECTION
IMPROVEMENTS



Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

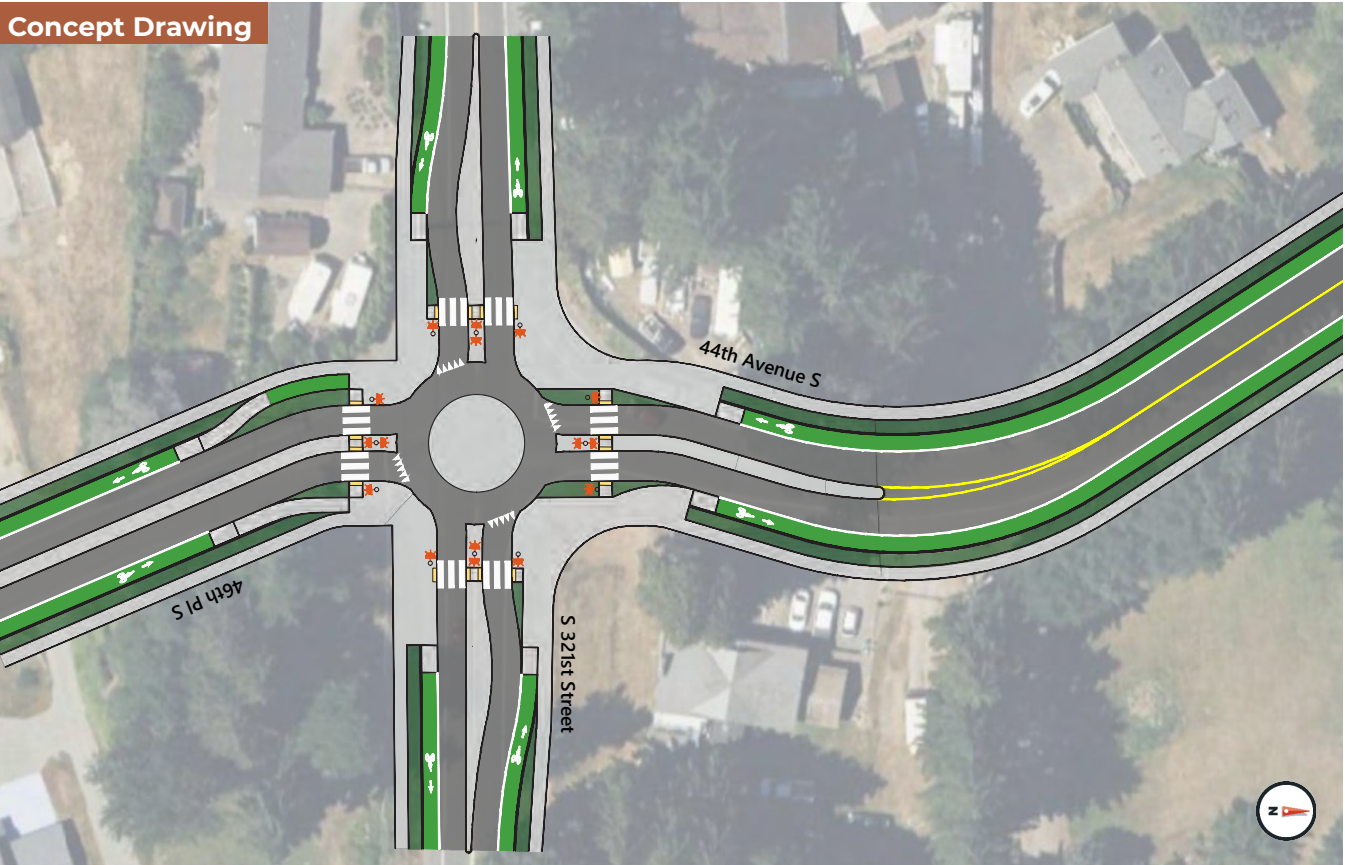
Description:

Intersection delays will be reduced through the construction of a single-lane roundabout. This intersection is outside City limits in King County. Coordination with King County will be required to fund and implement this project. Temporary mitigation measures to address existing LOS deficiency may require a traffic signal or other improvements until permanent project can be funded. Additional analysis is needed to determine if existing and/or future capacity needs can be met by improving the right-of-way east of 46th Place with roadway facilities instead of, or in addition to this roundabout.

VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Fails
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 1,200,000
Right of Way	\$ 350,000
Construction	\$ 2,200,000
Total	\$ 3,750,000

Concept Drawing



COMP-19
A ST NW & 3RD ST NW
IMPROVEMENTS

Project Origin: 2019 Comprehensive
Transportation Plan
Primary Needs: Vehicle Capacity

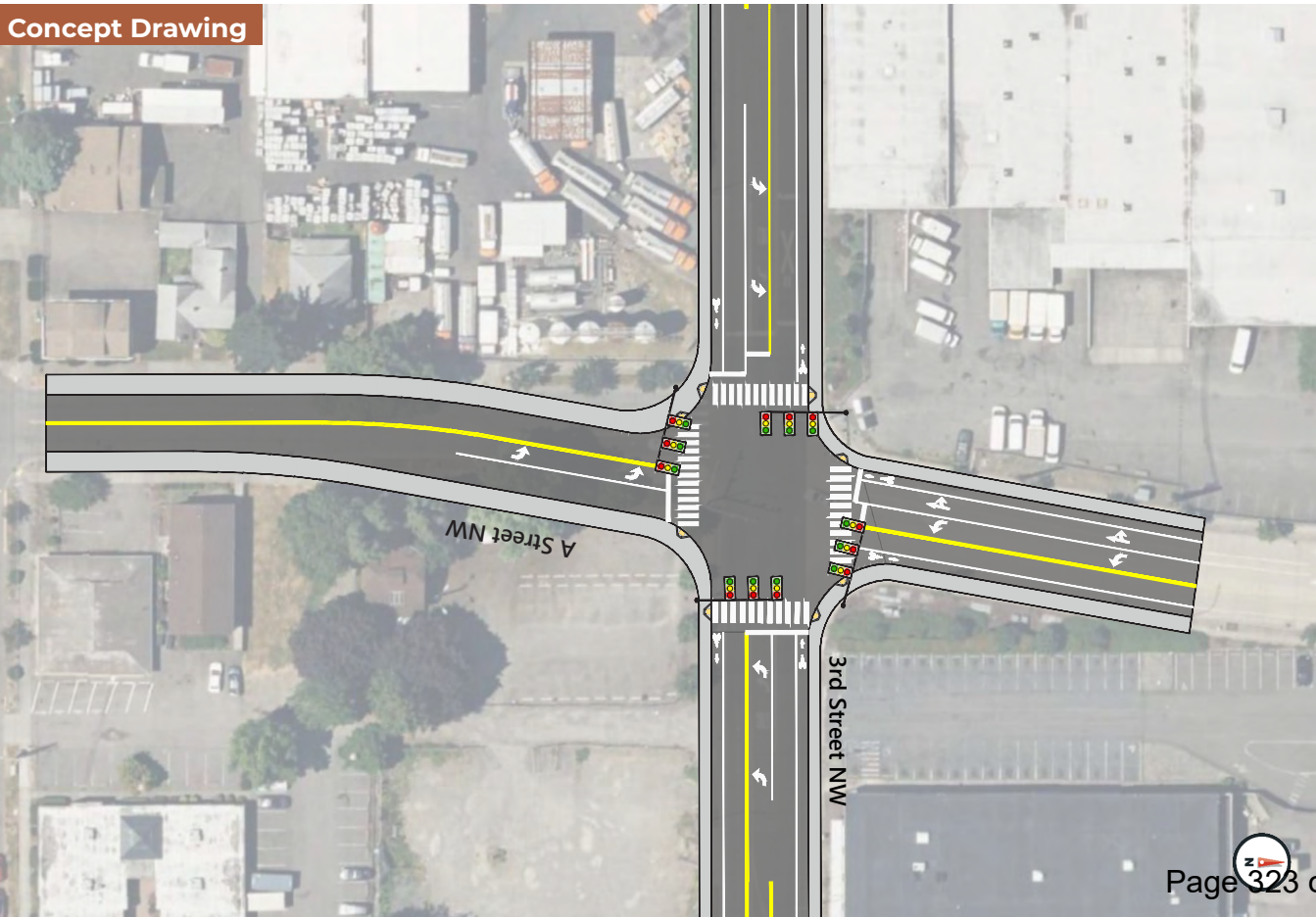
Description:

This project will reduce intersection delays and improve overall vehicle, pedestrian, and bicycle operations through this intersection by re-constructing the south leg of the intersection to be re-aligned such that the split phase operations of the signal can be removed. Modeling indicates that despite this project, the southbound right turn lane queue would have a queue length that exceeds LOS standards. Therefore, additional refinement of this project would be required with, or prior to, implementation.



PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 1,000,000
Right of Way	\$ 225,000
Construction	\$ 1,800,000
Total	\$ 3,025,000

Concept Drawing





Intersection delays will be reduced through the addition of a dedicated eastbound left turn lane on 3rd Street NW and modifying the signal operations to allow for protected/permissive left-turns on all approaches.

Fails

\$ 1,900,000

Concept Drawing

3rd Street NW

C Street NW

N

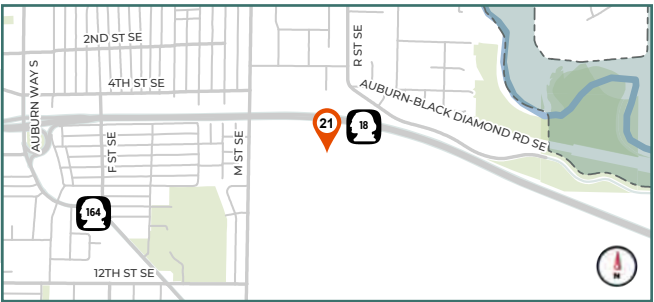
COMP-21
M ST SE BY-PASS RD
(M ST SE BY-PASS RD & SE AUBURN
- BLACK DIAMOND RD)

Project Origin: M Street Grade Separation
Pre-Design Report (2009)

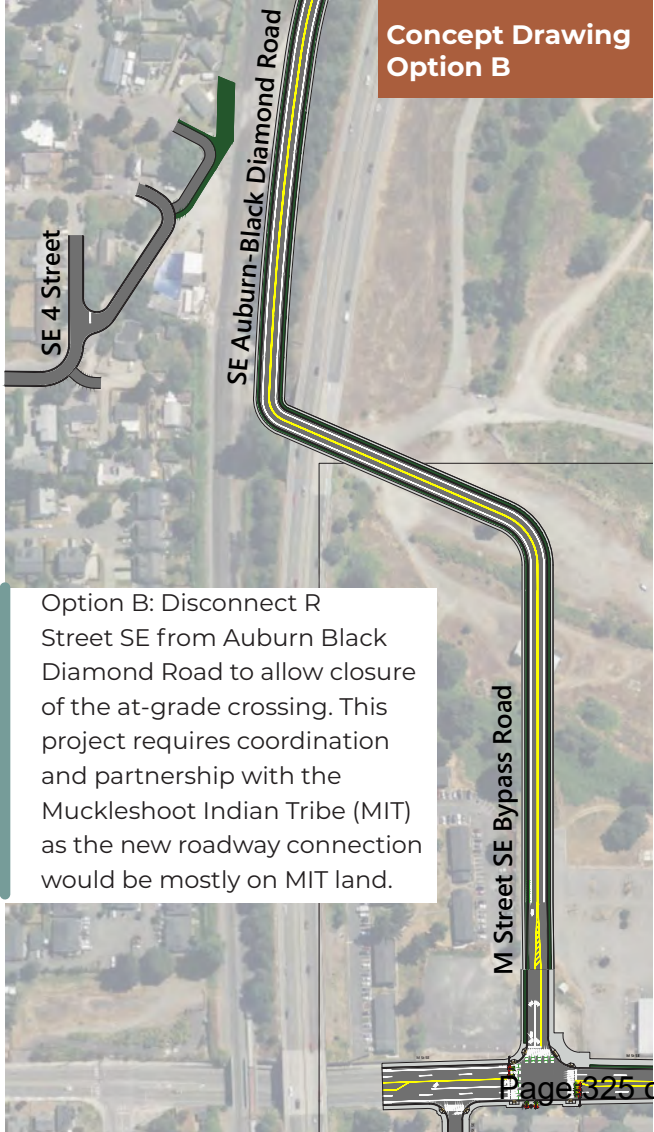
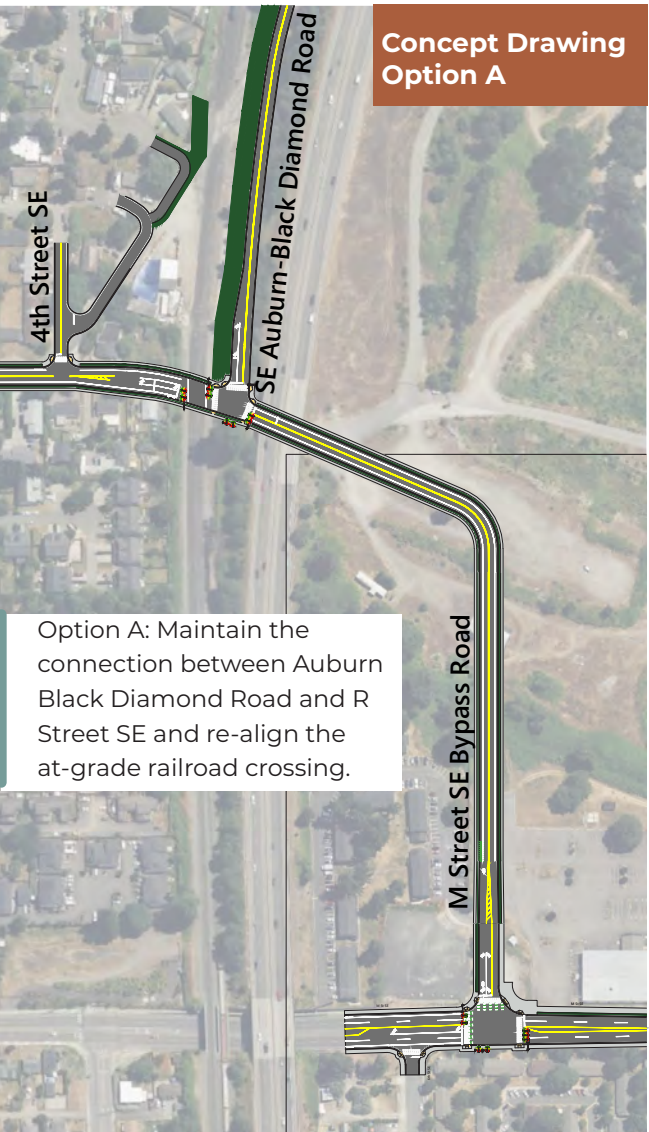
Primary Needs: Active Transportation/Safety/
System Resiliency

Description:

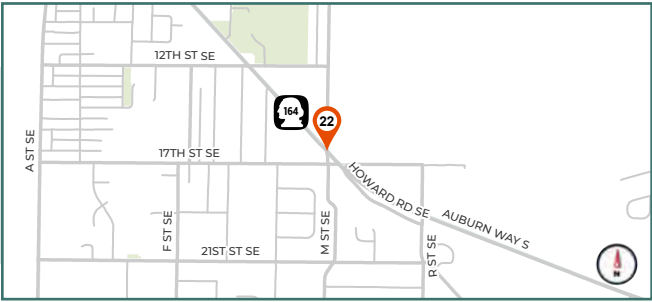
This project will provide a new roadway connection between Auburn Black Diamond Road and M Street SE. The new connection will provide pedestrian, bicycle, and vehicle connectivity that allows by-pass of the at-grade railroad crossing at Black Diamond Road/R Street SE to the grade separated crossing at M Street SE. There are two alternatives for this project that will be considered further with preliminary project design:



PROJECT PHASE	OPTION A	OPTION B
Planning & Engineering/Design	\$ 3,500,000	\$ 2,400,000
Right of Way	\$ 6,250,000	\$ 5,000,000
Construction	\$ 7,500,000	\$ 5,200,000
Total	\$ 17,250,000	\$ 12,600,000



COMP-22
AUBURN WAY S, M ST SE,
17TH ST SE INTERSECTION
IMPROVEMENTS



Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

Intersection delays will be reduced with several improvements including:

Add a third eastbound lane on Auburn Way South through the intersection

Restrict left turns from eastbound Auburn Way South to northbound M Street SE. Vehicles would utilize 12th Street SE for access to M Street SE from eastbound Auburn Way South.

Restrict left turns from westbound Auburn Way South on the west intersection leg with curbing/median. Access to businesses on the south side of Auburn Way South would be made via a u-turn at the signalized intersection of 12th Street SE/Auburn Way South.

Left turns from southbound M Street SE to eastbound Auburn Way South would be allowed from the far west lane, creating three lanes available for this movement.

Eastbound 17th Street SE to eastbound Auburn Way South would be opened where it is currently blocked.

Northbound movements from M Street SE to Auburn Way South would be restricted and M Street SE would not provide connectivity between 21st Street SE and Auburn Way South.

Mark east crossing of Auburn Way South with a new crosswalk

Improvements on Auburn Way South will be subject to WSDOT complete streets requirements and will require coordination and approval from WSDOT.

VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Fails	Fails
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 700,000
Right of Way	\$ 300,000
Construction	\$ 1,300,000
Total	\$ 2,300,000



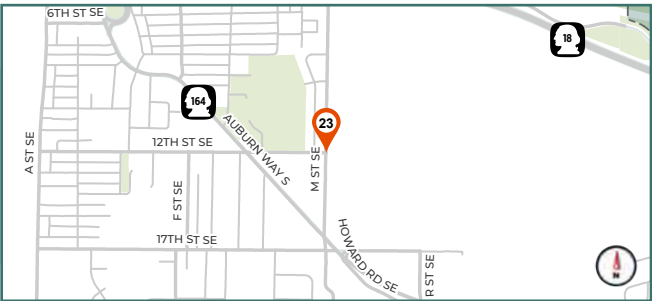
COMP-23
M ST SE & 12TH ST SE
INTERSECTION
IMPROVEMENTS

Project Origin: 2024 CTP Project (Modified from Previous Comp. Plan)

Primary Need: Vehicle Capacity, Active Transportation

Description:

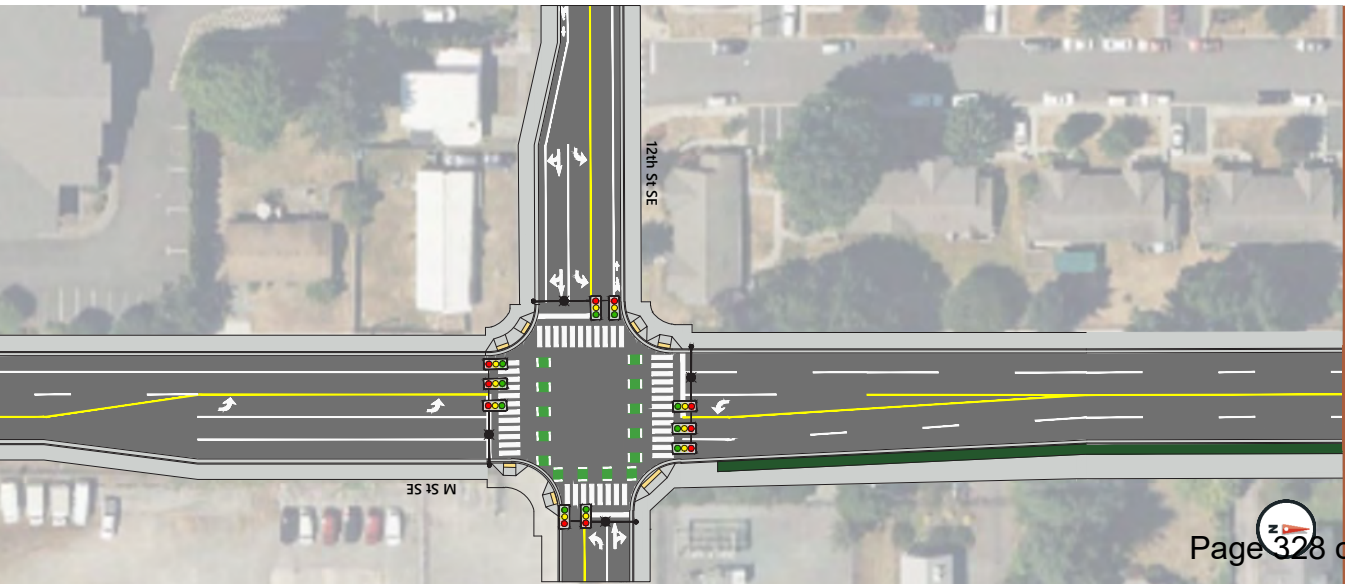
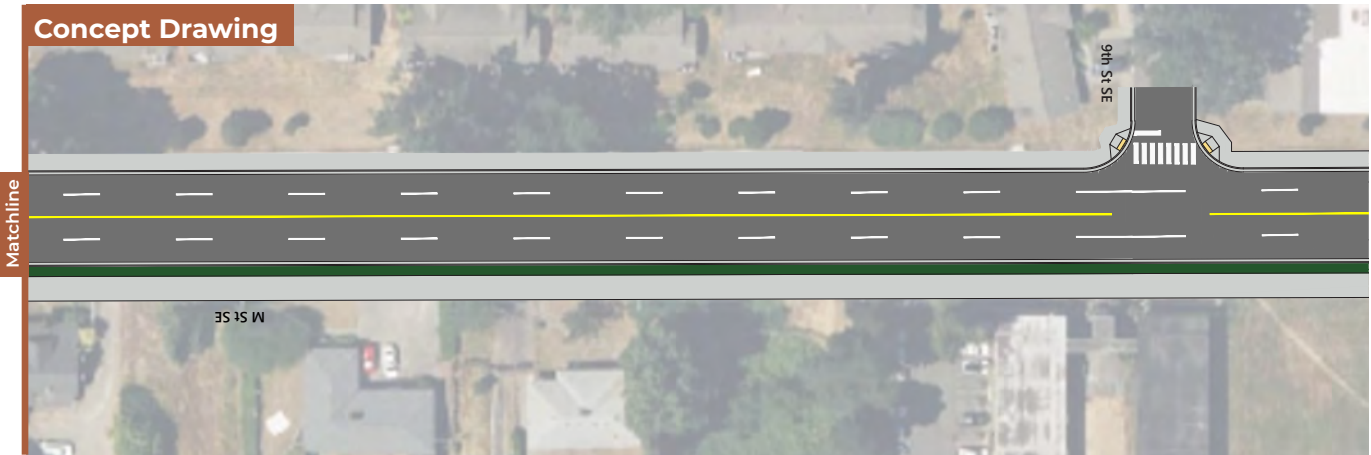
This project will reduce intersection delays with a new traffic signal. The project will also construct a separated trail along the east side of M Street SE between 12th Street SE and 8th Street SE to address active transportation level of service requirements.



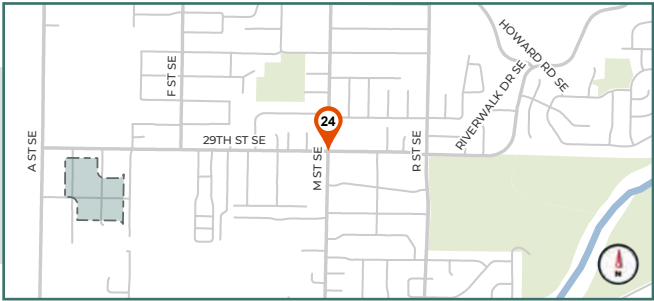
VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Fails	Fails
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/Design	\$ 1,200,000
Right of Way	\$ 1,350,000
Construction	\$ 2,100,000
Total	\$ 4,650,000

Concept Drawing



COMP-24
M ST SE & 29TH ST SE
INTERSECTION
IMPROVEMENTS



Project Origin: R St SE Corridor Study (2020)
Primary Needs: Active Transportation/Safety/
Vehicle Capacity

Description:

This project will reduce vehicle delays, improve operations and safety, and provide improved access for bikes and pedestrians through the intersection through construction of a single lane roundabout to replace the current all-way stop control.

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 900,000
Right of Way	\$ 125,000
Construction	\$ 1,900,000
Total	\$ 2,925,000

Concept Drawing



COMP-25 A ST SE CORRIDOR IMPROVEMENTS (37TH ST SE - WHITE RIVER BRIDGE)



Project Origin: BNSF Railway and A Street SE Crossing Study (2015), 2024 CTP Project

Primary Needs: Vehicle LOS/Mode Shift/Active Transportation/Safety

Description:

This project will reduce intersection delays at the intersections of C St SW & Ellington Rd/41st St SE, A St SE & Ellington Rd/41st St SE, and at SE & 44th St SE (private road). The project will provide active transportation facilities that support mode shift and improved vehicle and active transportation safety. The improvements would likely be implemented with multiple projects implemented over time as funding is available.

	PROJECT PHASE	COST ESTIMATE
Phase 1	Planning & Engineering/Design	\$ 2,940,000
	Right of Way	\$ 1,750,000
	Construction	\$ 15,250,000
	Phase 1 Total	\$ 19,940,000
Phase 2	Planning & Engineering/Design	\$ 600,000
	Right of Way	\$ 225,000
	Construction	\$ 1,200,000
	Phase 2 Total	\$ 2,025,000
	Project Total	\$ 21,965,000

Key project improvements and potential sequencing/phasing are:

Phase 1 (BNSF Railway and A Street SE Crossing)

1a New intersection with traffic signal and pedestrian and bike trail crossing on A Street SE just north of White River Bridge. White River Estates, and commercial properties along the east side of A Street SE between 41st Street SE and the new intersection will utilize this intersection for full access.

1b Construction of a pedestrian/bike tunnel under the BNSF Railway tracks that provides connectivity between the west side of A Street SE and Skinner Road. Extension of the separated trail on Skinner Road to connect to the tunnel crossing. Improvements between the White River Trail and the new intersection at the north end of the White River Bridge on the east side of A Street SE to create separated/buffered trail connection.

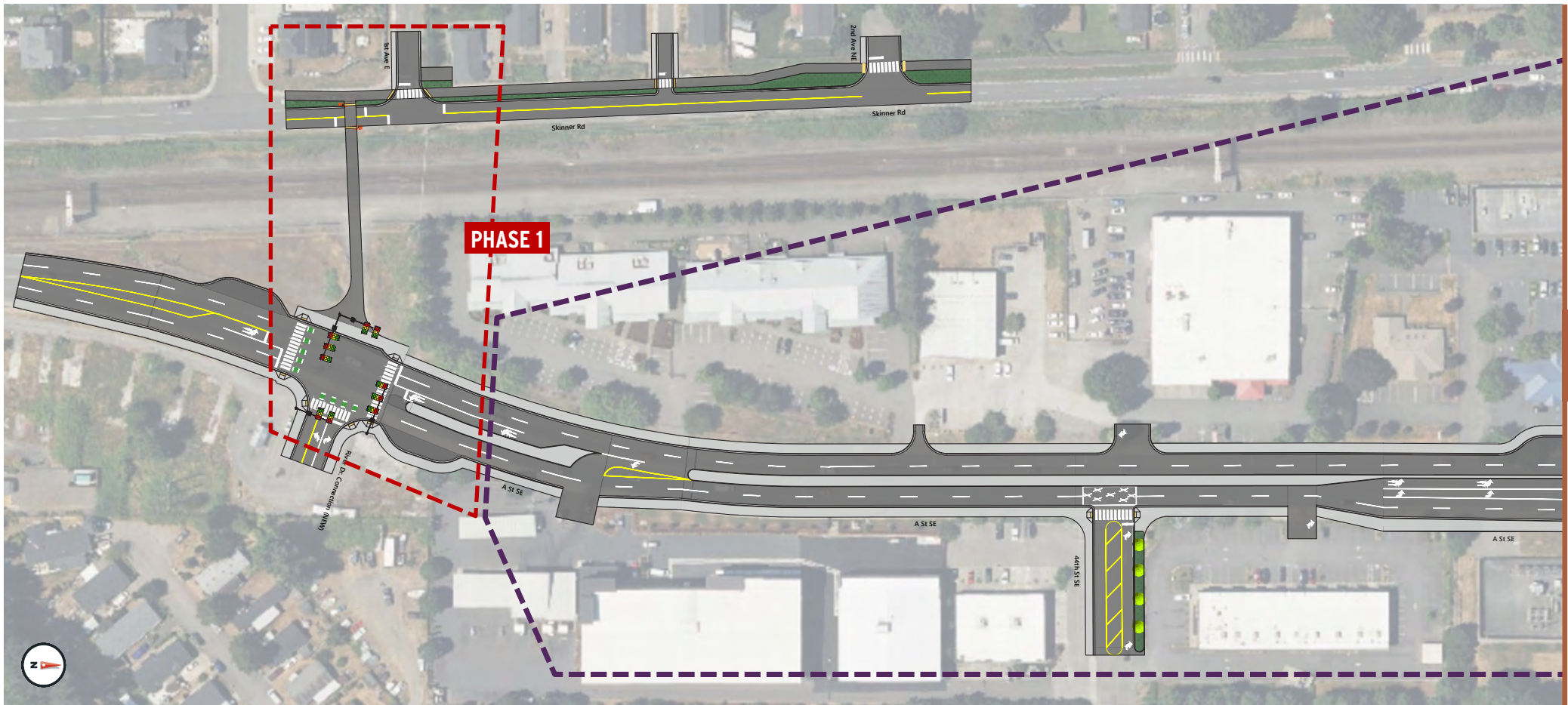
Phase 2 (Access Management & A Street SE Intersection Improvements at 41st Street SE and 37th Street SE)

2a Space for vehicle u-turns for both directions on A Street SE will be provided at all signalized intersections and medians will be installed to restrict left turns in/out of adjacent driveways and 44th Street SE.

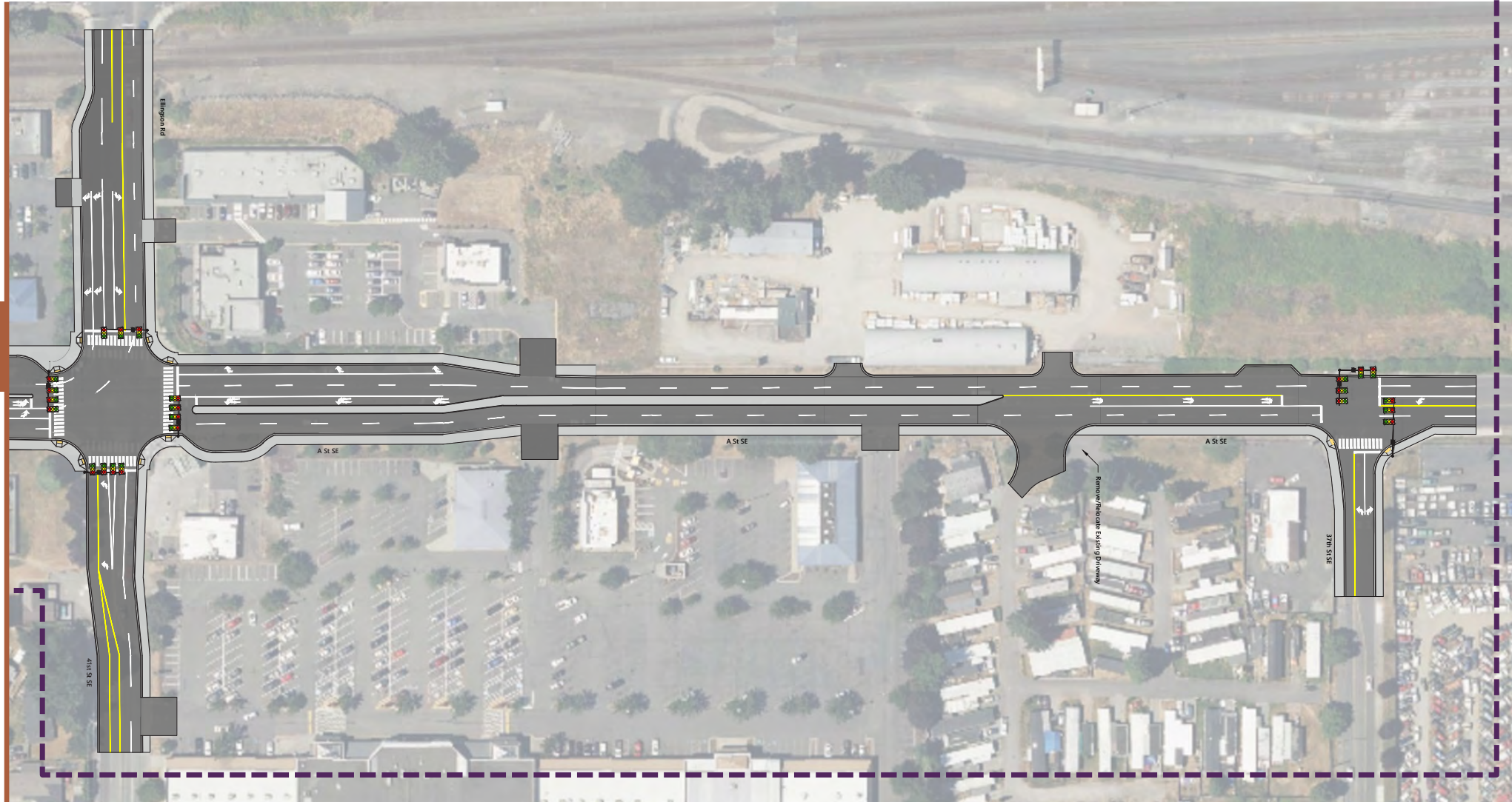
2b A second left turn lane from northbound A Street SE to westbound Ellington Road/41st Street SE will be added.

2c A second dedicated right turn lane from eastbound Ellington Road/41st Street SE will be added and there will be a separated dedicated eastbound through lane.

2d Smart signage will be installed on Ellington Road/41st Street SE to allow two westbound movements through the intersection of C Street SW during some times and one westbound through and one right turn only (to northbound C Street SW) during other times. Re-build sidewalks on Ellington Road/41st Street SE between C Street SW and A Street SE to provide maximum width possible as constrained by the BNSF bridge and mark the crosswalk/replace curb ramps on south leg of intersection of A Street SE and Ellington Road/41st Street SE.



PHASE 2

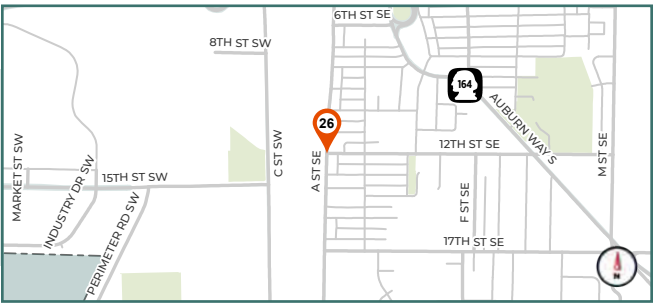


COMP-26
A ST SE & 12TH ST SE
INTERSECTION
IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

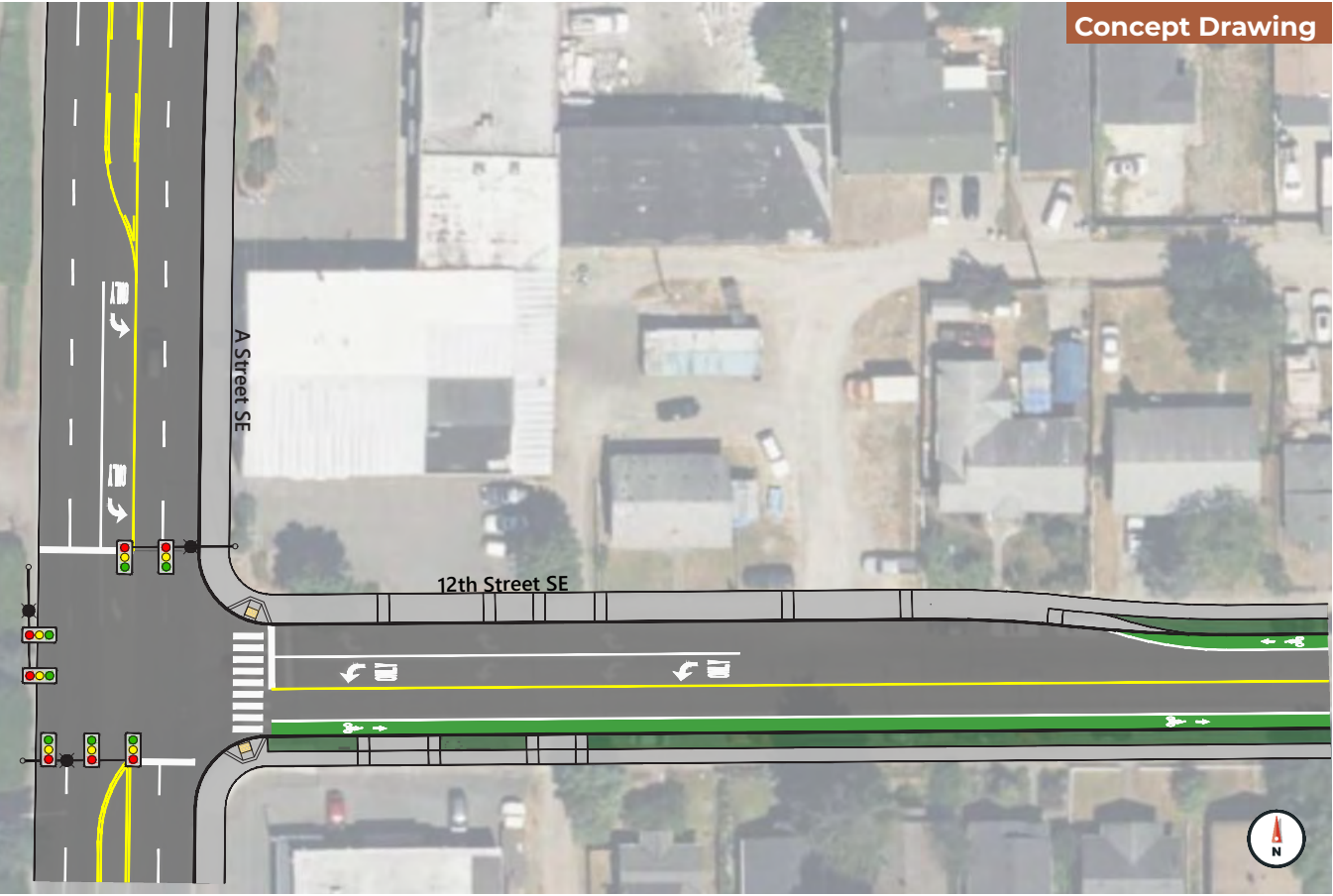
Description:

Intersection delays will be reduced through the replacement of the stop control with construction of a new traffic signal.

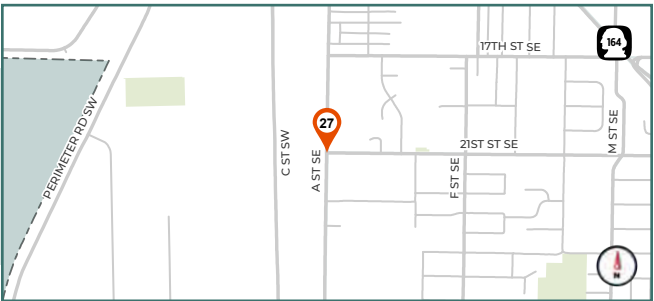


VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 500,000
Right of Way	\$ 25,000
Construction	\$ 900,000
Total	\$ 1,425,000



COMP-27
A ST SE & 21ST ST SE
INTERSECTION
IMPROVEMENTS



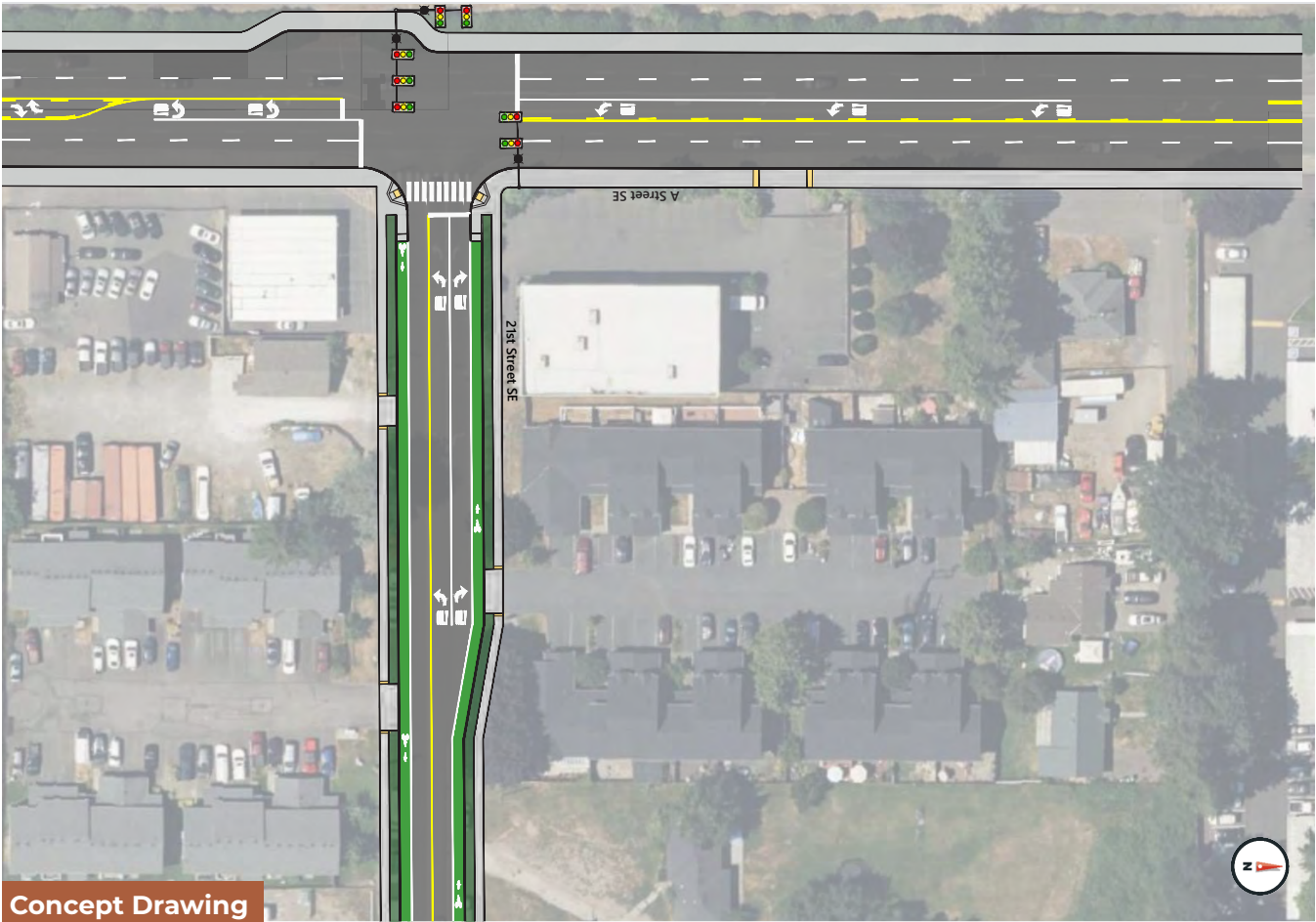
Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

Description:

Intersection delays will be reduced through the replacement of the stop control with construction of a new traffic signal. Improvements may also include widening for a northbound u-turn to support access management along the corridor.

VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Meets	Meets
2044 Future	Fails	Fails

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 600,000
Right of Way	\$ 125,000
Construction	\$ 1,200,000
Total	\$ 1,925,000



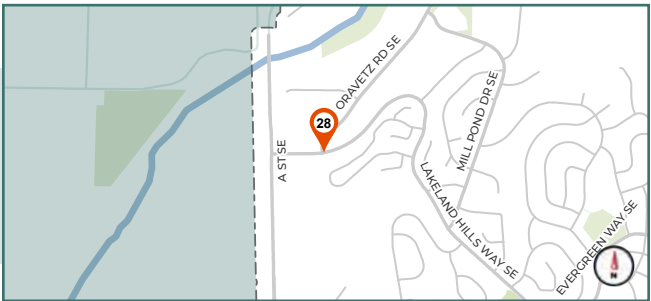
Concept Drawing

COMP-28
LAKELAND HILLS WAY SE &
ORAVETZ RD SE CORRIDOR
INTERSECTION IMPROVEMENTS

Project Origin: New 2024 CTP Project
Primary Need: Vehicle Capacity

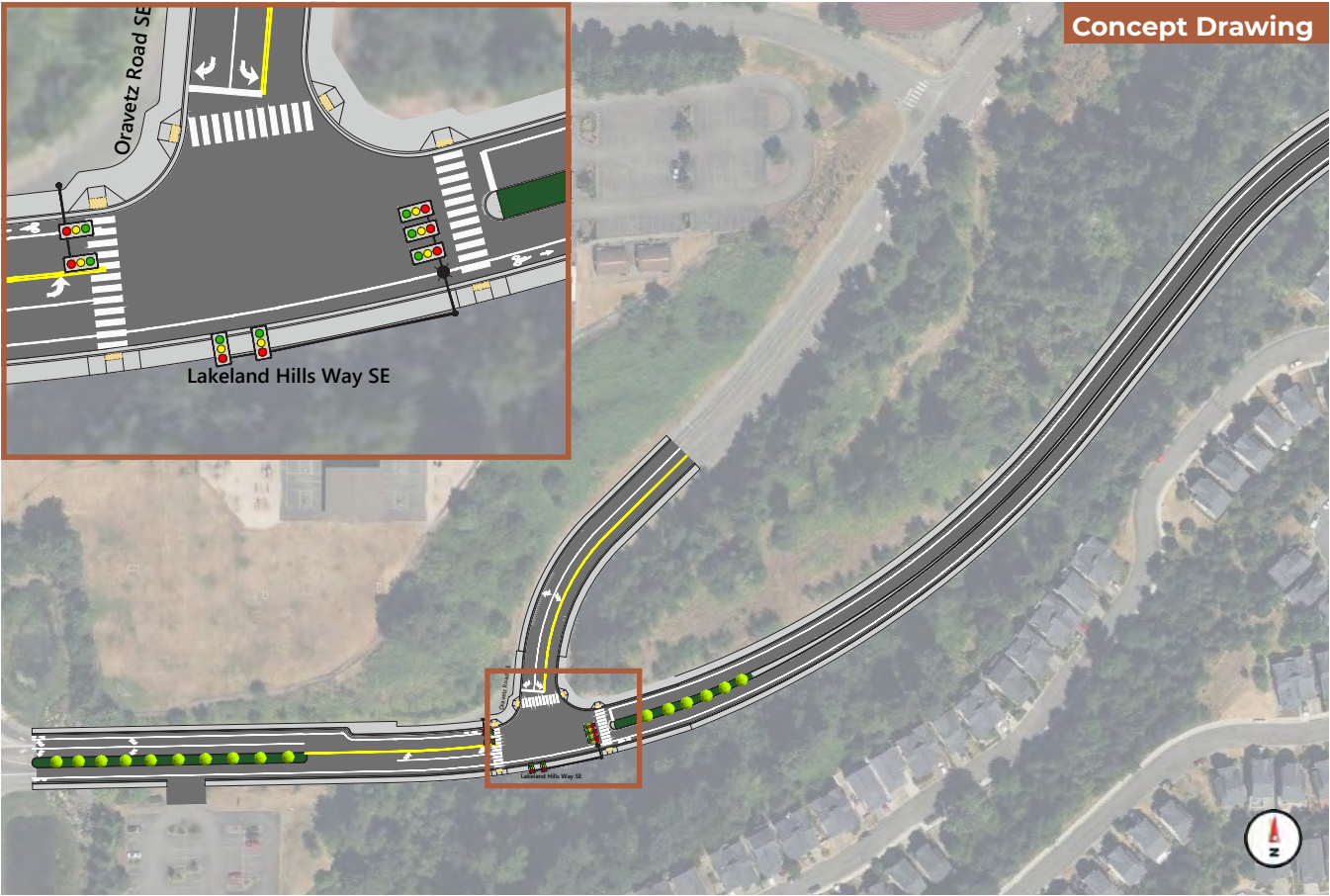
Description:

Intersection delays will be reduced through the replacement of the stop control with construction of a new traffic signal.



VEHICLE LOS WITHOUT PROJECT	AM	PM
2024 Existing	Fails	Meets
2044 Future	Fails	Meets

PROJECT PHASE	COST ESTIMATE
Planning & Engineering/ Design	\$ 900,000
Right of Way	\$ 10,000
Construction	\$ 1,700,000
Total	\$ 2,610,000



LIST OF BIKE IMPROVEMENTS TO ENCOURAGE MODE SHIFT

Existing and proposed bike facilities are mapped at <https://auburn.maps.arcgis.com/apps/instant/sidebar/index.html?appid=0d4f2a3eee6d4a54bb284c3d09142b62>

STREET	FROM	TO	EXISTING FACILITY	MINIMUM FACILITY REQUIRED TO MEET LTS STANDARD	APPROACH
Lakeland Hills Way	Lake Tapps Parkway	69th Street SE	Class III Bikeway	Class II Bikeway	Sign bike trail through Sunset Park.
I St NE	45th St NE	42nd Pl. NE	Class III Bikeway	Class I Bikeway	Build trail on East side, RRFB at trail crossing.
I St NE	42nd Pl. NE	37th St NE	Class III Bikeway	Class II Bikeway	Change network class to auxiliary. Build out bike lanes.
C St NE	42nd St NE	30th St NE	Class III Bikeway	Class II Bikeway	North of 37th, remove TWFTL add bike lanes; south of 37th re-build pavement, add bike lanes.
37th St NE	I St NE	AWN	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Re-stripe to include bike lanes and remove parking on north side.
37th St NE/NW	AWN	Between Emerald Downs Dr & I	Class III Bikeway	Class I Bikeway	Build separated trail on north side, re-strip to narrow lanes to 11 to 12 feet wide.
AWN	37th St NE	35th St NE	Class III Bikeway	Class II Bikeway	Remove bike network designation, remove bike lane designation on 35th between AWN and I Street.
8th St NE	Harvey Rd NE	R St NE	Class III Bikeway	Class II Bikeway	Re-channelize to include bike lanes. Potential widening at some locations.
8th St NE	R St NE	8th St Bridge	Class III Bikeway	Class I Bikeway	Construct separated trail along side of roadway.
8th St Bridge			Class III Bikeway	Class I Bikeway	Widen bridge or construct adjacent active transportation bridge. Construction separated trail.
SE 320th St	8th St Bridge	104th Ave SE	Class III Bikeway	Class I Bikeway	Re-channelize and widen to provide separated trail.
Lea Hill Rd SE	104th Ave SE	112th Ave SE	Class III Bikeway	Class I Bikeway	Trail along east side of road, bike lane along west side of road - See Lea Hill Corridor Study.
SE 312th St	112th Ave SE	116th Ave SE	Class III Bikeway	Class I Bikeway	Trail along east side of road, bike lane along west side of road - See Lea Hill Corridor Study.
SE 312th St	116th Ave SE	124th Ave SE	Class III Bikeway	Class II Bikeway	Re-Channelize and Widen to Provide bike lanes.
124th Ave SE	SE 284th St	SE 288th St	Class III Bikeway	Class II Bikeway	Widen to Minor Arterial Standards w/bike lanes.
124th Ave SE	SE 304th St	SE 307th Pl	Class III Bikeway	Class II Bikeway	Widen to Minor Arterial Standards w/bike lanes.
R St NE	8th St NE	E Main St	Class III Bikeway	Class II Bikeway	Re-Stripe to include bike lanes.

(Continued on next page)

STREET	FROM	TO	EXISTING FACILITY	MINIMUM FACILITY REQUIRED TO MEET LTS STANDARD	APPROACH
4th St NE	AWN	H St NE	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Add bike lanes.
4th St NE	H St NE	J St NE	Class III Bikeway	Class II Bikeway	Add bike lanes.
4th St NE	J St NE	M St NE	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Add bike lanes.
E Main St	E St NE	Pike St SE	Class III Bikeway w/ Pavement	Class II Bikeway	Bulb-outs/traffic calming/speed reduction to 25mph/sharrows signage (R to D).
4th St SE	F St SE	M St SE	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Install sharrows/signage.
12th St SE	J St SE	L St SE	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Bikes lanes on 12th from AWN to M Street SE.
15th St SW	C St SE	Perimeter Rd	Class II Bikeway (Both Sides)	Class I Bikeway	Construct separated trail along south side.
15th St SE	Perimeter Rd	Interurban Trail	Class III Bikeway	Class I Bikeway	Construct separated trail along south side.
17th St SE	B St SE	F St SE	Class II Bikeway (Both Sides)	Class I Bikeway	Bulb-outs/traffic calming/speed reduction to 30mph/sharrows signage (R to D).
21st St SE	F St SE	R St SE	Class II Bikeway (Both Sides)	Class I Bikeway	Bulb-outs/traffic calming/speed reduction to 30mph/sharrows signage (R to D).
R St SE	21st St SE	Between 22nd St SE & 23rd St S	Class II Bikeway (Both Sides)	Class I Bikeway	Separated trail along east side of roadway. CP2116.
37th St SE	A St SE	M St SE	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Re-stripe to include bike lanes.
A St SE	41st St SE	44th St SE	Class III Bikeway	Class II Bikeway	Separated trail along east side of roadway.
A St SE	44th St SE	COA Boundary	Class III Bikeway	Class II Bikeway w/Buffer	Separated trail along east side of roadway.
A St SE	COA Boundary	South of Lakeland Hills Way SE	Class III Bikeway	Class I Bikeway	Separated trail along east side of roadway. CP2331.
Lakeland Hills Way	A St SE	Oravetz Pl SE	Class III Bikeway	Class II Bikeway	Re-stripe to include bike lanes.
R St SE	Between 25th St SE & 26th	White River Bridge	Class II Bikeway (Both Sides)	Class I Bikeway	Separated trail along east side of roadway. CP2116.
Lakeland Hills Way	Lake Tapps Parkway	Between Lake Tapps & 15th St	Class III Bikeway	Class III Bikeway w/ Pavement Marking	Install sharrows/signage.
Lake Tapps Pkwy SE	Lakeland Hills Way SE	Just east of Lakeland Hills	Class III Bikeway	Class I Bikeway	Construct separated trail along north side of roadway.

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APPENDIX C

Plan Checklists



IN THIS APPENDIX

[GMA Requirements Checklist](#)

[PSRC Requirements Checklist](#)

GMA REQUIREMENTS CHECKLIST

To comply with the Growth Management Act requirements, the Comprehensive Transportation Plan will include the following elements:

GMA REQUIREMENT	PLAN ELEMENT(S)
1. An inventory of air, water, and ground transportation facilities and services, including transit alignments, state-owned transportation facilities, and general aviation airports.	• Chapter 2 • Appendix A
2. Adopted multimodal levels of service (LOS) standards for all arterials, transit routes and highways.	• Chapter 2
3. Identification of specific actions to bring locally-owned transportation facilities and services to established multimodal LOS.	• Chapter 2 • Appendix B
4. A forecast of traffic for at least 10 years including land use assumptions used in estimating travel.	• Chapter 2
5. A projection of state and local system needs to meet current and future demand.	• Chapter 2 • Appendix B
6. A pedestrian and bicycle component to include collaborative efforts to identify and designate planned improvements for pedestrian and bicycle facilities and corridors that address and encourage enhanced community access and promote healthy lifestyles.	• Chapter 2, Section 2.3
7. A description of any existing and planned transportation demand management (TDM) strategies, such as HOV lanes or subsidy programs, parking policies, etc.	• Chapter 4, Goal 8
8. An analysis of future funding capability to judge needs against probable funding resources.	• Chapter 6, Section 6.1
9. A multi-year financing plan based on needs identified in the comprehensive plan, the appropriate parts of which serve as the basis for the 6-year street, road or transit program.	• Chapter 6, Section 6.1
10. If probable funding falls short of meeting identified needs: a discussion of how additional funds will be raised, or how land use assumptions will be reassessed to ensure that LOS standards will be met.	• Chapter 6, Section 6.4

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GMA REQUIREMENT	PLAN ELEMENT(S)
11. A description of intergovernmental coordination efforts, including an assessment of the impacts of the transportation plan and land use assumptions on the transportation systems of adjacent jurisdictions and how it is consistent with the regional transportation plan.	• Chapter 1, Section 1.5
12. A plan for public participation in the comprehensive planning process.	• Chapter 1, Section 1.3 • Appendix D
13. A plan to monitor how well comprehensive plan policies, development regulations, and other implementation techniques are achieving the plan's goals and the goals of the GMA.	• Chapter 7
14. Considerations for preserving property rights with an evaluation of regulatory or administrative actions to ensure they do not result in unconstitutional taking of private property.	• Chapter 4, Goal 9, Policy TR9-3
15. Requirement that local governments permit development only if adequate multimodal transportation facilities exist, or can be guaranteed to be available within six years, to support new development. The GMA requires each local jurisdiction to identify facility and service needs based on LOS standards. Auburn ensures that future development will not cause the system's performance to fall below the adopted LOS standard by doing one or a combination of the following: limiting development, requiring appropriate mitigation, or changing the adopted standard.	• Chapter 4, Goal 7

PSRC REQUIREMENTS CHECKLIST

PSRC requires that the plan promotes a sustainable, equitable, affordable, safe, and efficient multimodal transportation system, with specific emphasis on an integrated regional transit network that supports the Regional Growth Strategy and promotes vitality of the economy, environment, and health.

PSRC REQUIREMENT	PLAN ELEMENT(S)
Implement the Regional Transportation Plan	
1. Promote the development of an efficient, multimodal transportation system that supports the Regional Growth Strategy in collaboration with other jurisdictions and agencies (MPP-T-7)	• Chapter 4, Goal 4, Policy TR4-2
2. Work to develop and operate a safe and convenient system for all users and the movement of freight and goods (MPP-T-11)	• Chapter 4, Goal 5, Policy TR5-1-4
3. Reduce the need for new capital improvements through investments in operations, pricing programs, demand management strategies, and system management activities that improve the efficiency of the current system (RCW 36.70A.070(6)(a)(vi), MPP-T-3)	• Chapter 4, Goal 8, Policy TR8-3
4. Emphasize transportation investments that provide alternatives to single occupancy vehicle travel, increase travel options, especially to and within centers, and support compact, pedestrian- and transit-oriented densities and development (MPP-T-12-13, T-15)	• Chapter 4, Goal 8, Policy TR8-4
5. Increase the resilience of the transportation system and support security and emergency management (MPP-T-31)	• Chapter 4, Goal 5, Policy TR5-2-15
6. Prepare for changes in transportation technologies and mobility patterns (MPP-T-33-34)	• Chapter 4, Goal 10, Policy TR10-15
Support the Regional Growth Strategy	
7. Focus system improvements to connect centers and support existing and planned development as allocated by the Regional Growth Strategy (MPP-RC-7-9, T-7-8, T-15)	• Chapter 4, Goal 1, Policy TR1-4
8. Prioritize multimodal investments in centers and high-capacity station areas (MPP-RC-7-10, T-12-13, T-19)	• Chapter 2, Section 2.4.1 • Chapter 4, Goal 1, 5, and 6, Policies TR1-3 and TR1-4; TR5-1-1; TR6-3-1 and TR6-3-2

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PSRC REQUIREMENT	PLAN ELEMENT(S)
Support the Regional Growth Strategy	
9. Promote the design of transportation facilities that support local and regional growth centers and high-capacity transit station areas and fit the community in which they are located (MPP-T-19-21)	- Chapter 2, Section 2.4 - Chapter 4, Goal 5, Multimodal Accessible Network Policies (Transit) - Chapter 4, Goal 6, MMLOS Standards Policies (Transit)
10. Support a safe and welcoming environment for walking and bicycling (MPP-DP-15)	Chapter 4, Goal 5 (page 62-66)
11. Include a pedestrian and bicycle component and collaborative efforts to identify planned improvements for pedestrian and bicycle facilities and corridors (RCW 36.70A.070(6)(a)(vii))	Chapter 2, Section 2.3
12. Improve local street patterns and design to promote walking and biking (MPP-T-16-17)	Chapter 4, Goal 5
13. Support alternatives to driving alone, including walking, biking, and transit use, through design of local streets, land use development tools, and other practices (MPP-T-16-18)	Chapter 4, Goal 8, Policy TR8-4
Support People	
14. Identify racial and social equity as a core objective when planning and implementing transportation improvements, programs, and services (MPP-T-9)	Chapter 4, Goal 2
15. Ensure mobility choices for people with special needs (MPP-T-10)	Chapter 4, Goal 2
Support the Economy	
16. Recognize the critical role of safe, reliable, and efficient movement of people and goods (MPP-Ec-6,T-1, T-23)	Chapter 4, Goal 5, Policy TR5-1-4
17. Identify and support key facilities and improvements that connect the region to major transportation hubs such as ports, airports, and designated freight routes (MPP-T-24-25)	Appendix A
18. Promote coordination with providers of major regional infrastructure, such as freight rail and commercial aviation (MPP-Ec-4-5, T-27-28)	Chapter 4, Goal 5, Multimodal Accessible Network Policies and Supporting Actions (Freight, Air Transportation)

(Continued on next page)

PSRC REQUIREMENT	PLAN ELEMENT(S)
Protect the Environment	
19. Promote clean transportation programs and facilities, including actions to reduce air pollution and greenhouse gas emissions from transportation (MPP-CC-3, CC-12, T-29-30)	Chapter 4, Goal 4, Policy TR4-2
20. Reduce stormwater pollution from transportation facilities and improve fish passage (MPP-T-32)	Chapter 4, Goal 4, Policy TR4-3
21. Incorporate environmental factors into transportation decision-making, including attention to human health and safety (MPP-DP-44, T-4-5, T-29-32)	Chapter 4, Goal 4, Supporting Actions
Provide Facilities inventories and identify Service Needs	
22. Include mapped inventories for each element of the transportation system, including roadways, transit, cycling, walking, freight, airports, and ferries (RCW 36.70A.070, RCW 36.70A.108, MPP-T-7,T-15-17)	Appendix A
23. Include state facilities and reflect related (regional/ state) level-of-service standards (RCW 36.70A.070, RCW 36.70A.108)	Chapter 2, Section 2.2
24. Develop a comprehensive concurrency program that addresses level-of-service standards for multimodal types of transportation and include implementation strategies (RCW 36.70A.070, RCW 36.70A.108, MPP-DP-52-54)	Chapter 4, Goal 7
25. Provide travel demand forecasts and identify state and local system projects, programs, and management necessary to meet current and future demands and to improve safety and human health (RCW 36.70A.070, MPP-T-4-5)	Chapter 2, Section 2.2.8
26. Identify maintenance and system preservation projects and programs necessary to maintain the ability of the transportation system to provide safe, efficient, and reliable movement of people, goods, and services (RCW 36.70A.070, MPP-T-1-2, T-4)	- Chapter 4, Goal 10 - Chapter 6

(Continued on next page)

PSRC REQUIREMENT	PLAN ELEMENT(S)
Finance Transportation Investments	
27. Identify stable and predictable funding sources for maintaining and preserving existing transportation facilities and services (MPP-RC-11-12, T-6)	• Chapter 6, Section 6.3
28. Pursue alternative transportation financing methods, such as user fees, tolls, and other pricing mechanisms (MPP-T-6)	• Chapter 6, Section 6.5
29. Include a 20-year financing plan, as well as an analysis of funding capability for all transportation modes (RCW 36.70A.070(3), RCW 36.70A.070(6)(a)(iv), WAC 365-196-415, WAC 365-196-430, MPP-RC-11-12, T-6, T-15)	• Chapter 6, Section 6.1
30. Include a reassessment strategy to address the event of a funding shortfall (RCW 36.70A.070(3), RCW 36.70A.070(6)(a)(iv), WAC 365-196-415, WAC 365-196-430, MPP-RC-11-12,T-6)	• Chapter 6, Section 6.4
Address Land Uses Adjacent to Airports	
31. Airport-adjacent communities: Identify and address any airports within or adjacent to the jurisdiction (RCW 36.70.547, 36.70A.070(6)(a)(iii)(A), MPP-DP-48)	• Chapter 2, Section 2.5
32. Describe existing and planned uses near the airport, as well as policies and regulations that discourage incompatible uses (RCW 36.70.547, 36.70A.070(6)(a)(iii)(A), MPP-DP-48)	• Existing and planned uses are not described. However, Chapter 4, Goal 5, lists an action under Actions to Support Multimodal Accessible Network Goal and Policies (Air Transportation) that calls the agency to do so
33. Promote coordinated planning and effective management to optimize the region's aviation system in a manner that minimizes health, air quality, and noise impacts to communities, including historically marginalized communities (MPP-T-28)	• Chapter 4, Goal 5, Multimodal Accessible Network Policies (Air Transportation)



APPENDIX D

Outreach



IN THIS APPENDIX

Public Outreach

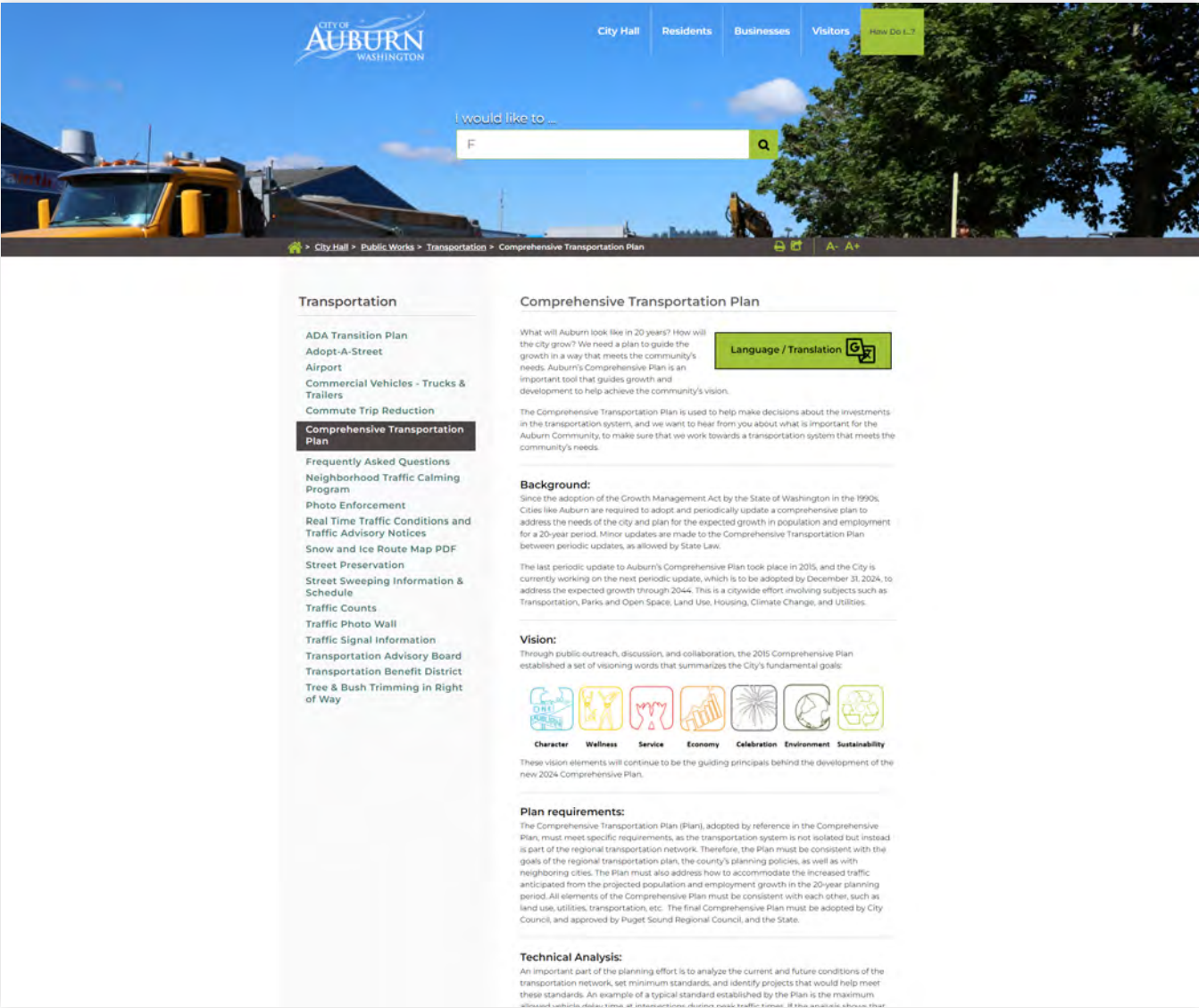
PUBLIC OUTREACH

For the 2024 update to the Comprehensive Transportation Plan (Plan), City staff engaged with the public in different ways, with the intent to encourage participation and receive input from the public to ensure that the needs of the community are addressed in the planning process.

Plan Webpage

A webpage was created with key information regarding the plan, and with a location specific survey where people could show on a map the type of concern they have, as well as three questions to help guide our planning process. The survey questions were translated into the four most used languages in Auburn, after English, which are, as of 2023, Spanish, Ukrainian, Russian, and Tagalog.

Figure 15. Plan Website Homepage



[Visit the Comprehensive Transportation Plan Website](#)

Figure 16. Online Survey - Location Specific Feedback

Public input:

We want to hear from you throughout this process, to understand your needs and ideas for Auburn's transportation systems.

Location Specific Feedback

Click on the map to drop a pin for the comment*

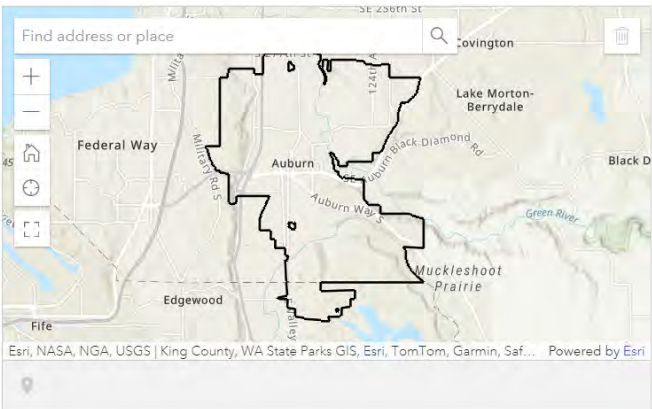
Please only click inside the box showing the Auburn City Limits. Only locations in Auburn will be considered.

Haga clic en el mapa para colocar un marcador para el comentario. Haga clic únicamente en el recuadro que muestra los límites de la ciudad de Auburn. Solo se considerarán las ubicaciones dentro de Auburn.

Клацніть на карті, щоб поставити мітку для коментарю. Клацайте лише в полі, що розташоване в межах міста Auburn City. Ураховуватимуться тільки зони в Auburn.

Щелкните карту, чтобы поставить метку для комментария. Щелкайте только в поле, находящемся в пределах города Auburn City. Будут учитываться только зоны в Auburn.

I-click ang map upang maglagay ng pin para sa mga komento. Pindutin lamang sa loob ng box na nagpapakita ng mga Limitasyon sa Lungsod ng Auburn. Ang mga lugar sa Auburn lamang ang isasaalang-alang.



Which category fits best? ¿Qué categoría se adapta mejor? Яка категорія підходить найкраще? Какая категория подходит лучше всего? Aling kategorya ang pinakaangkop?*

-Please select-

Please provide more details for your comment on the map:

Sírvase proporcionar más detalles para su comentario sobre el mapa:

Надайте більше інформації щодо свого коментарю на карті:

Предоставьте больше информации для своего комментария на карте:

Mangyaring magbigay ng higit pang mga detalye para sa iyong komento sa map:

Submit Enviar Надіслати Отправить Isumite

Public Comments from the Website/Online Survey

Comments collected through the plan website/online survey are summarized in the table below:

GENERAL QUESTIONS ABOUT TRANSPORTATION IN AUBURN			
QUESTION	RESPONDENT #1	RESPONDENT #2	RESPONDENT #3
1. Do you have any suggestions on how we can encourage more people to walk, ride a bike, or take a bus instead of driving a car?	<i>I think the best thing to do is to expand the bicycle route network. The current network of bike lanes and trails do not take people to where they want to go. The best way to get people out of their cars is to make cycling an attractive option, and making dedicated space for them will allow for that. Ideally, bike lanes should be protected bike lanes; cyclists are not going to feel safe if there is nothing physically protecting them from being run over by cars! In terms of walking, many sidewalks are currently too narrow and/or do not provide enough protection from cars. We could also benefit from more protected pedestrian/ bicycle crossings (e.g., HAWK signals). Also consider making some streets (perhaps downtown) pedestrian-only; taking cars off of a street makes it a much more attractive place for people to gather and shop. For buses, increasing service frequencies and expanding service hours (e.g., adding off-peak service to the 497) is a good way to attract more riders.</i>	<i>Safety. Safety. Safety. Nonexistent or disconnected infrastructure makes pedestrians and bicyclists feel unsafe. Aggressive inattentive drivers are everywhere and street widths are designed for freeway speeds. My elementary school children are threatened by drivers and nearly run over by right and left turning drivers daily. No amount of victim blaming will fix that. Intersections near schools need pedestrian first design principles like raised crosswalks and intersections and narrow streets to force drivers to slow.</i>	<i>You need a mix of advertising options and upkeep for what you have. Moved down here going on 2 years and there are places that are not safe to walk due to crime, etc. Other places like between Les Groves and M tend to have lots of debris piled up. (For example under the overpass there's large piles of dirt and grass growing and it's clear there's very poor drainage and upkeep in the area). Businesses downtown occasionally block sidewalks with signage etc., making it difficult for strollers or mobility issues. Overall need a mix of upkeep so people can utilize/ access them and then making sure you are giving them places to go.</i>

GENERAL QUESTIONS ABOUT TRANSPORTATION IN AUBURN

QUESTION	RESPONDENT #1	RESPONDENT #2	RESPONDENT #3
2. Do you have any suggestions on how we make sure we are providing transportation facilities in an equitable way and that we are considering the needs of the entire community, including typically underserved and disadvantaged groups?	<i>Expanding pedestrian, bicycle, and transit infrastructure to serve everyone's destinations is the best way to provide equitable transportation. Cars are expensive to purchase and maintain; living without one should be a feasible option.</i>	<i>Expanding pedestrian, bicycle, and transit infrastructure to serve everyone's destinations is the best way to provide equitable transportation. Cars are expensive to purchase and maintain; living without one should be a feasible option.</i>	<i>More education on existing options, maybe a more consistent booth at the farmers market and/or articles in the paper and making it clear where to flag needs or provide suggestions. Community Facebook groups in the area (and Nextdoor) seem fairly active so a social media education campaign could help spread the word more than just an add in the Auburn reporter (which by the way was misleading ad. I thought it was for city wide feedback but all these questions are transportation specific).</i>
3. Do you have suggestions on how we should prioritize limited funding for the wide range of transportation needs throughout the City?	<i>I think non-motorized projects should be prioritized over most projects that serve private cars. It's cheaper to add new bike lanes than it is to add new car lanes. And if we can get enough people out of their cars, we won't even need to expand road capacity!</i>	<i>All road repaving effort must add infrastructure for unrepresented road users like bicycles. Per a comprehensive plan for a connected network. Change zoning to create 15 minute neighborhoods.</i>	
4. Do you have any other comments about transportation in Auburn?		<i>All road repaving effort must add infrastructure for unrepresented road users like bicycles. Per a comprehensive plan for a connected network. Change zoning to create 15 minute neighborhoods.</i>	

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Active Transportation (Non-motorized, Walking or Biking)



General Traffic Issues



Safety

COMMENTS ON THE INTERACTIVE MAP

COMMENT	CATEGORY	PIN/LOCATION
<i>Perhaps a traffic light at A St SE & 21st St SE? This seems like a fairly busy intersection and I see a lot of people making somewhat dangerous turns.</i>		A St SE & 21st St SE
<i>Southbound C Street SW can get very congested at Ellingson Road during peak hours. Maybe consider adding an additional southbound left turn lane. Though, due to capacity constraints, this may require careful coordination of the C Street and A Street signals.</i>		C St SE & Ellingson Rd
<i>Consider bike lanes on Evergreen Way SE! The road lanes are too narrow to fit a bike and car simultaneously, and the sidewalk is too narrow to comfortably fit a bike and pedestrian simultaneously. I used to bike on this road frequently as part of my commute to school, and this caused problems for me.</i>		Evergreen Way SE
<i>On Kersey Way SE between Stuck River Dr and 50th St SE, there is a mismatch between the design speed of the road and the posted speed limit. Most of the vehicles on the road travel significantly faster than the posted speed limit of 35 mph, because the geometry and environment of the road puts the comfortable driving speed much higher. This should be fixed by either raising the speed limit to reflect the actual speed of traffic, or by adding traffic calming measures to make drivers slow down.</i>		Kersey Way SE
<i>The portion of Kersey Way SE between 50th St SE and the White River currently lacks non-motorized access. There should be a path for pedestrians and cyclists running parallel to this road on its west side. As someone who lives near 50th St, this would make it much more convenient for me to bike to school or downtown.</i>		Kersey Way SE
<i>The sidewalks are poor quality and in some places overgrown. Makes it difficult for anyone handicapper, strollers etc. to get around. There are several elderly residents on this road so would be nice to see some meaningful repair work done, not some more gridding that literally did nothing to improve conditions. The street was skipped over for paving as part of the larger paving project in the area, which made sense but the sidewalks are a big miss for the area and promoting walkability.</i>		L St SE between E Main St & 2nd St SE



Active Transportation (Non-motorized, Walking or Biking)



General Traffic Issues



Safety

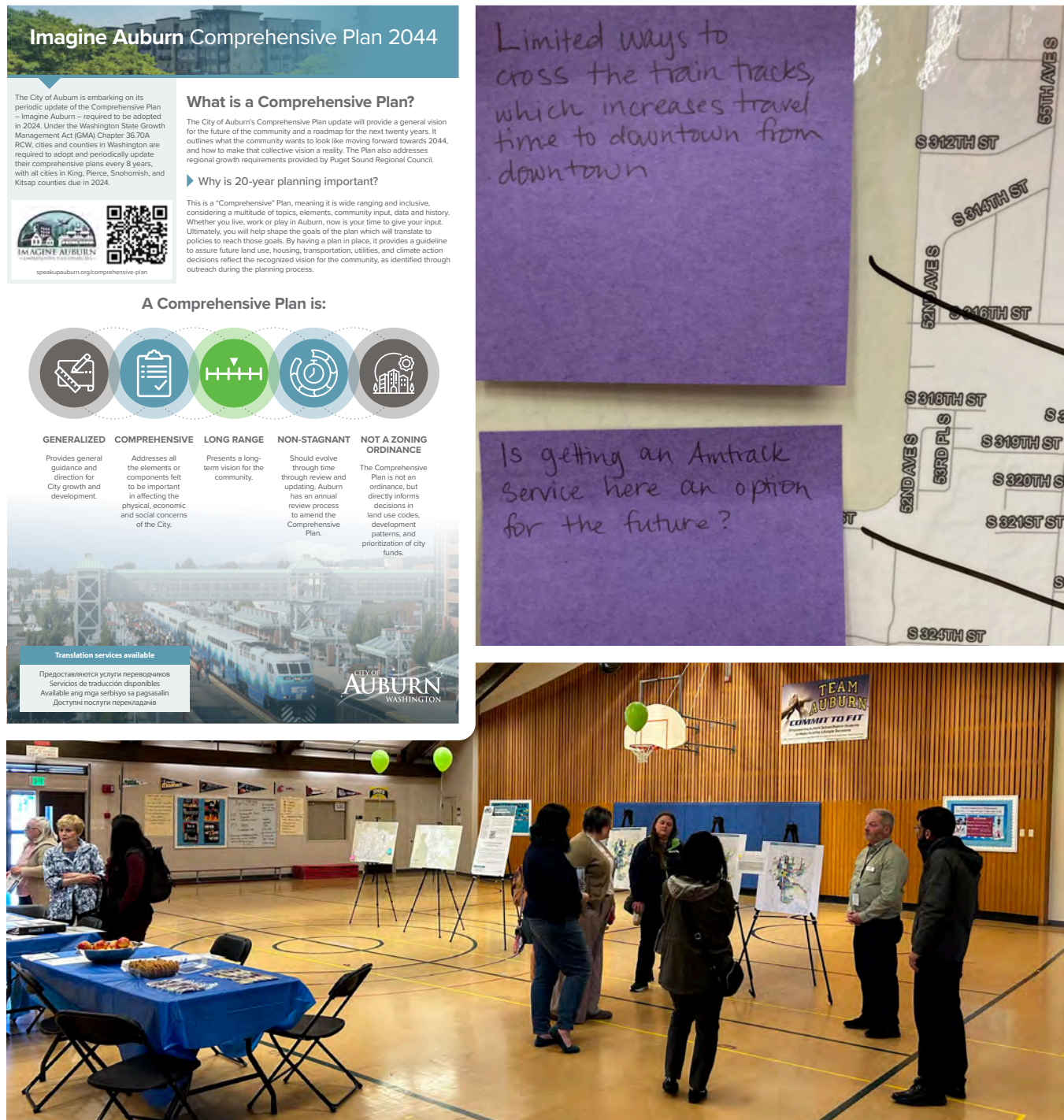
COMMENTS ON THE INTERACTIVE MAP

COMMENT	CATEGORY	PIN/LOCATION
<i>Everyday I cross this intersection; everyday drivers fail to yield to pedestrians. Particularly drivers waiting to turn left ignore children AND adults in the crosswalks. Drivers even do this with the crossing guard waiving their flag! Several changes would make this intersection safer. Time the light to treat pedestrians with respect. Give us the time to cross the street without fear of drivers by keeping all lights red and making right turn on red illegal and left turn only on green arrow. For human behavior it seems best to make this 24 hour policy instead of only before and after school hours. That would be a big improvement without much expense. What is really appropriate for a pedestrian area like this is a traffic circle with raised crosswalks to return the right-of-way to pedestrian and bicycle modes.</i>		Lakeland Hills Way SE & Evergreen Way SE
<i>Because of high volumes of vehicular and pedestrian traffic, it may be wise to consider prohibiting right turns on red at the Lake Tapps Pkwy/Lakeland Hills Way intersection to improve safety.</i>		Lakeland Hills Way SE & Lake Tapps Pkwy E
<i>The all-way stop at 29th St SE and M St SE can sometimes get congested or confusing. Maybe consider installing a roundabout instead, to improve safety and traffic flow. I'm no traffic engineer, but traffic patterns seem to be well-suited for a roundabout.</i>		M St SE & 29th St SE
<i>Maybe replace the all-way stop at 37th St SE and M St SE with a roundabout. Most people are making the same turn; right onto westbound 37th, or left onto northbound M. A roundabout would allow both of these movements to occur simultaneously without everyone having to stop.</i>		M St SE & 37th St SE
<i>The intersection of Sumner-Tapps Hwy E and 16th St E seems like a good place for a roundabout. From what I can tell, the traffic patterns here are more sporadic, making it a good fit for a roundabout to improve traffic flow and safety. Though, I understand that this intersection probably isn't a high priority for the city.</i>		Sumner Tapps Hwy E & 16th St E

Comprehensive Plan Open House

Organized by the Community Development Department, this event was intended to inform the community about the update to the City's Comprehensive Plan, on April 25, 2023 from 4 pm to 7 pm, at Washington Elementary School. Transportation Staff was present to share information and engage with attendees on the Comprehensive Transportation Plan, which is the Transportation Element of the Comprehensive Plan.

Figure 17. Open House Photos



Other Events

Staff hosted a celebration station on **Bike Everywhere Day**, on the Interurban Trail at the West Main Street entrance to encourage cyclist and active transportation in Auburn, as an alternative to driving, as part of the CTR / TDM work. At the same time, staff took advantage of this event to also engage with cyclists on the plan update and the survey.

Staff displayed information at the **Kids' Day** event on June 23, 2023, to let the community know about the plan, and share information about the survey.

Staff reserved a booth and engaged with the community at the **Auburn Farmer's Market** on July 23, 2023, from 10 am to 3 pm.

Staff reserved a booth and engaged with the community at the **Church of Nazarene**, who was hosting a resource fair for families with free backpacks and school supplies in partnership with the Auburn Kiwanis on August 5, 2023, from 11 am to 2 pm.

Figure 18. Other Outreach Event Photos



Church of Nazarene Kiwanis Event



Public Comments from Outreach Events

Comments collected at all of our public outreach events are summarized in the table below and categorized by type:



Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE
Open House (April 5, 2023)		
1. Dedicated and protected bike lanes needed. It's hard to feel safe if the bike lanes are not protected, as there are A LOT of distracted and bad drivers.	Comment was Auburn in general, not related to one specific location.	
2. Need street lights, especially brighter LED lights as it's hard to see people at night.	Comment referring to neighborhood downtown, to the west of the BNSF tracks, south of Main St.	
3. Is getting an Amtrak service an option for the future?		
4. Limited ways to cross the train tracks, which increases travel time to downtown from downtown	Referring the access from the west side of the tracks to the core downtown area.	
5. Need to improve safety and the perception of safety downtown.		
6. Need to better enforce traffic laws and improve bike and pedestrian visibility at intersections downtown.		
7. The 4-way stop by Zola's (Main St /D St) lacks compliance and there is a concern about pedestrian safety when crossing.		
8. Bus shelters are not welcoming. We need shelters and seating to encourage riders, and need to address safety at bus stops, such as transient camps and unwanted activity taking place in bus shelters.		
9. The interurban trail is not welcoming anymore; there is trash and homeless camps		
10. There is lots of trash downtown - garbage bins were removed and people don't have places to throw away trash, so it's all over the sidewalks. This makes the sidewalk less appealing and less comfortable to walk downtown.		
11. Bathrooms are closed in downtown parks. It is not equitable when other parks out of downtown have access to bathrooms, but not downtown residents and families.		

(Continued on next page)



Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE
Bike Day (May 19, 2023)		
1. The Interurban trail needs to be repaved.		
2. Accessing the Interurban Trail from the grocery Outlet area is difficult.		
3. Suggestion to replicate event from Seattle, where 8 miles of Lake Washington Boulevard are closed to traffic on Sundays for bicycles to ride. Something like this would be great in Auburn.		
4. Corner radius in ADA compliant facilities should also accommodate bike turning radius, as sharp corners are challenging for bikes		
5. Streets need to be bicycle friendly in general. Bike lanes with RPMs, rumble strips, or delineators would make it much more comfortable for cyclists. Solid curb is not ideal, however, as it presents a challenge to get out of the bike lane.		
6. Bike lanes need to be cleaned regularly, and also plowed when there is snow.		
7. Suggestion to extend the Interurban trail to Tacoma.		
8. Auburn needs more protected bike lanes along large or busy roads.		
9. Suggestion to look at Denver's bike network - they are a great model with a good bike network that connects Denver to any surrounding suburbs. The network is continuous, comfortable, and safe.		
10. It would be great to connect the Green River Trail to the Interurban Trail.		

(Continued on next page)

Bike Day





Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE
Bike Everywhere Day Celebration Station (May 17, 2024)		
1. There needs to be a connection between the Interurban Trail and the Sumner Link Trail.		
2. The trail condition on the Interurban Trail needs improvements, particularly the southern portion of the Interurban.	Comment is not specific to the portion of the Interurban in Auburn, but also pertains to portions of the trail outside of Auburn	
3. The pavement quality of the Interurban Trail is poor, particularly from W Main St to 15th St SW		
4. There should be restroom facilities on the Interurban Trail.		
5. There needs to be a better bicycle connection between Auburn and Federal Way		
6. There needs to be better pedestrian facilities on W Valley Hwy		
7. There is no bus connection between W Valley Hwy and Auburn Station. People who work along W Valley Hwy have to walk to Auburn Station to get the train.		
8. There should be water fountains along the Interurban Trail		
9. Make sure there are traffic calming features and RRFBs at trail crossings		
Senior Center Tabling (May 21, 2024)		
1. There is a safety concern for pedestrians when walking under Hwy 18; there are many homeless people there making it feel unsafe.		
2. During the winter, there is often ice near the bus stop by the downtown Safeway. Please make sure that ice is clear near bus stops.		
3. There is no transit access to Mary Olsen Farm; would like a bus route that goes there.		
4. Drivers often don't see pedestrians during blinking yellow left turn signals.		
5. I generally have a good pedestrian experience walking around Auburn in terms of sidewalks and ramps.		

(Continued on next page)



Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE
Farmer's Market (July 23, 2023)		
1. Need easier / more affordable way to get to airport (SeaTac).		
2. Parking garage for Sounder Train gets full early, and it's difficult to find parking to ride the train, unless arriving very early. There is no alternative parking available.		
Church of Nazarene One Community Kiwanis Event (August 5, 2023)		
1. It is difficult for elderly residents to get around when they have mobility challenges.		
2. Need to improve safety for kids to get to and from schools, parks, and around the neighborhood.		
3. The Government should not tell people what to do and let people chose to drive if that is what they want.	Comment related to the question "how to encourage people to walk, bike, and use transit."	
4. The City needs to install more roundabouts, and replace traffic signals with roundabouts.		

(Continued on next page)



Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE	LOCATION
OMS Requests (Comments are Summarized)			
1. At the intersection of M St SE & 21st St SE, there are concerns about speeding and stop sign compliance. Multiple residents have complained about crashes resulting in both injuries and property damage. They've also voiced concern about this due to it's proximity to schools.	We have received 13 requests for this intersection: R41232, R41186, R39846, R39650, R39529, R39519, R39511, R39398, R39262, R38041, R37045, R36674, R34364		M St SE & 21st St SE
2. At the intersection of 112th Ave SE and SE 284th St, there have been requests about speeding and a request for a roundabout at this location to help with pedestrian safety concerns.	R399390		112th Ave SE & SE 284th
3. Stop compliance concern at W St NW & Terrace Dr/S 316th St	R39982		W St NW & Terrace Dr/S 316th St
4. Concern about speeding and the left turn at 124th Ave SE & SE 284th St. Requests a street light at this location.	R40588		124th Ave SE & SE 284th St
5. Concern about the road condition on 37th St NW between I St NE and the Interurban Trail. Would like the condition of the road improved for bicycles.	R41651		37th St NW
6. Concern about pedestrian safety at the intersection of SE 304th St and 116th Ave SE.	R42770		SE 304th St & 116th Ave SE
7. Would like sidewalk along SE 304th St between 112th Ave SE and 116th Ave SE.	R42772		SE 304th St between 112th Ave SE & 116th Ave SE
8. Concern about safety on Lea Hill Rd between 104th Ave SE and 112th Ave SE. Requests additional safety features, such as street lights, turtles, warning signs, etc.	R42796		Lea Hill Rd between 104th Ave SE and 112th Ave SE
9. Concern about safety at the AWS & SR-18 interchange. Reports that many drivers wait too long to get into the left turn lanes, stopping abruptly in the through lanes and cutting in front of other drivers.	R43047		AWS & Sr-18 Interchange

(Continued on next page)



Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE	LOCATION
Emails and Other Feedback (Comments are Summarized)			
1. When prioritizing bike facility projects, instead of focusing only on feeding into transit and larger trails, the City should also look at destinations within the city and how cyclists get to those destinations.			General
2. A St SE should have bike lanes.			A St SE
3. M St SE should have its bike lane extended all the way up to Les Gove.			M St SE
4. 37th St SE should have a bike lane, to complete a grid of bike lanes to make biking feasible in south Auburn.			37th St SE
5. Would like bike lanes on Auburn Way, both North and South.			AWN & AWS
6. Concerned about the lack of bike lanes on Evergreen Way SE between Lakeland Hills Way & Kersey.			Evergreen Way SE
7. Concern about speeding and pedestrian safety on crosswalks crossing Evergreen Way.			Evergreen Way SE
8. Concern about speeding on 21st St SE near Shaughnessy Park			21st St SE east of Hemlock
9. Would like sidewalk or wider shoulder on 53rd St SE east of Kersey for better pedestrian and bicycle access.			53rd St SE east of Kersey
10. Would like speed cushions on 22nd St SE between M St SE and R St SE. Would like street to be safe enough for children to play in.			22nd St SE between M St SE & R St SE
11. Does not think the R St widening project will have any benefit		General	R St SE
12. Does not think the R St SE/21st St SE roundabout will have any benefit		General	R St SE & 21st St SE

(Continued on next page)



Pedestrian



Bicycle



Transit



Safety



Parks

COMMENT	CONTEXT/ CLARIFICATION	COMMENT TYPE	LOCATION
13. <i>The AWS/17th St SE/M St SE intersection improvements project will create inconveniences for accessing AWS and M St NE from her neighborhood</i>			AWS/17th St SE/M St SE
14. <i>Would like sidewalk on S 298th/65th Ave S/ S292nd, which connects 64th Ave S to W Valley Hwy.</i>			S 298th St/65th Ave S/S 292nd St
15. <i>Would like to see a speed enforcement camera on AWS at the bottom of the hill northwest of the casino.</i>			AWS
16. <i>Would like the White River Trail to connect to the right bank of the White River in the Pacific Right Bank Flood Protection Project, crossing A St SE and the BNSF tracks.</i>			White River Trail
17. <i>There is a lack of bicycle crossings across AWS between D St SE and M St SE.</i>			AWS
18. <i>There is a lack of bicycle facilities on I St NE between 40th St NE and 45th St NE</i>			I St NE between 40th St NE & 45th St NE
19. <i>Would like a signalized (RRFB) crossing of 8th St NE at Pike St NE/Henry St NE</i>			8th St NE & Pike St NE/Henry St NE
20. <i>A list of locations where signals do not detect bicycles was sent to the City.</i>			General
21. <i>Concern about speeding on Evergreen Way SE near Lakeland Hills Elementary.</i>			Evergreen Way SE near Lakeland Hills Elementary
22. <i>Concern about speeding and possible sight distance issues on Evergreen Way SE, particularly near 56th St SE and Bennett Ave SE.</i>			Evergreen Way SE

All Project Ratings

PROJECT/ COMP#	PROJECT NAME	AVERAGE RATING	NUMBER OF RATINGS	NOTES
	N/A (General)	4.00	1	
20	C St NW & 3rd St NW Intersection Improvements	5.00	1	
15	15th St NW & M St NW Access Management	4.00	1	
3	I St NE & 37th St NE Intersection Improvements			
17	S 316th S & 51st Ave S Intersection Improvements	4.00	1	
6	SE 304th St & 112th Ave SE Intersection Improvements	5.00	1	
7	SE 304th St & 118th Ave SE Intersection Improvements	3.00	1	
26	A St SE & 12th St SE Intersection Improvements	4.50	2	
2	Auburn Way N & 42nd St NE Intersection Improvements			
1	Auburn Way N & 45th St NE Intersection Improvements			
5	I St NE & 30th St NE Intersection Improvements			
8	SE 304th St & 116th Ave SE Intersection Improvements			
18	S 321st St & 44th Ave S/46th Pl S Intersection Improvements			
27	A St SE & 21st St SE Intersection Improvements	4.00	1	
16	S 316th St & 56th Ave S Intersection Improvements	3.00	1	
28	Lakeland Hills Way SE & Oravetz Rd SE Corridor and Intersection Improvements			
12	Pike St NE & 8th St NE Access Management			
22	Auburn Way S, M St SE, 17th St SE Intersection Improvements	1.90	21	<i>Ratings where either 4/5 or 1/2. No 3s</i>
23	M St SE & 12th St SE Intersection Improvements	4.00	1	
9	Lea Hill Rd Corridor Improvements (104th Ave SE - 112th Ave SE)			

(Continued on next page)

PROJECT/ COMP#	PROJECT NAME	AVERAGE RATING	NUMBER OF RATINGS	NOTES
10	Auburn Way S & 6th St SE Improvements (SR 18/ SR 164 Interchange)	5.00	1	
19	A St NW & 3rd St NW Improvements	5.00	1	
14	10th St NE Improvements (B St NW - Auburn Way N)	5.00	1	
11	116th Ave SE & SE 320th St Intersection Improvements			
9	Lea Hill Rd Corridor Improvements (SE 312th St from 112th Ave SE to 124th Ave SE)	5.00	1	
24	M St SE & 29th St SE Intersection Improvements			
21	M St SE By-Pass Rd (M St SE By-Pass & SE Auburn-Black Diamond Rd)	2.77	36	14 prefer Option A; 24 prefer Option B; 5 don't like either option
21	M St SE By-Pass Rd (M St SE By-Pass & SE Auburn-Black Diamond Rd)	3.54	35	14 prefer Option A; 24 prefer Option B; 5 don't like either option
3	I St Improvements (37th St NE - 45th St NE)	5.00	1	
13	8th St NE Improvements Project (Auburn Way N - Harvey Rd/M St NE)	5.00	1	
25	A St SE Projects	4.63	8	

AWS, 17th St SE, M St SE Project Ratings

RATING	COMMENT
1	<i>If you filter southbound M St SE traffic to 17th St SE, it will impact the residential area between 17th St SE and 21st St SE next to the middle school and overflow 21st St SE traffic. The right turn a car has to make from M St SE onto 17th St SE is what slows traffic going through the lights! There needs to be a light at M St SE and 21st St SE. Also, people going north from this end of town, who normally take M St SE will have to take R St SE and you also need a traffic light at R St SE and 21st St SE to handle that. During the evening rush hour, it's very difficult to get on R St going north to wind around, get on Auburn Way S for 1/2 a block and try to turn north onto M St SE. Come up with a better plan to not choke out R St SE, because this one you present will become an instant nightmare in a very wide area of southeast Auburn. A freeway exist running up to the Muckleshoot area of Auburn Way S, from the M St SE area under Hwy 18 would be a good spot for an exit! That would relieve traffic coming down M St SE to get to Auburn Way S and beyond.</i>
n/a	<i>The cul-de-sac will promote tent camping as there are no houses like a normal cul-de-sac. Let me just tent behind the Walgreens. And the antique store that already has a lot of theft will become a bigger target.</i>
n/a	<i>I have a lot of concerns. Will there be any public meetings or can I come down to see a whole plan? Do not block off and make a cul-de-sac of M St SE between 21st and 17th. All your improvements are pushing speeding traffic down neighborhood streets with no alternatives. If you close off M St SE between 21st and 17th, where is all the traffic supposed to go? Also, people in my area will now be forced into more traffic since there will be fewer options to get to the other side of town. Bad idea!</i>
5	<i>I am excited to reduce traffic in the residential area on and around M St SE. We have new schools in the area and a lot of kids walk to school. I live on the corner of M St SE and 21st St SE and I cannot count the number of accidents that have occurred and the number of near misses at this 4-way stop. It is a nonstop flow of traffic.</i>
5	<i>I live on the corner of M St SE and 21st St SE. Day and night, I hear cars spinning out and loud music. Oftentimes, people blow through the stop sign and cause accidents, one of which damaged our front fence. I believe the cul-de-sac will be the most beneficial for my family and everyone in this area! Thank you for this proposal, and I hope they all pass!</i>
1	<i>How am I supposed to get home when I live further south on M St SE?</i>
1	<i>I live on 23rd st SE. It is almost impossible to get out on R St SE to get to Auburn Way S in the morning, so I go to M St SE to get across Auburn Way S to get to work on the north end of town. This is going to force me and countless others to go through the school zones during the start of school and increase our time and fuel costs. Once in a while I will go to A St SE and the amount of inconsiderate parents dropping their kids off in the middle of the road is insane, all so they don't have to pull off the road and fight their way back in. My opinion is this will end in disaster.</i>
4	<i>I appreciate the multiple options provided. The lane being utilized for multiple left/right options makes the most sense to me.</i>
4	<i>Not a fan of the cul-de-sac on M St SE south of 17th St SE. It would cut off the direct access to Auburn Way S and M St SE from 21st St SE.</i>

(Continued on next page)

RATING	COMMENT
1	<i>I know it will make no difference since you will go through with these plans, but not having access to crossing Auburn Way S from M St SE is really an inconvenience to the hundred if not thousands of people that use it now. Change can really stink and this one is not helping.</i>
1	<i>Northbound coming from Lakeland, Lake Tapps, and Bonney Lake will only have R St SE/17th St SE to get on Auburn Way S instead of also having the option of M St SE. 17th St SE already backs up for blocks to get onto Auburn Way S. There will need to be a light at the bottom of Auburn Way S at 17th St SE for traffic from 17th St SE to get onto Auburn Way S. Also, how will fire trucks get through from the fire station onto Auburn Way S if 17th St SE is backed up? For southbound traffic, there needs to be a light at Howard Rd onto R St SE, as this already backs up onto Auburn Way S. Additionally, the pedestrian crossing at M St SE (from the church to Starbucks) is very dangerous. Needs to be "no vehicle turn on red" from Auburn Way S onto M St SE. Also, making M St SE a dead end is a horrible idea - there are only 3 north-south roads through Auburn.</i>
1	<i>No northbound traffic from M St SE to westbound AWS is a huge mistake. Putting in a cul-de-sac on M St SE is a nightmare waiting to happen. I suggest you put in a light at the intersection just south of the fire station on R St SE for everyone trying to make a left turn. I'd rather not ever shop in that area of Auburn since the access is so limited to go west on AWS. Also, this intersection was remade to its current flow to reduce accidents from cars attempting to cross over AWS at 17th St SE. Dead ending M St SE is a huge mistake. I'd rather see a roundabout for better traffic flow.</i>
4	<i>The 12th St SE signal with a u-turn? This isn't clear to me. Will there be a crosswalk at 12th? Will 12th ever go through to this land use that is being discussed at the miles sand pit?</i>
1	<i>Auburn Way S traffic up toward Muckleshoot and Enumclaw has gotten out of hand. The amount of incidents, traffic violations, and growing traffic is unbearable. Turning M St SE into a dead end doesn't seem like the correct answer. It seems like a cost effective, short sighted solution to a big problem.</i>
1	<i>By stopping northbound traffic from M St SE onto Auburn Way S, you did not provide a safe way for residents to access Auburn Way S from the streets west of Game Farm Park. This forces traffic onto R St SE, which means all those streets must make left turns and then go behind the apartments on Howard Rd to merge onto Auburn Way S without a traffic light. Or they will be forced to make a left turn at the four-way stop on 21st and then back track in order to turn onto 17th St SE. While this plan may move more volume, it totally ignores the current residents who live in this community.</i>
1	<i>This is not an improvement for traffic at all. M St SE is a major through road to reach the south end of town for families.</i>

(Continued on next page)

RATING	COMMENT
1	<i>This proposal, in my opinion, is not favorable to the citizens of Auburn whatsoever. I am a router for the Auburn School District and design the bus routes that travel these roads. This proposal would add significant costs, delays, and additional traffic to the intersection of Auburn Way S & M St SE. For our buses transporting students between all north end and south end schools, this would add significant delays where we wouldn't be able to make it to schools on time. Our bus fleet travels north and south on M St SE as the quickest way to access schools in north Auburn, mid-town, Lea Hill, and all the schools on the south end of Auburn. Eliminating access on M St SE from Auburn Way S to 21st St SE will cause major delays. Personally, I can't really believe it is being considered. We have bus stops at EJ Square (1210 M St SE) and if the eastbound left hand turn lane on Auburn Way S is eliminated, we will not be able to access this development. This is not even counting all the buses we have doing field trips that use that road to and from all the south and north schools. We have at least 30 routes that turn off Auburn Way S to 17th St SE. We have 23 routes that use R St SE and 17th St SE. We already have 22 buses that go from H St SE to 17th St SE to G St SE to 12th St SE to Auburn Way S. If you close M St SE, that will cause over 100 buses to use the neighborhood streets and we already get complaints when we use some of them.</i>
1	<i>This will make traveling north from our home on 25th St SE next to Pioneer Elementary very difficult. K St SE is already crowded in the morning. People park when dropping off kids and it's unsafe. This appears to make K St SE the only way out of our neighborhood. This plan will make traveling out of and in to south Auburn more congested.</i>
1	<i>The blocking off of M St SE from 21st St SE to 17th St SE is totally unacceptable! Having to use the neighborhood side streets to reach Olympic Middle School, Pioneer Elementary, or 17th St Plaza Retirement Center is not acceptable for emergency teams or school buses. Has anyone asked the police/fire departments about having to respond when more than one unit has to go there? The traffic on R St SE/17th St SE is already a major back up at the AM rush hour and so is the PM traffic on the road in front of the shopping center (Walgreens) connecting to R St SE. You think their deliver trucks can square the blocks through the 21st St SE neighborhoods? That short expanse of M St SE from 17th St SE to 21st St SE is a relief for the back ups at R St SE in the am/pm and so does the right hand turn of Auburn Way S to 17th St SE. Having them available decreases the response time for additional units coming into the SE Auburn area. This plan is a safety risk for the 21st St SE/R St SE/17th St SE/29th St SE residents.</i>
1	<i>The dead-end of M St SE does not make sense. It will cause increased traffic for nearby residential areas and a school zone. I do not understand the rationale. A better solution would involve adjusting the traffic light sequencing. No explanations for the changes have been presented. The communities south of 17th St SE will be negatively impacted. More thought needs to be given to the proposal, with better reasons given.</i>

A St SE Projects

RATING	COMMENT
5	<i>I believe that such improvements are needed on A St SE.</i>
4	<i>Yes, I think they need to add a road under the railroad tracks. Ellingson Rd is impossible at 3:00pm to 6:00pm in the afternoon. We cannot get in or out of our neighborhood. All of the traffic going to Lakeland Hills blocks us from leaving or coming home. So many people use that intersection. They don't follow the traffic light rules and block the intersection. It is definitely overrun with excessive traffic. There needs to be a separate road to cross over to A St SE.</i>
4	<i>I like it but we need serious help with the Skinner Rd and Ellingson Rd intersection. The traffic is backed up at the light going eastbound and it blocks the intersection. We have to drive around cars to continue on Ellingson northbound through the very short green light. It's been dangerous and dreadful whenever I leave my house on 2nd Ave NE during rush hours.</i>
4	<i>All around, this is a pretty good plan with sensible safety improvements. A few notes: 1) the illustration does not depict any bike lanes/paths along A St SE. This project should include quality bicycle facilities along the corridor; they would fill a crucial gap in the bike network and would make the proposed tunnel more useful. 2) It's unclear from the illustration if the existing median on Ellingson Rd will remain. If it will, it may be worth considering allowing u-turns from eastbound Ellingson so eastbound traffic can access the shopping center with the Dominos and Starbucks. 3) For pedestrian safety, I'd recommend keeping the existing no turn on red restriction. 4) The sidewalks don't look particularly safe or pleasant to walk on since they're right up against the travel lanes. Consider adding some extra space between the road and sidewalks; this would have the additional benefit of not detouring pedestrians as much around the u-turn pockets.</i>

M Street Bypass Project Ratings

OPTION A RATING	OPTION B RATING	PREFERRED OPTION	COMMENT
3	5	B	<i>I live on 5th St NE and initially gravitated toward option A, but then as I read through the logic of Option B, I was swayed. My biggest complaint about my neighborhood is that it's not very walkable because it is cut off by several busy streets and people speed up and down R St. Not to mention I find the train horns to be a mild nuisance. I would love to live in a quieter, more walkable neighborhood and taking two extra minutes to drive a couple blocks further when I need to use that highway exit is most certainly worth that. Let's make this a more walkable, more connected city!</i>
n/a	n/a	B	<i>Option B looks best. It might move some traffic from residential streets to minor arterials. Also removes an at-grade railroad crossing. There are alternative routes to get access to Hwy 18, so no problem there. Please consider a roundabout instead of a new signal at the new M St SE intersection.</i>
3	5	B	<i>I live near there and the trains not sounding their horns sounds like a great idea to me.</i>
5	2	A	<i>Concern is losing access to Hwy 18 with Option B for us who take this everyday instead of Lea Hill or downtown Auburn. I vote for Option A because it is an additive with less negative due to opening up driving opportunities, improving train safety, and benefiting the community around it. 100% for train safety as we do not want a derailment ever.</i>
1	5	B	<i>Currently, the traffic along R St SE to Black Diamond Rd encourages some drivers to rev their engines, speed, and make a lot of noise, all of which is detrimental to the residents and community that neighbors R St SE. Option B would eliminate this nuisance and improve the quality of life for everyone along R St SE and neighboring streets. Currently, it is risky to walk along R St SE as a pedestrian, out for a stroll. Option B would make the walk far more pleasant and also better for bicycles. Bicycle traffic currently is dangerous and hazardous for both cyclists and motorists.</i>
1	5	B	<i>I've lived in this neighborhood for almost 30 years and experienced a decline in quality of life due to increased traffic on R St SE due to noise and pollution. The train horns continue to be a nuisance, especially at night. The closing of R St SE (Option B) would be a blessing to the neighborhood, restoring some peace and tranquility, preserving the residential character of the area. I fail to see the practical feasibility of Option A. R St south of E Main St is a narrow two-lane street, no sidewalks, minimal shoulder, lined with homes. The front yards of these homes are shallow. There is no space to widen the road. A further increase in traffic, as projected, would be disastrous for the residents of this area. Traffic delays would still occur at the redesigned railway crossing. I don't know anyone who would feel inconvenienced by driving a few extra blocks to reach Auburn Black Diamond Rd. Funneling traffic to M St SE makes more sense as M St SE is well-established as a major arterial.</i>
1	4	B	<i>The statement says we currently enjoy easy access to Hwy 18. It is much easier to go up over Lea Hill and enter the highway there. I would rather do that than to continue to endure the extra load of trucks that Option A would bring to our neighborhood.</i>
5	n/a	A	<i>I think it's critical that NE Auburn maintains access through R St.</i>
n/a	5	B	<i>We don't need more traffic on R St NE. This would make the 8th St NE and R St NE intersection more of a mess and the 8th St NE road over the bridge to Lea Hill more of a bottle neck.</i>

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OPTION A RATING	OPTION B RATING	PREFERRED OPTION	COMMENT
n/a	n/a	B	<i>I prefer Option B because Option A would give access to more traffic at high speeds through residential areas. We already have this issue when Hwy 18 is blocked due to accidents.</i>
5	1	A	<i>I live outside the city limits on Auburn Black Diamond Rd and use the R St connection to get into Auburn when Hwy 18 is backed up or block and have used it for years! Closing off the R St connection would have a huge negative impact for those of us who live out that way! Having the M St connection in addition to R St would absolutely help give options to easily commute to both north and south Auburn.</i>
1	3	Neither	<i>With Option A, it is imaginable traffic flow eventually increasing along R St to make those along it and surrounding areas uncomfortable. The little connector of 4th St SE (from to R) may suffer similarly. Residential streets are not meant as highways. It's better to keep traffic flow on streets already undertaking heavier flow, such as M St. This makes Option B preferable. Yet, Option B's closing older access from 4th to Auburn Black Diamond and train crossing seems overkill. Local access will be lost. Not everyone taking back roads is a distance commuter or looking for shortcuts. It is a mistake to assume so. As for the train horn, Auburn is a railroad town. Train horns are sounding all about. Residing in the very neighborhood of the intersection discussed, it strikes me that spending money on an "inconvenience" that will little effect pervasiveness is wasteful. I prefer a compromised Option B, one with 4th to Auburn Black Diamond and the train crossing remaining open.</i>
n/a	n/a	A	<i>My concern is the restriction access to Auburn Black Diamond Rd for neighbors. Being a resident of 4th St SE and T St SE, Auburn Black Diamond provides a quick and necessary route for our children to get to and from school at Lakeview Elementary, especially for emergencies. In addition to accessing recreational areas such as Flaming Geyser Park and community events, family, and friends.</i>
1	5	B	<i>I would much prefer to keep our neighborhood quiet and lose the convenient access to 18 than have trucks utilizing R St.</i>
1	5	B	<i>I am voting for keeping large volumes of truck traffic out of our neighborhoods. M St is a large street, which is much better suited to such traffic.</i>
n/a	n/a	Neither	<i>Option A puts a street in our yard! Option B cuts us off from Hwy 18. Option A, how many drivers are going to run the light? Or speed through our yard? How many more accidents are going to happen in our yard? Option B takes away our road to Hwy 18 or Flaming Geyser State Park. Option B also allows the trains to be longer and idle more next to the houses here. We the home owners have to live with the extra noise, pollution, danger of car crashing our yard, loss of property, and more vibrations. We do not want this! No Option A or B!</i>
n/a	n/a	Neither	<i>Neither option benefits the neighborhood. Both options harm the neighborhood that this construction is being planned around.</i>
1	5	B	<i>I do not think diverting traffic through a housing neighborhood is a best practices idea. As the old Miles Pit area is developed, this would increase. I dealt with the M St SE underpass project and the traffic that diverted through our neighborhood was obnoxious! Not only did they drive around road closed signs, many of them were speeding while driving through. I would not wish increased traffic through a neighborhood on anyone. We all know that with a new improved road, the speeding would increase and put the residents living in those areas at increased risk.</i>

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OPTION A RATING	OPTION B RATING	PREFERRED OPTION	COMMENT
n/a	n/a	Neither	<i>I'm not sure what traffic issue is being addressed. Congestion? Rush hour backup? Pollution and accidents? Train horn? Diverting traffic off of M St to push it back onto M St further south doesn't solve much; it only pushes issues further down the line. Adding a traffic signal to M St - this alone will cause more stoppage and congestion. Spending money to eliminate train horns is silly - Auburn is a train hub. Additionally, closing the railroad crossing eliminates local access, potentially increasing incidental traffic on M St. Pollution and accidents will certainly escalate along R St by using it as a diversion thoroughfare. It is easy to speculate, but it would be less so if your purpose was clearer. As it stands, the project seems to be solving a non-existent problem by using Auburn Black Diamond Rd as a catalyst to disregard an entire neighborhood. Dedicated money might be better spent directly connecting Hwy 18 to the top of SR 164 hill at Muckleshoot.</i>
n/a	n/a	Neither	<i>Both options hinder the local neighborhood. The planned route saves 2 minutes. Maybe at the cost of a loss of property, more accidents, more noise, and more pollution.</i>
n/a	1	Neither	<i>I've lived in this neighborhood for over 15 years. Current traffic volumes and conditions make this a dangerous area to add more vehicles. Current volumes are high enough that a train crossing during peak hours means cars back up and block driveway access all the way down to E Main St. The speed limit is only 25, but folks drive too fast and take out street signs, trees, and last summer even a telephone pole. Most driveways are back in/back out driveways all along R St, which is not great. Option B is not too great either. I can't see why we would want to limit the neighborhood's access to Hwy 18. Aren't the in/off ramps backed up enough during peak hours? I see the intersection at AWS blocked by traffic for the on ramps pretty frequently. Wouldn't decreasing access to 18 make this worse?</i>
1	5	B	<i>We do not want more traffic, especially truck traffic, on R St SE.</i>
1	5	B	<i>Extending R St to the M St bypass road would negatively impact the quality of life in the neighborhood. The area between M St and the river, and south of 8th St to the railroad tracks is completely residential. R St is a residential street. South of E Main St, it is a narrow two lanes, lined with homes, without sidewalks or shoulders to speak of. There doesn't appear to be much room for widening the street. As such, it is unsuitable for the anticipated increased traffic. The proposed "improvement" to the rail crossing would not eliminate traffic delays as it will remain an at-grade crossing. Current traffic level is a nuisance, as are the frequent train whistles. Most of the traffic is from people outside the neighborhood passing through. This will increase dramatically if R St is extended. The benefits of closing R St - reduced traffic, no train horns - far outweigh the "drawback" of driving a few extra blocks to access Auburn Black Diamond Rd.</i>
1	5	B	<i>I am at 19 N St NE in Auburn, and have non-stop traffic down my street all day. My camera records cars every 30 seconds at peak traffic time. I have asked for speed bumps to match the adjacent road for 8 years. We have had two speed studies that show many speeders. I have even offered to pay for the speed bump between myself and the concerned neighbors that have put in many speed concerns on the See-Click-Fix app. Option B seems to be the only one that may lessen people cutting down my road to avoid the light on E Main and M St.</i>
3	4	B	<i>We like the reduced cut-through traffic and train whistle elimination of Option B, but a traffic study should be done for westbound E Main St between R St SE and M St first. As it is, we sometimes have difficulty going north and turning left/westbound off of N St SE onto E Main St because of westbound traffic, and Option B would divert more traffic off of R St onto E Main st that would have otherwise continued south on R St to get to Auburn Black Diamond Rd.</i>

Respondent Demographics

AGE	RACE (SELECT ALL THAT APPLY)	OTHER - RACE (SELECT ALL THAT APPLY)	DISABILITY	COUNTRY OF BIRTH	LANGUAGES SPOKEN AT HOME (SELECT ALL THAT APPLY)
64+	Caucasian		Yes	USA	English
43 to 63	Caucasian			USA	English
64+	Caucasian		No	USA	English
43 to 63	Other	North Africa-middle east	No	USA	Arabic, English
64+				USA	English
22 to 42	Hispanic or Latino, Caucasian		No	USA	English
22 to 42	Caucasian		No	USA	English
64+	Caucasian		No	USA	English
22 to 42	Black or African American, Caucasian		No	USA	English
22 to 42	Asian		No	USA	English
22 to 42	Prefer not to answer				English
64+					
43 to 63	Caucasian		No	USA	English

APPENDIX E

Roadway Classification Changes



IN THIS APPENDIX

New Street Classification
Changes by Street Name

ROADWAY CLASSIFICATION CHANGES

STREET NAME	BEGIN	END	PREVIOUS CLASSIFICATION	NEW CLASSIFICATION
S 324th Street	49th Avenue S	51st Avenue S	Local	Collector
62nd Place S	S 300th Street	End	Residential Collector	Local
63rd Place S	S 301st Street	End	Residential Collector	Local
Frontage Road	S 277th Street	44th Street NW	Minor Arterial	Local Industrial
D Street NW	S 277th Street	44th Street NW	Minor Arterial	Local Industrial
D Street NW Extension	44th Street NW	37th Street NW	Planned Minor Arterial	Remove
44th Street NW	Frontage Road NW	End	Minor Arterial	Local Industrial
I Street NW	44th Street NW	37th Street NW	Local	Local Industrial
49th Street NW	B Street NW	Auburn Way N	Non-Residential Collector	Local Industrial
49th Street NE Extension	I Street NE	L Street NE	Non-Residential Collector	Collector
L Street NE	51st Street NE	S 277th Street	Non-Residential Collector	Collector
M Street NW	15th Street NW	Gate	Non-Residential Collector	Local Industrial
M Street NW	Gate	29th Street NW	Non-Residential Collector	(Pending ROW Vacation)
29th Street NW	M Street NW	End	Non-Residential Collector	Private
29th Street NW	West Valley Hwy	End	Local	Local Industrial
26th Street NW	West Valley Hwy	End	Local	Local Industrial
R Street NW	15th Street NW	14th Street NW	Local	Local Industrial
14th Street NW	R Street NW	End	Local	Local Industrial
Pike Street NW	15th Street NW	20th Street NW	Local	Local Industrial
R Street NW	20th Street NW	End	Local	Local Industrial

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STREET NAME	BEGIN	END	PREVIOUS CLASSIFICATION	NEW CLASSIFICATION
20th Street NW	R Street NW	West Valley Hwy	Local	Local Industrial
22nd Street NW	R Street NW	West Valley Hwy	Local	Local Industrial
Outlet Collection Ramp	15th Street SW	Outlet Collection Way	Principal Arterial	Local Industrial
Outlet Collection Way (west)	15th Street SW	End	Principal Arterial	Local Industrial
Market Street	15th Street SW	End	Principal Arterial	Local Industrial
Outlet Collection Way (east)	15th Street SW	End	Principal Arterial	Local Industrial
Industry Drive SW	Boundary Blvd	15th Street SW	Minor Arterial	Local Industrial
Perimeter Rd	15th Street SW	End	Non-Residential Collector	Private
Sumner-Tapps Hwy E	Lake Tapps Pkwy SE	City Limit	Principal Arterial	Minor Arterial
55th Street SE	Bridget Ave SE	End	Rustic Collector	Rustic Local
Bridget Ave SE	55th Street SE	53rd Street SE	Rustic Collector	Rustic Local
M Street SE Extension	37th Street SE	41st Street SE	Planned Residential Collector	N/A
28th Street SE	Riverwalk Drive	Forest Ridge Dr. SE	Local	Collector
M Street SE	Auburn Way S	29th Street SE	Minor Arterial	Collector
Hemlock Street SE	Auburn Way S	End	Residential Collector	Local
15th Street SW Extension	C Street SW	A Street SE	Planned Minor Arterial	Remove
F Street SE	4th Street SE	Auburn Way S	Non-Residential Collector	Collector
A Street SW	Main Street	4th Street SW	Non-Residential Collector	Minor Arterial
4th Street SW	A Street SW	S Division St	Non-Residential Collector	Minor Arterial
S Division Street	3rd Street SW	4th Street SW	Non-Residential Collector	Minor Arterial

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STREET NAME	BEGIN	END	PREVIOUS CLASSIFICATION	NEW CLASSIFICATION
C Street SW	SR 18 EB ramps	SR 18 WB ramps	Minor Arterial	Principal Arterial
2nd Street SE/SW	Auburn Way North	D Street SE	Non-Residential Collector	Collector
2nd Street SE/SW	A Street SW	Auburn Way North	Non-Residential Collector	Minor Arterial
1st Street SE/SW	A Street SW	A Street SE	Non-Residential Collector	Minor Arterial
G Street SW	W Main Street	3rd Street SW	Non-Residential Collector	Local Industrial
3rd Street SW	E Street SW	G Street SW	Non-Residential Collector	Local Industrial
Lund Road	W Main Street	4th Street SW	Local	Local Industrial
Western St	W Main Street	End	Local	Local Industrial
Clay Street NW	W Main Street	End	Local	Local Industrial
H Street NW	W Main Street	6th Street NW	Non-Residential Collector	Local Industrial
6th Street NW	H Street NW	C Street NW	Non-Residential Collector	Local Industrial
2nd Street NW	D Street NW	H Street NW	Local	Local Industrial
D Street NW	2nd Street NW	3rd Street NW	Local	Local Industrial
3rd Street NW	C Street NW	D Street NW	Local	Local Industrial
1st Street NE/NW	B Street NW	Auburn Way N	Non-Residential Collector	Local
B Street NW	W Main Street	1st Street NW	Non-Residential Collector	Local
4th Street NE	Auburn Way N	M Street NE	Non-Residential Collector	Collector
8th Street NE	Harvey Road/M Street NE	104th Street SE	Minor Arterial	Principal Arterial
D Street NE	15th Street NE	16th Street NE	Non-Residential Collector	Local Industrial

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STREET NAME	BEGIN	END	PREVIOUS CLASSIFICATION	NEW CLASSIFICATION
16th Street NE	D Street NE	E Street NE	Non-Residential Collector	Local Industrial
E Street NE	16th Street NE	22nd Street NE	Non-Residential Collector	Local Industrial
E Street NE	22nd Street NE	23rd Street NE	Local	Local Industrial
23rd Street NE	E Street NE	E Street NE	Local	Local Industrial
E Street NE	23rd Street NE	26th Street NE	Local	Local Industrial
26th Street NE	E Street NE	Auburn Way N	Local	Local Industrial
22nd Street NE	E Street NE	Auburn Way N	Non-Residential Collector	Local Industrial
22nd Street NE	Auburn Way N	I Street NE	Non-Residential Collector	Minor Arterial
Riverview Drive NE	M Street NE	22nd Street NE	Residential Collector	Local
22nd Street NE	Pike Street NE	Riverview Drive	Residential Collector	Local
30th Street NE	B Street NW	Auburn Way N	Non-Residential Collector	Minor Arterial
30th Street NE	Auburn Way N	I Street NE	Non-Residential Collector	Minor Arterial
C Street NE	30th Street NE	42nd Street NE	Non-Residential Collector	Local Industrial
42nd Street NW/NE	B Street NW	Auburn Way N	Local	Local Industrial
B Place NW	B Street NW	End	Local	Local Industrial
85th Avenue S	Auburn Way N	City Limit	Non-Residential Collector	Local
37th Street NE	Auburn Way N	I Street NE	Non-Residential Collector	Collector
Green River Road	100th Avenue SE	City Limit	Non-Residential Collector	Rustic Collector
Green River Road	100th Avenue SE	104th Avenue SE	Non-Residential Collector	Collector

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STREET NAME	BEGIN	END	PREVIOUS CLASSIFICATION	NEW CLASSIFICATION
105th Place SE	Lea Hill Road	107th Place SE	Non-Residential Collector	Collector
107th Place SE	105th Place SE	SE 320th Street	Non-Residential Collector	Collector
SE 320th Street	107th Place SE	112th Avenue SE	Non-Residential Collector	Collector
116th Avenue SE	SE 316th Street	SE 315th Street	Residential Collector	Local
112th Avenue SE	SE 304th Street	SE 281st Street	Minor Arterial	Collector
SE 281st Street	112th Avenue SE	108th Avenue SE	Minor Arterial	Collector
108th Avenue SE	SE 281st Street	City Limit	Minor Arterial	Collector
SE 304th Street	132nd Avenue SE	City Limit	Minor Arterial	Principal Arterial
SE 288th Street	132nd Avenue SE	End	Local	Collector
SE 286th Street	124th Avenue SE	End	N/A	Local
SE 284th Street Extension	124th Avenue SE	SE 288th Street	Planned Residential Collector	Removed



AGENDA BILL APPROVAL FORM

Agenda Subject:

Ordinance No. 6958 (Gaub) (20 Minutes)

Department:

Public Works

Attachments:

[Ordinance No. 6958 with attachment](#)

[Presentation](#)

[Vicinity Map](#)

Date:

September 17, 2024

Budget Impact:

Current Budget: \$0

Proposed Revision: \$0

Revised Budget: \$0

Administrative Recommendation:

For discussion only.

Background for Motion:**Background Summary:**

The City is beginning the property acquisition process to obtain property rights needed for City Project CP2116 - R Street SE Widening – 22nd St SE to 33rd St SE (Project).

Ordinance 6958 declares public use and necessity regarding the Project and authorizes condemnation action for properties for which negotiations do not lead to agreement and closing. Property owners will be given notice of the ordinance in accordance with state law.

Fair market offers and negotiations will take place with property owners in efforts to reach settlement. Condemnation would only be necessary should agreement and settlement stall or fail.

The project provides public benefit by providing infrastructure that reduces traffic congestion, provides convenient and comfortable non-motorized travel, and improves safety for all users.

The project will include adding a second southbound lane to R St SE, replacing roadway pavement, constructing a separated multi-use trail for bikes and pedestrians along the west side of R St SE from 22nd St SE to the Game Farm Park Entrance where the new trail will cross to the east side of R St SE, constructing a wider sidewalk along the east side of R St SE, installing new street lighting, replacing the traffic signal at the intersection of R St SE/29th St SE (Riverwalk Dr SE), and replacing the existing pedestrian signal at R/31st St SE with a full traffic signal at the entrance to Game Farm Park.

Reviewed by Council Committees:

Councilmember: Tracy Taylor

Staff:

Ingrid Gaub

Meeting Date: September 23, 2024

Item Number:

ORDINANCE NO. 6958

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF AUBURN, WASHINGTON, PROVIDING FOR THE ACQUISITION BY EMINENT DOMAIN OF PROPERTY LOCATED NEAR OR ADJACENT TO R STREET SE WITHIN THE CITY OF AUBURN, WASHINGTON FOR ROADWAY WIDENING AND ASSOCIATED IMPROVEMENTS FOR PROJECT NO. CP2116, R STREET SE WIDENING – 22ND STREET SE TO 33RD STREET SE; DECLARING PUBLIC USE AND NECESSITY; AND PROVIDING FOR SEVERABILITY AND AN EFFECTIVE DATE

WHEREAS, efforts will be made to obtain property rights which need to be acquired in connection with the Project, including having the property appraised and negotiating reasonable amounts of compensation to be paid for the property to be acquired; and

WHEREAS, the City of Auburn is a noncharter optional municipal code city incorporated and organized under Title 35A RCW, and authorized to acquire and/or appropriate title to lands and other real property through the exercise of eminent domain within and without its corporate limits for public purposes pursuant to Chapter 8.12 RCW; and

WHEREAS, in the interest of improving R Street SE, the City of Auburn has identified a street improvement project, Project No. CP2116, R Street SE Widening – 22nd Street SE to 33rd Street SE (the “Project”), in compliance with the goals set forth in the City’s Comprehensive Plan; and

WHEREAS, the Project involves widening and other improvements to R Street SE to serve the public, for which the acquisition of certain real property and/or real property rights is necessary for the completion of the public uses of the Project; and

WHEREAS, for this Project, the City determined that acquisition of certain specific rights and interests from the real properties and owners, identified in this paragraph, is necessary to accomplish and construct the Project, as follows:

Tax Parcel #	Owner Name	Situs Address
4474200030	Clinton J. Homolka Corin L. Homolka	1505 29th Street Southeast Auburn, WA 98002
4474200020	Theodore G. Visaya Theresa M. Visaya	2815 R Street Southeast Auburn, WA 98002
7889100170	Michael E. Bruns Kimberly K. Bruns	2820 R Street Southeast Auburn, WA 98002
7889100160	Alan V. Pfeiffer Vicki Pfeiffer	2802 R Pl Southeast Auburn, WA 98002
4474200010	Karl Holmgren Cherie Jacobson	2809 R Street Southeast Auburn, WA 98002
2413200170	Geri Smith	1506 28th Street Southeast Auburn, WA 98002
7889100010	The Heirs and Devisees of the Estate of Jack V. Bergerson, deceased Jessalyn Bergerson	2803 R Place Southeast Auburn, WA 98002
7889000005	Ira B. Frank Maureen Y. Frank	1602 28th Street Southeast Auburn, WA 98002
2921059037	Bible Chapel, Inc	2606 R Street Southeast Auburn, WA 98002
2921059060	Fernando Lujan Velasquez Nancy Lujan	Vacant Land Auburn, WA 98002
1921059212	Mailene B. Anonuevo-Smith	1525 25th Street Southeast Auburn, WA 98002
1921059179	Jose M. Martinez Lopez Adilene Rodriquez Valazquez	2405 R Street Southeast Auburn, WA 98002
2921059031	T. Lindsay Howard	2502 R Street Southeast Auburn, WA 98002

and;

WHEREAS, the real properties identified above are all located within the City of Auburn, Washington and are referred to in this Ordinance as the "Parcels," and those specific rights and

interests needed by the City of Auburn for the Project are referred to in this Ordinance as the “Real Property Take”; and

WHEREAS, the legal definition of the Parcels, and the legal definition and survey drawings of the Real Property Take(s) needed from each of them, are set forth in Attachment 1 attached to and incorporated into this Ordinance by reference; and

WHEREAS, the City will appraise the fair market value of the Real Property Take; and

WHEREAS, the City will negotiate in good faith with the owners of the Parcels for the acquisition of the Real Property Take; and

WHEREAS, while this Ordinance authorizes condemnation, the City Council does hereby express its intent that negotiations be initiated in regard to the Real Property Take; and

WHEREAS, the City complied with the notice requirements set forth in RCW 8.25.290 by providing notice to the every property owner of record as indicated on the tax rolls of the county to the address provided on such tax rolls, for each property potentially subject to condemnation, at least fifteen days before the final action adopting this ordinance, and through publication once per week for two consecutive weeks, prior to the passage of a motion adopting this Ordinance and authorizing condemnation as provided herein; and

WHEREAS, payment of just compensation and costs of litigation should be made from the City's Project funds or from such other monies that the City may have available or attain for the acquisition;

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

Section 1. Incorporation of Recitals. The recitals set forth above are hereby adopted and incorporated herein as if set forth in full.

Section 2. Public Use and Necessity Declared. The City Council of the City of Auburn finds and declares that: (i) the Project for roadway widening and other improvement purposes is

a public use; (ii) the acquisition of the rights and interests in the Real Property Take legally described and depicted in Attachment 1 is necessary for the construction of the Project; and (iii) the acquisition of the Real Property Take and the construction of the Project are in the best interests of the residents and taxpayers of the City of Auburn.

Section 3. Acquisition. The City Council of the City of Auburn authorizes the acquisition, condemnation and taking of the Real Property Take as legally described and depicted in Attachment 1 hereto. The City Council authorizes the acquisition of the Real Property Take under threat of condemnation or by initiation of legal action for condemnation to acquire the Real Property Take as necessary for the commencement and completion of the Project, subject to the making or paying of just compensation to the owner(s) thereof in the manner provided by law.

Section 4. Reservation of Rights. Nothing in this ordinance limits the City in its identification and acquisition of property and property rights necessary for this public purpose. The City reserves the right to acquire additional or different properties as needed for the Project, and may adopt additional ordinances in the future authorizing acquisition by eminent domain of properties not included in Attachment 1 herein but likewise necessary for the Project, which is a public use.

Section 5. Authority of Mayor. The Mayor, by and through her designees, is authorized to negotiate for the acquisition of property and property rights, initiate and prosecute such causes of actions and legal proceedings in the manner provided by law to condemn, take, damage and appropriate the Real Property Take, and take such other actions and implement such administrative procedures as may in her discretion be necessary to carry out the provisions of this ordinance. In conducting said negotiations and initiating and prosecuting said condemnation proceedings, the Auburn City Attorney, by and through his/her/their designees, are hereby authorized to enter into stipulations for the Real Property Take. Settlement of any actions by the Mayor shall be made only upon the recommendation of legal counsel.

Section 6. Compensation. The compensation to be paid to the owners of the Real Property Take acquired through this condemnation action shall be paid from the City's Project funds or from such other monies that the City may have available or attain for the acquisition.

Section 7. Severability. If any section, subsection, sentence, clause, phrase or work of this ordinance should be held to be invalid or unconstitutional by a court or competent jurisdiction, such invalidity or unconstitutionality thereof shall not affect the constitutionality or validity of any other section, subsection, sentence, clause, phrase or word of this ordinance, nor its application to other persons or circumstances.

Section 8. Effective Date. This ordinance shall be in full force and effect five (5) days after publication of a summary of this ordinance in the City's official newspaper. The summary shall consist of this ordinance's title.

Section 9. Corrections by City Clerk. Upon approval of the City Attorney, the Auburn City Clerk is authorized to make necessary corrections to this Ordinance, including the correction of clerical errors in the body of this Ordinance or attachments/exhibit(s) hereto; ordinance, section, or subsection numbering; or references to other local, state, or federal laws, codes, rules, or regulations.

INTRODUCED: _____

PASSED: _____

APPROVED: _____

NANCY BACKUS, MAYOR

ATTEST:

APPROVED AS TO FORM:

Shawn Campbell, MMC, City Clerk

Jason Whalen, City Attorney

Published: _____

ATTACHMENT 1

Property Owners / Tax Parcels / Real Property Take

Property Owners: Clinton J. Homolka
Corin L. Homolka

Tax Parcel: 447420-0030

EXHIBIT A

PARCEL LEGAL DESCRIPTION
Tax Parcel #447420-0030

LOT 3, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF
RECORDED IN VOLUME 67 OF PLATS OF PAGE 26, RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

RIGHT OF WAY DEDICATION LEGAL DESCRIPTION

THAT PORTION OF LOT 3, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 67 OF PLATS AT PAGE 26, RECORDS OF KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 3, THENCE ALONG THE EAST LINE OF SAID LOT 3, SOUTH $01^{\circ} 20' 03''$ WEST A DISTANCE OF 110.00 FEET TO SOUTH LINE OF SAID LOT;

THENCE ALONG SAID SOUTH LINE, NORTH $89^{\circ} 24' 36''$ WEST A DISTANCE OF 5.85 FEET;

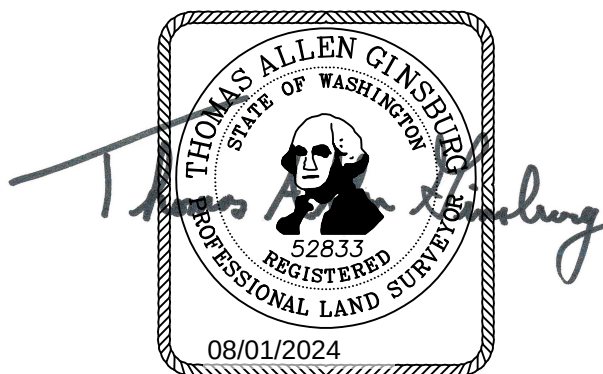
THENCE LEAVING SAID SOUTH LINE, NORTH $12^{\circ} 40' 18''$ EAST A DISTANCE OF 9.41 FEET;

THENCE PARALLEL WITH SAID EAST LOT LINE, NORTH $01^{\circ} 20' 03''$ EAST A DISTANCE OF 100.80 FEET TO THE NORTH LINE OF SAID LOT 3;

THENCE ALONG SAID NORTH LINE, SOUTH $89^{\circ} 28' 29''$ EAST A DISTANCE OF 4.00 FEET TO THE EAST LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 448 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS DEDICATION IS SOUTH $01^{\circ} 20' 03''$ WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



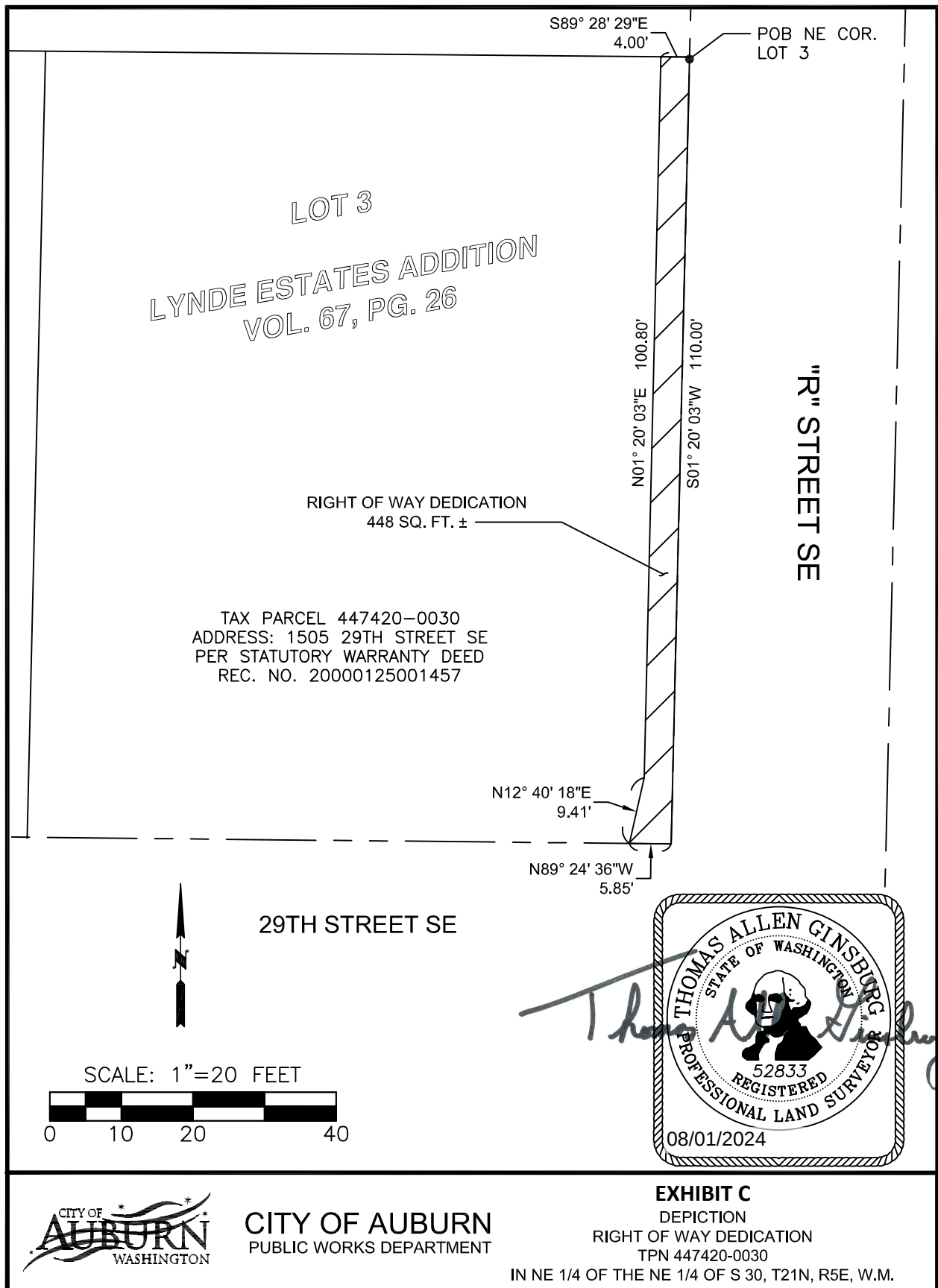


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF LOT 3, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 67 OF PLATS AT PAGE 26, RECORDS OF KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 3, THENCE ALONG THE NORTH LINE OF SAID LOT 3, NORTH 89° 28' 29" WEST A DISTANCE OF 4.00 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID NORTH LOT LINE NORTH 89° 28' 29" WEST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID NORTH LINE SOUTH 01° 20' 03" WEST A DISTANCE OF 110.00 FEET TO THE SOUTH LINE OF SAID LOT;

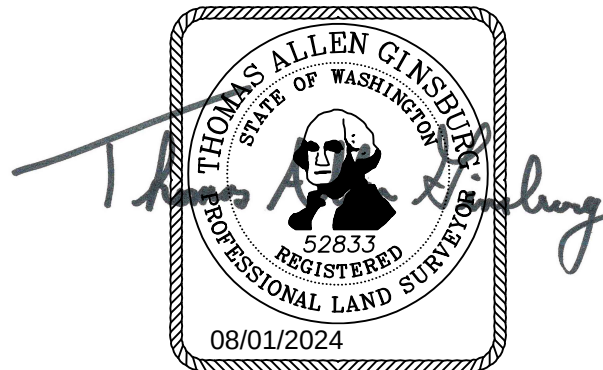
THENCE ALONG SAID SOUTH LINE SOUTH 89° 24' 36" EAST A DISTANCE OF 3.15 FEET;

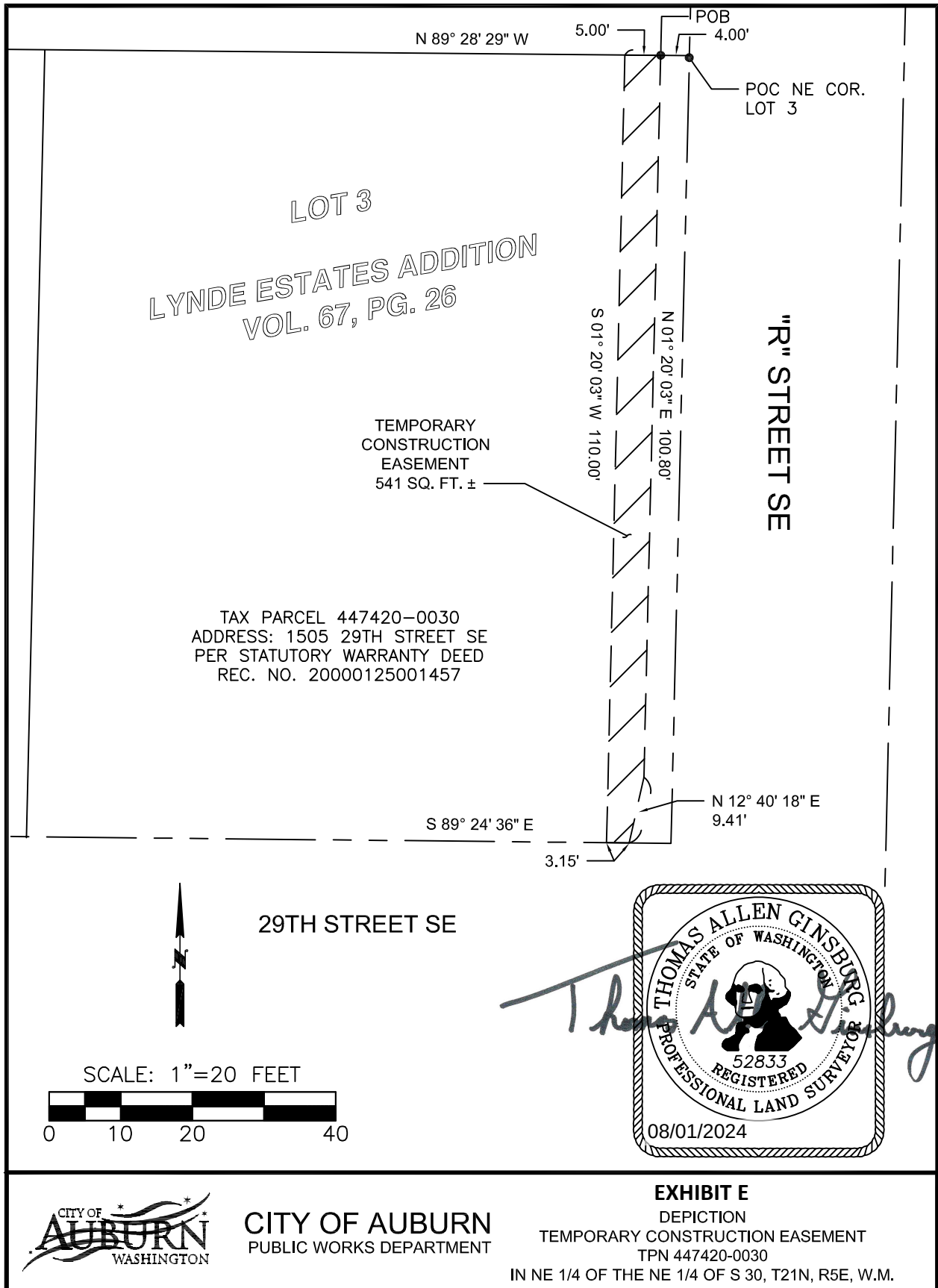
THENCE LEAVING SAID SOUTH LINE NORTH 12° 40' 18" EAST A DISTANCE OF 9.41 FEET;

THENCE NORTH 01° 20' 03" EAST A DISTANCE OF 100.80 FEET TO THE NORTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 541 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: Theodore G. Visaya
Theresa M. Visaya

Tax Parcel: 447420-0020

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #447420-0020

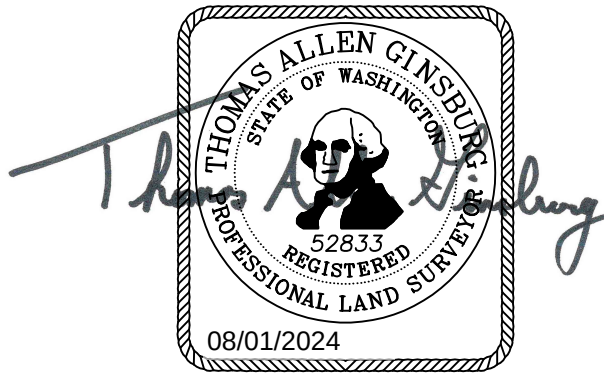
LOT 2, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF
RECORDED IN VOLUME 67 OF PLATS OF PAGE 26, RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THE EAST 4.00 FEET OF LOT 2, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 67 OF PLATS AT PAGE 26, RECORDS OF KING COUNTY, WASHINGTON.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 320 SQUARE FEET, MORE OR LESS.



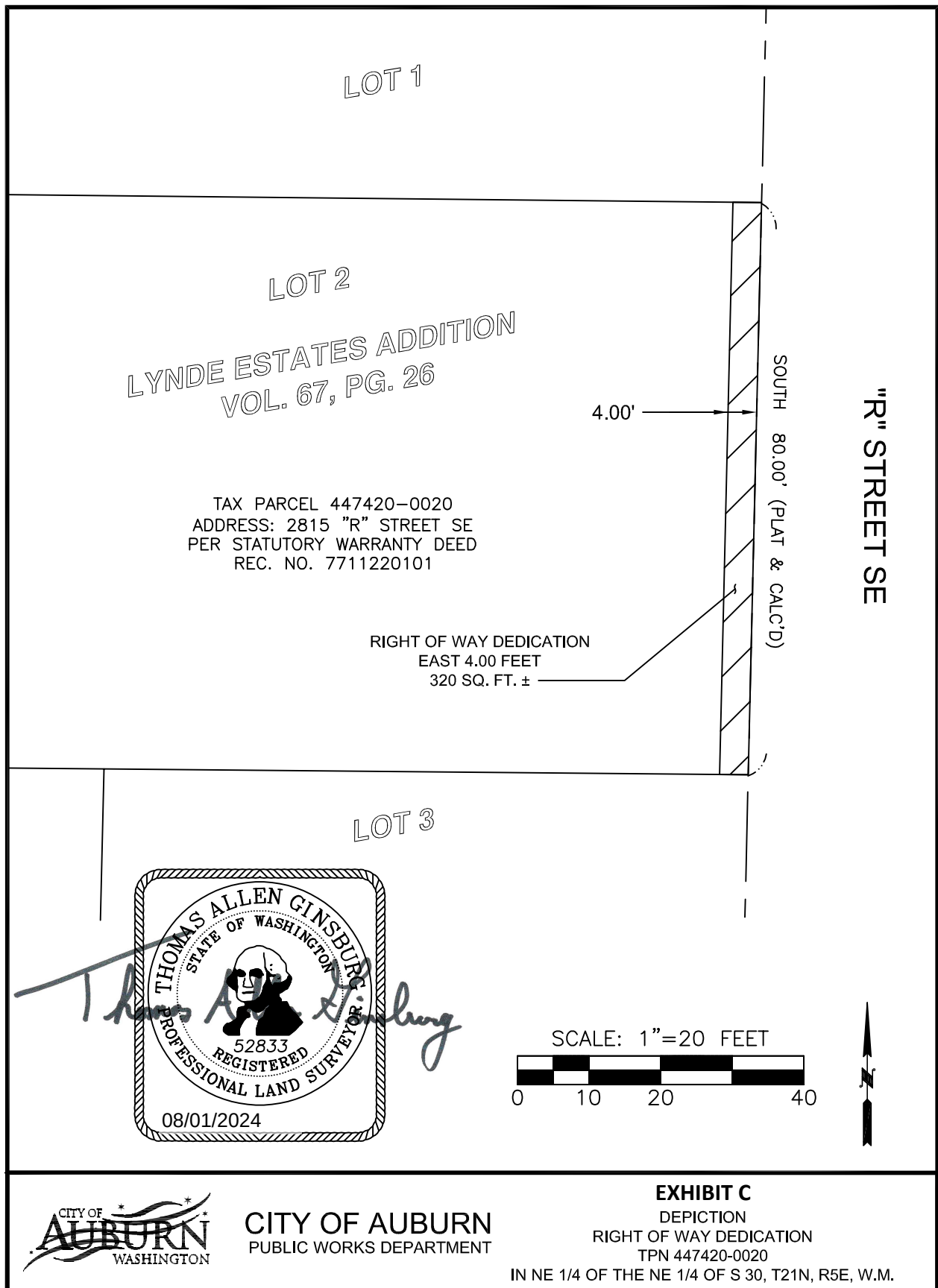


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF LOT 2, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 67 OF PLATS AT PAGE 26, RECORDS OF KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 2, THENCE ALONG THE NORTH LINE OF SAID LOT 2, NORTH 89° 23' 51" WEST A DISTANCE OF 4.00 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID NORTH LOT LINE, NORTH 89° 23' 51" WEST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID NORTH LOT LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 0.89 FEET;

THENCE NORTH 89° 23' 51" WEST A DISTANCE OF 8.49 FEET;

THENCE SOUTH 02° 27' 01" WEST A DISTANCE OF 23.73 FEET;

THENCE SOUTH 87° 32' 59" EAST A DISTANCE OF 8.96 FEET;

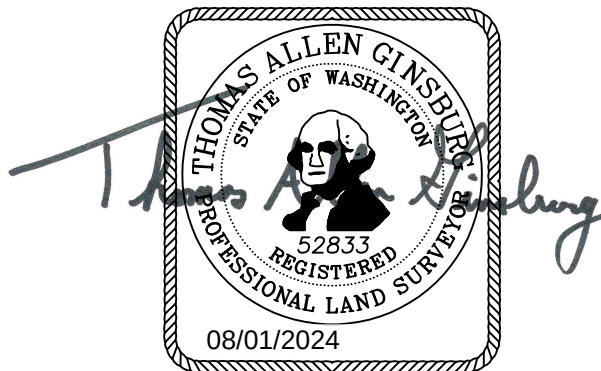
THENCE SOUTH 01° 20' 03" WEST A DISTANCE OF 55.12 FEET TO THE SOUTH LINE OF SAID LOT 2;

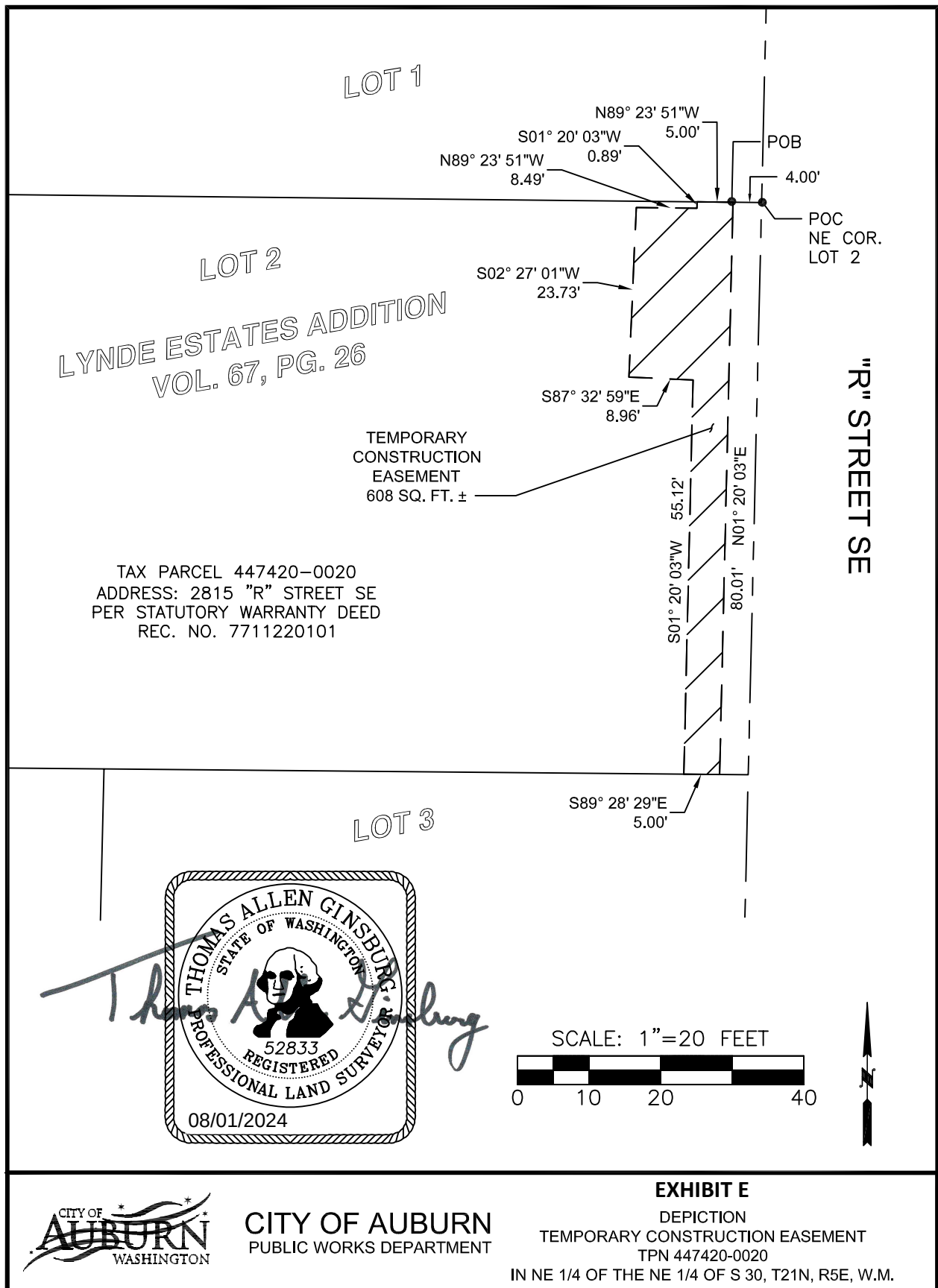
THENCE ALONG SAID SOUTH LINE SOUTH 89° 28' 29" EAST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID SOUTH LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 80.01 FEET TO THE NORTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 608 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: Michael E. Bruns
Kimberly K. Bruns

Tax Parcel: 788910-0170

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #788910-0170

LOT 17, SOUTHDALE NO.2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF
PLATS, PAGE 5, IN KING COUNTY, WASHINGTON.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THAT PORTION OF LOT 17, SOUTHDALE NO. 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF PLATS, PAGE 5, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 17, THENCE ALONG THE SOUTH LINE OF SAID LOT 17, NORTH 88° 45' 49" WEST A DISTANCE OF 54.61 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID SOUTH LINE, NORTH 88° 45' 49" WEST A DISTANCE OF 20.39 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE NORTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 20.05 FEET THROUGH A CENTRAL ANGLE OF 90° 00' 52" AN ARC DISTANCE OF 31.50 FEET TO THE WEST LINE OF SAID LOT;

THENCE ALONG SAID WEST LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 75.00 FEET TO THE NORTH LINE OF SAID LOT;

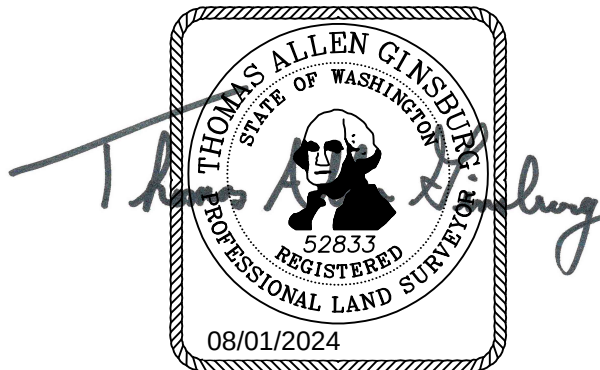
THENCE ALONG SAID NORTH LINE, SOUTH 88° 46' 57" EAST A DISTANCE OF 5.50 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 60.00 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE SOUTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 35.00 FEET THROUGH A CENTRAL ANGLE 89° 57' 27" AN ARC DISTANCE OF 54.95 FEET TO THE SOUTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 700 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS DEDICATION IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



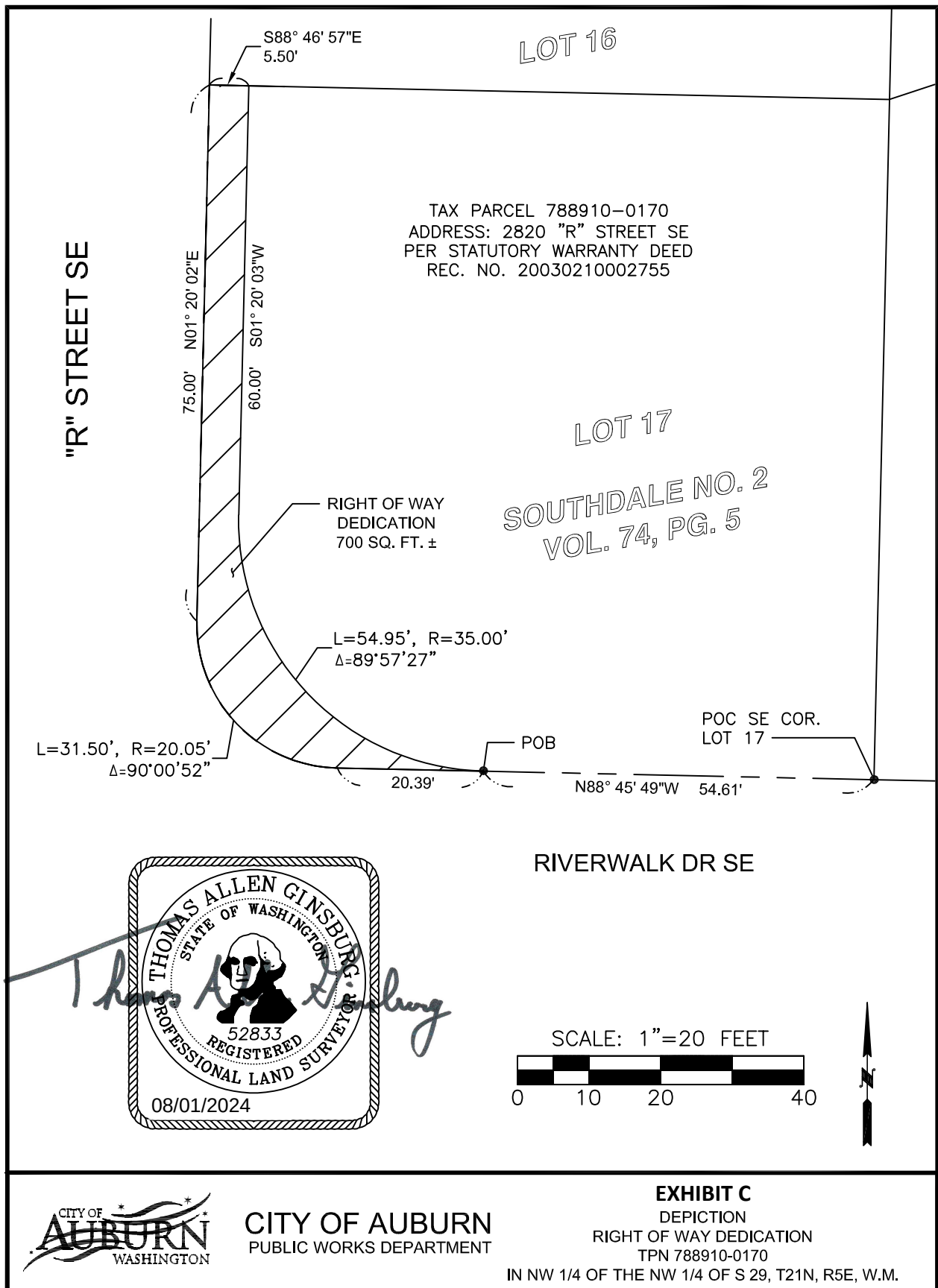


EXHIBIT D

TEMPORARY CONSTRUCTION EASEMENT LEGAL DESCRIPTION

THAT PORTION OF LOT 17, SOUTHDALE NO. 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF PLATS, PAGE 5, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 17, THENCE ALONG THE SOUTH LINE OF SAID LOT 17, NORTH 88° 45' 49" WEST A DISTANCE OF 49.61 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID SOUTH LINE, NORTH 88° 45' 49" WEST, A DISTANCE OF 5.00 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE NORTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 35.00 FEET THROUGH A CENTRAL ANGLE OF 90° 05' 51" AN ARC DISTANCE OF 55.04 FEET;

THENCE NORTH 01° 20' 03" EAST A DISTANCE OF 60.00 FEET TO THE NORTH LINE OF SAID LOT;

THENCE ALONG SAID NORTH LINE, SOUTH 88° 46' 57" EAST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 2.59 FEET;

THENCE SOUTH 88° 42' 01" EAST A DISTANCE OF 12.28 FEET;

THENCE SOUTH 01° 14' 17" WEST A DISTANCE OF 28.00 FEET;

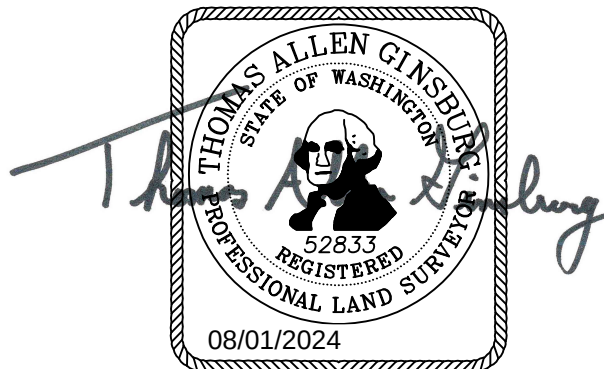
THENCE NORTH 88° 42' 01" WEST A DISTANCE OF 12.33 FEET;

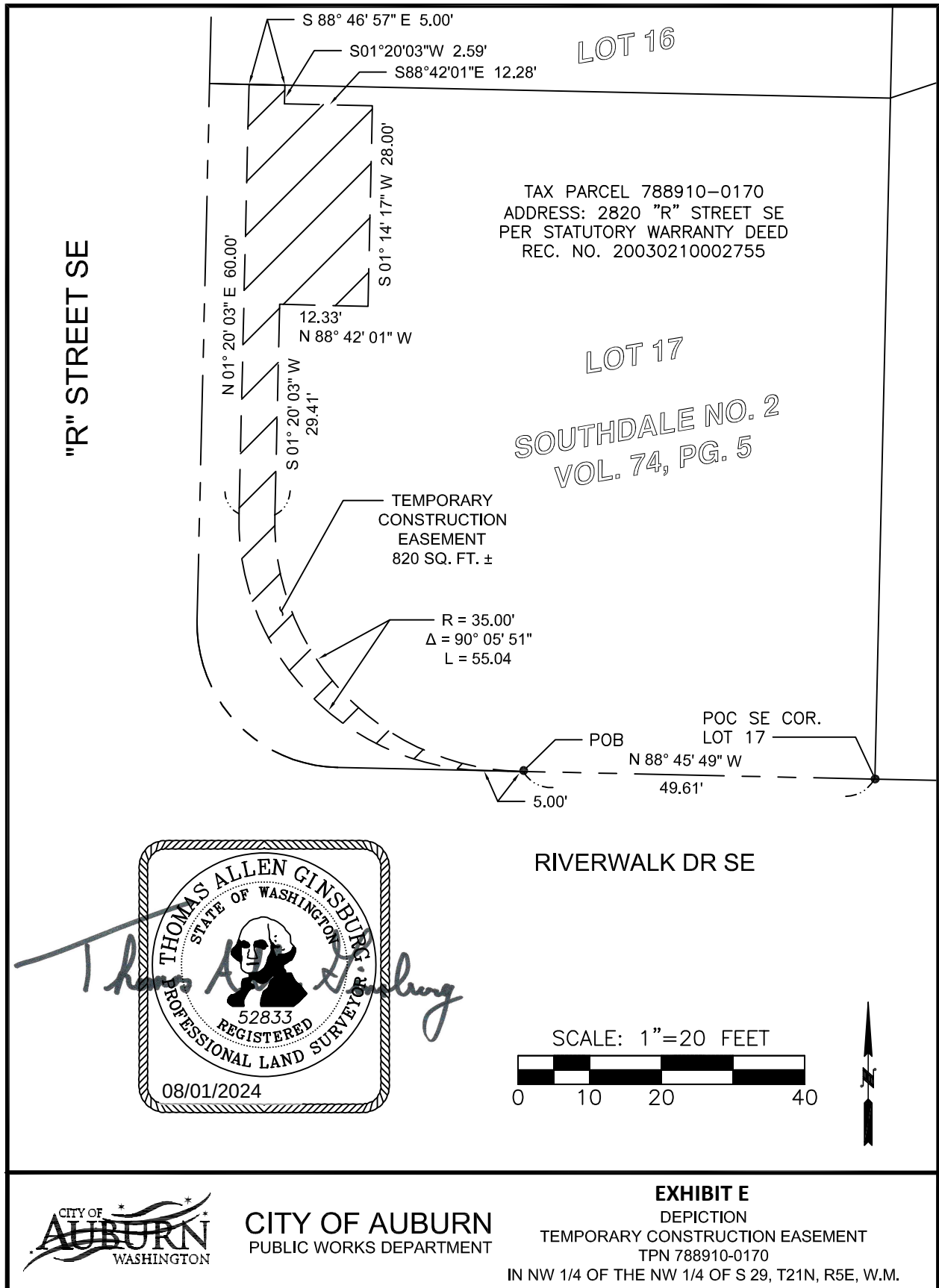
THENCE SOUTH 01° 20' 03" WEST A DISTANCE OF 29.41 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE SOUTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 35.00 FEET THROUGH A CENTRAL ANGLE 90° 05' 51" AN ARC DISTANCE OF 55.04 FEET TO THE SOUTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 820 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: Alan V. Pfeiffer
Vicki Pfeiffer

Tax Parcel: 788910-0160

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #788910-0160

LOT 16 OF SOUTHDALE NO.2, AS PER PLAT RECORDED IN VOLUME 74 OF PLATS, PAGE 5,
RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THAT PORTION OF LOT 16, SOUTHDALE NO. 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF PLATS, PAGE 5, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 16, THENCE ALONG THE WEST LINE OF SAID LOT 16, NORTH 01° 20' 03" EAST A DISTANCE OF 81.03 FEET TO A TANGENT CURVE CONCAVE TO THE SOUTHEAST;

THENCE NORTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 19.77 FEET THROUGH A CENTRAL ANGLE OF 90° 40' 01" AN ARC DISTANCE OF 31.28 FEET TO THE NORTH LINE OF SAID LOT;

THENCE ALONG SAID NORTH LINE, SOUTH 87° 59' 57" EAST, A DISTANCE OF 0.67 FEET TO A POINT OF CUSP OF A NON-TANGENT CURVE CONCAVE SOUTHEAST THE RADIAL CENTER OF WHICH BEARS SOUTH 02° 00' 03" WEST;

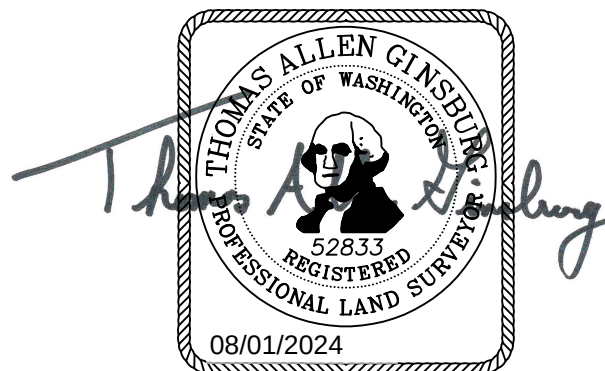
THENCE SOUTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 15.00 FEET THOROUGH A CENTRAL ANGLE OF 90° 40' 01" AN ARC DISTANCE OF 23.74 FEET;

THENCE SOUTH 01° 20' 03" WEST A DISTANCE OF 85.78 FEET TO SOUTH LINE OF SAID LOT;

THENCE ALONG SAID SOUTH LINE, NORTH 88° 46' 57" WEST A DISTANCE OF 5.50 TO THE WEST LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 519 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS DEDICATION IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



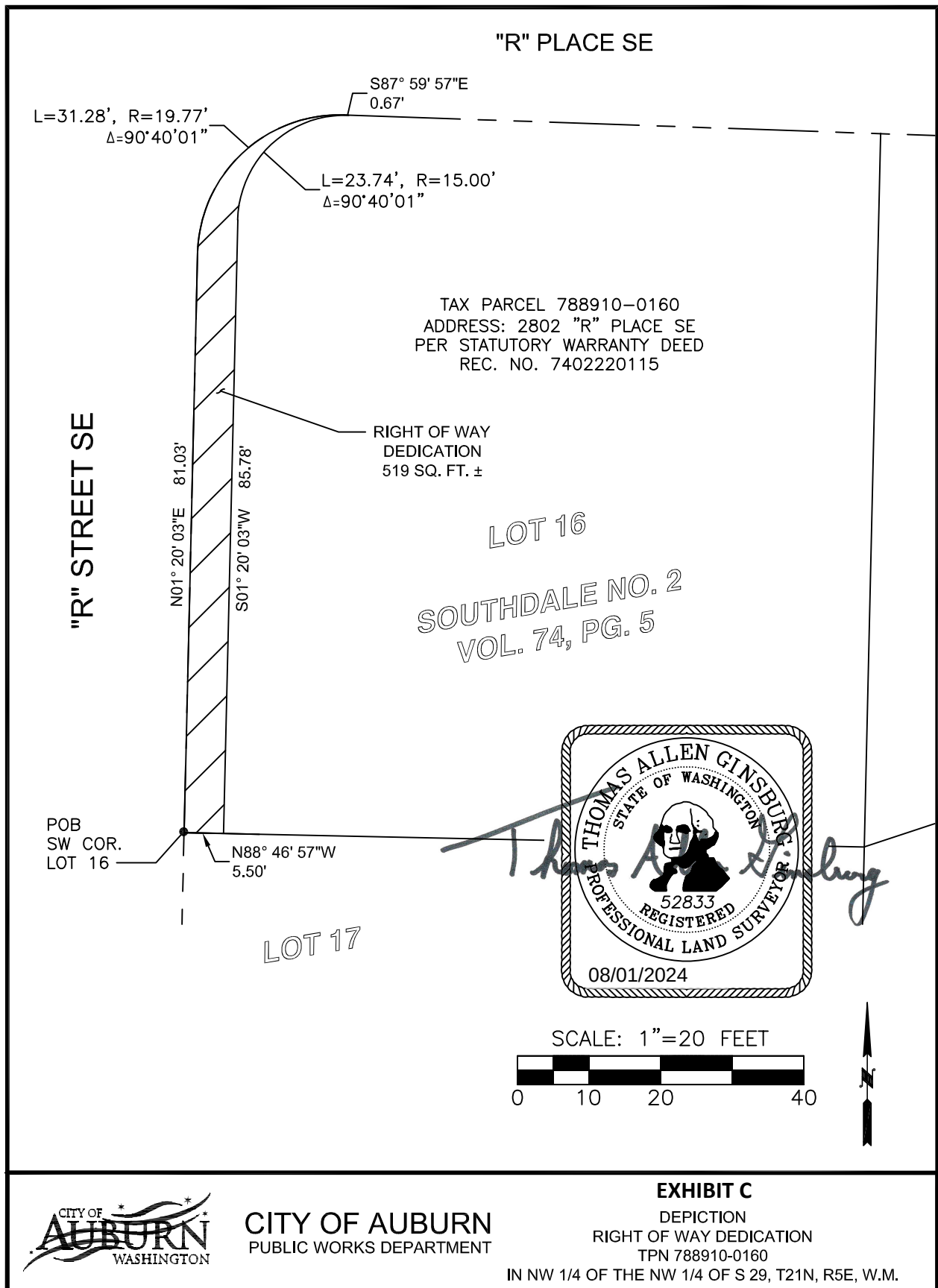


EXHIBIT D

TEMPORARY CONSTRUCTION EASEMENT LEGAL DESCRIPTION

THAT PORTION OF LOT 16, SOUTHDALE NO. 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF PLATS, PAGE 5, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID LOT 16, THENCE ALONG THE SOUTH LINE OF SAID LOT 16, SOUTH 88° 46' 57" EAST A DISTANCE OF 5.50 FEET TO THE POINT OF BEGINNING;

THENCE LEAVING SAID SOUTH LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 85.78 FEET TO A TANGENT CURVE CONCAVE TO THE SOUTHEAST;

THENCE NORTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 15.00 FEET THOROUGH A CENTRAL ANGLE OF 90° 40' 01" AN ARC DISTANCE OF 23.74 FEET TO THE NORTH LINE OF SAID LOT;

THENCE ALONG SAID NORTH LINE, SOUTH 87° 59' 57" EAST A DISTANCE OF 5.00 FEET TO A POINT OF CUSP OF A NON-TANGENT CURVE CONCAVE SOUTHEAST THE RADIAL CENTER OF WHICH BEARS SOUTH 02° 00' 03" WEST;

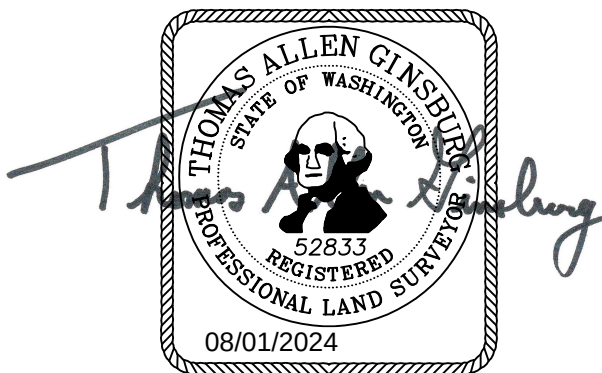
THENCE SOUTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 15.00 FEET THOROUGH A CENTRAL ANGLE OF 90° 40' 01" AN ARC DISTANCE OF 23.74 FEET;

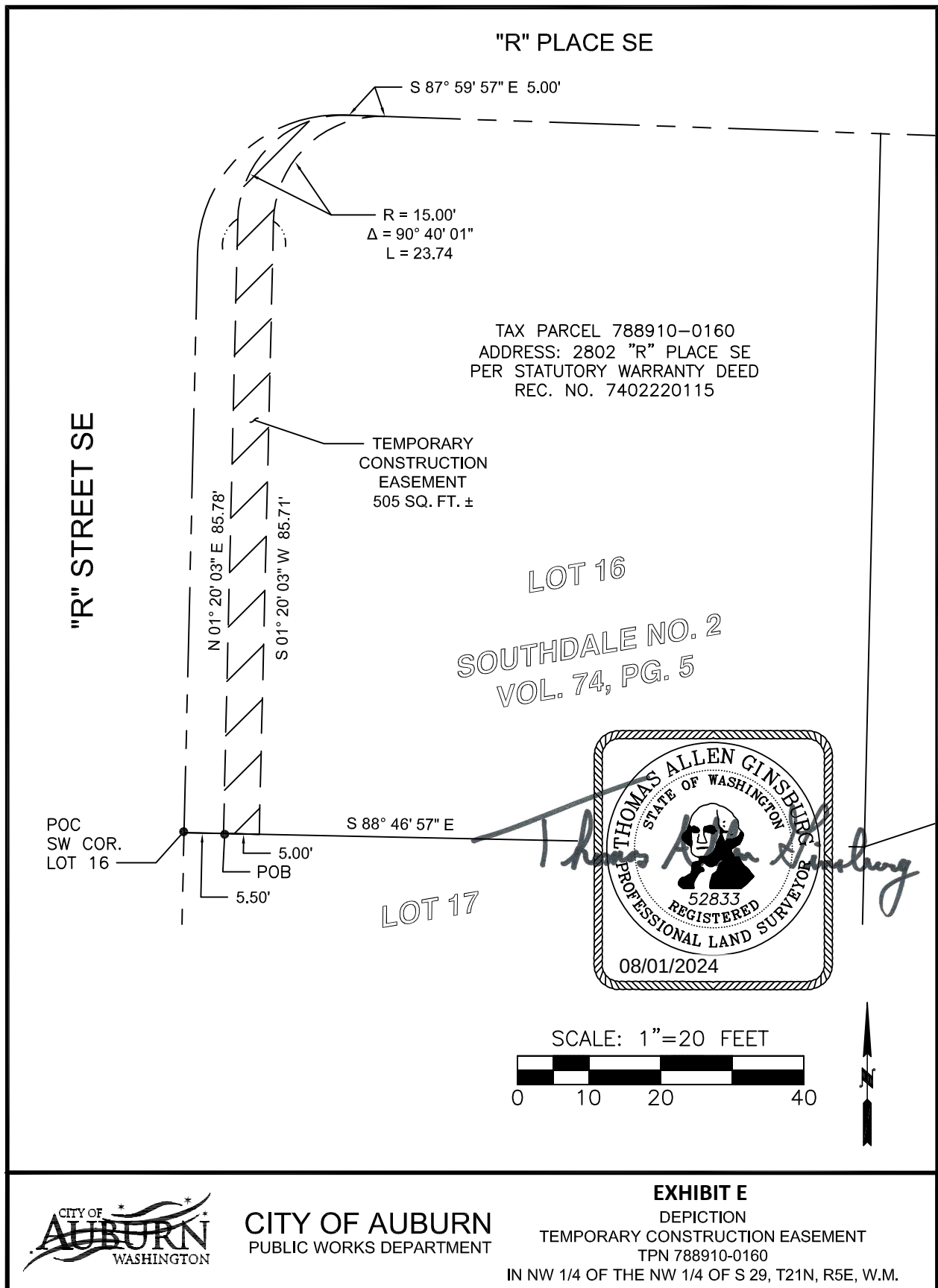
THENCE SOUTH 01° 20' 03" WEST A DISTANCE OF 85.71 FEET TO SAID SOUTH LINE;

THENCE ALONG SAID SOUTH LINE, NORTH 88° 46' 57" WEST A DISTANCE OF 5.00 FEET TO THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 505 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: Karl Holmgren
Cherie Jacobson

Tax Parcel: 447420-0010

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #447420-0010

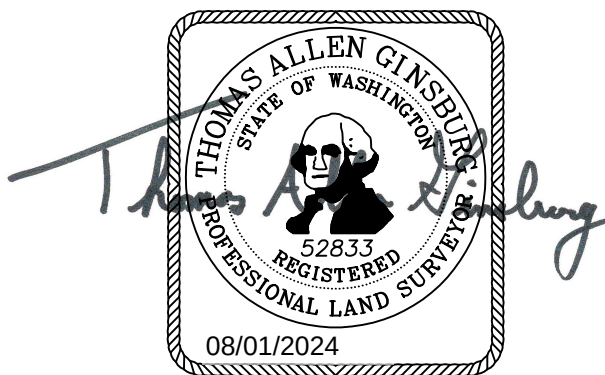
LOT 1, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF
RECORDED IN VOLUME 67 OF PLATS OF PAGE 26, RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THE EAST 4.00 FEET OF LOT 1, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 67 OF PLATS AT PAGE 26, RECORDS OF KING COUNTY, WASHINGTON.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 447 SQUARE FEET, MORE OR LESS.



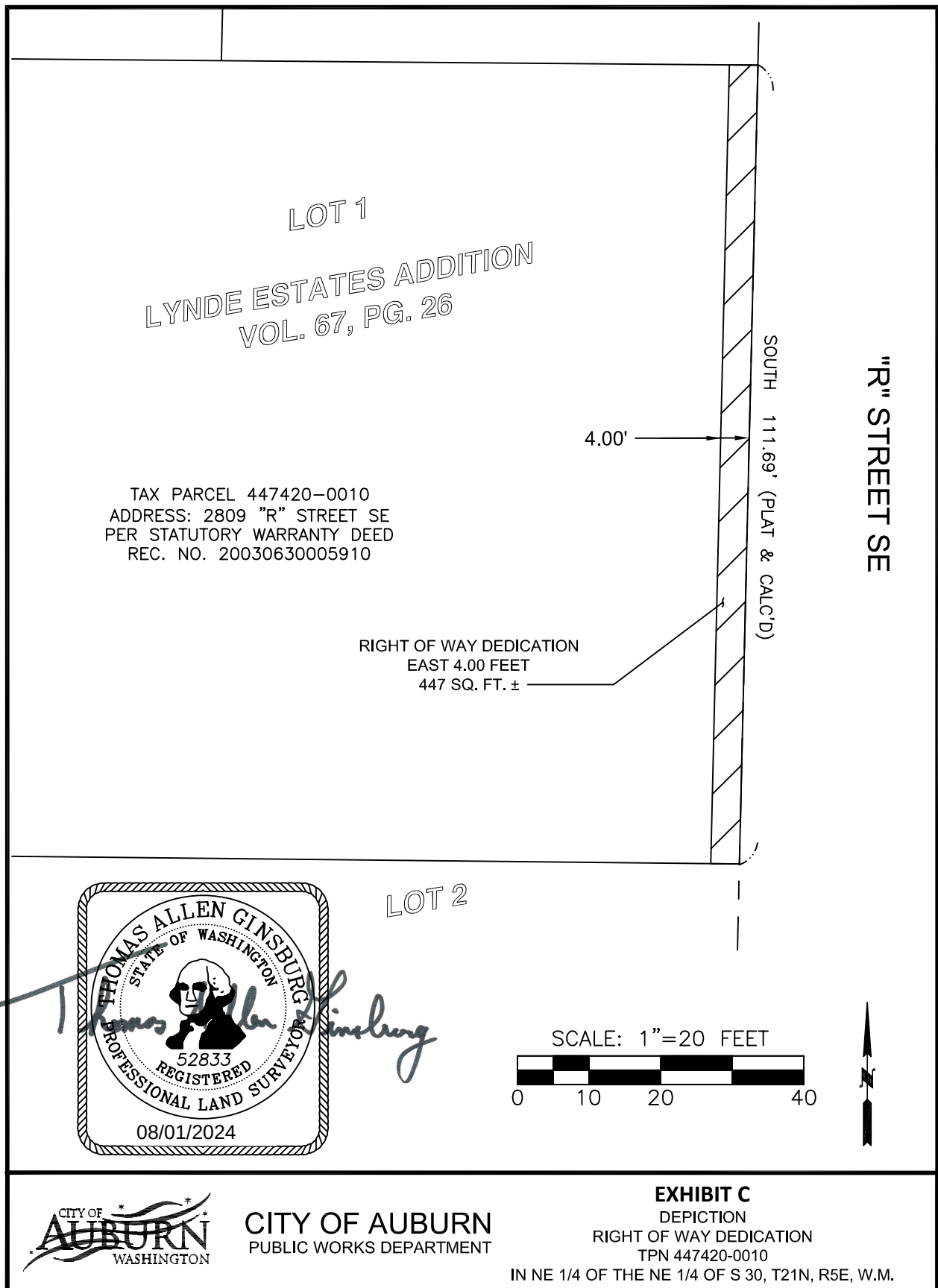


EXHIBIT D

TEMPORARY CONSTRUCTION EASEMENT LEGAL DESCRIPTION

THAT PORTION OF LOT 1, LYNDE ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 67 OF PLATS AT PAGE 26, RECORDS OF KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 1, THENCE ALONG THE SOUTH LINE OF SAID LOT 1, NORTH 89° 23' 51" WEST A DISTANCE OF 4.00 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID SOUTH LINE, NORTH 89° 23' 51" WEST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID SOUTH LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 5.07 FEET;

THENCE NORTH 89° 23' 51" WEST A DISTANCE OF 8.38 FEET;

THENCE NORTH 02° 27' 01" EAST A DISTANCE OF 24.29 FEET;

THENCE SOUTH 87° 24' 02" EAST A DISTANCE OF 7.91 FEET;

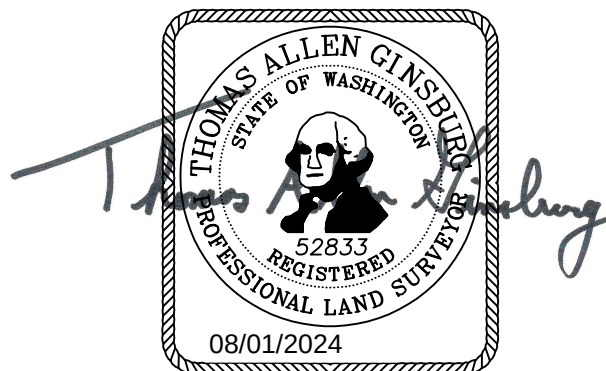
THENCE NORTH 01° 20' 03" EAST A DISTANCE OF 82.65 FEET TO THE NORTH LINE OF SAID LOT;

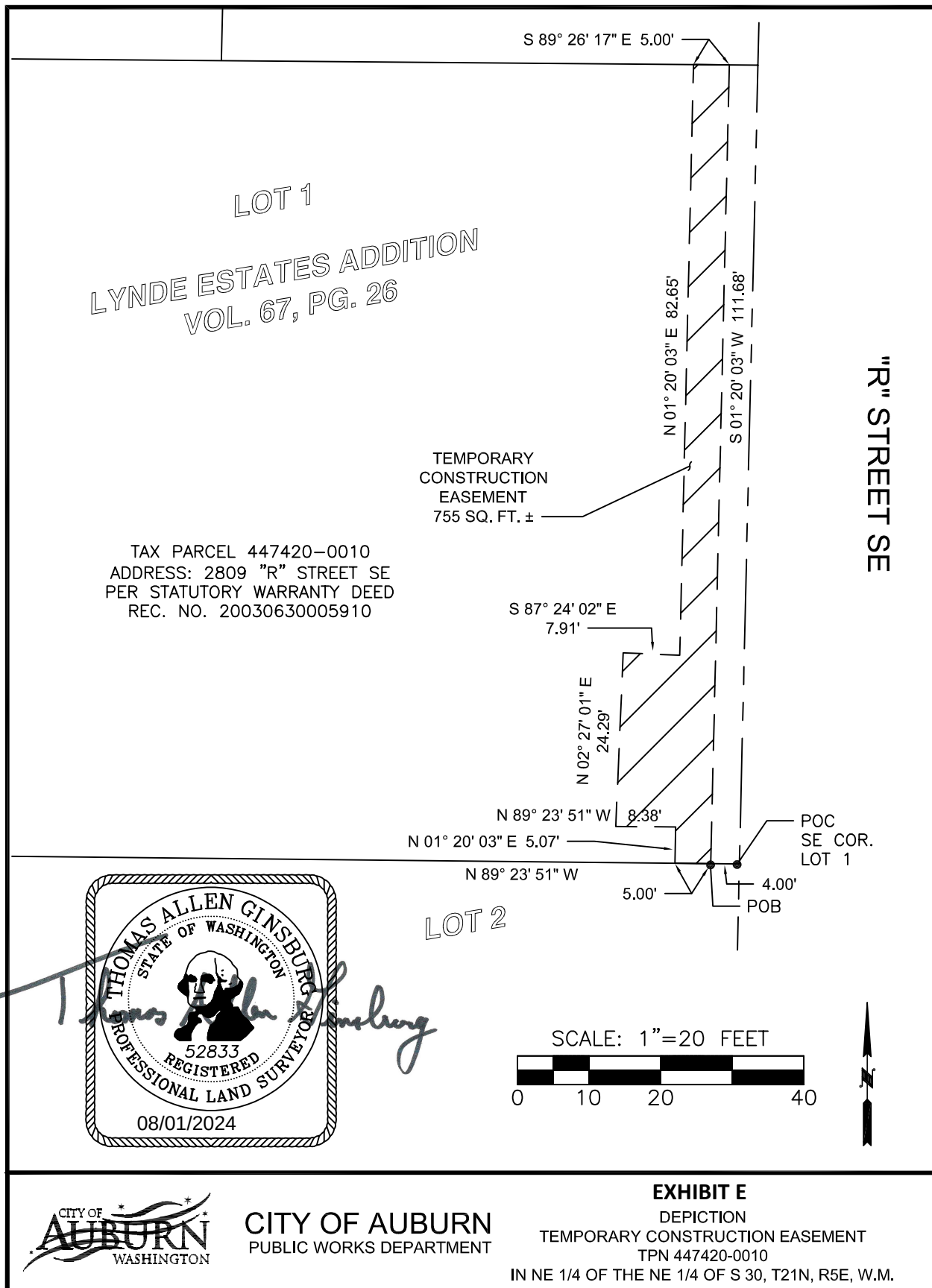
THENCE ALONG SAID NORTH LINE, SOUTH 89° 26' 17" EAST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 111.68 FEET TO THE SOUTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 755 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owner: Geri Smith

Tax Parcel: 241320-0170

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #241320-0170

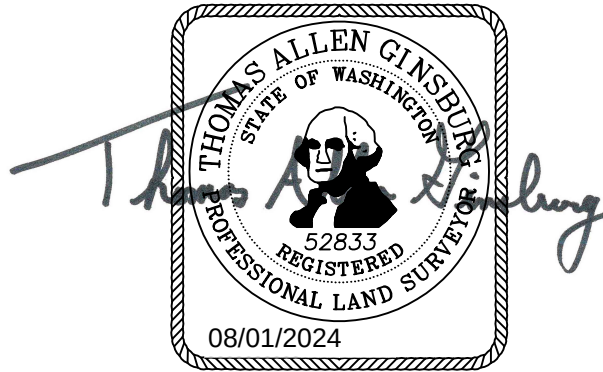
LOT 34, EVERGREEN ESTATES ADDITION TO THE CITY OF AUBURN, ACCORDING TO THAT PLAT THEREOF RECORDED IN VOLUME 61 OF PLATS AT PAGE 73, RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THE EAST 4.00 FEET OF LOT 34, EVERGREEN ESTATES ADDITION TO THE CITY OF AUBURN,
ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 61 OF PLATS AT PAGE 73, RECORDS
OF KING COUNTY, WASHINGTON.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 404 SQUARE FEET, MORE OR LESS.



28TH STREET SE

TAX PARCEL 241320-0170
ADDRESS: 1506 28TH STREET SE
PER STATUTORY WARRANTY DEED
REC. NO. 20070727002173

RIGHT OF WAY DEDICATION
EAST 4.00 FEET
404 SQ. FT. ±

LOT 34

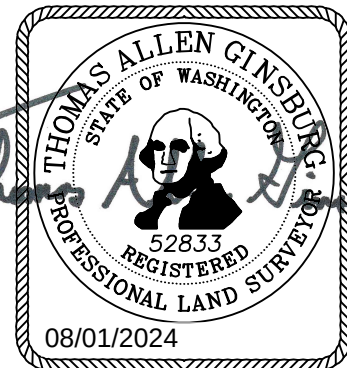
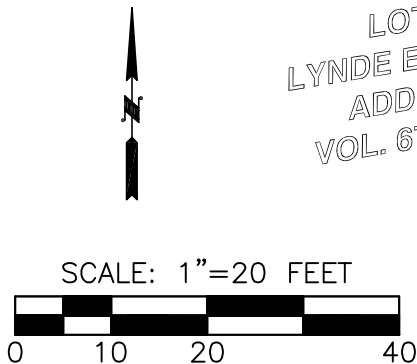
EVERGREEN ESTATES
ADDITION
VOL. 61, PG. 73

SOUTH 101.00' (PLAT & CALC'D)

"R" STREET SE

4.00'

LOT 1
LYNDE ESTATES
ADDITION
VOL. 67, PG. 26



CITY OF AUBURN
PUBLIC WORKS DEPARTMENT

EXHIBIT C
DEPICTION
RIGHT OF WAY DEDICATION
TPN 241320-0170
IN NE 1/4 OF THE NE 1/4 OF S 30, T21N, R5E, W.M.

EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF LOT 34, EVERGREEN ESTATES ADDITION TO THE CITY OF AUBURN,
ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 61 OF PLATS AT PAGE 73, RECORDS
OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 34, THENCE ALONG THE NORTH LINE
OF SAID LOT 34, NORTH 89° 31' 50" WEST A DISTANCE OF 4.00 FEET TO THE POINT OF
BEGINNING;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 101.00 FEET TO
THE SOUTH LINE OF SAID LOT;

THENCE ALONG SAID SOUTH LINE, NORTH 89° 26' 17" WEST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID SOUTH LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 3.26 FEET;

THENCE NORTH 88° 39' 57" WEST A DISTANCE OF 6.19 FEET;

THENCE NORTH 02° 26' 14" EAST A DISTANCE OF 35.01 FEET;

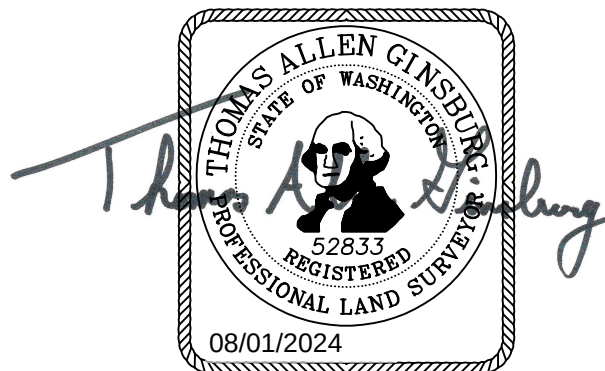
THENCE SOUTH 88° 39' 57" EAST A DISTANCE OF 5.52 FEET;

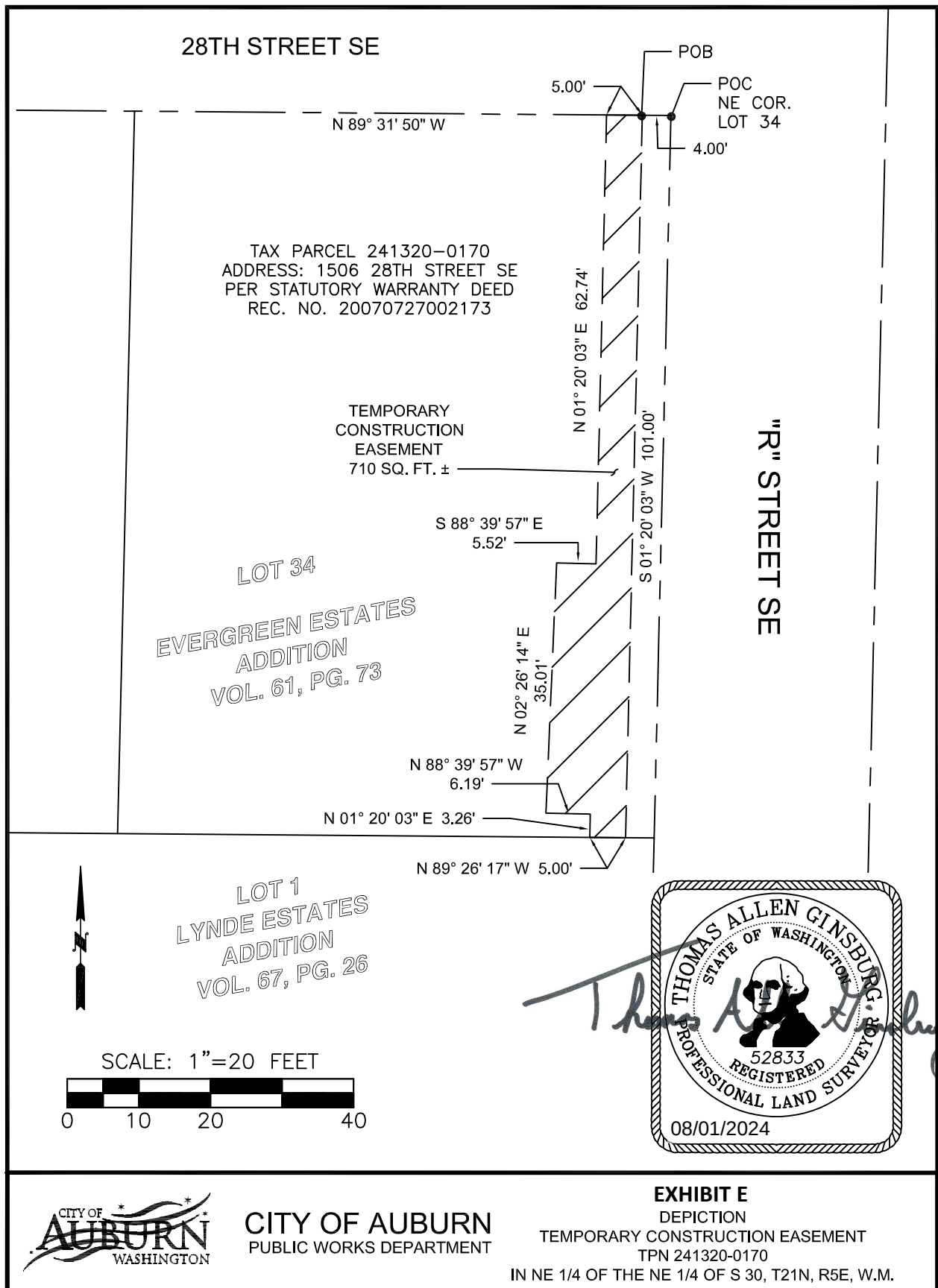
THENCE NORTH 01° 20' 03" EAST A DISTANCE OF 62.74 FEET TO THE NORTH LINE OF SAID LOT;

THENCE ALONG SAID NORTH LINE, SOUTH 89° 31' 50" EAST A DISTANCE OF 5.00 FEET TO THE
POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 710 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE
MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA
MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: The Heirs and Devisees of the
Estate of Jack V. Bergerson,
deceased

Jessalyn Bergerson

Tax Parcel: 788910-0010

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #788910-0010

LOT 1, SOUTHDALE NO.2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF
PLATS AT PAGE 5, RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THAT PORTION OF LOT 1, SOUTHDALE NO. 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF PLATS, PAGE 5, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 1, THENCE ALONG THE SOUTH LINE OF SAID LOT 1, NORTH 87° 59' 57" WEST A DISTANCE OF 72.23 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID SOUTH LINE, NORTH 87° 59' 57" WEST A DISTANCE OF 2.77 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE NORTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 20.23 FEET THROUGH A CENTRAL ANGLE OF 89° 19' 56" AN ARC DISTANCE OF 31.54 FEET TO THE WEST LINE OF SAID LOT;

THENCE ALONG SAID WEST LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 75.00 FEET TO THE NORTH LINE OF SAID LOT;

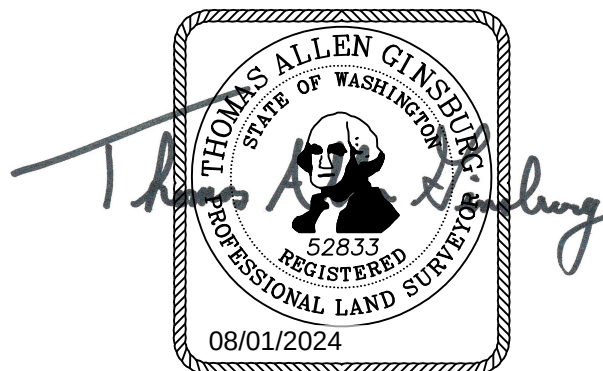
THENCE ALONG SAID NORTH LINE, SOUTH 88° 00' 06" EAST A DISTANCE OF 3.02 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 46" WEST A DISTANCE OF 75.22 FEET TO A TANGENT CURVE CONAVE TO THE NORTHEAST;

THENCE SOUTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 20.00 FEET THORUGH A CENTRAL ANGLE OF 89° 20' 43" AN ARC DISTANCE OF 31.19 FEET TO THE SOUTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 284 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS DEDICATION IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



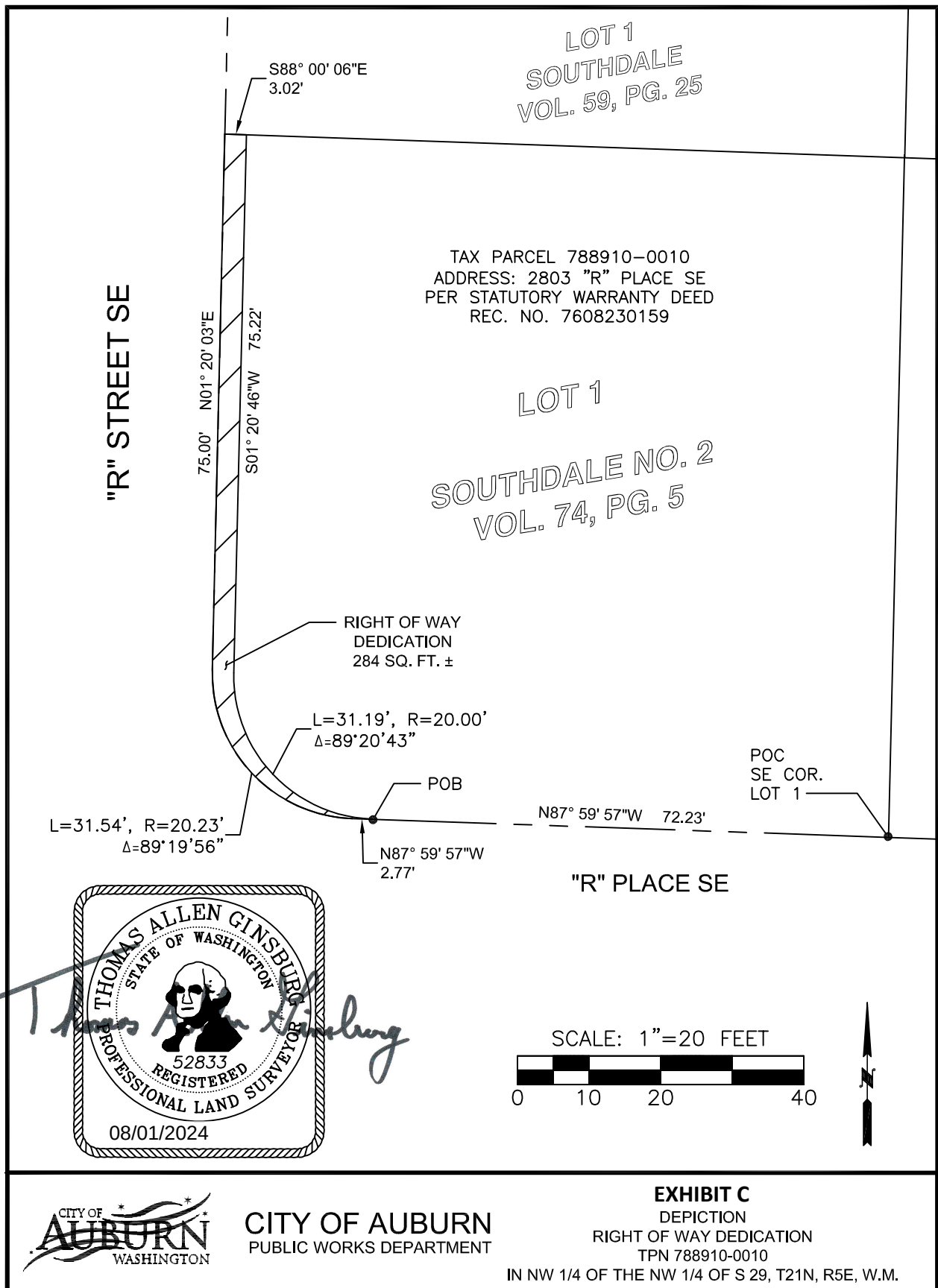


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF LOT 1, SOUTHDAL NO. 2, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 74 OF PLATS, PAGE 5, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 1, THENCE ALONG THE SOUTH LINE OF SAID LOT 1, NORTH 87° 59' 57" WEST A DISTANCE OF 67.23 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID SOUTH LINE, NORTH 87° 59' 57" WEST, A DISTANCE OF 5.00 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE NORTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 20.00 FEET THROUGH A CENTRAL ANGLE OF 89° 20' 43" AN ARC DISTANCE OF 31.19 FEET;

THENCE NORTH 01° 20' 46" EAST A DISTANCE OF 75.22 FEET TO THE NORTH LINE OF SAID LOT;

THENCE ALONG SAID NORTH LINE, SOUTH 88° 00' 06" EAST A DISTANCE OF 5.00 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 46" WEST A DISTANCE OF 11.85 FEET;

THENCE NORTH 90° 00' 00" EAST A DISTANCE OF 7.83 FEET;

THENCE SOUTH 00° 02' 19" WEST A DISTANCE OF 26.00 FEET;

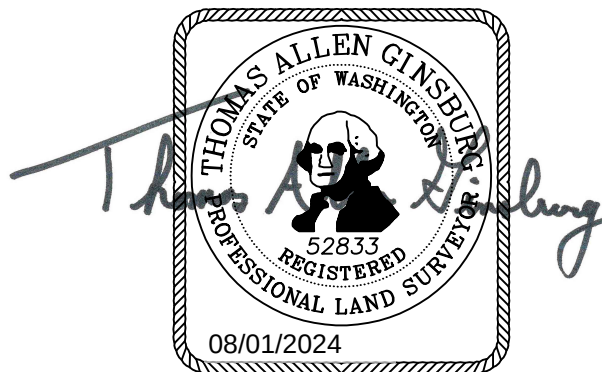
THENCE NORTH 87° 57' 41" WEST A DISTANCE OF 8.42 FEET;

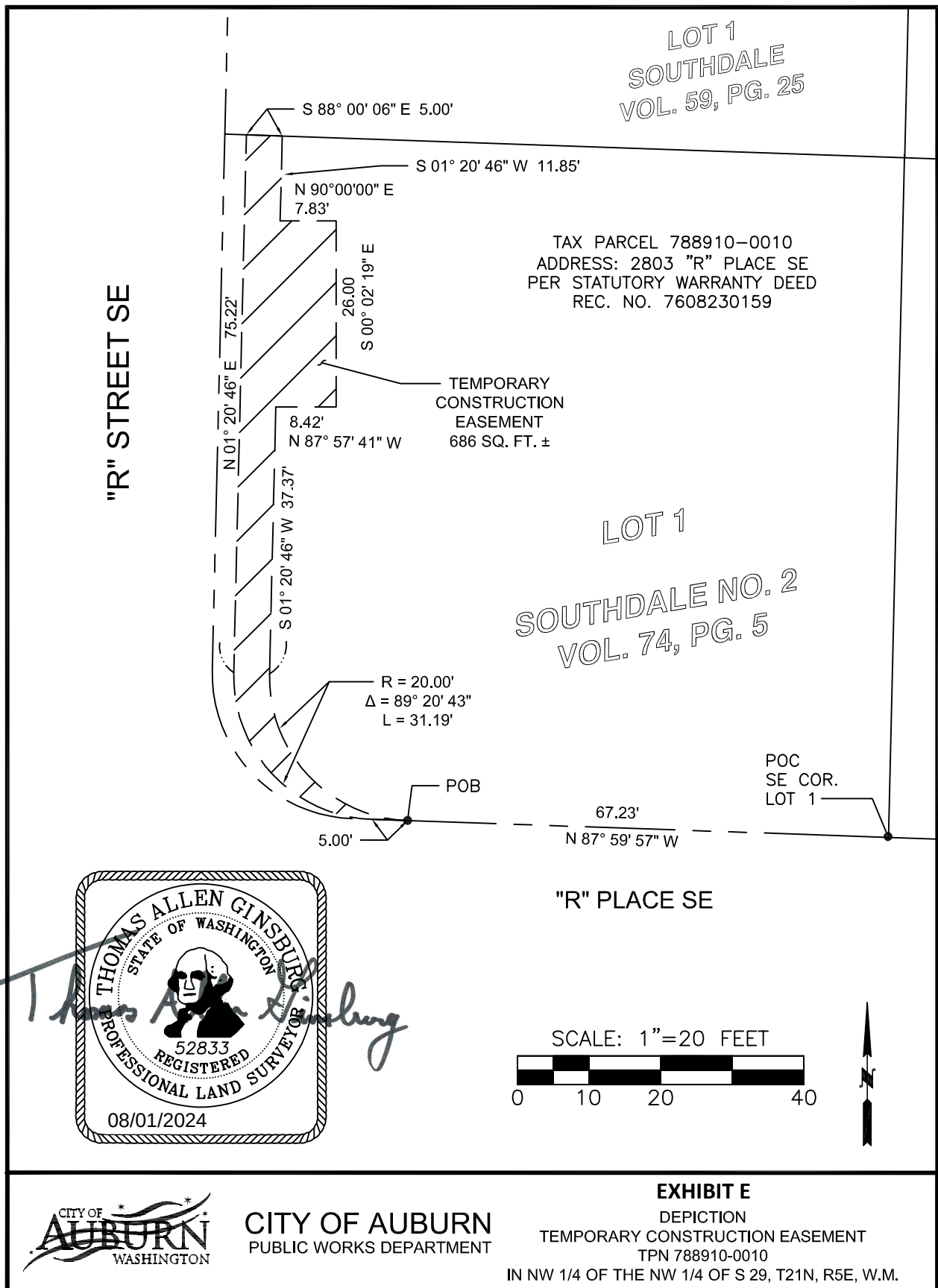
THENCE SOUTH 01° 20' 46" WEST A DISTANCE OF 37.37 FEET TO A TANGENT CURVE CONCAVE TO THE NORTHEAST;

THENCE SOUTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 20.00 FEET THOROUGH A CENTRAL ANGLE OF 89° 20' 43" AN ARC DISTANCE OF 31.19 FEET TO THE SOUTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 686 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: Ira B. Frank
Maureen Y. Frank

Tax Parcel: 788900-0005

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #788900-0005

LOT 1, SOUTHDALÉ ADDITION TO AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN
VOLUME 59 OF PLATS AT PAGE 25, RECORDS OF KING COUNTY, WASHINGTON.

EXHIBIT B

RIGHT OF WAY DEDICATION LEGAL DESCRIPTION

THAT PORTION OF LOT 1, SOUTHDALE ADDITION TO AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 59 OF PLATS AT PAGE 25, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1, THENCE ALONG THE SOUTH LINE OF SAID LOT 1, SOUTH 88° 00' 06" EAST A DISTANCE OF 3.02 FEET;

THENCE LEAVING SAID SOUTH LINE, NORTH 01° 20' 46" EAST A DISTANCE OF 89.89 FEET TO A TANGENT CURVE CONCAVE TO THE SOUTHEAST;

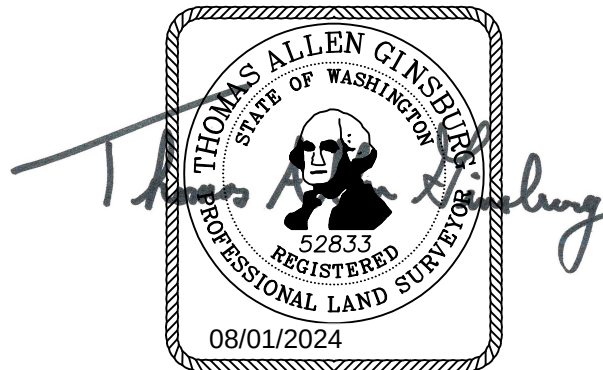
THENCE NORTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 10.00 FEET THROUGH A CENTRAL ANGLE OF 90° 39' 08" AN ARC DISTANCE OF 15.82 FEET TO THE NORTH LINE OF SAID LOT;

THENCE ALONG SAID NORTH LINE, NORTH 88° 00' 06" WEST A DISTANCE OF 13.15 FEET TO THE WEST LINE OF SAID LOT;

THENCE ALONG SAID WEST LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 100.00 FEET TO THE SOUTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 325 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS DEDICATION IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



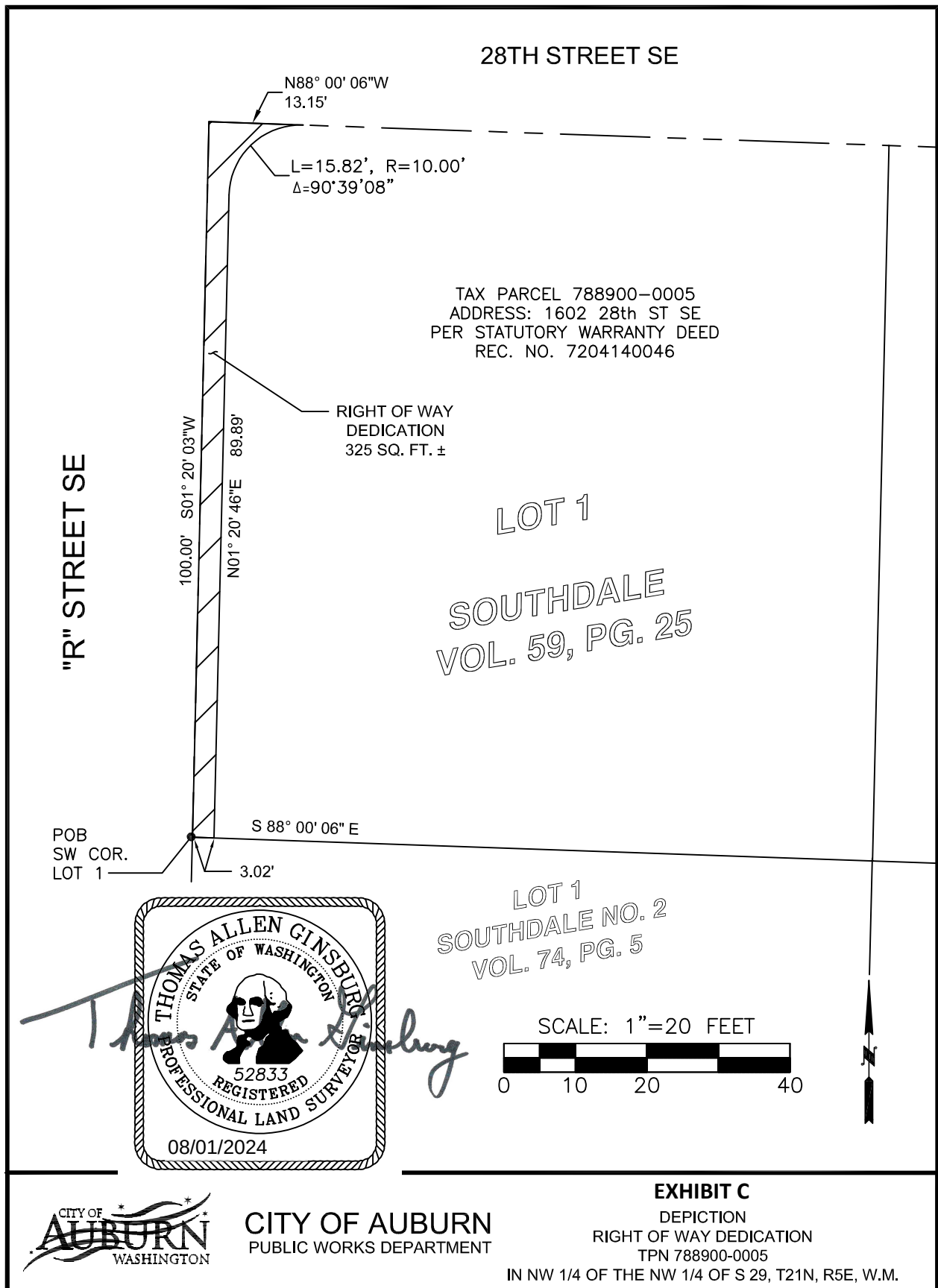


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF LOT 1, SOUTHDALE ADDITION TO AUBURN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 59 OF PLATS AT PAGE 25, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 1, THENCE ALONG THE NORTH LINE OF SAID LOT 1, NORTH 88° 00' 06" WEST A DISTANCE OF 76.85 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID NORTH LINE, NORTH 88° 00' 06" WEST, A DISTANCE OF 5.00 FEET TO A TANGENT CURVE CONCAVE TO THE SOUTHEAST;

THENCE SOUTHWESTERLY ALONG SAID CURVE HAVING A RADIUS OF 10.00 FEET THROUGH A CENTRAL ANGLE OF 90° 39' 08" AN ARC DISTANCE OF 15.82 FEET;

THENCE SOUTH 01° 20' 46" WEST, A DISTANCE OF 89.89 FEET TO THE SOUTH LINE OF SAID LOT;

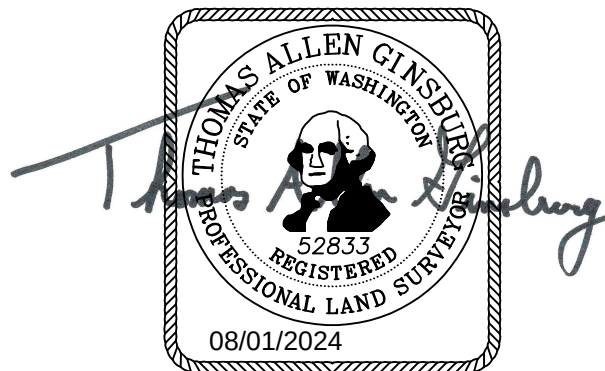
THENCE ALONG SAID SOUTH LINE, SOUTH 88° 00' 06" EAST A DISTANCE OF 5.00 FEET;

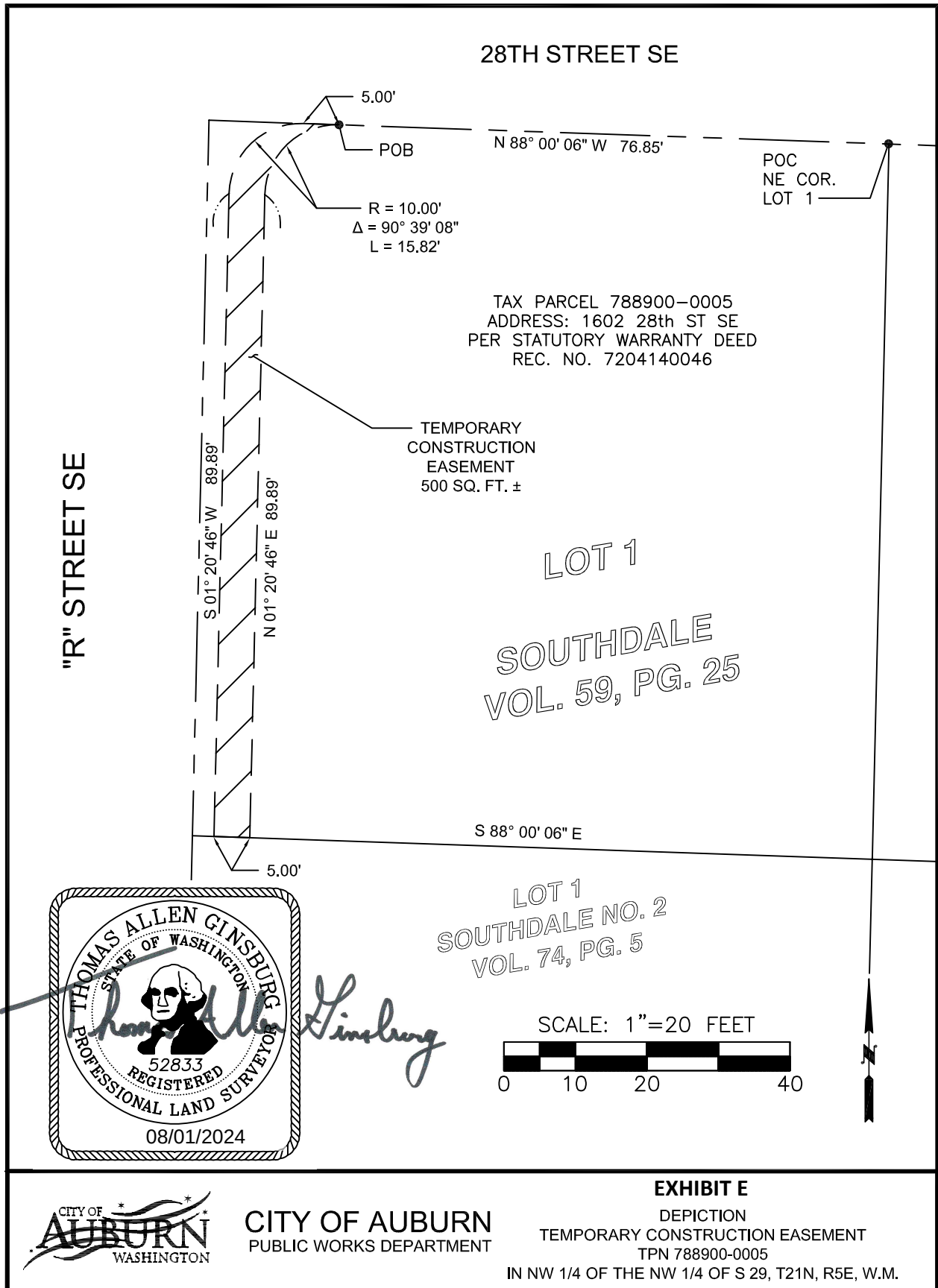
THENCE LEAVING SAID SOUTH LINE, NORTH 01° 20' 46" EAST A DISTANCE OF 89.89 FEET TO A TANGENT CURVE CONCAVE TO THE SOUTHEAST;

THENCE NORTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 10.00 FEET THROUGH A CENTRAL ANGLE OF 90° 39' 08" AN ARC DISTANCE OF 15.82 FEET TO THE NORTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 500 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owner: Bible Chapel, Inc

Tax Parcel: 292105-9037

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #292105-9037

BEGINNING AT A POINT ON THE WEST LINE OF SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON, SOUTH 1°19'00" EAST, 273.63 FEET FROM THE NORTHWEST CORNER OF SAID SECTION; THENCE SOUTH 1°19'00" EAST ALONG SAID WEST LINE 327.77 FEET; THENCE NORTH 75°05'15" EAST 450.26 FEET; THENCE NORTH 28°07'30" WEST 150.00 FEET; THENCE NORTH 0°41'00" WEST 145.00 FEET; THENCE SOUTH 80°08'22" WEST 382.05 FEET TO THE POINT OF BEGINNING. LESS THE NORTHERLY 160 FEET LYING EASTERLY OF THE WESTERLY 224 FEET. EXCEPT ROADS AND EXCEPT THAT PORTION THEREOF LYING SOUTHERLY OF THE FOLLOWING DESCRIBED LINE: BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION 29 FROM WHICH THE NORTHWEST CORNER OF SAID SECTION BEARS NORTH A DISTANCE OF 598.67; THENCE NORTH 75°32'20" EAST 30.98 FEET TO A POINT ON THE EAST LINE OF 100TH AVENUE SOUTHEAST (SOMETIMES REFERRED TO AS R STREET SOUTHEAST) WHICH POINT IS THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 75°32'20" EAST 419.21 FEET ALONG WHICH LINE IS LOCATED AN EXISTING WIRE FENCE AND THE PRODUCTION THEREOF EASTERLY TO THE EXISTING STAKE WHICH MARKS THE EASTERLY TERMINUS OF SAID LINE.

LESS THAT PORTION OF GOVERNMENT LOT 4 IN SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF LOT 38, SOUTHDALE AS RECORDED IN VOLUME 59 OF PLATS AT PAGE 25, RECORDS OF KING COUNTY, WASHINGTON; THENCE NORTH A DISTANCE OF 14.00 FEET; THENCE NORTH 83°23'47" EAST 93.62 FEET TO THE NORTHEAST CORNER OF SAID LOT 38; THENCE SOUTH 75°05'15 WEST 96.24 FEET TO THE POINT OF BEGINNING.

(ALSO KNOWN AS LOT B, LOT LINE ADJUSTMENT NO. LLA-0004-98, RECORDED UNDER RECORDING NO. 9806031697, RECORDS OF KING COUNTY, WASHINGTON.)

EXHIBIT B

**PERMANENT SLOPE EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF THAT PORTION OF LOT B, LOT LINE ADJUSTMENT NO. LLA-0004-98,
RECORDED UNDER RECORDING NO. 9806031697, RECORDS OF KING COUNTY, WASHINGTON,
IN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 21
NORTH, RANGE 5 EAST, W.M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID LOT B, THENCE ALONG THE NORTH LINE OF
SAID LOT B, NORTH 81° 28' 25" EAST A DISTANCE OF 10.15 FEET;

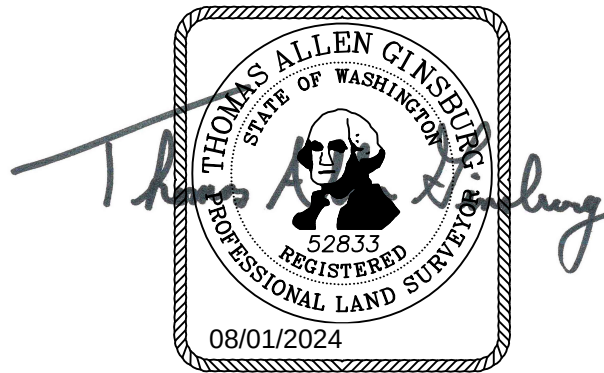
THENCE LEAVING SAID NORTH LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 21.26 FEET;

THENCE NORTH 88° 39' 57" WEST A DISTANCE OF 10.00 FEET TO THE WEST LINE OF SAID LOT;

THENCE ALONG SAID WEST LINE, NORTH 01° 20' 03" EAST A DISTANCE OF 19.52 FEET TO THE
NORTH LINE OF SAID LOT AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 204 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE
MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA
MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



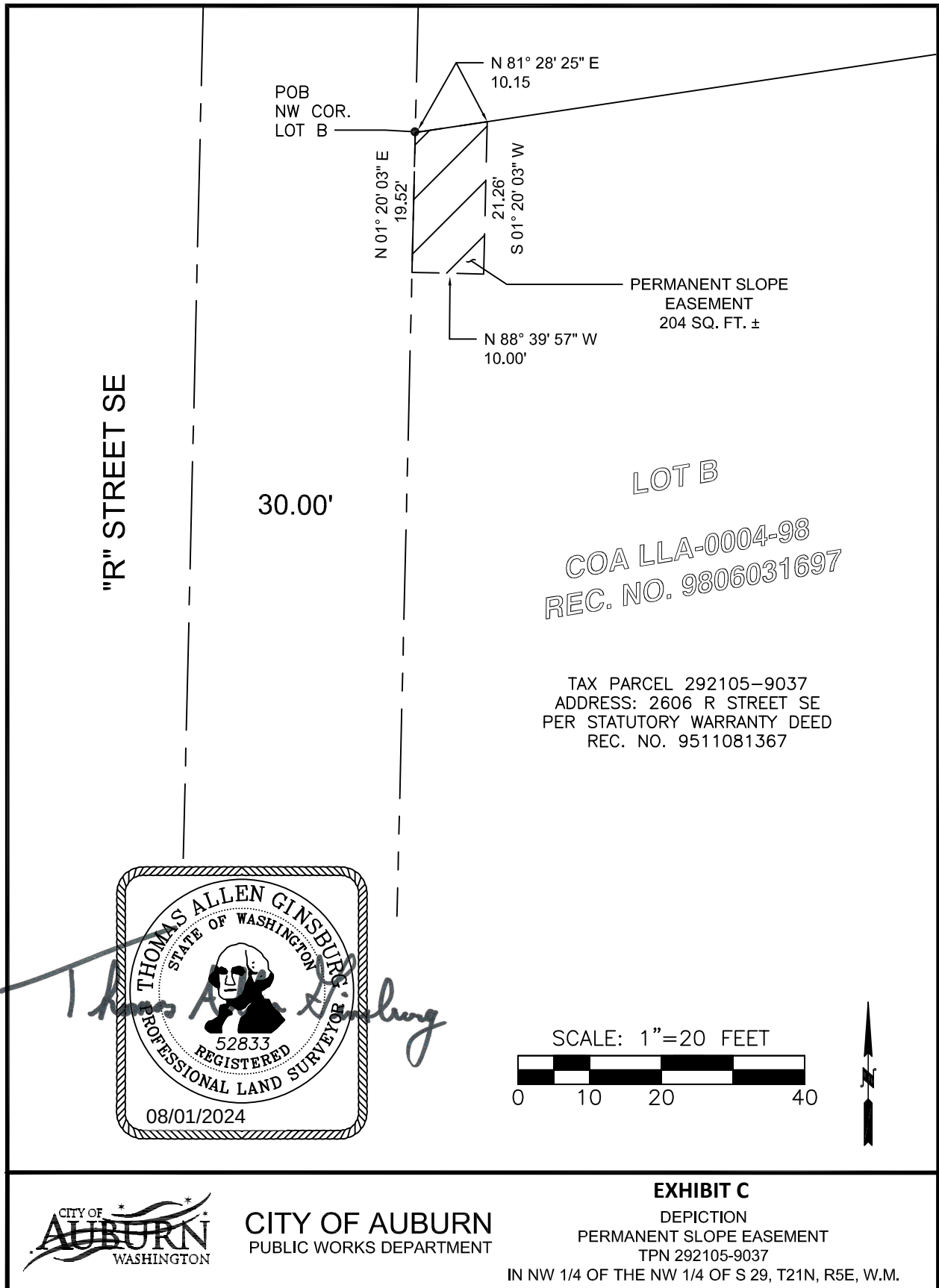


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF LOT B, LOT LINE ADJUSTMENT NO. LLA-0004-98, RECORDED UNDER RECORDING NO. 9806031697, RECORDS OF KING COUNTY, WASHINGTON, IN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT B, THENCE ALONG THE WEST LINE OF SAID LOT B, SOUTH 01° 20' 03" WEST A DISTANCE OF 44.75 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID WEST LINE, SOUTH 01° 20' 03" WEST A DISTANCE OF 50.00 FEET;

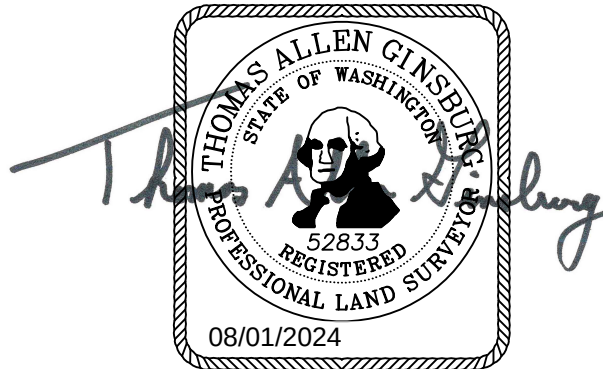
THENCE LEAVING SAID WEST LINE, SOUTH 88° 39' 57" EAST A DISTANCE OF 15.30 FEET;

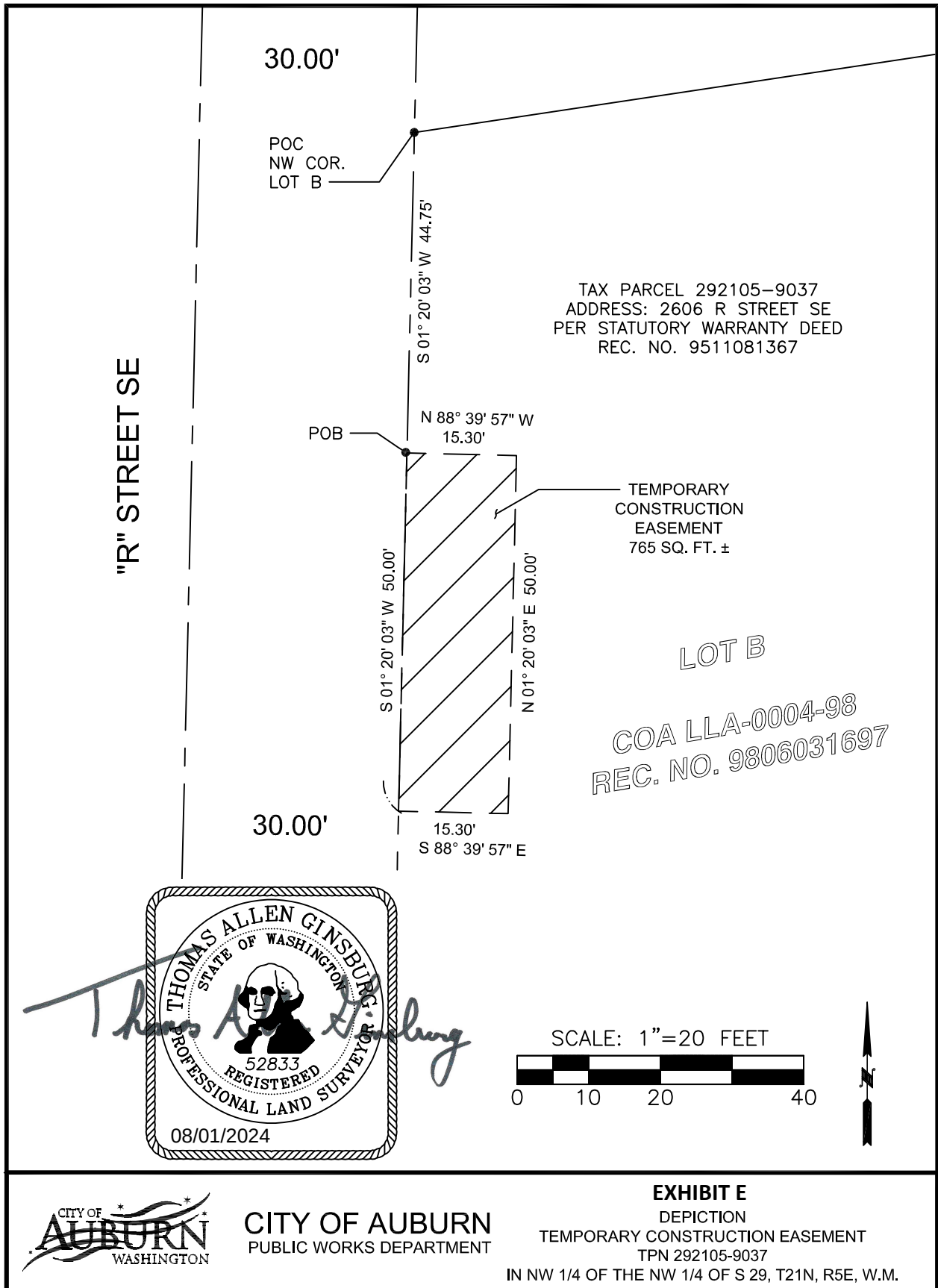
THENCE NORTH 01° 20' 03" EAST A DISTANCE OF 50.00 FEET;

THENCE NORTH 88° 39' 57" WEST A DISTANCE OF 15.30 FEET TO SAID WEST LINE AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 765 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





Property Owners: Fernando Lujan Velasquez
Nancy Lujan

Tax Parcel: 292105-9060

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #292105-9060

THAT PORTION OF GOVERNMENT LOT 4, SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING ON A POINT ON THE WEST LINE OF SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., 148 FEET SOUTH OF THE NORTHWEST CORNER; THENCE SOUTH 125.63 FEET; THENCE NORTH 80°08'23" EAST 382.05 FEET; THENCE NORTH 00°41'00" WEST 55 FEET; THENCE NORTH 89°13'00" WEST 376.26 FEET MORE OR LESS TO BEGINNING, LESS ROAD.

EXHIBIT B

**PERMANENT SLOPE EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF PARCEL "A" DESCRIBED IN STATUTORY WARRANTY DEED RECORDED UNDER KING COUNTY RECORDING NUMBER 20210910001899 AND AS DEPCICTED ON RECORD OF SURVEY RECORDED UNDER RECORDING NUMBER 20220512900003, BEING A PORTION OF GOVERNMENT LOT 4, SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID PARCEL "A," ALSO BEING A POINT ON THE EAST RIGHT OF WAY MARGIN OF "R" STREET SE;

THENCE ALONG THE WEST LINE OF SAID PARCEL "A," NORTH 01° 20' 03" EAST A DISTANCE OF 120.36 FEET, MORE OR LESS, TO THE NORTH LINE OF SAID PARCEL;

THENCE ALONG SAID NORTH LINE, SOUTH 88° 33' 25" EAST A DISTANCE OF 10.00 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 01° 19' 40" WEST A DISTANCE OF 28.23 FEET;

THENCE SOUTH 85° 04' 47" WEST A DISTANCE OF 8.34 FEET;

THENCE SOUTH 00° 18' 27" WEST A DISTANCE OF 12.30 FEET;

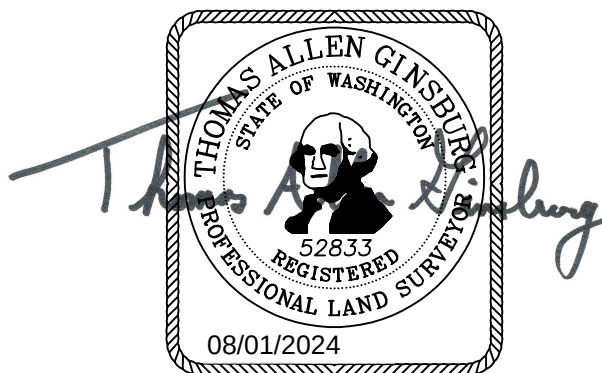
THENCE NORTH 75° 32' 16" EAST A DISTANCE OF 8.38 FEET;

THENCE SOUTH 01° 20' 03" WEST A DISTANCE OF 79.44 FEET, MORE OR LESS, TO THE SOUTH LINE OF SAID PARCEL;

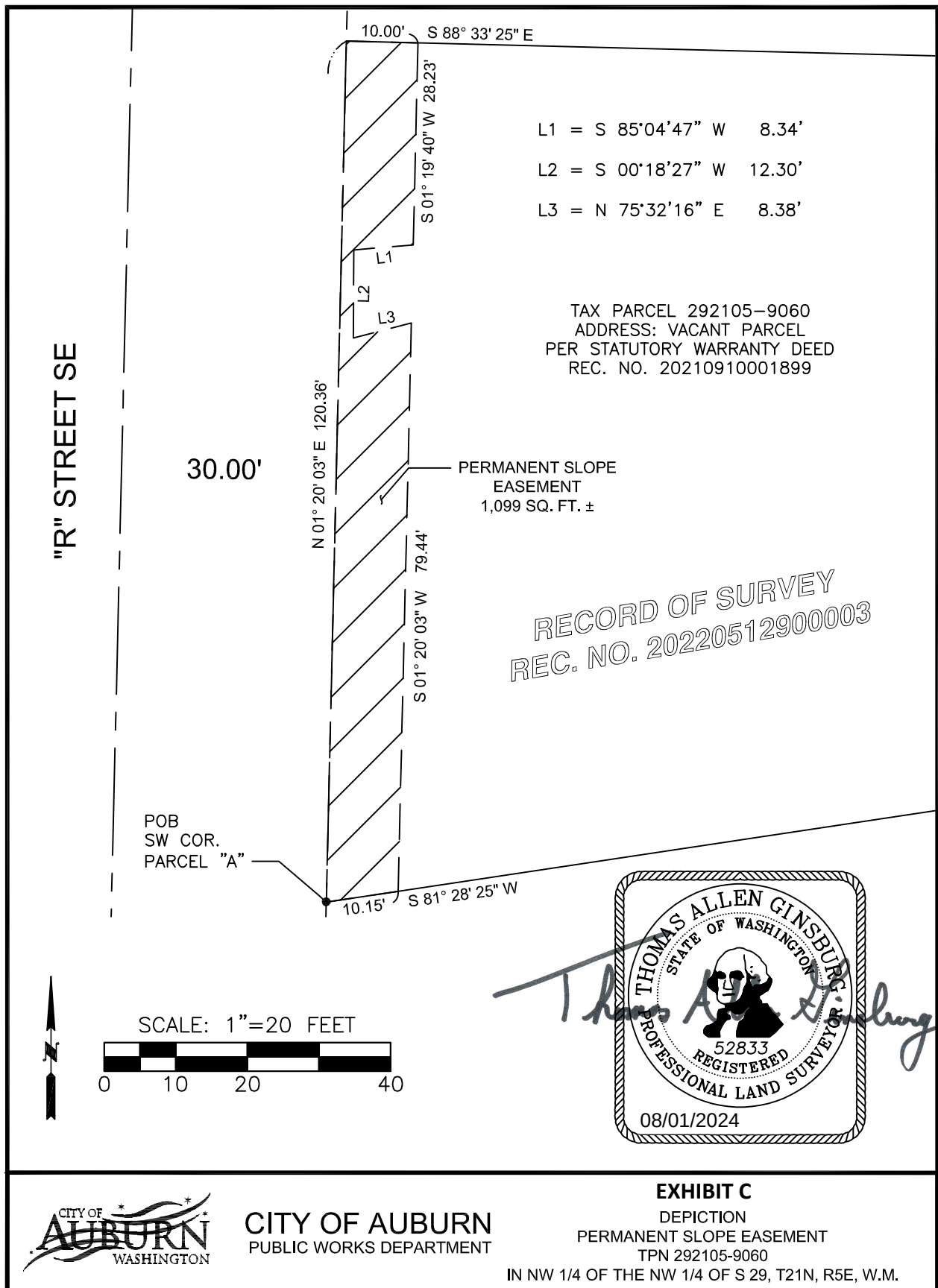
THENCE ALONG SAID SOUTH LINE, SOUTH 81° 28' 25" WEST A DISTANCE OF 10.15 FEET TO SAID WEST LINE AND THE POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 1,099 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



Ordinance No. 6958
September 13, 2024
Page 64 of 83



Property Owner: Mailene B. Anonuevo-Smith

Tax Parcel: 192105-9212

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #192105-9212

THE EAST 130 FEET OF THE SOUTH 132 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON.

EXCEPT THE EAST 20 FEET.

AND EXCEPT THE SOUTH 30 FEET FOR ROADS.

AND ALSO THAT PORTION CONVEYED TO THE CITY OF AUBURN BY DEED RECORDED UNDER RECORDING NO. 9211250270.

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THE EAST 5.10 FEET OF THE FOLLOWING DESCRIBED PROPERTY:

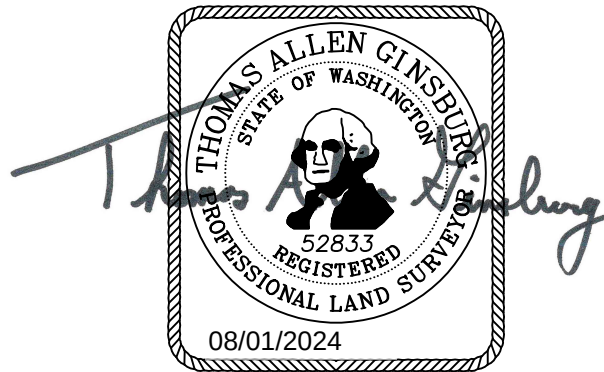
THE EAST 130 FEET OF THE SOUTH 132 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON;

EXCEPT THE EAST 20 FEET;

EXCEPT THE SOUTH 30 FEET FOR ROADS;

EXCEPT THAT PORTION CONVEYED TO THE CITY OF AUBURN BY DEED RECORDED UNDER RECORDING NUMBER 9211250270.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 520 SQUARE FEET, MORE OR LESS.



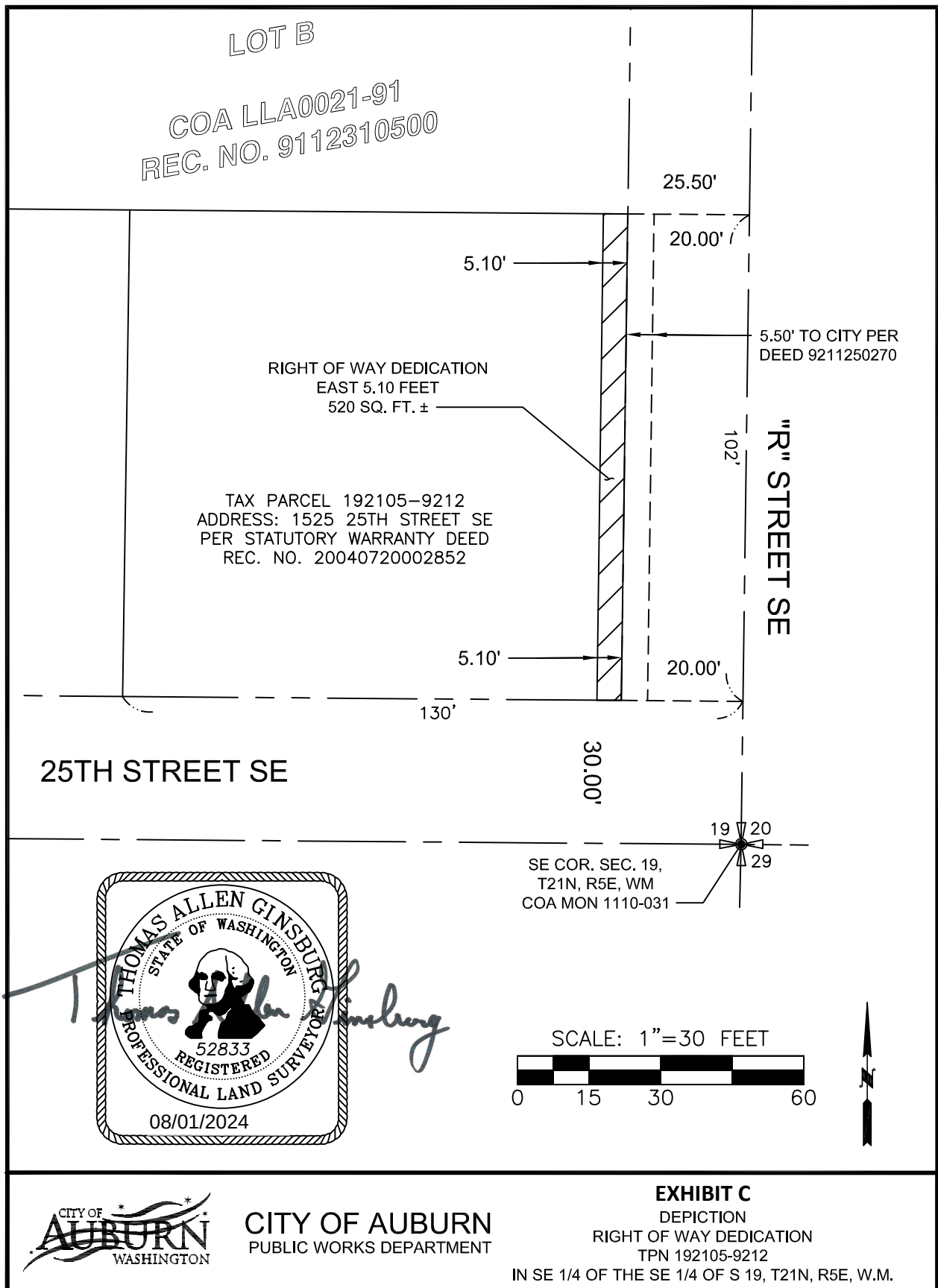


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THE WEST 9.50 FEET OF THE EAST 14.60 FEET OF THE FOLLOWING DESCRIBED PROPERTY:

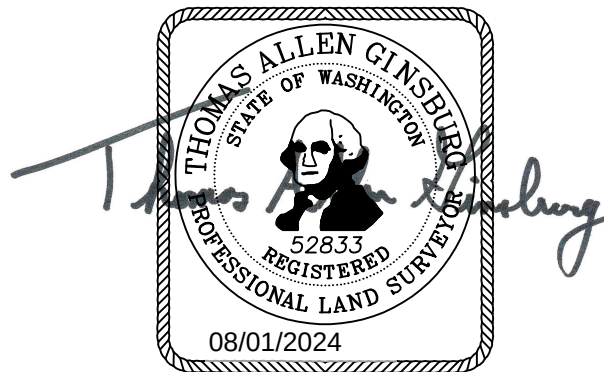
THE EAST 130 FEET OF THE SOUTH 132 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST
QUARTER OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING
COUNTY, WASHINGTON;

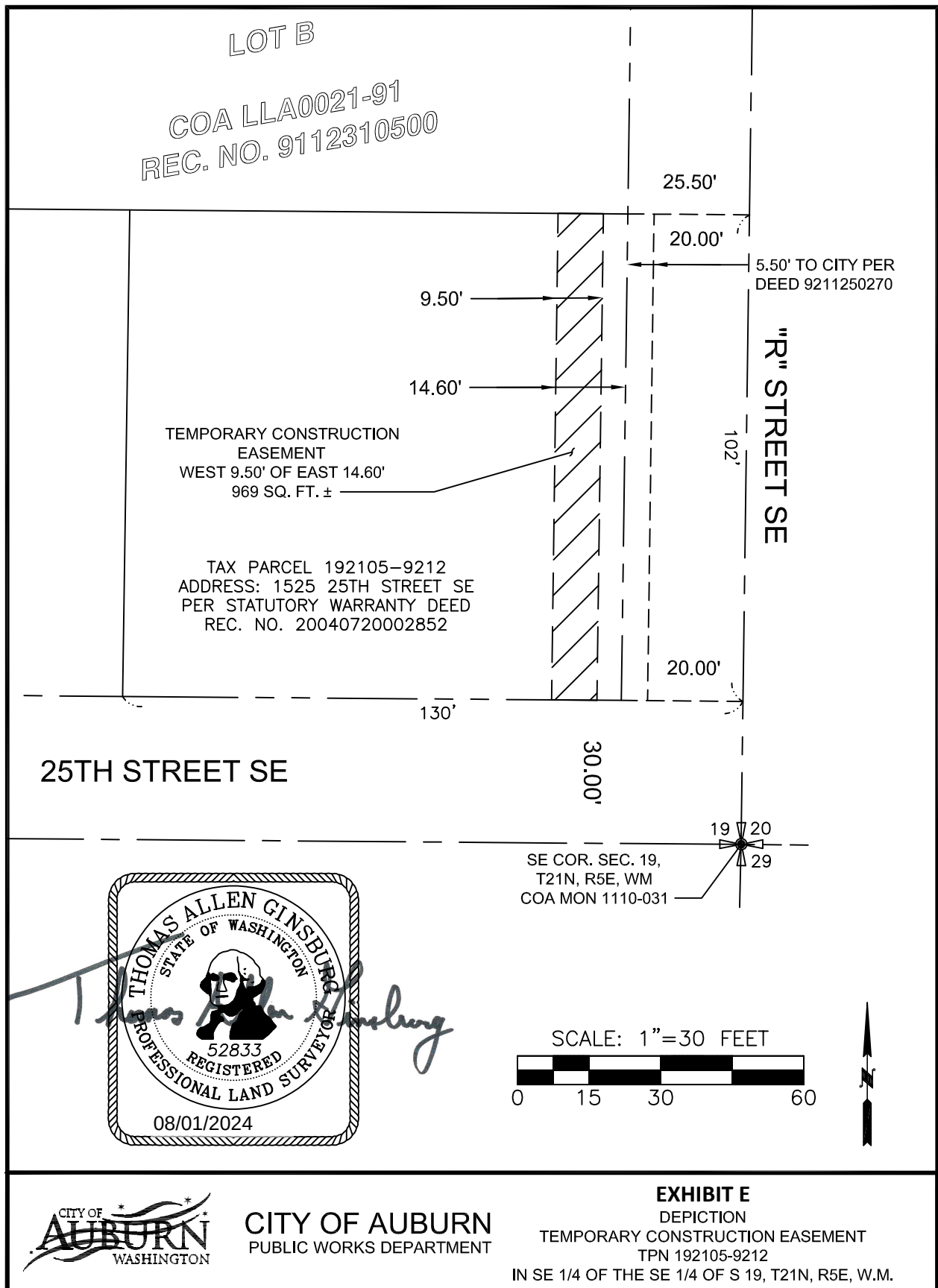
EXCEPT THE EAST 20 FEET;

EXCEPT THE SOUTH 30 FEET FOR ROADS;

EXCEPT THAT PORTION CONVEYED TO THE CITY OF AUBURN BY DEED RECORDED UNDER
RECORDING NUMBER 9211250270.

SAID EASEMENT CONTAINING AN AREA OF 969 SQUARE FEET, MORE OR LESS.





Property Owners: Jose M. Martinez Lopez
Adilene Rodriquez Valazquez

Tax Parcel: 192105-9179

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #192105-9179

THE NORTH 198 FEET OF THE SOUTH 330 FEET OF THE EAST 330 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON.

EXCEPT THAT PORTION DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON; THENCE SOUTH 0°00'19" EAST ALONG THE EAST LINE OF SAID SUBDIVISION 992.66 FEET TO THE CENTERLINE OF 24TH STREET SOUTHEAST; THENCE SOUTH 89°39'41" WEST 330 FEET; THENCE SOUTH 0°00'19" EAST 30 FEET TO THE SOUTH LINE OF 24TH STREET SOUTHEAST; THENCE NORTH 89°39'41" EAST ALONG THE SOUTH LINE 90.60 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 89°39'41" EAST 121.48; THENCE SOUTH 0°00'19" EAST 56 FEET; THENCE SOUTH 89°39'41" WEST 48.28 FEET; THENCE SOUTH 0°00'19" EAST 112.00 FEET; THENCE SOUTH 85°39'41" WEST 73.20 FEET; THENCE NORTH 0°00'19" WEST 168.00 FEET TO THE TRUE POINT OF BEGINNING.

ALSO EXCEPT THE SOUTH 132 FEET THEREOF.

ALSO EXCEPT THE WEST 90.6 FEET THEREOF.

ALSO EXCEPT ANY PORTION LYING WITHIN R STREET SOUTHEAST.

ALSO EXCEPT ANY PORTION LYING WITHIN 24TH STREET SOUTHEAST.

(BEING A PORTION OF LOT B, LOT LINE ADJUSTMENT NO. 0021-91, RECORDED UNDER RECORDING NO. 9112310500, RECORDS OF KING COUNTY, WASHINGTON.)

EXHIBIT B

**RIGHT OF WAY DEDICATION
LEGAL DESCRIPTION**

THE EAST 5.10 FEET OF LOT B, LOT LINE ADJUSTMENT NO. LLA0021-91, RECORDED UNDER
RECORDING NO. 9112310500 RECORDS OF KING COUNTY, WASHINGTON.

SAID RIGHT OF WAY DEDICATION CONTAINING AN AREA OF 861 SQUARE FEET, MORE OR LESS.



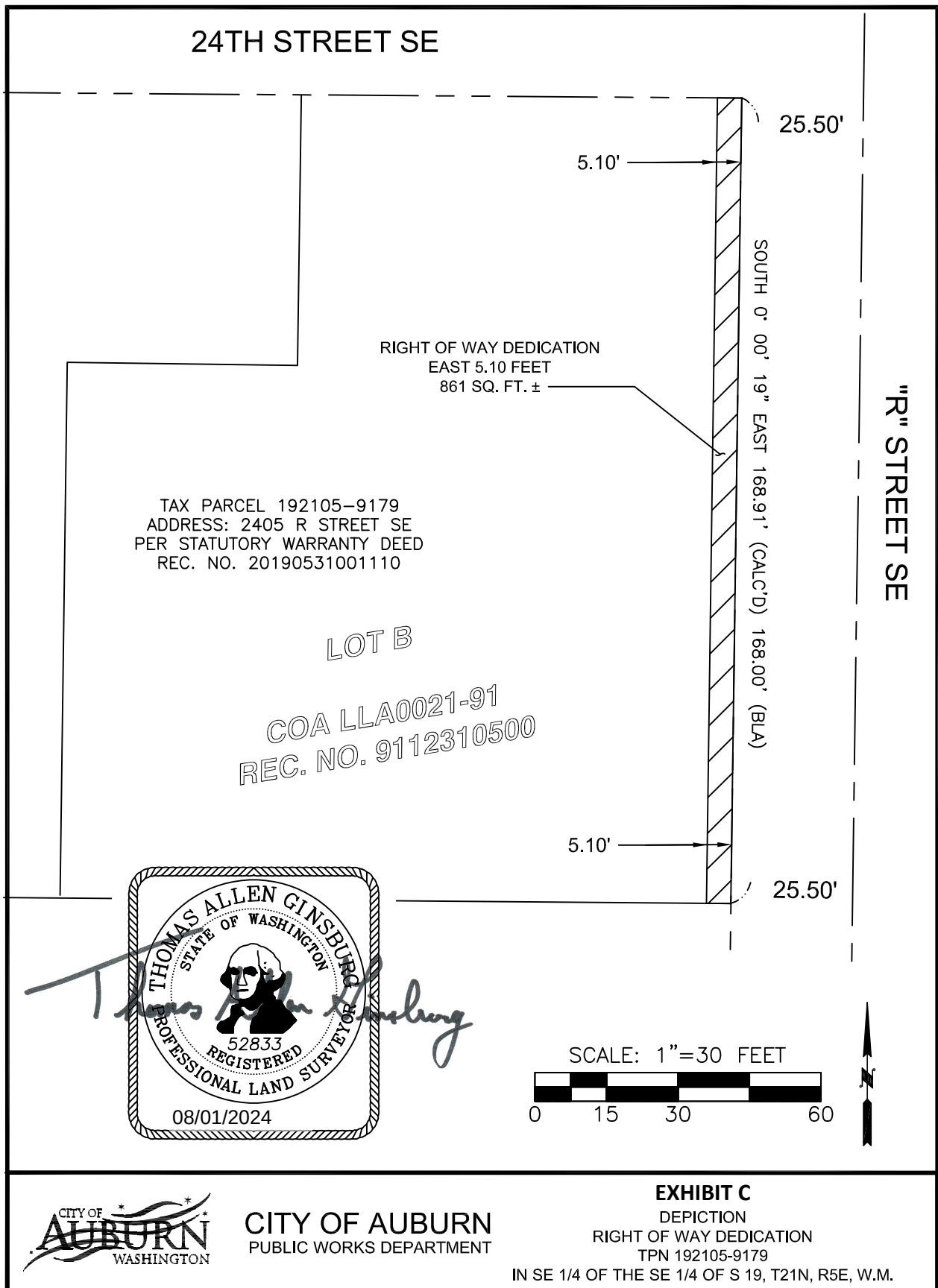
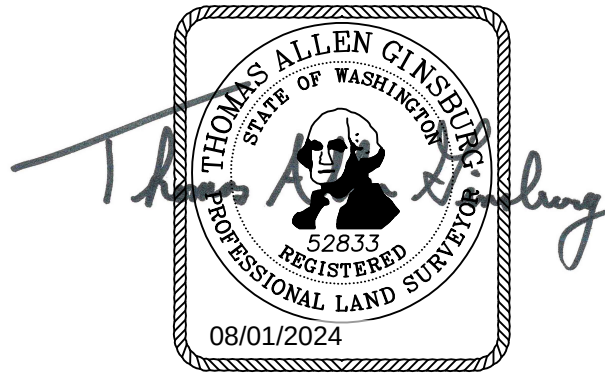


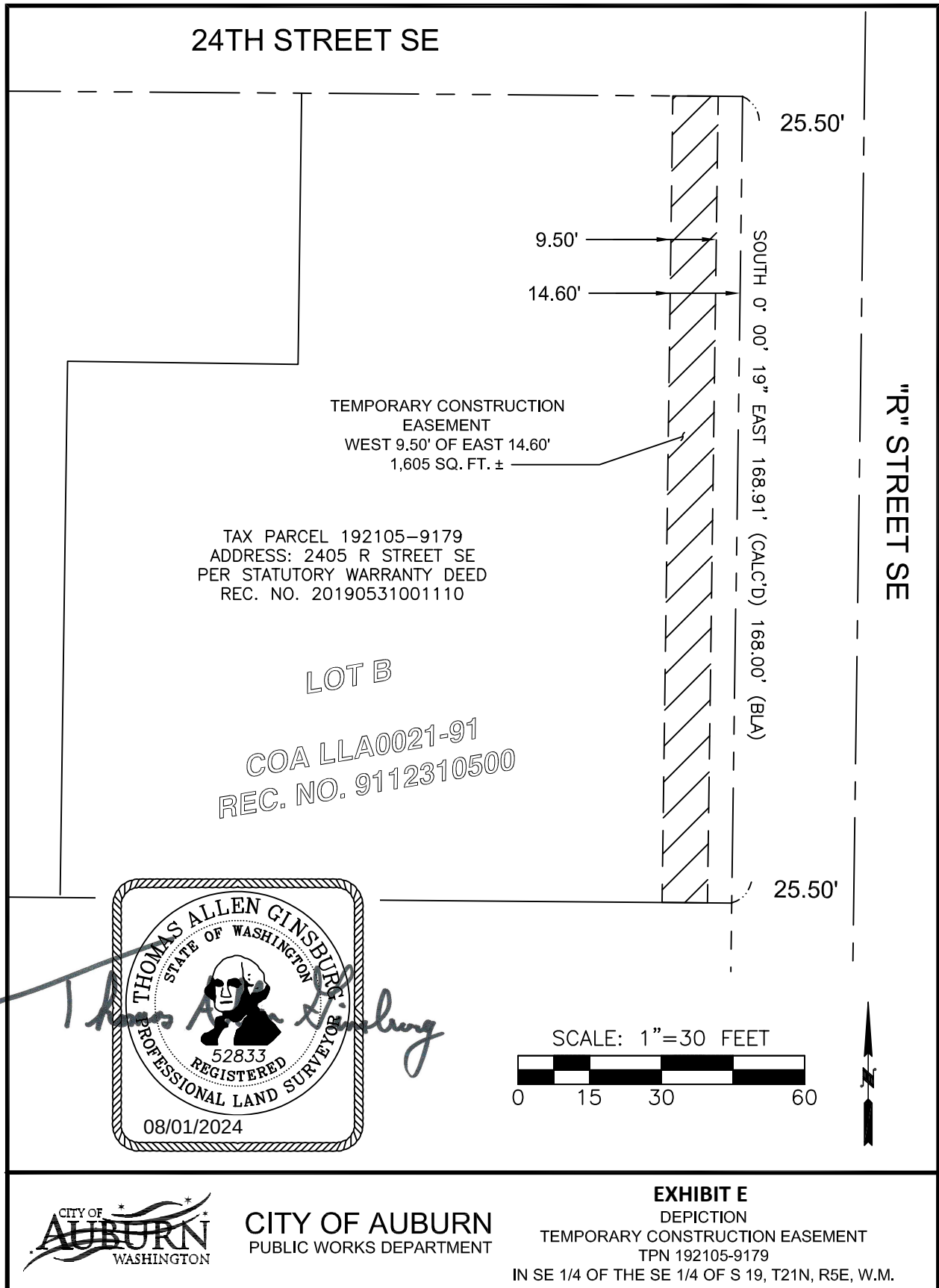
EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THE WEST 9.50 FEET OF THE EAST 14.60 FEET OF LOT B, LOT LINE ADJUSTMENT NO. LLA0021-91,
RECORDED UNDER RECORDING NO. 9112310500 RECORDS OF KING COUNTY, WASHINGTON.

SAID EASEMENT CONTAINING AN AREA OF 1,605 SQUARE FEET, MORE OR LESS.





Property Owner: T. Lindsay Howard

Tax Parcel: 292105-9031

EXHIBIT A

PARCEL LEGAL DESCRIPTION

Tax Parcel #292105-9031

BEGINNING AT THE NORTHWEST CORNER OF SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON; THENCE SOUTH 1°19'00" EAST 148 FEET; THENCE SOUTH 89°13'00" EAST 372.36 FEET; THENCE NORTH 00°41'00" WEST 148 FEET; THENCE WEST TO THE POINT OF BEGINNING. EXCEPT COUNTY ROAD.

EXHIBIT B

**PERMANENT SLOPE EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF GOVERNMENT LOT 4 IN THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 29, AS MONUMENTED BY CITY OF AUBURN MONUMENT 1110-031, AN ENCASED 3 INCH DIAMETER BRASS DISK STAMPED WITH AN "X" AND "CITY OF AUBURN PUBLIC WORKS LS 22954" AT THE INTERSECTION OF 25TH STREET SE AND "R" STREET SE;

THENCE SOUTH 89° 32' 37" EAST A DISTANCE OF 30.00 FEET TO THE EAST RIGHT OF WAY MARGIN OF "R" STREET SE;

THENCE ALONG SAID EAST MARGIN, SOUTH 01° 20' 03" WEST A DISTANCE OF 62.09 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID EAST MARGIN, SOUTH 01° 20' 03" WEST A DISTANCE OF 86.42 FEET TO THE NORTH LINE OF PARCEL "A" AS DESCRIBED IN STATUTORY WARRANTY DEED RECORDED UNDER KING COUNTY RECORDING NUMBER 20210910001899 AND AS DEPICTED ON RECORD OF SURVEY RECORDED UNDER RECORDING NUMBER 20220512900003;

THENCE ALONG SAID NORTH LINE, SOUTH 88° 33' 25" EAST A DISTANCE OF 10.00 FEET;

THENCE LEAVING SAID NORTH LINE, NORTH 01° 19' 52" EAST A DISTANCE OF 40.60 FEET;

THENCE SOUTH 80° 38' 11" WEST A DISTANCE OF 10.18 FEET;

THENCE NORTH 01° 20' 03" EAST A DISTANCE OF 10.87 FEET;

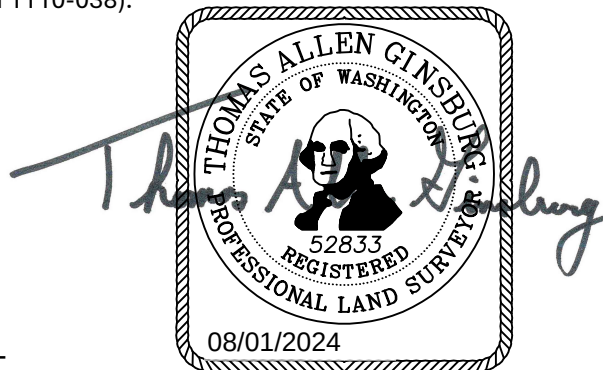
THENCE NORTH 86° 44' 53" EAST A DISTANCE OF 10.04 FEET;

THENCE NORTH 01° 19' 54" EAST A DISTANCE OF 36.06 FEET;

THENCE NORTH 88° 40' 06" WEST A DISTANCE OF 10.00 FEET TO SAID EAST MARGIN AND THE POINT OF BEGINNING

SAID EASEMENT CONTAINING AN AREA OF 761 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).



Ordinance No. 6958
September 13, 2024
Page 80 of 83

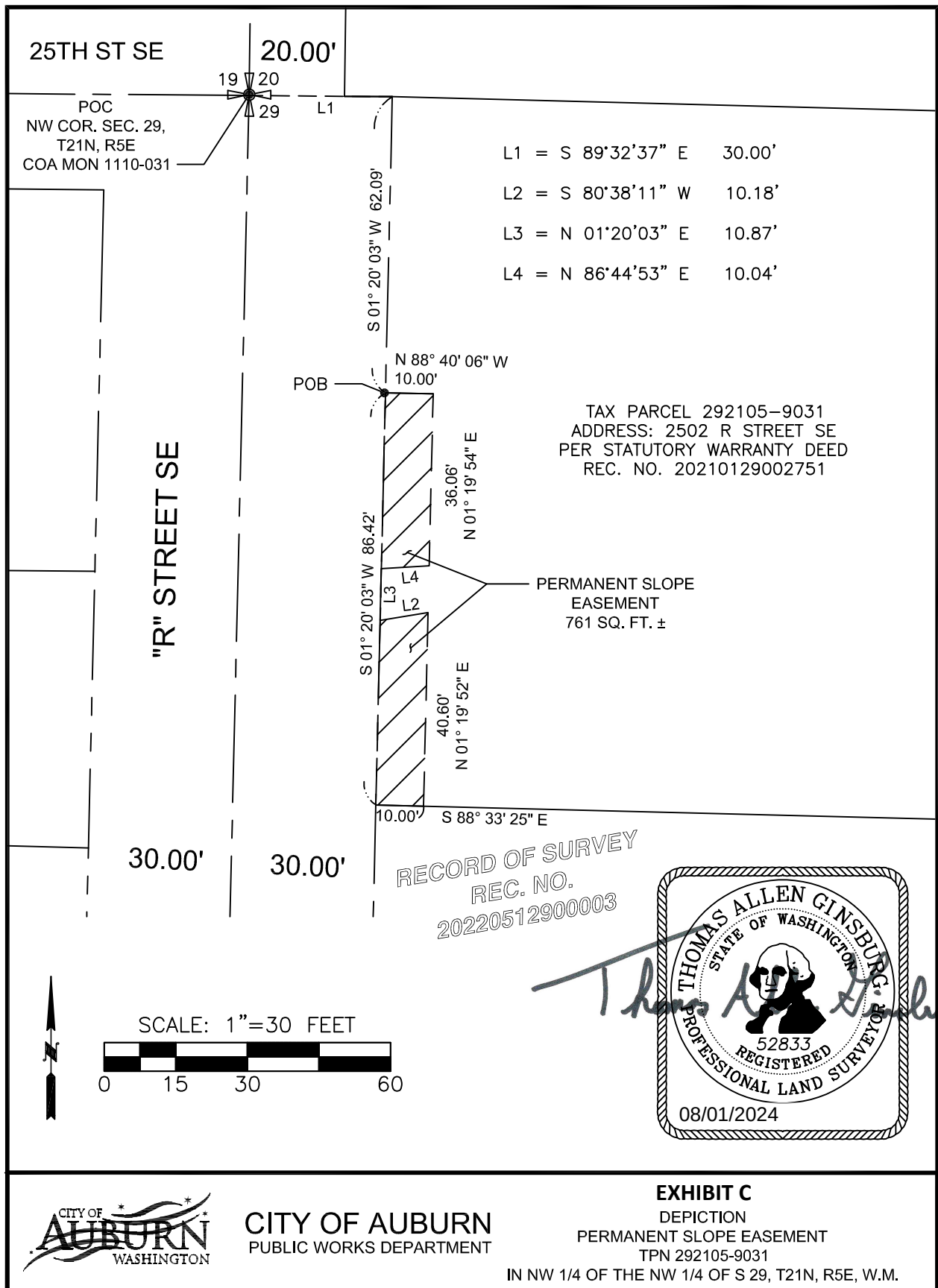


EXHIBIT D

**TEMPORARY CONSTRUCTION EASEMENT
LEGAL DESCRIPTION**

THAT PORTION OF GOVERNMENT LOT 4 IN THE NORTHWEST QUARTER OF SECTION 29,
TOWNSHIP 21 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS
FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 29, AS MONUMENTED BY CITY
OF AUBURN MONUMENT 1110-031, AN ENCASED 3 INCH DIAMETER BRASS DISK STAMPED WITH
AN "X" AND "CITY OF AUBURN PUBLIC WORKS LS 22954" AT THE INTERSECTION OF 25TH STREET
SE AND "R" STREET SE;

THENCE SOUTH 89° 32' 37" EAST A DISTANCE OF 30.00 FEET TO THE EAST RIGHT OF WAY
MARGIN OF "R" STREET SE;

THENCE ALONG SAID EAST MARGIN, SOUTH 01° 20' 03" WEST A DISTANCE OF 98.95 FEET TO THE
POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID EAST MARGIN, SOUTH 01° 20' 03" WEST A DISTANCE OF
10.87 FEET;

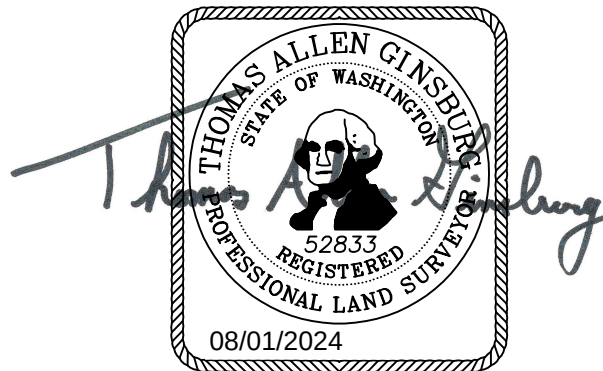
THENCE LEAVING SAID EAST MARGIN, NORTH 80° 38' 11" EAST A DISTANCE OF 10.18 FEET;

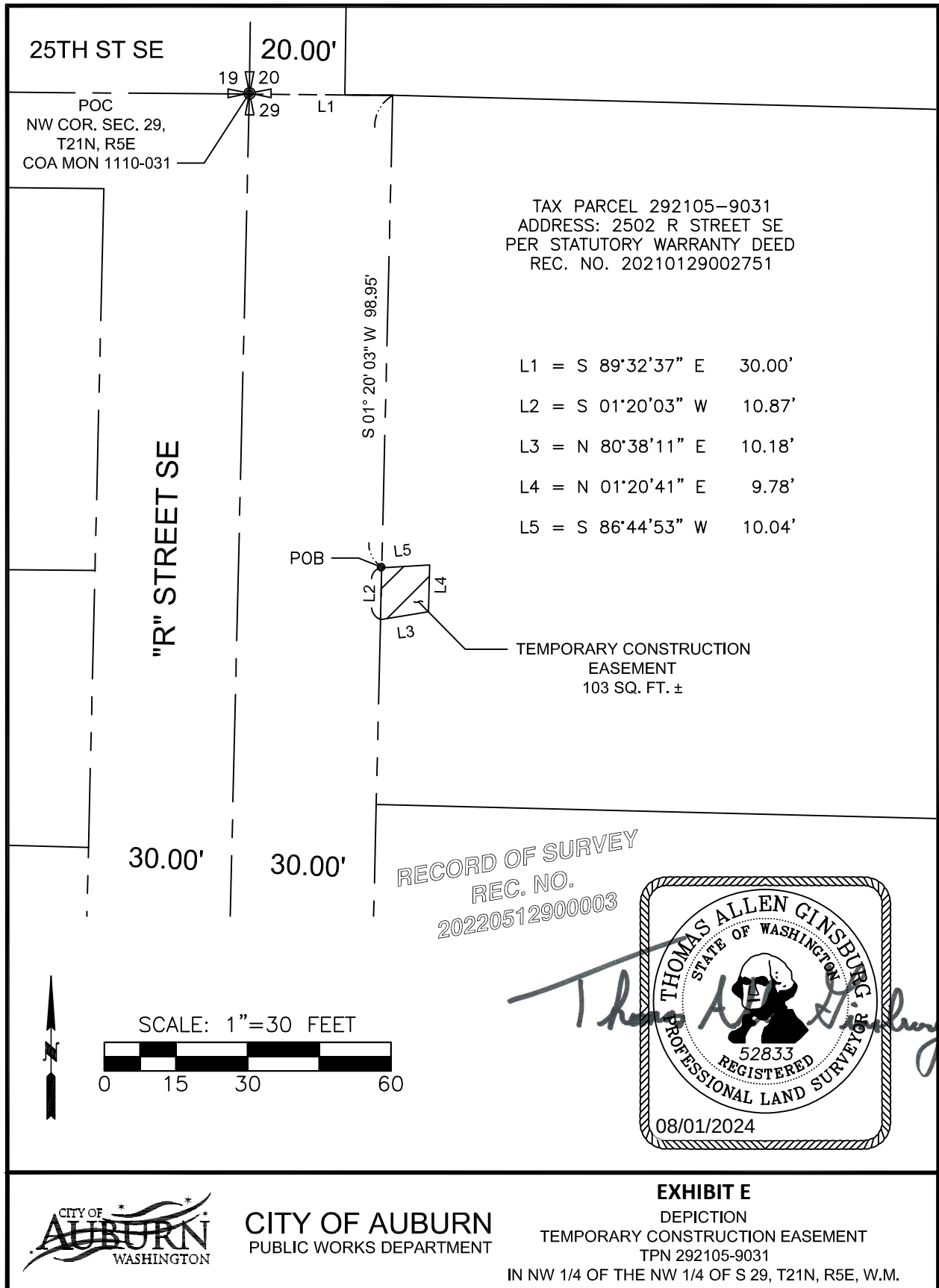
THENCE NORTH 01° 20' 41" EAST A DISTANCE OF 9.78 FEET;

THENCE SOUTH 86° 44' 53" WEST A DISTANCE OF 10.04 FEET TO SAID EAST MARGIN AND THE
POINT OF BEGINNING.

SAID EASEMENT CONTAINING AN AREA OF 103 SQUARE FEET, MORE OR LESS.

THE BASIS OF BEARINGS FOR THIS EASEMENT IS SOUTH 01° 20' 03" WEST BEING THE
MONUMENTED CENTERLINE OF "R" STREET SE AS DETERMINED BETWEEN 25TH STREET SE (COA
MON 1110-031) AND 29TH STREET SE (COA MON 1110-038).





ENGINEERING SERVICES
ORDINANCE 6958

KIM TRUONG/JACOB SWEETING
CITY COUNCIL STUDY SESSION
SEPTEMBER 23, 2024

Public Works Department

Engineering Services • Airport Services • Maintenance & Operations Services

AUBURN
VALUES

S E R V I C E
E N V I R O N M E N T
E C O N O M Y
C H A R A C T E R
S U S T A I N A B I L I T Y
W E L L N E S S
C E L E B R A T I O N

ORDINANCE 6958 - SUMMARY

- Establishes that:
 - Project CP2116 – R Street SE Widening is a public use.
 - Acquisition of property rights included in the ordinance are necessary for the project.
 - Acquisition of the property rights and construction of the project provides public benefits.
- Authorizes:
 - Acquisition through condemnation with just compensation paid to owners

SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

R STREET SE PROJECTS - BACKGROUND

- R Street SE has a history of:
 - Heavy congestion
 - Long queues at intersections
 - Accessibility to neighborhoods and safety concerns

- 2020 R Street Corridor Study recommends:
 - Roundabout at 21st ST SE & R ST SE [CP2308]
 - 29th ST SE & R ST SE intersection signal improvements [CP2116]
 - Adding a second southbound through lanes from 21st ST SE to 33rd ST SE. [CP2116]
 - Adding a two-way left turn lane south of 33rd ST SE [CP2315]

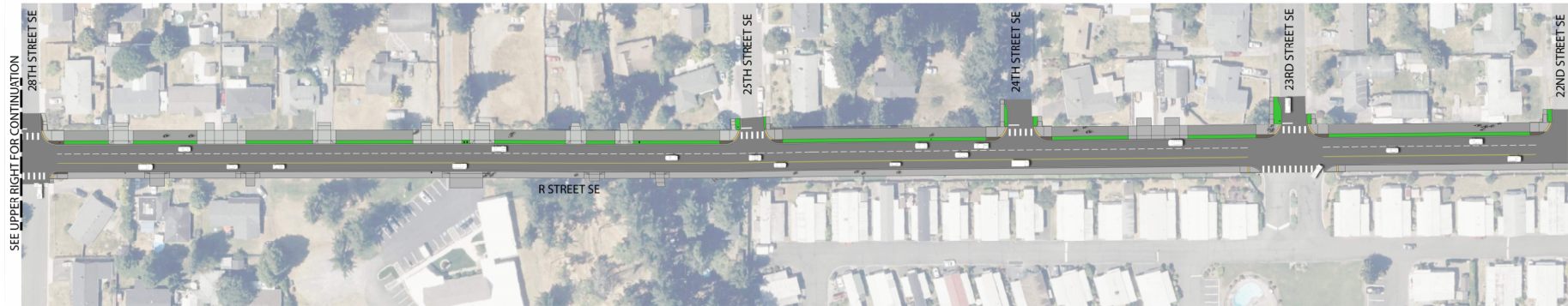
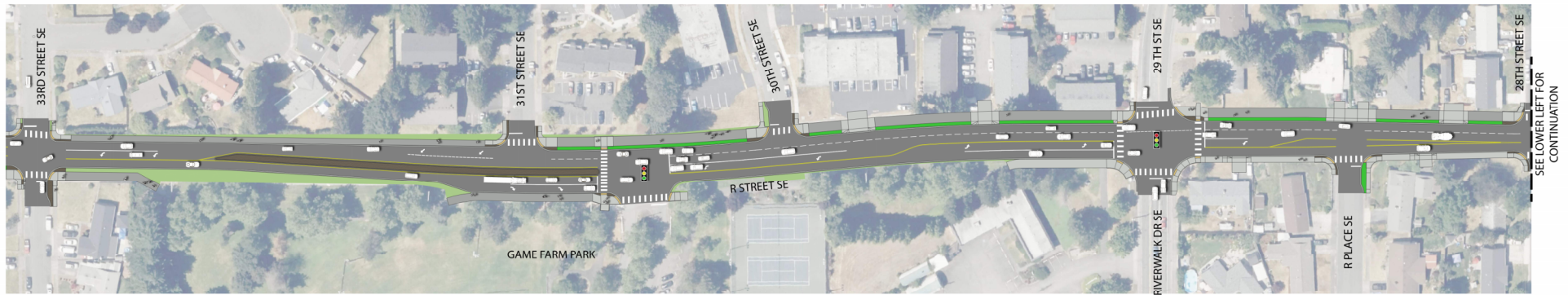
SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION



R STREET SE PROJECTS

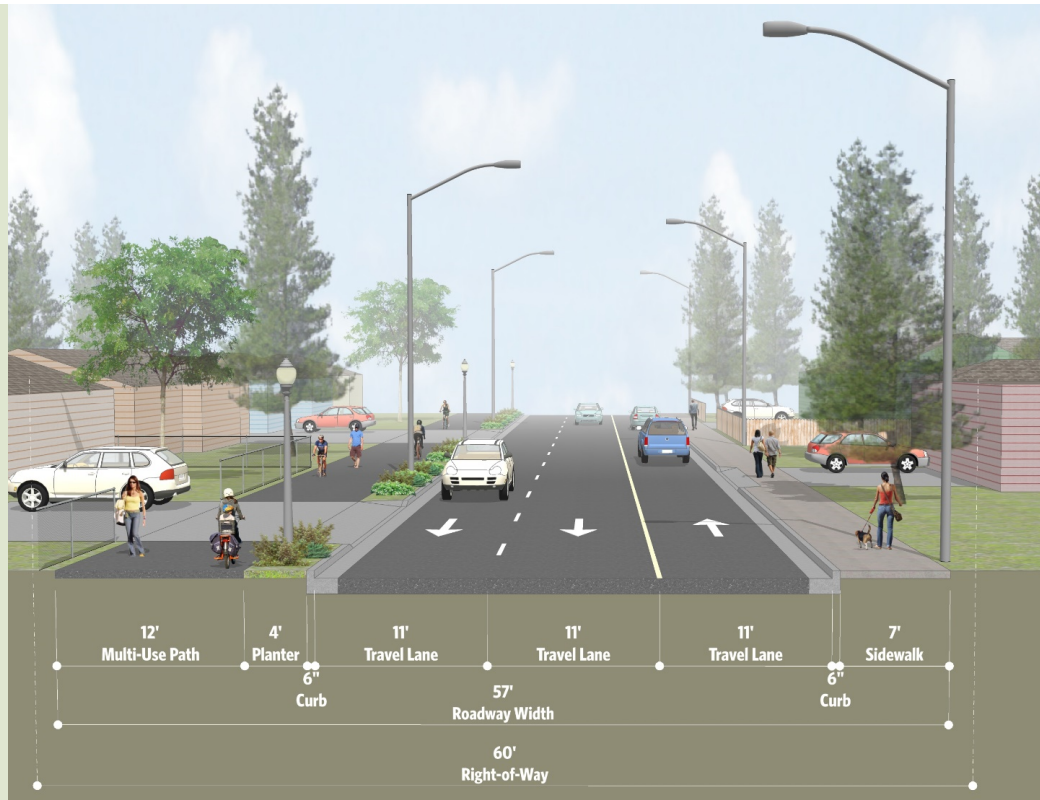
SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

CP2116 - PROJECT OVERVIEW



SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

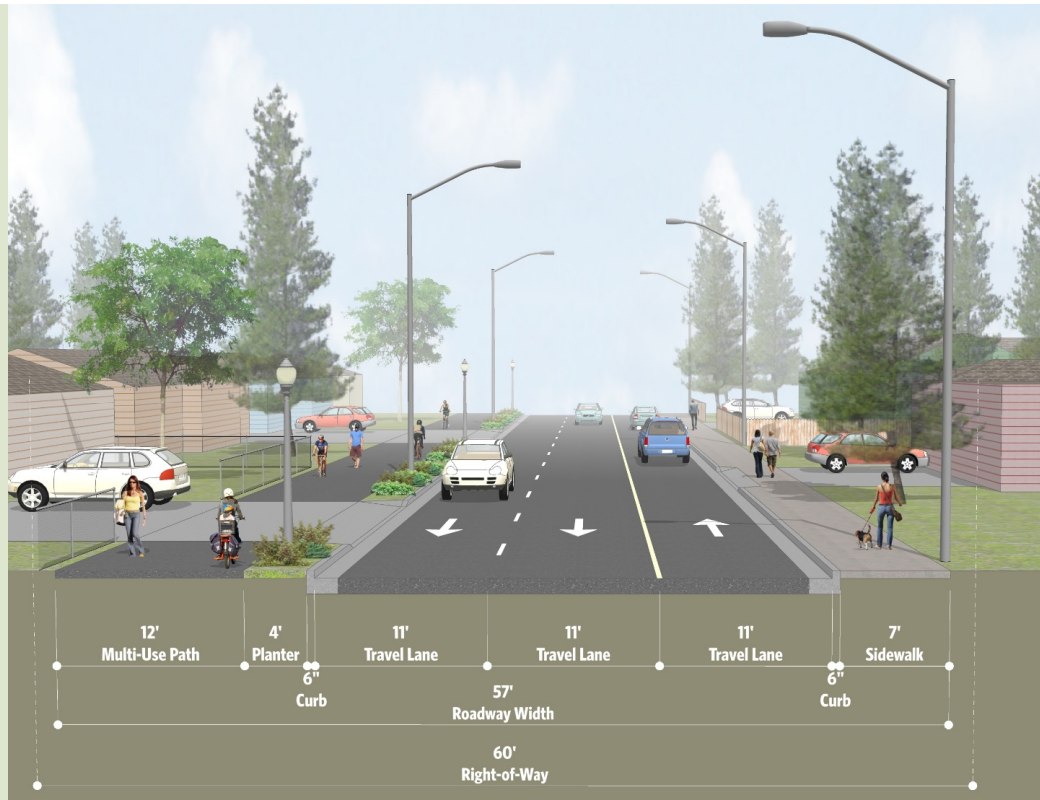
CP2116 - PROJECT SCOPE



- Add a second southbound lane from 22nd ST SE to 31st ST SE
- Multi-use pathway on the west side (north of the Game Farm Park entrance)
- A buffer to separate the roadway from the multi-use path.
- A new 7-foot-wide sidewalk on the east side
- Replace and repair roadway pavement

SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

CP2116 - PROJECT SCOPE



- New street lighting
- Replacement of the existing traffic signal at 29th St SE & R St SE intersection
- Full new traffic signal at the Game Farm Park entrance
- Upgrades to aging storm drainage and water system infrastructure

SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

CP2116 - PROPERTY NEEDS

- Property rights needed from 13 different properties.
- All property rights needed are partial takings along the street frontage. No full takes or relocations.
- Needed property rights vary with the following:
 - Permanent right-of-way
 - Slope easements
 - Temporary construction easements

SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

WHY IS ORDINANCE NEEDED?

- The R Street SE Widening project provides public benefit by:
 - Installing infrastructure that improve traffic operations and ease congestion.
 - Providing convenient and comfortable access for non-motorized users.
 - Improving safety for all users.
- If negotiations fail the condemnation ordinance helps pursue timely acquisition of property rights.
- Minimize the risk of delaying the project.

SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

CP2116 - PROJECT SCHEDULE

Design and Permitting

2023 2024 2025 2026 2027 2028

Property Acquisition

2023 2024 2025 2026 2027 2028

Construction (depending on permitting and property acquisition process)

2023 2024 2025 2026 2027 2028

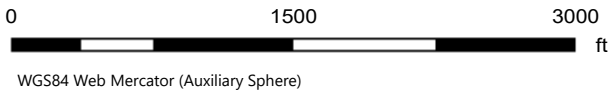
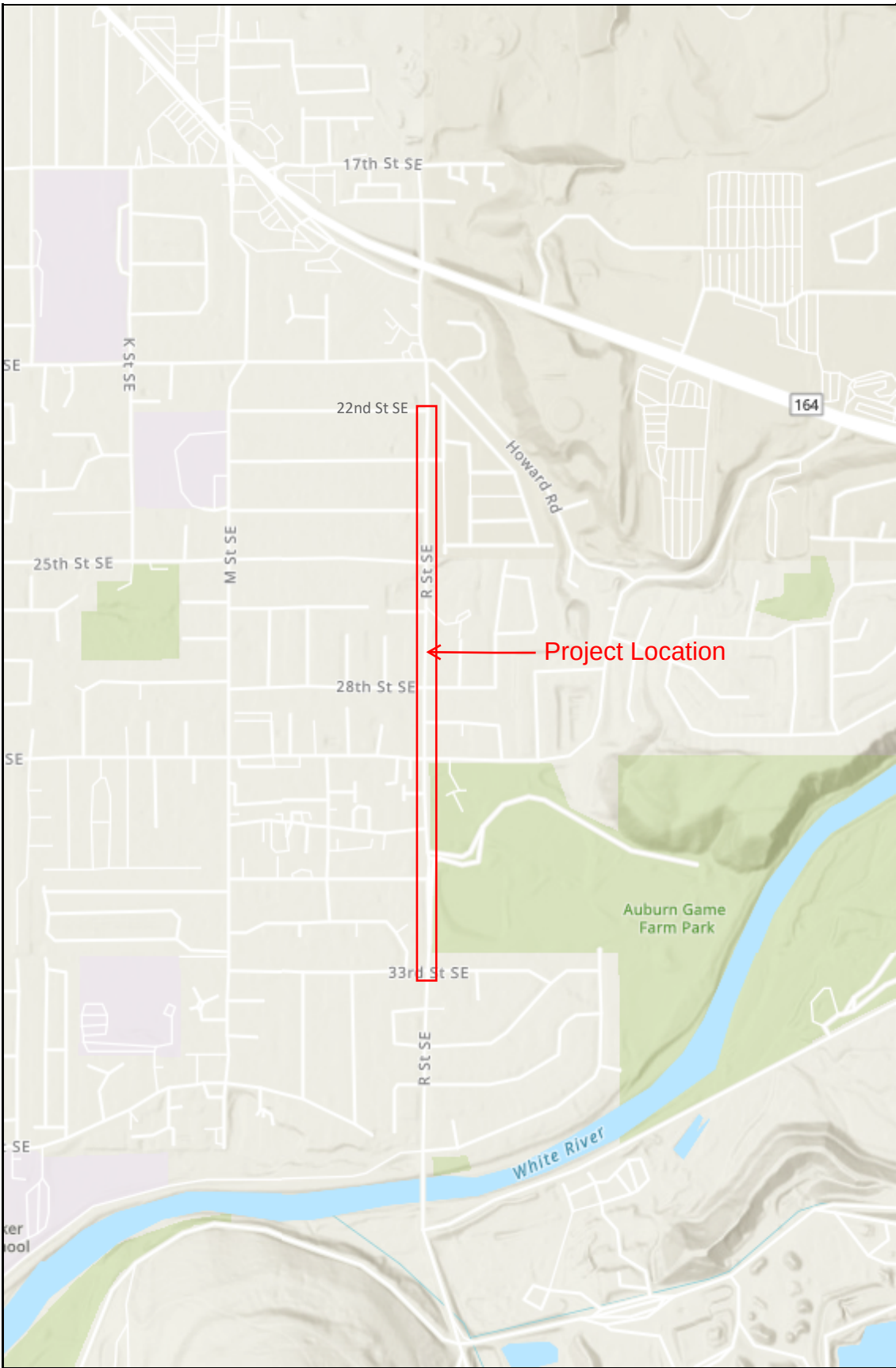
SERVICE • ENVIRONMENT • ECONOMY • CHARACTER • SUSTAINABILITY • WELLNESS • CELEBRATION

NEXT STEPS

- Required formal notices sent to property owners
- Newspaper publication
- Consideration and adoption of Ordinance 6958 on October 21st
- Scheduling of appraisal meetings
- Initiation of negotiations
- Negotiations, settlements, and closings
- File condemnation petition(s) only if necessary and only when needed

- Questions?

R Street SE Widening - Vicinity Map





AGENDA BILL APPROVAL FORM

Agenda Subject:

Council Rules of Procedure (Council) (60 Minutes)

Department:

Administration

Attachments:

[Council Rules Of Procedure, Section 6-19](#)

[revisions shown in track changes](#)

[Council Suggested Edit Header](#)

[Councilmember Suggested Edits - Combined](#)

Date:

August 30, 2024

Budget Impact:

Current Budget: \$0

Proposed Revision: \$0

Revised Budget: \$0

Administrative Recommendation:**Background for Motion:****Background Summary:****Reviewed by Council Committees:****Councilmember:**

Meeting Date: September 23, 2024

Staff:

Item Number:

Council Rules of Procedure Sections 6-19 Track Changes

SECTION 6 COUNCILMEMBERS

- 6.1 **Remarks.** Councilmembers who wish to speak shall address the Presiding Officer, and a when recognized, shall limit their comments to questions under consideration.
- 6.2 **Questioning.** Any member of the Council, and the Mayor, shall have the right to question any individual, including members of the staff, on matters related to the issue properly before the Council for discussion.
- 6.3 **Obligation to the Public Agency.** Notwithstanding the right of Councilmembers to express their independent opinions and exercise their freedom of speech, Councilmembers should act in a way that reflects positively on the reputation of the City and of the community. Councilmembers shall also interact with other members of the City Council, the Mayor, a and City staff in ways that promote effective local government.
- 6.4 **Council Training.** Councilmembers shall participate in training offered by individuals, agencies, entities, a and organizations including, a but not limited to, the Association of Washington Cities and the State of Washington. This includes initial orientation after taking office, and other required or recommended training.
- 6.5 **Participation in Committees, Agencies and Organizations.** To better represent the interests of the City of Auburn, Councilmembers are encouraged to participate in assignments to local, regional, state, a and national committees, agencies and organizations, and to attend community, regional, a and state events. Councilmembers who have confirmed their intent to attend are expected to arrange their appearance in order to avoid unnecessary expenditure of City funds.
- 6.6 **Code of Conduct.** Councilmembers shall be subject to the policies in Exhibit 1 of these Rules as they currently exist or are modified in the future. Unless otherwise stated in these Rules, the terms, provisions, and conditions set forth in the Policies are hereby incorporated into these Rules. Any violation of these policies, as determined by the City Council, shall be subject to section 20.1 of these Rules.

SECTION 12 DEPUTY MAYOR

- 12.1 Annually or more often as deemed appropriate, the members of the City Council, by majority vote, shall designate one of their members as Deputy Mayor for a one-a-year time period, except as provided in Section 12.1, Paragraphs G and H.

Elections will be held no later than the last Council meeting of the year for determining the Deputy Mayor for the subsequent year.

- A. Any member of the City Council ~~who will have served on the Council for one year at the beginning for that Councilmember's terms as Deputy Mayor,~~ may be nominated for the position of Deputy Mayor by having that Councilmember's name placed in nomination by a Councilmember. The nomination of a councilmember for the position of Deputy Mayor does not require a second, and a councilmember may nominate him or herself.
 - 1. Nominations for the position of Deputy Mayor shall be made by members of the City Council on the dates of election for the Deputy Mayor position.
 - 2. In connection with the selection of Deputy Mayor, ~~it is strongly suggested that~~ Councilmembers are expected to approach the election in an open, transparent, and respectful manner, avoiding anything that jeopardizes harmony among Councilmembers.
- B. The Councilmember receiving a majority of the votes cast by the members of the City Council shall be elected Deputy Mayor. A Councilmember may vote for ~~themselves~~ him or herself.
- C. The names of all nominees for the position of Deputy Mayor shall be included in the vote.
- D. If no single Councilmember received a majority of the votes cast, a second vote/ballot between the two nominees who received the largest number of votes will be held.
- E. The Deputy Mayor shall serve at the pleasure of the Council.
- F. In the event of ~~a prolonged~~ the absence or unavailability of the Deputy Mayor, the Council shall vote on which Councilmember shall serve as the Interim Deputy Mayor. The Interim Deputy Mayor shall be the Councilmember who receives a majority vote. That Councilmember the senior member of the City Council, other than the Deputy Mayor, shall then serve as Interim Deputy Mayor until the return of the regular Deputy Mayor, or until the subsequent Deputy Mayor is designated by majority vote. The Interim Deputy Mayor shall have all the rights, duties, and authority of the Deputy Mayor under these rules
- G. If the designated Deputy Mayor is unable to serve the full term of the position of Deputy Mayor, the Council shall elect the next Deputy Mayor in accordance with Section 12 to serve the remainder of the term. If the appointment is declined the process shall continue until a Deputy Mayor is designated.

- H. In the event that the Councilmember selected as Deputy Mayor (or Interim Deputy Mayor) is unable to perform the duties of the position of Deputy Mayor, or fails to act in accordance with the City Council Rules of Procedure, the City Council may, by a majority vote of the full City Council, remove the Deputy Mayor (or Interim Deputy Mayor) from this position, in which case, the Council shall elect the next Deputy Mayor (or Interim Deputy Mayor) in accordance with Section 12 to serve the remainder of the term.

[See RCW 35A.12.065.]

12.2 The Deputy Mayor or Interim Deputy Mayor, as the head of the legislative branch of the City, shall perform the following duties:

A. Intra-Council Relations:

1. Serve as the Chair of the Council Study Sessions in accordance with Rule 5.1.B;
- ~~2. Serve as an ex-officio member of all ad hoc committees of the City Council. If the Deputy Mayor's attendance at an ad hoc committee meeting brings the number of councilmembers attending to four, the meeting shall comply with the Open Public Meetings Act (RCW 42.30), unless expressly exempted;~~
- ~~3.2.~~ Assist in new councilmember training including conducting a review of the rules of procedure with one to two individual Councilmembers, and a staff liaison, if requested, provided the Mayor is notified of the request;
- ~~4.3.~~ Support cooperative and interactive relationships among Council members;
- ~~5.4.~~ Work with Mayor and Administration to prepare agendas for Council Study Sessions, in accordance with Rules 2.2 and 16.1.B;
5. Preside over the Study Sessions of the City Council, designate Special Focus Area Chairs and Vice-Chairs, designate Special Focus Area assignments, and work with the chairs of the Special Focus Areas on the portions of Study Sessions over which the Special Focus Areas chairs preside in order to reinforce appropriate Special Focus Area topics and to ensure the Councilmember understands how to preside over their portion of the meeting.

6. With support from the City Attorney and/or City Clerk, ensure that Councilmembers are aware of the requirements and limitations related to the Open Public Meetings Act (OPMA) and reinforce adherence to the OPMA and quorum triggers when Councilmembers are operating and communicating in their Ad-Hoc Committee and Special Focus Areas roles. The Deputy Mayor has a responsibility to report violations of the OPMA when they are made aware of a violation.

B. Mayor-Council Relations:

1. Help maintain a positive and cooperative relationship between the Mayor and the City Council;
2. Act as conduit between the Mayor and the City Council on issues or concerns relating to their duties;
3. Preside over Regular Meetings of the City Council in the absence or unavailability of the Mayor;
4. In the event of a prolonged absence or incapacitation that exceeds two weeks (a state of disability that prohibits the function of duties) of the Mayor, the Deputy Mayor shall perform the duties of the Mayor.
 - (a) A prolonged absence that exceeds two weeks is defined as requiring a leave of absence that prohibits the performance of the duties of the office. Vacation leave for periods up to two weeks, illnesses requiring an absence of less than two weeks, out of state or out of country travel lasting not more than two weeks, or other similar short-term absences shall not be considered prolonged absences.
 - (b) In the event of a disaster, emergency, or other similar circumstance, where the Mayor is out-of-town and unable to carry out the duties of the office of Mayor, the Deputy Mayor, in consultation with the Mayor, shall act as Mayor until the return and availability of the Mayor;
5. The Deputy Mayor shall also stand in on behalf of the Mayor in other situations as requested by the Mayor;
6. In the performance of the duties of the Mayor, the Deputy Mayor shall not have authority to appoint, remove, replace, discipline or take other similar action on any Department Deirector or employee of the City;

7. The Deputy Mayor shall not have veto authority for actions that may be taken by the City Council;
8. The Deputy Mayor shall be aware of City, regional, and intergovernmental policies and activities in order to properly execute the role of Mayor.

C. Intergovernmental and Community Relations:

1. Act in absence of Mayor as requested and/or as required;
2. Be aware of all City regional and intergovernmental policies and activities in order to be prepared to step into the role of Mayor if necessary;
3. Serve as the Chair of the City's Emergency Management Compensation Board.

D. Other Duties of the Deputy Mayor:

1. In cooperation with the Mayor and Special Focus Area ~~group's~~ Chairpersons and with assistance from Administration, create and establish agendas for all ~~Study Sessions~~;
2. Serve as liaison to the Junior City Council, ~~participating as a non-voting member of the Junior City Council~~, encouraging, guiding, and counseling the members of the Junior City Council in connection with its duties and assignments;
3. Facilitate any issue related to the conduct and/or actions of Councilmembers that may be inappropriate or that may be in violation of the Council Rules of Procedure (Section 20.1);
4. Conduct voluntary regular and periodic meetings with individual Councilmembers and a staff liaison, if a staff liaison is requested by the Deputy Mayor or the individual Councilmember and provided the Mayor is notified of the request, to address Councilmember issues, concerns, legislative processes, Councilmember proposals, Councilmember training, and other similar related items;
5. Conduct group meetings with Councilmembers, including two on one meetings with Councilmembers on a rotating basis provided that such meetings shall not have more than two Councilmembers at such meetings. All such meetings at which a quorum of the City Council is in attendance shall be in compliance with the Open Public Meetings Act (RCW 42.30), unless expressly exempted.

SECTION 13 COUNCIL POSITION VACANCY OR ABSENCE

- 13.1 If an unexpired Council position becomes vacant, the City Council has ninety (90) days from the occurrence of the vacancy to appoint, by majority vote of a quorum of the remaining members of the Council, a qualified person to fill the vacancy pursuant to State law. The Council may make such appointment at its next Regular Mmeeting, or at a Special Mmeeting called for that purpose. If the Council does not appoint a person within the ninety (90) day period, the County may appoint a qualified person to fill the vacancy as provided by RCW 42.12.070.
- 13.2 If there is an extended excused absence or disability of a Councilmember, the remaining members by majority vote may appoint a Councilmember Pro Tempore to serve during the absence or disability.
- 13.3 The City Clerk's Office shall prepare and submit a display advertisement to the City's official newspaper, with courtesy copies to all other local media outlets, which announces the vacancy consistent with the requirements necessary to hold public office: that the applicant (a) be a registered voter of the City of Auburn, and (b) have a one (1) year residency in the City of Auburn. This display advertisement shall contain other information, including but not limited to, time to be served in the vacant position, election information, salary information, Councilmember powers and duties, the deadline date and time for submitting applications, interview and appointment schedules, and such other information that the City Council deems appropriate.
- 13.4 The City Clerk's Office shall prepare an application form which requests appropriate information for City Council consideration of the applicants. Applications will be available at City of Auburn offices and on the City's official website. Copies of the display advertisement will be provided to current members of the City of Auburn commissions, committees, boards, task forces and other City-sponsored community groups.
- 13.5 Applications received by the deadline date and time will have personally identifiable information removed, and each Councilmember may submit two interview questions with a designation as to their primary and secondary questions. If two of the questions submitted by differing Councilmembers are similar one of Councilmember's second question will be used.

- 13.6 In the event the City receives more than 10 completed applications, each City Councilmember will submit to the City Clerk an unranked list of the candidates the Councilmember wishes to move forward in the process. Each Councilmember's list should contain no more than 15 **anonymized candidates**. The City Clerk shall aggregate all Councilmembers lists into one unranked master list of the 10-15 candidates most commonly selected among the individual lists provided. The list shall be arranged in **the anonymized** order and shall only include the **anonymized designation** of the candidates. This aggregated list shall be provided to the Council during the executive session prior to the interview meeting.
- 13.7 Immediately following the executive session, Council shall meet in public session to select which candidates to invite to participate in an interview at a future City Council meeting. The decision as to which applicants to interview will be based on the information contained in the application forms and Council's evaluation of the qualifications of the candidates. The decision as to which candidates will be interviewed will be at the sole discretion of the City Council.
- 13.8 At the opening of the meeting at which interviews take place, the Mayor shall provide an overview of the format and ground rules for the meeting. The applicant's order of appearance shall be determined at this time by a random lot drawing performed by the City Clerk.
- 13.9 In order to ensure each candidate has a fair and equal opportunity to speak with Council, all candidates will be asked to remain sequestered at City Hall, which includes not using electronic devices, for the duration of all candidate interviews. Candidates will be ushered to and from the City Council Chambers by a member of City staff in order to participate in their interview at the pre-determined time. Candidates will be released from sequestration upon conclusion of the final interview and may observe the remainder of the public portion of the Council meeting.
- 13.10 Each candidate interview shall be no more than 30 minutes in length. The Council may reduce the 30-minute interview time if the number of applicants exceeds six candidates. Each interview shall follow the following format. (1) The applicant shall present their credentials to the City Council (up to 10 minutes). (2) The City Council shall ask the predetermined set of questions, one question per Councilmember, which must be responded to by the applicant. Each applicant will be asked and will answer the same set of questions and will have two (2) minutes to answer each question (up to 14 minutes). (3) An informal question-and-answer period during which Councilmembers may ask and receive answers to miscellaneous or follow-up questions (remainder of time).
- 13.11 Upon completion of the interviews, the Council may convene into Executive Session to discuss the qualifications of the applicants. However, all interviews,

deliberations, nominations, and votes taken by Council must be in open public sessions. The Council may not determine who to select or reach a consensus on a preferred candidate in Executive Session.

13.12 The Mayor asks for nominations from Councilmembers for the purpose of creating a group of candidates to be considered. No second is needed.

13.13 Nominations are closed by a motion, second, and majority vote of Council.

13.14 Councilmembers may deliberate on matters such as criteria for selection and the nominated group of candidates.

13.15 The Mayor polls the Councilmembers to ascertain if they are prepared to vote. Voting must take place in a manner in which the public is notified as to the vote of each existing Councilmember for which candidate. If there is more than one candidate, a vote must be taken for each candidate to record each Councilmember's vote.

13.16 The City Clerk records the votes in the meeting minutes.

13.17 The selection of a candidate to fill the vacancy is made by a majority vote of the remaining six members of the Council.

13.18 If a majority vote is not received for a candidate, the Council may postpone elections until another date.

13.19 The Mayor declares the nominee receiving the majority vote as the new Councilmember to be sworn in immediately after the effective date of the resignation.

13.20 The term of the candidate selected to fill the vacancy will be in effect until a person is elected at the next regular election for municipal officers. If successful at the election, the interim term would then end, and the appointed Councilmember will either complete the 4-year term of the vacated position or begin a new 4-year term, depending on the position number of the vacated position.

13.21 If the Council does not appoint a qualified person to fill the vacancy within 90 days of the occurrence of the vacancy, the County Council will appoint a person to fill the vacancy (RCW 42.12.070).

SECTION 16 COUNCIL STUDY SESSIONS, COMMITTEES AND CITIZEN ADVISORY BOARDS

16.1 **Study Sessions and Special Focus Areas.** In addition to the regularly scheduled City Council meetings (Regular Council Meetings) scheduled on the first and third Mondays of the month, ~~City Council shall regularly schedule Council Study Sessions on the second, fourth and fifth Mondays of the month for review of matters that would come back before the City Council at Regular Council Meetings. Different than the format for Regular Council Meetings (identified in Section 3 hereof).~~ Study Sessions shall be less formal than Regular Council Meetings and shall give the City Council the opportunity to discuss and debate issues coming before it for action at Regular Council meetings. The format for these meetings shall be as follows:

A. General Business Focus and Special Focus Areas.

Study Sessions shall consist of (1) a ~~Special Focus Area~~General Business Focus and (2) a ~~Special Focus Area~~General Business Focus in each meeting. The General Business Focus shall be scheduled ~~first~~second, and shall include agenda items that relate to issues of general City concern, items that will be coming before the City Council at upcoming meetings, and presentations and reports to the City Council.

The Special Focus Area groups shall, on a rotating basis described below, commence their portion of the Study Session following the conclusion of the Study Session General Business Focus. The Special Focus Area groups shall review matters of Council concern related to their areas of oversight responsibility. The Special Focus Area groups shall consist of the following: (1) Public Works & Community Development; (2) Municipal Services; (3) Community Wellness; and (4) Finance, ~~Technology & Economic Development~~Internal Services. These Special Focus Area groups shall be tasked with oversight of Council considerations as follows:

1. Community Wellness
 - Health, Equity, ~~and~~& Wellness
 - Neighborhood Services
 - Homelessness Prevention
 - Social Services
 - Diversity, Equity, & Inclusion
 - Cultural Arts & Community Events
 - Housing Policy
2. Finance ~~and~~& Internal Services
 - Facilities
 - Technology
 - Property management
 - Risk management & Insurance
 - Fiscal Sustainability
3. Public Works & Community Development

- Utilities
 - Transportation
 - Environmental Policy
 - Land Use & Development
 - Right of Way Management
 - Airport
 - Park Development
 - Economic Development
4. Municipal Services
- Public Safety
 - Courts
 - Recreation, Museum ~~and~~ & Senior Services
 - Animal Control
 - Emergency Planning
 - Cemetery
 - Communications

~~Aside from the above Special Focus Area topics, there shall be a Finance ad hoc Committee to review vouchers and payroll.~~

B. Scheduling of Special Focus Area.

1. The Special Focus Areas shall conduct their portion of the Study Sessions on ~~2nd~~-second and ~~4th~~-fourth Mondays of the month on a rotating basis such as follows: Public Works & Community Development, then Municipal Services, then Community Wellness, then Finance & ~~Economic Development~~Internal Services, then Public Works & Community Development, then Municipal Services, and so on.
2. On ~~5th~~-fifth Mondays of the ~~m~~Month, Study Sessions will not typically include any of the above Special Focus Areas, but may include special topics and issues of general concern to the City Council, including Council operating arrangements and Council Rules of Procedure. It is provided, however, that in order for the City Council to address the matters coming before the City Council, the Mayor and Deputy Mayor may, as they deem appropriate, insert into any Study Session any matters calling for City Council consideration and discussion, regardless of Special Focus Areas, ~~;~~ provided that to the extent feasible sSuch matters will be scheduled to allow sufficient time for preparation of relevant background analysis and information concerning said items and provision to all Council ~~members~~ in advance of the Study Session.
3. Topics for Special Focus Area consideration (for inclusion in the Special Focus Area portion of the Study Session agenda) shall be determined by the Chair of each Special Focus Area along with the

Mayor, ~~and~~ the Deputy Mayor, the Vice-Chair, and the designated ~~Departments~~ ~~Director(s)~~ for the Special Focus Area, ~~with~~ ~~the~~ matters ~~to will~~ be scheduled to ~~the extent feasible to~~ allow sufficient time for preparation of relevant background analysis and information concerning said items and provision to all Councilmembers in advance of the Study Session. The ~~Department~~ ~~Director(s)~~ shall review agenda topics and suggestions by other Councilmembers of such topics. The Deputy Mayor may review agenda items and topics with each Special Focus Area ~~Chairperson~~ individually when convenient.

C. Meeting Times

Study Sessions shall be scheduled as set forth in Section 2.2, above.

1. Three to four hours maximum timeframe (goal).
2. Agenda items should relate to future policy-making, strategic planning, or key state or federal issues affecting current or future city operations.
3. Agenda items should be substantive only (e.g., traffic impact fee increase proposals, comprehensive plan updates, rather than day-to-day operational issues. Non-substantive items (e.g., accepting a grant, authorizing contract bidding, etc.) should go directly to the Regular City Council Meeting.

D. Study Session Meeting Format.¹

1. Call to Order.
2. Roll Call.
3. Announcements, Reports, and Presentations.
4. Agenda Items for Council Discussion.
5. Ordinances.
6. Special Focus Area (the Chair of the Special Focus Area scheduled for the Study Session shall preside over this portion of the ~~Study Session~~). The Vice Chair shall preside over this portion of the ~~Study Session~~ in the Chair's absence.
7. Adjournment.

¹ It is the intention of the City Council that Study Sessions shall be televised on the City's public access channel if reasonably possible.

E. Council discussion at Study Sessions of each agenda item shall be managed by the Presiding Officer through recognition of each Councilmember in turn. After presentation of an agenda item, the Presiding Officer will ask each Councilmember whether the member would like to make a statement or ask a question regarding the agenda item. The Presiding Officer will start with the Councilmember at the Presiding Officer's right and address each Councilmember in order of seating, as determined by the Presiding Officer. After all Councilmembers have been addressed, the Presiding Officer will again ask for a statement by each Councilmember in the same order. Invitation by the Presiding Officer to each Councilmember to make a statement or ask a question shall be repeated two additional times. There shall be a limit of one question per Councilmember for each round (for three total rounds). Further questions by any Councilmember should be sent via email to the appropriate Department Director after the meeting, provided the Mayor is included in that email. Questions posed at Study Session or via follow up email shall be limited to the matter presented at Study Session.

16.2 **Ad Hoc Committees.** The Mayor, the Deputy Mayor, or a majority of the City Council may establish Ad Hoc Committees as may be appropriate to consider special matters that require special approach or emphasis.

A. Ad Hoc Committees may be established and matters referred to them at Study Sessions, without the requirement that such establishment or referral take place at a regular City Council Meeting.

B. The Mayor and the Deputy Mayor shall each appoint a Councilmember to each Council Ad Hoc Committee. The Deputy Mayor may appoint themselves. The third Councilmember to be appointed to the Ad Hoc Committee shall be selected by majority vote of the Council. The Deputy Mayor shall appoint Councilmembers to Council ad hoc committees, provided that the Mayor shall appoint members to Council ad hoc committees if the Deputy Mayor is disabled or precluded from acting in that capacity.

C. Ad Hoc Committees shall consider all matters referred to them and take action by majority consensus only when all Ad Hoc Councilmembers are present. The Chair of such Ad Hoc Committee shall report to the Council the findings of the committee. Committees may refer items to the Council with a committee recommendation or with no committee recommendation. The Mayor shall appoint Council representatives to intergovernmental councils, boards and committees.

D. Unless otherwise expressly provided for when forming an Ad Hoc Committee, it is the intention of the Council that Ad Hoc Committees function informally and not in any way that takes action in lieu of or on behalf of the full Council. The purpose and function of such Ad Hoc Committees shall be to review matters in advance of their consideration by the full Council, and perhaps record and make recommendations to the full Council. They are not "committees of a

governing body” subject to the requirements of the Open Public Meetings Act (Chapter 42.30. RCW). Ad Hoc Committees shall not receive public testimony or allow audience participation in connection with or related to the agenda item being discussed by the Committee. Councilmember appointments to intergovernmental councils, boards and committees, including ad hoc committees, shall be periodically reviewed. All councilmembers shall have the opportunity to serve on such councils, boards, and/or committees as assigned by the Mayor and on a rotating basis at the discretion of the Mayor. Councilmember appointments to intergovernmental councils, boards, and committees by the Mayor shall be done with consideration of a councilmember’s expertise, background, knowledge, working experience and/or education in that council, board, or committee. Ad hoc committee appointment by the Mayor or Deputy Mayor shall be at their discretion.

- E. Councilmembers on Ad Hoc Committees may request a staff liaison, and City Attorney or City Attorney’s designee, be present to assist the Councilmembers with institutional knowledge on the subject matter to be discussed, provided the Mayor is notified of the request.
- a. Ad hoc council committees shall consider all matters referred to them. The chair of such ad hoc committee shall report to the City Council the findings of the committee. Committees may refer items to the Council with a committee recommendation or with no committee recommendation.

16.3 Intergovernmental Councils, Boards and Committees. The Mayor shall appoint Council representatives to intergovernmental councils, boards, and committees.

- A. Councilmember appointments to intergovernmental councils, boards and committees, including Ad Hoc Committees, shall be periodically reviewed. All Councilmembers shall have the opportunity to serve on such councils, boards, and/or committees as assigned by the Mayor and on a rotating basis at the discretion of the Mayor. Councilmember appointments to intergovernmental councils, boards, and committees by the Mayor shall be done with consideration of a Councilmember’s expertise, background, knowledge, working experience and/or education in that council, board, or committee. Ad Hoc Committee appointment by the Mayor or Deputy Mayor shall be at their discretion.
- B. Councilmembers will prioritize appointments to Intragovernmental Councils, Boards, and Committees by seeking and filling positions that provide value to the City and its constituents. Providing value occurs in the following order of priority: (1) bringing money to the City, (2) bringing projects and/or investments into the City, (3) influencing policy or investment outcomes in the City, and (4) protecting City interests. These community-wide benefits are a priority over the personal interests of an individual Councilmember.
- C. Advisory Boards, Committees, and Commissions established by ordinance, consisting of residents appointed pursuant to the establishing Ordinance and

serving in the capacity and for the purposes indicated in the Ordinance, shall act as an advisory committee to the Council.

- ~~b. Advisory Boards, Committees and Commissions established by ordinance, consisting of citizens appointed pursuant to the establishing Ordinance and serving in the capacity and for the purposes indicated in the Ordinance, shall act as an advisory committee to the City Council.~~
- ~~c. Committee Chairpersons shall have broad discretion in conducting their meetings. They will generally follow Roberts Rules of Order, Newly Revised.~~
- ~~d. Unless otherwise expressly provided for when forming an ad hoc committee, it is the intention of the City Council that ad hoc committees function informally and not in any way that takes action in lieu of or on behalf of the full City Council. The purpose and function of such ad hoc committees shall be to review matters in advance of their consideration by the full City Council, and perhaps record and make recommendations to the full City Council. They are not "committees of a governing body" subject to the requirements of the Open Public Meetings Act (Chapter 42.30. RCW). Ad hoc committees shall not receive public testimony or allow audience participation in connection with or related to the agenda item being discussed by the Committee.~~
- ~~e. Committee Chairpersons shall approve all agenda items and may, at their discretion, remove or add agenda items during the course of the meeting.~~

SECTION 17 COUNCIL REPRESENTATION AND INTERNAL COMMUNICATION

- 17.1 If a Councilmember meets with, attends a meeting, or otherwise appears before individuals, another governmental agency, a community organization, or a private entity or organization, including individuals, agencies, or organizations with whom or with which the City has a business relationship, and makes statements directly or through the media, commenting on an issue that does or could affect the City, the Councilmember shall state the majority position of the Council, if known, on that issue. Personal opinions and comments which differ from those of the Council majority may be expressed if the Councilmember clarifies that these statements do not represent the Council's position, and the statements are those of the Councilmember as an individual. Additionally, before a Councilmember discusses anything that does or could relate to City liability, the Councilmember should talk to the City Attorney or the City's Risk Manager, so that the Councilmember would have a better understanding of what may be said or how the discussion should go to control or minimize the City's liability risk and exposure.

- 17.2 Councilmembers need to have other Councilmember's concurrence before representing another Councilmember's view or position with the media, another government agency, or community organization.
- 17.3 Councilmembers shall not knowingly communicate with an opposing party or with an opposing attorney in connection with any pending or threatened litigation in which the City is a party or in connection with any disputed claim involving the City without the prior approval of the City Attorney, unless the Councilmember is individually a party to the litigation or is involved in the disputed claim separate from the Councilmember's role as a City official.
- 17.4 Communication among Councilmembers shall conform to the following parameters:
- A. Except in connection with Councilmembers meeting, informally, in committees not subject to the Open Public Meetings Act, to assure that communication on agenda items occurs to the greatest extent possible at the public meetings, and to avoid even the perception that email is being used in a way that could constitute a public meeting, successive communications on Council topics that involve a quorum of the Councilmembers shall not occur. e.g., successive communications on City Council topics that involve a quorum of the Councilmembers. Councilmembers ~~should~~ shall refrain from emailing Councilmembers about such agenda items. Councilmembers should be prepared to communicate about matters that are on upcoming Council agendas at the public meetings. If Councilmembers wish to share information with other Councilmembers about matters that are on upcoming agendas, the Councilmembers should forward that information to the Mayor for distribution in the Council meeting packets.
 - B. Councilmembers may communicate via email to other Councilmembers, including to a quorum of the full City Council about matters within the scope of the City Council's authority or related to City business, but not yet scheduled on upcoming Council agendas, to indicate a desire that certain items be included on upcoming meeting agendas; provided that Councilmembers shall never ask for responses from the other Councilmembers in that communication.
 - C. Email communication among Councilmembers relating to City operations should also include the Mayor as a recipient/addressee.
 - D. Councilmembers may email the Mayor about City business without limitations or restrictions.
 - E. The Deputy Mayor from time to time may need to communicate with all Councilmembers on various items such as the annual review of the Rules of Procedure. All such correspondence, usually in the form of email, shall

be provided to Council as a whole through the Council Assistant. Any responses from Council shall also be directed to the Council Assistant who shall then provide all Councilmembers with email correspondence regarding questions, comments, suggestions, recommendations, or any similar item.

F. City Council email correspondence and all electronic communications shall utilize the designated city email account or city device with no exceptions and within the parameters of the Open Public Meetings Act and the Public Records Act.

17.5 Councilmembers shall not communicate with staff regarding their own personal business during times set out to discuss City of Auburn business. Councilmembers shall not discuss personal business with staff immediately before or after Council meetings in Council Chambers.

17.5 Internet & Electronic Resources/Equipment and Facility Use.

A. Policy. It is the policy of the City Council that Internet and electronic resources equipment use shall conform to and be consistent with the requirements of City of Auburn Administrative Policy and Procedure 500-03, "Internet & Electronic Resources/Equipment Use Elected Officials."

All letters, memoranda, and interactive computer communication involving City Councilmembers and members of advisory boards and commissions, the subject of which relates to the conduct of government or the performance of any governmental function, are public records.

B. Communications. Each Councilmember is responsible for checking their communication device multiple times on a daily basis and respond to requests by City staff as soon as possible.

C. Electronic Communications.

1. For emergency notifications of absences, and not planned absences, Councilmembers shall send an email to CouncilAlerts@auburnwa.gov to ensure the auto distribution of communications to necessary people.

2. Messages that relate to the functional responsibility of the recipient or sender as a public official constitute a public record. Those records are subject to public inspection and copying.

3. Electronic communications that are intended to be shared among a quorum of the City Council or of an ad hoc Council Committee, whether concurrently or serially, must be considered in light of the

~~Open Public Meetings Act, if applicable. If the intended purpose of the electronic communication is to have a discussion that should be held at an open meeting, the electronic discussion shall not occur. Further, the use of electronic communication to form a collective decision of the Council shall not occur.~~

- ~~4. Electronic communication should be used cautiously when seeking legal advice or to discuss matters of pending litigation or other confidential City business. In general, electronic communication is discoverable in litigation, and even deleted electronic communication is not necessarily removed from the system. Confidential electronic communications should not be shared with individuals other than the intended recipients, or the attorney-client privilege protecting the document from disclosure may be waived.~~
- ~~5. Electronic communication between Councilmembers and between Councilmembers and staff shall not be transmitted to the public or news media without the filing of a public disclosure request with the City Clerk.~~
- ~~6. Even if a Councilmember uses their personal electronic devices all electronic communications and documents related to City business will be subject to discovery demands and public disclosure requests.~~

~~D. Use of City Equipment and Facilities.~~

- ~~1. City Councilmembers are provided various tools to assist them in handling the business of the City in the role as members of the City Council. These tools include, but are not limited to: (1) an individual office assigned to each Councilmember in which there is (a) office furniture; (b) a computer accommodating access to the City's computer network and (c) a telephone tied to the City's telephone system; (2) and I Pad or comparable equipment also tied to the City's computer system that can be used remotely (not just in the Councilmember's office); (3), an I Phone or comparable equipment accommodating mobile communication needs for (a) telephone calls, (b) emails, and (c) texting; (4) a City badge accommodating physical access to City Hall facilities and Council Offices; and (5) Council mailboxes.~~

~~In order to assure transmittal of information necessary to conduct business of the City and to avoid Public Records Act liability for the City and Councilmembers for improper or private equipment use, Councilmembers shall use the tools identified above to assist them in being able to receive and work with information related to duties as councilmembers.~~

17.6 Council Relations with City Boards and Commissions.

- A. **Council Liaisons.** In addition to where a ~~City~~ Councilmember is appointed by the ~~City~~ Council or the Mayor to serve as a member of a board, commission, committee, task force, or any other advisory body, the City Council may, on limited occasions or under unusual circumstances, appoint a Councilmember to serve as a non-member Liaison to a board, commission, committee, task force, or any other advisory body. Anytime a Councilmember is appointed as such a Liaison, the position or role of Liaison is subordinate to that of Councilmember, and the Councilmember's responsibility is first and foremost to the City and to the ~~City~~ Council. The role and responsibility of the Councilmember-Liaison is to keep the City Council apprised of the activities, positions, and actions of the entity or organization to which the Councilmember has been appointed Liaison, and not to communicate to the board, commission, committee, task force, or other advisory body a statement as the position of the City Council, except as authorized or directed by the ~~City~~ Council. Insofar as a Councilmember-Council Liaison position does not give all Councilmembers equal access to the activities, functions, and information of or about a board, commission, committee, task force or any other advisory body, appointments to Council Liaison positions should be reserved to those instances where a Report to the Council by the board, commission, committee, task force, or any other advisory body would not be convenient or practical.
- B. **Reports to the Council.** Each board, commission, committee, task force, or any other advisory body of the City shall be requested to present a report to the City Council at a Regular Meeting or a Study Session of the City Council, as scheduled by the Mayor or Deputy Mayor. Such reports shall be scheduled for a Regular Council Meeting or a Council Study Session, and shall be delivered by the Chair of the board, commission, committee, task force, or any other advisory body or designee. The reports shall inform the City Council of the activities, functions and information with which the board, commission, committee, task force, or any other advisory body has been involved since the previous report, and shall include the opportunity for questions by Councilmembers.

- 17.7 Whenever a member of the City Council attends any meeting of any other entity or organization, he or she should endeavor to be prudent in what he or she says or does at such meeting. Further, the Councilmember should avoid attending such meeting if that attendance would impose an interference with the meeting or the operations of the other entity or organization, or of the operations of the City.

SECTION 18

TRAVEL AUTHORIZATION

- 18.1 **Value of Council Travel.** The Auburn City Council recognizes the need of its members to attend conferences, trainings, and meetings to broaden their

knowledge of and familiarity with a diverse collection of City-related issues, including, but not limited to, Public Works, Communications, Transportation, Economic Development, Public Safety, and Energy. These conferences also provide valuable opportunities to network with other elected City ~~elected~~ officials. Comparing Auburn's specific issues with those of other cities often provides the City Council with established policies already in place in other cities that can be adapted to meet the specific needs of the City of Auburn, as well as expediently and efficiently acquainting Auburn City Councilmembers with ideas of how to address Auburn issues and solve Auburn problems.

- 18.2 **Annual Budget Amounts for Council Travel.** To accommodate Council travel, the Auburn City Council shall allocate an identified amount of money each year in the City budget process to each Councilmember for City-related travel costs, including transportation, lodging, meals, and registration costs.
- 18.3 **Adjustment of Council Travel Allocations.** If a Councilmember needs more than the amount of travel related funds allocated for their use, the Councilmember shall (1) see if there are unused funds available from any other Councilmember(s) who are willing to transfer funds from their account to the Councilmember needing additional travel funds. If so, with the consent of the Deputy Mayor and the other transferring Councilmember(s), funds will be transferred to the requesting Councilmember's allotment; or (2) shall request a net adjustment to the budget adding additional funds to their allotment, which adjustment shall be approved by a majority of the whole City Council.
- 18.4 **Receipts and Travel Documentation.** Each City Councilmember shall be responsible for providing to the Mayor or Finance Director, within ten (10) business days of returning from City travel, any and all City travel related receipts and documentation, and a written report regarding the authorized travel the Councilmember attended. All documentation shall also be sent via email to the CouncilAlerts@auburnwa.gov email address. Quarterly reports of the travel costs incurred by each eCouncilmember shall be provided by the Finance Department.

SECTION 19 CONFIDENTIALITY

- 19.1 Councilmembers shall keep confidential all written materials and verbal information provided to them during Executive or Closed Sessions and as provided in RCW 42.23.070, to ensure that the City's position is not compromised. Confidentiality also includes information provided to Councilmembers outside of Executive Sessions when the information is considered by the exempt from disclosure under exemptions set forth in the Revised Code of Washington.

Councilmembers Proposed Changes

Section 6

Expand on Section 6.3 Council Training

a. Update to:

- i. **6.3 – Council Training** – Councilmembers shall participate in training offered by individuals, agencies, entities, and organization including, but not limited to, the Association of Washington Cities (AWC), [Municipal Research and Services Center \(MRSC\)](#), [Jurassic Parliament](#), and the State of Washington. This includes initial orientation after taking office, and other required or recommended training.

6.3.1 Resources provided to each Council member shall include:

- 1) a current copy of the “Mayor and Councilmember Handbook” produced by AWC and MRSC, and 2) a current copy of “Mastering Council Meetings: A Guidebook for Elected Officials and Local Governments” from Jurassic Parliament.

6.3.2 Required Training shall be completed by each Councilmember within the first 6 months of joining Council. Council staff will work with Directors, the Deputy Mayor (or interim Deputy Mayor), and Councilmembers to ensure required trainings are scheduled and completed.

6.3.3 Required training will include:

- Elected Officials Essentials Workshop from AWC
- NeoGov Training as assigned by Auburn’s HR Department
- An overview of each Department presented by the respective department’s Director and/or that Director’s delegate
- A review of Council process for submitting New Business provided by the Deputy Mayor or interim Deputy Mayor
- A review on the process for submitting materials for the Council packet provided by the City Clerk
- City of Auburn Facility Tours
 - City Hall
- White River Valley Museum New Hire Tour

6.3.3.1 Progress against required training shall be tracked by the Deputy Mayor, or interim Deputy

Mayor, and reviewed during 1-on-1 meetings with the individual Council members.

6.3.4 Recommended Training is encouraged to be completed within the first year of office. Council staff will work with city Directors and community partners to schedule the following as requested by individual Councilmembers.

- City of Auburn Facility Tours
 - Maintenance and Operations Buildings
 - Airport
- Auburn Police Department Ride Along
- Partner Facility Tours
 - Auburn Resource Center
 - Municipal Court
 - Community Court
 - SCORE Jail

[FOR REFERENCE] The following references provide samples from other Washington cities that include more detailed training guidance within their Rules and Procedures documents.

- See Sequim, Section 3.8, Page 17 (council manager)
- See Issaquah, Section 3.04, Page 15-16 “Councilmember Training” (code city, city-mayor) Covers Orientation, Open Government Training, and General Training requirements.
- See Tukwila, Section 9, Page 16-17, “Joining the City Council” (code city, city-mayor). Covers required orientation, trainings, and readings.

Section 12

12.1 (A) Deputy (should have to be on council for at least a year to be considered for the Deputy Mayors position)

Suggested to not change: This one should be left the way it was. They should serve at least one year because a brand new councilmember does not know everything yet to serve as Deputy Mayor. The Deputy Mayor elect should also have both Municipal Certificates from AWC to better understand their job.

Section 12.2. 2. Keep as is in current rules

Section 13

13.8 Submit at least two questions instead of one just in case one of your questions is similar to another question from another councilperson

Section 16

Suggested added Language: Council members are encouraged to send questions to directors ahead of the meeting so the Director can answer them during their presentation.

16.2 (B) We should leave it the way it was originally written that The Deputy Mayor shall appoint Councilmembers to Council ad hoc committees, provided that the Mayor shall appoint members to Council ad hoc committees if the Deputy Mayor is disabled or precluded from acting in that capacity.

16.2 (E) We should leave this language in there
Ad hoc council committees shall consider all matters referred to them. The chair of such ad hoc committee shall report to the City Council the findings of the committee. Committees may refer items to the Council with a committee recommendation or with no committee recommendation.

Suggest to leave language as is currently: This one should be left as it was written. You have to put trust in your Deputy Mayor to choose the right people for an Ad Hoc committee. The Mayor should only be involved if the Deputy Mayor is disabled.

16.3 (A) Recommending edits to this section because it says Mayor or Deputy Mayor can assign to Ad Hoc Committees. Should consider removing Mayor selecting or appointing Ad hoc committee members

All Councilmembers shall have the opportunity to serve on such councils, boards, and/or committees as assigned by the Mayor and on a rotating basis at the discretion of the Mayor. Councilmember appointments to intergovernmental councils, boards, and committees by the Mayor shall be done with consideration of a Councilmember's expertise, background, knowledge, working experience and/or education in that council, board, or committee. Ad Hoc Committee appointment by the Mayor or Deputy Mayor shall be at their discretion.

Section 17

17.5 Councilmembers shall not communicate with staff regarding their own personal business during times set out to discuss City of Auburn business. Councilmembers shall not discuss personal business with staff immediately before or after Council meetings in Council Chambers.

17.5 Suggested to remove -This should be taken out. this puts division with staff and council and if it is before a council meeting and after a council meeting that is not during a council meeting

Section 18

18.4 – Clarify the kind of reports needed to be submitted

Section 19

Add a new Section: “**Community Commitments**”

- b. Add a Section to incorporate the short version of the REDI Coalition Vision Statement and to provide a sample set of questions to guide existing and future council members on the types of questions appropriate for supporting the REDI initiative.

- c. Add:

Section 19.1 **REDI Commitment** The Auburn City Council acknowledges our role as city leaders to champion a community that fosters a Racially Equitable, Diverse, and Inclusive (REDI) culture.

With this duty, we...

- Invest in trust- and solidarity-building
- Unite for co-liberation
- Emphasize intersectionality, starting with race
- Acknowledge what we don't know and take action to learn anew
- Have courage in the face of resistance
- Equitably use staff and community input to repair past harm and direct future REDI work
- Hold ourselves responsible for and accountable to investing in and modeling a REDI culture.

Section 19.2 **Equity Lens Framework** Members of the Council serve as elected representatives tasked with the responsibility to ensure that the long-term goals of the city meet the changing needs of the community.

This is sample set of questions that Council may choose to ask at meetings to ensure legislative actions are considerate of potential future impacts within the city.

- *Who (what groups) does this resolution/ordinance impact?*
- *Are all groups affected in the same way?*
- *Who has been included in the decision-making process?*
- *Have any groups been left out?*
- *Have we allowed enough time for input?*
- *Can we identify any potential benefit and/or harm from this decision in the near term or in the extended future (10-20+ years)?*
 - *What actions could mitigate potential harm or potential risks?*
- *Are there any historically relevant factors affecting this issue or decision today?*
- *Are there any comparable programs in our city or in other cities that we can learn from?*

2) Addition of an Appendix

- a. The Appendix should include reference materials to support Council members in performing their legislative duties. These materials should be presented as simple “How-To” documents produced by the City Clerk and Legal Department and approved by Council during annual review of Rules and Procedures.
- b. The Appendix should: 1) make it easier for Council to engage through defined process flows, 2) provide better clarity and guidance for Council to perform their duties, and 3) reduce lag for new Councilmembers
- c. Add Appendix for:
 - i. How to request a proclamation
 - ii. How to add an agenda item to Study Session
 - iii. How to add an agenda item to Council Meetings
 - iv. How to request a facility tours (internal/external)
 - v. How to form an Ad Hoc committee
 - vi. How to disband or retire an Ad Hoc committee
 - vii. Developing new resolutions
 1. Include template(s)
 2. Include flowchart
 - viii. Developing new ordinance with no budget impact
 1. Include template(s)
 2. Include flowchart
 - ix. Developing new ordinance with budget impact

1. Include template(s)
2. Include flowchart
- x. Submitting materials for council packets
 1. Include template(s)
 2. Modify the “Agenda Bill” template format to include a section for “Impacted Groups”

[REFERENCE]

- See Puyallup, Section 12, Page 10; SEE Tacoma, Section 8, Page 16; SEE Port Townsend, Section 3.14 (includes visual flowchart) (city-manager)
- Various/multiple council-mayor cities include different levels of detail on how to do different legislative activities. Ref. MRSC for code city, mayor – council cities.
- See Issaquah, Section 4.14, Page 32-33 “New Business Request” (code city, mayor-council)
- See Issaquah, Section 7.01, Page 47-48, “Council Ad Hoc Committees.”
- See Edmonds, Section 3, Page 3, “Agenda Preparation” (code city, mayor-council)
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Section 13.2 Through 24

Look at that why was it necessary to add all of that.