

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

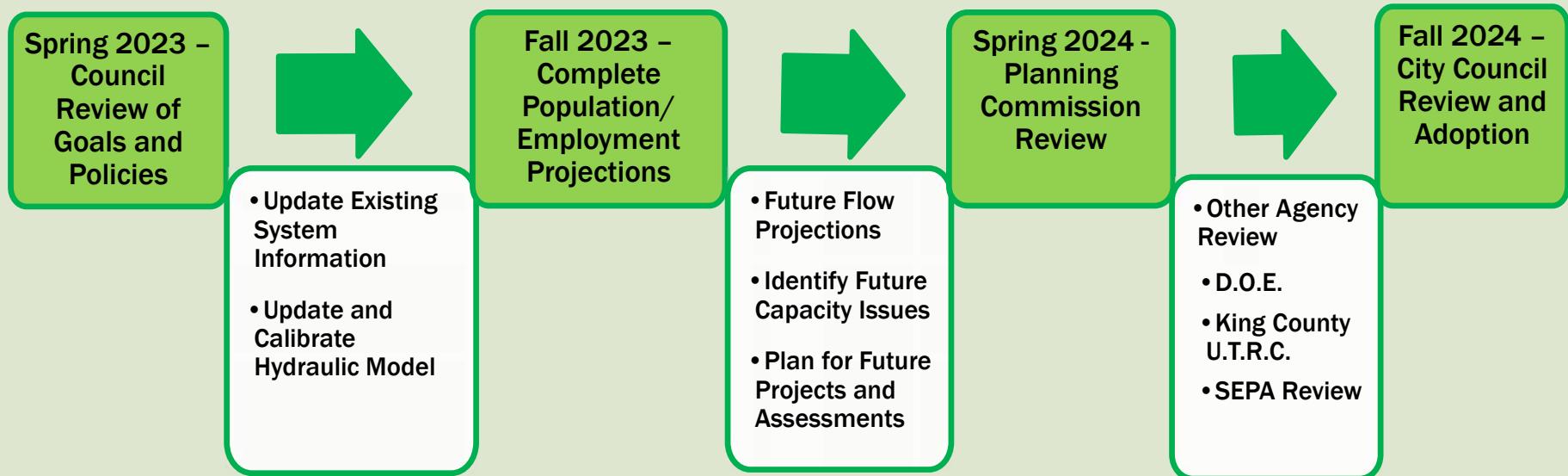
- **Auburn Comprehensive Plan Elements**

- 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

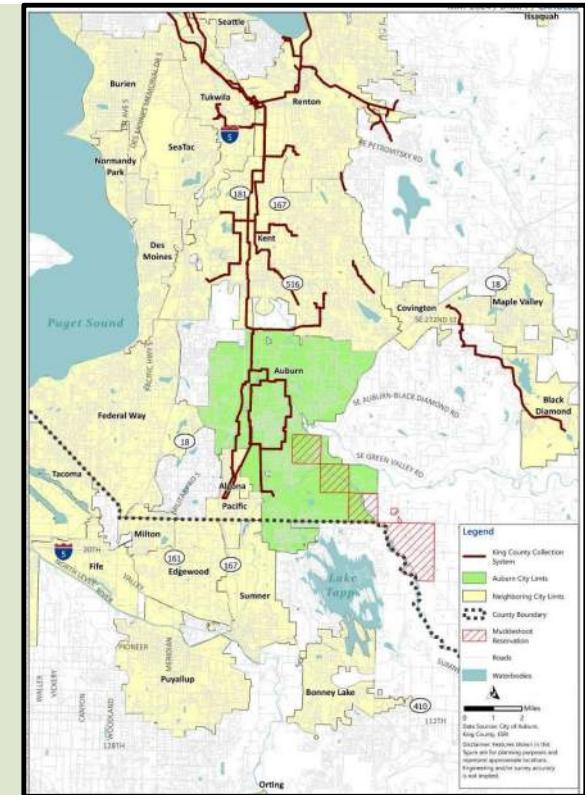


PLAN DEVELOPMENT PROGRESS/MILESTONES



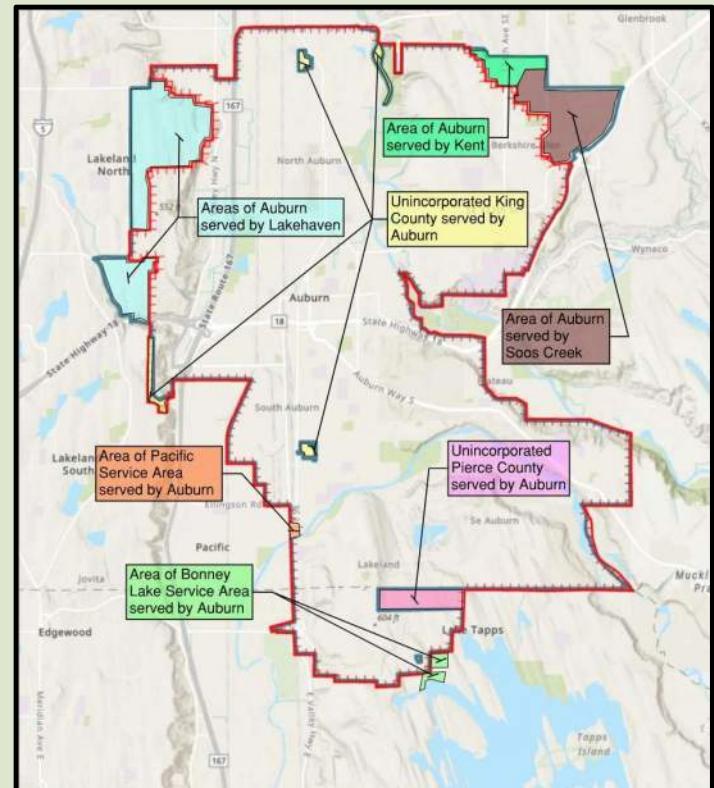
SANITARY SEWER UTILITY INTRODUCTION

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



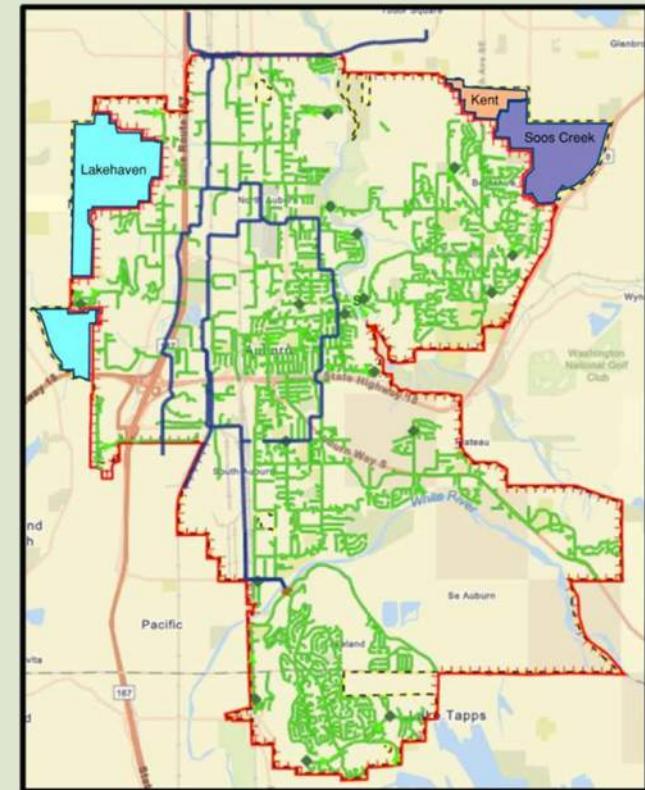
SANITARY SEWER UTILITY INTRODUCTION

- 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

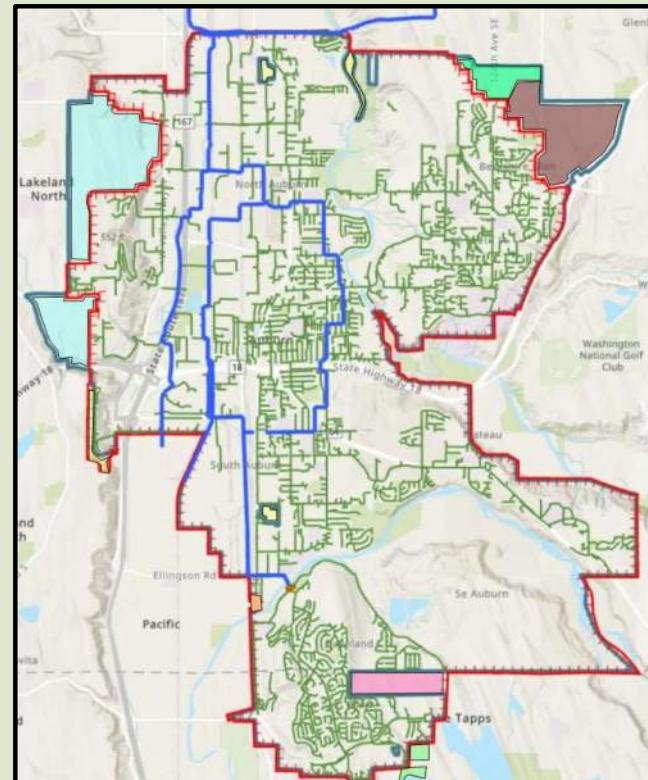
- Approximately 205 miles of Gravity Mains
- 12,700 Service Connections
- 17 Sewer Utility Pump Stations
- Approximately 5 miles of Force Mains



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

May 22, 2023

- Sewer Policies - City Council Review & Discussion

Goals

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

Policies

- Topic-specific statement providing guidelines for current and future decision-making.
- Indicates a clear commitment of the local legislative body.

Chapter 2 Wastewater System Policies

Policies:

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

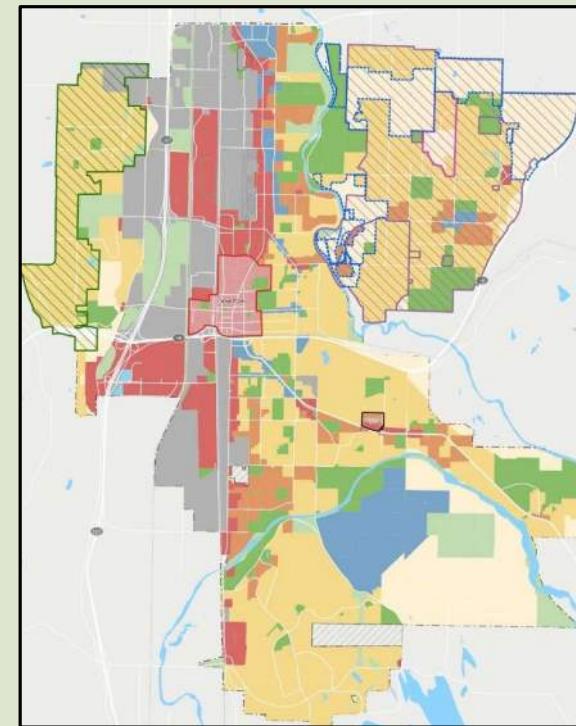
POLICY CLARIFICATION EXAMPLES

- **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

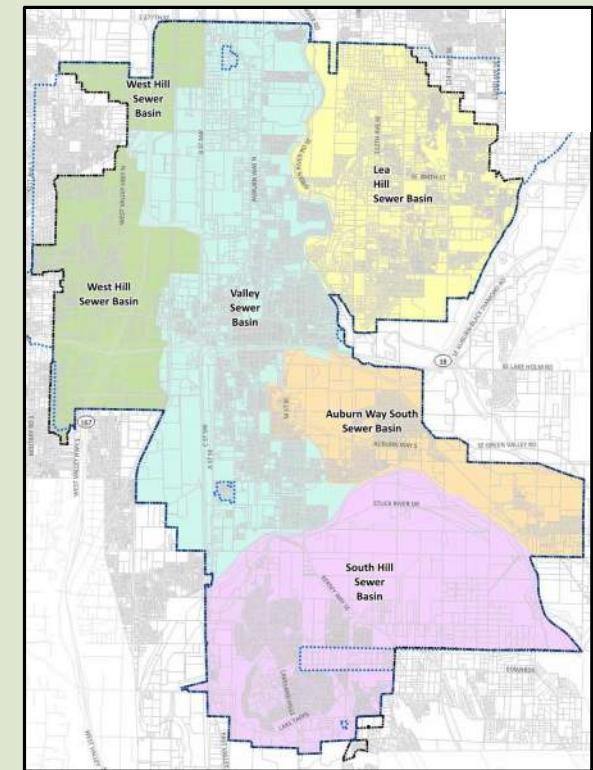


Proposed Land Use Map

2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 4 Description of Existing System

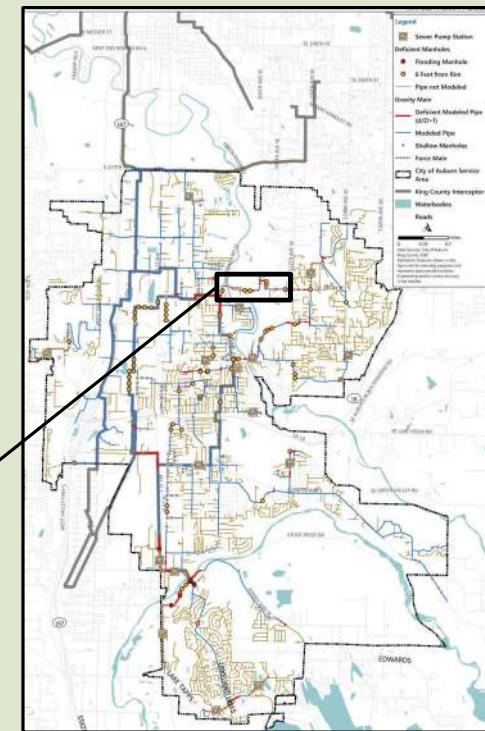
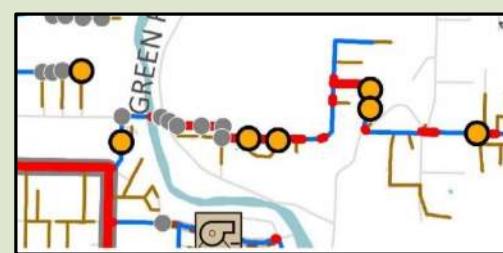
- **Description of the City's System**
 - Basins/Characteristics
 - Pump Stations
 - Siphons
 - Pipe Material/Age
- **Description of King County System**
- **Industrial Waste Discharges**



2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 5 Wastewater System Analysis

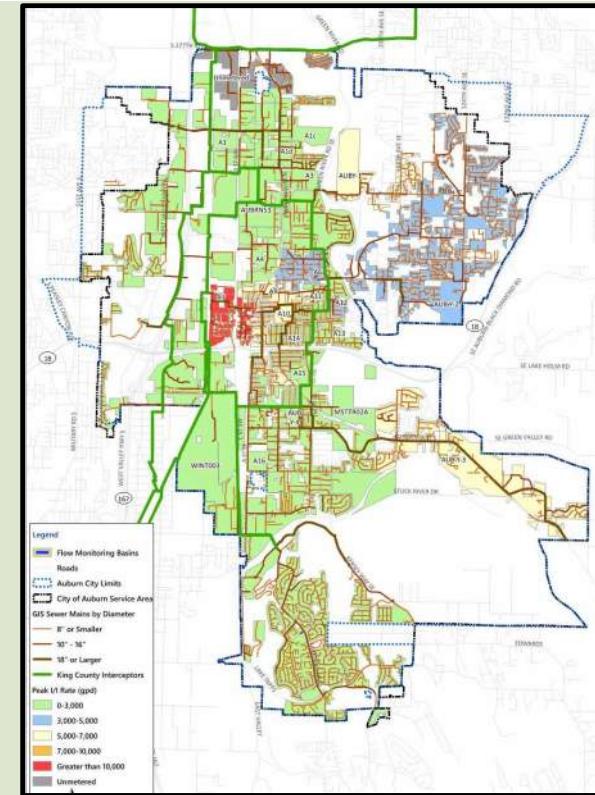
- Existing System Evaluation
- Future System Evaluation
- Future System Evaluation Including Climate Change
- Identify Deficiencies for Capital Improvements



2024 SANITARY SEWER COMPREHENSIVE PLAN

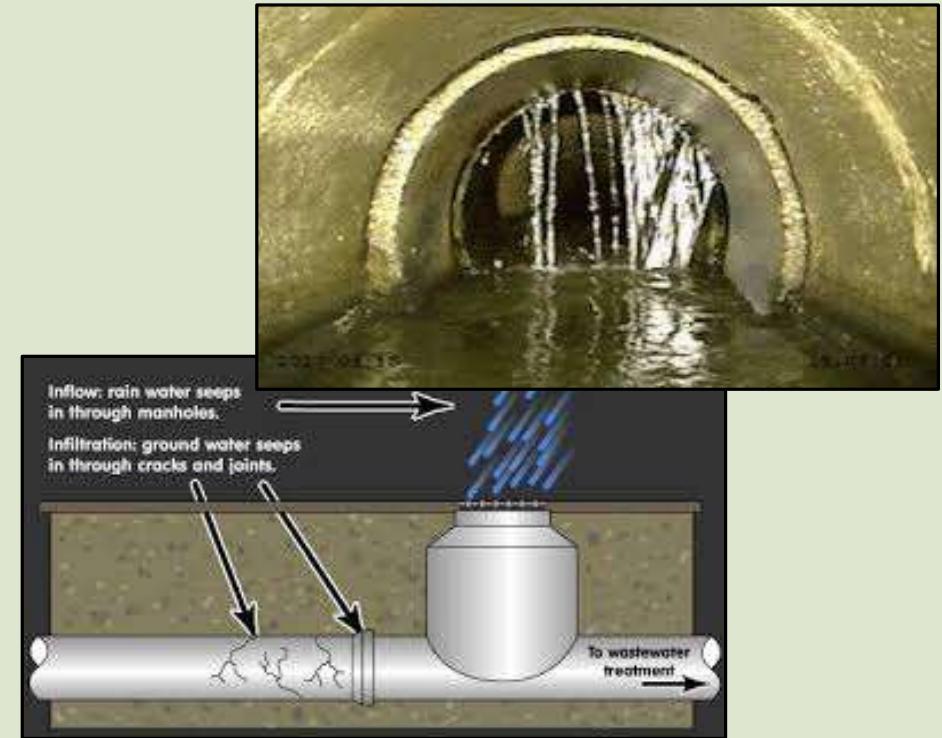
Chapter 5 Wastewater System Analysis

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



2024 SANITARY SEWER COMPREHENSIVE PLAN

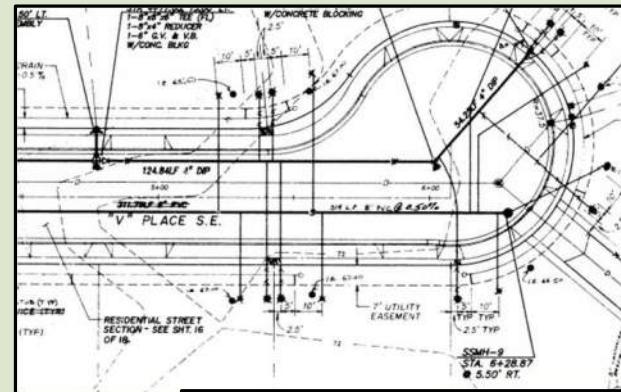
- **Inflow/Infiltration (I/I)**
 - Non-wastewater entering the system.
 - Observations/Inspections
 - Flow Measurement
 - Measure flows in particular sewer mains and correlate to rainfall and seasonal groundwater
 - Reduction Strategies
 - Rehabilitation/Replacement
 - Construction Standards



2024 SANITARY SEWER COMPREHENSIVE PLAN

System Inventory-GIS and Cartograph

- 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



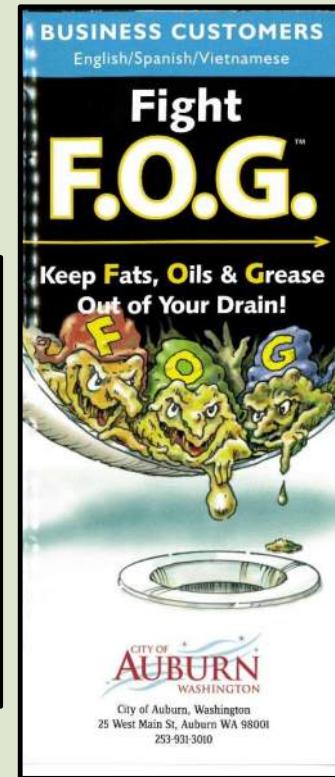
2024 SANITARY SEWER COMPREHENSIVE PLAN

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

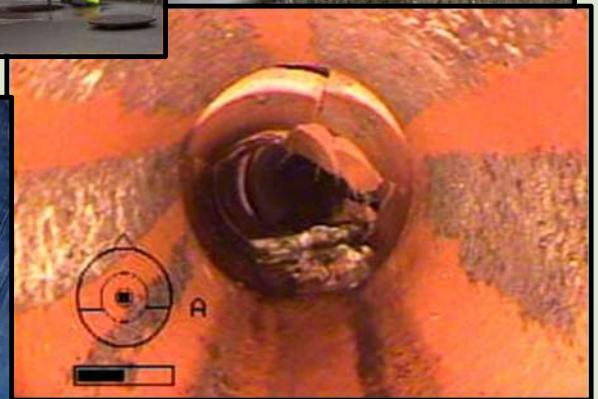


FOG Prevention Brochure Provided to Food Service Establishments

2024 SANITARY SEWER COMPREHENSIVE PLAN

Chapter 6 Maintenance and Operations

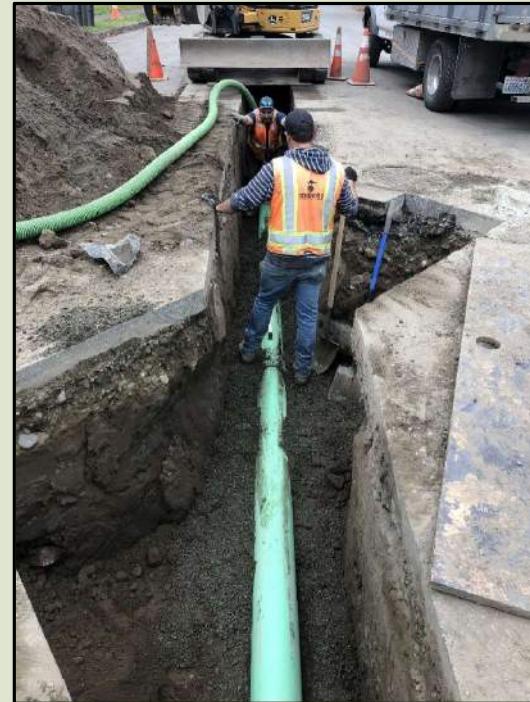
- Maintenance Program
 - Pump Stations
 - Mainlines
- Inspection Program
 - Closed Circuit Television (CCTV)
 - Manhole Inspections
 - Side Sewer Inspections



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	\$6,170,00	\$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?