

Mukilteo Surface Water Comprehensive Plan

2024 - 2030 Resource and Guide



CITY OF
MUKILTEO



Table of Contents

Introduction 1

Why Plan? 3

What's in the Plan? 8

What are the Utility's Goals? 8

Utility Responsibilities 12

How does the Utility fulfill its Surface Water
Responsibilities? 13

Surface and Stormwater Infrastructure 16

Water Quality 18

Technical Assistance 19

Public Safety 19

Natural Resources 20

Accomplishments 21

What has the Utility Accomplished Since the Last Plan? 22

Infrastructure 23

Operations and Maintenance 23

Technical Assistance 28

Water Quality Preservation and Improvements 28

Natural Resources 29

Outreach 31

How was Outreach Conducted for this Plan? 32

What did we learn from the Community? 33

Current Conditions and Issues 39

How were Current Conditions and Issues identified? 40

What's included in the Utility's Asset Inventory? 40

How is Infrastructure Operated and Maintained?	45
Is the Utility in Compliance with Surface Water Regulations?	49
What is the Status of Capital Improvement Projects?	50
Education and Outreach	52
Development Review	53
What Resources are needed to Operate the Utility?	53

Recommendations 57

What's recommended for the next 6 years?	58
CIP Projects	58
Facilities, Equipment and Technology	61
Programmatic Actions	62
How do Programmatic Actions Address Existing Challenges?	64

General	65
Efficiencies to Resolve Staffing Challenges	66
Operations and Maintenance	67
Water Quality	68

Implementation Plan 73

How will this Plan be Implemented?	74
Operating Reserve	74
Capital Reserve	74
Debt Service and Debt Service Coverage	74
Rate Funded System Reinvestment	75
Were Different Implementation Alternatives Evaluated?	75
Funding analysis	78
What do Estimated Project Costs mean for Rate Payers?	81

What is the Optimal Funding and Schedule Recommendation?	82
--	----

References **83**

References	84
------------	----

List of Tables

Table 2-1. Typical Operation and Maintenance Activities	16
Table 5-1. Stream Summary	42
Table 5-2 Infrastructure Summary	44
Table 6-1. Summary of Recommended Capital Improvement Projects	58
Table 6.2. Summary of Recommended Equipment and Technology	61
Table 6.3. Summary of Recommended Programmatic Actions	63
Table 7-1. Summary of Service Level Assumptions	76
Table 7-2. Summary of Estimated Rate Adjustments	81

List of Figures

Figure 1-1. Vicinity Location	2
Figure 1-2. Mukilteo's Surface Water Utility Planning History	4
Figure 1-3. Position in Landscape	5
Figure 1-4. Shallow Infiltration Feasibility	6
Figure 1-5. Zoning	7

Figure 1-6. Utility Goal Alignment with City Vision and Goals	11
Figure 2-1. Simplified Organizational Chart	15
Figure 3-1. Location of Completed Pipe Inspections	25
Figure 4-1. Community Outreach Events and Timeline	35
Figure 5-1. Mukilteo Watersheds	41
Figure 5-2. Mukilteo Wetlands	43
Figure 5-3. Types of Pipe Repairs Identified	48
Figure 5-4. Open Channel Inspection Results	48
Figure 5-5. Location of CIP Projects	51
Figure 5-6. Timeline of Major Expected Equipment Replacement	55
Figure 7-1. Additional Operating Costs by Level of Service	79
Figure 7-2. Additional Capital Costs by Level of Service	80

List of Appendices

Appendix A. Community Outreach Event Summaries

Appendix B. Staff Interview Summary

Appendix C. Watershed Fact Sheets

Appendix D. Capital Improvement Fact Sheets and List of CIPs

Appendix E. Equipment and Programmatic Action Fact Sheets

Appendix F. Financial Analysis Documentation

Appendix G. Letter of Recommendation for Citizen Advisory Committee

This page left intentionally blank.

This Surface Water Comprehensive Plan communicates how Mukilteo's Surface Water Utility operates and maintains the City's surface and stormwater infrastructure to reduce localized flooding, reduce impacts from stormwater on steep slopes, protect water quality for the residents and business owners in Mukilteo, and stay in compliance with the City's NPDES Phase II Permit.

This Plan serves as a roadmap to address existing and future surface and stormwater needs with a focus on projects and program implementation over the next 6 years through 2030.

1

Introduction

The City of Mukilteo is located in the south Snohomish County. It is a small City (7.4 square miles) that incorporated in 1947 and now has a population of 20,880 (2023). Figure 1-1 show the location of Mukilteo relative to its surroundings.



Figure 1-1. Vicinity Location

Why Plan?

Mukilteo owns and operates hundreds of surface and stormwater facilities and many tens of miles of stormwater conveyance pipes and ditches. This infrastructure requires ongoing maintenance, repair, and replacement to function properly. Private stormwater facilities and conveyance associated with commercial and neighborhood developments connect to the City operated system and the City is ultimately responsible for impacts from private systems to the City system and to the local streams, wetlands, and the Puget Sound from stormwater runoff because of its regulatory obligations. To ensure functionality of the system and prevent water quality degradation and flooding, planning is necessary to integrate all of the system components, including public engagement, education, private stormwater facility construction, development review, operation and maintenance of City-owned infrastructure and emergency response for unplanned events such as spills and extreme weather.

Stormwater Planning in Mukilteo

The Surface Water Utility formed in 1988, and subsequently began collecting surface water and connection fees. The connection fees were repealed in 1999. The City's first Comprehensive Surface Water Management Plan was developed in 2001 (Tetra Tech, 2001), coinciding with expanded State and Federal Water Quality and Stormwater regulations under the Clean Water Act. As shown in Figure 1-2, Mukilteo's planning efforts have responded to State and Federal regulatory changes that have guided the evolution of stormwater management in Mukilteo.

Much of the City's Surface and Stormwater Planning is conducted in compliance with its National Pollutant Discharge Elimination System (NPDES) Municipal Separated Stormwater (MS4) Phase II Permit, administered by the Washington State Department of Ecology under the Federal Clean Water Act.



Significant Events in Mukilteo's Surface Water Utility History

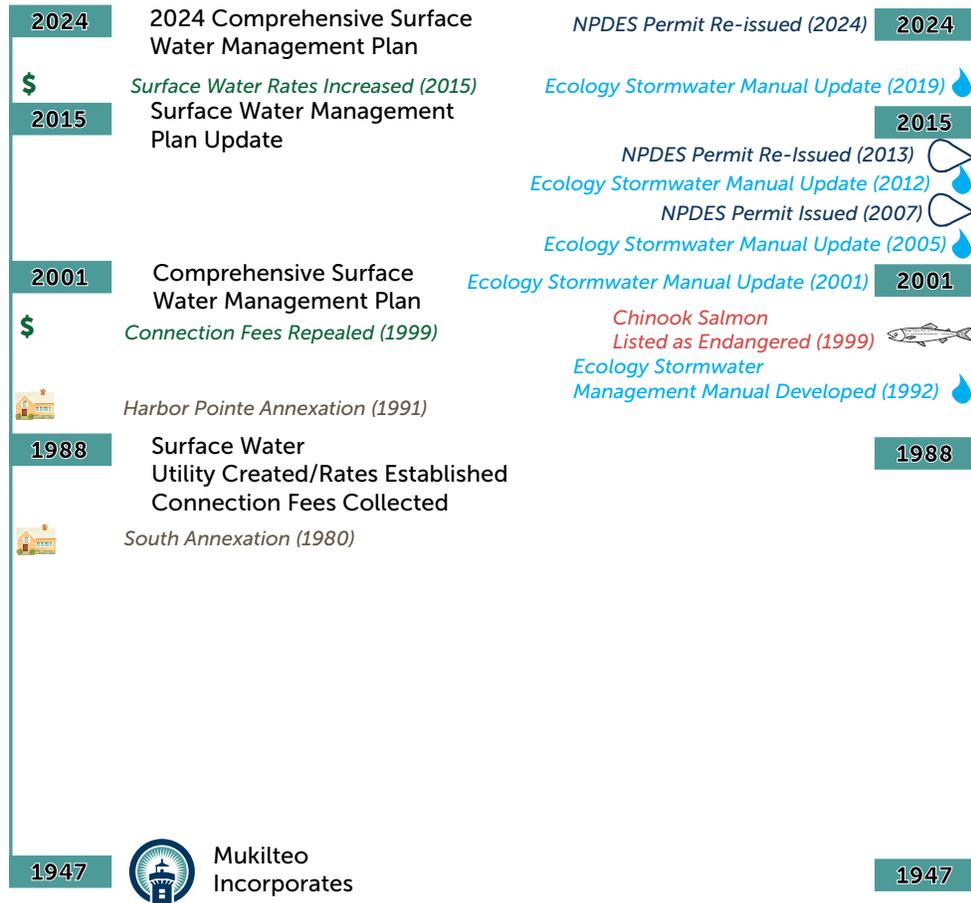


Figure 1-2. Mukilteo's Surface Water Utility Planning History

Unique Surface Water Planning Characteristics in Mukilteo

Mukilteo's position in the landscape, geologic setting, and development characteristics affect the types of surface water issues that need to be addressed and unique factors the City considers in the context of surface water planning.

Landscape and Geologic Setting

Mukilteo has constraints on surface water management due to its geologic setting and position in the landscape (Figure 1-3), including:

- Surface water outfall locations near steep slopes and bluffs
- Shallow infiltration infeasibility in many upland locations

The western boundary of Mukilteo is a feeder bluff to the Puget Sound. The bluff experiences significant erosion and contributes sand and gravel to local beaches. Stream channels in Mukilteo originate on the plateau several hundred



Figure 1-3. Position in Landscape

feet above sea level, making their way to the Puget Sound through deep ravines that cut through the bluffs in landslide prone areas. The City needs to consider how surface water outfalls are configured to discharge to water bodies (stream channels or Puget Sound) from the plateau in a way that does not exacerbate unstable slopes. A description of geologic characteristics is provided in the Final Geomorphology Critical Slope Memo (Altaterra and Aspect, 2015).

Most of the upland area in the City is not suitable for shallow infiltration due to the presence of glacial till (Aspect, 2015) (Figure 1-4, areas shown in red). This results in challenges for how and where to detain stormwater when it cannot be infiltrated.

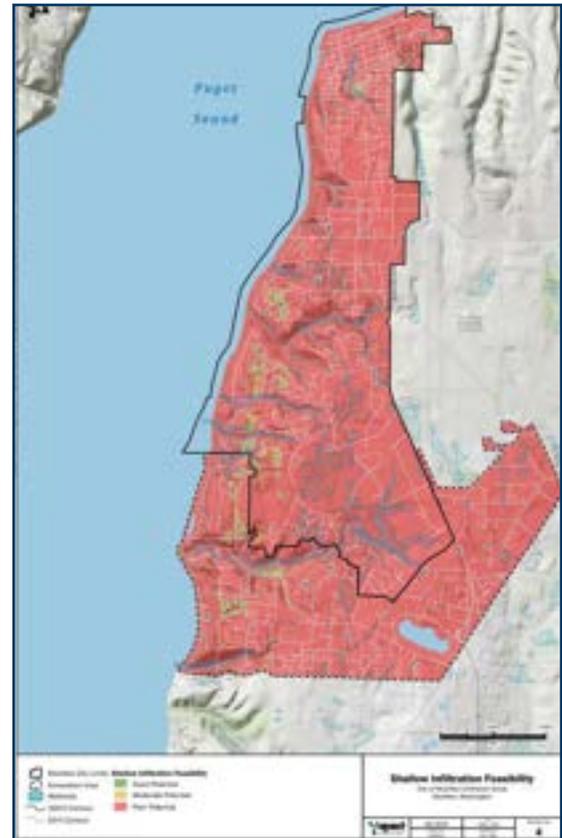


Figure 1-4. Shallow Infiltration Feasibility

Development Characteristics

Approximately 66% of Mukilteo is zoned as residential (single family through high density multi-family residential), with approximately equal percentages of Parks and Open Space (Figure 1-5), Commercial, and Industrial land uses making up the remainder of the zoning categories. The land development characteristics affect surface water management in a few different ways, including the following:

- More surface water revenue (rates) comes from residential rate payers, rather than commercial rate payers.
- A large number of private stormwater facilities are operated and maintained by homeowners' associations, requiring a different level of effort from City staff.
- Outreach to the City's residential population and commercial district is very important to achieve the City's surface water goals and NPDES Phase II Permit requirements.

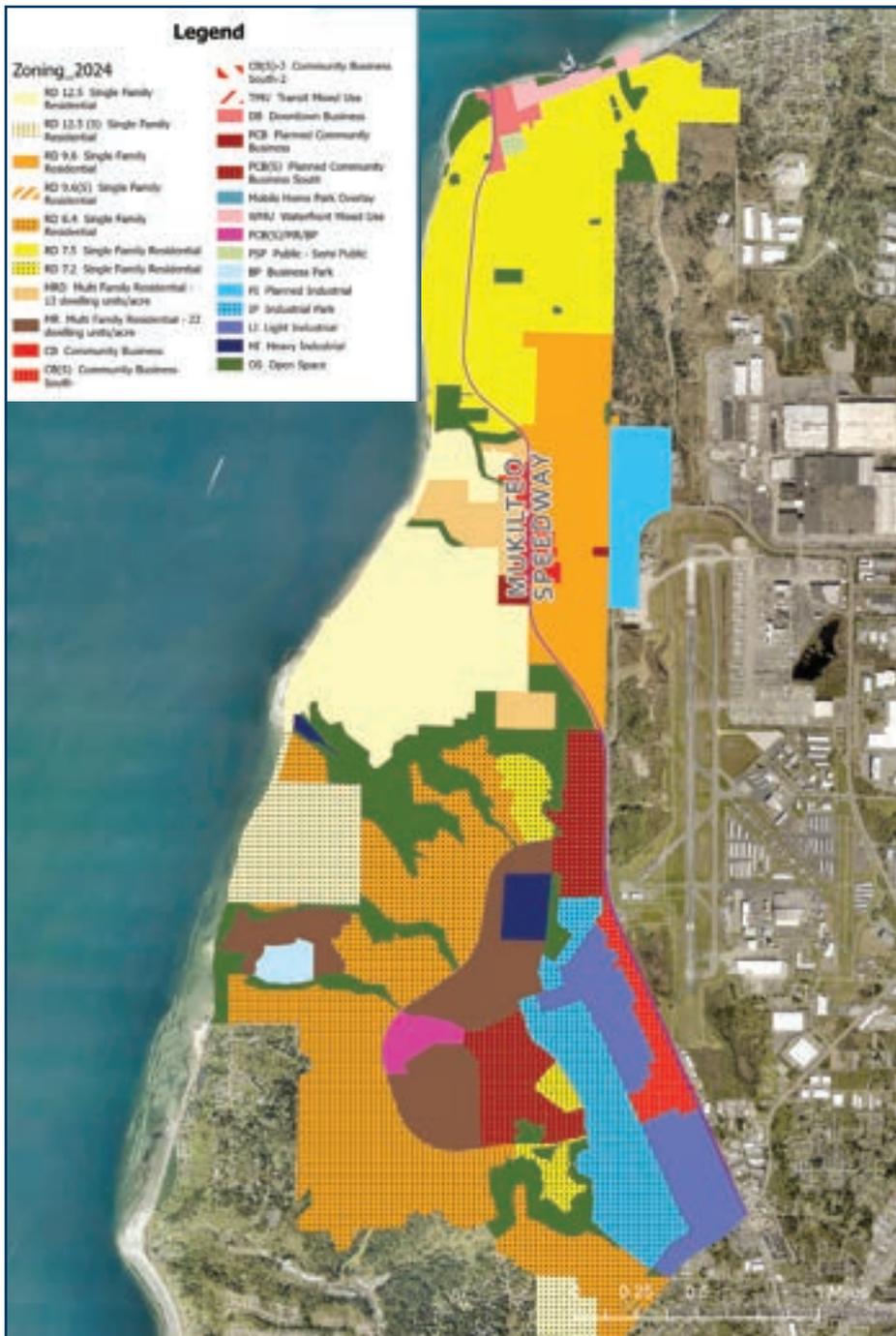


Figure 1-5. Zoning



What's in the Plan?

This Plan explains what the Surface Water Utility does and what its responsibilities are, it looks back at accomplishments since the last Plan in 2015 (City of Mukilteo, 2015), what the current issues and conditions are and what the community cares about, and provides recommendations for the next 6 years to keep the Utility operating in a manner that reaches the Utility and City goals, and complies with the NPDES Phase II Permit.

The Chapters in this Plan include:

1. Introduction: Overview of the Plan and Utility Goals
2. Utility Responsibilities
3. Accomplishments Since the Last Plan
4. Outreach Conducted for this Plan
5. Current Conditions and Issues
6. Recommendations
7. Implementation Strategy
8. References

What are the Utility's Goals?

Mukilteo's Public Works Department mission is "Working together to keep Mukilteo safe and sustainable, today and into the future, through active stewardship of our infrastructure and natural resources."

This provide the foundation for the Surface Water Utility goals:

- *Reduce flooding,*
- *Mitigate stormwater impacts on steep slopes, and*
- *Protect water quality*

And Mission:

To maintain, operate and administer the City's natural and developed surface and stormwater conveyance systems.



Furthermore, the Utility goals are in alignment with those of the City (City of Mukilteo, 2015). Figure 1-6 shows how Utility goals align with vision, themes, and goals for a liveable City outlined in the 2015 Comprehensive Plan. The Surface Water Utility strives to meet and align with the City's goals.



Historical photo of downtown Mukilteo near current ferry terminal for context of managing surface water runoff while at sea-level.

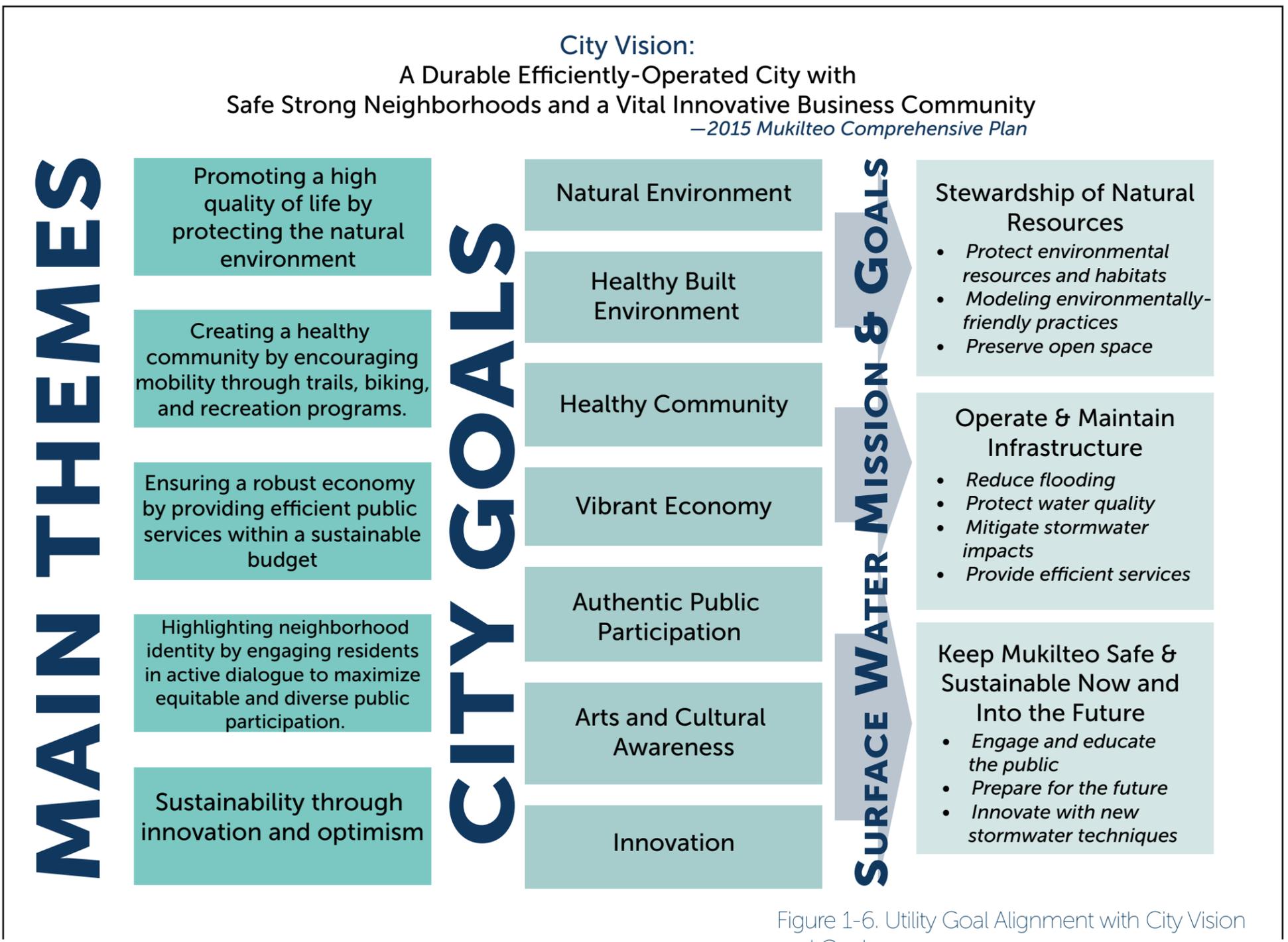


Figure 1-6. Utility Goal Alignment with City Vision and Goals

This page left intentionally blank.



The Surface Water Utility's Primary Responsibilities include activities that relate to surface and stormwater:

- *Operation and Maintenance of Surface and Stormwater Infrastructure*
- *Technical Assistance*
- *Public Safety (i.e. Flooding and Landslides)*
- *Water Quality Preservation and Improvement*
- *Protection of Natural Resources*

2

Utility
Responsibilities

How does the Utility fulfill its Surface Water Responsibilities?

The Utility keeps its overarching goals in mind when delivering services to the community.

Infrastructure is built and maintained so that:

- Public water quality facilities treat water that comes in contact with pollutants before it is conveyed to natural water bodies.
- Public flow control facilities detain and slow water down to prevent erosion and flooding.

Technical Assistance is provided to:

- Help homeowners seeking advice about drainage issues.
- Businesses needing help on source control and proper methods for storing, handling, and disposing of materials that could come in contact with stormwater.
- Ensure development applications comply with stormwater requirements.



Example of bioretention maintenance.



The Utility addresses flooding to protect homes and infrastructure.

Public safety includes:

- Flood abatement,
- Landslide abatement and mitigation.
- Preventive maintenance to avoid public safety issues.

Water Quality Preservation and Improvements includes:

- Meeting obligations under the City's NPDES Phase II Permit, including ensuring that private infrastructure that connects to the City's system functions as it is intended, conducting source control inspections, spill response, and illicit discharge detection and eliminate.

- Education and outreach to inform community about surface water and environmental issues, and encourage active community participation and stewardship.
- Complying with other local, state, and federal environmental regulations on site-specific capital projects.

Protection Natural Resources by:

- Managing surface and stormwater runoff to avoid impacts to natural resources.
- Support aquatic restoration projects.
- Preserving open space and natural resources that also provide surface water functions.

Most of the Utility’s responsibilities are handled with the Utility, however, because of the broad scope and range of services that are linked to surface and stormwater, other City departments work closely in partnership with Utility staff in Public Works to accomplish Utility goals. Figure 2-1 shows a City organizational chart showing links between different City departments and staff responsibilities.

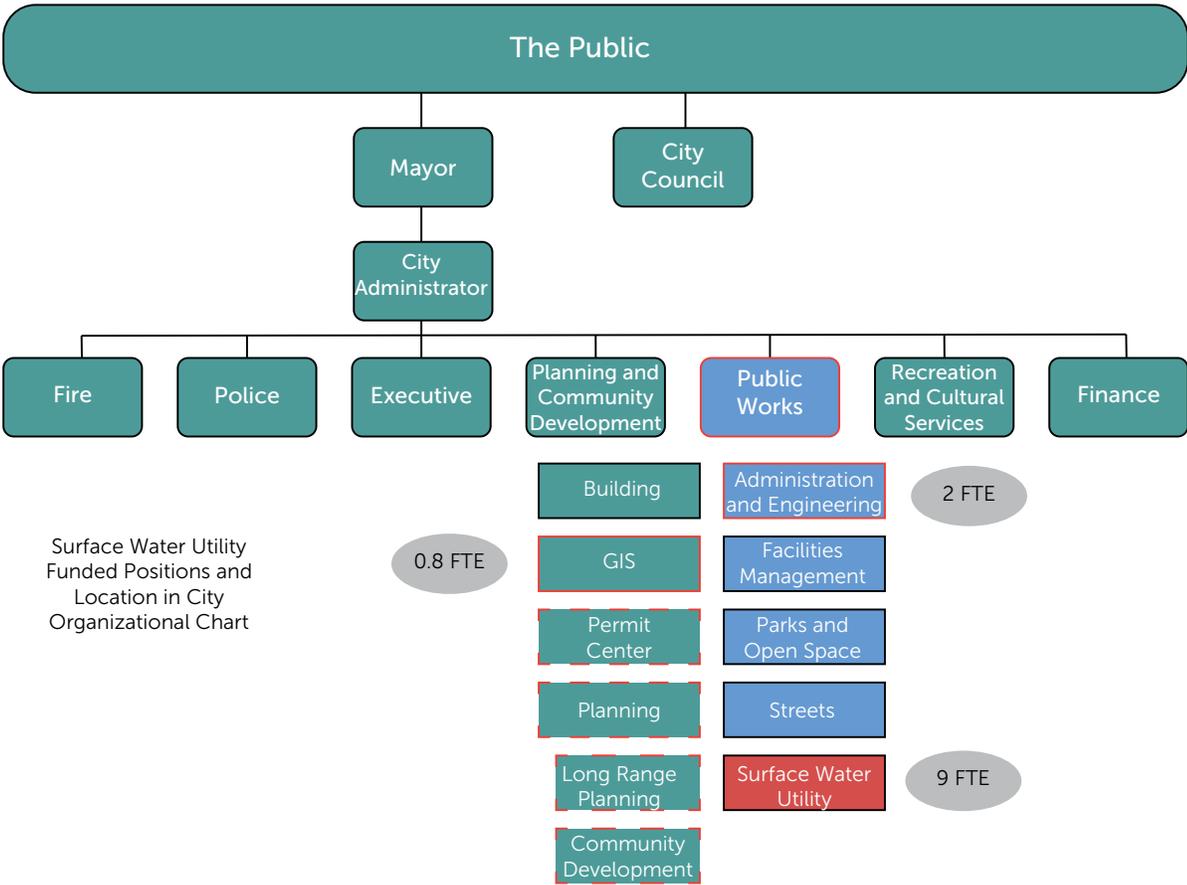


Figure 2-1. Simplified City Organizational Chart highlighting positions funded through Utility fee and groups that work closely with Utility staff (dashed outline)

Surface and Stormwater Infrastructure

The City owns and operates infrastructure designed to convey surface and stormwater, slow down, and remove pollutants from this water before it reaches natural water bodies including wetlands, streams, and the Puget Sound. Table 2-1 lists the type and approximate number of different infrastructure features including what they are designed to do.

The City’s infrastructure is inspected and maintained by surface water crews in the Public Works maintenance department. Some of the maintenance activities are guided by regulatory compliance frequencies in the City’s NPDES Phase II MS4 Permit, other activities are completed to ensure long-term functionality of the City’s assets.

When City inspections of infrastructure identify deficiencies, maintenance crews either fix the deficiencies, create a work order for a future repair, or flag the problem for additional evaluation that may require more significant time or capital to address. Table 2-1 lists the typical inspection and routine maintenance activities conducted by Surface Water staff.

Table 2-1. Typical Operation and Maintenance Activities

Operations and Maintenance Activities	Why is it Important? * Denotes NPDES Permit Requirement
City-owned stormwater facility inspection, cleaning, and maintenance	*Keeps infrastructure functioning properly.
City staff inspects all private stormwater facilities installed after 2009.	*Nudges private facility owners to maintain their systems.
Catch basin inspection and cleaning	*Reduces sediment in system.
Street sweeping and snow/ice control	*Reduces sediment in system.
Pond maintenance cleaning, and mowing	*Keeps infrastructure functioning properly.

Table 2-1. Typical Operation and Maintenance Activities

Operations and Maintenance Activities	Why is it Important? * Denotes NPDES Permit Requirement
Ditch line maintenance, vegetation control and sediment removal	Improves conveyance and filters pollutants.
Berm installation	Reduces flooding.
Stormwater system locates	Reduces system breakage from contractors.
Maintaining and replacing stormwater treatment filters	*Keeps infrastructure functioning properly.
Conducting pre-storm and post-storm investigation of frequently flooded areas	*Keeps infrastructure functioning properly.
Cleaning stormwater pipes	Reduces sediment in system.
Evaluating stormwater lines with CCTV camera	Helps trouble-shoot system problems and find solutions.
Large and small stormwater maintenance projects (facility and infrastructure repairs)	*Keeps infrastructure functioning properly.
Community service requests	Keeps community happy and informed.
Spill response and cleanup	*Keeps pollutants out of streams and waterways. Reduces hazardous conditions.
Illicit Discharge Detection and Elimination (IDDE)	*Resolves non-stormwater discharges and keeps pollutants out of streams and waterways.

Special programs that go above and beyond routine inspection and maintenance require additional resources, such as the City’s pipe condition assessment program that was initiated in 2020. This program is cleaning and inspecting 75 miles of City stormwater pipes with closed-circuit television (CCTV) cameras to remove legacy pollutants and identify structural and maintenance deficiencies. Approximate 26 % of the City’s pipe have been inspected and are being reviewed for deficiencies that warrant repairs or replacements.



Water Quality

The City is responsible for water quality under its MS4 according to its NPDES Phase II Permit. This is how most of the water quality programs are implemented in Mukilteo - through compliance with the NPDES Permit, which falls under the Clean Water Act and is administered by the Washington Department of Ecology. The NPDES permit includes sections on watershed planning, operations and maintenance, source control of pollutants, identification of illicit discharges, water quality monitoring, education, outreach, engagement, and other aspects of surface and stormwater management that affect water quality.

The City prepares an annual report for the Department of Ecology describing activities conducted in compliance with the permit. A new permit will be issued in July 2024. Expected City obligations under the new permit are discussed in Section 5.



The City's street sweeper can be seen is regularly out in the Community cleaning removing pollutants that end up in the stormwater system.



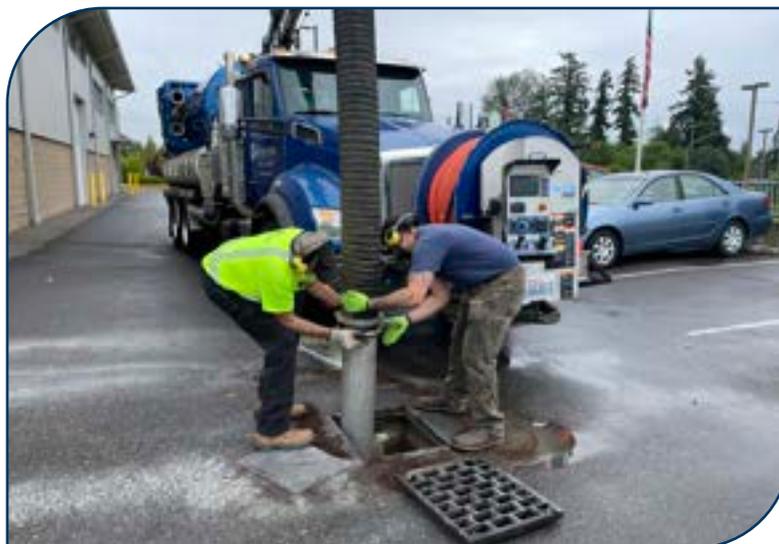
The City conducts street sweeping, which is a non-permit required activity that is important to water quality. Street sweeping is conducted to reduce debris on the roads, keep catch basins clear of sediment, and improve water quality conditions. The City owns one street sweeper for its 84 miles of roadway within the city limits.

Technical Assistance

The Utility provides technical assistance to its customers in two primary ways; through review of development permit applications that require stormwater review and through direct contact by customers who inquire about drainage issues and request site evaluations. Additionally, City staff often provide technical assistance in advance of code enforcement on entities that require stormwater corrective actions. This allows businesses and property owners to fix stormwater issues on their own prior to enforcement action or the City correcting deficiencies and passing on the costs. The City, according to its financial policies, is required to recover all costs associated with development review, corrective measures, and enforcement actions taken by the City. The master fee schedule outlines the hourly costs for different staff as well as the unit costs for different types of development review.

Public Safety

Public safety is a primary concern for the Utility and Public Works staff. The purpose of stormwater infrastructure is to prevent flooding and erosion and protect water quality and habitat that benefits the public. Public works maintenance personnel are responsible for inspecting and



Crew cleaning up spill with vector truck.

maintaining infrastructure so that it functions as designed, particularly during large rain events. In advance of such events, maintenance personnel inspect trouble spots to ensure that the system is clear and water can flow freely and not cause flooding. Sometimes its not possible to prevent flooding due to the size and/or timing of storm events. In these cases, Public Works personnel are responsible for flood abatement and cleanup.

Additionally, Public Works personnel assist with landslide mitigation and abatement that also occurs during or following periods of heavy rain and ground saturation.

Natural Resources

The Utility is a steward of Mukilteo's natural resources in both direct and indirect ways; the Surface water Utility directly protects habitat through responsible surface water management practices that reduce erosion and prevent water quality degradation. It models environmentally-friendly stormwater management practices such as the use of green stormwater infrastructure, or low-impact development that relies on vegetation to filter pollutants out of stormwater and infiltration of surface water back into the ground. The Utility supports capital projects in partnership with Parks for stream and wetland restoration and preserves open space where it provides surface water benefits.



Bank restoration in stream channel.



3

Accomplishments

What has the Utility Accomplished Since the Last Plan?

The Surface Water Utility has progressed in the volume and type of work accomplished since 2015. At the time of the 2015 Comprehensive Surface Water Management Plan Update, the Utility was developing strategies for how to best manage compliance with its Phase II NPDES Permit and implement needed surface water capital improvements. The 2015 Plan's goals to serve as a management tool for efficiently managing permit compliance and capital projects through increased levels of service, staffing levels and commensurate surface water rate increases was achieved.

This section describes specific accomplishments in each of the areas of Utility responsibilities. First and foremost, the accomplishments are tied to the increased availability of resources. As recommended in the 2015 Comprehensive Surface Water Management Plan Update financial analysis, surface water rates were increased to reflect the revenue needs of the Utility to complete its work. The new revenue that resulted from higher surface water rates starting in 2015 allowed the Utility to add staff, including the following positions:

Five new staff have been added to Utility funding since the last plan. These staff positions have been important for achieving NPDES compliance, maintaining infrastructure, and getting projects built.

- Surface Water Program Manager (new position in 2017)
- GIS Specialist (partially funded by Surface Water Fund, starting in 2017, position is housed in Planning)
- Maintenance Workers (2 new positions in 2017, 1 new position added in 2020)
- Sr. Surface Water Technician (new position in 2022)

The additional staff were instrumental in accomplishing the work that needed to be done.

Infrastructure

Infrastructure accomplishments include both operations and maintenance of existing infrastructure and design and construction of new infrastructure that solves surface and stormwater problems.

Operations and Maintenance

The Utility has made great strides with operations and maintenance of existing infrastructure. The requirements outlined in its Phase II NPDES Permit are being fulfilled now, whereas, prior to 2015, it was difficult for staff to accomplish all that was required of the permit.

The City implements practices according to its Phase II NPDES Permit to reduce stormwater impacts. These include maintenance activities such as ditch maintenance so that water in ditches can flow freely and reduce flooding and street sweeping on roadways to prevent debris and pollutants from entering the surface and stormwater system.

In 2022, the City began implementation of a pipe cleaning and inspection program to remove legacy pollutants from its stormwater pipe network and conduct closed-circuit television (CCTV) inspections of the pipes to evaluate structural and maintenance conditions. This is an on-going program that is in progress until all of the City's larger (greater than 8-inch diameter) pipes have



Using camera to inspect culvert connected to open channel conveyance.

been cleaned and inspected. To date, 20 miles of pipe have been cleaned, inspected, and the pipes have been assessed for needed repairs or maintenance. The pipes are being categorized based on risk so the City can decide which pipes are repaired or replaced first (i.e., those that are in the poorest condition or that



Cleaning pipes in advance of CCTV inspection.



Broken stormwater pipe.

would cause the greatest damage if they were to fail). Figure 3-1 shows the areas that have already been completed.

New Infrastructure

The largest capital project constructed since 2015 was the City's new decant facility at the maintenance yard. This was a big investment and is paying off for the City with crews being able to easily decant liquids from routine vector work, such as cleaning catch basins or pipes.

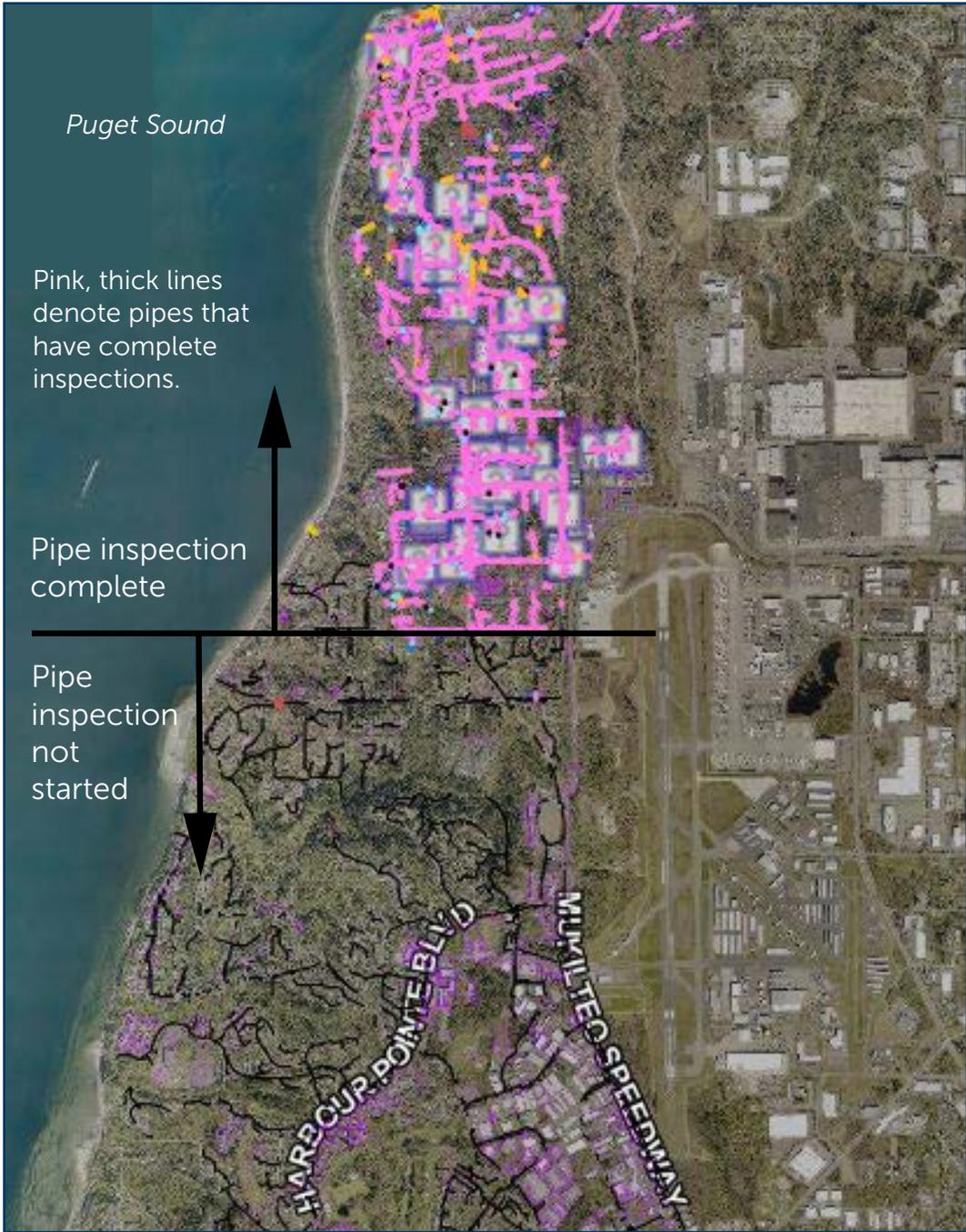


Figure 3-1. Location of Completed Pipe Inspections

Some of the major projects designed and/or constructed since 2015 include the following



as well as:

- 60th Avenue W drainage repairs (failed infrastructure), which was not in the 2015 Plan and was constructed as an emergency



Naketa Beach Outfall Reconstruction

- Two tide gates at Lighthouse Park (to prevent flooding), which was also not included in the 2015 Plan
- Design on Chennault Beach Drainage Improvements (early phase design)
- Construction of 2021 Surface Water Maintenance Projects
- 61st St Culvert Replacement

Technical Assistance

The Utility provides technical assistance by responding to service requests and reviewing development applications.

- Between 2016 and 2019, the Utility responded to 355 service requests.
- An average of 42 permit applications are reviewed for Surface Water elements by Utility staff every year, ranging from 13 permit reviews in 2020 to 85 reviews in 2017.

Water Quality Preservation and Improvements

The Utility has made strides toward water quality improvements since 2015 by implementing new projects, augmenting operations and maintenance, and conducting education and outreach.

Water Quality Project Implementation

In addition to increasing inspection and maintenance of infrastructure which serves to improve water quality, a source control program was developed in 2020. The City also continued to respond to spills (average of 9 per year), and the pipe cleaning and inspection program removed over 191 tons of sediment, removing approximately 308 pounds of pollutants from the system that could contribute to poor water quality every year.

Mukilteo also completed its Stormwater Management Action Plan (SMAP) for Chennault Beach Basin (Brown



Spill response and clean up.

and Caldwell, 2023), which recommends projects specific to that watershed to improve water quality conditions.



Surface water outreach booth at local event.

Education and Outreach

The Utility provides education and outreach to local schools and the business community with the goal of increasing understanding of environmental and surface and stormwater processes and the importance of best management practices to reduce pollution to our streams and waterways. The Utility conducted outreach in schools and businesses and provided spill kits and training for multiple years since 2015. Additionally, the

Utility implemented a program to mark stormwater drains with citizen volunteers to indicate where the drain goes and that it impacts fish as a visual indicator and reminder to the community.

Natural Resources

Accomplishments specific to natural resources are mostly indirect. By managing stormwater in a responsible way, natural resources are protected by the negative impacts associated with stormwater runoff- including erosion, aquatic habitat, and water quality degradation. Additionally, the Utility uses green stormwater infrastructure (vegetated solutions) where appropriate, and partners for stream and habitat restoration projects. The Utility partnered with Snohomish County to provide training on Natural Yard Care, designed to minimize use of harmful chemicals and focus on native vegetation.

This page left intentionally blank.



The Utility received input from the community that was used in this plan from:

- *An on-line and paper survey made available to all households in Mukilteo*
- *Representative community members participating in a Citizen Advisory Committee*
- *One in-person Open House Event*
- *Two virtual Open House Events*



4

Outreach

How was Outreach Conducted for this Plan?

The Utility conducts surface and stormwater management for the benefit of the community. Whereas there are tasks and activities that the Utility must do to comply with regulations, keep the community safe, and be fiscally responsible for the assets in its care, there is also some flexibility to tailor activities around what is important to the community.

In the development of this plan, community input was solicited in several different ways:

1. A survey was made available to all residents in the City to solicit input on their knowledge and views about stormwater management in Mukilteo.
2. A Citizen Advisory Committee (CAC) was formed to discuss broad issues and provide guidance for levels of service and alternative funding scenarios.
3. Three open houses were held; one at the beginning of the project in person to solicit input on issues and challenges, and two virtual open houses (same day) to solicit input on recommended projects and funding levels.

Figure 4-1 shows the events that were held over the course of the project.

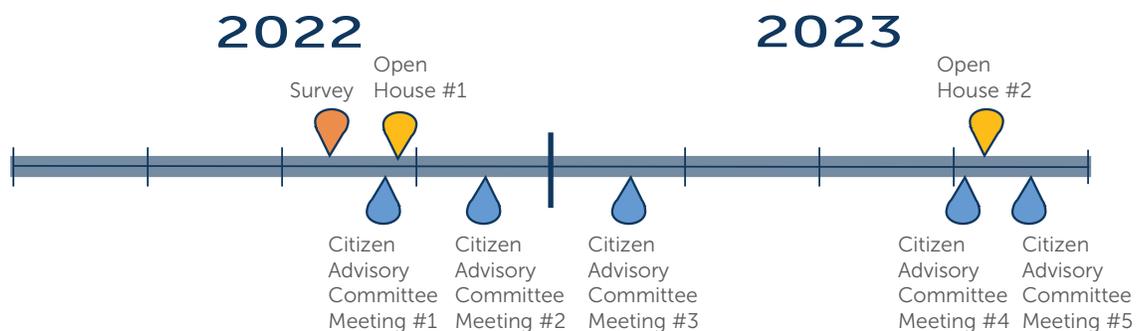


Figure 4-1. Community Outreach Events and Timeline

Prior to development of the survey and accompanying on-line StoryMap, a demographic analysis of the City was conducted to identify non-English languages for which the survey should be translated to be inclusive of non-English language speakers. The survey was made available in Spanish, Korean, and simplified Chinese. Additionally, translators for these three languages were provided at the in-person open house held on September 13, 2022.

Summaries of the Survey, CAC events, and Open Houses are provided in Appendix A.

What did we learn from the Community?

Feedback from the community came from the various means of outreach conducted that were designed to solicit different types of input to the Utility and planning process.

- The survey provided a tool to understand respondents overall satisfaction with the Utility and importance of different types of surface and stormwater issues.
- The Citizen Advisory Committee provided direct input to the planning process, including opportunities and challenges facing the Utility and community, as well as input on direction the Utility should take for alternative levels of service.



Screenshot of Online StoryMap and Survey.

- The Open Houses provided an opportunity for residents to identify and discuss specific drainage concerns and comment on direction of recommended projects.

Survey

There were 128 responses to the survey that was mailed out to over 5,600 Utility customers. The full survey report is included in Appendix A.

In general, respondents were satisfied with the Utility's stormwater management performance (59% responding that the Utility met or exceeded expectations in the last five years).

A majority of respondents said:

- Identifying and fixing water pollution problems was very or extremely important.
- Education to help people prevent pollution is a moderate, very, or extremely important priority.
- Maintenance of systems and structures was extremely important.
- Drainage issues, such as addressing flooding, clogged storm drains, and water runoff were top priorities.
- Building more projects to restore streams and wetlands was a very or extremely important goal.

Survey respondents indicated that identifying and fixing water quality problems and conducting maintenance on existing systems and structures is extremely important.

Survey participants also reported appreciating effort to keep people, property, and roads safe, and liked the quality of the comprehensive planning process materials, website, and engagement. Additionally, survey respondents shared comments on affordability, drainage, development, climate action, and providing more maintenance, education, and stormwater services.

Citizen Advisory Committee

The role of the Citizen Advisory Committee (CAC) in the development of the Surface Water Comprehensive Plan was to represent the community in a more intimate way and provide input, feedback, and recommendations to the Utility.

The Citizen Advisory Committee was selected from community members that submitted applications to be part of the process.

There were five CAC meetings held over the course of 18 months, with the following general topics:

Meeting #1- Introduction and Roles

Meeting #2 – Challenges and Opportunities

Meeting #3 – Introduction to Levels of Service

Meeting #4 – Levels of Service, Projects, and Rate Comparisons

Meeting #5 – Wrap-up, Recommend Level of Service

The Citizen Advisory Committee identified priority challenges to address in the Plan including the following:

- Meeting surface water code requirements on small lots
- Surface water staffing levels
- Landslides
- Conflicts, confusion, and no meaningful enforcement of regulations

Priority opportunities that were identified included:

- Property acquisition
- Using roads and right-of-way for stormwater management
- Obtaining grants for stormwater capital improvement projects
- Coordinating with other jurisdictions for data sharing

The citizen advisory committee also provided feedback on alternative levels of service and the rate analysis. Proposed projects, alternative levels of service, and rates are discussed in Section 7.

Open Houses

Three open houses were held over the course of the planning process; one at the beginning to introduce the plan and provide an opportunity for the community to provide one-on-one feedback in person, and the second two open houses



Open House #1.

were conducted on-line to provide an overview of the recommended projects and alternative rate options. The second two open-houses were conducted at different times on the same day.

A summary of the open house events is provided in Appendix A.

Fifteen people attended the first in-person open house event. Interpreters were available for Mukilteo's most commonly spoken languages other than English (Spanish, Korean, and simplified Chinese) to provide interpretation to any attendees who requested it.

Display board included information on the surface water program, the plan update process and ways to participate.

Open house attendees shared the following comments with staff at the open house event:

- Site visits and walking tours with the community will help people better understand potential projects, provide meaningful input, and ensure they lead to the biggest benefit possible.
- Specific neighborhoods have concerns around private drainage systems (which also lead to neighbor disputes).

- Community members feel that parcels being developed may lead to (or have already caused) downstream drainage issues.
- The community shares a desire to protect natural resources that are in private ownership and are for sale, and some worry about development leading to permanent loss of the resource.
- The community would like to receive more regular updates and information about prior accomplishments, what has been done since the last plan, and work in progress.
- Attendees were hopeful about future surface water communications and public outreach.
- There was interest expressed in the Smuggler’s Gulch drainage basin including concerns about development, natural resources preservation, and local flooding.

Two virtual public meetings were held in October 2023 to provide an update on the planning process and receive community feedback. Approximately 22 people attended the two meetings held on the same day. Polling questions presented to attendees during the open houses received similar responses to the survey with regard to the City doing more surface water education and outreach and proactively addressing



Postcard sent to resident for Virtual Open House #2.

flooding, clogged storm drains and water runoff. Several questions and discussion topics were raised during the virtual chat of each session. These topics are shown in the meeting summary in Appendix A. Videos of the virtual meetings are available on-line in the City’s Surface Water HUB.

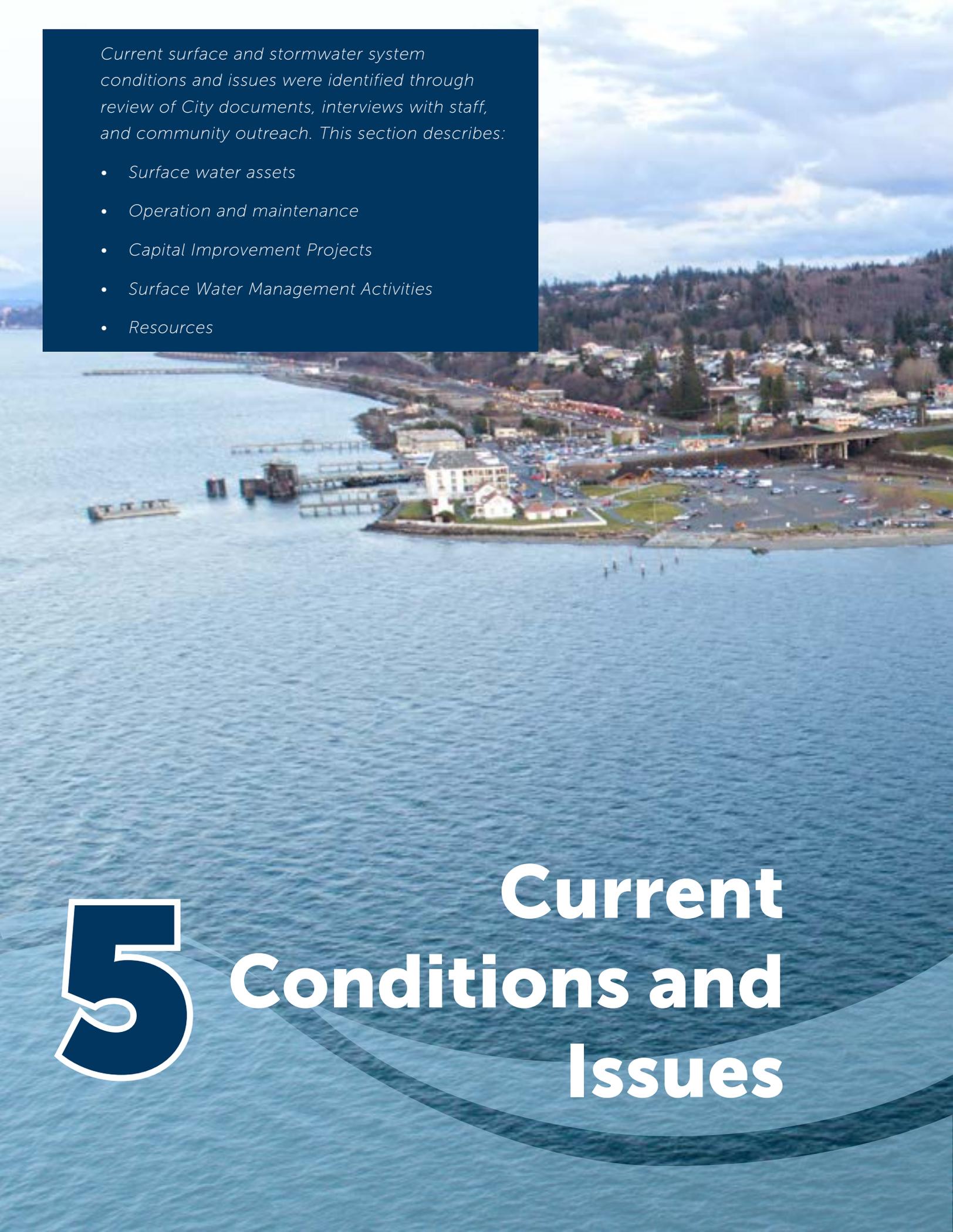
This page left intentionally blank.

Current surface and stormwater system conditions and issues were identified through review of City documents, interviews with staff, and community outreach. This section describes:

- *Surface water assets*
- *Operation and maintenance*
- *Capital Improvement Projects*
- *Surface Water Management Activities*
- *Resources*

5

Current Conditions and Issues



How were Current Conditions and Issues identified?

Current surface and stormwater system and management conditions and issues were identified by interviewing staff (Appendix B), conducting community outreach (Section 4 and Appendix A), and evaluating City documents and data. As the stormwater regulatory environment has evolved, the City has adjusted its workforce and activities to meet compliance obligations that have resulted from the City's NPDES Phase II Permit (Ecology, 2019a). There have been 3 permits issued since 2007, each with new requirements, and associated Stormwater Management Design Manual (Ecology, 2019b) Updates, which impact stormwater code and development review. At the same time, the City's surface water infrastructure is aging, requiring more maintenance to remain functional and in some cases nearing the end of its useful life.

Regulatory requirements and aging infrastructure are two of the factors that have put a stress on City resources to manage the Utility. This section describes the current surface and stormwater system conditions and issues, stormwater management needs, and challenges facing the Utility to meet existing and future needs. Section 6 provides recommendations for addressing current and future needs.

What's included in the Utility's Asset Inventory?

Surface water assets consist of natural resources (i.e., streams, wetlands, and the Puget Sound) including the waterbodies, vegetation, and aquatic organisms that live in those environments, and constructed infrastructure that conveys, slows down, and removes pollutants from surface and stormwater runoff that is in contact with the built landscape.

There are 14 watersheds within Mukilteo (Figure 5-1) that surface water naturally drains to; 6 are completely within the City's jurisdiction, and 8 overlap with other jurisdictions.

There are 20 miles of stream channel in the City. Table 5-1 shows the names and lengths of streams in each watershed.



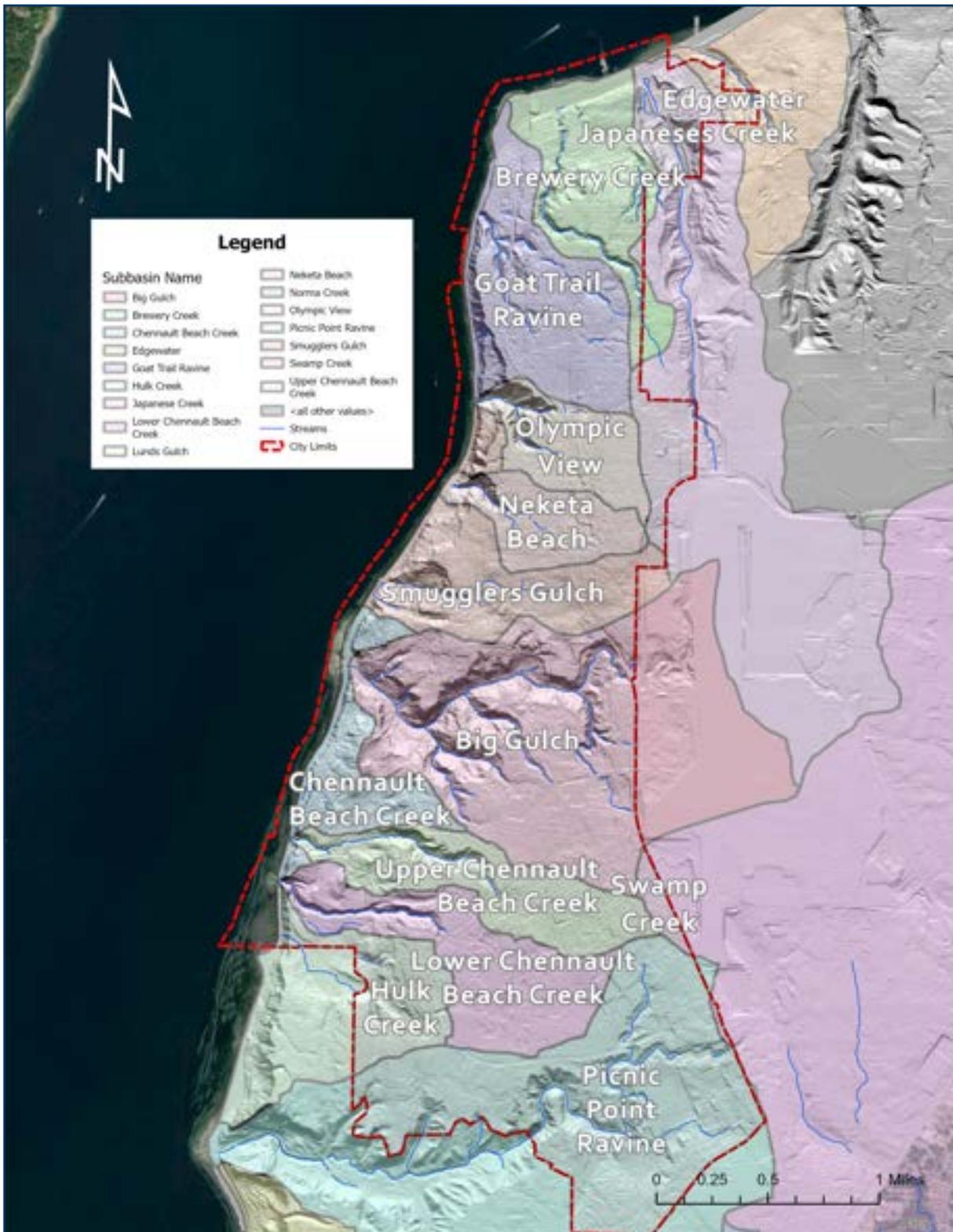


Figure 5-1. Mukilteo Watersheds

Table 5-1. Stream Summary

Watershed	Stream Name	Length (miles) in Mukilteo
Big Gulch	Big Gulch Creek	2.07
	Big Gulch Creek Tributaries	1.96
Brewery Creek	Brewery Creek	1.15
	Brewery creek Tributary	<0.1
Edgewater	Edgewater	0.58
Goat Trail Ravine	Goat Trail Creek	0.78
Hulk Creek	Hulk Creek	0.11*
Japanese Gulch	Japanese Gulch Creek	1.64
Lower Chennault Beach	Lower Chennault Beach Creek	0.92
Naketa Beach	Naketa Beach Creek	0.48
Olympic View	Olympic View Creek	0.71
Picnic Point Ravine	Picnic Point Creek	1.80*
Smuggler's Gulch	Smuggler's Gulch Creek	0.87
Upper Chennault Beach	Upper Chennault Beach Creek	1.13

*Only length of stream channel in the City of Mukilteo is reported. There is also stream channel outside of the City in this watershed.

In addition to stream resources, there are 124 acres of wetlands that are primarily in the southern half of the City on the plateau in the headwaters of Big Gulch, Upper Chennault, Lower Chennault, and Picnic Point creeks (Figure 5-2).

Watershed Fact Sheets are provided in Appendix C.



Typical stream channel geomorphology.



Figure 5-2. Mukilteo Wetlands

The types and numbers of constructed infrastructure in Mukilteo is listed in Table 5-2. It generally includes conveyance (i.e., pipes, ditches, and swales), structures to connect the conveyance and route surface flow to them (i.e., catch basins), larger stormwater facilities that are designed to hold water and release it slowly (i.e.,

detention ponds, pipes, and vaults), or remove pollutants by filtering or settling (i.e., bioretention, wet ponds), or green stormwater infrastructure (i.e., infiltrative facilities such as permeable pavement, bioinfiltration, etc.).

Table 5-2. Infrastructure Summary

Infrastructure Type	Purpose	Number of City Owned	Number of Privately Owned
Catch basins	Collection	4793	3583
Detention pipes	Flow control	47	154
Detention ponds	Flow control	25	37
Detention vaults	Flow control	10	94
Wet ponds	Water quality	1	2
Filter vaults	Water quality	3	10
Vault	Flow control	1	3
Water quality vault	Water quality	0	22
Permeable pavement	Flow control & water quality	0.9 acres (4 sites)	0.3 acres (11 sites)
Swales (i.e., bioretention, biofiltration, rain garden, infiltration, etc.)	Flow control & water quality	28	89
Storm filters (in catch basins)	Water quality	2 catch basins	20 catch basins
Open channels (i.e., ditches, etc.)	Conveyance	7.8 miles	0.16 miles
Stormwater pipes	Conveyance	78.4 miles	44.2 miles
Outfalls	Discharge	174	75
Downturned elbow for pollution control	Water quality	45	38

The ages and estimated cost/depreciation of the stormwater assets was not available for this planning effort and for use in the financial analysis and rate study.

An effort is underway to value the stormwater assets so that a depreciation and reinvestment schedule can be established.

How is Infrastructure Operated and Maintained?

City owned surface water infrastructure is inspected and maintained on the frequencies required by the NPDES Phase II permit (Ecology, 2019a):

- Catch basins are inspected every two years and cleaned if inspections indicate a need according to Ecology Manual (Ecology, 2019b) maintenance standards.
- Stormwater facilities (i.e., ponds, vaults, biofiltration swales, etc.) are inspected annually, and maintained in accordance with adopted Ecology Manual standards (Ecology, 2019b).

Additionally, private stormwater facilities constructed and operated under the City's NPDES Phase II Permit (on or after 2009) are annually inspected by the Utility for compliance with Ecology Manual maintenance standards.

The City has also initiated other infrastructure inspection and maintenance activities to reduce stormwater impacts associated with runoff including:

- Stormwater pipe cleaning and inspection.
- Open conveyance channel (i.e., ditches, swales, etc.) inspection and maintenance.
- Stormwater outfall inspection and maintenance.
- Street sweeping.
- Snow and ice control.

These additional inspection and maintenance programs have served to keep the Utility's assets functioning properly, and provide condition data to inform repair, replacement, and long-term maintenance needs.



Winter street flooding.

Catch Basins

Mukilteo owns over 4,500 catch basins, ranging in installation age from pre-1970 to 2019; there are another 3,500 catch basins that are in private ownership and connected to private stormwater pipe networks. The City inspects its catch basins every two years. Catch basins with excessive sediment build-up require cleaning with a vactor truck. Some catch basins require repairs, including masonry work to fix cracks and restore brick structures. The 2024

- 2026 catch basin inspection program has inspected 414 catch basins in the



Screenshot of catch basin inspection dashboard.



Catch basin replacement.

two-year cycle. Of those, 67% required cleaning, 20% required repair, and the remaining 13% were in good condition. The City crew uses a dashboard such as shown above to facilitate inspection and cleaning.

Stormwater Facilities

The Utility conducts annual inspections on 323 stormwater facilities; 214 are city-owned, and 109 are privately owned. The facilities range in type and size, including pipes,

vaults, ponds, swales, infiltration wells, permeable pavements, stormwater filters, oil-water separators and other stormwater best management practices designed to control flow or remove pollutants. In the last two years, the City has updated its stormwater infrastructure inventory, resulting in the addition of facilities that were inadvertently left off in the past. The City's NPDES Permit requires inspection of private facilities that were constructed under the permit (2009 or later), however, all privately owned stormwater facilities ultimately connect to the City system and to the streams that feed into the Puget Sound. Just as the City's stormwater facilities have an effect on the entire system, private facilities do too, and it can be positive or negative depending on how those facilities are cared for and how they function.

Pipe Cleaning and Inspection

A pipe cleaning and condition assessment program started in 2021. To date, 1,400 pipes (20.2 miles) have been cleaned and inspected in the northern half of the City (see Figure 3-1 in Section 3); 82 pipes (~1 mile) were not able to be cleaned, 97 pipes (~1.4 miles) had access issues, and 54 pipes (~0.7 miles) had been abandoned.

The pipe cleaning removes sediment and pollutants that bind to the sediment from the stormwater pipes preventing them from being deposited in receiving waters. An estimated 308 pounds of pollutants have been removed during the cleaning process. The pipe inspection program also helps the City validate GIS data, make corrections to pipe locations, sizes, and materials, and eliminate pipes that are no longer in service from the City's stormwater inventory.

Condition data collected in 2021 and 2022 identified needed pipe repairs, replacements, and long-term monitoring. In total, no deficiencies were identified in 65% of the stormwater pipes assessed. Figures 5-3 show the types of needs identified during the condition assessment program.

Approximately 20% of the pipes assessed had identified deficiencies where either spot repairs or replacements were recommended or full pipe replacements/repairs. The total length of both spot and full pipe repairs and replacements is approximately 10,900 linear feet (~2 miles). It is expected that as the pipe cleaning and inspection program continues to the newer part of the City (south), less deficiencies will be identified. The pipe program began in the north part of the City, which has older infrastructure, so it was expected that a larger number of pipe deficiencies would be identified.



Open Conveyance Channels

The Utility inspects and maintains its open stormwater conveyance channels. An open channel dashboard is used to indicate the inspection status and maintenance

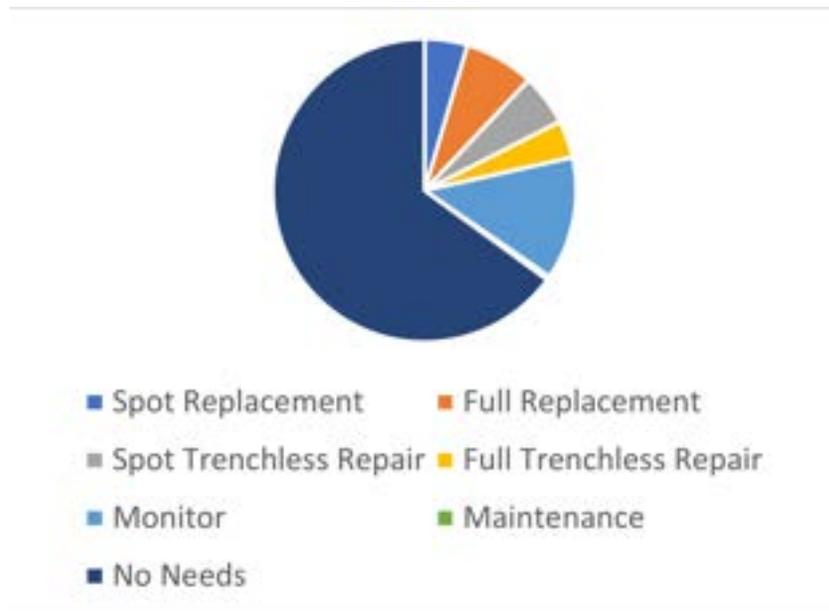


Figure 5-3. Types of Pipe Repairs Identified

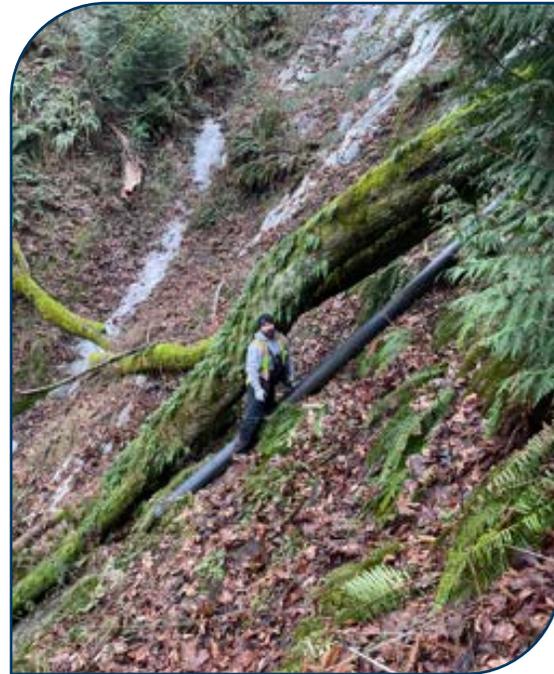
needs of the open channel conveyance channels. Typical maintenance includes removing sediment, vegetation control, and mowing. The most recent operations and maintenance dashboard (Figure 5-4) in GIS indicated that 69 conveyance channels needed cleaning, 25 needed repairs, and 153 were in good condition. Several others were not able to be located or inspected based on GIS information.



Figure 5-4. Open Channel Inspection Results

Outfalls

Similar to open conveyance channels, stormwater outfalls are also on an inspection schedule, with a dashboard for crews to use to track progress. The most recent dashboard indicated that crews had completed 30% of the outfall inspections, and 55% were still needing inspection. The inspections indicate whether the outfall discharges to a stream, whether an illicit discharge was detected during inspection, if cleaning or maintenance is needed, if energy dissipation is present for erosion control, and other important attributes.



Inspection of storm drain outfall on slope..

Street Sweeping, Snow and Ice Removal

Operations and maintenance staff conduct street sweeping to keep debris off the roads, out of the conveyance channels, and pollutants out of the natural water bodies. Street sweeping is conducted on priority roadways; generally arterials, etc. One full time staff person is assigned to street sweeping and mowing.

Public Works staff also conducts snow and ice control, including snow plowing and street sweeping after the roads are sanded for safety during freeze events.

Is the Utility in Compliance with Surface Water Regulations?

The City has been in compliance with its NDPES Phase II Permit, the primary driver of surface water regulations (City of Mukilteo, 2023a and 2023b). One area that has been challenging is inspecting private stormwater facilities and following up to ensure that maintenance is conducted as needed. There have been instances where homeowners' associations own private facilities and might not even be

aware of it, leading to years of neglect, no money set aside for necessary repairs, and difficulty to collect funds necessary to conduct the necessary repairs. This is just one type of situation that has arisen for private stormwater facility inspections. The City has also learned of additional facilities that have been added to the list for inspection and is behind on getting these done.

A new permit will be issued in July 2024. Several of the conditions listed in the draft permit are likely to be in the final permit and are assumed to be items that the City will need to address in the upcoming permit cycle. These conditions are described in the Recommendations Section 6.

What is the Status of Capital Improvement Projects?

The City has a large CIP list with projects identified over the last 20 years, including in the last Stormwater Comprehensive Plan (2015), the 2010 Smuggler's Gulch Retrofit Plan, and from maintenance staff during routine inspections.

Previous documentation was reviewed during this planning effort to consolidate the list of CIPs, remove duplicates and projects that have been completed, and update the status of those CIPs that are still important and should remain on the list. Forty-five stormwater capital projects were on the list prior to and up until 2010. An additional 49 projects were identified in 2015 during the Stormwater Comprehensive Plan, and four more projects were identified in 2020 by maintenance crews. It has been challenging to complete capital projects due to the high cost and overwhelming number of projects that are on the list.

The status of the projects reviewed are shown in Figure 5-5. Three of the projects were identified to be infeasible due to cost constraints, utility issues, or private property issues. Ten projects have been constructed including the following:

- Naketa Beach Outfall Repair
- 44th Avenue W Rain Garden and Gravel Gallery (identified in 2010 Smuggler's Gulch Stormwater Retrofit Study)
- 88th Street Pond Retrofit (identified in 2010 Smuggler's Gulch Stormwater Retrofit Study)



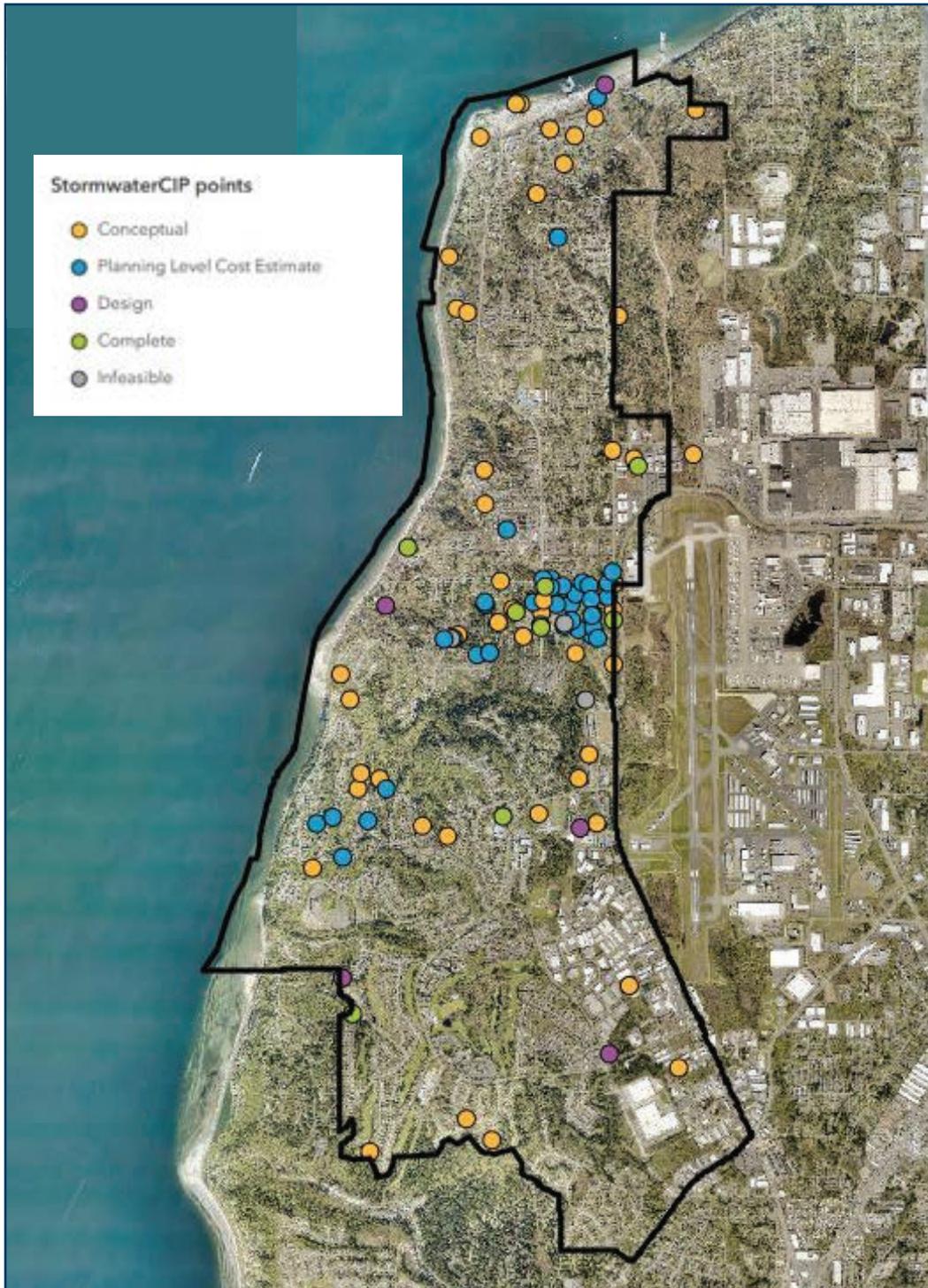


Figure 5-5. Location of CIP Projects

- 50th Place Pond Improvements (identified in 2010 Smuggler’s Gulch Stormwater Retrofit Study)
- 49th Avenue Bioretention Project (identified in 2010 Smuggler’s Gulch Stormwater Retrofit Study)
- Columbia Elementary School Rain Garden (2012 Mini grant to Silvertip Solutions)
- Bayview Storm Drainage Improvements (2015)
- Decant Facility (2015 Stormwater Comprehensive Plan)
- 61st Place Culvert (2015 Stormwater Comprehensive Plan)
- Pond M Restoration (2017 Inspection Program)
- Harbor Reach Detention Pond Restoration (2017 Inspection Program)

Three projects are currently in design/construction including the following:

- Daylighting Japanese Gulch Creek (2015 Stormwater Comprehensive Plan)
- 47th Pl W and 55th Pl W LID Retrofit (2014 Strategies Plan Retrofit)
- Clearview Pond Restoration (2017 Inspection Program)

Education and Outreach

The City’s NPDES Permit requires that education and outreach be conducted and targeted to specific communities about specific topics. The City has continued to build general awareness about stormwater pollution and focus on behavior change to reduce practices that contribute to pollution in surface and stormwater. The community has also engaged in this Plan in many ways as described in Section 3.

It is important for the community to have an awareness of surface and stormwater issues to build an appreciation for the work of the Utility and to engage in behaviors that support clean water, healthy habitat, and reduced flooding.

There are still challenges for reaching disadvantaged or underserved communities.

There was little participation from disadvantaged or underserved communities in this planning process despite efforts to advertise in locations where non-English speakers frequent, having interpreters available at meetings, and providing materials in multiple languages.

Participants that did participate in the outreach for this Plan and City staff did express a desire for greater visibility on the City's website, making it easier to find surface water information that is digestible and transparent. Participants want to know what their stormwater rates pay for.

Development Review

The Utility provides stormwater review for development projects that require it. Staff must be familiar with City code and the requirements of the Ecology Stormwater Management Manual, which provides the standards for which stormwater management is triggered and the types of facilities that are required for different types of development. The City collects a fee for this service as part of the development permit application, and according to City code, it is required to a cost neutral service.

An evaluation of development review fees and procedures is being conducted.

In a review of staffing analysis and permit revenue to the Utility, the amount of money brought in from permit fees might not be offsetting the staffing cost for review. As regulations have become more complicated and easy-to-develop sites have already been developed, applications are typically more challenging for reviewers and more costly to administer. A separate review of permit and review fees and associated revenue versus actual cost to the Utility is underway to address potential gaps.

What Resources are needed to Operate the Utility?

Resources to accomplish Utility goals include staff, equipment and facilities, technology, and funding. The City has experienced staff turnover in the last several years, which has impacted Public Works and the Utility.

Staffing

The City has experienced staff turnover in the last several years, which has impacted Public Works and the Utility. In that time period:

- Three people have rotated through the Surface Water Technician role over seven years, with the current Surface Water Technician being with the City for about three years before being promoted to Sr. Surface Water Technician.
- The new Surface Water Manager was hired from outside the City in August 2022, and a new Sr. Surface Water Technician Position was added in 2022.
- A new Public Works Director was promoted from within the City of Mukilteo in January 2022.
- Turn-over on the Storm Crew has been high as well. In 2022, a new lead, a new maintenance II, new maintenance I, and a new Public Works Superintendent were hired.

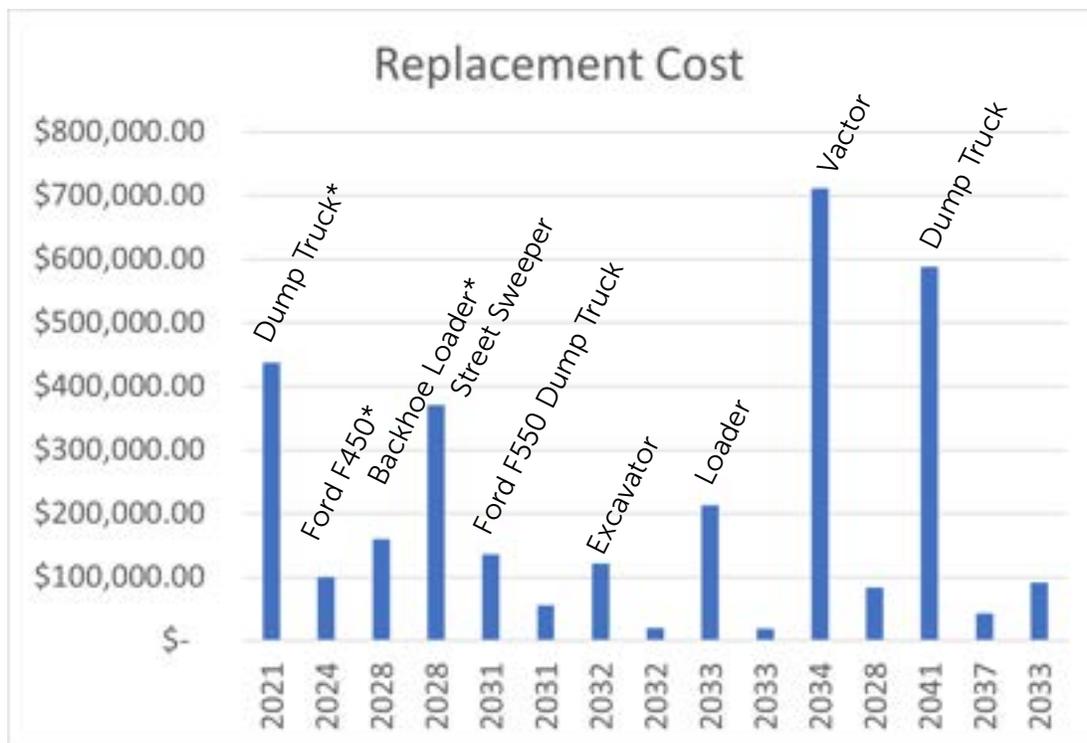
The benefit of new staff has been the opportunity to take a fresh look at old systems that could result in improvements. The downside is lost institutional knowledge and the extra time it takes to get familiar with the job, City, and new procedures.

In addition to new staff, there haven't been enough staff on the operations side to accomplish all the needed tasks. The crew has been operating with 6 positions, but an optimal fully-staffed crew would include 11 positions.

Equipment and Facilities

The maintenance yard is very functional, and the decant facility constructed in 2020, was a big improvement to the yard and the ability of crews to do their jobs more efficiently. Other improvements that crew has made at the yard includes modifying gates at the decant facility to allow more functional operation, maintaining equipment to keep it running, and using a hydro-seeder after conducting ditch operations to avoid having to put new grass down. Public works has also been very effective at acquiring and replacing equipment as needed. Equipment in Public Works is shared by the Utility and other groups within Public Works, such as transportation. Sometimes there are conflicts for heavily used equipment, such as the mini-excavator.

Additionally, the existing equipment is not sufficient for some completing some work activities, where access is difficult. Figure 5- 6 shows the timeline for major expected equipment replacement based on lifecycle.



* Included in Recommended Plan Funding

Figure 5-6. Timeline of Major Expected Equipment Replacement

Technology

Geographic Information Systems (GIS) is the primary tool used for mapping the stormwater infrastructure, tracking progress for inspection and maintenance programs (i.e., catch basins, pipe cleaning and inspection, stormwater facility inspection, outfall inspection, open channel conveyance inspection), and communicating information to the community using GIS-based tools. During this planning process, the City upgraded its GIS system to be able to better handle larger volumes of data and make it available in real-time to field crews and staff who use it.

Technological areas of improvement are still needed. Development review was

mostly conducted on paper plans and files, making it difficult to simultaneously conduct review by different staff. This was resolved in January 2024 with investment of a new program for electronic review. An asset management program that is GIS-based and could be paired with the City's existing GIS data would provide greater efficiency for tracking condition status, work orders, and repairs of the Utility's infrastructure.

Funding

Utility funding comes from revenue generated by monthly stormwater rates collected by the Utility through the Mukilteo Water and Wastewater District. Stormwater rates were increased in 2015 when the last Stormwater Comprehensive Plan was updated to address lagging revenues that weren't keeping up with the regulatory demands required by the NPDES Phase II Permit, capital project needs, and operations and maintenance needs of the Utility. The demands have continued to grow. The Utility has been very successful in obtaining grants for some of these big projects, including the decant facility design and construction, and the pipe cleaning and inspection project. At the time of this plan, the City was just informed of three additional successful grants for new capital project design and/or construction. Grants have been a way to offset funding received from stormwater rate revenue.



CCTV truck inspecting pipes. This project was funded by a grant.

Recommendations for the next 6 years include:

- *Capital Improvement Projects*
- *Replacement and new equipment to facilitate operation and maintenance activities*
- *New Staff Positions*
- *Programmatic Actions to address challenges and meet regulatory compliance*

6

Recommendations

What's recommended for the next 6 years?

In developing this Plan, a common theme communicated by Utility staff and the community to focus on current infrastructure before expanding on new capital projects. To that end, there are no new stand-alone site-specific capital projects recommended in this plan, rather high priority capital projects previously identified are recommended for design or construction in the next 6 years. New capital improvement programs are recommended to fund repair and replacement of stormwater infrastructure. Programmatic project actions are recommended for operations and maintenance, technology, NPDES Permit requirements, education and outreach, and to address challenges and opportunities identified by staff and the community during this planning process. New staff and equipment are also recommended to be able to fulfill the existing and expected Utility needs over the next 6 years.

CIP Projects

Seven site-specific CIP Projects were developed into fact sheets and are recommended for funding. Table 6-1 lists the projects, including a description, how it was identified, 2023 cost estimate, and whether it is grant eligible. At the time of this plan writing, some of the projects were already awarded grants from the Department of Ecology. Those projects are denoted with an asterisk.

Table 6-1. Summary of Recommended Capital Improvement Projects

Capital Improvement Project Name (Number)	Purpose	Identified By	2023 Cost
Catch Basin Replacement Fund	General O&M	Staff	\$100,000 (annual)
Pipe Repair Fund	General O&M	Pipe Inspection Program	\$500,000 (annual)
Vault Cleaning	General O&M	Staff	\$100,000 (annual)

Table 6-1. Summary of Recommended Capital Improvement Projects

Capital Improvement Project Name (Number)	Purpose	Identified By	2023 Cost
Chennault Beach Study (CIP#1)*	Fish passage, erosion	2023 Stormwater Management Action Plan	\$80,000
Chennault Beach Culvert Replacement (CIP#2)	Fish passage, erosion	2023 Stormwater Management Action Plan	\$3,567,000
47th Place W & 55th Pl. Low Impact Development (CIP#3)*	Water quality	2014 Mukilteo Stormwater Retrofit Prioritization	\$1,434,000
Smuggler's Gulch Bioretention Basin 2a (CIP#4)*	Water quality and flow control	2010 Smuggler's Gulch Retrofit Plan	\$2,800,000 (grant awarded for design portion-\$255,000)
Smuggler's Gulch Bioretention Basin 2b (CIP#5)	Water quality and flow control	2010 Smuggler's Gulch Retrofit Plan	\$2,800,000
Smuggler's Gulch Bioretention Basin 3 (CIP#6)	Water quality and flow control	2010 Smuggler's Gulch Retrofit Plan	\$3,730,000
Pacific Place Pond Liner	Water quality and erosion	Staff	\$1,000,000

Three other capital improvement project funds are recommended to address (1) catch basin replacement, (2) pipe repair, and (3) vault cleaning and are included in Table 6-1.

As described in Section 5, of the catch basins that had been inspected in the 2024- 2025 cycle, approximately 20% had identified deficiencies requiring repairs. One-hundred thousand dollars (\$100,000) is recommended for annual catch basin repair and replacement.

The pipe cleaning and condition assessment program has so far identified over 2 miles of pipes that require spot repairs or full replacement. Five-hundred thousand dollars (\$500,000) is recommended for annual pipe repair and replacement to address the pipe deficiencies that continue to be identified in this program. The pipes are being prioritized for repairs and replacement according to criticality criteria in the pipe inspection program (Altaterra, 2020) to allow the City to prioritize its resources according to the greatest risk.

Detention vaults are stormwater facilities that require routine sediment removal and cleaning to function properly and have enough capacity to detain water. It's recommended that \$100,000 annually be set aside to fund vault cleaning.

Capital improvement project fact sheets for those projects recommended for design and/or construction in the next 6 years are included in Appendix D. Additionally, a list of previously recommended capital projects is included in Appendix D.



Cutting pipe for a pipe replacement project.

Facilities, Equipment and Technology

As described in Section 5 and in Appendix B, the work of the Utility is supported by its facilities, equipment, and technology. The maintenance yard used by staff in Public Works, including those dedicated to surface water crews is functioning well, although some improvements are recommended. Equipment used to operate and maintain surface water infrastructure is kept well maintained but must be replaced at or around its optimal end of life to ensure the best use of resources. Several pieces of equipment are on schedule for replacement in the next 6 years and funds are recommended to acquire new equipment. Lastly, technological resources, such as geographic information systems (GIS), asset management programs, plan review software, and other computer programs aid the Utility in tracking asset inventory, work orders, permit compliance, and resource management. The Utility has made strides in the past few years to upgrade computer systems, and there is more improvement needed. Additional technological improvements are recommended.

Table 6-2 lists the facilities, equipment, and technological recommendations for the next 6 years including the reasons for the recommendation. All recommendations have an indication of whether they are new, ongoing, or replacement for existing equipment.

Table 6-2. Summary of Recommended Equipment and Technology

Equipment, Facilities, and Technological Needs	Purpose	Estimated Cost (2023 dollars)
Covered Material Storage Area (new)	Keep material dry	\$500,000
Skidsteer/trailer combination (new/purchased in early 2024)	General O&M	\$96,356
Large vactor rental (new)	Clean facilities that City vactor can't handle	\$13,000 (annually)
Dump truck (replacement)	Replace aging dump truck for general O&M	\$437,407



Table 6-2. Summary of Recommended Equipment and Technology

Equipment, Facilities, and Technological Needs	Purpose	Estimated Cost (2023 dollars)
Sewer camera- push camera (replacement)	Replace existing camera used for inspection of underground facilities	\$9,680
Backhoe Loader (replacement)	Replace aging backhoe loader for general O&M	\$160,000
Ford F450 Truck (replacement)	Replace aging truck for general O&M	\$100,000
Schwarze Street Sweeper (replacement)	Replace aging street sweeper for street sweeping	\$370,574.30
Miscellaneous equipment for spill response (replacement)	Replacement of aging equipment	\$8,670.78
Cues Inspection Camera (replacement)	Replace aging camera	\$83,846.19
Aerial imagery (ongoing- Action 25)	Needed for GIS analysis	\$5,292 (annually)
Asset Management Software (new- Action 26)	Used by entire City to manage assets and work orders	\$80,000 plus \$20,000 annually

Equipment and facilities fact sheets and programmatic actions that recommend new technology are included in Appendix E.

Programmatic Actions

Recommended programmatic actions address identified existing issues and anticipated future needs as described in Section 5. Table 6-3 lists the recommended programmatic actions, Utility staff's priority based on regulatory

requirements and identified needs, and estimated cost ranges. Cost ranges are provided rather than actual estimated costs because there are factors that will impact the final cost of the action, including whether staff or a contractor conducts the work. More detail is provided in the programmatic fact sheets in Appendix E.

Table 6-3. Summary of Recommended Programmatic Actions

Programmatic Action (Number)	Priority	Estimated Cost Range
Residential Rate Structure (Action 1)	Medium	<\$100,000
Private Facility Grant Program (Action 2)	High	~\$30,000 annually
Evaluate Surface Water Facilities for Repair and Replacement Needs (Action 3)	Low	<\$50,000
Inspect City Vaults (Action 4)	Low	<\$100,000
Property Acquisition (Action 5)	Low	~\$52,000 annually
Catch Basin Inspection Program Evaluation (Action 6)	Low	<\$50,000
Implement Interlocal Agreements (Action 7)	Low	<\$10,000
Development Code Review (Action 8)	Medium	<\$50,000
Green Stormwater Infrastructure (Action 9)	Low	<\$75,000
Standard Operating Procedures (Action 10)	High	<\$75,000
Climate Action and Resiliency (Action 11)	Medium	<\$120,000
Open Channel Inspections (Action 12)	Low	Included in on-going work plan



Table 6-3. Summary of Recommended Programmatic Actions

Programmatic Action (Number)	Priority	Estimated Cost Range
Outfall Inspections (Action 13)	High	Included in on-going work plan
Stream Channel Surveys (Action 14)	Low	<\$13,000 annually
Stormwater Parks (Action 15)	Medium	<\$75,000
Street Right-of-Way for Surface Water Management (Action 16)	Medium	<\$75,000
Education and Outreach (Action 17)	High*	~\$20,000 annually
NPDES Fire Department Coordination (Action 18)	High*	<\$5,000 annually
Urban Forestry (Action 19)	High*	~\$120,000
SMAP (Action 20)	High*	
Assess Facility Tributary Areas (Action 21)	High*	~\$25,000
Stormwater Investment Tracking (Action 22)	High*	\$14,000 plus \$2,000 annually
Easements (Action 23)	High	
GIS (Action 24)	High	\$8,000 annually
Surface Water Comprehensive Plan (Action 27)	High	\$500,000
Training and Certification (Action 28)	High*	\$5,000 annually

How do Programmatic Actions Address Existing Challenges?

Programmatic actions are meant to lay a framework for Utility improvements.

Many of the existing challenges in the Utility revolve around staffing – having enough trained and knowledgeable staff to do the volume of work required to operate and maintain the stormwater system. In addition to staff challenges, surface water priorities identified by Utility staff, the Citizen Advisory Committee, and the Community included maintenance and operation of existing infrastructure, water quality improvements, and education and outreach. Additional inspection and maintenance activities are recommended, as well as actions that will improve water quality and community education and outreach.

General

There are several programmatic actions that address general surface water management issues including administrative functions that are important to the functionality of the Utility and the goals of the City.

Action 1- Residential Rate Structure involves reviewing the current rate structure to identify if there are ways that it can be improved to be more equitable to everyone in the community.

Action 5- Property Acquisition recommends setting funding (\$50,000) aside annually for land acquisition opportunities that could benefit the Utility by preserving surface water functions or providing space for new stormwater management facilities.

Action 7- Implement Interlocal Agreements recommends reviewing existing interlocal agreements for relevance and identifying new agreements that could be advantageous to the Utility for shared responsibilities, and/or reduced costs.

Action 11- Climate Action and Resiliency recommends developing a Climate Action and Resiliency Plan the promotes strategies to reduce climate impacts, including surface water impacts.

Action 27 - Surface Water Comprehensive Plan is a placeholder for the next update to this Plan.

Efficiencies to Resolve Staffing Challenges

Staff turnover have impacted the Utility by the loss of institutional knowledge. Staff training and certification in specialized activities is needed to ensure that maintenance is completed according to recognized standards. Additional recommendations and programmatic actions are described below.

New Maintenance Staff

Four new maintenance staff (one lead and three maintenance workers) are recommended to fill existing and future surface water operational needs to keep the surface water system functioning well.

GIS Support

Action 24 - GIS recommends continuation of GIS support that has been integral to the functionality of the Surface Water Utility. The Utility recommends continuation of funds for GIS staff to provide assistance.

Code Enforcement Officer

A dedicated code enforcement officer is recommended to handle compliance violations for surface water (i.e., private facility inspection follow-up and maintenance) and other City permit violations to take the burden off technical staff. It is recommended that the Utility pay for 0.5 FTE of this position and receive approximately 50% dedication to surface water issues.

Standard Operating Procedures

Action 10 – Development of Standard Operating Procedures is designed to address the loss of institutional knowledge the Utility and City have recently experienced and make it easier for new staff to get trained and understand

the City processes for the work they do.

Action 28 - Staff training and certification will ensure that staff are comfortable doing their jobs and that they do similar tasks with the same approach and criteria.

Revision to Catch Basin Inspection Program

Action 6- Catch Basin Inspection Program is to evaluate alternative catch basin inspection frequencies, as allowed by the NPDES Phase II Permit, if it can be documented that an alternative frequency and methodology is warranted.

Development Code Review

Action 8 – Development Code Review involves reviewing existing code to identify opportunities for improvement and ease of the review process for smaller lots, making it more efficient for both reviewers and applicants.

Operations and Maintenance

Several inspection and maintenance programs are recommended to focus on understanding the condition of all Mukilteo’s surface water assets, addressing deficiencies, and putting resources toward repair and/or replacement. These include:

Action 3 – Evaluate Surface Water Facilities for Repair and Replacement Needs which includes a thorough assessment of large surface water facilities against as-built conditions and design criteria

Action 4 – Inspect City Vaults which includes evaluating the structural condition of these assets



Vault door maintenance.

Action 12 – Open Channel Inspections is an on-going program that inspects open channels (i.e., conveyance ditches, etc.) and identifies needed repairs (See Section 5)

Action 13 – Outfall Inspections is an on-going program that inspects surface water outfalls and identifies needed repairs (see Section 5).

Action 14 – Stream Channel Surveys is recommended to evaluate in-stream physical conditions to monitor changes and identify potential impacts from upland surface water runoff

Additionally, other actions will facilitate work conducted by crews including:

Action 23- Easements is to evaluate and obtain temporary and/or permanent drainage easements for city-owned infrastructure that crosses private property. Easements will allow operations and maintenance work to proceed more smoothly.

Water Quality

Whereas many of the programmatic actions listed above improve water quality through maintenance of existing facilities, additional actions are more forward-thinking, evaluating and identifying opportunities for ways to incorporate new water quality treatment facilities, including those that use bioretention (one of the ways that can reduce the effects of 6PPD Quinone from tire dust) in the City and encourage/provide assistance to private stormwater facility owners in maintenance of their facilities (which impact the City's infrastructure). The following actions are designed to improve water quality:

Action 2 – Private Facility Grant Program is a grant program to provide financial assistance to private stormwater facility owners that need it for maintenance resulting in improved water quality.

Action 9- Green Stormwater Infrastructure is to promote and encourage green stormwater infrastructure in the City and provide a repository of information for the Community to use.

Action 15- Stormwater Parks involves evaluation of existing parks and greenspaces for opportunities to incorporate stormwater features.

Action 16- Street right-of-way for Stormwater Management involves



evaluation of using existing street ROW for stormwater management, especially in conjunction with road improvement projects.

Action 17 – Education and Outreach involves identify and expanding tools to conduct education and outreach about water quality and other Utility activities.

NPDES

A draft NPDES Phase II Permit was issued in 2023, and will be effective on August 1, 2024. The draft permit had several new conditions that are anticipated to be carried forward to the final permit. Programmatic actions below address those draft permit conditions, including the following:



Mukilteo fire truck.

Action 18 – Fire Department Coordination

Draft NPDES Phase II Permit Conditions S2.B.2. and S2.B.3. refer to discharge from

emergency fire-fighting activities and the potential for discharge of Per- and Polyfluorinated Substances (PFAS), which are of concern because they don't break down in the environment, are known to contaminate drinking water and can bioaccumulate in fish, resulting in human consumption that could have negative health consequences according to the CDC Fact Sheet ([https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html#:~:text=Print-Per%2D%20and%20Polyfluorinated%20Substances%20\(PFAS\),in%20a%20variety%20of%20products\).](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html#:~:text=Print-Per%2D%20and%20Polyfluorinated%20Substances%20(PFAS),in%20a%20variety%20of%20products).)

The draft permit requires coordination with the fire department to develop a PFAS management plan to minimize discharge to the stormwater system, and to implement protocols for minimizing resuspension, conveyance, and discharge of PFAS already in the stormwater system.

Action 19- Urban Forestry

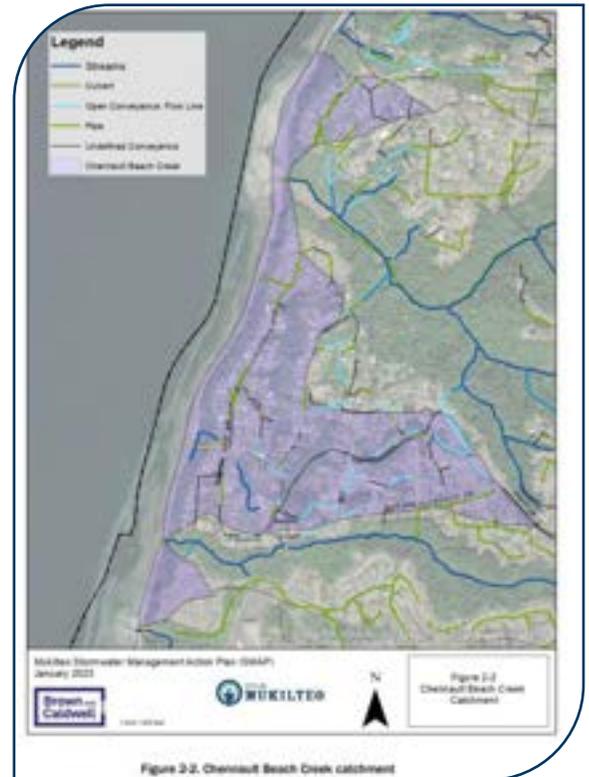
The draft permit includes development of tree canopy goals and policies (S5.C.1.c.ii) to support surface water management and water quality improvement in receiving waters and to map tree canopy (S5.C.b.iii) on the City-owned and operated properties. The recommended programmatic action is to develop an urban forestry plan in conjunction with the Community Development and Planning Departments and identify potential grants to jump start the urban forestry initiative.

Action 20 – SMAP

Similar to the current NPDES Phase II Permit, the draft permit (S5.C.1.d.i) requires development of a new Stormwater Management Action Plan (SMAP) for a high priority catchment OR identifying additional actions for the existing SMAP (Lower Chennault Beach). The one new requirement for the SMAP is to include projects that address transportation-related runoff, such as projects that address tire wear runoff. This new requirement is designed to make progress on the 6PPD- Quinone chemical associated with tire wear. Two high priority catchments that should be considered for the next SMAP include:

- Smuggler's Gulch
- Brewery Creek

Each of these watersheds are worthy of consideration for different reasons.



Screenshot from 2023 SMAP of Lower Chennault Beach Creek.

Smuggler's Gulch basin has a lot of back-logged projects needed to address on-going issues. SMAP would jump-start some of those projects. Redevelopment of the City's waterfront and the role that Brewery Creek plays would be a compelling reason to pick Brewery Creek watershed for the next SMAP.

Action 21 – Assess Facility Tributary Areas

The draft permit (S5.C.5.b.ii) requires development of methodology to map and assess acreage of MS4 (stormwater system) tributary basins to outfalls or discharge points that have stormwater facilities and flow control best management practices (BMPs)/facilities owned or operated by the City. This action will augment outfall inspection work already conducted by the City as well as compilation of stormwater facility data in GIS.

Action 22- Stormwater Investment Tracking

The draft permit (S5.C.7) requires permittees to implement a Program to control or reduce stormwater discharges to waters of the State from existing development by focusing on strategic stormwater investments over longer periods of time. This action will develop a tracking program and implementation schedule to manage stormwater retrofits, investments, and new areas treated or evaluate partnering to collaborate on regional goals.



This page left intentionally blank.



Three alternative levels of service were reviewed for implementation and potential rate impacts using different combinations of projects, staff, equipment purchases, and programmatic actions.

7 Implementation Plan

How will this Plan be Implemented?

Implementation of the recommendations in this Plan require resources; revenue and staff. A financial analysis was conducted to develop a funding plan and implementation schedule for the recommendations in this Plan over the planning horizon. The Utility's fiscal policies were reviewed as well as its strategies for managing operating and capital reserve funds and debt service. The following fiscal policies are recommended:

Operating Reserve

Consistent with previous City targets, achieve a year-end minimum balance target of at least 60 days of total annual operating expenses. This equates to roughly \$640,000 in 2023 based on budgeted operating expenditures of \$3.9 million.

Capital Reserve

After discussions with City staff, the surface water Utility's capital reserve target aims to hold approximately \$2.5 million in cash and includes both the operating and capital reserve balances combined. This value is intended to represent the funds sufficient for an emergency equipment repair, or a major asset failure.

Debt Service and Debt Service Coverage

The City does not have any outstanding surface water related debt. The City should aim to meet the reserve targets in any future bond covenants. If the City does decide to issue revenue bonds, it should maintain debt service coverage of at least 1.25X on any future debt issues (meaning collect an additional 25% above the bonded debt service).



Rate Funded System Reinvestment

It is recommended that the City establish a target level reinvestment strategy based on a percent of annual depreciation expenses in the future, once it has a better handle on the original cost and depreciation expense as the basis for reinvestment in the stormwater assets.

The financial analysis documentation is provided in Appendix F.

Were Different Implementation Alternatives Evaluated?

The recommendations in Section 6 cover different types of activities and obligations, including projects and actions that have to be done because of regulatory compliance or safety concerns. To evaluate different funding options, three levels of service were considered, levels 1 through 3, with level 1 being the minimum needed to meet the current and future NPDES Permit requirements and keep the Utility functioning on a day-to-day basis and level 3 being most proactive to accomplish all recommended Surface Water tasks and additional staff to maintain infrastructure at the highest level. Each level of service is additive to the baseline Utility operations. Level of service 1 also includes the 3 recommended annual repair and replacement and cleaning capital improvement funds (catch basins, pipes, and vaults), and the Chennault Beach Culvert Replacement Project (CIP#1). All other recommended capital projects are included in level of service 3. Table 7-1 shows the alternative levels of service and included projects.

Level of service in this context refers to the tasks to be accomplished. Level of service 1 represents the tasks to comply with regulations and day-to-day operations.

Table 7-1. Summary of Service Levels Assumptions

Level of Service 1 [Year to start]	Level of Service 2 [Year to start]	Level of Service 3 [Year to start]
Programmatic Actions		
Private Facility Grant Program (new-Action 2) [2024]	All Level of Service 1 Items Plus	All Level of Service Items 1 and 2 Plus
Standard Operating Procedures (ongoing-Action 10) [2024]	Residential Rate Structure (new-Action 1) [2024]	Property Acquisition (new-Action 5) [2024]
Outfall Inspections (ongoing-Action 13) [2023]	Development Code Review (new-Action 8) [2024]	Catch Basin Inspection Program Evaluation (new-Action 6) [2024]
Education and Outreach (ongoing-Action 17) [2023]	Climate Action and Resiliency (new-Action 11) [2024]	Implement Interlocal Agreements (ongoing-Action 7) [2024]
Training and Certification (ongoing-Action 28) [2024]	Stormwater Parks (new-Action 15) [2025]	Open Channel Inspections (ongoing-Action 12) [2023]
NPDES Fire Department Coordination (new-Action 18) [2025]	Street Right-of-Way for Surface Water Management (new-Action 16) [2027]	Stream Channel Surveys (new-Action 14) [2025]
Urban Forestry (new-Action 19) [2027]		Evaluate Surface Water Facilities for Repair and Replacement Needs (new-Action 3) [2026]
SMAP (new-Action 20) [2025]		Inspect City Vaults (new-Action 4) [2024]
Assess Facility Tributary Areas (new-Action 21) [2026]		Green Stormwater Infrastructure (new-Action 9) [2025]

Table 7-1. Summary of Service Levels Assumptions

Level of Service 1 [Year to start]	Level of Service 2 [Year to start]	Level of Service 3 [Year to start]
Stormwater Investment Tracking (new-Action 22) [2027]		
GIS (ongoing-Action 24) [2023]		
Easements (new-Action 23) [2024]		
Surface Water Comprehensive Plan (new-Action 27) [2030]		
Aerial imagery (ongoing-Action 25) [2024]		
Asset Management Software (new- Action 26) [2024]		
Staffing		
0.5 FTE Code Enforcement Officer [2024]		Lead Utility Worker [2025]
		Maintenance Worker (3) [2025]
Equipment		
Covered Material Storage [2027]		
Skidsteer/trailer Combination [2024]-Done		
Large Vactor (ongoing-rental) [2023]		
Dump Truck [2030]		
Backhoe Loader [2029]		
Ford F450 Truck [2027]		



Table 7-1. Summary of Service Levels Assumptions

Level of Service 1 [Year to start]	Level of Service 2 [Year to start]	Level of Service 3 [Year to start]
Schwarze Street Sweeper [2026]		
Inspection Camera [2028]		
Miscellaneous spill control equipment		
Capital Projects		
Catch Basin Replacement Repair Fund [2024]		47th Pl W and 55th Pl LID (CIP#3)[2025]
Pipe Repair Fund [2024]		Smugglers Gulch Bioretention Basin 2a (CIP#4)[2025]
Vault Cleaning [2024]		Smugglers Gulch Bioretention Basin 2b (CIP#5)[2026]
Chennault Beach Study and Culvert Replacement (CIP#1) [2025 - 2026]		Smugglers Gulch Bioretention Basin 3 (CIP#6)[2027]
		Pacific Pond Liner (CIP#7)[2028]

Funding analysis

To evaluate the different levels of service and funding strategies, projects, actions, equipment purchases, and new staff were identified to start and/or continue if



Figure 7-1. Additional Operating Costs (programmatic projects, equipment, and staff) by Level of Service

they were on-going at different points in time to spread the resources out over the planning horizon. Figure 7-1 shows the additional operating costs by levels of service.

As shown in Table 7-1 and Figure 7-1, the primary differences between the levels of service 1 and 3 are additions of new staff. Level of service 2 includes a few additional programmatic projects that are important to the program, but no new staff or equipment, which are larger cost items. All equipment needs are included in level of service 1 because they are items



A new dump truck is needed and scheduled for replacement in an outer year of the planning horizon.

that are either overdo for replacement or necessary for crews to get their work accomplished. The big jump in costs in later years for level of service 1 in Figure 7-1 reflects equipment purchases.

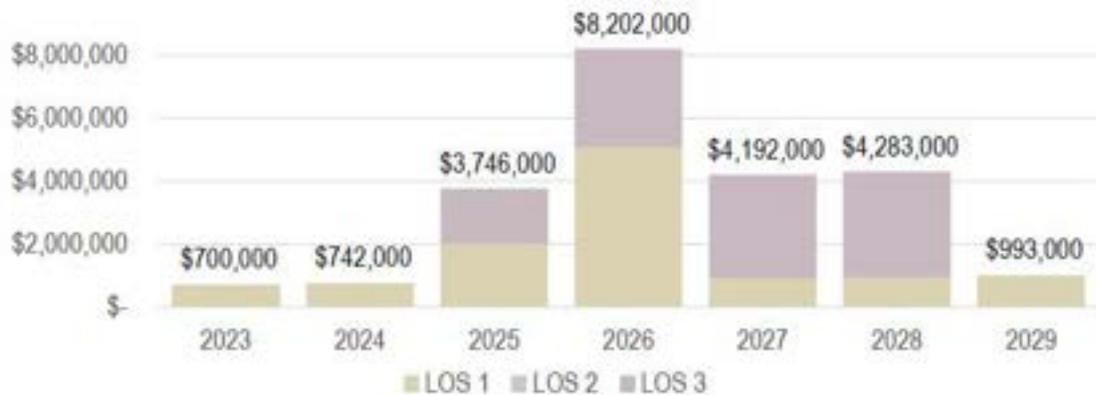


Figure 7-2. Additional Capital Costs by Level of Service.

Figure 7-2 shows the capital improvement program costs by level of service.

As shown in Table 7-1 and Figure 7-2, there are no capital projects proposed under level of service 2. The capital project funds for repair and cleaning of existing infrastructure (catch basins, pipe, and vaults) are on-going annual costs that begin in 2023. Only one other project is recommended for level of service 1; Chennault Beach Culvert Replacement and Study. This project is in the City’s SMAP. The City was notified that the design portion of the project will receive a grant award.

Two of the projects in level of service 3, also are anticipated to receive grant funding from the Washington State Department of Ecology, totally approximately \$1.8 million. This will help offset the costs shown in Figure 7-2. The Utility will continue to pursue grants wherever possible.

What do Estimated Project Costs mean for Rate Payers?

Estimated project costs and timeline for conducting work activities translates into revenue needs that comply with the City’s fiscal policies. To evaluate projected revenue, the 2023 project, equipment, and staffing costs were escalated by 3.1 percent to the year that they are estimated to begin. Based on the analysis of each level of service, revenue needs were calculated and translated into annual customer rate increases. Table 7-2 shows the projected increases for each level of service in annual percentages and monthly rates.

Table 7-2. Summary of Estimate Rate Adjustments Based on Level of Service

	2023	2024	2025	2026	2027	2028	2029
Level of Service 1							
Annual Increase	0.00%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
Monthly Rate	\$23.43	\$24.54	\$25.71	\$26.93	\$28.21	\$29.55	\$30.95
Level of Service 2							
Annual Increase	0.00%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%
Monthly Rate	\$23.43	\$24.58	\$25.78	\$27.05	\$28.37	\$29.76	\$31.22
Level of Service 3							
Annual Increase	0.00%	24.50%	24.50%	24.50%	15.00%	0.00%	0.00%
Monthly Rate	\$23.43	\$29.17	\$36.32	\$45.21	\$52.00	\$52.00	\$52.00



What is the Optimal Funding and Schedule Recommendation?

Staff recommends that Council adopts level of service 3. Appendix F, Funding Analysis, show a comparison of the monthly single-family surface water rates for current and alternative levels of service in Mukilteo and neighboring cities.

Appendix G contains a letter from the citizen advisory committee supporting staff in the recommendation to adopt level of service 3. Should council adopt level of service 3, it is recommended that rate increases be reviewed on a bi-annual basis to determine need. Grants such as the recent awards the City was notified of, help fund capital projects and offset revenue. Depending on the City's financial situation and capital needs, if grants offset some of the capital costs, the City could choose to forego rate increases, or fund additional needed capital projects with the extra revenue.

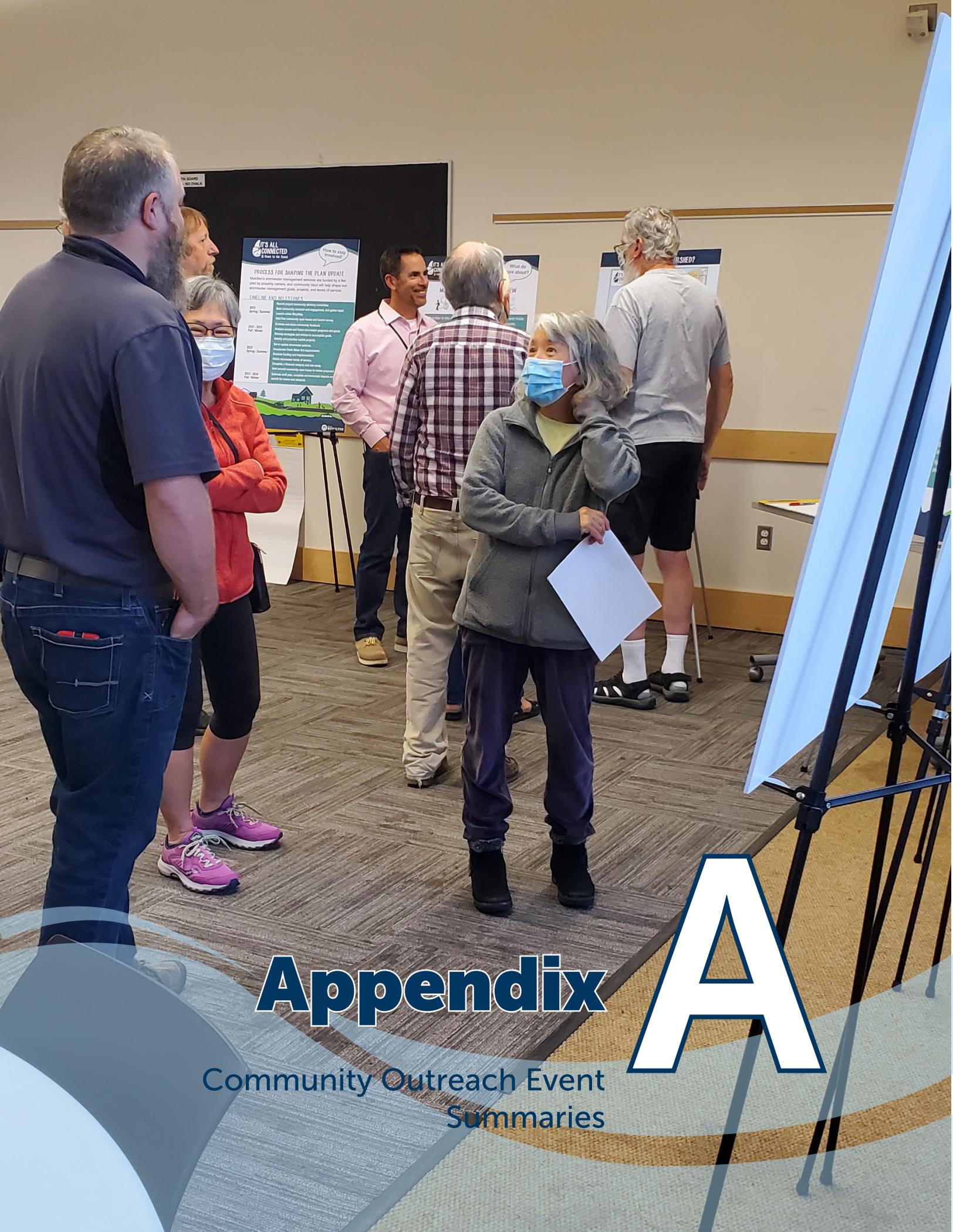


8

References

References

- Altaterra and Aspect. 2015. Technical Memorandum to Colleen Doten, Brown and Caldwell and Challis Stringer City of Mukilteo, February 11, 2015, Geomorphology and Critical Slope Evaluation in Support of the City of Mukilteo Stormwater Comprehensive Plan Update.
- Aspect, 2015. Infiltration Feasibility Assessment, Stormwater Management Plan, Mukilteo, Washington, Prepared for Brown and Caldwell, Project No. 130212, January 29, 2015.
- Brown and Caldwell, 2023. Stormwater Management Action Plan, prepared for City of Mukilteo, Washington. March 6, 2023.
- City of Mukilteo, 2015. Comprehensive Surface Water Management Plan Update, 2015 - 2021. August 2015.
- City of Mukilteo, 2023a. Stormwater Management Program (SWMP) Plan, January 2023 - December 2023, Prepared in fulfillment of NPDES Permit requirements by the City of Mukilteo.
- City of Mukilteo, 2023b. MS4 Annual Report Phase II Questionnaire, City of Mukilteo, March 27, 2023.
- Ecology, 2019a. Western Washington Phase II Municipal Stormwater Permit. National Pollutant Discharge Elimination System and State Waste Discharge General Permit for discharges from Small Municipal Separate Storm Sewers in Western Washington. Washington State Department of Ecology, July 1, 2019.
- Ecology, 2019b. Stormwater Management Manual for Western Washington, Washington State Department of Ecology, July 2019.
- Tetra Tech/KCM, Inc., 2001. City of Mukilteo Comprehensive Surface Water Management Plan, April 2001, Prepared for City of Mukilteo 4480 Chennault Beach Road, Mukilteo, WA 98275.



Appendix

A

Community Outreach Event Summaries

Appendix A

Community Outreach Event Summaries

- Citizen Advisory Committee (CAC) Meeting Presentations
 - Community Survey Results
 - Open House Summaries

Citizen Advisory Committee (CAC) Meeting Presentations



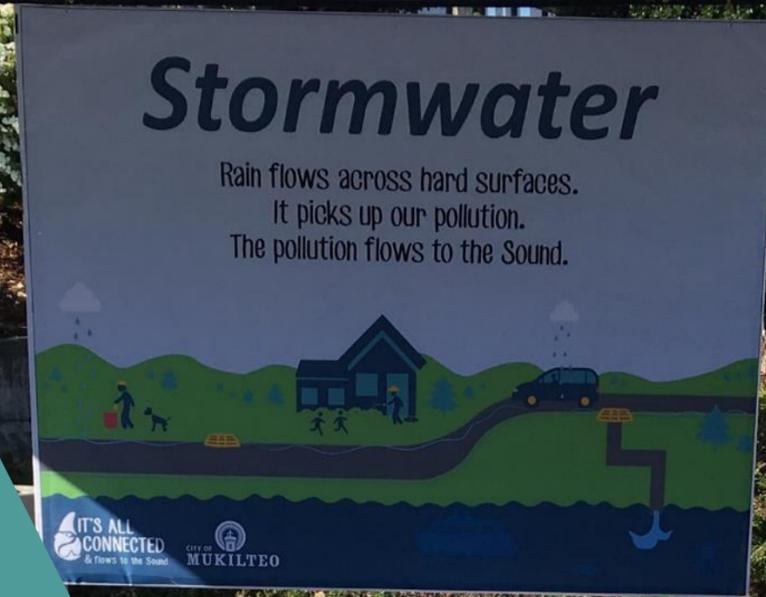


CITY OF
MUKILTEO

CAC MEETING

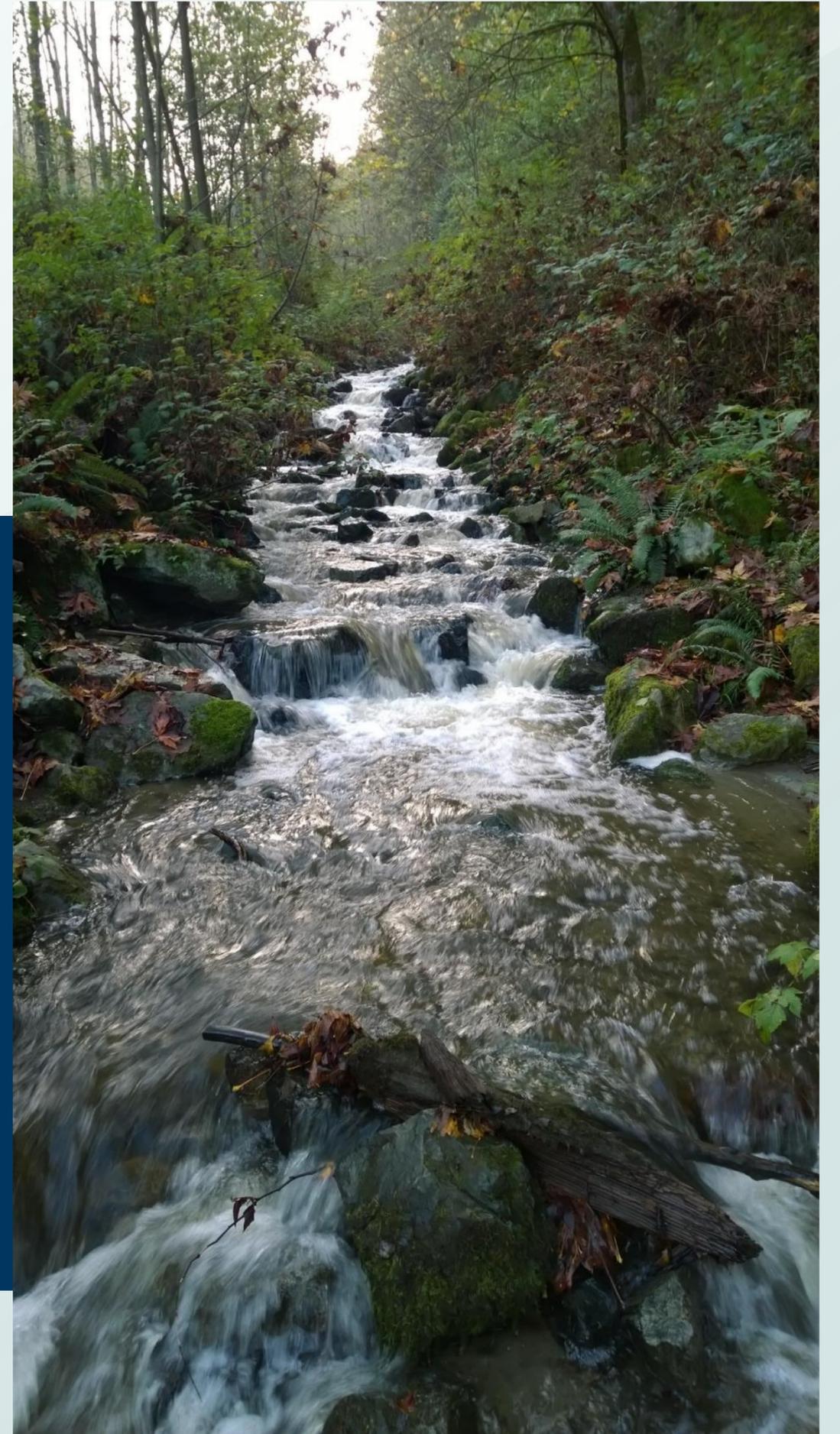
#1

September 8, 2022



AGENDA

- Welcome & Introductions
- CAC Role & Schedule
- Stormwater Utility Overview
- Stormwater Comprehensive Plan
- Wrap-up & Next Steps



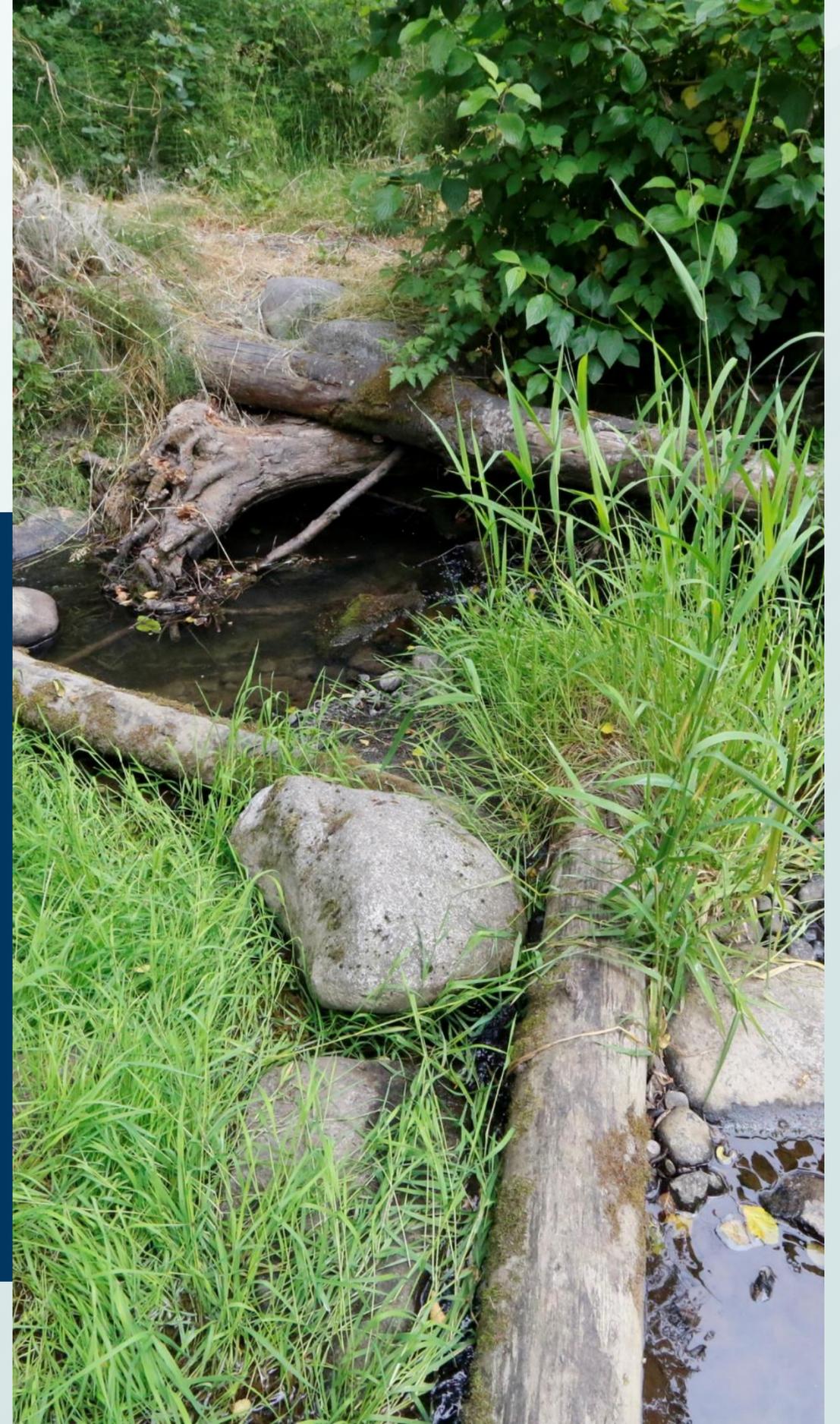
Welcome & Introductions

- Welcome!
- Meet the team
- Introduce yourselves
 - Name
 - Background
 - What are you most interested in achieving through this process?



CAC Roles & Schedule

- Part of public process
- Represent the community
- Provide input, feedback and recommendations
- Schedule
 - September 8, 2022: Stormwater Utility 101
 - October 2022: Challenges and opportunities
 - January 2023: Levels of service – Digging into the details
 - March 2023: Projects and priorities
 - May 2023: What will it cost and how will be pay for it



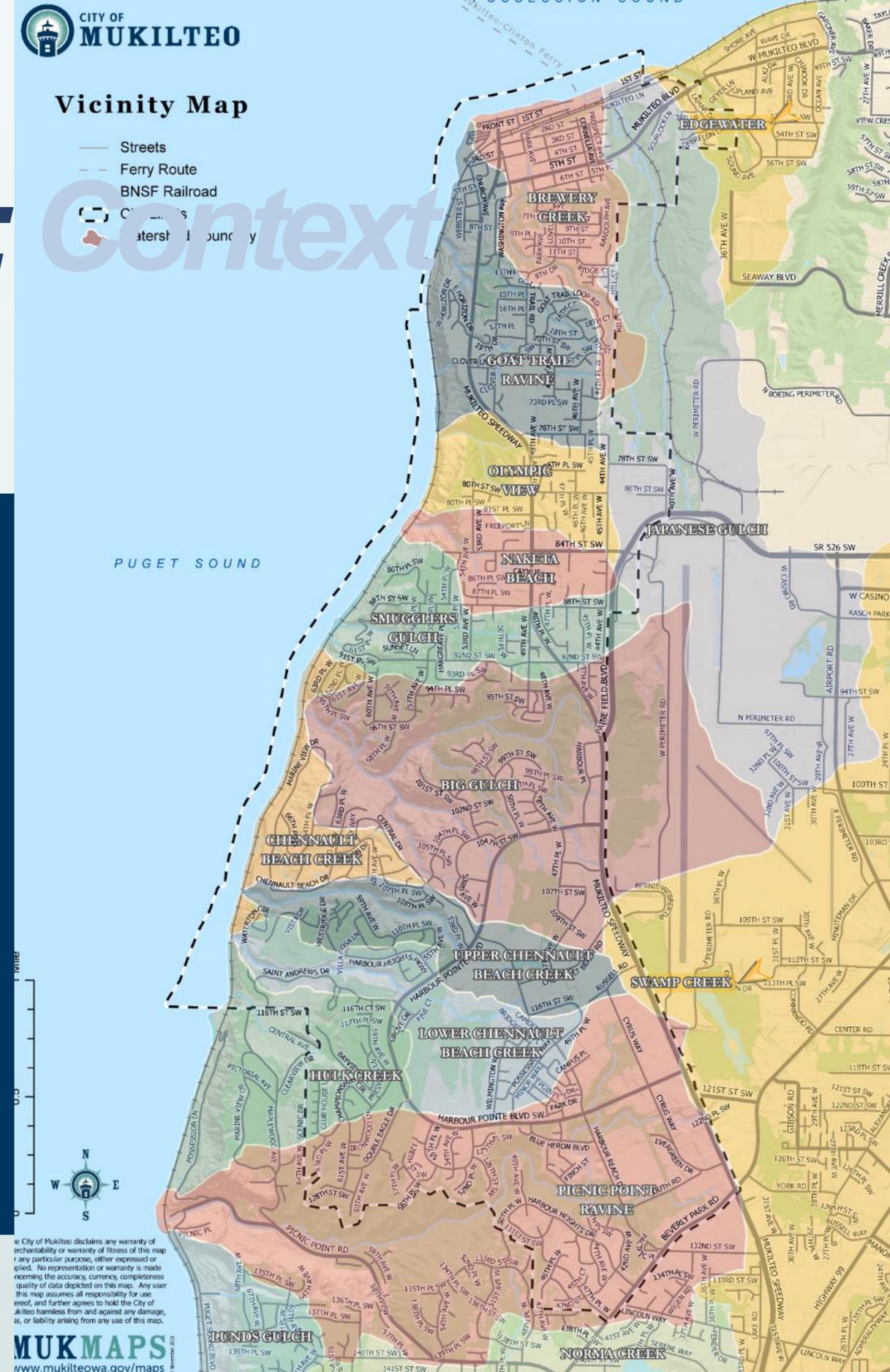
Stormwater Utility Overview:



Vicinity Map

- Streets
- Ferry Route
- BNSF Railroad
- City Limits
- Interjurisdictional Boundary

Context



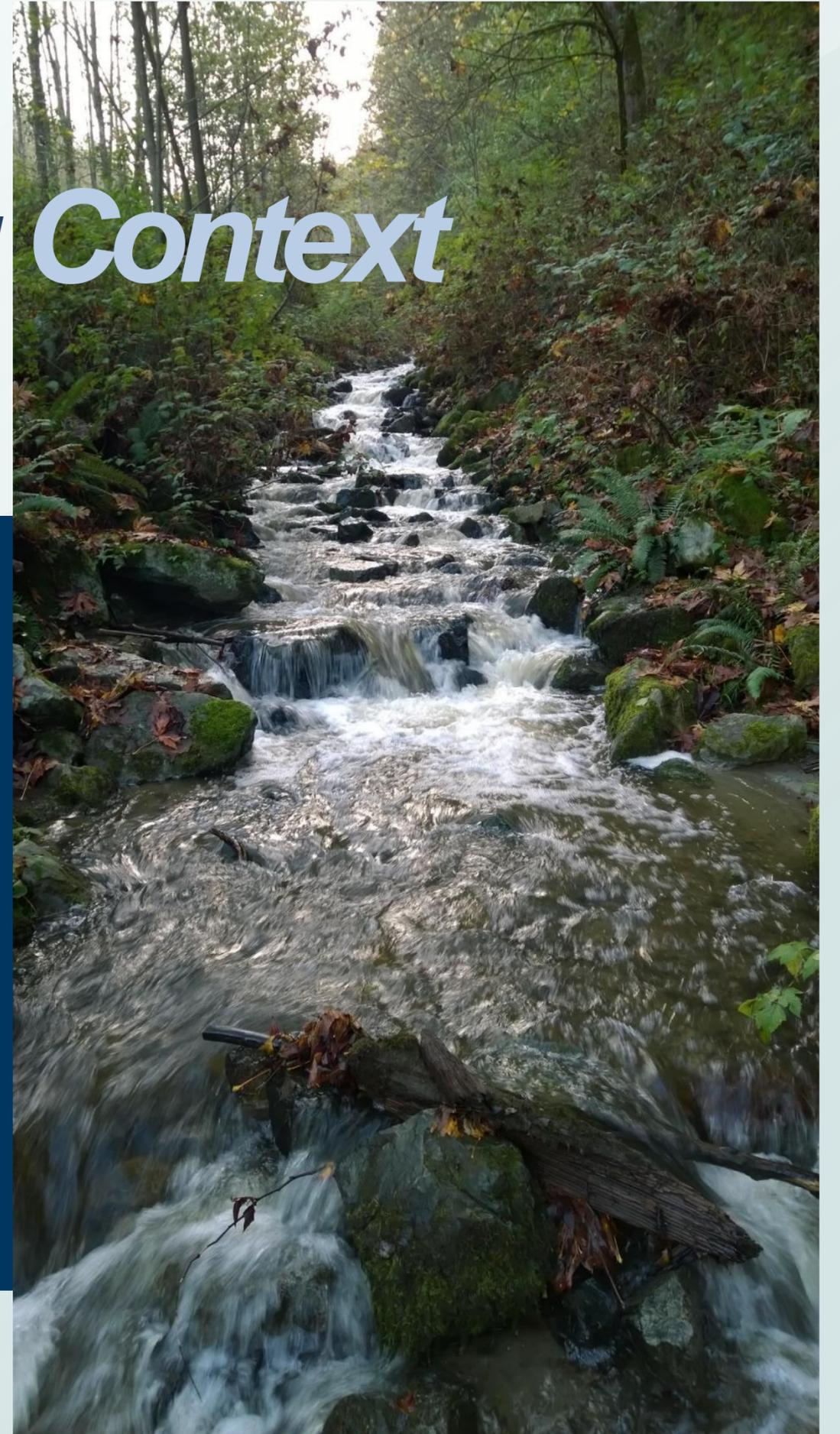
- Mukilteo is 9th largest city in Snohomish County
 - 21,300 residents
 - 13 watersheds
- 5,695 customers
- 4,500 catch basins
- 75 miles of pipe with 8" or greater diameter
- 16.85 miles of streams
- 117 acres of wetlands
- 167 flow control or treatment facilities

City of Mukilteo disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either expressed or implied. No representation or warranty is made regarding the accuracy, currency, completeness or quality of data depicted on this map. Any user of this map assumes all responsibility for use thereof, and further agrees to hold the City of Mukilteo harmless from and against any damage, injury, or liability arising from any use of this map.

Stormwater Utility Overview: Context

What is stormwater?

- Rain, melting snow, or discharge that doesn't soak in, but instead flows from impervious surface
- It picks up pollutants (oil, pet waste, fertilizer, etc.) and carries them to surface waters
- It decreases water quality, harms habitat and natural resources, and creates risk of flooding



Stormwater Utility Overview: Services

- Stormwater management to reduce impacts
- Operate and maintain stormwater infrastructure



Stormwater Utility Overview: Services

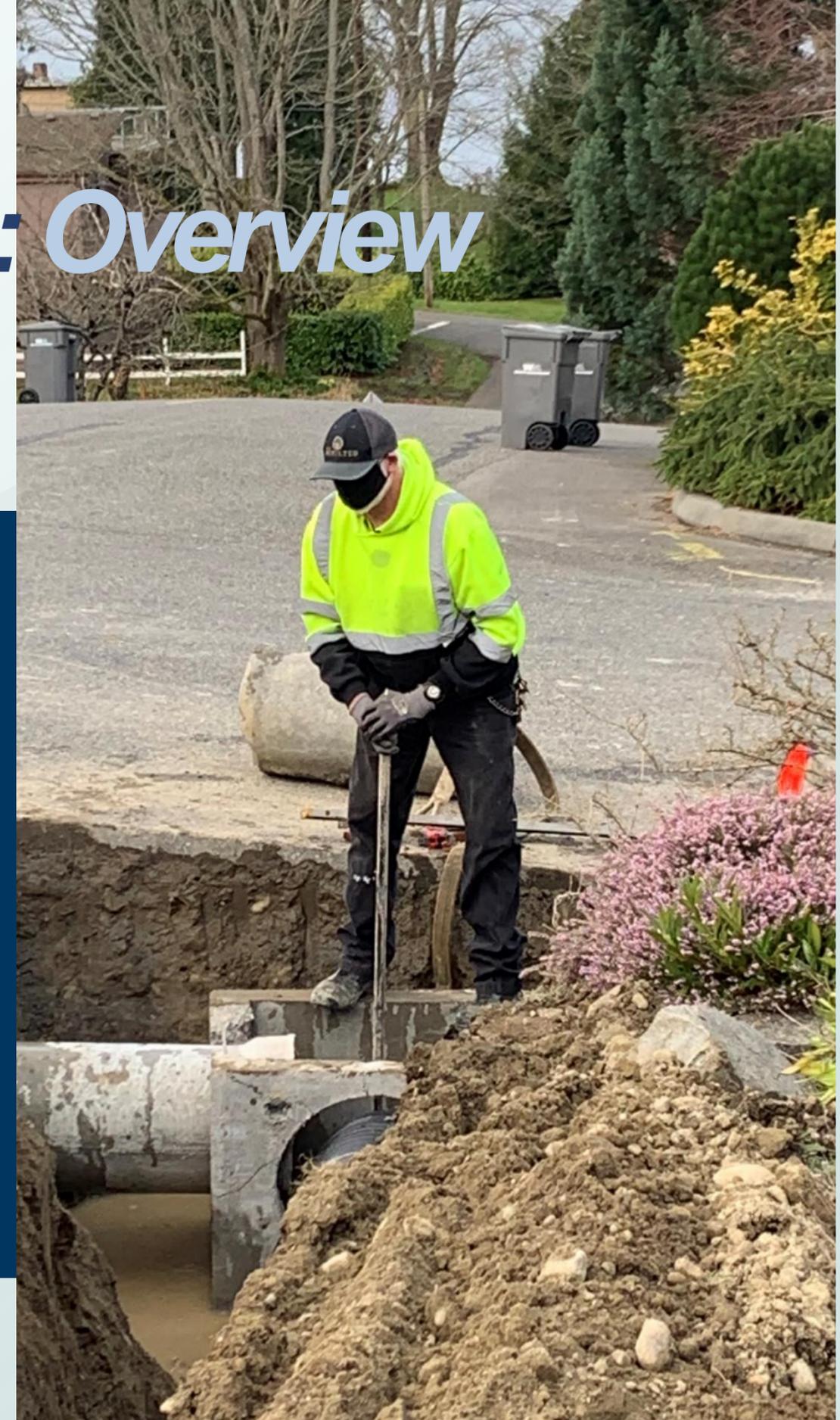
- Delete this slide



Stormwater Comprehensive Plan: Overview

Goals

- Identify projects and strategies to meet Utility goals
- Respond to community interests and concerns
- Define levels of service and funding strategies
- Develop implementation plan



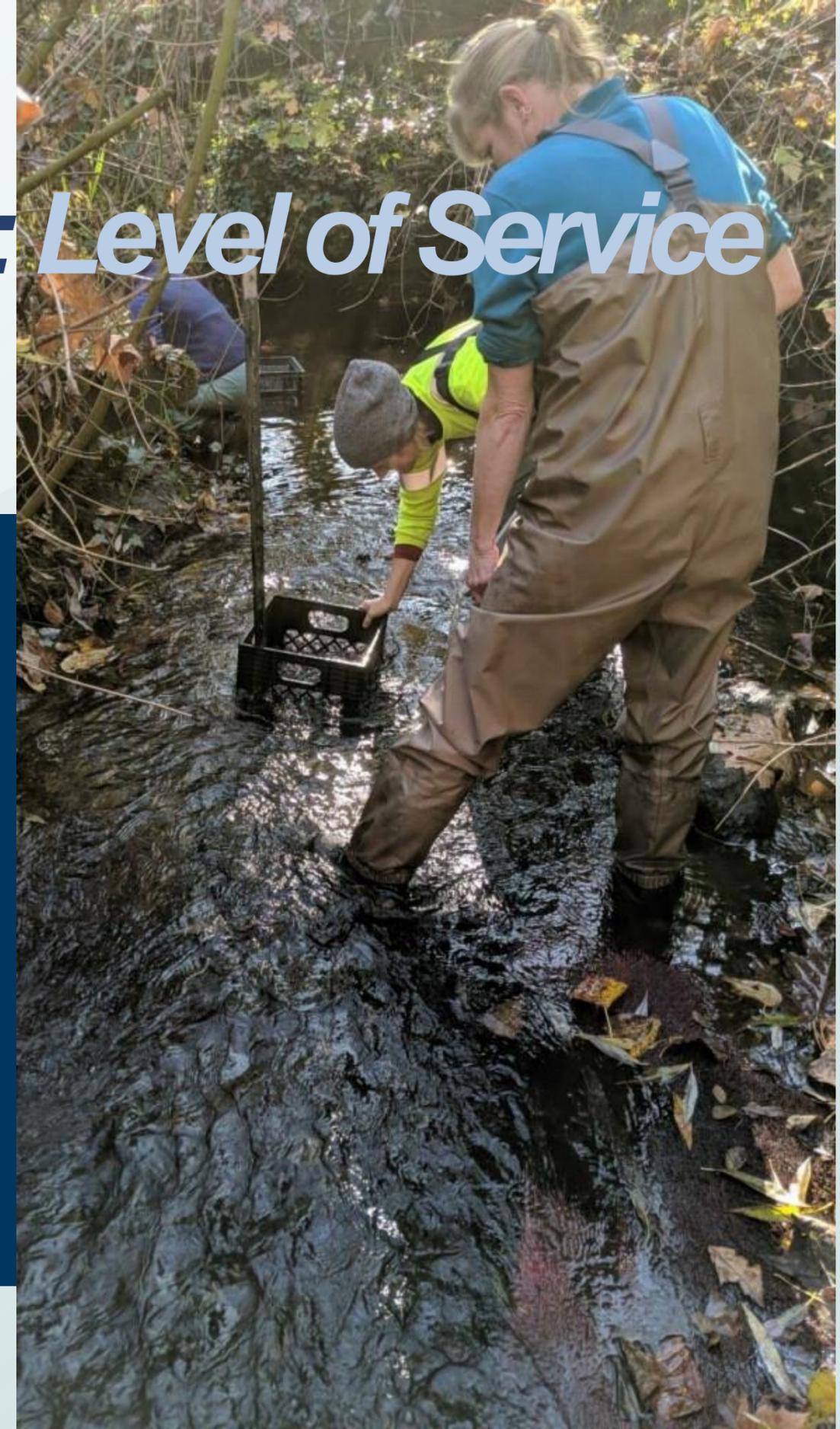
Stormwater Comprehensive Plan: Elements

- Define Utility goals
- Compare existing stormwater management to desired conditions to align with goals
- Evaluate alternative levels of service
- Identify actions, costs, and schedule



Stormwater Comprehensive Plan: Level of Service

- Evaluate existing program (level of service) and potential gaps
- Evaluate alternative levels of service needed to fill gaps
- Considerations
 - Community wellbeing, safety, and priorities
 - Alignment with goals
 - Fiscal and regulatory responsibility
 - Schedule
 - Funding
 - Existing budget and rates
 - Other potential funding sources



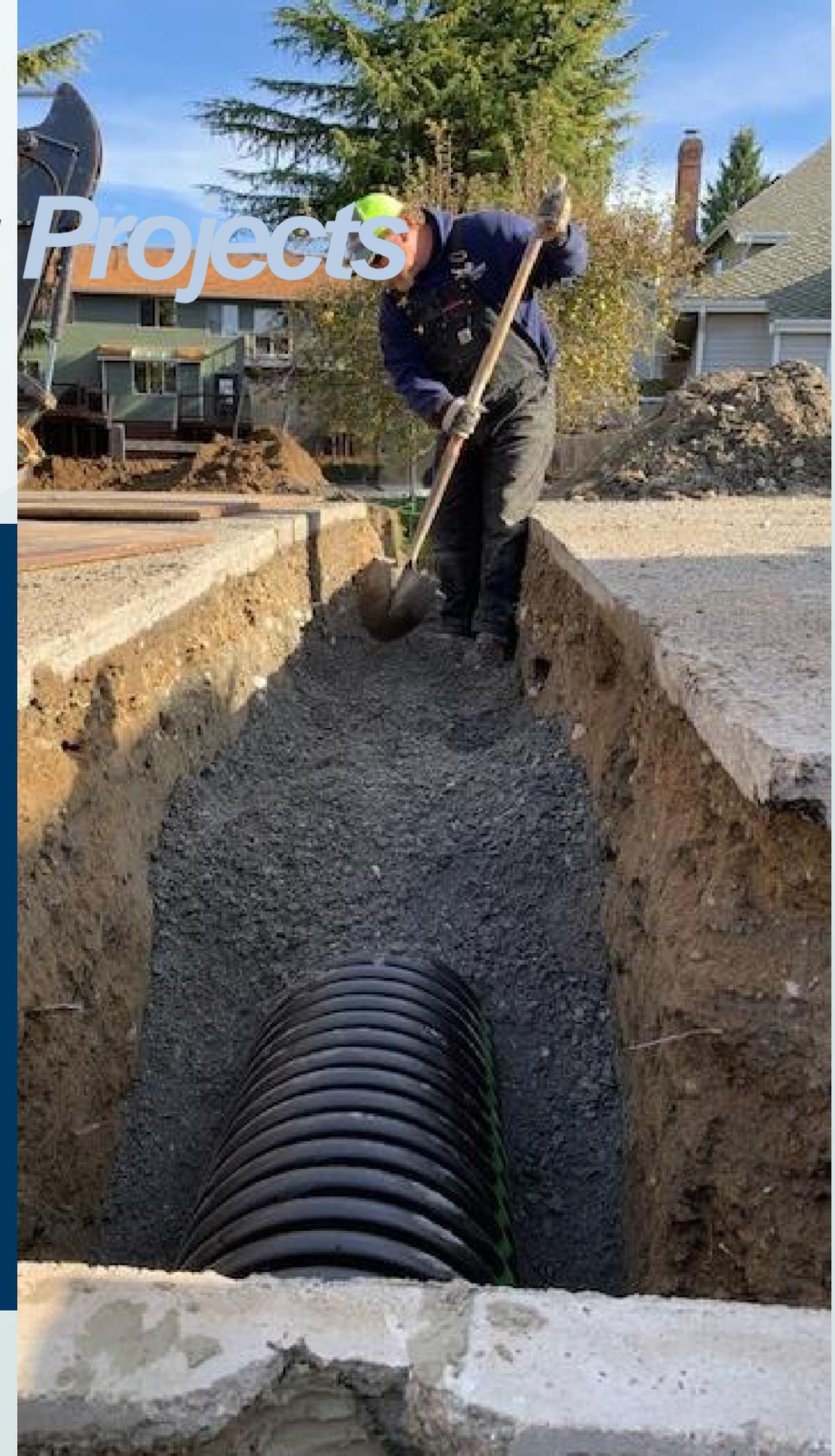
Stormwater Comprehensive Plan: *Projects*

Capital Projects

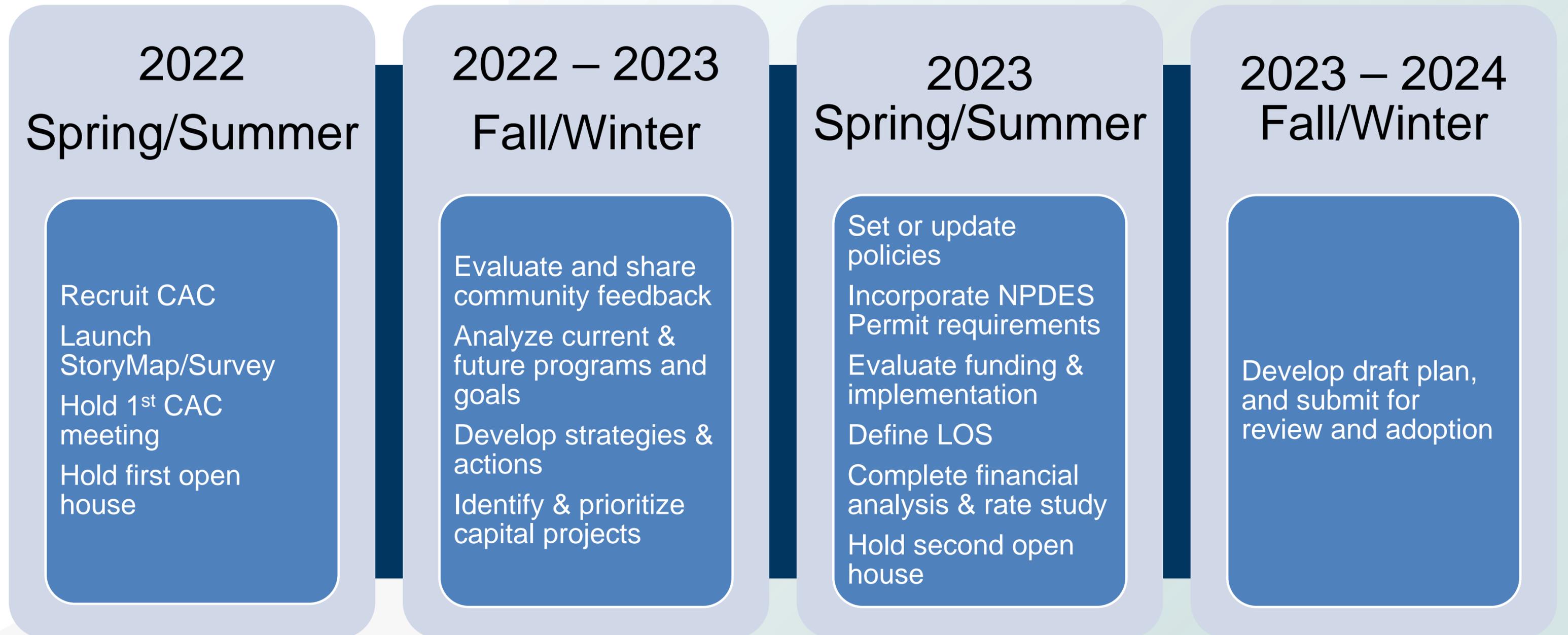
- Systems/infrastructure
- Water quality
- Flooding
- Erosion

Programmatic Projects

- Education and outreach
- Watershed planning
- Operations
- Pollution prevention
- Policies

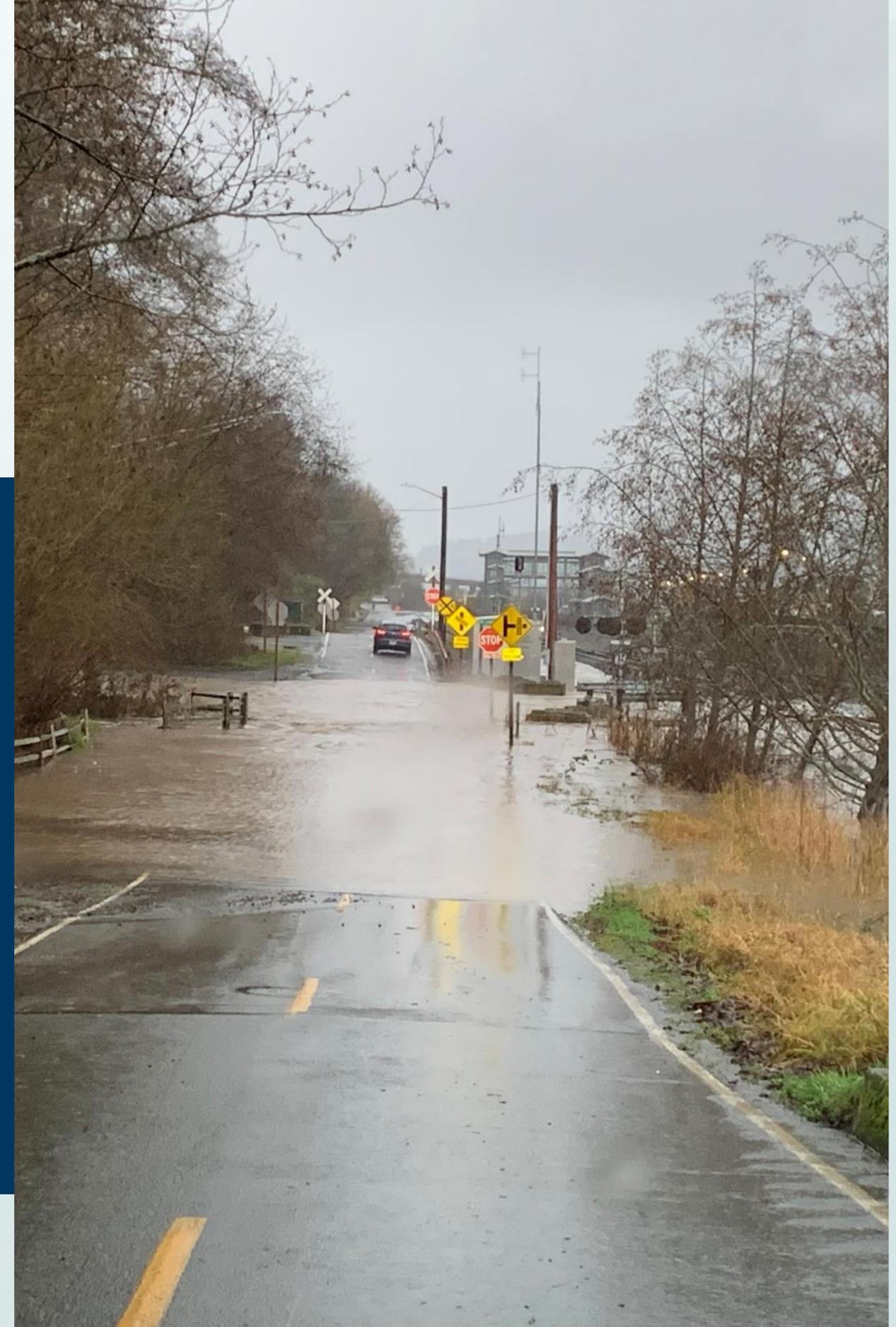


Stormwater Comprehensive Plan: Schedule



Wrap-up and Next Steps

- Next meeting: Challenges and opportunities
 - Date?
 - Challenges: Water quality, flooding, etc.
 - Opportunities: Projects, programs, etc.
- Survey: Open 8/25-10/10
- Open house: 9/13



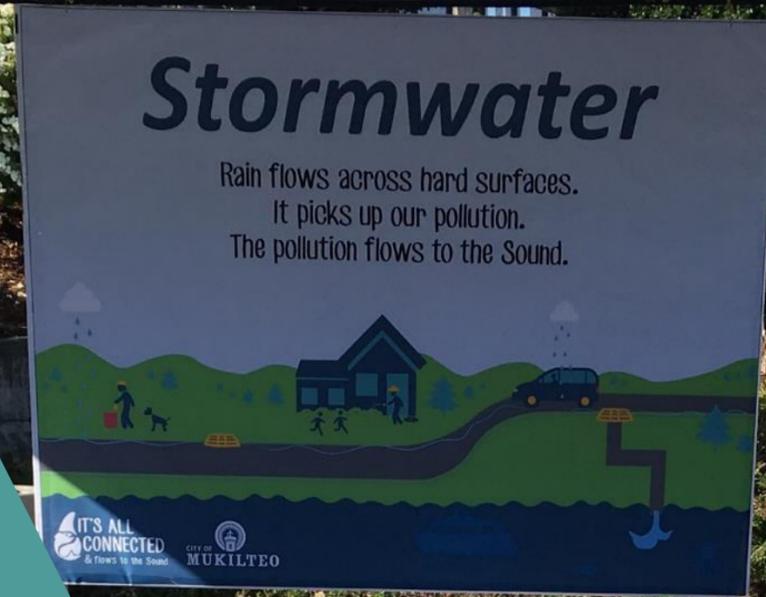


CITY OF
MUKILTEO

CAC MEETING

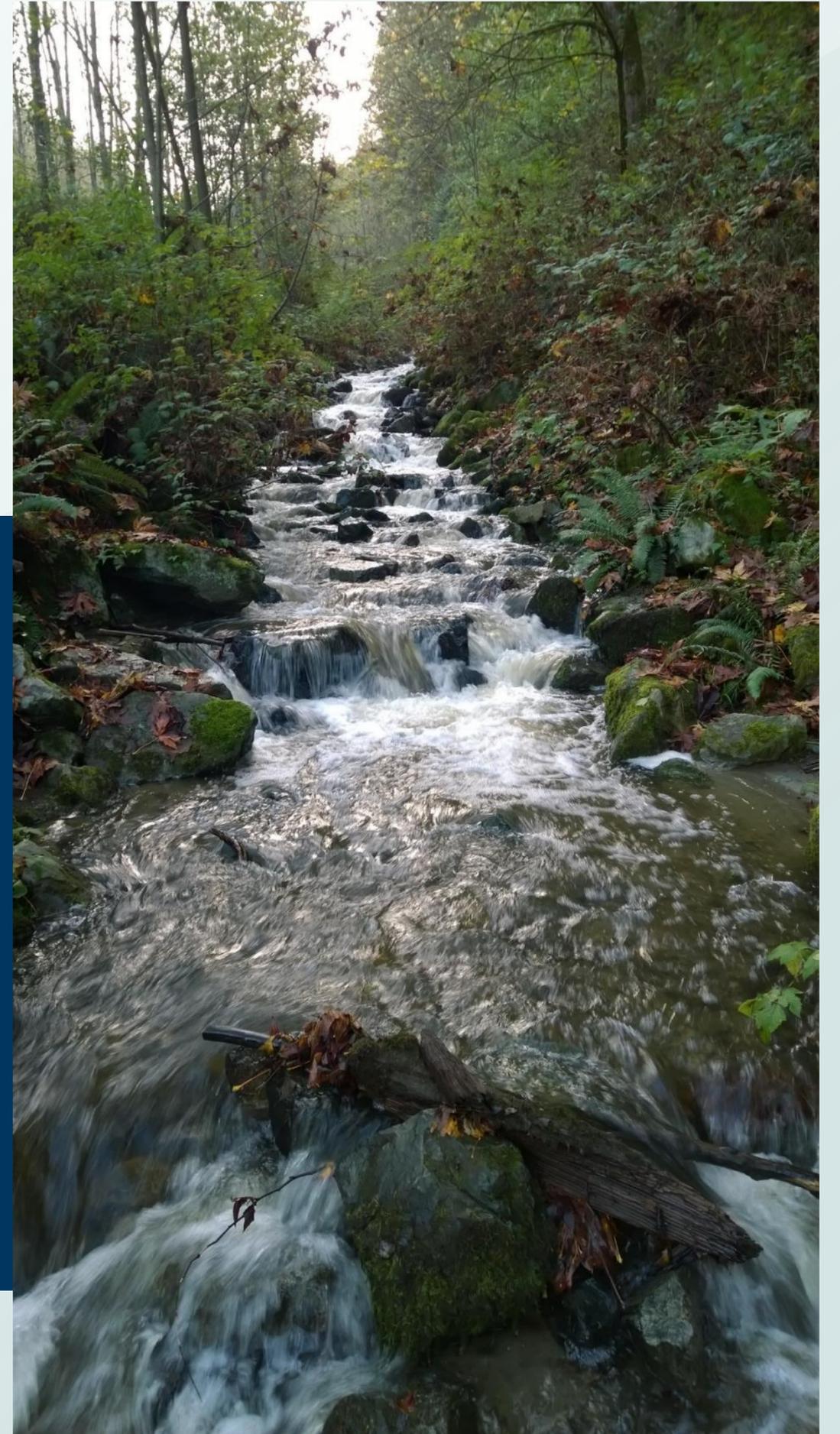
#2

November 3, 2022



AGENDA

- Project Updates
- Challenges
- Opportunities
- Wrap-up & Next Steps



Project Updates: Meeting #1 Recap

September 8

- CAC role
- Utility overview
- What's included in the Stormwater Comprehensive Plan



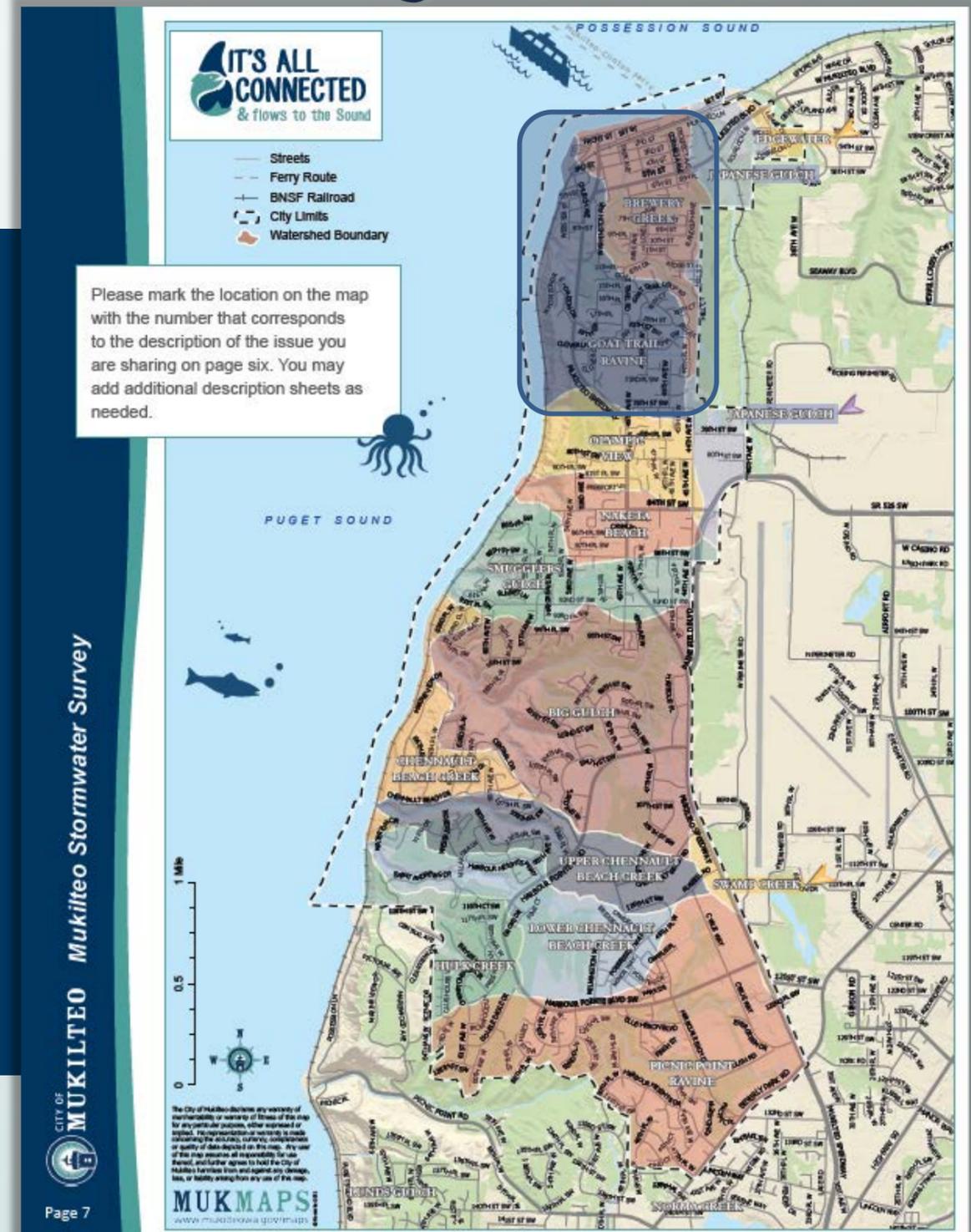
Project Updates: Open House Summary

- September 13
- Promoted in a variety of ways
- Staffed display boards
- ~15 attendees
- Public input
 - Specific concerns about drainage and flooding
 - Concern about ongoing development
 - Desire to maintain and invest in stormwater management



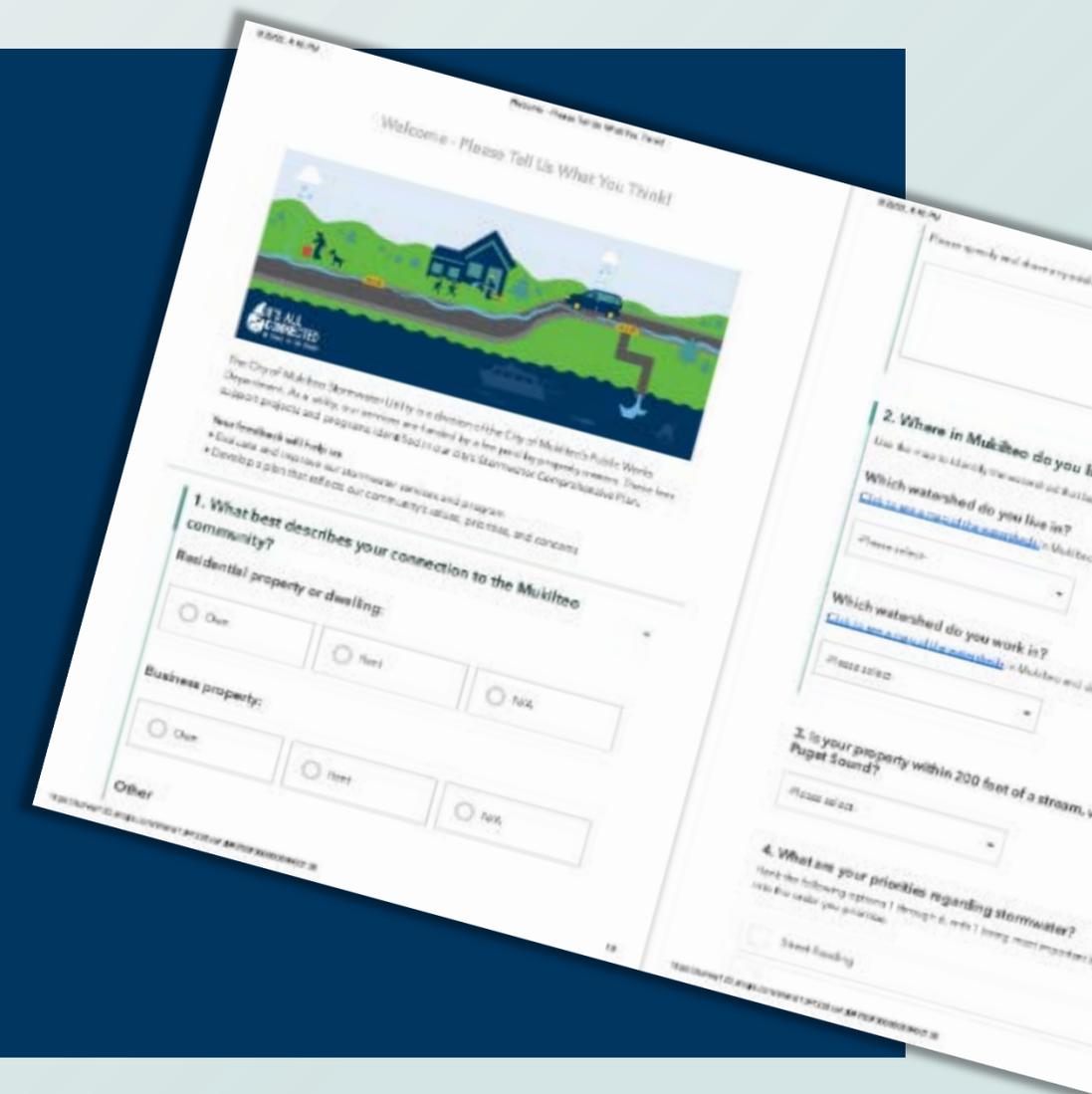
Project Updates: Preliminary Survey Results

- Survey open: 8/24 – 10/10
- Promotion: postcard, social media, open house
- 128 responses (most responses in first two weeks)
- Demographics
 - 97% homeowners
 - 38% 65 and older
 - 62% Caucasian
 - 34% lived in Mukilteo 3 to 10 years
 - 32% live in Goat Trail Ravine and Brewery Creek Watersheds



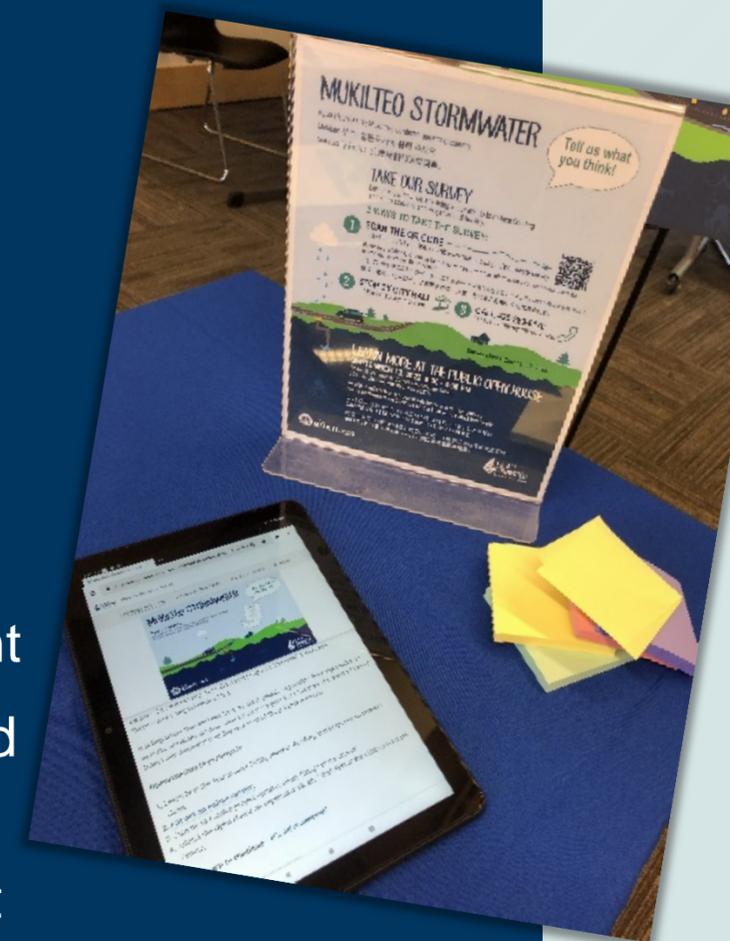
Project Updates: Preliminary Survey Results

- 57% live within 200 feet of stream, wetland, steep slope, Puget Sound
- Water quality (30%) and Property damage (28%) are top priorities
- 62% said maintaining stormwater drainage systems and structures are extremely important
- 41% said reducing flooding is extremely important
- 32% said providing technical assistance is extremely important
- 54% said addressing stormwater impacts on steep slopes is extremely important
- 42% said watershed planning to identify problems and solutions is extremely important



Project Updates: Preliminary Survey Results

- 59% said identifying and fixing water pollution problems is extremely important
- 58% said maintaining systems that remove pollutants from stormwater is extremely important
- 24% said conducting education and outreach on stormwater issues extremely important
 - 29% said it was moderately important and 35% said it was very important
- 41% said helping residents and business prevent water pollution are extremely important
 - 38% said it was very important
- 37% said that **IF** the utility conducted monitoring and research it would be extremely important
- 25% said that **IF** the utility built treatment facilities above and beyond what is required it would extremely important
- 37% said that **IF** the utility built projects to restore wetlands and streams for fish and wildlife it would be extremely important



Project Updates: Preliminary Survey Results

- 46% said the utility met expectations with regards to reducing flooding to keep people property and roads safe
- 47% said the utility met expectations with regards to providing opportunities to learn about stormwater and how to prevent pollution
- 48% said the utility met expectations with regards to overall management of stormwater and its impacts
- 29% said they'd like to report a stormwater issue
 - “Other” (11%) and flooding (9%) most common issues



Project Updates: Preliminary Survey Results

Key Takeaways

- Water quality and property damage are top priorities
- Maintaining stormwater drainage systems and structures are extremely important
- 3/4 of respondents said reducing flooding was very or extremely important
- Outreach and education are less important than other issues **but** technical assistance is very important or extremely important to 70% of respondents
- Identifying and fixing water pollution problems are very important or extremely important to 3/4 of all respondents
- Across all categories, just less than half of all respondents said the utility meets expectations
 - 28% said the utility either was somewhat below or below expectations with regards to providing opportunities to learn about stormwater issues and how to prevent pollution



Stormwater Challenges

- Geographic challenges
 - Steep slopes
- Developer/Property Owner Challenges
 - Meeting requirements on small lots
 - Restrictions
- Policy Challenges
 - Upland surface water management vs. stream restoration
- Data Challenges (information needed to inform decision making)
 - Mapping geographic-specific information such as flooding
 - Water quality and/or stream erosion monitoring
- Code Challenges
 - Conflicts, confusion, and no meaningful enforcement



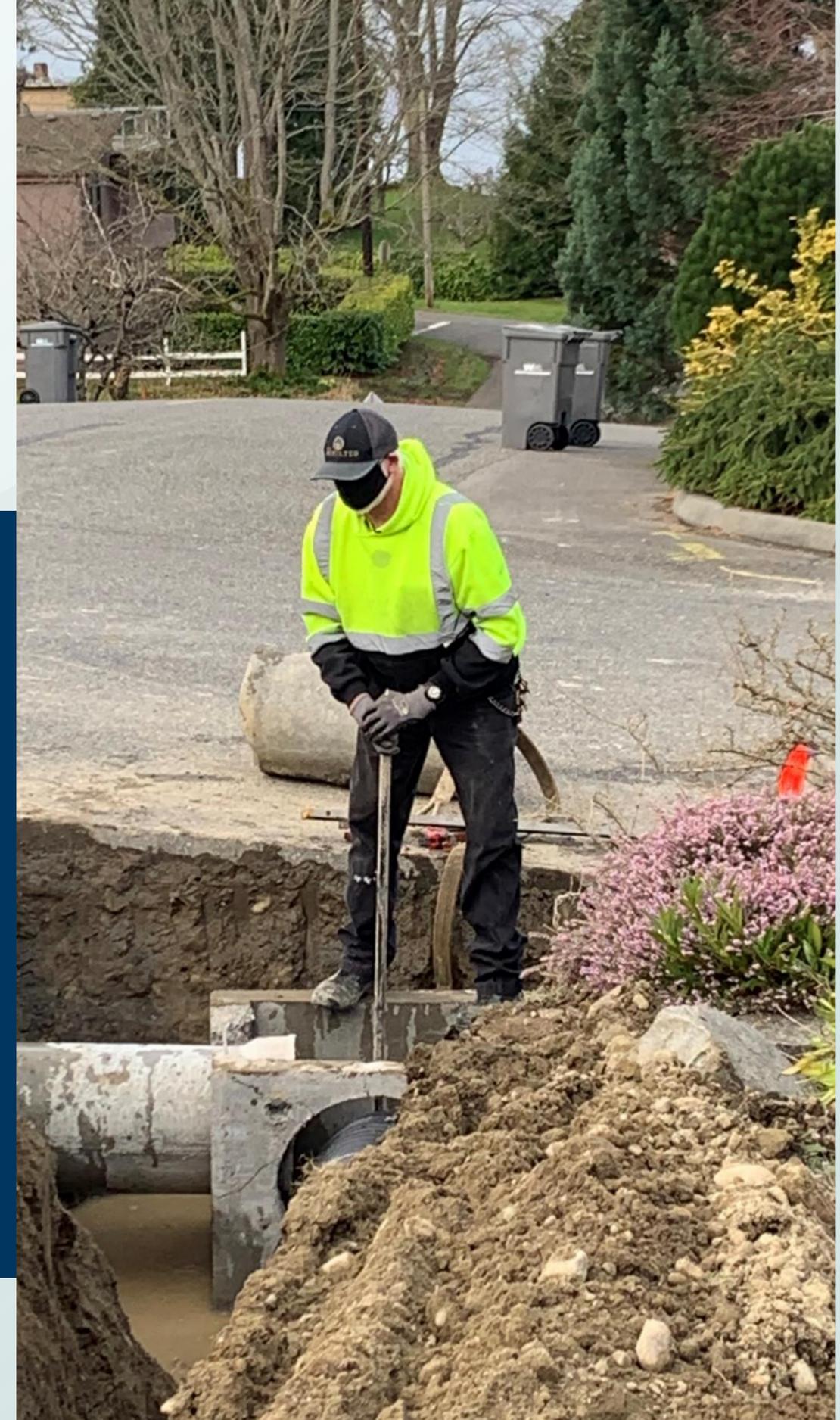
Challenges: Discussion

- What challenges do you see?
- What challenges are the most important to address?



Stormwater Opportunities

- Property acquisition
- Use roads/ROW for stormwater management
- Outreach and education
 - Adopt-a-Drain Program
 - Partnering with Local Schools/Libraries
 - Community-centered events
- Long-term monitoring



Stormwater Opportunities: Discussion

- What opportunities do you see?
- What opportunities should we pursue first?

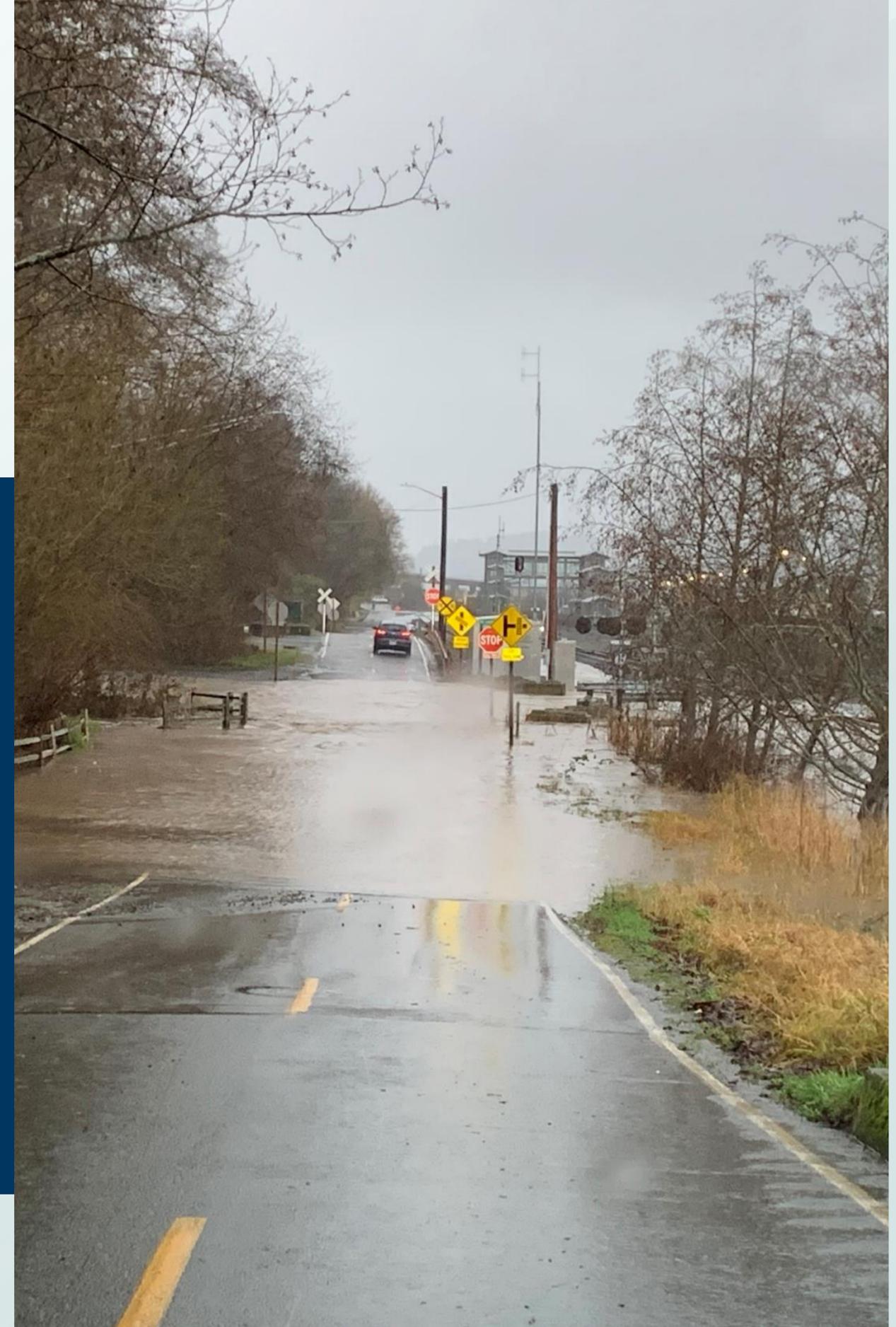


Stormwater Comprehensive Plan: Schedule



Wrap-up and Next Steps

- Next meeting: Levels of Service
 - January ?
- Survey Report
- Open house: Spring 2023



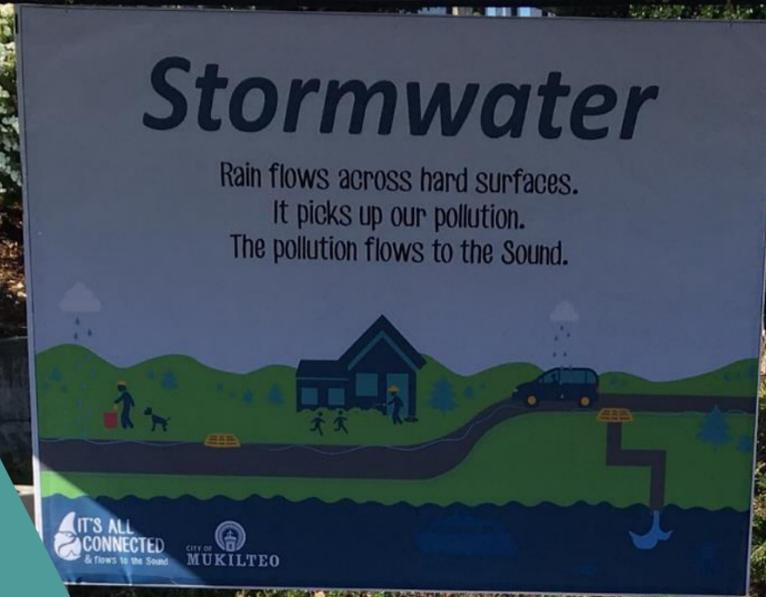


CITY OF
MUKILTEO

CAC MEETING

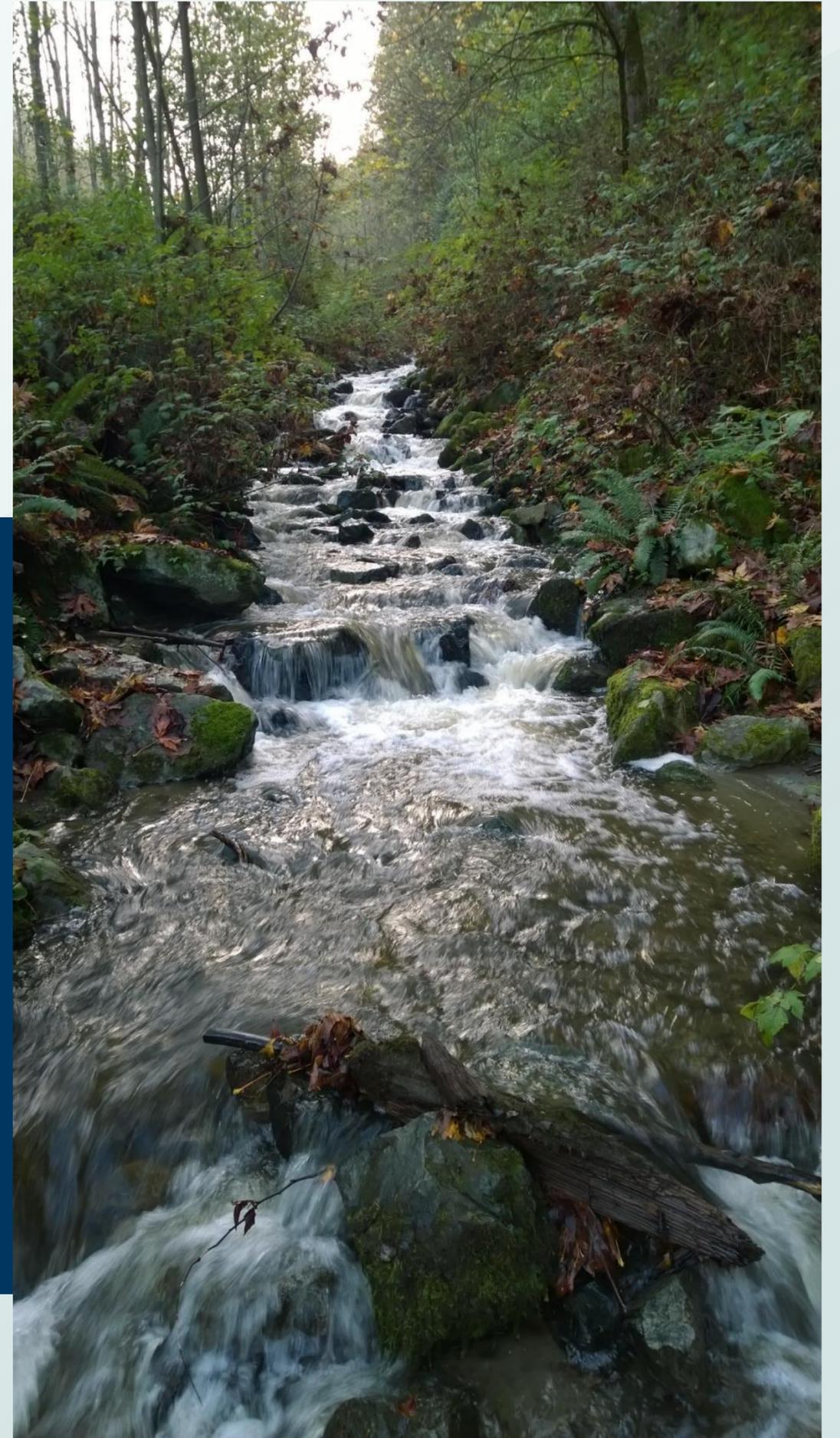
#3

February 2, 2023



AGENDA

- Meeting #2 Recap
- Survey Results
- Level of Service Discussion
- Wrap-up & Next Steps



Project Updates: Meeting #2 Recap

November 3

- CAC Priority Challenges
 - Staffing levels
 - Meeting requirements on small lots
 - Conflicts, confusion, and no meaningful enforcement



Project Updates: Meeting #2 Recap

November 3

- CAC Priority Opportunities
 - Use roads/ROW for stormwater management
 - Coordination with airports/jurisdictions (access to their data)
 - Grants (federal, state)
 - Property acquisition



Levels of Service (LOS)

How we're using the phrase.....

- The stormwater “services” the City providing its customers for the rates they are paying.
- This is different than the level of service term used in traffic engineering or design standards that refer to a standard that the City aims to meet (i.e., pipes are sized to convey water up to a 25-year storm event, or roads are designed for traffic such that back-ups are reduced to less than 10 minutes).



LOS Considerations

- What stormwater services is the City providing now?
- What future services are needed or desired (i.e., mandated by permits, desired by the community, required to prevent future system deterioration, etc.)?
- When are the future services needed? Can they be scheduled to avoid staff or budget impacts all at once?
- What rate impacts are there to changing stormwater services?



What we've heard:

Potential Changes to Level of Service:

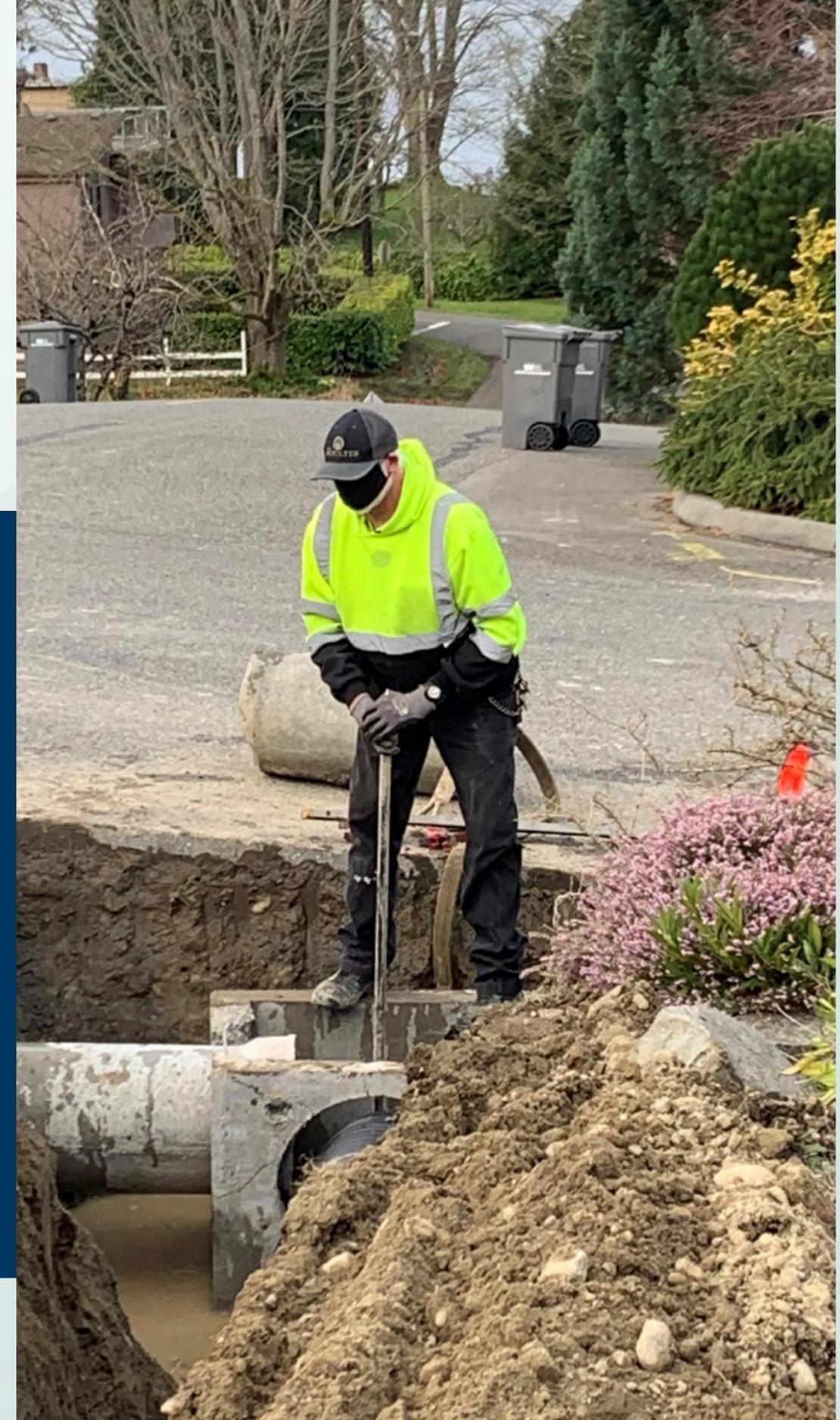
- Increased maintenance and repair of existing infrastructure (staff). A majority of survey respondents also expressed maintenance of drainage systems was extremely important.
- Increased education and outreach (staff). Survey respondents indicated there is room for improvement for learning about stormwater issues.
- Increased coordination with planning to assist small developers (CAC).



Examples of LOS Options

Current Level of Service

- No change
- Continue investigation and repair of infrastructure at current rate.
- Continue current education and outreach programs.
- Adjust stormwater activities to incorporate mandated NPDES requirements.



Examples of LOS Options

Moderate increase

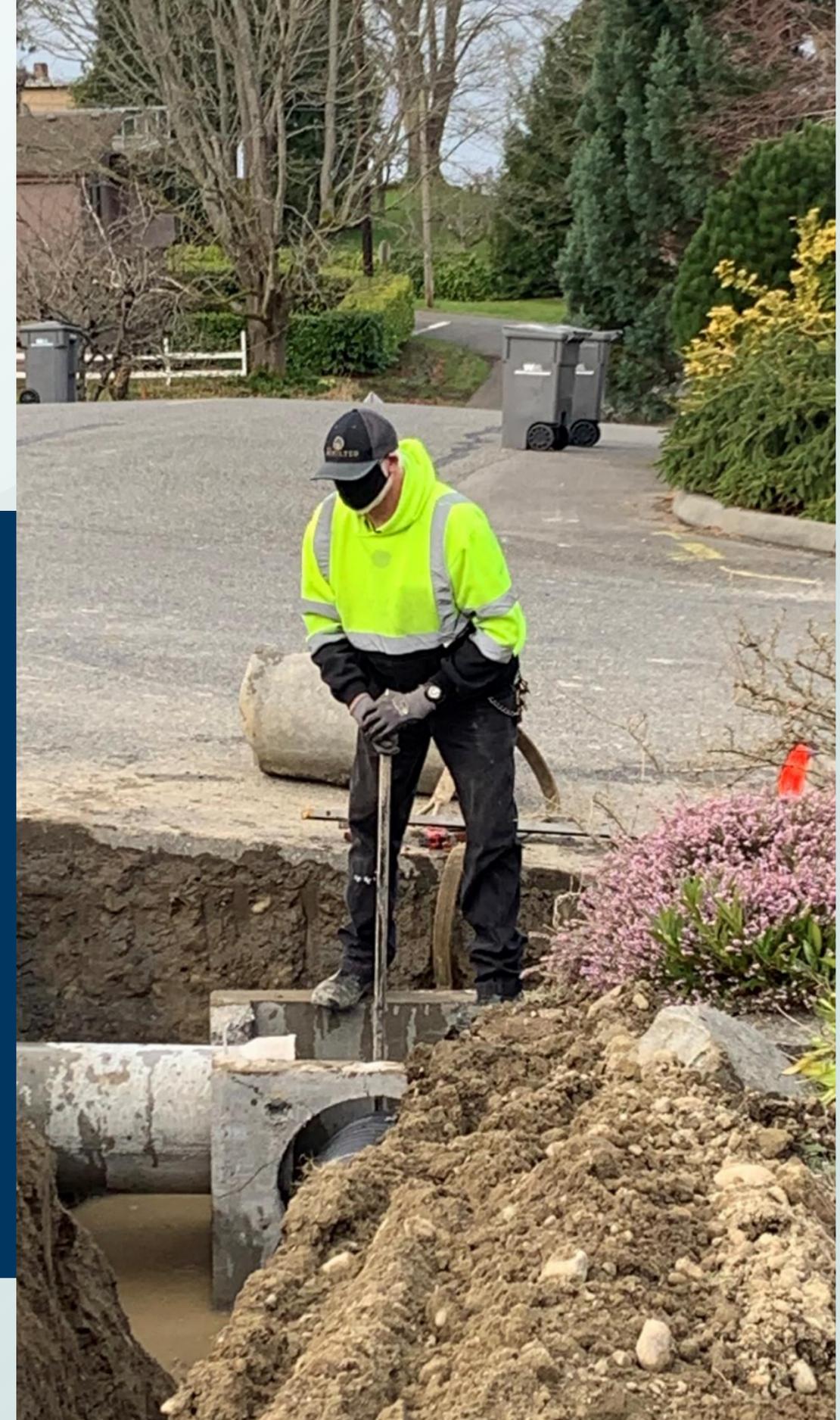
- Allocate additional funding to repair 5 number of pipes per year, and 2 number of stormwater facilities.
- Add two additional education and outreach events per year.
- Add funding for additional NPDES requirements.



Examples of LOS Options

Higher increase

- Allocate additional funding to repair 10 number of pipes per year, and 4 number of stormwater facilities.
- Focus more effort on education and outreach to make program more robust.
- Go above and beyond NPDES requirements to address water quality issues.
- Tackle steep slope issues.



LOS Questions and Discussion

Discussion

- LOS Options: Pros and Cons
- CAC preferences and priorities.

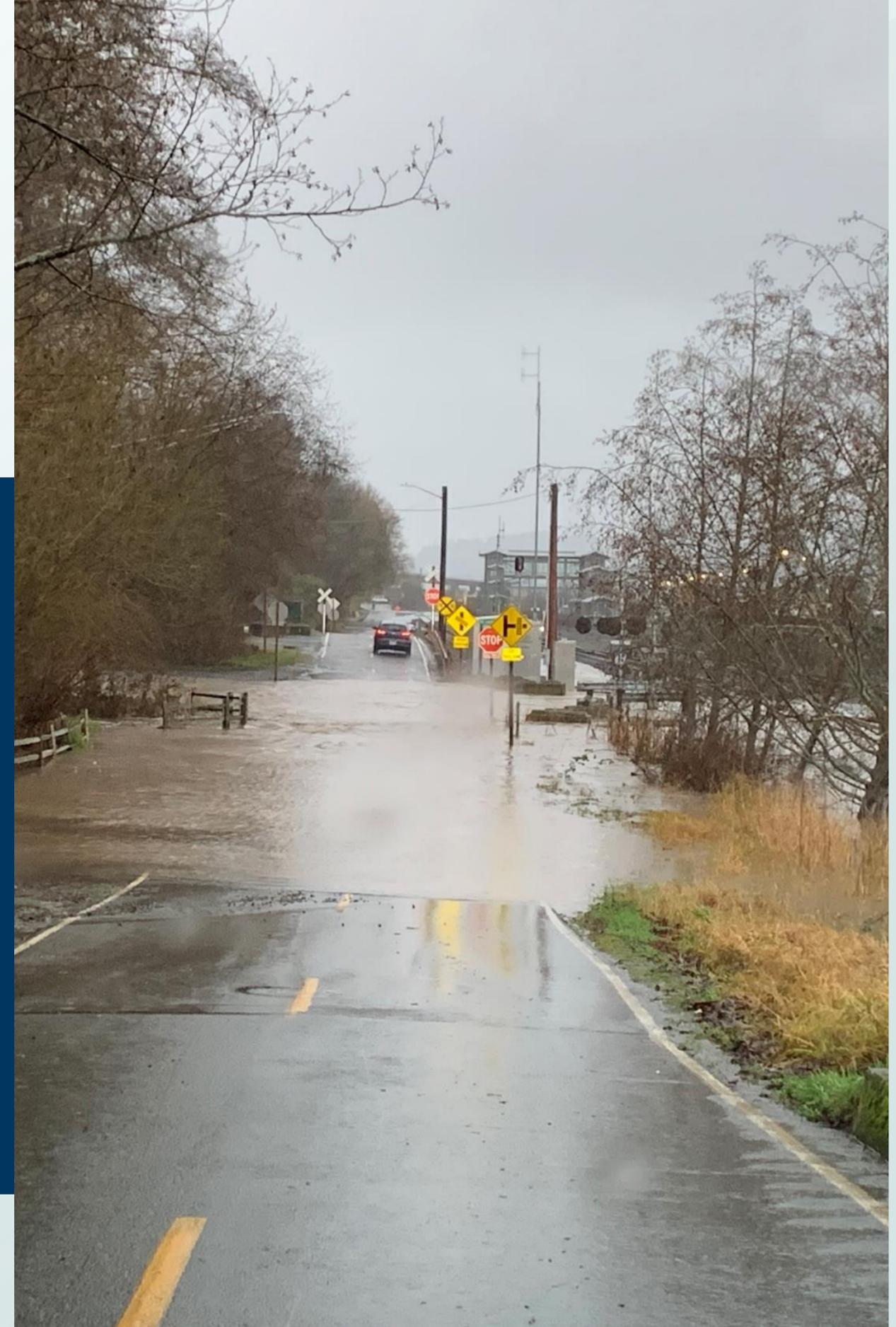


Stormwater Comprehensive Plan: Schedule



Wrap-up and Next Steps

- Next meeting: Projects & Priorities
 - March/April?
- Open house: Spring 2023





CITY OF
MUKILTEO

CAC MEETING

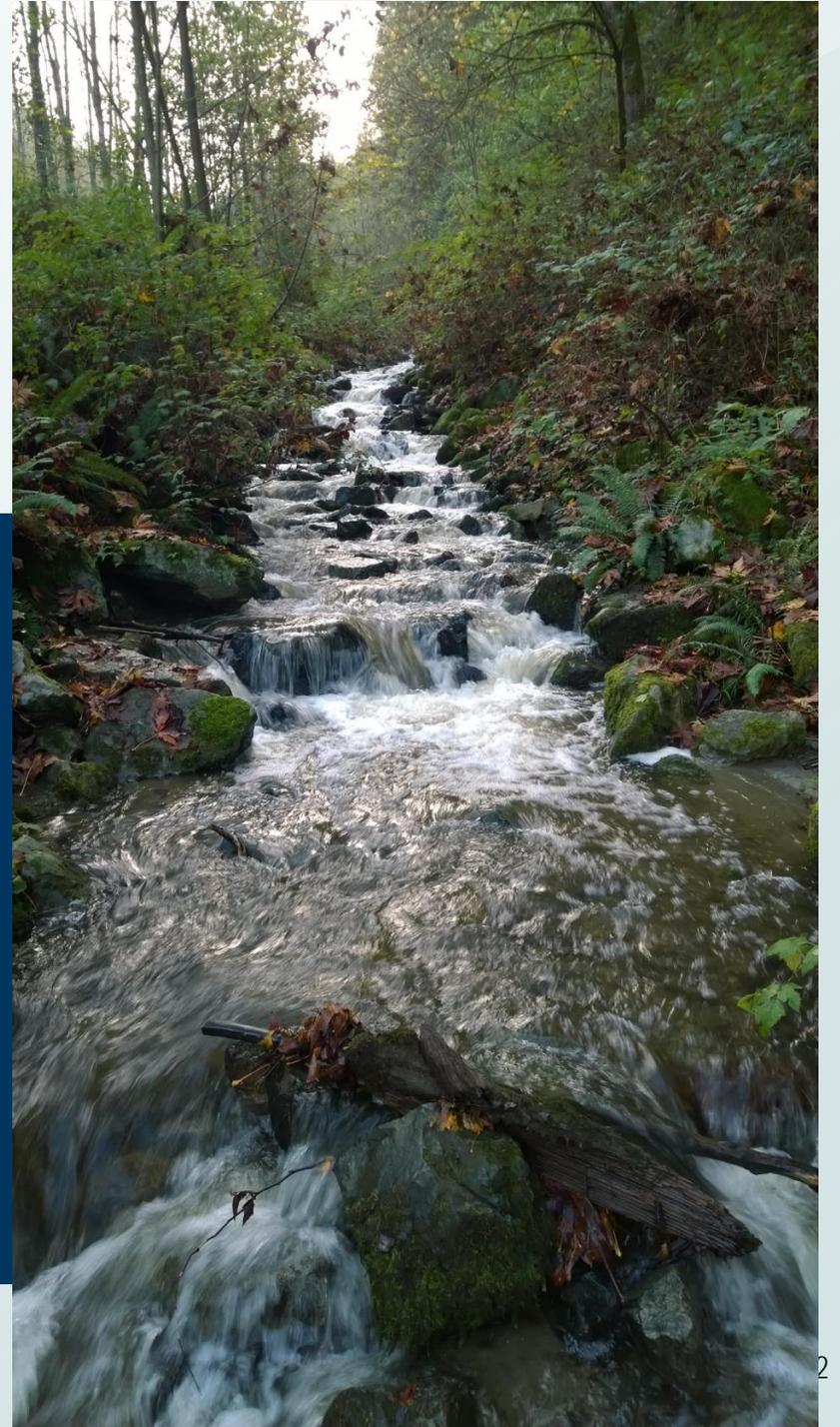
#4

October 19, 2023



AGENDA

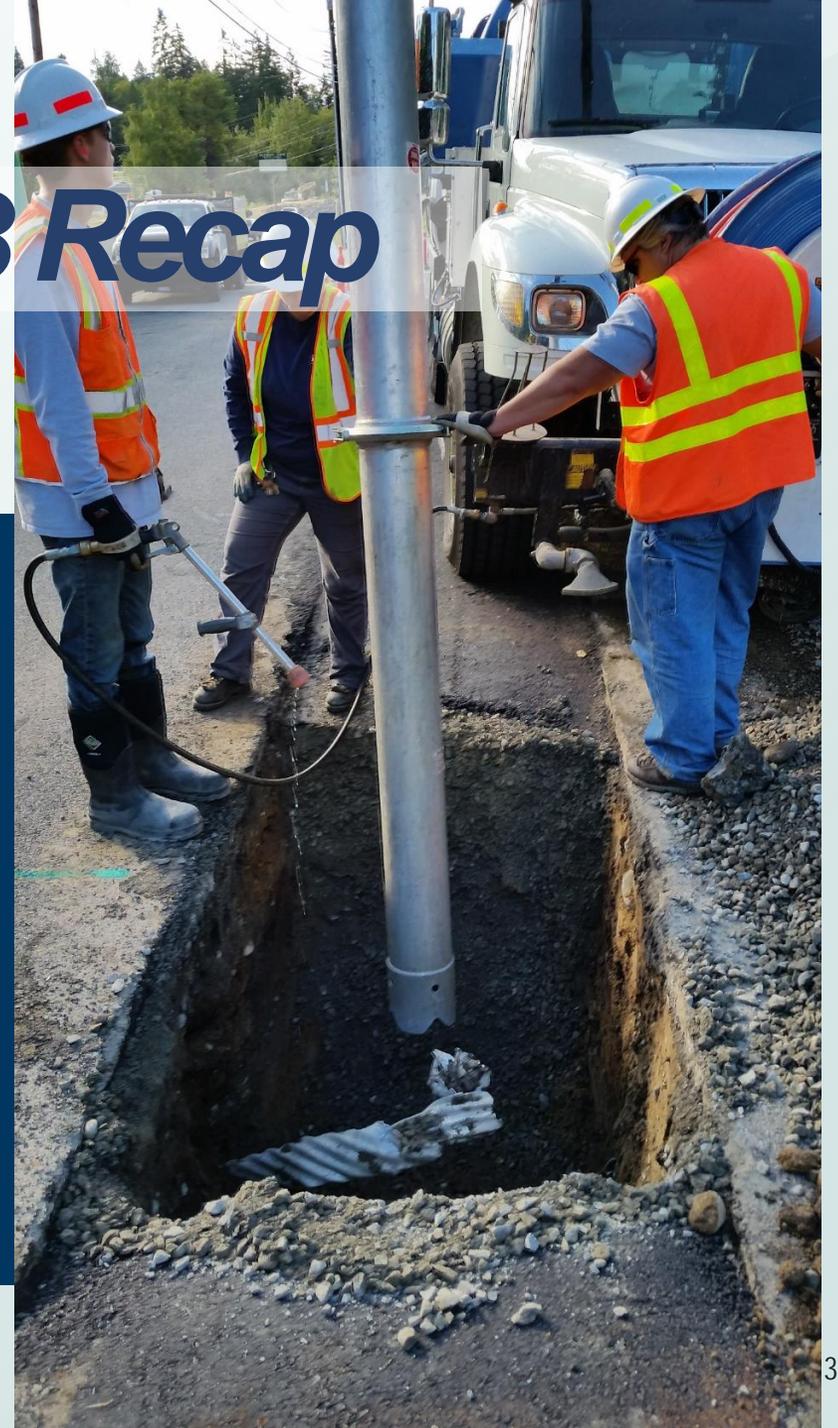
- Meeting #3 Recap
- Rate Study
- Recommended Projects
- Grant Funding
- Wrap-up & Next Steps



Project Updates: Meeting #3 Recap

February 2, 2023

- Introduced Level of Service Concept
 - Current (no change) vs. Additional (to meet existing and future needs and desires)
 - Potential rate impacts
 - Schedule, grants, and other considerations



Levels of Service (LOS)

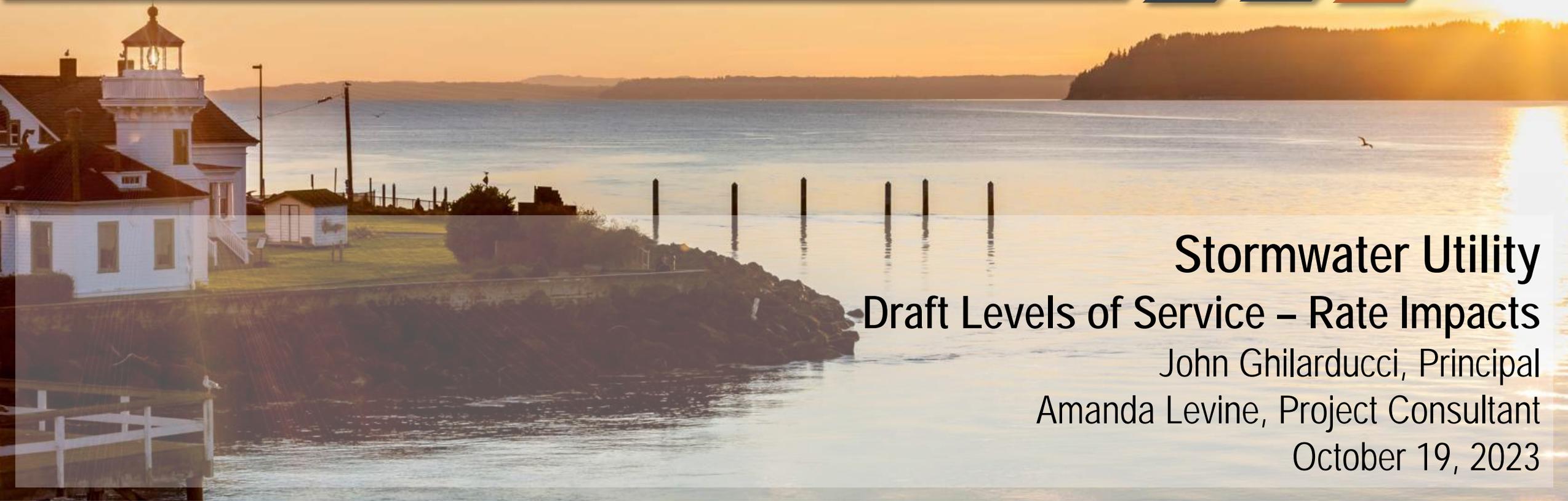
Reminder of how we're using the phrase.....

- The stormwater “services” the City providing its customers for the rates they are paying.
- This is different than the level of service term used in traffic engineering or design standards that refer to a standard that the City aims to meet (i.e., pipes are sized to convey water up to a 25-year storm event, or roads are designed for traffic such that back-ups are reduced to less than 10 minutes).





City of Mukilteo CAC Meeting



Stormwater Utility Draft Levels of Service – Rate Impacts

John Ghilarducci, Principal
Amanda Levine, Project Consultant
October 19, 2023



Introduction

Study Background

- City contracted with AltaTerra (and FCS GROUP) in April 2022
- City of Mukilteo Stormwater Comprehensive Plan



**Project
Kickoff**

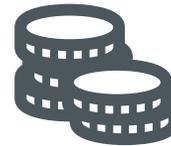
Completed



**Policy
Framework**

July 11, 2022
Council presentation

February 2, 2023
CAC discussion



**Rate
Forecast**

October 19, 2023
CAC discussion



**Council
Meetings**

In progress



Documentation



Agenda

- **Revenue requirement**
 - “What revenue adjustments are needed to cover the utility’s costs?”
 - » Study period: 2023-29
 - » Level of service (LOS) needs
 - » Rate forecast by LOS
 - With grant funding
 - Without grant funding
 - » Comparative rate survey
 - » Summary





Fees Fund the Stormwater Utility

- Primary revenue source for Stormwater Program = Storm drainage fees and charges
- Stormwater fees are guided by strategies and plans; set by Council

Customer Class	Monthly 2023 Fees
Residential	\$23.43 per parcel
Non-residential	\$23.43 per equivalent service unit (1 ESU = 2,500 impervious square feet*)



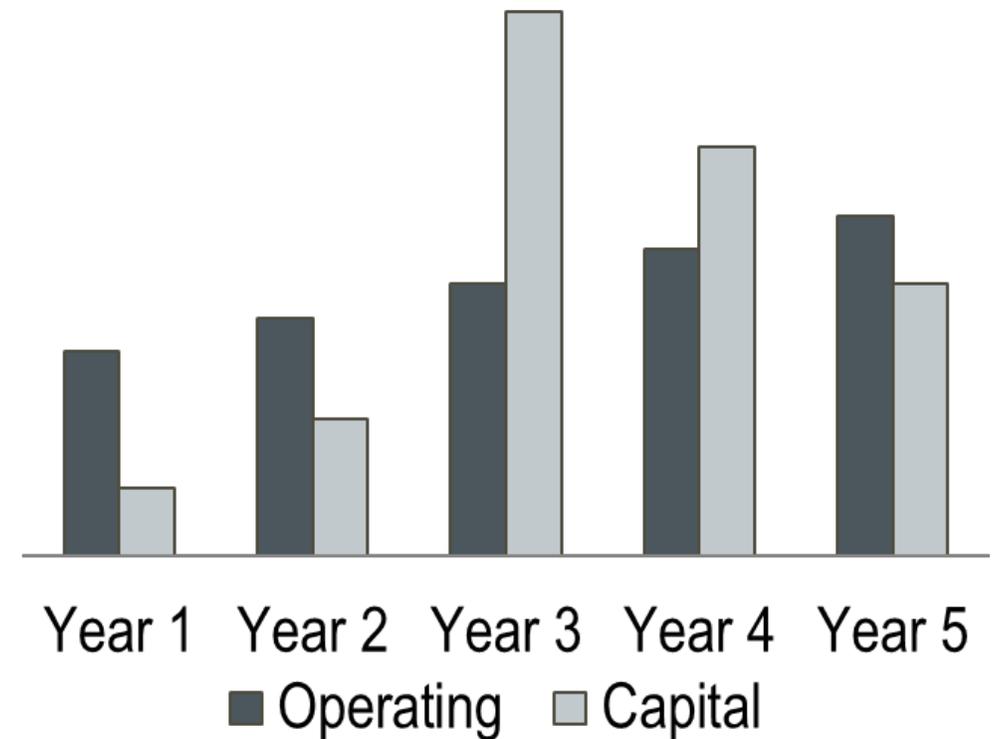
Rate Study Background



Introduction to Utility Rate Making

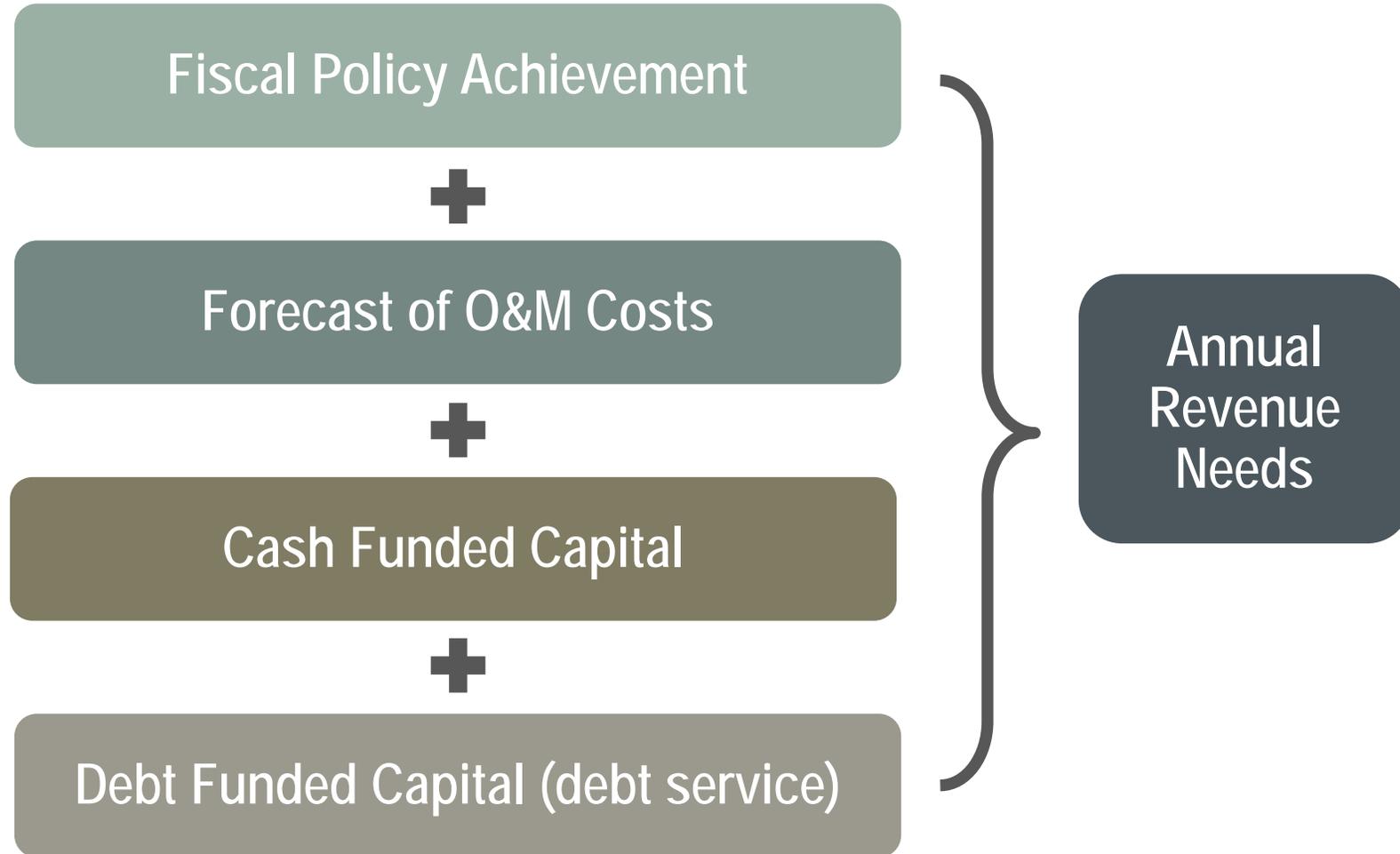
- Utility rates are set to cover the cost of providing service
- Operating & maintenance (O&M)
 - » Employee salaries and benefits
 - » Supplies and materials
 - » Consulting services
 - » Equipment costs
 - » Routine inspections and maintenance
- Capital costs
 - » Catch Basin Replacement Fund
 - » Pipe Repair Fund
 - » Smuggler's Gulch Bioretention Basin

Example





How Much Revenue is Needed?





Levels of Service



Levels of Service (LOS)

- Operating and capital expenditures added with each higher level of service
- LOS 1
 - » Meets all NPDES requirements
- LOS 2
 - » Additional programmatic costs
- LOS 3
 - » Proactive and accomplishes all City items
 - » Adds staff to maintain current City operations

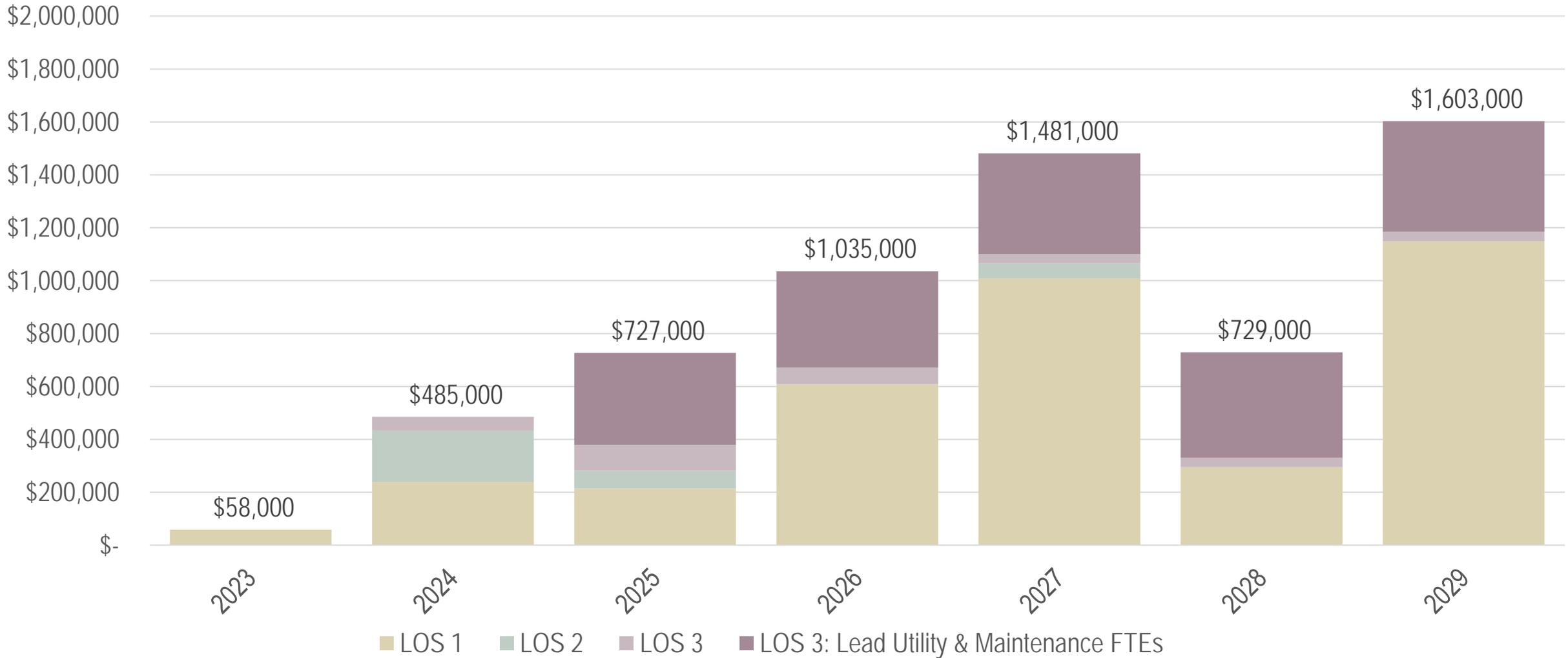


Level of Service Comparison

LOS 1	LOS 2	LOS 3
Staffing Needs and Programmatic Costs	Staffing Needs and Programmatic Costs	Staffing Needs and Programmatic Costs
✓ Private Facilities	✓ <i>ALL LOS 1 ITEMS</i>	✓ <i>ALL LOS 1 ITEMS</i>
✓ SOPs	<i>PLUS</i>	✓ <i>ALL LOS 2 ITEMS</i>
✓ Outfall Inspections	✓ SW Rate Equity	<i>PLUS</i>
✓ Education and Outreach	✓ Development Code Review	✓ Property Acquisition
✓ SW Comprehensive Plan	✓ Climate Action Plan	✓ CB Inspection Program
✓ Code Enforcement	✓ Stormwater Parks	✓ ILAs
✓ Staffing and Training Certification	✓ Street ROW for SW Management	✓ Open Channel Inspections
✓ Fire Department Coordination		✓ Stream Channel Sureys
✓ City Tree Plan		✓ Lead Utility Worker
✓ SMAP		✓ Maintenance Worker
✓ Assess Tributary Areas		✓ SW Facility Evaluation
✓ Stormwater Investment Tracking		✓ Inspect City Vaults
✓ SW Comprehensive Plan		✓ GSI
Capital Improvement Plan	Capital Improvement Plan	Capital Improvement Plan
✓ CB Catch Basin Replacement Fund	✓ <i>ALL LOS 1 ITEMS</i>	✓ <i>ALL LOS 1 ITEMS</i>
✓ Pipe Repair Fund		✓ <i>ALL LOS 2 ITEMS</i>
✓ Vault Cleaning		<i>PLUS</i>
✓ CIP #1 Chennault Beach Study		✓ Smuggler's Gulch Bioretention Basin 1
✓ CIP #2 Chennault Beach Culvert		✓ Smuggler's Gulch Bioretention Basin 2
✓ CIP #7 Pacific Pond		✓ Smuggler's Gulch Bioretention Basin 3
		✓ CIP #3 47th PI W & 55th PI LID



Additional Operating Cost by Levels of Service



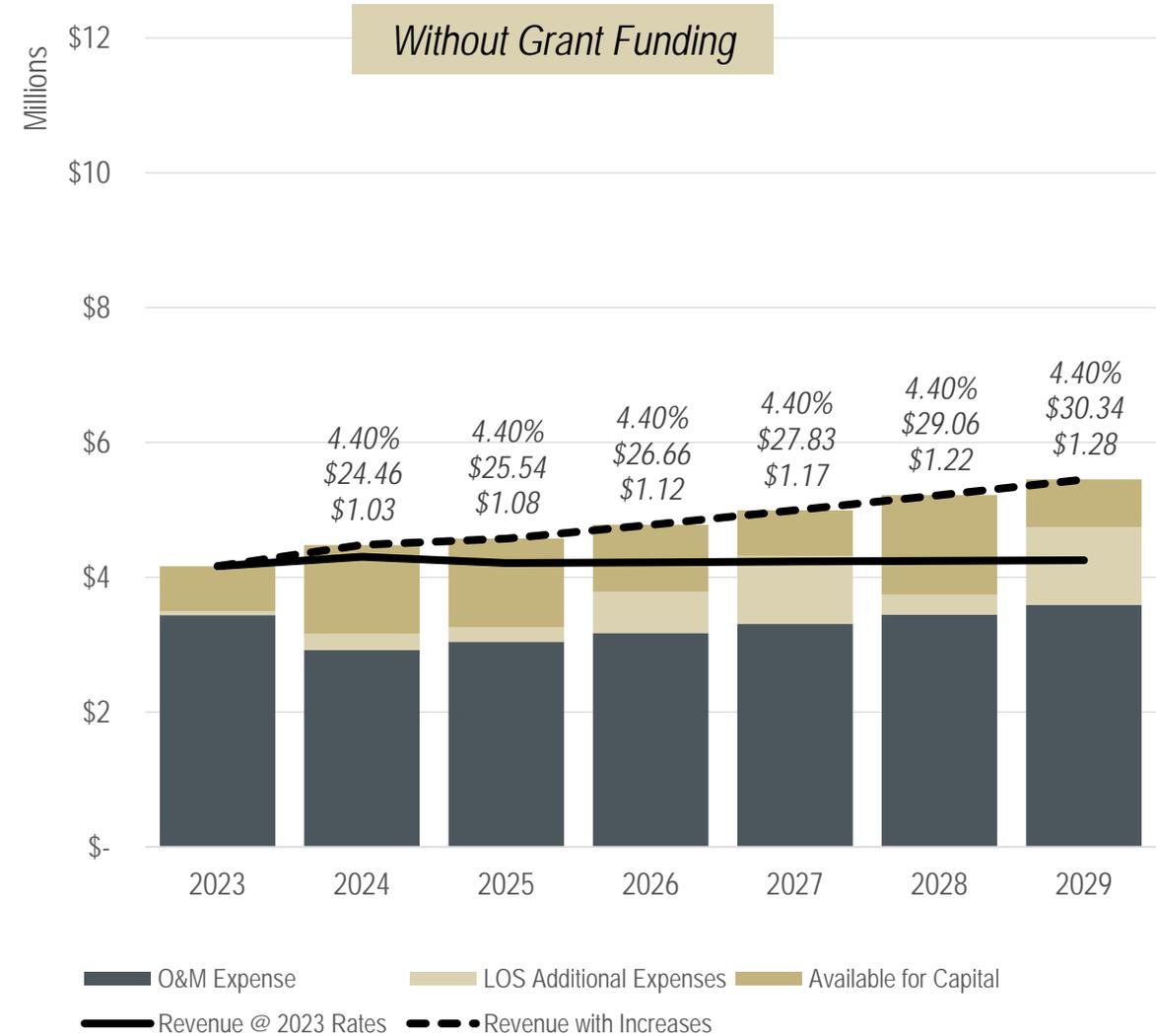
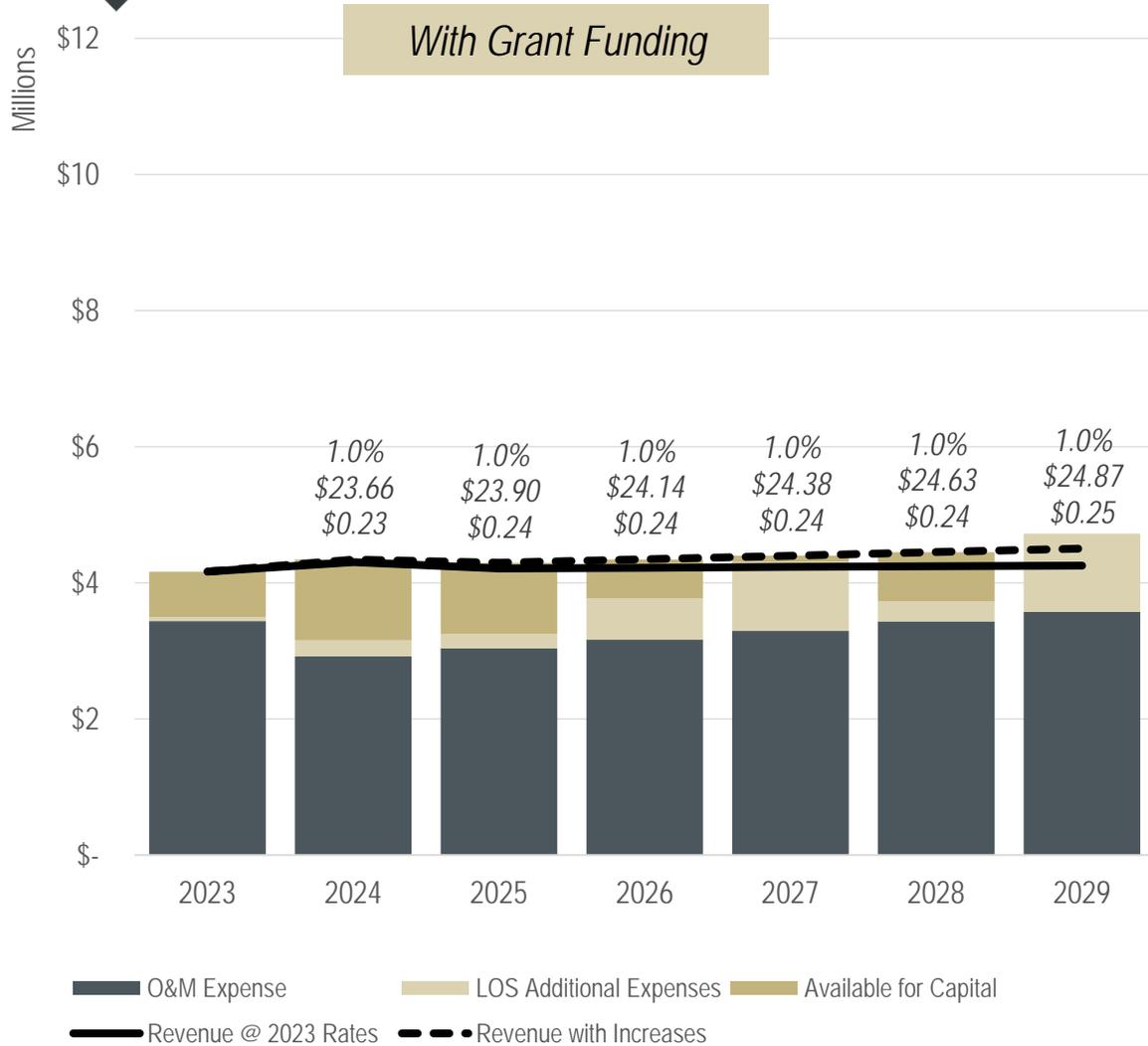


Capital Project Cost by Levels of Service



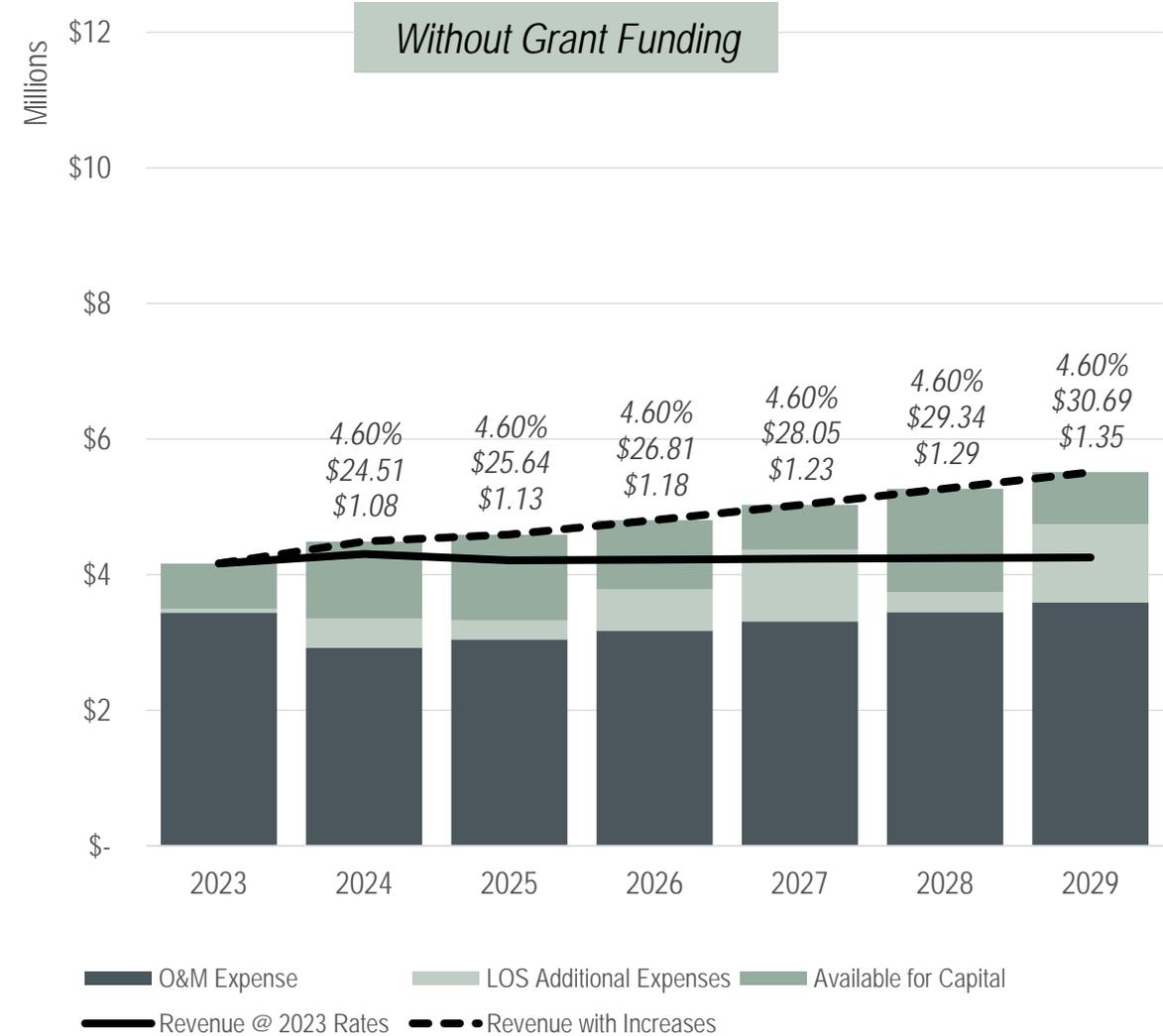
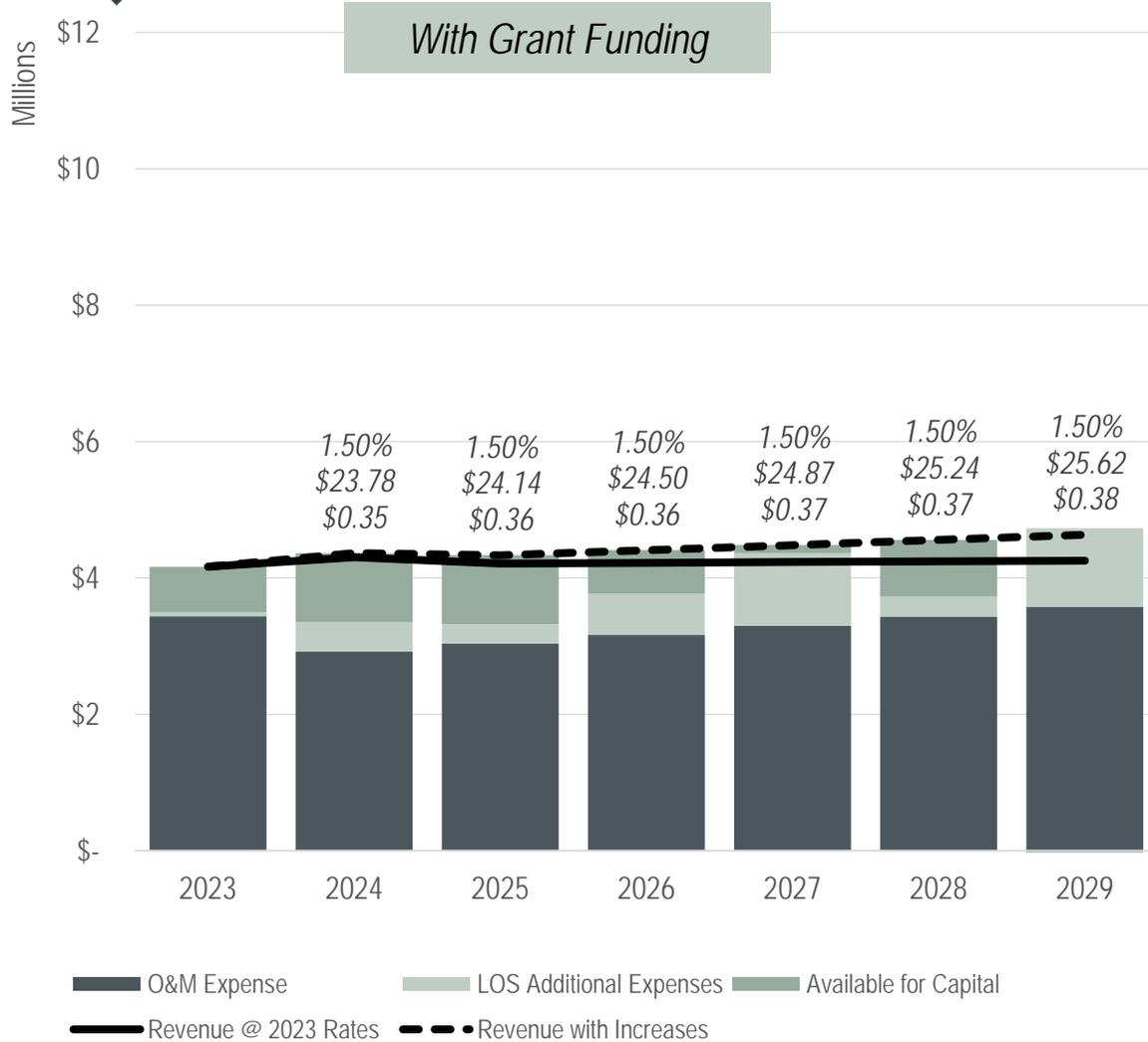


Revenue Requirement – LOS 1



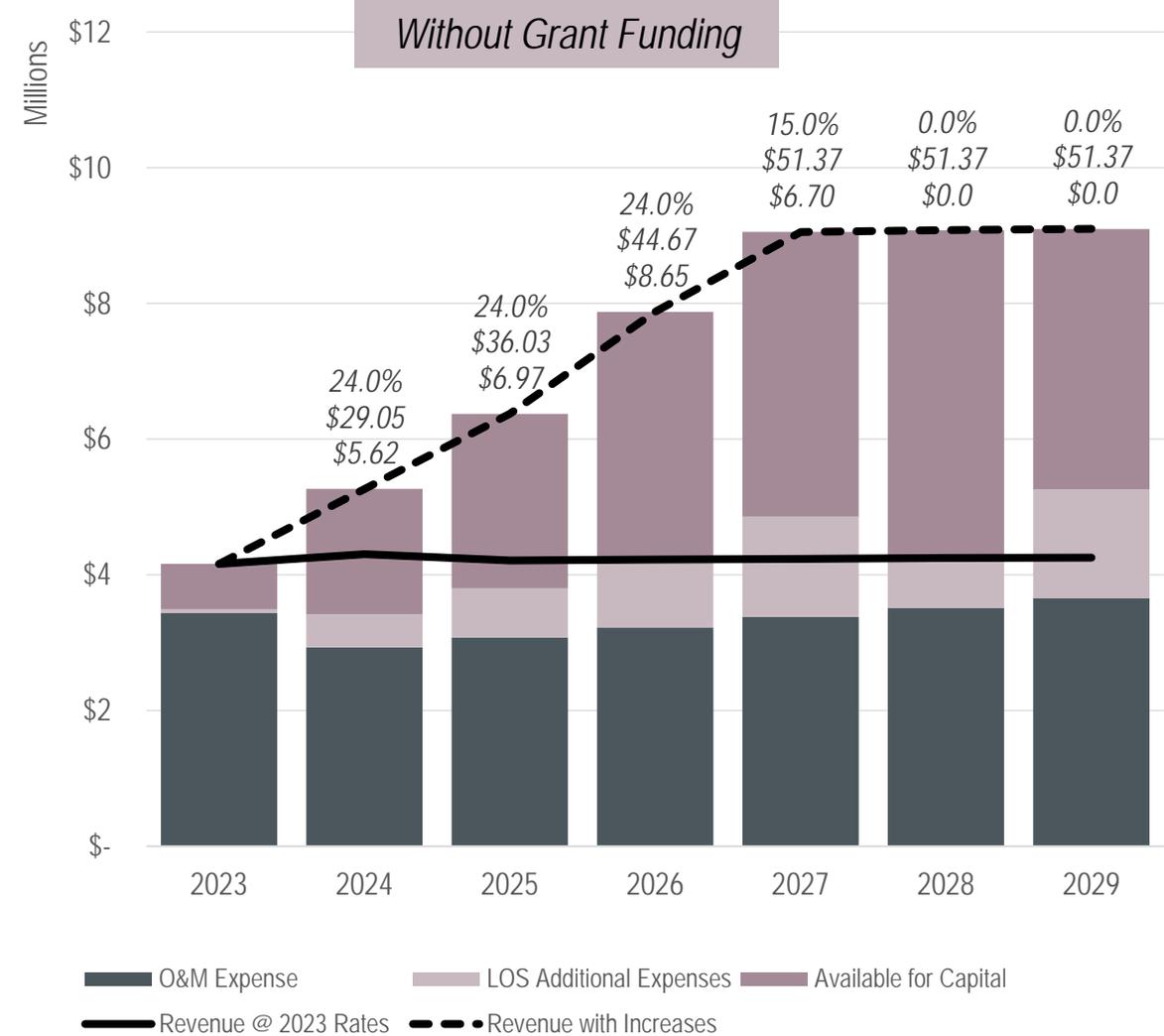
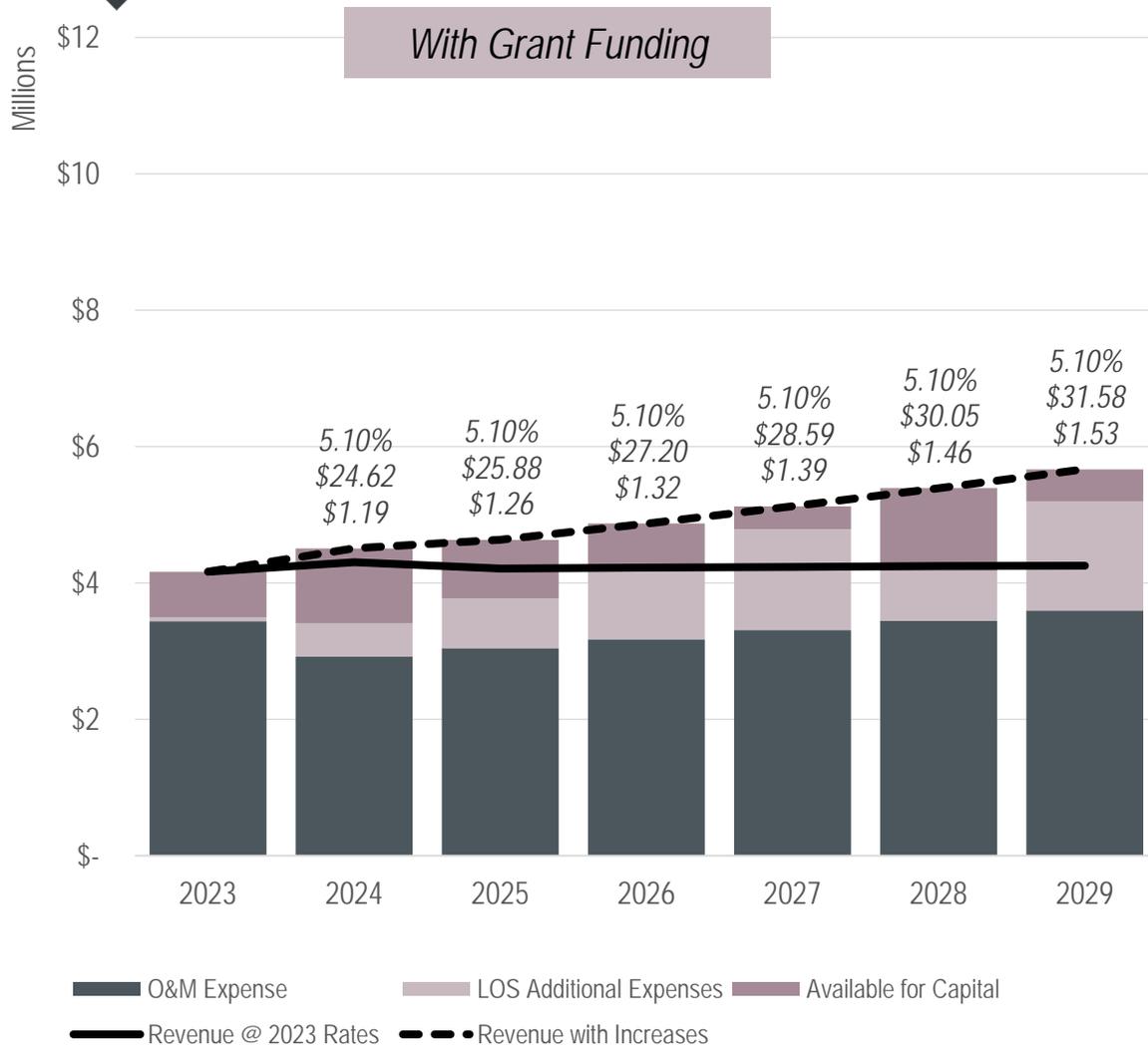


Revenue Requirement – LOS 2





Revenue Requirement – LOS 3



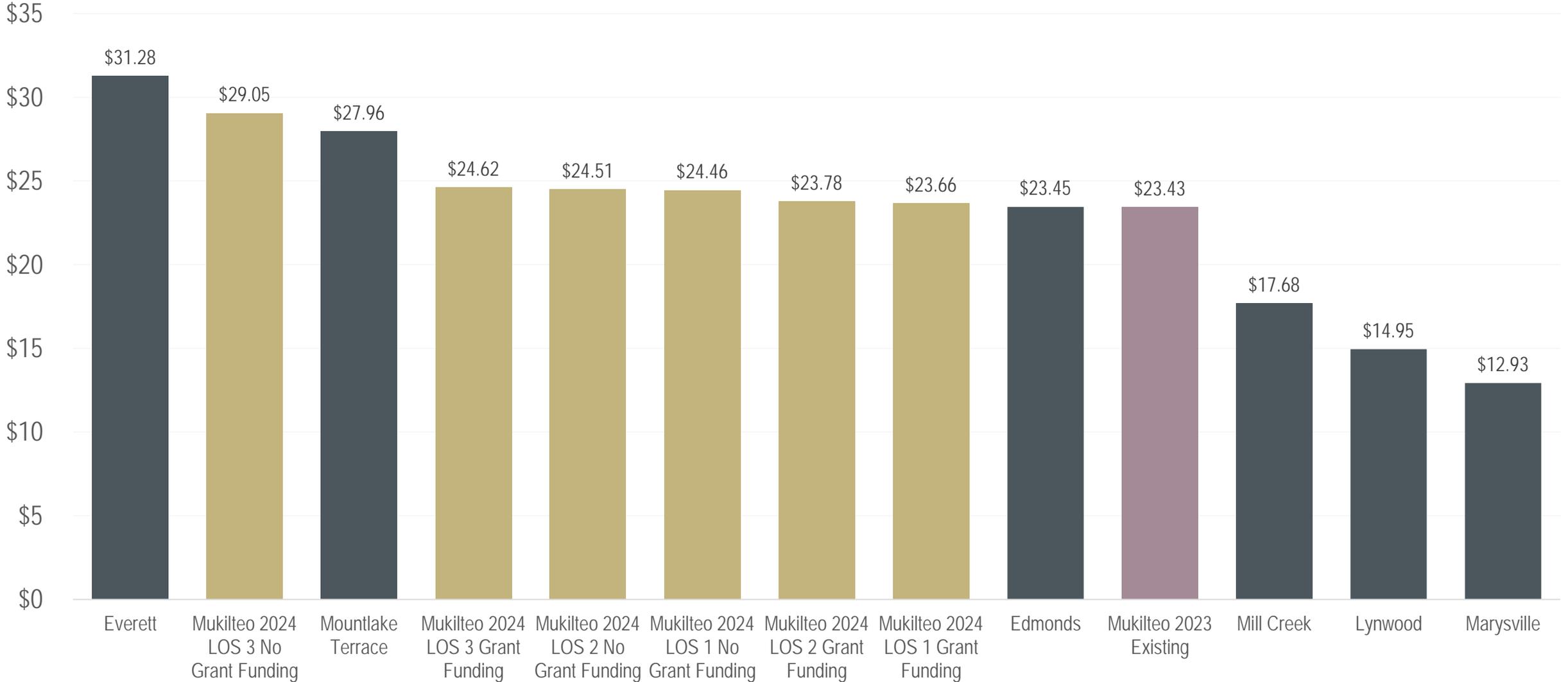


Monthly Residential Rates

	Existing 2023	2024	2025	2026	2027	2028	2029
LOS 1: Grant Funding	\$23.43	\$23.66	\$23.90	\$24.14	\$24.38	\$24.63	\$24.87
LOS 1: No Grant Funding	\$23.43	\$24.46	\$25.54	\$26.66	\$27.83	\$29.06	\$30.34
LOS 2: Grant Funding	\$23.43	\$23.78	\$24.14	\$24.50	\$24.87	\$25.24	\$25.62
LOS 2: No Grant Funding	\$23.43	\$24.51	\$25.64	\$26.81	\$28.05	\$29.34	\$30.69
LOS 3: Grant Funding	\$23.43	\$24.62	\$25.88	\$27.20	\$28.59	\$30.05	\$31.58
LOS 3: No Grant Funding	\$23.43	\$29.05	\$36.03	\$44.67	\$51.37	\$51.37	\$51.37



2023 Residential Monthly Stormwater Fees





Summary

- Consider preferred level of service
 - » LOS 1
 - » LOS 2
 - » LOS 3
- Other information for a future study?

Recommended Capital Projects

CIP Line Item	Budget (2023 dollars)	Years
Catch Basin Replacement Fund	\$50,000/year	2023 - 2029
Pipe Repair Fund	\$500,000/year	2023 - 2029
Vault Cleaning	\$100,000/year	2023 - 2029
<i>Chennault Beach Culvert Design*</i>	\$80,000	2025
Chennault Beach Culvert* Replacement	\$3,567,000	2026
<i>47th PI W and 55th PI LID Facilities*</i>	\$1,434,000	2025
<i>Smuggler's Gulch Bioretention Basin 1 Design*</i>	\$120,000	2025
Smuggler's Gulch Bioretention Basin 1 Construction*	\$2,500,000	2026
Smuggler's Gulch Bioretention Basin 2 Design*	\$120,000	2026
Smuggler's Gulch Bioretention Basin 2 Construction*	\$2,500,000	2027
Smuggler's Gulch Bioretention Basin 3 Design*	\$120,000	2027
Smuggler's Gulch Bioretention Basin 3 Construction*	\$2,500,000	2028
<i>Pacific Pond*</i>	\$1,000,000	2025

* Indicates grant eligible. ***Bold and italics*** indicates grant application submitted.



Recommended Equipment

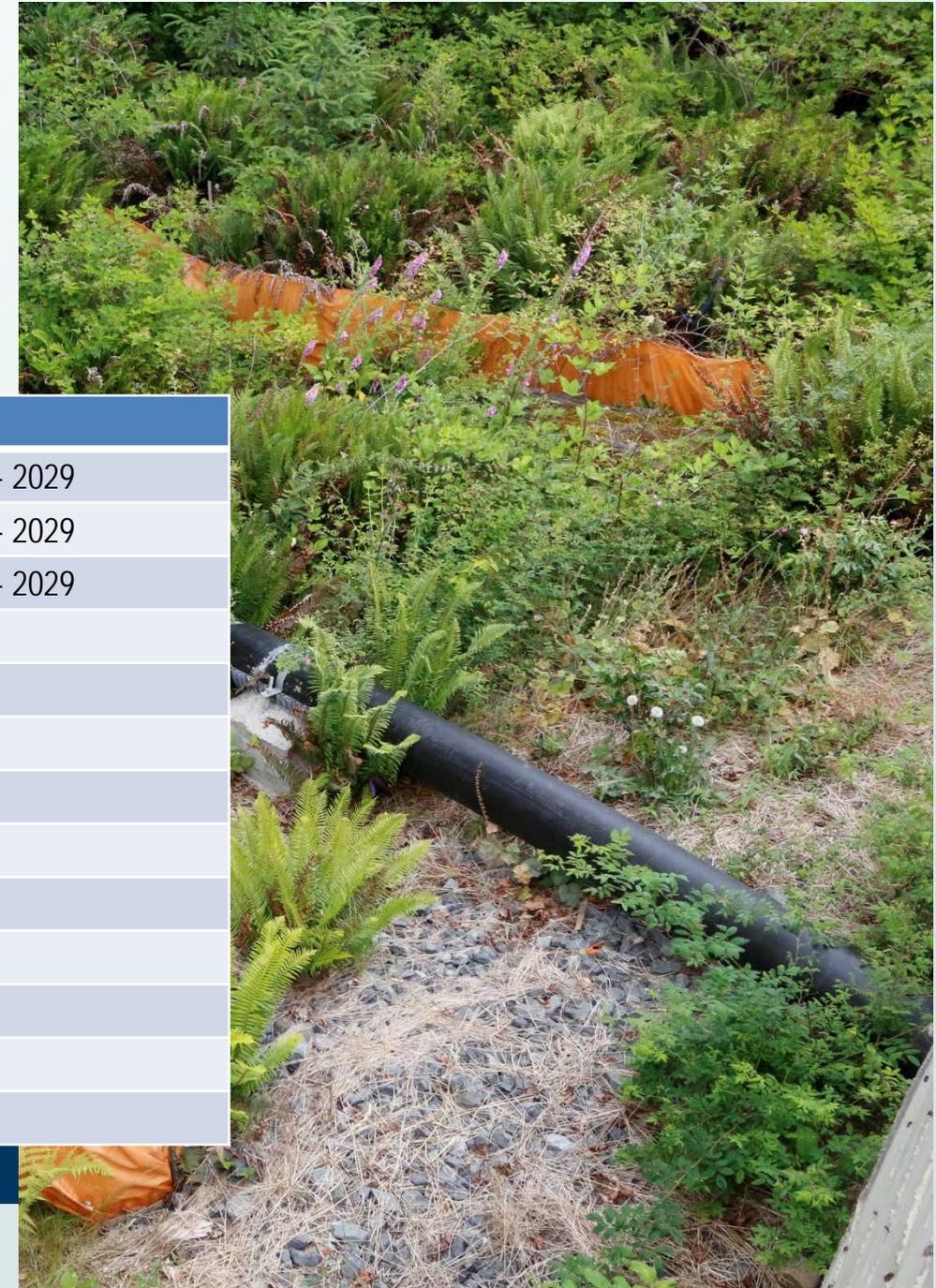


Equipment Line Item	Budget (2023 dollars)	Years
Covered Material Storage Area	\$500,000	2027
Skidsteer/trailer Combo	\$96,356	2024
Large Vactor Rental	\$13,000/year	2023 - 2029
Dump Truck	\$437,407	2030
Sewer Camera- Push Camera	\$9,680	2025
Backhoe Loader	\$160,000	2029
Ford 450 Truck	\$100,000	2027
Schwarze Sweeper	\$370,574	2026
Freeway 6x10 Enclosure for Spill Response and Storm Camera (2)	\$8,670	2028
Cues inspection camera	\$83,846	2028

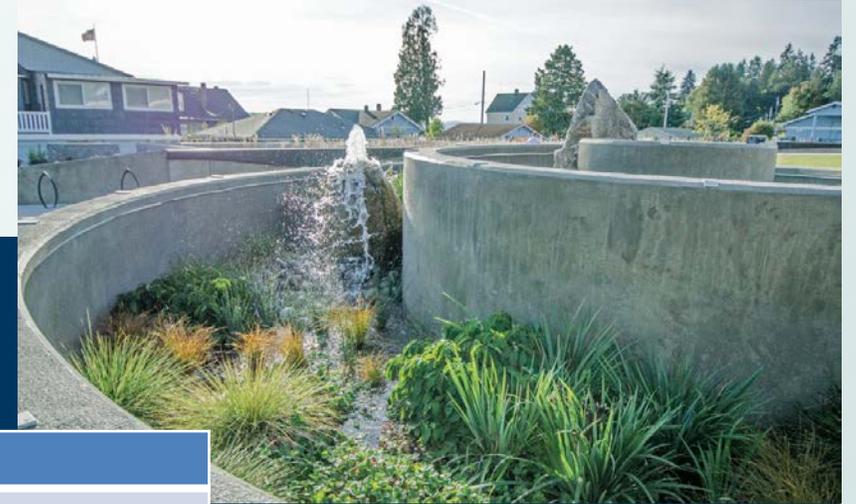
LOS 1 (Highest Priority) Programmatic Projects

CIP Line Item	Budget (2023 dollars)	Years
Private Facility Inspection and Grant Program	\$50,000/year	2023 - 2029
Develop Standard Operating Procedures	\$500,000/year	2023 - 2029
Conduct Outfall Inspections	\$100,000/year	2023 - 2029
Expand Education and Outreach	\$80,000	2025
Stormwater Comprehensive Plan	\$3,567,000	2026
Code Enforcement	\$1,434,000	2025
Staff Training and Certification	\$120,000	2025
Fire Department Coordination*	\$3,900 - \$8,000/year	2025
City Tree Plan*	\$75,000 + \$44,000/annually	2027
SMAP*	\$48,000	2025
Assess Tributary Areas*	\$14,500	2026
Stormwater Investment Tracking*	\$13,500	2027

* In Draft NPDES Permit. Not included in current rate analysis presented tonight.



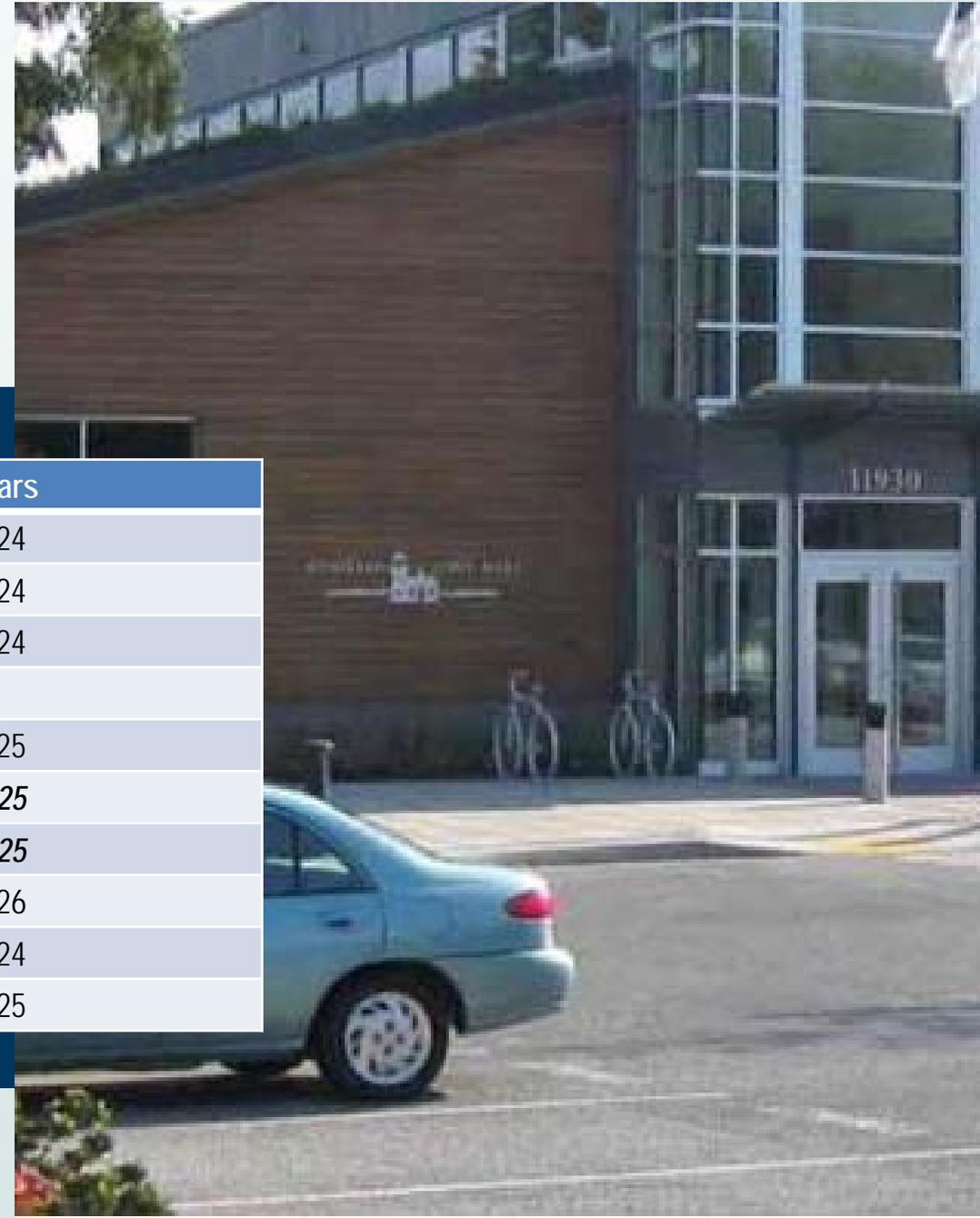
LOS 2 - Additional Programmatic Projects



CIP Line Item	Budget (2023 dollars)	Years
Stormwater Rate Equity	\$31,000	2024
Development Code Review	\$44,000	2024
Climate Action Plan	\$106,000	2024
Stormwater Parks	\$64,000	2025
Street ROW for Stormwater Management	\$51,000	2027

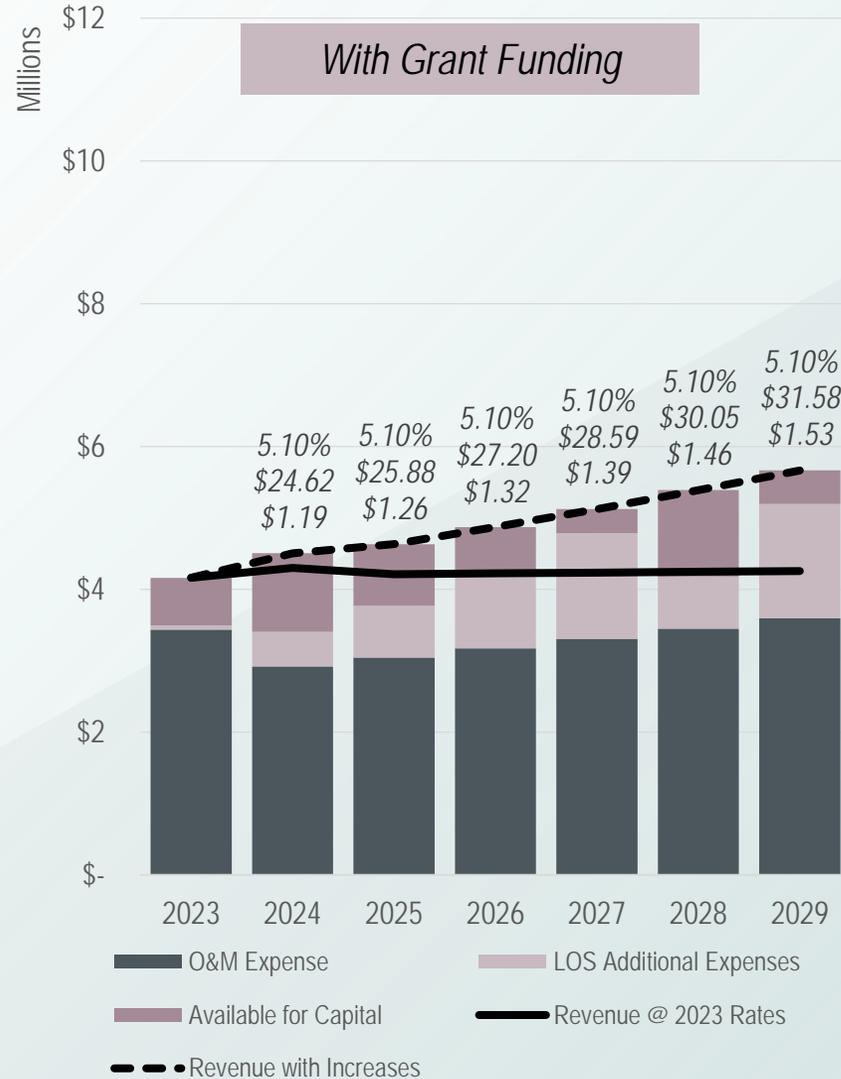
LOS 3 - Additional Programmatic Projects AND Staff

CIP Line Item	Budget (2023 dollars)	Years
Property Acquisition Fund	\$52,000/year	2024
CB Inspection Program Revision Review	\$27,000	2024
Review ILAs and Update	\$6,000	2024
Open Channel Inspections	No change	
Stream Channel Surveys	\$20,000, then \$10K/year	2025
<i>Lead Utility Worker</i>	<i>\$110,000/year</i>	<i>2025</i>
<i>Maintenance Workers- two</i>	<i>\$270,000/year</i>	<i>2025</i>
Stormwater Facility Evaluation	\$28,000	2026
Inspect City Vaults for Structural Conditions	\$13,000/year	2024
Green Stormwater Infrastructure Program	\$55,000, then \$4K/year	2025



Grant Funding

- Assume we are successful?
 - Program projects, but ask for less rate increase
- Assume no grant funding?
 - Program projects with higher rate. If successful, more money for additional projects.



Stormwater Comprehensive Plan: Schedule



Wrap-up and Next Steps

- Next meeting: ?
- Recommendations?
- Public Meetings: October 26, 2023





CITY OF
MUKILTEO

CAC MEETING

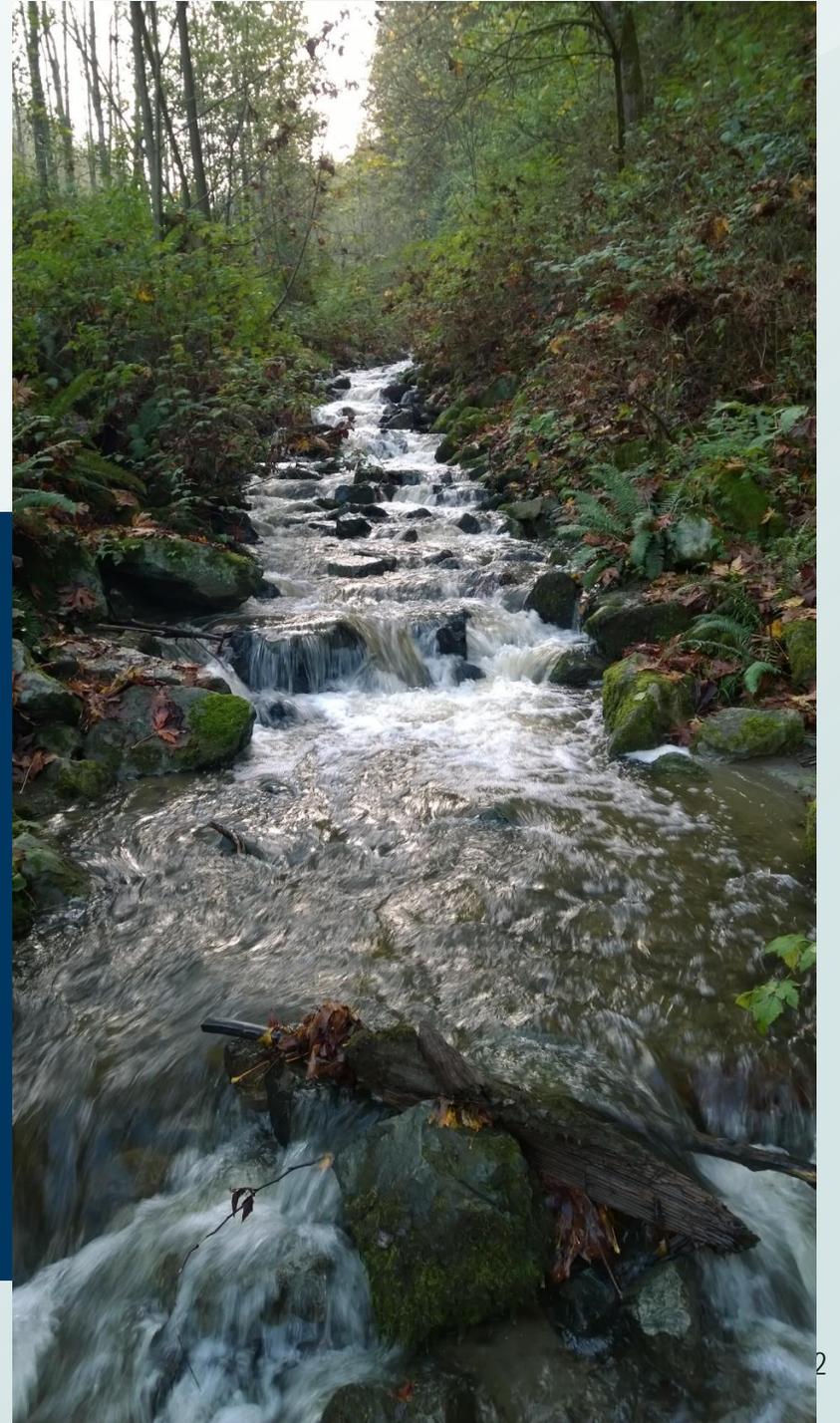
#5

November 9, 2023



AGENDA

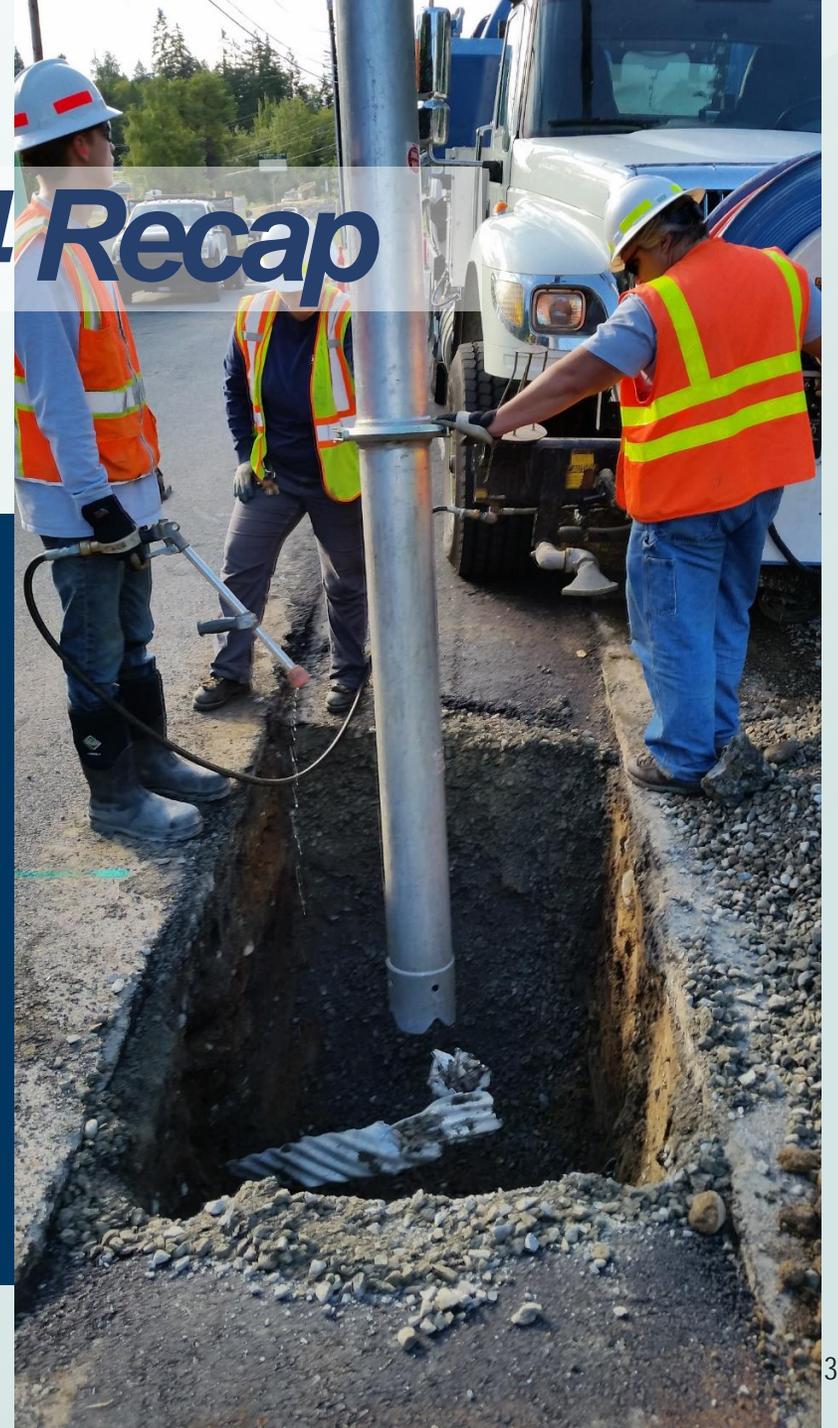
- Meeting #4 Recap
- Public Meetings Summary
- Recommendation Letter
- Wrap-up & Next Steps



Project Updates: Meeting #4 Recap

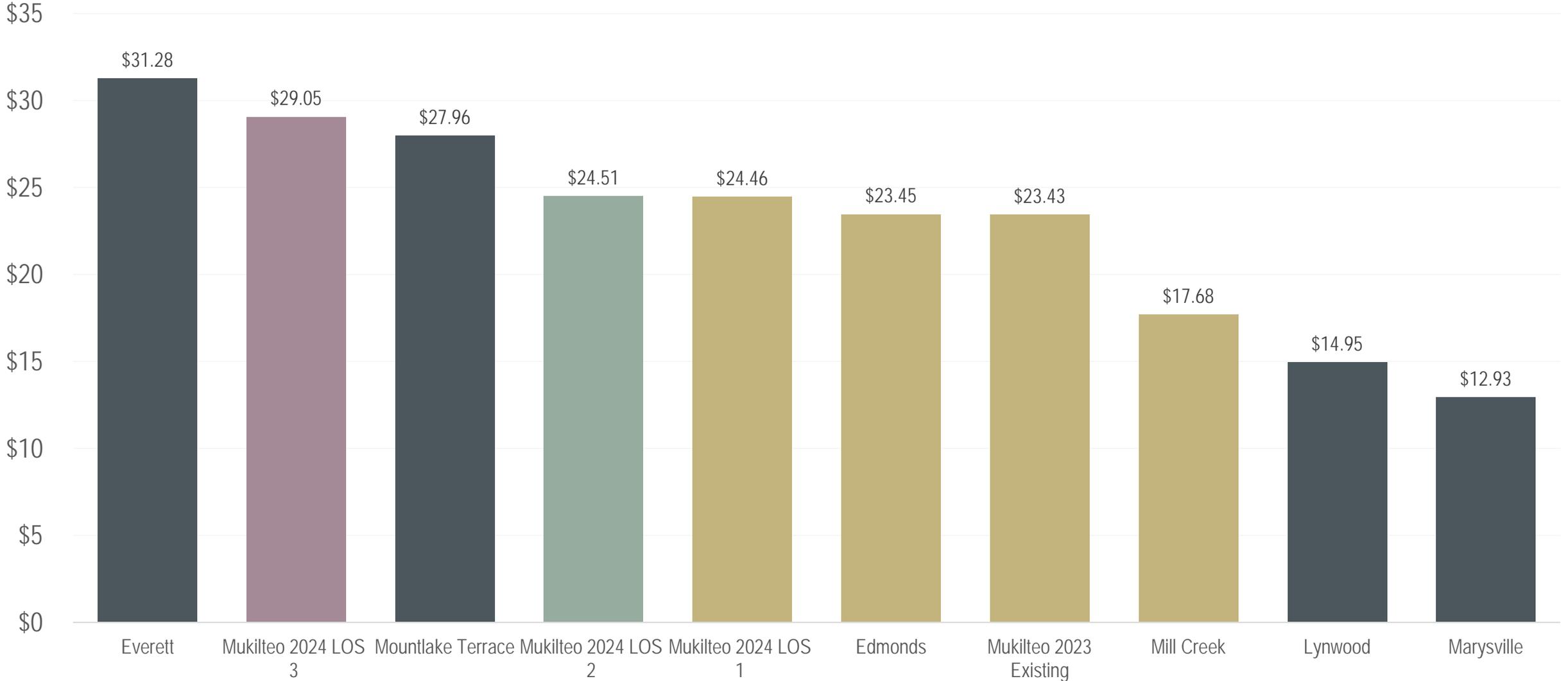
October 19, 2023

- Reviewed 3 LOS Options
 - With and without grants
 - Discussed projects, programs, and equipment
 - Began discussion on CAC recommendation





2023 Residential Monthly Stormwater Fees



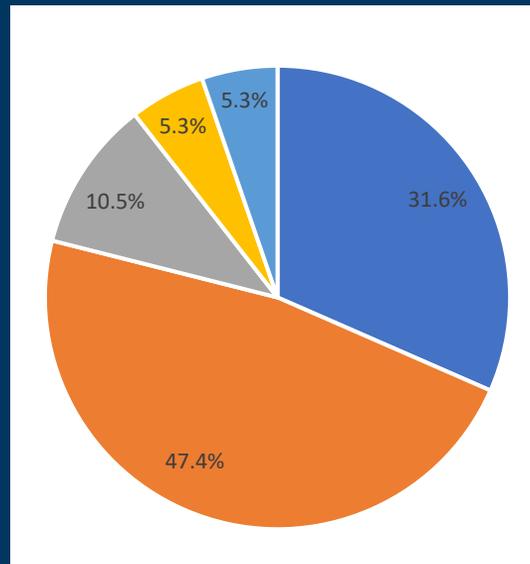
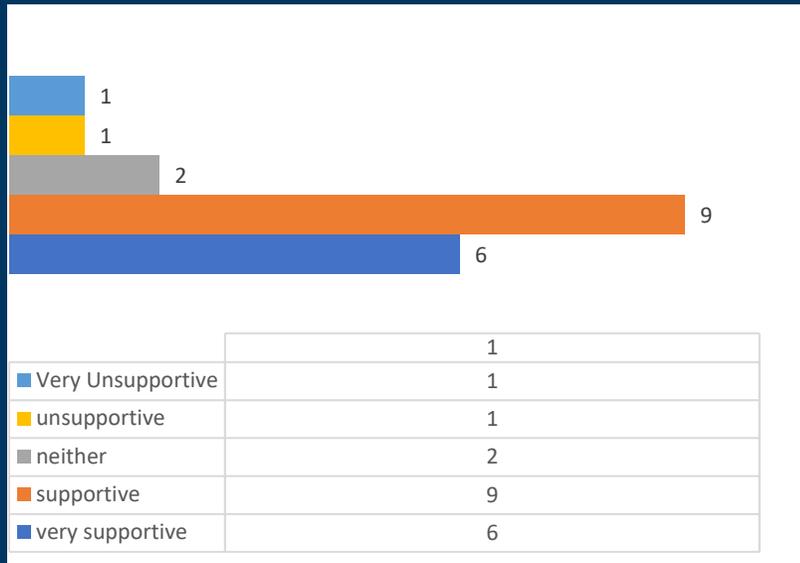
Public Meetings Summary

- 2 online public meetings: noon and 6 p.m.
- 22 attendees
- Presentation
 - What we've heard so far
 - Approach
 - Projects
 - LOS/Rates
 - Next steps
- 3 polling questions
- Questions/Comments



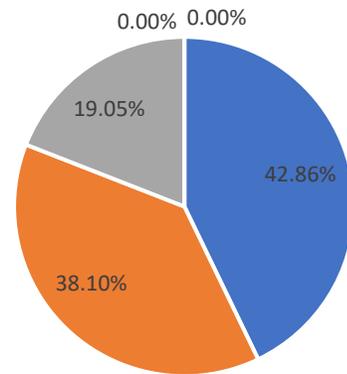
Public Meetings Summary: Results

Outreach and education: 79% supportive or very supportive



Public Meetings Summary: Results

Drainage issues: 81% supportive or very supportive



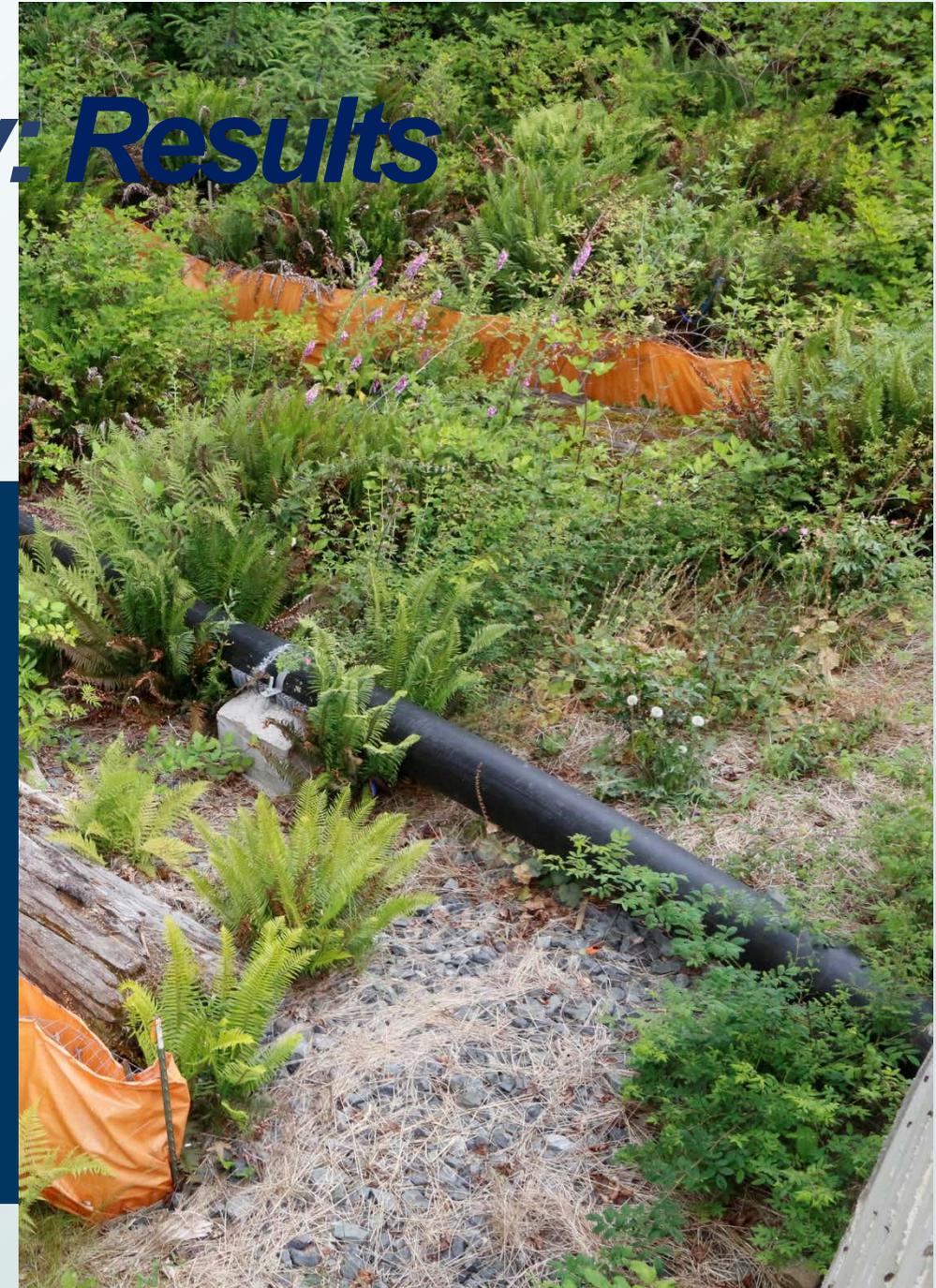
■ very supportive ■ supportive ■ neither ■ unsupportive ■ Very Unsupportive



Public Meetings Summary: Results

Priorities: Maintaining stormwater drainage systems tops the list

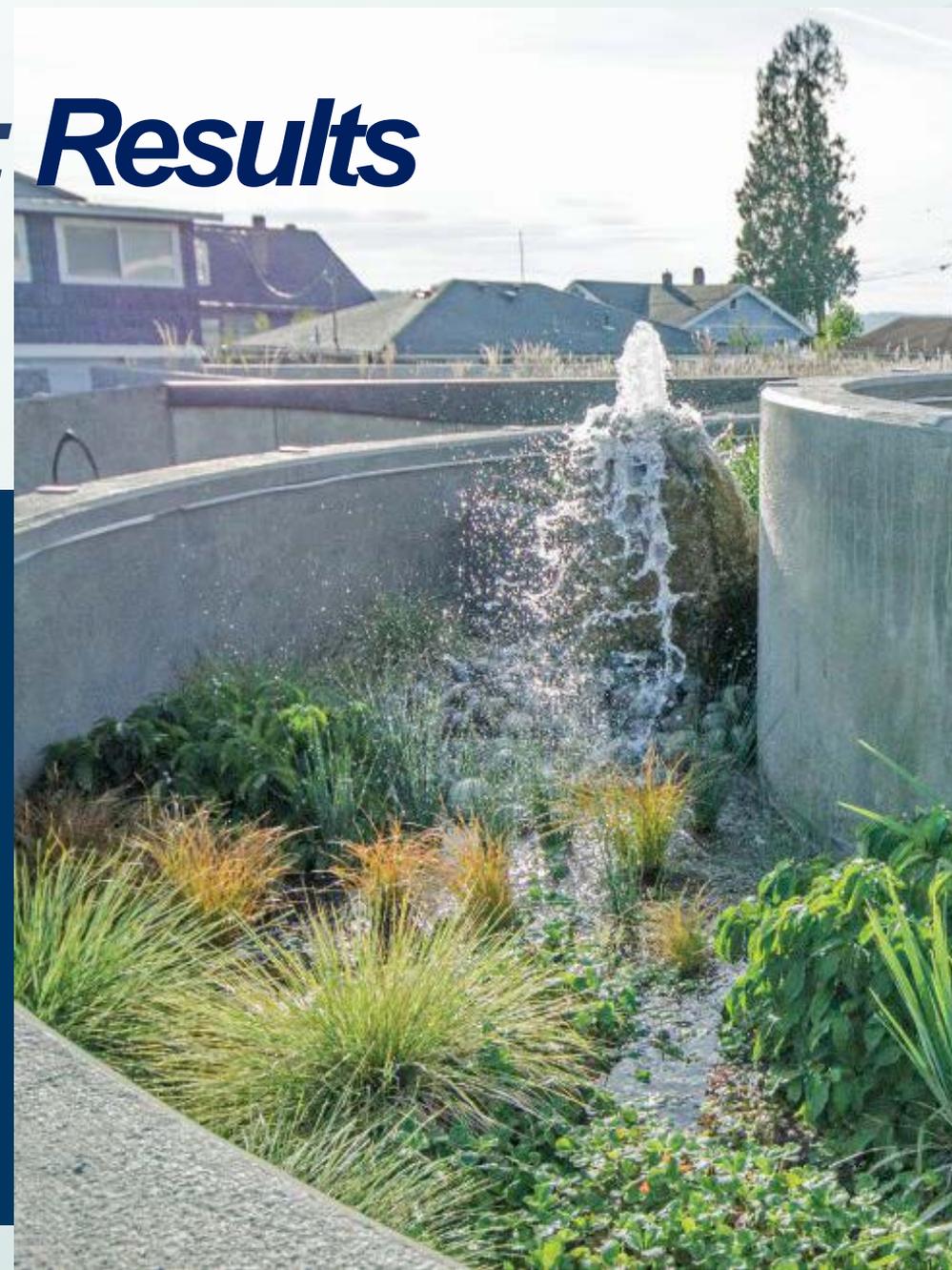
Maintaining stormwater drainage systems	18
Preventing pollutants from entering water bodies	15
Minimizing property damage	15
Addressing impacts on steep slopes	12
Minimizing street flooding	11
Conducting water quality monitoring and research	10
Maintaining and building new stormwater systems and structures that remove pollutants from stormwater	7
Minimizing loss of habitat and restoring streams and wetlands for fish and wildlife	6
Conducting outreach and education	3
Providing technical assistance to residents and businesses	2



Public Meetings Summary: Results

Questions/Comments

- 22 questions and comments
- Education and outreach
- Future scenarios
- LOS
- Specific projects



Recommendation Letter

DRAFT

Recommendation #1: The CAC recommends that the City Council select LOS 3 in order to accomplish city priorities and maintain city operations.

Recommendation #2: The CAC recommends that the city aggressively pursue grant opportunities as a way to mitigate impacts on ratepayers.



Stormwater Comprehensive Plan: Schedule

We are here

2022
Spring/Summer

- Recruit CAC
- Launch StoryMap/Survey
- Hold 1st CAC meeting
- Hold first open house

2022 – 2023
Fall/Winter

- Evaluate and share community feedback
- Analyze current & future programs and goals
- Define LOS
- Develop strategies & actions
- Identify & prioritize capital projects
- Hold 2nd and 3rd CAC meetings

2023
Spring/Summer

- Set or update policies
- Incorporate NPDES Permit requirements
- Evaluate funding & implementation
- Complete financial analysis & rate study

2023 – 2024
Fall/Winter

- Hold second open house
- Hold 4th CAC meeting
- Hold 5th CAC meeting
- Develop draft plan, and submit for review and adoption

Wrap-up and Next Steps

Draft Plan Completed

- End of 2023

Draft Plan Review/Outreach

- Early 2024

Council Approval of Final Plan

- Second Quarter 2024

Plan Implementation/Rate adjustment

- Mid-2024



Community Survey Results



Fall 2022 Mukilteo Stormwater Community Survey Report

City of Mukilteo 2024 Stormwater Comprehensive Plan



IT'S ALL CONNECTED

& flows to the Sound

To develop the 2024 Stormwater Comprehensive Plan, the City of Mukilteo Public Works Department asked the community to provide feedback that will help us evaluate and improve Mukilteo's stormwater services and programs.

The community shared what they care about, provided feedback on how we are doing, and let us know about their stormwater management priorities in Mukilteo.





Stormwater Services Community Survey Public Feedback Opportunity

The City of Mukilteo’s Surface Water Utility is a division of the Public Works Department. It is responsible for maintaining, operating, and administering the City’s natural and developed surface and stormwater conveyance systems, which includes the storm drainage system.

- ▶ The City of Mukilteo is developing its 2024 Stormwater Comprehensive Plan.
- ▶ The 2024 updates to Mukilteo’s Stormwater Comprehensive Plan will consider past progress, current conditions, and new approaches to stormwater management.
- ▶ The plan is a functional document that guides decisions, identifies opportunities and future projects, and prioritizes how stormwater utility funds are spent.

During the fall of 2022, the City of Mukilteo developed and administered a stormwater services community survey to gather input from community members on general satisfaction with stormwater services—the stormwater utility serves 5,695 customers.

Through the survey, the City invited members of the Mukilteo community to help evaluate and identify opportunities to improve Mukilteo stormwater services and programs. Public input is used to help the City develop a plan that reflects community values, priorities, and concerns.

The survey was open for public input from August 24 through October 10, 2022.

- ▶ The City promoted survey participation through:
 - » A citywide mailer and fliers placed at community locations
 - » Promotion at events and a project community open house
 - » The City’s social media channels and website
 - » Earned media coverage by local news outlets
- ▶ The survey was provided for the public in both a digital / online format on the project StoryMap website, and in hard-copy.
 - » The hard-copy survey was also made available in City of Mukilteo facilities and at local events. Hard copy survey responses were manually entered into the digital surveying tool to ensure a complete record of public input.
- ▶ To reach limited English proficiency (LEP) community member, the digital and hard-copy survey was provided in Mukilteo’s most spoken languages, Chinese, Spanish, and Korean. The survey also shared the City’s offer of additional translation and interpretation services and survey assistance to anyone by request.
- ▶ The survey also provided education on Stormwater Comprehensive Plan project goals to:
 - » Protect and enhance water quality and aquatic habitat by reducing sediment and other harmful pollutants that get carried into our waters
 - » Reduce localized flooding and erosion
 - » Protect and enhance stream and wetland function
 - » Mitigate stormwater impacts on steep slopes
 - » Educate the public on surface water issues





Overview of Survey Questions

The stormwater services community survey consisted of 19 community context and stormwater related questions, along with a set of optional demographic questions.

- ▶ Survey questions were grouped from general connection to the Mukilteo community and where respondents live or work to more specific questions about what stormwater management services and outcomes people value.
- ▶ The public was invited to share specific stormwater management concerns, report issues, and provide feedback about their level of satisfaction with services today.
- ▶ Optional demographic and language access questions were asked to assess the diversity of participation and ensure an accessible engagement process.

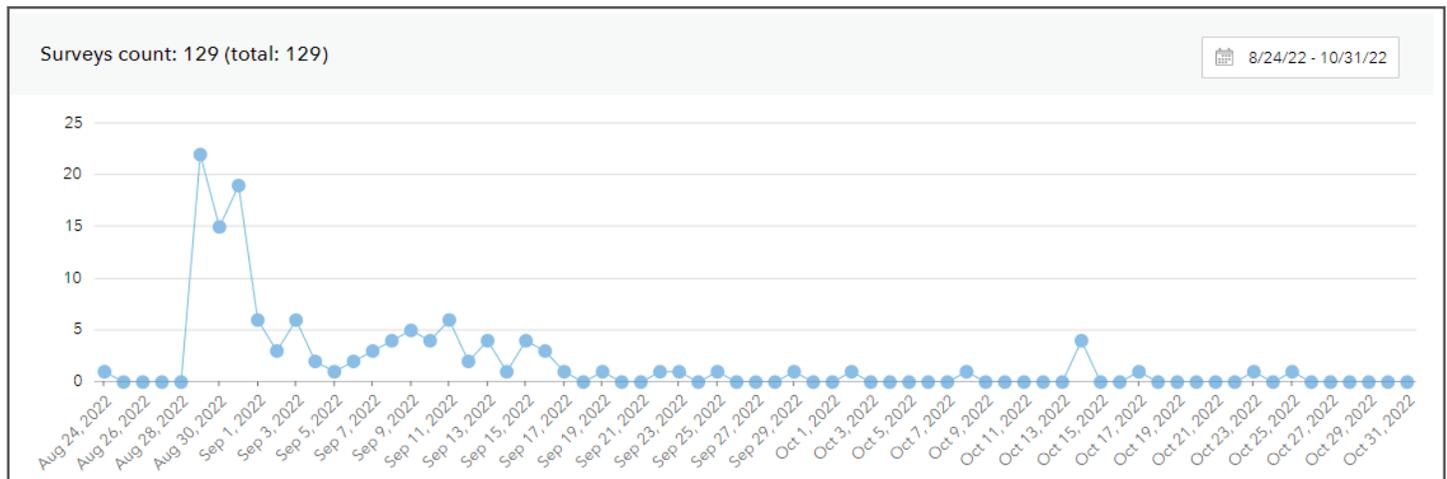
The survey was held open for 46 days, and a total of 128 surveys were completed.

- ▶ A total of 128 stormwater community surveys were submitted.
 - » The public input deadline was October 10, 2022
 - The most active survey response period was August 28 – September 25, 2022, which correlated with the arrival of the community mailer (postcard) and the promotion of the open house on September 13, 2022.
 - » The first survey submitted was on August 24, 2022.
 - » The last record entered was on October 25, 2022 (one response was entered after the report and data analysis was completed (on 11/10/2022) and was qualitatively assessed, but is not reflected in the data analysis).
 - Completion of manual entry of hard-copy responses occurred after the public deadline.

**128
Surveys
Completed**

**10/24
First Survey
Completed**

**10/25
Last Survey
Entered**





Key Findings and Takeaways

Overall, the Mukilteo community is satisfied with the level and quality of service over the last five years, but also identified an interest in increasing services and doing more to manage drainage, and confirmed they value stormwater management investments. Community members have concerns about affordability, ensuring planning and management matches localized needs, and finds stormwater education beneficial to understanding the value of service and how stormwater management goals and strategies benefit community interests and wellbeing. Data shown throughout the report is a reflection of the people who answered the related question.



Residential homeowners (97.64%) participated most, and the majority of respondents have been in Mukilteo for three to ten years or over 20-years.



People in the north half of the city participated more (28.34% from Smugglers Gulch or north), and 42 stormwater issues across seven watersheds were shared.



58.37% of all who responded live near a stream, wetland, steep slope, or Puget Sound.



88.71% said identifying and fixing water pollution problems was very or extremely important.



Protecting water quality, addressing pollutants, and preventing property damage were the top stormwater management priorities shared.



91 people reported drainage issues, and addressing flooding, clogged storm drains, and water runoff were identified as top priorities.



70.40% thought building more projects to restore streams and wetlands was a very or extremely important goal.



116 people said helping people prevent pollution is a moderate, very, or extremely important priority.



When it comes to managing drainage and reducing flooding, 62.70% thought maintenance of systems and structures was extremely important.



80 out of 128 people said stormwater management in the last five years met or exceeded expectations, 27 said below expectations, and 21 were unsure.



26 people shared additional comments that focused on affordability, drainage, development, climate action, and providing more maintenance, education, and stormwater services.



People appreciate efforts to keep people, property, and roads safe, and liked the quality of the comprehensive planning process materials, website, and engagement.

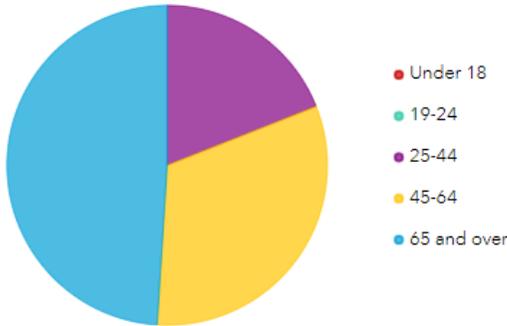


Respondent Demographics

Age

Answered: 100 | Skipped: 28

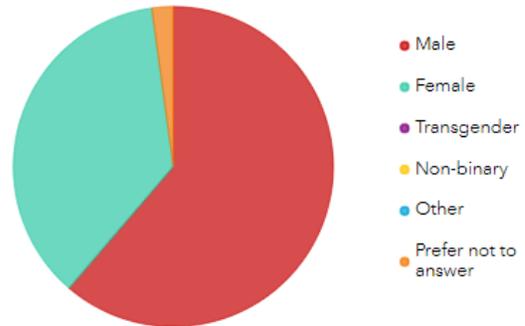
- ▶ 49.00% of respondents were 65 years of age or older, 32% were between 45 and 64 years of age, and 19.00% were 25-44 years of age.



Gender

Answered: 93 | Skipped: 35

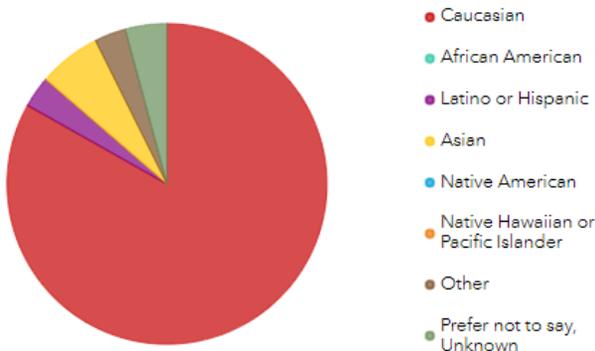
- ▶ 61.29% of respondents identified as male, 36.56% as female, and 2.15% preferred not to share.



Race / Ethnicity

Answered: 95 | Skipped: 33

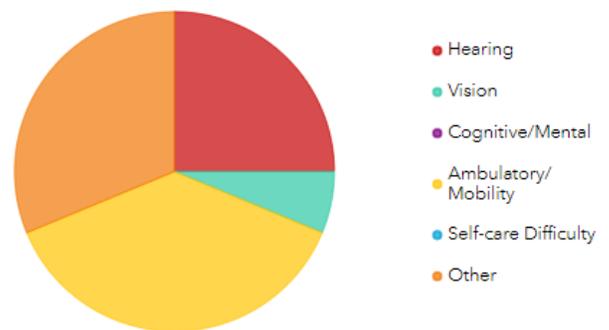
- ▶ 83.16% of respondents identified as Caucasian, 6.32% as Asian, 3.15% as Hispanic or Latino, 3.15% as other, and 4.22% preferred not to say.



Disability

Answered: 16 | Skipped: 112

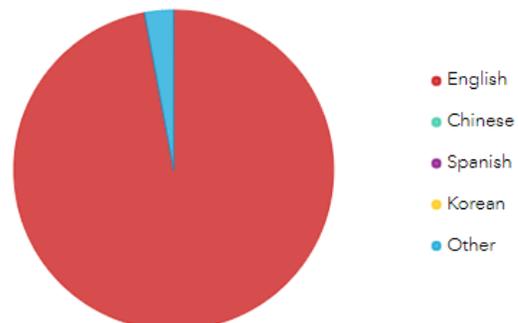
- ▶ 37.52% of respondents indicated an ambulatory or mobility disability, 25.04% hearing, 6.24% vision, and 31.28% said other.



Language Access

Answered: 34 | Skipped: 94

- ▶ Of respondents who shared their language access preferences, 33 people (97.05% of those who answered the question) indicated English, and 1 person indicated "other" but did not specify a preferred language.



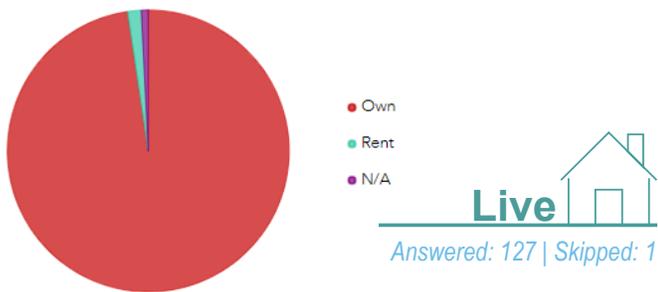


Question 1: Community Members Connection to Mukilteo

- ▶ Survey takers were asked to share their connection to the Mukilteo community and for how many years. The question provided the opportunity to check multiple options and leave a comment.
- ▶ Question respondents were asked to identify if they were a homeowner or renter.
 - » The majority of respondents were residential property owners, and only one respondent identified as a residential renter.
 - » Eleven additional comments were shared for question 1 and highlighted issues such as inspecting facilities, aging assets, managing drainage on private property, and concerns about stormwater management policies, and an interest in addressing landslides and erosion.

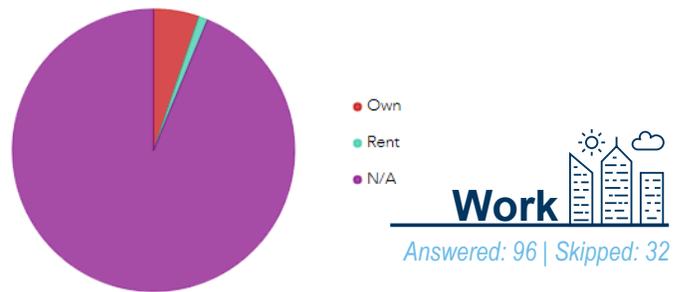
Residential

- ▶ 97.64% of question respondents were residential homeowners or renters in Mukilteo, and the majority lived in or north of Smugglers Gulch Watershed.



Business

- ▶ Six question respondents own or rent a business property, and have been in Mukilteo for three to over twenty years.



Residential	
Owner, Renter, or NA	
Own	124 people
Rent	2 people
N/A	1 person
Time owning or renting property	
2 years or less	17 people
3 to 10 years	43 people
11 to 20 years	22 people
Over 20 years	37 people
N/A	1 person

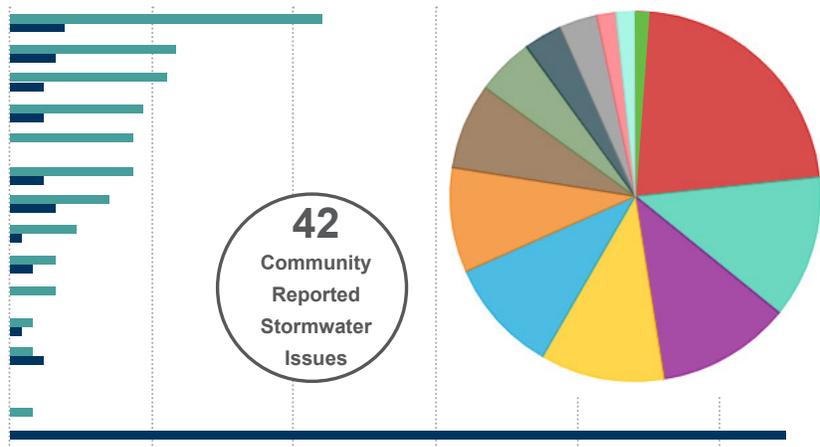
Business	
Owner, Renter, or NA (Count / Percentage)	
Own	5 people
Rent	1 person
N/A	90 people
Time owning or renting property	
2 years or less	0 people
3 to 10 years	2 people
11 to 20 years	2 people
Over 20 years	2 people
N/A	0 people





Question 2: Where in Mukilteo Survey Takers Live and/or Work

- ▶ Survey takers were asked if they live or work in any of Mukilteo’s 13 watersheds.
- ▶ Respondents to question 2 could identify their watersheds on a map, or share if options provided did not apply or they were unsure of their watershed.
 - » The majority of those who replied were residents, and 58.34% lived in or north of Smugglers Gulch.
 - » The most stormwater issues were reported by community members in Chennault Beach Creek, Brewery Creek, and Goat Trail Ravine.
 - » Stormwater issues were most often noticed after heavy rainfall and the most frequently reported issues were flooding, clogged drains, or a discharge of pollution.



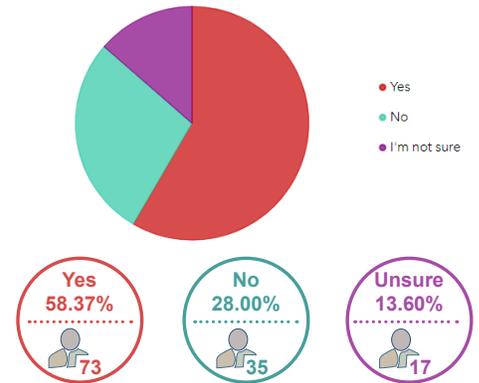
Watersheds	Live	Work	Map
Rank Name / Issues Reported	Count		Mukilteo's 13 Watersheds
1 Goat Trail Ravine / 8	28 people	5 people	
2 Brewery Creek / 7	15 people	4 people	
3 Smugglers Gulch / 6	14 people	3 people	
4 Picnic Point Ravine / 4	12 people	3 people	
5 Big Gulch / 0	11 people	0 people	
6 Chennault Beach Creek / 7	11 people	3 people	
7 Olympic View / 3	9 people	4 people	
8 Lower Chennault Beach Creek / 4	6 people	1 person	
9 Upper Chennault Beach Creek / 0	4 people	2 people	
10 Hulk Creek / 0	4 people	0 people	
11 Edgewater / 0	2 people	1 person	
12 Japanese Gulch / 0	2 people	3 people	
13 Naketa Beach / 0	0 people	0 people	
14 Other / 1	2 people	0 people	
15 Not sure / 2 left blank / 0	0 people	0 people	
16 Doesn't apply / 0	0 people	70 people	



Question 3: Proximity to Water, Wetlands, or Steep Slopes

Answered: 125 | Skipped: 3

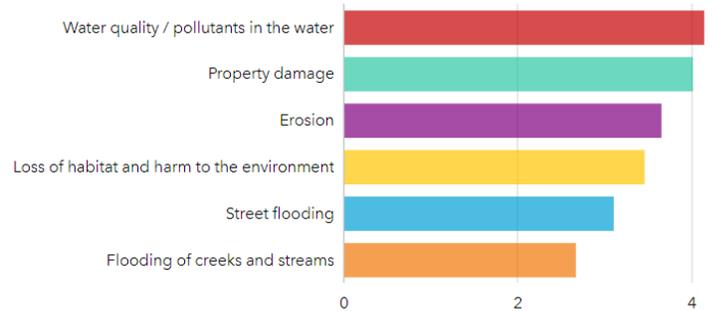
- ▶ To learn about proximity to surface waters or areas that may contribute to water runoff or erosion, survey takers were asked if their property was within 200 feet of a stream, wetland, steep slope, or Puget Sound.
 - » 58.37% of those who answered question 3 indicated they live close to Mukilteo surface waters, while 13.60% indicated they were not sure.
- ▶ In addition, across all survey questions, the public shared a value for safeguarding aquatic habitat, restoration efforts, and protecting water quality and preventing pollution.



Question 4: Stormwater Priorities

Answered: 124 | Skipped: 4

- ▶ Question 4 asked survey takers to rank their stormwater priorities from most to least important and provided six options.
 - » Respondents disproportionately represented residential owner interests, so a limited amount is known about the priorities of renters, businesses, or developers in the community.



Rank	Answers	1	2	3	4	5	6	Average
1	Water quality / pollutants in the water	30.80%	18.31%	16.65%	16.65%	9.99%	9.16%	4.14
2	Property damage	29.14%	24.14%	9.16%	14.99%	10.82%	14.99%	4.01
3	Erosion	16.65%	14.99%	24.97%	23.31%	8.32%	14.99%	3.65
4	Loss of habitat and harm to the environment	14.15%	18.31%	15.81%	21.65%	18.31%	14.99%	3.45
5	Street flooding	7.49%	19.15%	17.49%	10.82%	28.30%	19.97%	3.10
6	Flooding of creeks and streams	5.00%	8.32%	19.15%	14.15%	27.47%	29.14%	2.66





Question 5: Systems and Structures Maintenance

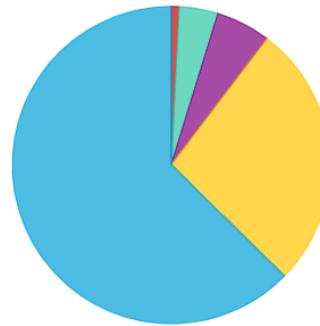
Answered: 126 | Skipped: 2

▶ Question 5 asked how important work to maintain Mukilteo’s stormwater drainage systems and structures was to them.

- » 89.68% of respondents said maintaining drainage systems and structures was either “very” or “extremely important.”
- » 4.76% who answered said it was “not at all” or only “slightly important,” and 5.56% said moderately important.



Maintain Structures



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 6: Reducing Local Flooding

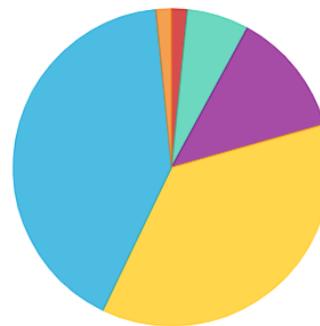
Answered: 126 | Skipped: 2

▶ Question 6 asked community members how important the City’s work to reduce local flooding is to them.

- » 40.95% said it was extremely important, 36.51% reported it was very important, and 12.70% noted it was very important.



Address Flooding



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 7: Drainage Technical Assistance

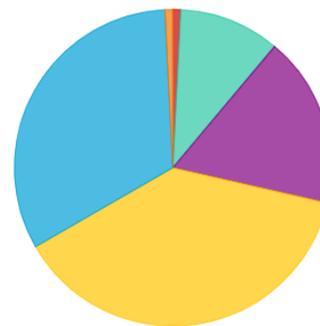
Answered: 126 | Skipped: 2

▶ Question 7 asked community members how important it was for the City of Mukilteo to provide residents with technical assistance to solve drainage problems on their property.

- » 90.13% said it was extremely, very, or moderately important.



Drainage Assistance



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 8: Addressing Impacts on Steep Slopes

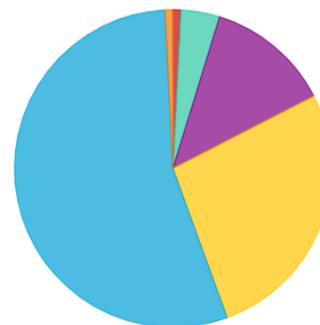
Answered: 126 | Skipped: 2

▶ Question 8 asked respondents how important they felt the City’s work to address stormwater impacts on steep slopes is to them.

- » 93.63% said it was extremely, very, or moderately important.



Landslide Repair



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure



Question 9: Watershed Planning

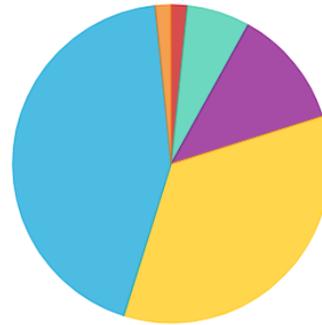
Answered: 124 | Skipped: 4

▶ Question 9 asked respondents how important they felt the City's work in watershed planning to identify problems and solutions unique to different watersheds in the city was to them.

- » 43.55% reported it was extremely important, while 34.67% said very important and 12.10% said it was of moderate importance.



Street Sweeping



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 10: Addressing Water Pollution

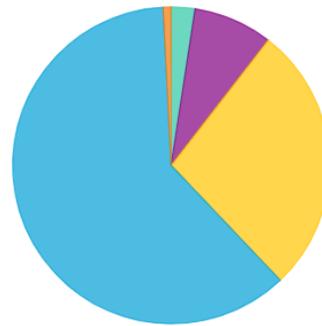
Answered: 124 | Skipped: 4

▶ Question 10 asked people to share how important it is to them that the City identify and fix water pollution problems.

- » 96.77% said it was extremely, very, or moderately important.
- » 2.42% said it was only slightly important, and 0% reported it was not at all important.



Identify Pollution



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 11: Maintaining Pollution Removal Systems

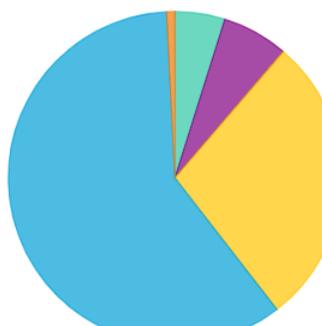
Answered: 124 | Skipped: 4

▶ Question 11 asked respondents how important they felt the City's work to maintain the systems and structures that remove pollution from stormwater is to them.

- » 94.35% said it was extremely, very, or moderately important.
- » 5.12% said it was only slightly important.
- » 0% reported it was not at all important.



Detention Ponds



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure



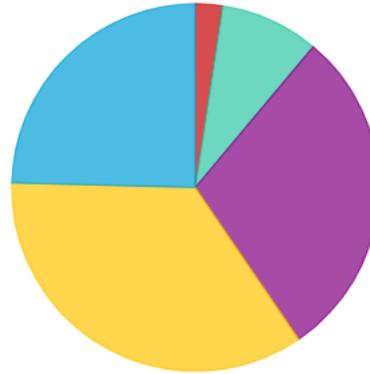
Question 12: Conducting Outreach and Education

Answered: 126 | Skipped: 2

- ▶ Question 12 asked how important people felt efforts to conduct education and outreach on stormwater issues is to them.
 - » 88.90% said it was extremely, very, or moderately important.
 - » 8.73% said it was only slightly important.
 - » 2.38% reported it was not at all important.



Community Outreach



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

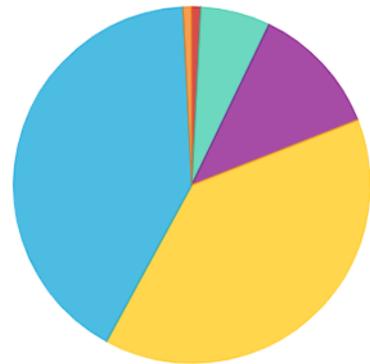
Question 13 Water Pollution Prevention Measures

Answered: 126 | Skipped: 2

- ▶ Question 13 asked people to share how important the City of Mukilteo's work to help residents and businesses prevent water pollution is to them.
 - » 92.07% said it was extremely, very, or moderately important.
 - » 6.35% said it was only slightly important.
 - » 0.79% reported it was not at all important.



Prevent Pollution



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure





Question 14: Conducting Monitoring and Research

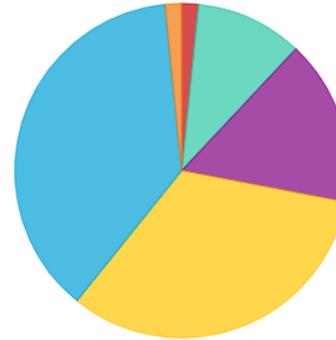
Answered: 125 | Skipped: 3

▶ Question 14 asked respondents if the Utility were to conduct monitoring and research (i.e., water quality, or biological), how important it would be to them.

- » 86.41% said it was extremely, very, or moderately important.
- » 10.10% said it was only slightly important.
- » 1.60% reported it was not at all important.



Monitoring and Research.



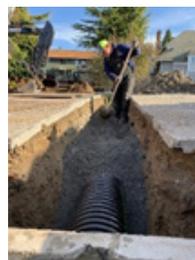
- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 15: Building Stormwater Treatment Facilities

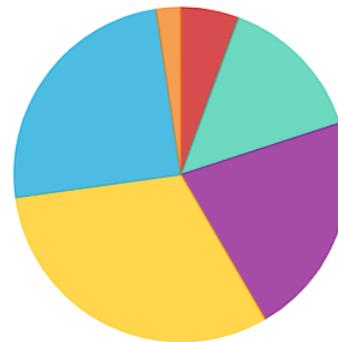
Answered: 125 | Skipped: 3

▶ Question 15 asked how important it would be for the Utility to build stormwater treatment facilities above and beyond what is required to keep pollutants from entering streams.

- » 77.60% said it was extremely, very, or moderately important.
- » 14.40% said it was only slightly important.
- » 5.60% reported it was not at all important.



Build New Infrastructure



- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure

Question 16: Habitat Restoration

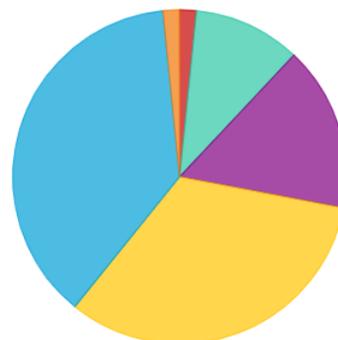
Answered: 125 | Skipped: 3

▶ Question 16 asked people how important they thought it would be for the City to build projects to restore streams and wetlands for fish and wildlife.

- » 86.41% said it was extremely, very, or moderately important.
- » 10.40% said it was only slightly important.
- » 1.60% reported it was not at all important.



Stream Restoration



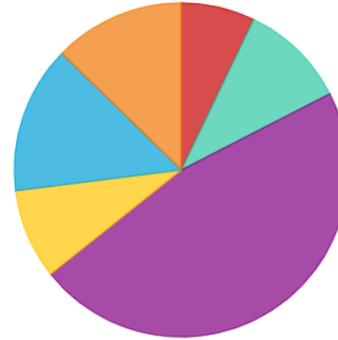
- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important
- Not sure



Question 17-A: Expectations for Drainage and Flooding

Answered: 126 | Skipped: 2

▶ Question 17-A asked, over the last five years, how well the Stormwater Utility had managed drainage to reduce flooding incidents to keep people, property, and roads safe—64.28% shared their expectations were met or exceeded.

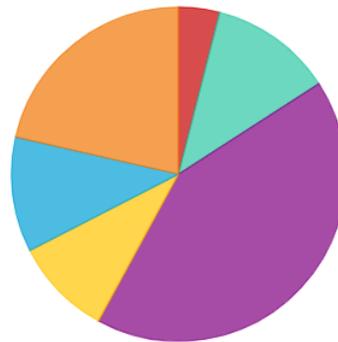


- Exceeds expectations
- Somewhat exceeds expectations
- Meets expectations
- Somewhat below expectations
- Below expectations
- Not sure

Question 17-B: Expectations for Water Stewardship

Answered: 126 | Skipped: 2

▶ Question 17-B asked, over the last five years, how well the Stormwater Utility had met expectations for keeping streams, wetlands, and Puget Sound healthy—57.95% shared their expectations were met or exceeded.

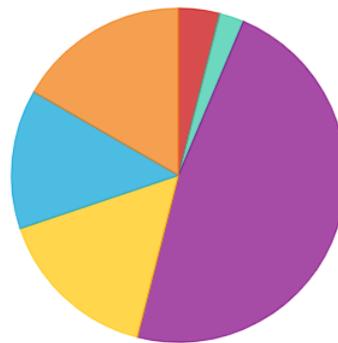


- Exceeds expectations
- Somewhat exceeds expectations
- Meets expectations
- Somewhat below expectations
- Below expectations
- Not sure

Question 17-C: Expectations for Education

Answered: 126 | Skipped: 2

▶ Question 17-C asked how well the Stormwater Utility had met expectations for providing opportunities to learn about stormwater issues and how to prevent pollution over the last five years—53.87% shared their expectations were met or exceeded.

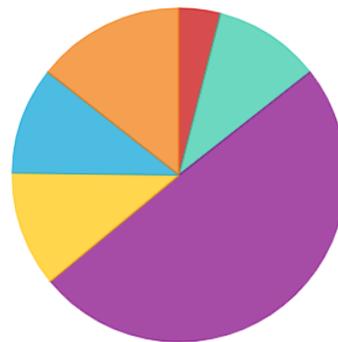


- Exceeds expectations
- Somewhat exceeds expectations
- Meets expectations
- Somewhat below expectations
- Below expectations
- Not sure

Question 17-D: Expectations for Overall Stormwater Management

Answered: 125 | Skipped: 3

▶ Question 17-D asked how well the Stormwater Utility had done meeting expectations overall in the last five years for managing stormwater and its impacts—63.50% shared their expectations were met or exceeded.



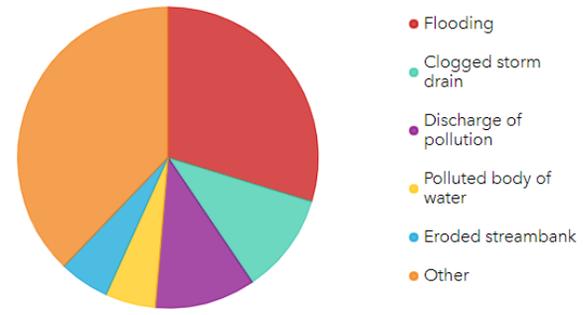
- Exceeds expectations
- Somewhat exceeds expectations
- Meets expectations
- Somewhat below expectations
- Below expectations
- Not sure



Question 18- A: Specific Drainage or Water Quality Issues Reported Answered: 128 | Skipped: 0

▶ Question 18 asked community members to report any specific drainage or water quality issues in Mukilteo and invited comment on the issues noticed and their location.

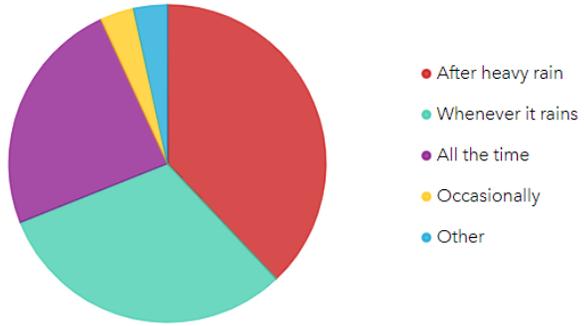
Reporting a Single Issue



Issue Type	Count	Issue Type	Count
Flooding	11 people	Polluted Body of Water	2 people
Clogged Drain	4 people	Eroded Streambank	2 people
Discharge of Pollution	4 people	Other	14 people

Answered: 37 | Skipped: 91

When / How Often Noticed Answered: 29 | Skipped: 99



When and How Often Noticed	Count
After Heavy Rain	11 people
Whenever it Rains	9 people
All the Time	7 people
Occasionally	1 person
Other	1 person

Description Answered: 35 | Skipped: 93



Location Answered: 37 | Skipped: 91



Watershed / Times Reported	Count
Chennault Beach Creek	7
Goal Trail Ravine	7
Brewery Creek	6
Smugglers Gulch	5
Lower Chennault Beach Creek	3
Olympic View	3
Picnic Point Ravine	3
Other	1
Blank Comment Field	2
TOTAL	37

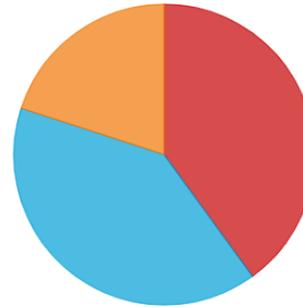


Question 18- B: Specific Drainage or Water Quality Issues Reported

▶ Question 18 also invited community members to share a second stormwater issue management.

Of the 128 Survey Respondents, Five People Reported a Second Issue

Answered: 37 | Skipped: 91

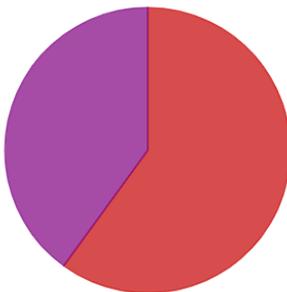


- Flooding
- Clogged storm drain
- Discharge of pollution
- Polluted body of water
- Eroded streambank
- Other

Issue Type	Count	Answered: 5 Skipped: 123	
Flooding	2 People	Polluted Body of Water	0 People
Clogged Drain	0 People	Eroded Streambank	2 People
Discharge of Pollution	0 People	Other	1 People

When / How Often Noticed

Answered: 5 | Skipped: 123



- After heavy rain
- Whenever it rains
- All the time
- Occasionally
- Other

When and How Often Noticed	
After Heavy Rain	3 People
Whenever it Rains	0 People
All the Time	2 People
Occasionally	0 People
Other	0 People

Location

Answered: 5 | Skipped: 123

- Surrey Lane SW, 98275
- Mukilteo Lane, 98275
- Goat Trail Road & Possession View Lane, 98275
- 64th Place West, 98275
- 900 Block of 2nd Street, 98275

Watershed / Times Reported	
Goal Trail Ravine	1
Brewery Creek	1
Smugglers Gulch	1
Lower Chennault Beach Creek	1
Picnic Point Ravine	1
TOTAL	5

Description

Answered: 5 | Skipped: 123

- TR995 drainage runoff issues
- Stream and culvert drainage on my property with no overflow protection
- Water draining out of vertical pipe
- Runoff is eroding backyards on Surrey Lane
- Flooding I experience at the front of my yard

Question 19: Additional Feedback and Comments Shared

▶ 26 community members shared additional comments focused on affordability, drainage, development, climate action, and providing more maintenance, education, and stormwater services. All comments are noted in the appendices of this report.



Questions 18 and 19: Themes from Issues and Comments Shared by Community Members



Community members reported stormwater issues and concerns



People shared the locations of pollution discharge concerns or where dumping of polluting materials is a worry.



People are interested in ways to streamline permitting for small projects in alignment with stewardship goals.



People want to improve systems and structures that direct stormwater to pipes and away from property and roads.



Comments and input reflected a desire to improve aquatic habitat for fish and wildlife.



Respondents identified specific watershed locations that may be candidates for restoration projects.



Community members appreciated the opportunity to learn about stormwater management goals.



People are concerned about rates, affordability, and the cost of service.



Protecting water quality and addressing erosion are important.



Respondents want the City to build more awareness about preventing clogged detention ponds, culverts, or drains to help reduce flooding or drainage issues.



Flooding and drainage on property, and across roads and sidewalks, along with being able to better direct stormwater were the most common issues shared.



The community is interested in incorporating climate action into stormwater management, improving aging infrastructure or built conditions, and using "green" solutions like permeable roads and planting new trees.



Appendix A Record of Survey Administered (See Phase 1 Outreach Summary for full inventory)

MUKILTEO STORMWATER
Tell us what you think!

Agua pluvial de Mukilteo: contáctenos para más información.
Mukilteo 雨水: 告诉我们您的想法。

TAKE OUR SURVEY
Let us know how we are doing in our efforts to reduce flooding and keep streams and Puget Sound healthy!

3 WAYS TO TAKE THE SURVEY:

1. SCAN THE QR CODE
2. STOP BY CITY HALL
3. CALL 425-263-8170

Survey closes October 18, 2023.

LEARN MORE AT THE PUBLIC OPEN HOUSE
SEPTEMBER 13, 2023, 6:30 - 8:00 PM

MUKILTEO STORMWATER
Tell us what you think!

Take our survey. Attend our Public Open House.

Agua pluvial de Mukilteo: contáctenos para más información.
Mukilteo 雨水: 告诉我们您的想法。

MUKILTEO STORMWATER
Tell us what you think!

3 WAYS TO TAKE THE SURVEY:

1. SCAN THE QR CODE
2. STOP BY CITY HALL
3. CALL 425-263-8170

Survey closes October 18, 2023.

MUKILTEO STORMWATER SURVEY
Tell us what you think!

Agua pluvial de Mukilteo: contáctenos para más información.
Mukilteo 雨水: 告诉我们您的想法。

MUKILTEO STORMWATER SURVEY
Tell us what you think!

MUKILTEO STORMWATER SURVEY
Tell us what you think!

1. Where does your property sit in relation to the Mukilteo waterfront?

2. How often do you see flooding on your property?

3. How often do you see flooding on the street?

4. How often do you see flooding on the sidewalk?

5. How often do you see flooding on the street?

6. How often do you see flooding on the sidewalk?

7. How often do you see flooding on the street?

8. How often do you see flooding on the sidewalk?

9. How often do you see flooding on the street?

10. How often do you see flooding on the sidewalk?

11. How often do you see flooding on the street?

12. How often do you see flooding on the sidewalk?

OPTIONAL DEMOGRAPHIC QUESTIONS

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Phone: _____

How long have you lived in Mukilteo? _____

How often do you visit Mukilteo? _____

How often do you use Mukilteo's waterfront? _____



Mukilteo Stormwater Survey

Mukilteo 우수 물문조사

Encuesta sobre las aguas pluviales de Mukilteo

Mukilteo 市雨水調查問卷

Appendix B

Comment Logs: Record of Survey Taker Open Ended Comments

- ▶ Document includes identifying information and is available as separate document by request.

Appendix C

Raw Data: Record of All Data in Raw Form

- ▶ Document includes identifying information and is available as separate data file document by request.

Open House Summaries



MUKILTEO STORMWATER

Tell us what you think!

Take our survey.

Let us know how we are doing in our efforts to reduce flooding and keep streams and Puget Sound healthy!

Agua pluvial de Mukilteo: Tome nuestra encuesta.

머킬테오 스톰워터: 설문조사에 참여하세요.

Mukilteo Stormwater: 参加我们的调查。

Attend our Public Open House.

Be a part of the community discussion!

Asista a nuestra reunión pública.

공개 회의에 참석하십시오.

参加我们的公开会议。



MUKILTEO STORMWATER

Tell us what you think!

Agua pluvial de Mukilteo: Tome nuestra encuesta.

머킬테오 스톰워터: 설문조사에 참여하세요.

Mukilteo Stormwater: 参加我们的调查。

TAKE OUR SURVEY

Let us know how we are doing in our efforts to reduce flooding and keep streams and Puget Sound healthy!

3 WAYS TO TAKE THE SURVEY:

1

SCAN THE QR CODE

to take the survey online, or visit www.mukilteowa.gov/stormwatersurvey



Escanee el código QR o visite storymaplink.com para leer en español.

QR 코드를 스캔하거나 storymaplink.com을 방문하여 한국어로 읽으십시오.

扫描二维码或访问storymaplink.com阅读中文。

2

STOP BY CITY HALL

to take the survey in person.



3

CALL 425-263-8170

to have the survey mailed to you.



Survey closes October 10, 2022.

LEARN MORE AT THE PUBLIC OPEN HOUSE

SEPTEMBER 13, 2022, 6:30 - 8:00 PM

Rosehill Community Center - Vancouver Room

304 Lincoln Ave, Mukilteo, WA 98275

Obtenga más información sobre el proceso asistiendo a la reunión pública:

13 de septiembre de 2022. 6:30 - 8:00 p.m. Traductor presente.

공개 회의에 참석하여 절차에 대해 자세히 알아보십시오

2022년 9월 13일, 오후 6:30 - 8:00 번역가 현재

通过参加公开会议了解有关该过程的更多信息

2022年9月13日, 下午6:30 - 8:00。翻译在场

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

Mukilteo Stormwater Comprehensive Plan Open House

Public Involvement Summary

Background

Mukilteo is a waterfront city on the eastern shore of Puget Sound, and the ninth largest city in Snohomish County. It hosts a vibrant community of 21,300 residents who live, recreate, and work in the city's 13 different watersheds. With nearly 17 miles of streams and 118 acres of wetlands, twelve of Mukilteo's watersheds drain to the Puget Sound—the 13th flowing into Lake Washington.

The City of Mukilteo Surface Water Utility is a division of the Public Works Department. It is responsible for maintaining, operating, and administering the City's natural and developed surface and stormwater conveyance systems, which includes the storm drainage system. The utility serves 5,695 customers.

The City of Mukilteo is developing its 2024 Stormwater Comprehensive Plan (2024 Plan). The 2024 Plan Updates to Mukilteo's Stormwater Comprehensive Plan considers past progress, current conditions, and new approaches to stormwater management. The plan is a functional document that guides decisions, identifies opportunities and future projects, and prioritizes how stormwater utility funds are spent. Stormwater planning helps make sure service levels meet system, regulatory, and community needs, and can be supported by utility rates and other funding sources.

The 2024 Plan helps ensure the City can:

- Meet regulatory requirements, including Clean Water Act, Growth Management Act and others.
- Safeguard public wellbeing and the city's waters, and related habitat.
- Reduce flooding related to storm events.
- Ensure existing and new development mitigates for impacts to stormwater runoff.
- Address stormwater system infrastructure, operation, and maintenance needs.
- Protect surface and ground water quality through pollutant source control and elimination.
- Identify capital improvement priorities to plan for new or replacing aging stormwater infrastructure.
- Evaluate current and future issues, new stormwater technologies or design approaches, and actions (or policies) needed to meet desired levels of service.
- Identify funding needs and opportunities to support stormwater planning, administration, and programs.
- Build community connections and understanding through outreach and engagement.

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

Notification

The open house was publicized in a number of ways, including:

- Sending postcards to all 5,695 ratepayers
- Posting flyers in City Hall, the Rosehill Community Center, the Mukilteo Library and other public places and community spaces
- Updating the [city's website](#) with open house information
- Posting on the city's Facebook page and Twitter feed
- Through the project StoryMap website: www.mukilteowa.gov/stormwatersurvey
- Direct promotion at community events like the 2022 Lighthouse Festival
- Via earned news media coverage in the [Mukilteo Beacon](#) and [Lynnwood Times](#)

The postcards and flyers were translated into simplified Chinese, Korean, and Spanish languages.



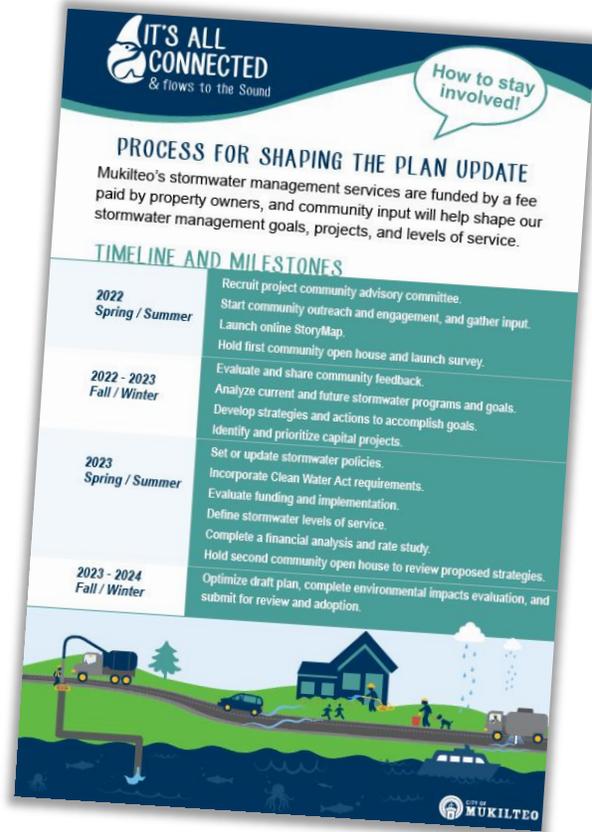
PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

Open House Overview

On September 13, 2022, the City of Mukilteo hosted an open house to introduce the plan update to the community. The open house provided an overview of the utility and what it does, described the plan update process and what it intends to accomplish. The open house also provided opportunities for the public to give feedback via one-on-one conversations with project staff, comment forms, post it notes, and by completing the Stormwater Community Survey. The open house was held at the Rosehill Community Center in 6:30 p.m. to 8:00 p.m.

Approximately 15 people attended the open house to learn about the stormwater program and provide comments. Attendees were greeted by project staff, asked to sign-in, share the watershed where they live or work (eight of thirteen watersheds were identified), and provided comment forms. Spanish, Korean, and simplified Chinese language interpreters, representing Mukilteo’s most commonly spoken languages other than English, were available to provide interpretation to any attendees who requested it. A total of 13 display boards included information on the stormwater program, the plan update process, and ways to participate.



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

Five project staff were available throughout the open house to answer questions and explain project details to the public. Attendees were encouraged to share their thoughts and priorities for the stormwater program. All meeting materials were made available on the project website following the open house.

Comment Summary

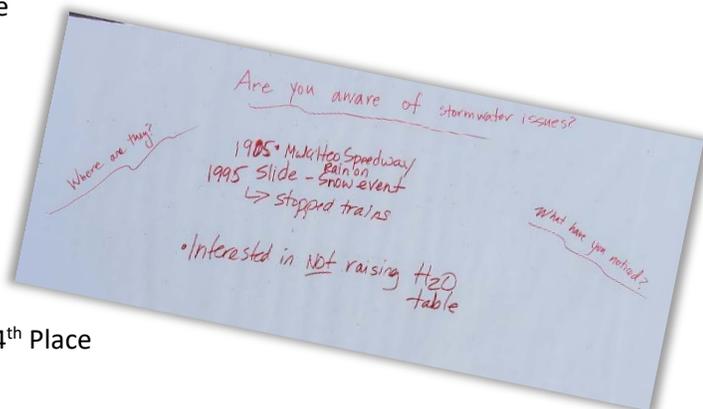
The following section is a summary of comments the City of Mukilteo received at the open house.

Verbal comments shared with staff:

- Site visits and walking tours with the community will help people better understand potential projects, provide meaningful input, and ensure they lead to the biggest benefit possible.
- Specific neighborhoods have concerns around private drainage systems (which also lead to neighbor disputes).
- Community members feel that parcels being developed may lead to (or have already caused) downstream drainage issues.
- The community shares a desire to protect natural resources that are in private ownership and are for sale, and some worry about development leading to permanent loss of the resource.
- The community would like to receive more regular updates and information about prior accomplishments, what has been done since the last plan, and work in progress.
- Attendees were hopeful that future communications and public outreach would clarify why some things that were recommended in the prior plan completed when others were not.

Community input on potential stormwater issues and future stormwater management projects

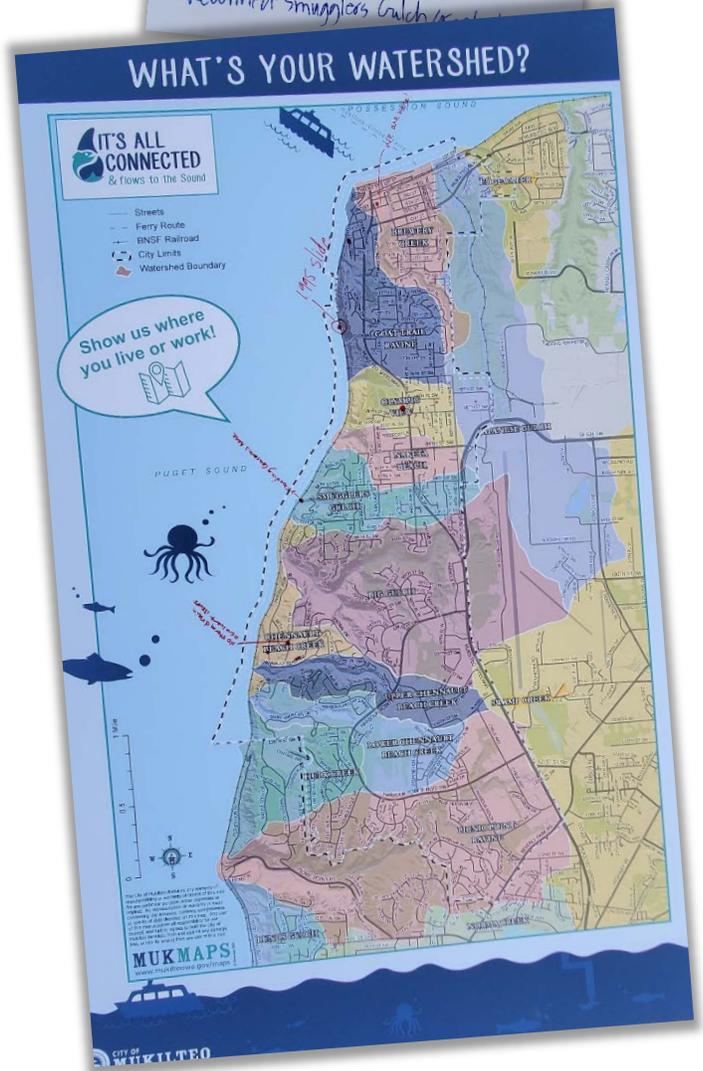
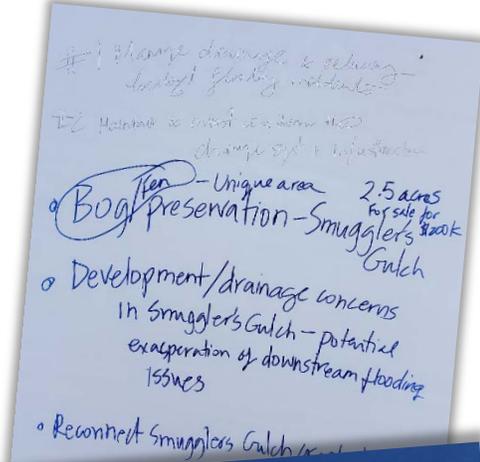
- 1905 and 1995 Mukilteo Speedway near East Horizon Drive rain, snow, and landslide events stopped trains.
- Smugglers Gulch Watershed flooding concerns near 61st Place West
- Lack of storm drains and stormwater management issues in Chennault Beach Creek Watershed near 64th Place West
- Interested in NOT raising the water table
- Managing drainage and reducing localized flooding incidents
- Maintain and invest in stormwater drainage systems and infrastructure
- Bog/Fen – Unique area, preservation- Smuggler’s Gulch (2.5 acres for sale for \$200k)



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

- Development/drainage concerns in Smugglers Gulch – potentially exasperating downstream flooding issues.
- Reconnect Smugglers Gulch Creek to bog



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:26 PM Mukilteo Stormwater Survey

Mukilteo Stormwater Survey

Mukilteo Stormwater Survey



Stormwater is rainwater that falls on the ground and is either absorbed into the soil, or runs off of roofs, streets, lawns and other surfaces that it lands on. Mukilteo's Stormwater Utility serves to protect streams from pollution, and infrastructure from flooding. We do this by maintaining and building stormwater infrastructure. We also engage our community to help keep pollution out of our streams and Puget Sound.

<https://storymaps.arcgis.com/stories/0a903d433ca4704a3205ca9902fcb0d391e>

9/29/22, 4:26 PM Mukilteo Stormwater Survey

Healthier streams for fish and people. A community better protected from flooding and erosion. These are our goals.

The City of Mukilteo Stormwater Utility is a division of the City of Mukilteo's Public Works Department. As a utility, our services are funded by a fee paid by property owners. These fees support projects and programs identified in our city's Stormwater Comprehensive Plan.

It is important that we hear from as many people as possible. Your input will help us make decisions around what services we prioritize. We then allocate the funding from your stormwater utility fees to fund the priority services.

Opportunities to participate:

1. Learn how the Stormwater Utility reduces flooding and keeps our waterways clean.
2. [Fill out an online survey.](#)
3. Sign up to receive project updates while filling out the survey.
4. Attend the Open House on September 13, 2022 6:30-8PM at Rose Hill Community Center.

Scroll down to continue... *it's all connected!*

[AGUAS PLUVIALES DE MUKILTEO: Conteste nuestra encuesta](#)

[MUKILTEO 우수: 설문조사에 응해 주세요](#)

[MUKILTEO市雨水: 完成我们的调查问卷](#)

<https://storymaps.arcgis.com/stories/0a903d433ca4704a3205ca9902fcb0d391e>

9/29/22, 4:26 PM Mukilteo Stormwater Survey



How do we reduce flooding and erosion in our City?

There are many ways we manage stormwater to help reduce flooding and erosion to keep people, property, and roads safe, including:

- **Maintaining the stormwater system and structures.** This prevents clogging and backups so that we experience less flooding in our city streets and streams. We regularly inspect our pipes and stormwater structures so that we can catch breaks, cracks, and other small problems before they become big problems.
- **Building projects that reduce local flooding.** When there are reoccurring stormwater backups, we investigate, design solutions, and build projects that either convey stormwater

<https://storymaps.arcgis.com/stories/0a903d433ca4704a3205ca9902fcb0d391e>

9/29/22, 4:26 PM Mukilteo Stormwater Survey

more effectively, or hold it longer so we can better control how much flows into our systems during rainstorms.

- **Providing technical assistance to property owners about drainage problems on your property.** Residents can receive a site visit and talk with experts at the Utility for help with flooding or erosion issues happening on their property.
- **Addressing stormwater impacts on steep slopes.** Mukilteo's location on the steep slopes above Puget Sound creates challenges for managing stormwater runoff. The Utility takes care to avoid erosion caused by stormwater on steep and unstable hillslopes to reduce impacts to property, infrastructure, and streams.



<https://storymaps.arcgis.com/stories/0a903d433ca4704a3205ca9902fcb0d391e>

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:26 PM Mukilteo Stormwater Survey

How do we keep our waterways clean for fish and people?

There are many things we do to keep our streams, wetlands and Puget Sound healthy, including:

- **Watershed planning that includes identifying problems and defining solutions.** Understanding the different terrain, and types of drainage issues in each watershed helps us tailor our stormwater management solutions.
- **Identifying and fixing water pollution problems.** Cleaning up pollution at its source is the best way to keep our waterways clean. When this isn't possible, water quality treatment facilities are constructed to filter pollutants out of stormwater.
- **Maintaining the stormwater system and facilities designed to remove pollution from stormwater.** The City's stormwater system gets filled with sediment and debris. City staff must complete annual maintenance on the stormwater system to ensure it continues to work properly.

<https://storymaps.arcgis.com/stories/0a0803433ca4704a3205c9f9302f3c3d3print> 57

9/29/22, 4:26 PM Mukilteo Stormwater Survey



Conducting education and outreach. The Utility provides outreach on stormwater issues to the community.

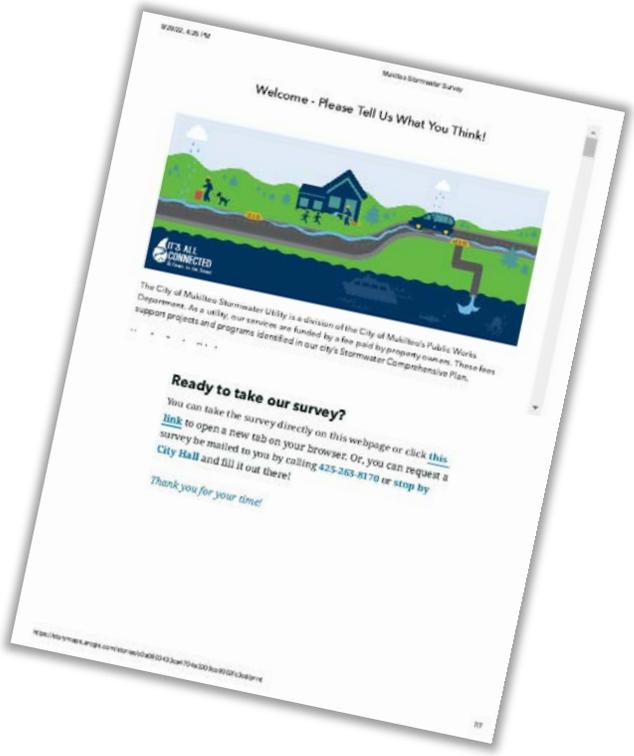
Help residents and businesses prevent water pollution. The Utility helps businesses prevent pollution from reaching the stormwater system.

How do we work together with residents and businesses to make positive change?

There are many ways the City's Stormwater Utility helps residents and businesses prevent pollution, including:

- **Conducting education and outreach.** Educating residents and businesses on how individual actions impact our streams and Puget Sound empowers residents and businesses to make small changes that improve the health of the City's streams and Puget Sound.
- **Helping residents and businesses prevent water pollution.** The Stormwater Utility experts can share lots of best practices that keep pollution out of our streams, wetlands, and Puget Sound.

<https://storymaps.arcgis.com/stories/0a0803433ca4704a3205c9f9302f3c3d3print> 67



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

WELCOME - PLEASE TELL US WHAT YOU THINK!

The City of Mukilteo Stormwater Utility is a division of the City of Mukilteo's Public Works Department. As a utility, our services are funded by a few parcel-by-parcel systems. These fees support projects and programs that focus on our city's Stormwater Comprehensive Plan.

Your feedback will help us:

- Evaluate and improve our stormwater services and program
- Develop a plan that reflects our community's values, priorities, and concerns

1. What best describes your connection to the Mukilteo community?

Residential property or dwelling:

Own Rent N/A

Business property:

Own Rent N/A

Other

2. Where in Mukilteo do you live and/or work? *

Use the map to identify the parcel and that best represents where you live and/or work.

Which watershed do you live in?

[Click here to view the map.](#) *Mukilteo and determine which watershed you live in.

Please select:

Which watershed do you work in?

[Click here to view the map.](#) *Mukilteo and determine which watershed you work in.

Please select:

3. Is your property within 200 feet of a stream, wetland, steep slope, or Puget Sound?

Please select:

4. What are your priorities regarding stormwater?

Rank the following systems 1 through 4, with 1 being most important by dragging the element into the order you prioritize.

Bank flooding



The Mukilteo Stormwater Utility may consider providing additional services to achieve Utility goals to keep streams, wetlands, and Puget Sound healthy.

Please provide your thoughts on the potential systems listed right to use all systems.

14. If the Utility were to conduct monitoring and record 3-4 water quality or biology, how important would this be to you?

Most important Important Moderately important Somewhat important Not important

15. If the Utility were to install communication technologies (such as sensors and beyond) when it is required to keep stormwater entering streams, how important would this be to you?

Most important Important Moderately important Somewhat important Not important

16. How important to you is it to have more information on water quality and availability for fish and wildlife, how important would this be to you?

Most important Important Moderately important Somewhat important Not important

17. In the past five years, how has the Stormwater Utility met your expectations in the following areas?

Service Area	Exceeds expectations	Somewhat exceeds expectations	Meets expectations	Somewhat meets expectations	Does not meet expectations
Bank flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Would you like to report any specific drainage or water quality issues in Mukilteo?*

Yes No

19. Is there anything else you would like to share about stormwater management in Mukilteo?*

Please provide your contact information below if you would like to be added to the City's list of interested parties for the project and be notified about community meetings:

Loss of habitat and harm to the environment

Water quality (nutrients in the water)

Erosion

Flooding of roads and streams

Property damage

None

A key role of Mukilteo's Stormwater Utility is to manage drainage and reduce flooding incidents to keep people, property, and assets safe.

Should rights to use all options.

How important is it to you to work to... (Scale 1-5)	Normal	Slightly important	Moderately important	Very important	Extremely important
9. How important is it to you to work to manage drainage to identify problems and determine what to do about them in the watershed in the city?	<input type="radio"/>				
10. How important is it to you to work to identify and fix water pollution problems?	<input type="radio"/>				
11. How important is it to you to work to maintain the system and clean up the system pollution from stormwater?	<input type="radio"/>				

A key role of Mukilteo's Stormwater Utility is to provide education and help incidents and businesses prevent pollution.

Should rights to use all options.

How important is it to you to work to... (Scale 1-5)	Normal	Slightly important	Moderately important	Very important	Extremely important
12. How important is it to you to work to provide education and outreach on stormwater issues?	<input type="radio"/>				
13. How important is it to you to work to help businesses and homes prevent water pollution?	<input type="radio"/>				



OPTIONAL DEMOGRAPHIC QUESTIONS

There are no right or wrong answers when participating in this survey, unless you select the "Please let us know if you would like translation or interpretation assistance." The translation services are provided in our community's local language that is your preferred language for printing project updates?

Please select:

Age

Please select:

Gender

Please select:

Ethnicity

Please select:

Disability

Please let us know if you would like translation or interpretation assistance.

The translation services are provided in our community's local language that is your preferred language for printing project updates?

Please select:

Powered by Survey123

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

IT'S ALL CONNECTED
5 Miles to the Sound

CITY OF MUKILTEO

Mukilteo Stormwater Survey
City of Mukilteo 2024 Stormwater Comprehensive Plan

have a **say**

WELCOME – PLEASE TELL US WHAT YOU THINK!

The City of Mukilteo Stormwater Utility is a division of the City of Mukilteo's Public Works Department. As a utility, our services are funded by a fee paid by property owners. These fees support projects and programs identified in our city's Stormwater Comprehensive Plan.

Our goal is to work in partnership with the community to:

- Protect and enhance water quality and aquatic habitat by reducing sediment and other harmful pollutants that get carried into our waters
- Reduce localized flooding and erosion
- Protect and enhance stream and wetland function
- Mitigate stormwater impacts on steep slopes
- Educate the public on surface water issues

Your feedback will help us:

- Evaluate and improve our stormwater services and program
- Develop a plan that reflects our community's values, priorities, and concerns

Completing this survey should take approximately 5 minutes

To complete the survey online visit: www.mukilteowa.gov/stormwatersurvey
Mail the hardcopy survey responses to the City of Mukilteo by Oct. 10th, 2022.
Attn: Public Works Stormwater Survey
11930 Cyrus Way
Mukilteo, WA 98275

Learn more at the public open house on Sept. 13, 2022, from 6:30 - 8:00 PM

- Rosehill Community Center – Vancouver Room, 304 Lincoln Ave, Mukilteo, WA 98275

1. What option below best describes your connection to the Mukilteo community?
(Please check all that apply)

	Owner, Renter, or NA	2 years or less	3-10 years	11-20 years	Over 20 years
Residential property or dwelling	<input type="checkbox"/> Own <input type="checkbox"/> Rent <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business property	<input type="checkbox"/> Own <input type="checkbox"/> Rent <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please specify and share details below	<input type="checkbox"/> Own <input type="checkbox"/> Rent <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please share any additional comments here:

Page 1

2. Where in Mukilteo do you live and/or work? Use the map to identify the watershed that best represents where you live and/or work. A larger map is attached to the last page of this survey. (Please check all that apply)

Watersheds	Live here	Work here	Not sure	Doesn't apply	Other
Edgewater	<input type="checkbox"/>				
Brewery Creek	<input type="checkbox"/>				
Goat Trail Ravine	<input type="checkbox"/>				
Olympic View	<input type="checkbox"/>				
Japanese Gulch	<input type="checkbox"/>				
Naketa Beach	<input type="checkbox"/>				
Smugglers Gulch	<input type="checkbox"/>				
Big Gulch	<input type="checkbox"/>				
Chennault Beach Creek	<input type="checkbox"/>				
Upper Chennault Beach Creek	<input type="checkbox"/>				
Lower Chennault Beach Creek	<input type="checkbox"/>				
Hulk Creek	<input type="checkbox"/>				
Picnic Point Ravine	<input type="checkbox"/>				

3. Is your property within 200 feet of a stream, wetland, steep slope, or Puget Sound?
 Yes No I'm not sure

4. What are your priorities regarding stormwater? (Rank the following options 1 through 6, with 1 being most important)

<input type="checkbox"/> Flooding of creeks and streams	<input type="checkbox"/> Water quality / pollutants in the water
<input type="checkbox"/> Property damage	<input type="checkbox"/> Loss of habitat and harm to the environment
<input type="checkbox"/> Erosion (when soil or sediment get moved by flowing water or streambanks)	<input type="checkbox"/> Street flooding

A key role of Mukilteo's Stormwater Utility is to manage drainage and reduce flooding incidents to keep people, property, and roads safe.

5. How important to you is our work to maintain stormwater drainage systems and structures?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

6. How important to you is our work to reduce local flooding?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

Page 2

7. How important to you is our work to provide residents with technical assistance to solve drainage problems on their property?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

8. How important to you is our work to address stormwater impacts on steep slopes?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

9. How important to you is our work in watershed planning to identify problems and solutions unique to different watersheds in the city?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

10. How important is it to you that we identify and fix water pollution problems?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

11. How important to you is our work to maintain the system and structures that remove pollution from stormwater?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

12. How important to you is our work to conduct education and outreach on stormwater issues?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

13. How important to you is our work to help residents and businesses prevent water pollution?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

A key role of Mukilteo's Stormwater Utility is to keep streams, wetlands, and Puget Sound healthy.

A key role of Mukilteo's Stormwater Utility is to provide education and help residents and businesses prevent pollution.

Page 3

The Mukilteo Stormwater Utility may consider providing additional services to advance Utility goals to keep streams, wetlands, and Puget Sound healthy. Please provide your thoughts on the potential services in questions 14 through 16.

14. If the Utility were to conduct monitoring and research (i.e., water quality, or biological), how important would this be to you?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

15. If the Utility were to build stormwater treatment facilities above and beyond what is required to reduce pollutants from entering streams, how important would this be to you?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

16. If the Utility were to build projects to restore streams and wetlands for fish and wildlife, how important would this be to you?
 Not at all important
 Slightly important
 Moderately important
 Very important
 Extremely important
 Not sure

17. In the past five years, how has the Stormwater Utility met your expectations in the following areas?

	Exceeds expectations	Somewhat exceeds expectations	Meets expectations	Somewhat below expectations	Below expectations	Not sure
Managing drainage to reduce flooding incidents to keep people, property, and roads safe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keeping streams, wetlands, and Puget Sound healthy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing opportunities to learn about stormwater issues and how to prevent pollution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall management of stormwater and its impacts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Page 4

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

18. Would you like to report any specific drainage or water quality issues in Mukilteo?

Yes No

1. Issue and description #1

- Issue type
 - Flooding
 - Clogged storm drain
 - Discharge of pollution
 - Polluted body of water
 - Eroded streambank
 - Other _____
- Issue location / nearest address or intersection: _____
- When and how often do you notice the issue
 - After heavy rain
 - Whenever it rains
 - All the time
 - Occasionally
 - Other _____
- Please describe the issue in your words

2. Issue and description #2

- Issue type
 - Flooding
 - Clogged storm drain
 - Discharge of pollution
 - Polluted body of water
 - Eroded streambank
 - Other _____
- Issue location / nearest address or intersection: _____
- When and how often do you notice the issue
 - After heavy rain
 - Whenever it rains
 - All the time
 - Occasionally
 - Other _____
- Please describe the issue in your words

If you would be willing to talk more about the issues you have shared with someone from the Stormwater Utility, please include your preferred contact information here: _____

19. Is there anything else you would like to share about stormwater management in Mukilteo?

Yes No

Page 5

IT'S ALL CONNECTED & flows to the Sound

CITY OF MUKILTEO

Mukilteo Stormwater Survey

City of Mukilteo 2024 Stormwater Comprehensive Plan

Please provide your contact information below if you would like to be added to the City's list of interested parties for this project and be notified about community meetings:

Name: _____
 Email address: _____
 Mailing address: _____

OPTIONAL DEMOGRAPHIC QUESTIONS

Demographic questions help us understand who is participating and how well community engagement efforts or input gathered reflect the diversity of our community.

Age

Under 18 19-24 25-44 45-64 65 and over

Gender

Male Female Transgender
 Non-binary Other
 Prefer not to answer

Race/Ethnicity

Caucasian African American Latino or Hispanic Asian Native American
 Native Hawaiian or Pacific Islander Other Prefer not to say, Unknown

Disability

Hearing Vision Cognitive/Mental Ambulatory/Mobility
 Self-care Difficulty Other _____

Please let us know if you would like translation or interpretation assistance.

The most common languages spoken in our community are listed below. What is your preferred language for getting project updates?

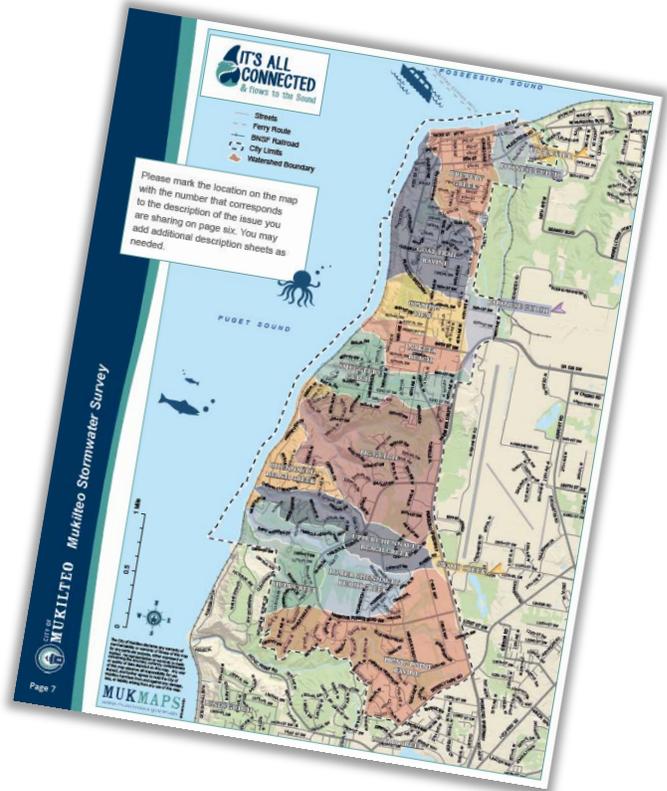
English Chinese Spanish Korean Other, please specify: _____

Let us know if you need translation or interpretation services, or require assistance with this survey, 425.263.8170. Title VI of the Civil Rights Act of 1964 requires recipients of Federal financial assistance to take reasonable steps to make their programs, services, and activities accessible by eligible persons with limited English proficiency.

Thank you for participating in this survey!

Please use the map on the next page to identify the locations of draining or water quality issues you're aware of.

Page 6



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo

Encuesta sobre las aguas pluviales de Mukilteo



Conteste nuestra encuesta.
¿Cuántos sobre nuestros esfuerzos para reducir las inundaciones y mantener saludables nuestros arroyos y Puget Sound!

Las aguas pluviales son agua de lluvia que cae al suelo y es absorbida por el suelo o escurre por los techos, las calles, el césped y otras superficies sobre las que cae. El Servicio de Aguas Pluviales de Mukilteo tiene el cometido de proteger los arroyos de la contaminación y la infraestructura de las inundaciones. Esto lo hacemos manteniendo y construyendo infraestructura para aguas pluviales. También involucramos a nuestra comunidad para ayudar a mantener la contaminación fuera de nuestros arroyos y de Puget Sound.

<https://storymaps.arcgis.com/stories/220021491346291693044a0358542b1pnt>

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo

Arroyos más saludables para los peces y las personas. Una comunidad mejor protegida de inundaciones y erosión. Estos son nuestros objetivos.

El Servicio de Aguas Pluviales de la Ciudad de Mukilteo (el Servicio) es una división del Departamento de Obras Públicas de la Ciudad de Mukilteo. Como servicio público, estamos financiados por las cuotas que pagan los propietarios. Estas cuotas apoyan proyectos y programas identificados en el Plan Integral de Aguas Pluviales de nuestra ciudad.

Es importante que escuchemos a tantas personas como sea posible. Su opinión nos ayudará a tomar decisiones sobre los servicios a los que damos prioridad. Luego asignamos los fondos de sus cuotas de servicios públicos de aguas pluviales para financiar los servicios que tienen prioridad.

Oportunidades para participar:

1. Conozca cómo el Servicio de Aguas Pluviales reduce las inundaciones y mantiene limpias nuestras vías fluviales.
2. [Complete una encuesta en línea.](#)
3. Inscribise en nuestra lista de correo.
4. Asista a la reunión pública el 13 de septiembre de 2022 6:30 a 8 p.m. en el centro comunitario Rose Hill Community Center.

Desplácese hacia abajo para continuar... ¡todo está conectado!

<https://storymaps.arcgis.com/stories/220021491346291693044a0358542b1pnt>

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo



¿Cómo reducimos las inundaciones y la erosión en nuestra ciudad?

Utilizamos muchos medios para manejar las aguas pluviales y ayudar a reducir las inundaciones y la erosión para mantener seguras a las personas, las propiedades y las carreteras, entre ellos:

- **Damos mantenimiento a las estructuras y el sistema de aguas pluviales.** Esto previene obstrucciones y desbordamientos para que tengamos menos inundaciones en las calles y arroyos de nuestra ciudad. Inspeccionamos regularmente nuestras tuberías y estructuras de aguas pluviales para que podamos detectar roturas, grietas y otros pequeños problemas antes de que se conviertan en grandes problemas.

<https://storymaps.arcgis.com/stories/220021491346291693044a0358542b1pnt>

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo

- **Creamos proyectos que reducen las inundaciones locales.** Cuando hay desbordamientos recurrentes de aguas pluviales, investigamos, diseñamos soluciones y construimos proyectos que transporten las aguas pluviales más eficazmente o las retengan por más tiempo para que podamos controlar mejor cuánto fluye hacia nuestros sistemas durante las tormentas.
- **Damos asistencia técnica a los propietarios sobre problemas de drenaje en su propiedad.** Los residentes pueden recibir una visita y hablar con expertos en la oficina del Servicio para recibir ayuda con los problemas de inundación o erosión que ocurran en su propiedad.
- **Estudiamos los impactos de las aguas pluviales en pendientes pronunciadas.** La ubicación de Mukilteo en las empinadas laderas que miran hacia Puget Sound crea problemas para el manejo de la escorrentía de aguas pluviales. El Servicio se ocupa de prevenir la erosión causada por las aguas pluviales en las laderas empinadas e inestables para reducir los impactos en las propiedades, la infraestructura y los arroyos.

<https://storymaps.arcgis.com/stories/220021491346291693044a0358542b1pnt>

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo



Planificar cuencas hidrográficas, lo cual que incluye la identificación de problemas y la definición de soluciones. El tamaño de calles mantiene las drenajes libres de escombros, lo que permite que fluyan las aguas pluviales.

Monitorear y solucionar problemas de contaminación del agua. El Servicio de Aguas Pluviales de la ciudad de Mukilteo ayuda a prevenir la contaminación de las aguas pluviales en los arroyos.

Mantener el sistema de aguas pluviales y las instalaciones diseñadas para eliminar la contaminación de las aguas pluviales. El S.A.P. se basa en el principio de la no redundancia para asegurar que el agua pluvial sea capturada y almacenada (que retiene y libera lentamente las aguas pluviales).

¿Cómo mantenemos nuestras vías fluviales limpias para los peces y las personas?

Hay muchas cosas que hacemos para mantener saludables nuestros arroyos, humedales y Puget Sound, entre otras:

- Planificar cuencas hidrográficas, lo cual que incluye la identificación de problemas y la definición de soluciones. Entender los diferentes terrenos y los tipos de problemas de drenaje en cada cuenca nos ayuda a adaptar nuestras soluciones de manejo de aguas pluviales.
- Identificar y solucionar problemas de contaminación del agua. Limpiar la contaminación en su origen es la mejor manera de mantener limpias nuestras vías fluviales. Cuando esto no es posible, se construyen

<https://storymaps.arcgis.com/stories/23032149134a291693c44a5395a2b2print> 58

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo

instalaciones de tratamiento de la calidad del agua para eliminar los contaminantes de las aguas pluviales.

- Mantener el sistema de aguas pluviales y las instalaciones diseñadas para eliminar la contaminación de las aguas pluviales. El sistema de aguas pluviales de la ciudad se llena de sedimentos y escombros. El personal de la ciudad debe completar el mantenimiento anual del sistema de aguas pluviales para garantizar que continúe funcionando correctamente.



Realización de actividades de educación y divulgación. El Servicio de Aguas Pluviales proporciona a la comunidad información sobre problemas de aguas pluviales.

Ayuda a los residentes y a las empresas a prevenir la contaminación del agua. El Servicio de Aguas Pluviales ayuda a las empresas a evitar que la contaminación llegue al sistema de aguas pluviales.

¿Cómo colaboramos con los residentes y las empresas para lograr un cambio positivo?

Hay muchas maneras en que el Servicio de Aguas Pluviales de la Ciudad ayuda a los residentes y a las empresas a prevenir la

<https://storymaps.arcgis.com/stories/23032149134a291693c44a5395a2b2print> 59

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo

contaminación, entre ellas:

- Realización de actividades de educación y divulgación. Educar a los residentes y empresas sobre cómo las decisiones individuales impactan nuestros arroyos y Puget Sound empodera a los residentes y empresas para hacer pequeños cambios que mejoren la salud de los arroyos de la Ciudad y Puget Sound.
- Ayudar a los residentes y a las empresas a prevenir la contaminación del agua. Los expertos del Servicio de Aguas Pluviales pueden compartir muchas de las mejores prácticas que impiden que la contaminación entre a nuestros arroyos, humedales y a Puget Sound.



<https://storymaps.arcgis.com/stories/23032149134a291693c44a5395a2b2print> 78

9/29/22, 4:27 PM Encuesta sobre las aguas pluviales de Mukilteo

¿Está listo para contestar nuestra encuesta?

Puede contestar la encuesta directamente en esta página web o hacer clic en [este enlace](#) para abrir una nueva pestaña en su navegador. O bien, puede solicitar que le envíen una encuesta por correo llamando al 425-263-8170 o [pasar por el Ayuntamiento \(City Hall\)](#) y completarla allí.

Le agradecemos su tiempo.



<https://storymaps.arcgis.com/stories/23032149134a291693c44a5395a2b2print> 89

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

BIENVENIDO - POR FAVOR, ¡DÍGANOS LO QUE PIENSA!

El Servicio de Aguas Pluviales de la Ciudad de Mukilteo (el Servicio) es una división del Departamento de Obras Públicas de la Ciudad de Mukilteo. Como servicio público, estamos fascinados por las cosas que piensan los propietarios. Entre cosas que piensan y programas identificados en el Plan Integral de Aguas Pluviales de nuestra ciudad.

Sus comentarios nos ayudarán a:

- Evaluar y mejorar nuestros servicios y programas de aguas pluviales.
- Diseñar un plan que refleje las visiones, las prioridades y las preocupaciones de nuestra comunidad.

1. ¿Qué describe mejor su conexión con la comunidad de Mukilteo?

Propiedad residencial o lugar de residencia:

Propietario Alquila N/A

Propiedad comercial:

Propietario Alquila N/A

2. ¿En qué parte de Mukilteo vive y/o trabaja?

Consulte el mapa para identificar la cuenca hidrográfica que mejor represente el lugar donde vive o trabaja.

2. ¿En qué parte de Mukilteo vive?

3. ¿En qué parte de Mukilteo trabaja?

4. ¿Está su propiedad a menos de 200 pies de un arroyo, humedal, pendiente empinada o de Puget Sound?

4. ¿Cuáles son sus prioridades con respecto a las aguas pluviales?

11. ¿Qué tan importante es para usted nuestro trabajo para mantener el sistema y las estructuras que eliminan la contaminación de las aguas pluviales?

Una función clave del Servicio de Aguas Pluviales de la Ciudad de Mukilteo es facilitar educación y ayudar a los residentes y las empresas a prevenir la contaminación.

12. ¿Qué tan importante es para usted nuestro trabajo de hacer a saber educación y divulgación sobre problemas de aguas pluviales?

13. ¿Qué tan importante es para usted nuestro trabajo para ayudar a los residentes y a las empresas a prevenir la contaminación del agua?

14. Si el Servicio tiene o está realizando o investigando por ejemplo, biológicos o de la calidad del agua, ¿qué importancia le da usted para usted?

15. Si el Servicio construyera instalaciones de tratamiento de aguas pluviales más allá de lo que se requiere para cumplir la entrada de contaminantes en las empresas, ¿qué importancia le da usted para usted?

16. Si el Servicio construyera proyectos para restaurar arroyos y humedales para peces y vida silvestre, ¿qué importancia le da usted para usted?

17. En los últimos cinco años, ¿en qué medida cumplió el Servicio con sus expectativas en las siguientes áreas?

18. ¿Le gustaría reportar algún problema específico de drenaje o calidad del agua en Mukilteo?

19. ¿Hay alguna otra cosa que le gustaría decir sobre el manejo de aguas pluviales en Mukilteo?

Proporcione su información de contacto abajo si quiere que lo agregamos a la lista de la Ciudad de partes interesadas para este proyecto que recibe notificaciones sobre reuniones comunitarias:

Decision de correo electrónico:

Decision de texto:

PREGUNTAS DEMOGRÁFICAS OPCIONALES

Las preguntas demográficas nos ayudan a comprender quién está participando y en qué medida los miembros de participación de la comunidad o los socios organizados reflejan la diversidad de nuestra comunidad.

Edad

Sexo

Raza/origen étnico

11. ¿Qué tan importante es para usted nuestro trabajo para mantener el sistema y las estructuras que eliminan la contaminación de las aguas pluviales?

Una función clave del Servicio de Aguas Pluviales de la Ciudad de Mukilteo es facilitar educación y ayudar a los residentes y las empresas a prevenir la contaminación.

12. ¿Qué tan importante es para usted nuestro trabajo de hacer a saber educación y divulgación sobre problemas de aguas pluviales?

13. ¿Qué tan importante es para usted nuestro trabajo para ayudar a los residentes y a las empresas a prevenir la contaminación del agua?

14. Si el Servicio tiene o está realizando o investigando por ejemplo, biológicos o de la calidad del agua, ¿qué importancia le da usted para usted?

15. Si el Servicio construyera instalaciones de tratamiento de aguas pluviales más allá de lo que se requiere para cumplir la entrada de contaminantes en las empresas, ¿qué importancia le da usted para usted?

16. Si el Servicio construyera proyectos para restaurar arroyos y humedales para peces y vida silvestre, ¿qué importancia le da usted para usted?

17. En los últimos cinco años, ¿en qué medida cumplió el Servicio con sus expectativas en las siguientes áreas?

18. ¿Le gustaría reportar algún problema específico de drenaje o calidad del agua en Mukilteo?

19. ¿Hay alguna otra cosa que le gustaría decir sobre el manejo de aguas pluviales en Mukilteo?

11. ¿Qué tan importante es para usted nuestro trabajo para mantener el sistema y las estructuras que eliminan la contaminación de las aguas pluviales?

Una función clave del Servicio de Aguas Pluviales de la Ciudad de Mukilteo es facilitar educación y ayudar a los residentes y las empresas a prevenir la contaminación.

12. ¿Qué tan importante es para usted nuestro trabajo de hacer a saber educación y divulgación sobre problemas de aguas pluviales?

13. ¿Qué tan importante es para usted nuestro trabajo para ayudar a los residentes y a las empresas a prevenir la contaminación del agua?

14. Si el Servicio tiene o está realizando o investigando por ejemplo, biológicos o de la calidad del agua, ¿qué importancia le da usted para usted?

15. Si el Servicio construyera instalaciones de tratamiento de aguas pluviales más allá de lo que se requiere para cumplir la entrada de contaminantes en las empresas, ¿qué importancia le da usted para usted?

16. Si el Servicio construyera proyectos para restaurar arroyos y humedales para peces y vida silvestre, ¿qué importancia le da usted para usted?

17. En los últimos cinco años, ¿en qué medida cumplió el Servicio con sus expectativas en las siguientes áreas?

18. ¿Le gustaría reportar algún problema específico de drenaje o calidad del agua en Mukilteo?

19. ¿Hay alguna otra cosa que le gustaría decir sobre el manejo de aguas pluviales en Mukilteo?

¿Díganos si quiere asistencia con traducción o interpretación.

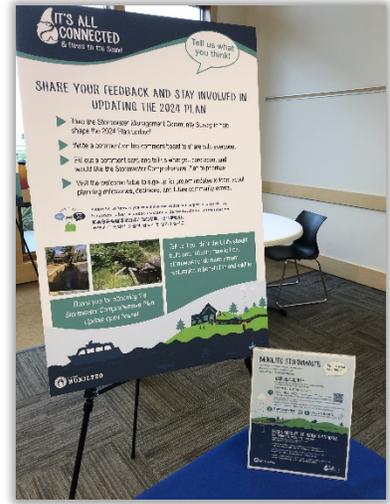
¿Cuál es su idioma preferido para recibir notificaciones sobre el proyecto?

¿Díganos si necesita asistencia con traducción o interpretación.

¿Cuál es su idioma preferido para recibir notificaciones sobre el proyecto?

¿Díganos si quiere asistencia con traducción o interpretación.

¿Cuál es su idioma preferido para recibir notificaciones sobre el proyecto?



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:28 PM Mukilteo 우수 설문조사

Mukilteo 우수 설문조사

MUKILTEO 우수
설문조사에 응해 주세요.
홍수를 줄이고 하천과 Puget Sound를 건강하게 유지하기 위한 우리의 노력에 대해 알려주세요!

귀하의 생각이 무엇인지 알려주세요!

우수는 땅에 떨어지는 빗물, 토양으로 흡수되거나 지붕, 거리, 잔디, 및 기타 표면에서 흘러 넘치는 빗물입니다. Mukilteo의 우수 유틸리티 사업소는 오염으로부터 하천을 보호하고 병합으로부터 기반 시설을 보호합니다. 우리 사업소는 우수 기반시설을 유지보수하고 건설함으로써 이러한 임무를 수행합니다. 또한 우리 사업소는 우리 지역사회와 협력하여 하천과 Puget Sound가 오염되지 않게 돕습니다.

물고기와 사람을 위한 더 건강한 하천 범람과 침식에서 더 잘 보호를 받는 지역사회 이것이 우리 사업소의 목표입니다.

<https://storymaps.arcgis.com/stories/547f80ca18c894146a26d8a9494100c9fnc>

9/29/22, 4:28 PM Mukilteo 우수 설문조사

Mukilteo 시 우수 유틸리티 사업소는 Mukilteo 시의 공공 사업부의 한 부분입니다. 유틸리티 사업소로서, 우리 사업소의 서비스는 재산 소유주가 지불하는 요금으로 자금을 조달합니다. 이 요금은 우리 시의 우수 종합 계획에서 확인된 프로그램과 프로젝트를 지원합니다.

중요한 것은 되도록 많은 사람들의 의견을 듣는 것입니다. 귀하의 의견은 우리 사업소가 서비스의 우선순위를 정하는 데 도움이 됩니다. 그러면 우리 사업소가 귀하의 우수 유틸리티 사업소 요금에서 자금을 할당하여 우선순위 서비스에 자금을 낼 것입니다.

참여 기회:

1. 우수 유틸리티 사업소가 어떻게 범람을 줄이고 수로를 깨끗하게 유지하는지 알아보세요.
2. **온라인 설문조사를 작성해 주세요.**
3. 우리 사업소 우편물 수신자 명단에 올라 주세요.
4. 2022년 9월 13일, 오후 6시 30분-8시에 Rose Hill Community Center에 있는 오픈 하우스에 참석해 주세요.

계속하려면 아래로 스크롤하세요... 모두 연결되어 있습니다!

<https://storymaps.arcgis.com/stories/547f80ca18c894146a26d8a9494100c9fnc>

9/29/22, 4:28 PM Mukilteo 우수 설문조사

우수 시스템과 구조물 유지보수. 우수 유출을 줄이고 하천과 Puget Sound를 건강하게 유지하기 위해 정기적으로 점검하는 것은 중요합니다.

우수 유출을 줄이고 하천과 Puget Sound를 건강하게 유지하기 위해 정기적으로 점검하는 것은 중요합니다.

우수 유출을 줄이고 하천과 Puget Sound를 건강하게 유지하기 위해 정기적으로 점검하는 것은 중요합니다.

우수 유출을 줄이고 하천과 Puget Sound를 건강하게 유지하기 위해 정기적으로 점검하는 것은 중요합니다.

우리 도시의 범람과 침식을 어떻게 줄이니까?

우리 사업소가 우수를 관리하여 범람과 침식을 줄여서 사람, 재산, 도로를 안전하게 지키는 방법에는 아래와 같이 여러 가지가 있습니다.

- 우수 시스템과 구조물 유지보수. 이러한 유지보수를 통해 막힘과 역류를 방지하여 도시의 거리와 하천이 덜 범람하게 합니다. 우리 사업소는 정기적으로 배관 우수 구조물을 점검하여 파손, 균열, 및 기타 사소한 문제가 큰 문제가 되기 전에 찾아낼 수 있습니다.
- 국부적 범람을 줄이는 프로젝트를 건설함. 우수 역류가 제발되는 경우, 우수 사업소는 우수를 보다 효과적으로 이송하거나, 또는 더 오래 유지하여 비가 쏟아지는 동안 시스템으로 유입되는 우량을 더 잘 제어할 수 있도록 조사하고, 해결책을 설계하여, 프로젝트를 건설합니다.

<https://storymaps.arcgis.com/stories/547f80ca18c894146a26d8a9494100c9fnc>

9/29/22, 4:28 PM Mukilteo 우수 설문조사

- 배수 문제가 있는 재산의 소유주에게 기술 지원을 제공함. 거주자는 현장 방문 및 당 유틸리티 사업소의 전문가 상담을 받아 본인 의 재산에서 발생하는 범람이나 침식 문제에 도움을 받을 수 있습니다.
- 가파른 경사면에 대한 우수 영향에 대처함. Mukilteo는 Puget Sound의 가파른 경사면에 소재하기에 우수 유출 관리에 어려움이 있습니다. 당 유틸리티 사업소는 가파르고 불안정한 경사면을 우수가 침식하는 현상을 방지하여 재산, 기반시설, 및 하천에 미치는 영향을 줄이기 위해 주의를 기울입니다.

문제를 확인하고 정기적으로 점검하는 것은 중요합니다. 지역 청소부에게 연락하여 문제를 제거하여 우수가 더 유출될 수 있게 합니다.

수익을 줄이고 침식을 줄이기 위해 정기적으로 점검하는 것은 중요합니다.

우수 유출을 줄이고 하천과 Puget Sound를 건강하게 유지하기 위해 정기적으로 점검하는 것은 중요합니다.

물고기와 사람을 위해 수로를 어떻게 깨끗이 유지합니까?

하천, 습지 및 Puget Sound를 건강하게 지키기 위해 우리가 하는 일 이 많이 있습니다.

<https://storymaps.arcgis.com/stories/547f80ca18c894146a26d8a9494100c9fnc>

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:28 PM Mukilteo 우수 설문조사

- 문제를 확인하고 해결책을 정의하는 것을 포함하는 유역 계획. 다양한 지형과, 각 유역의 배수 문제 유형을 파악하면 우수 관리 해결책을 맞춤형으로 마련하는 데 도움이 됩니다.
- 수질 오염 문제를 확인하여 해결하기. 오염원을 정의하는 것이 수로를 깨끗하게 유지하는 가장 좋은 방법입니다. 이것이 가능하지 않다면, 수질 처리 시설을 건설하여 우수에서 오염물질을 걸러내는 방법이 있습니다.
- 우수에서 오염을 제거하도록 설계된 우수 시스템과 시설 유지보수. Mukilteo의 우수 시스템은 퇴적물과 잔해물로 채워집니다. 시 직원들은 우수 시스템이 계속해서 제대로 작동하도록 안전을 기하기 위해 매년 우수 시스템 유지보수를 완료해야 합니다.




당 용인이다 사업소는 우수 문제에 대한 지원 활동을 제공합니다.

교육 및 자원 활동을 수행함. 개인 행동이 Mukilteo의 하천과 Puget Sound에 미치는 영향에 대해 거주민과 사업체를 교육하면, 거주민과 사업체가 Mukilteo의 하천과 Puget Sound를 더욱 건강하게 만드는 작은 변화를 주도할 수 있습니다.

교육 및 자원 활동을 수행함. 개인 행동이 Mukilteo의 하천과 Puget Sound에 미치는 영향에 대해 거주민과 사업체를 교육하면, 거주민과 사업체가 Mukilteo의 하천과 Puget Sound를 더욱 건강하게 만드는 작은 변화를 주도할 수 있습니다.

거주민과 사업체가 수질 오염을 방지하도록 돕기. 우수 유틸리티 사업소 전문가가 하천, 습지, 및 Puget Sound의 오염을 방지하는 수많은 모범 관행을 공유할 수 있습니다.

설문조사에 응할 준비가 되었습니까?
이 페이지에서 바로 설문조사에 응하거나 이 링크를 클릭하여 브라우저에서 새 탭을 열 수 있습니다. 또는 425-263-8170번으로 전화

https://storymaps.arcgis.com/stories/3d7f80ca18c884146a26d8a9a9494100/print 57

9/29/22, 4:28 PM Mukilteo 우수 설문조사

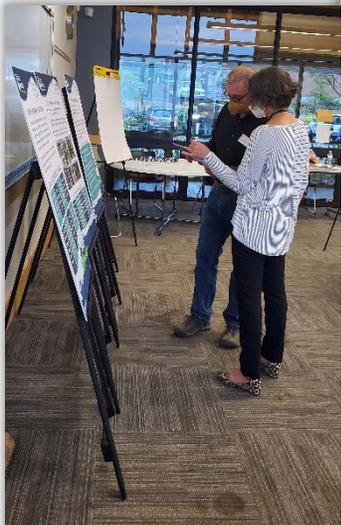
Mukilteo의 우수 유틸리티 사업소가 거주민과 사업체를 도와 오염을 방지하는 방법은 여러 가지가 있습니다.

교육 및 자원 활동을 수행함. 개인 행동이 Mukilteo의 하천과 Puget Sound에 미치는 영향에 대해 거주민과 사업체를 교육하면, 거주민과 사업체가 Mukilteo의 하천과 Puget Sound를 더욱 건강하게 만드는 작은 변화를 주도할 수 있습니다.

거주민과 사업체가 수질 오염을 방지하도록 돕기. 우수 유틸리티 사업소 전문가가 하천, 습지, 및 Puget Sound의 오염을 방지하는 수많은 모범 관행을 공유할 수 있습니다.

설문조사에 응할 준비가 되었습니까?
이 페이지에서 바로 설문조사에 응하거나 이 링크를 클릭하여 브라우저에서 새 탭을 열 수 있습니다. 또는 425-263-8170번으로 전화

https://storymaps.arcgis.com/stories/3d7f80ca18c884146a26d8a9a9494100/print 67



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

Mukilteo 우수 설문조사
Mukilteo 시 2024년 우수 종합 계획

환영합니다. 귀하의 생각이 무엇보다 알려주세요!

Mukilteo 시 우수 유달리 사업소는 Mukilteo 시의 공공 사업부의 한 부분입니다. 유달리 사업소에서, 우리 사업소의 서비스는 재산 소유자가 지불하는 요금으로 자금을 조달합니다. 이 요금은 우리 시의 우수 종합 계획에서 확인된 프로그램과 프로젝트를 지원합니다.

우리 사업소의 목표는 지역사회와 협력하여 다음 사항을 수행하는 것입니다.

- 수지원에 유입되는 퇴적물과 기타 유해 오염물질을 줄여 수질과 수생 서식지를 보호하고 개선합니다.
- 국지적 범람과 침식을 감소시킵니다.
- 하천과 습지 기능을 보호하고 강화합니다.
- 가파른 경사면에 대한 우수 영양을 완화합니다.
- 지표수 문제에 대해 대중 교육을 실시합니다.

귀하의 피드백은 우리 사업소가 다음과 같이 하는 데 도움이 됩니다.

- 우리 사업소의 우수 서비스의 프로그램을 평가하고 개선합니다.
- 지역사회 의견, 의견, 우선순위 및 우려사항을 반영하는 계획을 세웁니다.

본 설문조사를 작성하는 데는 약 5분이 걸릴 것입니다.

온라인 설문조사를 작성하려면 www.mukilteo.gov/stormwatersurvey를 방문해 주십시오.

온라인 설문조사 응답자는 2022년 10월 10일까지 우편으로 Mukilteo 시로 보내주세요.
Attn: Public Works Stormwater Survey
11930 Cyrus Way
Mukilteo, WA 98275

2022년 9월 13일, 오후 6시 30분-8시, 공개 오픈 하우스에서 자세히 알아보세요
• Rosehill Community Center - Vancouver Room, 304 Lincoln Ave, Mukilteo, WA 98275

1. 귀하와 Mukilteo 커뮤니티의 관계를 가장 잘 설명하는 것은 무엇입니까?
(해당되는 모든 항목에 체크 표시(☑)를 하세요.)

소유주, 임차인, 또는 해당 무	2년 이하	3-10년	11-20년	20년 초과
주거용 재산 또는 주거 중	<input type="checkbox"/> 소유 <input type="checkbox"/> 임대 <input type="checkbox"/> 해당 무	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
사업용 재산	<input type="checkbox"/> 소유 <input type="checkbox"/> 임대 <input type="checkbox"/> 해당 무	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
기타 (어떤 세 부류 중 하나로 분류 yourself)	<input type="checkbox"/> 소유 <input type="checkbox"/> 임대 <input type="checkbox"/> 해당 무	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

부기 의견이 있으시면 여기에 알려주세요.

2. Mukilteo의 어디에서 거주/일/또는 근무하십니까? 지도를 사용하여 거주지/일/또는 근무지를 가장 잘 나타내는 유역을 확인해 주세요. 본 설문조사의 마지막 페이지에는 더 큰 지도가 첨부되어 있습니다. (해당되는 모든 항목에 체크 표시(☑)를 하세요.)

유역	여기에서 거주/일/근무함	여기에서 일/근무함	일/근무함	여기에서 일/근무함	기타
Edgewater	<input type="checkbox"/>				
Brewery Creek	<input type="checkbox"/>				
Goat Trail Ravine	<input type="checkbox"/>				
Olympic View	<input type="checkbox"/>				
Japanese Gulch	<input type="checkbox"/>				
Naketa Beach	<input type="checkbox"/>				
Smugglers Gulch	<input type="checkbox"/>				
Big Gulch	<input type="checkbox"/>				
Chennault Beach Creek	<input type="checkbox"/>				
Upper Chennault Beach Creek	<input type="checkbox"/>				
Lower Chennault Beach Creek	<input type="checkbox"/>				
Hulk Creek	<input type="checkbox"/>				
Pacific Point Ravine	<input type="checkbox"/>				

3. 귀하의 재산은 하천, 습지, 급경사 또는 Puget Sound에서 200피트 이내에 있습니까?
 예 아니요 잘 모르겠음

4. 우수에 관한 귀하의 우선순위는 무엇입니까? (다음 옵션을 1에서 6까지로 순위를 매기세요. 가장 중요한 옵션이 1입니다.)

--- 개울과 하천의 범람	--- 수질/수생 오염물질
--- 재산 피해	--- 서식지 상실과 환경 피해
--- 침식 (토양이나 퇴적물이 흐르는 물이나 개울	--- 기타 범람
특을 따라 이동하게 됨)	

Mukilteo의 우수 유달리 도시의 주요 역할은 배수를 관리하고 범람 사고를 줄여 사람, 재산, 및 도로를 안전하게 지키는 것입니다.

5. 우수 배수 시스템과 구조물을 유지/보수하는 우리 사업소의 일이 귀하에게 얼마나 중요합니까?
 전혀 중요하지 않음 전혀 중요하지 않음

약간 중요함 약간 중요함

매우 중요함 매우 중요함

극히 중요함 극히 중요함

잘 모르겠음 잘 모르겠음

6. 국부 범람을 줄이는 당사의 작업이 귀하에게 얼마나 중요합니까?
 전혀 중요하지 않음 전혀 중요하지 않음

약간 중요함 약간 중요함

매우 중요함 매우 중요함

극히 중요함 극히 중요함

잘 모르겠음 잘 모르겠음

7. 귀하의 집에 배수 문제를 해결하기 위해 다음 질문에 대해 어떻게 생각하십니까?
배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

8. 귀하의 집에 배수 문제를 해결하기 위해 다음 질문에 대해 어떻게 생각하십니까?
배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

9. 도시의 여러 가지 다른 유형의 재산에 관련된 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

10. 우리 사업소가 다음을 통해 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

11. 우수에서 강을 제거하는 시스템과 구조물을 유지/보수하는 우리 사업소의 일과 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

12. 우수에서 강을 제거하는 시스템과 구조물을 유지/보수하는 우리 사업소의 일과 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

13. 귀하의 재산이 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

14. 귀하의 재산이 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

15. 귀하의 재산이 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

16. 귀하의 재산이 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

17. 지난 12년 동안, 우수 유달리 사업소는 다음을 통해 배수 문제를 해결하는 데는 어느 정도의 일이 귀찮게 할까?
 전혀 중요하지 않음 약간 중요함 매우 중요함 극히 중요함

Mukilteo 우수 유달리 사업소

18. Mukilteo 내의 특정 유역 또는 수생 오염물질은 어디에 있습니까?
 예 아니요

19. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

20. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

21. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

22. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

23. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

24. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

25. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

26. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

27. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

28. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

29. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

30. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

31. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

32. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

33. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

34. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

35. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

36. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

37. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

38. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

39. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

40. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

41. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

42. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

43. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

44. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

45. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

46. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

47. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

48. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

49. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

50. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

51. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

52. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

53. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

54. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

55. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

56. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

57. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

58. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

59. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

60. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

61. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

62. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

63. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

64. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

65. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

66. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

67. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

68. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

69. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

70. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

71. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

72. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

73. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

74. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

75. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

76. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

77. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

78. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

79. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

80. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

81. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

82. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

83. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

84. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

85. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

86. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

87. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

88. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

89. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

90. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

91. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

92. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

93. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

94. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

95. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

96. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

97. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

98. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

99. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

100. Mukilteo의 우수 유달리 사업소에 대한 의견은 무엇입니까?
 예 아니요

Print Community Survey / Korean



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:28 PM Mukilteo市雨水调查问卷

Mukilteo市雨水调查问卷

雨水是落在地面上的雨水，要么被土壤吸收，要么从屋顶、街道、草坪和其他地面流失。Mukilteo市雨水公用设施分部负责保护溪流免受污染，并保护基础设施免受洪水侵蚀。我们通过维护和建设雨水基础设施达到这一目的。我们还邀请我们的社区成员参与，帮助防止污染物进入我们的溪流和普吉特海湾。

对鱼和人类更健康的溪流。更好地保护社区免受洪水和侵蚀。这是我们的目标。

Mukilteo市雨水公用事业分部是Mukilteo市公共工程部的一个分部。作为公用事业分部，我们的服务由业主支付的费用提供资金。

<https://storymaps.arcgis.com/stories/6c31c97d6e74a40ad9d9f078787a4b1print>

9/29/22, 4:28 PM Mukilteo市雨水调查问卷

这些费用用于支持本市雨水综合计划中确定的项目和计划。

我们所听取尽可能多的人的意见十分重要。您的意见将帮助我们决定优先考虑哪些服务。然后，我们从您缴纳的雨水公用事业费中拨出资金，为优先服务提供资金。

参与机会:

1. 了解雨水公用事业分部如何减少洪水泛滥并保持我们的水道清洁。
2. [填写一份在线调查问卷](#)。
3. 加入我们的邮寄名单。
4. 参加开放日活动，日期：2022年9月13日 下午6:30-8:00；地点：Rose Hill社区中心。

向下滚动继续.....一切都是贯通连接的!

<https://storymaps.arcgis.com/stories/6c31c97d6e74a40ad9d9f078787a4b1print>

9/29/22, 4:28 PM Mukilteo市雨水调查问卷

我们如何减少本市的洪水和侵蚀?

我们通过多种方式管理雨水，帮助减少洪水和侵蚀，从而确保人员、财产和道路的安全，其中包括：

- **维护雨水系统和结构。** 这可以防止堵塞和倒塌，从而减少本市街道和溪流受到洪水侵蚀。我们定期检查管道和雨水排水结构，以便我们能够及时发现破裂、裂缝和其他小问题变成大问题之前发现的问题。
- **规划减少当地洪水的项目。** 当雨水倒流反复发生时，我们会开展调查，设计解决方案并规划项目，以便更有效地输送雨水或雨水保持更长时间，以便我们可以更好地控制暴雨期间流入我们系统的雨水流量。
- **就您的物业的排水问题向业主提供技术援助。** 居民可以接受实地考察，并与公用事业分部的专家交谈，获得解决物业上发生的洪水或侵蚀问题的帮助。
- **解决雨水对地貌的影响。** Mukilteo市位于普吉特海湾上方的陡坡上，这给管理雨水径流带来了挑战。公用事业分部注意避免雨水对陡峭和不稳定的山坡造成侵蚀，以减少对财产、基础设施和溪流的影响。

<https://storymaps.arcgis.com/stories/6c31c97d6e74a40ad9d9f078787a4b1print>

9/29/22, 4:28 PM Mukilteo市雨水调查问卷

我们如何为鱼和人类保持水道清洁?

为了保持溪流、湿地和普吉特海湾的健康，我们做了很多努力，其中包括：

- **流域规划，包括发现问题和定义解决方案。** 了解每个流域的不同地形和排水问题类型有助于我们定制雨水管理解决方案。
- **发现和解决水污染问题。** 从源头清理污染是保持水道清洁的最佳方法。如果无法做到这一点，则会建造水质处理设施，过滤雨水中的污染物。
- **维护旨在消除雨水污染的雨水系统和设施。** 本市的雨水系统充满了沉积物和碎屑。市政工作人员必须完成雨水系统的年度维护，以确保其继续正常运作。

<https://storymaps.arcgis.com/stories/6c31c97d6e74a40ad9d9f078787a4b1print>

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

9/29/22, 4:28 PM Mukilteo雨水调查问卷



开展教育和宣传工作。
公用事业分部向社区提供有关雨水问题的宣传服务。

帮助居民和企业防止水污染。
公用事业分部帮助业主防止污染物进入雨水系统。

我们如何与居民和企业合作以便做出积极的改变?

本市雨水公用事业分部通过多种方式帮助居民和企业防止污染，其中包括：

- 开展教育和宣传工作。教育居民和企业了解个人行为如何影响我们的溪流和普吉特海湾，使居民和企业能够做出小的改变，从而改善本市溪流和普吉特海湾的健康。
- 帮助居民和企业防止水污染。雨水公用事业分部专家可以分享很多最佳方法，防止污染物进入我们的溪流、湿地和普吉特海湾。

<https://storymaps.arcgis.com/stories/5c31c9b7c6e74aa0ad8a8d078e787aad?print>

5/5

9/29/22, 4:28 PM Mukilteo雨水调查问卷

准备好完成我们的调查问卷了吗?

您可以直接在本网页中填写调查问卷，或点击[本链接](#)，在浏览器上打开一个新选项卡。您还可以拨打电话号码425-263-8170 请求将调查问卷寄给您，或者到[市政厅](#)填写调查问卷!

[感谢您花费的宝贵时间!](#)

<https://storymaps.arcgis.com/stories/5c31c9b7c6e74aa0ad8a8d078e787aad?print>

6/6



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

欢迎 - 请告诉我们您的想法!

1. 什么最适当地描述您与Mukilteo市社区的联系?

住宅物业或住所

拥有住房 租房 不适用

商业地产

拥有住房 租房 不适用

其他

请在下面具体说明并分享详细意见

2. 您在Mukilteo市的哪个地方生活和/或工作?

请选择地址以最佳方式代表您生活和/或工作地点的分区。

您住在哪个区域?

请点击下拉菜单以选择您的区域，并确定您住在哪个分区。

Please select.

您在哪个区域工作?

请点击下拉菜单以选择您的区域，并确定您在哪个分区工作。

Please select.

5. 您使用雨水桶收集雨水吗?

是 否

6. 您使用透水铺装吗? (例如: 透水砖、透水混凝土、透水沥青)

是 否

7. 您使用绿色屋顶吗?

是 否

8. 您使用雨水花园吗?

是 否

9. 您使用雨水桶收集雨水吗?

是 否

10. 您使用雨水桶收集雨水吗?

是 否

11. 您使用雨水桶收集雨水吗?

是 否

18. 您是否拥有Mukilteo市的任何具体雨水问题?

是 否

19. 关于Mukilteo市的雨水问题, 您还有什么想分享的想法?

是 否

如果您希望知道是否有其他对本项目感兴趣的各方名单并收到有关社区会议的通知, 请在下方提供您的联系信息:

电子邮件地址:

联系电话:

提交

Powered by ArcGIS Survey123



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

MUKILTEO市雨水调查卷
Mukilteo市2024年雨水综合计划

发表 意见

欢迎！请告诉我们您的想法！
Mukilteo市雨水公用事业部门是Mukilteo市公共工程部的一个分部。作为公用事业分部，我们的服务由业主支付的费用提供资金。这些费用用于支持本市雨水综合计划中确定的项目和计划。

我们的目标是与社区合作，以便：
• 通过减少进入我们水域的沉积物和其他有害污染物来保护和改善水质和水生栖息地
• 减少局部洪水和侵蚀
• 保护和增强溪流和湿地功能
• 减轻雨水对陡坡的影响
• 就地表水问题对公众进行教育

您的反馈将帮助我们：
• 评估和改进我们的雨水服务和计划
• 制定反映我们社区价值观、优先事项和关注问题的计划

完成本调查卷约需5分钟

如需在线完成本调查卷，请访问网站：www.mukilteowa.gov/stormwatersurvey
在2022年10月10日之前将纸质调查卷寄回普雷格Mukilteo。
Attn: Public Works Stormwater Survey
11930 Cyrus Way
Mukilteo, WA 98275

在2022年9月13日下午6:30 - 8:00的公共开放日活动中了解更多信息
• Rosellhi Community Center - Vancouver Room, 304 Lincoln Ave., Mukilteo, WA 98275

1. 什么最适当地描述您与Mukilteo市社区的联系？
(请勾选所有适用的项目)

业主、承租人或不适用	2年以下	3-10年	11-20年	20年以上
住宅物业或住所 <input type="checkbox"/> 自有住房 <input type="checkbox"/> 租房 <input type="checkbox"/> 不适用	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
商业地产 <input type="checkbox"/> 自有住房 <input type="checkbox"/> 租房 <input type="checkbox"/> 不适用	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
其他，请在下面具体说明并评分详细程度 <input type="checkbox"/> 自有住房 <input type="checkbox"/> 租房 <input type="checkbox"/> 不适用	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

请在此处分享任何其他评论：

2. 您在Mukilteo市的哪个地方生活和工作？请使用地图指出最适当地代表您生活和工作地点的分水岭。本调查卷的最后一页附有一张较大的地图。(请勾选所有适用的项目)

分水岭	我住在附近	我在那里工作	不确定	不适用	其他
Edgewater	<input type="checkbox"/>				
Brewery Creek	<input type="checkbox"/>				
Goat Trail Ravine	<input type="checkbox"/>				
Olympic View	<input type="checkbox"/>				
Japanese Gulch	<input type="checkbox"/>				
Naketa Beach	<input type="checkbox"/>				
Smugglers Gulch	<input type="checkbox"/>				
Big Gulch	<input type="checkbox"/>				
Chennault Beach Creek	<input type="checkbox"/>				
Upper Chennault Beach Creek	<input type="checkbox"/>				
Lower Chennault Beach Creek	<input type="checkbox"/>				
Hulk Creek	<input type="checkbox"/>				
Picnic Point Ravine	<input type="checkbox"/>				

3. 您的物业是否位于溪流、湿地、陡坡或普吉特海湾200英尺以内？
 是 否 我不确定

4. 您对雨水的优先考虑是什么？(将以下选项从1到6排列，其中“1”表示最重要)

<input type="checkbox"/> 小溪和溪流洪水泛滥	<input type="checkbox"/> 水质/水中污染物
<input type="checkbox"/> 财产损失	<input type="checkbox"/> 栖息地丧失和对环境造成损害
<input type="checkbox"/> 侵蚀(当土壤沉积物被流水或浪岸推动时)	<input type="checkbox"/> 街道淹水

Mukilteo市雨水公用事业部门的一个重要作用是管理排水系统并减少洪水事件，以确保人员、财产和道路的安全。

5. 我们维护雨水排放系统和结构的工作对您来说有多重要？

完全不重要
 有点重要
 较为重要
 很重要
 极其重要
 不确定

6. 我们减少当地洪水事件的工作对您来说有多重要？

完全不重要
 有点重要
 较为重要
 很重要
 极其重要
 不确定

7. 您认为目前雨水排放系统的工作是否令人满意？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

8. 为了确定雨水排放系统的工作是否令人满意，您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

9. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

10. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

11. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

12. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

13. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

14. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

15. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

16. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

17. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

IT'S ALL CONNECTED & flows to the Sound

— 溪流
— 轻轨线路
— BNSF铁路
— 市区界限
— 分水岭界限

请用与您在第5页分享的问题描述相对应的号码在地面上标出位置。您可以根据需要添加额外的描述页面。

MUKILTEO 雨水调查卷

MUKMAPS!

18. 您是否曾向工作人员提出过问题？

是 否

1. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

2. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

3. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

4. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

5. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

6. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

7. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

8. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

9. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

10. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

11. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

12. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

13. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

14. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

15. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

16. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

17. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

18. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

19. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

20. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

21. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

22. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

23. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

24. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

25. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

26. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

27. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

28. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

29. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

30. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

31. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

32. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

33. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

34. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

35. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

36. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

37. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

38. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

39. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

40. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

41. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

42. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

43. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

44. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

45. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

46. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

47. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

48. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

49. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

50. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

51. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

52. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

53. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

54. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

55. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

56. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

57. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

58. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

59. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

60. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

61. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

62. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

63. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

64. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

65. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

66. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

67. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

68. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

69. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

70. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

71. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

72. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

73. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

74. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

75. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

76. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

77. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

78. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

79. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

80. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

81. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

82. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

83. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

84. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

85. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

86. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

87. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

88. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

89. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

90. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

91. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

92. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

93. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

94. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

95. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

96. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

97. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

98. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

99. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

100. 您是否曾向工作人员提出过问题？

完全不满意
 有点不满意
 满意
 非常满意
 不确定

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

IT'S ALL CONNECTED
& flows to the Sound

Tell us what you think!

MUKILTEO STORMWATER 2024 COMPREHENSIVE PLAN UPDATE

WELCOME

The City of Mukilteo Surface Water Utility maintains, operates, and administers the City's natural and developed surface and stormwater management and conveyance systems. We're developing our next Stormwater Comprehensive Plan and want to hear from you!

- ▶ Learn about this project and why stormwater management matters.
- ▶ Get an overview of the timeline and process for shaping the plan.
- ▶ Learn about Mukilteo's watersheds, stormwater management system elements, and services provided by the Stormwater Utility.
- ▶ Learn what a stormwater plan addresses and how it can impact our community and your service.
- ▶ Talk with City staff about your stormwater, drainage, and water quality priorities, and stormwater management projects.
- ▶ Sign-up for project updates, share input, and complete the community survey to tell us what you care about.

Please let us know if you would like translation or interpretation assistance.
Háganos saber si desea asistencia de traducción o interpretación.
如需翻譯或翻譯或口譯方面的協助，請與我們聯絡。
번역이나 통역에 도움이 필요하면 알려주세요.

CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

How to stay involved!

PROCESS FOR SHAPING THE PLAN UPDATE

Mukilteo's stormwater management services are funded by a fee paid by property owners, and community input will help shape our stormwater management goals, projects, and levels of service.

TIMELINE AND MILESTONES

2022 Spring / Summer	Recruit project community advisory committee. Start community outreach and engagement, and gather input. Launch online StoryMap. Hold first community open house and launch survey.
2022 - 2023 Fall / Winter	Evaluate and share community feedback. Analyze current and future stormwater programs and goals. Develop strategies and actions to accomplish goals. Identify and prioritize capital projects.
2023 Spring / Summer	Set or update stormwater policies. Incorporate Clean Water Act requirements. Evaluate funding and implementation. Define stormwater levels of service. Complete a financial analysis and rate study.
2023 - 2024 Fall / Winter	Hold second community open house to review proposed strategies. Optimize draft plan, complete environmental impacts evaluation, and submit for review and adoption.

CITY OF MUKILTEO

WHAT'S YOUR WATERSHED?

IT'S ALL CONNECTED
& flows to the Sound

Show us where you live or work!

CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

Tell us what you think!

WHAT IS STORMWATER AND WHERE DOES IT GO?

Before development, almost all rainfall, snowmelt, or other surface water would be used by plants, evaporate, or infiltrate (soak in) through the ground.

After development, new hard and impermeable surfaces like roads and parking lots prevent the water from soaking in and increase surface runoff while infiltration into the ground decreases.

WHY IS STORMWATER AN ISSUE?

- ▶ Surface water is all the water at the surface of the landscape – streams, lakes, ditches, ponds, and stormwater (a subset of surface water).
- ▶ Stormwater is rain, melting snow, or water discharged by people that doesn't soak in, but instead flows from rooftops, across paved areas like highways or parking lots, or through sloped lawns.
- ▶ Stormwater picks up pollutants like oil, pet waste, or fertilizer and carries them to surface waters, and along the way those pollutants get deposited on the landscape or flows untreated into streams and Puget Sound.
- ▶ Stormwater decreases water quality, harms habitat and natural resources, and it creates a risk of localized flooding.

CITY OF MUKILTEO



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

IT'S ALL CONNECTED
& flows to the Sound

What do you care about?

A PLAN FOR TODAY AND THE FUTURE

Mukilteo's last plan for managing stormwater was completed in 2015. As Mukilteo grows, critical environmentally sensitive areas are impacted, development creates more impervious surfaces, and new stormwater management challenges emerge.

We've accomplished many of the goals set in 2015 and now it's time to look ahead and plan for the future!



WHY MANAGING STORMWATER MATTERS

Stormwater management is important because it provides environmental, social, and economic benefits to local communities, such as:

- ▶ Safeguarding local natural resources today and in the future.
- ▶ Reducing storm related flooding risks for people and property.



CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

What do you care about?

MUKILTEO STORMWATER OVERVIEW



Mukilteo is the ninth largest city in Snohomish County and hosts a vibrant community of 21,300 residents who live, recreate, and work in the local watersheds. Twelve of Mukilteo's 13 watersheds drain directly to Puget Sound, and one drains to Lake Washington.

- ▶ 5,695 customers / ratepayers
- ▶ 13 watersheds
- ▶ 4,500 catch basins
- ▶ 75 miles of pipe with 8" or greater diameter
- ▶ 16.85 miles of streams
- ▶ 117.5 acres of wetlands
- ▶ 1 NPDES Phase II Permit
- ▶ 167 publicly owned flow control or treatment facilities

WHAT DOES IT MEAN?

Watershed (also called drainage basins or catchments): A defined area of land that drains rainfall and snowmelt to streams.

Surface water: Lakes, streams, wetlands, and other water collection areas.

Stormwater: Rain or melting snow that doesn't soak in, but instead flows from rooftops, across paved areas like highways or parking lots, or through sloped lawns.

NPDES: National Pollutant Discharge Elimination System



CITY OF MUKILTEO



IT'S ALL CONNECTED
& flows to the Sound

How's your service?

ABOUT YOUR STORMWATER UTILITY

Stormwater management services in Mukilteo are provided by the Surface Water Utility, a division of Mukilteo's Public Works Department.

The Utility's efforts help reduce the impacts of urban stormwater runoff on the built and natural environments through programs that reduce flooding, protect water quality, detect pollutants, mitigate stormwater impacts on steep slopes, and safeguard habitat.

Operations and maintenance programs care for pipes, ditches, catch basins, detention ponds and vaults, infiltration facilities, and provide for street sweeping.



As land is developed, it gets covered by hard surfaces that keep water from soaking in. Stormwater that flows across these water-resistant surfaces picks up pollutants and carries them into our local waters.

Effectively managing urban stormwater helps prevent flooding and creates healthy ecosystems and habitat for fishing, boating, swimming, and wildlife by filtering and removing pollutants before they get deposited into surface waters.



CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

How's your service?

STORMWATER MANAGEMENT SYSTEM ELEMENTS AND BENEFITS

Urban stormwater runoff is the leading threat to Washington's urban waters, streambeds, streambanks, and aquatic habitat.

Mukilteo's Stormwater Utility:

- ▶ Manages drainage, detects illicit discharge of pollutants, and reduces flooding incidents to keep people, property, and roads safe.
- ▶ Keeps streams, wetlands, and Puget Sound healthy through stormwater management planning.
- ▶ Provides education and technical assistance to help residents and businesses solve drainage problems and prevent pollution.
- ▶ Maintains stormwater drainage systems and structures, and addresses stormwater impacts on steep slopes.
- ▶ Evaluates new ways to manage development, protect or restore natural habitat, monitor water quality, and comply with State and Federal regulations.



Sources of water pollution include yard and pet waste, sediment (like soil and rocks), chemicals, fertilizers, oil, grease, and other contaminants that get picked up by water as it flows across hard surfaces or sloped land.




CITY OF MUKILTEO

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

IT'S ALL CONNECTED
& flows to the Sound

What are your priorities?

STORMWATER MANAGEMENT PLAN OVERVIEW

Updates to Mukilteo's Stormwater Comprehensive Plan consider past progress, current conditions, and new approaches to urban stormwater management. The plan is a functional document that guides decisions, identifies opportunities and future projects, and prioritizes how stormwater utility funds are spent.

Stormwater planning helps make sure service levels meet system, regulatory, and community needs, and can be supported by utility rates and other funding sources.

SOME OF OUR COMPREHENSIVE PLAN GOALS

Direct efforts to protect water quality and habitat.	Address impacts from stormwater runoff.	Comply with State and Federal regulations.	Respond to community interests and concerns.
Guide and align stormwater management goals, policies, decisions, and strategies.	Define levels of service and future projects, and identify ways to fund them.	Reduce localized flooding related to storm events.	Identify and plan for future stormwater projects.

CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

Tell us what you think!

KEY STORMWATER PLAN ELEMENTS

- Goals and guidance for stormwater system management and watershed planning within a defined area.
- Information about the existing stormwater system, including current operations, maintenance, funding, regulatory obligations, and policies.
- An outline of actions, costs, and impacts to rate payers for capital projects and strategic investments to address issues and needs.

BIG PLANNING OPPORTUNITIES

Setting goals to guide stormwater planning and management.	Identifying how to meet community needs, NPDES requirements, and protect our resources.	Assessing system conditions, constraints, levels of service and funding options.	Evaluating stormwater management projects, operation and, maintenance, needs.
--	---	--	---

CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

Tell us what you think!

SHARE YOUR FEEDBACK AND STAY INVOLVED IN UPDATING THE 2024 PLAN

- Take the Stormwater Management Community Survey to help shape the 2024 Plan update!
- Write a comment on the comment board to share with everyone.
- Fill out a comment card and tell us what you care about and would like the Stormwater Comprehensive Plan to prioritize.
- Visit the welcome table to sign-up for project updates to learn about planning milestones, decisions, and future community events.

Please let us know if you would like translation or interpretation assistance.
Háganos saber si desea asistencia de traducción o interpretación.
如果您需要翻译或口译方面的帮助，请告诉我们。
번역이나 통역에 도움이 필요하면 알려주세요.

Tell us if you think the Utility should build new infrastructure to treat stormwater or do more stream restoration to benefit fish and wildlife.

Thank you for attending the Stormwater Comprehensive Plan Update open house!

CITY OF MUKILTEO

IT'S ALL CONNECTED
& flows to the Sound

Do you have LOS priorities, questions, or concerns?

HOW COULD PLANNING IMPACT SERVICE?

Stormwater level of service (LOS) means evaluating existing programs, infrastructure, and requirements to decide how to allocate stormwater resources to meet goals and compliance requirements.

Deciding what matters the most is challenging, and your input can help determine the priority factors for evaluating and setting LOS.

- Setting LOS requires considering service and program goals, costs, staffing, gaps between recommended and required service levels, and rates and funding options.

LEVEL OF SERVICE CONSIDERATIONS

- Community wellbeing, safety, and priorities for service.
- The number of programs, projects, and level of service required or desired to meet goals.
- Fiscal and regulatory responsibility, flood hazard and damage reduction, and water quality and natural resources stewardship.
- Projects and program implementation costs, including staffing, education, and operations and maintenance.
- Funding provided by the adopted capital budget and rates paid by property owners.
- The potential to secure additional funding from grants, rate increases, or other sources.

CITY OF MUKILTEO

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

IT'S ALL CONNECTED & flows to the Sound

Tell us what you think!

WHAT FUTURE STORMWATER PROJECTS WOULD YOU PRIORITIZE?

- ▶ Protecting water quality and habitat to keep streams, wetlands, and Puget Sound healthy.
- ▶ Identifying and detecting spills and illicit discharge of pollutants.
- ▶ Managing drainage and reducing localized flooding incidents.
- ▶ Addressing stormwater impacts on steep slopes and controlling erosion.
- ▶ Maintain and invest in stormwater drainage systems and infrastructure.
- ▶ Watershed planning to identify problems and solutions.
- ▶ Consider building treatment facilities or conducting monitoring and research (i.e., water quality or biological) to increase our ability to protect natural resources and habitat.
- ▶ Providing outreach and education to help property owners and residents address drainage issues and become clean water stewards.



Talk with staff about drainage or water quality issues where you live or work to help identify potential projects.



CITY OF MUKILTEO

IT'S ALL CONNECTED & flows to the Sound

What matters to you?

SHARE A COMMENT HERE!

Comment




CITY OF MUKILTEO

Community Meeting / Open House Display Boards

IT'S ALL CONNECTED & flows to the Sound

We value your opinion!

LEAVE A COMMENT AND TELL US WHAT YOU CARE ABOUT!

We're developing our 2024 Stormwater Comprehensive Plan and want to hear from you! Your feedback will help us evaluate and improve Mukilteo's stormwater services and programs.

Visit the project website to learn more and be sure to complete the Stormwater Community Survey by Oct. 10th, 2022.

www.mukilteowa.gov/stormwatersurvey

THANK YOU FOR ATTENDING THE OPEN HOUSE AND SHARING YOUR FEEDBACK!

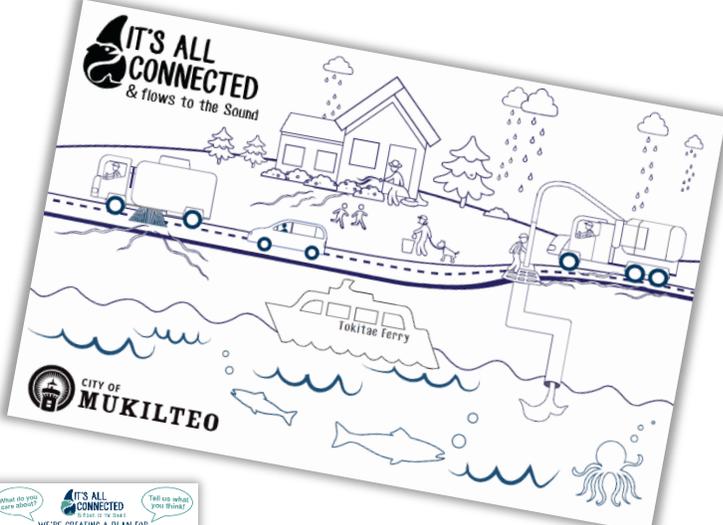
For project updates or meeting notifications, visit your email address below.

Email Address: _____



CITY OF MUKILTEO

IT'S ALL CONNECTED & flows to the Sound



CITY OF MUKILTEO

What do you care about? Tell us what you think!

IT'S ALL CONNECTED & flows to the Sound

WE'RE CREATING A PLAN FOR TODAY AND THE FUTURE



CITY OF MUKILTEO

Open House Comment Form and Kids Coloring Sheet



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

<p>MUKILTEO STORMWATER Tell us what you think!</p> <p>Agua pluvial de Mukilteo: contáctenos en español</p> <p>Mukilteo 市雨水: 完成我们的调查问卷。</p> <p>TAKE OUR SURVEY Let us know how we are doing in our efforts to reduce flooding and keep streams and Puget Sound healthy!</p> <p>3 WAYS TO TAKE THE SURVEY:</p> <ol style="list-style-type: none"> 1 SCAN THE QR CODE To take the survey online, or visit www.mukilteowa.gov/stormwatersurvey 2 STOP BY CITY HALL To take the survey in person. 3 CALL 425-263-8170 To have the survey mailed to you. 	
<p>MUKILTEO STORMWATER</p> <p>WELCOME – PLEASE TELL US WHAT YOU THINK!</p> <p>The City of Mukilteo Stormwater Utility is a division of the City of Mukilteo's Public Works Department. As a utility, our services are funded by a fee paid by property owners. These fees support projects and programs identified in our City's Stormwater Comprehensive Plan.</p> <ul style="list-style-type: none"> It is important that we hear from as many people as possible. <p>Your feedback will help us:</p> <ul style="list-style-type: none"> Evaluate and improve our stormwater services and program Develop a plan that reflects our community's values, priorities, and concerns <p>Let us know if you need translation or interpretation services or require assistance with this survey.</p>	<p>MUKILTEO 市雨水</p> <p>欢迎 — 请告诉我们您的想法!</p> <p>Mukilteo 市雨水公用事业分部是 Mukilteo 市公共工程部的一个分部。作为公用事业分部，我们的服务由业主支付的费用提供资金。这些费用用于支持本市雨水综合计划中确定的项目和计划。</p> <ul style="list-style-type: none"> 我们听取尽可能多的人的意见十分重要。 <p>您的反馈意见将帮助我们:</p> <ul style="list-style-type: none"> 评估和改进我们的雨水服务和计划 制定反映我们社区价值观、优先事项和关注问题的计划 <p>如果您需要笔译或口译服务，或在完成本调查问卷时需要帮助，请告诉我们。</p>
<p>Building projects that reduce local flooding.</p> <ul style="list-style-type: none"> When there are recurring stormwater backups, we investigate, design solutions, and build projects that either convey stormwater more effectively, or hold it longer so we can better control how much flows into our systems during rainstorms. <p>Providing technical assistance to property owners about drainage problems on your property.</p> <ul style="list-style-type: none"> Residents can receive a site visit and talk with experts at the Utility for help with flooding or erosion issues happening on their property. <p>Addressing stormwater impacts on steep slopes.</p> <ul style="list-style-type: none"> Mukilteo's location on the steep slopes above Puget Sound creates challenges for managing stormwater runoff. The Utility takes care to avoid erosion caused by stormwater on steep and unstable hillslopes to reduce impacts to property, infrastructure, and streams. <p>How do we keep our waterways clean for fish and people?</p> <p>There are many things we do to keep our streams, wetlands and Puget Sound healthy, including:</p> <p>Watershed planning that includes identifying problems and defining solutions.</p> <ul style="list-style-type: none"> Understanding the different terrain, and types of drainage issues in each watershed helps us tailor our stormwater management solutions. <p>Identifying and fixing water pollution problems.</p> <ul style="list-style-type: none"> Cleaning up pollution at its source is the best way to keep our waterways clean. When this isn't possible, water quality treatment facilities are constructed to filter pollutants out of stormwater. 	<p>规划减少当地洪水的项目。</p> <ul style="list-style-type: none"> 当雨水倒流反复发生时，我们会开展调查、设计解决方案并规划项目，以便更有效地输送雨水或将雨水保持更长时间，以便我们可以更好地控制暴雨期间流入我们系统的雨水量。 <p>就您的物业的排水问题向业主提供技术援助。</p> <ul style="list-style-type: none"> 居民可以接受实地考察，并与公用事业分部的专家交谈，获得解决物业上发生的洪水或侵蚀问题的帮助。 <p>解决雨水对陡坡的影响。</p> <ul style="list-style-type: none"> Mukilteo 市位于普吉特海湾上方的陡坡上。这给管理雨水径流带来了挑战。 公用事业分部注意避免雨水对陡峭和不稳定的山坡造成侵蚀，以减少对财产、基础设施和溪流的影响。 <p>我们如何为鱼和人类保持水道清洁?</p> <p>为了保持溪流、湿地和普吉特海湾的健康，我们做了很多努力，其中包括:</p> <p>流域规划，包括发现问题和定义解决方案。</p> <ul style="list-style-type: none"> 了解每个流域的不同地形和排水问题类型有助于我们定制雨水管理解决方案。 <p>发现和解决水污染问题。</p> <ul style="list-style-type: none"> 从源头清理污染是保持水道清洁的最佳方法。 如果无法做到这一点，则会建造水质处理设施，过滤雨水中的污染物。 <p>维护旨在消除雨水污染的雨水系统和设施。</p>
<p>Scan the QR code to visit the website to learn more and take a survey in (Chinese, Korean, Spanish) before October 10th.</p> <p>www.mukilteowa.gov/stormwatersurvey</p> <ul style="list-style-type: none"> Mail the hardcopy survey responses to the City of Mukilteo by Oct. 10th, 2022. Attn: Public Works Stormwater Survey 11930 Cyrus Way Mukilteo, WA 98275 <p>Our goal is to work in partnership with the community to:</p> <ul style="list-style-type: none"> Protect and enhance water quality and aquatic habitat by reducing sediment and other harmful pollutants that get carried into our waters A community better protected from flooding and erosion. Protect and enhance stream and wetland function Mitigate stormwater impacts on steep slopes Educate the public on surface water issues <p>Stormwater is rainwater that falls on the ground and is either absorbed into the soil, or runs off of roofs, streets, lawns and other surfaces that it lands on.</p> <ul style="list-style-type: none"> Mukilteo's Stormwater Utility serves to protect streams from pollution, and infrastructure from flooding. We do this by maintaining and building stormwater infrastructure. We also engage our community to help keep pollution out of our streams and Puget Sound. <p>How do we reduce flooding and erosion in our city?</p> <p>There are many ways we manage stormwater to help reduce flooding and erosion to keep people, property, and roads safe, including:</p> <p>Maintaining the stormwater system and structures.</p> <ul style="list-style-type: none"> This prevents clogging and backups so that we experience less flooding in our city streets and streams. We regularly inspect our pipes and stormwater structures so that we can catch breaks, cracks, and other small problems before they become big problems. 	<p>扫描二维码，访问网站，了解更多详情，并在 10 月 10 日之前用中文完成调查问卷。</p> <p>www.mukilteowa.gov/stormwatersurvey</p> <ul style="list-style-type: none"> 在 2022 年 10 月 10 日之前将纸质调查问卷寄给 Mukilteo 市。 Attn: Public Works Stormwater Survey 11930 Cyrus Way Mukilteo, WA 98275 <p>我们的目标是与社区合作，以便:</p> <ul style="list-style-type: none"> 通过减少进入我们水域的沉积物和其他有害污染物来保护和改善水质和水生栖息地 更好地保护社区免受洪水和侵蚀。 保护和增强溪流和湿地功能 减轻雨水对陡坡的影响 就地表水问题对公众进行教育 <p>雨水是落在地面上的雨水，要么被土壤吸收，要么从屋顶、街道、草坪和其他地面流失。</p> <p>Mukilteo 市雨水公用设施分部负责保护溪流免受污染，并保护基础设施免受洪水侵蚀。</p> <p>我们通过维护和建设雨水基础设施来达到这一目的。</p> <p>我们还邀请我们的社区成员参与，帮助防止污染物进入我们的溪流和普吉特海湾。</p> <p>我们如何减少本市的洪水和侵蚀?</p> <p>我们通过多种方式管理雨水，帮助减少洪水和侵蚀，从而确保人员、财产和道路的安全，其中包括:</p> <p>维护雨水系统和结构。</p> <ul style="list-style-type: none"> 这可以防止堵塞和倒流，从而减少本市街道和溪流受到洪水侵蚀。 我们定期检查管道和雨水排水结构，以便我们能够在破裂、裂缝和其他小问题变成大问题之前发现这些问题。

<p>Maintaining the stormwater system and facilities designed to remove pollution from stormwater.</p> <ul style="list-style-type: none"> The City's stormwater system gets filled with sediment and debris. City staff must complete annual maintenance on the stormwater system to ensure it continues to work properly. <p>How do we work together with residents and businesses to make positive change?</p> <p>There are many ways the City's Stormwater Utility helps residents and businesses prevent pollution, including:</p> <p>Conducting education and outreach.</p> <ul style="list-style-type: none"> Educating residents and businesses on how individual actions impact our streams and Puget Sound empowers residents and businesses to make small changes that improve the health of the City's streams and Puget Sound. <p>Helping residents and businesses prevent water pollution.</p> <ul style="list-style-type: none"> The Stormwater Utility experts can share lots of best practices that keep pollution out of our streams, wetlands, and Puget Sound. <p>Thank you for your time!</p>	<p>本市的雨水系统充满了沉积物和碎屑。市政工作人员必须完成雨水系统的年度维护，以确保其继续正常运行。</p> <p>我们如何与居民和企业合作以便做出积极的改变?</p> <p>本市雨水公用事业分部通过多种方式帮助居民和企业防止污染，其中包括:</p> <p>开展教育和宣传工作。</p> <ul style="list-style-type: none"> 教育居民和企业了解个人行为如何影响我们的溪流和普吉特海湾，使居民和企业能够做出小的改变，从而改善本市溪流和普吉特海湾的健康。 <p>帮助居民和企业防止水污染。</p> <ul style="list-style-type: none"> 雨水公用事业分部专家可以分享很多最佳方法，防止污染物进入我们的溪流、湿地和普吉特海湾。 <p>感谢您花费的宝贵时间!</p>
--	---



PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

MUKILTEO STORMWATER
 Tell us what you think!

TAKE OUR SURVEY
 Let us know how we are doing in our efforts to reduce flooding and how streams and Puget Sound health!

3 WAYS TO TAKE THE SURVEY:

1. **SCAN THE QR CODE**
 To take the survey online, or visit www.mukilteowa.gov/stormwatersurvey
2. **STOP BY CITY HALL**
 To take the survey in person.
3. **CALL 425-263-8170**
 To have the survey readed to you.

<p>MUKILTEO STORMWATER</p> <p>WELCOME – PLEASE TELL US WHAT YOU THINK!</p> <p>The City of Mukilteo Stormwater Utility is a division of the City of Mukilteo's Public Works Department. As a utility, our services are funded by a fee paid by property owners. These fees support projects and programs identified in our city's Stormwater Comprehensive Plan.</p> <ul style="list-style-type: none"> It is important that we hear from as many people as possible. <p>Your feedback will help us:</p> <ul style="list-style-type: none"> Evaluate and improve our stormwater services and program Develop a plan that reflects our community's values, priorities, and concerns 	<p>MUKILTEO 우수</p> <p>환영합니다. 귀하의 생각이 무엇인지 알려 주셔서!</p> <p>Mukilteo 시 우수 유틸리티 사업소는 Mukilteo 시의 공공 사업부의 한 부분입니다. 유틸리티 사업소로서, 우리 사업소의 서비스는 재산 소유주가 지불하는 요금으로 자금을 조달합니다. 이 요금은 우리 시의 우수 종합 계획에서 확인된 프로그램과 프로젝트를 지원합니다.</p> <ul style="list-style-type: none"> 중요한 것은 되도록 많은 사람들의 의견을 듣는 것입니다. <p>귀하의 피드백은 우리 사업소가 다음과 같이 하는 데 도움이 됩니다.</p> <ul style="list-style-type: none"> 우리 사업소의 우수 서비스와 프로그램을 평가하고 개선합니다. 지역사회의 가치관, 우선순위 및 우려사항을 반영하는 계획을 세웁니다.
---	---

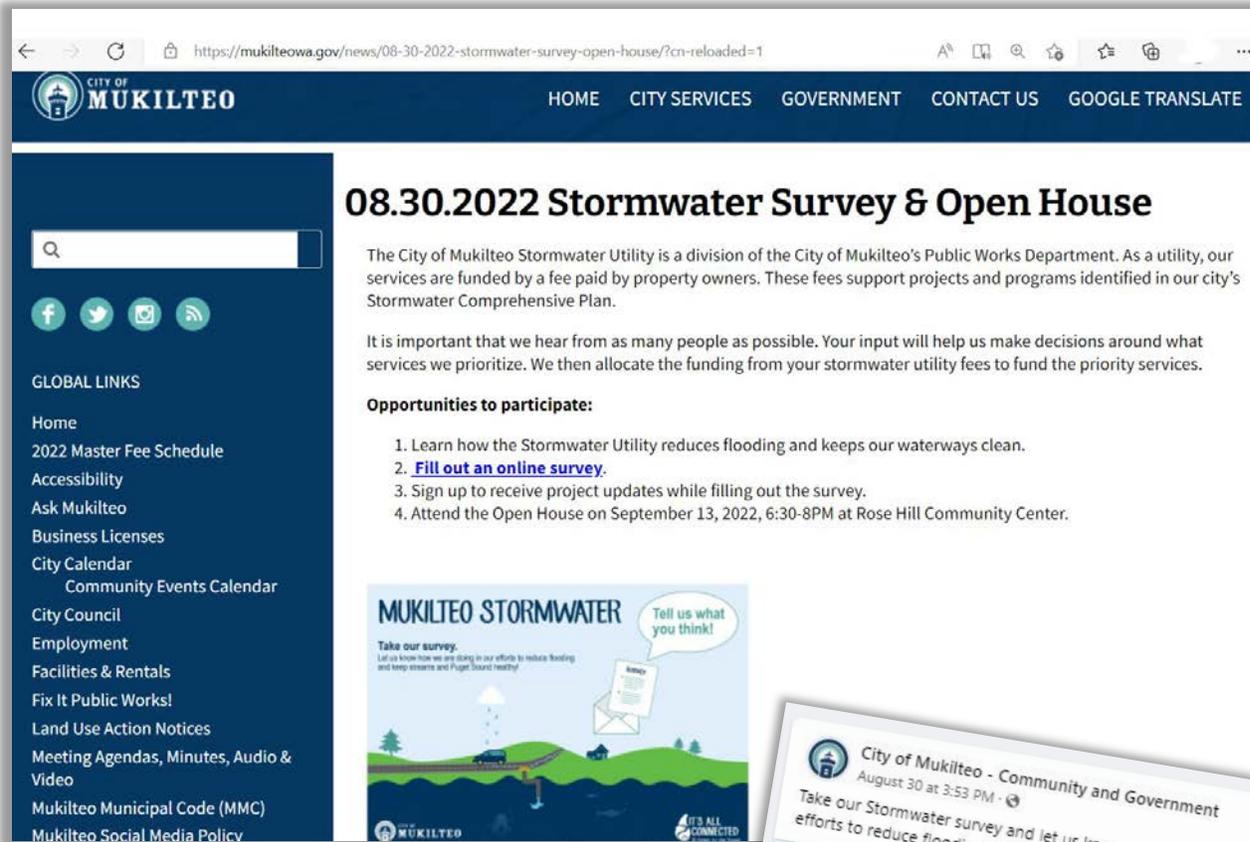
<p>Let us know if you need translation or interpretation services or require assistance with this survey.</p> <p>Scan the QR code to visit the website to learn more and take a survey in (Chinese, Korean, Spanish) before October 10th.</p> <p>www.mukilteowa.gov/stormwatersurvey</p> <ul style="list-style-type: none"> Mail the hardcopy survey responses to the City of Mukilteo by Oct. 10th, 2022. Attn: Public Works Stormwater Survey 11930 Cyrus Way Mukilteo, WA 98275 	<p>번역 또는 통역 서비스가 필요하거나, 본 설문조사에서 도움이 필요하다면</p> <p>10월 10일 전에 QR 코드를 스캔하여 웹사이트를 방문해서 자세한 내용을 알아보고 설문조사에 한국어로 응답하세요.</p> <p>www.mukilteowa.gov/stormwatersurvey</p> <ul style="list-style-type: none"> 인쇄본 설문조사 응답지는 2022년 10월 10일까지 우편으로 Mukilteo 시로 보내주세요. Attn: Public Works Stormwater Survey 11930 Cyrus Way Mukilteo, WA 98275
<p>Our goal is to work in partnership with the community to:</p> <ul style="list-style-type: none"> Protect and enhance water quality and aquatic habitat by reducing sediment and other harmful pollutants that get carried into our waters A community better protected from flooding and erosion. Protect and enhance stream and wetland function Mitigate stormwater impacts on steep slopes Educate the public on surface water issues 	<p>우리 사업소의 목표는 지역사회와 협력하여 다음 사항을 수행하는 것입니다.</p> <ul style="list-style-type: none"> 수질에 유입되는 퇴적물과 기타 유해 오염물질을 줄여 수질과 수생 서식지를 보호하고 개선합니다. 별담과 침식에서 더 잘 보호를 받는 지역사. 하천과 습지 기능을 보호하고 강화합니다. 가파른 경사면에 대한 우수 영향을 완화합니다. 기후 문제에 대해 대중 교육을 실시합니다.
<p>Stormwater is rainwater that falls on the ground and is either absorbed into the soil, or runs off of roofs, streets, lawns and other surfaces that it lands on.</p> <ul style="list-style-type: none"> Mukilteo's Stormwater Utility serves to protect streams from pollution, and infrastructure from flooding. We do this by maintaining and building stormwater infrastructure. We also engage our community to help keep pollution out of our streams and Puget Sound. 	<p>우수는 땅에 떨어지는 빗물로, 토양으로 흡수되거나 지붕, 거리, 잔디, 및 기타 표면에 흘러 넘치는 빗물입니다.</p> <ul style="list-style-type: none"> Mukilteo의 우수 유틸리티 사업소는 오염으로부터 하천을 보호하고 범람으로부터 기반시설을 보호합니다. 우리 사업소는 우수 기반시설을 유지보수하고 건설함으로써 이러한 업무를 수행합니다. 또한 우리 사업소는 우리 지역사회와 협력하여 하천과 Puget Sound가 오염되지 않게 돕습니다.
<p>How do we reduce flooding and erosion in our city?</p>	<p>우리 도시의 범람과 침식을 어떻게 줄입니까?</p>

<p>There are many ways we manage stormwater to help reduce flooding and erosion to keep people, property, and roads safe, including:</p> <p>Maintaining the stormwater system and structures.</p> <ul style="list-style-type: none"> This prevents clogging and backups so that we experience less flooding in our city streets and streams. We regularly inspect our pipes and stormwater structures so that we can catch breaks, cracks, and other small problems before they become big problems. <p>Building projects that reduce local flooding.</p> <ul style="list-style-type: none"> When there are reoccurring stormwater backups, we investigate, design solutions, and build projects that either convey stormwater more effectively, or hold it longer so we can better control how much flows into our streams during rainstorms. <p>Providing technical assistance to property owners about drainage problems on your property.</p> <ul style="list-style-type: none"> Residents can receive a site visit and talk with experts at the Utility for help with flooding or erosion issues happening on their property. <p>Addressing stormwater impacts on steep slopes.</p> <ul style="list-style-type: none"> Mukilteo's location on the steep slopes above Puget Sound creates challenges for managing stormwater runoff. The Utility takes care to avoid erosion caused by stormwater on steep and unstable hillslopes to reduce impacts to property, infrastructure, and streams. <p>How do we keep our waterways clean for fish and people?</p> <p>There are many things we do to keep our streams, wetlands and Puget Sound healthy, including:</p>	<p>우리 사업소가 우수를 관리하여 범람과 침식을 줄여서 사람, 재산, 도로를 안전하게 지키는 방법에는 아래와 같이 여러 가지가 있습니다.</p> <p>우수 시스템과 구조를 유지보수.</p> <ul style="list-style-type: none"> 이러한 유지보수를 통해 막힘과 역류를 방지하여 도시의 거리와 하천이 덜 범람하게 됩니다. 우리 사업소는 정기적으로 펌프 우수 구조물을 점검하여 파손, 균열, 및 기타 사소한 문제가 큰 문제로 되기 전에 찾아낼 수 있습니다. <p>국부적 범람을 줄이는 프로젝트를 건설함.</p> <ul style="list-style-type: none"> 우수 역류가 재발되는 경우, 우수 사업소는 우수를 보다 효과적으로 이동하거나, 또는 더 오래 유지하여 비가 올 때까지 동안 시스템으로 유입되는 유량을 더 잘 제어할 수 있도록 조사하고, 해결책을 설계하여, 프로젝트를 건설합니다. <p>배수 문제가 있는 재산의 소유주에게 기술 지원을 제공함.</p> <ul style="list-style-type: none"> 거주자는 현장 방문 및 양 유틸리티 사업소의 전문가 상담을 받아 본인의 재산에서 발생하는 범람이나 침식 문제에 도움을 받을 수 있습니다. <p>가파른 경사면에 대한 우수 영향에 대처함.</p> <ul style="list-style-type: none"> Mukilteo는 Puget Sound의 가파른 경사면에 소재하기에 우수 유거수 관리에 어려움이 있습니다. 양 유틸리티 사업소는 가파르고 불안정한 경사면을 우수가 침식하는 현상을 방지하여 재산, 기반시설, 및 하천에 미치는 영향을 줄이기 위해 주의를 기울입니다. <p>물고기와 사람을 위해 수로를 어떻게 깨끗이 유지합니까?</p> <p>하천, 습지 및 Puget Sound를 건강하게 지키기 위해 우리가 하는 일이 많이 있습니다.</p>
--	---

<p>Watershed planning that includes identifying problems and defining solutions.</p> <ul style="list-style-type: none"> Understanding the different terrain, and types of drainage issues in each watershed helps us tailor our stormwater management solutions. <p>Identifying and fixing water pollution problems.</p> <ul style="list-style-type: none"> Cleaning up pollution at its source is the best way to keep our waterways clean. When this isn't possible, water quality treatment facilities are constructed to filter pollutants out of stormwater. <p>Maintaining the stormwater system and facilities designed to remove pollution from stormwater.</p> <ul style="list-style-type: none"> The City's stormwater system gets filled with sediment and debris. City staff must complete annual maintenance on the stormwater system to ensure it continues to work properly. <p>How do we work together with residents and businesses to make positive change?</p> <p>There are many ways the City's Stormwater Utility helps residents and businesses prevent pollution, including:</p> <p>Conducting education and outreach.</p> <ul style="list-style-type: none"> Educating residents and businesses on how individual actions impact our streams and Puget Sound empowers residents and businesses to make small changes that improve the health of the City's streams and Puget Sound. <p>Helping residents and businesses prevent water pollution.</p> <ul style="list-style-type: none"> The Stormwater Utility experts can share lots of best practices that keep pollution out of our streams, wetlands, and Puget Sound. <p>Thank you for your time!</p>	<p>문제를 확인하고 해결책을 정의하는 것을 포함하는 유역 계획.</p> <ul style="list-style-type: none"> 다양한 지형과, 각 유역의 배수 문제 유형을 파악하면 우수 관리 해결책을 맞춤형으로 마련하는 데 도움이 됩니다. <p>수질 오염 문제를 확인하여 해결하기.</p> <ul style="list-style-type: none"> 오염원을 정화하는 것이 수로를 깨끗하게 유지하는 가장 좋은 방법입니다. 이것이 가능하지 않다면, 수질 처리 시설을 건설하여 우수에서 오염물질을 걸러내는 방법이 있습니다. <p>우수에서 오염을 제거하도록 설계된 우수 시스템과 시설 유지보수.</p> <ul style="list-style-type: none"> Mukilteo의 우수 시스템은 퇴적물과 잔해물로 채워집니다. 시 직원들은 우수 시스템이 계속해서 제대로 작동하도록 단계를 기하기 위해 매년 우수 시스템 유지보수를 완료해야 합니다. <p>긍정적인 변화를 위해 우리 사업소는 거주민과 사업체를 어떻게 공조합니까?</p> <p>Mukilteo의 우수 유틸리티 사업소가 거주민과 사업체를 도와 오염을 방지하는 방법은 여러 가지가 있습니다.</p> <p>교육 및 기타 활동을 수행함.</p> <ul style="list-style-type: none"> 개인의 행동이 Mukilteo의 하천과 Puget Sound에 미치는 영향에 대해 거주민과 사업체를 교육하면, 거주민과 사업체가 Mukilteo의 하천과 Puget Sound를 더욱 건강하게 만드는 작은 변화들 주도할 수 있습니다. <p>거주민과 사업체가 수질 오염을 방지하도록 돕기.</p> <ul style="list-style-type: none"> 우수 유틸리티 사업소 전문가가 하천, 습지, 및 Puget Sound의 오염을 방지하는 수많은 모범 사례를 공유할 수 있습니다. <p>시간을 내주셔서 감사합니다!</p>
--	--

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

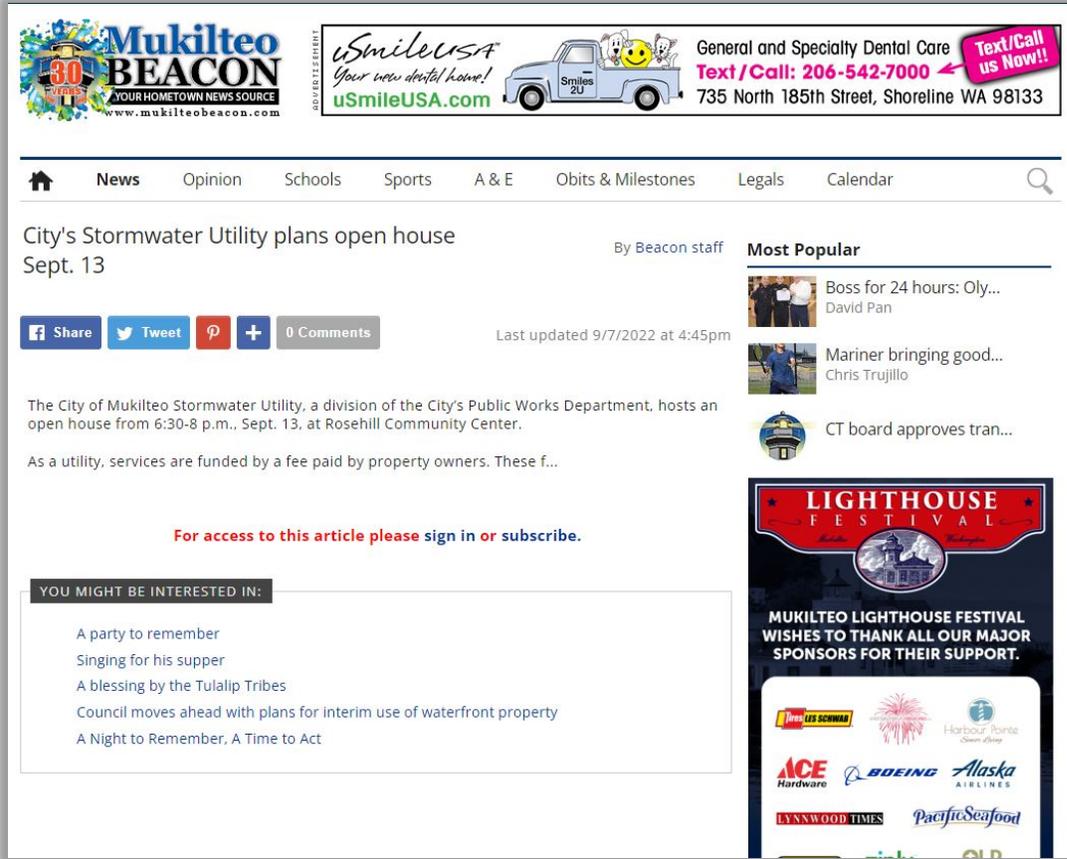
2024 STORMWATER COMPREHENSIVE PLAN



Open House and Survey Promotion

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN



Mukilteo BEACON
YOUR HOMETOWN NEWS SOURCE
www.mukilteobeacon.com

uSmileUSA
Your new dental home!
uSmileUSA.com

General and Specialty Dental Care
Text / Call: 206-542-7000
735 North 185th Street, Shoreline WA 98133

Text/Call us Now!!

News Opinion Schools Sports A & E Obits & Milestones Legals Calendar

City's Stormwater Utility plans open house Sept. 13

By Beacon staff

Most Popular

- Boss for 24 hours: Oly... David Pan
- Mariner bringing good... Chris Trujillo
- CT board approves tran...

Share Tweet + 0 Comments

Last updated 9/7/2022 at 4:45pm

The City of Mukilteo Stormwater Utility, a division of the City's Public Works Department, hosts an open house from 6:30-8 p.m., Sept. 13, at Rosehill Community Center.

As a utility, services are funded by a fee paid by property owners. These f...

For access to this article please sign in or subscribe.

YOU MIGHT BE INTERESTED IN:

- A party to remember
- Singing for his supper
- A blessing by the Tulalip Tribes
- Council moves ahead with plans for interim use of waterfront property
- A Night to Remember, A Time to Act

LIGHTHOUSE FESTIVAL
MUKILTEO LIGHTHOUSE FESTIVAL WISHES TO THANK ALL OUR MAJOR SPONSORS FOR THEIR SUPPORT.

LES SCHWAR Harbour Pointe ACE Hardware BOEING Alaska LYNNWOOD TIMES PacificSeafood



City of Mukilteo - Community and Government
September 12 at 8:12 AM

You are invited to attend an Open House to discuss the Comprehensive Surface Water Plan on September 13th, 2022, 6:30-8PM at Rosehill Community Center.

MUKILTEO STORMWATER

Agua pluvial de Mukilteo: consulte nuestra encuesta.
Mukilteo 雨の調査アンケートにご参加ください。
Mukilteo 降雨水: 完成度を確認の調査を待っています。

TAKE OUR SURVEY

Let us know how we are doing so we can adjust to reduce flooding and keep streams and Puget Sound healthy!

3 WAYS TO TAKE THE SURVEY:

- 1 SCAN THE QR CODE
To take the survey online, or visit www.mukilteo.gov/governmentalaffairs to learn more about the survey. You will receive an email with the QR code to scan. You will also receive an email with the QR code to scan. You will also receive an email with the QR code to scan.
- 2 STOP BY CITY HALL
To take the survey in person, visit City Hall at 334 Lincoln Ave., Mukilteo, WA 98147.
- 3 CALL 425-263-8170
To take the survey by phone, call 425-263-8170.

Survey closes October 18, 2022.

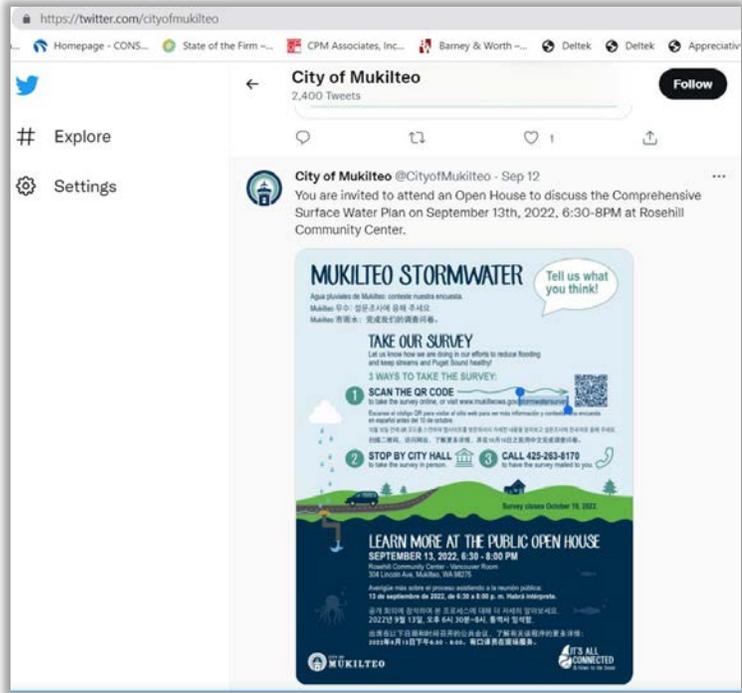
LEARN MORE AT THE PUBLIC OPEN HOUSE

SEPTEMBER 13, 2022, 6:30 - 8:00 PM
Rosehill Community Center, 334 Lincoln Ave., Mukilteo, WA 98147

Asamblea más sobre el proceso de desarrollo de la reunión pública.
13 de septiembre de 2022, de 6:30 a 8:00 p. m. Habitación Interoceánica.
2022年9月13日、午後6時30分～午後8時、ローズヒルコミュニティセンター。
2022年9月13日午後6時30分～8時、ローズヒルコミュニティセンター。

IT'S ALL CONNECTED

Like Comment Share



https://twitter.com/cityofmukilteo

Homepage - CONS... State of the Firm... CPM Associates, Inc... Barney & Worth... Detek Detek Appreciativ

City of Mukilteo
2,400 Tweets

City of Mukilteo @CityofMukilteo - Sep 12
You are invited to attend an Open House to discuss the Comprehensive Surface Water Plan on September 13th, 2022, 6:30-8PM at Rosehill Community Center.

MUKILTEO STORMWATER Tell us what you think!

TAKE OUR SURVEY

Let us know how we are doing so we can adjust to reduce flooding and keep streams and Puget Sound healthy!

3 WAYS TO TAKE THE SURVEY:

- 1 SCAN THE QR CODE
To take the survey online, or visit www.mukilteo.gov/governmentalaffairs to learn more about the survey. You will receive an email with the QR code to scan. You will also receive an email with the QR code to scan.
- 2 STOP BY CITY HALL
To take the survey in person, visit City Hall at 334 Lincoln Ave., Mukilteo, WA 98147.
- 3 CALL 425-263-8170
To take the survey by phone, call 425-263-8170.

Survey closes October 18, 2022.

LEARN MORE AT THE PUBLIC OPEN HOUSE

SEPTEMBER 13, 2022, 6:30 - 8:00 PM
Rosehill Community Center, 334 Lincoln Ave., Mukilteo, WA 98147

Asamblea más sobre el proceso de desarrollo de la reunión pública.
13 de septiembre de 2022, de 6:30 a 8:00 p. m. Habitación Interoceánica.
2022年9月13日、午後6時30分～午後8時、ローズヒルコミュニティセンター。
2022年9月13日午後6時30分～8時、ローズヒルコミュニティセンター。

IT'S ALL CONNECTED

Open House and Survey Promotion

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

https://www.mukilteobeacon.com/story/2022/09/21/news/public-input-sought-on-stormwater-issues/23575.html

Classifieds Directory About Contact Advertise Donate



Subscribe Sign In



News Opinion Schools Sports A & E Obits & Milestones Legals Calendar

Public input sought on stormwater issues

By David Pan

Most Popular

Share Tweet + 0 Comments

Last updated 9/21/2022 at 11:23am



David Pan

A couple attends the Mukilteo Surface Water Utility's open house Tuesday, Sept. 13, at Rosehill Community Center.

The Mukilteo Surface Water Utility still wants to hear from residents.

The utility, a division of City's Public Works Department, hosted an open house Tuesday, Sept. 13, to seek public input on its next Stormwater Comprehensive Plan.

City Surface Water program manager Meiring Borchers said 14 people attended the open house and, as of Friday, an online survey had about 70 responses. People can still participate in the online survey through Oct. 10

"We had good conversations with the 14 people who came out," Borchers said. "They gave us ideas and filled out the surveys."

The Surface Water Utility maintains, operates, and administers the City's natural and developed surface and stormwater management and conveyance systems.

Prior to development, most rainfall and surface

water would be used by plants, evaporate, or soak in through the ground. After development, hard and impermeable surfaces, such as roads and parking lots, prevent the water from soaking in and increase surface water runoff.

Stormwater is defined as water that doesn't soak into the ground, but instead flows from rooftops across paved areas like highways or parking lots, or through sloped lawns.

Many of the open house attendees shared their personal concerns about flooding. "Everybody had a story that they either experienced either in their neighborhood or on their property," Borchers said. "We want to hear from residents and customers. It's how we find out what areas are problem areas. We'll look at them in more detail with a planning perspective."

Stormwater picks up pollutants like oil, fertilizer, and pet waste and carries them to surface waters and, along the way, these pollutants get deposited on the landscape or flow untreated into streams and Puget Sound. Twelve of Mukilteo's watersheds (areas of land that drain rainfall and snowmelt to streams) drain directly to Puget Sound and one drains to Lake Washington

Stormwater decreases water quality, harms habitat and natural resources, and creates a risk of flooding. Borchers encourages residents to participate in the survey even if they don't have flooding issues with their properties.

Stormwater issues, he said, can impact the way people get to work or school, where people walk, how they recreate in their local parks, and how they interact with the local economy. "It can impact our infrastructure. It can impact your recreation," Borchers said. "We all want to get to the Seattle Seahawks game. We don't want to get stuck on a road."

Sometimes, people only become aware of stormwater issues when they can't get to an event. The City's last plan for managing stormwater was completed in 2015. Residents' feedback and the online survey will help the utility craft the 2024 Stormwater Comprehensive Plan Update.

A second open house to review proposed strategies will be held in the spring. Residents can access the online survey at bit.ly/3Bimvsk.

Turning in their keys... David Pan

House of Fire Car - Tr... David Pan

Council wants a clear... David Pan

Public input sought on... David Pan

Music and dance: It's... Michelle Reitan

Over 150 rods, customs, classics, muscle, imports, trucks & motorcycles, Live music, beer garden, food, & more!

HOUSE OF FIRE
CAR, TRUCK & MOTORCYCLE SHOW
Mukilteo, WA

SATURDAY, SEP 24 - 10AM to 4PM
12521 Harbour Beach Dr, Mukilteo
Visit www.mukilteobeacon.com

The Most Realistic Game of 2022
Sponsored by RAID - Shadow Legends

Harbour Pointe
ORTHODONTICS
Creating beautiful smiles that last a lifetime.
Call 425-348-5060

Are You a Freelance Reporter?
The Beacon is Looking

PHASE ONE: PUBLIC INVOLVEMENT SUMMARY

2024 STORMWATER COMPREHENSIVE PLAN

MUKILTEO STORMWATER Virtual Public Meetings

Learn about and provide input on potential plans to reduce flooding and address water quality and habitat issues!

Join us on October 26 for a virtual public meeting at noon or 6 p.m.

Check out the progress we've made since our September 2022 open house!

Reuniones públicas virtuales sobre aguas pluviales de Mukilteo

Obtenga información y comente sobre los posibles planes para reducir las inundaciones y abordar los problemas de calidad del agua y del hábitat.

Asista a una reunión pública virtual que se llevará a cabo el 26 de Octubre al medio día o a las 6 p. m.

Vea el progreso que hemos logrado desde nuestra reunión de puertas abiertas de septiembre de 2022.

Mukilteo 暴雨水虚拟公众会议

请了解减少洪水和解决水质和栖息地问题的可能计划并提出意见！

请参加 10 月 26 日中午或下午 6 时召开的一次虚拟公众会议。

了解我们自从 2022 年 9 月开放日活动以来取得的进展！

Mukilteo 우수 가상 공청회

홍수를 줄이고 수질 문제와 서식지 문제를 해결하기 위한 잠재적 계획에 대해 알아보고 의견을 제공해 주십시오!

10월 26일, 정오 또는 오후 6시에 가상 공청회에 참여해 주십시오.

우리가 2022년 9월 오픈 하우스 행사

이후에 이룬 진전 상황을 확인해 보십시오!



PLEASE ATTEND A PUBLIC MEETING

You're invited to a virtual public meeting to learn about and share ideas on potential stormwater improvements in the city. Your input is essential to our success!



Learn more

Más información

请在以下网站了解更多详情

더 자세한 내용은



<https://mukilteowa.gov/departments/public-works/surface-water/programs-and-planning/>

THURSDAY, OCTOBER 26, 2023

Both meetings will cover the same content

Jueves 26 de octubre

日期 : 10月26日

날짜: 10월 26일, 목요일

Two opportunities
to participate!

1 Virtual Public Meeting #1: 12:00 - 1:00 pm

Reunión pública virtual 1 / 第一次虚拟公众会议 / 1차 가상 공청회

<https://us02web.zoom.us/j/82720534988?pwd=aDcrVjMwRk9KcGJ6ZWRRaIFEN2Vsdz09>

Meeting ID: **827 2053 4988**

Passcode: **183125**



2 Virtual Public Meeting #2: 6:00 - 7:00 pm

Reunión pública virtual 1 / 第二次虚拟公众会议 / 2차 가상 공청회

<https://us02web.zoom.us/j/84395545991?pwd=Yml5d2daT3ZLVEtCRVNsOVdpWWMYUT09>

Meeting ID: **843 9554 5991**

Passcode: **704359**



To request interpretation at the public meeting, contact mborcherds@mukilteowa.gov by October 23.

Para solicitar servicios de interpretación para la reunión pública, comuníquese con Meiring Borchers por correo electrónico: mborcherds@mukilteowa.gov a más tardar el 23 de octubre.

如需请求在公众会议时提供口译服务，请在 10月23日前联系 Meiring Borchers · 电子邮件 mborcherds@mukilteowa.gov.

공청회에서 통역을 요청하려면, Meiring Borchers에게 이메일 mborcherds@mukilteowa.gov 10월 23일까지 연락하십시오.

City of Mukilteo
11930 Cyrus Way
Mukilteo, WA 98275

PRESORTED
FIRST CLASS MAIL
US POSTAGE PAID
C2M LLC
22202

Example Business

1234 Ave NW, Unit A
Mukilteo, WA 98275



1070012345612345678912345678901

PUBLIC MEETING SUMMARY

2024 SURFACE WATER COMPREHENSIVE PLAN

Mukilteo Surface Water Comprehensive Plan

Virtual Public Meetings Summary

Background

The City of Mukilteo is in the process of creating its 2024 Surface Water Comprehensive Plan (2024 Plan). This plan update considers the city's past achievements, current conditions, and fresh strategies for stormwater management. Essentially, the 2024 Plan is a practical roadmap guiding decisions, pinpointing opportunities and upcoming projects, and determining how stormwater utility funds will be allocated. This planning ensures that the city's stormwater services meet system, regulatory, and community needs, all while being financially sustainable through utility rates and other funding sources.

To engage and inform the community in the development of the Surface Water Comprehensive Plan, the city has been actively involving the public. On October 26, 2023, the City of Mukilteo held two virtual public meetings to update the public on the plan.

The 2024 Plan helps ensure the City can:

- Meet regulatory requirements, including Clean Water Act, Growth Management Act and others.
- Safeguard public wellbeing and the city's waters, and related habitat.
- Reduce flooding related to storm events.
- Ensure existing and new development mitigates impacts to stormwater runoff.
- Address stormwater system infrastructure, operation, and maintenance needs.
- Protect surface and ground water quality through pollutant source control and elimination.
- Identify capital improvement priorities to plan for new and replacement stormwater infrastructure.
- Evaluate current and future issues, new stormwater technologies or design approaches, and actions (or policies) needed to meet desired levels of service.
- Identify funding needs and opportunities to support stormwater planning, administration, and programs.
- Build community connections and understanding through outreach and engagement.

Virtual Public Meetings Overview

On October 26, 2023, the City of Mukilteo hosted two virtual public meetings from 12 to 1 p.m. and from 6 to 7 p.m. to provide an update on the planning process and to get community feedback. The two meetings covered the same topics and were held at different times to provide more opportunities for participation. The meetings provided an overview of the 2024 Surface Water Comprehensive Plan, described the plan update process and what we have heard so far, introduced the plan approach and

PUBLIC MEETING SUMMARY

2024 SURFACE WATER COMPREHENSIVE PLAN

proposed projects, and explained the level of services and rates. The meetings also provided opportunities for the attendees to give feedback via several polling questions, meeting chat, and asking questions at the end of the meeting.

Approximately 22 people attended the virtual public meetings to learn about the stormwater program and provide comments. Five project staff were available throughout the public meetings to answer questions and explain project details to the public. Attendees were encouraged to share their thoughts and priorities for the stormwater program.

Notification

The virtual meetings were promoted in a number of ways, including:

- Sending postcards to all ratepayers
- Updating the [city's website](#) with virtual public meeting information
- Posting on the city's Facebook page and Twitter feed
- Through the project StoryMap website: <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>
- Via earned news media coverage in the [Mukilteo Beacon](#)

The postcards were translated into simplified Chinese, Korean, and Spanish languages.



The public meetings were promoted in a number of ways, including on the project's StoryMap site and via postcards.

PUBLIC MEETING SUMMARY

2024 SURFACE WATER COMPREHENSIVE PLAN

Polling Questions Results

At the meetings, attendees were invited to engage in a series of questions to express their thoughts and priorities concerning the Surface Water Comprehensive Plan.

Question #1: Outreach and Education

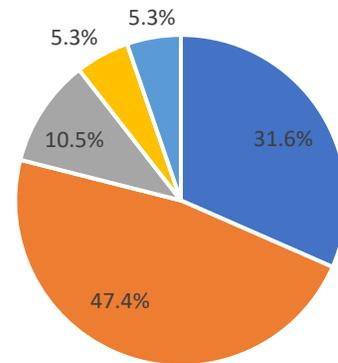
About 90% of last fall’s survey respondents said outreach and education about stormwater issues was important to them. The city is considering doing more stormwater outreach and education which would require allocating more of its surface water management budget to address these issues. Would you support increased education and outreach programs. I would be:

- Very supportive
- Supportive
- Neither supportive of unsupportive
- Unsupportive
- Very unsupportive

As for efforts to educate the public about stormwater issues, respondents exhibit varying levels of support. A significant 80% of respondents express support for educational and outreach initiatives, while 10% hold an unsupportive stance, and the remaining 10% neither support nor oppose these efforts.



	1
Very Unsupportive	1
Unsupportive	1
neither	2
supportive	9
very supportive	6



PUBLIC MEETING SUMMARY

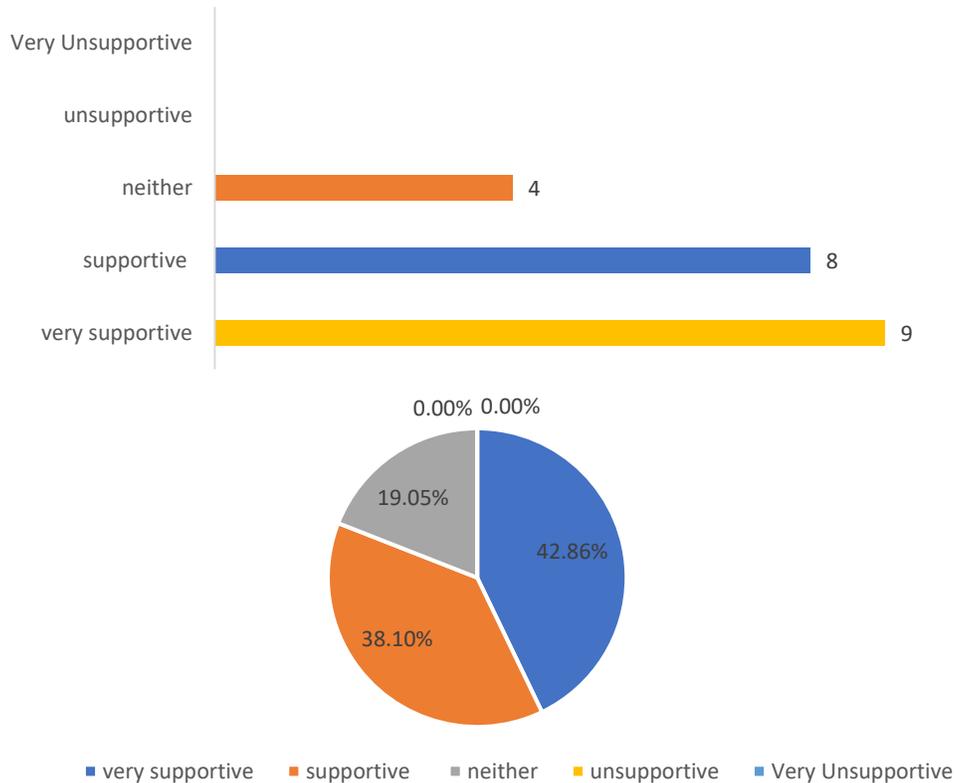
2024 SURFACE WATER COMPREHENSIVE PLAN

Question 2: Drainage Issues

Almost 80% of survey respondents reported they experienced drainage issues and felt addressing flooding, clogged storm drains, and water runoff were top priorities. The city might increase service to more proactively address these issues, requiring allocating more budget to address these issues. Would you support this service increase if flooding, clogged drains, and runoff were reduced? I would be:

- Very supportive
- Supportive
- Neither supportive of unsupportive
- Unsupportive
- Very unsupportive

This question received responses from 21 attendees from both meetings. Over 80% of participants express strong support for the city to enhance its services for proactive drainage issue management. More specifically, 43% are highly supportive (9 votes), 38% are supportive (8 votes), and 19 attendees remain neutral on the matter (4 votes), with no participants opposing the idea.



PUBLIC MEETING SUMMARY

2024 SURFACE WATER COMPREHENSIVE PLAN

Question #3: Priority

The Surface Water Comprehensive Plan will address three main areas: water quality, flooding, and erosion. Within those areas, there are a number of more specific challenges that could be addressed. Help the city prioritize its work over the next several years by choosing your top five priorities from the list below.

- Preventing pollutants from entering water bodies
- Maintaining and building new stormwater systems and structures that remove pollutants from stormwater
- Conducting water quality monitoring and research
- Minimizing property damage
- Minimizing street flooding
- Maintaining stormwater drainage systems
- Providing technical assistance to residents and businesses
- Addressing impacts on steep slopes
- Conducting outreach and education
- Minimizing loss of habitat and restoring streams and wetlands for fish and wildlife

From the options chosen by those in attendance, the priorities have been ranked from highest to lowest.

Maintaining stormwater drainage systems	18
Preventing pollutants from entering water bodies	15
Minimizing property damage	15
Addressing impacts on steep slopes	12
Minimizing street flooding	11
Conducting water quality monitoring and research	10
Maintaining and building new stormwater systems and structures that remove pollutants from stormwater	7
Minimizing loss of habitat and restoring streams and wetlands for fish and wildlife	6
Conducting outreach and education	3
Providing technical assistance to residents and businesses	2

In total, 20 participants took part in this poll. The top 5 priorities for addressing surface water challenges are as follows: maintaining stormwater drainage systems (18 votes), preventing pollutants from entering

PUBLIC MEETING SUMMARY

2024 SURFACE WATER COMPREHENSIVE PLAN

water bodies (15 votes), minimizing property damage (15 votes), addressing impacts on steep slopes (12 votes), and reducing street flooding (11 votes).

Next Steps:

The project team will use the public feedback provided at the public meetings to draft the Surface Water Comprehensive Plan. Once the plan is drafted it will be provided for public review in early 2024. The Mukilteo City Council will review and is scheduled to adopt the plan in spring 2024. Once the plan is approved, implementation, along with new stormwater utility rates, will begin in mid-2024.

Comment Summary:

Questions raised in the chat during meeting #1:

- What are the goals of outreach and education? How do we measure success?
- How do citizens know if debris needs to be cleaned up near their house during a storm
- If we have a 25 percent increase in housing units what happens to our runoff?
- What behaviors are we hoping to change?
- If we have 15-inch deluge, how do we do?
- How high is our water treatment above sea level?
- Is the camera-based monitoring system part of LOS 1?
- Is LOS 3 the only level that actually accomplishes any current goals?
- are there anything's in LOS 2 and 3 that are " a stitch in time, saves 9 categories?
- Is there a place that defines each of these line items?
- What is the highest rainfall in 8 hours? We can survive without major damage or landslides.

Questions and comments in the chat during meeting #2:

- Were those rate numbers the ones that assume no grants?
- Thank you very much for the ditch work on Webster Street!
- Big Gulch, including the stream, are very important to us. How will these proposals affect Big Gulch?
- CAC member and always interested in learning about what is going on in my community. Keep up the great work.
- As a taxpayer I am interested in how our city's money is spent
- I live adjacent to the Lower Chennault Ravine and have seen continued erosion during the past 20 years. Thanks for making this work transparent.
- Updates on how to address hillside water from driveways and roofs above my property.
- Is there a map that lists these sites?
- Thank you for your answers regarding Big Gulch. As a note for the future, we would very much like to see the stream further improved for salmon habitat.

3 WAYS TO TAKE THE SURVEY:

1

SCAN THE QR CODE

to take the survey online, or visit
www.mukilteo.gov/stormwatersurvey



Escanee el código QR o visite storymaplink.com para leer en español.

QR 코드를 스캔하거나 storymaplink.com을 방문하여 한국어로 읽으십시오.

扫描二维码或访问storymaplink.com阅读中文。

2

STOP BY CITY HALL

to take the survey in person.



3

CALL 425-263-8170

to have the survey mailed to you.



Survey closes October 10, 2022.

LEARN MORE AT THE PUBLIC OPEN HOUSE

SEPTEMBER 13, 2022, 6:30 - 8:00 PM

Rosehill Community Center - Vancouver Room

304 Lincoln Ave, Mukilteo, WA 98275

Obtenga más información sobre el proceso asistiendo a la reunión pública:

13 de septiembre de 2022, 6:30 - 8:00 p. m. Traductor presente.

공개 회의에 참석하여 절차에 대해 자세히 알아보십시오

2022년 9월 13일, 오후 6:30 - 8:00 번역가 현재

通过参加公开会议了解有关该过程的更多信息

2022年9月13日, 下午6:30 - 8:00。翻译在场

City of Mukilteo
11930 Cyrus Way
Mukilteo, WA 98275

PRESORTED
FIRST CLASS MAIL
US POSTAGE PAID
C2M LLC
22202

Example Business

1234 Ave NW, Unit A
Mukilteo, WA 98275



1070012345612345678912345678901



Appendix

Staff Interview Summary

B



Mukilteo Surface Water Comprehensive Plan

City Stakeholder Interview Summary

Interview Purpose

City of Mukilteo stakeholders were interviewed between July 2022 and November 2022 to gain an understanding of how surface and stormwater management functions are carried out in different groups within the organization and to identify potential capital and/or programmatic (i.e., policy, operational, staffing, or equipment needs) actions that should be put forth for consideration in the Surface Water Comprehensive Plan. Representatives of departments that intersect with surface and stormwater management elements and staff that work within Public Works were interviewed. The interviews were confidential, and no individual participants are called out by group or other identifying feature in this document. The interviews were conducted early in the planning process (summer – fall 2022). Some conditions reported by staff and ideas suggested by interview participants have been addressed at the time of Plan completion. In those cases, changed conditions are noted in blue italics.

Overview and Participation

Interviewers:

Heather Haskell, EMA
Erin Nelson, Altaterra Consulting

Interview Participants (10):

- Matt Nienhuis, *Public Works Director*
- Meiring Borchers, *Current Surface Water Program Manager*
- Linda Ritter, *former Senior Planner*
- Kory VanDyke, *GIS Technician*
- Ken Owings, *Public Works Superintendent*
- Dustin Goodwin, *GIS Coordinator*
- Jennifer Adams, *former Surface Water Program Manager*
- Matthew Geiger, *Senior Stormwater Technician*
- Brian Wirt, *now Senior Engineering Technician, formerly Senior Stormwater Technician*
- Bryce Remmen, *Storm Crew Lead*

Representative Group/Functions of Interviewees:

Figure 1 shows the organizational structure of the City. Interview participants were primarily from Public Works, however, Public Works interfaces with Planning and Community

Development regularly, so staff from that department were also interviewed. Staff from finance were not available to be interviewed.

Organization Structure for City Budget

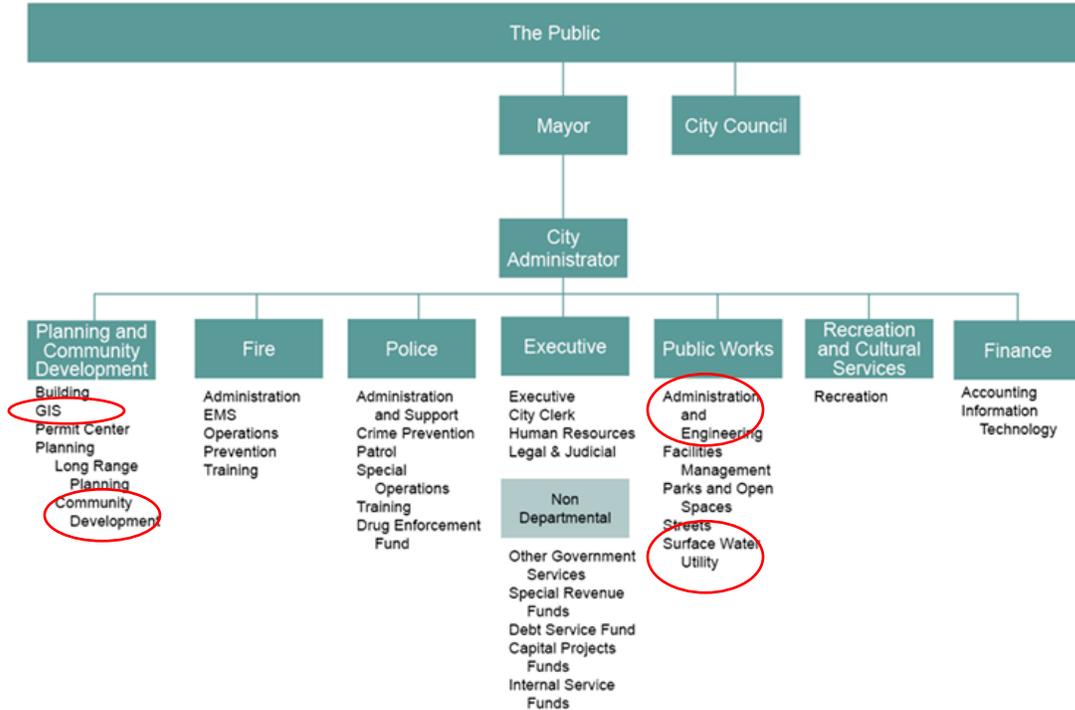


Figure 1. Location in Organization where Interviewees currently work or formerly worked

Representative Mukilteo Experience of Interviewees:

Figure 2 shows the number of years of Mukilteo experience represented by the personnel interviewed for the Mukilteo Stormwater Comprehensive Plan. Over half of the people interviewed have been with the city under 5 years and two of the three people interviewed that have been with the City longer than 5 years have since left City employment. The City, like most other cities in the region, is going through a transition period with new personnel.

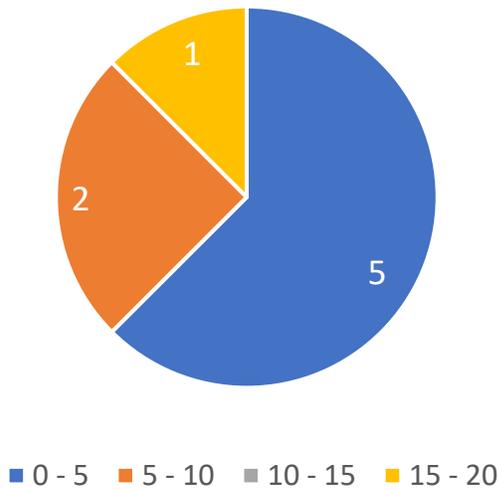


Figure 2. Chart Showing Representative Mukilteo Experience (in years)

What we asked:

The interview format was freeform, allowing participants to describe their work related to surface and stormwater and what works well and what could use improvement, including ideas for capital, staffing, equipment, or programmatic action items to include in the Surface Water Comprehensive Plan. General interview themes included the topic areas below with follow-up questions and discussion based on the responses of the participant.

- Roles and responsibilities within the Utility or related to Utility work? Methods for interacting with Surface Water Utility?
- Opinions on what the most important tasks are to meet Utility goals.
- Elements that help make job successful.
- Barriers that get in the way of completing surface and stormwater tasks and ideas to mitigate the barriers.
- Specific projects and actions recommended for inclusion in the Surface Water Comprehensive Plan?
- What works well and what needs improvement in the Utility?
- Opinions on how the Surface Water Comprehensive Planning process can help the Utility meet its goals.

What we heard:

All participants were very engaged in the interviews and were interested in the Surface Water Utility's success moving forward, even if they were no longer employed by the City or no longer directly involved with day-to-day activities. Listed below are the primary themes we heard from the interview participants.

Staff Capacity and Turnover

There has been significant turnover in positions in the Surface Water Utility and in the City of Mukilteo government in the last few years. Specifically, the following staffing changes occurred between 2015 and 2022:

- Three people rotated through the Surface Water Technician role over a period of seven years.
- The current Surface Water Technician has been with the City for about 2 years.
- A new Surface Water Manager was hired from outside the City of Mukilteo in August 2022.
- A new Public Works Director was promoted from within the City of Mukilteo in January 2022.
- Turn-over on the Storm Crew has been high as well in 2022. In 2022, the Storm Crew has a new lead, new maintenance 2, new maintenance 1, and a new superintendent.

What works well

- Remaining staff and new staff have shown flexibility to take on additional work or complete necessary work items while vacant staff positions are being filled.
- There is a fresh look at old systems that could result in improvements in how work is accomplished because of the staff turnover.

Challenges for Staffing and Turnover

- It has taken new staff time to get up and run the tasks required of them due to unfamiliarity with systems, and lack of documentation on where things are and how to do things.
- It is difficult to get work accomplished with fewer resources.
- The optimal Storm Crew is 11 positions, whereas the current Storm Crew consists of 6 positions.

Ideas suggested by participants:

- Develop Standard Operating Procedures (SOPs) for routine tasks so that there is documentation and institutional knowledge is not lost.
- Conduct in-house staff training to ensure that staff are consistently and accurately completing work to the standards required of Mukilteo.
- Add Storm Crew staff to be able to conduct routine pond maintenance/ditching (3- person crew) and Vactor truck work (2-person crew).

Operations and Maintenance of Existing Infrastructure

The Storm Crew operates and maintains the stormwater infrastructure in the Public Works department. There is cross-over with other Public Works maintenance activities and time is not separated out for surface water specific activities. The primary responsibilities of the Storm Crew include the following:

- City wide maintenance (inspection, cleaning, landscape maintenance, and repair) of:
 - Stormwater facilities (bioswales, green roof, media filters, ponds)
 - Catch basins (4500+)
 - Ditches (260+)
 - Berms
- Street sweeping and right-of-way maintenance
- Stormwater system locates
- Hot spot inspection and storm response of areas known to flood

- Snow plowing
- Cleaning and rodding stormwater lines not including the CCTV program
- TV/camera stormwater pipes for inspection
- Cleaning pervious surfaces (2 large areas on schedule)
- Pulling shoulders
- Fix it Service Requests including:
 - Repairs requested by the public or supervision on the stormwater system
 - Non-stormwater requests that take time away from stormwater maintenance
- Small projects including:
 - Building pipe racks and organized storage yard for stormwater
 - Modifying lift gates in decant facility
- Large projects including:
 - CCTV rodding program for 10 miles of pipe.
 - M pond #89013 rehabilitation
 - Clear View Pond #94006 rehabilitation
 - Bayview Pond #94002 rehabilitation
 - Black hole- OF007 maintenance
 - Large scale facility repair (city-wide)
 - Broken pipe at Harbour Pointe Boulevard and Kamiak
 - Basketball court vault #91004 maintenance

What works well

- The maintenance yard is functional.
- Equipment is maintained by a contractor who does regular check-ups and service.
- Public Works has been effective at acquiring and replacing equipment as needed.
- Crew can do creative problem solving such as modifying gates in the decant facility to allow more functional operation.
- Leads plan out 2 weeks in advance and coordinate with one another for crew workloads.
- Operations have improved the program over the last several years. Crews are reporting footage of pipes cleaned and tons of waste disposed.
- The new decant facility is a big improvement.
- Operations now uses a hydro-seeder after ditching. This is a big improvement over just cleaning ditches without putting new grass down.
- Catch basins with no bottoms have been fixed in the old town area.
- The pipe inspection program is working well.

Challenges for Operations Crews

- All equipment is shared, so sometimes there are conflicts when equipment is in use, such as the mini excavator which is used a lot.
- Staffing (see above).
- Equipment needs, including the following:
 - Two new work trucks
 - Skid-steer/trailer combination with attachments for vegetation control and dirt work

Note: Skid-steer was purchased.

- Dump truck
- Extension hose for Vector work
- Cover for material storage area
- Maintenance of some facilities where access is difficult or impossible (i.e., basketball court vault)
- Keeping up with vegetation maintenance at facilities
 - Aging workforce
 - Competing needs, such as CCTV/cleaning work
- Not all private facilities are inspected. Some do not have HOAs associated with them, and it is unclear if anyone is caring for those facilities. It is likely that many private facilities, especially those that are not required to be inspected by the City by the City's NPDES Phase II permit, need significant maintenance or repair.
 - Staff do not have the capacity to follow up on failing private infrastructure.

Ideas suggested by participants:

- Get current infrastructure up to par before expanding on new projects.
 - Need to understand the condition of ponds and vaults before maintaining and repairing them.
- Memorandum of Understanding with WSDOT for "Black hole" which is in WSDOT right-of-way but being maintained by Mukilteo. The location is at Mukilteo Speedway and Goat Trail.

Note: Mukilteo has learned that an MOU is unnecessary as it is the City's responsibility to maintain and replace stormwater infrastructure under 60 inches diameter on state highway routes through its jurisdiction (RCW 47.24 and WAC 468-18-050).

- Outsource repairs to contractors to minimize projects done in-house by Storm Crews so they can focus on routine maintenance and cleaning.
- Move facility inspections to Surface Water technicians.
- Need new GIS-based work order tracking system to improve on WINCAMs (in progress).
- Consider alternative catch basin inspection and maintenance schedules. Need to request "Alternative inspection schedule" from DOE in 2024 maybe or late 2023.
- Consider augmenting private facility inspection program to include facilities that are older than 2009.
- Equipment replacement needs to be included in the Surface Water Comprehensive Plan. Stormwater equipment is paid for out of Stormwater Fund.

Electronic systems

The Surface Water Utility utilizes the electronic systems it has to the extent of their capabilities in its daily workload, including:

- Geographic Information Systems (GIS) for system mapping, and tracking system for pipe inspection and cleaning program, as well as information HUB for the Stormwater Comprehensive Plan.
- WINCAMs for workload management and service calls.

There is room for improvement in this area, and the City purchased an Enterprise GIS System that allows them greater flexibility and capabilities to do more with GIS.

What works well

- GIS has set up web apps and is working through data cleanup and standardization. The drainage pipes have been the biggest part of the cleanup.
- Error reporting in the collector app that is being used for pipe cleaning has been helpful and allows GIS to update mapping errors in real-time.
- Pipe cleaning and CCTV app have been successful. The crews can see what pipes are coming up next and CCTV crews can watch for issues. There is real-time feedback on the dashboard, including progress for the week. All pipes inspected and all pipes cleaned are reported.

What needs improvement

- Public works does not have a good work management system. The system is 15 – 20 years old and an annual update of the system is needed. The City is looking at Workforce as a temporary solution.
- Catch basin inspections are done in Survey123 and data lives in the Survey123 tables but is not pushed back into the CB layer automatically. The data must eventually be imported back to the geodatabase.
- Public facing maps and apps showcasing projects around the city. This is doable now, but there is a need to make sure the data is updated regularly.
- Upgrade to enterprise system so that they can both be editing data at the same time. The two GIS staff must interrupt each other's work to edit data.

Note: City upgraded to an Enterprise GIS system.

Ideas from Participants

- Review 6-year GIS Strategic Plan (2018) and see where the City is at regarding recommendations.

Note: The City appears to have made progress on many of the recommendations in the 6-year GIS Strategic Plan, however, some of the more resource-intensive recommendations have not been implemented.

Development Review and Code Compliance

Surface Water Utility staff conducts stormwater portions of development review. Resources to conduct the work have been an on-going issue because of staff turnover, losing institutional knowledge and the short turnaround time required for plan review. There is no code compliance officer to follow up on violations which makes it difficult to enforce the existing City codes.

What Works Well

- The City is doing well with keeping up on development review, despite being understaffed.

Challenges for Development Review and Code Compliance

- Development review is conducted on paper plans and files, making it difficult to simultaneously conduct reviews by different staff. An electronic program, such as Blue Beam, would make it much more efficient to conduct development review.

Note: The City is now working with an electronic system for development review.

- There is not a lot of training for reviewers, and WA state stormwater regulations are much different than in other parts of the country. There needs to be more training available on how to use the Ecology Manual and the relevance of certain sections to Mukilteo.
- Stormwater requirements are challenging for customers/residents on small lots and in the downtown area where there is 100% impervious lot coverage in some places, but also the need to be pedestrian friendly. There is no space for stormwater. Other options are needed.
- Since the City is mostly built out, development review is mostly single-family residences on difficult sites (the easy sites have already been developed).

Ideas suggested by participants:

- Purchase Blue Beam for development review and transfer to electronic documentation.

Note: An electronic program has been purchased and is in use.

- Create standardized forms and filing methods to make information more accessible and retrievable.
- Identify creative ways that property owners are not restricted from using their property but can still meet surface water requirements.
- Consider looking at how impervious surfaces are calculated? Does it make sense from a stormwater standpoint?
- Consider purchasing properties with City funds for preservation and conservation to prevent stormwater impacts.
- Fund a portion of a City-wide code compliance officer to enforce City code and stormwater violations.
- Increase charges for stormwater development review.

Note: A review of permit fees is underway.

Customer Service

Engineering and operations staff respond to customer inquiries as they come in and depending on the type of call. The calls are tracked in GIS now, and the Utility does a good job of being responsive to customer inquiries. The Surface Water Technician makes field visits for 95% of the calls that come in. About 5% of the calls come from outside the City boundaries and do not require a site visit. Operations receives about 2 – 3 service calls a week.

Ideas from Participants

- Dashboard or private facilities and resources for inspection, cleaning, and maintenance.
- Heat map showing where flooding calls come from (when and where).

- Public-facing dashboards and maps of City operations and maintenance (ditch cleaning, street sweeping, catch basin cleaning, etc.).

Note: The City is utilizing internal dashboards and maps to track operations and maintenance progress.

Education and Outreach

The City has general goals for public education and outreach that build awareness about stormwater pollution and focus on behavior change to reduce practices that contribute to pollution in surface and stormwater. The City's program is designed around meeting requirements of its NPDES Phase II Permit, but there are other outreach elements that are equally important for the Utility in gaining support from Council and the Community in the work they do.

What works well

- Community members have engaged on this Plan in a few ways including:
 - Public Open House
 - Survey
 - Participation on a Citizen Advisory Committee
- Utility staff are out in the community at local events, providing information and outreach about the Utility and stormwater.
- Well-placed signs and vehicle wraps (coming in 2023) promote Mukilteo's stormwater activities.

Challenges for Education and Outreach

- Reaching disadvantaged or underserved communities. Despite providing materials in multiple languages, having interpreters at public meetings, and advertising at locations where non-English speakers frequent, there was little participation from these communities in the outreach conducted thus far for this Plan.
- Limited staff resources.

Ideas suggested by participants:

- Increase visibility on the City's website, making information easier to find and more transparent.
- More frequent participation in community events.
- Participation at local schools (K-12).
- Partnerships with local colleges.
- Signs/kiosks at trailheads or on the waterfront about projects or interesting stormwater facts.
- Adopt-a-drain program.
- Internal training/outreach (how-to videos instead of SOPs).
- Education and Outreach to Council Members.
- Showcase projects that the City has completed. Let them know what their rates pay for.

Capital Projects

In the last 5 – 6 years, the City has not done many stormwater CIPs even though there is a big CIP project list and CIPs were identified in the 2015 Stormwater Comprehensive Plan for implementation by now. Some of the staff suggested that the Utility needs to focus on moving from compliance to

implementing stormwater CIPs, whereas others suggested there is more work to be done on existing infrastructure before building new infrastructure.

Challenges

- There is a challenge between holding budget for more expensive projects (which many CIPs are) to doing less expensive projects that may be less important but give the City a “quick-win.”
- There is also a challenge with forwarding projects that have been on the CIP list for a long time that may not be relevant or worthy vs. pursuing recent add-ons that seem more critical and address current needs. Intelligent decisions need to be made about CIPs because there is not enough budget to do even a portion of the projects listed.
- Unplanned projects end up taking away the budget set aside for Stormwater CIPs. There is not a separated CIP budget from SW operational budget.

Ideas suggested by participants:

- Need a separate fund for capital improvements.
- Capital projects should be fully scoped to include the portion that involves stormwater and how much stormwater should fund. For instance, a transportation improvement project that involves stormwater improvements should fully scope the stormwater improvements so that those can be accounted for and budgeted for out of the Surface Water Fund.



Appendix

Watershed Fact Sheets

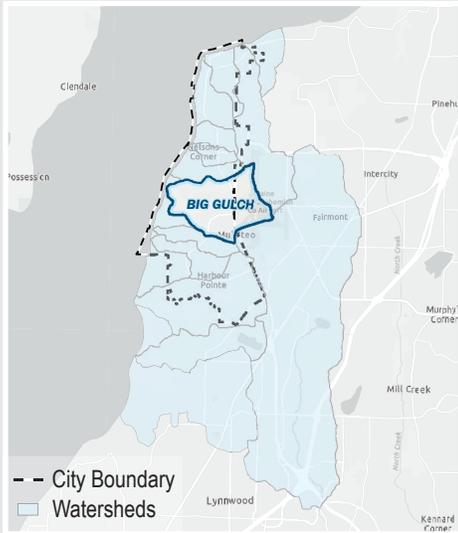
C

BIG GULCH

Receiving Water **Puget Sound**
 WRIA **8**
 Acres **1086.54**

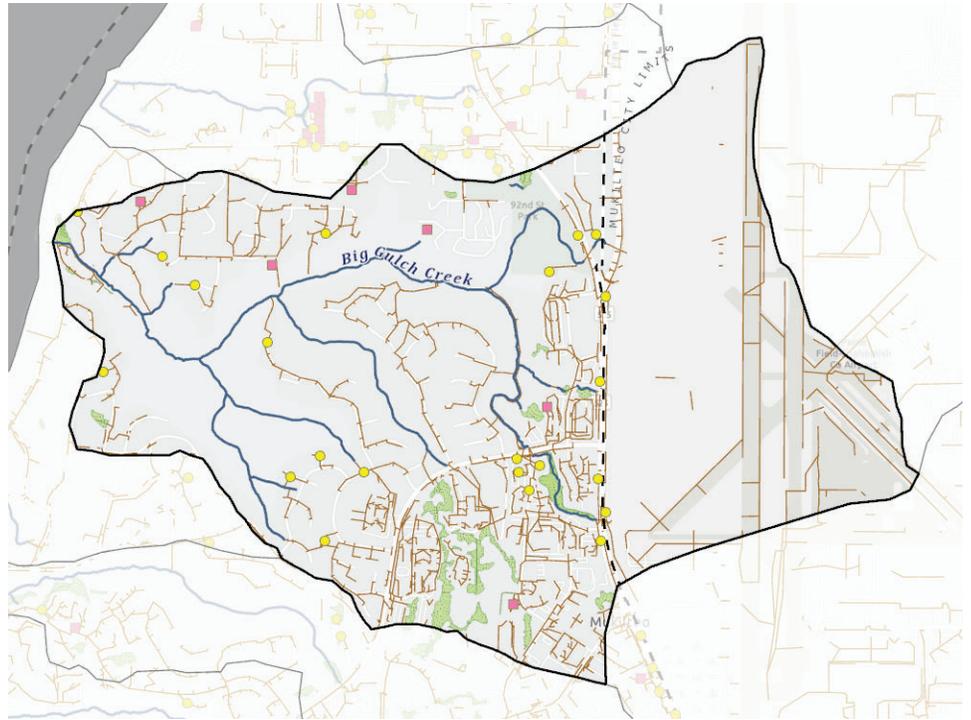


Location



Acres in City Jurisdiction **733.65**
 Percent in City Jurisdiction **68%**

Streams and Pipes

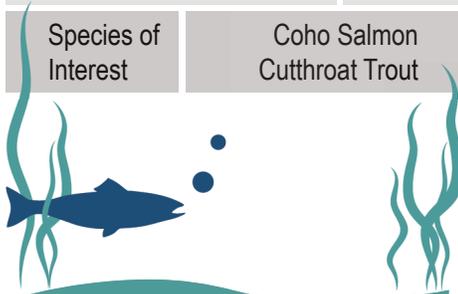


Stormwater Pipe/Ditch Length **31.07 miles**
 Stream Length **4.75 miles**
 Wetlands
 Stormwater Facility (Public)
 Stormwater Facility (Private)
 Stormwater Facility (P&P) Total Count **28**

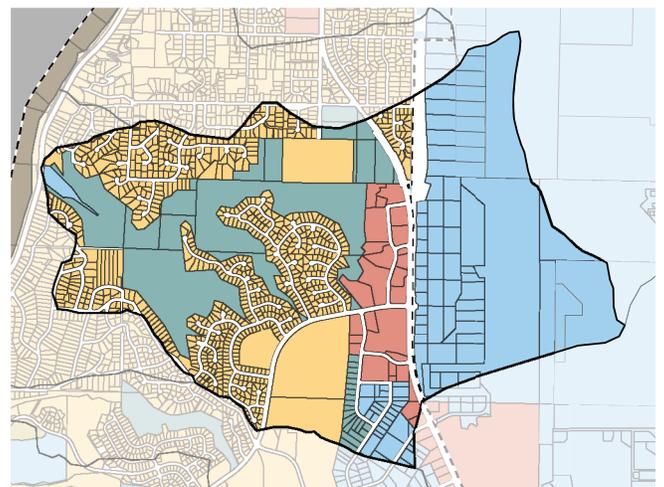
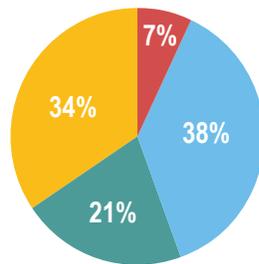
Habitat Information



Habitat - Wetland (Acres)	8.12
Habitat - Length Fish Bearing Streams (Miles)	1.67
Species of Interest	Coho Salmon Cutthroat Trout



Zoning



Unique Characteristics

Home to Big Gulch Park and Trails <https://mukilteowa.gov/wp-content/uploads/Big-Gulch-Trails.pdf>

Wastewater Treatment Plant located near the mouth.

Previously owned by the Port Gamble Lumber Company and the Chevron Oil Company.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

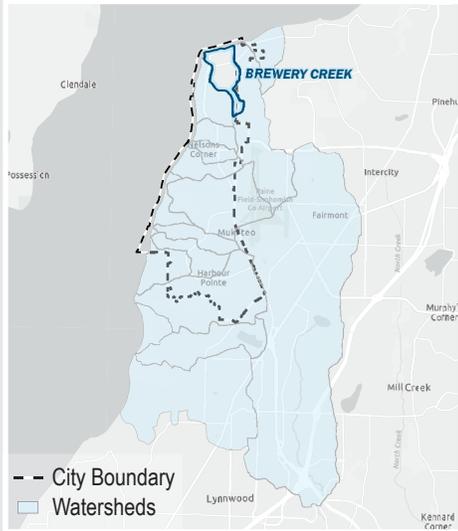


BREWERY CREEK

Receiving Water **Puget Sound**
 WRIA **7**
 Acres **302.96**

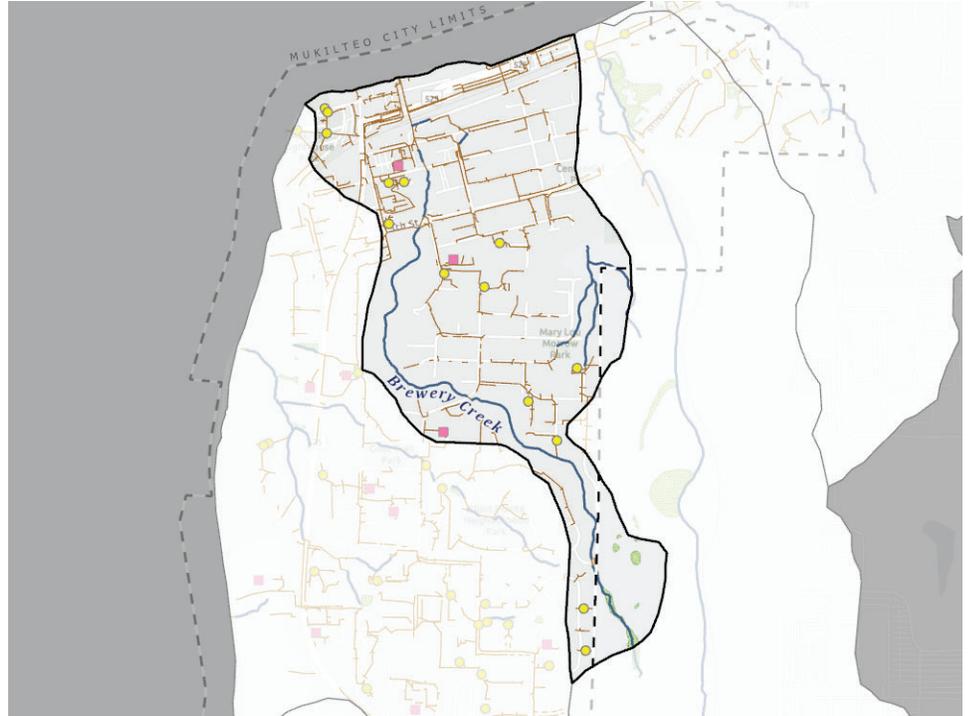


Location



Acres in City Jurisdiction **272.14**
 Percent in City Jurisdiction **90%**

Streams and Pipes

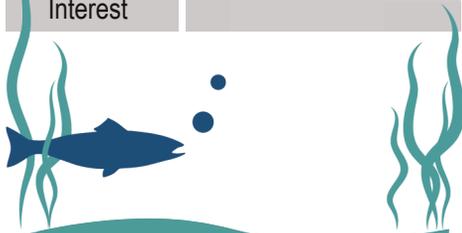


— Stormwater Pipe/Ditch Length **10.41 miles** ● Stormwater Facility (Public)
 — Stream Length **1.96 miles** ■ Stormwater Facility (Private)
 ■ Wetlands Stormwater Facility (P&P) Total Count **18**

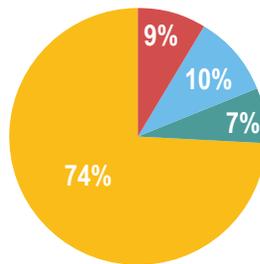
Habitat Information



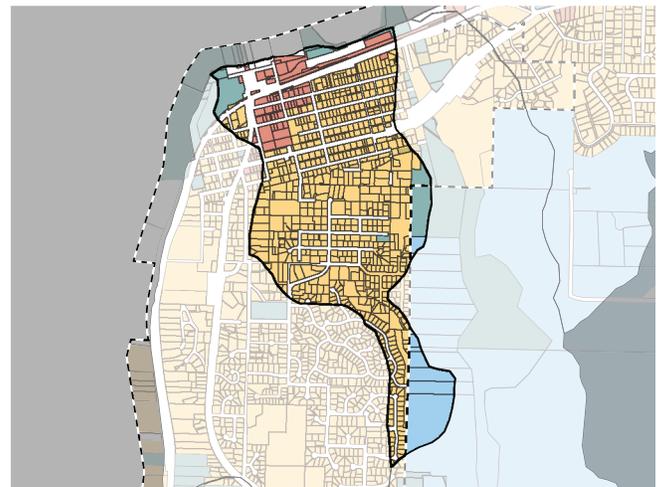
Habitat - Wetland (Acres)	3.38
Habitat - Length Fish Bearing Streams (Miles)	0.74
Species of Interest	N/A



Zoning



Zone	Acres
Commercial	21.49
Industrial	25.08
Open Space	16.92
Residential	180.12



Unique Characteristics

Named for Mukilteo's beer brewing industry that started around 1864 with a brewery built in the ravine that is now Brewery Creek.

Home to numerous City parks and beaches.

Oldest City stormwater infrastructure.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

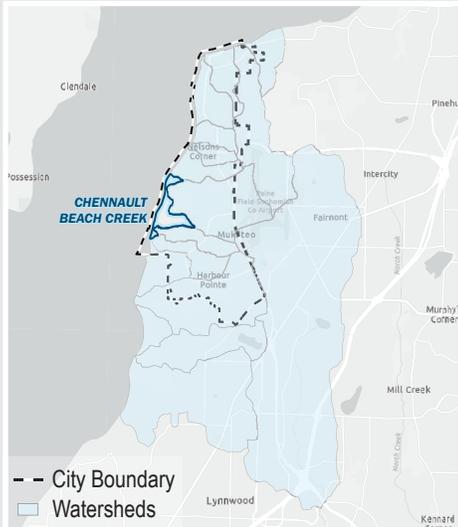


CHENNAULT BEACH CREEK

Receiving Water **Puget Sound**
 WRIA **8**
 Acres **184.40**

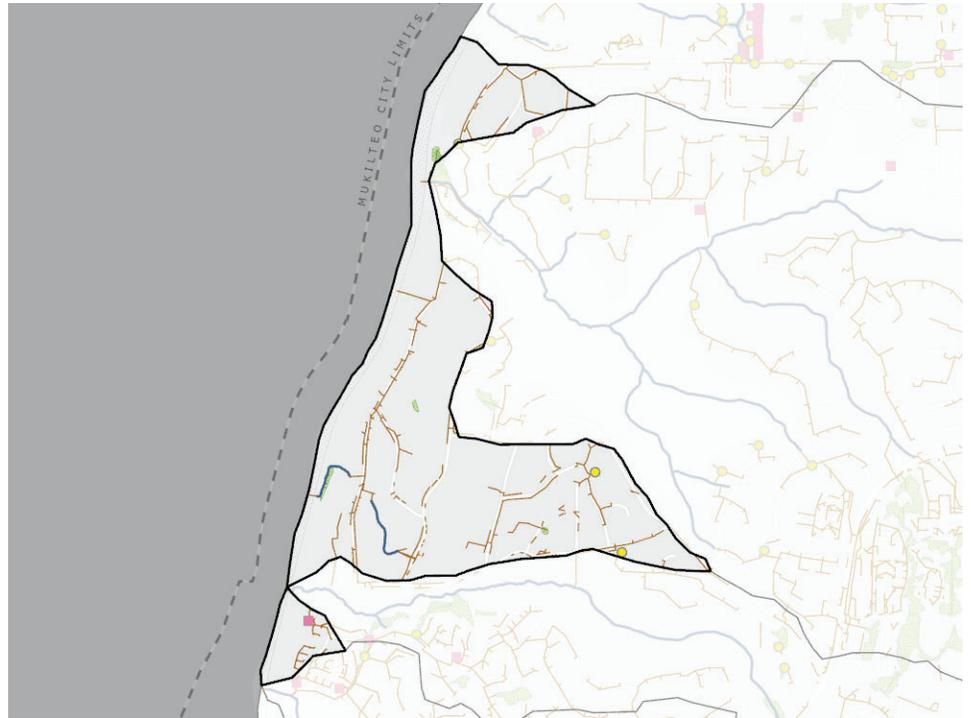


Location



Acres in City Jurisdiction **184.40**
 Percent in City Jurisdiction **100%**

Streams and Pipes

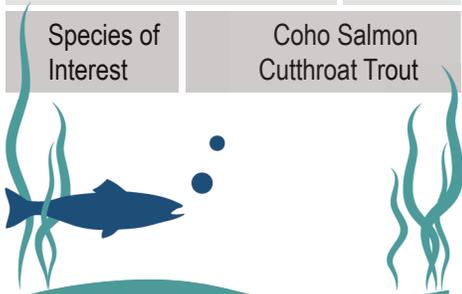


— Stormwater Pipe/Ditch Length **4.31 miles** ● Stormwater Facility (Public)
 — Stream Length **0.24 miles** ■ Stormwater Facility (Private)
 ■ Wetlands Stormwater Facility (P&P) Total Count **4**

Habitat Information



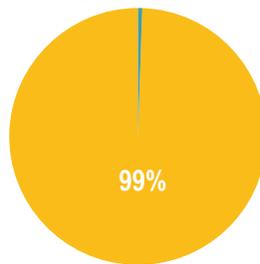
Habitat - Wetland (Acres)	3.51
Habitat - Length Fish Bearing Streams (Miles)	0.02
Species of Interest	Coho Salmon Cutthroat Trout



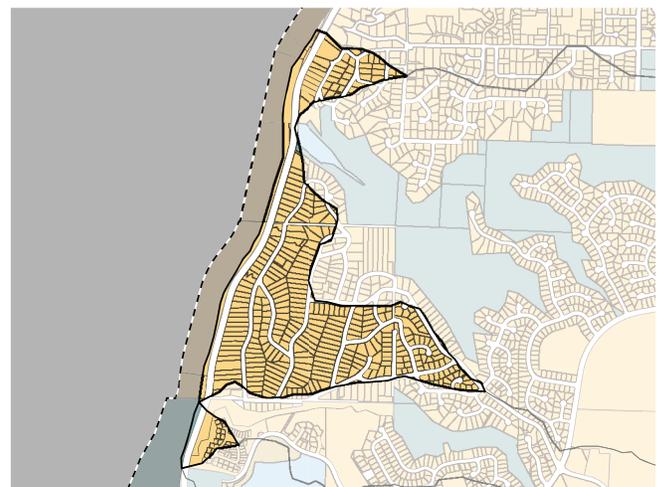
Unique Characteristics

2023 Stormwater Management Action Plan focus area.

Zoning



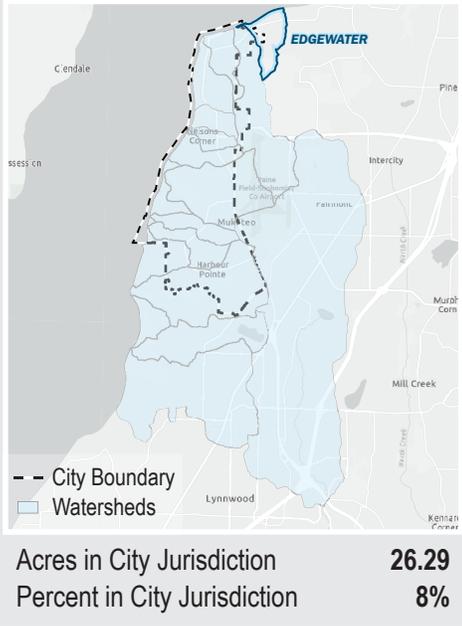
Zone	Acres
Commercial	0.00
Industrial	0.04
Open Space	1.10
Residential	143.75



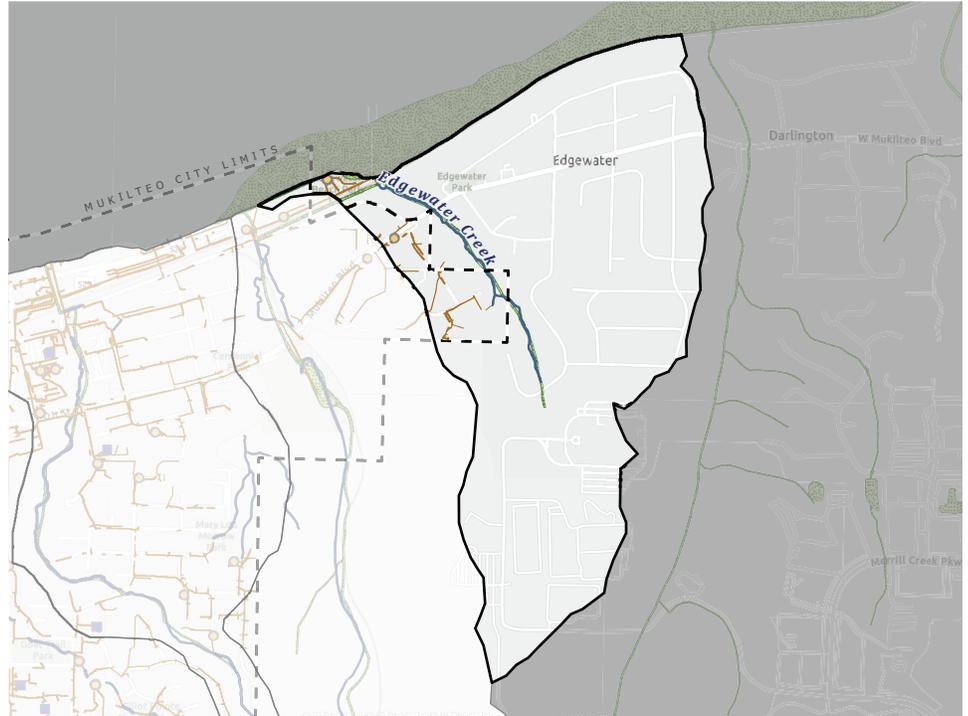
For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>



Location



Streams and Pipes



- Stormwater Pipe/Ditch Length **45.15 miles**
- Stream Length **5.57 miles**
- Wetlands
- Stormwater Facility (Public)
- Stormwater Facility (Private)
- Stormwater Facility (P&P) Total Count **2**

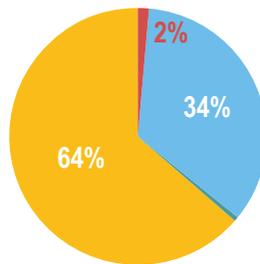
Habitat Information

Habitat - Wetland (Acres)	2.87
Habitat - Length Fish Bearing Streams (Miles)	0.39

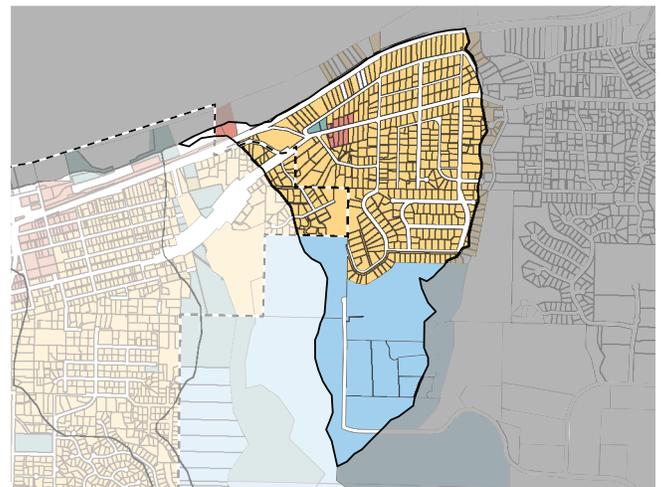
Species of Interest

- Chinook Salmon
- Chum Salmon
- Coho Salmon
- Pink Salmon
- Steelhead Trout

Zoning



Zone	Acres
Commercial	4.67
Industrial	100.39
Open Space	1.06
Residential	185.49



Unique Characteristics

The beachhead was constructed by the Port of Everett as part of the construction of the Mount Baker Terminal.

Large percentage of basin drainage is from industrial area.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

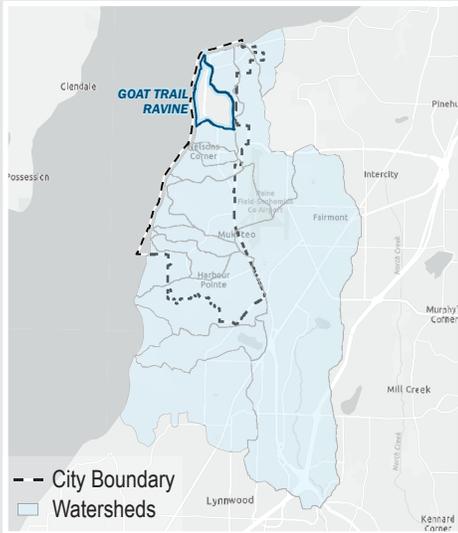


GOAT TRAIL RAVINE

Receiving Water Puget Sound
 WRIA 8
 Acres 382.10

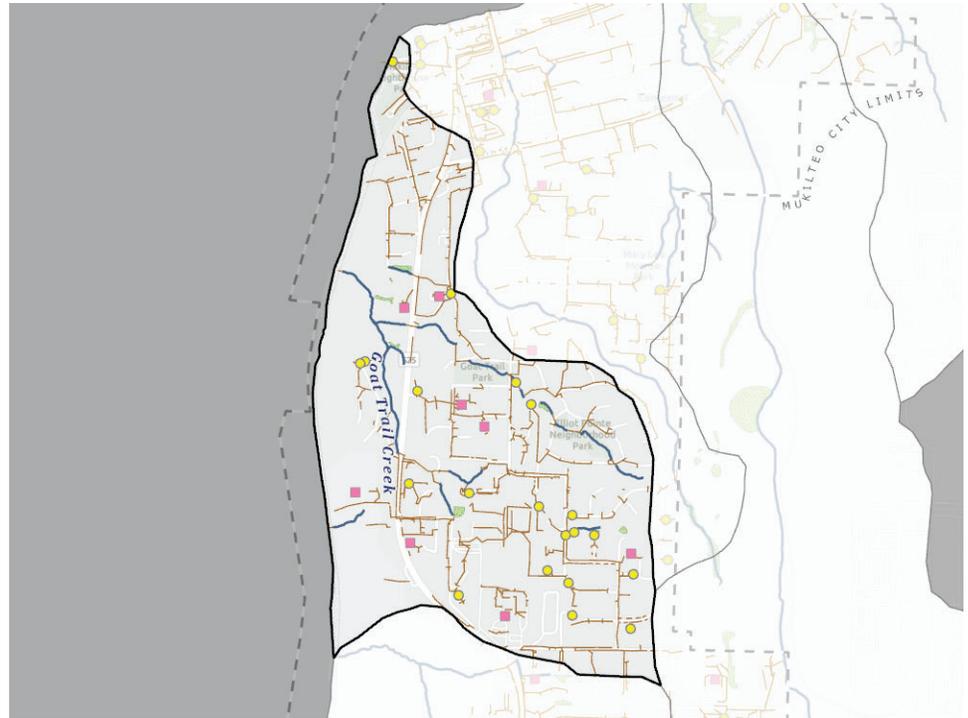


Location



Acres in City Jurisdiction **382.10**
 Percent in City Jurisdiction **100%**

Streams and Pipes



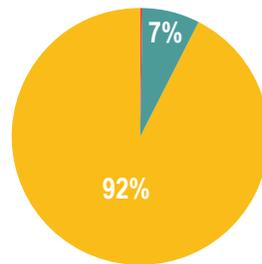
Habitat Information



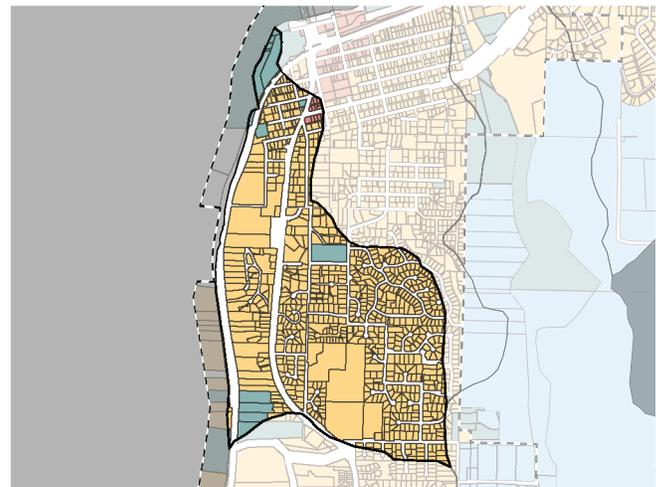
Habitat - Wetland (Acres)	1.52
Habitat - Length Fish Bearing Streams (Miles)	0.0
Species of Interest	N/A

Stormwater Pipe/Ditch Length **11.78 miles**
 Stream Length **1.40 miles**
 Wetlands
 Stormwater Facility (Public)
 Stormwater Facility (Private)
 Stormwater Facility (P&P) Total Count **28**

Zoning



Zone	Acres
Commercial	1.63
Industrial	0.00
Open Space	20.99
Residential	272.89



Unique Characteristics

Home to two City Parks: Goat Trail Park and Elliot Pointe Park.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

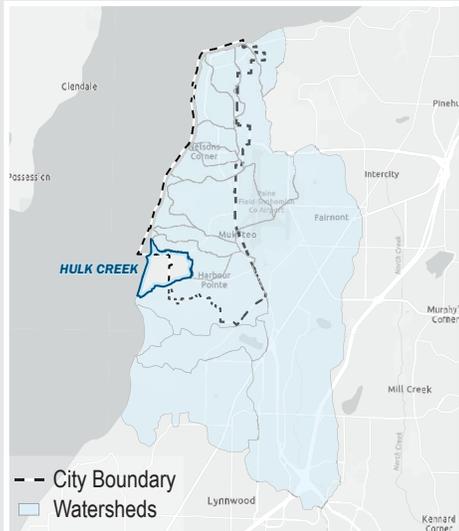


HULK CREEK

Receiving Water **Puget Sound**
 WRIA **8**
 Acres **374.92**

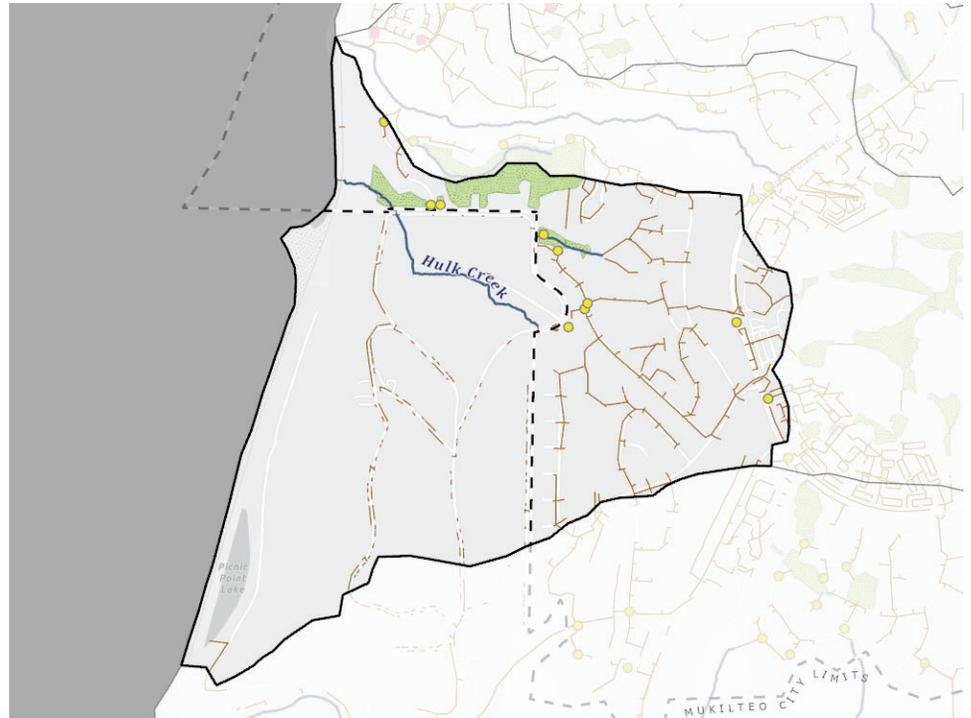


Location



Acres in City Jurisdiction **165.51**
 Percent in City Jurisdiction **44%**

Streams and Pipes

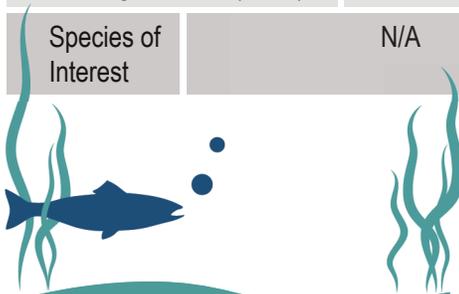


— Stormwater Pipe/Ditch Length **6.07 miles** ● Stormwater Facility (Public)
 — Stream Length **0.60 miles** ■ Stormwater Facility (Private)
 ■ Wetlands Stormwater Facility (P&P) Total Count **10**

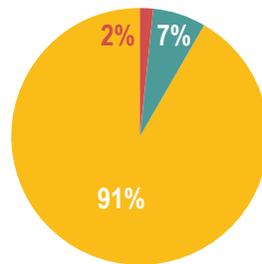
Habitat Information



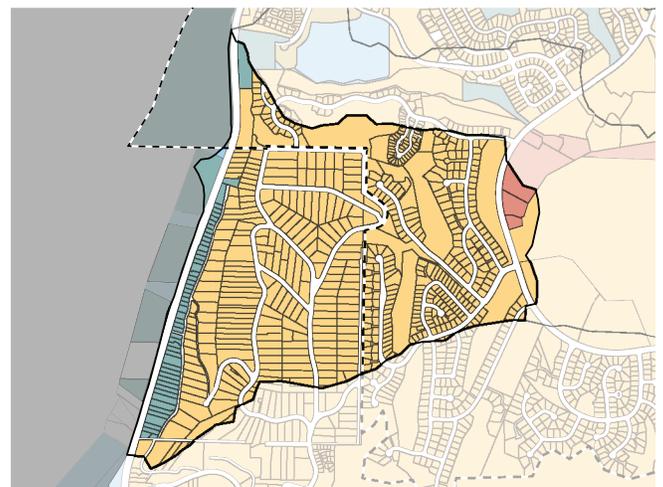
Habitat - Wetland (Acres)	11.61
Habitat - Length Fish Bearing Streams (Miles)	0.06
Species of Interest	N/A



Zoning



Zone	Acres
Commercial	5.31
Industrial	0.28
Open Space	21.43
Residential	289.20



Unique Characteristics

Named after hulks of remaining motor vessels and the boat graveyard nearby. (MV Pacific Queen last visible hulk).

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

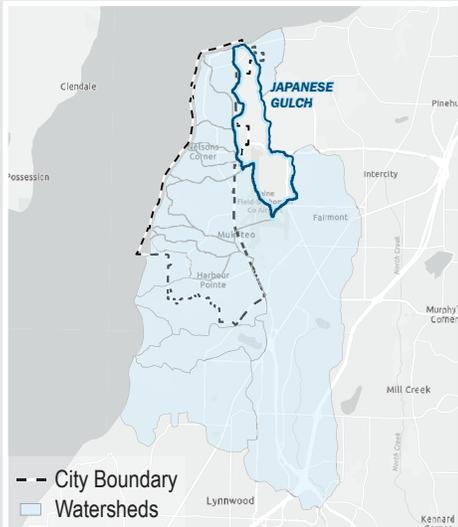


JAPANESE GULCH

Receiving Water **Puget Sound**
 WRIA **7**
 Acres **1148.44**

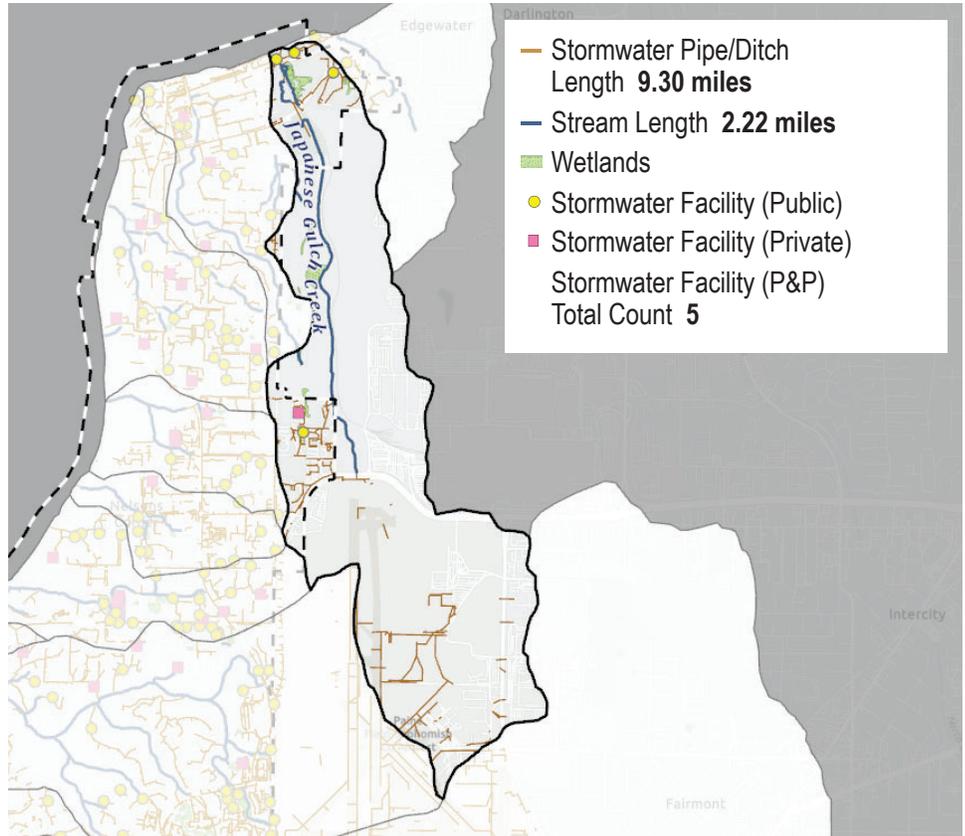


Location



Acres in City Jurisdiction **185.15**
 Percent in City Jurisdiction **16%**

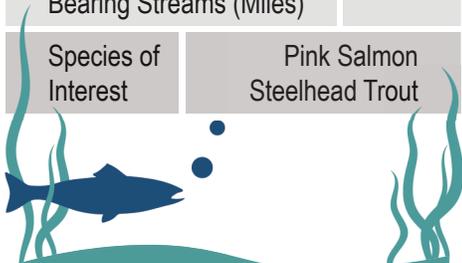
Streams and Pipes



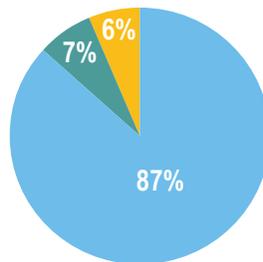
Habitat Information



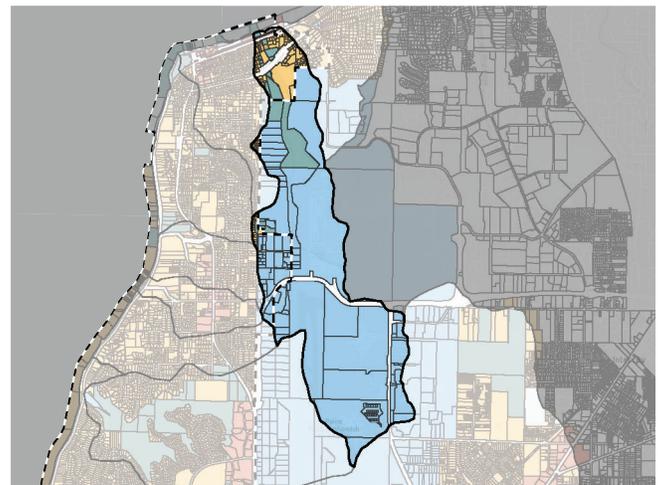
Habitat - Wetland (Acres)	24.78
Habitat - Length Fish Bearing Streams (Miles)	0.0
Species of Interest	Pink Salmon Steelhead Trout



Zoning



Zone	Acres
Commercial	1.70
Industrial	938.34
Open Space	76.86
Residential	67.33



Unique Characteristics

Named after the Japanese immigrants who worked at Mukilteo Lumber Company (1903-1930) and lived the company housing in the gulch.

The Boeing railroad spur is the steepest standard gauge railroad in America, at a 7% incline.

Over four miles of multimodal trails.

Fish ladder visible from trail

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

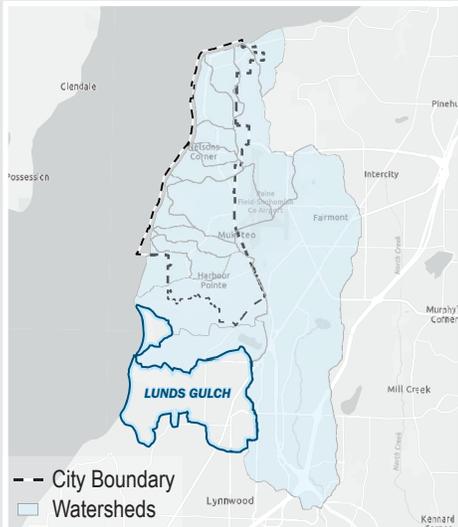


LUNDS GULCH

Receiving Water Puget Sound
 WRIA 8
 Acres 2348.01

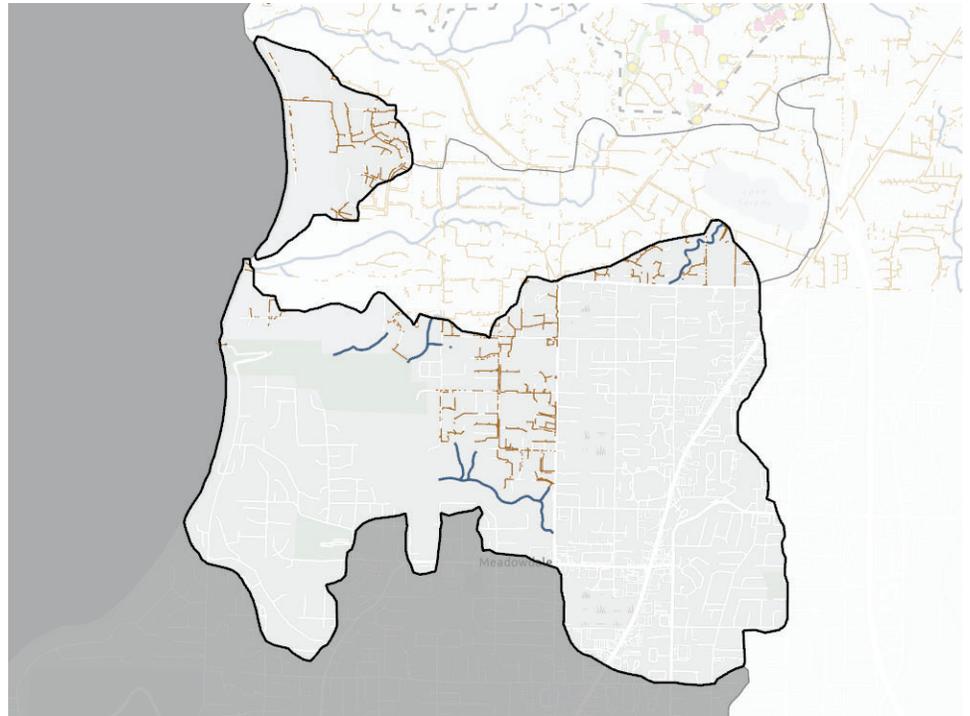


Location



Acres in City Jurisdiction **0.00**
 Percent in City Jurisdiction **0%**

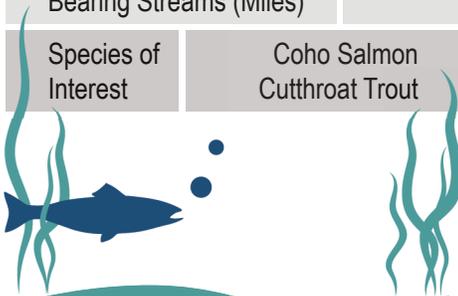
Streams and Pipes



Habitat Information

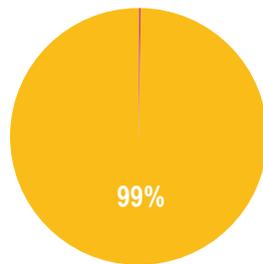


Habitat - Wetland (Acres)	59.01
Habitat - Length Fish Bearing Streams (Miles)	3.30
Species of Interest	Coho Salmon Cutthroat Trout

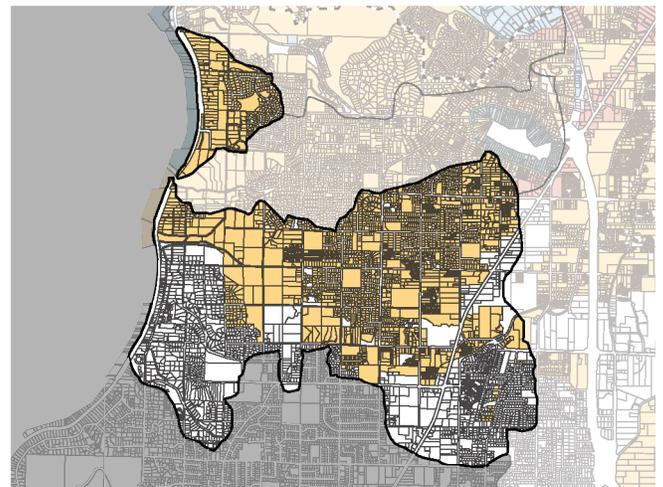


Stormwater Pipe/Ditch Length **11.59 miles**
 Stream Length **1.98 miles**
 Wetlands
 Stormwater Facility (Public)
 Stormwater Facility (Private)
 Stormwater Facility (P&P) Total Count **0**

Zoning



Zone	Acres
Commercial	1.59
Industrial	1.06
Open Space	1.00
Residential	1174.60



Unique Characteristics

Named after one of the first settlers in the area, John Lund who homesteaded the area in 1878.

Flows through Meadowdale Beach County Park which has hiking trails and beach access.

Unincorporated Snohomish County. Included for completeness.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

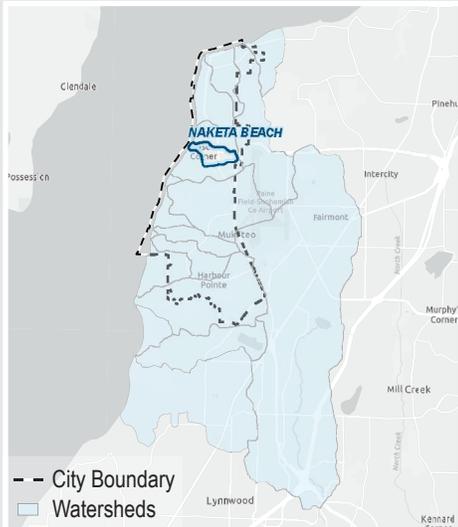


NAKETA BEACH

Receiving Water **Puget Sound**
 WRIA **8**
 Acres **159.57**

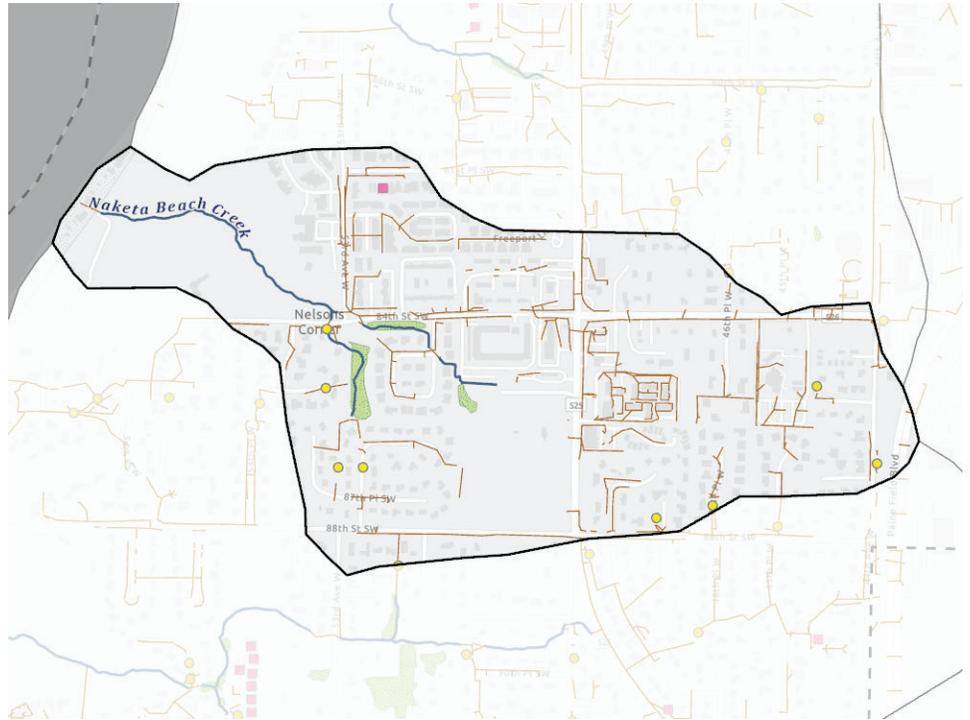


Location



Acres in City Jurisdiction **159.57**
 Percent in City Jurisdiction **100%**

Streams and Pipes

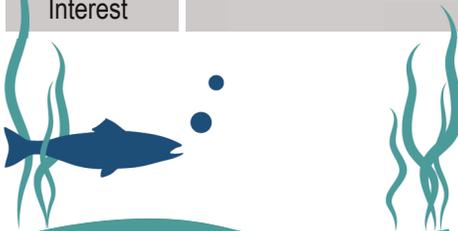


Stormwater Pipe/Ditch Length **5.63 miles**
 Stream Length **0.60 miles**
 Wetlands
 Stormwater Facility (Public)
 Stormwater Facility (Private)
 Stormwater Facility (P&P) Total Count **11**

Habitat Information



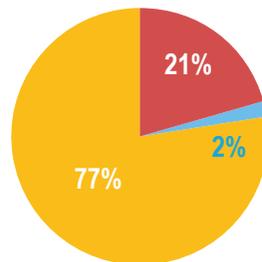
Habitat - Wetland (Acres)	0.85
Habitat - Length Fish Bearing Streams (Miles)	0.12
Species of Interest	Coho Salmon



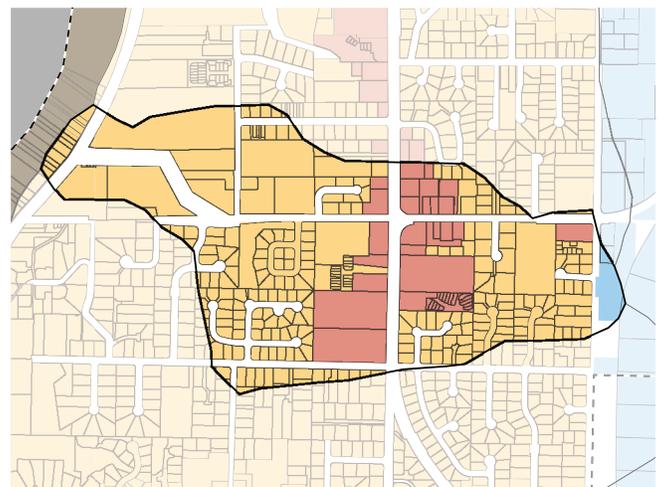
Unique Characteristics

About a dozen homes are located on a narrow strip on land between Puget Sound and the BNSF railway tracks. These homes are not served by a road and residents access them by a trail and underpass under the tracks.

Zoning



Zone	Acres
Commercial	27.38
Industrial	2.39
Open Space	0.00
Residential	102.43



For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

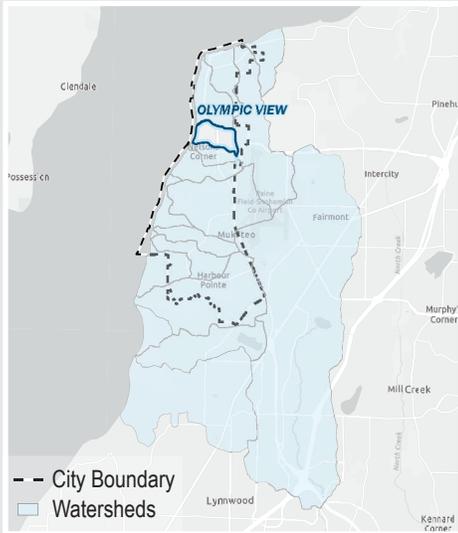


OLYMPIC VIEW

Receiving Water Puget Sound
 WRIA 8
 Acres 201.95

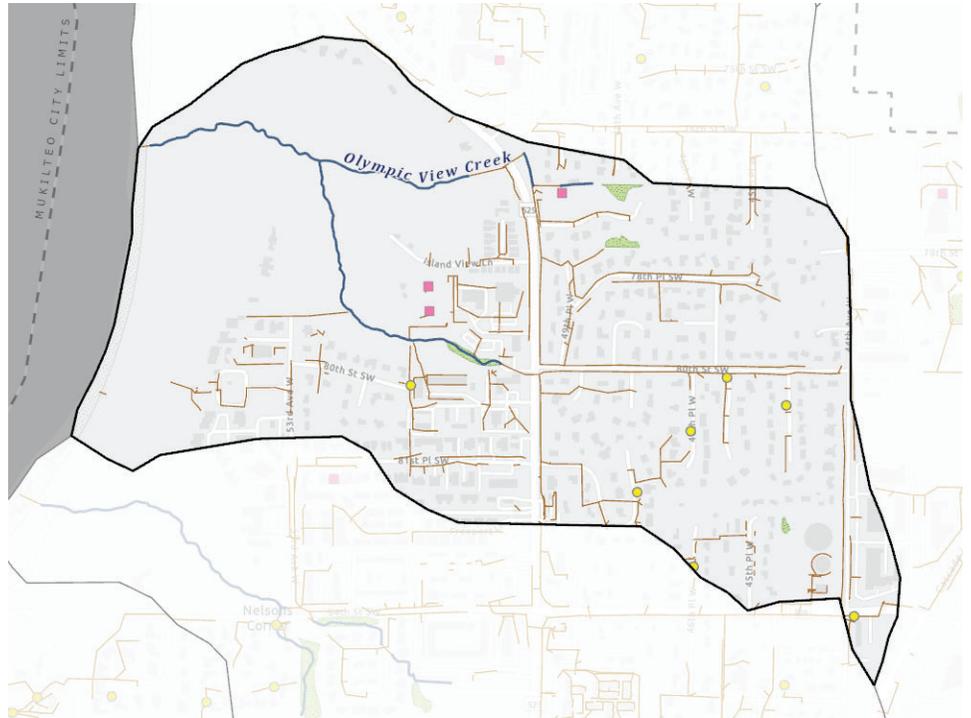


Location



Acres in City Jurisdiction **201.95**
 Percent in City Jurisdiction **100%**

Streams and Pipes

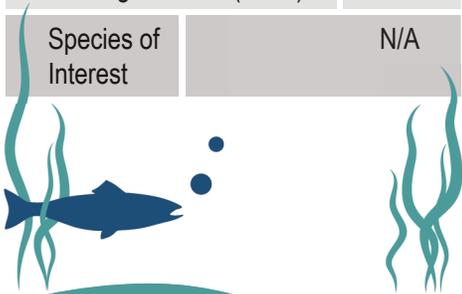


Stormwater Pipe/Ditch Length **5.76 miles**
 Stream Length **0.78 miles**
 Wetlands
 Stormwater Facility (Public)
 Stormwater Facility (Private)
 Stormwater Facility (P&P) Total Count **11**

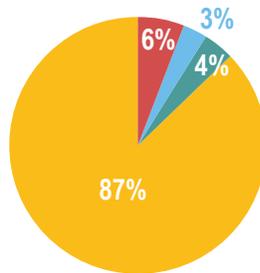
Habitat Information



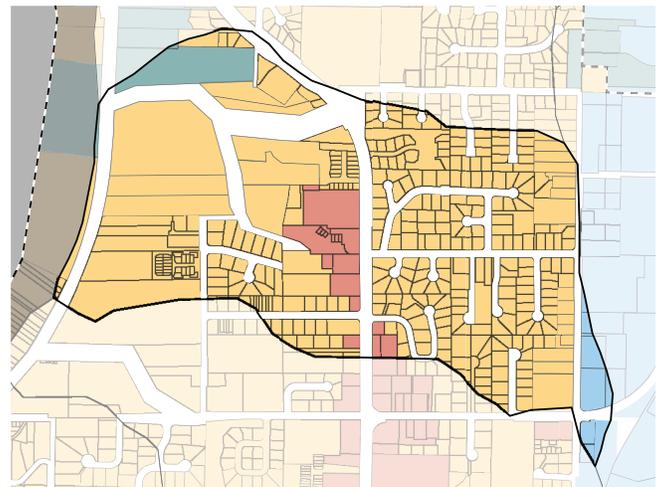
Habitat - Wetland (Acres)	1.40
Habitat - Length Fish Bearing Streams (Miles)	0.18
Species of Interest	N/A



Zoning



Zone	Acres
Commercial	9.83
Industrial	4.55
Open Space	6.52
Residential	140.71



Unique Characteristics

Short, but steep watershed prone to landslides that may block rail traffic between Everett and Seattle.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

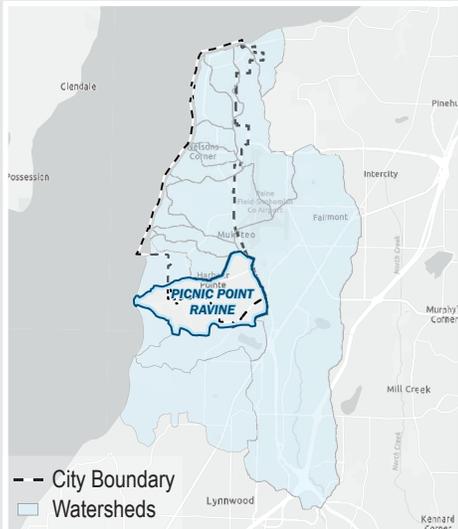


PICNIC POINT RAVINE

Receiving Water **Puget Sound**
 WRIA **8**
 Acres **1416.20**

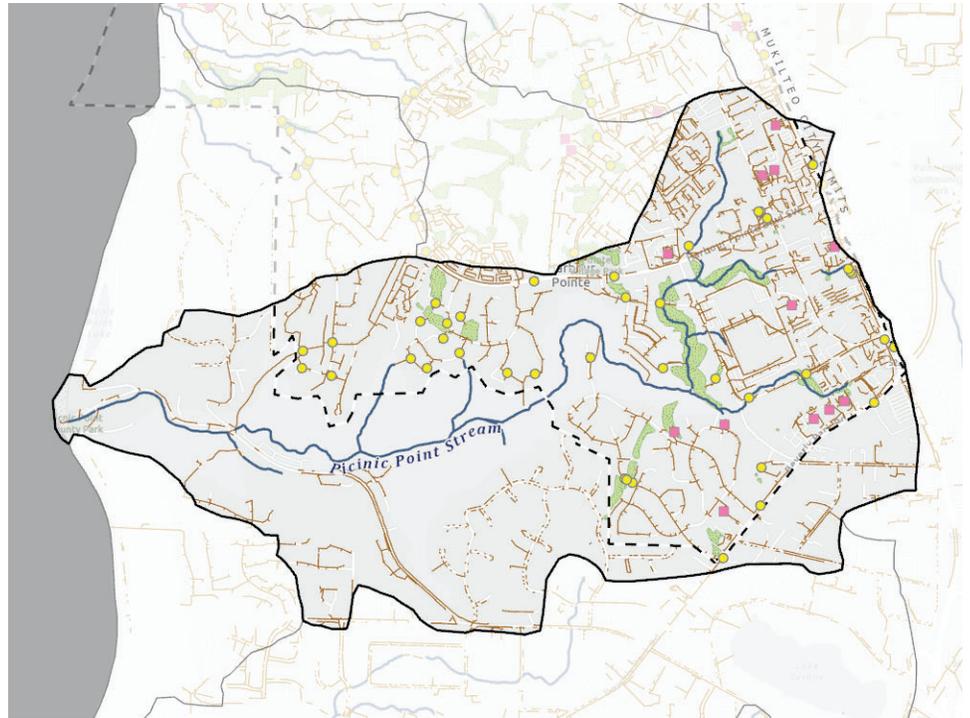


Location



Acres in City Jurisdiction **750.09**
 Percent in City Jurisdiction **53%**

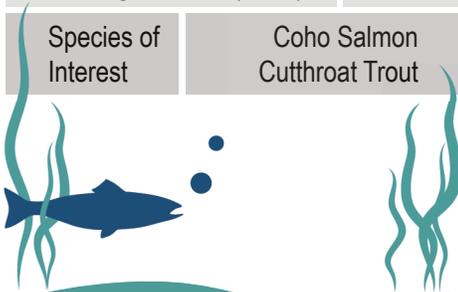
Streams and Pipes



Habitat Information

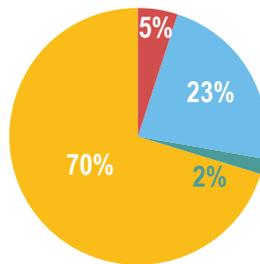


Habitat - Wetland (Acres)	20.22
Habitat - Length Fish Bearing Streams (Miles)	3.28
Species of Interest	Coho Salmon Cutthroat Trout

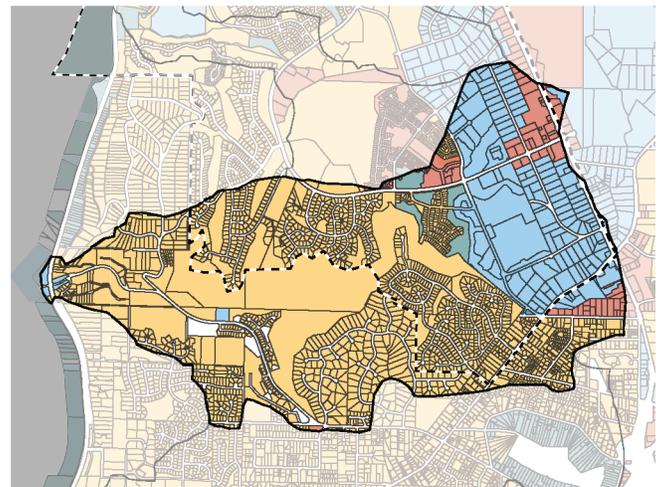


Stormwater Pipe/Ditch Length **40.16 miles** Stormwater Facility (Public) ●
 Stream Length **45.12 miles** Stormwater Facility (Private) ■
 Wetlands ■ Stormwater Facility (P&P) Total Count **53**

Zoning



Zone	Acres
Commercial	63.85
Industrial	284.82
Open Space	22.44
Residential	876.86



Unique Characteristics

The stream flows through a steep ravine where eroding slopes can contribute large amounts of sediment to the stream.

Home of Picnic Point County Park:

<https://snohomishcountywa.gov/Facilities/Facility/Details/Picnic-Point-Park-72>

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

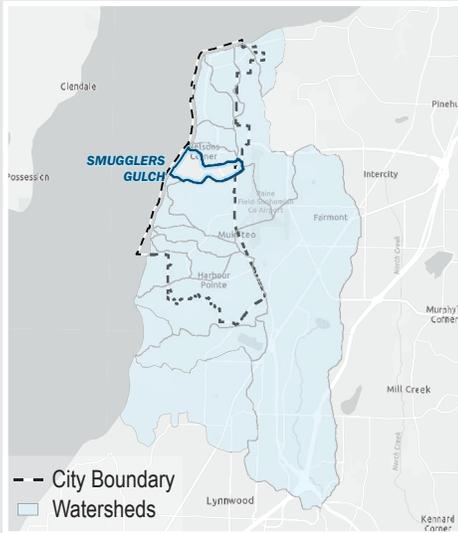


SMUGGLERS GULCH

Receiving Water **Puget Sound**
 WRIA **8**
 Acres **301.74**

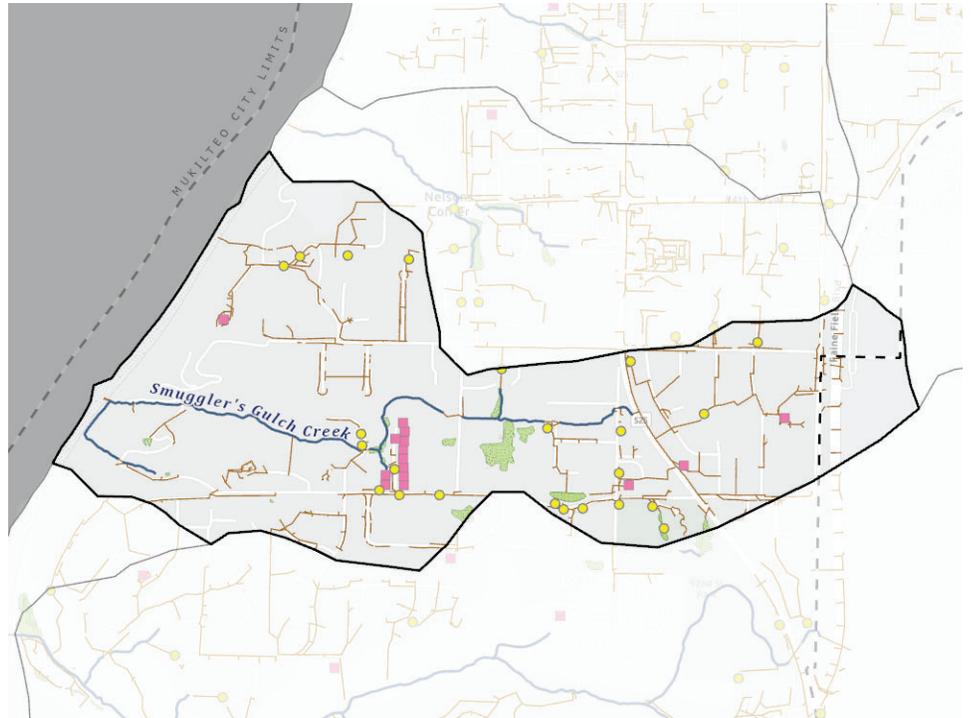


Location



Acres in City Jurisdiction **287.78**
 Percent in City Jurisdiction **95%**

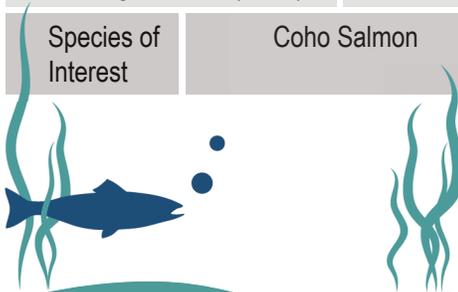
Streams and Pipes



Habitat Information

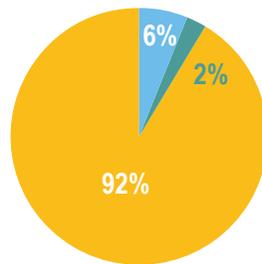


Habitat - Wetland (Acres)	3.16
Habitat - Length Fish Bearing Streams (Miles)	0.09
Species of Interest	Coho Salmon

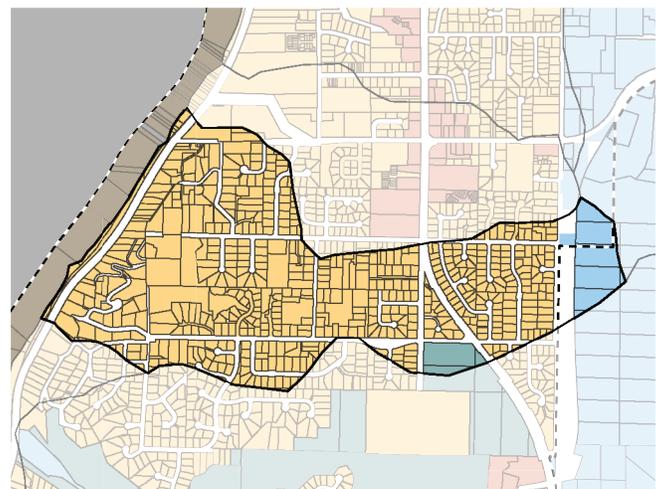


— Stormwater Pipe/Ditch Length **7.67 miles** ● Stormwater Facility (Public)
 — Stream Length **1.14 miles** ■ Stormwater Facility (Private)
 ■ Wetlands Stormwater Facility (P&P) Total Count **40**

Zoning



Zone	Acres
Commercial	0.00
Industrial	15.40
Open Space	5.96
Residential	224.78



Unique Characteristics

Namesake stems from the heavily wooded hillside and deep gulch that smugglers hid in during prohibition.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

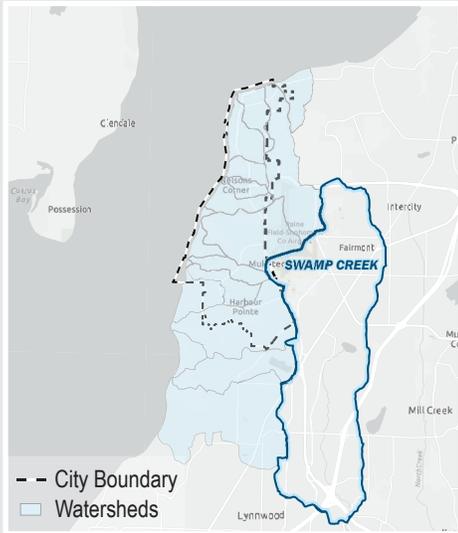


SWAMP CREEK

Receiving Water **Sammamish**
 WRIA **8**
 Acres **6603.27**

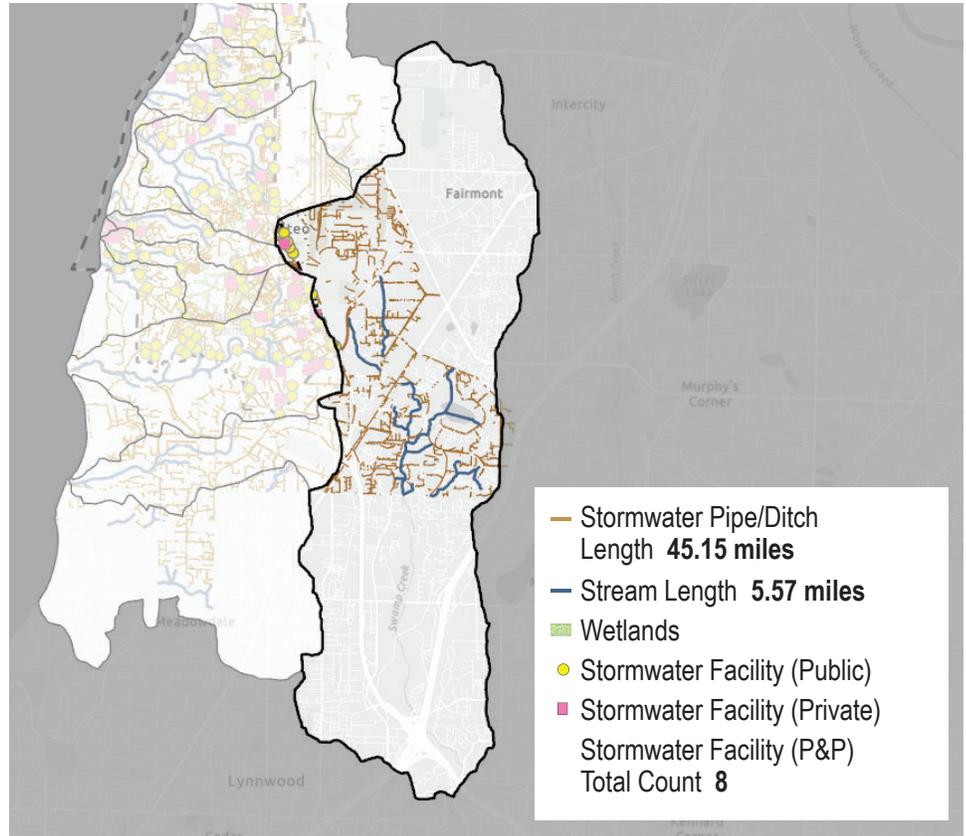


Location



Acres in City Jurisdiction **30.90**
 Percent in City Jurisdiction **<0.01%**

Streams and Pipes



- Stormwater Pipe/Ditch Length **45.15 miles**
- Stream Length **5.57 miles**
- Wetlands
- Stormwater Facility (Public)
- Stormwater Facility (Private)
- Stormwater Facility (P&P) Total Count **8**

Habitat Information

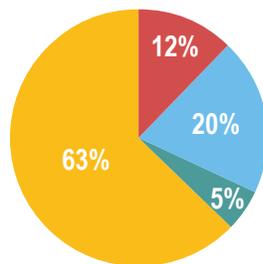


Habitat - Wetland (Acres)	327.03
Habitat - Length Fish Bearing Streams (Miles)	13.32

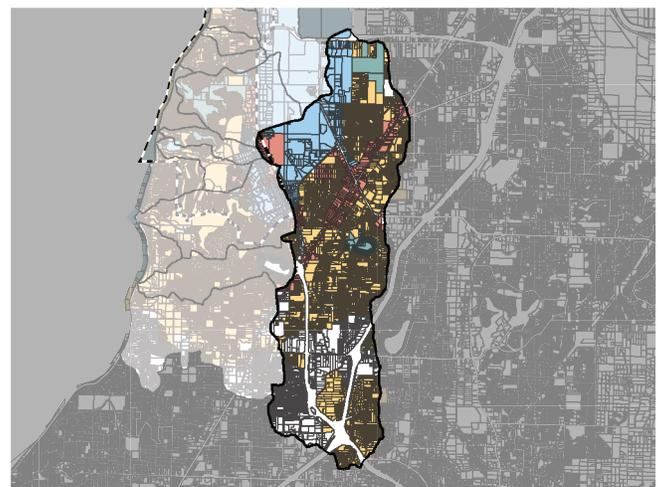
Species of Interest

- Chinook Salmon
- Coho Salmon
- Cutthroat Trout
- Sockeye Salmon
- Steelhead Trout

Zoning



Zone	Acres
Commercial	554.17
Industrial	899.45
Open Space	235.13
Residential	2842.88



Unique Characteristics

Drains all the way to Lake Washington.

Flows through several other close by municipalities including Bothell, Lynnwood, Brier, Mountlake Terrace, Everett, and Kenmore where it outfalls to the Sammamish River.

For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>

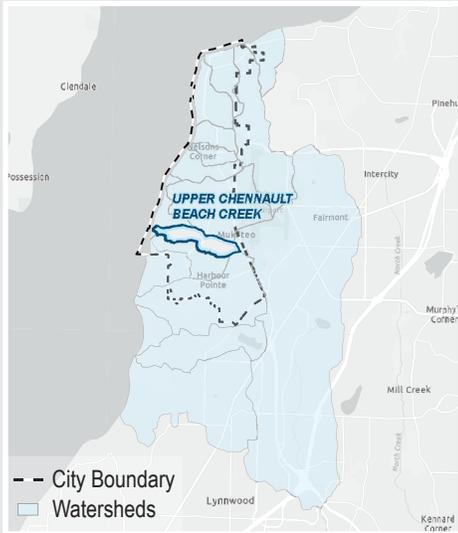


UPPER CHENNAULT BEACH CREEK

Receiving Water Puget Sound
 WRIA 8
 Acres 277.39

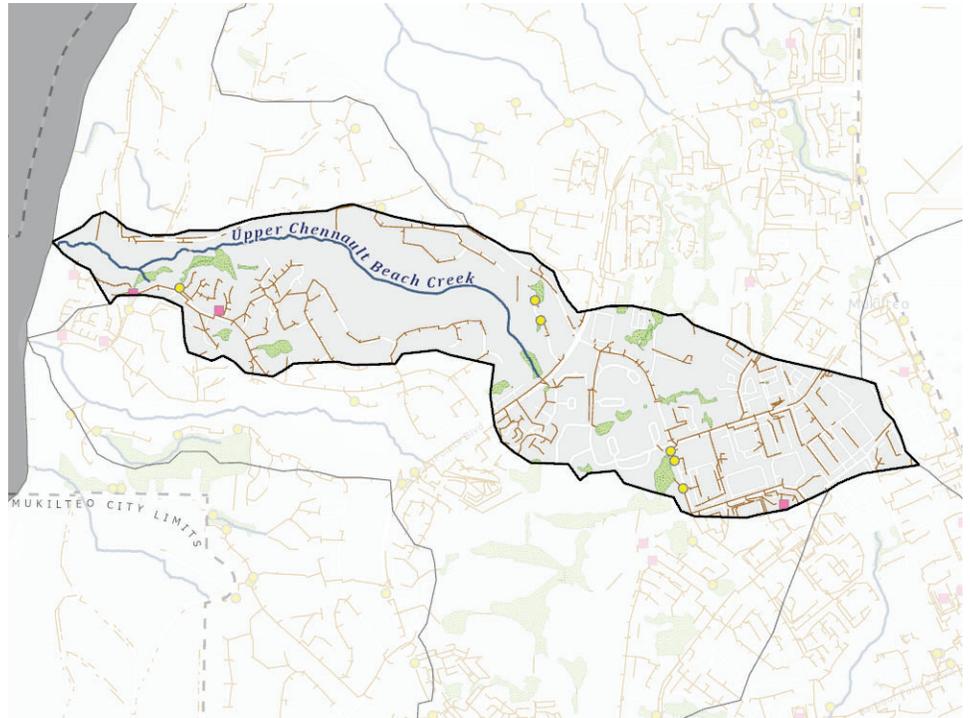


Location



Acres in City Jurisdiction **277.39**
 Percent in City Jurisdiction **100%**

Streams and Pipes

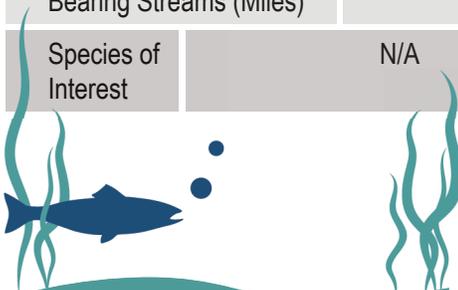


— Stormwater Pipe/Ditch Length **8.97 miles** ● Stormwater Facility (Public)
 — Stream Length **1.16 miles** ■ Stormwater Facility (Private)
 ■ Wetlands Stormwater Facility (P&P) Total Count **11**

Habitat Information



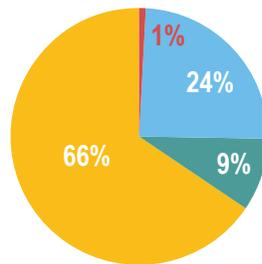
Habitat - Wetland (Acres)	3.64
Habitat - Length Fish Bearing Streams (Miles)	0.97
Species of Interest	N/A



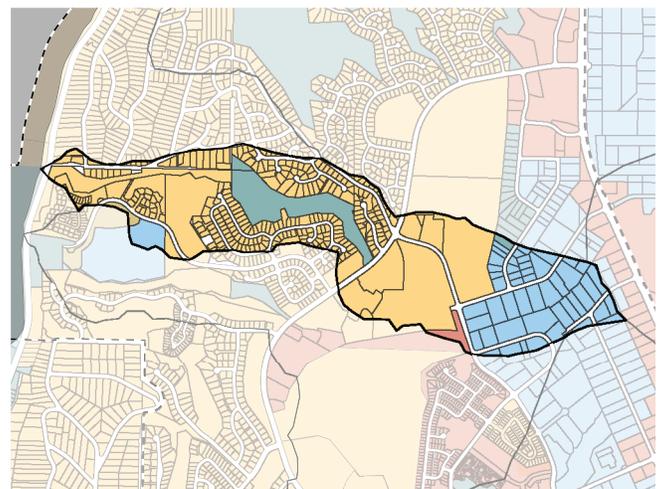
Unique Characteristics

Chennault is an adopted misspelling of the French term "chenault" - a topographic name for someone who lives near an irrigation channel. It is derived from the French word "chenal" meaning channel or pipe. The correct spelling is shown on some records until at least the early 1990s when a second "n" was added.

Zoning



Zone	Acres
Commercial	2.63
Industrial	60.19
Open Space	22.18
Residential	161.40



For more information scan the QR code or visit <https://stormwater-comp-plan-2024-1-mukilteo-city.hub.arcgis.com/>





Appendix

D

Capital Improvement Fact
Sheets and List of CIPs

Recommended CIP Projects

Three capital improvement project funds are recommended for repair and replacement of existing infrastructure; catch basins, pipes, and vaults. The total annual funding recommended is \$700,000. The Utility is compiling a list of priority pipe repairs and replacement needs from the pipe inspection program. High priority pipes on this list are expected to be repaired or replaced first. Catch basin repairs and vault cleaning activities are on-going and it is expected that \$200,000 is sufficient to fund these activities on an annual basis.

CIP Projects

Seven site-specific CIP Projects were developed into fact sheets and are recommended for funding. Table D-1 lists the projects, including a description, how it was identified, 2023 cost estimate, and whether it is grant eligible. The Project Summary Sheets follow.

Table D-1. Summary of Recommended Capital Improvement Projects (Grants were awarded to projects with an asterix noted)

Capital Improvement Project Name (Number)	Purpose	Identified By	2023 Cost
Catch Basin Replacement Fund	General O&M	Staff	\$100,000 (annual)
Pipe Repair Fund	General O&M	Pipe Inspection Program	\$500,000 (annual)
Vault Cleaning	General O&M	Staff	\$100,000 (annual)
Chennault Beach Study (CIP#1)*	Fish passage, erosion	2023 Stormwater Management Action Plan	\$80,000
Chennault Beach Culvert Replacement (CIP#2)	Fish passage, erosion	2023 Stormwater Management Action Plan	\$3,567,000
47th Place W & 55th Pl. Low Impact Development (CIP#3)*	Water quality	2014 Mukilteo Stormwater Retrofit Prioritization	\$1,434,000
Smuggler's Gulch Bioretention Basin 2a (CIP#4)*	Water quality and flow control	2010 Smuggler's Gulch Retrofit Plan	\$2,800,000 (grant awarded for design portion-\$255,000)
Smuggler's Gulch Bioretention Basin 2b (CIP#5)	Water quality and flow control	2010 Smuggler's Gulch Retrofit Plan	\$2,800,000
Smuggler's Gulch Bioretention Basin 3 (CIP#6)	Water quality and flow control	2010 Smuggler's Gulch Retrofit Plan	\$3,730,000
Pacific Place Pond Liner (CIP#7)	Water quality and erosion	Staff	\$1,000,000



DEPARTMENT
Public Works/Surface Water
OBJECTIVE
Complete options analysis for Upper Chennault Beach Creek culvert realignment
WATERSHED
Upper Chennault Beach Creek
COST OPINION
<u>Feasibility Study:</u> \$80,000 (2023 dollars)
CONSIDERATIONS
Grant application

Project Description

This study will provide an options analysis for the realignment of the Upper Chennault Beach Creek culvert crossing at the access road connecting Chennault Beach Drive and Harbor Heights Parkway. This study was identified as SMAP Study 2 in the 2023 Stormwater Management Action Plan (SMAP) for the Chennault Beach Creek basin as a retrofit project study to be completed within the next six years.

Project Rationale

The existing crossing is a 3-foot diameter precast concrete culvert (PCC) that is approximately 75 feet long, per WDFW. This culvert was identified as a complete barrier to fish passage due to slope by WDFW on March 3, 2022. The culvert is undersized and is likely contributing to channel erosion downstream. The eroding bank is likely a result of the undersized crossing, as well as its position relative to the valley. The realignment would potentially provide more flow attenuation in the creek ravine, reduce and provide an opportunity for public education related to the watershed processes and water quality.

Anticipated Elements

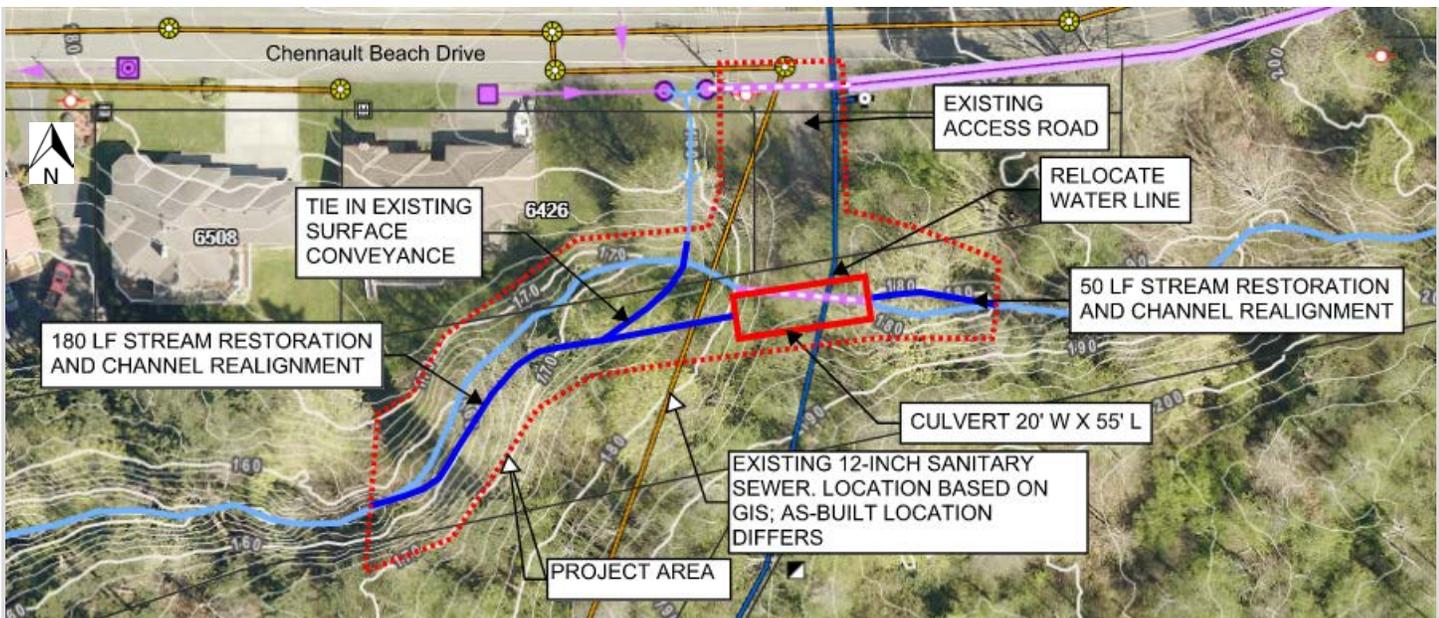
Options analysis should consider the realignment of the culvert and streambed, replacing the culvert with a fish passable structure, removing the culvert and eliminating the access road, eliminating the access road and constructing a pedestrian bridge, and avoiding or minimizing the relocation of the surrounding utilities.

Chennault Beach Creek Access Road Culvert Improvements

SW Goal: Sediment & Erosion Reduction



DEPARTMENT	Public Works/Surface Water	CONSIDERATIONS	Steep slopes
OBJECTIVE	Reduce channel erosion and provide additional fish habitat and migration at Chennault Beach Creek.		Environmental permits (shoreline, HPA)
WATERSHED	Upper Chennault Beach Creek		Fish passage
COST OPINION	<u>Design and Construction</u> \$3,567,000 (2023 dollars)		Impact to residences
			Impact to riparian area
			Coordination with water and sewer utilities.



Project Description

This project is a placeholder for CIP#1 Chennault Beach Creek Access Road Culvert Improvements Feasibility Study. The project described in this fact sheet is one option that will be considered during options analysis. This project provides a new fish passable culvert for the City owned crossing of an unnamed access road and Chennault Beach Creek. The existing crossing is a 3-foot diameter precast concrete culvert (PCC) that is approximately 75 feet long, per WDFW. The culvert is undersized and is likely contributing to channel erosion downstream. The project includes the installation of a culvert designed to be fish passable using stream simulation culvert design, as described in WDFW's Water Crossing Design Guidelines published in 2013. The concept design bank full width for the site is 15 feet based on field measurements taken at the site by WDFW. The bank full width and lidar data were utilized to determine conceptual design culvert dimensions of 20 feet wide by 55 feet long. In addition to the culvert installation, the project includes approximately 230 feet of stream restoration and channel realignment. The channel realignment will direct flow away from eroding banks near 6426 Chennault Beach Drive.

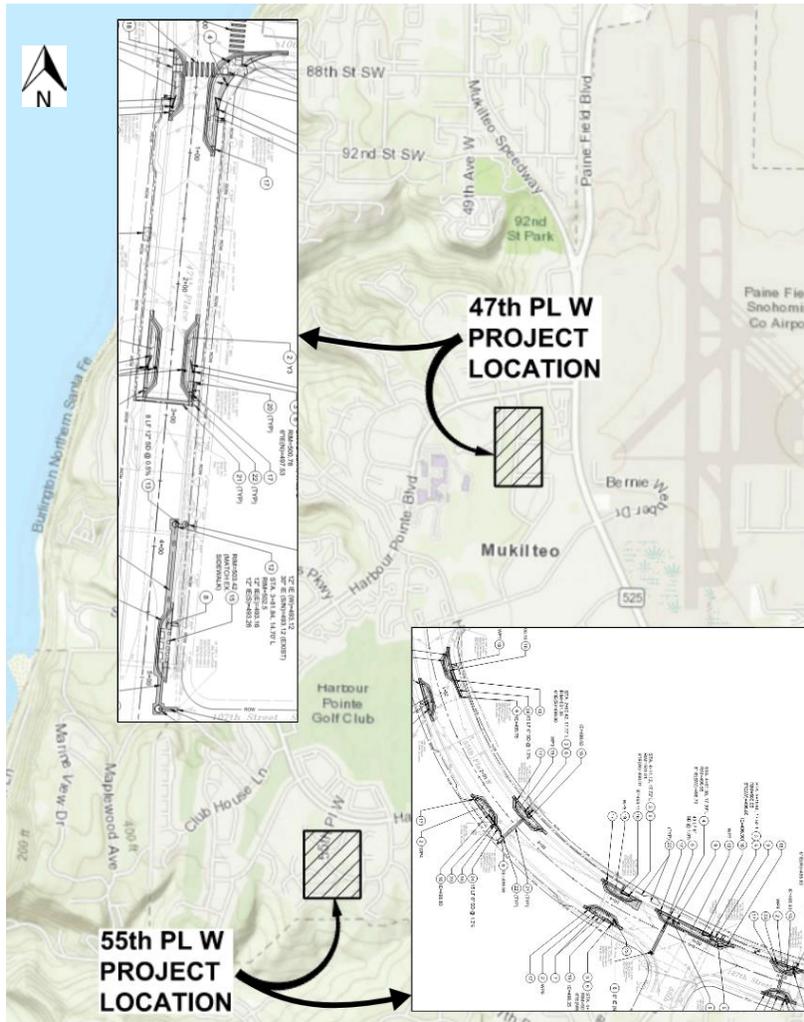
Project Rationale

The existing crossing was identified as a complete barrier to fish passage due to slope by WDFW on March 3, 2022. The project will result in fish habitat gain for many potential species including coho salmon, steelhead, sea run cutthroat trout, and resident trout. In addition to the habitat gain, the project will address channel erosion on the right bank downstream of the crossing. The eroding bank is

likely a result of the undersized crossing, as well as its position relative to the valley. Replacing the culvert and realigning the channel away from the eroding bank will stabilize the area and prevent future erosion.

Anticipated Elements

Key elements of this project include the coordination and relocation of existing Mukilteo Water and Wastewater utility assets that conflict with the proposed culvert crossing. Depth and location of the existing sanitary sewer that crosses under the stream will also need to be identified and coordinated prior to design to confirm feasibility of relocating the stream and maintaining adequate cover over the existing sewer. Public engagement will be important for the success of this project due to construction impacts during the installation of the culvert and stream realignment. Additional alternatives for this project will be considered under CIP #1, and the results of that analysis may significantly change the scope of this project. The additional alternatives analysis should be conducted after an existing conditions assessment has been conducted. The cost estimate assumes that all utilities can either be left in place or be relocated without significant modification to the systems outside the project area.



DEPARTMENT
Public Works/Surface Water
OBJECTIVE
Low-impact development systems for water quality treatment
WATERSHED
Big Gulch and Picnic Point Ravine
COST OPINION
<u>Design and Construction</u> \$1,434,000 (2023 dollars)
CONSIDERATIONS
Traffic control (high traffic)
Connection to existing storm
Environmental permitting (cultural resources)
Impact to residences
Coordination with other utilities (gas, water, sewer) for conflicts and relocations
Partnership with YMCA
Education and/or public outreach opportunity.

Project Description

A portion of 47th PL W and the YMCA landscaping will be reconstructed to include bioretention facilities in-series. The improvements in this area include: (1) Four bioretention facilities with underdrains, cleanouts, trench dams, beehive grates, and/or flow diversion weirs; (2) a BioClean modular wetland system for enhanced water quality treatment; (3) new storm conveyance, including one 48-inch manhole, two 48-inch catch basins (CBs), and 139 linear feet (LF) of 12-inch storm drain pipe; (4) pavement improvements, including curb & gutter installation bordering the bioretention areas and curb ramp & crosswalk installation at the intersection of 47th PL W and 106th St SW; and (5) landscaping enhancements.

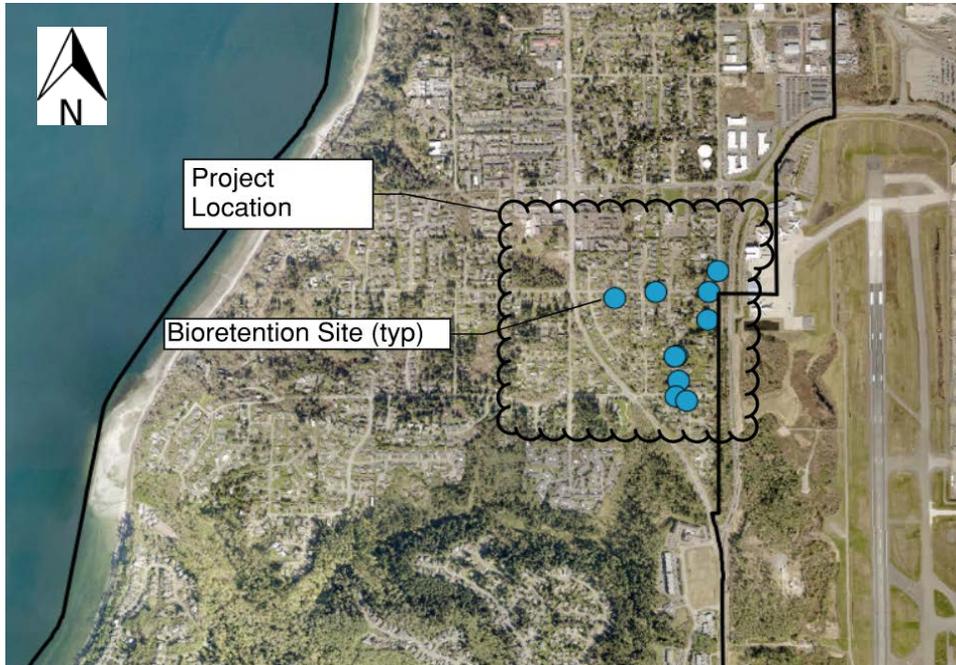
55th PL W will be retrofitted with a green street concept that includes bioretention swales in series to provide water quality treatment and shallow infiltration to reduce peak flows. The improvements in this area include: (1) Nine bioretention facilities with underdrains, cleanouts, trench dams, beehive grates, bubblers, and/or flow diversion weirs; (2) new storm conveyance, including one 48-inch CB, 38 LF of 6-inch storm drain pipe, and 43 LF of 8-inch storm drain pipe; (3) pavement improvements, including curb & gutter installation bordering the bioretention areas and curb ramp installation at the intersection of 55th Ave W and 127th St W; and (4) landscaping enhancements.

Project Rationale

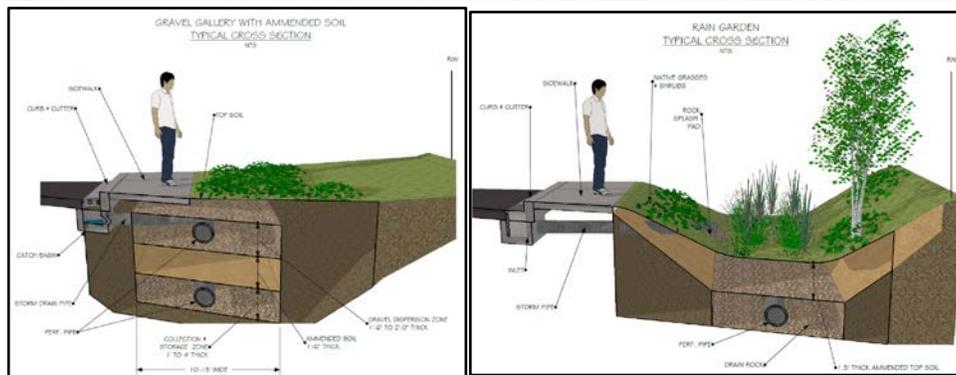
Runoff from the catchment that drains to 47th PL W and the YMCA is currently unretained. The detention ponds in the 55th PI W catchment were constructed in 1988 and are undersized according to current regulations. In addition, field observations indicate that this catchment may have high nutrient loading.

Anticipated Elements

The key elements of this project that need to be considered and will help make the project successful include coordination with existing gas, sewer, and water utilities for conflicts and relocations; partnership with the YMCA, as the project site is on private property; environmental permitting for cultural resources known to be on or near the sites; and potential education and public outreach opportunities.



DEPARTMENT
Public Works/Surface Water
OBJECTIVE
Flow control and water quality treatment in the eastern portion of Smuggler's Gulch
WATERSHED
Smuggler's Gulch Basin (Basin 2A)
COST OPINION
<u>Design and Construction</u>
\$2,800,000 (2023 dollars)
CONSIDERATIONS
Geotechnical investigations (infiltration)
Impact to residences
Coordination with other utilities (gas, water, sewer)
Conveyance to bioretention facility



Project Description

This project will construct 10 low-impact development (LID) facilities, including rain gardens and gravel galleries with amended soil zones, within the Smuggler's Gulch Basin to provide stormwater quality treatment and flow control. These facilities can function well without the infiltration being a component of the facility by capturing stormwater runoff via a perforated pipe and controlling flows with a simple flow control structure. If infiltration proves to be feasible through geotechnical investigations, the performance of the LID facilities will be enhanced through higher reductions in pollutants and flow rates.

Project Rationale

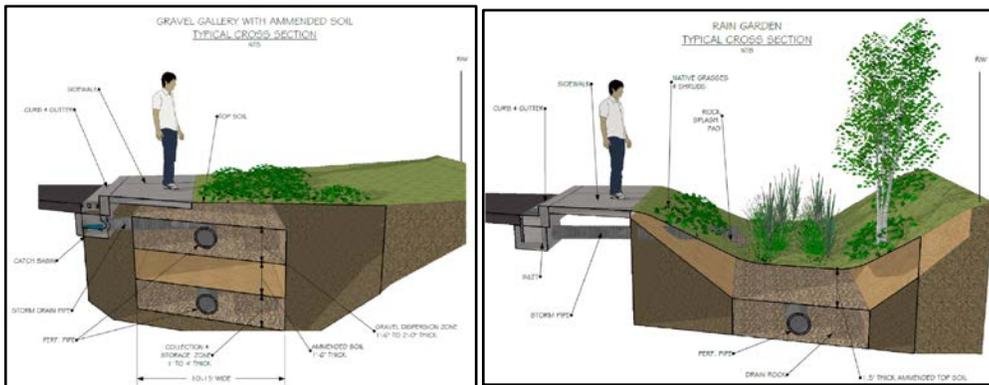
High peak flow rates frequently occur in Smuggler's Gulch, causing flooding, property damage, severe erosion, collapsing of the natural embankment material into the channel in some locations, sediment deposition in the lower reaches, and general degradation of the stream channel prior to discharging directly into Puget Sound, creating undesirable environmental impacts. Pollutants from urbanized areas enter stormwater and are known to cause problems for fish and wildlife habitat, thus stormwater quality is also a concern. Detention ponds in this basin provide some level of attenuation of peak flows, but due to their age, they do not conform to the current state-of-the-practice for flow control or water quality treatment.

Anticipated Elements

A complete subsurface geotechnical investigation is recommended to evaluate geotechnical constraints and determine infiltration feasibility.



DEPARTMENT
Public Works/Surface Water
OBJECTIVE
Flow control and water quality treatment in the eastern portion of Smuggler’s Gulch
WATERSHED
Smuggler’s Gulch Basin (Basin 2B)
COST OPINION
<u>Design and Construction</u> \$2,800,000 (2023 dollars)
CONSIDERATIONS
Geotechnical investigations (infiltration)
Impact to residences
Coordination with other utilities (gas, water, sewer)
Conveyance to bioretention facility



Project Description

This project will construct 9 low-impact development (LID) facilities, including rain gardens and gravel galleries with amended soil zones, within the Smuggler’s Gulch Basin to provide stormwater quality treatment and flow control. These facilities can function well without the infiltration being a component of the facility by capturing stormwater runoff via a perforated pipe and controlling flows with a simple flow control structure. If infiltration proves to be feasible through geotechnical investigations, the performance of the LID facilities will be enhanced through higher reductions in pollutants and flow rates.

Project Rationale

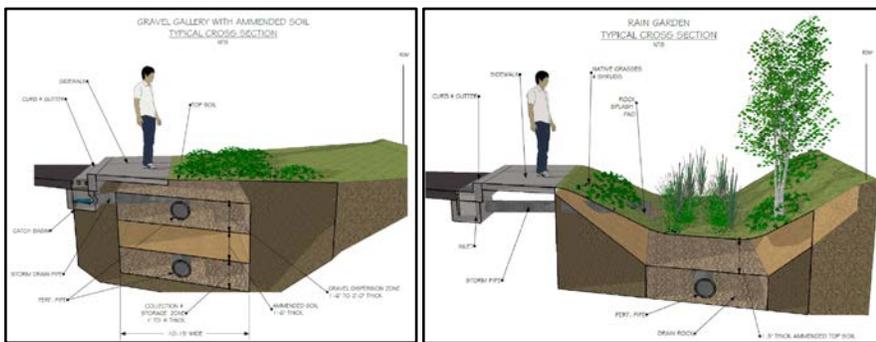
High peak flow rates frequently occur in Smuggler’s Gulch, causing flooding, property damage, severe erosion, collapsing of the natural embankment material into the channel in some locations, sediment deposition in the lower reaches, and general degradation of the stream channel prior to discharging directly into Puget Sound, creating undesirable environmental impacts. Pollutants from urbanized areas enter stormwater and are known to cause problems for fish and wildlife habitat, thus stormwater quality is also a concern. Detention ponds in this basin provide some level of attenuation of peak flows, but due to their age, they do not conform to the current state-of-the-practice for flow control or water quality treatment.

Anticipated Elements

A complete subsurface geotechnical investigation is recommended to evaluate geotechnical constraints and determine infiltration feasibility.



DEPARTMENT
Public Works/Surface Water
OBJECTIVE
Flow control and water quality treatment in the central portion of Smuggler's Gulch
WATERSHED
Smuggler's Gulch Basin (Basin 3)
COST OPINION
<u>Design and Construction</u>
\$3,730,000 (2023 dollars)
CONSIDERATIONS
Geotechnical investigations (infiltration)
Impact to residences
Coordination with other utilities (gas, water, sewer)
Conveyance to bioretention facility



Project Description

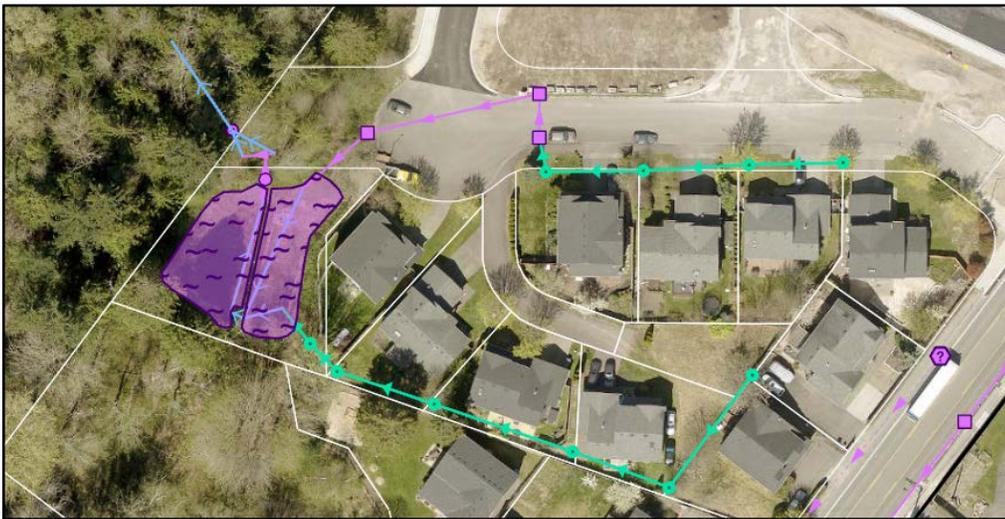
This project will construct 10 low-impact development (LID) facilities, including bioretention cells, gravel galleries with amended soil zones, porous concrete sidewalks, and storm pipe conveyance, within the Smuggler's Gulch Basin to provide stormwater quality treatment and flow control. These facilities can function well without the infiltration being a component of the facility by capturing stormwater runoff via a perforated pipe and controlling flows with a simple flow control structure. If infiltration proves to be feasible through geotechnical investigations, the performance of the LID facilities will be enhanced through higher reductions in pollutants and flow rates.

Project Rationale

High peak flow rates frequently occur in Smuggler's Gulch, causing flooding, property damage, severe erosion, collapsing of the natural embankment material into the channel in some locations, sediment deposition in the lower reaches, and general degradation of the stream channel prior to discharging directly into Puget Sound, creating undesirable environmental impacts. Pollutants from urbanized areas enter stormwater and are known to cause problems for fish and wildlife habitat, thus stormwater quality is also a concern. Detention ponds in this basin provide some level of attenuation of peak flows, but due to their age, they do not conform to the current state-of-the-practice for flow control or water quality treatment.

Anticipated Elements

A complete subsurface geotechnical investigation is recommended to evaluate geotechnical constraints and determine infiltration feasibility.



DEPARTMENT
Public Works/Surface Water
OBJECTIVE
Mitigate erosion and improve stormwater quality
WATERSHED
Picnic Point Ravine
COST OPINION
<u>Design and Const.</u>
\$1,000,000 (2023 dollars)
CONSIDERATIONS
Steep slopes
Street Classification/Access
Impact to Residences
Coordination with other utilities (gas, water, sewer)
Education and/or public outreach opportunity
Erosion Control
Sediment Reduction

Project Description

The existing Pacific Place Pond was designed in 1999 and is not sized to meet current detention sizing criteria. The proposed design will replace the above ground pond and failing impervious liner with an underground detention vault. The vault will be sized with the intention of satisfying current drainage code detention storage requirements as well as being able to accommodate additional storage capacity if changes to the upstream basin increase runoff to the detention facility. The newly created surface space above the vault may be developed as a stormwater park which will improve community access to open space and recreation.

A water quality facility will also be added downstream of the vault to provide treatment and improve downstream water quality. Treating water quality where there previously was none will help the City fulfill NPDES permits for 2024-2029.

Project Rationale

The pond has been selected for replacement since it is directly adjacent to a steep slope, and the impervious pond liner is beginning to show signs of failure, including cracking, and tearing of the liner. This stormwater facility has been failing since 2011 and if it fails, it will allow runoff stored into the pond to infiltrate into native soils. The City's primary concern regarding infiltration is the potential erosion of the adjacent slope as the result of increased groundwater. Increased erosion of the slope will introduce additional sedimentation into the basin and the downstream receiving waters, which are classified as 303(d) listed waters.

Anticipated Elements

The key elements that need to be considered and will help make the project successful include coordination with existing gas, sewer, and water utilities for conflicts and relocations, analysis of geotechnical reports to ensure the design is suitable for the site, and potential education and public outreach opportunities.

In addition to the Recommended Capital Improvement projects included in this Plan, previously recommended projects that were not carried forward in this Plan are listed in Table D-2, including a brief description of the project, how it was identified, and its status. As funding is available, or opportunity arises in conjunction with other projects, these projects should be considered for future implementation. These projects will be re-prioritized in the next few years.

Table D-2. Summary of Previously Recommended Capital Improvement Projects

Capital Improvement Project Name	Identified By	Status
Park Avenue Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept
5th Street Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept
Lighthouse Park Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept
Cornelia/3rd Storm System Extension	2015 Stormwater Comprehensive Plan	Concept
2nd Street Storm Drainage Extension	2015 Stormwater Comprehensive Plan	Concept
2nd Street Pipe Restoration	2015 Stormwater Comprehensive Plan	Concept
Lamar Drive Road Reconstruction	2015 Stormwater Comprehensive Plan	Concept
Mukilteo Lane Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
10th & Loveland Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
Goat Trail Pipe Restoration	2015 Stormwater Comprehensive Plan	Concept
Horizon Heights Storm System Extension	2015 Stormwater Comprehensive Plan	Concept
44th Ave Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept
53rd Ave Storm System Extension	2015 Stormwater Comprehensive Plan	Concept
84th St SW (West) Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
88th St (West) Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept

Table D-2. Summary of Previously Recommended Capital Improvement Projects

Capital Improvement Project Name	Identified By	Status
88th St (East) Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept
Whisper Woods Pond Retrofit	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
92nd/50th Pl Wetland Restoration & Expansion (Detention Pond Retrofit)	2015 Stormwater Comprehensive Plan	Concept
Purchase Vacant Land to Restore Natural Detention Areas	2015 Stormwater Comprehensive Plan	Concept
92nd/Hargreaves Storm Drain Extension	2015 Stormwater Comprehensive Plan	Concept
92nd St Park Detention Pond/LID Facility	2015 Stormwater Comprehensive Plan	Concept
63rd Pl W Slope Stabilization	2015 Stormwater Comprehensive Plan	Concept
66th Pl W Street Drainage Improvements	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
102nd St SW Storm Drainage Improvements	2015 Stormwater Comprehensive Plan	Concept
Central Drive Storm Drainage Improvements for Big Gulch Basin	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
62nd Pl W/Canyon Drive Storm Drainage Improvements	2015 Stormwater Comprehensive Plan and 2023 Stormwater Management Action Plan	Planning Level Cost Estimate
Chennault Beach Street Drainage Improvements	2015 Stormwater Comprehensive Plan and 2023 Stormwater Management Action Plan	Planning Level Cost Estimate
Purchase Vacant Property @ 106xx 56th Ave W	2015 Stormwater Comprehensive Plan	Concept
Brewery Creek Outfall	2015 Stormwater Comprehensive Plan	Concept
Park Avenue Tidegate	2015 Stormwater Comprehensive Plan	Concept

Table D-2. Summary of Previously Recommended Capital Improvement Projects

Capital Improvement Project Name	Identified By	Status
64th Pl W Street Drainage Improvements	2015 Stormwater Comprehensive Plan	Planning Level Cost Estimate
Harbour Pointe Blvd & 47th Pl W Stream Corridor Enhancement (privately owned)	2015 Stormwater Comprehensive Plan	Concept
Lower Big Gulch Creek Restoration (privately owned)	2015 Stormwater Comprehensive Plan	Concept
Central Drive Storm Drainage Improvements for Chennault Beach Basin	2015 Stormwater Comprehensive Plan	Concept
63rd Pl W Storm Drainage Improvements for Big Gulch Basin	2015 Stormwater Comprehensive Plan	Concept
63rd Pl W Storm Drainage Improvements for Chennault Beach Basin	2015 Stormwater Comprehensive Plan	Concept
Upper Smugglers Gulch Restoration (retrofitting WSDOT pond)	2015 Stormwater Comprehensive Plan	Concept
North Fork of Big Gulch Stream Restoration & Wetland Creation (privately owned)	2015 Stormwater Comprehensive Plan	Concept
53rd Ave Traffic Calming Improvements	2015 Stormwater Comprehensive Plan	Concept
Daylight Japanese Gulch Creek	2015 Stormwater Comprehensive Plan	Design
Japanese Gulch/Brewery Creek Headwater Wetland Creation/Enhancement	2015 Stormwater Comprehensive Plan	Concept
Bioremediation Site	2015 Stormwater Comprehensive Plan	Concept

Table D-2. Summary of Previously Recommended Capital Improvement Projects

Capital Improvement Project Name	Identified By	Status
Cyrus Way Wetland Preservation (privately owned)	2015 Stormwater Comprehensive Plan	Concept
Project 49th Ave Pond - potential new site	2010 Smuggler's Gulch Stormwater Retrofit Study Pre-Design Report	Concept
New Pond on Vacant Lot; W of Harbour Pt Pl	2014 Strategies Plan Retrofit Project	Concept
Library Swale	2014 Strategies Plan Retrofit Project	Concept
Bioretention At Harbour Pointe Middle School	2014 Strategies Plan Retrofit Project	Concept
Daylight pipe across Harbour Pointe Golf Course create a wetland	2014 Strategies Plan Retrofit Project	Concept
Private vault retrofit	2014 Strategies Plan Retrofit Project	Concept
Pond Project 3.2 Stream Retrofit Next to 50th Pl Pond	2010 Smuggler's Gulch Stormwater Retrofit Study Pre-Design Report	Concept



Appendix

Equipment and Programmatic
Action Fact Sheets

E

Recommended Facilities, Equipment and Technology

Table E-1 lists the facilities, equipment, and technological recommendations for the next 6 years including the reasons for the recommendation. All recommendations have an indication of whether they are new, ongoing, or replacement for existing equipment. Summary sheets providing more detail follows Table E-1.

Table E-1. Summary of Recommended Equipment and Technology

Equipment, Facilities, and Technological Needs	Purpose	Estimated Cost (2023 dollars)
Covered Material Storage Area (new)	Keep material dry	\$500,000
Skidsteer/trailer combination (new/ purchased in early 2024)	General O&M	\$96,356
Large vactor rental (new)	Clean facilities that City vactor can't handle	\$13,000 (annually)
Dump truck (replacement)	Replace aging dump truck for general O&M	\$437,407
Sewer camera- push camera (replacement)	Replace existing camera used for inspection of underground facilities	\$9,680
Backhoe Loader (replacement)	Replace aging backhoe loader for general O&M	\$160,000
Ford F450 Truck (replacement)	Replace aging truck for general O&M	\$100,000
Schwarze Street Sweeper (replacement)	Replace aging street sweeper for street sweeping	\$370,574.30
Miscellaneous equipment for spill response (replacement)	Replacement of aging equipment	\$8,670.78
Cues Inspection Camera (replacement)	Replace aging camera	\$83,846.19
Aerial imagery (ongoing- Action 25)	Needed for GIS analysis	\$5,292 (annually)
Asset Management Software (new- Action 26)	Used by entire City to manage assets and work orders	\$80,000 plus \$20,000 annually



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Build a covered storage area for material in the Public Works yard to keep raw materials used for construction and maintenance projects dry.
NEW OR EXISTING
New
RESOURCE NEEDS (One-time)
~\$500,000
CONSIDERATIONS
The covered material storage area would benefit all of Public Works, including the Surface Water Utility. Consider cost sharing.

Equipment or Facilities Description and Need

The Surface Water Utility's maintenance facility houses equipment and supplies for small construction projects and stormwater maintenance activities such as repair and replacement of catch basins, stormwater pipes, ditches, and stormwater treatment facilities. Raw materials such as sand, gravel, and mulch for vegetated facilities is stored at the maintenance facility for use as needed, as well as various large equipment used for maintenance. A covered material storage area would keep raw materials dry and in good condition for when they are needed, making it easier for staff to manage.

Estimated Cost

The estimated cost for a heavy duty industrial structure to provide cover for material and/or equipment storage is approximately \$500,000.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Purchase skidsteer and trailer to use for stormwater maintenance projects
NEW OR EXISTING
New
RESOURCE NEEDS (One-time)
~\$96,356.25 (2023 dollars)
CONSIDERATIONS
None.

Equipment or Facilities Description and Need

The Surface Water Utility's maintenance group requires equipment for small construction projects such as repair and replacement of catch basins, stormwater pipes, ditches, and stormwater treatment facilities, and to move raw material around the maintenance yard. A skidsteer is needed to do this work, and a trailer is needed to transport the skidsteer to job sites.

Estimated Cost

The estimated cost for a skidsteer is around \$96,000.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Rent a large vactor truck to facilitate cleaning of vaults that are not accessible to cleaning with City-owned equipment
NEW OR EXISTING
New
RESOURCE NEEDS (Annual)
~\$13,000 (2023 dollars)
CONSIDERATIONS
Rental of a large vactor truck is more cost effective than purchasing a heavy-duty large vactor that is needed infrequently.

Equipment or Facilities Description and Need

Some of the City's vaults and stormwater facilities are too deep for the City's equipment to pull material out for annual cleaning. Rental of a larger vactor truck is needed to facilitate annual cleaning of some of the City's vaults.

Estimated Cost

The estimated cost annual vactor truck rental is \$13,000.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Replace existing dump truck nearing end of its useful life.
NEW OR EXISTING
New
RESOURCE NEEDS
~\$437,407.21 (2023 dollars)
CONSIDERATIONS
None.

Equipment or Facilities Description and Need

One of the Public Works dump trucks operated by the Stormwater Utility (International brand) was purchased in 2001 and has a life expectancy of 15 years. If the truck had been replaced at the end of its life expectancy, the replacement year would have been 2021, however, it is still running well and replacement is scheduled for 2030. Dump trucks are needed to haul material from stormwater facility cleaning and ditching, and to bring material to job sites for construction and/or maintenance projects.

Estimated Cost

The estimated cost of dump truck replacement is \$437,401.21 in 2023 dollars.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Replace aging backhoe loader for general operations and maintenance activities.
NEW OR EXISTING
Existing
RESOURCE NEEDS
~\$160,000 (2023 dollars)
CONSIDERATIONS
None.

Equipment or Facilities Description and Need

The backhoe loader is a necessary piece of equipment for public works and the Surface Water Utility for conducting operations and maintenance activities. It is needed to move material around the yard and load dumptrucks for offsite material transport. This equipment is a planned replacement for existing equipment at the end of it’s useful life.

Estimated Cost

The estimated cost of backhoe loader replacement is \$160,000.00 in 2023 dollars.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Replace existing street sweeper nearing end of its useful life.
NEW OR EXISTING
Existing
RESOURCE NEEDS
~\$370,574.30 (2023 dollars)
CONSIDERATIONS
None.

Equipment or Facilities Description and Need

Street sweeping is important for removing pollutants and debris off the roadway to keep them out of the stormwater system. The community also appreciates clean roads. This purchase is to replace the existing street sweeper at the end of its useful life and does not represent a new piece of equipment.

Estimated Cost

The estimated cost of street sweeper replacement is \$370,574.30 in 2023 dollars.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Replace existing Ford truck nearing end of its useful life.
NEW OR EXISTING
Existing
RESOURCE NEEDS
~\$100,000 (2023 dollars)
CONSIDERATIONS
None.

Equipment or Facilities Description and Need

This vehicle replacement is a work truck used by staff to travel to job sites throughout the City with tools, equipment, and staff. It replaces the current Ford F450 truck with a like replacement.

Estimated Cost

The estimated cost of the Ford F450 Truck is \$100,000 in 2023 dollars.



DEPARTMENTS
Public Works/Operations
OBJECTIVE
Replace sewer push camera, inspection camera, and spill response equipment.
NEW OR EXISTING
Existing
RESOURCE NEEDS
~\$100,000 (2023 dollars)
CONSIDERATIONS
None.

Equipment or Facilities Description and Need

Various cameras are needed to inspect buried infrastructure remotely. The Utility's cameras are in need of replacement and approximately ~\$90,000 is needed for these two pieces of equipment. Additionally, fencing and supplies for spill containment are also needed (~\$10,000). These costs are for replacement equipment and materials and do not represent additional new equipment added to the City's inventory.

Estimated Cost

The estimated cost of miscellaneous equipment replacement is \$100,000.00 in 2023 dollars.

Recommended Programmatic Actions

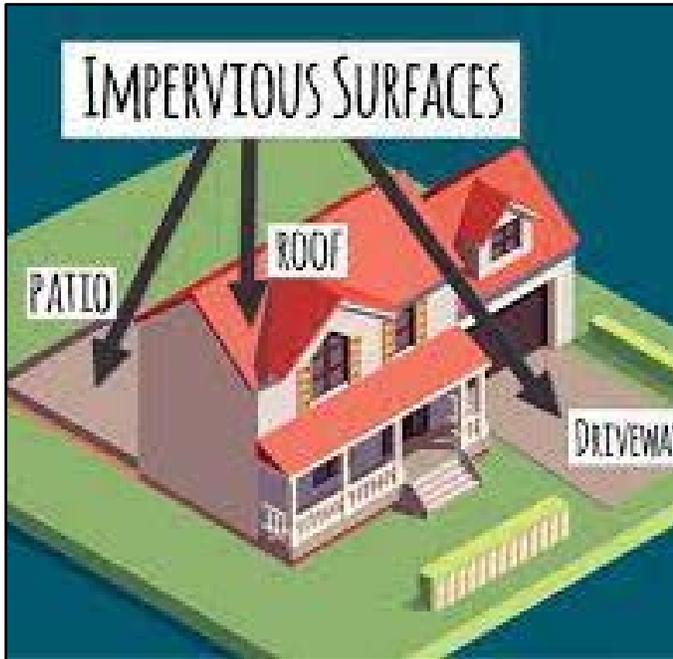
Recommended programmatic actions address identified existing issues and anticipated future needs. Table E-2 lists the recommended programmatic actions, Detail is provided in the programmatic fact sheets that follow Table E-2.

Table E-2. Summary of Recommended Programmatic Actions

Programmatic Action (Number)	Priority	Estimated Cost Range
Residential Rate Structure (Action 1)	Medium	<\$100,000
Private Facility Grant Program (Action 2)	High	~\$30,000 annually
Evaluate Surface Water Facilities for Repair and Replacement Needs (Action 3)	Low	<\$50,000
Inspect City Vaults (Action 4)	Low	<\$100,000
Property Acquisition (Action 5)	Low	~\$52,000 annually
Catch Basin Inspection Program Evaluation (Action 6)	Low	<\$50,000
Implement Interlocal Agreements (Action 7)	Low	<\$10,000
Development Code Review (Action 8)	Medium	<\$50,000
Green Stormwater Infrastructure (Action 9)	Low	<\$75,000
Standard Operating Procedures (Action 10)	High	<\$75,000
Climate Action and Resiliency (Action 11)	Medium	<\$120,000
Open Channel Inspections (Action 12)	Low	Included in on-going work plan
Outfall Inspections (Action 13)	High	Included in on-going work plan
Stream Channel Surveys (Action 14)	Low	<\$13,000 annually
Stormwater Parks (Action 15)	Medium	<\$75,000
Street Right-of-Way for Surface Water Management (Action 16)	Medium	<\$75,000
Education and Outreach (Action 17)	High*	~\$20,000 annually
NPDES Fire Department Coordination (Action 18)	High*	<\$5,000 annually
Urban Forestry (Action 19)	High*	~\$120,000
SMAP (Action 20)	High*	
Assess Facility Tributary Areas (Action 21)	High*	~\$25,000
Stormwater Investment Tracking (Action 22)	High*	\$14,000 plus \$2,000 annually
Easements (Action 23)	High	
GIS (Action 24)	High	\$8,000 annually

Table E-2. Summary of Recommended Programmatic Actions

Programmatic Action (Number)	Priority	Estimated Cost Range
Surface Water Comprehensive Plan (Action 27)	High	\$500,000
Training and Certification (Action 28)	High*	\$5,000 annually



Schematic of Impervious Surfaces (from Apex, NC official website)

DEPARTMENTS		
Public Works/Surface Water		
GIS		
Finance		
OBJECTIVE		
Revise residential rate structure to provide greater equity among stormwater customers.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
City Staff	OR	Contractor
0.287 FTE		\$92,000.00
CONSIDERATIONS		
<ul style="list-style-type: none"> Parcel-level GIS analysis of impervious surfaces needs to be conducted. Requires coordination with Mukilteo Water and Wastewater District which bills customers on behalf of the Utility. 		

Project Description

The Mukilteo Surface Water Utility Rate Structure collects Utility fees from residential and commercial customers based on equivalent residential units (ERUs). One ERU is equal to 2,500 square feet of hard surface and residential properties are billed at a rate of one ERU, regardless of the amount of hard surface on the parcel. Non-residential parcels are billed at for multiple ERUs, depending on the amount of hard surface on the parcel. For instance, a non-residential parcel with 7,500 square feet of hard surface would be billed for 3 ERUs. The 2020 monthly Surface Water Utility rate per ERU was \$23.43.

This project would revise the current rate structure to provide more equity for residential customers so that they are paying an equitable fee based on the amount of hard surface on their properties (i.e., properties with less hard surface would pay less and properties with more hard surface would pay more).

Project Rationale

This project would result is more fairness for residential customers that are currently all paying the same Utility rate, regardless of individual collective impacts to the stormwater system. It would be more in line with other Utilities where users pay for what they get or the impacts they contribute.

Anticipated Elements

The key elements to this project include evaluation of the anticipated impacts and resource needs for making a structural change in how Utility rates are calculated and administered. Currently, hard surfaces on individual parcels are measured at the time of site development for non-residential parcels. Individual residential parcels do not have an accurate accounting of hard surfaces to calculate ERUs in the same manner as non-residential parcels are calculated. Additionally, some residential parcels that have greater hard surfaces may also mitigate their stormwater impacts on-

site and have valid arguments for not paying a greater rate based on additional hard surfaces. The City should consider whether credits for on-site stormwater mitigation will be included in a revised rate structure.

The steps needed to implement revised rate changes include the following:

1. Evaluate how other jurisdictions collect Surface Water Utility fees, and what the benefits and drawbacks are from the different methods.
2. Conduct parcel-level GIS analysis of hard surfaces.
3. Conduct analysis of revenue variation including different rate scenarios:
 - Residential ERU rate remains the same, but residential properties with greater than 2,500 square feet of hard surfaces are charged at a rate of multiple ERUs, like non-residential parcels. Rate impact is to residential parcels with greater impervious surfaces.
 - Reduced rate per ERU for all customers but change to how residential parcels are calculated (like non-residential).
 - Tiered status for residential customers depending on amount of hard surface (i.e., one rate for small amount of hard surface, another rate for medium amount of hard surface, and another rate for over a certain amount of impervious surface).
 - Other rate scenarios, as needed.
4. Determine if credits should be offered, and if so, what types?
5. Determine how often hard surface updates should be made (i.e., every five years?), and what are the parameters for customers to appeal the rate they are charged.
6. Develop rate policy.
7. Conduct legal review.
8. Council adoption.

Expected Outcome

The expected outcome of this action is to have data to inform decisions about how Mukilteo collects surface water rates and whether a change is warranted to provide greater equity among residential customers.

Deliverables

The deliverables for this action include:

1. A detailed parcel-scale GIS analysis of hard surfaces on residential lots.
2. Evaluation of alternative rate scenarios and revenue impacts, including options for credits.
3. Development of a rate policy, including decisions on how often to update analyses and how to resolve customer conflicts.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. Although it is assumed that City staff will lead this evaluation effort, if a contractor is hired to do the work, those estimated fees are shown in Table 3 below and project management fees for City Staff.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE ¹	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		60	0.037				
1	Evaluate how other jurisdictions collect fees	20	0.0125				
2	Conduct parcel level analysis of hard surfaces	200	0.125				
3	Conduct revenue variation of different rate scenarios and evaluate credits	60	0.0375				
4	Develop policy, including how often analysis should be updated	80	0.05				
5	Conduct legal review	20	0.013				
6	Council adoption	20	0.013				
Total		460	0.287				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (PM) (0.15* FTE)	0.15
Available staff hours (hrs./year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

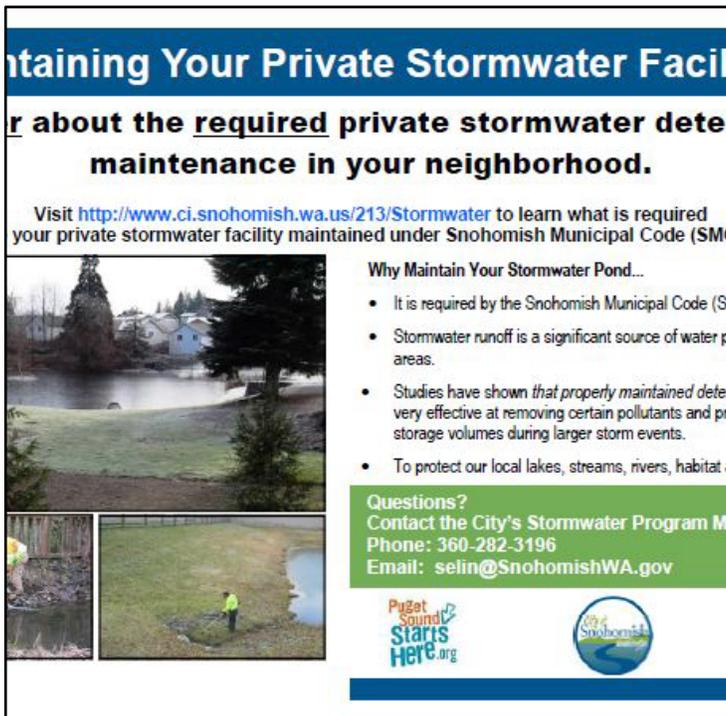
Table 3. Staff and Cost Summary

Summary	Hours	FTE	Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	460	0.287	\$31,071.00		\$31,071.00

Summary	Hours	FTE	Labor Cost	Other Direct Costs	Total
TOTAL	460	0.287	\$31,071.00		\$31,071.00
Consultant or Contractor					
OR Consultant or Contractor Only			\$ 92,000.00	\$ -	\$ 92,000.00
TOTAL			\$ 92,000.00	\$ -	\$ 92,000.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	240	0.15	0	0
GIS Staff	200	0.125		
Legal Staff	20	0.0125		



Flier from City of Snohomish Private Facility Inspections.

DEPARTMENTS

Public Works/Surface Water

Finance

OBJECTIVE

Provide opportunities for owners of private stormwater facilities to apply for City-offered grants to help offset the cost of stormwater facility maintenance and/or repairs to help improve water quality in Mukilteo's receiving waters and surface water system and offer opportunities for self-certification.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Contractor
0.13 FTE		\$41,400.00

RESOURCE NEEDS (Annual)

City Staff	OR	Contractor
0.05 FTE		\$16,663.50

Plus \$20,000 for grant allocation (assumes one \$20K grant per year)

CONSIDERATIONS

- Determine whether self-certification should be applied to all private facilities, or just facilities that don't get inspected by the City.

Project Description

There are hundreds of private stormwater facilities in Mukilteo, most of which were constructed prior to 2009 and are not inspected by City staff according to their NPDES Phase II permit. All private facilities, especially those that are not regularly inspected by City staff are potentially problematic for the City due to their contribution of pollutants to the stormwater system when they cease to function as designed because of delayed maintenance and being in disrepair.

This project would provide an opportunity for private stormwater facility owners to conduct inspection and maintenance through a program of self-reporting and certification that inspection and/or maintenance has been completed. The City would offer opportunities for those that self-certify inspections to apply for maintenance grants up to \$20,000 to off-set the costs of conducting stormwater facility repairs.

Project Rationale

This project would provide financial incentives in the form of grants to conduct maintenance on their privately owned and operated stormwater facilities, which will help improve water quality entering the City's MS4 system.

Anticipated Elements

The key elements of this project include reviewing City Municipal Code to identify if updates are needed, developing tools for use by private facility owners, including easy to use inspection forms, promotion of the program, program administration for grant disbursement and evaluation of program effectiveness.

The steps needed to implement private facility self-certification and grant program include:

1. Evaluate existing private inspection program for facilities included in NPDES Phase II annual inspection, and how other jurisdictions administer self-certification programs (i.e., City of Snohomish, City of Shoreline).
 - a. Review existing statistics for private facilities. How many facilities are in compliance? How many non-compliance letters are written each year? How many follow-up visits are required? Etc.
2. Determine scope of program (i.e., all private facilities, or only facilities not currently inspected by the City) and whether municipal code needs revision for clarification and consistency.
3. Develop inspection forms and promotion materials for private stormwater facility owners including:
 - Overview of why private stormwater facility functionality is important, municipal code that requires inspection and maintenance by facility owners, and description of self-certification program.
 - Easy to use self-certification inspection forms.
 - Reference guide for maintenance resources, how to find contractors, and grant opportunity available through the City.
 - Grant description and application.
4. Identify staff to implement program and number and amounts of grants to offer each year.
5. Determine if updates to municipal code are needed to provide better compliance and incentives for self-certification.

Expected Outcome

The expected outcome of this action is better functionality of private stormwater facilities through City support (education and grant funding) for inspection and maintenance.

Deliverables

The deliverables for this action include:

1. Evaluate self-certification programs from other jurisdictions to learn from experiences of others, including [City of Snohomish](#), and [City of Shoreline](#).
2. Inventory of existing private facilities, including condition status (if known), maintenance compliance (if known), and City level of effort to initiate a self-certification program for the existing private facilities and future private facilities.
3. Development of a private facility self-certification program including the following:
 - a. Scope of program (which facilities to include)
 - b. Forms and promotional materials (on-line, paper, distribution, etc.)
 - c. Grant applications (forms, criteria, amount, conditions)
 - d. City follow-up to ensure program is operating as intended

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. Although it is assumed that City staff will lead this evaluation effort, if a contractor is hired to do the work, those estimated fees are shown in Table 2 below and project management fees for City Staff. For planning purposes, it is assumed one grant (\$20,000) is awarded annually.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		27	0.017				
1	Evaluate other jurisdictions' self-certification programs	20	0.0125				
2	Evaluate private facility inventory data	40	0.025				
3	Develop program including forms, procedures, criteria, applications, and conditions for program.	120	0.075				
Total		207	0.13				
Annual							
PM ³		10.5	0.007				
1	Promote program	20	0.0125				
2	Administer grants	20	0.0125			\$20,000.00	
3	Follow-up on certifications/enforcement	30	0.019				
Total		80.5	0.05			\$20,000.00	

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs./year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	207	0.13	\$17,787.00		\$17,787.00
TOTAL	207	0.13	\$17,787.00		\$17,787.00
Consultant or Contractor					
OR Consultant or Contractor Only			\$41,400.00	\$ -	\$ 41,400.00
TOTAL			\$ 41,400.00	\$ -	\$ 41,400.00
Annual Costs					
City					
City Staff	80.5	0.05	\$7,411.00	\$20,000.00	\$27,411.00
TOTAL	80.5	0.05	\$7,411.00	\$20,000.00	\$27,411.00
Consultant or Contractor					
OR Consultant or Contractor Only			\$16,663.50	20,000.00	\$36,663.50

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	207	0.13	80.5	0.05



Mukilteo Stormwater Pond after maintenance

DEPARTMENTS		
Public Works/Surface Water		
Finance		
OBJECTIVE		
Conduct condition assessment of City stormwater facilities, inventory repair and replacement needs, prioritize repairs, and prepare budget estimates and implementation schedule.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
City Staff	AND	Contractor
0.08 FTE		\$116,640.00
CONSIDERATIONS		
<ul style="list-style-type: none"> Budget should be set aside for annual repairs based on outcome of evaluations. 		

Project Description

There are hundreds of City-owned stormwater facilities, including over 30 stormwater ponds that may require significant repairs to improve facility functionality, or modifications to make maintenance and inspection easier for storm crew personnel.

This project would involve conducting stormwater facility assessments of the entire inventory to evaluate condition relative to original design, repairs and/or maintenance needed for facility to function according to its original design, and resources needed to implement the repairs and/or maintenance at each facility. This project will also prioritize facilities for repair and/or maintenance based on condition and need.

Project Rationale

An assessment of the City's stormwater facility inventory is needed so that resources can be planned and budgeted for needed facility repairs, rather than addressing issues when they become critical or its an emergency situation. There are several known stormwater facility repairs that are needed. This project will evaluate all facilities to ensure that there is a better understanding of the full scope of resources needed to maintain and fix the City's stormwater facilities.

Anticipated Elements

The key elements of this project include developing standard operating procedures for conducting facility inspections, implementing the inspections, prioritizing maintenance and repairs, and budgeting resources and time to complete maintenance and repairs.

The steps needed to for the stormwater facility evaluation program include:

1. Create complete inventory of facilities and those to be included in the evaluation. Gather all available data associated with each facility including, but not limited to:
 - a. As-built documents.
 - b. Maintenance records
 - c. Photographs
 - d. Complaint history
2. Develop standard operating procedure for evaluating condition of stormwater facilities, including:
 - a. Compare as-built documents to current condition (i.e., pond depths, vegetation, berm elevations, inlet and outlet conditions, etc.).
 - i. Determine if there are modifications/maintenance/repairs that can be made to return facility to as-built condition. If not, are there valid reasons for not doing so that would also be okay from a stormwater standpoint?
 - b. Assess function of facility relative to intended function (i.e., flow control, water quality). How is the stormwater facility functioning, regardless of the original design?
 - i. Determine if there are modifications/maintenance/repairs that can be made to improve existing function that is different than original design (i.e., modified orifices at control structure, etc.).
 - c. Determine type of documentation (i.e., photos, as-built mark-ups, drawings with mark-ups, videos, check-lists) and method for collecting data (i.e., tablet (ArcGIS Collector?), paper forms, etc.).
3. Conduct facility assessments, and identify facility needs, priorities, and pros/cons of completing maintenance and repairs.
 - a. Compile list of small maintenance items.
 - b. Compile list of major capital needs.
 - c. Identify alternatives to major capital needs.
4. Develop preliminary budget and resource needs for stormwater facility maintenance and repairs, including identification of whether internal staff or contractors are needed to complete the work.
5. Prioritize and schedule maintenance and repairs.

Expected Outcome

The expected outcome of this action is better functionality of City stormwater facilities and ability to plan for and budget for anticipated maintenance and repairs of facilities in a proactive manner.

Deliverables

The deliverables for this action include:

1. Standard operating procedures for stormwater facility evaluations.
2. Documentation of stormwater facility evaluations, according to standard operating procedures.
3. Prioritization and implementation schedule for facility maintenance and repairs, including budget and resource needs to complete the work.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff and a Contractor to complete this action. It is assumed that a contractor will lead this evaluation effort, however, City staff will be involved in planning, gathering information, and managing the contractor. For the purposes of this planning level cost estimate, it is assumed that 36 City-owned stormwater ponds (detention ponds and wet ponds) will be evaluated. The cost to repair and/or maintain facilities where maintenance items are identified is not included in this planning level cost estimate.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE ¹	Labor Hours	Labor Cost ²	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM ³		100	0.06				
1	Compile stormwater facility inventory and resources	40	0.025				
2	Develop standard operating procedures			100	\$20,000.00		
3	Conduct facility evaluation			504	\$96,640.00		
Total		140	0.08	604	\$116,640.00		

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$160.00- \$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	140	0.08	\$116,640.00		\$116,640.00
TOTAL	140	0.08	\$116,640.00		\$116,640.00
Consultant or Contractor					
OR Consultant or Contractor Only			\$144,640.00	\$ -	\$144,640.00
TOTAL			\$144,640.00	\$ -	\$144,640.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	140	0.08	0	0



Stormwater Vault on Harbour Reach Dr., Mukilteo.

DEPARTMENTS

Public Works/Surface Water

Finance

OBJECTIVE

Evaluate inspection of City stormwater vaults to evaluate structural integrity, and maintenance/repair needs every 5 years.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	AND	Contractor
0.025 FTE		\$20,000.00

RESOURCE NEEDS (Annual)

City Staff	AND	Contractor
0.0437 FTE		\$16,800.00

CONSIDERATIONS

- Resources should be set aside for making repairs, based on inspection results.

Project Description

There are approximately 30 City-owned stormwater vaults (detention vaults, filter vaults, and water quality vaults), that would benefit from engineered observations of structural integrity to identify potential concerns with damaged parts and/or deteriorated structures that may not be noticeable during annual inspections.

This project would involve conducting assessments of the entire inventory within a 5-year time period to evaluate structural condition of closed stormwater BMPs, such as vaults. This project will also prioritize facilities for repair, maintenance, and/or replacement based on need and will recommend a schedule for future structural inspections based on the findings.

Project Rationale

Vaults and enclosed stormwater BMPs are more challenging to assess because they are below ground and require confined space entry procedures for safety. Typically, annual inspection focuses on debris and sediment accumulation in the facility and removal options. The structures themselves are harder to assess. This project will provide a baseline of city-owned stormwater vault conditions once the inventory has been assessed.

Anticipated Elements

The key elements of this project include developing standard operating procedures for conducting vault structural inspections, implementing the inspections, prioritizing maintenance, repairs and/or replacements, budgeting resources and time to complete recommended actions, and recommending future structural inspections based on results.

The steps needed to for the vault structural inspection program include:

1. Create inventory of vaults to be included in the evaluation and gather all available data associated with each facility including, but not limited to:

- a. As-built documents.
 - b. Maintenance records
 - c. Photographs
 - d. Complaint history
2. Develop standard operating procedure for evaluating structural condition of vaults, including:
 - a. Methodology for conducting inspections (i.e., confined space entry requirements, three-person teams, removal of debris and sediment prior to inspections, etc.)
 - b. Elements of structures to be assessed including:
 - i. Concrete or metal joints (i.e., offsets, corrosion, etc.)
 - ii. Cracks (i.e., length, width of openings, general severity)
 - iii. Parts; moving and stationery (i.e., rust, corrosion, ability to move, etc.)
 - iv. Safety (i.e., ladders, rungs, lids, etc.)
 - c. Determine type of documentation (i.e., photos, as-built mark-ups, drawings with mark-ups, videos, check-lists) and method for collecting data (i.e., tablet (ArcGIS Collector?), paper forms, etc.).
 3. Conduct vault inspections, and identify facility needs, and priorities.
 - a. Compile list of small maintenance items (i.e., missing bolts, etc.)
 - b. Compile list of major capital needs (i.e., major cracks, concrete work needed inside vault).
 - c. Identify alternatives to major capital needs.
 4. Develop preliminary budget and resource needs for stormwater vault maintenance and repairs, including identification of whether internal staff or contractors are needed to complete the work.
 5. Prioritize and schedule maintenance and repairs.
 6. Identify on-going frequency for future structural inspections.

Expected Outcome

The expected outcome of this action is better functionality of City stormwater facilities and ability to plan for and budget for anticipated maintenance and repairs of facilities in a proactive manner.

Deliverables

The deliverables for this action include:

1. Standard operating procedures for structural vault inspections.
2. Documentation of structural vault inspections, according to standard operating procedures.
3. Prioritization and implementation schedule for facility maintenance and repairs, including budget and resource needs to complete the work.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff and a Contractor to complete this action. It is assumed that a contractor will lead this evaluation effort, however, City staff will be involved in planning, gathering information, and managing the contractor. For the purposes of this planning level cost estimate, it is assumed that 30 City-owned stormwater vaults (various types) will be inspected, and that 6 vaults will be inspected each year, annually as an on-going program. If during the first inspection round a different frequency is recommended, fewer facilities may be inspected each year after the first five years.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		20	0.0125				
1	Compile stormwater vault inventory and resources	20	0.0125				
2	Develop standard operating procedures			100	\$20,000.00		
Total		40	0.025	100	\$20,000.00		
Annual							
PM		10	0.006				
1	Clean facilities in advance of inspections	60	0.0375				
2	Conduct vault structural inspections			105	\$16,800.00		
Total		70	0.0437	105	\$16,800.00		

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$160.00- \$200.00
Average City Staff Rate	\$60.00

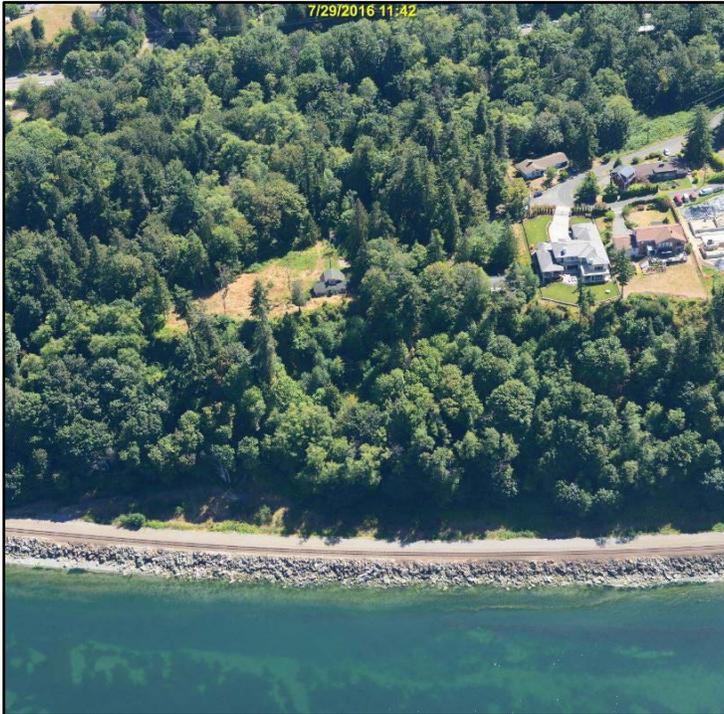
Table 3. Staff and Cost Summary

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	40	0.025	\$20,000.00		\$20,000.00
TOTAL	40	0.025	\$20,000.00		\$20,000.00
Annual Costs					

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
City Staff	70	0.0437	\$16,800.00		\$16,800.00
TOTAL	70	0.0437	\$16,800.00		\$16,800.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	40	0.025	10	0.006
Surface Water Operations Staff	0	0	60	0.0375



Oblique image of Mukilteo shoreline in Puget Sound from Ecology Coastal Atlas Shoreline Viewer.

DEPARTMENTS

Public Works/Surface Water

Finance

OBJECTIVE

Develop a property acquisition fund that can be accessed by the Surface Water Utility for the purposes of purchasing property for stormwater facility development or preservation of surface water functions.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff

0.05 FTE

RESOURCE NEEDS (Annual)

<u>City Staff</u>	<u>AND</u>	<u>Fund Allocation</u>
0.006 FTE		\$50,000.00

CONSIDERATIONS

Project Description

The City of Mukilteo is largely built-out, making it challenging for developers to build new projects, including the City when land is needed for construction of stormwater control facilities. Additionally, the undeveloped land in the City is often most challenging to develop because of the presence of critical areas such as wetlands, streams, and landslide hazard areas. Some parcels that are undesirable from a building perspective may also serve an important surface water function and should be considered for preservation in their capacity to naturally mitigate stormwater impacts.

Project Rationale

A property acquisition fund that is set aside for the purpose of preserving land that naturally provides important surface water functions or is located where the City requires land to construct new stormwater facilities would put the Surface Water Utility in a better position to strategically act upon opportunities when desirable parcels become available on the market.

Anticipated Elements

The key elements of this project include developing a fund to set aside for property acquisition.

The steps needed to develop the property acquisition fund include:

1. Conduct a review of undeveloped parcel costs on a per acre basis. Determine a funding amount that should be contributed annually to the fund to build it up over a reasonable period of time so that the Utility can have the financial ability to act upon opportunities when they come up.
2. Determine criteria for considering purchase of parcels, including:
 - a. Benefit to the public and the Utility
 - i. Surface water functions, or ability to provide functions if a facility will be built

- ii. Multiple purposes (i.e., are the opportunities for development of passive recreation on the site with the Parks Department?)
 - iii. Cost to the Utility for acquisition and long-term maintenance and/or site security
- b. Potential legal issues

Expected Outcome

The expected outcome of this action is ability of the Utility to act proactively when land becomes available that would serve Utility needs.

Deliverables

The deliverables for this action include:

1. Budget evaluation of acquisition fund and what a reasonable funding level is to meet acquisition goals.
2. Development of criteria for property acquisition.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. It is assumed that City staff will lead this effort. For the purposes of this planning level cost estimate, it is assumed that the City allocates \$50,000 per year to the property acquisition fund.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		10.5	0.006				
1	Conduct evaluation of property rates and determine annual fund allocation	20	0.0125				
2	Legal review	10	0.006				
2	Develop criteria for property acquisition consideration	40	0.025				
Total		80.5	0.05				
Annual							
PM		10	0.006				
1	Annual Funding					\$50,000.00	
Total		10	0.006			\$50,000.00	

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747

FTE and Rate Assumption	
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	80.5	0.05	\$7,411.00		\$7,411.00
TOTAL	80.5	0.05	\$7,411.00		\$7,411.00
Annual Costs					
City Staff	10	0.006	\$1,482.00	\$51,482.00	\$51,482.00
TOTAL	10	0.006	\$1,482.00	\$51,482.00	\$51,482.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	70.5	0.04	10	0.006
Legal	10	0.006		



Catch basin with oil on it in Mukilteo.

DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Evaluate results of current program for inspecting and cleaning catch basins under NPDES Phase II permit condition S5.C7 and determine if an alternative approach should be applied to all or a portion of the system based on inspection and cleaning results.

NEW OR EXISTING

Existing

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.22 FTE		\$69,000.00

CONSIDERATIONS

- Cost and benefits of making program modifications.

Project Description

There are over 4,500 city-owned catch basins in Mukilteo. NPDES Phase II Permit Condition S5.C7 requires inspection of all catch basins and inlets operated by the City every two years, with follow-up cleaning if inspection indicates cleaning is needed to comply with maintenance standards established in the Stormwater Management Manual for Western Washington. The City has been collecting data through the catch basin inspection and cleaning program since it became a Phase II Permittee. This project is to evaluate the data to determine if an alternative, less onerous approach allowed under the Phase II Permit would be appropriate based on the results.

Project Rationale

Reports from surface water personnel indicate that there are numerous catch basins within the City’s system that rarely trigger cleaning, after inspection. A review of the inspection data will help inform better, more efficient processes for catch basin inspection and cleaning to focus efforts where the need is greatest.

The permit allows for modifications to the standard approach for inspecting all catch basins every two years (i.e., Mukilteo’s current approach) based on maintenance records of double the length of time of a proposed new frequency. The City has been inspecting catch basins for at least ten years, so if the data warrants a reduced frequency, inspections could be reduced for all or part of the system based on this Ecology-permitted alternative. Other alternatives are also available to the City in the permit.

Anticipated Elements

The key elements of this project include reviewing data collected by stormwater personnel from the catch inspection and cleaning program since its inception in 2009.

The steps needed to evaluate the current program and make a decision about whether to implement modifications

include the following:

1. Review existing catch basin inspection and maintenance program data including:
 - a. Compile data for catch basins inspected each year
 - b. Analysis of inspection results (i.e., how much sediment and debris was measured during each inspection and did it trigger the catch basin to be cleaned?)
 - c. Spatial analysis of which catch basins required cleaning (1) after every inspection, (2) after 50% of the inspections, (3) after 25% of the inspections, and (4) never.
2. Evaluate alternative catch basin inspection schedules outlined in the NPDES Phase II Permit based on the data analysis above, including:
 - a. Revised inspection schedule for part of the system
 - i. Revise inspection schedule to every 4 or 5 years for those catch basins that have never had accumulated sediment or for those catch basins that have accumulated sediment that requires cleaning every other inspection cycle.
 - ii. Continue inspecting those catch basins that generally require cleaning on a bi-annual basis.
 - b. Consider modifying catch basin inspection and cleaning to be conducted on a "circuit basis," where 25% of the catch basins within each circuit are inspected to identify maintenance needs every two years. Catch basin cleaning would occur for all catch basins within a "circuit" upstream of where catch basins inspected indicate cleaning is needed.
 - c. Consider cleaning all pipes, ditches, catch basins and inlets within a circuit once during the permit term. The City is cleaning its pipes as part of its pipe condition program. It is worth considering whether this option could be piggy-backed on the remainder of the pipe condition program and continued into the future once the pipe condition program is completed. The new permit term will begin in August 2024.
3. Compare estimated costs to implement each alternative inspection and cleaning program.

Expected Outcome

The expected outcome of this action is a more efficient, focused use of resources for catch basin inspection and cleaning.

Deliverables

The deliverables for this action include:

1. Data analysis of existing catch basin inspection and cleaning program.
2. Map of catch basins, color-coded by historical cleaning frequency based on inspection results.
3. Memorandum documenting analysis and recommended alternative for modification to the current catch basin inspection and cleaning program, or keeping the status quo.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. It is assumed that City staff will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		45	0.028				
1	Compile and review existing CB inspection data	40	0.025				
2	Conduct spatial analysis of data using GIS (color-code data)	40	0.025				
3	Evaluate revised inspection schedule for all or part of system, including up to 3 scenarios	100	0.0625				
4	Evaluate circuit-based modification, including approximate circuits and numbers of catch basins.	40	0.025				
5	Evaluate once per permit term cleaning program piggy-backed onto existing pipe cleaning and inspection program.	40	0.025				
6	Compare results of alternatives, document results, and recommend approach.	40	0.025				
Total		345	0.22				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$160.00- \$200.00
Average City Staff Rate	\$60.00

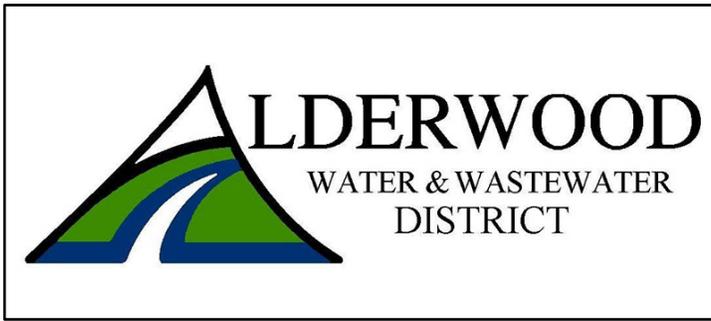
Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
City Staff	345	0.22	\$27,416.00		\$27,416.00
TOTAL	345	0.22	\$27,416.00		\$27,416.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	305	0.19		
GIS Staff	40	0.025		



DEPARTMENTS

Public Works/Surface Water
Legal

OBJECTIVE

Renew and enter into Interlocal Agreements with jurisdictional partners that help the Utility meet its goals in a more cost effective and efficient manner by sharing resources and using bulk purchasing power.

NEW OR EXISTING

New and Existing

RESOURCE NEEDS (One-time)

City Staff
0.04 FTE

CONSIDERATIONS

Project Description

Interlocal agreements are an effective way for the City and the Utility to efficiently access needed services and result in less duplication of similar programs by neighboring and in some cases, overlapping Utility districts and/or jurisdictions. Mukilteo uses interlocal agreements with the Mukilteo Water and Wastewater District for surface water billing, and to access a contract lab for water quality analyses. Additionally, the City is currently negotiating with the Alderwood Water and Wastewater District for an interlocal agreement to access their cured-in-place pipe lining program at a much lower cost than if the Utility were to contract services themselves.

This project is to review the Utility's existing interlocal agreements with an eye toward renewal, and to determine additional ILAs that would be beneficial to pursue (such as the one with Alderwood Water and Wastewater District). Additionally, dormant ILAs should be reviewed for consideration of whether they are still necessary or if they should be updated.

Project Rationale

Interlocal agreements are expiring and need review prior to renewal, and there are opportunities for new interlocal agreements that take time and attention to negotiate and implement.

Anticipated Elements

The key elements of this project include reviewing existing interlocal agreements to determine whether the City wants to renew, whether conditions of existing agreements should be modified, and whether new interlocal agreements should be entered into with new entities.

The steps needed to review and implement interlocal agreements include the following:

1. Consolidate list of current Utility interlocal agreements including the following:
 - a. Entity with whom the agreement is with.
 - b. Duration and conditions of the agreement.
 - c. Assessment of past, current, and future need for the agreement to determine whether the agreement should continue as-is, be discontinued, or if modifications should be made in a future agreement.
2. Develop list of Interlocal agreements that are being considered or would be mutually advantageous for future opportunities (i.e., CIPP program with Alderwood, and other bulk work activities or shared resources).
3. Develop and revise Interlocal Agreements, including the following steps:
 - a. Develop schedule and roles for drafting and revising ILAs, including author (which entity takes the lead), purpose, roles and responsibilities, cost-sharing (if needed), duration of ILA, changes, and approval processes (i.e., time for elected officials to approve ILA).
 - b. Draft ILA(s).
 - c. Conduct legal review.
 - d. Approval process between entities and elected officials.
 - e. Finalize ILA(s).

This project action does not include the annual budget allocated to conducting laboratory analyses or CIPP pipe lining under either ILA. Those project actions are separate.

Expected Outcome

The expected outcome of this action is to have a set of ILAs that provide an efficient means for the Utility to meet goals in a more cost-effective manner.

Deliverables

The deliverables for this action include:

1. Compiled list of existing and potential future ILAs.
2. Up to two revised and/or new ILAs. For this project action, it is assumed that the following ILAs are negotiated:
 - a. Alderwood Water and Wastewater District ILA for CIPP pipe lining.
 - b. Mukilteo Water and Wastewater District ILA for contract water quality lab services. A review of the Mukilteo Water and Wastewater District ILA for fecal coliform testing appears to show no sunset period. However, either side could terminate the ILA at any time with 45 days notice. It is unclear whether this ILA is still active, as it was executed in 2012.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. It is assumed that City staff will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		9	0.006				
1	Compile list of interlocal agreements	2	<0.001				
2	Conduct review of ILA status and need	10	0.006				
3	Develop, revise and negotiate new ILAs	40	0.025				
4	Legal review	10	0.006				
Total		71	0.04				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	71	0.04	\$5,929.00		\$5,929.00
TOTAL	71	0.04	\$5,929.00		\$5,929.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	61	0.04		
Legal Staff	10	0.006		



Framing photo from Mukilteo's website.

DEPARTMENTS		
Public Works/Surface Water		
Legal		
OBJECTIVE		
Streamline stormwater permitting, code inconsistencies (if needed), and improvements, especially for small lot developments.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
<u>City Staff</u>	<u>OR</u>	<u>Consultant</u>
0.14 FTE		\$43,700.00
CONSIDERATIONS		

Project Description

Stormwater development codes are confusing and challenging to implement, especially for developers and residents wanting to make improvements on smaller lots.

This project will review the City's existing development outreach materials and processes to obtain permits that comply with stormwater codes and identify improvements to simplify procedures and make them more understandable and easier to comply.

Project Rationale

Stormwater development codes are challenging for the customer and for staff reviewing submitted development applications. Simplification of the process, and clarification of requirements, if possible, will make it easier for applicants and staff reviewing development applications for compliance with stormwater requirements.

Anticipated Elements

The key elements of this project include coordinating with the planning department to review opportunities for improved development applications that involve stormwater requirements.

The steps needed for this project include the following:

1. Review on-line materials, including:
 - a. Brochures.
 - b. Applications.
 - c. Worksheets and templates.
2. Evaluate opportunities for improvement including:
 - a. Consolidation of materials.

- b. Clarification of definitions (i.e., hard surface and impervious surface definitions).

Note: The 2019 Ecology Manual's definition of hard surfaces is: an impervious surface, a permeable pavement, or a vegetated roof. Mukilteo's municipal code (Chapter 17.08) includes decks under the definition of hard surfaces.

Ecology's impervious surface definition is: A non-vegetated surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for the purposes of determining whether the thresholds for application of Minimum Requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surface for purposes of runoff modeling. The City's municipal code mirrors Ecology's definition.

- c. Better access on-line (i.e., less steps to find materials needed or links from other permits/applications).
 - d. Explanations of requested information.
 - e. Removal of inconsistencies, if any.
3. Document recommended improvements, including code changes, if needed.
 4. Update and link to GIS-based parcel map for customers to locate their parcel and potential issues that may trigger certain types of review such as critical slopes, bluff protection, or stream and wetland protection.
 5. Coordinate with planning department to improve outward facing materials (website), and internal review processes, if necessary (i.e., use of electronic tracking and review to expedite review process and allow multiple reviewers at the same time, rather than paper copies).

This project action does not include budget for website improvements or electronic systems improvements.

Expected Outcome

The expected outcome of this action is to streamline stormwater development review processes.

Deliverables

The deliverables for this action include:

1. Documentation of recommended improvements to stormwater code development review processes, including potential code updates and clarification of definitions in public materials, if needed.
2. Updated GIS-based parcel viewer map that includes critical areas, so customers could be aware of potential additional supplemental information or requirements needed during development review.
3. Updated stormwater application materials, worksheets, brochures, and flow-diagrams that illustrate the process for customers and how it integrates with other permits.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that a Consultant will lead this effort. For the purpose of this planning level cost estimate, it is assumed that one process flow diagram is developed and up to 5 existing permit application materials are updated.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		29	0.02				
1	Review on-line materials	40	0.025				
2	Evaluate opportunities for improvement, coordinate with planning	40	0.025				
3	Document recommended improvements	40	0.025				
4	Update GIS parcel viewer map	40	0.025				
5	Coordinate with planning to improve outward facing materials on web.	40	0.025				
Total		219	0.14				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	219	0.14			
TOTAL	219	0.14			
Or One-time Consultant Costs					
Consultant			\$43,700.00		\$43,700.00
TOTAL			\$43,700.00		\$43,700.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	179	0.12		
GIS Staff	30	0.02		



Permeable pavement at Mukilteo City Hall is a type of Green Stormwater Infrastructure.

DEPARTMENTS		
Public Works/Surface Water		
OBJECTIVE		
Implement a green stormwater infrastructure program that promotes GSI in the City and provides a repository of information for residents and businesses to use.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
City Staff	OR	Consultant
0.17 FTE		\$55,200.00
RESOURCE NEEDS (Annual)		
City Staff	OR	Consultant
0.014 FTE		\$4,255.00
CONSIDERATIONS		

Project Description

Green stormwater infrastructure or low impact development is one of the preferred stormwater best management practices for controlling stormwater runoff. Mukilteo residents are interested in using these techniques when appropriate, and the City would like to have more of the private infrastructure be of this type.

This project will use existing City tools to focus on and promote the use of green stormwater infrastructure.

Project Rationale

Green stormwater infrastructure techniques are not promoted in an obvious way on the City's website. Links are provided to documents for rain gardens and low impact development techniques, but there is no context provided for when a developer or applicant should consider using those techniques over more traditional stormwater management techniques. Providing more details on types of green stormwater infrastructure on the City website would be helpful to residents for their projects.

Anticipated Elements

The key elements of this project include developing web content for green stormwater infrastructure, and updating the City website to promote green stormwater infrastructure

The steps needed for this project include the following:

1. Review other City websites for ideas on GSI promotional materials, including City of Kirkland, City of Lynnwood (rain gardens), and City of Kenmore.
2. Collect content for website, including:

- a. Links to resources from others.
 - b. Photos of completed GSI facilities in Mukilteo.
 - c. GIS maps showing locations of GSI in Mukilteo (i.e., permeable pavement, rain gardens, etc.) with links to quick facts and photos for more information.
3. Launch updated webpages with GSI promotional material.

Expected Outcome

The expected outcome of this action is to provide easier access to GSI resources for the Mukilteo community that will translate into more GSI facilities being constructed over time.

Deliverables

The deliverables for this action include:

1. Content and updated web pages with GSI promotional material, including:
 - a. Descriptions of up to 5 different types of GSI and links to resources for where and how to implement.
 - b. GSI-based map with photos, locations, and information about constructed GSI facilities in Mukilteo.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that a Consultant will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		36	0.022				
1	Review other City websites for content	20	0.0125				
2	Collect content for website	60	0.0375				
3	GIS map of GSI facilities with links to photos and info sheets	80	0.05				
4	Launch updated webpages	80	0.05				
Total		276	0.173				
Annual							
PM		3	<0.001				
1	Maintain webpages	10	0.006				
2	Update GIS map with new facilities as they are constructed	10	0.006				
Total		23	0.014				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15

FTE and Rate Assumption	
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	276	0.17			
TOTAL	276	0.17			
Or One-time Consultant Costs					
Consultant			\$55,200.00		\$55,200.00
TOTAL			\$55,200.00		\$55,200.00
Annual Costs					
City					
City Staff	23	0.014			
TOTAL	23	0.014			
Or Annual Consultant Costs					
Consultant			\$4,255.00		\$4,255.00
TOTAL			\$4,255.00		\$4,255.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	116	0.07		
GIS/IT Staff	160	0.10	23	0.014



Mukilteo Crews repairing a stormwater pipe.

DEPARTMENTS		
Public Works/Surface Water		
OBJECTIVE		
Document means and methods for accomplishing standard storm and surface water tasks in the Utility to provide clarity, consistency, and continuity.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
<u>City Staff</u>	<u>OR</u>	<u>Consultant</u>
0.215 FTE		\$69,000.00
RESOURCE NEEDS (Annual)		
<u>City Staff</u>	<u>OR</u>	<u>Consultant</u>
0.041 FTE		\$23,011.50
CONSIDERATIONS		

Project Description

Many of the staff responsibilities in the Surface Water Utility include routine tasks, including NPDES Phase II required tasks, and prescribed inspection and maintenance standards for stormwater infrastructure outlined in Ecology’s Stormwater Management Manual for Western Washington (Ecology Manual). The City’s stormwater system, data storage, and internal processes are unique to Mukilteo. A common understanding of the system, procedures, and methods is needed by current and future staff to alleviate disruptions and inefficiencies.

This project will develop standard operating procedures and documentation that can be accessed by staff (existing and new) to reference how routine tasks should be done and where to find things.

Project Rationale

Recent staff turnover in Mukilteo has highlighted the need for standard operating procedures in the Surface Water Utility. New staff have had challenges understanding what has or has not been accomplished in the past, where documents are stored, and how tasks are carried out. The Utility has started to develop SOPs for many tasks, and this project action includes resources to continue that effort.

Anticipated Elements

The key elements of this project include working with staff to develop standard operating procedures that will get used. It is recommended that short videos be made of staff completing tasks. Most people are visual learners and retain information better when they see and hear it, rather than just read it. Video documentation of people explaining how things are done could be more effective than writing out how to do something. This could also be

done with internal processes, that walk-through screen-shares to show how to do computer-related tasks (much like you-tube how to videos).

The steps needed for this project include the following:

1. Compile list of tasks that need SOPs, including but not limited to:
 - a. Maintenance tasks (i.e., catch basin inspections and cleaning, ditch inspections, ditch cleaning, pipe cleaning, street sweeping, permeable pavement sweeping, etc.)
 - b. Development review tasks (i.e., parcel location, critical areas, impervious surface calculations, surface water pollution prevention plan review, TESC plan review, minimum requirement review, etc.)
 - c. Business source control inspection tasks
 - d. Technical assistance tasks
2. Record videos
 - a. Recruit staff to participate in video SOPs.
 - b. Record video SOPs during normal work activities (schedule extra time). For the purposes of the planning level cost estimate, it is assumed 3 people participate in the videos and each video takes 3 hours to record (possibly over a few days).
 - c. Edit videos in the office.
3. Upload videos to internal Mukilteo SOP file for future access by employees.

Expected Outcome

The expected outcome of this action is to provide staff with a better understanding of how routine tasks should be done in Mukilteo and provide an easy way to access that information.

Deliverables

The deliverables for this action include:

1. Video SOPs for up to 10 different routine tasks.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. It is assumed that City staff will lead this effort. It is assumed most of this effort will be one-time, but that up to two SOPs will be updated or added annually.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		45	0.028				
1	Preparation for videos	100	0.06				
2	Video recordings	90	0.056				
3	Video editing	100	0.06				
4	Archive SOPs	10	0.006				
Total		345	0.215				
Annual							

PM		9	0.005				
1	Update up to 2 SOPs	58	0.03				
Total		67	0.041				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	345	0.215	\$29,645.00		\$29,645.00
TOTAL	345	0.215	\$29,645.00		\$29,645.00
Or One-time Consultant Costs					
Consultant			\$69,000.00		\$69,000.00
TOTAL			\$69,000.00		\$69,000.00
Annual Costs					
City					
City Staff	67	0.041	\$5,929.00		\$5,929.00
TOTAL	67	0.041	\$5,929.00		\$5,929.00
Or One-time Consultant Costs					
Consultant			\$23,011.50		\$23,011.50
TOTAL			\$23,011.50		\$23,011.50

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	345	0.215	67	0.041



Flooding near Waterfront in Mukilteo.

DEPARTMENTS

Public Works/Surface Water

Planning

OBJECTIVE

Develop a Climate Action and Resiliency Plan that identifies City and Community actions that Mukilteo can promote strategies to reduce climate impacts, while also preparing for inevitable climate impacts that are already occurring.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.33 FTE		\$105,800.00

CONSIDERATIONS

Project Description

All communities are experiencing the effects of changing climate conditions. In the Pacific Northwest, climate impacts are expected to be experienced by warmer, wetter winters, and drier summers. The effects of these changing conditions result in consequences for Surface Water Utilities and Cities trying to manage infrastructure that the community relies on, including transportation networks and stormwater conveyance systems and facilities that manage stormwater runoff.

This project action is to develop a Climate Action and Resiliency Plan that promotes a city-focused awareness and commitment to activities that reduce greenhouse gas emissions, which are known to cause global climate changes, and to prepare for changing climatic conditions that can impact infrastructure and human health and safety of the community.

Project Rationale

A Climate Action and Resiliency Plan is a good way to focus the City and Community toward common goals of making Mukilteo, our Nation, and our World a better, inhabitable place for everyone. The goal would be to commit to small changes the City could make to do its part to reduce greenhouse gas emissions and promote similar community-initiated strategies that individuals can do at home.

Likewise, impacts that are already occurring, and the City needs to plan for how to respond and protect its infrastructure, and the health and safety of the community. Strategies to help the community be more resilient to things such as wildfire smoke, heat waves, drought conditions, or prolonged rain and flooding that lead to landslides, are important impacts that should be addressed in a Climate Action and Resiliency Plan.

Anticipated Elements

The key elements of this project include the following:

1. Identify internal project team, including representatives from departments that will be responsible for implementing the plan (i.e., planning, parks, public works, finance).
2. Develop community engagement plan.
 - a. What do you want to know from the community?
 - b. What is the best way to engage? How will you incorporate input?
3. Develop goals for Greenhouse Gas Emission Reduction (i.e., make your own, or adopt regional and state goals)
 - a. Conduct Greenhouse Gas Inventory
 - b. Estimate Future Emissions with no action and with action
4. Develop City- and Community-strategies that can help reduce emissions to meet goals
 - a. Prioritize actions based on cost, likelihood of success, etc.
5. Develop resiliency strategies for current and predicted future climate impacts, including:
 - a. Flooding
 - b. Heat waves
 - c. Poor air quality
 - d. Drought conditions
6. Conduct social equity analysis of strategies (i.e., how do strategies benefit, or result in a greater burden to underserved or marginalized communities?)
7. Prepare Climate Action and Resiliency Document and Implement Actions

Expected Outcome

The expected outcome of this action is to provide strategies and tools for the City and Community to address greenhouse gas emissions locally, and to prepare for climate impacts in the Community.

Deliverables

The deliverables for this action include:

1. Community engagement plan and activities, to be determined.
2. Climate Action and Resiliency Plan.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that a Consultant will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		69	0.043				
1	Community engagement	80	0.05				
2	Greenhouse gas inventory and goals	60	0.04				
3	Develop greenhouse gas emission reduction strategies	80	0.05				
4	Develop resiliency strategies	80	0.05				
5	Social equity analysis	60	0.04				
6	Draft and final Climate Action Plan	100	0.06				
Total		529	0.33				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	529	0.33			
TOTAL	529	0.33			
Or One-time Consultant Costs					
Consultant			\$105,800.00		\$105,800.00
TOTAL			\$105,800.00		\$105,800.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	529	0.33	0	0



Storm Crews Conducting Open Channel (Ditch) Maintenance.

DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Develop a better understanding of the condition and maintenance needs of open channels, which are an important conveyance component in the City's stormwater system and provides unique functions.

NEW OR EXISTING

Existing

RESOURCE NEEDS (One-time)

City Staff

TBD

CONSIDERATIONS

- Resources need to be allocated for operations crews to maintain and repair deficiencies identified during inspections.

Project Description

Mukilteo's stormwater conveyance infrastructure consists of pipes and open channel ditches. The City's pipes are undergoing a comprehensive cleaning and inspection review so that a more complete understanding of pipe condition and resources needed to correct deficiencies is known. The 7.8 miles of open channels have much different characteristics than the buried pipe infrastructure. They are typically earthen and vegetated, although some are lined with concrete, asphalt, or other hard materials. Because they are not buried, it is easier to observe conditions, and respond to deficiencies sooner.

The City has typically maintained ditches (open channels) by removing debris and vegetation, however, a more nuanced review of open channel condition is warranted so that maintenance can be targeted to improve conveyance and water quality. For instance, removing all vegetation and leaving bare earth can result in poor water quality if stormwater runoff is in contact with earthen materials in the ditches that erode and cause turbid conditions. Additionally, during open channel inspection, additional data should be collected to populate available GIS data, including material (currently only a few of the channels describe the material, and it's not consistent where the material is referenced; in some cases, material is referenced in the "type" attribute, rather than "material"), slope or inverts to provide an idea of how steep the channel is, and average width and depth. These physical factors are important when evaluating hydraulics and how flow may or may not erode or top over the banks of the open channel. This project action will continue the open channel evaluation program already started by the City in 2022/2023.

Project Rationale

Although this project is already being done by the City, it is included in this Plan because it is an important element of the City's work program that should be continued.

Anticipated Elements

The key elements of this project include the following:

1. Evaluate open channels on a five-year frequency. Approximately 1.5 miles of open channel would be inspected each year.
2. Review inspection forms to confirm that data being collected is what is needed to (1) effectively identify issues to be maintained, and (2) fill in data gaps in GIS inventory.
3. Review time needed for staff to conduct inspections annually, and percentage of maintenance work orders generated from annual inspections. The initial program results indicate that more maintenance staff are needed to conduct the needed open channel repairs.

Expected Outcome

The expected outcome of this action is better maintained open channels that provide better functionality as part of the City's overall stormwater conveyance network, and fewer community complaints about open channels in their neighborhoods.

Deliverables

There are no deliverables associated with this action.

Planning Level Cost Estimate

This action is budget-neutral as it is a continuation of an on-going program, however, it is expected that upon review of the staff resource needs, additional staff will be needed in maintenance.



Stormwater Outfall Pipe on Slope (HDPE Smooth Pipe)

DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Have a system for assessing the condition of stormwater outfalls, identifying maintenance issues, and planning repairs and/or replacement.

NEW OR EXISTING

Existing

RESOURCE NEEDS (One-time)

City Staff OR Consultant

TBD

CONSIDERATIONS

- Resources need to be planned for future repairs and maintenance based on deficiencies identified during inspections.
- Consider whether geotechnical evaluation of outfalls is needed in assessment to determine potential impacts to slope stability or slope stability impacts on outfall locations.

Project Description

Mukilteo has 188 city-owned stormwater outfalls. The outfalls range in diameter from under 14 inches to greater than 40 inches. For the outfalls that have material recorded in GIS, there are roughly equal numbers of outfalls constructed of concrete (33), smooth PVC (35), and corrugated metal pipe (33). Thirty-one pipes are constructed of High-density polyethylene (HDPE) corrugated or smooth pipe, 35 are constructed of smooth polyvinyl chloride and one is constructed of ductile iron. There is no data available for 45 outfalls.

The outfalls were originally assessed in 2013. No data is available in GIS for most of the outfalls. Less than 40 outfalls had condition data, although almost all were considered to be in good condition in 2013. A drainage problem was reported for one outfall in Brewery Creek, and four outfalls were reported to be in fair condition in 2013.

The City has re-initiated an outfall inspection program in 2023 and is interested in continuing this program to inspect outfalls on a five-year frequency.

This project action will continue the outfall inspection program already started by the City in 2023.

Project Rationale

Although this project is already being done by the City, it is included in this Plan because it is an important element of the City’s work program that should be continued to (1) correct data deficiencies and populate missing information about the outfalls, and (2) better understand conditions to plan for and budget repairs and maintenance.

Anticipated Elements

The key elements of this project include the following:

1. Evaluate outfalls on a five-year frequency. Approximately 35 outfalls would be inspected each year.

2. Review inspection forms to confirm that data being collected is what is needed to (1) effectively identify issues to be maintained, and (2) fill in data gaps in GIS inventory. Additionally, evaluate how slope stability issues are being identified by field staff and whether geotechnical evaluation is necessary to follow-up in some circumstances.
3. Review time needed for staff to conduct inspections annually, and percentage of maintenance work orders generated from annual inspections to determine if increased staff resources are needed to fully resource this program.

Expected Outcome

The expected outcome of this action is to identify outfall issues before they become major problems and potentially contribute to unstable slope conditions or receiving water quality problems. Additionally, this action will help plan for future resources needed to repair and/or replace problematic outfalls, or to establish maintenance easements for outfalls on or near private property.

Deliverables

There are no deliverables associated with this action.

Planning Level Cost Estimate

This action is budget-neutral as it is a continuation of an on-going program.



Big Gulch Creek.

DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Monitor physical stream channel condition trends to identify upland stormwater management needs or evaluate how well existing flow control facilities are functioning.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.16 FTE		\$50,370.00

RESOURCE NEEDS (Annual)

City Staff	OR	Consultant
0.082 FTE		\$33,017.54

CONSIDERATIONS

- Number of cross-sections and profiles may be adjusted, depending on information the City would like to collect.

Project Description

Ecology's stormwater design manual's flow control requirements were established based on scientific data that links excessive flow volumes and durations to erosion in small streams. There has been a large body of research in this area, and since the early 1990s, stormwater regulations have evolved to address erosive conditions in streams that receive stormwater runoff.

In Mukilteo and in many other jurisdictions in the Puget Sound region, development has occurred over time, and with it, management of stormwater runoff has been handled according to the requirements at the time of development, which may or may not be protective of stream channels based on what is known today. Updating stormwater management to today's standards and installing new stormwater treatment where none was previously required is one way that jurisdictions are improving receiving waters, particularly small streams.

This project action is to set up long-term channel surveys so that stream channel conditions can be monitored for trends that will alert the City to how well stormwater is being managed in the uplands, or if other conditions are causing changes to channel conditions. Stream channels are expected to change, because they are dynamic systems, so long-term monitoring is needed to observe trends over-time.

Project Rationale

The primary purpose for managing stormwater is for the protection of human health (flooding), and the environment (aquatic habitat and water quality). Monitoring physical conditions of channels to determine potential on-going flow-altering changes that damage habitat and are detrimental to water quality will be beneficial in providing data that supports stormwater management decisions and where to focus upland stormwater management.

Anticipated Elements

The key elements of this project include establishing up to two different cross section locations and one longitudinal profile in up to 4 different stream channels (8 cross sections and 4 longitudinal profiles total), following procedures outlined in USDA Forest Service General Technical Report RM-245 (Stream Channel Reference Sites: An Illustrated Guide to Field Technique).

1. Identify 4 priority stream channels for monitoring.
2. Conduct a stream channel reconnaissance of each priority stream channel and identify potential locations to establish permanent cross-sections to be surveyed annually. Longitudinal profile should include at least one of the channel cross-sections.
3. Establish permanent benchmarks for and longitudinal profile so that repeat measurements can be collected.
4. Collect initial measurements and annual measurements according to general guidelines in USDA Technical Report RM-245.
5. Conduct annual pebble counts to characterize stream channel sediment at each cross-section location.
6. Graph annual results to identify trends over time.

Expected Outcome

The expected outcome of this action is to identify potential stream channel changes that could indicate a need for stormwater management actions. Long-term trends to be aware of include aggradation (sediment deposition), which could indicate excessive upstream erosion or landslide activity, or incision (down-cutting) or channel widening (bank erosion), which could indicate excessive flows and flow durations that are eroding the channel to accommodate more flow.

Deliverables

The deliverables associated with this action include the following:

1. Map of locations where permanent cross-sections and longitudinal profiles are to be measured.
2. Field notebook with annual data collection.
3. Annual graphs of cross-sections, profiles, and sediment distribution at cross-section locations.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that City staff will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		33	0.021				
1	Identify 4 priority stream channels for survey	5	0.003				
2	Conduct stream channel reconnaissance of 4 stream channels (assume 2 people, 10 hours with preparation per stream)	64	0.04				

3	Cross section establishment (per cross section)	80	0.05			
4	Longitudinal profile (per profile)	40	0.025			
5	Pebble Counts (per site)	10	0.006			
6	Data consolidation, map, and graphs	20	0.0125			
Total		252	0.157			
Annual						
PM		17	0.01			
1	Annual Cross sections	64	0.04			
2	Annual Longitudinal Profiles	24	0.015			
3	Annual Pebble Counts	16	0.01			
4	Data consolidation	10	0.006			
Total		131	0.082			

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

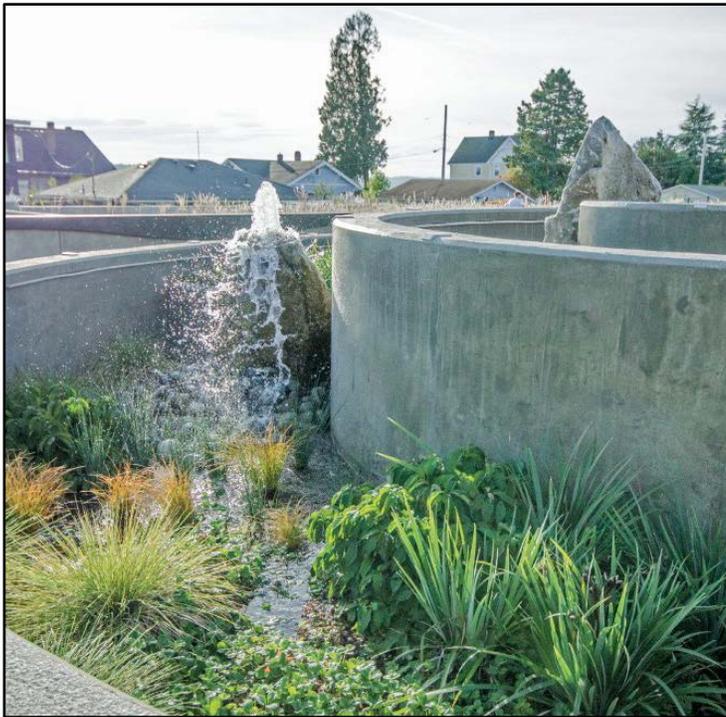
FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	252	0.157	\$20,752.00		\$20,752.00
TOTAL	252	0.157	\$20,752.00		\$20,752.00
OR Consultant/Contractor					
Consultant			\$50,370.00		\$50,370.00
TOTAL			\$50,370.00		\$50,370.00
Annual Costs					
City Staff	131	0.082	\$10,376.00		\$10,376.00
TOTAL	131	0.082	\$10,376.00		\$10,376.00
OR Consultant/Contractor					
Consultant			\$33,017.54		\$33,017.54
TOTAL			\$33,017.54		\$33,017.54

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	252	0.157	131	0.082



Manchester Stormwater Park (from Puget Sound Partnership Innovation Stories)

DEPARTMENTS

Public Works/Surface Water
Parks

OBJECTIVE

Evaluate existing parks properties and greenspace for opportunities to incorporate surface water features and/or treatment.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.2 FTE		\$64,400.00

CONSIDERATIONS

- Need to coordinate with Parks Department and other stakeholders to identify mutual benefits.

Project Description

The City of Mukilteo owns over 140 parcels of property that have various uses ranging from parks, to cultural activities (e.g., libraries), to undeveloped greenspace that abuts the city’s stream channels in deep, wooded ravines (i.e., Upper and Lower Chennault Beach creeks, Big Gulch Creek, Picnic Point stream, and parts of Brewery Creek and Goat Trail Creek), and city playgrounds and ball fields. City-owned land could provide opportunities to create surface water features and/or facilities that serve important functional needs and provide educational opportunities for the community about stormwater management.

This project action is to evaluate potential opportunities for stormwater “parks” on city-owned land where mutual benefits may be possible. For instance, needed park improvements could incorporate local stormwater improvements that benefit a neighborhood and the neighboring receiving water.

Project Rationale

One of the biggest challenges with retrofitting older neighborhoods with new stormwater management features is the cost of land. Utilizing city-owned land available in parks, greenspaces, and undeveloped properties, could be a way to utilize resources to mutual benefits, if storm and surface water features could be incorporated into existing uses, or into future designs planned for the parks and parcels. Many jurisdictions are creatively using parks and city-owned property to achieve multiple cross-department and community-wide benefits, especially since land in the Puget Sound Region is at a premium.

Anticipated Elements

The key elements of this project include coordinating with personnel in the Parks Department and Planning Departments to identify mutual goals and potential opportunities for shared community projects.

1. Conduct GIS inventory of city-owned land against areas that are may require additional stormwater treatment due to age of development (under treated or not treated due to stormwater requirements at the time of development).
2. Identify potential city-owned parcels that overlap stormwater needs.
3. Conduct GIS-based analysis of parcels that could meet stormwater needs, including size, slope, critical areas, existing use and features, etc., that may or may not make the parcel feasible for stormwater features or treatment.
4. Establish city team of stakeholders (i.e., parks, public works, and planning) to evaluate potential opportunities on city-land and identify potential locations, if any, for stormwater features.
5. Conduct community outreach for any city-owned parcels identified for potential stormwater parks.
6. Document evaluation of parcels and list of potential opportunities, based on analysis, and stakeholder and community input.

Expected Outcome

The expected outcome of this action is to identify potential city-owned parcels, including parks and greenspaces that could be utilized for stormwater features and/or treatment in conjunction with existing land use or in coordination with future planning improvements.

Deliverables

The deliverables associated with this action include the following:

1. GIS analysis of city-owned land vs. Utility stormwater treatment needs.
2. GIS analysis of city-owned parcels that intersect stormwater treatment needs.
3. Stakeholder and community input evaluation of parcels that are deemed feasible for stormwater features and/or treatment.
4. Documentation of evaluation and opportunities.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that a Consultant will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		42	0.026				
1	Conduct GIS analysis of city-owned parcels vs. stormwater treatment needs	80	0.05				
2	Conduct GIS analysis of city-owned parcel characteristics that intersect stormwater needs	60	0.04				

3	Coordinate with stakeholders	40	0.025			
4	Conduct community input	60	0.04			
5	Document results	40	0.025			
Total		322	0.2			

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	322	0.20			
TOTAL	322	0.20			
OR Consultant/Contractor					
Consultant			\$64,400.00		\$64,400.00
TOTAL			\$64,400.00		\$64,400.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff/Parks/Planning	182	0.113		
GIS	140	0.09		



Bioretention swale photo. From Washington Stormwater Center.

DEPARTMENTS

Public Works/Surface Water & Transportation

OBJECTIVE

Evaluate using existing street right-of-way for stormwater management, especially in conjunction with road improvement projects and where new stormwater treatment is needed.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.16 FTE		\$50,600.00

CONSIDERATIONS

Project Description

There are 78 miles of roads within the City limits. Not all of these are public city-owned roads with available right-of-way, but even if a small percentage of the entire length of roadway was available for stormwater treatment, such as bioretention swales, or other appropriate technology to treat road runoff, the Utility could make progress in treating primary pollution-generating surfaces that contribute significant runoff (i.e., roads) to the City's receiving waters.

This project action is to (1) establish criteria for when road right-of-way should be considered for stormwater treatment (i.e., conditions that are favorable), so that when road projects are constructed, stormwater treatment is considered whether it is required or not, (2) proactively identify locations in the City where stormwater treatment is needed (i.e., untreated or under treated areas due to ages of development) relative to potential right-of-way that could serve this need. This project action should be a companion to Action Number 14, Stormwater Parks.

Project Rationale

One of the biggest challenges with retrofitting older neighborhoods with new stormwater management features is the cost of land. Utilizing city-owned right-of-way could be a way to utilize resources to mutual benefits, if storm and surface water features could be incorporated into right-of-way, or into future road improvement projects.

Anticipated Elements

The key elements of this project include coordinating with transportation personnel in Public Works and Planning Departments to identify mutual goals and potential opportunities for shared community projects.

1. Conduct GIS inventory of city-owned right-of-way against areas that are may require additional stormwater treatment due to age of development (under treated or not treated due to stormwater requirements at the

time of development). This task can be done in conjunction in Action Number 14, for Stormwater Parks, if the two actions are conducted simultaneously. However, for planning purposes, they are budgeted separately.

2. Identify potential city-owned right-of-way that overlap stormwater needs.
3. Conduct GIS-based analysis of right-of-way that could meet stormwater needs, including size, slope, critical areas, existing use and features, etc., that may or may not make the right-of-way feasible for stormwater treatment.
4. Establish city team of stakeholders (i.e., public works and planning) to evaluate potential opportunities and criteria for using right-of-way and identify potential locations, if any, for stormwater treatment.
5. Document right-of-way criteria and list of potential opportunities, based on analysis, and stakeholder input.

Expected Outcome

The expected outcome of this action is to identify potential city-owned right-of-way that could be utilized for stormwater treatment in conjunction with existing right-of-way or in coordination with future transportation improvements.

Deliverables

The deliverables associated with this action include the following:

1. GIS analysis of city-owned right-of-way vs. Utility stormwater treatment needs.
2. GIS analysis of city-owned right-of-way that intersect stormwater treatment needs.
3. Stakeholder input evaluation of criteria and potential locations that are deemed feasible for stormwater treatment.
4. Documentation of evaluation and opportunities.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that a Consultant will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		33	0.02				
1	Conduct GIS analysis of city-owned ROW vs. stormwater treatment needs	80	0.05				
2	Conduct GIS analysis of city-owned ROW characteristics that intersect stormwater needs	60	0.04				
3	Coordinate with stakeholders	40	0.025				
4	Document results	40	0.025				
Total		253	0.16				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	253	0.16			
TOTAL	253	0.16			
OR Consultant/Contractor					
Consultant			\$50,600.00		\$50,600.00
TOTAL			\$50,600.00		\$50,600.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff/Parks/Planning	113	0.07		
GIS	140	0.09		



DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Identify new tools, venues, and opportunities to expand surface and stormwater education and outreach.

NEW OR EXISTING

Existing

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.12 FTE		\$39,100.00

RESOURCE NEEDS (Annual)

City Staff	OR	Consultant
0.13 FTE		\$41,400.00

CONSIDERATIONS

Project Description

The City has been conducting surface and stormwater education and outreach as part of its NPDES Phase II Permit, complying with new requirements as permit conditions change. The Utility participates in Community events and holds Public Works-focused events including “Touch-a-Truck” as popular ways to involve and educate the community about the work that Mukilteo Public Works and the Stormwater Utility accomplish. Additionally, in 2023, the City will be using vehicle wraps and well-placed signs to promote Mukilteo’s stormwater activities.

This project action is to (1) promote additional visibility on the City’s website, making information easier to find and more transparent through the GIS HUB, (2) re-initiate the adopt-a-drain program, (3) develop strategy to reduce illegal dumping in Japanese Gulch and other locations and (4) identify other targeted audiences (i.e., K-12 school children, or partnerships with local colleges) for increased outreach and participation.

Project Rationale

The City’s current education and outreach program is meeting the requirements of the NPDES Phase II Permit, but this project could expand the Utility’s support from the community and within the City’s organization by continuing to look for new, easy ways to promote and disseminate information about the work the Utility does.

Anticipated Elements

The key elements of this project include the following.

1. Update the City’s website to include the ArcGIS HUB with information about the Stormwater Comprehensive Plan, Watershed Fact Sheets, and other useful information to let the public know about what the Utility is doing. Action Number 9- Green Stormwater Infrastructure Program information could also be incorporated into

this location on the City's website.

2. Re-initiate the adopt-a-drain program.
3. Research strategies used by other jurisdictions to curtail illegal dumping, including surveillance, educational signs, rewards, and solid waste gift coupons to local haulers.
4. Review list of community events attended by Utility staff. Determine which events are most beneficial to attend, and whether additional events should be added to the calendar.
5. Identify opportunities for engagement with K-12 classrooms, or local colleges for stewardship activities, data gathering (i.e., Action Number 13- Stream Channel Surveys could potentially be a partnership project with a local community college).

Expected Outcome

The expected outcome of this action is enhancement of the City's existing stormwater education and outreach program and better transparency for Utility customers.

Deliverables

The deliverables associated with this action include the following:

1. Updated web-site with ArcGIS HUB content.
2. Re-initiate adopt-a-drain program.
3. Strategy to reduce illegal dumping, which impacts water quality. Include \$2,000 for equipment or signage.
4. Review current community events and plan for future events.
5. Identify new opportunities for engagement. Coordinate with potential partners. Assume up to two new engagement opportunities.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff or a Consultant to complete this action. It is assumed that City staff will lead this effort.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		25	0.015				
1	Update website	20	0.0125				
2	Re-initiate adopt-a drain program.	60	0.04				
3	Develop strategy to reduce illegal dumping						
4	Review current community events.	10	0.006				
5	Identify new opportunities for engagement.	40	0.025				
Total		195	0.12				

Annual						
PM ³		27	0.016			
1	Website maintenance	30	0.018			
2	Implementation of adopt-a-drain program.	40	0.025			
3	Implement illegal dumping strategy	30	0.018		\$2,000.00	
4	Implementation of up to two new outreach opportunities	80	0.05			
Total		207	0.13		\$2,000.00	

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	195	0.12	\$16,305.00		\$16,305.00
TOTAL	195	0.12	\$16,305.00		\$16,305.00
OR Consultant/Contractor					
Consultant			\$39,100.00		\$39,100.00
TOTAL			\$39,100.00		\$39,100.00
Annual Costs					
City					
City Staff	207	0.13	\$17,787.00	\$2,000.00	\$19,787.00
TOTAL	207	0.13	\$17,787.00	\$2,000.00	\$19,787.00
OR Consultant/Contractor					
Consultant			\$41,400.00	\$2,000.00	\$43,400.00
TOTAL			\$41,400.00	\$2,000.00	\$43,400.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	175	0.11	177	0.11
IT/GIS	20	0.0125	30	.013



DEPARTMENTS		
Public Works/Surface Water and Mukilteo Fire Department		
OBJECTIVE		
Coordinate with fire department to develop PFAS management plan to minimize discharges to the MS4.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
City Staff	OR	Consultant
0.105 FTE		\$36,800.00
RESOURCE NEEDS (Annual)		
City Staff	OR	Consultant
0.03 FTE		\$11,500.00
CONSIDERATIONS		
This programmatic action addresses a condition in the draft NPDES permit. The permit condition may change before the permit becomes final. Local fire departments may develop templates and strategies to address these issues collectively.		

Project Description

Ecology’s Draft NDPES Phase II Permit was issued in August 2023, outlining draft conditions that are expected to be in the next permit that goes into effect in August 2024. Condition S2.B.2 and S2.B.3 relate to the discharge of Per- and polyfluoroakyl substances (PFAS) which are used in fire-fighting foams. The draft permit requires the permittees to coordinate with their local fire departments to reduce PFAS discharge to the stormwater system from emergency fire-fighting activities through development of a PFAS management plan, and to implement protocols to reduce resuspension, conveyance, and discharge of PFAS that are already in the stormwater system.

This project action will coordinate with the fire department to address PFAS management and track fire-fighting activities where PFAS was used (in fire-fighting foam) and may be in the stormwater system so that appropriate actions can be taken to reduce the spread of these chemicals.

Project Rationale

PFAS compounds are known as “forever chemicals” that are persistent in the environment and bodies. As more becomes known about them and they are discovered in more places, there has been a greater awareness and concern about their continued use in consumer products and fire-fighting activities. The Draft Phase II NPDES Permit has added conditions to address PFAS in fire-fighting activities.

Anticipated Elements

The key elements of this project include the following.

1. Coordinating with Mukilteo fire department to develop a plan for reducing PFAS in the stormwater system during and after emergency fire-fighting activities. It is assumed that the fire department will take the lead on

- developing the plan with input and support from the Surface Water Utility.
2. Coordinate with the fire department to track fire-fighting activities over the last 5 years and use of PFAS (including past fire-fighting activities) to identify areas in the stormwater system that may require cleaning to reduce the potential for resuspension or conveyance of chemicals that may already be in the stormwater system.
 3. Implement stormwater system cleaning where the fire department indicates past use of PFAS chemicals may have occurred to reduce resuspension or conveyance. Cross-check locations and dates of fire-fighting activities against pipe cleaning program, catch basin cleaning and vault cleaning to identify locations that may have already been cleaned.
 4. Report progress toward NPDES Phase II conditions in NPDES annual reports.

Expected Outcome

The expected outcome of this action is compliance with the City's Phase II NPDES Permit and reduction of PFAS "forever chemicals" in the environment and stormwater system.

Deliverables

The deliverables associated with this action include the following:

1. PFAS management plan (developed by the Mukilteo Fire Department with support from the Surface Water Utility).
2. Map of fire locations, dates, and use of PFAS fire-fighting chemicals for the last 5 years. The map will be updated annually with fire information from the previous year.
3. Map of areas that require stormwater system cleaning to minimize resuspension or conveyance of PFAS fire-fighting chemicals (after map of fire locations, dates and use of PFAS chemicals is cross-checked against Surface Water maintenance activities). The map will be updated annually based on the previous year's fire information.
4. Implementation of stormwater system cleaning. It is assumed that this will be an on-going task.
5. NPDES Annual Reporting.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. It is assumed that City staff will lead this effort. For the purpose of this planning level cost estimate, it is assumed that initial stormwater system cleaning will add 60 hours of staff time, and that subsequent cleaning will add 20 hours of staff time per year.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		24	0.014				
1	PFAS Management Plan	40	0.022				
2	Map of fires, dates, and use of PFAS over last 5 years.	40	0.022				
3	Map of locations where stormwater system cleaning is needed to reduce PFAS.	20	0.011				

4	Stormwater System Cleaning.	60	0.034				
Total		184	0.105				
Annual							
PM ³		7.5	0.004				
1	Update fire location and use of PFAS map.	10	0.005				
2	Update stormwater system cleaning map to address PFAS in system.	10	0.005				
3	Implement stormwater cleaning.	20	0.011				
4	Phase II NPDES Permit Reporting	10	0.005				
Total		57.5	0.03				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	184	0.105	\$16,304.75		\$16,304.75
TOTAL	184	0.105	\$16,304.75		\$16,304.75
OR Consultant/Contractor					
Consultant			\$36,800.00		\$36,800.00
TOTAL			\$36,800.00		\$36,800.00
Annual Costs					
City					
City Staff	57.5	0.03	\$4,607.00		\$4,607.00
TOTAL	57.5	0.03	\$4,607.00		\$4,607.00
OR Consultant/Contractor					

Consultant			\$11,500.00		\$11,500.00
TOTAL			\$11,500.00		\$11,500.00

Table 4. Staff Distribution Summary

City Staff Distribution ¹	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	64	0.037	17.5	0.01
Stormwater Operations	60	0.034	20	.011
IT/GIS	80	0.046	20	.011

¹Fire Department time is not included in this estimate.



DEPARTMENTS

Public Works/Surface Water, Planning, and Community Development Department

OBJECTIVE

Develop tree canopy goals and policies to support stormwater management and water quality improvement.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.45 FTE		\$158,700.00

RESOURCE NEEDS (Annual)

City Staff	OR	Consultant
0.062 FTE		\$21,620.00
Plus \$44,000.00 Funding for Urban Forestry		

CONSIDERATIONS

This programmatic action addresses conditions in the draft NPDES permit. The permit conditions may change before the permit becomes final.

Project Description

Ecology’s Draft NPDES Phase II Permit was issued in August 2023, outlining draft conditions that are expected to be in the next permit that goes into effect in August 2024. Conditions S5.C.1.c.ii and S5.C.b.iii relate to tree canopy goals and policies and mapping tree canopy on City properties.

This project action will build upon other initiatives that the City is taking to promote healthy urban forests and increase tree canopy on City properties. The City is taking steps to become a “Tree City USA” and will be applying for grants to jump-start the process of expanding types and numbers of trees in the City.

Project Rationale

Trees provide multiple ecological functions, including positive benefits for stormwater management. This project serves to both meet the conditions of the Draft Phase II NPDES Permit, which are likely to be included in the Final Permit when it is issues in August 2024, and to support the City’s goal for a healthy environment through forest cover that moderates heat impacts, contributes to the reduction of greenhouse gas emissions, and provides evapotranspiration and uptake of water, reducing stormwater runoff.

Anticipated Elements

The key elements of this project include the following. This project will largely be implemented by the Planning and Community Development Departments with assistance from GIS and the Surface Water Utility. It is expected that funding for this project will be from the Storm Water Fund and/or grants.

1. Develop a City Tree Plan that includes the following:
 - a. Tree canopy goals and policies to support stormwater management and water quality improvement per the NPDES Phase II Permit condition S5.C.c.ii.

- i. Tree canopy goals and policies are assumed to be developed by the Planning and Community Development Group.
- b. Implementing tree canopy goals and policies adopted in City code or in the Comprehensive Plan. It is anticipated that the goals and policies will align with those of Tree City USA, with a ready-made implementation plan to reach the goal of becoming a Tree City USA. The requirements for a community to become a Tree City USA per the [Arbor Day Foundation](#) include:
 - i. Maintaining a tree board or department.
 - ii. Having a community tree ordinance.
 - iii. Spending at least \$2 per capita on urban forestry.
 - iv. Celebrating Arbor Day
- 2. Conduct a City Tree Inventory
- 3. Map tree canopy on the City's owned and operated properties.
- 4. Plan for Arbor Day celebration, which is observed on the last Friday in April.
- 5. Annual implementation of the urban forestry program.

Expected Outcome

The expected outcome of this action is compliance with the City's Phase II NPDES Permit, increased tree canopy in Mukilteo, and recognition as a Tree City USA once all community requirements have been met.

Deliverables

The deliverables associated with this action include the following:

1. Draft and Final City Tree Plan
2. Draft and final tree canopy goals and policies ready for City Council adoption.
3. City tree inventory.
4. Map of tree canopy on City owned and operated properties.
5. Convene an urban forestry committee/board that is facilitated in the Planning and Community Development Departments.
6. Development of an urban forestry fund to improve tree canopy, and maintain, care for, and replace existing trees as needed. Fund should be approximately \$44,000 to meet requirements of Tree City USA. Grants may help support funding requirements.
7. Implement urban forestry goals and policies.
8. Arbor Day celebration.
9. NPDES Annual Reporting.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. It is assumed that City staff (Planning and Community Development) will lead this effort. It is also assumed that funding will come from the Surface Water Utility.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		103	0.018				

1	Draft city tree plan.	200	0.11				
2	Final city tree plan.	100	0.057				
3	City Tree Inventory	300	0.17				
4	Adopt City tree goals and policies	30	0.017				
3	Map tree canopy on City-owned and operated properties.	40	0.022				
4	Convene an urban forestry committee/board.	20	0.011				
Total		793	0.45				
Annual							
PM ³		14	0.008				
1	Implement urban forestry goals and policies	40	0.022			\$44,000.00	
2	Annual Arbor Day celebration planning and implementation.	48	0.027				
3	Phase II NPDES Permit Reporting	6	0.003				
Total		108	0.062			\$44,000.00	

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

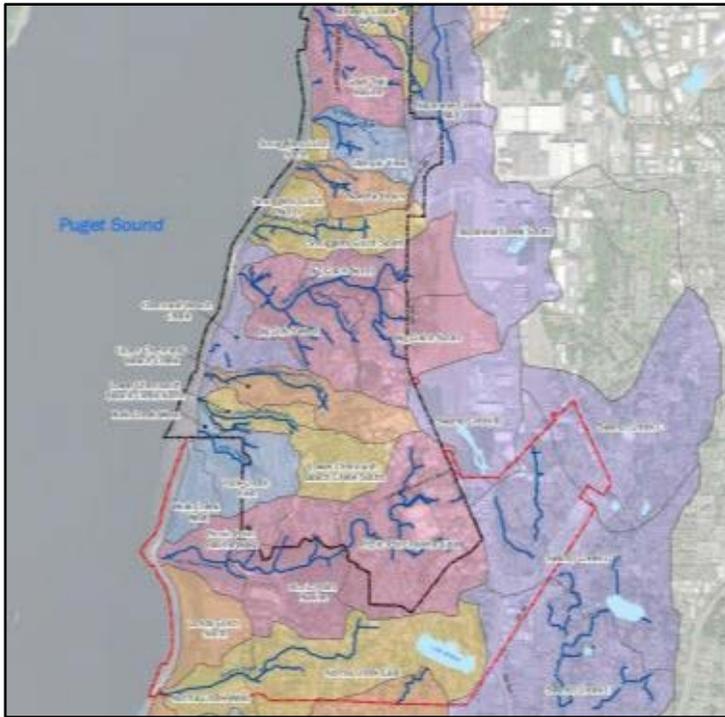
Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	793	0.45	\$75,482.00		\$75,482.00
TOTAL	793	0.45	\$75,482.00		\$75,482.00
OR Consultant/Contractor					

Consultant			\$158,700.00		\$158,700.00
TOTAL			\$158,700.00		\$158,700.00
Annual Costs					
City					
City Staff	108	0.062	\$9,163.00	\$44,000.00	\$53,163.00
TOTAL	108	0.062	\$9,163.00	\$44,000.00	\$53,163.00
OR Consultant/Contractor					
Consultant			\$21,620.00	\$44,000.00	\$65,620.00
TOTAL			\$21,620.00	\$44,000.00	\$65,620.00

Table 4. Staff Distribution Summary

City Staff Distribution	One-time		Annual	
	Hours	FTE	Hours	FTE
Planning and Community Development	733	0.41	102	0.05
Surface Water Staff	20	0.011	6	.144
IT/GIS	40	0.022	0	0



DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Develop an Stormwater Management Action Plan (SMAP) for a high priority catchment.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	AND	Consultant
0.02 FTE		\$48,000.00

CONSIDERATIONS

This programmatic action addresses conditions in the draft NPDES permit. The permit conditions may change before the permit becomes final. It is assumed that a Consultant is hired to complete the SMAP.

Project Description

Ecology’s Draft NPDES Phase II Permit was issued in August 2023, outlining draft conditions that are expected to be in the next permit that goes into effect in August 2024. Condition S5.C.1.d.i. requires completion of a Stormwater Management Action Plan for at least one new high priority catchment or additional actions for an existing SMAP.

This project action will be similar to the SMAP the City completed for the Chennault Beach Creek catchment. The Draft Permit condition is mostly the same as Condition S5.C.1.d.i. in the current permit, except that it specifies projects that address transportation-related runoff, should be considered including those that address tire wear runoff. It is expected that Brewery Creek or Smuggler’s Gulch catchments, both which are high priority for the City will be the selected catchments for completion of a new SMAP.

Project Rationale

This project serves to both meet the conditions of the Draft Phase II NPDES Permit, which are likely to be included in the Final Permit when it is issued in August 2024, and to coordinate with existing City priorities.

Anticipated Elements

The key elements of this project include the following.

1. Select a high priority catchment from list of high priority catchments previously identified in the SMAP process. It is anticipated that either Smugglers Gulch or Brewery Creek catchments will be selected, depending on timing of redevelopment plans and/or other stormwater project development in these catchments.
2. Complete SMAP according to permit requirements and SMAP guidelines.
 - a. Describe stormwater facility retrofits needed.
 - b. Identify land management/development strategies and actions for water quality management.

- c. Identify targeted, enhanced, or customized implementation of stormwater management actions such as operations, public education and outreach, IDDE, and source control.
- d. Identify changes needed to long-range plans.
- e. Develop an implementation schedule and budget sources for short- and long-term actions.
- f. Identify a process and schedule for future assessment and feedback to improve implementation procedures.

Expected Outcome

The expected outcome of this action is compliance with the City's Phase II NPDES Permit, and specific implementable actions and commitment to complete actions within the high priority catchment.

Deliverables

The deliverables associated with this action include the following:

1. Draft SMAP.
2. Final SMAP.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for the City or a consultant to complete this action. It is assumed that a Consultant will complete the SMAP.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		36	0.02				
1	Draft Stormwater Management Action Plan			180	\$36,000.00		
2	Final Stormwater Management Action Plan			60	\$12,000.00		
Total		36	0.02	240	\$48,000.00		

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	36	0.02	\$3,060.00		\$3,060.00
TOTAL	36	0.02	\$3,060.00		\$3,060.00
OR Consultant/Contractor					
Consultant			\$48,000.00		\$48,000.00
TOTAL			\$48,000.00		\$48,000.00

Table 4. Staff Distribution Summary

City Staff Distribution ¹	One-time	
	Hours	FTE
Surface Water Staff	36	0.02



DEPARTMENTS		
Public Works/Surface Water		
OBJECTIVE		
Map and assess tributary drainage acreages to stormwater treatment and flow control facilities operated by Mukilteo.		
NEW OR EXISTING		
New		
RESOURCE NEEDS (One-time)		
<u>City Staff</u>	<u>OR</u>	<u>Consultant</u>
0.14 FTE		\$42,000.00
CONSIDERATIONS		
This programmatic action addresses conditions in the draft NPDES permit. The permit conditions may change before the permit becomes final.		

Project Description

Ecology's Draft NPDES Phase II Permit was issued in August 2023, outlining draft conditions that are expected to be in the next permit that goes into effect in August 2024. Condition S5.C.5.b.ii. requires the City to develop methodology for mapping and assessment of acreage that is tributary to outfalls or discharge points that have stormwater treatment or flow control facilities owned or operated by the City. The result will be an assessment of all land area in the City that are managed or unmanaged by stormwater treatment or flow control BMPs/facilities.

Project Rationale

This project serves to both meet the conditions of the Draft Phase II NPDES Permit, which are likely to be included in the Final Permit when it is issued in August 2024. This project action will also help identify areas that could benefit from stormwater retrofit.

Anticipated Elements

The key elements of this project include the following.

1. Develop scope of project and methodology to meet goals, including:
 - a. Types of facilities, outfalls, discharge points to include in the analysis.
 - b. Ownership of facilities to include in analysis (City, private, other jurisdictions, etc.).
 - c. Level of detail (facility as-builts, conveyance networks, topography, or all of the above).
 - d. How to manage by-pass flows? If flow is bypassed from a tributary area during certain events, is the area counted or partially counted in the analysis?
 - e. How to manage de-facto facilities such as wetlands not designed for flow control or water quality, but providing those functions naturally?
 - f. Whether analysis should break-down areas treated by facility type and/or age of facility? What types

of filters should be included for more refined analysis?

2. Design GIS-based analysis to identify tributary areas to facilities.
3. Conduct test analysis.
4. Review test analysis and refine analysis based on initial test results.
5. Conduct final analysis.

Expected Outcome

The expected outcome of this action is compliance with the City's Phase II NPDES Permit, and identification of land area treated and untreated by stormwater management facilities or BMPs in Mukilteo.

Deliverables

The deliverables associated with this action include the following:

1. Draft summary map of treated and untreated areas.
2. Final summary map of treated and untreated areas.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		32	0.02				
1	Develop scope and methodology	20	0.011				
2	Design GIS-based analysis	40	0.022				
3	Conduct test analysis	60	0.034				
4	Review and assess test analysis	30	0.017				
5	Conduct final analysis	40	0.022				
6	Prepare final summary	20	0.011				
Total		242	0.14				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	242	0.14	\$20,751.50		\$20,751.50
TOTAL	242	0.14	\$20,751.50		\$20,751.50
OR Consultant/Contractor					
Consultant			\$42,000.00		\$42,000.00
TOTAL			\$42,000.00		\$42,000.00

Table 4. Staff Distribution Summary

City Staff Distribution ¹	One-time	
	Hours	FTE
Surface Water Staff	60	0.03
IT/GIS Staff	182	0.1



DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Develop tracking and implementation program to track stormwater facility retrofits, investments, and progress toward water quality treatment.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

City Staff	OR	Consultant
0.13 FTE		\$46,000.00

RESOURCE NEEDS (Annual)

City Staff	OR	Consultant
0.017 FTE		\$5,980.00

CONSIDERATIONS

This programmatic action addresses conditions in the draft NPDES permit. The permit conditions may change before the permit becomes final.

Project Description

Ecology’s Draft NPDES Phase II Permit was issued in August 2023, outlining draft conditions that are expected to be in the next permit that goes into effect in August 2024. Conditions S5.C.7. and S5.C.7.b. requires the City to implement a program to control or reduce stormwater discharges of the State from areas of existing development and to focus on strategic stormwater investments over longer planning timeframes, and to document methods used to implement retrofits for equivalent acreages required by the permit (Mukilteo’s required areas is 2.2 acres over the life of the permit).

Project Rationale

This project serves to both meet the conditions of the Draft Phase II NPDES Permit, which are likely to be included in the Final Permit when it is issued in August 2024. This project action will also help track City progress for converting land area that is currently untreated by stormwater management to treated by stormwater management facilities.

Anticipated Elements

The key elements of this project include the following.

1. Develop a tracking process for stormwater investments including the following:
 - a. Stormwater retrofits, including type, location, and acreage treated. These retrofits receive 100% credit for all acreage treated toward the City’s goal of 2.2 acres.
 - b. Stormwater maintenance projects over \$25K, such as sediment removal from facilities, including location and acres treated. These projects receive 50% credit for acres treated toward the City’s goal of 2.2 acres.
 - c. Property acquisition that preserves open space, forest, and riparian habitat, including location and acres preserved. These projects receive 50% credit for acres acquired toward the City’s goal of 2.2

acres.

- d. Restoration projects that restore riparian buffers, forest cover, or permanently remove impervious surface, including location and acres restored. These projects receive 50% credit for acres restored toward the City's goal of 2.2 acres.
 - e. Curb miles of street sweeping and number of events on the same route. These project actions receive credit at a rate of 0.1 times curb miles swept times (number of events per year minus 3).
 - f. Linear feet of stormwater pipe cleaned each year. These project actions receive credit at a rate of 0.1 times the linear feet of lines cleaned.
2. Implement the tracking process in GIS, using map-based tools and inputs from Stormwater Operations and Surface Water staff.
 3. Develop easy-to-understand dashboards that tie to GIS maps and data and provide real-time information about the City's progress relative to the Permit goals.
 4. Update data that feeds into tracking process annually at a minimum, but preferably on a quarterly basis.
 5. Report results in NPDES Annual Report.

Expected Outcome

The expected outcome of this action is compliance with the City's Phase II NPDES Permit, and provide transparency to the Mukilteo Community about stormwater program implementation and progress toward improving water quality.

Deliverables

The deliverables associated with this action include the following:

1. Draft tracking process (assumed to be GIS-based) and web-based dashboard.
2. Final tracking process (assumed to be GIS-based) and web-based dashboard.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action.

Table 1. Estimated Task Costs¹

Task	Description	City Staff		Consultant/Contractor Staff			
		Labor Hours	FTE	Labor Hours	Labor Cost	Direct Costs	Subtotal Contractor/Consultant
One-time							
PM		30	0.02				
1	Develop tracking process	80	0.045				
2	Implement tracking process	80	0.045				
3	Develop dashboards	40	0.022				
Total		230	0.13				
One-time							
PM		4	0.002				
1	Quarterly updating of data	20	0.011				
2	Phase II NPDES Permit Reporting	6	0.003				
Total		30	0.017				

¹Planning Level Cost Assumptions are shown in Table 2.

Table 2. Planning Level Cost Assumptions

FTE and Rate Assumption	
Project Management (0.15* FTE)	0.15
Available staff hours (hrs/year/FTE)	1747
Consultant Staff Rate	\$200.00
Average City Staff Rate	\$60.00

Table 3. Staff and Cost Summary

Summary	Hours	FTE	City or Consultant Labor Cost	Other Direct Costs	Total
One-time Costs					
City					
City Staff	230	0.13	\$13,607.00		\$13,607.00
TOTAL	230	0.13	\$13,607.00		\$13,607.00
OR Consultant/Contractor					
Consultant			\$46,000.00		\$46,000.00
TOTAL			\$46,000.00		\$46,000.00
Annual Costs					
City					
City Staff	30	0.017	\$1,932.00		\$1,932.00
TOTAL	30	0.017	\$1,932.00		\$1,932.00
OR Consultant/Contractor					
Consultant			\$5,980.00		\$5,980.00
TOTAL			\$5,980.00		\$5,980.00

Table 4. Staff Distribution Summary

City Staff Distribution ¹	One-time		Annual	
	Hours	FTE	Hours	FTE
Surface Water Staff	30	0.017	20	0.011
IT/GIS Staff	200	0.11	10	0.006



DEPARTMENTS

Public Works/Surface Water

OBJECTIVE

Obtain easements to access and maintain public infrastructure located on private property.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

\$300,000

CONSIDERATIONS

This programmatic action addresses conditions in the draft NPDES permit. The permit conditions may change before the permit becomes final.

Project Description

Stormwater infrastructure owned and operated by the City is located on public property for the most part. However, there are situations where public infrastructure is connected to pipes that convey flow through private property and are not accessible to the City for inspection and/or maintenance. Easements are typically obtained when private property is needed for stormwater infrastructure. During a recent evaluation of Mukilteo stormwater pipe conditions, several pipe segments were identified on private property that connected to the public stormwater system on one or both ends and would benefit from inspection to determine potential impacts to the City system. Thirty locations have been flagged as needing easements to facilitate City access for infrastructure inspection and maintenance.

Project Rationale

This project will provide the City with the ability to inspect and maintain integral parts of the City's stormwater conveyance network, by including private pipes that connect with City infrastructure on upstream and downstream ends.

Anticipated Elements

The key elements of this project include the following.

1. Prioritizing private properties and pipe segments that would benefit from inspection and potential maintenance.
2. Entering negotiations with property owners to obtain legal easements for the purposes of conducting evaluation and/or maintenance of stormwater infrastructure.

Expected Outcome

The expected outcome of this action is obtainment of easements that allow stormwater staff to conduct their jobs in a more efficient way because there are legal agreements in place that allow necessary utility activities to take place.

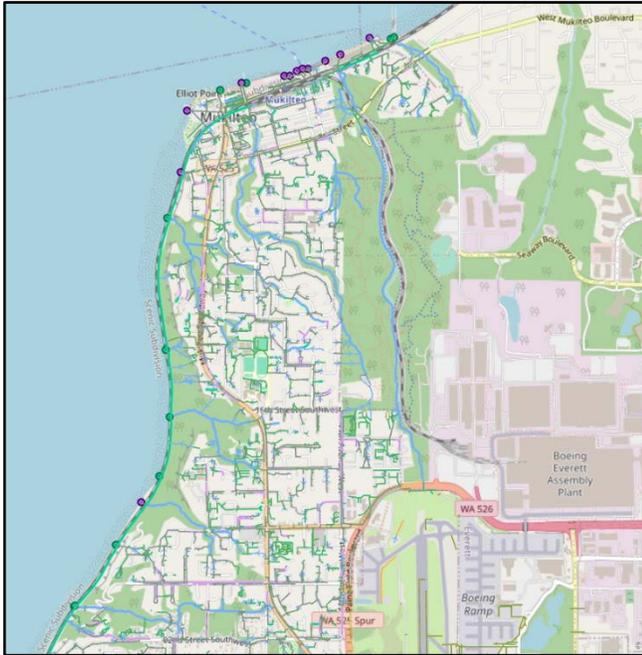
Deliverables

The deliverables associated with this action include the following:

1. Up to 30 legal easements recorded on properties for which the City needs access.

Planning Level Cost Estimate

Table 1 outlines the tasks and estimated costs for City staff to complete this action. This estimate includes \$300,000 for obtaining easements, including the cost of easements. It will depend on negotiations on how many easements can be obtained for this dollar value.



DEPARTMENTS
Public Works/Surface Water/GIS
OBJECTIVE
Continue to fund GIS staff to support stormwater analyses and initiatives.
NEW OR EXISTING
Existing
RESOURCE NEEDS (Annual)
\$8,628/year (2023 dollars)
CONSIDERATIONS
GIS staff provide on-going support to the Surface Water Utility by conducting requested analyses, managing databases, managing operations dashboards, and providing data to support the City's NPDES annual report.

Project Description

The Surface Water Utility relies on City GIS staff housed in another department to provide on-going GIS services to meet their needs. The Utility has paid for GIS staff time from the Surface Water Utility fund as an interdepartmental transfer and will continue to do so.

Project Rationale

GIS analyses and support are critical to the functionality of the Surface Water Utility. Stormwater infrastructure mapping is provided in GIS, inventory information and data is housed in GIS, and analyses to assess and prioritize condition and track repairs are conducted in GIS. This project action is to ensure that funding continues for GIS staff to meet Surface Water Utility needs.

Anticipated Elements

The key elements of this project include the following.

1. Fund City GIS professionals to manage routine surface water system data, track operations and maintenance, conduct analyses, and respond to requests from the Surface Water Utility.
2. Independent actions in this Plan that are GIS-intensive have assumed separate funds for GIS staff. The funds assumed in this action are only for routine GIS support.

Expected Outcome

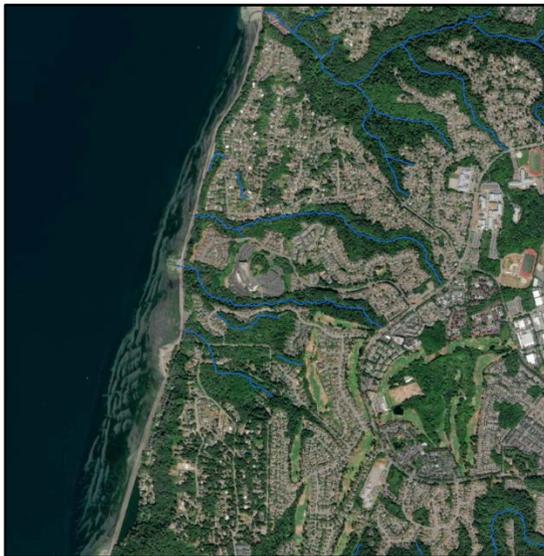
The expected outcome of this action is continued GIS support for the Surface Water Utility.

Deliverables

The deliverables associated with this action are variable.

Planning Level Cost Estimate

This cost estimate assumes \$8,628/annually for City staff time in 2023 dollars.



DEPARTMENTS
Public Works/Surface Water/GIS
OBJECTIVE
Ensure that Mukilteo is included in Snohomish County’s annual collection of aerial imagery by paying for the imagery through an existing ILA.
NEW OR EXISTING
New
RESOURCE NEEDS (Annual)
\$5,292.00/year
CONSIDERATIONS
Utilize the existing ILA with Snohomish County, update the scope of work, and transfer funds to pay for aerial imagery that includes Mukilteo.

Project Description

The City uses aerial imagery in Surface Water Analysis to identify development trends, land cover, tree cover, and impervious surfaces. It’s important to have updated aerial imagery to conduct analyses. This project will leverage data collected annually by Snohomish County and ensure that Mukilteo is included in the aerial imagery flights.

Project Rationale

This project will collect data that makes surface and stormwater analyses more efficient by having the appropriate data available.

Anticipated Elements

The key elements of this project include the following.

1. Work with Snohomish County to update ILA if needed.
2. Revise an existing scope of work that was developed in 2020 to include Mukilteo when Snohomish County was last conducting aerial imagery flights.
3. Acquire aerial imagery for Mukilteo.

Expected Outcome

The expected outcome of this action is having high quality aerial imagery of the City available for City and public use.

Deliverables

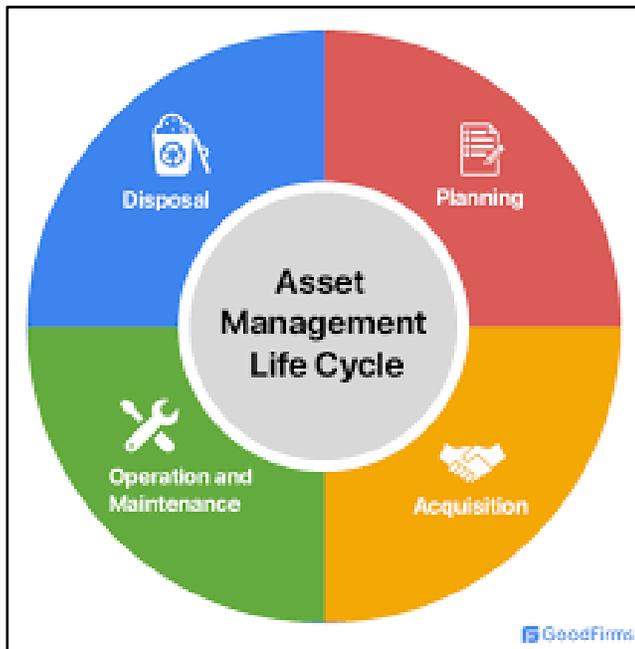
The deliverables associated with this action include the following:

1. 31 square miles of 3” AccuPlus EagleView Pictometry Product
2. 12 square miles of 9” AccuPlus EagleView Pictometry Product

Snohomish County provided an estimate for the services and products they use (EagleView Regional Aerial Imagery Sharing).

Planning Level Cost Estimate

The annual estimated cost for obtaining aerial imagery from Snohomish County is \$5,292 (in 2023 dollars).



DEPARTMENTS

Public Works/Surface Water/GIS

OBJECTIVE

Purchase asset management software to make managing stormwater assets more efficient.

NEW OR EXISTING

New

RESOURCE NEEDS (One-time)

~\$80,000 estimated to purchase software

RESOURCE NEEDS (Annual)

~\$20,000 estimated annual maintenance/subscription fee

CONSIDERATIONS

This software would be used by the entire City and should be purchased with that in mind to manage all of the City's assets.

Project Description

The Surface Water Utility's stormwater infrastructure is currently managed through a variety of software programs and tools including GIS, excel, and other programs. An integrated software program that captures the City's infrastructure inventory, condition, maintenance schedule, maintenance history, repair schedules, alerts to crews, and other elements of asset management will help the City more efficiently manage their infrastructure.

Project Rationale

The City has outgrown the tools they have been using to manage their assets, especially when there is staff turnover, and different staff have different methods and work-arounds for inventorying and tracking maintenance. A program designed to do this would alleviate frustration by staff and set up systems that are easy for everyone to use and access.

Anticipated Elements

The key elements of this project include the following.

1. Research different asset management systems that would work for the Utility and other City departments.
2. Test out different software tools if possible and talk to other jurisdictions about their successes and challenges with different products on the market.
3. Select and purchase software that will work for the City.
4. Transfer data and documentation into the new software program.
5. Train employees on the use of the new software.

Expected Outcome

The expected outcome of this action is better ability to track stormwater inventory and details about each stormwater asset, including condition, maintenance history, repair needs, and upcoming work orders.

Deliverables

The deliverables associated with this action include the following:

1. Purchase asset management software.
2. Subscribe or pay for annual software maintenance fees.

Planning Level Cost Estimate

This cost estimate includes the estimated cost for asset management software and the annual subscription or maintenance fees typically associated with such software. It does not include time for staff to evaluate different software programs, transfer data and documents into the program, or train staff on the use of the software. The one-time estimated cost for purchase of the asset management software is \$80,000 (2023 dollars), with an annual cost of \$20,000 (2023 dollars).



DEPARTMENTS
Public Works/Surface Water/GIS
OBJECTIVE
Update existing Surface Water Comprehensive Plan beginning in 2030 for the next 6 year timeframe.
NEW OR EXISTING
New
RESOURCE NEEDS (One-time)
~\$500,000
RESOURCE NEEDS (Annual)
None.
CONSIDERATIONS
It is assumed the next update to the Comprehensive Plan will begin in 6 years following the end of this Plan's planning horizon.

Project Description

The Surface Water Comprehensive Plan provides the planning framework for the activities and resources needed to conduct the Surface Water Utility's work.

Project Rationale

A new Surface Water Comprehensive Plan will likely be needed at the end of this Plan's planning horizon because a new NPDES Phase II Permit will be issued and there may be additional surface water design requirements or manual changes that need to be addressed. Additionally, it provides the Utility an opportunity to reflect on how well goals and objectives of this plan were met, and whether there are changes needed in the focus or direction of the Utility for meeting the surface water needs of its customers.

Anticipated Elements

The key elements of this project include the following.

1. Evaluate existing conditions, programs, and projects and reflect on accomplishments, challenges, and future needs.
2. Interview Utility staff and City staff that work with the Utility for input on challenges and Utility needs.
3. Conduct community outreach and public engagement.
4. Develop projects and programs for the next 6-year implementation period.
5. Conduct financial analysis.
6. Prepare Surface Water Comprehensive Plan.

Expected Outcome

The expected outcome of this action is to have a guide for Surface Water Utility activities, resource needs, and projects for a 6-year planning horizon.

Deliverables

The deliverables associated with this action include the following:

1. Surface Water Comprehensive Plan.

Planning Level Cost Estimate

This estimated cost for the Surface Water Comprehensive Plan is \$500,000 in 2023 dollars.



DEPARTMENTS
Public Works/Surface Water
OBJECTIVE
Ensure staff have the training to do their jobs correctly and consistently, and appropriate certifications, if needed.
NEW OR EXISTING
New
RESOURCE NEEDS (One-time)
None.
RESOURCE NEEDS (Annual)
\$5,000
CONSIDERATIONS
Training needs and types are expected to vary depending on staff and staff turnover.

Project Description

It is important that staff have the appropriate training, whether on-the-job, or from outside resources to do their jobs correctly and consistently. This action sets aside funding to pay for training and/or certification.

Project Rationale

There has been fairly significant staff turnover in recent years within the Surface Water Utility and at the City of Mukilteo. This makes it more important than ever that staff have the same training and/or certification to conduct their jobs to ensure that the stormwater system is operated and maintained as it should be.

Anticipated Elements

The key elements of this action are to be determined based on need, but may include in-house training, remote classes, or in-person local training events and certification opportunities.

Expected Outcome

The expected outcome of this action is to have a fully trained staff that have opportunities to learn and advance in their careers.

Deliverables

There are no deliverables associated with this action.

Planning Level Cost Estimate

This estimated cost for training and certification is \$5,000 annually in 2023 dollars.



Appendix

Financial Analysis Documentation

F



Surface Water Utility Rate Study

FINAL REPORT
January 2024

Washington

7525 166th Avenue NE, Ste. D215
Redmond, WA 98052
425.867.1802

Oregon

5335 Meadows Road, Ste. 330
Lake Oswego, OR 97035
503.841.6543

Colorado

2755 Canyon Blvd.
Boulder, CO 80302
719.284.9168

www.fcsgroup.com

This entire report is made of readily recyclable materials, including the bronze wire binding and the front and back cover, which are made from post-consumer recycled plastic bottles.



FCS GROUP
Solutions-Oriented Consulting

January 18, 2024

Ms. Erin Nelson

Subject: Surface Water Utility Rate Study

Dear Ms. Nelson:

Attached is the final report on the results of the Surface Water Utility Rate Study. We want to thank you and City staff for your assistance and participation in helping us gather information and in discussing the various issues. On behalf of the FCS GROUP study team, it has been a pleasure to work with you and staff on this study. Please let me know if you have any questions. I can be reached at (425) 336-1865 or JohnG@fcsgroup.com.

Sincerely,



John Ghilarducci
Project Principal

CC:

Amanda Levine, Project Consultant, FCS GROUP

TABLE OF CONTENTS

Table of Contents	i
Section I. Introduction.....	2
Section II. Fiscal Policies.....	4
Section III. Revenue Requirement	7
Section IV. Conclusion	15

Section I. INTRODUCTION

Background

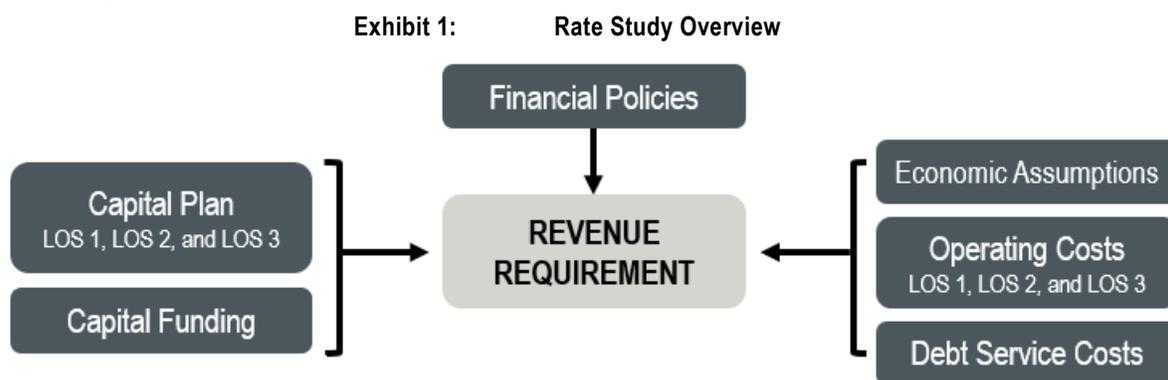
Located in Snohomish County, the City of Mukilteo (“City”) owns and operates a municipal surface water utility. According to the City website, the mission of the utility is “to maintain, operate and administer the City’s natural and developed surface and stormwater conveyance systems.” Today the City provides an array of surface water services to address ongoing regulatory obligations, pollution, localized flooding, and landslide hazards.

The City bills and collects fees from customers within its service area through a “City stormwater” line-item on each customer’s water and wastewater invoice, billed every two months. The charge is calculated based on equivalent residential units, or ERUs, where 1 ERU = 2,500 square feet of impervious surface area. As stated by the City, “residential properties are billed for one ERU, regardless of actual impervious surface coverage. Non-residential properties are calculated based on actual square footage of impervious surface coverage. For example, if a non-residential property has 7,500 square feet of impervious surface, they are charged 3 ERUs ($7,500/2,500=3$).”

The recommended rate adjustments described in this report support the operational costs of the system, as well as future capital projects needed to meet the City’s goal of providing quality surface water services to its residents.

Rate Study Overview

The purpose of this rate study is to develop a funding plan (“revenue requirement”) for the City’s surface water utility for the 7-year study period from 2023-2029, which aligns with the City’s capital improvement program (CIP). Within this study, there are three (3) unique levels of service (LOS) for both the CIP and operating expense plans. A revenue requirement identifies the total revenue needed to fully fund the utility on a standalone basis considering operating and maintenance expenditures, fiscal policy achievement, and the capital project needs of the utility. **Exhibit 1** describes the general methodology of the rate study.



Rate Revenue Requirement Results

The financial plan for each surface water LOS indicated rate increases are necessary to (a) fully fund the operation of the City’s systems and complete each utility’s proposed CIP projects, (b) meet

reserve targets in accordance with City policies and (c) end each year with positive cash flow through 2029. The proposed rate increases are summarized in **Exhibit 2** below.

Exhibit 2: Surface Water Utility Annual Rate Increases 2023-2029 (LOS 1-LOS 3)

	2023	2024	2025	2026	2027	2028	2029
Level of Service 1							
Annual Increase	0.00%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
Monthly Rate	\$23.43	\$24.54	\$25.71	\$26.93	\$28.21	\$29.55	\$30.95
Level of Service 2							
Annual Increase	0.00%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%
Monthly Rate	\$23.43	\$24.58	\$25.78	\$27.05	\$28.37	\$29.76	\$31.22
Level of Service 3							
Annual Increase	0.00%	24.50%	24.50%	24.50%	15.00%	0.00%	0.00%
Monthly Rate	\$23.43	\$29.17	\$36.32	\$45.21	\$52.00	\$52.00	\$52.00

Section II. FISCAL POLICIES

II.A. INTRODUCTION

The basic framework for evaluating utility revenue needs includes implementing sound fiscal policies. Several policy topics are important to consider further as part of managing the finances of the City, including operating reserves, capital reserves, debt management policies, and rate funded capital. For financial modeling purposes, the surface water utility's reserves and cash on hand are split into three separate funds: Operating, Debt Service and Capital.

Operating Reserve

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. Industry practice for utility operating reserves typically ranges from 30 days (8%) to 120 days (33%) of operating expenses, with the lower end more appropriate for utilities with stable revenue streams and the higher end of the range more appropriate for utilities with significant seasonal or consumption-based fluctuations.

Recommended Policy: Consistent with previous City targets, achieve a year-end minimum balance target of at least 60 days of total annual operating expenses.

This equates to roughly \$640,000 in 2023 based on budgeted operating expenditures of \$3.9 million.

Capital Reserve

This reserve provides a source of emergency funding for unexpected asset failures or other unanticipated capital needs. This capital reserve policy is not intended to guard against catastrophic system failure or extreme acts of nature. Given these different purposes, there are a variety of potential benchmarks for setting a minimum balance for this fund – options include a percentage (commonly 1 – 2%) of the original cost of fixed assets, a rolling multi-year average of capital costs, or an amount determined sufficient to fund an equipment or asset failure. Note that as of the writing of this report, the City's fixed asset documentation was considered incomplete and therefore was not utilized to set the capital reserve.

Recommended Policy: After discussions with City staff, the surface water utility's capital reserve target aims to hold approximately \$2.5 million in cash and includes both the operating and capital reserve balances combined. This value is intended to represent the funds sufficient for an emergency equipment repair, or a major asset failure.

Typically, as a City completes its CIP, it is prudent to increase the reserve target to better reflect the cost of emergency replacement as system value increases. Capital reserves larger than the stated fixed amount above may be reasonable if the City is saving for future capital projects that cannot be funded with same-year rate revenues, or if total fixed assets grow substantially in the future.

Debt Service

The City does not currently have any outstanding surface water-related debt. Based on the proposed level of service options, it is not anticipated that the surface water utility will need to borrow to fund its 2023-2029 capital program. However, if the City were to ever issue debt, the debt-related policies in the following sections would apply.

Debt Reserve

A debt reserve is most often required as a condition of bond issuance, though some state loan programs also require a reserve. The reserve intends to protect bondholders (or the agency issuing loans) from the risk of the borrower defaulting on their payments and is most often linked to either average annual debt service or maximum annual debt service.

Recommended Policy: The City should aim to meet the reserve targets outlined in any future bond covenants.

Debt Service Coverage

Debt service coverage is typically a requirement associated with revenue bonds and some state loans, and it is an important benchmark to measure the riskiness of the surface water utility's ability to repay debt. Coverage is most easily understood as a factor applied to annual debt service. In such a case, if it issues revenue bonds, the City agrees to set rates to meet operating expenses and not only pay debt service but to collect an additional 25% above bonded debt service (commonly referred to as 1.25x). The extra revenue is a "cushion" that assures bondholders that the utility debt service will be paid on time.

Recommended Policy: Maintain debt service coverage of at least 1.25x on any future debt issues.

Rate Funded System Reinvestment (Rate Funded Capital)

Rate funded system reinvestment is the funding of long-term infrastructure replacement needs through a regular (annual) and predictable rate provision. Most commonly, utilities that have addressed replacement funding needs have used historical (original cost) depreciation expense as the basis for a reasonable level of reinvestment in the system. This strategy can help minimize (or eliminate) a utility's reliance on debt.

Recommended Policy: We are not assuming any rate funded capital targets during this study; however, the City is investing in the GIS capability to track current surface water assets.

We recommend the City establish a target level based on a percent of annual depreciation expenses in the future, once the data is available.

Exhibit 3 provides a summary of the recommended fiscal policies for the City’s surface water utility.

Exhibit 3: Summary of Fiscal Policies

Policy	Recommended Targets
Operating Reserve	Target: 60 days of operating expenses
Operating + Capital Reserve	\$2.5 million (60 days of operating expenses + the value of an emergency repair)
Debt Reserve	Based on terms outlined in covenants for existing / future debt obligations.
Debt Service Coverage	An internal policy target of at least 1.25.
Rate Funded Capital	City to establish a target level based on a percent of annual depreciation expense once the data is available

Section III. REVENUE REQUIREMENT

III.A. INTRODUCTION

This section presents the revenue requirement analysis results for the surface water utility. This study concludes that revenue from existing rates is not sufficient to fully fund the utility on a standalone basis, considering upcoming operating and maintenance expenditures, fiscal policy achievement, and capital project needs for each level of service. **Exhibit 4** summarizes the expected rate increases necessary to fund the operation and maintenance of the surface water system while achieving City-wide financial policies.

Exhibit 4: Surface Water Utility Annual Rate Increases 2023-2029 (LOS 1-LOS 3)

	2023	2024	2025	2026	2027	2028	2029
Level of Service 1							
Annual Increase	0.00%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
Monthly Rate	\$23.43	\$24.54	\$25.71	\$26.93	\$28.21	\$29.55	\$30.95
Level of Service 2							
Annual Increase	0.00%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%
Monthly Rate	\$23.43	\$24.58	\$25.78	\$27.05	\$28.37	\$29.76	\$31.22
Level of Service 3							
Annual Increase	0.00%	24.50%	24.50%	24.50%	15.00%	0.00%	0.00%
Monthly Rate	\$23.43	\$29.17	\$36.32	\$45.21	\$52.00	\$52.00	\$52.00

Economic & Inflation Factors

The operating and maintenance expenditure forecast largely relies on the City’s 2023 adopted budget. This is considered the “baseline” budget for the utility, and remains unchanged among all three level of service options. The line items in the baseline budget forecast are adjusted each year by utilizing one of the following applicable factors:

- General Cost Inflation – assumed to be 3.1 percent per year starting in 2023 based on 10-year average Consumer Price Index for All Urban Consumers (CPI-U) for Seattle-Tacoma-Bellevue.
- Construction Cost Inflation – assumed to be 6.0 percent throughout the forecast based on the 10-Year average Construction Cost Index (CCI) for Seattle.
- Taxes – State Business and Occupation tax rate of 1.75 percent (taxable revenue above \$1.0 million threshold).
- Personnel Cost Inflation – based on the 10-year average Employment Cost Index (ECI) in total compensation and in total benefits, as well as discussions with City staff.
 - Labor Cost Inflation: Assumed to be 4.5 percent throughout the forecast.
 - Benefits Cost Inflation: Assumed to be 5.0 percent throughout the forecast.

- Fund Earnings – assumed to be 1.75 percent per year based on historical earnings reports from the State’s Local Government Investment Pool (LGIP), and discussions with City staff.
- Customer Account Growth – assumed to be 0.25 percent throughout forecast based on discussions with City staff at the time of analysis.

Fund Balances

The surface water utility began 2023 with roughly \$7.0 million in cash or cash equivalents. For forecasting purposes, operating resources and uses are tracked separately from capital resources and uses. **Exhibit 5** shows that of the \$7.0 million in beginning cash, \$4.5 million is available for future capital projects after accounting for 2023’s combined operating and capital reserve targets.

Exhibit 5: Cash or Cash Equivalent Balances

Description	2023 Beginning Balance
Total Beginning Cash	\$7.0 million
Less: Operating & Capital Reserves	\$2.5 million
Available for Future Capital Projects	\$4.5 million

Existing Debt Obligations

As noted earlier, the City has no current outstanding surface water debt. Though the proposed level of service scenarios do not require issuance of new debt, if the City were to borrow in the future for an unforeseen cost, it may be prudent to consider the following:

- While cash funding might be less expensive in the long run because there is no interest cost, debt funding may be practical in some situations since it allows for the payment of costs over an extended period. Utilizing debt might also allow the City to complete projects more quickly, thereby avoiding some inflation costs.
- Using debt to spread the cost over time also promotes “generational equity,” ensuring that future customers pay for their proportionate share of system costs.
- The City’s ability to meet debt service coverage and other debt-related requirements may limit the amount of debt that it can issue.
- Excessive amounts of outstanding debt can affect a utility’s credit rating (and its ability to secure low-interest debt).

III.B. LEVELS OF SERVICE

Operating and Maintenance Expenditures

Through Alta Terra Consulting LLC, FCS GROUP was provided a comprehensive list of staffing needs and programmatic costs by level of service. There are three (3) distinct levels of service within this study:

- **Level of Service 1** is designed to meet all current and anticipated Nation Pollutant Discharge Elimination System (NPDES) Phase II permit requirements as well as items that keep the utility running on a day to day basis.

- **Level of Service 2** is designed to meet all current and future NPDES Phase II permit requirements, as well as accomplish priority City surface water tasks like the Climate Action Plan, SW Rate Equity Evaluation, and Evaluation of Surface water Parks.
- **Level of Service 3** is designed to meet all NPDES requirements, proactively accomplish all City surface water tasks, and add staff to maintain surface water infrastructure under the highest level of service.

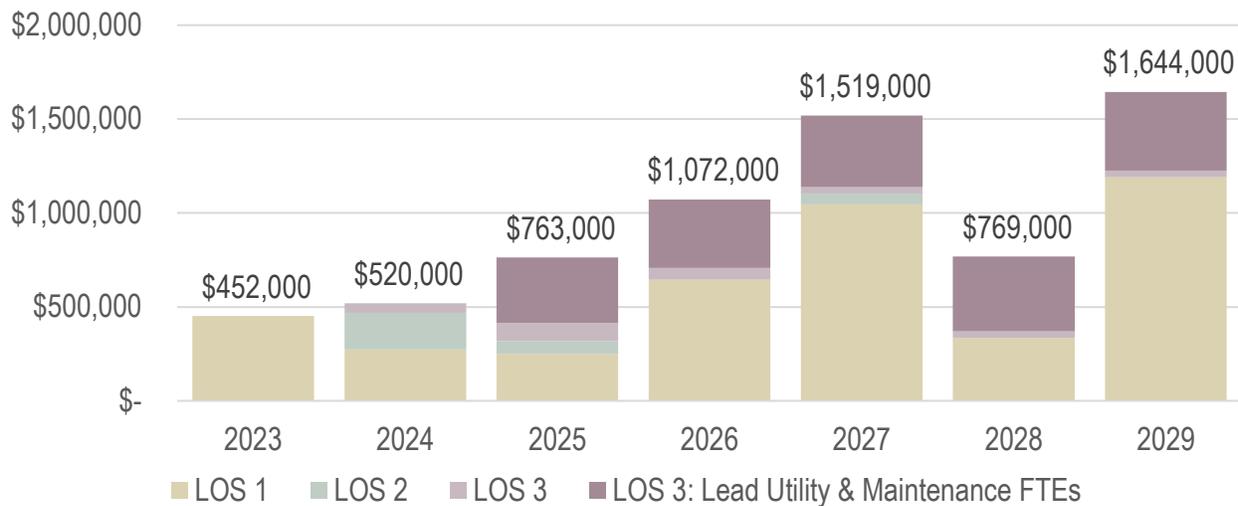
Exhibit 6 shows the comparison between all three LOS for staffing needs and programmatic costs, and which specific programs fall into which category. Note that all of these costs are in addition to the costs described as the utility’s “baseline” budget for 2023.

Exhibit 6: Level of Service Comparison for Staffing Needs and Programmatic Costs

LOS 1	LOS 2	LOS 3
✓ Private Facilities	✓ ALL LOS 1 ITEMS	✓ ALL LOS 1 ITEMS
✓ SOPs	PLUS	✓ ALL LOS 2 ITEMS
✓ Outfall Inspections	✓ SW Rate Equity	PLUS
✓ Education and Outreach	✓ Development Code Review	✓ Property Acquisition
✓ SW Comprehensive Plan	✓ Climate Action Plan	✓ CB Inspection Program
✓ Code Enforcement	✓ Surface Water Parks	✓ ILAs
✓ Staffing and Training Certification	✓ Street ROW for SW Management	✓ Open Channel Inspections
✓ Fire Department Coordination		✓ Stream Channel Sureys
✓ City Tree Plan		✓ Lead Utility Worker
✓ SMAP		✓ Maintenance Worker
✓ Assess Tributary Areas		✓ SW Facility Evaluation
✓ Surface Water Investment Tracking		✓ Inspect City Vaults
✓ GIS Expenses		✓ GSI
✓ Aerial Imagery		
✓ Easements		
✓ Asset Management Software		

LOS 1, 2, and 3 costs are spread over the forecast period. **Exhibit 7** below shows how the additional costs by LOS are added to the budget year by year.

Exhibit 7: Additional Operating Costs by Levels of Service



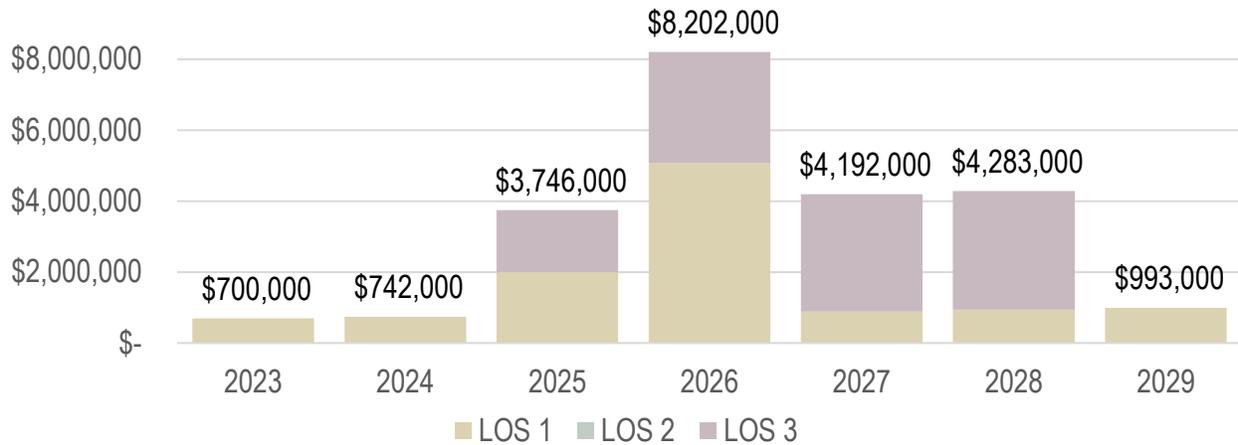
Capital Expenditure Forecast

FCS GROUP was provided with CIP costs through 2029. These costs are displayed by their LOS – falling into level 1, 2 or 3. As with the staffing needs and programmatic costs, these CIP costs are additive in that LOS 2 costs include all LOS 1 plus any additional costs, and LOS 3 is LOS 1, LOS 2, and other additional costs. A few summary notes related to the capital plan are provided below:

- Approximately 50 percent of the total capital improvement project costs (\$11.3 million in escalated dollars) are considered LOS 1. Because there are no specific additional LOS 2 capital costs, the remaining projects are categorized as LOS 3.
- The two most expensive project costs within the CIP are the annual pipe repair fund costs which average \$600,000 in escalated dollars per year, and the Chennault Beach Culvert which totals \$4.2 million in escalated dollars in 2026. Both of these projects are considered LOS 1 priorities.
- The Smuggler’s Gulch projects – construction and design for basins 1, 2 and 3 from 2025 through 2028 make up \$9.9 million of the LOS 3 costs. This is 86 percent of all LOS 3 capital costs.

Exhibit 8 shows the escalated CIP over the forecast by level of service.

Exhibit 8: Capital Improvement Program by LOS (Escalated \$)



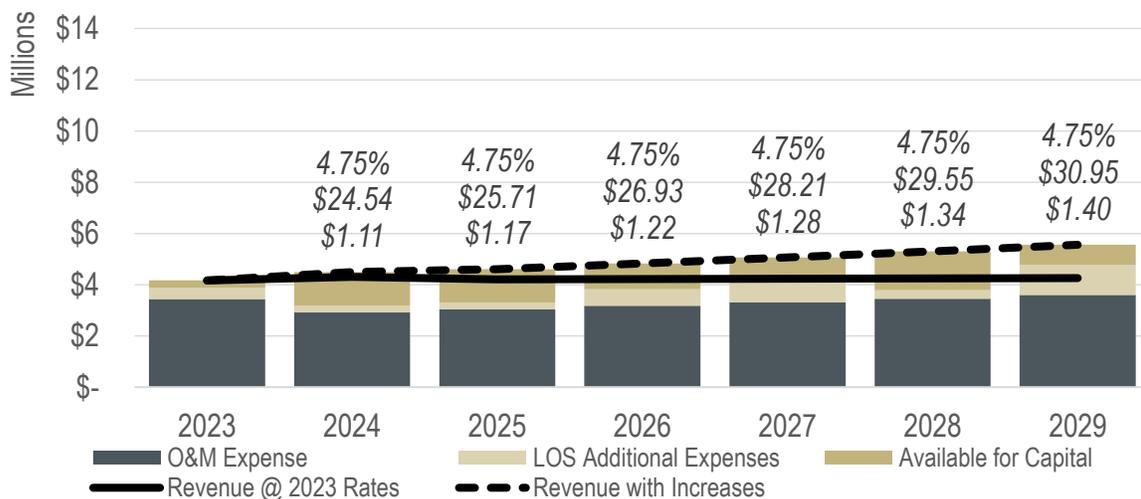
An additional note on the projects above – the City is actively applying for grants to 10 of the 13 capital improvement projects on their list. They could potentially secure just under \$14 million in funding, but at the writing of this report, no money has been secured yet. Because of this, the revenue requirement results described in the following sections do not assume any level of grant funding. However, if additional funds were to become available to the City from grants, that could be an appropriate time to reevaluate the rates, and potentially lessen the need for future rate increases.

III.C. REVENUE REQUIREMENT RESULTS

Capital Funding Strategy – LOS 1

The LOS 1 2023-29 capital plan totals \$11.3 million with cost escalation. The City plans to fund the capital improvement program with rate revenues and existing reserves (the City does not have surface water connection charges, any secured grants, or plans to use debt funding). **Exhibit 9** shows the required rate increases for revenues to be sufficient to pay for operating expenses and fund the capital plan.

Exhibit 9: LOS 1 Revenue Requirement Results

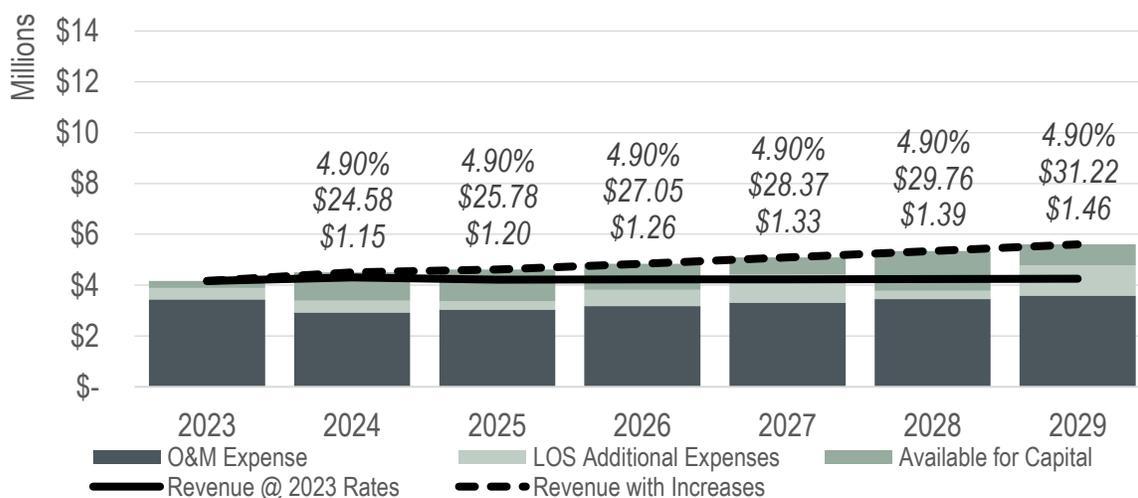


The rate increases for the surface water utility in LOS 1 are largely driven by the need to keep up with inflation, but also some larger one-time programmatic costs early on in the forecast (e.g., easements and asset management software). In all three LOS options, there is a drop in utility expenses in 2024 which allows the City more time to build up revenue for capital. As demonstrated in the graph, the City would not be able to pay for the LOS additions (the light tan blocks) throughout the whole forecast without rate increases.

Capital Funding Strategy – LOS 2

The LOS 2 2023-29 capital plan totals \$11.3 million with cost escalation. The City plans to fund the capital improvement program with rate revenues and existing reserves (the City does not have surface water connection charges, any secured grants, or plans to use debt funding). **Exhibit 10** shows the required rate increases for revenues to be sufficient to pay for operating expenses and fund the capital plan.

Exhibit 10: LOS 2 Revenue Requirement Results

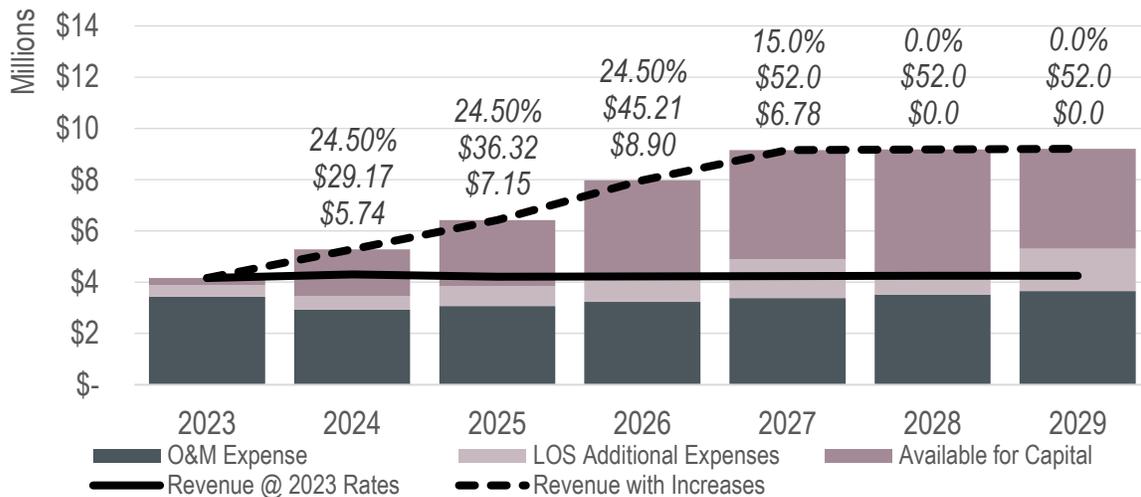


LOS 2 introduces approximately \$320,000 additional programmatic costs and staffing FTEs, and no additional CIP costs. From this increase, the utility needs a 0.15 percent rate increase in addition to the LOS 1 rate of 4.75 percent to meet all targets, and all utility requirements.

Capital Funding Strategy – LOS 3

The LOS 3 2023-29 capital plan totals \$22.9 million with cost escalation. The City plans to fund the capital improvement program with rate revenues and existing reserves (the City does not have surface water connection charges, any secured grants, or plans to use debt funding). **Exhibit 11** shows the required rate increases for revenues to be sufficient to pay for operating expenses and fund the capital plan.

Exhibit 11: LOS 3 Revenue Requirement Results



LOS 3 adds \$2.2 million of additional programmatic costs and staffing FTEs, (\$1.9 million of which are the cumulative salaries and benefits for a new lead utility worker and a new maintenance worker from 2025 through 2029), as well as \$11.5 million in additional CIP costs. Because of these large additions, the rate increases need to be larger in the beginning of the forecast.

Forecasted Reserves

For all level of service options, the recommended operating fund balance is 60 days of total annual operating expenditures, and the recommended combined operating and capital fund balance is set to \$2.5 million.

Exhibits 12, 13 and 14 show that for each LOS option, the utility is meeting these approximate targets.

Exhibit 12: LOS 1: Combined Operating & Capital Reserve Forecast

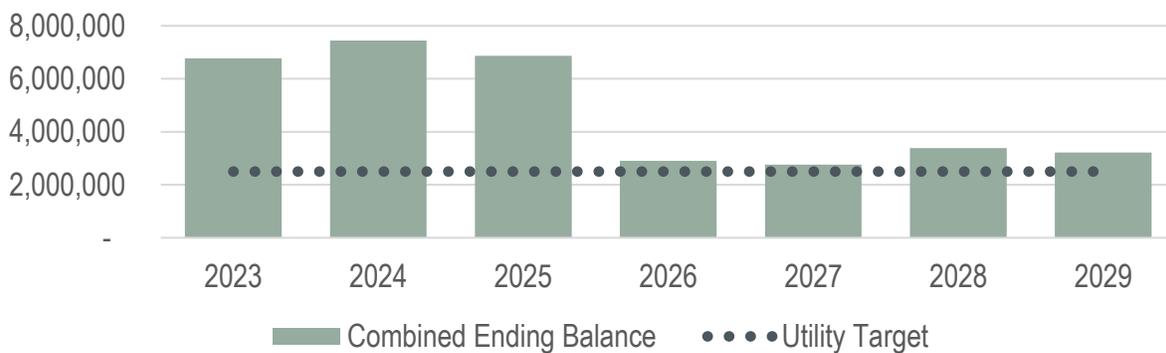


Exhibit 13: LOS 2: Combined Operating & Capital Reserve Forecast

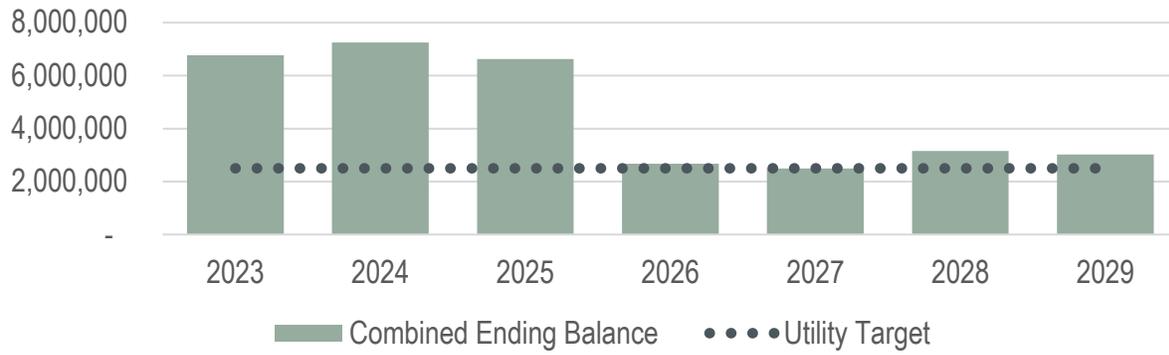
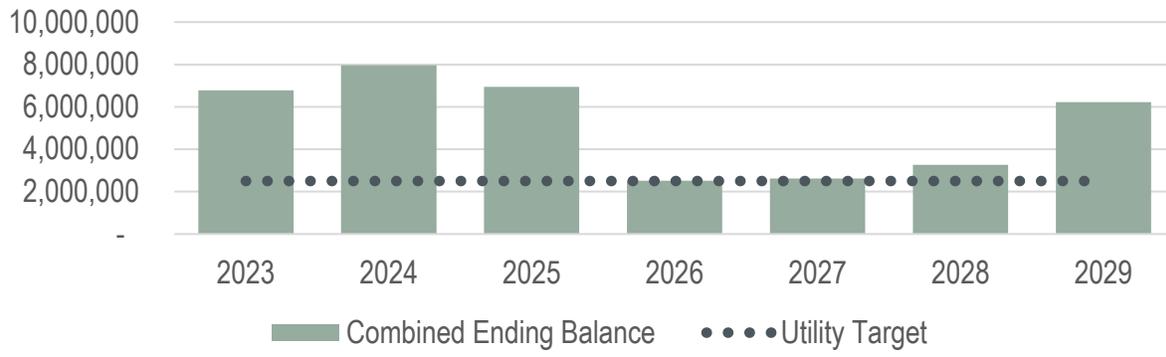


Exhibit 14: LOS 3: Combined Operating & Capital Reserve Forecast



Section IV. CONCLUSION

Recommendations

Based on discussions with City staff, FCS GROUP recommends City Council adopt one of the LOS rate plan options shown in **Exhibit 15**. All of these increases allow the utility to accomplish the following:

- Continue to fund existing operating expenses, plus cost escalation;
- Allow the utility to pay for operating costs associated with (at minimum) LOS 1;
- Allow the utility to rate fund (at minimum) \$11.3 million in capital projects from 2023-2029; and
- Maintain utility reserves at a healthy level throughout the forecast.

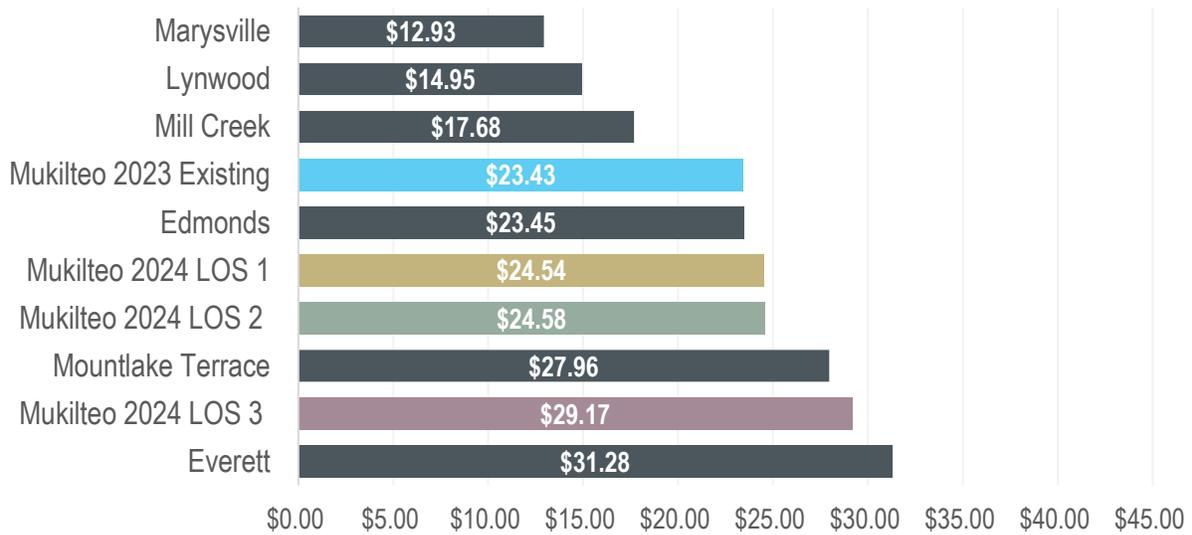
Exhibit 15: Surface Water Utility Annual Rate Increases 2023-2029 (LOS 1-LOS 3)

	2023	2024	2025	2026	2027	2028	2029
Level of Service 1							
Annual Increase	0.00%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
Monthly Rate	\$23.43	\$24.54	\$25.71	\$26.93	\$28.21	\$29.55	\$30.95
Level of Service 2							
Annual Increase	0.00%	4.90%	4.90%	4.90%	4.90%	4.90%	4.90%
Monthly Rate	\$23.43	\$24.58	\$25.78	\$27.05	\$28.37	\$29.76	\$31.22
Level of Service 3							
Annual Increase	0.00%	24.50%	24.50%	24.50%	15.00%	0.00%	0.00%
Monthly Rate	\$23.43	\$29.17	\$36.32	\$45.21	\$52.00	\$52.00	\$52.00

Single-Family Residential Rate Comparison

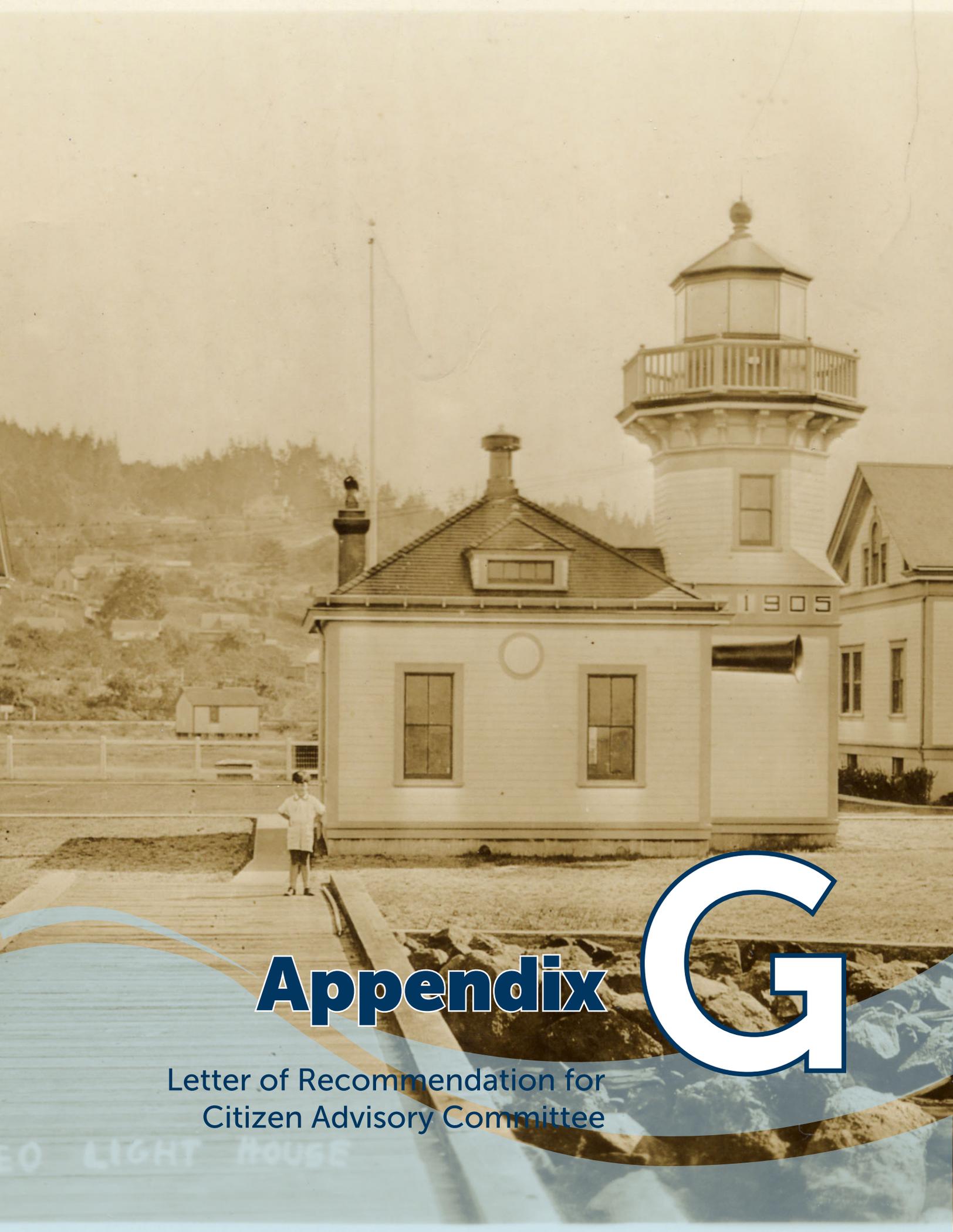
A rate survey of comparable utilities was performed, comparing the City’s monthly surface water billing to those of neighboring communities. **Exhibit 16** compares the City of Mukilteo’s monthly single-family residential rate for surface water services. Note that each jurisdiction has a unique set of geographic traits, customers, and system characteristics that can have a significant impact on rates. This rate survey was prepared using prevailing 2023 rates as published on each jurisdiction’s website.

Exhibit 16: Comparison of Monthly Single-Family Surface Water Rates



Updating This Study's Findings

It is recommended that the City revisit the study findings during the forecast period to check that the assumptions used are still appropriate and that no significant changes have occurred that would alter the results of the study. The City should use the study findings as a living document, comparing study outcomes to actual revenues and expenses each year. Any significant or unexpected changes may require adjustments to the rate strategy recommended in this report.



Appendix

G

Letter of Recommendation for
Citizen Advisory Committee

EO LIGHT HOUSE

BACKGROUND

The City of Mukilteo's (City) Surface Water Utility, a division of the Public Works Department, is responsible for the operation of the City's Municipal Separate Storm Sewer System, (MS4) and Phase II permit. The system consists of approximately 75 miles of pipe with 8" or greater diameter, 4,793 catch basins, and over 214 publicly owned flow control or treatment facilities.

The Surface Water Utility is updating its Surface Water Comprehensive Plan (SWCP), which was last prepared in 2015. The 2024 SWCP will serve as a guide for current and future Surface Water Utility personnel to mitigate water quality impacts from stormwater runoff to waters of the State within the City's jurisdiction and help city officials plan projects that maintain the City's Phase II permit and improve stormwater infrastructure. The 2024 SWCP will define appropriate levels of service for the surface water program, update capital projects and surface water program activities that support goals and regulatory requirements and evaluate financial alternatives for achieving program goals.

COMMUNITY ADVISORY COMMITTEE ROLE

As part of its public process, the City convened a Community Advisory Committee (CAC) to act as a sounding board during the SWCP's development. The City conducted a recruitment process to identify community members interested in participating in the CAC. The CAC consists of the following 5 Mukilteo community members who represent a broad cross-section of interests and perspectives.

Fred Baxter
Chuck Bernasconi
Sylvia Kawabata
Andrea Swisstack
Charles Tung

The CAC met 5 times (with a virtual and in-person option at each meeting) between September 2022 and November 2023. The meetings were conducted by City and consultant team staff. Each meeting was 1.5 hours long and consisted of presentations and discussions on the following topics.

- Surface water utility overview and planning process
- Challenges and opportunities
- Levels of Service
- Potential capital projects and programmatic strategies
- Facilities and equipment needs
- Rate Study

As a final task, the CAC was asked to provide the City Council with recommendations and advice that we would like the Council to consider as it deliberates and ultimately adopts the 2024 Surface Water Plan.

Recommendations

Early on in its existence the CAC identified a number of challenges and opportunities and believes strongly that they need to be addressed in the 2024 SWCP. These include:

- Ensuring there is adequate staffing to perform required duties (maintenance, enforcement, assistance)
- The desire for more education and outreach
- The desire for more technical assistance for property owners
- The need to more proactively maintain existing infrastructure
- Pursuing state and federal grants to help offset project costs
- Using right of way (ROW) and other city property for stormwater management
- Evaluating stormwater elements of the development code to find ways to improve understanding and implementation

At its last meeting, the CAC was presented with three options for Level of Service (LOS). Each option ensured that the surface water utility can meet its permit requirements and addressed the desire for more education and outreach and code enforcement. LOS 1 accomplishes that and includes funding for repair, replacement, and cleaning along with some smaller CIP projects. LOS 2 included items such as using the ROW and other city facilities for stormwater management and code review updates. LOS 3 included all of the items in LOS 1 and LOS 2 but also included additional programs such as property acquisition fund, green stormwater infrastructure and bioretention projects in Smuggler's Gulch. In order to accomplish the goals of LOS 3, additional staff is necessary and is included in the LOS 3 option.

LOS 1 will result in small rate increases over the current rate of \$23.43/month (for example, an increase of \$1.03 per month in 2024 and \$6.91 per month by 2029). LOS 2 will result in a slightly larger rate increase (for example, \$1.08 per month in 2024 and \$7.26 per month by 2029). LOS 3 will result in a larger rate increase (for example, \$5.62 per month in 2024 and \$27.94 by 2029). The CAC realizes that the proposed LOS 3 rates represent a significant increase and urges the city to take steps to mitigate impacts to rate payers by pursuing grants. With or without grants the CAC believes LOS 3 is the most sustainable and responsible option to ensure the city's aging stormwater infrastructure is maintained, repaired, and replaced on schedule and other city priorities are met. We provide the City Council with the following recommendation.

Recommendation #1: The CAC recommends that the City Council select LOS 3 in order to accomplish city priorities and maintain city operations.

Recommendation #2: The CAC recommends that the city aggressively pursue grant opportunities as a way to mitigate impacts on ratepayers.

In closing, the CAC would like to thank the City of Mukilteo for forming and engaging the CAC throughout the planning process. We would be happy to provide clarification of our recommendations as you consider adopting the SWCP and the proposed rate options.

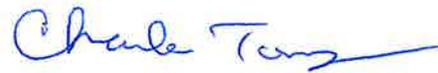
Thank you,



Fred Baxter, AIA Emeritus



Sylvia Kawabata



Charles Tung, P.E.



Chuck Bernasconi



Andrea Swisstack, P.E.