



**City of Edmonds
2024
Stormwater Management Program (SWMP) Plan**

Permittee Coverage Number: WAR04-5513



**City of Edmonds
121 5th Avenue North
Edmonds, WA 98020**

March 2024

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1 INTRODUCTION

This document has been prepared in accordance with the *Western Washington Phase II Municipal Stormwater Permit* (the Permit). The Permit was issued by the Department of Ecology (Ecology) to municipalities with populations of less than 100,000 as operators of small and medium municipal separate storm sewer systems (MS4s). The City of Edmonds is one of the municipalities who must comply with this permit.

The Permit authorizes the discharge of stormwater runoff from MS4s into the state’s surface waters (i.e., streams, rivers, lakes, sounds, wetlands, etc.) and groundwater as long as municipalities implement Permit-specified actions and activities, referred to as Best Management Practices (BMPs), to protect these receiving waters. Permit requirements are phased in over the permit term per a specified schedule which is included as Appendix A of this report. Some of the required BMPs are carry-overs from the previous Permit cycles while other requirements are new. Additional schedule detail can be found in the full text of the Permit found on Ecology’s website¹.

The initial Permit became effective back in 2007, but the current five-year permit was issued by Ecology and became effective on August 1, 2019 and will expire on July 31, 2024.

In some cases, the Permit requires reporting and implementation of water-body-specific cleanup plans developed by Ecology. However, Ecology has not developed such plans for Edmonds’ water bodies to date.



A newly installed bioswale/rain garden in the Seaview neighborhood helps reduce the amount of stormwater that flows into the local Perrinville Creek watershed. This bioswale/rain garden was expanded in 2023 from the original installation in 2022 to now run the length of the street.

¹ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Western-Washington-Phase-II-Municipal-Stormwater>

1.1 The Stormwater Management Program Plan

Section S5.A of the Permit requires each Permittee to develop and implement a Stormwater Management Program (SWMP). Each Permittee must also annually prepare written documentation of the SWMP, called the SWMP Plan (Plan). This Plan is intended to be a forward-looking document describing the set of actions and activities (BMPs) the Permittee intends to complete in the upcoming calendar year to comply with the Permit.

Section S9 of the Permit requires the City to submit an Annual Report by March 31 of each year. This annual report describes the status of the Permit requirements during the preceding reporting year (in this case, calendar year 2023). This report can be found on the City's website².

Per Permit section S5.A.5.b, this Plan includes a written description of the coordination mechanisms among departments within the City of Edmonds to ensure compliance. This written description is found in section 1.2 of this Plan.

This SWMP Plan does not include *all* of the activities and programs implemented by the City to address stormwater runoff issues; the plan only focuses on those that are required by, or are influenced by the requirements of, the Permit. The Plan does not include information about the capital improvement plan (CIP) which outlines improvement projects to address flooding, water quality, and aquatic habitat issues. More information on the stormwater CIP and previous Stormwater Comprehensive Plan can be found on the City's website³. This Plan is organized per S5.C of the Permit and is updated annually for submittal with the City's annual reports to Ecology. The remaining BMPs are grouped under the following Program components:

- 2.1. Stormwater Planning
- 2.2. Public Education and Outreach
- 2.3. Public Involvement and Participation
- 2.4. Mapping & Documentation
- 2.5. Illicit Discharge Detection and Elimination (IDDE)
- 2.6. Controlling Runoff from New Development, Redevelopment, and Construction Sites
- 2.7. Operations and Maintenance (O&M)
- 2.8. Source Control
- 2.9. Monitoring & Assessment (S8)

This SWMP Plan covers the City of Edmonds' activities planned in 2023 to comply with the Permit. Edmonds continues to track costs associated with the program's action and activities as required by the Permit.

² <https://www.edmondswa.gov/cms/One.aspx?portalId=16495016&pageId=17266630>

³ <https://www.edmondswa.gov/cms/one.aspx?pageId=18080032> and <https://www.edmondswa.gov/cms/One.aspx?portalId=16495016&pageId=17272149>



Student volunteers from Edmonds-Woodway High School helped with Edmonds Marsh restoration in 2022 and again in 2023, by helping remove old fencing and invasive nightshade as well reestablishing the historical stream channel flows.

1.2 Stormwater Management in Edmonds

Logger George Brackett founded Edmonds in 1890 making it the oldest incorporated city in Snohomish County with a growing population of approximately 42,000 and covering approximately 9 square miles of land area. Edmonds is approximately 94% built-out with the vast majority of the land-use as single-family or multi-family residential (City of Edmonds 2017). The City is broken into 26 local sub-basins, with 24 of those basins eventually draining into Puget Sound. The remaining two basins enter the greater Lake Ballinger watershed which discharges into Lake Washington.

Edmonds first adopted a stormwater code in 1977 and has been actively mitigating runoff from new impervious surfaces since this date. Responsible management of stormwater is something the City has been committed to well in advance of the current Permit.

1.2.1 Organization

There are three City departments that drive the majority of the work to comply with the Permit, however input or services from many other departments are needed to make the system function as a whole. The city departments of Public Works, Development Services, and Parks & Recreation do most of the heavy lifting for permit compliance, but coordination with the finance department, police departments, City Clerk's office, and the City attorney have been necessary for permit compliance as well. Compliance with the Permit continues to be one of the City's farthest-reaching programs, involving a large portion of City staff and departments. The Public Works & Utilities Director holds the Permit Section G19 certification and signature authority, and a copy of the authorization letter is included as Appendix B of this report. Figure 1 shows an organizational chart of the City Departments, highlighting in green those that are involved in Permit compliance. The Stormwater Engineer is the permit coordinator for the City of Edmonds and is the lead person responsible for permit compliance. However, this work is further sub-

divided within City staff as shown in Figure 2. This figure demonstrates the lead staff person for each individual task per S5.C of the Permit, and all the staff involved in each element; it highlights just how many staff members contribute to the effort of permit compliance.

The Stormwater Engineer in the Engineering Division of the Public Works Department is primarily responsible for ensuring Permit compliance. The Stormwater Engineer coordinates the annual report and update of the SWMP plan each year and is the lead for *Stormwater Planning, Public Involvement and Participation*, and *Controlling Runoff from New Development* sections of the permit. The Stormwater Engineer also conducts development reviews for compliance with stormwater codes directly, and coordinates field activities and inspections with the Engineering Program Manager who oversees the engineering permit reviewers and development field inspection staff. The position also leads stormwater related code, utility rates, the Stormwater Comprehensive Plan, and CIP updates which are the major processes for public involvement in stormwater decision making.



In June of 2023, City stormwater staff attended the Civic Field Park grand opening event. This event was attended by hundreds of residents. Many of those spent time at the stormwater engineering table reviewing literature and learning about the benefits of clean stormwater. Residents also had an opportunity to play the ‘poop toss game’ which is a great learning tool in how to properly dispose of waste in a playful way.

The City of Edmonds has two separate stormwater technicians who lead most of the remaining Permit compliance tasks. The Sr. Stormwater Engineering Technician is housed under the Engineering Division of Public Works and is ‘the face’ of the stormwater division for the public. As the lead for compliance with the *Public Education and Outreach, Illicit Discharge Detection and Elimination*, and *Source Control* sections of the permit, as well as the lead for private facility and outfall inspections. This vital position spends much of their time interfacing with the public in various capacities. Whether it’s educating business owners, working with contractors to improve stormwater services, or helping residents get their rain garden project off the ground, this role is constantly out making a difference in our community and connecting with people. The benefit of this position goes far beyond the data that can be placed in the annual report or

addressed in this Plan; this role is crucial to bringing the public in as partners in stormwater management and extends good stormwater practices well beyond the limits of the MS4.

The other position, GIS Stormwater Technician, is housed within the Operations Divisions of the Public Works Department and generally focuses more on the city-owned elements of the compliance requirements. This role leads the *Mapping and Documentation* section of compliance and is responsible for the public facilities inspections. This role is a valuable liaison between the office and field staff. As the lead data collector for the city systems, this position is critical in alerting others of conditions which warrant further attention.

The Public Works Operations Division handles all other operations and maintenance-related components of the City's MS4 including spill response and clean-up, catch basin inspections, IDDE first response, and adherence with the SWPPP for the Public Works Department storage and maintenance yard. The Parks & Recreation Department is responsible for stormwater management and municipal operations on park properties and for adhering with the SWPPP on the Parks & Recreation Department storage and maintenance yard.

The Finance Department manages the payments required to comply with the *Monitoring and Assessments* portion of the permit.

The Code Enforcement Officer (Development Services Department) and the City Attorney get involved in a variety of issues as needed and the Police Department supports IDDE and Source Control efforts as needed.

1.2.2 Internal Coordination

The Stormwater Engineer and Sr. Stormwater Technician in the Engineering Division regularly meet with other staff members involved in Permit compliance activities. Regular meetings are held with the Street/Stormwater Manager, Stormwater Division Lead, and GIS Stormwater Technician to coordinate issues related to Municipal Operations and Maintenance and system mapping.

After major illicit discharge events, the Sr. Stormwater Engineering Technician discusses and reviews the response and documentation with the Street/Stormwater Manager, Stormwater Division Lead, and Stormwater Engineer. Both the Sr. Stormwater Engineering Technician and GIS Stormwater Technician transferred into their roles after being valuable members of the stormwater crews and have greatly improved communication between the Engineering and Operations divisions of the Public Works Department. Their knowledge of procedures and processes within the Operations divisions have led to significant improvements in the way information is shared and documented between the groups.

The Stormwater Engineer meets regularly with the Engineering Program Manager and the two Engineering Technicians to discuss issues related to Controlling Runoff from New Development, Redevelopment and Construction sites. The Engineering Program Manager and Engineering Technicians regularly meet with the Planners on this Permit component as well to ensure staff beyond the engineering division understand the importance of the stormwater components of development procedures.

The Senior Utility Engineer, Stormwater Engineer, Associate Engineer, and the Sr. Stormwater Engineering Technician also meet every other week to coordinate utility projects and discuss field concerns, including stormwater permit compliance issues.

The Stormwater Engineer coordinates with all parties involved in permit compliance at the beginning of every year to collect the data needed for the annual report and Stormwater Management Program Plan update, and to review potential impacts to workload and staffing needs.

In 2020, the formation of the inter-disciplinary team for the new stormwater planning requirements began. This team crosses multiple departments and backgrounds to stretch stormwater even further across City departmental lines; see Section 2.1.2 for more about this meeting.



Community volunteers in partnership with the City of Edmonds, Salish Sea Monitoring Group (SSMG) aided with the NPDES Permit required Dry Weather Outfall Testing during 2023. In addition, the SSMG has also continued testing various outfalls within Edmonds to compile a database which can lead to a greater knowledge of the current and changing conditions of stormwater.

1.2.3 External Coordination

The City’s Stormwater Engineer and Sr. Stormwater Engineering Technician coordinate with colleagues in the adjacent communities of Mountlake Terrace, Lynnwood, Lake Forest Park, Shoreline, and Snohomish County on SWMP-related issues.

In 2023, the City continued to commit an elected Council Member, a staff person (Sr. Stormwater Engineering Technician or Stormwater Engineer, as available) and annual funding to *The Lake Ballinger/McAleeer Creek Forum*. This is a multi-agency group, consisting of the City of Edmonds, City of Mountlake Terrace, City of Lake Forest Park, and the City of Shoreline.

This group works with residents on and adjacent to the Lake Ballinger watershed to address water quality and flooding concerns on the lake and along the downstream McAleer Creek passage. The Forum added the City of Shoreline in 2020 to incorporate the City of Shoreline's Echo Lake input, as Echo Lake drains into Lake Ballinger. The Forum still hopes to add the City of Lynnwood as a 'formal' member in the future to better incorporate the Halls Lake and Scriber Lake input as well. In 2019 the Forum introduced a successful implementation of an aquatic vegetation management plan, funded by Ecology grants and resulted in significant reduction of the nuisance vegetation impacting lake water quality. As of 2023, this invasive vegetation has been greatly reduced and this program is seen as a success. In recent years, the City of Edmonds has also joined the Snohomish County Lake Monitoring Program and have a resident volunteer who is collecting data to track and map the health of Lake Ballinger. The data is managed by Snohomish County and helps to populate Snohomish County's webpage for Lake Ballinger⁴. Snohomish County also produces a 'report card' regarding the health of the lake on an annual basis. A copy of the *Lake Ballinger 2023 Health Report* is attached as Appendix E.

City staff also regularly attend STORM (*Stormwater Outreach for Regional Municipalities*) meetings and regional NPDES Coordinators meetings with other agencies to share and collaborate on ways to meet permit requirements and improve stormwater programs. In 2024, the hope is to also restart the SnoSTORM group, which is a Snohomish County centered focus and education group.

The City works closely with the Snohomish Conservation District (SCD) as a partner which provides assistance for implementation of smaller scale LID retrofits within the City. The Sr. Stormwater Engineering Technician and SCD often work together with willing residents, in an impacted drainage basin, to provide partial funding, design, and installation of rain gardens on their private properties.

Our ongoing partnership has produced many private projects in the past but beginning in 2020 the relationship blossomed to include our most ambitious effort into the bioswale/rain garden program yet. An entire block of a City MS4 system was converted to rain gardens and most of the roadway runoff is now infiltrated from this block. In 2023, the interest in private gardens remained and we kept our focus promoting private gardens that were both public facing as well as centered within the Perrinville Creek watershed which was identified in the *Stormwater Management Action Plan (SMAP)*⁵ as the priority watershed. This watershed has become a focused priority for the City and will likely continue that way for some time.

In 2020, the City made the decision to move away from its partnership with Snohomish County for the *Natural Yard Care* educational and behavior change program and has instead begun participating in the 'new' campaign featured around 'dumpster and trash compactor maintenance' per S5.C2.ii.a. In 2021, a pilot study in conjunction with other regional municipalities to collect initial data for this upcoming program was started and completed and provided the City with important early data regarding how businesses 'acted'. The program essentially started in earnest in 2022 when the Sr. Stormwater Engineering Technician began

⁴ <https://snohomishcountywa.gov/5353/Ballinger>

⁵ https://www.edmondswa.gov/government/departments/public_works_and_utilities/stormwater_utility_system/2022_stormwater_planning

visiting 11 initial businesses along the Highway 99 corridor, noting early conditions of these areas.

In 2023, Aspect Consulting was hired to officially kick this long-term behavior change program off. Again, this research largely focused on the previous businesses that have the targeted audience that have these types of refuse services and have had either previous issues or are potential pollution generating.

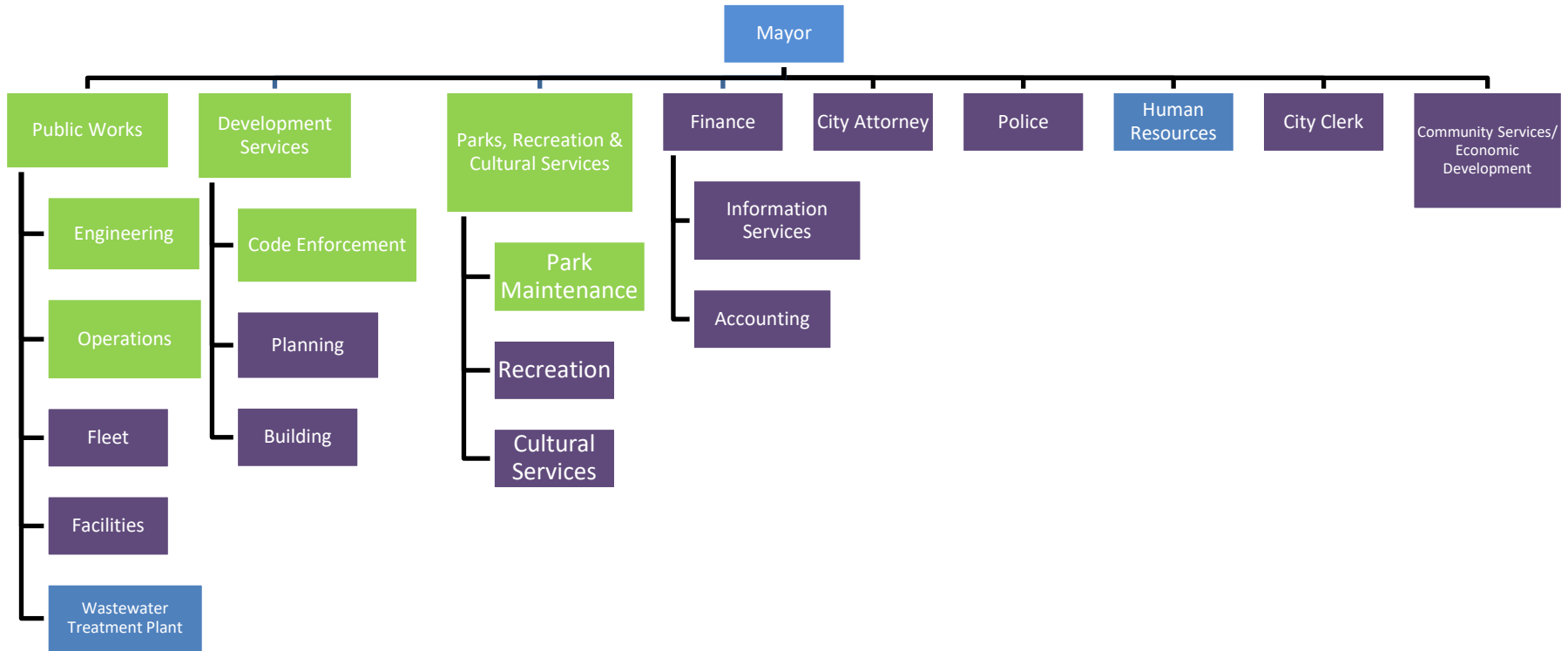
Having participated in both *car-leak prevention/education* and *natural yard care* programs (which effectively had run their course) previously, staff was observing and documenting several IDDE issues which resulted from poor dumpster maintenance and/or operations. This new campaign will likely have the most impact in reducing preventable illicit discharges observed within Edmonds. Edmonds is working with the regional municipality group ‘*DOG*’, (Dumpster Outreach Group) to participate in this program and contribute to regional data gathering and result analysis. This program will be part of the behavioral change requirement moving forward in the permit cycle. All of these businesses were identified as potential pollutant threats and will continue to be monitored and notified over the period of this behavior change campaign.

Lastly, the City also continues to provide financial and active staff support to the extra-curricular club at the local high school called *Students Saving Salmon (SSS)*; see education and outreach section for more information. Staff have also volunteered time to support several science projects by local high school aged students who have been interest in stormwater treatment applications. Similarly, we also continue to work jointly as partners with *Sound Salmon Solutions* who operate the Willow Creek fish hatchery in Edmonds.

1.3 Document Organization

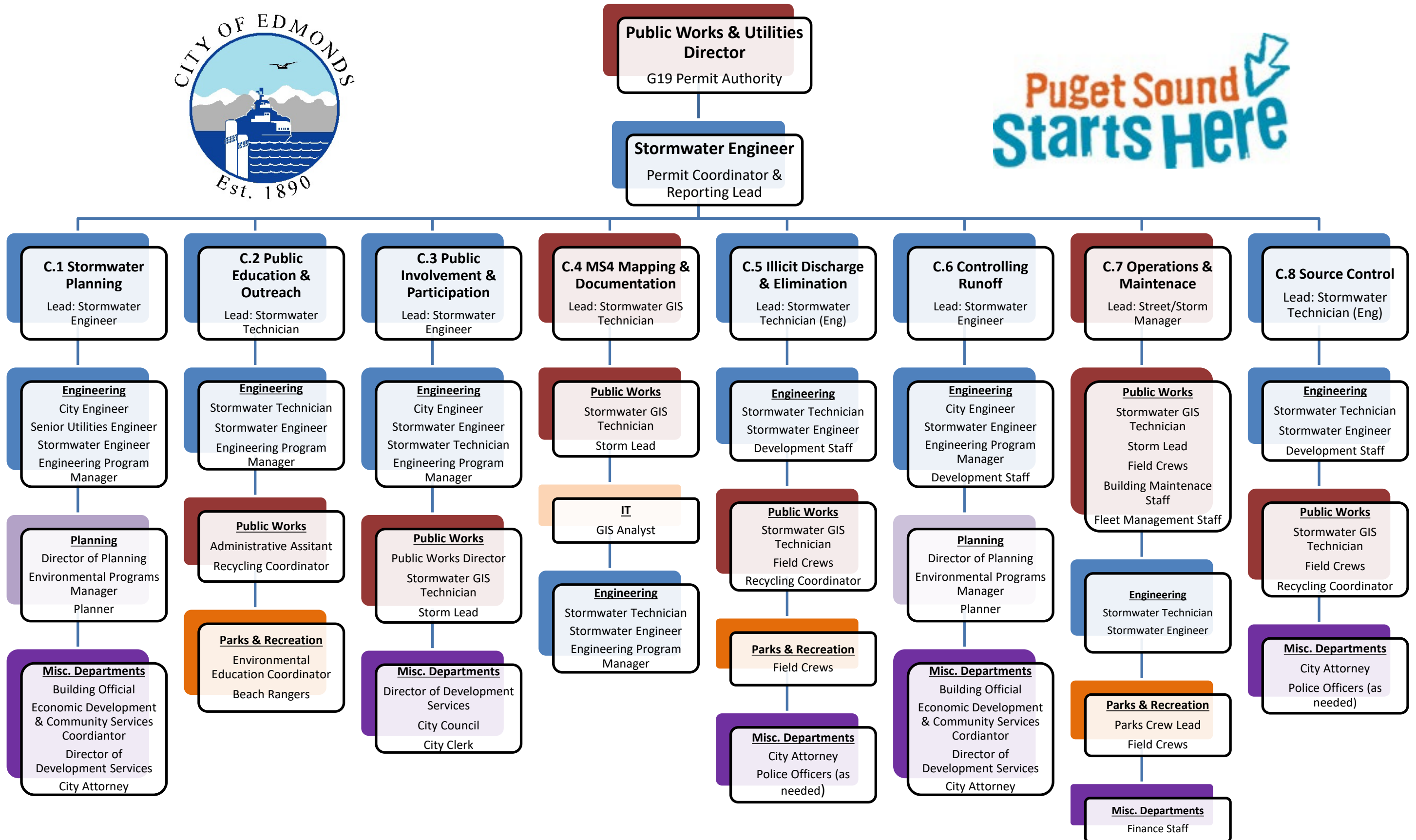
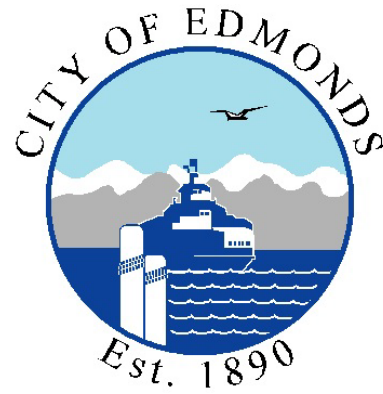
The remaining sections of this document have been organized to follow the sequence of the Permit requirements S5.C.1 through S5.C.8, as well as S8 (monitoring and assessment). Permit requirements, current/ongoing activities, and planned activities for each of the required elements are presented.

Figure 1.1 City of Edmonds Organizational Chart



Involvement in Permit Compliance

Figure 1.2 City of Edmonds Municipal Permit Roles & Responsibilities



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2 STORMWATER MANAGEMENT PLAN ELEMENTS

2.1 Stormwater Planning

The SWMP requirements for Stormwater Planning (Section S5.C.1) of the Phase II permit are summarized below, followed by a description of the ongoing and planned SWMP activities that meet these requirements.

2.1.1 Permit Requirements

The Stormwater Planning section (Section S5.C.1) is a new section for this permit cycle and the new requirements are implemented over the course of the permit life cycle. Appendix A includes a quick visual of implementation timelines. Section S.5.C.1 requires that each permittee:

- Form an inter-disciplinary team to develop and implement a stormwater planning program by August 2020.
- Coordinate with long-range plans.
- Maintain and update codes to make LID the preferred alternative.
- Submit a Stormwater Management Action Plan (SMAP) per Ecology's requirements, with intermittent submittals scheduled prior to final plan due date of March 31, 2023.



A portion of the heavily impacted Perrinville Creek is showing impacts from extreme sediment loads during storm events; the City has announced a major restoration project will be kicking off for this drainage basin.

2.1.2 Continuing/Ongoing Activities

This is a new section for this permit cycle, but some of the requirements existed in other sections of the previous permits.

An interdisciplinary team was developed, and an initial kick-off meeting was held on 7/14/2020. The meeting established a baseline need for stormwater involvement in planning documents moving forward and included staff members from a wide range of functions and perspectives across various departments. The meeting minutes, including list of attendees, can be found in Appendix F.

The Stormwater Engineer meets regularly with development reviewers and inspectors to understand what is or is not working with the current stormwater codes and maintains a list of desired code changes to be implemented when stormwater codes are next updated. We believe our current development codes are indeed forcing the use of LID methods positively and as we continue to educate our developers, contractors and residents, these requirements will become more repeatable and accepted moving forward.

2.1.3 Planned Activities

As it works out for Edmonds, the next major planning documents to be updated are the most direct documents related to stormwater.

Ecology has formally issued the updated Stormwater Management Manual for Western Washington (SWMMWW) and the City began updating the stormwater codes in 2022. In the permit, S5.C.6 required an update of the code to reflect the new SWMMWW by June 30, 2022. In keeping compliance with this date, the City did update the stormwater codes to reflect this.

Likewise, the Stormwater Comprehensive Plan the City currently has is from 2010 and has been recognized as outdated. Work on revising and updating this plan began in 2023 with the intent of completion by the end of 2024. This will be a major document in driving the City's stormwater management program. While not a planning document in the land-use sense, this plan is critical to help ensure the sustainable function of our stormwater division to meet our citizens' needs, in addition to permit requirements. It will also help direct future stormwater capital improvement priorities.

While the watershed inventory assessment (SMAP) was finalized in 2022, recent emergency conditions and a mayoral declaration⁶ have essentially identified the City's high priority basin as Perrinville Creek. This declaration and subsequent findings from Herrera Consulting, hired to develop the SMAP, have confirmed that this troubled watershed will be the focus for rehabilitation. Over the course of the past year, organized efforts with regards to public workshops, staff input and a general timeline for the basin recommendation has taken place. The Perrinville Creek watershed has been subject to decades of urbanization and when compounded with observable impacts of climate change, now flashes down through a steep ravine valley, and carries large amounts of sediment and debris where it plugs and pushes flow

⁶ <https://myedmondsnews.com/2021/03/mayor-proposes-perrinville-creek-restoration-project-to-address-long-term-flooding-threats-to-fish/>

outside/under the historical stream bed. This in-turn has lead to flooding, property damage, stranding of fish, loss of fish habitat, and serious risk to City and BNSF infrastructure. As the studies and alternatives develop for any and all future projects in the area, the City will be looking to also meet the requirement for the SMAP with this work effort.

The annual report filed with Ecology requires this information to be submitted as a standalone document. Thus, this section is included as Appendix C of this report; the entirety of the appendix is also included with the annual report submittal. See Appendix C for more information pertaining to Public Education & Outreach (S5.C.2).



In October of 2023, City staff once again conducted a rain garden tour in the Perrinville Creek watershed where seven new private gardens were installed two years prior. 23 registered participants took part in this annual tour, which has seen growing participation nearly every year since the inception of the programmed event.

2.2 Public Involvement and Participation

The SWMP requirements for public involvement and participation (Section S5.C.2 of the Phase II permit) are summarized below followed by a description of the recent and planned SWMP activities that meet these requirements.

2.2.1 Permit Requirements

Section S5.C.3 of the Phase II Permit states that Permittees shall provide ongoing opportunities for public involvement and participation through advisory councils, public hearings, watershed committees, participation in developing rate-structures, or other similar activities. The new Permit cycle has relatively minor changes to this section and mostly represents a continued effort of the previous Permit cycle. Each Permittee shall comply with applicable state and local public notice requirements when developing elements of the SWMP. The minimum performance measures are:

- Permittees shall create opportunities for the public to participate in the decision-making processes involving the development, implementation and update of the Permittees stormwater management program and components.
- Each Permittee shall post on their website their SWMP Plan and the annual report required under S9.A no later than May 31st each year. All other submittals shall be available to the public upon request.

2.2.2 Continuing/Ongoing Activities

The current Permit had relatively minor changes to this section but requires that the City continue to provide ongoing opportunities for the public to participate in SWMP decision-making, and to post the annual report for previous calendar year and updated SWMP Plan to the City's website by May 31st each year.⁷

The City's website also provides a portal for residents to contact staff and voice their opinions about the SWMP and includes the appropriate contact information for City staff⁸. Engineering Stormwater staff are also accessible to answer questions or take feedback from walk-in residents at the permit counter.

The City's budget is updated annually and includes a public hearing to allow for citizen input on stormwater proposals brought forth by the City. Stormwater utility rates were adopted January of 2019, and included several public hearings as the plan was revised at Council's direction. Many of the Council members directed revisions were in response to public input they had received directly from citizens. Public hearings are also held before all major code updates, including prior to the next round for stormwater code updates. This allows the public to get

⁷https://www.edmondswa.gov/government/departments/public_works_and_utilities/stormwater_utility_system/phase_ii_municipal_stormwater_permit_compliance

⁸https://www.edmondswa.gov/government/departments/public_works_and_utilities/stormwater_utility_system/phase_ii_municipal_stormwater_permit_compliance

involved in helping shape the stormwater policies of the City. There will also be public hearings and workshops associated with the upcoming *City of Edmonds Stormwater Comprehensive Plan* update.

City staff have had to evolve public feedback approaches due to COVID-19 restrictions and while the transition was slower at first, it now appears the public has adapted to a new way of conducting business and outreach virtually. However, we believe our Council meetings now function to provide equitable opportunities for all to voice their opinion. Also, recent successes on a City transportation project have provided a guide for successful public workshops which staff will seek to recreate moving forward.

2.2.3 Planned Activities

The plan is to continue with open and clear communication as is required, which falls in line with Edmonds' standard practices. As the City dives into the *Stormwater Comprehensive Plan* update in 2024, public input will be a critical element to consider. Multiple workshops have already taken place and will continue to be anticipated as part of this process and would be in addition to the more formal decision points that would require Council action and/or public hearings. This same process was also true when the stormwater code update was undertaken earlier in 2022. The City feels that public input is a critical component of balancing competing needs and to the Council decision-making process that needs to occur.

Moving beyond the pilot phase of the dumpster lid program (*DOG*) and into the implementation phase of this behavioral change program will also continue. In early 2021, the Sr. Stormwater Engineering Technician gathered initial baseline data on the targeted audience of selected businesses to assess the currently unknown status of dumpsters, lids and the general conditions of refuse areas. Selected businesses were chosen to have the pilot programs 'Shut the Lid' campaign stickers applied to encourage better habits thus reducing potential pollution. The inspections consisted of weekly drive-by documentation of these dumpsters and if the recently placed notifications played a role. In 2022, this dumpster lid campaign started in earnest with 11 potentially pollution generating businesses targeted who are known to have previously had IDDE or specific dumpster issues. In 2023, Aspect Consulting was hired to oversee this long-term behavior change program. Results of the first round of data analysis and thoughts have been included as Appendix G. This behavioral change topic was chosen by staff as the rise of notable pollutant generating complaints/issues along the major business corridors has been increasing in recent years. This program is ongoing and in time will supply the City of Edmonds with a final data set and recommendations.

2.3 MS4 Mapping and Documentation

The SWMP requirements for Mapping & Documentation (Section S5.C.4) of the Phase II permit) are summarized below, followed by a description of the ongoing and planned SWMP activities that meet these requirements.

2.3.1 Permit Requirements

Section S5.C.4 of the Phase II permit is now Mapping & Documentation, which is technically a new section of the permit. However, it is more of a re-organization of existing requirements

which were previously under other sections of the Permit so that most requirements are not actually new requirements. The revised permit section requires:

- Continue mapping the City’s MS4 system.
- New mapping requirement to add pipe size and material, areas not discharging to surface water, and private connections to the public system.
- Mapping format must be electronic and meet certain mapping standards by August 2021.



Between annual facility inspections and the GIS Technicians continued mapping of the MS4, issues such as these are becoming less and less prevalent.

2.3.2 Ongoing Activities

Much of the City’s mapping effort was completed in previous Permit cycles and can be viewed at the simplified URL: www.maps.edmondswa.gov. Public Works stormwater staff includes a GIS Stormwater Technician who is responsible for mapping all new/discovered private systems as well as public stormwater systems. Mapping these systems is continually updated on an ongoing basis. The Sr. Stormwater Engineering Technician and GIS Stormwater Technician coordinate with each other to identify mapping improvements for operational needs. This includes coordination with the development services staff to create facility files which include as-builts and necessary drainage information for future inspection programs and to prepare for the newly instituted Source Control program.

The City mapping system is already created in a standard ArcGIS format, readily shareable as shape files, and already includes most of the additional information added during this Permit cycle. Pipe sizes and materials are all identified as attributes within the system as well as whether any given feature discharges to an infiltration system. The original data gathering effort even noted where private connections to the MS4 were found previously.

2.3.3 Planned Activities

As noted above, the City has collected most of the additional data required to comply with the newest mapping requirements. Pipe size and material for all pipes are already readily accessible on the map as attributes. Any point where our MS4 discharges to an outfall, another

municipality's MS4, and/or a private drainage system is mapped. The system notes even include information about where private systems connect to our MS4 system.

In the works for 2024 and likely into 2025, is a plan to add a new 'layer' on the GIS map to include LID features. With the growth of both public and private rain gardens, bioswales and other environmentally beneficial 'green' systems, the GIS map will isolate these said features and provide staff and the community the knowledge and understanding to the location of these facilities. This map layer will be seen as both critical to understanding our MS4 infrastructure but also as an educational tool. Aside from that, plans to maintain the current mapping standards and update for new private connections and MS4 extension or modifications will be on an as needed basis.



This City owned rain garden is part of the mapped MS4 and is currently visible within the City's online mapping portal. Soon, private rain gardens will also be added to the GIS map.

2.4 Illicit Discharge Detection and Elimination

The SWMP requirements for illicit discharge detection and elimination (IDDE) (Section S5.C.5 of the Phase II permit) are summarized below, followed by a description of the ongoing and planned SWMP activities that meet these requirements.

2.4.1 Permit Requirements

Section S5.C.5 of the Phase II permit states that the SWMP shall include an ongoing program designed to prevent, detect, characterize, trace, and eliminate illicit connections and illicit discharges into the MS4. The minimum performance measures are:

- Each Permittee shall implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges into the Permittee’s MS4 to the maximum extent allowable under state and federal law.
- Each Permittee shall implement an ongoing program designed to detect and identify non-stormwater discharges and illicit connections into the Permittee’s MS4.
- Each Permittee shall implement an ongoing program designed to address illicit discharges, including spills and illicit connections, into the Permittee’s MS4.
- Permittees shall train staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, and illicit connections, to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements or staffing. Permittees shall document and maintain records of the training provided and the staff trained.
- Recordkeeping: Permittees shall track and maintain records of the activities conducted to meet the requirements of this section. The reporting shall collect certain data and provide it in an Ecology prescribed schema each year.



City staff reported a grease/food waste spill and open container at a restaurant during the initial dumpster outreach campaign visit.

2.4.2 Ongoing Activities

The Permit requires the City to continue implementing the enforceable mechanisms to prohibit illicit discharges, have municipal staff training on illicit discharge detection, elimination, and response, and host a citizen hotline. However, this section does not include many new requirements except to record and report in a certain Ecology prescribed schema. The City is currently implementing all these activities and has IDDE specific code in ECDC 7.200 which was created and adopted in compliance with previous Permit cycles. The City of Edmonds plans to continue all operations except as noted in *Planned Activities* below. In 2021, the City made use of the *WQWebIDDE* portal for reporting IDDE issues, however for 2022 and moving forward, the use of the *NPDESPro* software program will be used.

The following is a brief summary list of IDDE program activities for 2023 to comply with the Phase II permit, Section S5.C.3; a more complete description of illicit discharge program elements can be found in Appendix D:

- Responded to 26 different IDDE related reports, where 20 of those impacted the MS4 in some manner. Of those events, 10 required notifications to Ecology and 1 required S4.F letters; none required an adaptive management plan.
- Dry-weather outfall inspections looked at 10 separate outfalls; flow was not present at any of the outfalls. No IDDE concerns were found.
- Formal field screening by “look-and-lift” method: 32 % in 2023. A G-20 letter was filed and attached to declare that prior to 2022, the City was out of compliance, as within a three-year term. This was due to the City not reaching the minimum standards for this three-year alternative schedule.
- Extra screening by video inspection: 6457 LF of the City piped system in 2023; 88,392 LF in permit cycle.
- Evaluated IDDE program based on reviews of responses to spill incidents and other investigations of illicit discharges or connections.
- Continued to ensure all appropriate staff are properly trained on IDDE and spill response and inspection staff maintain CESCL certifications.
- Aspect Consulting reached out to 15 businesses and was able to provide services to all 15 of them; the spill kit program has served 247 Edmonds business since 2013.

The Sr. Stormwater Engineering Technician had previously updated the standard field reporting form which City field staff use to document spills or illicit discharge issues to align with the revised Ecology schema for reporting. Training on the revised form was conducted at an all-staff meeting in 2020 and the forms were distributed to field vehicle kits along with spill kits to aid in response. With the new form ensuring that field staff are gathering the correct information, the City is aligned to comply with the new schema requirements. In addition, all crew members of Public Works, Parks Dept. and the Engineering Dept. who regularly do field inspections have the mobile phone numbers for both the Sr. Stormwater Engineering Technician and Stormwater Leadworker for immediate responses to spills/leaks.

2.4.3 Planned Activities

No major revisions to the City’s current IDDE program is required in 2024. Screening by way of video inspection appears to be infeasible for meeting the minimum permit requirements. However, staff believe that more video inspections will indeed benefit the MS4 and want to utilize this method as much as feasible in addition to the minimum screening required by the permit, done by way of catch basin “look-and-lift” inspections.

In 2023, the City also successfully implemented the *NPDESPro* software for tracking IDDE issues. In years past, inefficient spreadsheets were used to track these, however with the new Ecology schema requirements, this software will compile and format it to the *WQWebIDDE* portal for reporting. This software generates an .xml file which can be uploaded to Ecology in order to meet the new schema requirements. The software also provides tools which help staff

generate the documentation necessary for IDDE follow-up and enforcement and can improve staff efficiency. Documenting the 2024 IDDE's will continue in this manner.



Aspect Consulting concentrated their efforts visiting businesses that are potentially pollution generating such as automotive shops, restaurants and strip malls in 2023.

2.5 Controlling Runoff from New Development, Redevelopment, and Construction Sites

The SWMP requirements for controlling runoff from new development, redevelopment, and construction sites (Section S5.C.6 of the Phase II permit) are summarized below, followed by a description of the ongoing and planned SWMP activities that meet these requirements.

2.5.1 Permit Requirements

Section S5.C.6 of the Phase II permit remains predominately the same as in previous years. Minor changes were made to require adoption of an updated stormwater manual, relocate private facility maintenance text to the operations and maintenance section, and remove the watershed-scale planning requirement from this section. The Permit lists the following requirements, only the first one is new:

- Revise stormwater codes to adopt the updated 2019 SWMMWW, or equivalent, by June 30, 2022.
- Develop and implement an ordinance or ordinance revisions that address runoff from new development, redevelopment, and construction projects in a manner that meets the minimum requirements established by Ecology.
- Develop and implement a site planning process and selection and design criteria for best management practices (BMPs) that will protect water quality and reduce the discharge of pollutants to the maximum extent practicable.
- Develop and implement an approval process for new development that includes inspections of and enforcement of maintenance standards for private stormwater facilities.
- Develop and implement provisions in development code regarding techniques for low impact development (LID) that make LID the preferred and commonly used approach to site development, in order to minimize impervious surfaces, native vegetation loss, and stormwater runoff in all types of development situations.
- Develop and implement a permitting process with plan review, inspection, and enforcement capability for both public and private projects to ensure sufficient stormwater management, proper installation, and maintenance of erosion control BMPs and permanent stormwater facilities, and assignment of responsibility for post-construction maintenance.
- Inspect all construction sites before construction if they exhibit high potential for sediment transport during construction to ensure adequate erosion and sediment control BMPs, and again upon completion of construction to ensure proper installation of permanent stormwater controls.

- Provide access to Notice of Intent (NOI) letters to representatives of proposed new development and redevelopment projects that require a Construction General Stormwater Permit or an Industrial Stormwater General Permit from Ecology.
- Train City staff responsible for implementing the program described above, including staff involved with permitting, plan review, construction site inspections, and enforcement.



Bio-retention facility recently installed in a newer housing development.

2.5.2 Ongoing Activities

The City will continue to implement and enforce City codes addressing construction/post-construction runoff controls, make Notice of Intents (NOIs) available for sites that require a Construction Stormwater General Permit or an Industrial Stormwater General Permit from Ecology⁹, perform site plan reviews and permitting per the Edmonds Community Development Code (ECDC) Chapter 18.30 (Stormwater Management), perform construction inspections, and train staff in all aspects of this Permit requirement.

City codes were updated during the previous Permit cycle, but ECDC 18.30 also includes two provisions which demonstrate the City's commitment to stormwater management above the minimum requirements. The first is the addition of detention tanks in the Ecology provided list for LID BMPs. On many reviews in the City of Edmonds, which is plagued with till soils and steep slopes in many areas, this revision is the only way that stormwater mitigation is achieved on smaller projects. The City also has a 'retrofit' requirement, which requires re-development projects, which meet drainage review thresholds, to mitigate for a portion of their existing unmitigated surfaces. The two provisions result in requiring mitigation which otherwise would

⁹ Provided Ecology keeps it in a publicly available location on their website.

not be required by the minimum provisions of permit Appendix A and proactively try to correct the existing impacts that urbanization has already had on stormwater in the City.

In Edmonds, all drainage reviews go through the Stormwater Engineer, who is the same employee tasked with managing the stormwater code and training other development staff in the stormwater related elements of their inspection work. The City reviewed and issued 81 new permits that required stormwater mitigation and review under these codes in 2023 (not all have facilities which necessitate inspection per S5.C.7). Every site is inspected for erosion & sediment control measures prior to clearing or grading. Including already issued permits and permits which did not require drainage review, 166 sites were inspected this year, and 22 formal enforcement actions were taken to address stormwater or erosion control violations. These stormwater inspections are fully documented in the City's asset management software, 'Track-It' to help inspectors organize, document, and prioritize these evolving properties.

The re-arrangement of post-construction inspection and maintenance to the operations & maintenance section of the permit brings the permit more in alignment with operational procedures in Edmonds. Post-construction inspections are led by the Sr. Stormwater Engineering Technician, who is separate from the other development related tasks that the City supports; see Section 2.7 for more details regarding post construction inspections.

2.5.3 Planned Activities

As noted above, the changes to this section are minimal, and the City intends to continue all development related programs currently in place. The Stormwater Engineer has a running list of desired code revisions derived from lessons learned while reviewing projects under current codes. The City would like to update stormwater codes to the newest manual as soon as is possible; however, current workloads may not allow for the desired schedule. The City will of course elevate the priority of this effort as the Permit-required date approaches, in order to ensure compliance.

2.6 Operation and Maintenance

This section summarizes Phase II permit requirements related to operation and maintenance of stormwater system and facilities (Section S5.C.7) and describes current and planned SWMP activities related to these requirements.

2.6.1 Permit Requirements

Section S5.C.7 of the Phase II permit lists the following requirements:

- Develop and implement standards for stormwater facility maintenance that are equivalent to those included in Ecology's Stormwater Management Manual for Western Washington.
- Inspect all permanent stormwater treatment and BMP/flow control facilities permitted by the City since the first Permit cycle annually. These are supported by field observations and data. Appropriate maintenance and enforcement actions are taken where applicable.

- Conduct spot checks of potentially damaged permanent treatment and flow control facilities after major storm events.
- Inspect, and clean if necessary, all catch basins and inlets owned or operated by the City at least once by August 1, 2017, and then every two years thereafter. Compliance will be determined by the presence of an established inspection program designed to inspect at least 95% of the MS4.
- Establish and implement policies and procedures to reduce stormwater impacts from all lands owned and maintained by the City, including parks, open space, road rights-of-way, maintenance yards, and stormwater treatment and flow control facilities.
- Develop and implement an ongoing training program for City employees whose construction, operations, or maintenance job functions may adversely affect stormwater quality.
- Develop and implement a stormwater pollution prevention plan (SWPPP) for all heavy equipment maintenance or storage yards and material storage facilities owned or operated by the City.
- Maintain records of inspections and maintenance or repair activities.



Managing flood conditions in the face of urbanization and climate change has been a constant concern. In 2021, City staff and consultants have met multiple times at Perrinville Creek hoping to find a long-term resolution for the ongoing flooding concerns. A plan is now on the table between local Tribes, WDFW and the City.

2.6.2 Ongoing Activities

The City continues to annually maintain the MS4 infrastructure, inspect stormwater treatment and BMP/flow control facilities, perform spot checks of facilities on a regular basis (especially after large storm events), follow the SWPPP for public storage and materials yards, and provide appropriate staff training.

As of 2019, the City is now operating on a reduced 3-year inspection cycle for catch basin inspections. Documentation for the reduced schedule was provided in the previous permit cycle.

The City has had many of their flow control facilities for decades thus having extensive inspection data on many of them, and very few inspections have annually required any maintenance activity. City inspection records do not indicate excessive wear or buildup of sediment in most traditional flow control facilities. Accordingly, the City inspection of public facilities was reduced to a 3-year cycle to help with compliance. Ongoing data collected led to the conclusion from staff that a reduced schedule of three years would be sufficient, as approximately 33% of the City-owned facilities could be reliably inspected annually. One exception has been made for 'Filterra' devices and any other 'wetland-in-a-box' type BMPs; the City has limited experience or data with these devices and is inspecting these annually until their performance is better understood.

The Permit states the City must complete all the flow control BMP/facilities inspections annually, however in 2021, only 43% of the required inspections on public facilities were completed. This was in large part to COVID-19 complications and staffing issues where dedicated individuals to follow through on inspections were not available. The City anticipated this to change and 100% of inspections/cleanings did take place in 2022.

When fully functional, the City also has an exceptional catch basin inspection program which cleans and inspects the municipally owned catch basins at the same time. This is done using a two-man Public Works crew and a 'Vactor' truck. The previous permit coordinator had reviewed the extensive backlog of catch basin inspection data and determined that a three-year cycle was sufficient for the City to meet compliance. The current permit coordinator recently re-reviewed the data in 2018 and reached the same conclusion. Thus, the City catch basin maintenance program now inspects and cleans all catch basins and manholes within the entire City on a 3-year cycle, averaging out to approximately 33% of the MS4 screened per year. IDDE screening by 'look-and-lift' is also done during this inspection process.

In 2023, Public Works was able to inspect about 32% of the MS4, bringing the three-year total to meet the required goals. With a renewed storm-centric maintenance philosophy, staff believe any deficiencies in the past will continue to be made up in 2024 and moving forward.

The needs of the private facilities inspection program continue to grow with new development. With new facilities added this year, the total number of private facilities requiring inspection is 97. Of those, the Sr. Stormwater Engineering Inspector inspected 97 in 2023 and none of those sites required maintenance actions. The Sr. Stormwater Engineering Technician has overhauled and gotten this important program back on track and fully compliant. The City is now building a backlog of private inspection data to be evaluated and considered for a possible reduced inspection frequency cycle in future years.

While the permit requirements apply to a certain list of facilities as defined by the Permit, Edmonds has had drainage codes as early as 1977, and has many private drainage systems that

have not been maintained for decades. Accordingly, the City is inspecting (when workload allows) these non-permit-required facilities in an effort to improve water quality and potential residential flooding concerns.

An additional 22 private systems were inspected in 2023 which were not necessarily permit-required facilities, where 2 of these older facilities required contractor maintenance to be performed. Staff believe inspections of older private facilities and catch basins will continue to have a great impact on protecting the City MS4 and downstream receiving waters than repeated inspections of newer facilities. Increasing the number of non-permit-required inspections on these older systems is a main driver in pursuing a reduced inspection cycle on the formal permit-defined facilities.

Operation crews, leads and managers continue to gather and document all work efforts and costs associated with permit compliance.

2.6.3 Planned Activities

Except as noted below, the City plans to continue all operation and maintenance programs into 2024, without significant changes, including a continued use of reduced cycles for catch basin inspections. However, improving City databases, mapping, and processes is a constantly evolving process and new minor improvements are being added to the system as technology, workloads, and known information changes.

It is also now clear that the City cannot manage the permit requirement minimum screening by video inspection on a consistent basis and must rely on a “look-and-lift” screening method, which is performed at the time of the catch basin inspections. Staff time will be diverted away from the video inspection program as needed to make-up for shortfalls elsewhere.



Crews work to replace damaged storm pipes.

For 2024, the City does not see need for major changes to the private facility inspection program. The Stormwater Engineer will continue to review the private facility inspection data annually to determine if it supports a proposal for a reduced inspection cycle on private facilities. The hope is that this can be done to offset some of the workload added by the new ‘Source Control’ section of the Permit. Reducing the need for the Stormwater Engineering Technician to inspect routinely compliant facilities will free them up to perform more business inspections as well as more inspections on older private systems, which are not permit-defined facilities.

The City also continues to plan and budget for basic pipe replacement work needed to maintain an aging MS4. The City continues to dedicate a bit over \$2 million annually to replacing aging, damaged, or undersized sections of the MS4.



City Staff working to solve private drainage problems.

2.7 Source Control Program for Existing Development

This section summarizes Phase II permit requirements related to the new Source Control section (S5.C.8) of the permit and describes current and planned SWMP activities related to these requirements.

2.7.1 Permit Requirements

Section S5.C.8 of the Phase II permit lists the following requirements:

- Develop and adopt an ordinance, or other enforceable documents, requiring source control BMPs for pollution generating sources associated with existing land uses and activities by August 1, 2022.
- Compile an inventory that identifies businesses and sites that generate high rate of complaint response, and/or which are on an Ecology provided list of business considered to have a high potential to generate pollutant to the MS4. Inventory shall be complete by August 1, 2022.
- By January 1 of 2023, implemented an inspection program which inspects 20% of the businesses identified on the annual inventory.
- By January 1 of 2023, implemented a progressive enforcement policy which requires compliance.



Illicit discharge next to commercial dumpster enclosure.

2.7.2 Ongoing Activities

This is a new section of the Permit and all work associated with on-boarding this program is a completely new workload to be assumed by City budgets, staff, and resources. The City has completed its initial inventory as required per Part ii of this section. The updated 2023 business list contains 283 businesses/properties which would require inspection under the new program, which translates to roughly 57 inspections per year. In 2023, the Sr. Stormwater Engineering

Technician inspected all 57. Unsure of what conditions were expected, it was noted that conditions were ultimately better than anticipated. An educational approach towards substandard refuse areas was favored for this first year. Many business owners received guidance stickers and personal visits from the Sr. Stormwater Engineering Technician to help educate and guide their staff.



The spreadsheet documenting the initial 57 businesses is attached as Appendix H. These source control inspections are done in conjunction with other inspections or duties already required to create maximum efficiency for a small team. This program will also take place simultaneously with the City’s dumpster and trash compactor maintenance behavioral change program on a yearly basis.

2.7.3 Planned Activities

Work has been completed on an enforceable ordinance that began this year and the Stormwater Engineer will lead the effort to update City codes or ordinance as needed.

Staff plans to lean heavily on existing Phase 1 permittees and initial Phase 2 agencies to comply with this section in order to mimic successful implementations and codes as much as feasible.

Staff are also continuing to onboard the ‘NPDESPro’ Software for 2024, which will help manage the new ‘Source Control’ sites, contacts, and inspections, while streamlining the communications with businesses. This tool is important to the City’s ability to manage the extra workload without additional staffing.

2.8 Monitoring and Assessment (S8)

This section summarizes Phase II permit requirements related to stormwater monitoring and assessment (Section S8) and describes current and planned activities related to these requirements.

2.8.1 Requirements

Section S8 of the Phase II permit lists the following requirements:

- Regional Status and Trends Monitoring - Pay a fee to cover the permit extension period.
- Regional Status and Trends Monitoring - notify Ecology by December 1, 2019, whether the Permittee will pay into a collective fund to conduct stormwater discharge monitoring as prescribed in this Permit section.
- Stormwater Management Program (SWMP) Effectiveness and Source Identification Studies - Pay a fee to cover the permit extension period.
- Stormwater Management Program (SWMP) Effectiveness and Source Identification Studies - notify Ecology by December 1, 2019, whether the Permittee will pay into a collective fund to conduct stormwater discharge monitoring as prescribed in this Permit section.
- Provide information as requested to support Stormwater Action Monitoring (SAM) projects; maximum of three requests per cycle.

2.8.2 Recent/Ongoing Activities

The required notification for 2019 was filed and received by Ecology on November 18, 2019. The City has elected to pay into the collective fund in order to comply with this permit section. The alternative would require additional resources which would ultimately be more costly to the City.

2.8.3 Planned Activities

Nothing further than providing payments as invoiced is planned for compliance and the City plans to make prompt payment of any such invoices. The Stormwater Engineer will be tasked with responding to SAM requests for information, as needed, but this work effort cannot be planned as the nature of the requests is currently unknown.



3 APPENDICES

3.1 Appendix A – 2019-2024 Western Washington Phase II Municipal Permit Timeline

2019-2024 Western Washington Phase II Municipal Permit Time Line							
SWE = Stormwater Engineer (Zack R) OPS = Operations (Mike J/Tod M)		SWT = Stormwater Technician Engineering (Pat J) GIS = Stormwater Technician Operations (Bryan C)					
S5 Permit Components	Ongoing Program Implementation	2019	2020	2021	2022	2023	2024
A. Stormwater Management Plan	Annually update & submit the SWMP with Annual Report (S9) SWE - A.3.a. \$ tracking: track the cost (or estimate) of development and implementation of each component of the SWMP OPS - A.3.b. activity tracking: track # of inspections, follow up actions, official enforcement, public ed activities SWT/ GIS						
A.5. Coordination	Ongoing coordination SWE			By March 31: Submit description of internal coordination mechanisms SWE			
C.1 Stormwater Planning		Annually assess and report LID code-related requirements. SWE	By Aug. 1: Convene interdisciplinary team to lead SW Planning program. SWE	By March 31: Respond to series of Annual Report (AR) questions describing SW Planning during 13-19 permit SWE	By March 31: Submit watershed inventory. By June 30: Document the prioritized and ranked list of receiving water basins. SWE	By Jan. 1: Submit report of responses to SW Planning AR questions for coordination of long range plans during this permit term SWE By March 31: Develop Stormwater Management Action Plan (SMAP) for at least 1 high priority area.	
C2. Public Education and Outreach	Ongoing implementation of ed & outreach		By July 1: Conduct new evaluation of	By Feb 1: Follow community-based social marketing			By March 31: Evaluate & report on

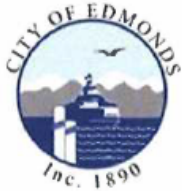
Department of Ecology
August 1, 2019

S5 Permit Components	Ongoing Program Implementation	2019	2020	2021	2022	2023	2024
	program elements SWT		effectiveness of current behavior change campaign SWT	practices, or similar, to develop or modify behavior change campaign tailored to the community SWT By Apr 1: Implement Strategy developed in S5.C.2.a.ii.(c)			implemented strategy SWT
C.3 Public Involvement and Participation	Ongoing -Create opportunities for public, including overburdened communities, to participate in SWMP and SMAP - Post to website SWMP and Annual Report by May 31 each year SWE / SWT						
C.4 MS4 Mapping and Documentation	Ongoing Maintain mapping data GIS		By Jan 1: Begin to collect size and material for all known MS4 outfalls GIS	By Aug 1: mapping data in electronic format with fully described mapping standards GIS		By Aug 1: Complete mapping all known MS4 connections to privately-owned stormwater systems GIS	
C.5 Illicit Discharge Detection and Elimination	Ongoing - Implement program to prohibit, address, and eliminate illicit discharges. - Train staff SWT	By Aug 1: Begin tracking total % of MS4 screened OPS	By Mar 31: MAY Begin using WQwebIDDE form for annual reporting - If using own tracking: submit as much of the info as possible in SWT	By Mar 31: Required to use WQwebIDDE form for annual reporting SWT - If using own tracking: submit .xml file that follows the schema, but may submit	By Mar 31: If using own tracking system for recordkeeping, submit a .xml that follows the data schema SWT		

S5 Permit Components	Ongoing Program Implementation	2019	2020	2021	2022	2023	2024
			format requested (or similar)	alternative formats (i.e. .xls, .csv, .txt)			
C.6 Controlling Runoff	-Implement & enforce program to reduce pollutants in runoff. -Train staff. SWE				By June 30: Adopt and make effective program that meets requirements of App. 1 or equivalent PH I program. (See permit for other dates) SWE		
C.7 Operations and Maintenance	-Inspect & maintain stormwater facilities and catch basins controlled by & regulated by the Permittee. - Implement practices, policies, and procedures to reduce SW impacts from all permittee lands. -Train staff. OPS				By June 30: Update maintenance standards By Dec 31: Document practices, policies, and procedures to reduce SW impacts from all permittee lands. By Dec 31: Update SWPPPs for heavy equipment maintenance or storage OPS / SWT yards/facilities.		
C.8 Source Control					By Aug 1: -Adopt & make effective ordinances requiring source control BMPs. -Establish inventory of properties with SWE / SWT	By Jan 1: -Implement inspection program -Implement progressive SWE / SWT	

Department of Ecology
August 1, 2019

3.2 Appendix B – G19 Permit Authority Letter



CITY OF EDMONDS

121 5TH AVENUE NORTH · EDMONDS, WA 98020 · 425-771-0220 · FAX 425-672-5750
Website: www.edmondswa.gov

PUBLIC WORKS DEPARTMENT
Engineering Division

MIKE ROSEN
MAYOR

January 9, 2024

Department of Ecology NWRO
Attn: Colleen Griffith
PO Box 330316
Shoreline, Washington 9833-9716

Subject: G19 Certification and Signature
Western Washington Phase II Municipal Stormwater Permit (WAR04-5513)

Dear Ms. Griffith:

This letter is submitted as allowed under federal regulations 40 CFR § 122.22 and in reference to the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for discharges from Small Municipal Separate Storm Sewers, Phase II Municipal Stormwater Permit (WAR04-5513) and successive NPDES permits for City of Edmonds municipal stormwater discharges. As allowed by law, the City can authorize a representative to sign, on behalf of the principal executive officer or ranking elected official, all reports and other information submitted to the Washington State Department of Ecology.

This letter shall serve as authorization under permit section G19.B, and shall formally and specifically authorize the Director of the Public Works and Utilities Department, for the City of Edmonds, to sign on my behalf any documents required by the permit and any other official correspondence related to the NPDES program that would otherwise bear my signature, to the full extent allowed by permit or law. The current person in this role is Oscar Antillon, however, this authorization is intended to run with the position/title of Public Works Director.

In accordance with Permit section G19:

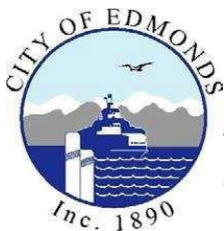
I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that Qualified Personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

Sincerely,

Mike Rosen
Mayor

cc: Oscar Antillon, Public Works Director
Robert English, City Engineer
Michele (Mike) De Lilla, Senior Utilities Engineer

3.3 Appendix C – Public Education & Outreach Activities for 2023



City of Edmonds Public Education and Outreach Activities for 2023

The required elements for a public education and outreach program (Section S5.C.2 of the Permit) are summarized below, followed by a description of the ongoing and planned SWMP activities that meet these requirements.



The City of Edmonds public and residential rain garden program has been a focus in recent years to help with excess stormwater flows and pollutants. This new privately owned rain garden, which was installed in 2021, is in the Perrinville Creek Watershed. [Photo taken Oct. 14, 2023]

Permit Requirements

Permit Section S5.C.1 states that the SWMP shall include an education and outreach program designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities. The education program may be developed and implemented locally or regionally. The Permit lists the following minimum performance measures for compliance with this element. Each Permittee shall:

- Provide an education and outreach program for the area served by the MS4. The program shall be designed to educate target audiences about the stormwater problem and provide specific actions they can follow to minimize the problem.
- Create stewardship opportunities and/or partner with existing organizations to encourage residents to participate in activities such as stream teams, storm drain marking, volunteer monitoring, riparian plantings, and education activities.
- Measure the understanding and adoption of the targeted behaviors for at least one target audience in at least one subject area. No later than July 1, 2020, permittees shall use the resulting measurements to direct education and outreach resources and develop a strategy to affect behavior change. Permittees may meet this requirement individually or as a member of a regional group.

Continuing/Ongoing Activities

Our approach and priorities for education and outreach has been informed by surveys conducted in 2009 and 2013, which measured the public's knowledge and practices regarding stormwater, and helped inform priorities for specific topics to be addressed in our community. These results, as well as the requirements of the current Phase II Permit, continue to be a guide for our Public Education and Outreach Program (see Table 1).

The Permit requires the City to continue a public education and outreach program and measure changes in behavior for at least one audience in at least one subject area. Since Edmonds is predominantly residential and based on the findings of the surveys, the City had focused efforts between 2013-2020 on educating homeowners on natural yard care techniques to encourage them to protect water quality. The integration of this program was done in partnership with regional organizations who lead the effort to implement and evaluate the program's efficacy.

With the conclusion of a January 2020 natural yard care evaluation in partnership with Snohomish County and upon careful consideration, the City decided to seek a new educational and behavioral change opportunity as the previous campaign had principally 'run its course'. The decision now to pursue an educational outreach program focused on 'dumpster and trash compactor maintenance within the business sectors of Edmonds, closer aligns to the importance and growing emphasis in clean watersheds and eliminating polluted runoff.

As many of our illicit discharge reports stem from in and around our local businesses as well as the integration of a source control program, the City felt the timing was right to pursue this dumpster and trash compactor maintenance program. As Edmonds' main business corridors are near sensitive watersheds such as Lake Ballinger and Puget Sound, the local relevancy of improving stormwater water quality is of the highest importance. Upon committing to the program, the City completed the initial research and data collection for this pilot in March 2021 by selecting specific businesses that had high potential for uncleanness and/or previous pollution concerns.

The initial pilot for this program compiled 10 businesses ranging from restaurants, medical facilities, grocery stores, and multi-use buildings who either had previous complaints or could be potentially pollution generating based on windshield surveys conducted by the Stormwater Engineering Technician. Over the course of a few weeks, the Sr. Stormwater Engineering Technician placed awareness stickers on dumpsters, spoke to owners and employees, and contacted property managers. Therefore, based on the data collected and additional feedback from the larger regional 'Dumpster Outreach Group', and support from recycling/disposal companies, Edmonds began to pursue this emerging program for this permit cycle. During this campaign, language translated stickers and signs will be used to assist this messaging.

In 2022, the program started in earnest as the Sr. Stormwater Engineering Technician visited 11 initial businesses located along the Highway 99 corridor. These initial businesses were identified as plausible pollution generating businesses such as restaurants, convenient stores and mixed-use strip malls. These establishments (along with additional businesses) will be monitored and communicated with periodically over the course of next few years with the ultimate hope of using this education program to facilitate change in behavior in terms of reducing onsite pollution. During 2022's pilot, success was measured by collecting data pertaining to the frequency that said businesses are actively managing their dumpsters/trash compactors.

For 2023, the Ecology mandated source control program (S5.C2.ii.b) kicked off in earnest reidentifying the pilot businesses as well as welcoming new additions to the program. In helping conduct this ongoing program, the City reached out to Aspect Consulting, a northwest based geotechnical and engineering firm to conduct and advise on the new program. Over the course of 2023, Aspect Consulting made four separate visits to the identified businesses. They spoke with business owners to convey the importance of refuse maintenance, in addition to conducting inspections. During the final visits, the data was compiled and examined, noted, and presented back to Edmonds staff in a final report. This report will now advise the City whether the expected behavior change towards maintaining the respective dumpsters/trash compactors was successful. See Appendix G to learn and understand the specifics of the study. As time and staffing permits, the City envisions this program increasing in size to monitor additional businesses across Edmonds. This program has been envisioned to carry over for years to come to gather a full data analysis and determine if changing behavior patterns in the long term is feasible.



The City continues to increase its partnership with numerous organizations to encourage residents and non-residents involvement in educational opportunities. Current and ongoing partnering organizations to include permittees and non-permittees:

- Snohomish County Surface Water Management
- City of Mountlake Terrace
- SnoSTORM (Sub-group of STORM for Snohomish County Municipalities)
- Snohomish Conservation District (SCD)
- STORM (Stormwater Outreach for Regional Municipalities)
- City of Lynnwood
- Washington State University Extension (Snohomish County Master Gardeners)
- Aspect Consulting
- Sound Salmon Solutions
- Edmonds-Woodway High School
- City of Shoreline
- Mountlake Terrace High School
- Students Saving Salmon (SSS)
- Storm Drain Marking Volunteers
- Western Washington University
- Edmonds College Green Team (AmeriCorps)
- Zero Waste Washington
- Edmonds College
- Salish Sea Monitoring Group
- Salmon Safe Inc.
- WSDOT
- Department of Ecology

- Edmonds Saltwater Marsh Rehabilitation Volunteers
- My Edmonds News (online newspaper)



In this third year of a volunteer restoration project at the Edmonds Marsh, reestablishing Shellabarger Creek is still a priority. In multiple volunteer events in 2023, events such as these pictured helped restore stream flows by clearing stormwater culverts and reestablishing historical drainage patterns. Over 500+ hours of event labor brought over 40+ community volunteers out to collect trash, remove old fencing, and dig/clear channels that was impacted with muck. In addition, these volunteers also removed invasive plants and replanted native vegetation. [Photos taken August 5th & 19th, 2023]



In May of 2023, the annual 'Watershed Fun Fair' also continued with great success. This event is truly one of our hallmark events that allows for a fun family affair that can offer insight into why we like to say, "Puget Sound Starts Here". This celebrated annual event offered nature-themed activities, exhibits, games, crafts, and fish feeding. This youth-centric event had over 100 plus attendees again thanks to a great message and beautiful weather!



Sr. Stormwater Engineering Technician shows a young and inquisitive participant just how easy it is to pick up pet waste and where to dispose of it. [Photos taken May 15, 2023]

On another positive note, the City's annual rain garden tour, which takes place every October was also able to stay on schedule. This popular and ever-growing event, using City staff as private tour guides, accompanied 23 registered participants for the second time now through a newer rain garden cluster (2021) in the Perrinville Creek watershed that illuminates and educates on the benefits of rain gardens. While these project gardens were designed to be private, they were also selected to be public facing, becoming both educational center pieces as well as functional water and pollutant reducing infrastructure.



Led by Jen Leach (Parks Dept.) (pictured) and Patrick Johnson (Public Works), the annual rain garden tour visited the Perrinville Creek Watershed. [Photos taken Oct. 15, 2023]

Working in partnership with Snohomish Conservation District (SCD) was as always, a highlight for the City. Along with installing additional private raingardens, advising and working with residents, and providing LID maintenance, plans were again also proposed to find and develop a new City owned right-of-way rain garden system in the Perrinville Creek watershed for 2023. This project would be akin to another successful and nearby raingarden project that was built in 2020. This watershed continues to be a priority for the City in developing green infrastructure to reduce the ongoing and problematic conditions we're faced with. In May/June of 2023 the hopeful project did indeed take shape in the form of an over 1000ft. long right-of-way bioswale & rain garden.



This bioswale will significantly reduce (or eliminate) the stormwater runoff from 83rd Avenue from directly flowing into the Perrinville Creek watershed. [Photo taken June 1, 2023]



As the contractor, Snohomish Conservation District (SCD) excavated a large unused piece of land, where it was converted to a useful and beneficial rain garden. [Photo taken June 1, 2023]

In October and November, we also continued our partnership with SCD as part of the October 14th Orca Recovery Day regional event as well as a native plant giveaway/rain barrel pickup event. This is Edmonds' third year taking part in and promoting this annual Orca recovery event. It's combined with over 70 other events across the region which highlights the plight of the Orca and what we can do to help save this iconic species. Likewise, with a chosen location at the Willow Creek Salmon & Watershed Education Center, Edmonds became a contact-less pick up point for those who pre-purchased water saving rain barrels for their homes and gardens. This successful event distributed ALL of the pre-purchased rain barrels. In conjunction, free native plants were also given away to residents by Edmonds Stewards while also engaging in numerous folks traveling through the park for the day. After receiving positive feedback from patrons as well as staff following the event, plans are in the works to continue this event for the future.



Snohomish Conservation District conducted our annual rain barrel distribution event for our local residents. [Photo taken by SCD and published on their Facebook Site].

With our partner in over a decade worth of environmental work and spill kit distribution, ECOSS (Environmental Coalition of South Seattle) and the City parted ways. However, a new opportunity to work with a new vendor also brought about new ideas and discussions. So, for the first year in many, the City hired Aspect Consulting to discuss business created pollution and how best to address it. Aspect Consulting was brought on to handle business spill kit distribution and to help aid in educating and bringing awareness to our residents on what is considered polluted runoff and how to encourage spill preparedness. Once onboard, Aspect Consulting delivered spill kits and provided pollution prevention education to 15 Edmonds businesses. Of those, all 15 businesses received new spill kits

and were identified as receiving stormwater education/training. In understanding the difficult nature of approaching these businesses to discuss spills/cleanup, we applaud Aspect Consulting in their mission and outreach to our local businesses. We anticipate this partnership to continue for years to come.

In 2023, the City of Edmonds and partner organization Students Saving Salmon also collaborated on several occasions to allow for Edmonds-Woodway High School students and interested local volunteers to work to improve our fish habitat. These activities ranged from restoring riparian plantings, surveys on spawning salmon, cleaning fish passable culverts, inserting salmon egg hatch boxes into streams, and monitoring sensitive stormwater outfalls. In addition, Students Saving Salmon also helped tremendously with the Edmonds Marsh/Shellabarger Creek Restoration project.

The City of Edmonds continued promotion of the video series “*Certain Things Don’t Mix*”, a collaborative effort from STORM and Comcast Spotlight. This commercial series first developed in 2018, helps bring public attention and awareness to the relationship between the environment and pollutants. They take a lighthearted but poignant look at how stormwater and pollutants mix to affect the environment. During 2023, they were posted multiple times on the City webpage, City newsletter, online local newspapers and social media as well as running continuously in the City Hall Green Resource Room. They have received upwards of 2,750+ views and responses since their debut in 2018.

The EarthCorps’ Puget Sound Stewards continued to be active in Edmonds during 2023, but the program officially transitioned to Sound Salmon Solutions in 2022 and was renamed the Edmonds Stewards. The Edmonds Stewards program enables local community participation to help keep our parks, forests, and wetlands healthy and sustainable. The program grew under new leadership and approximately 12 Stewards were active this year in leading volunteer groups throughout the City, performing a variety of habitat stewardship projects including removing invasive species and planting native plants throughout our parks.





City of Edmonds Street Sweeper was wrapped with an environmentally important stormwater message in 2023. Our sweeper truck runs 12 months out of the year, thus reaching thousands of residents.
[Photo taken Oct. 5, 2023]

For a complete list of our public education and outreach activities see Table 1.

Table 1. Ongoing Public Education and Outreach Activities

Educational Material / Activity	Description of Educational Material/Activity	Phase II Permit Sections(s) & Target Audience
Brochures, Booklets, Fact Sheets and Other Written Material (available from Engineering Department at City Hall, the Parks Department at the Francis Anderson Center, or on the City website)		
Stormwater Addendum & Checklists	Includes information to supplement or elaborate on the guidelines and requirements outlined in Edmonds Community Development Code Chapter 18.30 Stormwater Management and Ecology's Stormwater Management Manual for Western Washington.	S5.C.2.a.i General public and businesses S5.C.2.a.ii Engineers, contractors, developers, review staff and land use planners
Streamside Landowners Best Management Practices web page	This portion of the City's website discusses leaving stream banks natural, planting native plants and trees, limiting the use of lawn chemicals, proper car washing, and keeping pets out of streams. https://www.edmondswa.gov/cms/One.aspx?portalId=16495016&pageId=17269291	S5.C.2.a.i Residents, landscapers and property owners/managers
Natural Yard Care booklet	This booklet was prepared by Seattle/King County and Washington State University Extension and is available at Edmonds City Hall. https://snohomishcountywa.gov/DocumentCenter/View/7260/Natural-Yard-Care?bidId=	S5.C.2.a.i General Public and businesses S5.C.2.a.ii Residents, landscapers and property owners/managers
How to be a Salmon Friendly Gardener brochure	Brochure describes building healthy soil with compost, using natural fertilizers, directing runoff to pervious areas, and protecting shoreline habitat. https://snohomishcountywa.gov/DocumentCenter/View/3769/Salmon-Friendly-Gardener?bidId=	S5.C.2.a.i Residents, landscapers and property owners/managers)
Safer Alternatives for the Home and Garden fact sheets	A collection of fact sheets prepared by Toxics Free Future (previously Washington Toxics Coalition) that lists less toxic fertilizers and describes alternatives to common toxic products for control of slugs, aphids, and weeds. https://toxicfreefuture.org/healthy-living/healthy-gardens/	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, landscapers and property owners/managers
Protecting Water Quality in Urban Runoff	Fact sheet published by USEPA that discusses urbanization's impact on the quality & quantity of stormwater runoff and what can be done to best manage this runoff. https://www3.epa.gov/npdes/pubs/nps_urban_facts_final.pdf	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, landscapers and property owners/managers
Protecting Washington's Waters from Stormwater Pollution	Seven-page environmental education guide that discusses a variety of topics related to stormwater runoff and presents ways to protect receiving waters from the detrimental effects of uncontrolled stormwater runoff. https://fortress.wa.gov/ecy/publications/documents/0710058.pdf	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, landscapers and property owners/managers

City of Edmonds Stormwater Education and Outreach web page	City's Stormwater Education and Outreach web page provides information on stormwater and stormwater regulations, including FAQs, and information on car washing, vehicle leaks, and links to City and regional outreach brochures, articles, and web pages. https://www.edmondswa.gov/government/departments/public_works_and_utilities/stormwater_utility_system/stormwater_public_education_outreach	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, landscapers and property owners/managers
Car Wash brochures	Two car wash brochures are available that discuss the issues of car wash water discharging to storm drains. One brochure is focused on how to best handle washing cars at home, the other covers the use of the City's car wash kit during fund raising events. Both are available online. https://www.edmondswa.gov/UserFiles/Servers/Server_16494932/File/Government/Departments/Public%20Works%20and%20Utilities/Stormwater%20Utility%20System/Stormwater%20Public%20Education/Car%20Washing%20in%20Edmonds/Car_Wash_Brochure_FINAL.pdf	S5.C.2.a.i General public and businesses
Stormwater articles in City's electronic newsletter, social media and print publications.	A variety of stormwater related articles were posted in the City's electronic newsletter, the City's web page, the City of Edmonds' Facebook page as well as MyEdmondsNews.com and the Edmonds Beacon. These articles touched on such topics as drain cleaning, street sweeping, clean car washing, pet waste, snow and ice removal, vehicle leaks, rain gardens and natural yard care. These articles aim to be daily reminders and educational tools for our local residents that stormwater runoff is the single largest non-point pollution source to our waterways. https://edmondsbeacon.villagesoup.com/ https://myedmondsnews.com/ https://www.facebook.com/cityofedmonds/	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, Landscapers, and Property Owners/Managers
Wildlife of Edmonds poster	Developed by City Parks and Recreation staff, the poster has photos of the many animals (and their habitat) that can be found in Edmonds. The overall goal is to foster environmental stewardship among citizens of Edmonds and those who visit our parks and beaches. It is expected that this will result in behavior changes, such as picking up pet waste and fixing leaky cars, which will benefit watersheds and wildlife.	S5.C.2.a.i General public and businesses
Storm drain marking	Information regarding storm drain marking is provided on the City website. https://www.edmondswa.gov/government/departments/public_works_and_utilities/stormwater_utility_system/stormwater_public_education_outreach/storm_drain_stenciling . Free assistance and marking supplies are offered to volunteer groups that apply for the materials. In 2019 and 2020, two groups of people checked out the current stock of marking supplies.	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, Landscapers, and Property Owners/Managers
Rain Garden Handbook for Western Washington	This handbook is available for pickup at City Hall and given out during rain garden tours and information sessions. The Handbook can be used by homeowners, landscapers, landscape architects, engineers and others to create rain gardens in Western Washington, whether or not required by stormwater regulations. https://apps.ecology.wa.gov/publications/SummaryPages/1_310027.html	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, Landscapers, and Property Owners/Managers
STORM (Stormwater Outreach for	Access to the STORM public library as an open source of clean water, pollution prevention, and environmental outreach materials. https://www.pugetsoundstormgroup.org/Default.aspx#	S5.C.2.a.i General public and businesses

<i>Regional Municipalities)</i>		S5.C.2.a.ii Residents, landscapers, and property owners/managers
Presentations, Curriculums and Activities		
Spill Kit for Businesses Program – in partnership with Aspect Consulting	The City partnered with Aspect Consulting in 2023 to educate Edmonds' businesses on spill prevention and preparation. The businesses that received a spill kit were taught how to use the kit, the ways to minimize the occurrence and impact of future spills, and where their stormwater runoff flows to. In 2023, 15 businesses (many of them English speaking as a second language) were identified and served with PIG spill kits.	S5.C.2.a.i General public and businesses
Edmonds Beach Ranger Education and Outreach Program	The City of Edmonds has supported the Beach Ranger program since 1986, when the first Rangers were hired to teach marine education and conservation to school-aged children within the Edmonds School District, staff the Olympic Beach Visitor Station, and patrol the beaches in the summertime. Rangers teach marine ecology and beach etiquette to all ages, including the impacts of human activities on the Puget Sound and steps people can take to limit the impact of their actions. Due to impacts associated with the pandemic in-person learning and outreach was suspended, and a series of educational videos and activities geared towards distance learning were created. Lessons included marine ecology and etiquette, stormwater, plant anatomy, general nature observations, and more and can be accessed through the Discovery Programs website .	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, Landscapers, and Property Owners/Managers
Snohomish Conservation District	In 2023, in partnership with SCD, the City of Edmonds ran outreach and project to a new neighborhood right-of-way bioswale/rain garden. This new project was installed in the SMAP targeted Perrinville Creek watershed. This new public rain garden along with previously installed ones will help reduce the flows and pollutants into Perrinville Creek. Substantial erosion issues recently have made this watershed a priority to seek infiltration and reduction as an alternative to the traditional piped storm system. https://snohomishcd.org/	S5.C.2.a.i General public and businesses S5.C.2.a.ii Residents, Landscapers, and property owners/managers
Snohomish Conservation District	The City continued to partner with Snohomish Conservation District to bring awareness and outreach while beautifully maintaining 9 City owned rain gardens and bioswales throughout Edmonds. https://snohomishcd.org/	S5.C.2.a.i (General Public and businesses)
Snohomish Conservation District	On Nov. 18, 2023 with SCD, conducted a rain barrel pickup as well as a native plant giveaway at the Willow Creek Fish Hatchery. https://snohomishcd.org/	S5.C.2.a.i (General Public and businesses)
Orca Recovery Day – in partnership with Snohomish Conservation District	In 2023, Edmonds participated for the third time in Orca Recovery Day in October as we partnered with Snohomish Conservation District. SCD also provided signage and brochures for those interested. This will continue to be a yearly event. https://snohomishcd.org/orca-recovery-day	S5.C.2.a.i (General Public and businesses)
Dumpster Outreach Group <i>(Part of a regional</i>	Since 2014, the City had partnered with Snohomish County and other regional municipalities to deliver a comprehensive natural yard care	S5.C.2.a.i General public and businesses

program)	training program. With the conclusion to the 2020 natural yard care program though, the City has decided to pursue a new behavioral change campaign, 'Dumpster Outreach', which will target businesses within Edmonds. This new 2021 regional outreach campaign is comprised of 23 other cities. While the program is in development, staff have attended meetings, begun early data collection, ordered stickers/pamphlets and targeted sections of the business sector to emphasize. A pilot program took place in March 2021 to help give a direction to the program. In 2022, 11 business were chosen to begin the program. In 2023, the program began in full with the help of Aspect Consulting.	S5.C.2.a.ii General public and businesses
"Puget Sound Starts Here" Storm Drain Marking Program	In 2020 with student volunteers, over 600 newly purchased customized "Puget Sound Starts Here" storm drain markers were mounted above storm drains in and around key watersheds bringing awareness to reducing pollutants in stormwater. With limited access to students due to the ongoing pandemic, this program was paused but the hope is to continue it once again when appropriate.	S5.C.2.a.ii General public and businesses
Residential Rain Garden Tour and Information Session Program	Staff from the Parks Department and Public Works led a rain garden tour on Oct. 14, 2023. Using the Rain Garden Handbook for Western Washington as a guide, participants explored the process of designing, building, and maintaining a rain garden, and saw examples of key principles at work, and received a free copy of the Handbook and a list of local resources. 23 registered residents and locals showed up for the tour as this has become an annually successful event. https://fortress.wa.gov/ecy/publications/documents/1310027.pdf	S5.C.2.a.i General public and businesses
		S5.C.2.a.ii Residents, landscapers and property owners/managers
Lake Ballinger Water Quality Monitor Volunteer (Funding Support)	In 2022, the City of Edmonds, City of Mountlake Terrace and Snohomish County partnered in an interlocal agreement to better monitor the changing environmental conditions at Lake Ballinger. This agreement has led to Snohomish County training a local lake resident to do basic water quality monitoring to which this data will be collected by Snohomish County and compiled into a year- end report. https://snohomishcountywa.gov/DocumentCenter/View/72449/Ballinger_2021?bidId=	S5.C.2.a.i General public and businesses
		S5.C.1.a.ii General public and businesses
Puget Sound Beaches & Pier Cleanups (Stewardship)	In a typical year, service groups join us at our waterfront beaches to help remove litter in our parks. Similarly, a dedicated group of volunteer divers remove debris that has accumulated underwater at the base of the fishing pier.	S5.C.2.a.i General public and businesses
Edmonds College Green Team (AmeriCorps) (Stewardship)	In 2022, the City of Edmonds took on a new stewardship in Edmonds College. In partnership with AmeriCorps, this program will begin regular water quality testing in Perrinville Creek which has been plagued recently with scouring flows partially due to urban runoff. This testing will take place recurrently with a data set and recommendations once the project is finalized.	S5.C.2.a.i General public and businesses
		S5.C.2.a.ii General public and businesses
Watershed Fun Fair	This annual event typically focuses on providing activities and information about soil health, water quality, stormwater management, habitat restoration for fish and wildlife, green infrastructure, natural yard care, recycling, and wildlife found throughout a healthy watershed. Due to impacts associated with the pandemic, this event was cancelled in 2020 and 2021. In 2022 and 2023, the return of the event happened with over 100 kids and adults attending the event.	S5.C.2.a.i General public and businesses
		S5.C.2.a.ii General public and businesses
Students Saving Salmon (Funding Support) (Stewardship)	In 2023, the City of Edmonds continued its stewardship with Students Saving Salmon. This club of high school students mentored by a retired fish biologist have undertaken several small projects along Edmonds's waterways and perform hands-on in-field testing and observation of drainage courses. The City continues to provide funding to this	S5.C.2.a.i General public and businesses

	<p>program, which provides further engagement for those interested in stormwater and environmental related fields. Student projects are routinely covered in articles in the local newspaper, leading to increased awareness amongst a larger audience than just the students involved.</p> <p>In 2023, the students conducted water monitoring in the Edmonds Marsh, culvert cleaning, riparian restoration and plantings as well as releasing Chum and Coho Salmon in several local creeks.</p> <p>The students also become educators and stewards by volunteering their time in preparing a written report to present to Edmonds City Council each year.</p>	<p>S5.C.2.a.ii General public and businesses</p>
<p>Watershed Habitat Restoration Stewardship <i>(in partnership with Edmonds Stewards)</i> <i>(Stewardship)</i></p>	<p>In 2023, more than 2.0 acres of parkland was under active restoration with the goal of replacing invasive species with native trees and shrubs to both increase habitat diversity and resilience and help control flooding and erosion.</p> <p>Restoration activities include site preparation, planting, and maintenance, with work being performed by Parks staff, contractors, and/or volunteers. Sound Salmon Solutions' Edmonds Stewards (formerly EarthCorps) receive ongoing funding through the Parks Department to manage a volunteer program in Edmonds. Approximately 12 stewards are active in Edmonds, leading volunteer stewardship events in our forests, wetlands, and shorelines.</p>	<p>S5.C.2.a.i General public and businesses</p> <p>S5.C.2.a.ii General public and businesses</p>
Other		
<p>Green Resource Room</p>	<p>The City continues to promote and update the City's Green Resource Room, to showcase sustainability and low impact development (LID) techniques and provide guidance and information to Edmonds residents and developers. The Green Resource Room maintains a stock of low flow garden nozzles, garden timers, moisture meters and low flow showerheads that are offered free to the public. Solar Panels, rain barrels and a monitor which cycles through a variety of LID topics are also on display. A highlight of the room is the pervious pavement display which was created to spark interest and inform both residents and contractors of the benefits of incorporating infiltration on their properties. This display can be disassembled and brought to outreach events.</p>	<p>S5.C.2.a.i General public and businesses</p> <p>S5.C.2.a.ii General public and businesses</p>
<p>Mutt Mitt pet waste stations</p>	<p>"Leash and Scoop" signs are posted throughout Edmonds. Mutt Mitt pet waste stations are located at 11 parks and public areas in Edmonds, including the well-used and popular City dog park at Marina Beach. The Off Leash Area Edmonds (OLAE) non-profit organization help maintain and volunteer their time for maintenance and cleanups. These pet waste stations are maintained daily by City of Edmonds Parks and Recreation staff. As a controllable pollution source, the pet waste stations have educated and encouraged dog owners to utilize them throughout the city, with the Marina Beach Dog Park approximately removing 300 pounds of pet waste every week. There are 17 stations in total.</p>	<p>S5.C.2.a.i General public and businesses</p> <p>S5.C.2.a.ii General public and businesses</p>
<p>City proclamation for "Puget Sound Starts Here" Month</p>	<p>Every year the City makes an official proclamation to promote awareness of the Puget Sound Starts Here (PSSH) campaign which serves to educate the general public about local and regional water quality issues. This typically coincides with the Watershed Fun Fair, a substantial social media campaign, and a month long PSSH banner displayed over heavily travelled arterials for awareness.</p>	<p>S5.C.2.a.i General public and businesses</p>

<p><i>“Puget Sound Starts Here”</i> Decals on City Vehicles</p>	<p>In 2023, the City continued to refresh and replace the 14 in. x 6in. “Puget Sound Starts Here” campaign decals on the 8 vehicles used by the Stormwater Department. These vehicles are out on the streets of Edmonds daily for residents to see and promote the idea of clean stormwater. These vehicles include a Vactor truck, 2 street sweepers, a dedicated stormwater TV truck, and fleet vehicles.</p>	<p>S5.C.2.a.i General public and businesses</p>
<p>Stormwater Community Research Report</p>	<p>In 2013, Edmonds sanctioned a survey of a sample of its residents and businesses to measure the public’s knowledge and practices regarding stormwater quality issues to be compared to a baseline study conducted in 2009 along with five other municipalities. These 2009/2013 studies continue to guide our public education and outreach activities and enable the City to measure change in target behaviors as a result of our efforts. The report has been posted on the City’s stormwater outreach web page. https://www.edmondswa.gov/UserFiles/Servers/Server_16494932/File/Government/Departments/Public%20Works%20and%20Utilities/Stormwater%20Utility%20System/Stormwater%20Public%20Education/Outreach%20Resources/2013Edmonds_Stormwater_survey_report_FINAL_4_21_2014.pdf</p>	<p>S5.C.2.a.i General public and businesses S5.C.2.a.ii General public and businesses Residents, landscapers and property owners/managers</p>
<p><i>“Puget Sound Starts Here”</i> Commercials <i>“Certain Things Don’t Mix”</i> Campaign.</p>	<p>In 2023, the City in partnership with STORM and Comcast Spotlight helped fund the successful and well received 3 commercials bringing public attention and awareness to how “Certain Things Don’t Mix”. The commercials took a lighthearted but poignant look at how stormwater and pollutants mix together to affect the environment, and were posted multiple times on the City webpage, Green Resource Room, City newsletter, online newspapers and social media where they received upwards of 1500+ views. https://www.youtube.com/watch?v=DjkwzGSz69g https://www.youtube.com/watch?v=B2JCLtUf7E8 https://www.youtube.com/watch?v=L-QeXauQQng</p>	<p>S5.C.2.a.i General public and businesses S5.C.2.a.ii General public and businesses</p>
<p>Participation in regional municipal stormwater educational forums/groups.</p>	<p>The City regularly attended virtual local and regional meetings convened to share and promote outreach resources and techniques. The groups were formed with the intent of educating the general public and specific interest groups about stormwater and the impacts of stormwater on our environment.</p>	<p>S5.C.2.a.i General public and businesses</p>

3.4 Appendix D – IDDE Summary 2023

3.5 Appendix E – Lake Ballinger 2023 Health Report



Lake Ballinger 2023 Health Report

Lake Health = FAIR

The lake health is currently fair. Actions are needed to prevent pollution and improve shoreline health.

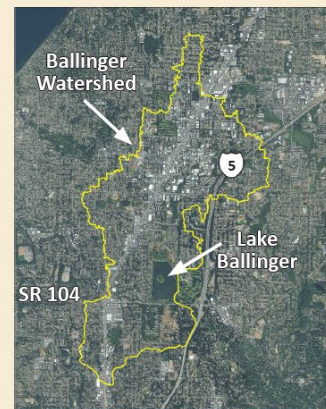
Health Indicators	Poor	Fair	Good	Excellent	Details
Water Clarity <i>Visibility in water</i>					Good – Average clarity is 11.2 feet deep and varies with the amount of algae.
Phosphorus <i>Keeping it low prevents algae</i>					Fair – Phosphorus levels are high.
Algae <i>Problematic if too much</i>					Fair – Algae levels are high. The lake has occasional toxic algae blooms
Shorelines <i>Shoreline plants protect the lake</i>					Fair – Half of the lake shoreline has trees and shrubs rather than lawns.

Possible ratings include: ■ Poor ■ Fair ■ Good ■ Excellent

Based on data collected from 2019-2022. For additional details and data, visit www.lakes.surfacewater.info.

Lake Ballinger Watershed

The properties inside the yellow line drain to the lake and make up the lake's watershed. The area outside the yellow line drains to other lakes, streams or rivers.



Ballinger Facts

- 💧 Lake Ballinger is a 100-acre lake within the cities of Mountlake Terrace and Edmonds.
- 💧 The lake name was changed from McAleer to Ballinger in 1901 when R.A. Ballinger purchased the island and surrounding lands.
- 💧 In 1970, the City of Mountlake Terrace purchased a golf course on the north end of the lake which is now a popular recreational park.
- 💧 Ballinger Park provides great opportunities for wildlife habitat and recreation for local residents.

Take Action to Protect Lake Ballinger

Reduce Pollution

Make small changes on your property to prevent phosphorus pollution (see reverse side).

Retain Trees & Shrubs

Keep or plant more trees and shrubs. They reduce and clean polluted runoff.

Prevent Milfoil

Clean, drain and dry your boat before launching or leaving the lake to prevent the spread of invasive plants.

See back for details on how you can help.

Protect Lake Ballinger

Reduce Phosphorus Pollution

What you do makes a difference. Here are the most important actions you can take on your property to reduce harmful phosphorus pollution and protect Lake Ballinger.



Practice Natural Lawn Care

Avoid fertilizer that contains phosphorus and watch natural lawn care videos at www.naturallyardcare.org.



Pick Up Pet Waste

Scoop it, bag it, and place it in the trash.



Prevent Soil Erosion

Cover bare soil areas with mulch or plants and fix eroding areas.



Infiltrate Roof & Driveway Runoff

Divert roof and driveway runoff into lawns or vegetated areas to absorb and filter pollutants.



Maintain A Leak-Free Septic System

Have an inspection at least every three years*. Visit www.SavvySeptic.org for more information.



Create A Healthy Shoreline (if applicable)

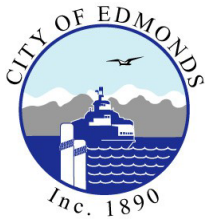
Maintain existing shoreline vegetation and replace some shoreline lawns with trees and shrubs.

* System type determines frequency.

Translations, interpretations, and ADA accommodations are available upon request. Call 425-388-3204. (TTY: 711)

Se encuentran disponibles traducciones, interpretaciones y adaptaciones de conformidad con la ADA a pedido. 425-388-3204 (TTY: 711)

3.6 Appendix F – Interdisciplinary Team Meeting Minutes



MEETING MINUTES

City of Edmonds Engineering Division

Date: July 14 @ 1:30 PM
Subject: NPDES Requirement for Stormwater Planning
Location: Zoom

Attendees:

- Zack Richardson (Stormwater Engineer)
- Rob English (City Engineer)
- Rob Chave (Planning Manager)
- Kernen Lien (Environmental Program Manager)
- Jeannie McConnell (Engineering Program Manager)
- Pat Johnson (Stormwater Engineering Technician)
- Leif Bjorback (Building Official)
- Shane Hope (Development Services Director)
- Angie Feser (Parks & Recreation Director)
- Phil Williams (Public Works & Utilities Director)

Topics

1. Zack provided the group with a quick refresh on ~~municipal~~ what the NPDES permit is and why it matters.
2. Zack reviewed with the group section S5.C.1: Stormwater Planning
3. Rob Chave (Planning Director) provided brief description of usual City-wide Comp Plan update process & contents; very minor update planned this year, with major update needed by 2024.
4. Discussed any other documents or reports used to managed projected growth, see table summary below.

Plan/Report Name	Next estimated update	Potential Impact on Stormwater	Relevance/notes/comments
Citywide Comprehensive Plan	Dec 2024	Medium	Large overarching documents; generally goals but not specifics. Does project growth.
Shoreline Master Plan	Dec 2024	Large	Protects shoreline area and controls some discharges
PROS (Parks) Plan	Early 2021	Small	Parks plan; stormwater impacts mostly limited to in-project impacts
Transportation Improvement Plan (TIP)	Annually	Small	Road portion of capital plan; stormwater impacts mostly limited to in-project impacts
Zoning Codes	Not likely in this cycle	Medium	Controls impervious maximum restrictions

Plan/Report Name	Next estimated update	Potential Impact on Stormwater	Relevance/notes/comments
Critical Area Codes	Unknown	Medium	Authorizes certain discharges within critical areas
Stormwater Code (18.30)	June 2022	Large	Storm code; all elements to comply with NPDES permit section S5.C.6
Combined Utility Rate Study	Unknown (completed at end of 2019)	Large	Directs and adjusts stormwater revenues.
Stormwater Comprehensive Plan	Dec 2022	Large	General guidance for internal stormwater programs; will include new rate study which control stormwater revenues within City of Edmonds
Street Standards	Unknown	Large	Controls road widths & configurations.

5. Discussed as a group, other known challenges with stormwater in current codes; see table summary below.

Potential Code Section To Review	Concern/Issue to be Considered/Reviewed
Critical areas code; stormwater facilities within critical area buffers	Review and consider exceptions for the placement of stormwater facility nearer than the outer 25% of buffers. Exception needed to allow discharges in steep slope areas to be moved to the area of least erosion potential.
Zoning code and/or zone-specific design standard; maximum impervious coverage	City utilizes a structure coverage maximum rather than true impervious surfaces maximum. This was well thought through in previous code updates, but general consensus was that this should be re-reviewed at next update to ensure we are addressing cumulative impacts adequately. City currently uses a "retro-fit requirement "within the code to help address cumulative impacts
Street standard; road diets	Reduce required lane/road widths to the minimum needed for safe/emergency access.
Tree code	Develop program, with necessary standard, to encourage clustering of development in order to maintain clustering of existing trees
Subdivision Code	Incentive-based development standards are being considered and could include incentives for stormwater mitigation above minimum requirements.
Building code, Planning Code, and/or zone-specific design standards: Definition of structure	It has been identified that constructing a permanent lid on dumpster enclosures changes their designation, requiring a building permit and making setbacks applicable. Need to work in an exemption that allows the installation of a permanent cover without additional requirements, which may conflict with aesthetics goals or code from other departments.
Stormwater Code	Adjust LID list to place Edmonds-added detention tank BMP as preferred over a perforated pipe connection BMP. More mitigation is achieved by detention tank than perforated pipe connection.

6. Discussed keeping Zack in the loop for nearly all future code updates; even if codes can't be changed, keeping stormwater involved is now a permit

requirement.

- a. This isn't a change from the previous approach; just a formalization of a practice which was already in-place and incorporated into previous updates.
 - b. The group as a whole is exceptionally collaborative and remembers how heavily stormwater factored into previous updates; a majority of the team members were present when making updated to comply with the previous permit cycle.
7. Agenda item to review annual report questions abandoned due to shortage of time; specific questions not reviewed with entire group. Zack will follow up directly or with additional meetings as needed as annual report due date approaches.

3.7 Appendix G – Edmonds Dumpster Outreach Memo



March 5, 2024


MEMORANDUM

Project No. AS230211A

To: Pat Johnson, City of Edmonds

From:


Jules Velasquez
Stormwater Scientist
jules.velasquez@aspectconsulting.com


Will Guyton
Stormwater Project Analyst
will.guyton@aspectconsulting.com

Re: Dumpster Lid Campaign

Background

To meet the Public Education and Outreach component (Section S5.C.2.) of the Western Washington Phase II Municipal Stormwater Permit, the City of Edmonds (City) participated in the Washington Stormwater Center’s Dumpster Outreach Group. The City implemented a Dumpster Lid Campaign (Campaign) based on a 2021 pilot study comprised of six jurisdictions: Bellevue, Bothell, Federal Way, Kirkland, Redmond, and Sammamish. Dumpsters with open lids can serve as a source of stormwater pollution by leaking organic matter, chemicals, and bacteria when it rains, draining into nearby stormwater drainage systems, and discharging to receiving waters. The Campaign utilizes targeted outreach efforts and educational materials to commercial businesses with a goal to increase education on proper use and maintenance of dumpsters, and to change public behavior by keeping dumpster lids shut. Success of the Campaign should result in limiting or eliminating this type of pollution from occurring. The City hired Aspect Consulting, a Geosyntec company, (Aspect) to help implement the Campaign, which was conducted from September through December 2023.

Targeted Campaign Participant Businesses

The City identified 12 commercial businesses for inclusion in the Campaign (see Table 1). These businesses were selected due to their classification as a high-traffic area, as well as many of them having past issues that would be beneficial to follow up on.

Table 1. Targeted Campaign Businesses

Business Name	Address	Type	Shared Dumpster
Casa Oaxaca	8402 Bowdoin Way	Restaurant	No



Business Name	Address	Type	Shared Dumpster
Five Corner Deli Market	8406 Bowdoin Way	Retail Food	No
Grease Monkey	21121 76 th Avenue West	Automotive	Yes
Noodle Hut	8418 Bowdoin Way	Restaurant	No
Panda Express	21940 Highway 99	Restaurant	Yes
Than Brothers Restaurant	22618 Highway 99	Restaurant	Yes
Arby's	8425 244 th Street SW	Restaurant	No
Denny's	8431 244 th Street SW	Restaurant	No
Kafe Neo – Harvey's	21108 Highway 99	Restaurant	Yes
Kang's Jokbal	22618 Highway 99, #110	Restaurant	Yes
Seattle Deli	22618 Highway 99, #114	Restaurant	Yes
Seaweed	21412 Highway 99, Suite A	Retail	No

Campaign Methods

Campaign implementation consisted of four distinct site visits to each business.

Site Visit 1

Aspect conducted initial site visits to each identified business on September 7, 2023, to provide first contact, inform businesses of the Campaign, and to fill out a dumpster outreach paper questionnaire (Appendix A). The intent of the questionnaire was to gauge each business’s understanding of stormwater pollution, knowledge of spill response procedures, and to identify needed behavioral changes related dumpster maintenance and lid closure. Aspect also took photographs of the location and condition of each dumpster (Appendix B). The businesses were also provided with pamphlets about the Campaign, and stickers to place on the dumpster to serve as a reminder to shut the lid.

Site Visits 2 and 3

Aspect completed second and third visits to each business on October 19 and November 20, 2023. These were drive-by screening visits to observe and note current dumpster conditions, determine if the amount of lid closures had changed, and take photos to further document conditions (Appendix B). Each visit was spaced approximately one month after the previous.

Site Visit 4

A final visit to each business was completed on December 6, 2023. This visit consisted of an exit survey to fill out the questionnaire again, in hopes that their knowledge of the Campaign and dumpster best management practices have increased. Dumpster conditions were also noted, and a final photo was taken (Appendix B).

Data and Results

During the final visits, nearly all the targeted businesses with dumpsters demonstrated an improvement in lid closures by the final survey (Figure 1). It appeared that many of the businesses at the start of the Campaign already practiced good habits; however, the targeted outreach provided intentional stormwater pollution prevention education opportunities to reinforce good habits. It was also noted that the provided campaign stickers appeared on multiple dumpsters.

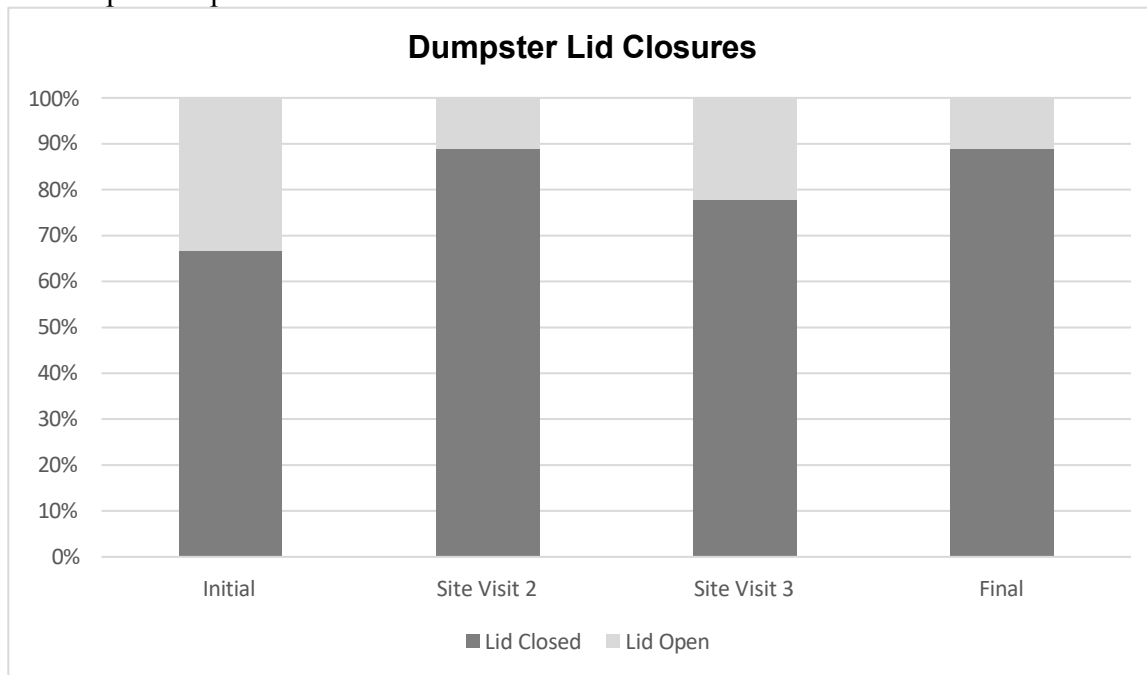


Figure 1. Dumpster Lid Closures by Site Visit

Although all 12 of the identified businesses were visited, given questionnaires and educational materials, and evaluated for site conditions, it is important to note that only 9 of the businesses utilize dumpsters for their waste receptacle. The remaining 3 businesses are part of a business plaza that utilizes a shared trash compactor; these 3 businesses were excluded from the results presented in Figure 1 because there was no lid to close.

As presented on Figure 1, 67 percent (6 out of 9) of the targeted businesses with dumpsters were observed to have closed lids during the first visit. During the final visit, the targeted businesses with closed lids increased to 89 percent (8 out of 9). The remaining business where the lid was observed open during the final visit is located within a plaza with multiple restaurants and a shared the dumpster area, which likely explains the inconsistency in shutting the lid.

Compared to the 2021 pilot study, the City received similar results. Shared dumpsters were more likely to have containers with lids open in comparison to privately owned dumpsters. There were no significant statistical differences in closures when it came to business type.

Observed Campaign Challenges

During the Campaign implementation, the following challenges were observed:

1. Three targeted businesses are located in the Boo Han Plaza, where they share a trash compactor with other tenants. Therefore, these businesses had no dumpster lids, and the Campaign goals did not really apply.
2. Many of the staff from the targeted businesses spoke little English, making communication about the Campaign difficult. At times, the language barrier resulted in the business representative having apprehension about participation.
3. The final visit often did not guarantee meeting with the employee that was initially surveyed, so there was no clear improvement in knowledge due to this inconsistency.
4. The time between the first and final visits was only four months. The short duration of time between interactions led to confusion for some business representatives and reluctance to fill out the final survey, having felt like they had just recently completed the process.

Recommendations

The City's Campaign appears to have been effective at creating behavioral change within the targeted group of businesses surveyed. If the City decides to continue this Campaign, Aspect recommends the following improvements for consideration:

1. **Increased Number of Relevant Businesses.** To better understand the effectiveness of the Campaign, it is recommended the City increase the number of targeted businesses. We also recommend the City only target and survey businesses that utilize dumpsters as their primary waste receptacle.
2. **Digital Surveys.** During the first site visit, paper questionnaires were utilized to survey the targeted businesses. However, an online version was created and utilized for the final site visit, and surveys were conducted using an iPad, which made this interaction smoother. The digital questionnaire was quicker, added professionalism to the surveyor that bolstered the business's comfort in giving out information, and provided better management of data. We recommend the City use a digital survey to gather data moving forward.
3. **Mitigating Language Barriers.** With the likelihood of interacting with non-English or limited English-speaking business owners and staff, we recommended the City produce educational materials in the most commonly spoken languages of their community to explain the goals and intent of the Campaign.
4. **Lid Closing Tool.** One of the most frequently cited barriers to lid closures is difficulty in reaching a lid that is too high. An incentive that this Campaign could offer is a lid-closing tool that could combat this issue.
5. **Timing.** The timing of site visits also played a role in employee willingness to participate, as there was confusion over why the same survey needed to be filled out twice in such a brief period of time (4 months). We recommend the Campaign site visits take place over the course of a full year.
6. **Train More Staff and Schedule Trainings.** The Campaign could be more effective if training was performed with more than one business employee present. If possible, personnel should try to schedule a short training meeting with all employees available to maximize outreach. This may have to be done before or after closing, which will require more effort; however, its effectiveness would be much greater in facilitating store-wide behavior change. If this is done, then there is no need for the final questionnaire to be implemented.

1.

City of Edmonds
March 5, 2024

MEMORANDUM
Project No. AS230211A

Limitations

Work for this project was performed for the City of Edmonds (Client), and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Attachments: Appendix A – Dumpster Outreach Questionnaire
Appendix B – Photolog

V:\230211 Edmonds Spill Kit and Dumpster Outreach Prgrms\Deliverables\2_Dumpster Outreach Program\Final\Edmonds Dumpster Outreach Memo_Final_2024.03.05.docx

APPENDIX A

Dumpster Outreach Questionnaire



**CITY OF EDMONDS
DUMPSTER OUTREACH PROGRAM QUESTIONNAIRE**

Date: _____

Business Name:		
Contact Person:		
Address:		
Email:		Phone:
Dumpster Ownership:	<input type="checkbox"/> Shared <input type="checkbox"/> Single <input type="checkbox"/> Other _____	

1. Have you used or are you familiar with spill kits? If yes, does your business have a spill kit?

2. Do you know where to buy or restock a spill kit? If so, where?

3. Do you know who to call if you see a spill that could cause pollution? If so, who?

4. Do you know what a storm drain is?

a. Where are storm drains located on your business's property?

b. Do you know where the storm drains discharge to? If so, where?

- 5. Who do you contact if your dumpster is leaking or needs replacement?**

- 6. Do you know why it is important to keep dumpster lids closed? If so, please explain.**

- 7. What are some barriers that may prevent you from keeping your dumpster lids closed?**

- 8. What are some tools or resources that would help you keep your dumpster lids closed? (Ex. step stool, staff training, lid closing tool, etc.)**

Mail to: Jules Velasquez, Aspect Consulting, 3201 Martin Luther King Jr. Way S, Seattle, WA 98144



APPENDIX B

Photolog





Photograph 1. Site 1, 2: Casa Oaxaca, Five Corner Deli Market



Photograph 2. Site 1, 2: Casa Oaxaca, Five Corner Deli Market



Photograph 3. Site 3: Noodle Hut



Photograph 4. Site 3, Noodle Hut



Photograph 5. Site 4: Grease Monkey



Photograph 6. Site 4: Grease Monkey



Photograph 7. Site 5: Panda Express



Photograph 8. Site 5: Panda Express



Photograph 9. Site 6, 7, 8: Pho Than Brothers, Seattle Deli, King's Jokbal



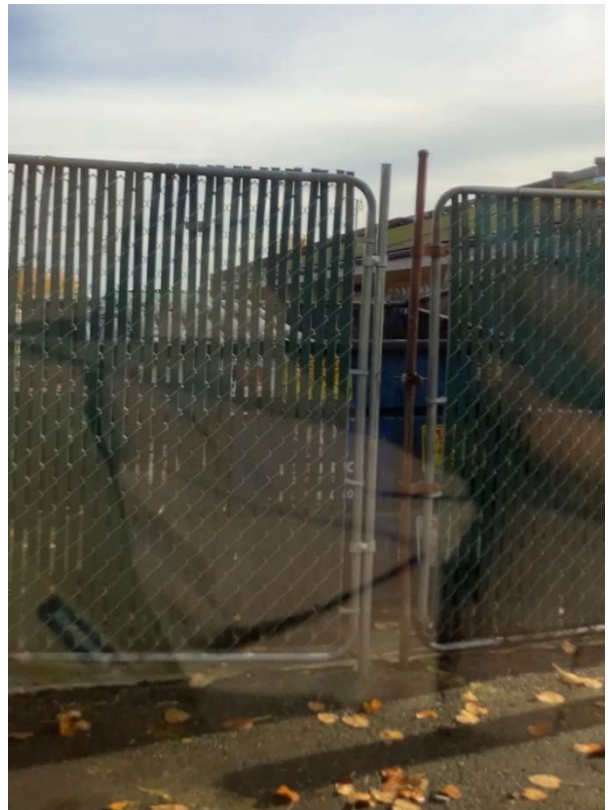
Photograph 10. Site 9: Arby's



Photograph 11. Site 9: Arby's



Photograph 12. Site 10: Denny's



Photograph 13. Site 10: Denny's



Photograph 14. Site 11: Kafe Neo



Photograph 15. Site 11: Kafe Neo



Photograph 16. Site 12: Seaweed



Photograph 17. Site 12: Seaweed

3.8 Appendix H – Source Control Business Inspected

Business Name	Address	Category	Amount of Times Visited	Corrections/Enforcements	Notes
APM AUTO SERVICE INC	7711 230TH ST SW	Automotive	1	None	
AUDIO VISIONZ	8130 240TH ST SW STE B	Automotive	1	None	
BALLINGER 76	7601 LAKE BALLINGER WAY	Automotive	1	None	
CALIBER COLLISION CENTERS	23510 HWY 99	Automotive	1	None	
CAMPBELL NELSON NISSAN INC	24325 HIGHWAY 99	Automotive	1	None	
CAMPBELL VOLKSWAGEN OF EDMONDS	24329 HIGHWAY 99	Automotive	1	None	
CANOPY WORLD INC	21508 HIGHWAY 99	Automotive	1	None	*Remove from list moving forward.
CAR TECH AUTO GLASS INC	22325 HIGHWAY 99	Automotive	1	None	
CARAVAN OUTFITTER, LLC (Campbell-Nelson)	24329 HIGHWAY 99	Automotive	1	None	
BOYER ELECTRIC CO INC	8119 240TH ST SW SUITE A	Constructio n	1	None	
5 CORNERS TERIYAKI	8410 MAIN ST SUITE C	Restaurant	1	None	
85C BAKERY CAFE	22611 76TH AVE W 100	Restaurant	1	None	
A BREWED AWAKENING	8400 BOWDOIN WAY	Restaurant	1	None	
A VERY TAKI TIKI BAR & GRILL- BENNBOYS LLC	518 MAIN ST	Restaurant	1	None	
AMATA THAI CUISINE	22814 100TH AVE WEST	Restaurant	1	None	
ANTHONY'S BEACH CAFE	456 ADMIRAL WAY SUITE 101	Restaurant	1	None	
ARBY'S	5005 PACIFIC HWY E 14	Restaurant	1	None	Under construction.
ARNIE'S AT THE LANDING	300 ADMIRAL WAY SUITE 211	Restaurant	1	None	
BAMBU	22511 HIGHWAY 99 106	Restaurant	1	None	
BAR DOJO	8404 BOWDOIN WAY	Restaurant	1	None	
BARKADA EDMONDS	622 5TH AVE S	Restaurant	1	None	
BISTRO 76	18401 76TH AVE W SUITE 103	Restaurant	1	None	
BOILING FISH	22511 HIGHWAY 99 STE 101	Restaurant	1	None	
BOILING POINT RESTAURANT - EDMONDS	22001 HWY 99 SUITE 100	Restaurant	1	None	
BUCATINI	9818 "A" EDMONDS WAY	Restaurant	1	None	
BURGER KING	7609 212TH ST SW	Restaurant	1	None	
CAFE LOUVRE-ALFA COFFEE INC	210 5TH AVE S STE 101	Restaurant	1	None	
CAFFE LADRO	8403 MAIN ST	Restaurant	1	None	
CALYPSO EDMONDS	109 MAIN ST	Restaurant	1	None	
CARAVAN KEBAB	9711 FIRDALE AVE	Restaurant	1	None	
CASA OAXACA	8402 BOWDOIN WAY	Restaurant	1	None	
CHANTERELLE	316 MAIN ST	Restaurant	1	None	

Business Name	Address	Category	Amount of Times Visited	Corrections/Enforcements	Notes
CHEESEMONGERS TABLE	203 5TH AVE S STE 1	Restaurant	1	None	*Ownership Change and business change
CHOPSTICKS IN EDMONDS	23025 100TH AVE W	Restaurant	1	None	
7-ELEVEN	8101 238TH ST SW	Retail Trade	1	None	*Closed
7-ELEVEN	21109 76TH AVE W	Retail Trade	1	None	
99 RANCH MARKET-WELCOME MARKET INC	22511 HIGHWAY 99 SUITE 108	Retail Trade		None	Spoke to employees regarding the shared dumpster areas cleanliness
ANCHOR CHIC	529 DAYTON AVE	Retail Trade	2	None	*Remove from list moving forward.
ANOTHER CASTLE VIDEO GAMES	23303 HIGHWAY 99 SUITE A	Retail Trade	1	None	
AVIATOR AUDIO INC	23311 HIGHWAY 99	Retail Trade	1	None	
BARO GROCERY	23830 HIGHWAY 99 116A	Retail Trade	1	None	
BOO HAN MARKET	22618 HIGHWAY 99	Retail Trade	1	None	
BRIGID'S BOTTLESHOP	188 SUNSET AVE S	Retail Trade	1	None	
BURLINGTON COAT FACTORY (AURORA ANTIQUE PAVILION)	24111 HIGHWAY 99 STE 201	Retail Trade	1	None	
99 HAIR CUT CENTER LLC	22511 HIGHWAY 99 SUITE 113	Services	1	None	
ALBERTO'S CHURROS, LLC	405 HOWELL WAY	Services	1	None	
ALLEY BELL MUSIC	143 5TH AVE N	Services	1	None	*Remove from list moving forward.
AMBREW, LLC - AMERICAN BREWING CO.	180 W DAYTON ST 102	Services	1	None	*Ownership change - New owner is Salish Sea Brewing
ANIMAL DERMATOLOGY SERVICE	120 W DAYTON ST STE A8	Services	1	None	
ARROW PREPARATORY ACADEMY	20406 76TH AVE W	Services	1	None	
AUDA BARBER SHOP	21014 76TH AVE W	Services	1	None	
BELLISSIMO SALON-BELLISSIMO HAIR SALON INC	402 MAIN ST	Services	1	None	
BESPOKE SKIN STUDIO	144 RAILROAD AVE STE 310	Services	1	None	
BEST FRIENDS PET RETREAT & DAY SPA	21100 72ND AVE W	Services	1	None	
BLUE COLLAR DOGHOUSE, INC.	180 DAYTON ST STE 101	Services	1	None	Spoke to employees regarding pet waste issues.
BRIDGE ANIMAL REFERRAL CENTER	8401 MAIN ST	Services	1	None	
BROOKLYN HAIR STUDIO	301 3RD AVE N	Services	1	None	



Perrinville Creek Stormwater Management Action Plan

City of Edmonds

Prepared for
City of Edmonds

Prepared by
Herrera Environmental Consultants, Inc.



Perrinville Creek Stormwater Management Action Plan

City of Edmonds

Prepared for
City of Edmonds
121 5th Avenue North
Edmonds, Washington 98020

Prepared by
Herrera Environmental Consultants, Inc.
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
Telephone: 206-441-9080

March 29, 2023

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PURPOSE

The City of Edmonds (City) Perrinville Creek Watershed Stormwater Management Action Plan (SMAP) is prepared to meet the requirements of S5.C.1.d.iii of the 2019–2024 Western Washington Phase II National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit (Phase II Permit) issued by the Washington State Department of Ecology (Ecology).

The SMAP is organized according to the permit language and identifies the following for the high priority catchment located in the Perrinville Creek watershed:

- A description of the stormwater facility retrofits needed for the area, including the best management practice (BMP) types and preferred locations.
- Land management/development strategies and/or actions identified for water quality management.
- Targeted, enhanced, or customized implementation of stormwater management actions related to Phase II Permit section S5, including:
 - Illicit discharge detection and elimination (IDDE) field screening,
 - Prioritization of source control inspections,
 - Operations and maintenance (O&M) inspections or enhanced maintenance, or
 - Public education and outreach behavior change programs.
- If applicable, identification of changes needed to local long-range plans, to address SMAP priorities.
- A proposed implementation schedule and budget sources for:
 - Short-term actions (i.e., actions to be accomplished within 6 years), and
 - Long-term actions (i.e., actions to be accomplished within 7 to 20 years).
- A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.

BACKGROUND

The City completed the *City of Edmonds Receiving Water Conditions and Stormwater Management Influence Assessment* on March 21, 2022 with a supplemental short addendum on June 2022 (Herrera 2022a) and the *City of Edmonds Receiving Water Prioritization* on June 27, 2022 (Herrera 2022b). A [Stormwater Management Action Planning web page](#) and [StoryMap](#) were developed in January–February 2022 and updated in February 2023. This SMAP is developed based on the findings of the watershed inventory and prioritization process conducted in 2022 and public input received in 2023. The watershed data and analysis conducted to prepare this SMAP will serve to better understand stormwater pressures upon receiving waters.

WATERSHED PRIORITIZATION SUMMARY

Step 1 of the watershed assessment and prioritization process was to identify appropriately sized watersheds and then refine the list of candidate watersheds. The process started with nine watersheds which are depicted in Figure 1. Three watersheds (Deer Creek, Lund’s Gulch, and Southwest Edmonds) had 4 percent or less of their area under City jurisdiction and therefore these were removed from further consideration, leaving six candidate watersheds to evaluate in Step 2:

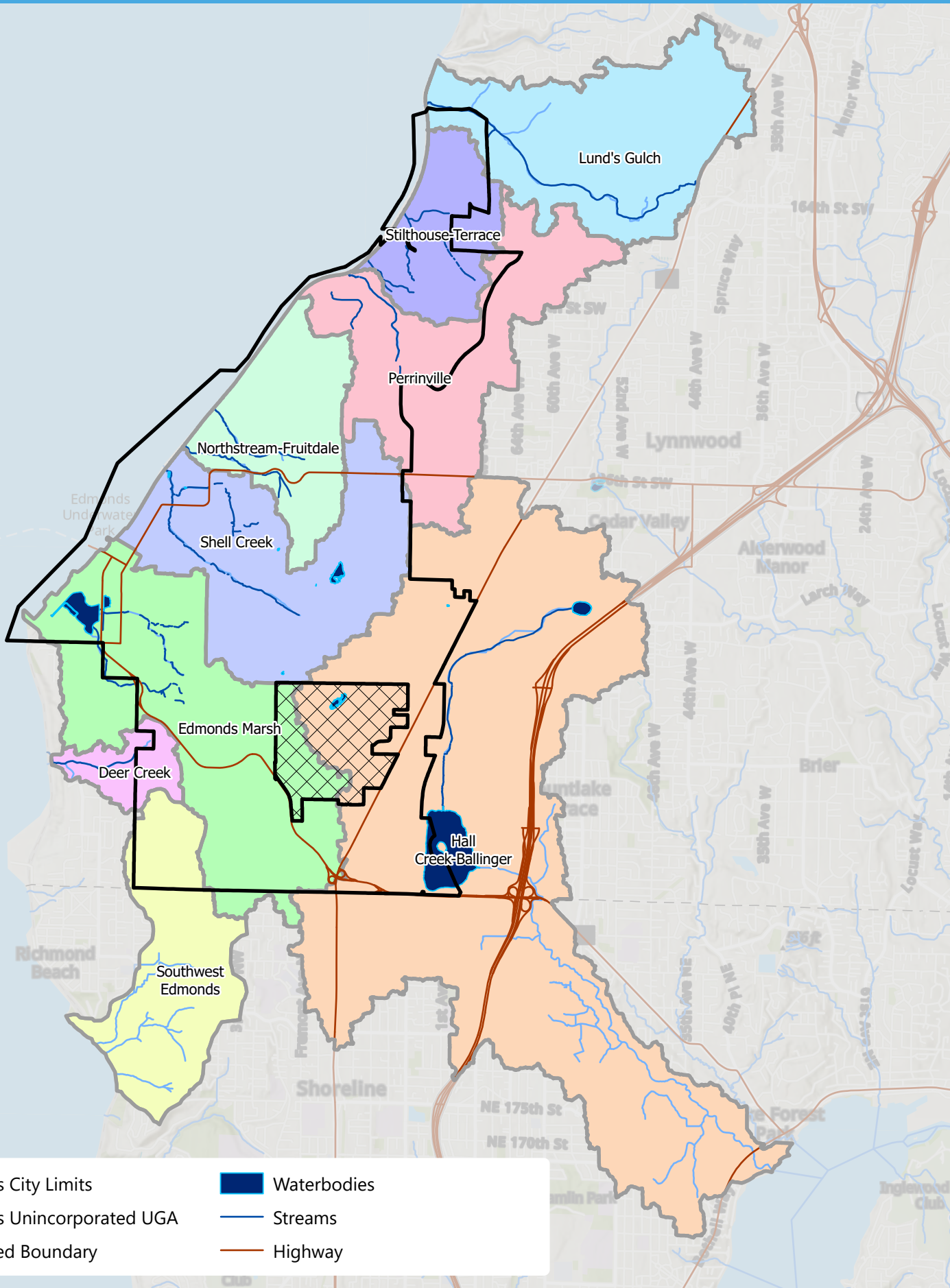
- Edmonds Marsh
- Hall Creek-Lake Ballinger
- Northstream-Fruitdale Creeks
- Perrinville Creek
- Shell Creek
- Stilthouse-Terrace Creeks







In Step 2, the remaining six candidate watersheds were evaluated using qualitative metrics from the receiving water assessment (Herrera 2022a). Metrics represented three categories: water use importance, development and future growth, and water and habitat conditions. Through the scoring process, four candidate watersheds emerged as higher priority, specifically for restoration, and were carried forward to Step 3:

- Edmonds Marsh
- Hall Creek-Lake Ballinger
- Perrinville Creek
- Shell Creek

Step 3 involved applying a second group of metrics to the four remaining candidate watersheds: public input, social equity, and support of existing plans and projects. As a result of this final step, the Perrinville Creek watershed was selected as the highest priority watershed for restoration.

Figure 1.
City of Edmonds Watersheds.



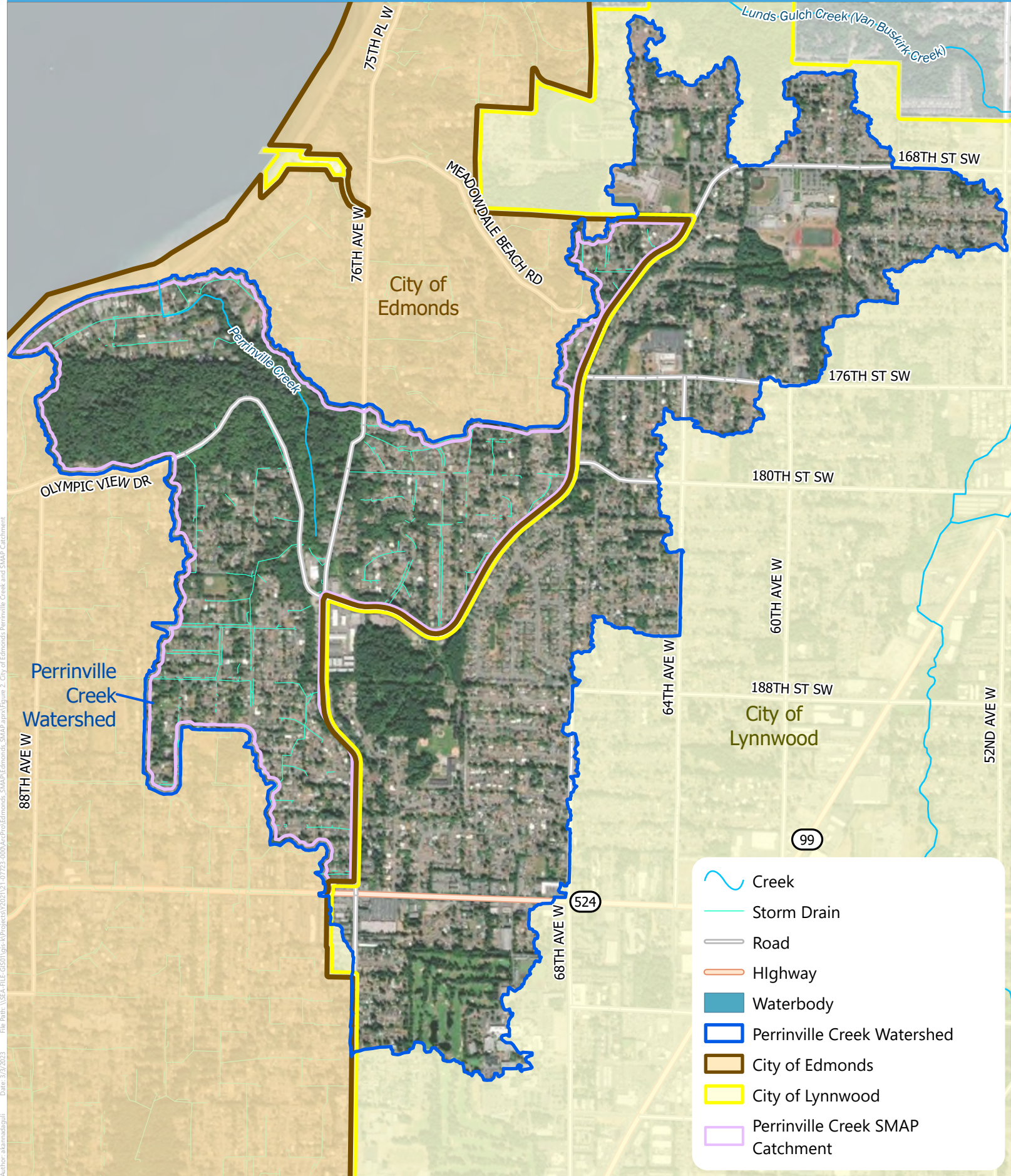
-  Edmonds City Limits
-  Edmonds Unincorporated UGA
-  Watershed Boundary
-  Waterbodies
-  Streams
-  Highway

The Perrinville Creek watershed was selected as the highest priority watershed based on the following characteristics:

- High water use importance:
 - Potential to support salmon species including coho and resident coastal cutthroat trout
 - Supports forage fish spawning areas at the Puget Sound nearshore
 - Provides a high level of public access to receiving waters
- Low level of existing and future development:
 - Low watershed impervious cover
 - Low percentage of development in the stream riparian buffer
 - Low expected population growth
- Good water and habitat condition
- Moderate jurisdictional control
- Support of social equity considerations
- Support existing stormwater retrofit projects
- High level of public support

The portion of the Perrinville Creek watershed that lies within the City limits is 541 acres, thus the full watershed within the city limits was selected as the catchment area for development of the SMAP since Ecology's guidance recommends a catchment that is approximately 400 to 600 acres (Ecology 2019). Figure 2 depicts the Perrinville Creek watershed and catchment that will be the focus of the SMAP.

Figure 2.
City of Edmonds Perrinville Creek and SMAP Catchment.



-  Creek
-  Storm Drain
-  Road
-  Highway
-  Waterbody
-  Perrinville Creek Watershed
-  City of Edmonds
-  City of Lynnwood
-  Perrinville Creek SMAP Catchment

File Path: \\SEA-FLE-60501\gis\Projects\2021\21-07723-000\ArcPro\Edmonds_SMAP\ArcMap\Figure 2_City of Edmonds Perrinville Creek and SMAP Catchment.aprx
 Date: 3/2/2023
 Author: alamedadagull

STORMWATER MANAGEMENT ACTIONS

Process to Identify Stormwater Management Actions

Stormwater management actions considered by the project team included projects, policies or programs to enhance infiltration, improve control of erosive flows, reduce excess flooding, reduce excess sediment transport and reduce bacterial pollution. City staff were actively involved in action identification, prioritization, implementation schedule, and identifying funding sources through meetings and field evaluation. The project [StoryMap](#) was updated, a public survey posted, and two public workshops were held in February 2023 (see the Summary of Public Input section of this SMAP for additional detail). Public input was solicited for prioritizing land management actions and program enhancements, identifying additional actions, and identifying areas with uncontrolled stormwater to inform future projects in the watershed.

Stormwater management actions were identified in three categories:

- **Strategic stormwater retrofit projects (RP):** These projects typically involve design and construction of a new stormwater facility or expansion/upgrade of an existing facility, to address existing development. Projects encourage infiltration or flow control and may include a water quality treatment component.
- **Land management strategies (LM):** Programs, policies or studies targeting methods to improve or protect lands that are of high value or lands that can be converted to improve water quality or encourage infiltration or flow control.
- **Stormwater management program enhancements (SE):** Actions integrated with existing Phase II Permit programs that supplement permit requirements to reduce pollutants, encourage infiltration and reduce erosive flows.

Strategic Stormwater Retrofit Projects

Two retrofit projects were identified in the Perrinville Creek watershed:

- RP-1. Perrinville 1 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach
- RP-2. Perrinville 2 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach

The project locations are depicted in Figure 3. The project name, description and BMP type are shown in Table 1. Detailed project summary sheets are in found Appendix A.

Table 1. City of Edmonds Perrinville Creek Watershed Stormwater Retrofit Projects.

Project	Description	BMP Type
RP-1. Perrinville 1 Neighborhood Retrofit Feasibility Analysis	Conduct community outreach, hydrologic investigation, feasibility evaluation and concept development for bioretention facilities at 179th St., Olympic View Dr., Ridge Way and 72nd Ave.	Bioretention
RP-2. Perrinville 2 Neighborhood Retrofit Feasibility Analysis	Conduct community outreach, hydrologic investigation, feasibility evaluation and concept development for bioretention facilities at 188th St., 196th St., and 76th Ave.	Bioretention

RP = retrofit project, BMP = best management practice

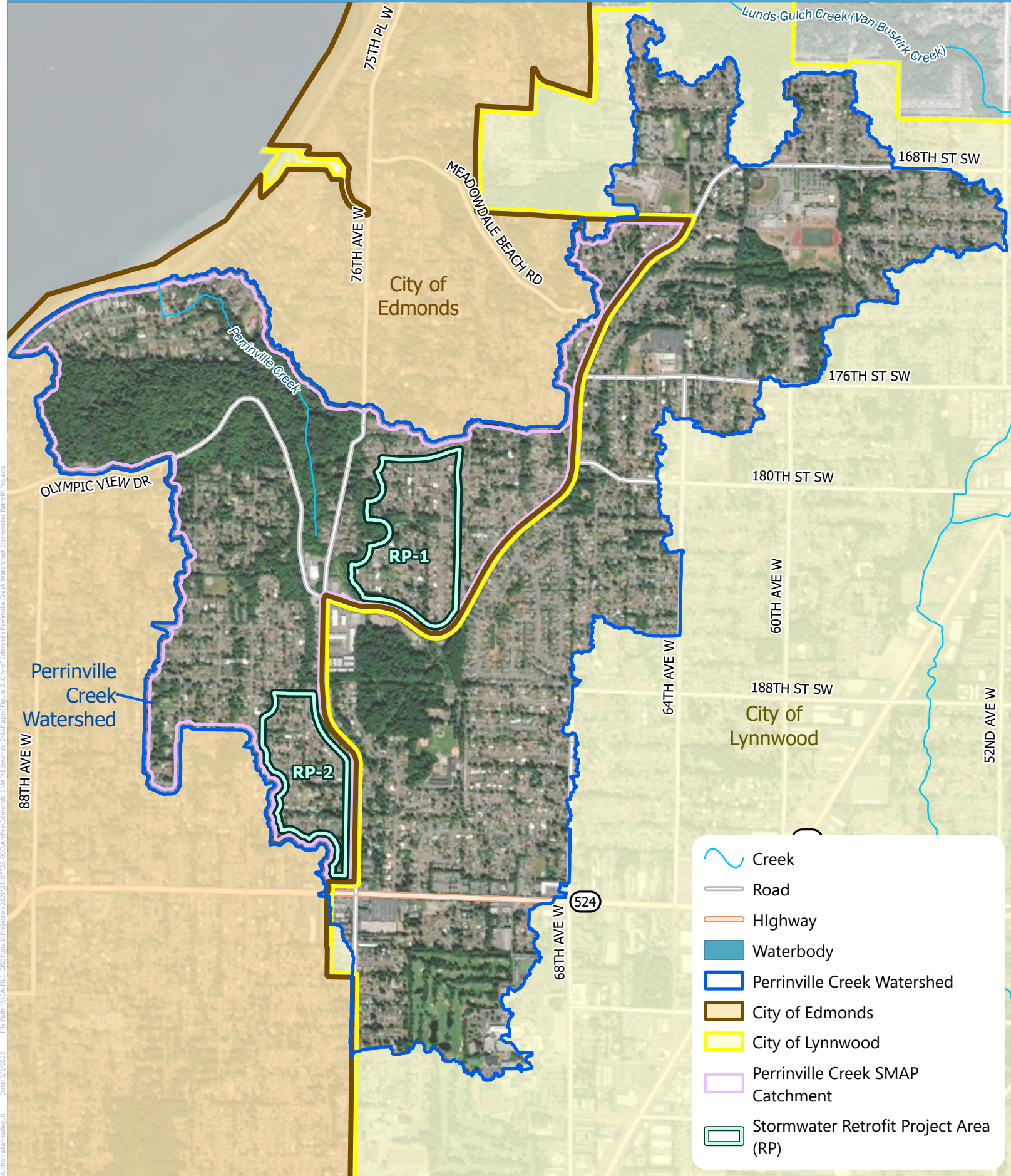
Land Management Strategies

Land management strategies were identified and prioritized based upon implementation feasibility and their potential to improve receiving water condition.

Four land management strategies were identified in the Perrinville Creek watershed:

- LM-1. Strengthen stormwater design requirements for redevelopment
- LM-2. Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood’s portion of the watershed
- LM-3. Identify hard surface areas (such as sections of parking lots or other paved areas) that are no longer of service to the property owner where pavement could be removed
- LM-4. Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property

Table 2 presents each land management strategy and a detailed description.



- Creek
- Road
- Highway
- Waterbody
- Perrinville Creek Watershed
- City of Edmonds
- City of Lynnwood
- Perrinville Creek SMAP Catchment
- Stormwater Retrofit Project Area (RP)

File Path: \\SEA-FILE-60501\gis-k\Projects\2021\21-07723-000\ArcPro\Edmonds_SMAP.aprx | Figure 3. City of Edmonds Perrinville Creek Watershed Stormwater Retrofit Projects
 Date: 3/2/2023
 Author: akamadagull

Table 2. City of Edmonds Perrinville Creek Watershed Land Management Strategies.

Strategy	Description
LM-1. Strengthen stormwater design requirements for redevelopment	Current City code requires 50% retrofit on “remaining” hard surfaces during redevelopment. Consider revising code to increase this retrofit requirement to 75%. Consider stricter flow control standards than what is in the current code for new and redevelopment projects.
LM-2. Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood’s portion of the watershed	Excluding areas that infiltrate or drain directly to Puget Sound, over 70% of the area draining to Perrinville Creek is located in the City of Lynnwood. Identify opportunities to build support for increased coordination to address flow control in the upper Perrinville Creek watershed.
LM-3. Identify hard surface areas (such as sections of parking lots or other paved areas) that are no longer of service to the property owner where pavement could be removed	Conduct evaluation of locations and high-level feasibility of areas as candidates for pavement removal and replacement with pervious surfaces and/or techniques to encourage infiltration. Identify potential cooperative projects and initiate discussion with landowners.
LM-4. Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property	Create a 3-year pilot program to develop educational resources, conduct outreach, and implement “boots on the ground” technical assistance to support streamside private property landowners with managing their land for the benefit of the stream.

LM = Land Management Strategy

Stormwater Program Enhancements

The City conducts a number of activities for compliance with the Phase II Permit. These include activities associated with IDDE, Source Control, Operations and Maintenance, and Public Education and Outreach. This section describes enhancements related to two permit sections: operations and maintenance (S5.C7) and public education and outreach (S5.C.2) for the Perrinville Creek watershed. No actions related to IDDE or source control programs were identified.

Operations and Maintenance

The Phase II Permit requires the City to inspect all City-owned or operated catch basins and inlets every two years and clean if inspection indicates that cleaning is needed. Additional provisions exist for reduced cleaning based upon inspection. In the Perrinville Creek watershed, the City identified the following action:

- SE-1. Continue to train City staff on green stormwater facility maintenance practices

Public Education and Outreach

The Phase II Permit requires the City to implement public education and outreach programs in order to build awareness, foster behavior change, and provide stewardship opportunities related to water resource protection. In the Perrinville Creek watershed, the City identified the following actions:

- SE-2. Provide workshops and technical assistance for constructing rain gardens
- SE-3. Conduct annual public rain barrel event
- SE-4. Implement a social media campaign to promote pet waste pickup
- SE-5. Develop and implement a natural yard care program

Table 3 summarizes the Phase II Permit section reference, identified action, and description.

Table 3. City of Edmonds Perrinville Creek Watershed Stormwater Program Enhancements.		
Permit Section	Action	Description
Operations and Maintenance (S5.C.7)	SE-1. Continue to train City staff on green stormwater facility maintenance practices	Maintained green stormwater facilities will result in optimum water quality treatment and flow control of the designed system.
Public Education and Outreach (S5.C.2)	SE-2. Provide workshops and technical assistance for constructing rain gardens	Work with property owners of developed lots to encourage rain gardens or other infiltration methods to reduce runoff. Partner with the Snohomish Conservation District to implement.
	SE-3. Conduct annual public rain barrel event	This event provides an opportunity for community members to purchase a low-cost rain barrel and learn about conserving water resources and stormwater runoff. Partner with the Snohomish Conservation District to implement.
	SE-4. Implement a social media campaign to promote pet waste pickup	Conduct messaging encouraging pet waste pick up for clean water and clean shoes.
	SE-5. Develop and implement a natural yard care program	Promote natural yard care through social media and other educational materials encouraging less use of fertilizers and chemicals.

SP = Stormwater Management Program Enhancement

CHANGES TO LONG RANGE PLANS

Identified actions will be considered for incorporation into the 2023-2024 stormwater comprehensive plan update and the City 2024 Comprehensive Plan periodic update based upon public input, future anticipated 2024-2029 Phase II Permit requirements, and City Council decisions.

SUMMARY OF PUBLIC INPUT

The City conducted outreach to inform and solicit input using a [Stormwater Management Action Planning web page](#) and several workshops. The project web page and StoryMap summarize the permit requirements, provide access to project documents, summarize the prioritization process, and highlight the identified stormwater management actions included in this SMAP. Two virtual public workshops were advertised through the City's listserv, website, direct email to stakeholders and interested citizens, and a postcard mailed to addresses in the Edmonds portion of the Perrinville Creek watershed. Two 1-hour virtual workshops covering the same content were held February 22, 2023 at 12:00 pm and 6:00 pm. A total of 39 attendees participated in the workshops (21 attendees at the 12:00 pm workshop and 18 attendees at the 6:00 pm workshop). A total of 13 responses were received from the public input survey, which may include multiple responses from an individual (i.e., surveys are anonymous, and no restriction was placed on multiple entries). The workshop materials and a recording of the presentation can be found on the City's [Stormwater Management Action Planning web page](#). A summary of the public survey input is included in Appendix B.

Workshop attendees were asked to select the top three stormwater management actions from a combined list of land management strategies and stormwater program enhancements (a total of nine stormwater management actions). The results showed a high level of support for three out of the four land management strategies included in Table 2:

- LM-1. Strengthen stormwater design requirements for redevelopment
- LM-2. Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood's portion of the watershed
- LM-3. Identify hard surface areas (such as sections of parking lots or other paved areas) that are no longer of service to the property owner where pavement could be removed

The results also showed a moderate level of support for the remaining land management strategy included in Table 2 and two out of the five stormwater program enhancements included in Table 3:

- LM-4. Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property
- SE-2. Provide workshops and technical assistance for constructing rain gardens
- SE-5. Develop and implement a natural yard care program

The public input survey (on the project web page) asked respondents to rank the list of land management strategies and stormwater program enhancements separately. Survey respondents were asked two additional questions:

1. *List other strategies or actions the City could consider to improve conditions in Perrinville Creek.*

2. Add other areas in the Perrinville Creek watershed where you've seen uncontrolled and damaging stormwater runoff, for consideration of potential stormwater facility retrofit projects by pinning the location on the map provided.

When survey participants were asked to *Rank the proposed land management strategies in order of importance*, the strategy that received the highest average score was:

- LM-2. Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood’s portion of the watershed

Average scores from 11 participants for each proposed land management strategy are summarized in Figure 4. Two survey participants skipped this ranking question.

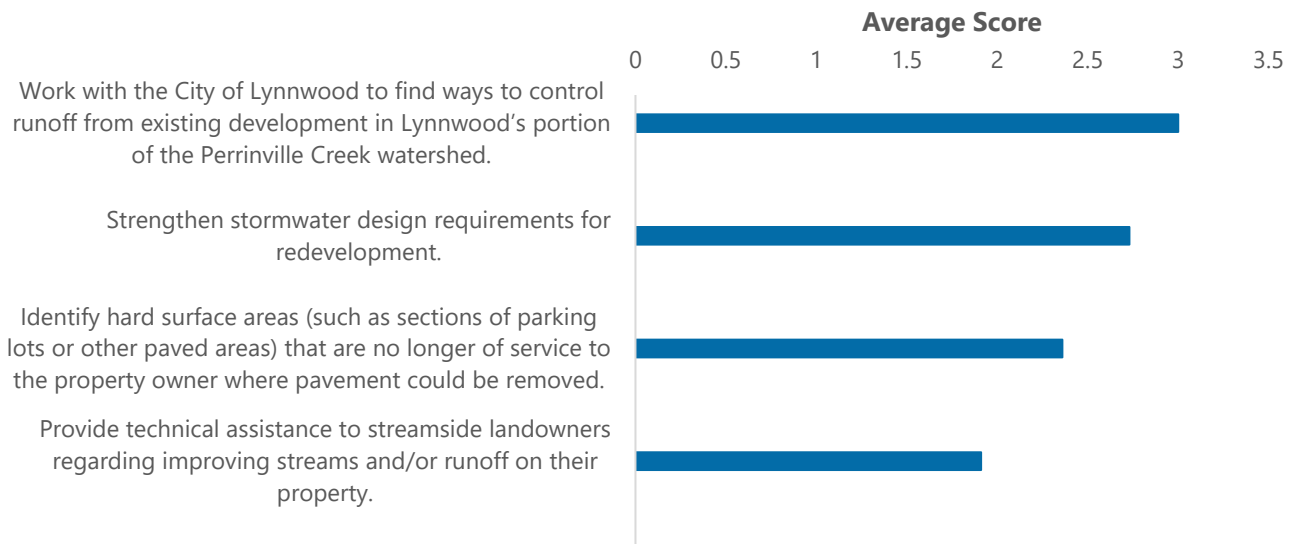


Figure 4. Results from the Public Survey Question on Ranking Proposed Land Management Strategies.

When survey participants were asked to *Rank the proposed stormwater program enhancement actions in order of importance*, the strategy that received the highest average score was:

- SE-1. Continue to train City staff on green stormwater facility maintenance practices

Average scores from 11 participants for each proposed stormwater program enhancement action are summarized in Figure 5. Two survey participants skipped this ranking question.

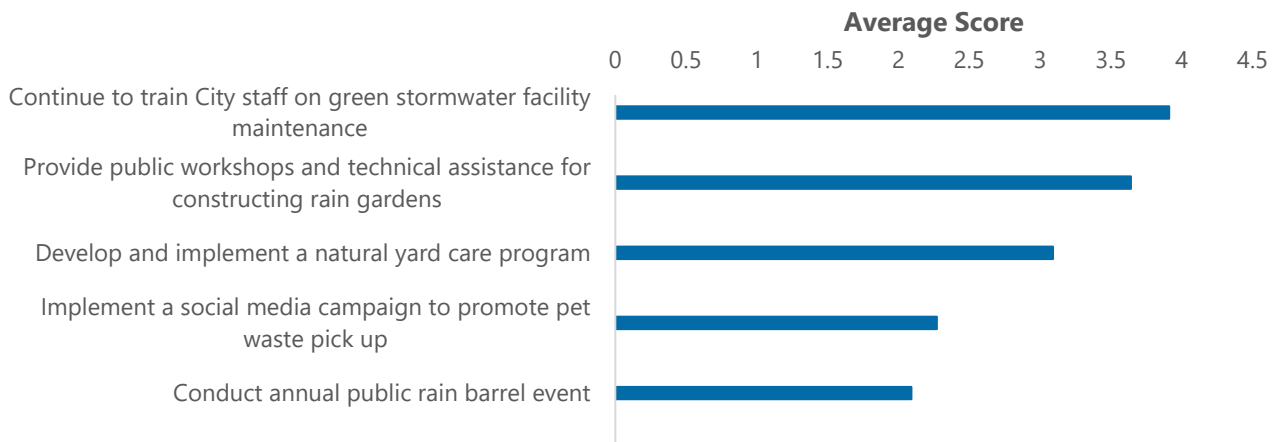


Figure 5. Results from the Public Survey Question on Ranking Proposed Stormwater Program Enhancement Actions.

A variety of comments were received from survey participants regarding other strategies or actions the City could consider to improve conditions in Perrinville Creek. Several comments relate to in-stream work that is not the focus of this SMAP. Other comments express a need for additional stormwater facilities and proposed locations for new facilities or retrofits of older facilities. A subset of comments is listed below and all comments are included in Appendix B:

- Larger scale infiltration facilities utilizing [underground injection controls] UICs and having small footprints have been shown feasible and highly beneficial in parts of the watershed: Seaview Park (Phases 1 and 2), Lynndale Elementary School. There are several existing detention facilities along the Olympic View Drive corridor in Lynnwood which could be modified to promote infiltration.
- Request Lynnwood actively participate in addressing and funding the stormwater damage caused to Perrinville Creek.
- Other than [technical assistance] TA for rain gardens, I doubt the other enhancement actions will bear many results for the effort.

The City’s initial responses to these comments are also included in Appendix B.

Survey participants were also invited to put points on a map indicating areas in the Perrinville Creek watershed where uncontrolled and damaging stormwater runoff has been observed. A map of pinned locations is included as Figure B-1 in Appendix B. Several points are clustered in one area on a residential street, which indicates that those points may not have been adjusted from the default point included on the map.

The City will continue to inform the public during implementation of the SMAP. Public input and future Phase II Permit requirements will be considered during SMAP implementation.

PROPOSED IMPLEMENTATION SCHEDULE AND BUDGET SOURCES

For each action, the City identified whether the action would be implemented in the short-term (accomplished within 6 years) or long-term (accomplished within 7 to 20 years). Short-term is assumed to be 2024-2030 and long-term is assumed to be 2031-2044, and is dependent on the requirements in the Phase II Permit reissuance on August 1, 2024.

The proposed budget source for a majority of the stormwater management actions is the existing stormwater utility fund, with the exception of the stormwater retrofit projects. Stormwater retrofit projects may be included in the future stormwater comprehensive plan update and incorporated into capital project planning. Future Phase II Permit requirements for stormwater facility retrofits will be reviewed and apply to capital project planning.

Table 4 identifies the proposed implementation and potential budget sources for each action.

Appendix C summarizes the cost estimate and assumptions for short-term actions (Table C-1) and long-term actions (Table C-2). The cost estimates and assumptions are in 2023 dollars and designed to inform the potential impact to the City stormwater funds of future anticipated Phase II Permit requirements.

Table 4. City of Edmonds Stormwater Management Actions Schedule and Budget Sources.

Action	Schedule		Budget Source
	Implement 2024–2030 Short-term	Implement 2031–2044 Long-term	
RP-1. Perrinville 1 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach	✓		Not determined
RP-2. Perrinville 2 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach	✓		Not determined
LM-1. Strengthen stormwater design requirements for redevelopment	✓		Existing stormwater utility fund
LM-2. Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood’s portion of the watershed	✓	✓	Existing stormwater utility fund
LM-3. Identify hard surface areas that are no longer of service to the property owner where pavement could be removed	✓		Existing stormwater utility fund
LM-4. Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property	✓	✓	Existing stormwater utility fund
SE-1. Continue to train City staff on green stormwater facility maintenance practices	✓		Existing stormwater utility fund
SE-2. Provide workshops and technical assistance for constructing rain gardens	✓		Existing stormwater utility fund
SE-3. Conduct annual public rain barrel event	✓	✓	Existing stormwater utility fund
SE-4. Implement a social media campaign to promote pet waste pickup	✓		Existing stormwater utility fund
SE-5. Develop and implement a natural yard care program	✓		Existing stormwater utility fund

RP = Retrofit Project, LM = Land Management Strategy, SP = Stormwater Management Program Enhancement



FUTURE ASSESSMENT AND FEEDBACK

This SMAP identifies and describes retrofit projects, land management strategies, and enhanced stormwater management actions that are intended to protect or enhance Perrinville Creek. The City will assess implementation of this SMAP by tracking project implementation and program effectiveness. The City will use the results of this assessment to adjust SMAP implementation over time.

Retrofit projects will be reviewed and tracked as part of capital project planning and budgeting. More detailed stormwater program assessment, capital project planning, and financial analysis will occur on a 6-year cycle as part of comprehensive planning and provide an additional opportunity for tracking.

Progress on land management strategies will be assessed annually and staff allocation will be shifted as needed to meet implementation goals.

Stormwater program activities will be reviewed annually during Phase II Permit reporting and staff and budget allocation will be shifted as needed to meet implementation goals.

REFERENCES

Ecology. 2019. Stormwater Management Action Planning Guidance. Washington Department of Ecology-Water Quality Program. Publication Number 19-10-010.

Herrera. 2022a. City of Edmonds Receiving Water Conditions and Stormwater Management Influence Assessment. Prepared for the City of Edmonds by Herrera Environmental Consultants, Seattle, Washington. March 21. Addendum prepared June 28, 2022.

Herrera. 2022b. City of Edmonds Receiving Water Prioritization. Prepared for the City of Edmonds by Herrera Environmental Consultants, Seattle, Washington. June 27.

Note:

Some pages in this document have been purposely skipped or blank pages inserted so that this document will print correctly when duplexed.

APPENDIX A

Project Summary Sheets

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PERRINVILLE CREEK WATER QUALITY RETROFIT

Perrinville 1 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach

Existing Site Map



Location

Perrinville 1 (approximately 71 acres) consists of neighborhood streets bounded between 179th Street (northern extent), Olympic View Drive (southern extent), the ravine west of Ridge Way (western extent), and 72nd Avenue (eastern extent).

Opportunity

Runoff from this neighborhood area drains into Perrinville Creek, where erosive flows are a major concern. Neighborhood streets have unimproved right-of-way (ROW) areas along the edge of street pavement that are a mixture of gravel, grass, and landscaping. Existing conveyance includes ditches and culverts. Piped storm drain conveyance is present in some portions of the neighborhood. Although slopes are too steep for green infrastructure in some ROW locations, there may be several opportunities to reduce erosive flows and support infiltration prior to entering Perrinville Creek. To date, this neighborhood has not received City investment in green infrastructure.

Benefits

Future bioretention projects in this neighborhood would help reduce flows to Perrinville Creek while also improving water quality, increasing stormwater educational opportunities, and providing aesthetic benefits in an area that historically has not received green infrastructure investments.

Site Considerations

Underlying soils are Vashon glacial till, which overlays more permeable Vashon advance outwash at depths of 5 to 40+ feet. Perched groundwater was identified below the till soils in one boring in Perrinville 1 and slopes are also steep in many sections of the ROW. Given the variability in site characteristics, detailed infiltration testing and hydrogeologic analyses will be needed to determine which sites and BMP configurations will be most effective for promoting detention and infiltration.

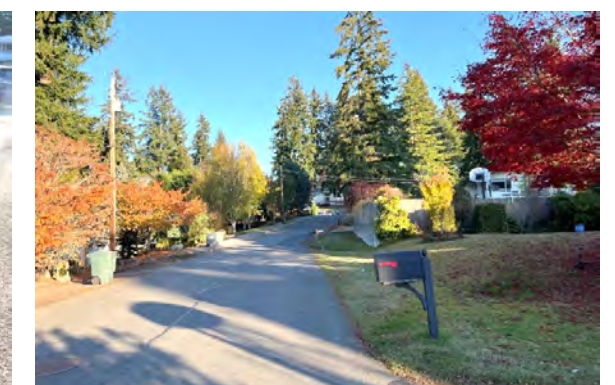
Existing Conditions Photos



Existing stormwater drainage ditches in the ROW could be retrofitted to provide water quality treatment and infiltration.



The neighborhood has many gravel ROW areas.



This is an example of a large grassy area in the ROW at a topographic low.

PERRINVILLE CREEK WATER QUALITY RETROFIT

Perrinville 1 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach

Concept Site Plan



Project Description

For the 3.05 acres of potentially suitable ROW area (green), conduct community outreach and a feasibility analysis to prepare for future green infrastructure projects in the neighborhood:

- Secure grant funding for community engagement and feasibility evaluation.
- Develop a community outreach plan and engage neighborhood residents to help identify desired project locations in the ROW.
- Investigate hydrogeologic conditions, given the potential for perched groundwater below the till, to identify suitable locations.
- Apply the results of the feasibility evaluation and hydrogeologic investigation to prioritize sites with the highest level of community support and greatest cost-benefit.
- Develop conceptual designs in anticipation of final design and construction.
- Apply for grants to fund design and construction.

Bioretention could be used for water quality treatment, coupled with either detention and/or infiltration, depending on site conditions. Detention could be constructed using detention pipes, detention chambers, or modular suspended pavement systems. Infiltration could take the form of infiltration trenches, pit drains, or drilled drains, depending on the location, depth to till, and presence of an unsaturated receptor layer.

Cost

The adjacent table summarizes planning-level cost estimates for Perrinville 1. Cost estimates assume that the project will occur concurrently with Perrinville 2 and share tasks. Costs would be higher if the projects are conducted separately.

Project Task	Cost Estimate (2023 Dollars)
Community Engagement	\$50,000
Hydrogeologic Investigation*	\$126,800
Feasibility Evaluation*	\$109,900
Concept Development*	\$40,300
Total	\$327,000

* Indicates costs based on the Stormwater Retrofit Feasibility grant application, with costs split evenly with Perrinville 2.

Design Precedents



Barton Roadside Rain Gardens

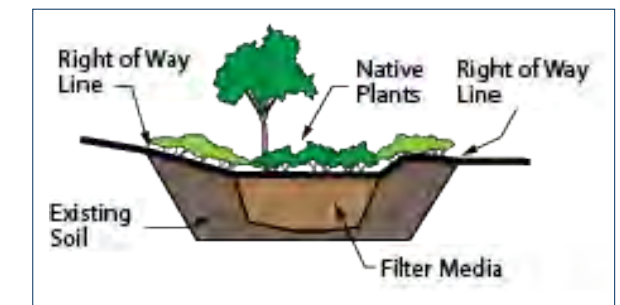
West Seattle, WA

- Neighborhood-scale retrofit
- Connected to deep well for infiltration



Bioretention with Silva Cells

- Suspended pavement system traps and stores water
- Bioretention and trees provide aesthetic benefits



Bioretention Concept Diagram

- Bioretention in ROW
- Incorporates native plants

PERRINVILLE CREEK WATER QUALITY RETROFIT

Perrinville 2 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach

Location

Perrinville 2 (approximately 55 acres) consists of neighborhood streets bounded by 188th Street (northern extent), 196th Street (southern extent), the Perrinville Creek watershed boundary (western extent, excluding the area that drains to the Seaview Park stormwater facility), and 76th Avenue (eastern extent).

Opportunity

Runoff from this neighborhood area drains into Perrinville Creek, where erosive flows are a major concern. Neighborhood streets have unimproved right-of-way (ROW) areas along the edge of street pavement that are a mixture of gravel, grass, and landscaping. Existing conveyance includes ditches and culverts. Piped storm drain conveyance is present in some portions of the neighborhood. Although slopes are too steep for green infrastructure in some ROW locations, there may be several opportunities to reduce erosive flows and support infiltration prior to entering Perrinville Creek.

Residential rain gardens are present within the Perrinville 2 project area. Another neighborhood located south of Perrinville 2, in the southern portion of the Perrinville Creek watershed, has also been the focus of rain garden retrofit projects within its ROW. These existing local projects indicate there is potential for additional, community supported, green infrastructure projects.

Benefits

Future bioretention projects in this neighborhood would help reduce flows to Perrinville Creek while also improving water quality, increasing stormwater educational opportunities, and providing aesthetic benefits.

Site Considerations

Underlying soils are Vashon advance outwash in some areas. In other areas, 5 to 20+ feet of Vashon glacial till overlies the more permeable Vashon advance outwash. Given the variability in site characteristics, detailed infiltration testing and hydrogeologic analyses will be needed to determine which sites and BMP configurations will be most effective for promoting detention and infiltration.

Existing Conditions Photos



The neighborhood has many gravel ROW areas that could be retrofitted for infiltration.

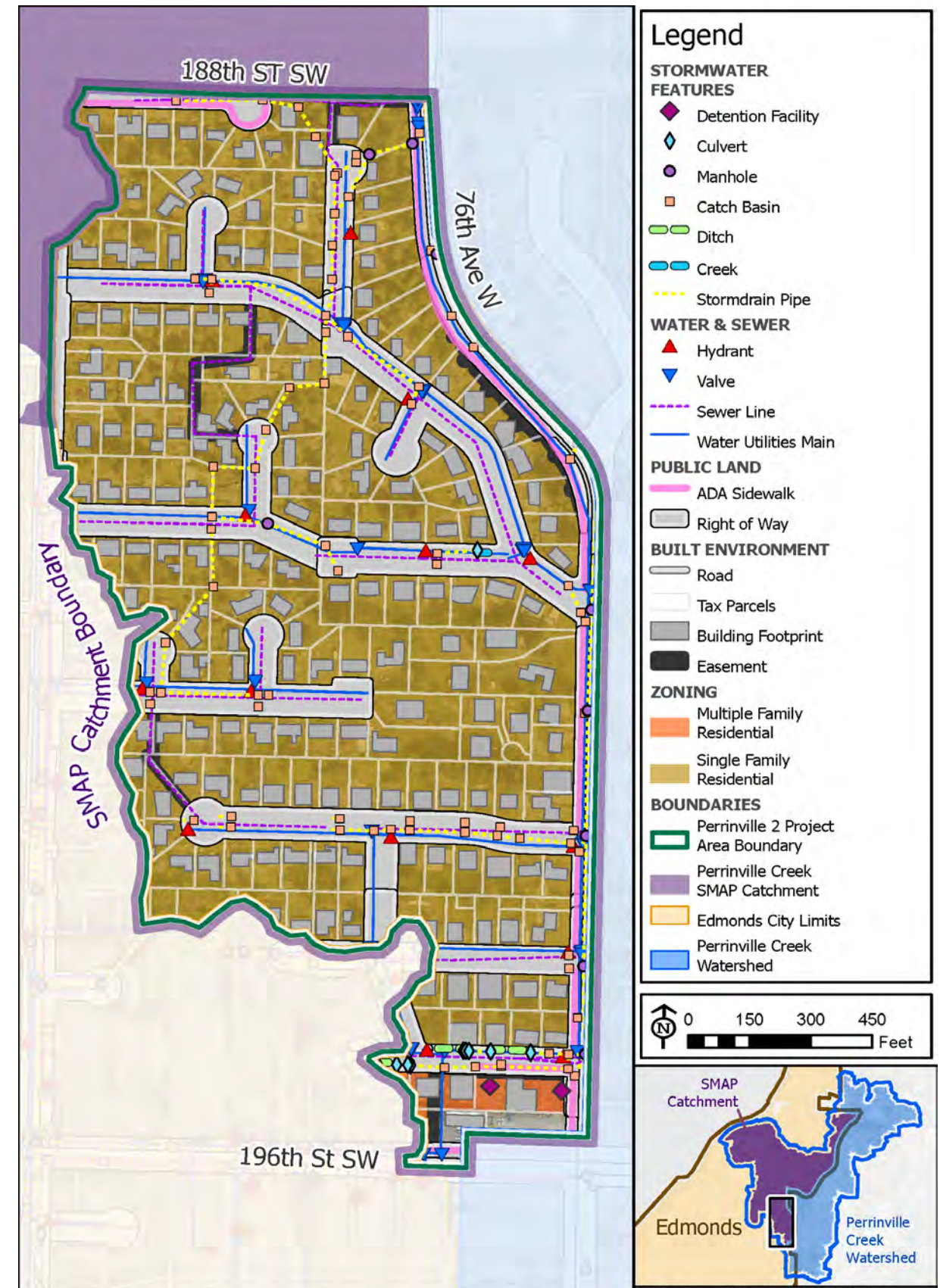


Section of 191st St SW with excess pavement that could be removed and retrofitted with bioretention.



The neighborhood has many grassy ROW areas that could be retrofitted for infiltration.

Existing Site Map



PERRINVILLE CREEK WATER QUALITY RETROFIT

Perrinville 2 Neighborhood Scale Retrofit Feasibility Analysis and Community Outreach

Project Description

For the 3.38 acres of potentially suitable ROW area (green), Conduct community outreach and a feasibility analysis to prepare for future green infrastructure projects in the neighborhood:

- Secure grant funding for community engagement and feasibility evaluation.
- Develop a community outreach plan and engage neighborhood residents to help identify project locations in the ROW.
- Investigate hydrogeologic conditions, given the potential for high groundwater levels, to identify suitable locations.
- Apply the results of the feasibility evaluation and hydrogeologic investigation to prioritize sites with the highest level of community support and greatest cost-benefit.
- Develop conceptual designs and cost estimates in anticipation of final design and construction.
- Apply for grants to fund design and construction.

Bioretention could be used for water quality treatment, coupled with either detention and/or infiltration, depending on site conditions. Detention could be constructed using detention pipes, detention chambers, or modular suspended pavement systems. Infiltration could take the form of infiltration trenches, pit drains, or drilled drains, depending on the location, depth to till, and presence of an unsaturated receptor layer.

Cost

The adjacent table summarizes planning-level cost estimates for Perrinville 2. Cost estimates assume that the project will occur concurrently with Perrinville 1 and share tasks. Costs would be higher if the projects are conducted separately.

Project Task	Cost Estimate (2023 Dollars)
Community Engagement	\$50,000
Hydrogeologic Investigation*	\$126,800
Feasibility Evaluation*	\$109,900
Concept Development*	\$40,300
Total	\$327,000

* Indicates costs based on the Stormwater Retrofit Feasibility grant application, with costs split evenly with Perrinville 1.

Design Precedents



81st Ave W Raingarden Retrofit

Edmonds, WA

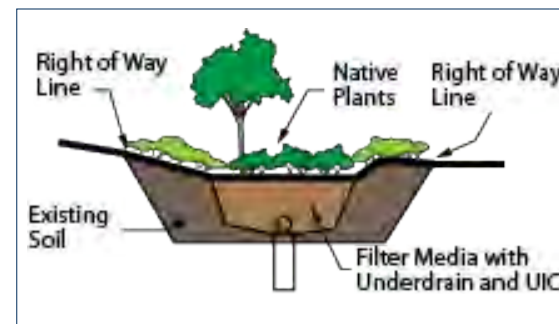
- Neighborhood-scale rain gardens
- Implemented with support from the Snohomish Conservation District



Venema Creek Bioretention

Seattle, WA

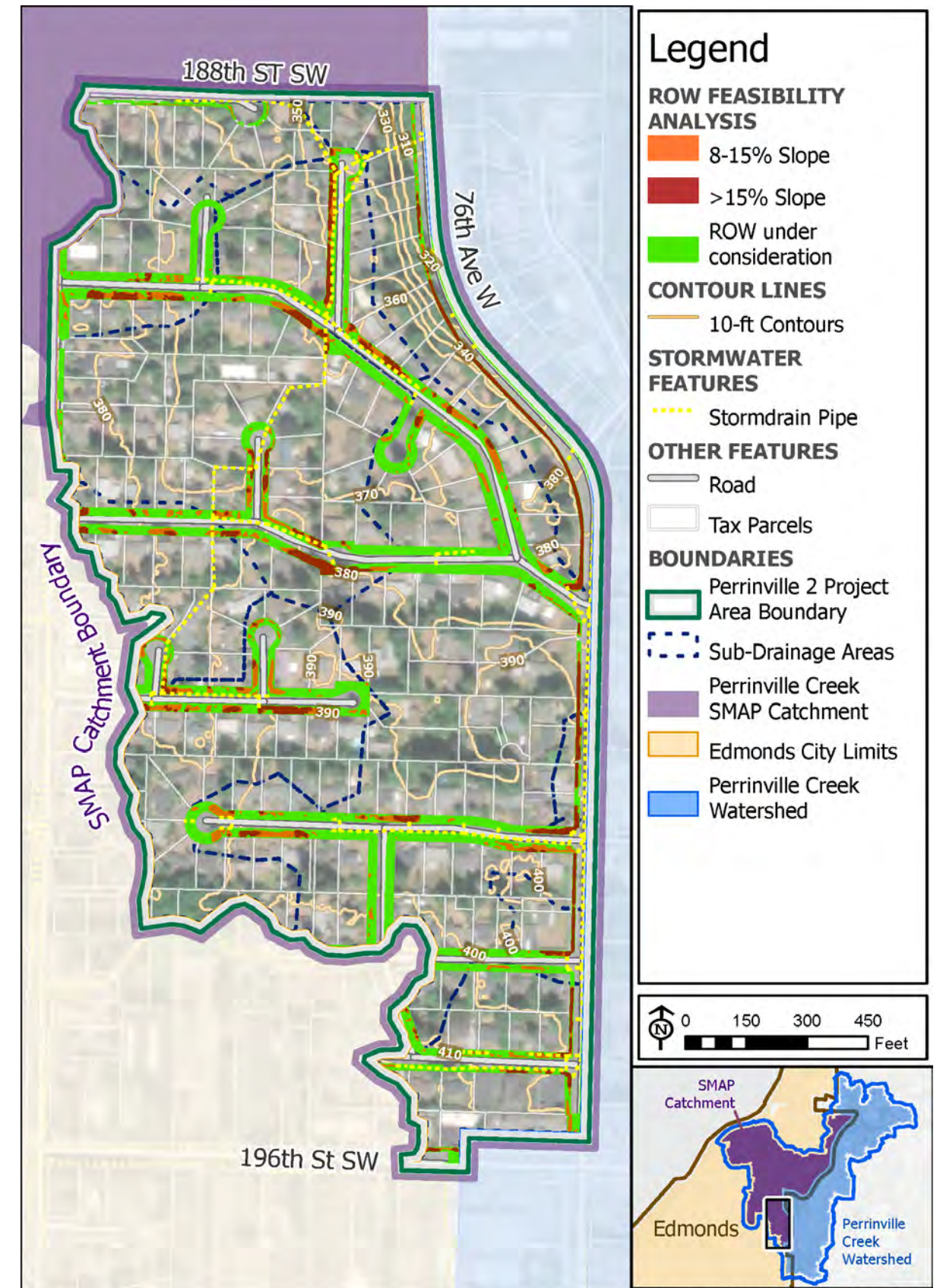
- Neighborhood with steep slopes
- Bioretention with deep infiltration well to reduce runoff quantity and speed



Bioretention Concept Diagram

- Bioretention in ROW
- Incorporates native plants
- Includes an underdrain and UIC well for infiltration

Concept Site Plan



APPENDIX B

Public Input Responses

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Public Survey Summary

Q1. Rank the proposed land management strategies in order of importance:

Table B-1. Proposed Land Management Strategy Scores.

Choice Number	Choices	Percent of Total Responses/ Response Count	Participant Selected Rank				Average Score
			1	2	3	4	
1	Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood's portion of the Perrinville Creek watershed.	Percent of Total Responses	45.5%	27.3%	9.1%	18.2%	3
		Response Count	5	3	1	2	
2	Strengthen stormwater design requirements for redevelopment.	Percent of Total Responses	27.3%	36.4%	18.2%	18.2%	2.73
		Response Count	3	4	2	2	
3	Identify hard surface areas (such as sections of parking lots or other paved areas) that are no longer of service to the property owner where pavement could be removed.	Percent of Total Responses	27.3%	9.1%	36.4%	27.3%	2.36
		Response Count	3	1	4	3	
4	Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property.	Percent of Total Responses	0.0%	27.3%	36.4%	36.4%	1.91
		Response Count	0	3	4	4	

Note: Includes 11 responses out of 13 total responses. Two survey participants skipped this question.

Average score is calculated by assigning a weighted value to the participant-selected rank. For this question, the following weights were used:

Selected Rank	Assigned Score
1	4
2	3
3	2
4	1

Using Question 1, Choice 1 as an example, out of 11 total responses, five respondents selected a rank of 1, three respondents selected a rank of 2, and so forth. Assigning a weighted score to each selected rank, the Question 1, Choice 1 average score is calculated as:

$$\frac{(5 \times 4) + (3 \times 3) + (1 \times 2) + (2 \times 1)}{11} = 3$$

Q2. Rank the proposed stormwater program enhancement actions in order of importance:

Table B-2. Proposed Stormwater Program Enhancement Action Scores.

Choice Number	Choices	Percent of Total Responses/ Response Count	Participant Selected Rank					Average Score
			1	2	3	4	5	
1	Continue to train City staff on green stormwater facility maintenance	Percent of Total Responses	45.5%	18.2%	27.3%	0.0%	9.1%	3.91
		Response Count	5	2	3	0	1	
2	Provide public workshops and technical assistance for constructing rain gardens	Percent of Total Responses	27.3%	45.5%	9.1%	0.0%	18.2%	3.64
		Response Count	3	5	1	0	2	
3	Develop and implement a natural yard care program	Percent of Total Responses	18.2%	9.1%	45.5%	18.2%	9.1%	3.09
		Response Count	2	1	5	2	1	
4	Implement a social media campaign to promote pet waste pick up	Percent of Total Responses	0.0%	18.2%	9.1%	54.6%	18.2%	2.27
		Response Count	0	2	1	6	2	
5	Conduct annual public rain barrel event	Percent of Total Responses	9.1%	9.1%	9.1%	27.3%	45.5%	2.09
		Response Count	1	1	1	3	5	

Note: Includes 11 responses out of 13 total responses. Two survey participants skipped this question.

Average score is calculated by assigning a weighted value to the participant-selected rank. For this question, the following weights were used:

Selected Rank	Assigned Score
1	5
2	4
3	3
4	2
5	1

Using Question 2, Choice 1 as an example, out of 11 total responses, five respondents selected a rank of 1; two respondents selected a rank of 2, and so forth. Assigning a weighted score to each selected rank, the Question 2, Choice 1 average score is calculated as:

$$\frac{(5 \times 5) + (2 \times 4) + (3 \times 3) + (0 \times 2) + (1 \times 1)}{11} = 3.91$$

Q3. Please list other strategies or actions the City could consider to improve conditions in Perrinville Creek:

Note: The City has provided initial responses to submitted comments (Public Survey Comment) in the City Response column in Table B-3.

Table B-3. Other Strategies or Actions Identified for Improving Conditions in Perrinville Creek and Initial City Responses.		
Map ID	Public Survey Comment	City Response
0	One action to improve conditions of Perrinville Creek would be to encourage the removal and restoration of the illegal bicycle pump track in the east side of Southwest County Park. This BMX track is above Perrinville Creek, allowing the erosive soil to run down slope into the creek. I have recently seen people actively digging and shaping the track for bicycle use, but no action has been taken by Snohomish County to stop this activity and restore the park to its natural state.	Southwest County Park is owned and maintained by Snohomish County. The City plans on continued discussions on a number of issues and retrofits related to Perrinville Creek with various Snohomish County Departments including Parks and Surface Water Management.
1	There needs to be an Infiltration facility installed on the west side of Olympic View drive sufficient in size to control any surge in stormwater caused by a significant rain event. This facility needs to include a filtering system to screen out oil particulates before they enter Perrinville Creek.	The City plans to update the 2015 <i>Perrinville Creek Stormwater Flow Reduction Retrofit Study</i> that will include looking at additional adding infiltration facilities in the entire watershed, pending additional funding. In addition, updating the City's <i>Storm and Surface Water Comprehensive Plan (Plan)</i> beginning this year will include the Perrinville Creek watershed. The extent of capital projects, programs, code/policy changes and other actions in the Perrinville watershed will depend on the Council-approved scope for the Plan, allotted funding by Council, and ability to get outside grants and additional personnel for the work.
	Also, if feasible, change the flow of stormwater where it enters the creek, to a point angled downstream from where it is today. The stormwater entering the creek as it is today enters at roughly a 90-degree angle causing an erosion of the far side bank and streambed siltation. Siltation has been an enormous downstream problem, especially near the outlet to Brown's Bay.	This SMAP, per Department of Ecology guidance, does not include in-water projects. This comment will be considered for additional work planned for the Perrinville Creek watershed.
	Also, there is far too much groundwater seeping under 76th Ave from the Lynnwood side, just north of the Perrinville Post office. The City of Lynnwood needs to redirect that seepage into a stormwater drainage system before entering the creek.	The City does not regulate or control the flow of groundwater.
2	save the Perrinville woods. do not those huge precious trees be cut down. no development of that property at the headwaters of the Perrinville creek.	The Perrinville woods are mostly owned by private property owners. The City has no plans to develop its portion of that area.

Table B-3 (continued). Other Strategies or Actions Identified for Improving Conditions in Perrinville Creek.		
Map ID	Attendee Comment	City Response
3	[none]	No response necessary.
4	No new development	This is beyond the scope of this SMAP and other planned City actions in the watershed.
5	Clean up the park surrounding the creek. Make ingress/egress safer and easier so that neighborhood folks can easily assist with upkeep	Southwest County Park is owned and maintained by Snohomish County. The City plans on continued discussions on a number of issues and retrofits related to Perrinville Creek with various Snohomish County Departments including Parks and Surface Water Management.
6	[none]	No response necessary.
7	Larger scale infiltration facilities utilizing UICs and having small footprints have been shown feasible and highly beneficial in parts of the watershed: Seaview Park (Phases 1 & 2), Lynndale Elementary School. There are several existing detention facilities along the Olympic View Drive corridor in Lynnwood which could be modified to promote infiltration.	The City plans to update the 2015 <i>Perrinville Creek Stormwater Flow Reduction Retrofit Study</i> that will include looking at additional underground injection control (UIC) wells for flow control, pending additional funding. In addition, updating of the City's <i>Storm and Surface Water Comprehensive Plan</i> (Plan) beginning this year will include the Perrinville Creek watershed. The extent of capital projects, programs, code/policy changes and other actions in the Perrinville watershed will depend on the Council-approved scope for the Plan, allotted funding by Council, and ability to get outside grants and additional personnel for the work.
8	Other than [technical assistance] TA for rain gardens, I doubt the other enhancement actions will bear many results for the effort. I think Sno Co needs to be involved for the Southwest County Park (SWCP) portion. You mention pet waste, and there are many dogs walked thru the park daily, but zero garbage cans provided by the park. In the 6pm meeting you also mention teaching homeowners to remove invasives by the stream. A group of volunteers remove invasives in SWCP every Saturday and could be planting natives to parallel the stormwater program action plans. This would be an effort that could be brought to scale. I also wonder if a properly built trail accessing the creek within the park could do two things-- 1) prevent erosion by eliminating the current steep "social trails" and 2) provide a view of the creek to visitors so that they can appreciate better the assets and issues of the creek and water shed and engage in local improvements.	Southwest County Park is owned and maintained by Snohomish County, the City plans on continued discussions on a number of issues and retrofits related to Perrinville Creek with various Snohomish County Departments including Parks and Surface Water Management.

Table B-3 (continued). Other Strategies or Actions Identified for Improving Conditions in Perrinville Creek.		
Map ID	Attendee Comment	City Response
9	Large stormwater retention ponds and infiltration galleries are required to reduce stormwater impacts. Planning should include the impacts of more severe rain events as the climate changes in the future. Responsible design should include a time horizon of 100 years.	The City plans to update the 2015 <i>Perrinville Creek Stormwater Flow Reduction Retrofit Study</i> that will include looking at retention ponds and infiltration galleries, pending additional funding. In addition, updating the City's <i>Storm and Surface Water Comprehensive Plan</i> (Plan) beginning this year will include the Perrinville Creek watershed. The extent of capital projects, programs, code/policy changes and other actions in the Perrinville watershed will depend on the Council-approved scope for the Plan, allotted funding by Council, and ability to get outside grants and additional personnel for the work.
10	would love to see you open up/restore more of Perrinville creek currently in culvert and covered up.	This SMAP, per Department of Ecology guidance, does not include in-water projects. This comment will be considered for additional work planned for the Perrinville Creek watershed. While most of Perrinville Creek is not in a pipe or culvert, as opportunities and funding source arise, opening up the creek will be evaluated.
11	Drastically reduce volume of stormwater going into Perrinville Creek during rainstorms. Request Lynnwood actively participate in addressing and funding the stormwater damage caused to Perrinville Creek. Develop daily maximum cfs "target" for stormwater flows into Perrinville Creek (the cfs would be based on maximum flow that would NOT damage natural creek conditions) and THEN implement retrofits in Edmonds AND Lynnwood within one year that will ensure the maximum flow is NOT exceeded. Obtain DOE grants for expensive projects to reduce stormwater flow and include Lynnwood in matching funding for such projects. Eliminate streambank erosion in Perrinville Creek caused by excess stormwater flows from Lynnwood AND Edmonds. Fix the damage caused to the lower stream salmon spawning areas caused by the excess stormwater flows. Fix the stormwater damaged creek ravine that will otherwise continue to slough sediment into the creek destroying aquatic organisms and their habitat.	The City is in active talks with the City of Lynnwood about the issues in Perrinville Creek. The City of Lynnwood's most recent Surface Water Management Comprehensive Plan (2020) includes four flow control projects in the Perrinville watershed (pages 61-62 of their Plan). The City of Edmonds plans to update the 2015 <i>Perrinville Creek Stormwater Flow Reduction Retrofit Study</i> that will include looking at flow "targets," pending additional funding. In addition, updating the City's <i>Storm and Surface Water Comprehensive Plan</i> (Plan) beginning this year will include the Perrinville Creek watershed. The extent of capital projects, programs, code/policy changes and other actions in the Perrinville watershed will depend on the Council-approved scope for the Plan, allotted funding by Council, and ability to get outside grants and additional personnel for the work.

Table B-3 (continued). Other Strategies or Actions Identified for Improving Conditions in Perrinville Creek.

Map ID	Attendee Comment	City Response
12	Place a diversion structure under the Perrinville Post Office that will divert excess stormwater flow into a pipe under 76th Ave that flows in separate pipe along the Lynnwood sewer pipe down to the Lynnwood Treatment Plant and exits to Puget Sound AFTER it flows through stormwater treatment vaults. ACTIVELY pursue state & federal funding for this–DON'T just say it's too expensive.	The City of Edmonds plans to update the 2015 <i>Perrinville Creek Stormwater Flow Reduction Retrofit Study</i> that will include looking at flow diversion options, pending additional funding. In addition, updating the City's <i>Storm and Surface Water Comprehensive Plan (Plan)</i> beginning this year will include the Perrinville Creek watershed. The extent of capital projects, programs, code/policy changes and other actions in the Perrinville watershed will depend on the Council-approved scope for the Plan, allotted funding by Council, and ability to get outside grants and additional personnel for the work.
	Restore a "fish friendly" connection to Puget Sound (that was destroyed by excess stormwater) that has appropriate low gradient stream channel for chum salmon spawning including assurance of clean spawning gravel. Include an estuary on east side of railroad tracks to provide essential habitat for juvenile salmon.	The City is currently working on a design for the mouth of Perrinville Creek that will be more fish friendly. For the project to succeed, agreements with private property owners and BNSF Railway need to be obtained as well as permits from several state and Federal environmental permitting agencies
	Mitigate the losses caused to salmonid populations in Perrinville Creek by excess stormwater by implementing a juvenile salmonid re-introduction and enhancement project.	Once Perrinville Creek is more "fish friendly" in terms of sediment load and velocity, a juvenile salmonid re-introduction and enhancement project would be an appropriate follow-up action.

Q4. Add other areas in the Perrinville Creek watershed where you've seen uncontrolled and damaging stormwater runoff, for consideration of potential stormwater facility retrofit projects by pinning the location on the map provided:

Note: Numerical labels on Figure B-1 correspond to the "Map ID" in Table B-3. There is a cluster of points that indicates participants may not have selected a point location when completing the survey.



File Path: K:\Projects\2021\21-0723-0000\AvePro\Edmonds_SMAP.aprx\SURVEY_RESULTS - City of Edmonds Perrinville Creek and SMAP Catchment_COPY
 Date: 3/28/2023
 Author: kevingrove

- ▲ Survey Result
- Creek
- Waterbody
- Perrinville Creek Watershed
- Perrinville Creek SMAP Catchment
- City of Edmonds
- City of Lynnwood
- Road
- Storm Drain
- Highway



Public Meeting Summary

Summary of Poll Responses

Select the top **THREE** actions that you think will help Perrinville Creek:

12PM Meeting Responses

Stormwater Action	# of Attendees Supporting
Strengthen stormwater design requirements for redevelopment	14
Work with Lynnwood to control flows in the upper watershed	13
Identify hard surface areas where pavement could be removed	11
Provide workshops and technical assistance for constructing rain gardens	5
Implement a streamside landowner technical assistance program	4
Develop and implement a natural yard care program	3
Conduct annual rain barrel event	2
Promote pet waste pick up	2
Train city staff on green stormwater facility maintenance	2

6PM Meeting Responses

Stormwater Action	# of Attendees Supporting
Work with Lynnwood to control flows in the upper watershed	14
Strengthen stormwater design requirements for redevelopment	13
Identify hard surface areas where pavement could be removed	7
Implement a streamside landowner technical assistance program	7
Provide workshops and technical assistance for constructing rain gardens	4
Develop and implement a natural yard care program	3
Conduct annual rain barrel event	2
Train city staff on green stormwater facility maintenance	1

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APPENDIX C

Stormwater Management Action Plan Short-Term and Long-Term Cost Estimates and Assumptions

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Table C-1. Stormwater Management Action Plan–Short-Term Action Cost Assumptions.

Action	Type	Description	Total Cost	Cost Assumptions
RP-1. Perrinville 1 Neighborhood Retrofit Feasibility Analysis	Retrofit	Conduct community outreach, hydrologic investigation, feasibility evaluation and concept development for bioretention facilities at 179th St., Olympic View Dr., Ridge Way and 72nd Ave.	\$327,000	Assumption based upon field reconnaissance, analogous projects. See project summary sheet in Appendix A.
RP-2. Perrinville 2 Neighborhood Retrofit Feasibility Analysis	Retrofit	Conduct community outreach, hydrologic investigation, feasibility evaluation and concept development for bioretention facilities at 188th St., 196th St., and 76th Ave.	\$327,000	Assumption based upon field reconnaissance, analogous projects. See project summary sheet in Appendix A.
LM-1. Strengthen stormwater design requirements for redevelopment	Land Management Strategy	Current City code requires 50% retrofit on “remaining” hard surfaces during redevelopment. Consider revising code to increase this retrofit requirement to 75%. Consider stricter flow control standards than what is in the current code for new and redevelopment projects.	\$13,700	Assumes 60 hours of consultant and 40 hours of City management staff hours.
LM-2. Work with the City of Lynnwood to increase coordination to address flow control from existing development in Lynnwood’s portion of the watershed	Land Management Strategy	Excluding areas that infiltrate or drain directly to Puget Sound, over 70% of the area draining to Perrinville Creek is located in the City of Lynnwood. Identify opportunities to build support for increased coordination to address flow control in the upper Perrinville Creek watershed.	\$28,800	Assumes 60 hours of staff time (management level) each year for a total of 6 years to identify policies, programs for coordination, conduct meetings internally and with City of Lynnwood.
LM-3. Identify hard surface areas (such as sections of parking lots or other paved areas) that are no longer of service to the property owner where pavement could be removed	Land Management Strategy	Conduct evaluation of locations and high-level feasibility of areas as candidates for pavement removal and replacement with pervious surfaces and/or techniques to encourage infiltration. Identify potential cooperative projects and discuss with landowners.	\$13,700	Assumes 60 hours of consultant and 40 hours of City planner and management staff hours.

Table C-1 (continued).		Stormwater Management Action Plan–Short-Term Action Cost Assumptions.		
Action	Type	Description	Total Cost	Cost Assumptions
LM-4. Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property	Land Management Strategy	Create a 3-year pilot program to develop educational resources, conduct outreach, and implement “boots on the ground” technical assistance to support streamside private property landowners with managing their land for the benefit of the stream.	\$22,500	Assumes 80 hours of stormwater technical staff time to research materials, conduct a mailing to streamside property owners, conduct one workshop annually, print materials and conduct five site visits each year for a total of 3 years. Allows \$8,100 for material costs and advertising.
SE-1. Continue to train City staff on green stormwater facility maintenance practices	Stormwater Program Enhancement	Maintained green stormwater facilities will result in optimum water quality treatment and flow control of the designed system.	\$5,000	Assumes enrollment and attendance of 5 staff at O&M training provided by WSU Stormwater Center or similar training program.
SE-3. Conduct annual public rain barrel event	Stormwater Program Enhancement	This event provides an opportunity for community members to purchase a low-cost rain barrel and learn about conserving water resources and stormwater runoff.	\$15,000	Assumes cost for payment to Snohomish Conservation District Interlocal Agreement for this event each year over 6 years.
SE-4. Implement a social media campaign to promote pet waste pickup	Stormwater Program Enhancement	Conduct messaging encouraging pet waste pick up for clean water and clean shoes.	\$6,000	Assumes initial cost for 60 hours of staff time to develop 5 messages and post to social media. Assumes 20 hours of staff time to refresh messages and post each year for a total of 2 years.
SE-5. Develop and implement a natural yard care program	Stormwater Program Enhancement	Promote natural yard care through social media and other educational materials encouraging less use of fertilizers and chemicals.	\$8,400	Assumes 40 hours of stormwater technical staff time to research materials, develop social media posts, and post materials to City website. Conduct outreach through listserv and other newsletters each year for a total of 5 years. Assumes 20 hours each year to conduct outreach.
Total Short-Term Cost			\$767,100	

RP = retrofit, LM = land management strategy, SE = stormwater program enhancement

Table C-2. Stormwater Management Action Plan–Long-term Action Cost Assumptions.

Action	Type	Description	Total Cost	Cost Assumptions
LM-2. Work with the City of Lynnwood to find ways to control runoff from existing development in Lynnwood’s portion of the watershed	Land Management Strategy	Excluding areas that infiltrate or drain directly to Puget Sound, over 70% of the area draining to Perrinville Creek is located in the City of Lynnwood. Identify opportunities to build support for increased coordination to address flow control in the upper Perrinville Creek watershed.	\$67,200	Assumes 60 hours of staff time (management level) each year for a total of 14 years to identify policies, programs for coordination, conduct meetings internally and with City of Lynnwood.
LM-4. Provide technical assistance to streamside landowners regarding improving streams and/or runoff on their property	Land Management Strategy	Create a 3-year pilot program to develop educational resources, conduct outreach, and implement “boots on the ground” technical assistance to support streamside private property landowners with managing their land for the benefit of the stream.	\$22,500	Assumes 80 hours of stormwater technical staff time to research materials, conduct a mailing to streamside property owners, conduct one workshop annually, print materials and conduct five site visits each year for a total of 3 years. Allows \$8,100 for material costs and advertising.
SE-2. Provide workshops and technical assistance for constructing rain gardens	Stormwater Program Enhancement	Work with property owners of developed lots to encourage rain gardens or other infiltration methods to soak in runoff.	\$63,000	Cost assumption from existing interlocal agreement with Snohomish Conservation District. Assumes 100 hours of City staff time (stormwater technician, O&M staff) and donated materials for 4 rain gardens installed each year for a total of 3 years.
SE-3. Conduct annual public rain barrel event	Stormwater Program Enhancement	This event provides an opportunity for community members to conserve water resources and learn about stormwater runoff.	\$35,000	Assumes cost for payment to Snohomish Conservation District Interlocal Agreement for this event each year over 14 years.
Total Long-Term Cost			\$187,700	

RP = retrofit, LM = land management strategy, SP = stormwater program enhancement

4 ATTACHMENTS

4.1 Attachment 1 – Aspect Spill Kit Memo



MEMORANDUM

Project No. AS230211A

March 5, 2024

To: Pat Johnson, City of Edmonds

From:

A handwritten signature in blue ink that reads "Jules Velasquez".

Jules Velasquez
Stormwater Scientist
jules.velasquez@aspectconsulting.com

A handwritten signature in blue ink that reads "Will Guyton".

Will Guyton
Stormwater Project Analyst
will.guyton@aspectconsulting.com

Re: Spill Kit Program

Background

Washington State Departments of Ecology considers stormwater to be the largest pollutant source of the Puget Sound. Small spills of hazardous materials and waste, such as leaks from vehicles, machinery, and various business operations can occur and travel due to impervious surfaces, such as pavement. These spills could be a range of things from restaurant cooking oil, to coolant from an automotive repair shop. These contaminants enter the storm drain system, and travel to local water bodies, such as streams, lakes, and eventually the Puget Sound. Contaminated stormwater can have negative effects on both humans and wildlife. The U.S. Environmental Protection Agency's "Urban Stormwater Preliminary Data Summary" shows that impacts range from an increase in bacteria- and disease-causing organisms and contamination of drinking water supplies, to beach closures and high rates of prespawn mortality in salmonid populations.

Paramount to improving water quality is reducing these point-source pollution sources and educating the public on this topic. The City of Edmond's (City) Spill Kit Program (Program) aims to work with local businesses to promote positive behavior change to prevent pollution from entering the Puget Sound. The main goals of the program are to increase knowledge of stormwater runoff and pollution, and to encourage spill preparedness and knowledge of how to stop a spill if it occurs. By issuing spill kits to potential pollution generating businesses and providing proper training on how to use them, more local Edmonds businesses will be equipped to combat pollution. This Program strives to establish a positive relationship between the City and local businesses and to create a positive behavior change in the community.



Implementation

The City targeted 15 potential pollution generating businesses to be given spill kits for the Program in 2023 (Table 1). The primary targets for this program were restaurants, auto shops, and gas stations. Businesses located in high traffic areas, as well as those with previously reported spills were prioritized.

Table 1. Targeted Campaign Businesses

Business Name	Address	Type
Traditional Beef Soup	22929 Hwy 99	Restaurant
Dick’s Drive-In	21910 Hwy 99	Restaurant
Boiling Point	22001 Hwy 99 #100	Restaurant
Dong Ting Chun	22001 Hwy 99 #400	Restaurant
Factory Direct Tire	22617 76 th Ave W	Auto
Jack in the Box	21130 Hwy 99	Restaurant
Kafe Neo	21108 Hwy 99	Restaurant
Miller’s Rent All	22901 Hwy 99	Commercial
O’Reilly’s Auto Parts	23005 Hwy 99	Auto
Shell Gas Station	22000 Hwy 99	Gas
Taco Time	23904 Hwy 99	Restaurant
Dumpling Generation	23820 Hwy 99 #115	Restaurant
Hosonyi	23820 Hwy 99 #114	Restaurant
Pizza Hut	23839 Hwy 99	Restaurant
Our Place Dessert Café	23832 Hwy 99	Restaurant

In establishing this year’s program, each targeted business was provided with an instructional spill poster demonstrating correct usage of the spill kit, as well as emergency spill response numbers. A City representative explained what each part of the spill kit is and how it is used, then a demonstration was performed to show the business how to use the kit if a spill was to occur. The business was then given their own spill kit, a spill kit content sheet (Figure 1), as well as a signed spill plan (Figure 2). A GIS site map was also provided, showing the nearest stormwater catch basins that the spill kit should be used on (Figure 3). The spill kits provided contained:

- 5-Gallon bucket with lid
- Large disposal bag
- Zip ties
- Heavyweight sorbent pads
- Sorbent socks
- Nitrile gloves
- Splash-resistant goggles
- Instruction page
- Contents page
- Spill response labels

Summary and Recommendations

The City visited all 15 identified businesses and received a positive response from them for the deliveries of the spill kits. All targeted businesses received spill training, a spill plan (Appendix B), spill kit, and a relevant site map (Appendix C).

If the City elects to continue this Program, the following are recommended improvements for consideration:

1. **Provide Additional Trainers and Schedule Trainings.** The Program could be more effective if the spill kit training was performed with more than one employee. If possible, personnel should try to schedule a short training meeting with all employees available and perform the spill demonstration to maximize outreach. This may have to be done before or after closing, which will require more effort, but its effectiveness would be much greater in facilitating store-wide behavior change.
2. **Mitigating Language Barriers.** With the likelihood of interacting with non-English or limited English-speaking business owners and staff, it is recommended that the City produce educational materials in the most commonly spoken languages of their community to explain the goals and intent of the Program.

Overall, the spill kit trainings were well received. The free nature of the program, as well as the business only having to sign the spill plan facilitated a pleasant interaction with the business.

Limitations

Work for this project was performed for the City of Edmonds, and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Attachments: Appendix A – Spill Kit Instructions and Content Sheet
Appendix B – Spill Plan
Appendix C – Site Maps

APPENDIX A

Spill Kit Content Sheet



SPILL KIT INSTRUCTIONS

Materials:

- Pads — Absorbent pads should be placed directly on spills to absorb liquids quickly. There are two kinds of pads: one is for oil and is white, and the other is universal and is grey in color.
- Socks/booms — Use absorbent socks (also known as booms) to circle spills to contain liquids and prevent further spread. Make sure to overlap the ends of socks to create leak-proof barriers.
- Pillows — Like pads, absorbent pillows should be placed directly on top of spills. Pillows will absorb a higher volume of liquid than pads.



- Goggles — Goggles should be worn when cleaning up spills to protect the eyes from hazardous liquids, which may splash during cleanup.
- Gloves — During spill cleanup, nitrile gloves will protect hands from hazardous materials.
- Bags with ties — These disposable bags tie closed for easy disposal of used absorbent materials.

Directions:

1. Assess the spill and identify the liquid. There are universal spill kits and oil specific spill kits that can be used depending on the spill.
2. Place absorbent socks or booms to:
 - a. Contain the liquid's spread by placing socks downstream of a spill.
 - i. Oil-only absorbents float to confine and absorb these kinds of spills.
 - b. Prevent the spill from going into the catch basin, manhole, ditch, or other drainage feature.
3. Once the liquid is confined, place absorbent pads or loose material (e.g., kitty litter) over the spill to clean it up.
4. Used absorbents should be placed in disposal bags with ties, and placed into an appropriate waste container.
 - a. For spills of oil, grease, gas, and solvent, place closed bags into a Hazardous Waste collection container.
 - b. For non-hazardous waste (e.g., food, cleaning chemicals, dirty water), place closed bags into the trash.

APPENDIX B

Spill Plan



SPILL PREVENTION AND CLEANUP PLAN



Business Name		Phone	
Site Address			
Spill Clean-up Material Location(s)			
Run-off from this site drains to...			

SPILL PLANNING AND PREVENTION:

<input type="checkbox"/>	Take inventory of chemicals and materials on site – <i>use less toxic materials where available.</i>
<input type="checkbox"/>	Obtain appropriate spill response materials and personal protective equipment (PPE)
<input type="checkbox"/>	Designate and train spill cleanup coordinator
<input type="checkbox"/>	Train staff, at least once annually. Document your training

IN CASE OF A SPILL, CONTACT THE FOLLOWING:

	CONTACT NAMES	CONTACT PHONE NUMBERS
Business Owner, Site Manager, or Environmental Officer		
Onsite Spill Cleanup Coordinator		
REQUIRED PHONE CALLS to make if a spill reaches a catch basin, water-body, or exceeds kit capacity.	City of Sammamish	Weekdays 8:30 AM - 5:00 PM: (425) 295-0500 Evenings and Weekends: (425) 295-0700
	WA State Department of Ecology	(425) 594-0000 24 hours

SPILL CLEAN-UP:

<input type="checkbox"/>	Evaluate situation, including safety considerations; notify owner/manager of spill
<input type="checkbox"/>	Put on Personal Protective Equipment (PPE)
<input type="checkbox"/>	Stop the source of the spill
<input type="checkbox"/>	Protect the drain(s)
<input type="checkbox"/>	Clean up spill by applying spill kit materials
<input type="checkbox"/>	Dispose of clean up materials properly and restock the kit

If spill reaches a storm drain or is too large to control, contact the agencies listed above.

FACILITY ACTIVITIES WITH POTENTIAL TO CONTAMINATE RUN-OFF

Activities	check all that apply	Activities	check all that apply
Fueling and fuel transfer	<input type="checkbox"/>	Loading/unloading of products	<input type="checkbox"/>
Outdoor manufacturing	<input type="checkbox"/>	Landscape construction/maintenance	<input type="checkbox"/>
Outdoor equipment/vehicle maintenance and repair	<input type="checkbox"/>	Outside storage of uncovered materials	<input type="checkbox"/>
Outside drum or container storage	<input type="checkbox"/>	Others:	<input type="checkbox"/>
Vehicle, equipment, and building washing	<input type="checkbox"/>		

EQUIPMENT AND MATERIALS STORED ON SITE (>1 GALLON) WITH POTENTIAL TO CONTAMINATE RUN-OFF

Equipment	check all that apply	Vehicle Fluids	check all that apply	Misc. Chemicals	check all that apply
Forklifts	<input type="checkbox"/>	Antifreeze	<input type="checkbox"/>	Acid	<input type="checkbox"/>
Trucks	<input type="checkbox"/>	Brake fluid, transmission fluid	<input type="checkbox"/>	Ammonia	<input type="checkbox"/>
Cranes	<input type="checkbox"/>	Gasoline	<input type="checkbox"/>	Caustic, bases, lye	<input type="checkbox"/>
Customer and employee vehicles	<input type="checkbox"/>	Motor oil	<input type="checkbox"/>	Photographic chemicals	<input type="checkbox"/>
Cleaning Products	check all that apply	Other fluids:	<input type="checkbox"/>	Pesticides, herbicides	<input type="checkbox"/>
Liquids	<input type="checkbox"/>	Solvents, Paints, Lubricants	check all that apply	Other	check all that apply
Solids	<input type="checkbox"/>	Parts washer	<input type="checkbox"/>	Fertilizers	<input type="checkbox"/>
Food Preparation/Waste	check all that apply	Dry cleaning fluids	<input type="checkbox"/>	Inks, dyes	<input type="checkbox"/>
Cooking oil	<input type="checkbox"/>	Paint thinner, turpentine	<input type="checkbox"/>	Others:	<input type="checkbox"/>
Grease (new or used)	<input type="checkbox"/>	Paint, coatings; oil based	<input type="checkbox"/>		
Dumpster	<input type="checkbox"/>	Paint, latex	<input type="checkbox"/>		
Grease Trap or Interceptor	<input type="checkbox"/>	Machine oil/coolant	<input type="checkbox"/>		
Other liquids:	<input type="checkbox"/>	Hydraulic fluid	<input type="checkbox"/>		
		Others:	<input type="checkbox"/>		

Need help developing your spill plan?

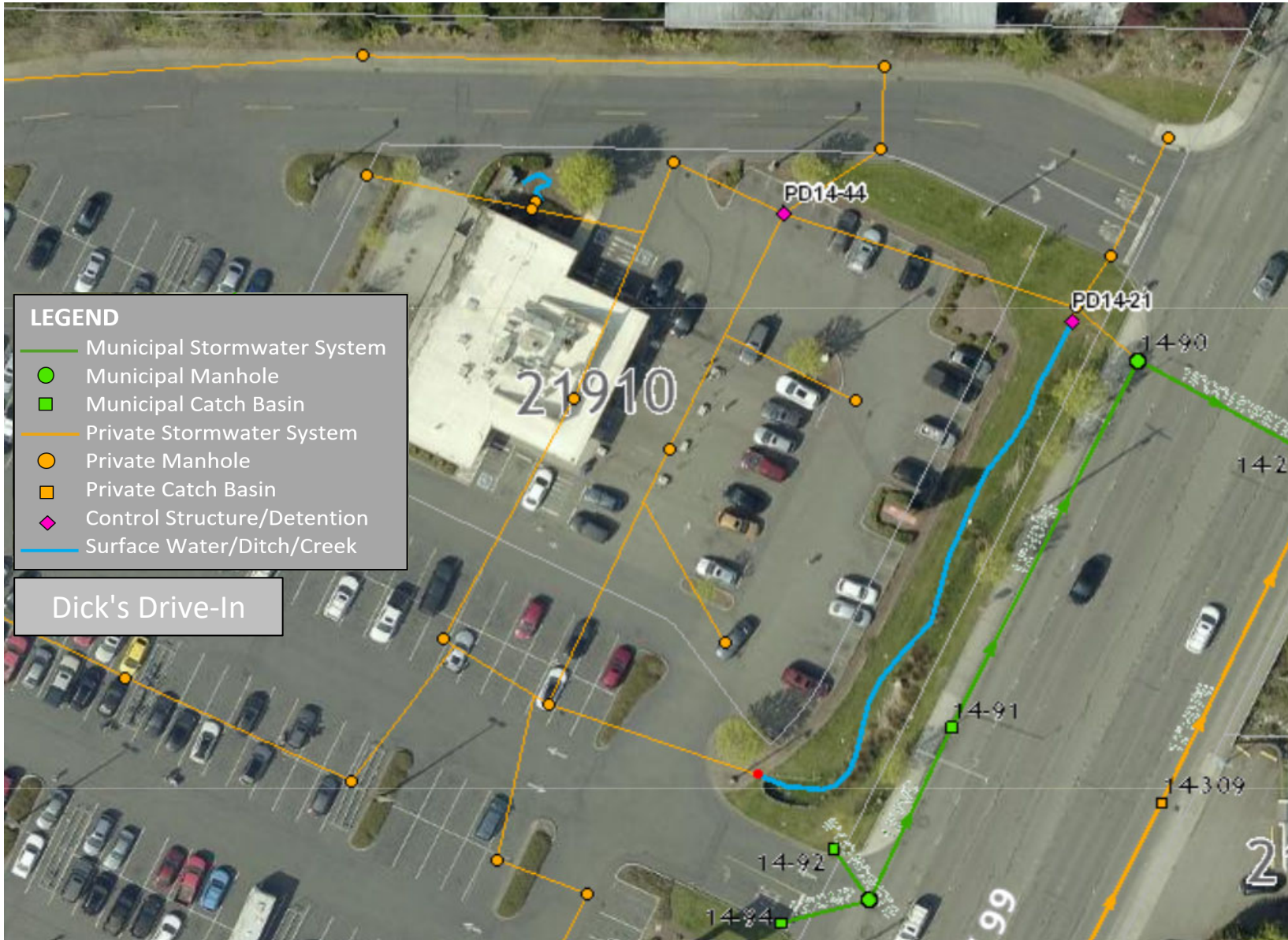
Contact Us! (425) 295-0573 or lwerre@sammamish.us

APPENDIX C

Site Map







LEGEND

- Municipal Stormwater System
- Municipal Manhole
- Municipal Catch Basin
- Private Stormwater System
- Private Manhole
- Private Catch Basin
- ◆ Control Structure/Detention
- Surface Water/Ditch/Creek

Boiling Point
Dong Ting Chun









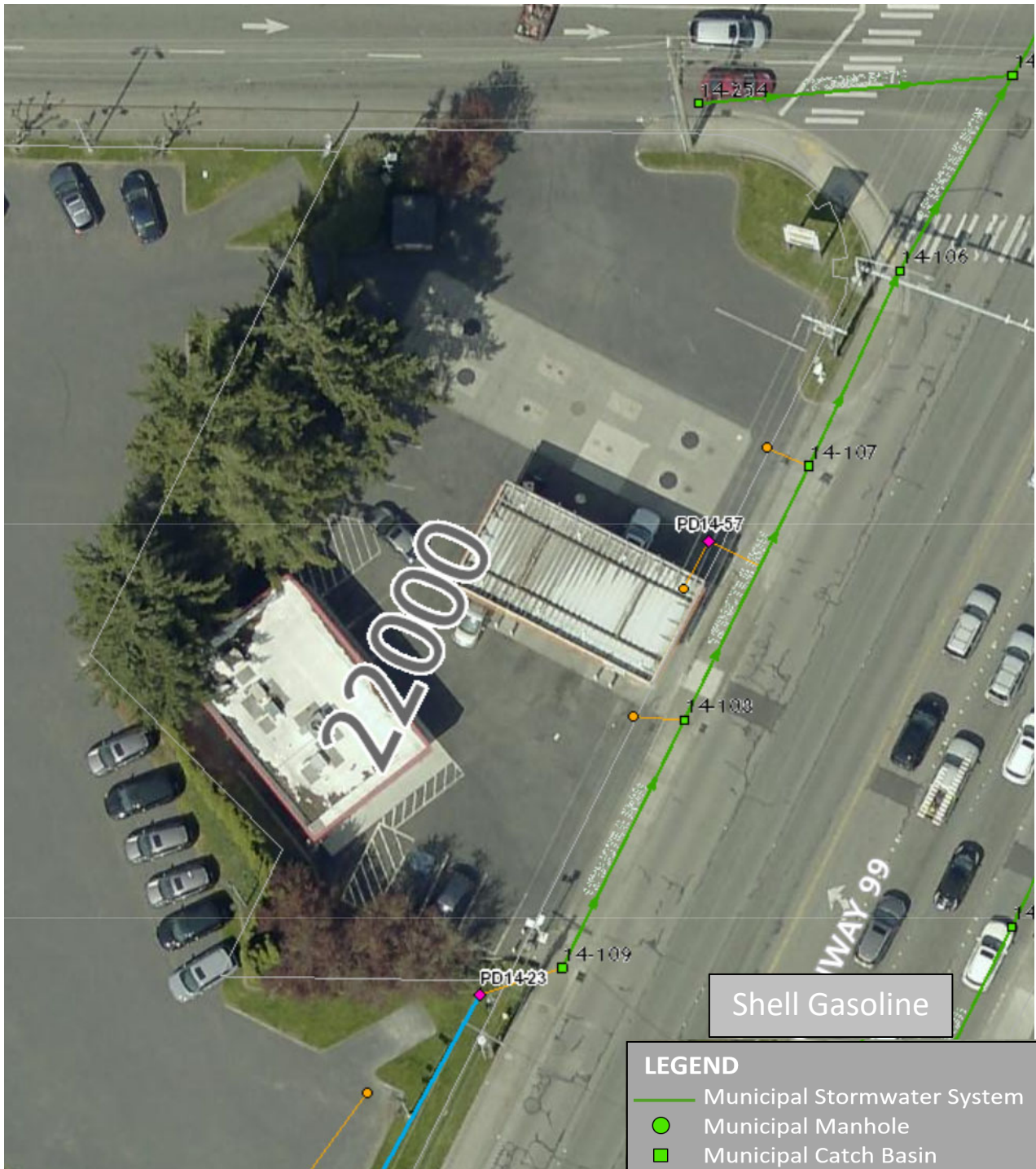


LEGEND

- Municipal Stormwater System
- Municipal Manhole
- Municipal Catch Basin
- Private Stormwater System
- Private Manhole
- Private Catch Basin
- Control Structure/Detention
- Surface Water/Ditch/Creek

O'Reilly Auto Parts





LEGEND

- Municipal Stormwater System
- Municipal Manhole
- Municipal Catch Basin
- Private Stormwater System
- Private Manhole
- Private Catch Basin
- ◆ Control Structure/Detention
- Surface Water/Ditch/Creek



LEGEND

- Municipal Stormwater System
- Municipal Manhole
- Municipal Catch Basin
- Private Stormwater System
- Private Manhole
- Private Catch Basin
- ◆ Control Structure/Detention
- Surface Water/Ditch/Creek

Dumping Generation
 Hosoonyi Korean Restaurant



4.2 Attachment 2 – S4F.Letter



CITY OF EDMONDS

121 5TH AVENUE NORTH · EDMONDS, WA 98020 · 425-771-0220 · FAX 425-672-5750
Website: www.edmondswa.gov

PUBLIC WORKS DEPARTMENT
Engineering Division

MIKE NELSON
MAYOR

September 26, 2023

Department of Ecology – NWRO
ATTN: Colleen Griffith
PO BOX 330316
Shoreline, WA 98133-9716

RE: City of Edmonds (WAR045513-4) S4.F Notification

To Whom it May Concern,

This letter is being provided in accordance with Permit Section S4.F is to provide response to a discharge in violation of S4.A and/or S4.B.

At 10:00am on 09/15/2023 the city of Edmonds' Sr. Stormwater Engineering Technician Patrick Johnson received a phone call from Greg Malowicki, a City of Edmonds Engineering Project Manager, regarding an accidental sewage release.

The project manager called to self-report that a City of Edmonds contractor, Shoreline Construction, who is involved in upgrading underground utilities accidentally released an estimated 30-gallons of sewage as a bypass had temporarily failed. The Stormwater Technician immediately filed an ERTS (#725466) and began organizing the cleanup along efforts with the contractor crews and the on-scene project manager.

While the address of the initial release occurred at 854 Maple St., the flow of the sewage release headed westward down the curb line of Maple St., into the stormwater drains and eventually into a constantly flowing spring-fed tributary that eventually ties into the MS4 which flows to Puget Sound.

The first responders at the scene were from both the City of Edmonds and Shoreline Construction, who after reconnecting the sewage bypass, began mobilizing the contractors on-scene Vactor and Sweeper. With no rain in the forecast (fortunately), the crews mechanically swept the curb line and cleaned out the affected catch basins. However, the sewage that did get washed into the downstream piped MS4 was not removed or treated. The quickly moving watercourse unfortunately pushed the now diluted sewage through the MS4.

It was determined that the incident was an accident by the contractor and likely to not happen again at this jobsite. The jobsite will continue to be monitored by City staff for additional releases or issues. It is still definitively unknown how this incident was led to occur, although working in small and confined spaces likely contributed. The City's spill response and education program and project manager will continue to reach out to the



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MIKE NELSON
MAYOR

PUBLIC WORKS DEPARTMENT
Engineering Division

offending contractor to ensure we have done our best to educate the contractor to ensure incidents such as these do not happen again in Edmonds.

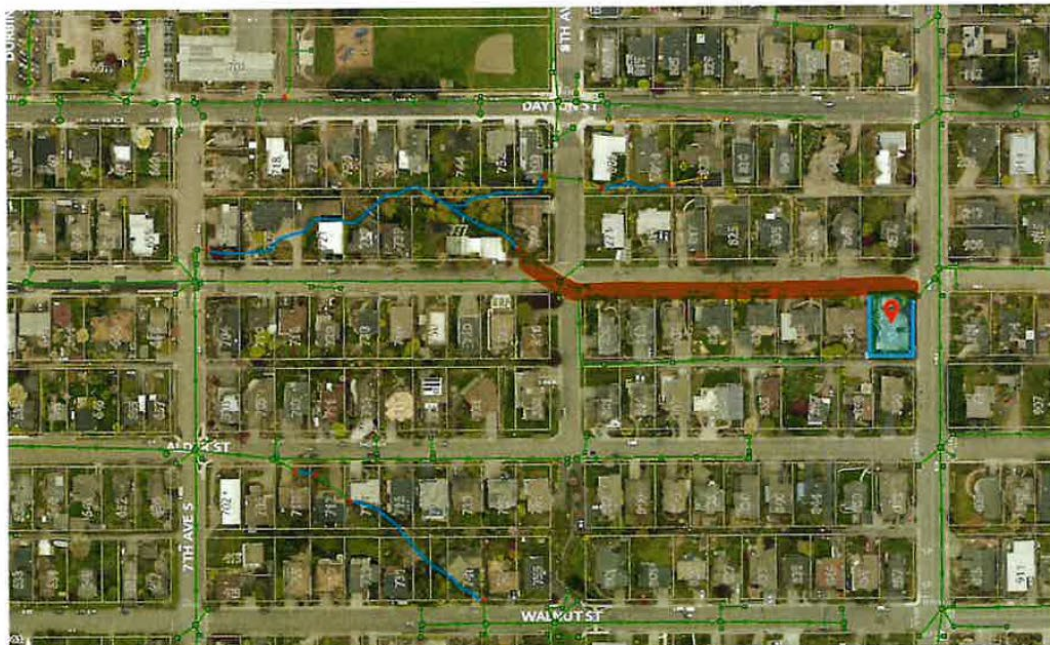
In accordance with Permit section G19:

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that Qualified Personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

Sincerely,

Oscar Antillon
Public Works Director, City of Edmonds

Copies: City of Edmonds WAR045513 Permit File
Rob English, City Engineer, City of Edmonds



4.3 Attachment 3 – MS4 Outfalls List

ASSET_ID	STRUC TURE	OBJECT ID *	OUTLET_SIZE	OUTLET_T YP	FLOW_ DIR	FLOWS _TO	WATER SHED	NOTES
CV1056	1056	1109	60					MS4 OUTFALL
CV722	722	765	24	CONCRETE	NORTH			MS4 OUTFALL
CV331	331	351	18	CONCRETE	WEST	OPEN		MS4 OUTFALL
CV333	333	353	24	CMP	WEST	TILE		MS4 OUTFALL
CV662	662	705	24	CONCRETE	West	OPEN		MS4 OUTFALL
CV676	676	719	18	CONCRETE	WEST	TILE		MS4 OUTFALL
CV51	51	53	30					MS4 OUTFALL
CV18	18	20	18					MS4 OUTFALL
CV12	12	12	18					MS4 OUTFALL
CV2015	2015	2111	36					MS4 OUTFALL
CV67	67	73	18					MS4 OUTFALL
CV664	664	707	12					MS4 OUTFALL
CV1215	1215	1276	24	CONCRETE	NORTH			MS4 OUTFALL
CV745	745	792	24	CMP	NW			MS4 OUTFALL
CV850	850	901	24	CMP	WEST			MS4 OUTFALL
CV853	853	905	24	CMP	NW			MS4 OUTFALL
CV737	737	781	24	CONCRETE	WEST			MS4 OUTFALL
CV1109	1109	1165	24	HDPE	WEST			MS4 OUTFALL
CV1102	1102	1158	24	CONCRETE				MS4 OUTFALL
CV1051	1051	1104	24	CONCRETE	WEST			MS4 OUTFALL
CV701	701	744	24	CONCRETE	NW			MS4 OUTFALL
CV425	425	452	24	CONCRETE	NORTH			MS4 OUTFALL
CV285	285	305	24	CONCRETE	NW			MS4 OUTFALL
CV1593	1593	1677	36	CMP	EAST	<Null>		MS4 OUTFALL
CV1142	1142	1201	36	CMP	NW			MS4 OUTFALL
CV345	345	367	36	CONCRETE	NW			MS4 OUTFALL
CV402	402	428	36	CONCRETE	NORTH			MS4 OUTFALL
CV761	761	808	48	CMP	SW			MS4 OUTFALL
CV739	739	784	24	CMP	NORTH			MS4 OUTFALL
CV878	878	930	48	HDPE	NW			MS4 OUTFALL
CV1384	1384	1457	24					MS4 OUTFALL
CV1202	1202	1263	48	CMP	WEST			MS4 OUTFALL
CV1398	1398	1471	36	CONCRETE	SOUTH			MS4 OUTFALL
CV666	666	709	24	CMP	NORTH	7-278		MS4 OUTFALL
CV396	396	422	24	CMP	WEST			MS4 OUTFALL
CV681	681	724	24	CONCRETE	SW			MS4 OUTFALL
CV447	447	476	36	HDPE	EAST			MS4 OUTFALL
CV59	59	61	0					MS4 OUTFALL
CV68	68	74	36	CONCRETE	WEST			MS4 OUTFALL

ASSET_ID	STRUC TURE	OBJECTID *	OUTLET_SIZE	OUTLET_T YP	FLOW_DIR	FLows_TO	WATER SHED	NOTES
CV49	49	51	24					MS4 OUTFALL
CV57	57	59	36					MS4 OUTFALL
CV83	83	90	24	CONCRETE	SW			MS4 OUTFALL
CV17	17	19	24	CMP	WEST	OPEN TILE		MS4 OUTFALL
CV53	53	55	0					MS4 OUTFALL
CV1611	1611	1698	36	<Null>	<Null>	<Null>		MS4 OUTFALL
CV1993	1993	2086	42	CMP	NORTH			MS4 OUTFALL
CV2004	2004	2098	30	CMP	SE			MS4 OUTFALL
CV1998	1998	2092	30	CONCRETE	EAST	<Null>		MS4 OUTFALL
CV1996	1996	2090	24	<Null>	<Null>	<Null>		MS4 OUTFALL
CV2243	2243	11467	12	PVC	East			MS4 OUTFALL
CV2006	2006	2100	12	CMP	EAST			MS4 OUTFALL
CV2014	2014	2110	18	CONCRETE	EAST			MS4 OUTFALL
CV2129	2129	2224	12	HDPE	NORTH	<Null>		MS4 OUTFALL
CV2018	2018	2114	8	CONCRETE	East	<Null>		MS4 OUTFALL
CV1070	1070	1123	4	PVC	NORTH			MS4 OUTFALL
CV679	679	722	8	PVC	WEST			MS4 OUTFALL
CV674	674	717	12	CONCRETE				MS4 OUTFALL
CV673	673	716	8					MS4 OUTFALL
CV1072	1072	1125	12	CONCRETE	WEST			MS4 OUTFALL
CV1440	1440	1515	<Null>	<Null>	<Null>	<Null>		MS4 OUTFALL
CV2249	2249	13067	<Null>	<Null>	<Null>	<Null>		MS4 OUTFALL
CV326	326	346	18	CONCRETE	WEST			MS4 OUTFALL
CV324	324	344	18	CONCRETE	WEST			MS4 OUTFALL
CV665	665	708	18					MS4 OUTFALL
CV668	668	711	8	PVC	WEST			MS4 OUTFALL
CV669	669	712	8	PVC	NW			MS4 OUTFALL
CV670	670	713	8	CONCRETE	WEST			MS4 OUTFALL
CV671	671	714	12	CMP	WEST			MS4 OUTFALL
CV677	677	720	8	PVC	WEST			MS4 OUTFALL
CV1076	1076	1129	36	HDPE	WEST			MS4 OUTFALL - HAS A GRATE ON THE END OF THE PIPE
CV1793	1793	1886	24	CONCRETE	EAST	<Null>		MS4 OUTFALL - HAS A TRASH GRATE ON THE END
CV672	672	715	30	CONCRETE	WEST			MS4 OUTFALL - TIDEFLUX
CV1947	1947	2040	30	CMP	EAST			MS4 OUTFALL - UNDER WATER
CV663	663	706	18	CONCRETE	WEST	OPEN TILE		MS4 OUTFALL, 10" HDPE PIPE HAS BEEN PLACED INSIDE AND MUDDIED AROUND.
CV1416	1416	1489	6	PVC	WEST	<Null>		MS4 OUTFALL, BURIED

ASSET_ID	STRUCTURE	OBJECTID *	OUTLET_SIZE	OUTLET_TYP	FLOW_DIR	FLOW_TO	WATERSHED	NOTES
CV352	352	376	24	CONCRETE	WEST	OPEN TILE		MS4 OUTFALL, FRIUTDALE CREEK OUTLET
CV1071	1071	1124	12	CONCRETE	WEST			MS4 OUTFALL, HAS TIDE FLUX
CV1073	1073	1126	12	CONCRETE	WEST			MS4 OUTFALL, HAS TIDE FLUX
CV303	303	323	36	CONCRETE	WEST	OPEN TILE		MS4 OUTFALL, NORTHSTREAM CREEK OUTLET
CV678	678	721	8	PVC	WEST			MS4 OUTFALL, PIPE IS BURIED
CV2256	2256	1695	12	CONCRETE	EAST			MS4 OUTFALL, PIPE IS BURIED
CV1608	1608	17867	<Null>	<Null> DUCTILE	<Null>	<Null> OPEN TILE		MS4 OUTFALL, SHELL CREEK DIVERSION
CV320	320	340	60	IRON	WEST	OPEN TILE		MS4 OUTFALL, SHELL CREEK OUTLET
CV270	270	289	36	CONCRETE	NW	OPEN TILE		