

City of Clyde Hill Stormwater Management Action Plan Fairweather Creek

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City of Clyde Hill

Stormwater Management Action Plan

For Fairweather Creek

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1. EXECUTIVE SUMMARY

1.1 Introduction

This document outlines the City of Clyde Hill's (City) approach for implementation of a Stormwater Management Action Plan (SMAP) as required in the 2019 Western Washington Phase II permit section S5.C.1

Tasks performed prior to the creation of this SMAP include a receiving water condition assessment of all the receiving waters within the City that receive runoff from the MS4 system and a receiving waters prioritization assessment to determine the receiving water and subbasin that would best benefit from an SMAP. The selected receiving water is expected to benefit the most from future implementation of the following strategies:

- 1) Strategic retrofits, including a combination of both improvements of existing structural facilities and siting and construction of new facilities.
- 2) Land management strategies that act as water quality management tools to conserve, protect, or restore receiving waters.
- 3) Strategic SWMP enhancements and targeted S5.C stormwater management actions.

The basin selected is the Fairweather Creek Basin.

This SMAP is focused on addressing impacts from the cumulative development within the City for this watershed rather than on a single site or subdivision. The goal of the SMAP is to identify how to address existing stormwater problems most strategically within the Fairweather Creek basin, and how to meet the City's future population and density targets while also protecting and providing conditions in receiving waters.

The goal of the SMAP is to identify approaches to accommodate future growth and development within the City while also preventing water quality degradation and/or improving conditions in receiving water harmed by existing development.

1.2 Ecology's Vision for Stormwater Planning

From Ecology's Stormwater Management Action Planning Guidance, publication 19-10-010, pages 1-2:

There are many ways to successfully approach comprehensive stormwater planning in general, and many ways to approach the specific steps required by the Permit and in this document in particular. Ecology recognizes that many jurisdictions are already actively planning stormwater investments and actions to accommodate future growth in a way that minimizes impacts to receiving waters and designated uses. Jurisdiction staff responsible for developing a SMAP may, and should, coordinate with other local planning efforts and use and leverage those efforts to produce the permit-required deliverables. Some jurisdictions may simply need to add a subset of the steps required by the permit and described below to an existing planning effort. Others may have a plan or process underway that completely meets Ecology's goals and guidance for meeting the Permit requirements.

The Permit requires a planning approach that emphasizes protection of designated uses and improvements to receiving water quality and habitat under both existing and anticipated future developed conditions. SMAP is focused on addressing impacts from the cumulative development in a watershed rather than on single site or subdivision impacts. SMAP helps to answer these two important questions:

- 1) How can we most strategically address existing stormwater problems?
- 2) How can we meet our future population and density targets while also protecting and improving conditions in receiving waters?

A successful SMAP strategically identifies approaches – in addition to current requirements of the Permit – to accommodate future growth and development while preventing water quality degradation and/or improving conditions in receiving waters harmed by past development.

The City intends to address these requirements by

- 1) Addressing existing stormwater problems most strategically with targeted retrofits and enhanced maintenance standards.
- 2) Mitigating the pollution-generating and stormwater volume effects of population growth and zoning. Zoning within the City is predominantly single-family homes with multi-family homes, low-density commercial properties, and schools. The City does not intend to modify current zoning, the effects of population growth (i.e., increased pollution-generating activities) can be mitigated through an approach that emphasizes public education and outreach to limit illicit discharges and spills, low impact development (LID) techniques where feasible, and enforcement of the Minimum Requirements as outlined in the Clyde Hill Storm Water Guidelines and the Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW).

Specific 2019 – 2024 Phase II Permit Language for S.5.C.1 **Stormwater Planning:**

d. Stormwater Management Action Planning (SMAP). Permittees shall conduct a similar process and consider the range of issues outlined in the Stormwater Management Action Planning Guidance (Ecology, 2019; Publication 19-10-010). Permittees may rely on another jurisdiction to meet all or part of SMAP requirements at a watershed scale, provided a SMAP is completed for at least one priority catchment located within the Permittee's jurisdiction.

- i. Receiving Water Assessment. Permittees shall document and assess existing information related to their local receiving waters and contributing area conditions to identify which receiving waters are most likely to benefit from stormwater management planning. By March 31, 2022, Permittees shall submit a watershed inventory and include a brief description of the relative conditions of the receiving waters and the contributing areas. The watershed inventory shall be submitted as a table with each receiving water name, its total watershed area, the percent of the total watershed area that is in the Permittee's jurisdiction, and the findings of the stormwater management influence assessment for each basin. Indicate which receiving waters will be included in the S5.C.1.d.ii prioritization process. Include a map of the delineated basins with references to the watershed inventory table.*

- (a) Identify which basins are expected to have a relatively low Stormwater Management Influence for SMAP. See the guidance document for definition and description of this assessment. Basins having relatively low expected Stormwater Management Influence for SMAP do not need to be included in S5.C.1.d.ii-iii.
- ii. Receiving Water Prioritization. Informed by the assessment of receiving water conditions in (i), above, and other local and regional information, Permittees shall develop and implement a prioritization method and process to determine which receiving waters will receive the most benefit from implementation of stormwater facility retrofits, tailored implementation of SWMP actions, and other land/development management actions (different than the existing new and redevelopment requirements). The retrofits and actions shall be designed to: 1) conserve, protect, or restore receiving waters through stormwater and land management strategies that act as water quality management tools, 2) reduce pollutant loading, and 3) address hydrologic impacts from existing development as well as planned for and expected future buildout conditions. No later than June 30, 2022, document the prioritized and ranked list of receiving waters. (a) The Permittee shall document the priority ranking process used to identify high priority receiving waters. The Permittee may reference existing local watershed management plan(s) as source(s) of information or rationale for the prioritization.
- (b) The ranking process shall include the identification of high priority catchment area(s) for focus of the
- iii. Stormwater Management Action Plan (SMAP) in (iii), below. Stormwater Management Action Plan (SMAP). No later than March 31, 2023, Permittees shall develop a SMAP for at least one high priority catchment area from (ii), above, that identifies all of the following:
- (a) A description of the stormwater facility retrofits needed for the area, including the BMP types and preferred locations.
- (b) Land management/development strategies and/or actions identified for water quality management.
- (c) Targeted, enhanced, or customized implementation of stormwater management actions related to permit sections within S5, including:
- IDDE field screening,
 - Prioritization of Source Control inspections,
 - O&M inspections or enhanced maintenance, or
 - Public Education and Outreach behavior change programs. Identified actions shall support other specifically identified stormwater management strategies and actions for the basin overall, or for the catchment area in particular.
- (d) If applicable, identification of changes needed to local long-range plans, to address SMAP priorities. (e) A proposed implementation schedule and budget sources for:
- Short-term actions (i.e., actions to be accomplished within six years), and
 - Long-term actions (i.e., actions to be accomplished within seven to 20 years).
- (f) A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.

Section S.5.C.1 (d) above was used as an outline for the City's SMAP for Fairweather Creek.

2. FAIRWEATHER CREEK STORMWATER MANAGEMENT PLAN

2.1 Summary

The Permit requires that the City develop an SMAP for at least one high priority catchment area. This section describes the prioritization rationale as well as strategies for water quality management and stormwater management within the Fairweather Creek basin. Refer to the attached Figure 1 - Clyde Hill Storm Drain Basin Map for basin locations within the City.

2.2 Catchment Prioritization

As a result of the Receiving Water Condition Assessment and Receiving Waters Prioritization effort, completed in 2022, the City has selected Fairweather Creek for SMAP development and prioritize water quality and flow control measures within this basin. An excerpt from the Receiving Prioritization, taken from the **City of Clyde Hill 2022 Stormwater Management Program**, is provided below:

“Stormwater in the Northwestern portion of Clyde Hill contributes to the Fairweather Creek basin (0498), a water with the designated use of anadromous fishery, and an unnamed tributary to Cozy Cove Bay (called Cozy Cove Creek), which also has the designated use of anadromous fishery. Both water bodies are under the same Analysis Unit ID in the Puget Sound Watershed Characterization Project. Therefore, it is assumed both water bodies share the same characteristics, outside of the 303(d) listing applied to Fairweather Creek.

The total area of the Fairweather Creek basin is approximately 420 acres, of which Clyde Hill makes up 218 acres or 52% of the total drainage basin. The total area of the Cozy Cove basin is approximately 180 acres, of which Clyde Hill makes up 116 acres or 64% of the total drainage basin. Water Quality Assessment review showed that the Fairweather Creek/Cozy Cove basins had high sediment and moderate levels of phosphorous, which could be attributed to a golf course located outside of the City of Clyde Hill limits. The Water flow Assessment revealed low surface storage and high discharge rates. Of all the outfalls [to which runoff from the City flows] the Fairweather Creek/Cozy Cove basin is likely the worst receiving water to which the City MS4 contributes. Additionally, Fairweather Creek has a 303(d) listing for bacteria, temperature, dissolved oxygen, and copper. “

Zoning changes within the City are not anticipated within the next 20 years. Zoning within City jurisdiction associated with the major pollutants and 303(d) listing pollutants listed above include stormwater runoff from pollution-generating surfaces, such as roadways and parking facilities. The City does not have plans to alter the current zoning in a way that would increase the amount of such surfaces; thus, the hydrologic impacts from current land use are likely to be maintained. However, any increases in existing transportation network usage (increases in the number of automobiles) would lead to an increase in pollutant loading in stormwater surface runoff within the basin.

As short-term and long-term actions, the City will seek funding for stormwater runoff treatment and flow control retrofit facilities within the Fairweather Creek Basin to mitigate stormwater impacts to the basin. Such facilities will be needed for high-use intensity sites. Additional measures to meet this goal will be discussed within this document.

2.3 Strategies

Low Impact Development (LID) measures are required to the extent possible on new development and redevelopment projects; however, the City has observed seepage issues on downslope properties due to groundwater flow. Infiltrating facilities within the City must therefore have Geotechnical Engineer's approval for design, to ensure there are no groundwater or seepage impacts downslope. In lieu of on-site LID measures, the City has implemented a policy requiring small detention facilities for new and redevelopment projects that do not trigger flow control. The City will continue working with developers to ensure this policy is implemented. Additionally, the City will pursue runoff treatment and/or flow control retrofits throughout the Fairweather Creek Basin, with preference to installation of proprietary water quality units to provide treatment within Fairweather Creek Basin.

2.4 Land management/development strategies identified for water quality management.

All development, redevelopment, and construction site activities are subject to the requirements outlined in CHMC Chapter 15.10. The City has published the Clyde Hill Storm Water Drainage Guidelines and has adopted the latest version of the Stormwater Management Manual for Western Washington, which outlines the Minimum Requirements for runoff treatment and the applicability of Basic, Enhanced, and Phosphorous Water Quality treatment standards, as well as the applicability of Oil Control. As metals and phosphorous are pollutants of concern within Fairweather Creek, all new development, redevelopment, and construction sites within the City right-of-way in this basin will be required to provide Enhanced and Phosphorous treatment, in addition to the current requirements for Oil Control outlined in the Clyde Hill Stormwater Drainage Guidelines, to target PGIS surfaces.

2.5 Targeted, enhanced or customized implementation of stormwater management actions.

From Ecology's Stormwater Management Action Planning Guidance, publication 19-10-010, page 14:

Where appropriate, coordinate SMAP with other aspects of S5.C implementation. Pursuant to your Receiving Water Conditions Assessment and Receiving Water Prioritization (or Phase I County scenario modeling), your SMAP may include implementation of targeted, enhanced, or customized implementation of stormwater management actions related to the following Permit provisions within S5.C in addition to the other required SMAP actions:

- Focused or more frequent IDDE field screening;
- Prioritization of Source Control inspections;
- O&M inspections or enhanced maintenance of facilities you own or operate;
- Maintenance that requires capital construction of more than \$25,000; and/or
- Public Education and Outreach behavior change programs to support SMAP actions for the receiving water overall, or for the catchment area in particular.

Permit flexibility allows for effective targeted implementation of each of these S5.C programs.

This following section describes how the City plans to coordinate other implemented policies relevant to Phase II Permit Section S5.C with required SMAP actions.

2.5.1 Targeted/Enhanced/Customized IDDE Field Screening S5.C

The water quality concerns identified for Fairweather Creek Basin are bacteria, temperatures, copper, and DO. Other major pollutants include metal, phosphorous, and hydrocarbons.

Clyde Hill has previously adopted an ordinance that prevents illicit non-stormwater discharges into the MS4, as found in CHMC 13.10. The ordinance outlines prohibited discharges, allowed discharges, conditional discharges, prohibits illicit connections, monitoring, as well as enforcement.

The City will continue its existing Illicit Discharge Detection and Elimination (IDDE) program, which relies on complaints from the public or identification by City staff during system maintenance, completing field screening for an average of 12% of the MS4 each year. To comply with the current Permit, the following program enhancements will be maintained over the next 10 years:

2.5.1.1 Field Screening Methodology

Clyde Hill's IDDE program requires the inspection, characterizing the nature of, and determining the potential public and environmental threat posed by an illicit discharge as well as attempting to trace the source and eliminate the illicit connection. IDDE screening is documented with inspection sheets and the City's Mobile 311 system. Within 7 days of documentation, compliance is achieved by investigating or referring to the appropriate agency any illicit connections, illicit discharges, including spills. The reports that are judged to be urgent or severe are immediately investigated or referred to the appropriate agency.

2.5.1.2 IDDE Training Program

City staff involved in IDDE undergo training yearly and as staff changes occur.

Additionally, as the land uses outlined in the table below are associated with stormwater runoff containing higher metals, the City will prioritize IDDE complaints from sites associated with those land uses within Fairweather Creek Basin.

2.5.2 Prioritization of Source Control Inspections

Through a combination of historical inspection and complaint records, information available on business records, the City has identified multifamily and commercial sites that are potentially pollutant-generating. On identified sites, the Business Inspection Program Staff will inspect structural and operational BMPs and onsite conveyance systems to ensure that the appropriate operational and structural source control BMPs are employed and properly maintained. Inspections for those locations that are within the Fairweather Creek Basin will have a prioritized schedule.

See Table 1 for the land uses associated with pollutants of concern with in Fairweather Creek.

Table 1 - Pollutants of Concern and Associated Land Use

Pollutant Type	Associated Land Use	Prioritized Source Control Inspections
bacteria	<ul style="list-style-type: none"> runoff from wildlife areas and pet waste 	none applicable
metal	<ul style="list-style-type: none"> road runoff commercial or industrial spills leaking storage tanks 	commercial properties, leaking storage tanks
phosphorous	<ul style="list-style-type: none"> roadways and urban vegetated areas atmospheric deposition of particles phosphorous-based soaps, detergents, and chemicals exposed soil 	none applicable

If BMPs are lacking and/or inadequate, verbal and/or written notice is provided along with technical assistance, detailing what must be done to achieve compliance. Failure to comply will trigger progressive enforcement. The authority to issue written notices and enforce their contents is found in CHMC 15.10.

2.5.3 Operations & Maintenance

Priority for O&M inspections and enhanced maintenance of existing and future BMP facilities owned and operated by City of Clyde Hill will be given to those located within Fairweather Creek Basin, even if such maintenance and inspections will exceed the maintenance standard as described in the BMP Maintenance Tables, Appendix V-A of the 2019 SWMMWW.

2.5.4 Public Education and Outreach

The City will perform public education and outreach efforts to inform and solicit feedback from the local community within and adjacent to Fairweather Creek Basin. Outreach efforts will focus on informing the community of the Creek’s biological importance and its selection as a prioritized stream by the City, as well as pollutants and other stormwater impacts affecting the creek’s stream health, and relevant BMPs.

Hotline for Public Reporting of Spills and other Illicit Discharges

The City Hall telephone number for reporting will be identified on the City’s website specifically for reporting spills and other illicit discharges. Afterhours calls are communicated to and responded to by public works staff via contact from an on-call service then also emailed to public works staff to be input into the database.

Illicit Discharge Public Education

Illicit discharge public education to inform public employees, businesses, and the public of hazards associated with illicit discharges and improper storage of waste will be integrated into the public education efforts at various community events in addition to local schools within and adjacent to the Fairweather Creek Basin, providing ecology awareness-based artwork for a Citywide calendar. Additionally, the City will install and/or maintain animal waste education signs and/or collection stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal use and the potential for pollution of stormwater.

2.6 Schedule and Budget

2.6.1 Short Term Actions (S.5.C.1 (e))

The City will complete a water quality and/or capacity retrofit project(s) at one site in the Fairweather Creek Basin within the next six years, with priority toward water quality retrofits. These projects will target City-owned right-of-way in high-use sites and intersections and will provide water quality treatment to exceed the standard required by the SWMMWW by providing enhanced and phosphorous treatment.

The City will also assess opportunities for installing runoff treatment and stormwater management facilities on redevelopment projects on City-owned property within the Fairweather Creek Basin that are more protective than the Storm Water Drainage Guidelines. This assessment will occur as projects occur and is not scheduled.

Strategic efforts will include public engagement, public educational outreach, and staff training. These efforts will occur yearly, at a minimum, in coordination with existing engagement, outreach, and training schedules.

2.6.2 Long Term Actions (S.5.C.1 (e))

The City will complete water quality and/or capacity retrofit project(s) at two sites within the next 20 years, with priority toward water quality retrofits. These projects will target City-owned right-of-way in high-use sites and intersections and will provide water quality treatment to exceed the standard required by the SWMMWW by providing enhanced and phosphorous treatment. Flow control retrofits may be combined with water quality retrofit projects. The City will also assess opportunities for installing runoff treatment and stormwater management facilities on redevelopment projects on City-owned property within the Fairweather Creek Basin that are more protective than the Storm Water Drainage Guidelines. This assessment will occur as projects occur and is not scheduled.

The City has selected two potential sites for water quality retrofits along 84th Avenue NE, as shown in the attached Figure 1 - Clyde Hill Storm Drain Basin Map; however, the entire storm system along the 84th Avenue NE corridor has been selected as an area of interest for retrofit.

Budget sources will include grant funding from the Department of Ecology, Transportation Improvement Board (TIB), and City's general fund resources.

Project scheduling is dependent on funding source cycles. The typical cycle for the following sources are as follows:

- Ecology stormwater capacity grants program – funding cycle set biennially based on approved state budget.
- Ecology streamflow restoration competitive grants – funding cycle set biennially based on \$40,000,000 total budget.
- Ecology water quality combined funding program – funding cycle set annually based on approved state budget. Applications are accepted mid-August to Mid-October.
- TIB grant, small city programs – funding cycle set annually. Applications are accepted June to August.

2.7 Future Assessment and Feedback

Feedback in the selection of all retrofit projects will be solicited from the stakeholders, including but not limited to City maintenance staff, business owners, homeowners. Outreach and education will be conducted to seek stakeholder input for each project, feedback on stormwater management activities, and provide educational material on best management practices. Outreach will be completed via any of the following, as needed: public forums or workshops, public hearings, reaching out through social media or public mailers.

2.7.1 Adaptive Management

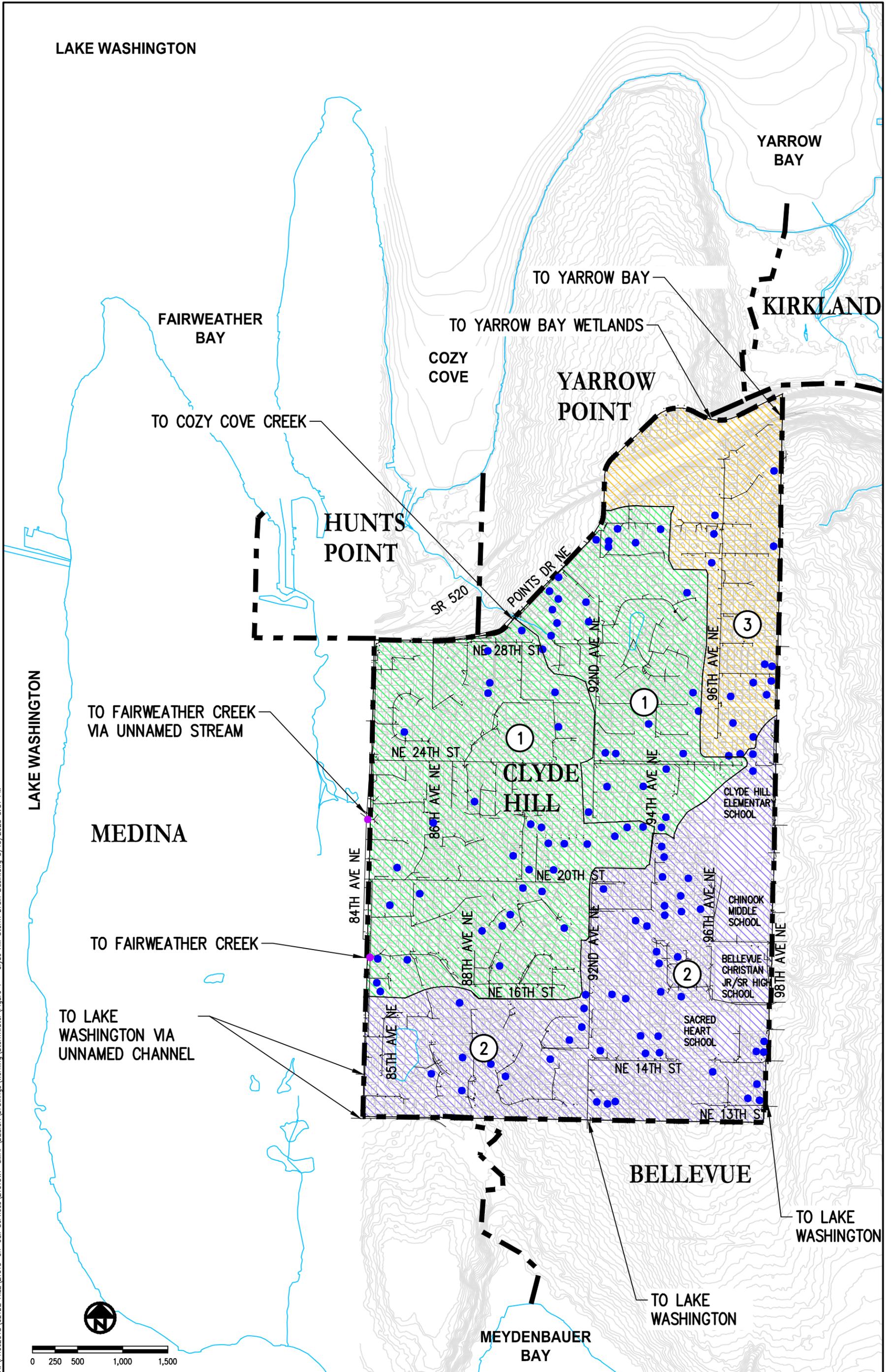
The City will track the and record the activities performed in accordance with this SMAP as part of routine operations. This includes but is not limited to the number of IDDE reports that result in corrective action, O&M inspections that result in corrective action, and number of stormwater treatment and detention facilities constructed by new development projects, redevelopment projects, as well as retrofit projects. This data will be tracked on a continual basis and changes will be made to the SMAP, as implementation results develop.

Tracking of retrofit BMPs and BMPs located within City property will include, at a minimum, the following information:

- BMP facility Type
- Facility location
- Year of installation
- Amount of PGHS treated (if applicable)
- Amount of HS detained (if applicable)
- Total catchment area to facility

3. ATTACHMENTS

- Figure 1 - Clyde Hill Storm Drain Basin Map



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FIGURE 1. CLYDE HILL SD BASIN MAP
Stormwater Management Action Plan



- EXISTING DETENTION BMP LOCATION
- POTENTIAL WQ RETROFIT LOCATION
- # BASIN PRIORITY

