

Stormwater Management Action Plan

Receiving Water Assessment

1.1.1 Overview

A receiving water assessment was performed for the City of Clyde Hill to assess and document the existing information and conditions related to local receiving waters and contributing areas. The purpose of the assessment is to aid in identifying the receiving waters that would most likely benefit from stormwater management planning.

The NPDES permit requires a watershed inventory, provided as a table, to be submitted no later than March 31, 2022, and a brief description of the receiving waters that are in Clyde Hill. Four waterbodies were identified as receiving waters for the City of Clyde Hill. Assessment was performed using 303(d) listing information, Puget Sound Watershed Characterization Project, and the Coastal Atlas Map.

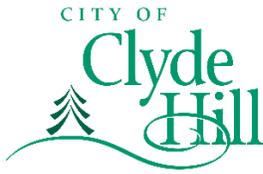
1.1.2 Receiving Waters

Stormwater in the Northeastern portion of Clyde Hill drains to Yarrow Creek (A499), a water with the designated use of anadromous fishery. The total area of the Yarrow Creek basin is approximately 640 acres, of which Clyde Hill makes up 100 acres or 16% of the total drainage basin. Water Quality Assessment review showed that, of the four outfalls to which the City contributed runoff, the Yarrow Creek basin had the lowest water quality concerns. The Water flow Assessment revealed low surface storage and high discharge rates. Of all the basin outfalls, the Yarrow Creek basin is likely the best receiving water to which the City MS4 contributes.

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, 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.

The southern portion of Clyde Hill drains to the Medina Coastline via two main outfalls: an unnamed open channel and the storm pipe network. Because both downstream pathways are under the same Analysis Unit ID in the Puget Sound Watershed Characterization Project and are also constructed pathways, their contributing basins are treated as a single basin for this analysis. The Medina Coastline



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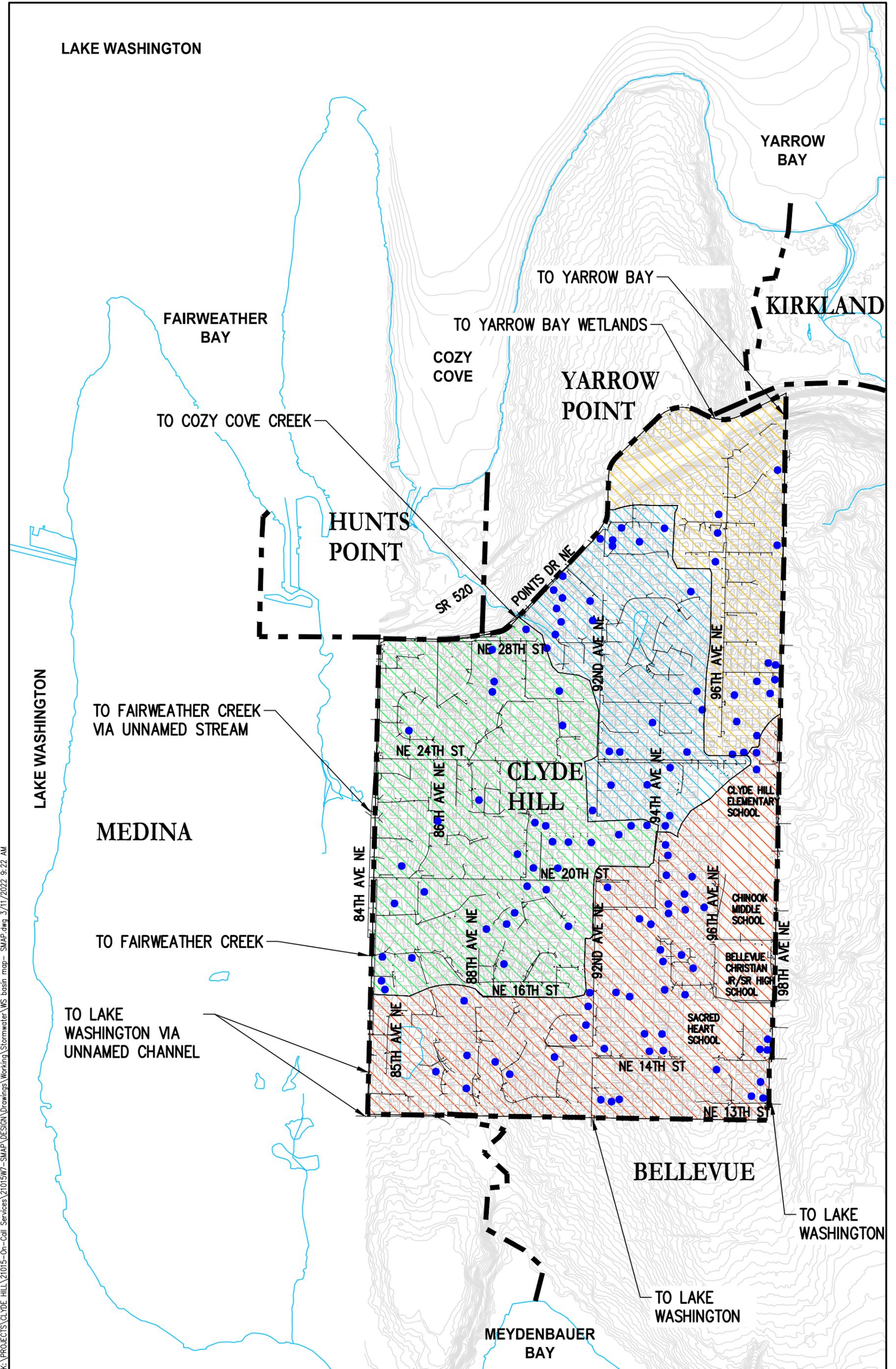
of Lake Washington has the designated use of anadromous fishery. The total area of the Medina basin is approximately 2,557 acres, of which Clyde Hill makes up 236 acres or 9% of the total drainage basin. Water Quality Assessment review showed that, this basin water quality concerns related to high levels of metals, nitrogen, and sediment. The Water flow Assessment revealed low surface storage and high discharge rates.

**City of Clyde Hill
Stormwater Mitigation Action Plan - Receiving Water Assessment**

March 2022

	Analysis Unit ID	8120	8118	8118	8121
	Water Body Name	Yarrow Creek	Fairweather Creek	Unnamed Tributary to Cozy Cove Bay/"Cozy Cove Creek"	Medina Direct Discharge
	Stream ID	A499	498	N/A	N/A
Step 1	Total area of WS (acre)	640	420	180	2556.60
Step 1	Area of WS in CH (sf)	4356984.94	9476050	5039630.07	10286622.3
Step 1	Area of WS in CH (acre)	100.02	217.54	116.00	236.15
Step 1	Percent of the total watershed area that is in the Permittee's jurisdiction	16%	52%	64%	9%
Step 2	Designated Use	anadromous fishery	anadromous fishery	anadromous fishery	n/a
Step 2	R-1 Res	63%	47%	82%	66%
Step 2	B-1 Business	0%	0%	0%	0%
Step 2	G-1 Gov	0%	0%	0%	0%
Step 2	S-1 School	0%	1%	0%	19%
Step 2	ROW	37%	52%	18%	14%
Step 2	Population	502	1091	582	1184
Step 2	Existing FC BMPs	15	35	27	48
Step 2	Existing WQ BMPs	unk	unk	unk	unk
Step 2	Fish and Wildlife	poor	very poor	very poor	very poor
Step 2	How much growth is directed toward this area	low	low	low	low
Step 2	How is transportation planning likely to affect the basin	no plans to substantially alter transportation network			
Step 2	Are headwaters, riparian areas, and other sensitive portions of the basin likely to be protected under current zoning and plans?	There are no substantial riparian areas within the City of Clyde Hill. Current zoning codes include environmental protections for sensitive areas to prevent degradation in accordance with DOE standards.	There are no substantial riparian areas within the City of Clyde Hill. Current zoning codes include environmental protections for sensitive areas to prevent degradation in accordance with DOE standards.	There are no substantial riparian areas within the City of Clyde Hill. Current zoning codes include environmental protections for sensitive areas to prevent degradation in accordance with DOE standards.	There are no substantial riparian areas within the City of Clyde Hill. Current zoning codes include environmental protections for sensitive areas to prevent degradation in accordance with DOE standards.
Step 2	Is the receiving water impaired?	No	Yes	No	No
Step 2	303(d) listing reason	n/a	Bact, Temp, Copper, DO	n/a	n/a
Step 2	If yes, What sources/activities are the main contributors to the pollutant load targeted for reduction (e.g., polluting activities associated with particular land use or land cover types)?	n/a	Primary contributor is untreated roadway surface runoff.	n/a	n/a
Step 2	When does the impairment occur? Is it seasonal, or flow-dependent?	n/a	Year round	n/a	n/a
Step 2	Can these sources be addressed (or are they already being addressed) through BMPs found in the SWMMWW and applied through your SWMP?	n/a	Yes. Additional mitigation can be provided by enhanced water quality treatment facilities (vaults, surface BMPs) to treat roadway runoff.	n/a	n/a
Step 2	Will enhanced municipal stormwater management actions result in meeting loading targets?	n/a	Yes	n/a	n/a
Step 2	Are substantial non-stormwater management actions needed to address the impairment?	n/a	None identified.	n/a	n/a
Step 2	What combination of additional stormwater management actions will most effectively reduce current and future loadings?	n/a	Provide additional water quality treatment for surface runoff from contributing sources.	n/a	n/a
Step 2	Evaluate information related to overburdened communities within the contributing areas to help determine where overlap may exist with improving receiving water conditions for water quality and human health.	West of 92nd Ave NE			
Step 2	Likely best receiving water CH MS4 Contributors	1	4	3	2
Step 2	Likely worst receiving water CH MS4 Contributors	4	1	2	3

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Step 3	Sources Used	Puget Sound Watershed Characterization Project	Puget Sound Watershed Characterization Project, 303(d) listing	Puget Sound Watershed Characterization Project	Puget Sound Watershed Characterization Project
Step 3	What are the major pollutants and/or flow impacts associated with individual point sources versus non-point sources?	Metals, Phosphorous, Hydrocarbons, Increased Runoff from Development			
Step 3	Will the loadings and/or runoff volumes increase under expected future land use conditions?	No	No	No	No
Step 3	Can these sources be addressed through other land management strategies, including policies, code, or development standards?	Modifications to the WQ requirements for redevelopment affecting pollution generating surfaces or modifications to detention requirements for development, continue public education and outreach, pursue retrofit projects for water quality and detention facilities for public right-of-way	Modifications to the WQ requirements for redevelopment affecting pollution generating surfaces or modifications to detention requirements for development, continue public education and outreach, pursue retrofit projects for water quality and detention facilities for public right-of-way	Modifications to the WQ requirements for redevelopment affecting pollution generating surfaces or modifications to detention requirements for development, continue public education and outreach, pursue retrofit projects for water quality and detention facilities for public right-of-way	Modifications to the WQ requirements for redevelopment affecting pollution generating surfaces or modifications to detention requirements for development, continue public education and outreach, pursue retrofit projects for water quality and detention facilities for public right-of-way
Step 3	Can future growth be managed to minimize adverse stormwater impacts?	Yes by modifying building requirements or through installing stormwater retrofits	Yes by modifying building requirements or through installing stormwater retrofits	Yes by modifying building requirements or through installing stormwater retrofits	Yes by modifying building requirements or through installing stormwater retrofits
Step 3	Expected Hydrologic Impact	Mod	Mod	Low	Low
Step 4	Expected Pollutant Loading	Mod	Mod	Mod	Mod
Step 4	Planned Land Use in Basin (20 years)	No Change	No Change	No Change	No Change
Step 4	Water Flow Importance	High	High	Moderate High	Moderate High
Step 4	Water Flow Degradation	Moderate High	High	High	High
Step 4	Water Flow Overall Protection & Restoration	Highest Restoration	Highest Restoration	Restoration	Restoration
Step 4	Water Quality Degradation (Moderate High or above)	n/a	Sediment	Sediment, Phosphorous, Metals, Nitrogen, Pathogens	Sediment, Phosphorous, Metals, Nitrogen, Pathogens
Step 4	WQ issues	sediment, nitrogen, phosphorous, metals			
Step 4	Water Flow Assessment	low surface storage, high discharge			
Step 4	Protection or Restoration Goals	Increase runoff attenuation prior to entering SD system	Lower copper and heavy metal loading, increase runoff attenuation prior to entering SD system	Increase runoff attenuation prior to entering SD system	Increase runoff attenuation prior to entering SD system
Step 4	Rationale as to where targeted stormwater investments and actions are most likely to protect/improve receiving water conditions	Water Flow and Water Quality Degradation Ranking	303(d) listing, Water Flow Degradation Ranking	Water Flow and Water Quality Degradation Ranking	Water Flow and Water Quality Degradation Ranking
Step 4	Prioritized Catchments	Detention/WQ facilities NE 24th Ave	WQ BMPs at intersections along NE 24th Ave, NE 20th Ave, 92nd Ave NE, Points Drive NE/NE28th St, Roads with high ADT, Infiltrating Facilities (possibly) on NE 24th if upslope of areas not prone to groundwater seep, Detention Facilities	Detention and WQ BMPs E/SE portion of CH	Detention and WQ BMPs E/SE portion of CH

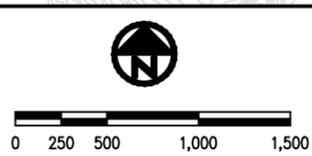


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- DETENTION BMP LOCATION
- NO BMP LOCATION

(DRAFT)
CLYDE HILL SD BASIN MAP
 Stormwater Management Action Plan



KPG
 Interdisciplinary Design
 3131 Elliott Ave Suite 400
 Seattle, WA 98121
 (206) 286-1640
 2502 Jefferson Ave
 Tacoma, WA 98402
 (253) 627-0720
 www.kpg.com