



WEST HYLEBOS
STORMWATER
MANAGEMENT ACTION PLAN
(SMAP)

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City of Federal Way, Public Works Department

Stormwater Management Action Plan (SMAP)

The West Hylebos has been chosen as our basin to prioritize based on our prioritization method. SMAP prioritization process is in Appendix A. This SMAP will include a description of stormwater facility retrofits proposed for the area, their purpose, and location. Land management and development strategies identified for water quality management for the area. This will also involve augmentation stormwater management activities such as IDDE, source control, O&M inspections, and public education and outreach. All of this will be done along with a budget and implementation plan for short-term (within 6 years) and long-term (7 to 20 years) as required by the Western Washington NPDES Phase II permit issued by Ecology.

Background on West Hylebos Creek

The Hylebos Creek – West drainage basin is approximately 5,840 acres. It is the largest basin in the city, with approximately 91 percent of the basin inside the city limits. The Hylebos basin includes three subbasins:

- West Fork
- East Fork
- Lower Hylebos

Hylebos Creek drains directly to Commencement Bay in Puget Sound. The West Fork drains the central and southern portions of the city, with several smaller tributaries that converge at West Hylebos Wetland Park. Hylebos Creek provides spawning habitat for threatened fall-run Chinook salmon (*Oncorhynchus tshawytscha*) and has documented presence of threatened winter-run steelhead (*O. mykiss*) (WDFW 2021). The Hylebos basin has experienced significant development and urbanization. Hylebos Creek and the West Fork of Hylebos Creek are included on Ecology's 303(d) list for bacteria, dissolved oxygen, and temperature (Ecology 2021a).

The lower main stem and lower West and East Forks flow through Puyallup Tribal Lands. The Muckleshoot Tribe maintains fishing rights on Hylebos Creek, which was formerly home to substantial runs of coho (*O. kisutch*), chum (*O. keta*), and Chinook salmon, as well as cutthroat (*O. clarki*) and steelhead trout; these populations are now diminished. The Puyallup Tribe releases between 10,000 and 20,000 juvenile fall Chinook salmon into the West Fork on an annual basis (Schwartz 2016). The Salmon Habitat Protection and Restoration Strategy for water resource inventory area (WRIA) 10 does not prioritize Hylebos Creek as an area for salmon recovery due to the small populations it contains compared to populations in the main stem Puyallup, White, and Carbon Rivers.

Stormwater Facility Retrofits for the West Hylebos Basin

The permit requires the City present descriptions of the stormwater facility retrofits needed for the basin, including BMP types, and preferred locations. The retrofits listed here all derived from the 2021 Federal Way SWM Comprehensive Plan, Federal Way’s Capital Improvement Projects 2020-2026 Guide, and the 2023-2024 City Budget. A short-term project list and budget schedule, summarizing cost and purpose of each project can be found below as Table 4-1 and Table 4-2. Long-term projects are under development that shall follow development of the City’s 2024 Comprehensive Plan. Detailed project scope definitions are included in Appendix B.

Short-term:

Table 4-1 Capital Improvement Projects 2023-2028					
Project Name	Stormwater Facility Retrofit	Purpose	Total Cost	Unfunded Needs	Timeframe
South 356th Street Culvert Replacement	Yes	Replacement of existing twin 57"x38" arch culverts conveying West Hylebos Creek under S 356th St. The existing culverts will be removed and replaced with a concrete box culvert. Culvert is planned to be constructed in conjunction with S 356th St Roadway Improvements project.	\$1,400,000	\$521,000	LTD-2025
South 359th Street Culvert Replacement	Yes	Replace culvert and regrade the stream by removing the downstream weirs so the system is fish-passable and restore in-stream habitat.	\$890,000	\$890,000	2027-2028
Hidden Pond Feasibility	No	Feasibility study to assess options for utilizing the pond site.	\$60,000	\$60,000	2026
West Hylebos Basin Land Acquisition	No	Matching funds for King County Conservation Futures Grant property acquisition. The project will acquire high value riparian corridor properties and protect high value habitat and wildlife areas within the City.	\$5,180,000	-	LTD-2028
West Hylebos Education Center and Trail	No	Conversion of a portion of the Brook Lake Community center site into an education and outreach center. Retrofit of the existing building and parking lot into a trailhead for an expansion of the Hylebos Wetlands Park Trail to the south.	\$7,800,000	\$3,900,000	2027-2028
North Fork West Hylebos Watershed Trail	No	A nature trail system within Spring Valley along North Fork West Hylebos Creek. The trail will better connect the community with the natural environment, provide numerous education and outreach opportunities, and encourage environmental stewardship.	\$5,200,000	\$5,200,000	2025-2026
West Hylebos Watershed Trail (Spring Valley)	No	Construction of a nature trail system within the Spring Valley and Lower West Hylebos conservation areas to expand on the existing West Hylebos Wetland Park trails.	\$7,800,000	\$3,900,000	2027-2028
S 324th St and Pacific Hwy S Drainage Improvement	Yes	Drainage study, design, and construction of improvements to the storm system to address recurring street flooding during intense storms.	\$350,000	-	2023-2024
Upsize Pipes at SW Campus Dr, W of 9th Ave SW	Yes	Two storm drain laterals on SW Campus Drive are undersized and cause flooding in the roadway. Use pipe bursting techniques as road was recently overlaid.	\$30,000	-	2023
Small CIP Program	Yes	Includes miscellaneous small capital projects and major maintenance work to be completed by a combination of contracted services and city staff.	\$1,500,000	-	2023-2028
Pipe Repairs	Yes	Annual pipe rehabilitation program.	\$2,786,000	-	2023-2028
Catch Basin Repairs	Yes	Annual catch rehabilitation program.	\$675,000	-	2023-2028
Neighborhood Drainage Improvement	No	Annual program to respond to localized stormwater concerns (such as flooding) within neighborhoods (i.e. low impact development opportunities).	\$200,000	-	2023-2028
CCTV Inspection and Assessment	No	Annual Storm Drain CCTV inspection and assessment program.	\$1,200,000	-	2023-2028
Citywide Water Quality Monitoring	No	Annual water quality monitoring program.	\$600,000	-	2023-2028

Table 4-2 Short-term CIP Budget Schedule							
Cost in Thousands of Dollars (e.g. \$1 = \$1,000)							
Project Name	LTD thur 2022	2023	2024	2025	2026	2027	2028
South 356th Street Culvert Replacement	\$60	\$94	\$225	\$1,021 ^a			
South 359th St Culvert Repair						\$258	\$632
Hidden Pond Feasibility					\$60		
West Hylebos Basin Land Acquisition	\$2,280	\$1,150 ^b	\$150	\$1,150 ^b	\$150	\$150	\$150
West Hylebos Education Center and Trail						\$110	\$1,590
North Fork West Hylebos Watershed Trail		\$600 ^a	\$4,600 ^a				
West Hylebos Watershed Trail (Spring Valley)						\$220	\$7,580
S 324th St and Pacific Hwy S Drainage Improvement		\$75	\$275				
Upsize Pipes at SW Campus Dr, W of 9th Ave SW		\$30					
Small CIP Program	\$600	\$150	\$150	\$150	\$150	\$150	\$150
Pipe Repairs	\$884	\$317	\$317	\$317	\$317	\$317	\$317
Catch Basin Repairs	\$225	\$75	\$75	\$75	\$75	\$75	\$75
Neighborhood Drainage Improvement	\$50	\$25	\$25	\$25	\$25	\$25	\$25
CCTV Inspection and Assessment	\$600	\$100	\$100	\$100	\$100	\$100	\$100
Citywide Water Quality Monitoring		\$100	\$100	\$100	\$100	\$100	\$100

^a The City plans to apply for grant funding for half of this total cost.

^b The City plans to apply for grant funding for \$1M of this total cost.

Long-term:

The City is currently working on updating the City’s 2015 Comprehensive Plan for 2024. This will include a lot of long-range planning that will be taken into consideration when planning future stormwater retrofits. The 2024 Comprehensive plan will plan out the City for the next twenty years till 2044. More specific long-term retrofit project plans will be included once the 2024 Comprehensive Plan is more developed. The City plans out CIP projects for the next 6 years and that plan is updated every 2 to 3 years.

Land Management & Development Strategies

Ecology’s SMAP Guidance states “SMAP may include identification of lands to protect or conserve from impervious surface conversions or native vegetation removal, and the strategic means for providing the needed protection, which could be addressed via purchase or zoning or land use policy changes, to name a few options. SMAP may also include other zoning or land use policy changes deemed necessary to prevent the water body from maintaining its current designated uses.”

Short-term:

- We plan on acquiring 2 parcels in the West Hylebos for the purpose of conservation and restoring threatened and endangered species habitat as mentioned in Table 4-1. Currently, in the planning phase.

West Hylebos Basin Land Acquisition Project	
Location:	Creek corridors between S 356th St and S 373rd St
Timeline:	LTD - 2028
Project Description:	This project will purchase properties along West Hylebos Creek and North Fork West Hylebos Creek corridors between S 356th St and S 373rd St. The purpose of the project is to protect the creek and its riparian zone. Some of the parcels have already been acquired by the city. A few parcels are owned by other public agencies such as Lakehaven Utility District or WSDOT. The goal of this project includes acquiring five parcels along the corridor that are currently owned by private owners.
Cost Estimation:	The total 2018 assessed value of the five parcels is approximately \$2,378,000. The city plans to set aside \$150,000 per year for the acquisition of these parcels.
Source of Funds:	The City plans to apply for matching funds through the King County Concersations Futures Grant and it qualifies as an opportunity area which means the grant may potentially cover 100% of cost.
Vicinity Map:	

- The City current code, FWRC 11.45, charges surface waters rates by equivalent service units (ESU) and 1 ESU equals 3,200 square feet of impervious surfaces. Rate became effective January 1, 2021. Currently, the surface water rates increase annually until 2028. This financially incentivizes impervious development and creates a financial barrier for impervious development.

Long-term:

- If the acquisition of the creek corridors mentioned in the short-term goals is successful. The City will evaluate and plan best applicable use of the acquired land to improve West Hylebos basin.
- The City will reevaluate the surface water fee rate structure in 2028.

Augmentations to Stormwater Management Program

We are required to target, enhance, or customize our implementation of the stormwater management actions related to permit section within S5. This includes our IDDE program, source control inspections, O&M inspections or enhanced maintenance, and public education and outreach behavior change program. These are augmentation to our current stormwater management program that will take effect 2023.

Short-Term:

IDDE and Source Control

The following IDDE and Source Control Programs will be augmented to prioritize the West Hylebos starting in 2023.

- Dry Weather Outfall Inspections
 - Include outfalls within the basin annually
 - Increase frequency of outfall inspections; where all outfalls within the basin will be inspected every 2 years.
- Source Control
 - Prioritize sites and increase frequency of inspections for sites within basin to ensure majority of sites within the West Hylebos basin are inspected annually or biannually, dependent on staff time available.
 - Enhanced source control, in addition to traditional source control procedures this will also involve talking to property owner or business owner during site inspections, identifying sources of pollution, determine how sources of pollution are managed (usage, storage, and disposal), and provide BMPs specific to the business.

O&M Inspections and Maintenance

Upon review we found that previous enhancement that were going to include in this section were insufficient. The City discuss potential O&M inspection and maintenance programs that could be enhance in its interdisciplinary team meeting that is planned to occur in October.

Public Education and Outreach

- General Awareness
 - Focus on the West Hylebos when conducting outreach at public events such as movie night or farmers market.
- Stewardship Events
 - Plan more litter pick up events within the basin because most reports we get are regarding litter on public property. Out of 6,818 reports through our SeeClickFix system from Jan-Dec of 2021, 1,538 complaints were about garbage on streets/sidewalks.
 - Focus storm drain curb marking events within the basin.
 - Prioritize the West Hylebos in Stream Team stewardship activities.
- Behavioral Change Program
 - Prioritize sites within the basin when selecting business for our behavioral change program site visits conducted by ECOSS starting in 2023.

Long-term:

Short-term stormwater management program augmentations will be evaluated and adjusted as necessary.

SMAP Updates

The SMAP will be updated annually. Review and revisions will be discussed during the interdisciplinary team meetings.

Citywide Monitoring Program

The City will focus its monitoring program on all stretches of the West Hylebos that has a 303(d) impairment to begin process of correcting the impairments to improve water quality. First step, will be to verify that the impairments still exist. If impairments exist, then develop a plan to determine major source of impairment, correct the major source of impairment, and continue with monitoring to ensure that the impairment has been corrected if possible. This will be an ongoing program to assess the creek. Data will be used to track effectiveness of West Hylebos SMAP and update the SMAP as applicable. This program launched January 2023. First couple years will be focused on establishing baseline measurements and characterizing impairments. The Federal Way City-Wide Monitoring QAPP is underdevelopment and will ensure we have quality data acceptable to Ecology.

Short Term:

- Establishing baseline data for local waterways.
- Identify and confirm current 303(d) impairments.

Long Term Goals:

- Identify major sources of impairments.
- Plan projects or efforts to reduce or prevent major sources contributing to impairments.

