



MUNICIPAL STORMWATER OPERATIONS AND MAINTENANCE PROGRAM

2022

TABLE OF CONTENTS

TABLE OF REVISIONS AND REVIEWS.....	ii
PURPOSE, GOAL, AND APPROACH	1
OVERVIEW	1
STORMWATER FACILITIES.....	2
STREETS	3
PARKS	5
BUILDING MAINTENANCE	5
GENERATED MATERIAL	6
TRAINING.....	9
REVIEW AND RECORDKEEPING.....	9

APPENDICES

- A. Table of Stormwater Facilities
- B. Facility Maintenance Standards
- C. Source Control Best Management Practices
- D. Shop Guide for Dangerous Waste Management
- E. Street Waste Disposal

TABLE OF REVISIONS AND REVIEWS

DATE	COMMENTS
1/30/2015	Updated to comply with 2012 SWMMWW and the 2013-2018 Western Washington Phase II Municipal Stormwater Permit – Otak, Inc.
3/15/2021	Updated to comply with 2019 SWMMWW and the 2019-2024 Western Washington Phase II Municipal Stormwater Permit – City of Kelso

PURPOSE, GOAL, AND APPROACH

PURPOSE

The Municipal Stormwater Operations and Maintenance (O&M) Program (Program) was written to comply with the 2019-2024 Phase II Municipal Stormwater NPDES Permit (Permit) for Western Washington, section S5.C.7.d to prevent or reduce pollutant runoff from municipal operations.

GOAL

Conduct municipal operations and maintenance programs in a manner that reduces the discharge of pollutants to the maximum extent practicable (MEP) using all known, available, and reasonable methods of prevention, control, and treatment (AKART).

APPROACH

- A. This Program is a supporting document to the City's Stormwater Management Program (SWMP).
- B. It shall be reviewed at least once per Permit cycle by Engineering and Public Works staff, and updated as necessary.
- C. This Program outlines the inspections and maintenance procedures to be performed by staff in Engineering and Public Works.
- D. It incorporates the 2019 Stormwater Management Manual for Western Washington (SWMMWW) into City operations and maintenance practices.

OVERVIEW

The City of Kelso (City) has a population of over 12,000 people and is located along Interstate 5. The Coweeman and Cowlitz rivers flow through Kelso, and Kelso borders the Columbia River. The City is regulated by the Permit, that requires the City to implement practices, policies, and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the City, and road maintenance activities under the functional control of the City.

The City's Public Works and Engineering Departments work cooperatively to achieve Permit compliance. The Public Works Department is responsible for the City's O&M activities and, therefore, has the greatest opportunity to reduce stormwater impacts from City-owned and maintained land. The City's Engineering Department is responsible for stormwater-related inspections and monitoring Permit compliance.

Public Works Department – Operations Division

The Operations Division (Operations) provides services from its Operations Maintenance Facility (Facility) at 2300 Parrott Way, and the Facility operates under its own Stormwater Pollution Prevention Plan (SWPPP). The Facility includes heavy equipment and a storage yard. The SWPPP is used to prevent and control pollution to waters of the state and to comply with the requirements of the Permit. Water, sewer, stormwater and roadway maintenance services are based out of the Facility.

Public Works Department – Parks and Recreation Division

The Parks and Recreation Division (Parks) manages eight parks with more than 50 acres of parkland. It conducts operations out of its facility located at Tam O'Shanter Way next to the City's largest park, Tam O'Shanter Park. Parks activities include maintenance at the City parks.

Both Operations and Parks work under the guidance of other programs such as the *Nutrient, Integrated Pest Management and Herbicide Plan*, and the *Illicit Discharge Detection and Elimination (IDDE) Program*. All City employees who work in the field and, as part of their regular duties, may observe illicit discharges or connections or who may impact water quality receive training on illicit discharges and spills.

Engineering Department

The Engineering Department provides inspection of stormwater treatment and flow control facilities, trains staff, and keeps records of some compliance activities.

STORMWATER FACILITIES

The City's municipal separate storm sewer system (MS4) includes nine runoff detention and/or treatment facilities, which are listed below. The *Stormwater Facilities Manual* contains all relevant information about these facilities; copies are kept with Engineering. The stormwater drainage system includes about 37 miles of storm sewer pipes from 4- to 84- inches in diameter. The system also includes about 1,500 catch basins and 650 manholes documented in a geodatabase.

Stormwater treatment and flow control facilities include the following:

- CDS unit at N 1st Avenue and N Pacific Avenue
- Stormceptor System at S 3rd Avenue and Oak Street City parking lot
- Flow control structure and oil/water separator at east end of Allen Street Bridge
- Flow control structure, oil/water separator and pond with outlet control structure at west end of Allen Street Bridge
- Bioretention planter on West Main Street between SW 6th Avenue and W Cowlitz Way
- Bioretention cell on West Main between NW 3rd Avenue and NW 4th Avenue
- Detention facility at Paxton Reservoir, on Paxton Road
- Bioretention cells at Yew Street between S Pacific Avenue and S 7th Avenue
- StormFilter systems, bioretention cells, bioretention planters and wetpond at Tam O'Shanter Park

Table 1 in Appendix A lists components of each above-listed stormwater facilities, and summarizes each facility's maintenance requirements and schedule. Engineering will perform annual inspections of stormwater treatment and flow control facilities, and Operations will perform any required maintenance. Operations will inspect and maintain catch basins and manholes, and Engineering will provide analysis of inspection results.

Standards

The maintenance standards from Chapter 3 in Volume IV of the 2019 SWMMWW are required by this Program until July 31, 2024. After July 31, 2024, maintenance standards from the current version of the SWMMWW are required. Updated standards for selected facility types are included as Appendix B.

Compliance with Standards

Maintenance will be performed promptly as necessary to remain compliant with standards. When an inspection identifies an exceedance of the maintenance standard, maintenance will be performed as follows:

- Within 1 year for typical maintenance of facilities, except catch basins;
- Within 6 months for catch basins;
- Within 2 years for maintenance that requires capital construction of less than \$25,000; or
- As otherwise documented in Permit section S5.C.7.a.ii.

Inspection Frequency

1. Annually, for municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities.
2. Spot check municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities after major storm events (24-hour storm event with a 10-year or greater recurrence interval). Operations will also spot check known flooding trouble spots after storms.
3. Inspect 50% of catch basins per year, as required by Permit section S5.C.7.c.iii.

Records and Performance

Records of all inspections are kept by the Engineering Department. Compliance during this Permit cycle shall be determined by documenting the established inspection program and achieving an annual rate of at least 95% of inspections specified above, per Permit section S5.C.7.c.iv.

Further guidance for inspection and maintenance is provided in *BMPs for Maintenance of Stormwater Drainage and Treatment Systems* found in Appendix C.

STREETS

Street Sweeping

Operations sweeps all curbed streets in the City of Kelso. Street sweeping is performed using an Elgin Crosswind J regenerative air street sweeper. The sweeper has vacuum and sweeping capabilities for efficient removal of sediment, debris and other pollutants. Debris build-up is at its most during the months of October through December. The City coordinates sweeping with other activities that generate higher than normal loading. For example, in areas of heavy leaf

build-up during the fall, street sweeping is performed after crews remove the majority of leaves with heavy equipment. The City performs the sweeping on an as-needed basis and as much as staff time allows. Refer to *BMPs for Urban Streets* in Appendix C for further guidance.

Deicing

Operations performs deicing of city streets using salt brine, composed of sodium chloride and water. Application of the brine is only performed when needed to protect the health and safety of the traveling public. Refer to the *BMPs for Deicing and Anti-Icing Operations for Airports, and BMPs for Streets and Highways* in Appendix C for further guidance.

Dust Emissions

The City has unpaved streets and alleys that are re-graded and re-rocked periodically to control erosion and potholing. Dust problems are uncommon. If dust emissions become significant the City will consider dust control practices. These could include re-rocking with a cleaner grade of rock and using approved dust suppressant chemicals such as those listed in Ecology Publication #96-433 (revised March 2003), "Techniques for Dust Prevention and Suppression." For further guidance, refer to the *BMPs for Dust Control at Disturbed Areas and Unpaved Roadways and Parking Lots* in Appendix C.

Utility Installation

The City maintains the water, sewer, and storm drain utilities. Utility installations and replacements can generate sediment pollution. The City will employ pollution prevention and good housekeeping efforts such as protecting inlets, keeping the street clean, and installing erosion and sediment control BMPs to ensure final stabilization of disturbed soils. For further guidance, see SWMMWW Volumes IV, Source Control, and II, Construction Stormwater Pollution Prevention.

Utility Corridors and Facilities

The City has utility corridors and facilities outside of the streets and sidewalks, but still within the right of way. For these areas, the City will follow its *Nutrient, Integrated Pest Management and Herbicide Plan* and the *BMPs for Maintenance of Public and Private Utility Corridors and Facilities* in Appendix C.

Roadside Areas

The City has pervious surfaces with landscaping outside of the streets and sidewalks, but still within the right of way. For these areas, the City will follow its *Nutrient, Integrated Pest Management and Herbicide Plan* and the *BMPs for Landscaping and Lawn / Vegetation Management* in Appendix C.

Stormwater Drainage and Treatment Systems

Stormwater drainage and treatment systems, including catch basins, culverts, pipelines and structural BMPs, are maintained to preserve the condition and capacity for which they were originally constructed. Structural BMPs are maintained in accordance with their respective facility maintenance standard section in Appendix B. Materials removed from these systems are disposed of in accordance with the "Street Wastes" section below. Further guidance can be found in the *BMPs for Maintenance of Stormwater Drainage and Treatment Systems* in Appendix C.

Roadside Ditches

Roadside ditches are maintained to preserve the condition and capacity for which they were originally constructed, and to minimize bare or thinly vegetated ground surfaces.

Maintenance practices should provide for erosion and sediment control as needed. Further guidance can be found in the *BMPs for Maintenance of Roadside Ditches* in Appendix C.

Road Repair and Resurfacing

Regular municipal street repair and maintenance activities, such as pavement marking, pavement grinding, repair, patching, resurfacing, sealing and right-of-way maintenance, can generate a range of stormwater pollutants, including metals, chlorides, hydrocarbons (e.g. benzene, toluene, ethylbenzene, xylene), nutrients, sediment and trash.

The City will employ pollution prevention and good housekeeping efforts such as protecting inlets, keeping the street clean, and installing erosion and sediment control BMPs to ensure final stabilization of disturbed soils. For further guidance, see SWMMWW Volumes IV, Source Control, and II, Construction Stormwater Pollution Prevention.

Pavement Striping

Only DOT-approved paint is used and it is applied to WSDOT standards. Pavement striping operations are only conducted during dry weather.

PARKS

The City owns and/or maintains 17 parks and about 6 miles of trails. City park classifications include regional park, neighborhood park, neighborhood play lot, neighborhood open spaces, and undeveloped open spaces. Park landscaping and vegetation disposal guidance can be found in *BMPs for Landscaping and Lawn / Vegetation Management* in Appendix C.

The City Operations Division has policies and practices for application of fertilizers, pesticides, and herbicides on City managed facilities such as parks. The City has developed a nutrient management and an integrated pest management plan, *Nutrient, Integrated Pest Management and Herbicide Plan 2015*, to guide these activities.

Trash cans and pet waste stations are placed in parks and at trail entrances and exits to encourage trash and pet waste disposal. Pet waste stations include a “Scoop the Poop” sign, pet waste bags, and a trash can. Further guidance can be found in the *BMPs for Pet Waste* in Appendix C.

BUILDING MAINTENANCE

Exterior Painting

The City is responsible for maintaining the building exteriors of City Hall, the Operations & Maintenance Facility at 2300 Parrott Way, and any other City owned and operated buildings. Surface preparation and the application of paints to buildings outdoors can be a source of pollutants. Potential pollutants resulting from painting buildings include organic compounds, oils and greases, heavy metals, and suspended solids. Refer to *BMPs for Painting/Finishing/Coating*

of *Vehicles/Boats/Buildings/Equipment* found in Appendix C for guidance on work space set-up, paint application, and clean-up methods.

Exterior Washing

Operations maintains City owned and operated buildings by washing the building exterior. If the washwater contains oils, soaps, or detergents, it should be collected and conveyed to appropriate treatment such as a sanitary sewer system. If the washwater does not contain oils, soaps, or detergents (in this case only a low pressure, clean, cold water rinse is allowed) then it could drain to soils that have sufficient natural attenuation capacity for dust and sediment. Further guidance can be found in the *BMPs for Washing and Steam Cleaning Vehicles/Equipment/Building Structures* found in Appendix C.

Roof Drains

On City buildings where roofs are galvanized, roof drains should be evaluated for potential sources of stormwater pollutants and source control BMPs applied where feasible. Further guidance can be found in the *BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings* found in Appendix C.

GENERATED MATERIAL

The City will manage materials generated by municipal operations using appropriate BMPs to reduce and prevent potential pollutants from being mixed with stormwater runoff. When generating material, Public Works will be responsible for implementing BMPs in the Facility SWPPP and in this Program.

A. APPLICABLE REGULATIONS

The City will comply with all applicable local, state, and Federal laws and regulations, including but not limited to:

- State (Ecology): [WAC 173-303](#) – Dangerous Waste Regulations; and
- Local (Cowlitz County Health Dept.) according to the Minimum Functional Standards for Solid Waste Management ([WAC 173-304](#)) and Municipal Landfill Standard ([WAC 173-351](#)), Cowlitz County Health Department.

B. WASTE HANDLING AND DISPOSAL

This section addresses the generally applicable stormwater runoff pollution prevention BMPs. Street wastes are discussed in this section because they are specifically discussed in the Permit.

BMPs for Storage of Liquid, Food Waste, or Dangerous Waste (see Appendix C)

- Clean-up leaks and spills.
- Store containers in impervious containment under a roof.
- *Liquids* – Use tight fitting lids or bungees; use of drip pans; inspect containers for damage and leaks. *Solids* – Elevate or otherwise protect from stormwater.

- If generating “dangerous waste,” contact the Stormwater Manager for assistance and follow Ecology’s “Shop Guide for Dangerous Waste Management.” (See Appendix D).
- Comply with Uniform Fire Code if waste is flammable, reactive, or explosive.
- Cover trash cans and dumpsters.

BMPs for Storage or Transfer (outside) of Solid Raw Materials, By-products, or Finished Products (see Appendix C)

- Sweep regularly.
- Do not hose down materials/product to the stormwater system.
- Protect catch basins or other entry points nearest to the pile.
- Treat runoff, where it has a pathway to the storm sewer or surface waters.
- Provide [impervious where necessary] containment with berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutants, and TSS.
- The storage area should have a minimum 1.5% slope to prevent run-on and to minimize contact (pooling) between stormwater and any leachable materials.

Dangerous or Special Wastes

- These waste materials typically contain hazardous substances, oils, or exhibit hazardous characteristics such as corrosivity, ignitability, reactivity, toxicity, or environment persistence.
- State regulations require anyone handling and managing these waste materials, including but not limited to waste designation, packaging, labeling, preparing shipping documents, and transporting, be trained in the duties they perform. See WAC 173-303-330.
- City staff are not trained in the handling and managing of dangerous or special wastes, such as hazardous waste operations and emergency response (HAZWOPER) training. Spills that include dangerous wastes materials are forwarded on to 911 for response.

Street Wastes

- Street wastes generated by street sweeping or cleaning of catch basins, etc. will be managed according to “Street Waste Disposal”, which is Appendix 6 of the Permit (see Appendix E of this Program).

Selected Waste Related Definitions

➤ *Dangerous Waste*: Means those solid waste designated in WAC 173-303-70 through 173-303-100 as dangerous, or extremely hazardous or mixed waste. Characterization is a three-step process:

1. Is the material a waste?
2. Is it a listed waste substance?
3. Does it exhibit any dangerous waste characteristics (ignitability, corrosivity, reactivity, or toxicity)?

No person without appropriate training should perform this task.

➤ *Special Waste*: Means any state-only dangerous waste that is solid only (non-liquid, non-aqueous, non-gaseous), that is: Corrosive, toxic (Category D toxicity only), selective PCB waste, or persistent waste that is not extremely hazardous waste. [Exclusion: Any solid waste regulated by the EPA cannot be a special waste].

- Vector truck wastes are taken to the shop and disposed of at the leaf/waste bin. The wastes are tested for metals three times per year at ALS Environmental in Kelso. Metals tested are arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Results typically are non-detect for the metals. Wastes that pass testing are shipped to either the City's fill site at 2514 Talley Way or the Cowlitz County landfill.
- In the future, vector waste from cleaning the stormwater drainage system will be delivered to a decant facility at the Three Rivers Regional Wastewater Plant. The facility is expected to be complete in 2015. The facility will be maintained by Cowlitz County and will be equipped with a decant bay, a grit chamber, and a coalescing plate oil/water separator. The final effluent will be discharged to the sanitary sewer and treated at the Three Rivers Regional Wastewater Plant.

Spills

- Public Works staff have been trained on spill response through Illicit Discharge Detection and Elimination (IDDE) training. Spill response basics are described below.
- For major spills that cannot be controlled or cleaned up using spill kits available on City vehicles or at the Facility, call 911 for assistance. For minor spills respond as detailed below.
- Notify the Public Works Superintendent or the Stormwater Manager for spills on municipal streets and alleys for internal reporting, assistance, and/or direction for traffic safety, street surface damage, and/or cleanup assistance.
- When responding to liquid spills, the best practice to manage waste from cleanup activities is to first clean up the hotspot areas (those with free liquids on the surface) separately from residual stains. Sand or sorbents applied on residual stains can usually be characterized and managed separately, which provides cost savings to the City.
- Further guidance can be found in the *BMPs for Spills of Oil and Hazardous Substances* found in Appendix C.

Hydraulic Oil Spill Example

1. Absorb the hot spot area of free liquid with sorbent material (preferably with sorbent pads or, if needed, with Amerizorb, floor dry, soil, or sand).
2. Place the material in a heavy-duty plastic bag and label on it the date, City of Kelso, spill source (e.g. equipment #), and the phrase "Non- Regulated Material, Solid" followed by the specific sorbent type then "Hydraulic Oil".

8/16/11

City of Kelso

Spill from 38-500

Non-Regulated Material, Solid – Sorbent Pads and Hydraulic Oil

3. Take the bagged material to the designated storage container for disposal and notify your supervisor and the Stormwater Manager of the quantity of waste generated from the spill.

Note: Alternatively, if sanding is the only feasible option, then a street sweeper can sweep the area when ready (preferably when empty). The sweeper operator will write down the above label information plus the total estimated quantity in volume and submit the information to the Public Works Superintendent.

4. Any remaining residual oil that cannot be absorbed on street surfaces may need sand spread over for traction purposes. Place motorcycle-related warning signs as needed until street sweepers are ready to sweep up the sand. This sand can be combined with normal street sweeping material.

TRAINING

The City of Kelso has an ongoing training program to educate new Public Works staff on the importance of protecting water quality, the Permit requirements, operation and maintenance standards, the SWPPP, selecting appropriate BMPs, inspection procedures, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns, including potential illicit discharges. Follow-up training will only be provided to address changes in procedures, techniques, requirements, or staffing, in accordance with Permit section S5.C.7.e.

REVIEW AND RECORDKEEPING

This Program is reviewed at least once per Permit cycle by the Stormwater Manager, Operations Drainage Lead and Public Works Superintendent.

Records of training, inspection, and maintenance (or repair) activities are kept in order to document in the annual report required by the Permit.

This page is intentionally left blank.