CHELAN COUNTY

Stormwater Pollution Prevention

Operations and Maintenance Plan

Chelan County Public Works

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Updated January 2016

Acknowledgements

The template for this Stormwater Pollution Prevention Operations and Maintenance Plan was developed by Otak, Inc. for the Wenatchee Valley Stormwater Technical Advisory Committee, consisting of representatives from the City of Wenatchee, the City of East Wenatchee, Chelan County, and Douglas County. Contributions to the project were made by other Eastern Washington communities, including stormwater program managers from the Cities of Kennewick, Moses Lake, Richland, Spokane, and Spokane Valley, Spokane and Walla Walla Counties, and the Eastmont Metropolitan Park District. The Operations and Maintenance Plan Template project was funded by a grant from the Washington State Department of Ecology.

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Glossary

The majority of the definitions below are sourced from the Washington Department of Ecology (Ecology) Eastern Washington Phase II Municipal Stormwater Permit (Phase II Permit). Definitions not provided from the Phase II Permit were taken from other sources, including Ecology's Stormwater Management Manual for Eastern Washington and EPA's NPDES website glossary.

Best Management Practices (BMPs) The activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to downstream or down gradient systems.

Catch Basin A drainage structure which collects water. May be either a structure where water enters from the side or through a grate.

Conveyance System The drainage facilities, both natural and man-made which collect and carry surface and stormwater flow. Includes gutters, drainage inlets, pipes, catch basins, manholes, channels, swales, ditches, small drainage courses, streams, and rivers.

Drywell A stormwater disposal system designed to disperse water below the land surface. Drywells are regulated by the Department of Ecology under the Underground Injection Control (UIC) program.

Erosion and Sedimentation Control (ESC) Any temporary or permanent measures taken to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, and sediment traps and ponds. Erosion sediment control BMPs are synonymous with stabilization and structural BMPs.

Groundwater Water in a saturated zone or stratum beneath the land surface.

Hazardous Substance 1) Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive or chemically reactive. 2) Any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or is otherwise released into the environment.

Hyperchlorinated	Water that contains more than 10 mg/Liter chlorine. Disinfection of water mains and appurtenances requires a chlorine residual of 10 mg/L at the end of the disinfection period. This level is well above the Maximum Residual Disinfectant Level of an annual average of 4 mg/Liter chlorine for potable water.
Illicit Discharge	Any discharge to the municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.
Maintenance	Activities conducted to extend the life cycle and ensure proper operation of existing facilities. Maintenance should not expand the use or capacity of a facility beyond the existing or designed use and results in no significant adverse hydrologic impact.
Maintenance Standard	Describes the condition when cleaning, repair, or other maintenance is required for a given facility.
Manhole	An entrance provided to a drainage facility for the purpose of inspection and cleaning. This may consist of a circular manhole shaft, frame and round cover or an opening into a structure where the top of the structure is at the surface. The opening may be round or rectangular.
Material Storage Facility	An uncovered area where bulk materials (liquid, solid, granular, etc.) are stored in piles, barrels, tanks, bins, crates, or other means.
National Pollutant Discharge Elimination System	The national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Oil/Water Separator	A vault, usually underground, designed to provide a quiescent environment to separate oil from water.
Phase II Permit	Eastern Washington Phase II Municipal Stormwater Permit, issued by the Department of Ecology on January 17, 2007 and modified June 17, 2009.
Pollutant	A waste material that pollutes wind, water, or soil. A non-stormwater discharge that enters the stormwater collection and conveyance system.
Receiving Waters	Any water body receiving stormwater runoff, including surface water, groundwater, and the stormwater collection and conveyance system.
Sediment	A naturally occurring material that is broken down by weathering and erosion and transported by wind, water, or other fluids.
Stormwater	Rainwater runoff, snowmelt runoff, and surface runoff and drainage.
Swale	A shallow drainage conveyance with relatively gentle side slopes, generally manmade.
Water Quality	The chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.
Waters of the State	Those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington state and "waters of the state" as defined in Chapter 90.48 RCW, which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the State of Washington.

Acronyms and Abbreviations

BMPs	Best Management Practices
CONSTRUCTION PERMIT	General NPDES Permit for Stormwater Discharges Associated with Construction Activities
ECOLOGY	Washington State Department of Ecology
EPA	Environmental Protection Agency
FTE	Full Time Equivalents
INDUSTRIAL PERMIT	General NPDES Permit for Stormwater Discharges Associated with Industrial Activities
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
PHASE II PERMIT	Eastern Washington Phase II Municipal Stormwater Permit
RCRA	Resource Conservation and Recovery Act
SWPPP	Stormwater Pollution Prevention Plan
UIC	Underground Injection Control

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Section 1—Introduction

Purpose

Chelan County is currently subject to the requirements of both the National Pollutant Discharge Elimination System (NPDES) Eastern Washington Phase II Municipal Stormwater Permit (Phase II Permit) and the Underground Injection Control (UIC) Rule. Under the Phase II Permit, the county is required to develop and implement a municipal Operations and Maintenance (O&M) Plan to protect water quality and reduce the discharge of pollutants into receiving waters. Receiving waters include surface waters, groundwater, and the stormwater collection and conveyance system.

The county's municipal employees engage in a number of activities that may positively or negatively impact water quality. This O&M Plan includes stormwater pollution prevention and good housekeeping practices that should be utilized during municipal maintenance activities in the following areas:

- Stormwater Collection and Conveyance System,
- Roads, Highways, and Parking Lots,
- Vehicle Fleets,
- Municipal Buildings,
- Parks and Open Space, and
- Flood Management Projects

This O&M Plan also addresses stormwater pollution prevention during Construction Projects. Appendix D has a site specific Stormwater Pollution Prevention Plan (SWPPP) for the county's municipal storage areas.

O&M Plan Development

This Stormwater Pollution Prevention O&M Plan was prepared based on a Stormwater Pollution Prevention O&M Plan Template developed by Otak, Inc for the Wenatchee Valley Stormwater Technical Advisory Committee using funding provided by a Washington State Department of Ecology (Ecology) Grant. The inspection schedules, maintenance standards and Best Management Practices (BMPs) included in this plan are based on Ecology's *Stormwater Management Manual for Eastern Washington* (2004), the *Model Municipal Stormwater Program for Eastern Washington*, and other guidance documents from Ecology and EPA.

Common Pollutants, Sources, and Impacts

Stormwater runoff contains pollutants that can harm human health, degrade water quality and habitat, and impair ecosystem functions. These pollutants originate from vehicles, businesses, homeowner activities, and municipal activities, and include oil, hydrocarbons, heavy metals, deicers, sediment, pesticides/herbicides, fertilizer, and bacteria. During rain

and snow melt events, stormwater runoff may accumulate these pollutants which are then washed into the receiving waters. Table 1-1 shows the sources of common stormwater pollutants and the potential impacts.

Table 1-1
Common Stormwater Pollutants, Sources, and Impacts

Pollutant	Sources	Impacts
Sediment	Construction sites; eroding stream banks and lakeshores; winter sand and salt application; vehicle/boat washing; agricultural sites.	Destruction of plant and fish habitat; transportation of attached oils, nutrients and other pollutants; increased maintenance costs, plugged conveyance systems, flooding.
Nutrients (phosphorus, nitrogen)	Fertilizers; malfunctioning septic systems; livestock, bird & pet waste; vehicle/boat washing; grey water; decaying grass and leaves; sewer overflows; leaking trash containers, leaking sewer lines.	Increased potential for nuisance or toxic algal blooms; increased potential for hypoxia/anoxia (low levels of dissolved oxygen which can kill aquatic organisms).
Hydrocarbons (petroleum compounds)	Vehicle and equipment leaks; vehicle and equipment emissions; pesticides; fuel spills; equipment cleaning; improper fuel storage & disposal.	Toxic to humans and aquatic life at low levels.
Heavy Metals	Vehicle brake and tire wear; vehicle/equipment exhaust; batteries; galvanized metal; paint and wood preservatives; fuels; pesticides; cleaners.	Toxic at low levels; drinking water contamination.
Pathogens (bacteria)	Livestock, bird and pet wastes; malfunctioning septic systems; sewer overflows; damaged sanitary lines.	Risk to human health leading to closure of shellfish areas and swimming areas; drinking water contamination.
Toxic Chemicals	Pesticides; dioxins; Polychlorinated Biphenyls (PCBs); spills, illegal discharges and leaks.	Toxic to human and aquatic life at low levels.
Debris/Litter	Improper waste disposal and storage; fishing gear; leaking rubbish containers; cigarette butts; littering.	Potential risk to human and aquatic life, aesthetically displeasing, can plugged conveyance systems, flooding.

Source: Rabasca and Rinehart, 2006

What are Best Management Practices (BMPs)?

BMPs are the activities, actions, procedures, prohibitions of practices, structural facilities, and/or managerial practices that, when used singly or in combination, prevent or reduce the release of pollutants into receiving waters.

There are three broad categories of BMPs:

- Operational BMPs are those activities and actions that municipal staff should perform on a regular basis to prevent the release of pollutants into the stormwater system. For example, street sweeping is an operational BMP. Putting tarp over material stockpiles at the end of each day is an operational BMP.
- Structural BMPs are permanent facilities or structures that are constructed to prevent pollutants from coming into contact with stormwater. For example, constructing a roof over a material storage area is a structural BMP.
- Treatment BMPs are the facilities that are used to remove pollutants from stormwater before it is released downstream into the surface waters or groundwaters. For example, oil/water separators and vegetated swales are Treatment BMPs.

This O&M Plan is focused on operational and structural BMPs that will be utilized to protect the county's receiving waters. Section 3 also describes the maintenance of the county's existing stormwater treatment BMPs, as regular maintenance is required to keep treatment BMPs functioning as they are intended.

Management Considerations

Preventing stormwater pollution during maintenance activities is a significant responsibility that impacts the activities of nearly every department in Chelan County. Maintenance activities must be carefully planned, coordinated, and documented to meet the requirements of the Phase II Permit, avoid duplication, and make best use of limited staff time and resources. Section 13 of this O&M Plan describes the planning, budgeting, and recordkeeping activities associated with stormwater pollution prevention and good housekeeping during municipal maintenance activities.

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Section 2—Program Overview

Organization/Structure

Chelan County Public Works Department is primarily responsible for the maintenance of the county's stormwater infrastructure. This includes inspecting and cleaning catch basins and manholes, clearing roadside ditches and culverts, and maintaining stormwater treatment and disposal facilities.

In addition, many other county departments conduct municipal activities that have the potential to introduce pollutants into stormwater. To protect receiving waters from stormwater pollution, the following within Chelan County are covered under this Stormwater Pollution Prevention O&M Plan:

- Roads and Streets
- Fleets and Vehicles
- Building Maintenance
- Parks, Open Space, and Landscaping
- Stormwater

Stormwater Infrastructure Inventory

The county completed a mapped inventory of the public stormwater infrastructure in 2005, again in 2011, and currently is maintaining an updated map of the MS4. A map of the publically operated stormwater system is included as Figure 2-1. The inventory is continually updated as new structures and facilities are added to the system. The county's stormwater system is comprised of:

- catch basins and manholes
- storm sewer pipe and culverts
- conveyance ditches
- drywells
- stormwater management facilities (see Table 2-1)
- surface discharges to the Wenatchee River, Columbia River, and Squilchuck Creek

Table 2-1
Summary of Major Stormwater Management Facilities

Name/Number/Designator	Facility Type	Location/Address	Year Constructed
Old Station Regional Stormwater Facility	Infiltration Pond, Stilling Basin	Old Station Road	2000

Downs Road Detention Pond	Detention Pond	Between the intersection of Downs Road and Lower Sunnyslope Road.	2000
Loop Trail Biofiltration Swale	Biofiltration Swale	Confluence State Park (northeast section) – Loop Trail, behind Columbia Fruit Packers, Inc.	2003

In addition to the stormwater system owned and operated by Chelan County, there are a number of private stormwater management facilities that are owned and operated by commercial/industrial businesses or residential homeowners associations. The county's program related to private facility maintenance is discussed in Section 3.

Facilities, Equipment, and Storage Areas

The county is responsible for the operation and maintenance of a number of municipal facilities as shown in Figure 2-2. These facilities include:

- Chelan County Campus-Wenatchee
- County Motor Pool (located at Wenatchee Campus)
- Sunnyslope Maintenance Yard (Material/Equipment Storage Yard)
- Sunnyslope Fleet Maintenance
- Park Facilities (Ohme Gardens and Wenatchee River County Park)

Contracted Activities

The county typically contracts with private companies to perform the following maintenance activities:

- Vegetation management
- Janitorial services for municipal buildings
- Window washing
- Safety equipment inspections
- Hazardous waste removal (i.e. motor oil, hydraulic oil, pump holding tanks, etc.)

Private contractors performing work on behalf of the county are also subject to the provisions protecting stormwater runoff. This O&M Plan should be referenced when preparing contract documents.

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Section 3—Stormwater Collection and Conveyance System

Table 3-1 Implementation Checklist Stormwater Collection and Conveyance System				
Potential Pollutants: Sediment, Nutrients, Hydrocarbons, Heavy Metals, Pathogens, Toxic Chemicals, Debris/Litter				
	Current Activity	Required New Activity*	Optional	Responsibility
Regular inspections of stormwater conveyance and treatment infrastructure (Refer to Table 3-2).	X			Stormwater Program Manager, Public Works Staff, Wenatchee Maintenance District
Catch Basin Inspection – 100% of high priority areas inspected annually	X			Stormwater Program Manager, Public Works Staff, Wenatchee Maintenance District
Catch Basin Inspection - 1/3 of low priority areas inspected annually	X			
Conduct maintenance activities based on inspections.	X			Wenatchee Maintenance District
Maintain inspection records	X			Stormwater Program Manager, Wenatchee Maintenance District
Implement IDDE program	X			Stormwater Program Manager
UIC registration and assessment	X			Stormwater Program Manager

*All required new activities must be implemented prior to the August 2019 to be in compliance with the Phase II Permit.

Section 3—Stormwater Collection and Conveyance System

Continued

Overview

The Public Works Department is responsible for maintenance of the stormwater collection and conveyance system, including catch basins and manholes, pipes, ditches, and stormwater management/treatment facilities. Maintenance activities focus on removing sediment, debris, and pollutants from the stormwater system, before they can be flushed downstream into receiving waters, resulting in adverse effects on aquatic life and water quality. Regular maintenance is also needed to keep stormwater management facilities (e.g. detention ponds, treatment swales) functioning as they were designed.

Maintenance for the stormwater collection and conveyance system consists of inspection, cleaning, repairs, and replacement. The Phase II Permit requires a shift from responsive maintenance to preventative, standards-based maintenance. Regular inspections will be used to identify when cleaning or repairs are needed to keep the stormwater system functioning at an optimal level. The maintenance activities should then be performed, utilizing the BMPs in this section.

The activities related to stormwater collection and conveyance system maintenance that are covered in this O&M Plan include:

- Facility Inspections
- Conveyance System Maintenance
- Stormwater Management Facility Maintenance
- Small Construction Activities
- Waste Disposal
- Private Facilities
- Recordkeeping

Facility Inspections

The Phase II Permit requires regular inspection of the Chelan County's stormwater facilities to check system performance and identify maintenance needs. Stormwater facility inspections will primarily be performed by the Stormwater Program Manager and/or the Wenatchee Maintenance District within the Public Works Department.

Inspection Schedule

Table 3-2 shows the proposed inspection frequencies for each type of stormwater management facility. Most stormwater management facilities will be inspected on an annual basis. Drywells and other UICs will be inspected twice-yearly. Catch basin and roadside ditch inspections are scheduled based on priority areas. High priority areas are those areas that are

subject to major sanding or neighborhoods with significant tree cover. High priority areas will be inspected annually and low priority areas will be inspected every three years on a rotating schedule.

Table 3-2
Stormwater Facility Inspection Frequencies

Facility Type	Inspection Frequency	Timing
Management Facilities		
Oil Water Separator	Once in Early Spring*	April
Drywells	Annually	Spring orFall
Ponds (Detention, Water Quality)	Annually	March - October
Control Structures (Swales, Trenches)	Annually	March - October
Conveyance System		
Catch Basins: <High priority area>	Annually	March - October
<1/3 of low priority areas>	Year A	March - October
<1/3 of low priority areas>	Year B	March – October
<1/3 of low priority areas>	Year C	March – October
Roadside Ditches	Annually	March - October
Culverts	Annually	March - October

*Based upon the Stormwater Management Manual recommendation.

Inspection Activities

During inspections, field inspectors may utilize the inspection checklists in Appendix A (or similar) to document the condition of each facility and identify any required maintenance activities. Any identified maintenance needs should be reported to the District Foreman and/or Stormwater Program Manager, so that work orders can be developed to complete the required repair or cleaning.

In addition to documenting the condition of each stormwater facility, field inspectors should continually verify and update (as needed) the county's inventory map. Field inspectors should immediately report any spills or illicit discharge concerns to their District Foreman, who in turn should inform the Stormwater Program Manager.

Standards and BMP Selection

The Stormwater Management Manual for Eastern Washington includes required facility maintenance standards related to the physical condition and function of each type of stormwater management facility. The maintenance standards cover topics such as sediment depth, erosion, vegetation growth, accumulated trash and debris, and structural integrity. For example, one of the maintenance standards for catch basins states that a structure should be cleaned when sediment exceeds 60 percent of the sump depth or when sediment has accumulated to within 6 inches of the lowest pipe invert.

The inspection checklists in Appendix A list the recommended maintenance standards for each type of stormwater management facility. Field inspectors can use the checklists during regular inspection (or similar) to indicate when cleaning or repairs are needed. The Phase II Permit then requires that the county correct an observed problem "…as soon as practicable" after the condition is identified during a regularly scheduled inspection or spot check.

Beyond the inspection requirements, the Phase II Permit requires the county to prevent the discharge of pollutants to the stormwater system and protect water quality to the maximum extent practicable. The following operational and structural BMPs will help Chelan County meet the permit requirements.

Conveyance System Maintenance

The following BMPs apply to the maintenance of the stormwater collection and conveyance system, including catch basins and manholes, outfalls, pipes, ditches, and drywells. Regular inspection and cleaning of catch basins and manholes should reduce the need for frequent cleaning of storm sewer pipes.

Operational BMPs

- Regularly inspect catch basins and outfalls according to the inspection schedule outlined in this O&M Plan to determine maintenance. Complete maintenance activities as identified during inspections.
- Clean catch basins and manholes when sediment and debris exceeds 60 percent of the sump depth or when sediment has accumulated to within 6 inches of the lowest pipe invert.
- Clean storm sewer pipes when accumulated sediment and debris exceeds 20 percent of the pipe diameter.

- Clean roadside ditches when accumulated sediment and debris exceeds 20 percent of the design depth.
- Conduct ditch cleaning during low water periods, minimizing the disturbance of existing vegetation.
- If required, test and dispose of sediment and debris according to the Waste Disposal Protocol in Appendix B.
- Manage a "hot spot" list of frequent flooding locations. Conduct spot checks of those locations following major precipitation events, exceeding 1.0inches of rainfall in any 24 hour period.
- Continue tomplement the Chelan County's Illicit Discharge Detection and Elimination Program to regularly inspect outfalls for evidence of unreported spills, illicit connections, or illegal dumping.
- Ensure that all UIC wells are registered with Ecology. Required information includes: operator/owner information, site location (latitude and longitude), BMPs used to protect groundwater quality, and a UIC well description.
- Ensure UIC well assessments are complete, evaluating the potential for pollutants to enter the stormwater runoff that flows to each UIC well. The well assessment should consider land use and groundwater protection areas and may consider local geology and depth to groundwater for wells that are considered a high threat to groundwater.

Structural BMPs

- If feasible, stencil drywell and catch basin grates with, "Dump No Waste - Drains to Stream/Groundwater".
- Prioritize, schedule, and complete repairs and replace damaged components of the stormwater conveyance system identified during inspections.
- It is recommended that UIC wells identified during the well assessment as being high threats to groundwater be retrofitted. A retrofit may include changing the source control activities and/or Structural BMPs around the well, adding an upstream catch basin or spill control device, adding pretreatment facilities, and/or well decommissioning. For more details, see the Ecology document entitled, Guidance for UIC Wells that Manage Stormwater, Publication Number 05-10-067.

Stormwater Management Facility Maintenance

The following BMPs apply to the maintenance of stormwater management facilities, including detention and infiltration ponds, underground tanks and vaults, treatment swales, oil/water separators, and proprietary treatment devices.

Operational BMPs

- Regularly inspect stormwater management facilities according to the inspection schedule outlined in this O&M Plan to determine maintenance. Complete maintenance activities as identified during inspections.
- Remove sediment when it exceeds the sediment storage depth (typically 12 inches) in ponds or when it exceeds 15 percent of the vault storage depth or tank diameter.
- Remove sediment when it exceeds a depth of 2 inches in treatment swales.
- Whenever possible, coordinate catch basin cleaning to coincide with municipal street sweeping.
- If required, test and dispose of sediment and debris according to the Waste Disposal Protocol in Appendix B.
- Conduct drive-by inspections of all County-owned stormwater management facilities following major precipitation events, exceeding 1.0 inches of rainfall in any 24 hour period.

Structural BMPs

- Prioritize, schedule, and complete repairs and replace damaged components of the stormwater conveyance system identified during inspections.

Vegetation Management BMPs

- If needed, mow vegetation in ponds and swales at least once per year to prevent the establishment of woody vegetation.
- If vegetation is removed and soil is exposed during sediment removal consider seeding and mulching the area as soon as possible after cleaning.
- Mechanical methods of vegetation removal should be considered before the use of herbicides.

Small Construction Activities

Sediment and erosion control measures should be implemented when stormwater system repair or replacement projects include grading, soil transfer, or vegetation removal. The

following BMPs apply when making structural repairs or replacing components of the stormwater infrastructure.

Small Construction BMPs

- Minimize land disturbance and exposed slope length.
- Whenever possible, avoid land disturbance during the wet season.
- Implement erosion control techniques or devices to stabilize disturbed areas. Use mulch or other erosion control measures when soils are exposed for more than a week.
- Install storm drain inlet protection on all inlets within 500 feet downstream or down gradient of the project site to prevent coarse sediment from entering the drainage system. Inlet protection methods include block and gravel inlet protection, gravel and wire inlet protection, and catch basin inserts. Inspect inlet protections frequently during construction.
- Remove excess soil from the site as soon as possible after backfilling to eliminate sediment loss from surplus fill.
- Obtain a General *NPDES Construction Stormwater General Permit* from Ecology for any project that disturbs one or more acres and has the potential to discharge to a water of the state.

For larger construction projects that include the addition of new stormwater system components or the replacement of culverts in streams or other perennial water bodies, follow the construction activity guidelines in Section 8.

Waste Disposal

Waste generated from cleaning of catch basins and other stormwater management and treatment facilities should be disposed of at the Wenatchee Valley Regional Decant Facility and follow proper disposal procedures outlined in the Facilities Operation and Maintenance Manual (Appendix B). Alternatively, if disposal by Waste Management, Inc. is required, then Waste Management, Inc. disposal requirements shall be followed. In some cases, the waste material must be tested to determine the proper disposal method. Material in catch basins with obvious contamination (unusual color, staining, corrosion, unusual odors, fumes, and oily sheen) should be left in place or segregated from other wastes until testing results can identify the nature of the contaminants. The county's waste testing and disposal protocol is outlined in the Wenatchee Valley Regional Decant Facility Operations and Maintenance Manual and is included in Appendix B.

Private Facilities

In addition to the stormwater system owned and operated by Chelan County, there are a number of stormwater facilities that manage stormwater runoff from private property. These facilities are owned and operated by private property owners – either commercial/industrial businesses or residential homeowners associations. While the maintenance of these systems is the responsibility of the private owner, Chelan County is required to establish a private facilities maintenance program for facilities that discharge to the county's stormwater collection and conveyance system or to local receiving waters. The purpose of the program is to verify that maintenance is performed and the private facilities are functioning to manage and protect water quality.

The private facility maintenance program is administered by the Stormwater Program Manager within the Public Works Department. Details of the program are described in Appendix C and the Post-Construction Stormwater Management for New Development and Redevelopment Program and detailed within the most recent Phase II Permit.

Recordkeeping

Recordkeeping is a condition of the Phase II Permit. The Stormwater Program Manager is responsible for managing records of stormwater collection and conveyance system maintenance activities. In accordance with the Phase II Permit, the following documentation must be kept for at least five years following work activity:

- Inspection schedules and checklists for stormwater treatment and flow control facilities;
- Records of spot checks performed following major storm events,
- Repairs or maintenance actions completed as a result of inspections and spot checks,
- Number and type of enforcement actions related to private facilities, and
- Number and type of illicit discharges detected and eliminated.

In addition, the county may track the following information to help in planning and budgeting for future maintenance activities.

- Catch basins cleaned each year.
- Amount of sediment collected and date removed.

Hard copy reports should be stored in the Public Works Department. If available, inspections, catch basin cleaning, and facility maintenance should also be imported into the county's GIS system, so the Stormwater Program Manager can geographically track maintenance activities and plan for future work.

In addition, material or liquid spills should be promptly reported to the District Foreman and Stormwater Program Manager. All paperwork related to the spill and cleanup activities should be maintained at the Public Works Department.

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Section 4—Roads, Highways and Parking Lots

Table 4-1 Implementation Checklist Roads, Highways, and Parking Lots				
Potential Pollutants: Sediment, Hydrocarbons, Heavy Metals, Toxic Chemicals, Debris/Litter				
	Current Activity	Required New Activity*	Optional	Responsibility
Sweep arterials annually	X		X	Wenatchee Maintenance District
Sweep residential streets annually	X			Wenatchee Maintenance District
Store swept material in a covered and/or contained site	X			Wenatchee Maintenance District
Minimize street flushing	X			Wenatchee Maintenance District
Use sand & deicers at lowest rate necessary for public safety	X			Wenatchee Maintenance District
Use pesticides only if there is a pest problem	X			Wenatchee Maintenance District
Whenever possible store material stockpiles under a permanent cover, a contained site, or use plastic sheeting	X			Wenatchee Maintenance District

*All required new activities must be implemented prior to the August 2019 to be in compliance with the Phase II Permit.

Overview

Pollutants accumulate on roadway surfaces and parking lots from pavement and vehicle wear, atmospheric deposition, and littering. Hydrocarbons, copper, and other heavy metals are deposited on roads from clutch and break wear, vehicle exhaust, and leaking motor fluids. Degrading road surfaces, litter, and trash, also add pollutants to stormwater runoff. Anti-icing chemicals that include acetate can deplete dissolved oxygen, increase conductivity, and increase pH of receiving waters. Sand used for winter traction can accumulate in the stormwater collection and conveyance system, carrying pollutants into receiving waters. If not properly managed, regular municipal street maintenance activities can negatively impact the health of local aquatic resources.

The Wenatchee Maintenance District of the Chelan County Public Works Department is responsible for implementing this O&M Plan during maintenance of the county's roads. Other Chelan County departments are responsible for implementing this O&M Plan during maintenance of all parking lots over 5,000 square feet. This includes:

- Chelan County Campus – Wenatchee (Facilities Maintenance)

Park Facilities (Ohme Gardens and Wenatchee River County Park)

Stormwater pollution prevention during roadway and parking lot maintenance focuses on collecting sediment, debris, and pollutants before they can enter the stormwater collection and conveyance system. This plan also covers proper vegetation management and application and storage of materials used for snow and ice control.

Standards and BMP Selection

The Phase II Permit does not include specific maintenance standards or BMPs related to the maintenance of roads, highways, and parking lots. The county's obligation is to prevent the discharge of pollutants to the stormwater system and protect water quality to the maximum extent practicable. To meet that goal, Chelan County has identified BMPs related to each of the following activities:

- Street Sweeping
- Winter Activities
- Street Repair and Maintenance
- Vegetation Management
- Recordkeeping

In general, the focus on selecting road, highway, and parking lot BMPs is to reduce the amount of sediment and debris that is washed from the roadways into the stormwater collection and conveyance system. Implementing these BMPs will help prevent the discharge of pollutants into receiving waters and help reduce the cost of maintaining the stormwater collection and conveyance system.

Street Sweeping

Chelan County conducts street sweeping for aesthetic, safety, and public health reasons. Effective sweeping removes pollutants before they can be carried into the stormwater collection and conveyance system and may reduce the frequency of catch basin cleaning.

Street Sweeping Schedule

The county's street sweeping schedule was developed to produce the most cost-effective reduction of pollutants, taking into account pollutant loads and weather patterns (sweeping before the onset of wet weather). If needed, high priority areas that are subject to a higher potential for pollutant loading may have to be swept on a more frequent basis (i.e. winter sanding areas). In general, the county aims to sweep most arterials and residential streets at least once a year or as needed.

Street Sweeping BMPs

- Use regenerative air sweepers on curb and gutter streets.
- Maintain sweeping equipment in good working condition.
- Store swept material in a covered and/or contained site until it can be disposed of following the Chelan County's Waste Disposal Protocol in Appendix B.
- Coordinate street sweeping schedules to coincide with important pollution prevention events such as fall for leaf collection, winter sanding operations, and peak pollen production in the spring.
- Whenever possible, coordinate street sweeping to occur just prior to catch basin cleaning.
- Schedule additional street sweeping following special events that generate higher than normal pollutant loadings.
- Train operators on factors that influence pollutant removal, including sweeper speed, brush adjustment, rotation rate, sweeping pattern, and maneuvering around parked vehicles.
- Consider periodic parking restrictions to ensure curbs are cleared before sweeping takes place.
- Attempt to track street sweeping waste (total volume or weight per mile of road swept) and modify sweeping schedules based on accumulated sediment loads.
- Avoid wet cleaning or flushing and utilize dry methods whenever possible.
- If wet cleaning or flushing is absolutely necessary, sweep and remove debris prior to flushing.

Waste Disposal

Street waste is generally not considered a dangerous waste and is disposed of at the Wenatchee Valley Regional Decant Facility. However, high traffic loads or spills can lead to waste that requires special handling and disposal, and proper disposal procedures outlined in the Facilities Operations and Maintenance Manual (Appendix B) shall be followed. If waste generated from street sweeping is disposed of by Waste Management Inc., it must follow their requirements. In some cases, the waste material must be tested to determine the proper disposal method. The county's waste testing and disposal protocol is outlined in the Wenatchee Valley Regional Decant Facility Operations and Maintenance Manual and is included in Appendix B.

Winter Activities

Chelan County conducts winter activities such as anti-icing, deicing, sanding, snow plowing, and snow removal to enhance public safety during inclement winter weather. Proper selection and application of deicing chemicals is important to prevent negative environmental impacts to water quality and plants.

Anti-icing, Deicing and Sanding

- Select anti-icers and deicers that cause the least adverse environmental impact while still providing adequate public safety. The following materials are preferred:
  - Sand
  - Liquid magnesium chloride
  - Salt
- Follow manufacturer's recommendations when applying chemical deicer.
- Calibrate equipment to optimum levels according to manufacturer instructions.
- Apply sand and deicers at the lowest rate necessary to provide for vehicle traction; avoid excessive application.
- Sweep streets in early spring to collect accumulated sand after the winter season.

Snow Removal

- Whenever possible, avoid covering inlets of the stormwater collection and conveyance system during plowing, so snowmelt can drain.
- Attempts should be made not to stockpile snow within 25 feet of surface waters, 75 feet of private water supplies, 200 feet from any community water supply, or 400 feet from any municipal well.

Material Storage

Uncovered material storage stockpiles are a major source of pollutants as sand, cinder, salts, or other road maintenance materials can be carried into the stormwater system during rain or snow melt events. Vehicle, equipment, and material storage areas should be maintained according to the SWPPP included in Appendix D. The following operational BMPs should be implemented to limit the transport of materials into the stormwater collection and conveyance system:

- Limit deicer and sand purchases to the amount that is expected to be needed for the upcoming season.
- Whenever possible, store material stockpiles in a building or within a paved and bermed covered area.
- Store chemical anti-icing and deicing materials following manufacturer recommendations.
- Sweep parking lots, material storage areas, and driveways regularly to collect dirt, waste, debris, and loose stockpile materials. Do not hose down the areas toward a storm drain inlet or ditch.
- Whenever possible, collect and recycle stored materials back into the stockpile.
- If feasible, place temporary plastic sheeting over uncovered stockpiles if not in use.

Street Repair and Maintenance

Street repair and maintenance activities include road surfacing (repairing potholes, sealing cracks, overlaying roads, and paving shoulders), pavement marking, signage and signal repairs, and small construction projects. The BMPs related to these activities are described below.

Street Repair and Maintenance BMPs

- When possible, avoid work in wet weather.
- Carry a spill kit during maintenance activities.
- Prevent paving materials, paint, pavement markings, and wastes from entering the storm drainage system.
- When placing chip seals, if feasible, limit spreading aggregate to the sealed surface and sweep up excess aggregate once cured and each day thereafter until aggregate loss is insignificant.
- Collect any loose sand, gravel, asphalt, or other material as soon as possible after repair activities.
- Sweep or vacuum dust and debris before using water to clean up work sites.
- Avoid striping operations when the pavement is wet or if rain is likely.
- When possible, use portable drip trays under equipment to catch spills.
- Properly contain and dispose of unused paint, cleaning materials, and debris following repair activities.

Small Construction BMPs

The following BMPs apply when making small roadway repairs that include grading, soil transfer, or vegetation removal:

- Minimize land disturbance and exposed slope length.
- Whenever possible, avoid land disturbance during the wet season.
- Implement erosion control techniques or devices to stabilize disturbed areas. Use mulch or other erosion control measures when soils are exposed for more than a week.
- Install storm drain inlet protection on all inlets within 500 feet downstream or down gradient of the project site to prevent coarse sediment from entering the drainage system. Inlet protection methods include block and gravel inlet protection, gravel and wire inlet protection, and catch basin inserts. Inspect inlet protections frequently during construction.
- Remove excess soil from the site as soon as possible after backfilling to eliminate sediment loss from surplus fill.
- Obtain a *NPDES Construction Stormwater General Permit* from Ecology for any project that disturbs one or more acres and has the potential to discharge to a water of the state.

For larger construction projects that create new impervious surfaces or have the potential to disturb large areas of soil, follow the construction activity guidelines in Section 8.

Vegetation Management

Vegetation management includes maintaining landscaping for roadway right-of-ways and medians and controlling noxious weeds, pests, and unwanted vegetation growth. Disturbed soil, removed vegetation, and chemicals can all negatively impact receiving waters. Vegetation within the right-of-way is maintained by the Wenatchee Maintenance District, while Park Facilities (Ohme Gardens and Wenatchee River County Park) are maintained by county staff. For more information on the BMPs implemented at Park Facilities (Ohme Gardens and Wenatchee River County Park), refer to Section 7 – Parks and Open Spaces.

Landscaping and Irrigation BMPs

- Maintain vegetative cover on medians and embankments to prevent soil erosion. If feasible, when vegetation is removed, apply mulch or other cover measures to prevent soil erosion.
- Dispose of lawn clippings, leaves, branches, and other vegetative material where it does not have the opportunity to enter streams or storm drains.
- Avoid loosening the soil during weed control.
- Inspect the irrigation system regularly to minimize excess watering and prevent the runoff of fertilizer.
- Repair leaks to the irrigation system as soon as they are observed or reported.

- Minimize the use of chemical fertilizers and calibrate the distributor to avoid excessive application.
- Store fertilizers in enclosed areas or in covered impervious containment in accordance with Chelan County's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Pesticide and Herbicide BMPs

- Attempt mechanical methods of vegetation removal first, then herbicides.
- Do not use pesticides or herbicides if rain is expected.
- Do not mix or prepare pesticides near storm drain inlets.
- Follow product labels for proper application of any pesticide.
- Use the minimum amount of chemical needed for the job.
- Avoid pesticide applications within 100 feet of a water body.
- Use products specifically labeled for dry ditches when treating roadside ditches.

Storage and Disposal

- Follow federal, state, and local laws governing the storage and disposal of pesticides and herbicides.
- Store herbicides/pesticides in enclosed areas or in covered impervious containment in accordance with the county's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
- Rinse water from equipment cleaning and/or from herbicide/pesticide/fertilizer containers should be used as product, recycled into product, or disposed of properly.
- Following use, dispose of unused pesticide as hazardous waste.

Recordkeeping

Recordkeeping is a condition of the Phase II Permit. The Wenatchee District Foreman and the Stormwater Program Manager are responsible for keeping records of road and parking lot maintenance activities that have the potential to impact stormwater. The recordkeeping required by the Phase II Permit is limited to documenting any liquid or material spills that could carry pollutants into the stormwater collection and conveyance system. Spills should be reported to the Wenatchee District Foreman and the Stormwater Program Manager. All paperwork related to the spill and cleanup activities should be maintained at the Public Works Department.

The following records may also assist the Stormwater Program Manager in planning for future maintenance activities:

- Street sweeping – location, frequency;
- Culvert cleaning – location, frequency;
- Total volume/weight of materials collected per mile of road swept;

- Winter de-icing/sanding activities – location, type, frequency;
- Amount of street waste removed, and
- Results of sediment testing, if required.

Hard copy reports should be stored at the Public Works Department. In the future, hard copy documents may be scanned for electronic storage. Additionally, records may also be imported into the county's GIS system, so the Stormwater Program Manager can geographically track maintenance activities and plan for future work.

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Section 5—Vehicle Fleets

Table 5-1 Implementation Checklist Vehicle Fleets				
Potential Pollutants: Sediment, Hydrocarbons, Heavy Metals, Toxic Chemicals, Debris/Litter				
	Current Activity	Required New Activity*	Optional	Responsibility
Sweep vehicle storage parking lot, when needed.	X		X	Wenatchee Maintenance District, Fleets, Motor Pool
Maintain spill kit onsite at all times	X			Motor Pool, Fleets
Conduct employee training on fueling procedures	X			Motor Pool, Fleets
Conduct vehicle or power washing at a designated washing location or at a commercial facility	X			All county vehicles
Conduct vehicle maintenance inside, whenever feasible	X		X	Motor Pool, Fleets

*All required new activities must be implemented prior to the August 2019 to be in compliance with the Phase II Permit.

Overview

The Public Works Department is responsible for maintaining county vehicles and equipment in proper working order. Most Public Works Department fleet vehicle maintenance is conducted at the Sunnyslope Maintenance Yard, while Chelan County vehicle maintenance (Motor Pool) is conducted at the county's Wenatchee campus garage. Vehicle maintenance activities have the potential to spill or leak fluids, fuel, or other polluting liquids. Vehicle washing can also contribute soap, debris, and pollutants into the stormwater collection and conveyance system.

Standards and BMP Selection

The Phase II Permit does not include specific maintenance standards or BMPs related to the maintenance of vehicle fleets. Chelan County's obligation is to prevent the discharge of pollutants to the stormwater system and protect water quality to the maximum extent practicable. To meet that goal, the county has identified BMPs related to each of the following activities:

- Vehicle Storage Areas

- Vehicle Fueling
- Vehicle Maintenance
- Vehicle Washing
- Recordkeeping

In general, the focus on selecting vehicle fleet BMPs is to prevent spills and reduce the potential for non-stormwater discharges into the into the stormwater collection and conveyance system. Implementing these BMPs will help prevent the discharge of pollutants into receiving waters.

Vehicle Storage

When vehicles and equipment are parked or stored outside without cover they have the potential to leak or drip hazardous fluids that can be carried to the stormwater system during a rain or snow melt event. Chelan County Public Works Department primary fleet vehicle storage area is located at the Sunnyslope Maintenance Yard and is a combination of outside with and without a cover. Chelan County's Motor Pool (passenger vehicles) are stored overnight (outdoors) at the Chelan County Campus - Wenatchee. In addition to the following BMPs, the Sunnyslope Maintenance Yard should be maintained according to the SWPPP included in Appendix D.

Operational BMPs

- Sweep parking lots, storage areas, and driveways regularly to collect dirt, waste, and debris. Do not hose down the areas to a stormwater conveyance system.
- Use drip pans or containers under vehicles and equipment that drip or are likely to drip liquids.
- Remove liquids from vehicles retired for scrap.

Structural BMPs

- Implement Structural BMPs to address vehicle storage areas in accordance with Chelan County's SWPPP.
- An oil removal system (i.e. oil water separator) at the vehicle storage area.

Vehicle Fueling

Chelan County operates a fueling station at the Sunnyslope Maintenance Yard, while the Motor Pool utilizes commercial gas stations. The following BMPs should be implemented to

minimize contact between stormwater runoff and spilled fuel, oil or other leaked vehicle fluids at the Sunnyslope Maintenance Yard fueling area.

Operational BMPs

- Fuel tanks and fuel dispensers shall have current permits with the appropriate agencies.
- Prepare an emergency spill response plan and have a designated trained person(s) available either on site or on call at all times to promptly and properly implement that plan and immediately clean up all spills.
- Maintain a spill kit onsite at all times.
- Train employees on the proper use of fuel dispensers. Proper fueling and spill cleanup instructions shall be posted at fueling areas. Post signs in accordance with the Uniform Fire Code.
- Make sure that the automatic shutoff on the fuel nozzle is functioning properly.
- The person conducting the fuel transfer must be present at the fueling pump during fuel transfer, particularly at unattended or self-serve stations.
- Hosing down of leaks, drips and spills is prohibited.

Vehicle Maintenance

Vehicle and equipment maintenance and repair conducted by Chelan County may include vehicle fluid removal, engine and parts cleaning, body repair and painting. Typical fleet vehicle and equipment maintenance activities are conducted within the mechanic shop located at the Sunnyslope Maintenance Yard, while the motor pool is located within the Wenatchee campus garage.

Operational BMPs

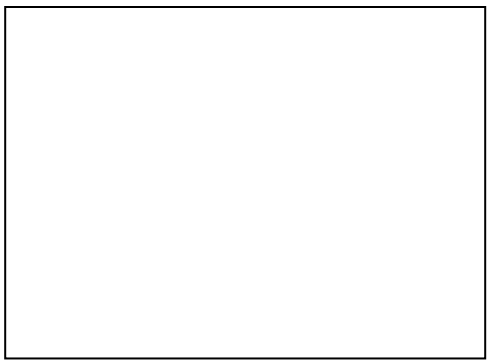
- Whenever possible, conduct vehicle maintenance indoors or within a paved, bermed and covered area.
- Outdoor vehicle and equipment maintenance shall not be performed during rain events or prior to predicted rain events unless required by emergency conditions.
- Maintenance activity areas should be kept clean, well organized and equipped with cleanup supplies.
- Inspect for leaks all incoming vehicles, parts, and equipment stored temporarily outside.
- Use absorbent pads, drip pans or absorbent material as appropriate. If rags and absorbents are saturated or contaminated with high concentrations of regulated

hazardous materials, dispose of rags and absorbents according to hazardous waste disposal guidelines.

- Vehicle maintenance activities (fluid removal, engine and parts cleaning, and body repair and painting) should be done in accordance with Chelan County's SWPPP.

Vehicle Washing

In accordance with Chelan County's Illicit Discharge Resolution (Chelan County Code Chapter 13.14), vehicle wash water is prohibited from entering the stormwater collection and conveyance system. In addition to the potential impacts from soapy water, wash water may contain other hazardous vehicle fluids. Chelan County primarily washes Public Works Department fleet vehicles at the Sunnyslope Maintenance Yard in a designated oil/water separator wash area, while Chelan County vehicles (Motor Pool) are washed at the county's Wenatchee campus garage (which is connected to the City of Wenatchee's sanitary sewer).



Operational BMPs

- Vehicle and equipment washing areas should be inspected daily and cleaned as needed.
- Use phosphate-free biodegradable soaps and detergents whenever practical.
- Do not remove original product label from cleaning containers as it contains important spill cleanup and disposal information. Use the entire product before disposing of the container.
- Minimize water usage.
- If needed, conduct vehicle/equipment washing off-site at a commercial washing facility in which the washing occurs in an enclosure and drains to the sanitary sewer.

Structural BMPs

- If vehicle washing is to be conducted at a location other than the Sunnyslope Maintenance Yard, Wenatchee campus garage (connected to the sewer) or commercial car wash, construct a designated vehicle wash location, including a covered wash pad and containment berms or inside a garage area where drains connected to the sanitary sewer system (with prior approval).

Recordkeeping

The Phase II Permit requires long term recordkeeping of events and activities that have the potential to impact stormwater. The recordkeeping required by the Phase II Permit is limited to documenting any liquid or material spills that could carry pollutants into the stormwater

collection and conveyance system. Material or liquid spills should be promptly reported to the District Foreman and all paperwork related to the spill and cleanup activities should be maintained at the Public Works Department.

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Section 6—Municipal Buildings

Table 6-1 Implementation Checklist Municipal Buildings				
Potential Pollutants: Sediment, Nutrients, Hydrocarbons, Heavy Metals, Toxic Chemicals, Debris/Litter				
	Current Activity	Required New Activity*	Optional	Responsibility
Maintain a spill kit onsite at all times	X			Facilities
Cover storm drain inlets prior to pressure washing	X			Facilities
Inspect the irrigation system monthly during the watering season	X			Facilities
Sweep paved areas and storage areas regularly	X		X	Facilities/ Wenatchee Maintenance District
Use drop cloths underneath outdoor painting activities	X			Facilities
Store toxic materials under cover	X			Facilities
Use sand and salt at lowest rate necessary for public safety	X			Facilities

*All required new activities must be implemented prior to the August 2019 to be in compliance with the Phase II Permit.

Overview

Municipal building maintenance includes cleaning, washing, painting, and landscape maintenance. Potential pollutants from these activities include organic compounds, oil and grease, soap, heavy metals, and particulate matter. The Facility Maintenance Department is responsible for the maintenance of Chelan County's municipal buildings including:

- West Annex (including county jail)
- Law and Justice
- Courthouse
- Administration
- 316 Building
- Juvenile Justice Center
- Okanogan Detox Center

Standards and BMP Selection

The Phase II Permit does not include specific maintenance standards or BMPs related to the maintenance of municipal buildings. Chelan County's obligation is to prevent the discharge of pollutants to the stormwater system and protect water quality to the maximum extent practicable. To meet that goal, the county has identified BMPs related to each of the following activities:

- General Facility Housekeeping
- Building Cleaning and Washing
- Painting
- Vegetation Maintenance
- Winter Activities
- Recordkeeping

In general, the goals in selecting municipal building maintenance BMPs are to prevent spills, to reduce the potential for a non-stormwater discharge into the stormwater collection and conveyance system, and to reduce the amount of sediment and debris that is washed into the stormwater collection and conveyance system. Implementing these BMPs will help prevent the discharge of pollutants into receiving waters and help reduce the cost of maintaining the stormwater collection and conveyance system.

General Facility Housekeeping

The purpose of general facility housekeeping is to keep municipal areas clean and free of debris and other pollutants that could be washed into the stormwater collection and conveyance system during a rainfall event. General facility housekeeping also includes storing materials under cover and handling materials and waste products in a way that minimizes the risk to stormwater.

Operational BMPs

- Keep open areas clean and orderly.
- Pick-up litter.
- Promptly contain and clean up solid and liquid pollutant leaks and spills.
- Sweep paved material handling and storage areas regularly.
- Inspect all structural BMPs regularly, particularly after a significant storm.
- Use drip pans or absorbent pads under leaking vehicles and equipment to capture fluids.
- Promptly remove debris and old equipment.
- Store hazardous materials as specified by the manufacturer.
- Conduct regular employee training to reinforce proper housekeeping actions.

Building Cleaning and Washing

Municipal building cleaning and washing activities may include washing of carpet and other interior items and/or conducting pressure washing of buildings, rooftops, and other large structures associated with a municipal building. Wash water from municipal building washing practices has the potential to be contaminated with pollutants harmful to stormwater such as sediment and chemicals.

Operational BMPs

- Dispose of carpet or interior wash water to the sanitary sewer (with prior approval from the local sewer agency – City of Wenatchee). Do not dispose of any wash water outdoors or to a storm drain system.
- Report any spills or accidental discharges to the storm drain system to Facilities Supervisor and Stormwater Program Manager.
- Collect wash water from building structures and convey it to an appropriate treatment device, such as the sanitary sewer system (with prior approval). If wash water contains oils, soaps, or detergents, it may be directed to soils that have sufficient natural attenuation capacity for dust and sediment. A sump pump, wet vacuum, or similarly effective device may be used to collect the runoff and loose materials.
- Use storm drain covers for any inlets in the vicinity of the work area when conducting pressure washing activities. The cover(s) must be in place prior to engaging in the washing activity. Collect any accumulated runoff and solids with a wet vacuum or broom, and properly dispose of wastes before removing the cover(s) at the end of the work day.

Painting

Painting activities associated with interior or exterior municipal buildings include surface preparation and application of paints, stains, finishes and other coatings. Paints, stains, and finishes contain harsh chemicals and will contaminate stormwater if allowed to comingle.

Operational BMPs

- Never dump any toxic substance or liquid waste on the pavement or the ground.
- Report any spills or accidental discharges to the storm drain system to the Facilities Supervisor and the Stormwater Program Manager.
- Train employees in the careful application of paints, finishes, stains, and coatings to reduce misuse and over spray.

- Use ground cloths or drop cloths underneath outdoor painting, scraping, sandblasting work, paint mixing, and tool cleaning.
- Wipe up spills with rags and other absorbent materials immediately. Do not hose down the area to a storm drain, receiving water, or conveyance ditch that drains to a receiving water.
- Clean brushes and tools covered with non-water based paints, finishes, or other materials in a manner that allows collection of used solvents (e.g., paint thinner, turpentine, xylol, etc.) for recycling or proper disposal.
- Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with stormwater.

Vegetation Management

Vegetation management includes maintaining landscaping for landscaped areas associated with municipal buildings and controlling noxious weeds, pests, and unwanted vegetation growth. Disturbed soil, removed vegetation, and chemicals can all negatively impact receiving waters.

Landscaping and Irrigation BMPs

- Dispose of lawn clippings, leaves, branches, and other vegetative material in proper disposal containers and not disposed of in streams or storm drains.
- Inspect the irrigation system regularly to minimize excess watering and prevent the runoff of fertilizer.
- Repair leaks to the irrigation system as soon as they are observed or reported.
- Do not use leaf blowers to blow waste into streets, storm drains, or ditches.
- Minimize the use of chemical fertilizers and calibrate the distributor to avoid excessive application onto sidewalks or roadways.
- Store fertilizers in enclosed areas or in covered impervious containment in accordance with the Chelan County's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Pesticide and Herbicide BMPs

- Use mechanical methods of vegetation removal rather than herbicides.
- Use pesticides only if there is an actual pest problem (not as a regularly scheduled preventative maintenance measure).
- Use the least toxic pesticide for the job; avoid the use of copper-based pesticides if alternatives are available; select products with low water solubility and low persistence.
- Do not use pesticides or herbicides if rain is expected.
- Do not mix or prepare pesticides near storm drain inlets.
- Follow product labels for proper application of any pesticide.

- Use the minimum amount of chemical needed for the job.
- Avoid pesticide applications within 100 feet of a water body and avoid application on or near most stormwater collection and conveyance facilities.

Storage and Disposal

- Follow federal, state, and local laws governing the storage and disposal of pesticides and herbicides.
- Store herbicides/pesticides in enclosed areas or in covered impervious containment in accordance with the Chelan County's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
- Rinse water from equipment cleaning and/or from herbicide/pesticide/fertilizer containers should be used as product, recycled into product, or disposed of properly.
- Following use, dispose of unused pesticide as hazardous waste.

Winter Activities

Winter activities around municipal buildings include salting, sanding and snow removal on sidewalks and small parking lots. (Winter activities related to large parking lots are discussed in Section 4.) These activities enhance protect public safety during inclement winter weather. In addition to the BMPs described below, see Section 4 for BMPs related to storage of sand and deicer.

Deicing and Sanding

- If ever used, whenever possible, limit the use of chemical deicers. When chemical application is needed, select produces with the least adverse environmental impact while still providing for public safety. The following materials are preferred:
  - Sand
  - Salt
- Apply sand and salt at the lowest rate necessary to provide for public safety; avoid excessive application.
- Sweep parking lots in early spring to collect accumulated sand after the winter season.

Snow Removal

- Whenever possible, avoid piling snow over inlets of the stormwater collection and conveyance system so snow melt can drain.
- Snow removed from sidewalks and municipal parking lots shall be deposited on adjacent landscaping or within a seldom used parking stall.
- Attempts should be made to avoid depositing snow within 25 feet of surface waters, 75 feet of private water supplies, 200 feet from any community water supply, or 400 feet from any municipal well.

Other Maintenance Activities

Additional maintenance activities associated with municipal buildings include building repair, remodeling, and construction projects.

Operational BMPs

- Use a storm drain cover if dust, grit, wash water, or other pollutants have the potential to enter a storm drain inlet. Collect any accumulated runoff and solids with wet vacuums and brooms as needed.
- Use ground cloths or drop cloths underneath outdoor painting, scraping, and sandblasting work and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Store and maintain a spill control kit and ensure employees are familiar with proper spill control procedures.
- Report spills or accidental discharges to the stormwater conveyance system to the Facilities Supervisor and the Stormwater Program Manager.

Recordkeeping

The Phase II Permit requires long term recordkeeping of events and activities that have the potential to impact stormwater. The recordkeeping required by the Phase II Permit is limited to documenting any liquid or material spills that could carry pollutants into the stormwater collection and conveyance system. Material or liquid spills should be promptly reported to the Facilities Supervisor and the Stormwater Program Manager and all paperwork related to the spill and cleanup activities should be maintained at the Public Works Department.

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Section 7—Parks and Open Space

Table 7-1 Implementation Checklist Parks and Open Space				
Potential Pollutants: Sediment, Nutrients, Heavy Metals, Pathogens, Toxic Chemicals, Debris/Litter				
	Current Activity	Required New Activity*	Optional	Responsibility
Minimize use of chemical fertilizers	X			Parks Staff
Inspect irrigation systems regularly	X			Parks Staff
Dispose of waste vegetation in designated areas	X			Parks Staff
Use pesticides only if there is a pest problem	X		X	Parks Staff

*All required new activities must be implemented prior to the August 2019 to be in compliance with the Phase II Permit.

Overview

The maintenance of parks and open space areas frequently includes fertilization, mowing, pesticide application, and supplemental irrigation. Potential pollutants from these activities include nutrients, chemicals, organic debris, and sediment. Improving the way park and open space maintenance activities are conducted can reduce the amount of stormwater pollution that is conveyed to local aquatic resources.

Wenatchee River County Park and Ohme Gardens staff are responsible for the maintenance of its property.

Standards and BMP Selection

Unless park areas include stormwater management facilities, the Phase II Permit does not include specific maintenance standards or BMPs related to the maintenance of parks and open space. (BMPs for maintenance of stormwater management facilities are included in Section 3). Chelan County's obligation is to prevent the discharge of pollutants to the stormwater system and protect water quality to the maximum extent practicable. To meet that goal, the county has identified BMPs related to each of the following activities:

- Vegetation Management
- Buildings and Structures
- Storage Areas
- Recordkeeping

In general, the goals in selecting park and open space maintenance BMPs are to prevent spills, to reduce the potential for a non-stormwater discharge into the stormwater collection and conveyance system, and to reduce the amount of sediment and debris that is washed into the stormwater collection and conveyance system. Implementing these BMPs will help prevent the discharge of pollutants into receiving waters and help reduce the cost of maintaining the stormwater collection and conveyance system.

Vegetation Management

Proper turf management and landscape maintenance practices have the potential to reduce the amount of stormwater runoff and the amount of pollutants that drain to receiving waters. Vegetated spaces provide an excellent opportunity to infiltrate precipitation as it falls and filter pollutants before they can be washed downstream. Vegetation management includes maintaining landscaping throughout park and open space area and controlling noxious weeds, pests, and unwanted vegetation growth. BMPs should be used to prevent disturbed soil, removed vegetation, and chemicals from causing a negative impact to receiving waters.

Vegetation Management BMPs

- Maintain vegetative cover on medians and embankments to prevent soil erosion. When vegetation is removed, apply mulch or other cover measures to prevent soil erosion.
- Allow natural revegetation in suitable areas and clearly designate "no mow" areas.
- Dispose of vegetated waste (clippings, leaves, branches) at designated areas; landscape material should not be disposed of in streams or storm drains.
- Avoid loosening the soil during weed control.
- Do not use leaf blowers to blow waste into streets, storm drains, or ditches.
- Minimize the use of chemical fertilizers and calibrate the distributor to avoid excessive application.
- Never apply fertilizer within 5 feet of pavement, 25 feet of a storm drain inlet, or 50 feet of a stream or water body.
- Store fertilizers in enclosed areas or in covered impervious containment in accordance with the Chelan County's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Irrigation BMPs

- Inspect the irrigation system regularly to minimize excess watering and prevent the runoff of fertilizer.
- Repair leaks to the irrigation system as soon as they are observed or reported.

- Use soaker hoses, rather than sprinklers; irrigate in the morning or evening to conserve water.
- Monitor soil for moisture content and adjust irrigation times accordingly.

Pesticide and Herbicide BMPs

- Use mechanical methods of vegetation removal rather than herbicides, when feasible.
- Use pesticides only if there is an actual pest problem (not as a regularly scheduled preventative maintenance measure).
- Use the least toxic pesticide for the job; avoid the use of copper-based pesticides if alternatives are available; select products with low water solubility and low persistence.
- Do not use pesticides or herbicides if rain is expected.
- Do not mix or prepare pesticides near storm drain inlets.
- Follow product labels for proper application of any pesticide.
- Use the minimum amount of chemical needed for the job.
- Avoid pesticide applications within 100 feet of a water body and avoid application on or near most stormwater collection and conveyance facilities, excluding dry roadside ditches.
- Use products specifically labeled for dry ditches when treating roadside ditches.

Storage and Disposal

- Follow federal, state, and local laws governing the storage and disposal of pesticides and herbicides.
- Store herbicides/pesticides in enclosed areas or in covered impervious containment in accordance with the Chelan County's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.
- Rinse water from equipment cleaning and/or from herbicide/pesticide/fertilizer containers should be used as product, recycled into product, or disposed of properly.
- Following use, dispose of unused pesticide as hazardous waste.

Trash and Debris

Trash and debris collection is important to maintain the aesthetic and livability of the Chelan County's park facilities. Prompt trash removal also helps prevent garbage and leachate from entering the stormwater conveyance system and polluting receiving waters.

Trash and Debris Removal BMPs

- When possible, store garbage containers beneath covered structures.
- Covered trash containers are used.
- Locate dumpsters on a flat, concrete surface that does not slope or drain into the storm drain system.
- Regularly inspect garbage and recycling containers for cracks and leaks; make repairs promptly.
- Properly dispose of hazardous waste, gasoline, oil, and other chemical liquids. Never dispose of hazardous waste in park dumpsters or garbage containers.

Buildings and Structures

The building facilities in the Wenatchee River County Park and Ohme Gardens shall be maintained according to the BMPs in Section 6 of this O&M Plan.

Storage Areas

Maintenance vehicles, equipment, and uncovered material stockpiles have the potential to leak or contribute pollutants to the stormwater system during rain or snow melt events. Vehicle, equipment, and material storage areas should be maintained according to the SWPPP included in Appendix D. The following operational BMPs should be implemented to limit the transport of materials into the stormwater collection and conveyance system:

- Sweep parking lots, material storage areas, and driveways regularly to collect dirt, waste, debris, and loose stockpile materials. Do not hose down the areas to a stormwater conveyance system.
- Whenever possible, store material stockpiles in a building or within a paved and bermed covered area. Place temporary plastic sheeting over stockpiles that are exposed to the elements.
- Whenever possible, collect and recycle stored materials back into the stockpiles.
- Park/store all vehicles and equipment in a designated covered containment area.
- Use drip pans or containers under vehicles and equipment that drip or are likely to drip liquids.

Recordkeeping

The recordkeeping required by the Phase II Permit is limited to documenting any liquid or material spills that could carry pollutants into the stormwater collection and conveyance system. Material or liquid spills should be promptly reported to the Ohme Gardens

supervisor and the Stormwater Program Manager and all paperwork related to the spill and cleanup activities should be maintained at the Public Works Department.

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Section 8—Construction Projects

Section 8—Construction Projects

Municipal construction projects are subject to the same requirements as those projects proposed by private developers. During construction, proper erosion and sediment controls should be used to prevent sediment-laden stormwater from flowing away from the site and into the stormwater collection and conveyance system. Ecology requires construction sites of a certain size to document their planned sediment and erosion control techniques and to obtain separate NPDES Permit coverage.

The following construction projects are required to have a *NPDES Construction Stormwater General Permit* (refer to Ecology's website or regional office for additional information):

- Clearing, grading and/or excavation that results in the disturbance of one or more acres and discharges stormwater to surface waters of the State; or
- Clearing, grading and/or excavation on sites smaller than one or more acres that are part of a larger common plan of development or sale that will ultimately disturb one acre or more, and discharge stormwater to surface waters of the State; or
- Any size construction activity discharging stormwater to waters of the State that Ecology determines to be a significant contributor of pollutants to waters of the State of Washington or that Ecology reasonably expects to cause a violation of any water quality standard.

The following construction activities are exempt from NPDES permit coverage:

- Construction activities that discharge all stormwater and non-stormwater to ground water, and have no point source discharge to either surface water or a storm sewer system that drains to surface waters of the State.
- Construction activities covered under an Erosivity Waiver (Condition S2.C).
- Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Municipal projects that are subject to the *NPDES Construction Stormwater General Permit* should refer to Ecology's website for information regarding the required erosion and sediment control practices.

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Section 9—Industrial Activities

The Department of Ecology issues the *NPDES Industrial Stormwater General Permit* to authorize stormwater discharges associated with industrial activities. The current permit was put into effect as of January 1, 2010. The permit requires the development and implementation of a SWPPP and a sampling plan specific to the permitted facility. **Chelan County does not have any facilities currently covered under the Industrial Permit.**

Any facility listed in Table 9-1 that discharges to surface water or into a storm drainage system that later discharges to a surface water is subject to the Industrial Permit and must obtain permit coverage from Ecology. This guidance table was adopted from Ecology's *Guidance Manual for Preparing/Updating a Stormwater Pollution Prevention Plan for Industrial Facilities.*

Table 9-1
Examples of Facilities that Require an Industrial Permit

Municipal Industrial Facilities	Description and SIC Codes
Hazardous Waste Treatment, Storage, or Disposal Sites	Including those operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA).
Landfills, Land Application Sites, and Open Dumps	Facilities receive or have received any industrial wastes (waste that is received from any industrial facilities, including those subject to regulation under Subtitle D of RCRA).
Recycling Facilities	Facilities involved in recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile recyclers, including but not limited to those classified as SIC 5015 and 5093.
Transportation Facilities	Those classified under the following SICs which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations: 40 – Railroad Transportation, 41 – Local and Interurban Passenger Transportation, 45 – Transportation by Air.
Sewage Treatment Plants	Those with a design flow of one million gallons per day or more.

Source: *Stormwater Pollution Prevention and Good Housekeeping*, Yakima County, 2010.

The following types of facilities do not need an Industrial Permit:

- Facilities that discharge all stormwater associated with industrial activity in to the ground (e.g. infiltration basins, dry wells, drain fields); with some exemptions.
- Facilities that discharge all stormwater to a combined sewer system.
- Facilities owned and operated by the federal government or are on Tribal land, or facilities that discharge directly to Tribal waters meeting Environmental Protection Agency (EPA) approved water quality standards.
- Facilities that qualify for "Conditional No Exposure." However, facilities must re-apply every five years or 30 days after the effective date reissuance of the Industrial Permit, whichever comes first.

Section 10—Storage Areas

Section 10—Storage Areas

The NPDES Permit requires all material storage areas, heavy equipment storage areas, and maintenance areas to develop and implement a SWPPP to protect water quality and prevent the discharge of contaminated stormwater to surface or groundwater. The SWPPP describes both operational and structural BMPs that will be implemented at each facility.

The following Chelan County properties are covered by the SWPPP which is included in Appendix D.

- Sunnyslope Maintenance Yard

A copy of the SWPPP must also be kept on hand at each of the facilities listed above.

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Section 11—Flood Management Projects

Section 11—Flood Management Projects

The Phase II Permit does not include specific maintenance standards or BMPs related to the flood management projects. The Phase II Permit requires Chelan County to "…assess water quality impacts in the design of all new flood management projects that are associated with the MS4 or that discharge to the MS4…." Chelan County meets this obligation by reviewing all projects under Chelan County Code Chapter 13.18, Construction and Post-Construction Stormwater Runoff Control Program. The Public Works Department is responsible for the design and review of proposed flood management projects. During the design of all new flood management projects, the County Engineer will assess the water quality impacts of the proposed project and consider the use of controls to minimize impacts to site hydrology.

In 2014, Chelan County formed a countywide Flood Control Zone District to manage flood related impacts. In 2016, the county's Comprehensive Flood Hazard Mitigation Plan should be complete and will address flood control facilities.

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Section 12—Other Facilities and Activities

Section 12—Other Facilities and Activities

Currently, Chelan County does not conduct any other maintenance activities that have the potential to impact stormwater runoff.

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Section 13—Planning, Budgeting and Recordkeeping

The focus of this O&M Plan is to implement activities and practices that will protect receiving waters and comply with the NPDES Phase II Permit. Many of the BMPs in this plan were already being implemented by Chelan County staff. Increased inspection frequencies and recordkeeping are expected to have the most impact on current county resources.

Management Philosophy

This O&M Plan was developed to meet the requirements of the NPDES Phase II Permit. The Permit includes required inspection schedules and maintenance standards for the stormwater collection and conveyance system. Beyond that, the Permit is prescriptive when it comes to implementing BMPs for other Chelan County departments. Instead, the BMPs in this plan have been selected based on the requirements to "…reduce the discharge of pollutants to the maximum extent practicable (MEP)" (Permit Section S4.C) and to "…use all known, available, and reasonable methods of prevent, control and treatment (AKART) to prevent and control pollution of waters of the State of Washington." (Permit Section S4.D)

The BMPs and activity schedules in this O&M Plan have also been developed based on:

- The level of service expected by local citizens;
- The level of service requested by the Board of County Commissioners; and
- The maintenance frequencies needed to prevent costly repairs of the stormwater collection and conveyance system.

For example, the Phase II Permit does not have required street sweeping frequencies, so the frequencies listed in this plan are those necessary to maintain aesthetics, prevent excessive build-up of sediment in catch basins, and prevent significant trash, debris, and sediment accumulation in bike lanes.

Staff Assignments and Work Orders

Staffing and equipment calculations were developed in 2008 as part of the Wenatchee Valley Stormwater Management Plan and have been updated and adjusted since.
The Public Works Director/County Engineer with assistance from the Stormwater Program Manager, Road Supervisor, and Wenatchee Maintenance Foreman is responsible for developing the annual work plan and making crew assignments to implement the practices and activities outlined in this O&M Plan. Each year a work plan is developed that lists activities and projects, timelines, as well as staff and equipment assignments.

Annual Budget

The cost of implementing this O&M Plan for all Chelan County facilities and operations is expected to be $200,000 on an annual basis. Of the total cost, approximately $100,000 or 50% of the total will be needed to maintain the stormwater collection and conveyance system in accordance with the Phase II Permit requirements. The majority of the cost increase over current expenditures is needed to conduct annual inspections of all components of the stormwater system. Over time, these annual inspections will allow Chelan County to adjust crew assignments to focus maintenance activities on neighborhoods and facilities that experience the most problems. Recurring problem areas can also be identified for long term retrofit to address the challenges.

Equipment Needs

Chelan County is generally well equipped to address the maintenance needs identified in this O&M Plan. The Public Works Director, Fleet Manager, Motor Pool Manager, Facilities Manager all maintain a list of vehicles/equipment and a replacement plan.

Coordination with Phase II Permit

This O&M Plan is focused on meeting the requirements of Section S5.B.6 of the Phase II Permit. However, a number of other permit requirements are intertwined with the Chelan County's operations and maintenance activities. Implementing this O&M Plan will assist the county with compliance with the following:

Illicit Discharge Detection and Elimination

Field inspectors play a key role in verifying and updating information in Chelan County's stormwater system inventory. Field inspectors and maintenance crews are also the front lines for identifying spills and potential illicit discharge concerns. Illicit discharge issues will be promptly reported to the Stormwater Program Manager and all paperwork related to the spill and cleanup activities should be maintained at the Public Works Department. In addition, the spill clean-up training required under Section S5.B.3 is applicable to spills of potential pollutants during municipal maintenance activities.

Recordkeeping

The Phase II Permit focuses primarily on keeping records of activities related to inspection, maintenance, and repair of the stormwater collection and conveyance system. The inspection checklists in Appendix A assists Chelan County's recordkeeping system. As

described in Section 3, the Phase II Permit requires that the following documentation be kept for at least five years following work activity:

- Inspection schedules and checklists for stormwater treatment and flow control facilities;
- Records of spot checks performed following major storm events,
- Repairs or maintenance actions completed as a result of inspections and spot checks,
- Number and type of enforcement actions related to private facilities, and
- Number and type of illicit discharges detected and eliminated.

In addition, tracking the following information may be helpful in planning and budgeting for future maintenance activities.

- Catch basins cleaned each year,
- Amount of sediment collected and date removed,
- Results of sediment testing,
- Street sweeping – location, frequency;
- Total volume/weight of materials collected per mile of road swept;
- Winter de-icing/sanding activities – location, type, frequency;
- Amount of street waste removed, and
- Results of sediment testing.

The District Foreman is also responsible for keeping records of crew activities for the overall maintenance program. This information can be compared against the staffing and equipment spreadsheet (Appendix F) on a quarterly or annual basis to evaluate whether staffing and equipment predictions are accurate. To facilitate this comparison, it may be necessary to add new timesheet codes to Chelan County's reporting system.

Annual Report

Inspection checklists and maintenance records developed during the implementation of this O&M Plan will assist Chelan County in completing the Phase II Permit annual report that must be submitted to Ecology by March 31 of each year. While the maintenance records do not need to be submitted with the annual report, the county does have an obligation to supply Ecology with the records if requested.

Appendix A
Stormwater Facility Inspection Checklists

Inspection and Maintenance Checklist
Stormwater Collection and Conveyance System

Date of Inspection: _____ Inspection Area: _____

Field Inspector(s): _____ Reason for Inspection: _____

Current Weather: _____ Rain (inches): In Last 24 hrs: _____ In Last Week: _____

Facility Type	Location		Sediment Build-up		Maintenance Needed		Maintenance Follow-up	
(CB, Pond, etc)	GIS#/GPS	Description	Depth (in)	Needs Removal?	Code	Description/Action Needed	Date Completed	Initials

Maintenance Codes:

1 – Accumulated Sediment
2 – Trash & Debris
3 – Vegetation Concerns
4 – Water Quality Concerns
5 – Impeded Water Flow
6 – Erosion
7 – Structural Repairs
8 – Cover/Frame/Grate
9 – Damaged Pipes
10 – Mosquito/Vector Breeding
11 – Other
12 – Could Not Locate

See maintenance standards for detailed code descriptions for each facility type. Maintenance standards are based on the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Make additional copies of this page as needed for field inspections.

Maintenance Standards
Catch Basins and Manholes

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment exceeds 60% of sump depth. Sediment depth within 6 inches of the invert of the lowest pipe.
2	Trash & Debris	Trash or debris in front of catch basin opening or blocking inlet by more than 10%. Trash or debris exceeds 60% of sump depth. Trash or debris within 6 inches of the invert of the lowest pipe. Trash or debris blocking more than 1/3 of any inlet or outlet pipe. Trash and debris blocking more than 20% of grate surface. Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).
3	Vegetation	Vegetation growing across and blocking more than 10% of the grate opening. Vegetation growing in inlet/outlet pipe joints that is more than six inches tall.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing in catch basin during dry weather – report as potential illicit discharge concern.
5	Water Flow	Impeded water flow due to vegetation or sediment (use appropriate code from above).
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Frame separated by more than ¾ inch from top slab. Frame not securely attached. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread. Grate with opening wider than 7/8 inch. Grate damaged or missing.
8	Structure	Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch. Fractures or cracks in basin walls or bottom. Grout at inlet/outlet pipes has separated or cracked wider than ½ inch and longer than one foot. Soil is entering the catch basin through cracks in the structure. Settlement has created a safety, function, or design problem. Field inspector judges that structure is unsound.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.

Maintenance Standards derived from the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Maintenance Code	Type	Conditions When Maintenance Is Needed
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges. Catch basin insert requires replacement if: • Sediment, trash or debris blocks water flow through the insert, • Effluent water from the insert has a visible sheen, or • Insert is saturated with water or oil and can no longer absorb.
12	Could Not Locate	Field inspectors are unable to locate the catch basin or manhole.

Maintenance Standards
Control Structures

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 60% of sump depth. Sediment accumulated within 6 inches of the orifice plate or lowest pipe invert.
2	Trash & Debris	Trash or debris exceeds 60% of sump depth. Trash or debris within 6 inches of the orifice plate or lowest pipe invert. Trash or debris blocking openings in the control structure. Trash or debris blocking more than 1/3 of any inlet or outlet pipe. Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).
3	Vegetation	Vegetation growing in inlet/outlet pipe joints that is more than six inches tall.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	Impeded water flow due to vegetation or sediment (use appropriate code from above).
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Frame separated by more than ¾ inch from top slab. Frame not securely attached. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Damaged or missing orifice plate. Control structure is not securely attached to manhole wall. Control structure is not in upright position. Connection between control structure and outlet pipe is not water tight. Holes (other than design openings) in the control structure. Cleanout gate is not watertight, is missing, is rusted, or cannot be moved up and down by one maintenance person applying normal pressure. Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch. Fractures or cracks in basin walls or bottom. Grout at inlet/outlet pipes has separated or cracked wider than ½ inch and longer than one foot. Soil is entering the catch basin through cracks in the structure. Settlement has created a safety, function, or design problem. Field inspector judges that structure is unsound.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.

Maintenance Standards derived from the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Maintenance Code	Type	Conditions When Maintenance Is Needed
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.
12	Could Not Locate	Field inspectors are unable to locate the structure.

Maintenance Standards
Conveyance Systems (Pipes and Ditches)

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment or debris exceeds 20% of pipe diameter or 20% of debris barrier openings. Accumulated sediment that exceeds 20% of the design depth of the ditch.
2	Trash & Debris	Trash and debris accumulated in pipe or ditch. Visual evidence of dumping
3	Vegetation	Vegetation reduces movement of water through pipes. Excessive vegetation that reduces free movement of water through ditches.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing in pipes or ditch during dry weather – report as potential illicit discharge concern.
5	Water Flow	Impeded water flow due to vegetation or sediment (use appropriate code from above). Standing water in the pipe or swale between storm events.
6	Erosion	Erosion damage over 2 inches deep where cause is still present or there is potential for continued erosion. Native soil is visible beneath the rock lining of a conveyance ditch.
7	Cover/Frame/ Grate	N/A
8	Structure	Debris barrier/trash rack is missing or not attached to pipe. Debris barrier/trash rack bars are bent by more than 3 inches. Debris barrier/trash rack bars are loose or rust is causing 50% deterioration to any part of the barrier.
9	Damaged Pipes	Protective coating is damaged or rust is causing more than 50% deterioration to any part of pipe. Any dent that decreases the flow area by more than 20% or puncture that impacts performance.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the pipe or ditch.

Maintenance Standards
Drywells

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 2 feet or impedes flow from inlet pipes.
2	Trash & Debris	Trash or debris exceeds 2 feet or impedes flow from inlet pipes. Trash or debris blocks more than 1/3 of any inlet or outlet pipe. Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).
3	Vegetation	Vegetation growing in inlet/outlet pipe joints that is more than six inches tall. Root systems entering drywell.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing into drywell during dry weather – report as potential illicit discharge concern.
5	Water Flow	Facility does not drain within 72 hours. Impeded water flow due to vegetation or sediment (use appropriate code from above).
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Frame separated by more than ¾ inch from top slab. Frame not securely attached. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch. Grout at inlet/outlet pipes has separated or cracked wider than ½ inch and longer than one foot. Settlement has created a safety, function, or design problem. Field inspector judges that structure is unsound.
9	Damaged Pipes	Inlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the drywell.

Maintenance Standards
Energy Dissipators

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Accumulated sediment exceeds 20% of the design depth. Over 1/2 of perforations in dispersion pipe are plugged with sediment.
2	Trash & Debris	Visual evidence of dumping Over 1/2 of perforations in dispersion pipe are plugged with trash or debris.
3	Vegetation	Excessive vegetation reduces free movement of water through the flow spreader or energy dissipator.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through facility during dry weather – report as potential illicit discharge concern.
5	Water Flow	Visual evidence of water discharging at concentrated points from the dissipator (normal condition is a “sheet flow” of water from the facility). Water in receiving area has potential to cause significant erosion or landslide.
6	Erosion	Only one layer of rock above native soil in an area five square feet or larger. Any exposure of native soil within rock pad area. Soil erosion in or adjacent to rock pad.
7	Cover/Frame/ Grate	N/A
8	Structure	Flow spreader has deteriorated to1/2 of original size or concentrated worn spots exceeding one square foot making structure unsound. See Conveyance System standards for pipes and debris barriers/trash racks.
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the energy dissipator facility.

Maintenance Standards
Green Roofs (or Roof Gardens)

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Inlets to roof drainage system clogged with sediment.
2	Trash & Debris	Inlets to roof drainage system clogged with trash or debris. Trash and debris accumulated on the roof.
3	Vegetation	Planted vegetation becomes excessively tall. Presence of poisonous or nuisance vegetation or noxious weeds. Planted vegetation is sparse or bare or eroded patches occur in more than 10% of roof garden.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	Water stands in the green roof between storms and does not drain freely.
6	Erosion	Eroded or scoured areas due to wind or water.
7	Cover/Frame/ Grate	N/A
8	Structure	Membrane or roof structure is compromised by either roots and/or water damage.
9	Damaged Pipes	N/A
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g., standing water for more than 72 hours in areas accessible to mosquitoes)
11	Other	Irrigation system leaking or malfunctioning.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Infiltration Trenches

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Two inches or more of accumulated sediment. Percolation test indicates infiltration rate is less than 90% of design capacity. Inlet pipe is clogged with sediment.
2	Trash & Debris	Trash or debris impeding water flow. Visual evidence of dumping. Inlet pipe is clogged with trash and debris.
3	Vegetation	Poisonous or nuisance vegetation constituting a hazard to maintenance personnel or the public. Evidence of noxious weeds.
4	Water Quality	Evidence of oil, gasoline, contaminants, or other pollutants.
5	Water Flow	Little or no water visibly flows through trench during heavy rain storms.
6	Erosion	Erosion damage over 2 inches deep where cause is still present or there is potential for continued erosion.
7	Cover/Frame/ Grate	N/A
8	Structure	N/A
9	Damaged Pipes	Protective coating is damaged or rust is causing more than 50% deterioration to any part of pipe. Any dent that decreases the flow area by more than 20% or puncture that impacts performance.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the trench.

Maintenance Standards
Media Filters (e.g. Stormfilter)

Note: Manufacturer maintenance standards should supersede those shown below.

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth on filters exceeds 1/4-inch. Sediment depth in vault exceeds 6-inches in first chamber. Drain pipes and/or clean-outs become full with sediment.
2	Trash & Debris	Trash and debris accumulated on compost filter bed. Drain pipes and/or clean-outs become full with trash or debris.
3	Vegetation	Root systems entering the structure.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing into the system during dry weather – report as potential illicit discharge concern.
5	Water Flow	Drawdown of water through the media takes longer than 1 hour and overflow occurs frequently. Flows do not properly enter filter cartridges.
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Cracks wider than 1/2-inch. Evidence of soil particles entering structure through cracks. The vault is not structurally sound. Baffles corroding, cracking, warping and/or showing signs of failure.
9	Damaged Pipes	Any part of the pipes that are crushed or damaged due to corrosion and/or settlement. Inlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structural wall, missing rungs, has cracks and/or is misaligned.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Oil/Water Separators

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth in bottom of structure exceeds 6-inches.
2	Trash & Debris	Trash and debris accumulation in vault, or pipe inlet/outlet, floatables and non-floatables.
3	Vegetation	Root systems entering the structure.
4	Water Quality	Discharge shows obvious signs of poor water quality. Oil accumulations that exceed 1-inch at the surface of the water. Water flowing into the system during dry weather – report as potential illicit discharge concern.
5	Water Flow	Water is not flowing properly through the facility.
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Cracks wider than 1/2-inch. Any evidence of soil entering the structure through cracks. The vault is not structurally sound. Baffles or walls corroding, cracking, warping and/or showing signs of failure.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structural wall, missing rungs, has cracks and/or is misaligned.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Ponds: Detention, Infiltration, Evaporation, Water Quality

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Inlet/Outlet pipe clogged with sediment. Sediment accumulation in pond bottom exceeds 6 inches or 10% of the designed pond depth unless otherwise specified.
2	Trash & Debris	Trash and debris exceeding 5 cubic feet (equivalent to one standard size garbage can) per 1,000 square feet of pond area. Visual evidence of dumping. Inlet/Outlet pipe clogged with trash or debris.
3	Vegetation	Poisonous or nuisance vegetation constituting a hazard to maintenance personnel or the public. Evidence of noxious weeds. Tree growth does not allow access or interferes with slope mowing, silt removal, vactoring, or equipment movements. Dead, diseased, or dying trees identified by a certified Arborist. Tree growth on berms over 4 feet high that may lead to piping and eventual berm failure. Tree growth on emergency spillways.
4	Water Quality	Prevalent and visible oil sheen. Evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	First cell (if applicable) is empty, doesn't hold water.
6	Erosion	Erosion of the pond's side slopes exceeding 2 inches deep where there is potential for continued erosion. Scouring of the pond bottom exceeding 6-inches deep, or where continued erosion is prevalent.
7	Cover/Frame/ Grate	See Control Structures for additional maintenance standards.
8	Structure	See Control Structures for additional maintenance standards. Liner is visible and has more than three 1/4-inch holes in it. Any part of the berm or emergency spillway that has settled 4 inches lower than the design elevation. Discernable water flow through pond berm. (Consult with Geotechnical Engineer to evaluate condition and recommend repair.) Emergency spillway: only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of flow path of spillway. (Rip-rap on inside slopes need not be replaced.) Internal spillway not level.
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)

Maintenance Standards derived from the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Maintenance Code	Type	Conditions When Maintenance Is Needed
11	Other	Evidence of rodent holes or any evidence of water piping through dam or berm via rodent holes. (Consult with Geotechnical Engineer to evaluate condition and recommend repair.) Beaver dam within the pond, resulting in change or function of the facility. Insects such as wasps and hornets that interfere with maintenance activities.
12	Could Not Locate	Field inspectors are unable to locate the pond.

Maintenance Standards
Porous Pavement

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Porous pavement clogging due to organic matter and sediment.
2	Trash & Debris	Porous pavement clogging due to trash or debris. Trash and debris accumulated on overflow devices.
3	Vegetation	Planted vegetation becomes excessively tall. Nuisance weeds and other vegetation start to take over.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants
5	Water Flow	N/A
6	Erosion	Soil from adjacent areas washed onto pavement.
7	Cover/Frame/ Grate	N/A
8	Structure	Cracked or moving edge restraints. Cracked or settled pavement Aggregate loss in pavers from settling or power washing.
9	Damaged Pipes	N/A
10	Mosquito Vector Breeding	N/A
11	Other	
12	Could Not Locate	

Maintenance Standards
Sedimentation Manholes

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Accumulated sediment exceeding 12 inches or impeding flow from inlet or outlet pipes.
2	Trash & Debris	Accumulated trash or debris exceeding 12 inches or impeding flow from inlet or outlet pipes.
3	Vegetation	N/A
4	Water Quality	Discharge shows obvious signs of poor water quality. Water flowing into the system during dry weather – report as potential illicit discharge concern.
5	Water Flow	N/A
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Any openings or voids allowing material to be transported into facility. Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks. Field inspector determined the vault is not structurally sound.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Swales: Biofiltration, Grassy, Infiltration

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 2 inches. Inlet/outlet areas clogged with sediment.
2	Trash & Debris	Trash and debris accumulated in the swale. Inlet/outlet areas clogged with trash and debris.
3	Vegetation	Grass is sparse or bare or eroded patches occur in more than 10% of the bottom of the swale. Grass is taller than 10 inches. Nuisance weeds or other vegetation starting to take over. Excessive shading causing poor grass growth.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through facility during dry weather – report as potential illicit discharge concern.
5	Water Flow	Standing water in swale between storms does not drain freely. Flow spreader uneven or clogged where flows are not uniformly distributed through the swale.
6	Erosion	Small quantities of water continually flow causing an eroded, muddy channel at the bottom. Eroded or scoured grassy swale bottom due to flow channelization, or higher flows.
7	Cover/Frame/ Grate	N/A
8	Structure	N/A
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the swale.

Maintenance Standards
Vaults, Tanks, and Storage Pipes

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 10%of diameter of storage area for half length of storage vault or any point depth exceeds 15% of diameter. (Example: 72-inch storage tank would require cleaning when sediment reaches depth of 7 inches for more than 1/2 length of tank.)
2	Trash & Debris	Trash or debris exceeds the limits for sediment described above.
3	Vegetation	N/A
4	Water Quality	Prevalent and visible oil sheen. Evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	First cell (if applicable) is empty, doesn't hold water.
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	See Control Structures for additional maintenance standards. Openings or voids between tank or pipe sections allowing material to be transported into facility. Tank/pipe is bent more than 10% of its design shape. Cracks wider than 1/2-inch. Evidence of soil particles entering structure through cracks. The vault is not structurally sound. One-half of the cross section of an air vent is blocked or vent is damaged.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Vegetated Filter Strips

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 2 inches.
2	Trash & Debris	Trash and debris accumulated on the filter strip.
3	Vegetation	Grass taller than 10-inches. Nuisance weeds or other vegetation starts to take over. Planted vegetation is sparse or bare or eroded patches occur in more than 10% of the filter strip area.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through facility during dry weather – report as potential illicit discharge concern.
5	Water Flow	Visual evidence of water discharging at concentrated points (rather than sheet flow) onto the filter strip.
6	Erosion	Eroded or scoured areas due to flow channelization or higher flows.
7	Cover/Frame/ Grate	N/A
8	Structure	Flow spreader uneven or clogged so that flows are not uniformly distributed through filter width.
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the filter strip.

OPERATIONS & MAINTENANCE PLAN

WENATCHEE VALLEY REGIONAL DECANT FACILITY

1745 South Wenatchee Avenue
Wenatchee, WA 98801

CITY OF WENATCHEE

Public Works
1350 McKittrick Street, Suite A
Wenatchee, WA 98801

July 5, 2015

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APPENDICES

DEFINITIONS

Authorized User- Designated employees of the following governmental agencies: City of Wenatchee and Chelan County.

Eastern Washington Phase II Municipal Stormwater Permit-

Eductor – A tank truck with a heavy duty vacuum designed to pneumatically load solids, liquids, sludge or slurry through suction lines.

Spoils – Waste material brought up during the course of an excavation operation.

Hot Load – Waste material that has been contaminated and cannot be disposed of at the Greater Wenatchee Regional Landfill.

Suspect Load – Waste material that is believed to be contaminated and must be tested to determine if it meets the numeric limits for disposal at the Greater Wenatchee Regional Landfill.

Municipal Separate Stormwater Systems (MS4) – Conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains).

1. INTRODUCTION

The Wenatchee Valley Regional Decant Facility is owned and maintained by the City of Wenatchee and operated cooperatively with Chelan County. The mission of the Wenatchee Valley Regional Decant Facility is to provide an efficient and environmentally sound system for handling, treating, and disposing of stormwater liquids and solids generated from the cleaning of stormwater management systems. The purpose of this Operations and Maintenance Plan is to provide a comprehensive overview of all operations at the Wenatchee Valley Regional Decant Facility so that all facility users can meet the requirements of the owner and regulatory agencies, consistent with this mission.

This Operations and Maintenance Plan has been reviewed and approved by:

- Daniel Frazier, Public Works Director, City of Wenatchee
- Eric Pierson, P.E., County Engineer/Public Works Director, Chelan County

Related documents and information include:

- Interlocal Agreement for Operation and Maintenance of Wenatchee Valley Regional Decant Facility

2. GENERAL INFORMATION

The Wenatchee Valley Regional Decant Facility was constructed in 2014-2015. General information about the decant facility is presented in Table 1. A vicinity map with facility access routes and access restrictions is provided in Figure 1. Figure 2 shows the facility layout.

The facility is accessed from the east side of South Wenatchee Avenue near the intersection of Terminal Avenue. A gate is located at this entry point to limit access to authorized personnel. The City of Wenatchee will issue access keycards to the regional partners and other authorized users. Refer to Section 4.0 for more information on the requirements for authorized users.

The materials accepted at this facility will be liquids and solids from the cleaning of municipal separate stormwater systems and hydro-excavation. Materials prohibited at the facility include:

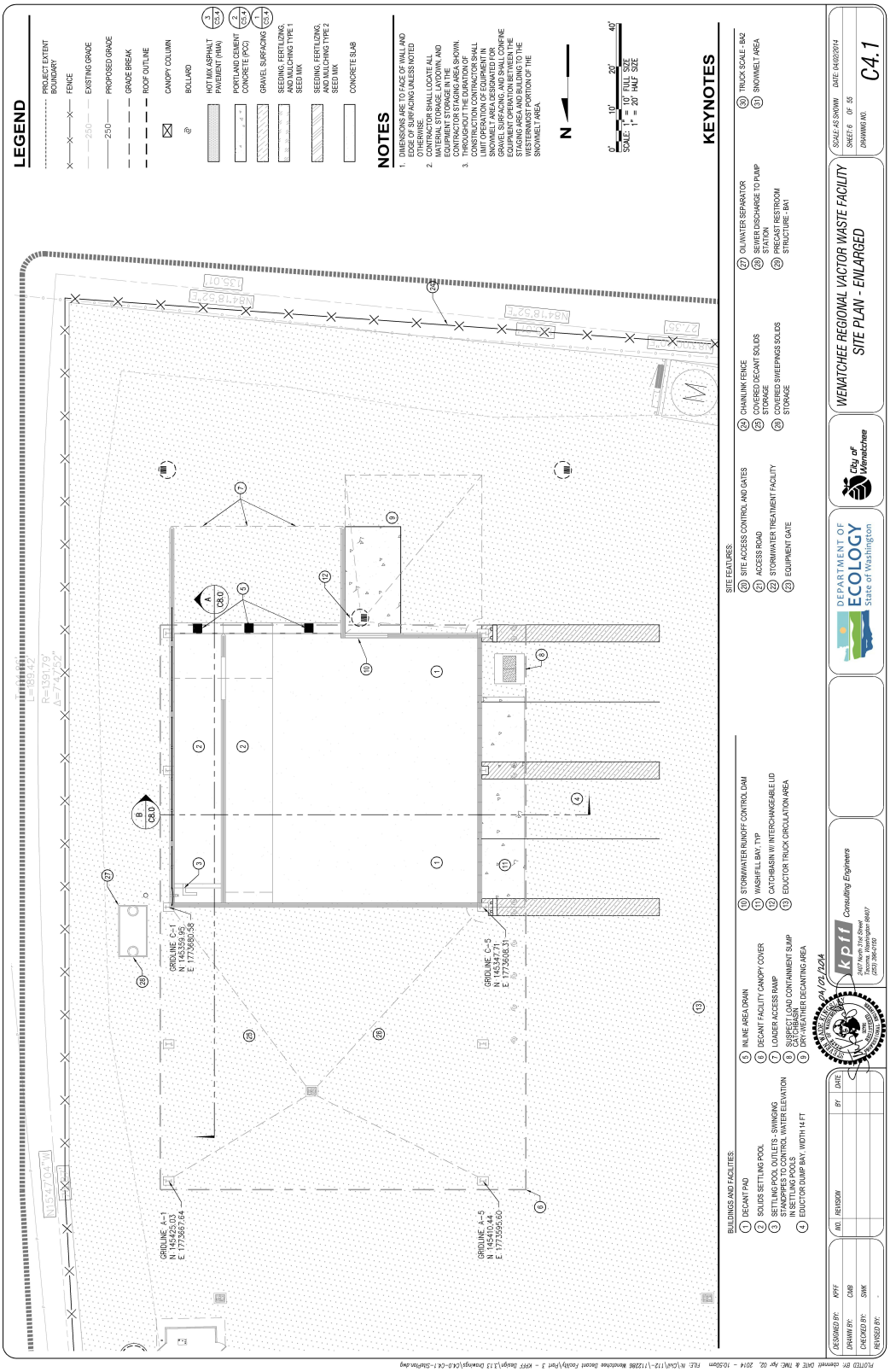
- Suspected or obvious contaminated materials;
- Stormwater drainage systems with known or historic contamination;
- Sewage;
- Concrete slurries.

Material brought to the facility will be decanted and allowed to dry. Dried material will either be disposed of at the landfill, or as allowed, for other subsurface filling activities. The regional partners expect to process approximately 2,600 tons of dried material per year.

Table 1. Decant Facility Information	
Facility Name	Wenatchee Valley Regional Decant Facility
Facility Owner	City of Wenatchee
Facility Address	1745 South Wenatchee Avenue
Facility Phone	(509) 888-3235
Days/Hours of Operation	Monday – Friday, 7:00 AM to 5:00 PM (hours may vary)
Emergency Contact	Rivercom, 911
Primary Contact	Terry O'Keefe, 888-3230 / 669-9898 tokeefe@wenatcheewa.gov
Secondary Contact	Jessica Shaw, 888-3225 / 630-5007 jshaw@wenatcheewa.gov
Major Discharge Authorization (or other permission to discharge to sanitary sewer)	City of Wenatchee Pete Moser, WWTP Supervisor, 888-3238 pmoser@wenatcheewa.gov
Acceptable Materials	Stormwater cleaning, sweeping, ditch cleaning, trenching, and hydro-excavation.
Prohibited Materials	Suspected or obvious contaminated materials, concrete slurries, and sewage.

Figure 1. Vicinity Map and Access Routes to __ Decant Facility.

Figure 2. Layout of the __ Decant Facility.



3. Environmental Regulations and Permits

3.1 Solid Waste Handling

The following applicable laws, regulations, permits, and codes pertain to the handling of solid materials:

- Solid Waste Management – Reduction and Recycling (RCW 70.95)
- Solid Waste Handling Standards (WAC 175-350) for Piles Used for Storage and Treatment (WAC 173-350-320)
- A Solid Waste Handling Permit from the Chelan-Douglas Health District (not required at this time).
- Permit or contract with Waste Management to dispose of the dried material at the local landfill. (Note: City of Wenatchee and City of East Wenatchee have contracts with Waste Management for the disposal of dried material from stormwater system maintenance and sweeping).

3.2 Liquids Discharge

The following applicable laws, regulations, permits, and codes pertain to the discharge of liquids to a sewer:

- The Washington State Water Pollution Control Act (RCW 90.48)
- Wenatchee City Code (Chapter 4.08 Sewers- Rates and Charges)

3.3 Stormwater

The following relevant regulations, permits, and codes pertain to stormwater management:

- Eastern Washington Phase II Municipal Stormwater NPDES Permit issued August 1, 2012 and effective from August 1, 2014 until July 31, 2019.
    - City of Wenatchee, Permit No. WAR04-6011
    - City of East Wenatchee, Permit No. WAR04-6012
    - Chelan County, Permit No. WAR04-6002
- Stormwater Management Manual for Eastern Washington (Ecology 2004)

- The Washington State Water Pollution Control Act (RCW 90.48)
- City of Wenatchee South Storage Yard and Decant Facility Stormwater Pollution Prevention Plan (SWPPP)
- Wenatchee City Code (Chapter 4.10 Stormwater Illicit Discharge Detection and Elimination)

4. USE AUTHORIZATION

4.1 Authorized Users

Authorized users of Wenatchee Valley Regional Decant Facility currently include designated employees of the following governmental agencies: City of Wenatchee and Chelan County.

4.2 Authorized User Requirements

Personnel of authorized users must meet the below requirements in addition to the training requirements set forth in Section 4.3.

4.3 Training Requirements

Authorized users are trained in basic facility operations and practices. The City of Wenatchee will provide mandatory annual training in coordination with Chelan County. The annual training will include general decant facility information, operational procedures, emergency procedures, recordkeeping requirements and information on identifying illicit discharges and prohibited materials. The City of Wenatchee will maintain a record of authorized personnel that have successfully completed the training and signed the compliance statement. If new employees are hired after the annual training event, each regional partner will be responsible for providing initial training and a signed compliance statement for the new employees.

5. User Fees and Billing

5.1 Rate Structure and Updates

Disposal costs will be separate from the annual fees and will be billed at the rate set by Waste Management.

If damages are incurred at the Facility attributable to one partner, the cost of repairing the damage plus a 15% administration fee will be billed to that partner. In addition, the cost for disposing of contaminated material brought to the site, cleanup costs and the 15% administration fee will be billed to partner responsible for the material.

5.2 Fee Determination and Billing Process

Each load that is brought to the facility will be documented and the volume of liquid and solids estimated. This information will be used to determine the annual user fee and disposal costs as set forth in the interlocal agreement. The City of Wenatchee will invoice each partner annually on or before December 15th. Payment will be due no later than January 31st.

Other fees associated with damage to the facility or contaminated material will be billed immediately following the repair or removal of the contaminated material.

Payments should be remitted to the following address:

City of Wenatchee
Attention: Accounts Payable
P.O. Box 519
Wenatchee, WA 98807-0519

6. MATERIAL QUANTITY MEASUREMENT

Since the decant facility will not be equipped with a scale, the amount of each load will be estimated by the driver. The driver will use his/her knowledge of the vehicle's capacity and visual observation of the material to estimate the solids and liquids. The Waste Disposal Log will be used for drivers to document the amount of material brought to the site. Each regional partner will submit their waste disposal logs on a quarterly basis and as requested by the City of Wenatchee. The waste disposal log can be found in Appendix A.

7. Material Acceptance and Inspection

7.1 Material Acceptance

Acceptable materials may include:

- Eductor liquids and solids from cleaning and maintenance of stormwater conveyance, detention, and treatment structures or facilities
- Excavated materials from cleaning and maintenance of stormwater conveyance, detention, and treatment structures or facilities
- Street and parking lot sweepings
- Ditch spoils
- Eductor liquids and soils generated during utility excavation and potholing
- Any other materials will need to be approved on a case-by-case basis by the City of Wenatchee.

Prohibited materials may include:

- Suspected or confirmed contaminated waste (hot loads)
- Sanitary sewer waste
- Fuel (petroleum/oils) or hazardous site waste
- Concrete or other inert construction site waste

7.2 Collection Site Review and Inspection

To prevent collection of prohibited materials, activities conducted before materials are collected and delivered to the decant facility may include:

- Supervisor reviews information on collection site characteristics to verify they do not represent known sources of prohibited materials.
- Driver inspects the collection site and materials prior to collection to identify the potential presence of prohibited materials.
- Driver completes an inspection checklist to document collection site review and inspection observations (ie GIS or other inspection record).

- Driver does not collect prohibited materials and notifies supervisor of their location.
- Supervisor determines appropriate methods for collection and disposal of prohibited materials.
- ***If it is unknown, do not collect.***

7.3 Facility Inspection and Corrective Actions

City of Wenatchee staff will inspect the material on the decant pad on a regular basis. The frequency of the inspections will depend on how much material is being brought into the facility. Upon identifying a suspect load, city staff will attempt to isolate the material and notify the responsible regional partner. Costs for disposing of contaminated material and cleaning the facility can be found in Section 5 above and in the Interlocal Agreement for Annual O&M of Wenatchee Valley Regional Vactor Waste Facility.

8. MATERIAL PROCESSING

8.1 Hot Load Identification and Handling

Hot loads are any materials known or suspected to be contaminated. To avoid bringing suspect or hot loads to the decant facility; drivers will be trained on inspecting and identifying suspect material in the field. Drivers should pay attention for illicit discharges, unusual/foul odors, oily sheens, and staining on the pavement.

A. Procedure for Suspect Material in the Field Before Educting

- If the material is hazardous or is an immediate threat to personnel health or the environment, call 911, stay a safe distance from the material and restrict access to the area until help arrives.
- For all other suspect material, notify your supervisor immediately.
- If the source of the material can be determined (such as motor oil), the contaminant should be removed from the catch basin with a trash pump or shovel and collected in a barrel or double-bagged. Absorbent or adsorbent material may also be used to collect the material.
- The supervisor and/or Stormwater Manager should contact the appropriate waste hauler or Waste Management to determine disposal options. Testing may be required.
- This material may not be stored at the decant facility. Prior to disposal, insure that the contaminated material is stored in a manner to prevent spilling, leaking and stormwater pollution.

B. Procedure for Suspect Material in the Field After Educting

- Immediately notify your supervisor. The supervisor is required to contact the City of Wenatchee.
- Upon approval by the City of Wenatchee, the suspect material may be hauled to the decant facility.
- Before discharging verify that the gate valve on the suspect load containment sump is closed. The sump is located in the southern most bay of the decant facility. Refer to Figure 2.
- The City of Wenatchee will conduct testing to determine whether the material can be processed at the decant facility or will need to be hauled away.

- Testing, removal and cleanup costs plus a 15% administration fee will be charged to the responsible jurisdiction.

C. Procedure for Suspect Material at the Decant Facility

- Once a suspect material is identified, cease decanting or dumping the material.
- Notify the emergency City of Wenatchee contact and your supervisor.
- Advise other users who may be decanting or dumping material to stop.
- Shut the emergency gate valve in Manhole #1 and then raise the swinging standpipe in the settling pool to an upright position to stop discharge to sanitary sewer. Refer to Figure 2.
- City of Wenatchee staff will take steps to stop the discharge from reaching the sanitary sewer system and isolate the contaminated material.
- Testing, removal and cleanup costs plus a 15% administration fee will be charged to the responsible jurisdiction.

8.2 Solids Handling

The following procedures outline the responsibilities of the Regional Partners and the City of Wenatchee staff.

A. Procedures for Decanting (Authorized Users)

- Verify with your supervisor which bay will be used.
- Back the truck or sweeper up to the wheel stops.
- Crack the door of the debris tank and allow any liquids to drain onto the decant pad.
- Next open the door of the debris tank and wash the solids out onto the decant pad.
- Hose bibs may also be used to fill the trucks and sweepers.

B. Procedures for City Maintenance Staff

- Move the dried, dewatered solids to the covered solids storage area with the loader.

8.3 Dry-weather Solids Handling

To use the seasonal decant area during dry-weather for additional decanting capacity, the city maintenance staff must follow these steps:

1. Close the storm drain isolation gate valve.

2. Next, remove the effluent control dam allowing decant liquid to discharge to the decant pad and settling pools.

The City of Wenatchee must determine when dry-weather decanting is no longer viable due to a change in weather or season. To discontinue use of the seasonal decant area, the city maintenance staff must clean all decant material. Once the seasonal decant area is clean of sediment and debris, the catch basin and storm line up to the valve will be cleaned using the eductor truck. The storm drain isolation valve should then be opened. Finally, the effluent control dam must be put back in place to ensure that stormwater runoff does not discharge to the decant pad and sanitary sewer.

If the seasonal decant area is in use and precipitation is forecasted, the City of Wenatchee will notify the users to move decanting to the covered decant pad and either remove or cover material in the seasonal decant area.

8.4 Solids Disposal

City of Wenatchee maintenance staff will conduct testing in accordance with Section 9 - Materials Handling. Dried solids that have been approved for disposal will be loaded from the storage area into the Waste Management dumpsters. Solid waste will not be stored on site for more than 90 days.

9. MATERIAL TESTING

9.1 Liquids

City of Wenatchee Environmental Staff will conduct quarterly monitoring of the liquid discharges during the first twelve months of operation. During each sample event, a grab sample will be collected from the final chamber of the oil/water separator.

The test parameters, methods, and discharge criteria can be found in Table 2. The monitoring results from the first year of operations will be used to determine if future monitoring of the liquid discharge is necessary. Future monitoring will be required if liquid test results indicate that the discharge to sewer is near or exceeding wastewater discharge limits set forth by Wenatchee City Code 4.08. Testing results will be provided to the regional partners.

A. Liquid Sampling Procedure

- Request the sample bottles from the laboratory.
- Equipment needed for sampling: Lid puller, cooler, ice, sample bottle, laboratory chain of custody form/order form, disposable gloves, traffic safety cone.
- When collecting the sample, remove the lid from the final chamber of the oil/water separator and place the traffic safety cone near the opening.
- Using a clean sampling stick and the proper personal protective equipment (at a minimum disposable gloves), collect a grab sample from the oil/water separator. The sample should be representative of the discharge leaving the tank.
- Close the lid on the tank.
- Fill the sample bottles with the grab sample from the separator.
- Fill out the label on the bottles and place in the sample collection cooler with ice.
- Complete laboratory chain of custody and order forms.
- Deliver to the laboratory or ship immediately.
- Be sure to clean sampling equipment.

Table 2. Liquid Sampling and Discharge Criteria				
Parameter	**Test Method**	**Sampling Frequency**	**Sample Type**	**Instantaneous Maximum Concentration (mg/L)**
Copper	EPA 200.8	Quarterly	Grab	0.68
Lead	EPA 200.8	Quarterly	Grab	0.5
Zinc	EPA 200.8	Quarterly	Grab	1.48
Total Phenols	EPA 420.1	Quarterly	Grab	0.1

9.2 Solids

Solid material will be tested annually for the standard eight RCRA metals: Ag, As, Ba, Cd, Cr, Hg, Pb and Se. The solid material will be tested using the EPA Method 1311 Toxicity Characteristic Leaching Procedure (TCLP). Two composite samples will be collected. Testing results will be provided to the regional partners and Waste Management.

A. Solid Sampling Procedure

- Request the sample containers from the laboratory.
- Equipment needed for sampling: Shovel, large spoon, cauldron, cooler, ice, sample containers, laboratory chain of custody form/order form, disposable gloves, and boots.
- Using the shovel, large spoon and cauldron as well as the proper personal protective equipment (at a minimum disposable gloves and boots), collect 20 random samples from throughout the pile of dried material. Mix well with the large spoon, and fill the sample container. Repeat for a second sample.
- Fill out the labels on the containers and place in the sample collection cooler with ice.
- Complete laboratory chain of custody and order forms.
- Deliver to the laboratory or ship immediately.
- Be sure to clean sampling equipment.

10. SECURITY/SAFETY PROCEDURES

10.1 Site Security

The property will be fenced and access restricted to authorized users. A key card system will be used to access the facility.

10.2 Personal Safety

The following safety measures must be followed at all times:

- Staff and visitors must wear a safety vest at all times.
- Safety glasses and boots are also recommended for users and maintenance staff.
- Speeds on the site should not exceed 10 mph.
- Drivers should watch for pedestrians and other users, especially when backing into the decant facility.

Safety concerns and accidents must be immediately reported to the user's supervisor and the City of Wenatchee.

11. Record Keeping and Notification

All of the regional partners will be responsible for documenting the material that is brought to the site on the Waste Disposal Log in Appendix A. Each jurisdiction will also be responsible for submitting these records to the City of Wenatchee on a quarterly basis and as required in the case of a suspect load or other problem.

The City of Wenatchee will be responsible for maintaining all records associated with the operation and maintenance of the facility in addition to the records associated with the interlocal agreement. Records will be retained in compliance with Washington State Law and will be available any time during normal business hours upon seven calendar days advance notice.

12. Environmental Controls

12.1 Stormwater

All stormwater will be detained on site and infiltrated. Good housekeeping and regular maintenance in accordance with the City of Wenatchee South Storage Yard and Decant Facility SWPPP will be implemented to prevent stormwater pollution.

12.2 Dust

Access to the site and decant pad will be paved. Drivers should avoid driving on unpaved areas of the property.

12.3 Odor

Concerns about odor should be reported to the City of Wenatchee.

12.4 Vector

The site is fenced and material will be removed from the site within 90 days.

13. Facility Maintenance

The City of Wenatchee is responsible for maintaining the Decant Facility as well as on-site stormwater infrastructure.

13.1 Settling Pool

Swinging standpipes within the settling pool allows City of Wenatchee maintenance staff to control discharge of liquids to the sanitary sewer and the water surface elevation within the settling pool. City maintenance staff, at their discretion, can lower the standpipe or open the manual gate valve to completely drain the settling pools for cleaning and maintenance. Once the settling pools are completely drained, the remaining solids can be collected and deposited on the decant pad for dewatering prior to transfer to the covered storage area.

13.2 Decant Pad

City of Wenatchee maintenance staff will use the loader to remove dried material from the decant pad. Staff should also use brooms or hoses for general housekeeping in areas that may be missed by the loader.

13.3 Seasonal Decant Area

City of Wenatchee maintenance staff will be responsible for putting the seasonal decant area into operation and removing dry solids as needed. Maintenance will also be required when this decant area is shut down. The catch basin in this area should be inspected quarterly.

13.4 Oil/Water Separator

The oil/water separator shall be inspected quarterly and serviced as necessary to remove all oils, floating material, and solids within the structure.

13.5 Material Storage Area

City of Wenatchee maintenance staff will be responsible for moving dried solid material from the decant pad to the covered storage area. Staff should insure that material is not stored in this area for more than 90 days and that material is not spilling outside of the covered storage area. Any overflows should be immediately cleaned up.

13.6 On-site Stormwater Management System

13.6.1. Bio-infiltration Swale and Pond

Maintenance staff will remove accumulated debris/sediment in the bio-infiltration swale and pond twice a year or as needed to prevent clogging. If water remains in the swale or pond for greater than 72 hours, crews shall check for debris and sediment accumulation. If there is no buildup of sediment of debris the treatment soil shall be replaced or amended as needed to maintain adequate treatment capacity.

During the first 1 to 2 years the swale and pond should be monitored quarterly to assess its performance. In addition, the city staff should verify vegetative cover is viable throughout the entire year. If plants appear to be lacking water or appear to have died, treatment effectiveness decreases. If bio-infiltration facility plants die, the City shall evaluate the cause, remedy the cause, and replace all dead plants to ensure treatment capacity is maintained for the facility.

13.6.2. Drywell

A maintenance vehicle access to the drywell has been provided along the south side of the bio-infiltration pond. Maintenance crews shall remove debris and sediment from the drywell grate twice a year, or as required to prevent the buildup of materials that could inhibit infiltration.

13.6.3. Catch Basins

At least quarterly, maintenance staff will inspect the stormwater catch basins on-site to determine if maintenance is needed. Good maintenance of these catch basins will help reduce the amount of maintenance needed for the downstream stormwater facilities.

Table 3 Facility Maintenance and Inspection Schedule

Equipment Feature	Inspection	Maintenance
Decant Pad	Visual Inspection Daily	Weekly*
Settling Pool	Visual Inspection Daily	Weekly*
Seasonal Decant Area	Visual Inspection Daily	Weekly*
Oil/Water Separator	Quarterly	As needed
Material Storage Area	Visual Inspection Daily	Weekly

Bio-Infiltration Swale and Pond	Quarterly	Annually
Catch Basins	Quarterly	As needed
Drywell	Twice yearly	Annually
Hose Bibs	Daily	As needed
Bathroom	Weekly	Weekly

*Maintenance will be dependent upon season of operation

14. REFERENCES

Ecology. 2012. 2012 Stormwater Management Manual for Western Washington. Washington, Volumes I – V. Washington Department of Ecology Water Quality Program. Publication No. 12-10-030. August 2012.

King County Decant Facility O&M Template, June, 2013.

Appendix A Recordkeeping Forms

Wenatchee Valley Regional Decant Facility

Waste Disposal Log

Agency Name: _____

Activity Location	Date	Activity*	Estimated Quantity Solids (TDS)	Estimated Quantity Liquids (GAL)

* C= Catch Basin Cleaning, H = Hydroexcavation, M = Stormwater Mainline Cleaning, S = Stormwater Facility Maintenance if other please specify

Name, printed: _____

Partner Representative

Signed: _____

Partner Representative

Dried Material Tracking Form

Date	Yards of Dry Material	Operator Initials	Notes

Spill Reporting Form

In the event of a spill or release to water, soil, or air collect the following information:

Section 1: Reporting Party	**Section 2: Responsible Party**
Name:	Name:
Phone Number:	Phone Number:
Organization:	Organization:

Section 3: Incident Information			
Incident Description:			
Incident Date:	Time of Discovery:	Cause:	
Address:	City:	State:	County:
Material Involved:	Amount Released:		
Water Body Affected:	Sheen Length:		
Sheen Width:	Sheen Color: (rainbow, silver, grey, etc.)		
Odor Description:	Weather Conditions:		

Section 4: Other
Actions Taken:

Appendix B Maintenance Checklist

Wenatchee Regional Decant Facility
Inspection and Maintenance Checklist

Date of Inspection: _____ Inspection Area: _____

Inspector(s): _____ Reason for Inspection: _____

Current Weather: _____ Rain (inches): In Last 24 hrs: _____ In Last Week: _____

Facility Type	Location		Sediment Build-up		Maintenance Needed		Maintenance Follow-up	
(CB, Pond, etc)	GIS#/GPS	Description	Depth (in)	Needs Removal?	Code	Description/Action Needed	Date Completed	Initials

Maintenance Codes:

1 – Accumulated Sediment
2 – Trash & Debris
3 – Vegetation Concerns
4 – Water Quality Concerns
5 – Impeded Water Flow
6 – Erosion
7 – Structural Repairs
8 – Cover/Frame/Grate
9 – Damaged Pipes
10 – Mosquito/Vector Breeding
11 – Other
12 – Could Not Locate

See maintenance standards for detailed code descriptions for each facility type. Maintenance standards are based on the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Make additional copies of this page as needed for field inspections.

Maintenance Standards
Catch Basins and Manholes

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment exceeds 60% of sump depth. Sediment depth within 6 inches of the invert of the lowest pipe.
2	Trash & Debris	Trash or debris in front of catch basin opening or blocking inlet by more than 10%. Trash or debris exceeds 60% of sump depth. Trash or debris within 6 inches of the invert of the lowest pipe. Trash or debris blocking more than 1/3 of any inlet or outlet pipe. Trash and debris blocking more than 20% of grate surface. Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).
3	Vegetation	Vegetation growing across and blocking more than 10% of the grate opening. Vegetation growing in inlet/outlet pipe joints that is more than six inches tall.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing in catch basin during dry weather – report as potential illicit discharge concern.
5	Water Flow	Impeded water flow due to vegetation or sediment (use appropriate code from above).
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Frame separated by more than ¾ inch from top slab. Frame not securely attached. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread. Grate with opening wider than 7/8 inch. Grate damaged or missing.
8	Structure	Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch. Fractures or cracks in basin walls or bottom. Grout at inlet/outlet pipes has separated or cracked wider than ½ inch and longer than one foot. Soil is entering the catch basin through cracks in the structure. Settlement has created a safety, function, or design problem. Field inspector judges that structure is unsound.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.

Maintenance Standards derived from the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Maintenance Code	Type	Conditions When Maintenance Is Needed
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges. Catch basin insert requires replacement if: • Sediment, trash or debris blocks water flow through the insert, • Effluent water from the insert has a visible sheen, or • Insert is saturated with water or oil and can no longer absorb.
12	Could Not Locate	Field inspectors are unable to locate the catch basin or manhole.

Maintenance Standards
Control Structures

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 60% of sump depth. Sediment accumulated within 6 inches of the orifice plate or lowest pipe invert.
2	Trash & Debris	Trash or debris exceeds 60% of sump depth. Trash or debris within 6 inches of the orifice plate or lowest pipe invert. Trash or debris blocking openings in the control structure. Trash or debris blocking more than 1/3 of any inlet or outlet pipe. Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).
3	Vegetation	Vegetation growing in inlet/outlet pipe joints that is more than six inches tall.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	Impeded water flow due to vegetation or sediment (use appropriate code from above).
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Frame separated by more than ¾ inch from top slab. Frame not securely attached. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Damaged or missing orifice plate. Control structure is not securely attached to manhole wall. Control structure is not in upright position. Connection between control structure and outlet pipe is not water tight. Holes (other than design openings) in the control structure. Cleanout gate is not watertight, is missing, is rusted, or cannot be moved up and down by one maintenance person applying normal pressure. Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch. Fractures or cracks in basin walls or bottom. Grout at inlet/outlet pipes has separated or cracked wider than ½ inch and longer than one foot. Soil is entering the catch basin through cracks in the structure. Settlement has created a safety, function, or design problem. Field inspector judges that structure is unsound.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.

Maintenance Code	Type	Conditions When Maintenance Is Needed
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.
12	Could Not Locate	Field inspectors are unable to locate the structure.

Maintenance Standards
Conveyance Systems (Pipes and Ditches)

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment or debris exceeds 20% of pipe diameter or 20% of debris barrier openings. Accumulated sediment that exceeds 20% of the design depth of the ditch.
2	Trash & Debris	Trash and debris accumulated in pipe or ditch. Visual evidence of dumping
3	Vegetation	Vegetation reduces movement of water through pipes. Excessive vegetation that reduces free movement of water through ditches.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing in pipes or ditch during dry weather – report as potential illicit discharge concern.
5	Water Flow	Impeded water flow due to vegetation or sediment (use appropriate code from above). Standing water in the pipe or swale between storm events.
6	Erosion	Erosion damage over 2 inches deep where cause is still present or there is potential for continued erosion. Native soil is visible beneath the rock lining of a conveyance ditch.
7	Cover/Frame/ Grate	N/A
8	Structure	Debris barrier/trash rack is missing or not attached to pipe. Debris barrier/trash rack bars are bent by more than 3 inches. Debris barrier/trash rack bars are loose or rust is causing 50% deterioration to any part of the barrier.
9	Damaged Pipes	Protective coating is damaged or rust is causing more than 50% deterioration to any part of pipe. Any dent that decreases the flow area by more than 20% or puncture that impacts performance.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the pipe or ditch.

Maintenance Standards
Drywells

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 2 feet or impedes flow from inlet pipes.
2	Trash & Debris	Trash or debris exceeds 2 feet or impedes flow from inlet pipes. Trash or debris blocks more than 1/3 of any inlet or outlet pipe. Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).
3	Vegetation	Vegetation growing in inlet/outlet pipe joints that is more than six inches tall. Root systems entering drywell.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing into drywell during dry weather – report as potential illicit discharge concern.
5	Water Flow	Facility does not drain within 72 hours. Impeded water flow due to vegetation or sediment (use appropriate code from above).
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Frame separated by more than ¾ inch from top slab. Frame not securely attached. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch. Grout at inlet/outlet pipes has separated or cracked wider than ½ inch and longer than one foot. Settlement has created a safety, function, or design problem. Field inspector judges that structure is unsound.
9	Damaged Pipes	Inlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the drywell.

Maintenance Standards
Energy Dissipators

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Accumulated sediment exceeds 20% of the design depth. Over 1/2 of perforations in dispersion pipe are plugged with sediment.
2	Trash & Debris	Visual evidence of dumping Over 1/2 of perforations in dispersion pipe are plugged with trash or debris.
3	Vegetation	Excessive vegetation reduces free movement of water through the flow spreader or energy dissipator.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through facility during dry weather – report as potential illicit discharge concern.
5	Water Flow	Visual evidence of water discharging at concentrated points from the dissipator (normal condition is a “sheet flow” of water from the facility). Water in receiving area has potential to cause significant erosion or landslide.
6	Erosion	Only one layer of rock above native soil in an area five square feet or larger. Any exposure of native soil within rock pad area. Soil erosion in or adjacent to rock pad.
7	Cover/Frame/ Grate	N/A
8	Structure	Flow spreader has deteriorated to1/2 of original size or concentrated worn spots exceeding one square foot making structure unsound. See Conveyance System standards for pipes and debris barriers/trash racks.
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the energy dissipator facility.

Maintenance Standards
Green Roofs (or Roof Gardens)

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Inlets to roof drainage system clogged with sediment.
2	Trash & Debris	Inlets to roof drainage system clogged with trash or debris. Trash and debris accumulated on the roof.
3	Vegetation	Planted vegetation becomes excessively tall. Presence of poisonous or nuisance vegetation or noxious weeds. Planted vegetation is sparse or bare or eroded patches occur in more than 10% of roof garden.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	Water stands in the green roof between storms and does not drain freely.
6	Erosion	Eroded or scoured areas due to wind or water.
7	Cover/Frame/ Grate	N/A
8	Structure	Membrane or roof structure is compromised by either roots and/or water damage.
9	Damaged Pipes	N/A
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g., standing water for more than 72 hours in areas accessible to mosquitoes)
11	Other	Irrigation system leaking or malfunctioning.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Infiltration Trenches

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Two inches or more of accumulated sediment. Percolation test indicates infiltration rate is less than 90% of design capacity. Inlet pipe is clogged with sediment.
2	Trash & Debris	Trash or debris impeding water flow. Visual evidence of dumping. Inlet pipe is clogged with trash and debris.
3	Vegetation	Poisonous or nuisance vegetation constituting a hazard to maintenance personnel or the public. Evidence of noxious weeds.
4	Water Quality	Evidence of oil, gasoline, contaminants, or other pollutants.
5	Water Flow	Little or no water visibly flows through trench during heavy rain storms.
6	Erosion	Erosion damage over 2 inches deep where cause is still present or there is potential for continued erosion.
7	Cover/Frame/ Grate	N/A
8	Structure	N/A
9	Damaged Pipes	Protective coating is damaged or rust is causing more than 50% deterioration to any part of pipe. Any dent that decreases the flow area by more than 20% or puncture that impacts performance.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the trench.

Maintenance Standards
Media Filters (e.g. Stormfilter)

Note: Manufacturer maintenance standards should supersede those shown below.

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth on filters exceeds 1/4-inch. Sediment depth in vault exceeds 6-inches in first chamber. Drain pipes and/or clean-outs become full with sediment.
2	Trash & Debris	Trash and debris accumulated on compost filter bed. Drain pipes and/or clean-outs become full with trash or debris.
3	Vegetation	Root systems entering the structure.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing into the system during dry weather – report as potential illicit discharge concern.
5	Water Flow	Drawdown of water through the media takes longer than 1 hour and overflow occurs frequently. Flows do not properly enter filter cartridges.
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Cracks wider than 1/2-inch. Evidence of soil particles entering structure through cracks. The vault is not structurally sound. Baffles corroding, cracking, warping and/or showing signs of failure.
9	Damaged Pipes	Any part of the pipes that are crushed or damaged due to corrosion and/or settlement. Inlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structural wall, missing rungs, has cracks and/or is misaligned.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Oil/Water Separators

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth in bottom of structure exceeds 6-inches.
2	Trash & Debris	Trash and debris accumulation in vault, or pipe inlet/outlet, floatables and non-floatables.
3	Vegetation	Root systems entering the structure.
4	Water Quality	Discharge shows obvious signs of poor water quality. Oil accumulations that exceed 1-inch at the surface of the water. Water flowing into the system during dry weather – report as potential illicit discharge concern.
5	Water Flow	Water is not flowing properly through the facility.
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Cracks wider than 1/2-inch. Any evidence of soil entering the structure through cracks. The vault is not structurally sound. Baffles or walls corroding, cracking, warping and/or showing signs of failure.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structural wall, missing rungs, has cracks and/or is misaligned.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Ponds: Detention, Infiltration, Evaporation, Water Quality

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Inlet/Outlet pipe clogged with sediment. Sediment accumulation in pond bottom exceeds 6 inches or 10% of the designed pond depth unless otherwise specified.
2	Trash & Debris	Trash and debris exceeding 5 cubic feet (equivalent to one standard size garbage can) per 1,000 square feet of pond area. Visual evidence of dumping. Inlet/Outlet pipe clogged with trash or debris.
3	Vegetation	Poisonous or nuisance vegetation constituting a hazard to maintenance personnel or the public. Evidence of noxious weeds. Tree growth does not allow access or interferes with slope mowing, silt removal, vactoring, or equipment movements. Dead, diseased, or dying trees identified by a certified Arborist. Tree growth on berms over 4 feet high that may lead to piping and eventual berm failure. Tree growth on emergency spillways.
4	Water Quality	Prevalent and visible oil sheen. Evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	First cell (if applicable) is empty, doesn't hold water.
6	Erosion	Erosion of the pond's side slopes exceeding 2 inches deep where there is potential for continued erosion. Scouring of the pond bottom exceeding 6-inches deep, or where continued erosion is prevalent.
7	Cover/Frame/ Grate	See Control Structures for additional maintenance standards.
8	Structure	See Control Structures for additional maintenance standards. Liner is visible and has more than three 1/4-inch holes in it. Any part of the berm or emergency spillway that has settled 4 inches lower than the design elevation. Discernable water flow through pond berm. (Consult with Geotechnical Engineer to evaluate condition and recommend repair.) Emergency spillway: only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of flow path of spillway. (Rip-rap on inside slopes need not be replaced.) Internal spillway not level.
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)

Maintenance Standards derived from the Washington State Department of Ecology's *Stormwater Management Manual for Eastern Washington* (September 2004).

Maintenance Code	Type	Conditions When Maintenance Is Needed
11	Other	Evidence of rodent holes or any evidence of water piping through dam or berm via rodent holes. (Consult with Geotechnical Engineer to evaluate condition and recommend repair.) Beaver dam within the pond, resulting in change or function of the facility. Insects such as wasps and hornets that interfere with maintenance activities.
12	Could Not Locate	Field inspectors are unable to locate the pond.

Maintenance Standards
Porous Pavement

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Porous pavement clogging due to organic matter and sediment.
2	Trash & Debris	Porous pavement clogging due to trash or debris. Trash and debris accumulated on overflow devices.
3	Vegetation	Planted vegetation becomes excessively tall. Nuisance weeds and other vegetation start to take over.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants
5	Water Flow	N/A
6	Erosion	Soil from adjacent areas washed onto pavement.
7	Cover/Frame/ Grate	N/A
8	Structure	Cracked or moving edge restraints. Cracked or settled pavement Aggregate loss in pavers from settling or power washing.
9	Damaged Pipes	N/A
10	Mosquito Vector Breeding	N/A
11	Other	
12	Could Not Locate	

Maintenance Standards
Sedimentation Manholes

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Accumulated sediment exceeding 12 inches or impeding flow from inlet or outlet pipes.
2	Trash & Debris	Accumulated trash or debris exceeding 12 inches or impeding flow from inlet or outlet pipes.
3	Vegetation	N/A
4	Water Quality	Discharge shows obvious signs of poor water quality. Water flowing into the system during dry weather – report as potential illicit discharge concern.
5	Water Flow	N/A
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	Any openings or voids allowing material to be transported into facility. Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks. Field inspector determined the vault is not structurally sound.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Swales: Biofiltration, Grassy, Infiltration

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 2 inches. Inlet/outlet areas clogged with sediment.
2	Trash & Debris	Trash and debris accumulated in the swale. Inlet/outlet areas clogged with trash and debris.
3	Vegetation	Grass is sparse or bare or eroded patches occur in more than 10% of the bottom of the swale. Grass is taller than 10 inches. Nuisance weeds or other vegetation starting to take over. Excessive shading causing poor grass growth.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through facility during dry weather – report as potential illicit discharge concern.
5	Water Flow	Standing water in swale between storms does not drain freely. Flow spreader uneven or clogged where flows are not uniformly distributed through the swale.
6	Erosion	Small quantities of water continually flow causing an eroded, muddy channel at the bottom. Eroded or scoured grassy swale bottom due to flow channelization, or higher flows.
7	Cover/Frame/ Grate	N/A
8	Structure	N/A
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the swale.

Maintenance Standards
Vaults, Tanks, and Storage Pipes

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 10%of diameter of storage area for half length of storage vault or any point depth exceeds 15% of diameter. (Example: 72-inch storage tank would require cleaning when sediment reaches depth of 7 inches for more than 1/2 length of tank.)
2	Trash & Debris	Trash or debris exceeds the limits for sediment described above.
3	Vegetation	N/A
4	Water Quality	Prevalent and visible oil sheen. Evidence of oil, gasoline, contaminants or other pollutants.
5	Water Flow	First cell (if applicable) is empty, doesn't hold water.
6	Erosion	N/A
7	Cover/Frame/ Grate	Cover is missing or only partially in place. One maintenance person cannot remove lid after applying normal lifting pressure. Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.
8	Structure	See Control Structures for additional maintenance standards. Openings or voids between tank or pipe sections allowing material to be transported into facility. Tank/pipe is bent more than 10% of its design shape. Cracks wider than 1/2-inch. Evidence of soil particles entering structure through cracks. The vault is not structurally sound. One-half of the cross section of an air vent is blocked or vent is damaged.
9	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.
12	Could Not Locate	Field inspectors are unable to locate the facility.

Maintenance Standards
Vegetated Filter Strips

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	Sediment depth exceeds 2 inches.
2	Trash & Debris	Trash and debris accumulated on the filter strip.
3	Vegetation	Grass taller than 10-inches. Nuisance weeds or other vegetation starts to take over. Planted vegetation is sparse or bare or eroded patches occur in more than 10% of the filter strip area.
4	Water Quality	Any evidence of oil, gasoline, contaminants or other pollutants. Water flowing through facility during dry weather – report as potential illicit discharge concern.
5	Water Flow	Visual evidence of water discharging at concentrated points (rather than sheet flow) onto the filter strip.
6	Erosion	Eroded or scoured areas due to flow channelization or higher flows.
7	Cover/Frame/ Grate	N/A
8	Structure	Flow spreader uneven or clogged so that flows are not uniformly distributed through filter width.
9	Damaged Pipes	See Conveyance System standards for pipes and debris barriers/trash racks.
10	Mosquito Vector Breeding	Suitable habitat exists for mosquito production (e.g. standing water for more than 72 hours in areas accessible to mosquitoes.)
11	Other	
12	Could Not Locate	Field inspectors are unable to locate the filter strip.

Appendix C Facility Budget

Wenatchee Regional Decant Facility
Operating and Maintenance Costs - Initial Year Operation

KEY
Wages
Benefits
Goods & Services
Equipment

		Monthly Estimated O&M Costs for Initial Operating Year												Annual Total
Category / Item	**Explanation**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
		Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	
Personnel for Operation and Routine Maintenance														
Weekly/Quarterly Inspections	Weekly facility inspection and checklist documentation. One person, 2 hours per month		$51	$51	$51	$51	$51	$51	$51	$51	$51	$51		**$510**
			$31	$31	$31	$31	$31	$31	$31	$31	$31	$31		**$310**
Solids Management	Move dried solids from tipping floor to storage area and load street sweepings and solids from tipping floor into the WM containers. Assume peak months require 6 man hours per week. Off-season requires 4 man hours every other week.		$204	$612	$612	$612	$612	$612	$612	$612	$612	$204		**$5,304**
			$124	$372	$372	$372	$372	$372	$372	$372	$372	$124		**$3,224**
			$400	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$400		**$10,400**
Settling pool maintenance	Drawdown water level in collection pools, collect solids and transfer to secondary storage pad, reset discharge pipe levels to maintain settling pool volume. Anticipated to occur monthly, 6 man hours				$153	$153	$153	$153	$153	$153	$153			**$1,071**
					$93	$93	$93	$93	$93	$93	$93			**$651**
Grounds maintenance	Allowance for vegetation mgmt at 3 man hours per week in growing season. These figures reflect maintenance for only the percentage of the pond that applies to the Facility - at 23% of the entire property.			$70	$70	$70	$70	$70	$70	$70	$70			**$563**
				$43	$43	$43	$43	$43	$43	$43	$43			**$342**
Utilities														
Electricity	Includes $7/month base charge and 3,200 kwh/yr @ $0.027/kwh	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	**$198**
Stormwater	Based on impervious site only for Vactor Facility. Imp. Area = 100,000 sf = 33 ERUs (3,000 sf per ERU) at $7.40 per ERU + utility tax of 18.20%	$289	$289	$289	$289	$289	$289	$289	$289	$289	$289	$289	$289	**$3,473**
Water	City water w/2" tap @$49.64 base + $1.73/HCF, billed monthly	$59	$113	$299	$299	$419	$419	$419	$419	$419	$419	$113	$59	**$3,454**
Sewer	Assumes metered flow will be 50% of water consumption due to evaporation. Sewer rate includesa monthly fee of $27.14 fixed + $2.56/100CCF over 1,000 CCF.	$34	$34	$196	$196	$276	$276	$276	$276	$276	$276	$44	$34	**$2,194**
Services														
Material Testing	Sample schedule based on yards of material (below). At a total of 1,657 CY annually, 5 samples are required annually at $205/sample.							$1,025						**$1,025**
Janitorial	Wash down and stocking of restroom assumed to be minimal and included in other time allowances for work on site.													**$0**
Minor Repair / Replacement														
Misc Repairs	Includes concrete, minor equipment, irrigation, signage, etc.												$500	**$500**
Insurance														
Insurance Premium	This is currently an estimated amount based on 170 working hours and $300,000 value for the building.												$900	**$900**

Total Annual OM&R Costs	$399	$1,263	$3,179	$3,425	$3,626	$3,626	$4,651	$3,626	$3,626	$3,626	$1,273	$899	**$34,119**
Net Present Value Wages	$153	$410	$740	$897	$899	$902	$905	$907	$910	$913	$263	$0	**$7,901**
Net Present Value Benefits	$0	$123	$314	$337	$300	$267	$237	$211	$188	$167	$43	$0	**$2,188**
Net Present Value Goods and Services	$388	$429	$736	$715	$870	$846	$1,666	$800	$778	$757	$340	$643	**$8,968**
Net Present Value Total	$541	$962	$1,789	$1,950	$2,070	$2,015	$2,808	$1,919	$1,876	$1,837	$647	$643	**$19,056**
Equivalent Annual Cost			**$1,555**										

Excluded Costs:		
Initial facility construction and financing costs.		
Administrative costs for management of facility and facility use		
Annual Insurance	$1,000.00	Based on $2/1,000 valuation at $500,000 structure value

Assumptions and Values:			
Equipment rates: Vactor @ $149/hr and Loader @ $50/hr	Loader	**$50.00**	
	Vactor	**$149.00**	
Average 2015 hourly staff rate for operations and maintenance, salary:		**$25.50**	
Average 2015 hourly staff rate for operations and maintenance, benefits:		**$15.50**	
Annual salary increase 2%		**2.00%**	
Annual benefit increase 15%		**15.00%**	
Forecast 10 yr treasury bond rate (www.cbo.gov):		**5.20%**	Rate is 10 year note, projected at 2017
Forecast Consumer Price Index (www.cbo.gov):		**2.30%**	
Real discount rate for goods and services net present value - [(1+forecast 10yr treasury rate)/(1+ forecast CPI)]-1 :		**2.83%**	
Real discount rate for wages for net present value - [(1+forecast 10yr treasury rate)/(1+ forecast CPI)]-1 :		**-0.29%**	
Real discount rate for benefits for net present value - [(1+forecast 10yr treasury rate)/(1+ forecast CPI)]-1 :		**12.41%**	
Equivalent Annual Cost Annuity Factor ((1-(1/i^t))/i):		**12.25**	

NOTES:

Utility fees include City utility taxes.

Designated "peak" months are March thru October.

Each partner will be required to pay for disposal by WM each year at an estimated $35/ton. The assumption is that Chelan County will dispose of 342 tons/year and East Wenatchee will dispose of 500 tons/year.

Potential future capital repairs that would necessitate a capital reserve after the initial 5-year term (these are annual estimates and provided for information purposes only):

		Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Total
Concrete repairs	Includes minor chip repairs up to 3/4" deep, 6-8 SF per year	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	**$3,600**
Pavement sealcoat	Two coat coal tar emulsion seal cost, 72,750SF. Per RS Means, cost per SY is $1.78. Assumed to occur every 6 years.					$14,388							$14,388	**$28,776**
Electrical repairs	Light repair/replacement	$300			$300			$300			$300			**$1,200**
Gate/fence repairs	Minor repairs/hardware replacement								$2,500					**$2,500**
													Total	$36,076
													Annualized starting in Year 6	$4,008.44

Agency	Cap. Contribution	Percentage of Capital Paid	Share of O&M Expenses	Share of Disposal Fees	Total Estimated Annual Fee
Chelan County	$ 75,000	15%	$ 5,118	$11,970	$17,088
Wenatchee	$ 362,500	85%	$ 23,883	$61,320	$85,203
Total	**$ 437,500**	**100%**	**$ 29,001**	**$73,290**	**$102,291**

		Estimated Loading to Facility by Month, tons										
Category / Item	**Explanation**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Total**
Eductor Waste	KPFF estimates 2,280 tn per year. Distribution based on historical operations schedule	48.5	272.9	272.9	272.9	272.9	272.9	272.9	272.9	272.9	48.5	2280
Sweeper Waste	KPFF estimates 314 tn per year. Distribution based on historical operations schedule	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4	31.4	314

KPFF utilized information from the partners, as well as available statewide data and experience, to estimate the size and weight of eductor and sweeper waste to the Facility.
The estimated average daily loading of eductor and sweeper waste is 6.76 CY/day and 1.07 CY/day, respectively. This equates to 1,590 CY/year and 252 CY/year for a 5-day work week over 47 weeks.

	Eductor Waste	Street Sweeper Waste
Solids generated daily (CY/Day)	6.76	1.07
Solids generated annually (CY/Year)*	1588.6	251.45
Avg. Dry Unit Density (lb/CY)	2870	2500
Solids generated annually (Tons)*	2280	314

*Assuming 5-day work week and 47 weeks.

Appendix D
Stormwater Pollution Prevention Plan
Sunnyslope Maintenance Yard

Sunnyslope Maintenance Yard
Stormwater Pollution Prevention Plan

Prepared for:
Wenatchee Valley Stormwater Technical Advisory Committee

Template Development Funded by:
Washington State Department of Ecology

Prepared by:
Otak, Inc.
6 South 2nd Street, Suite 605
Yakima, WA 98901
Otak Project No. 31703

February 3, 2011
Updated January 2016

KEEP THIS SWPPP ON-SITE AT ALL TIMES

THIS SWPPP IS TO BE MADE AVAILABLE TO THE PUBLIC UPON REQUEST

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Chelan County Sunnyslope Maintenance Yard SWPPP

Sections

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Acronyms, Abbreviations, and List of Definitions

Acronyms and Abbreviations

BMPs	Best Management Practices
Ecology	Washington State Department of Ecology
EPA	Environmental Protection Agency
ISGP	Industrial Stormwater General Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
Phase II Permit	NPDES Phase II Municipal Stormwater Permit
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
UIC	Underground Injection Control

List of Definitions

The majority of the definitions below are sourced from the Washington Department of Ecology (Ecology) Eastern Washington Phase II Municipal Stormwater Permit (Phase II Permit). Definitions not provided from the Phase II Permit were taken from other sources, including Ecology's Stormwater Management Manual for Eastern Washington, Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) website glossary, and the Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments.

Best Management Practices (BMPs) are the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinances.

Discoloration is a means by which to characterize stormwater. Typically, stormwater is yellowish in color. Discoloration however, other than turbidity, can indicate whether there is rust from iron pipes or iron bacteria, as seen by a yellowish/red color or if paint or cleaning agent emulsions have entered the stormwater system, as indicated by a white cloudy color.

Erosion and Sediment Control BMPs mean BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and

matting, plastic covering, and sediment traps and ponds. Erosion sediment control BMPs are synonymous with stabilization and structural BMPs.

Floatables is a means by which to characterize stormwater. A floatable is used as an indicator if very obvious trash or other controllable debris, such as landscaping material, leaf litter, etc has entered into the storm system.

Foam is a means by which to characterize stormwater. Foam is used as an indicator that potentially soap or other cleaning products have entered into the storm system. However, stormwater can often be slightly foamy from pollen and other natural organic material. The way to tell the difference is by touch and smell. If the foam is persistent and accompanied by a fragrant odor, it is most probably coming from a cleaning product. If the suds break up quickly, then it is most likely from turbulence and/or natural conditions.

Hazardous Substance is: 1) Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive or chemically reactive. 2) Any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or is otherwise released into the environment.

Hyperchlorinated means water that contains more than 10 mg/Liter chlorine. Disinfection of water mains and appurtenances requires a chlorine residual of 10 mg/L at the end of the disinfection period. This level is well above the Maximum Residual Disinfectant Level of an annual average of 4 mg/Liter chlorine for potable water.

Illegal Dumping means any intentional and non-permitted disposal of any substance other than stormwater into the municipal separate storm sewer system, unless otherwise called out as an allowed non-stormwater discharge.

Illicit Connection means any man-made conveyance that is connected to a municipal separate storm sewer without a permit, excluding roof drains and other similar type connections. Examples include sanitary sewer connections, floor drains, channels, pipelines, conduits, inlets or outlets that are connected directly to the municipal separate storm sewer system.

Illicit Discharge means any discharge to the municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

Industrial Stormwater General Permit (ISGP) means the NPDES Industrial Stormwater General Permit, issued by Ecology for stormwater discharges associated with industrial activities (Issued 2002, modified 2004, effective January 2005).

Material Storage Facilities means an uncovered area where bulk materials (liquid, solid, granular, etc.) are stored in piles, barrels, tanks, bins, crates, or other means.

Municipal Separate Storm Sewer System (MS4) means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2) Designed or used for collecting or conveying stormwater;
3) Which is not a combined sewer; and
4) Which is not part of a Publicly Owned Treatment Works, as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Non-Stormwater Discharges are discharges of process wastewaters, vehicle wash waters, cooling waters, or any other wastewaters associated with the facility into the stormwater collection system. Other discharges must be addressed in a separate NPDES permit. See also **Illicit Discharges**. Certain non-stormwater discharges are conditionally approved under the ISGP but are subject to specific provisions, including identifying the location, flow volumes, quality, potential for water quality issues and ability to apply appropriate BMPs. Examples of conditionally approved non-stormwater discharges under an ISGP include:

- Discharges from fire fighting activities.
- Fire protection system flushing, testing, and maintenance.

- Discharges of potable water including water line flushing, provided that water line flushing must be de-chlorinated prior to discharge.
- Uncontaminated air conditioning or compressor condensate.
- Irrigation drainage.
- Uncontaminated ground water or spring water.
- Discharges associated with dewatering of foundations, footing drains, or utility vaults where flows are not contaminated with process materials such as solvents.

Stormwater Management Program (SWMP) means a set of actions and activities designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable and to protect water quality, and comprising the components listed in S5 of S6 of the Western Washington Phase II Municipal Stormwater Permit and any additional actions necessary to meet the requirements of applicable requirements.

Structural source control BMPs are physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. Structural source control BMPs typically include:

- Enclosing and/or covering the pollutant source (building or other enclosure, a roof over storage and working areas, temporary tarp, etc.).
- Segregating the pollutant source to prevent run-on of stormwater, and to direct only contaminated stormwater to appropriate treatment BMPs.

Treatment BMPs are intended to remove pollutants from stormwater. A few examples of treatment BMPs are Wetponds, oil/water separators, biofiltration swales, and constructed wetlands.

Turbidity is a means by which to characterize stormwater. The dispersion or scattering of light in a liquid, caused by suspended solids and other factors; commonly used as a measure of suspended solids in a liquid.

Vehicle Maintenance or Storage Facility means an uncovered area where any vehicles are regularly washed or maintained, or where at least 10 vehicles are stored.

Water Quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington state and "waters of the state" as defined in Chapter 90.48 RCW, which include lakes, rivers,

ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the State of Washington.

Contacts

Pollution Prevention Team

The Pollution Prevention Team is responsible for ensuring that the recommended BMPs are implemented to control stormwater pollution at the site. Team members are responsible for inspections, operation and maintenance, operational source controls, employee training, emergency and spill response, and other activities necessary to implement the Stormwater Pollution Prevention Plan (SWPPP).

The Pollution Prevention Team for the Chelan County Public Works Department consists of the following staff members:

Name	Job Title	Contact Number
Eric Pierson	**Director/County Engineer**	**667-6415**
Don Hathaway	**Fleets Manager**	**667-6514**
Brad Hard	**Maintenance Supervisor**	**667-6626**
Keith Newberry	**Wenatchee District Foreman**	**667-6502**
Chris Flick	**Facilities Supervisor**	**667-6555**
Jason Detamore	**Stormwater Program Manager**	**667-6415**

Section 1—Introduction

Chelan County is currently subject to the requirements of the National Pollution Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit (Phase II Permit) and the Underground Injection Control (UIC) Rule. The NPDES Phase II Permit was issued by the Washington State Department of Ecology (Ecology) on January 17, 2007, and became effective on February 16, 2007. The Phase II Permit was reissued on July 1, 2012 and is valid through June 30, 2019.

Chelan County is required to develop and implement Stormwater Pollution Prevention Plans (SWPPPs) to protect water quality at municipally owned and operated facilities, including material storage areas, heavy equipment storage areas, and maintenance areas, that are not currently covered under another NPDES stormwater permit (e.g., the General NPDES Permit for Stormwater Discharges Associated with Industrial Activities).

This document presents the SWPPP developed for the following facility:

- Sunnyslope Maintenance Yard

1.1 SWPPP Objective

The objective of this SWPPP is to implement measures to prevent and control the contamination of discharges of stormwater to surface or ground waters.

1.2 Record Keeping

All records related to this SWPPP shall be maintained for at least five years. All records related to this SWPPP shall be kept with the SWPPP, preferably in the same binder.

1.3 SWPPP Availability

All records related to this SWPPP shall be made available to the public at reasonable times during business hours. Members of the public who request SWPPP records in person shall be allowed to view documents on-site. SWPPP records shall not be removed from the site. Copies of SWPPP records may be obtained by sending a written request to the Public Works Department.

All records related to the SWPPP shall be made available to Ecology upon request.

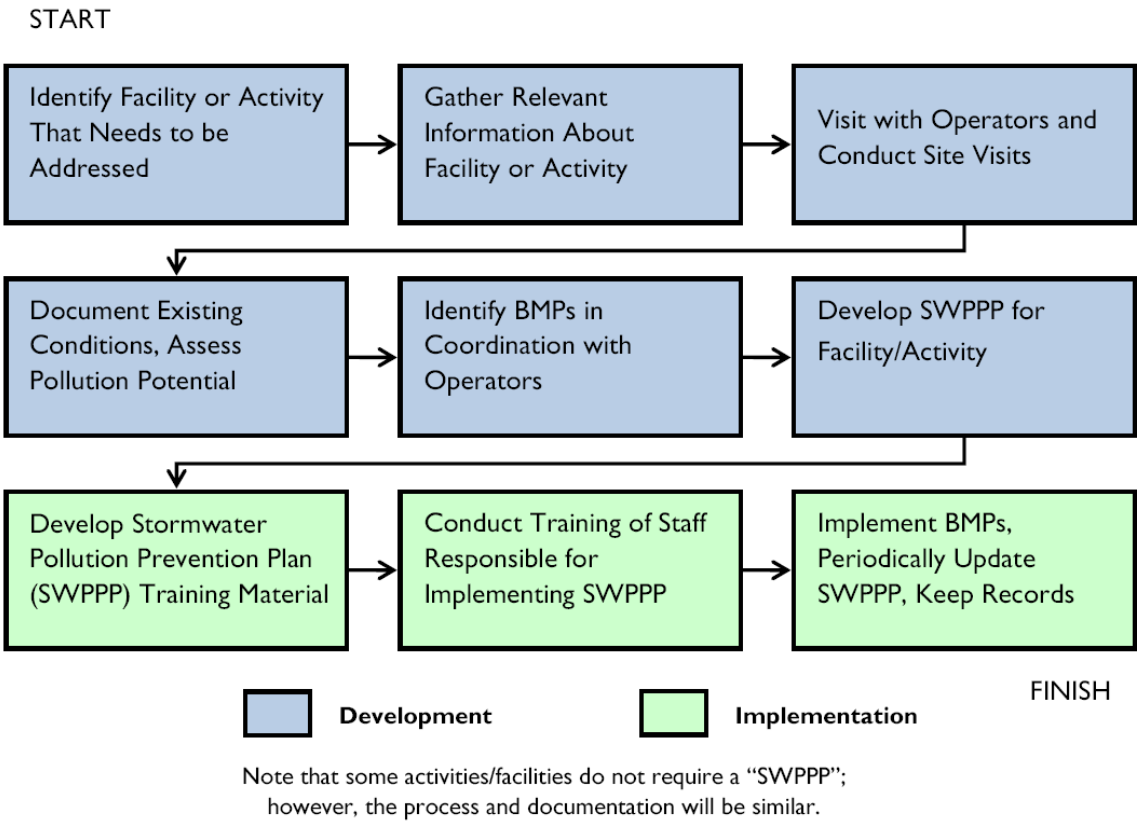
1.4 SWPPP Development and Implementation Process

This SWPPP was prepared based on a SWPPP Template developed by Otak, Inc. for the Wenatchee Valley Stormwater Technical Advisory Committee using funding provided by a grant from Ecology.

The methods used to develop this SWPPP included the use of facility assessment questionnaires, site visits, identification of facility specific Best Management Practices (BMPs), and coordination with facility operators. Implementation of the SWPPP will include

employee training and BMP application. The complete process can be best described by the flow chart presented in Figure 1.

Figure 1
Flow Chart of SWPPP Development and Implementation Process



Note that some activities/facilities do not require a "SWPPP"; however, the process and documentation will be similar.

1.5 SWPPP Revisions

The SWPPP will need to be modified under the following conditions:

- Significant changes occur at the Facility which affect current BMPs and could affect stormwater quality;
- Chelan County purchases or develops a new property to be used for municipal storage activities;
- Chelan County changes site use (adds or ceases a major activity) at an existing municipal storage site; and/or
- On an annual basis to reflect any administrative changes, including Pollution Prevention team members.

Section 2—Site Assessment & Best Management Practices

2.1 Facility Description

The Sunnyslope Maintenance Yard is located at 210 Easy Street, Wenatchee, WA. The site shares a border with Easy Street, Ohme Gardens Road, and East Peters Street. The site is approximately 10.5 acres in area, including 6 acres of concrete and pavement, 4 acres of compacted gravel, and 0.5 acres of vegetation. Site facilities consist of six (6) permanent structures. Activities include equipment storage/repair/washing, heavy equipment and vehicle parking areas, and the storage of raw materials, such as anti-icing/deicing chemicals, cold mix, stockpiles of rock, gravel, and other road maintenance material. A site map for the facility is shown in Appendix A.

A facility assessment was conducted to identify pollutant sources, evaluate current practices, and describe the stormwater collection and conveyance system. Using the information gathered from the Facility Assessment Questionnaire (Appendix B) and Facility Assessment Photolog and Site Visit Form (Appendix C), a BMP implementation plan was developed for each category assessed.

2.1.1 History of Spills and Leaks

There is no recorded history of any major spills or leaks at this facility.

2.1.2 Production and Application Activities

Production or application activities have the potential to contaminate stormwater from debris left behind during production; spills, leaks, or drips from products or equipment used during production; or leaching or erosion from materials involved.

- Painting
- Sign Fabrication
- Vehicle Painting

2.2 Best Management Practices

BMPs are the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to receiving waters.

There are three general classes of BMPs: Operational Source Control BMPs, Structural Source Control BMPs, and Treatment BMPs. Operational BMPs are those than involve specific activities or one-time actions on the part of the facility staff. If Operational BMPs do not adequately prevent the potential contamination of stormwater, Structural BMPs, such as constructing new covered shelters to prevent stormwater from coming into contact with potential pollutants, may be a reasonable solution. Treatment BMPs are only used as a last

resort to remove containments from stormwater before discharging to a stormwater conveyance system or to surface or ground waters.

2.2.1 General Operational BMPs

General Operational BMPs are good housekeeping activities that should be applied to day-to-day activities at the facility to prevent contaminants from entering stormwater at their source. The purpose of good housekeeping is to keep the Facility area clean and free of debris, storage materials under cover, and handling materials and waste products in a way that minimizes the risk to stormwater. The good housekeeping BMPs are:

- Keep open areas clean and orderly;
- Pick-up litter;
- Promptly contain and clean up solid and liquid pollutant leaks and spills;
- Sweep paved material handling and storage areas regularly;
- Inspect all BMPs regularly, particularly after a significant storm;
- Use drip pans or absorbent pads under leaking vehicles and equipment to capture fluids;
- Promptly remove debris and old equipment;
- Store hazardous materials as specified by the manufacturer; and
- Conduct regular employee training to reinforce proper housekeeping actions.

See Appendix D for additional preventative maintenance BMPs. The BMP descriptions in Appendix D were drawn primarily from Ecology's Stormwater Management Manual for Eastern Washington (2004) and the California Department of Transportation's Storm Water Quality Handbook Maintenance Staff Guide (2003, Revised 2007).

2.2.2 Site Assessment and Specific BMPs

A wide variety of activities and areas of concern throughout the facility may potentially contaminate stormwater. Tables 1 through 8 provide a brief description of those activities and areas of concern along with specific Operational and/or Structural BMPs to reduce pollution potential.

Additional example pollutant source-specific BMPs are included in Appendix E. BMP descriptions were drawn primarily from Ecology's Stormwater Management Manual for Eastern Washington (2004) and the California Department of Transportation's Storm Water Quality Handbook Maintenance Staff Guide (2003, Revised 2007).

2.4 Employee Training and Education

A formal training seminar will be provided for all municipal field staff upon completion of the SWPPP. Chelan County will develop and provide education materials oriented toward prevention of stormwater pollution and implementation of the SWPPP. The goal of the training is to reduce or eliminate behaviors and practices that cause or contribute to adverse

stormwater impacts. All maintenance facility personnel are recommended to participate in this initial implementation training seminar to improve their understanding of stormwater impacts and ways to prevent stormwater pollution. Additional training should be provided as an annual refresher course, or as new employees are hired.

Table 1 Building and Ground Maintenance BMPs	
Issue:	Stormwater can be contaminated from dust deposited on surfaces exposed to rain or from sediment due to erosion of exposed soils.
Facility Assessment:	There are six buildings and over 100 county vehicles and pieces of heavy equipment that are stored at this location. An oil/water separator is located adjacent to the mechanics shop. This is inspected monthly and clean on an "as-needed" basis.
Problem(s) Observed:	No problems were observed.
Current BMPs:	• Covered parking and storage utilized whenever possible. • Sweep paved area, when needed.
Improvements:	None

Table 2 Loading and Unloading of Materials BMPs	
Issue:	Loading, unloading, or other transfer of liquid or solid materials has the potential to contaminate stormwater through spills, leaks, or drips of the transferred material or from the equipment performing the transfer.
Facility Assessment:	Liquids are transferred indoors at the following locations: • Mechanic Shop • Sign Shop Liquids are transferred outdoors at the following locations: • West of the Maintenance Shed (on a gravel surface)
	Types of liquids transferred: • Oils and greases • Paint • Pesticides, herbicides, and fertilizers • Cleaning products • Deicer
	Solids are transferred indoors and outdoors. Types of solids transferred: • Equipment • Parts • Bulk cold mix
Problem(s) Observed:	No problems were observed.
Current BMPs:	• Maintain spill kit onsite at all times. • Spills and leaks are promptly addressed and reported to the proper supervisor.
Improvements:	None.

Table 3 Outdoor Storage of Raw Materials BMPs	
Issue:	Materials stored outdoors, and in some cases indoors, have the potential to contaminate stormwater through erosion of granular materials, spills or leaks from storage containers or equipment containing liquids, and dissolution of soluble materials.
Facility Assessment:	Types of liquids stored include: • Pesticides, herbicides, and fertilizers • Deicer
	Types of solid materials stored include: • Rock • Wood • Sand • Cold mix • Salt
Problem(s) Observed:	No problems were observed.
Current BMPs:	• Whenever possible store material stockpiles under a permanent cover, use plastic sheeting, or place in a contained area.
Improvements:	Additional covered storage areas may be appropriate for equipment and/or materials.

Table 4 Storage of Liquids, Solid Waste, and Hazardous Materials BMPs	
Issue:	Waste management activities have the potential to contaminate stormwater through improper storage of solid and liquid wastes, and spills, leaks, or drips from containers.
Facility Assessment:	One trash dumpster is located behind the mechanic shop.
	Used oil is stored inside and outside the mechanic shop.
Problem(s) Observed:	Some of the used oil barrels stored outside of the mechanic shop do not have secondary containment.
Current BMPs:	• Store materials indoors or in covered areas with secondary containment whenever possible. • Maintain a spill kits onsite. • Spills and leaks are promptly addressed and reported to the Fleets & Facilities Supervisor.
Improvements:	Continue to provide secondary containment for the used oil barrel and/or look for a more suitable storage location if feasible.

Table 5 Vehicle and Equipment Cleaning BMPs	
Issue:	If not conducted properly, cleaning and washing of vehicles, heavy and light equipment, buildings, tools, or paved surfaces can contaminate stormwater by washing contaminants such as oil and grease, soap, or dirt into the storm sewer or onto areas exposed to rain.
Facility Assessment:	Cleaning and washing is currently performed at the wash rack behind the mechanic shop.
	A secondary cleaning/rinsing area is designated at the material storage area where water infiltrates.
	Types of materials cleaned or washed include: • Passenger vehicles • Service trucks • Heavy equipment • Tools, parts, other material
	The chemicals used during washing include: • Phosphorus-free soap in the wash bay.
Problem(s) Observed:	No problems were observed.
Current BMPs:	• Conduct all vehicle washing at the wash rack, at an area where water can infiltration into the ground, or a commercial car wash. • Covered parking and storage is utilized whenever possible.
Improvements:	Separate wash rack for herbicide truck.

Table 6 Vehicle and Equipment Fueling BMPs	
Issue:	Vehicles and heavy equipment require fueling with hazardous liquids (fuel) that can contaminate stormwater.
Facility Assessment:	Vehicle and heavy equipment refueling is conducted at the Sunnyslope Maintenance Yard, adjacent to the mechanic shop.
Problem(s) Observed:	No problems were observed.
Current BMPs:	• Maintain a spill kits onsite. • Spills and leaks are promptly addressed and reported to a supervisor. • Training should be provided to operators.
Improvements:	None.

Table 7 Vehicle and Equipment Maintenance and Repair BMPs	
Issue:	Vehicles and heavy equipment contain hazardous liquids (fuel, hydraulic oils, antifreeze, etc.) or have other wearable products (tires, brake pads, etc.) that can contaminate stormwater.
Facility Assessment:	Vehicle and equipment maintenance, service, and repair are conducted at the mechanic shop.
	Potential stormwater contaminants used in the operation or maintenance of vehicles and equipment on-site include: • Oil and fuel • Batteries • Antifreeze • Hydraulic Fluid
Problem(s) Observed:	No problems where observed
Current BMPs:	• Maintain a spill kits onsite. • Spills and leaks are promptly addressed and reported to a supervisor. • Conduct vehicle maintenance inside whenever possible. • Store materials indoors or in covered areas with secondary containment whenever possible.
Improvements:	None.

Table 8 Vehicle and Equipment Parking and Storage BMPs	
Issue:	Vehicles and heavy equipment contain hazardous liquids (fuel, hydraulic oils, antifreeze, etc.) or have other wearable products (tires, brake pads, etc.) that can contaminate stormwater.
Facility Assessment:	Employees personal vehicles are parked along the northern property fence line. County vehicles/equipment are dispersed at different locations over the maintenance yard. Typically, heavy equipment is stored undercover at the maintenance shed adjacent to the District Foreman's office and also at the sander shed. County vehicles are located on the adjacent to the mechanics shop.
	Vehicles and equipment that are stored or parked on-site include: passenger vehicles, service trucks, dump trucks/snow plows, boom truck, excavator, vactor truck, dozers, grader, broom/sweeper, mower, sprayer paver, distiller, rollers, and backhoes
Problem(s) Observed:	No problems where observed.
Current BMPs:	• Covered parking and storage is utilized whenever possible. • Sweep paved areas and storage areas regularly. • Maintain a spill kits onsite. • Spills and leaks are promptly addressed and reported to a supervisor.
Improvements:	Additional covered storage should continue to be investigated.

Section 3—Illicit Non-Stormwater Discharges

Chelan County is required to develop, implement, and enforce a program to detect and eliminate non-stormwater illicit discharges into the municipal separate storm sewer system (MS4), including spills, illicit connections, and illegal dumping.

3.1 Illicit Connections

An illicit connection is any man-made conveyance of non-stormwater discharges that is connected to an MS4 without a permit. Examples include sanitary sewer connections, floor drains, and process waters that are connected directly or indirectly to the MS4. Exemptions include connections from foundation and footing drains, air conditioning condensation, uncontaminated groundwater, and other similar type connections. A complete list of the prohibited and exempt non-stormwater discharges can be found in Chelan County's Illicit Discharge Detection and Elimination code (Chelan County Code Chapter 13.14)

If an illicit connection is detected on-site, the Pollution Prevention Team shall take appropriate steps to terminate or redirect the connection to an appropriate discharge location.

3.2 Illicit Discharges

An illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the Phase II Permit) and discharges resulting from emergency fire fighting activities.

If a prohibited discharge is observed, the Pollution Prevention Team shall take immediate action to terminate the discharge. Depending on the nature of the illicit discharge, it may be necessary to report it as a spill; a three-page summary of basic spill response procedures is included in Appendix F.

3.3 Illegal Dumping

Illegal dumping consists of spilling, dumping, releasing, throwing, depositing or placing solid waste, litter, pet waste, yard waste, or hazardous materials where there is the potential for those materials or pollutants to end up in the MS4.

If illegal dumping is observed, the Pollution Prevention Team shall take immediate action to identify the responsible party and ensure cleanup of the dumped material.

Appendix A—Site Maps

Appendix B—Facility Assessment Questionnaire

Municipal Facility Assessment Questionnaire

1 Facility Description

This section identifies and describes the location of the municipal facility, contact information for key facility staff, and general site information. Please attach any maps or sketches of the facility, if available.

Facility Name:	**Sunnyslope Maintenance Yard**
Facility Location:	**210 Easy Street, Wenatchee, WA 98801**
Facility Description:	**Offices, shops, maintenance and storage for Public Works and other county departments**
Mailing Address:	**316 Washington Street, Suite 402, Wenatchee, WA 98801**
Contact Name:	**Eric Pierson, Director/County Engineer**
Contact Phone:	**(509)667-6415**
SIC Code (If Applicable):	
Main Site Activities:	**Maintenance and fleet administration offices, vehicle storage and maintenance, material storage, chemical/herbicide storage**
Area of Facility (in acres):	**10.5 acres**

Surface Types:

(Check all that apply and fill in approximate area)

- ☒ Permanent Buildings: 6 number of buildings
- ☐ Temporary Buildings: _____number of buildings
  _____square feet
- ☒ Pavement: 6 acres
- ☒ Gravel: 4 acres
- ☐ Bare Ground: _____acres
- ☒ Vegetation: 0.5 acres

2 Potential Pollutant Sources

This section identifies and describes the activities conducted on site that have the potential to contaminate stormwater. Please complete the following sections.

2.1 Waste Management

Waste management activities have the potential to contaminate stormwater through improper storage of wastes, spills, leaks, or drips from containers.

☐ No waste management activities are performed on site.

☒ Wastes are managed as follows:

- ☒ Dumpster, located: North of the mechanic shop
- ☐ Trash compactor, located: _____
- ☐ Recycling Containers, located: _____
- ☐ Used Oil Container, located: Within the mechanic shop
- ☐ Other, describe: _____

2.2 Cleaning and Washing

If not conducted properly, cleaning and washing of vehicles, heavy and light equipment, buildings, tools, or paved surfaces, can contaminate stormwater by washing contaminants such as oil and grease, soap, or dirt into the storm sewer or onto areas exposed to rain.

☐ No cleaning or washing activities are performed on site.

☒ Cleaning and washing is performed as follows:

Location of cleaning or washing activity: The wash rack is located behind the mechanic shop.

Cleaning or washing area / structure:

- ☒ Self-Contained Building (The wash rack self-contained and does not flow offsite)
- ☐ Covered Pad
- ☒ Designated Open Area
- ☐ Other: _____

Surface of cleaning or washing area:

- ☐ Asphalt
- ☒ Concrete
- ☒ Compacted Gravel

☐ Soil

Type(s) of materials cleaned or washed:

☐ Vehicles, describe: Passenger, service trucks

☐ Equipment, describe: heavy equipment, vehicle parts, tools

☐ Buildings

☐ Paved areas

☐ Other: _____

Chemical(s) used in washing:

☐ Soaps or detergents: _____

☐ Abrasives: _____

☐ Acids: _____

☐ Solvents: _____

☐ Other: _____

Drainage characteristics of wash area(s): The wash rack area drains to an oil/water separator, which is pumped cleaned on an as needed basis. If washing occurs someplace other than the wash rack, it is at a contained gravel location.

Discharge location for wash water:

☐ Storm Sewer; Treated?

☒ No

☐ Yes, please describe: _____

_____

☐ Sanitary Sewer

☐ Other: _____

2.3 Transfer of Liquids or Solids

Loading, unloading, or other transfer of liquid or solid materials has the potential to contaminate stormwater through spills, leaks, or drips of the transferred material or from the equipment performing the transfer.

☐ No transfer of liquids or solids is performed on site.

☒ Transfer of liquids is performed as follows:

Location(s) where transfer occurs:

☒ Direct connection to aboveground storage tank

☒ Direct connection to underground storage tank

☐ Railroad yard

☐ Loading dock

☒ Permanent fueling station

☐ Open area

☐ Indoors

☐ Other: _____

Transfer Area Structure(s):

☐ Self-Contained Building

☒ Covered Pad

☐ Designated Open Area

☐ Other: _____

Surface of Transfer Area:

☐ Asphalt

☒ Concrete

☒ Compacted Gravel

☐ Soil

Type(s) of liquids transferred:

☒ Fuels, oils, or greases: _____

☐ Paints: _____

☐ Acids: _____

☒ Pesticides, Herbicides, Fertilizers: _____

☐ Cleaning products: _____

☒ Other: Deicer

Type of transfer:

☐ Bulk liquid

☒ Mobile fueling

☒ Liquid filled container:

☒ Small Containers

☒ Drums
☐ Totes
☐ Bunker
☐ Other: _____

☒ Transfer of solids is performed as follows:

Location(s) where transfer occurs:

☐ Railroad yard
☐ Loading dock
☒ Open area
☐ Indoors
☐ Other: _____

Transfer Area Structure:

☐ Self-Contained Building
☒ Covered Pad
☐ Designated Open Area
☐ Other: _____

Surface of Transfer Area:

☐ Asphalt
☒ Concrete
☐ Compacted Gravel
☐ Soil

Type(s) of solids transferred:

☒ Shipping Containers: _____
☒ Equipment: _____
☐ Packaged goods: _____
☒ Bulk materials (aggregate, debris, etc.): Cold mix
☐ Other: _____

Equipment involved in transfer:

☐ Top pick
☒ Forklift

☐ Crane

☒ Dump truck (end, side, bottom, etc.): _____

☐ Other: _____

2.4 History of Spills and Leaks

If there is a history of any spills or leaks on site that discharged to storm sewer system, surface waters, or groundwater please describe: There is no history of spills and leaks at this time.

2.5 Production and Application Activities

Production or application activities have the potential to contaminate stormwater from debris left behind during production, spills, leaks, or drips from products or equipment used during production, or leaching or erosion from materials involved. Application activities involve the application of product to an object such as painting, coating, spraying, or other treatment.

☐ No production or application activities are performed on site.

☒ Production and/or application activities are performed as follows:

Location(s) of production and/or application activities: Equipment production and application activities occur within the mechanic shop. Sign fabrication is conducted at the sign shop.

Description of production and/or application activities: The city fabricates signs, paints equipment, conduct equipment maintenance, fabricate parts for equipment and vehicle

Drainage characteristics of work area; are there any pretreatment BMPs? This work is typically done inside the sign or mechanics shops.

2.6 Storage and Stockpiling

Vehicle and Equipment Storage and Parking

Vehicles and heavy equipment contain hazardous liquids (fuel, hydraulic oils, antifreeze, etc.) or have other parts (tires, brake pads, etc.) that can contaminate stormwater. If vehicles or heavy equipment are stored or parked outdoors on site, please complete the following:

☐ No vehicle or equipment storage or parking is performed on site.

☒ Vehicle and/or equipment storage and/or parking application is performed as follows:

Vehicles and equipment that are stored or parked on site:

Passenger vehicles, service trucks, dump trucks/snow plows, boom truck, excavator, vactor truck, dozers, grader, broom/sweeper, mower, sprayer paver, distiller, rollers, and backhoes

Location of storage or parking area: Employees personal vehicles are parked along the northern property fence line. County vehicles/equipment are dispersed at different locations over the maintenance yard. Typically, heavy equipment is stored undercover at the maintenance shed adjacent to the District Foreman's office and also at the sander shed. County vehicles are located on the adjacent to the mechanics shop.

Storage or parking area structure:

- ☒ Covered
- ☒ Designated Open Area
- ☐ Other: _____

Surface of storage or parking area:

- ☒ Asphalt
- ☒ Concrete
- ☒ Compacted Gravel
- ☐ Soil

List potential stormwater contaminants used in the operation or maintenance of heavy equipment on site:

- ☒ Petroleum products (fuel, oils, greases) – source of oil & grease and metals
- ☐ Acids – source of low pH
- ☒ Batteries – source of low pH, and heavy metals (lead, nickel, cadmium, etc.)
- ☒ Antifreeze
- ☒ Solvents
- ☒ Soaps or detergents – source of phosphorus
- ☐ Other: _____

Drainage characteristics of Vehicle and Equipment Storage and Parking: Stormwater from the open areas drain to either a dry well or an open area to infiltrate/evaporate. Runoff is contained onsite.

Material Storage

Materials stored outside have the potential to contaminate stormwater through erosion of granular materials, spills or leaks from liquids or equipment containing liquids, and dissolution of soluble materials. If materials are stored outside on site, please complete the following section:

- ☐ No material storage is performed on site.
- ☒ Material storage is performed as follows:

Location(s) of where materials are stored: Adjacent to the mechanic's shop.

Storage area structure:

- ☒ Covered
- ☒ Designated Open Area
- ☐ Other: _____

Surface of Storage Area:

- ☒ Asphalt
- ☒ Concrete
- ☐ Compacted Gravel
- ☐ Soil

Type(s) of Liquids Stored:

- ☒ Fuels, oils, or greases
- ☒ Paints
- ☐ Acids
- ☒ Pesticides, Herbicides, Fertilizers
- ☒ Cleaning products
- ☐ Other: _____

Liquids are stored in:

- ☒ Small Containers
- ☒ Drums
- ☐ Totes
- ☒ Aboveground Tanks
- ☐ Other, describe: _____

Type(s) of Solid Materials Stored:

- ☒ Aggregates (sand, gravel, rock, broken concrete, broken asphalt, etc.)
- ☐ Soil and compost
- ☒ Wood Products (untreated lumber, logs, wood chips, wood waste, etc.)
- ☒ Scrap metals
- ☒ Building Materials (masonry products, metal framing, rebar, etc.)
- ☒ Treated lumber

☐ Other: Cold mix

Type(s) of Equipment Stored:

☒ Equipment with galvanized metal components

☒ Equipment with fluid filled reservoirs

☐ Equipment with greased joints or other moving parts

☐ Other: _____

Drainage characteristics of material storage area: Stormwater from the open areas drain to either a dry well or an open area to infiltrate/evaporate. Runoff is contained onsite.

2.7 Vehicle and Equipment Maintenance and Repair

☐ No vehicle or equipment maintenance is performed on site.

☒ Vehicle and/or equipment maintenance is performed on site as follows:

Describe the location(s) and activities performed: Vehicle maintenance is typically carried out inside the mechanic shop.

2.8 Dust Control and Soil and Sediment Control

Stormwater can be contaminated from dusts deposited on surfaces exposed to rain, or from erosion of exposed soils.

☒ No dust generating activities are performed on site and no exposed soils are present.

☐ Exposed soils are present on site as follows:

Location of exposed soils: _____

Slope: _____

Reason soils remain exposed: _____

☐ Dust generating activities are performed on site as follows:

Location of dust-generating activity: _____

Type(s) of dust-generating activity:

☐ Storage of materials (aggregate, sawdust, ash, etc.), describe: _____

_____

☐ Manufacturing process, describe: _____

_____

☐ Vehicle traffic

☐ Soil disturbance/grading

☐ Other: _____

Describe any erosion and sediment control or dust control methods used: _____

2.9 Landscape Management

Landscape maintenance (including control of weeds) has the potential to introduce chemical pollutants, sediment, and nutrients into stormwater. If landscape management practices occur on site please complete the following section.

Pesticide, Herbicide, and Fertilizer Application

Check one:

☐ There are no vegetated areas on site. No pesticides, herbicides or fertilizers are used.

☐ Vegetated areas are present on site. However, no pesticides, herbicides or synthetic fertilizers are used on site.

☒ Vegetated areas are present on site. Pesticides, herbicides or fertilizers are used.

Please note any existing training or BMPs related to pesticide, herbicide, and fertilizer application:

Only certified personnel are allowed to use chemicals. _____

Mowing / Trimming / Planting

If vegetated areas exist on site please describe their maintenance and waste disposal procedures: ___

Weed trimmers are utilized to maintain vegetation. The dumpster located onsite is the preferred method of disposal. _____

2.10 Non-Stormwater Discharges

Please describe any discharge(s) leaving the site and entering any storm drain, surface water, or dry well which is not made up entirely of stormwater: There are no non-stormwater discharges that leave the site.

2.11 Other Pollution-Generating Activities

This questionnaire does not capture all potential sources of stormwater pollution. Evaluate your site for any additional pollution generating activities not listed above and describe here.

☒ No other pollution-generating activities are performed on site.

☐ Other pollution-generating activities are performed on site as follows: _____

_____

_____

_____

_____

3 Stormwater Drainage System

Please attach any maps or sketches of the facility's stormwater drainage system, if available.

The stormwater drainage system consists of the following components: *Check all that apply*

- ☒ Catchbasins
- ☐ Floor drains
- ☐ Deck drains
- ☐ Roof drains
- ☐ Trench drains
- ☐ Culverts
- ☐ Subsurface Pipes
- ☐ Ditches
- ☒ Dry Wells
- ☐ Pump station
- ☒ General Site Stormwater Treatment:
  - ☒ Oil/water separator
  - ☐ Catch basin inserts

☐ Bioswale

☐ Pond

☐ Filtration System

☐ Other: _____

Stormwater from the site discharges to: (*Check all that apply*)

☒ Ground

☒ Drywells

Appendix C—Facility Assessment Photolog and Site Visit Form

Facility Assessment Site Visit Form

Date: February 19, 2011 Facility: Sunnyslope Maintenance Yard

Waste Management

Dumpster location to dispose of trash.

Cleaning and Washing

Wash rack located on the back side of the mechanic shop.

Materials Storage

Vehicle and Equipment Parking and Storage

Vehicle and Equipment Maintenance and Repair

Refueling Location

Appendix D—General Operational Source Control BMPs

General Pollution Prevention BMPs

Operational Source Control BMPs

Pollutant Control Approach

Operational Best Management Practices (BMPs) can be commonly applied to day-to-day activities at municipal storage facilities. These General Operational Source Control BMPs focus on retaining stormwater onsite, segregating pollutants from runoff, and preventing the discharge of pollutants to the stormwater collection and conveyance system.

Scheduling and Planning BMPs

1. Plan and schedule all maintenance activities in a manner that considers the use of BMPs. Recognize how the activity will affect stormwater so that the proper BMPs can be placed or utilized at the proper time. Some maintenance activities shall not be performed during rain events or when storms are predicted unless required by emergency conditions.
2. Be aware of where the flow of a leak, spill, or other runoff would go.
3. Set-up the work area to minimize the tracking of material by vehicles and equipment in or out of the work area.

Good Housekeeping BMPs

1. Promptly contain and clean up solid and liquid pollutant leaks and spills, including oils, solvents, fuels, and dust from operations and maintenance conducted on any exposed soil, vegetation, or paved area.
2. Use solid absorbents, e.g., clay and peat absorbents and rags for cleanup of liquid spills/leaks, where practicable.
3. Properly reuse, recycle, or dispose of cleaned empty containers, excess materials, and equipment or parts.
4. Sweep paved material handling and storage areas regularly, as needed, for the collection and disposal of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch, or receiving water unless necessary for dust control purposes to meet air quality regulations, and unless the pollutants are conveyed to a treatment system approved by the local jurisdiction.
5. Clean oils, debris, sludge, etc. from all BMP systems regularly, including catch basins, settling/detention basins, oil/water separators, boomed areas, and conveyance systems, to prevent the contamination of stormwater.
6. Promptly repair or replace all substantially cracked or otherwise damaged paved secondary containment, high-intensity parking, and any other drainage areas that are subjected to pollutant material leaks or spills.
7. Promptly repair or replace all leaking connections, pipes, hoses, valves, etc. that can contaminate stormwater.

General Operational Source Control BMPs

Continued

Preventative Maintenance BMPs

1. Inspect all BMPs regularly, particularly after a significant storm. Identify and correct deficiencies to ensure that the BMPs are functioning as intended.
2. Prevent the discharge of unpermitted liquid or solid wastes, vehicle and equipment wash-water, and sewage to ground or surface water, or to storm drains that discharge to surface water, or to the ground.
3. Do not connect floor drains in potential pollutant source areas to storm drains, surface water, or to the ground.
4. Conduct all oily parts cleaning, steam cleaning, or pressure washing of equipment or containers inside a building, or on an impervious contained area, such as a concrete pad. Direct contaminated stormwater from such an area to a sanitary sewer where allowed by local jurisdiction, or to other approved treatment.
5. Do not pave over contaminated soil unless it has been determined that groundwater has not been and will not be contaminated by the soil. Call Ecology for assistance.
6. Construct impervious areas that are compatible with the materials handled. Portland cement concrete, asphalt, or equivalent material may be considered.
7. Use drip pans or absorbent pads under leaking vehicles and equipment to capture fluids.
8. Drain oil and fuel filters before disposal. Discard empty oil and fuel filters, oily rags and other oily solid waste into appropriately closed and properly labeled containers, and in compliance with the Uniform Fire Code.
9. For the storage of liquids; use containers, such as steel and plastic drums, that are rigid and durable, corrosion resistant to the weather and fluid content, non-absorbent, water tight, rodent-proof, and equipped with a close fitting cover.
10. For the temporary storage of solid wastes contaminated with liquids or other potential pollutant materials use dumpsters, garbage cans, drums and comparable containers, that are durable, corrosion resistant, nonabsorbent, non-leaking, and equipped with either a solid cover or screen cover to prevent littering. If covered with a screen, the container should be stored under a lean-to or equivalent structure.
11. Where exposed to stormwater, use containers, piping, tubing, pumps, fittings, and valves that are appropriate for their intended use and for the contained liquid.
12. Where feasible, store potential stormwater pollutant materials inside a building or under a cover, and/or containment.
13. Minimize use of toxic cleaning solvents, such as cholorinated solvents, and other toxic chemicals.
14. Use environmentally safer raw materials, products, additives, etc.
15. Empty drip pans immediately after a spills or leaks are collected in an uncovered area.
16. Stencil warning signs at stormwater catch basins and drains, e.g., “Dump no waste.”

Appendix E—Example Pollutant Source-Specific BMPs

Pollutant Source Specific BMPs

1. Building and Ground Maintenance

Typical Activities	**Environmental Concerns**
Care of landscaped areas around each facility, cleaning of parking areas and pavements, dust control, and maintenance of the stormwater drainage system.	Discharge of the following materials into the stormwater drainage system or watercourse: • Sediment • Sewage • Litter • Trash • Non-Stormwater liquids • Herbicides • Vehicle Fuel and Fluids
Pollutant Control Approach	
Pollutants such as herbicides, eroded soil, and site debris can contaminate stormwater. Employ Operational Source Control Best Management Practices (Operational BMPs) to minimize the contact of stormwater and these pollutants.	

Operational BMPs

1. Dispose of sweepings and cleaning wastes as solid waste.
2. Inspect and clean stormwater conveyance systems as needed.
3. Properly dispose of wash-water generated by building maintenance activities. Dispose of wash-water to the sanitary sewer system.
4. Minimize dust generation and apply environmentally friendly and government approved dust suppressant chemicals, if necessary. Sprinkle or wet down soil or dust with water as long as it does not result in a wastewater discharge.
5. Limit the exposure of erodible soil, stabilize or cover erodible soil where necessary to prevent erosion, and/or provide treatment for stormwater contaminated with suspended solids caused by eroded soil.

Structural BMPs

1. Stencil drywell and catch basin grates with, “Dump No Waste - Drains to Stream/Groundwater".

Pollutant Source Specific BMPs

2. Floor Drains

Typical Activities

Floor drains are found in maintenance shops. Any spills, leaks, or drips of oil, antifreeze, paint, etc. that end up on the shop floor have the potential to end up in the floor drain.

Pollutant Control Approach

Identify and locate the final outfall for the floor drain system. If the floor drains are found to be connected to a drywell or other stormwater conveyance system, or if you are unsure where the floor drains outfall to, do not hose down shop floor with water.

Environmental Concerns

Discharge of the following materials into the stormwater drainage system or watercourse:

- Fuel
- Vehicle/Equipment Fluids
- Paint Products
- Metals

Operational BMPs

1. Sweeping should be used in place of water to clean the shop floor.
2. Clean up any hazardous material spills immediately.
3. Consider plugging each floor drain to eliminate potential pollutants from entering.

Structural BMPs

1. If a floor drain is found to be connected to a drywell or other stormwater conveyance system, it must be disconnected and routed to the sanitary sewer (if allowed by the local jurisdiction) or to other appropriate treatment BMPs.

Pollutant Source Specific BMPs

3. Loading and Unloading of Materials

Typical Activities

A variety of products are transferred at maintenance facilities and may cause harm to the environment if they come in contact with ground or surface waters. The following procedures are used to reduce the potential for the discharge of pollutants from loading/unloading areas to the stormwater drainage system or watercourses by minimizing exposure of the materials to stormwater and safeguarding against accidental release of materials.

Pollutant Control Approach

Cover and contain the loading/unloading area, where necessary, to prevent run-on of stormwater and runoff of contaminated stormwater; or, transfer materials in an area that slopes away from storm drains and waterways.

Environmental Concerns

Discharge of the following materials into the stormwater drainage system or watercourse:

- Asphalt Products
- Paint
- Epoxy Resins
- Cement
- Herbicides
- Solvents
- Vehicle Fluids
- Fertilizer
- Fuel

Operational BMPs

1. Sweep loading/unloading areas frequently to remove material that could otherwise be washed off by stormwater.
2. Place drip pans or other appropriate temporary containment devices at locations where leaks or spills may occur during loading/unloading activities.
3. In the event of a spill or leak, follow the procedures outlined in the facility's Spill Response Plan.
4. Ensure the cleanup of liquid/solid spills in the loading/unloading area immediately if a significant spill occurs and upon completion of the transfer activity for minor spills.
5. Maintain an appropriate oil spill cleanup kit on-site for rapid cleanup of oil spills.
6. Ensure that an employee trained in spill containment and cleanup is present during loading/unloading activities.

Structural BMPs

1. Consistent with Uniform Fire Code requirements and to the extent practicable, conduct unloading or loading of solids and liquids in a building, under a roof or lean-to, or other appropriate cover.

2. Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the runoff or loss of any spilled material from the area.
3. Pave and slope loading/unloading areas to prevent the pooling of water.
4. Install an automatic shutoff valve in storm drain system in case of unanticipated off-loading interruption (e.g. coupling break, hose rupture, overfill, etc.)

Pollutant Source Specific BMPs

4. Outdoor Storage of Raw Materials

Typical Activities

Maintenance facilities store a variety of raw materials that may adversely impact water quality if they come in contact with ground or surface waters. Raw materials may include asphalt, soil, road deicing salts, compost, unwashed sand and gravel, sawdust, logs, bark, lumber, metal products, etc.

Pollutant Control Approach

Provide impervious containment with blocks, berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutant(s) and suspended solids. The preferred method for storage of materials is under a covered structure.

Environmental Concerns

Discharge of the following materials into the stormwater drainage system or watercourse:

- Asphalt Products
- Sand and aggregates
- De-icing Agents

Operational BMPs

1. Store materials away from stormwater drainage systems or watercourses.
2. Protect storm drain inlets and watercourses from potential spills of raw materials.
3. Sweep paved storage areas regularly for collection and disposal of loose solid materials.
4. Do not hose down the contained stockpile area to a storm drain, a conveyance to a storm drain, or to receiving water.

Structural BMPs

1. Areas should be sloped to drain stormwater to the perimeter where it can be collected or to internal drainage "alleyways" where material is not stockpiled.
2. Convey contaminated stormwater from stockpile areas to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.
3. Choose one or more of the structural source control BMP options listed below for stockpiles greater than five cubic yards of erodible or water soluble materials such as soil, road deicing salts, compost, unwashed sand and gravel, sawdust, etc. Also included are outside storage areas for solid materials, such as logs, bark, lumber, metal products, etc.
4. Store in a building or paved and bermed covered area; or
5. Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material; or
6. Pave the area and install a stormwater drainage system. Place curbs or berms along the perimeter of the area to prevent the run-on of uncontaminated stormwater and to collect and convey runoff to treatment. Slope the paved area in a manner that minimizes the contact

between stormwater (e.g., pooling) and leachable materials in compost, logs, bark, wood chips, etc.; or

7. For large stockpiles that cannot be covered, implement containment practices at the perimeter of the site and at any stormwater conveyance system as needed to prevent erosion and discharge of the stockpiled material offsite or to a storm drain. Ensure that contaminated stormwater is not discharged directly to stormwater conveyance systems without conveying first through a treatment BMP.

Pollutant Source Specific BMPs

5. Storage of Liquids, Solid Materials, and Hazardous Materials

Typical Activities

A variety of products are stored at maintenance facilities and may be harmful to the environment if they come in contact with ground or surface waters. The following procedures are used to reduce the potential for the discharge of pollutants from hazardous material storage sites to the stormwater drainage system or watercourses by minimizing exposure of the materials to stormwater and safeguarding against accidental release of materials.

Pollutant Control Approach

Store hazardous materials in a designated area containing chemically compatible materials. Do not store incompatible products in the same storage area without some type of physical barrier separating the containers. For example, do not store strong oxidizers with organics, or flammable/combustible materials. Where feasible, store hazardous materials in a covered area that does not drain to the stormwater drainage system or watercourse. Ensure container covers or caps are secure.

Environmental Concerns

Discharge of the following materials into the stormwater drainage system or watercourse:

- Asphalt Products
- Paint
- Epoxy Resins
- Cement
- Herbicides
- Solvents
- Fertilizer
- Vehicle Fluids
- Fuel

Operational BMPs

1. Sweep storage areas frequently to remove material that could otherwise be washed off by stormwater.
2. Place drip pans, or other appropriate temporary containment device, at locations where leaks or spills may occur.
3. In the event of a spill or leak, follow the procedures outlined the facility's Spill Response Plan.
4. Place tight fitting lids on all containers.
5. Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code.
6. Label all cabinets, storage sheds, etc. containing hazardous chemicals with proper Hazardous Material signage.

7. Do not remove original product label from paint or hazardous materials containers as it contains important spill cleanup and disposal information. Use the entire product before properly disposing of the container. Appropriately label all secondary containers.
8. Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills, and failure of piping systems. Check containers daily for leaks/spills. Replace containers as needed.
9. Cover dumpsters, or keep them under a cover such as a lean-to, to prevent the entry of stormwater. Replace or repair leaking garbage dumpsters.
10. Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners.

Structural BMPs

1. Keep containers with dangerous waste or other potential pollutant liquids inside a building unless this is impracticable due to site constraints or Uniform Fire Code requirements.
2. Store containers in a designated impervious area that is covered, bermed, diked, or paved, in order to contain leaks and spills. Any secondary containment structures shall be sloped to drain into a dead-end sump for the collection of leaks and small spills.
3. For liquid wastes such as used oil, surround the containers with a secondary containment structure. The secondary containment structure must be of sufficient height to provide a volume of either: 10 percent of the total volume of all containers or 110 percent of the volume contained in the largest container, whichever is greater, or, if a single container, 110 percent of the volume of that container.
4. Place containers mounted for direct removal of a liquid chemical for use by employees inside a secondary containment structure as described above. Use a drip pan during liquid transfer.
5. For contaminated stormwater in the secondary containment structure, connect the sump outlet to a sanitary sewer, if approved by the local jurisdiction, or to appropriate treatment, such as an American Petroleum Institute (API) or Coalescing Plate (CP) oil/water separator, catch basin filter or other appropriate system. Equip the sump outlet with a valve to prevent the release of spilled or leaked liquids, especially flammables (compliance with Fire Codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated stormwater to treatment.
6. Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tanker truck or other appropriate vehicle for off-site treatment and/or disposal.

Pollutant Source Specific BMPs

6. Vehicle and Equipment Washing

Typical Activities	**Environmental Concerns**
Vehicles and equipment are typically washed on-site at maintenance facilities. When vehicle and equipment washing is conducted, it is essential that the washwater not be allowed to drain to the stormwater drainage system or watercourses.	Discharge of the following materials into the stormwater drainage system or watercourse: • Cleaning Agents • Non-Stormwater fluids • Sediment • Fuel • Vehicle Fluids • Metals
Pollutant Control Approach	
The preferred approach is to cover and/or contain the vehicle/equipment washing or conduct the washing inside a building or within a designated washing station to contain the washwater and keep it separate from stormwater.	

Operational BMPs

1. Vehicle and equipment washing areas should be inspected daily and cleaned as needed.
2. Approved safer alternative products should be used where practical and effective, such as phosphate-free biodegradable soaps and detergents.
3. Do not remove the original product label from cleaning containers as it contains important spill cleanup and disposal information. Use the entire product before disposing of the container.
4. Water usage should be minimized.
5. If possible, conduct vehicle/equipment washing off-site at a commercial washing facility in which the washing occurs in an enclosure and drains to the sanitary sewer.

Structural BMPs

1. Preferably, conduct vehicle/equipment washing in a building or enclosure constructed specifically for washing of vehicles and equipment, which drains to the sanitary sewer.
2. Alternatively, conduct outside washing operations in a designated wash area and:
3. Operate a closed system with wastewater recycling (like a floor drain discharge to a holding tank); or
    a. Discharge to a municipal sanitary sewer; or
    b. Obtain a groundwater discharge permit.
4. For additional information see the Washington State Department of Ecology document entitled "Vehicle and Equipment Washwater Discharges/Best Management Practices Manual", publication number 95-056.

Pollutant Source Specific BMPs

7. Vehicle and Equipment Fueling

Typical Activities

When vehicle and equipment fueling takes place, there is the potential for fuel to be leaked or spilled at the site. The procedures for vehicle and equipment fueling are designed to minimize contact between stormwater runoff and spilled fuel, oil or other leaked vehicle fluids at equipment fueling areas.

Pollutant Control Approach

Fueling stations must be constructed on an impervious concrete pad under a roof to keep out rainfall and stormwater run-on. A treatment BMP must be used for contaminated stormwater and wastewaters in the fueling containment area. These procedures should be used at all equipment fueling areas.

Environmental Concerns

Discharge of the following materials into the stormwater drainage system or watercourse:

- Fuel
- Vehicle Fluids

Operational BMPs

1. Prepare an emergency spill response plan and have a designated trained person(s) available either on site or on call at all times to promptly and properly implement the plan and immediately cleanup any spills. Keep suitable cleanup materials, such as dry adsorbent materials, on site to allow prompt cleanup of a spill.
2. Train employees on the proper use of fuel dispensers. Proper fueling and spill cleanup instructions shall be posted at fueling areas. Post signs in accordance with the Uniform Fire Code (UFC).
3. Make sure that the automatic shutoff valve on the fuel nozzle is functioning properly.
4. A person must be present at the fuel pump during fueling at all times.
5. Hosing down of leaks, drips and spills is prohibited.
6. Maintain clean fuel dispensing areas using dry cleanup methods.

Structural BMPs

1. The fueling pad must be paved with Portland cement concrete, or equivalent. If paved with asphalt, add a protective coating to create an impervious surface, inspect regularly, and street sweep quarterly at a minimum.
2. Stormwater collected on the fuel island containment pad must be conveyed to a sanitary sewer system, if approved by the sanitary authority; or to an approved treatment system such as an oil/water separator and a water quality treatment BMP. Discharges from the treatment

BMP to storm drains, surface water, or to the ground must not display ongoing or recurring visible sheen and must not contain greater than a significant amount of oil and grease.

3. The fueling island must have a roof or canopy to prevent the direct entry of precipitation onto the fueling area. The roof or canopy should, at a minimum, cover the fueling area (within the grade break or fuel dispensing area) and preferably extend several additional feet to reduce the introduction of windblown rain.
4. The transfer of fuel from the delivery tank truck to the fuel storage tank must be performed in an impervious contained area and appropriate overflow protection must be used. Alternatively, cover nearby storm drains during the filling process and use drip pans under all hose connections.

Pollutant Source Specific BMPs

8. Vehicle and Equipment maintenance and Repair

Typical Activities	**Environmental Concerns**
Vehicle and equipment maintenance and repair may include vehicle fluid removal, engine and parts cleaning, body repair and painting.	Discharge of the following materials into the stormwater drainage system or watercourse: • Fuel • Vehicle Fluids • Used Oil Filters • Lead-Acid Batteries • Paint Products • Metal
Pollutant Control Approach	
Reduce the discharge of potential pollutants from areas in which vehicle maintenance and repair activities are conducted by employing controls which minimize contact between stormwater and the activity areas and products used in each activity.	

Operational BMPs

1. Outdoor vehicle and equipment maintenance shall not be performed during rain events or prior to predicted rain events unless required by emergency conditions.
2. Maintenance activity areas should be kept clean, well organized and equipped with spill cleanup supplies.
3. Inspect all incoming vehicles, parts, and equipment stored temporarily outside for leaks.
4. Use absorbent pads, drip pans or absorbent material as appropriate. If rags and absorbents are saturated or contaminated with high concentrations of regulated hazardous materials, dispose of rags and absorbents as hazardous waste.

Structural BMPs

1. Use drip pans or containers under parts or vehicles that drip or are likely to drip.
2. Remove batteries and liquids from vehicles and equipment in designated areas which are designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system.
3. Empty oil and fuel filters before disposal.
4. Recycle greases, used oil, oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic fluids, and transmission fluids.
5. Transfer removed vehicle and equipment fluids from drip pans or other temporary containers into recycling storage tanks or drums by the end of each shift (daily).
6. Do not mix dissimilar or incompatible waste liquids stored for recycling.
7. Ensure safeguards such as oil shut-off valves are installed and maintained on recovery equipment.

Pollutant Source Specific BMPs

9. Vehicle and Equipment Parking and Storage

Typical Activities	**Environmental Concerns**
Vehicles and equipment have the potential to leak or drip hazardous fluids. When they are parked or stored outside and are exposed to the elements (not parked under a cover), the fluids can be picked up by stormwater and carried to the storm sewer system.	Discharge of the following materials into the stormwater drainage system or watercourse: • Fuel • Metal • Vehicle Fluids • Lead-Acid Batteries
Pollutant Control Approach	
Provide impervious containment with berms, dikes, etc. and/or store under cover to prevent run-on and discharge of hazardous pollutants.	

Operational BMPs

1. Sweep parking lots, storage areas, and driveways regularly to collect dirt, waste, and debris. Do not hose down the areas to a stormwater conveyance system.
2. Use drip pans or containers under vehicles and equipment that drip or are likely to drip.
3. Remove liquids from vehicles that are retired for scrap.

Structural BMPs

1. Consider storing damaged vehicles inside a building or paved and bermed covered containment area until all liquids are removed.
2. Park/store all vehicles and equipment in a designated covered area.

Pollutant Source Specific BMPs

10. Vegetation Management

Typical Activities	**Environmental Concerns**
This method of landscaping and lawn vegetation management can include grading, soil transfer, vegetation removal, pesticide/herbicide and fertilizer applications, and watering. Lawn and vegetation management can also include control of objectionable weeds, insects, mold, bacteria and other pests with chemical pesticides and herbicides.	Discharge of the following materials into the stormwater drainage system or watercourse: • Fertilizer • Pesticides • Herbicides • Sediment
Pollutant Control Approach	
Control fertilizer and pesticide/herbicide applications, soil erosion, and site debris to prevent contamination of stormwater. Stormwater contaminants include toxic organic compounds, heavy metals, oils, sediment, coliform bacteria, fertilizers and pesticides.	

Operational BMPs

Pesticides, Herbicides, and Fertilizer (below called "Chemicals")

1. Choose the least toxic pesticide/herbicide available that is capable of reducing the infestation to acceptable levels. The pesticide/herbicide should readily degrade in the environment and/or have properties that strongly bind it to the soil. Any pest control method used should be conducted at the life stage when the pest is most vulnerable. Any method used should be site-specific and not used wholesale over a wide area.
2. Apply chemicals according to label directions. Under no conditions shall chemicals be applied in quantities that exceed manufacturer's instructions.
3. Mix chemicals and clean the application equipment in an area where accidental spills will not enter surface or ground waters, and will not contaminate the soil.
4. Store chemicals in enclosed areas or in covered impervious containment. Ensure that contaminated stormwater or spills/leaks of the chemicals are not discharged to storm drains. Do not hose down the paved areas to a storm drain or conveyance ditch.
5. Clean up any spilled chemicals and ensure that the contaminated waste materials are kept in designated covered and contained areas.
6. The chemical application equipment must be capable of immediate shutoff in the event of an emergency.
7. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

8. Do not spray chemicals within 100 feet of open waters including wetlands, ponds, and streams, sloughs and any drainage ditch or channel that leads to open water except when approved by Ecology or the <CITY/COUNTY>. All sensitive areas including wells, creeks and wetlands must be flagged prior to spraying.
9. Spray applications should only be conducted during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.
10. Rinse water from equipment cleaning and/or triple-rinsing of chemical containers should be used as product or recycled into product.

Pesticides

1. Develop and implement an Integrated Pest Management (IPM) plan and use pesticides only as a last resort.
2. Implement a pesticide-use plan and include at a minimum: a list of selected pesticides and their specific uses; brands, formulations, application methods and quantities to be used; equipment use and maintenance procedures; safety, storage, and disposal methods; and monitoring, record keeping, and public notice procedures.
3. Consider alternatives to the use of pesticides such as covering or harvesting weeds, substitute vegetative growth, and manual weed control/moss removal.

Turf Management

1. Consider the use of soil amendments, such as compost, that are known to control some common diseases in plants.
2. Use at least an eight-inch "topsoil" layer with at least 8 percent organic matter to provide a sufficient vegetation-growing medium.
3. Aerate lawns regularly in areas of heavy use where the soil tends to become compacted. Aeration should be conducted while the grasses in the lawn are growing most vigorously. Remove layers of thatch greater than ¾-inch deep.
4. Set the mowing height at the highest acceptable level and mow at times and intervals designed to minimize stress on the turf. Generally mowing only 1/3 of the grass blade height will prevent stressing the turf.
5. Irrigate less often, but for longer frequency to develop a strong root system within the grass.
6. Turfgrass is most responsive to nitrogen fertilization, followed by potassium and phosphorus.
7. Fertilizers should be applied in amounts appropriate for the target vegetation and at the time of year that minimizes losses to surface and ground waters. Do not fertilize during a drought or when the soil is dry. Alternatively, do not apply fertilizers within three days prior to predicted rainfall. The longer the period between fertilizer application and either rainfall or irrigation, the less fertilizer runoff occurs.
8. Use slow release fertilizers such as methylene urea, IDBU, or resin coated fertilizers when appropriate, generally in the spring. Use of slow release fertilizers is especially important in areas with sandy or gravelly soils.

9. Time the fertilizer application to periods of maximum plant uptake. Generally fall and spring applications are recommended, although WSU turf specialists recommend four fertilizer applications per year.
10. Properly trained persons should apply all fertilizers. Fertilizers should not be applied to grass swales, filter strips, or buffer areas that drain to sensitive water bodies unless approved by the <CITY/COUNTY>.

Appendix F—Spill Response Plan

Chelan County
Spill Response Plan

EMERGENCY

In the event of a hazardous material or waste release, fire, or emergency that is a danger to personnel health and safety immediately call:

911

NON-EMERGENCY

In the event of a non-emergency spill or release to water, soil, or air call:

National Response Center: **1-800-424-8802**
AND
Washington State Emergency Management Division: **1-800-258-5990 OR 1-800-OILS-911**
AND
Washington State Department of Ecology Eastern Region: **1-509-329-3400**

Be prepared to provide the following information (see Spill Reporting Rorm):

- Where is the spill?
- What spilled?
- How much spilled?
- How concentrated is the spilled material?
- Who spilled the material?
- Is anyone cleaning up the spill?
- Are there resource damages (e.g. dead fish or oiled birds)?
- Who is reporting the spill?
- How can you be reached?

Required Spill Control and Reporting BMPs:

- Stop, contain, and clean up all spills immediately upon discovery. Do not flush absorbent materials or other spill cleanup materials to a storm drain or to surface water. Collect the contaminated absorbent material as a solid and place in appropriate disposal containers.
- If any spill has reached, or may reach, a sanitary or a storm sewer, groundwater, or surface water, notify Ecology and the local sewer authority immediately (not to exceed one hour). Take reasonable steps to minimize any adverse impacts to waters of the state and to correct the problem. Follow up with written documentation covering the event within thirty (30) days unless otherwise directed by Ecology.
- Place and maintain emergency spill containment and cleanup kit(s) at outside areas where there is a potential for fluid spills. These kits should be appropriate for the materials being handled and the size of the potential spill, and readily accessible to personnel responsible for spill response.
- Oil includes the following: oil, gasoline, or diesel fuel that causes a violation of the state of Washington's Water Quality Standards, or, that causes a film or sheen upon or discoloration of the waters of the state or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.
- In the event of a spill or release to water, soil, or air utilize the Spill Reporting Form to document information.

Spill Reporting Form

In the event of a spill or release to water, soil, or air collect the following information:

Section 1: Reporting Party	**Section 2: Responsible Party**
Name:	Name:
Phone Number:	Phone Number:
Organization:	Organization:

Section 3: Incident Information			
Incident Description:			
Incident Date:	Time of Discovery:	Cause:	
Address:	City:	State:	County:
Material Involved:	Amount Released:		
Water Body Affected:	Sheen Length:		
Sheen Width:	Sheen Color: (rainbow, silver, grey, etc.)		
Odor Description:	Weather Conditions:		

Section 4: Other
Actions Taken:

Appendix C
Private Facility Inspection and Enforcement Protocol

Private Facility Inspection and Enforcement Protocol

Chelan County

The Eastern Washington Phase II Municipal Stormwater Permit (Permit) requires that the Chelan County protect water quality and reduce the discharge of pollutants into receiving waters. As part of the Permit, Chelan County must reduce pollutant discharges from stormwater management facilities through implementation of the Construction and Post-Construction Resolution codified as Chelan County Code (CCC) Chapter 13.18 and the Operations and Maintenance Plan completed in February 2011 and updated annually.

This protocol outlines county's procedures for ensuring private stormwater facilities are maintained according to Chelan County standards. The facilities that may be impacted include privately owned and maintained ponds, tanks, vaults, swales and other stormwater management facilities that drain to the public municipal separate storm sewer system (MS4). The MS4 includes the public storm sewer pipe system, as well as ditches, creeks, and rivers.

Transfer of Ownership

Chelan County may assume ownership of privately-owned facilities where there is a regional benefit to the utility and if certain conditions stated in the CCC Chapter 13.18 have been met.

Inspection and Enforcement

Chelan County Code Chapter 13.18, Construction and Post-Construction Stormwater Program, states that all privately-owned stormwater facilities that discharge to the public stormwater collection and conveyance system (including pipes, ditches, creeks, and rivers) shall be subject to inspection by the county. These facilities must be maintained in accordance with the latest revised version of the Department of Ecology's *Stormwater Management Manual for Eastern Washington* and county standards. The following protocol describes the county's procedures for inspecting and enforcing maintenance standards for private facilities.

Overview: Owners of private stormwater facilities assume the responsibility of maintaining their facilities in a manner that prevents stormwater pollution and maintains the original function of the facility. Maintenance activities include annual inspections, record keeping, and reporting.

Chelan County's inspection program includes the following procedures:

- The private facility inspection program is the responsibility of the County Engineer or appointed representative.
- Chelan County maintains a map and database of private facilities that discharge to the county's stormwater conveyance system.
- Beginning in 2016, Permit required inspections will occur and Chelan County will send a reminder letter to all affected facility owners in late winter or early spring of each year. The letter includes a required completion date for facility inspections, instructions for completing an inspection, and the applicable inspection checklist from Appendix A of the O&M Plan.
- Private facilities that are to be inspected, are to be by a qualified third party hired by the facility owner. Identified maintenance activities must be completed prior to November 1.
- The Public Works Department Stormwater Program Manager will review all inspection and maintenance reports and enter the information in the private facility database. Inspection and maintenance records will be maintained for at least five (5) years.
- Chelan County will send a reminder letter to all private facility owners that have not returned an inspection report by October 1st. Owners that fail to meet the November 1st deadline will be subject to enforcement action under CCC Chapter 13.16.
- Spot-checks may be performed to verify inspections.