

City of West Richland

**Stormwater Pollution
Prevention**

Operations and Maintenance Plan



City of West Richland

3100 Belmont Blvd., Ste 102

West Richland, WA 99353

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Acknowledgements

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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.
- Continuous Deflection System (CDS) Units** A drainage structure use to collect and provide pretreatment for stormwater runoff as approved and defined by the Department of Ecology under the Technology Assessment Protocol - Ecology (TAPE) program.
- 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.

Glossary

Continued

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 (NPDES)	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 July 17, 2019.
Pollutant	A waste material that pollutes wind, water, or soil. A non-stormwater discharge that enters the stormwater sewer system.
Receiving Waters	Any water body receiving stormwater runoff, including surface water, groundwater, and the stormwater sewer 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.

Glossary

Continued

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 Equivalent
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

Section I—Introduction

Purpose

The City of West Richland 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, West Richland is required to develop a municipal Operations and Maintenance (O&M) Plan to protect water quality and reduce the discharge of pollutants into receiving waters by February 16, 2011 and implement the plan by August 16, 2011. Receiving waters include surface waters, groundwater, and the municipal stormwater system.

This O&M Plan includes stormwater pollution prevention and good housekeeping practices that can be utilized during municipal maintenance activities in the following areas:

- Municipal Stormwater System,
- Roads, Streets, and Parking Lots,
- Vehicle Fleets,
- Municipal Buildings,
- Parks and Open Space, and
- Other Facilities and Activities.

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

O&M Plan Development

This Stormwater Pollution Prevention O&M Plan was prepared off a template funded by a Washington State Department of Ecology (Ecology) Grant. The inspection schedules, maintenance standards and Best Management Practices (BMPs) included in this plan is 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 can contain pollutants that may 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.

Section 1—Introduction

Continued

Table I-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 receiving waters. Section 3 also describes the maintenance of the City’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 the City. 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.



Section 2—Program Overview

Organization/Structure

The City of West Richland’s Stormwater Division of the Public Works Department is primarily responsible for the maintenance of the City’s stormwater infrastructure. This includes inspecting and cleaning stormwater lines, catch basins and manholes, clearing roadside ditches, and maintaining stormwater treatment and disposal facilities.

In addition, many divisions within the Public Works Department conduct municipal activities that have the potential to introduce pollutants into stormwater. To protect receiving waters from stormwater pollution, the following department divisions and activities are covered under this Stormwater Pollution Prevention O&M Plan:

- Streets
- Water
- Wastewater
- Stormwater
- Parks and Open Spaces
- Fleets & Facilities

Stormwater Infrastructure Inventory

The City completed a mapped inventory of the public stormwater infrastructure in 2008. A table and map of the publically operated stormwater system is included as Table 2-1 and Figure 2-1. The inventory is periodically updated as new structures and facilities are added to the system. As of January 2020, the City’s municipal stormwater system was comprised of approximately:

- 1902 catch basins and manholes
- **19.9 miles of stormwater pipe**
- 0.90 miles of conveyance ditches
- **607 drywells**
- **3.05 miles of percolation trenches**
- 20 stormwater management facilities (see Table 2-1). This includes the four stormwater retro-fit projects, which were funded by DOE.
- No outfalls

Section 2—Program Overview

Continued

Table 2-1 Summary of Stormwater Management Facilities			
Name/Number/Designator	Facility/ Function Type	Location/Address	Year Constructed
Kingview Basin	Grass Lined Retention Basin	South of Maple Ln. & Melinda Dr. Intersection	1979
Coyote Park Basin	Grass Lined Retention Basin	Westside of S. Highlands Blvd. @ Hummingbird Ln. Intersection	1979
Canal Basin	Grass Lined Retention Basin	NW Quadrant of Canal Dr. & Van Giesen (SR 224) Intersection	1993
Royalty Basin	Grass Lined Retention Basin	Behind The Plaza II Strip Mall Between Clark St. & Butte St.	1993
Dodge Basin	Grass Lined Retention Basin	Westside of S. 35 th Ave. Between Dodge St. & Van Giesen	1993
Bombing Range Basin	Grass Lined Retention Basin	Off Bombing Range Rd. Between Grouse Dr. & Rosencrans Rd.	1999
Harrington Ditches	Rock Lined Ditch	Along Harrington Road near the Intersection with Grosscup	2001
Cherry Hill Basin	Grass Lined Retention Basin	Eastside of S. 38 th Ave. Between Bing St. & Ironton Dr.	2002
Kirkwood Pond	Retention Pond	NE Quadrant of S. Highlands Blvd. & Keene Rd. Intersection	2004
Bombing Range Sports Complex Basin	Grass Lined Retention Basin	SE Quadrant of Bombing Range Rd. & North Lake Dr. Intersection	2005
Keene Roundabout Basin	Grass Lined Retention Basin	SE Quadrant of Keene Rd. & Bombing Range Rd. Intersection	2005
Kennedy Basin	Grass Lined Retention Basin	NW Quadrant of Keene Rd & Kennedy Rd. Intersection	2005
Morab Basin	Infiltration Swale	Off Morab St. East of Morab St. & Losino Ave. Intersection	2006
Desert Glade Pond	Evaporation Pond	North of Keene Rd. Between Watkins Way & West Lattin Rd.	2006
Collins Heights Basin	Grass Lined Retention Basin	At the west end of Collins Heights Subdivision off Northview Loop	2011
Bombing Range Road Upper Site CMP System	Underground Detention Facility	Along Bombing Range Road between S. 46th Ave. and S. 47th Ave.	2014
Bombing Range Road Lower Site CMP System	Underground Retention Facility	Along Austin Drive (Lot 28 of Canal Heights) just east of Bombing Range Road	2014
Fern Loop Trenches Retro-fit	Percolation Trenches	Luanne Estates Subdivision	2015
62 nd Ave Stormwater Retro-fit	CDS Units and Drywells	62 nd Ave	2016
Ironton Drive Stormwater Retro-fit	Percolation Trenches	Ironton Drive (45th Ave to S. 38th Ave)	2019

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

Facilities, Equipment, and Storage Areas

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

- City Campus: (Community Development/Public Works, Administration, Library and Police Services)
- City Maintenance Facility
- Senior Center
- Parks and Open Space Properties
- Parking Lots > 5000sf
- City Wells, Pump Houses and Reservoirs
- Wastewater Treatment Plant



Contracted Activities

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

- Major Tree Trimming/Removal
- Roof Repairs/Painting
- Janitorial Services
- Crack Sealing
- Street Overlays

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

Section 2—Program Overview

Continued

Insert Figure 2-1 Map of Stormwater System, including:

- Pipes
- Ditches
- Catch Basins and Manholes
- Drywells
- Stormwater Management Facilities
- Outfalls

Insert Figure 2-2 Map of Municipal Facilities, including:

- Municipal buildings
- Municipal parking lots > 5,000 sf
- Vehicle, equipment, and material storage yards
- Parks and open space properties
- Other (treatment plants, well sites, etc)

Section 3—Stormwater Collection and Conveyance System

Section 3—Stormwater Collection and Conveyance System

Overview

The Stormwater Division of the Public Works Department is responsible for maintenance of the stormwater collection system, including catch basins, CDS units, 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
- Stormwater 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 City’s stormwater facilities to check system performance and identify maintenance needs. Stormwater facility inspections will be performed by the Maintenance Operations Supervisor – Stormwater, or his/her designee.

Section 3—Stormwater Collection and Conveyance System

Continued

Inspection Schedule

Table 3-1 shows the inspection frequency goals for each type of stormwater management facility. The goal for most stormwater management facilities will be inspections every one to five years. The goal for drywells and other UICs will be inspected every one to three years. 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 one to five years on a rotating schedule.

Table 3-1 Stormwater Facility Inspection Frequencies Goals		
Facility Type	Inspection Frequency Goal	Timing
Management Facilities		
Oil Water Separators	Every 1 to 3 years	Spring
Drywells	Every 1 to 3 years	Spring - Fall
Infiltration Basins and Trenches	Every 1 to 3 years	Spring - Fall
Treatment Swales	Every 1 to 3 years	Spring - Fall
Ponds (Detention, Water Quality, Evaporation, Infiltration)	Every 1 to 3 years	Summer
Underground CMP Systems	Every 1 to 3 years	Spring - Fall
Continuous Deflection Systems (CDS)	Every 1 to 3 years	Spring - Fall
Conveyance System		
Catch Basins: (High Priority Areas)	Annually	Spring - Fall
1/5 of Low Priority Areas	Every 1 to 5 years	Spring - Fall
1/5 of Low Priority Areas	Every 1 to 5 years	Spring - Fall
1/5 of Low Priority Areas	Every 1 to 5 years	Spring - Fall
1/5 of Low Priority Areas	Every 1 to 5 years	Spring - Fall
1/5 of Low Priority Areas	Every 1 to 5 years	Spring - Fall
Roadside Ditches	Every 1 to 3 years	Year Round
Culverts	Every 1 to 3 years	Year Round

Section 3—Stormwater Collection and Conveyance System

Continued

Inspection Activities

During inspections, field inspectors should utilize the inspection checklists in Appendix A to document the condition of each facility and identify any required maintenance activities. Any identified maintenance needs should be reported to the City's Maintenance Operations Supervisor—Stormwater 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 City's inventory map. Field inspectors should immediately report any spills or illicit discharge concerns to the City's Operations Supervisor—Stormwater.

All facilities are to be inspected and cleaned per the manufactures recommendations and Maintenance Guide. This includes all CDS units.

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 required maintenance standards for each type of stormwater management facility. Field inspectors should use the checklists during regular inspection to indicate when cleaning or repairs are needed. The Phase II Permit then requires that the City to 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 City 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 the City meet the permit requirements.

Section 3—Stormwater Collection and Conveyance System

Continued

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 stormwater 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, manholes and roadside ditches on a regular maintenance schedule, or when needed due to accumulated sediment and debris.
- Test and dispose of sediment and debris according to the Waste Disposal Protocol in Appendix B.
- Conduct ditch cleaning during low water periods, minimizing the disturbance of existing vegetation. If vegetation is removed during ditch cleaning, the ditch side slopes should be seeded and mulched as soon as possible after cleaning.
- Develop a “hot spot” list of frequent flooding locations. Conduct spot checks of those locations following major precipitation events, exceeding the 10-year precipitation value from the Eastern Washington Stormwater Manual isopleth maps for any 24 hour period.
- Implement the City’s Illicit Discharge Detection and Elimination Program to regularly inspect outfalls for evidence of unreported spills, illicit connections, or illegal dumping.
- Register all UIC wells with Ecology. Required information includes: operator/owner information, site location (latitude and longitude), BMPs used to protect groundwater quality, and a UIC well description.
- Complete a UIC well assessment, 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

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

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.
- When possible, coordinate catch basin cleanings shortly after municipal street sweepings.
- Test and dispose of sediment and debris according to the Waste Disposal Protocol in Appendix B.
- Develop a “hot spot” list of major stormwater retention facilities. Conduct spot checks of those locations following major precipitation events, exceeding the 10-year precipitation value from the Eastern Washington Stormwater Manual isopluvial maps for 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

- Mow vegetation in ponds and swales on a regular basis.
- If vegetation is removed during sediment removal, seed and mulch the area as soon as possible after cleaning.
- Use mechanical methods of vegetation removal rather than herbicides, when applicable.

Section 3—Stormwater Collection and Conveyance System

Continued

Minor Construction Activities

Sediment and erosion control measures should be considered 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.

Minor Construction BMPs

- Minimize land disturbance and exposed slope length.
- Whenever possible, avoid land disturbance prior to forecast storm events.
- Implement erosion control techniques or devices to stabilize disturbed areas. Use mulch or other erosion control measures when soils are exposed for extended periods of time.
- Install storm drain inlet protection on inlets 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 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 Permit for Stormwater Discharges Associated with Construction Activities* 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 must be disposed of according to the requirements of the Benton Franklin Health Department. 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 City's waste testing and disposal protocol is included in Appendix B.

Private Facilities

In addition to the stormwater system owned and operated by the City, there are also 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. The maintenance of these systems is the responsibility of the private owner. The City's goal is to have all privately owned stormwater facilities to be managed and maintained in accordance with city standards and requirements. The City does not allow any stormwater discharge into the City's stormwater collection and conveyance system or to local receiving waters. It is the responsibility of the facility owner to ensure that proper operation and maintenance is performed and the private facilities are functioning in a manner of which it was designed. All private facilities are required to be inspected by the property owner or the private property owner can hire a third party.

The City may enter into an agreement and assume ownership of privately owned facilities where there is a regional benefit to the utility under certain conditions. Details of the inspection requirements and enforcement protocol are described in Appendix C.

Recordkeeping

Recordkeeping is a condition of the Phase II Permit. The City's Maintenance Operations Supervisor – Stormwater, or his/her designee is responsible for keeping 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, 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. See Section 13 for additional information.

Section 3—Stormwater Collection and Conveyance System

Continued

- Catch basins cleaned each year,
- Amount of sediment collected

Hard copy reports and documents should be stored at the City’s Public Works Building and scanned for electronic storage.

In addition, material or liquid spills should be promptly reported to the City’s Maintenance Operations Supervisor – Stormwater and all paperwork related to the spill and cleanup activities should be maintained at the City’s Public Works Building.

Section 4—Roads, Streets and Parking Lots

Section 4—Roads, Streets and Parking Lots

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.

The Public Works Department is responsible for implementing this O&M Plan during maintenance of the City's roads and arterials. The Public Works Department is also responsible for implementing this O&M Plan during maintenance of all municipal parking lots over 5,000 square feet. This includes:

- City Campus Parking Lots
- Bombing Range Sports Complex Parking Lots
- Flat Top Park / Park-n-Ride Parking Lots
- Waste Water Treatment Plant Parking Lot
- Senior Center Parking Lot



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, streets, and parking lots. The City's goal is to prevent the discharge of pollutants to the stormwater system and protect water quality to the maximum extent practicable given fiscal constraints. To meet that goal, the City has identified BMPs related to each of the following activities:

- Street Sweeping
- Winter Activities
- Street Repair and Maintenance

Section 4—Roads, Streets and Parking Lots

Continued

- Vegetation Management
- Recordkeeping

In general, the focus on selecting road, streets, 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

The City 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 City's street sweeping schedule was developed to produce the most cost-effective reduction of pollutants, taking into account pollutant loads and weather patterns. High priority areas that are subject to winter sanding will be swept more frequently as needed. Table 4-2 shows the proposed street sweeping schedule. In general, the City's goal is to sweep all principal and minor arterials at least twice a year and all residential streets annually.

Section 4—Roads, Streets and Parking Lots

Continued

Table 4-2 Street Sweeping Schedule		
Location/Neighborhood	Sweeping Frequency Goal	Timing
Management Facilities		
<u>Principal Arterials</u> : Van Giesen (SR 224), Keene Rd.	Bi-Annually	During Non-Freezing Weather
<u>Minor Arterials</u> : Bombing Range Rd., Paradise Way, Grosscup/Harrington Rd., Belmont Blvd., Ruppert Rd., Kennedy Rd., and Dallas Rd.	Bi-Annually	During Non-Freezing Weather
<u>Collectors</u> : S. Highlands Blvd., Holly Way, N. 62 nd Ave., Kona Dr., Watkins Way, Mt. Adams View Dr., and Fallon Dr.	Annually	During Non-Freezing Weather
<u>All Other Residential</u>	Annually	During Non-Freezing Weather

Street Sweeping BMPs

- Maintain sweeping equipment in good working condition.
- Properly store collected material until it can be disposed of following the City’s Waste Disposal Protocol in Appendix B.
- Coordinate street sweeping schedules to coincide with important pollution prevention events such as the end of curbside 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 (i.e. Veterans Day Parade, Earth Day)
- Train operator 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.



Section 4—Roads, Streets and Parking Lots

Continued

- 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. However, high traffic loads or spills can lead to waste that requires special handling and disposal. Waste generated from street sweeping must be disposed of according to the requirements of Benton Franklin Health Department. In some cases, the waste material must be tested to determine the proper disposal method. The City's waste testing and disposal protocol is included in Appendix B.

Winter Activities

The City 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 City uses the following materials:
 - Liquid Magnesium Chloride
 - ¼" Minus Sand
 - Calcium Chloride
 - 10:1 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 Plowing

- Whenever possible, avoid covering inlets of the stormwater system during plowing, so snowmelt can drain.

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.
- Place temporary plastic sheeting over uncovered stockpiles.

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.
- Prevent paving materials, paint, pavement markings, and wastes from entering the storm drainage system.
- When placing chip seals, limit spreading aggregate to the sealed surface and sweep up excess aggregate once cured and each day thereafter until aggregate loss is insignificant.

Section 4—Roads, Streets and Parking Lots

Continued

- 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 striping, use water-based paints or thermoplastics rather than solvent-based materials.
- When possible, use portable drip trays under equipment to catch spills.
- Use dry cutting techniques with proper dust control when saw cutting and sweep or vacuum up residue. If wet cutting techniques are required, use as little cooling water as possible and switch the water off when the saw is not in use. Use downstream inlet protection to keep cutting waste out of the stormwater collection and conveyance system.
- Properly contain and dispose of unused paint, cleaning materials, and debris following repair activities.

Minor Construction BMPs

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

- Minimize land disturbance and exposed slope length.
- Whenever possible, avoid land disturbance prior to forecast storm events.
- Implement erosion control techniques or devices to stabilize disturbed areas. Use mulch or other erosion control measures when soils are exposed for extended periods of time.
- Install storm drain inlet protection on inlets 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 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 Permit for Stormwater Discharges Associated with Construction Activities* from Ecology for any project that disturbs one or more acres and has the potential to discharge to a water of the state.

For major 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.

Landscaping and Irrigation 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.
- Dispose of lawn clippings, leaves, branches, and other vegetative material at the local landfill; landscape material should not be disposed of in 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 the City's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Pesticide and Herbicide BMPs

- Follow federal, state and city policies and guidelines regarding landscape management decisions. Use integrated best management practices that consider cultural, biological, mechanical, or engineering controls before chemical controls.
- Use mechanical methods of vegetation removal rather than herbicides when practical. Herbicides should be limited to curbs and gutters per manufacturers recommendations.
- 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 forecasted.
- 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.

Section 4—Roads, Streets and Parking Lots

Continued

- 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 City’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 City’s Maintenance Operations Supervisor – Stormwater is 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 City’s Maintenance Operations Supervisor – Stormwater and all paperwork related to the spill and cleanup activities should be maintained at the City’s Public Works Department.

The following records may also assist the City’s Maintenance Operations Supervisor-Stormwater in planning for future maintenance activities:

- 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.

Hard copy reports and documents should be stored at the City’s Public Works Department and scanned for electronic storage.

Section 5—Vehicle Fleets

Overview

The City’s Maintenance Operations Supervisor - Fleet is responsible for maintaining City vehicles and equipment in proper working order. Most vehicle maintenance is conducted at local nearby automotive shops, (i.e. Dean’s, or Quick Lube). 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 system.

Standards and BMP Selection

The Phase II Permit does not include specific maintenance standards or BMPs related to the maintenance of vehicle fleets. The City’s goal 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 City 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 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. The City’s primary vehicle storage area is located at the City’s Maintenance Facility. Passenger vehicles and work trucks are also stored overnight in the City Campus parking lot and the Waste Water Treatment Plant parking lot. In



Section 5—Vehicle Fleets

Continued

addition to the following BMPs, the vehicle storage areas 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 sewer 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 the City's SWPPP.

Vehicle Fueling

The City operates a diesel fueling tank at the City's Maintenance Facility. The following BMPs should be implemented to minimize contact between stormwater runoff and spilled fuel, oil or other leaked vehicle fluids at equipment fueling areas.

Operational BMPs

- Fuel tanks and fuel dispensers shall have current permits with the appropriate agencies, when required.
- 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 the City may include vehicle fluid removal, engine and parts cleaning, body repair and painting. If conducted outdoors, all of these activities have the potential to discharge pollutants into the stormwater system.

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 storm events or prior to forecasted storm 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 the City's SWPPP.

Vehicle Washing

In accordance with the City's Illicit Discharge Detection and Elimination Municipal Code Chapter 13.82, (Ord. 24-09 § 1, 2009) 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. The City primarily washes vehicles at The Wash Stop, an enclosed commercial wash site for public use located near City Campus.



Operational BMPs

- Vehicle and equipment washing areas should be inspected regularly and cleaned as needed.

Section 5—Vehicle Fleets

Continued

- Mark the wash area.
- 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.
- Conduct vehicle/equipment washing off-site at a commercial washing facility in which the washing occurs in an enclosure that recycles wash water.

Structural BMPs

- If vehicle washing is to be conducted onsite, construct a designated vehicle wash location, including a covered wash pad, containment berms, and a drain connected to the sanitary sewer system.

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 City's Maintenance Operations Supervisor – Stormwater and all paperwork related to the spill and cleanup activities should be maintained at the City's Public Works Department.

Section 6—Municipal Buildings

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 City's Maintenance Operations Supervisor – Facilities is responsible for the maintenance of the City's municipal buildings including:

- City Administration Building
- Community Development/Public Works Building
- Police Services Building
- City Maintenance Facility
- Library
- Senior Center
- Park Restroom Facilities
- Waste Water Treatment Plant (Maintenance Operations Supervisor - Sewer)
- Lift Station Facilities (Maintenance Operations Supervisor - Sewer)
- Well and Pump House Facilities (Maintenance Operations Supervisor - Water)

Standards and BMP Selection

The Phase II Permit does not include specific maintenance standards or BMPs related to the maintenance of municipal buildings. The City's goal 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 City 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

Section 6—Municipal Buildings

Continued

BMPs will help prevent the discharge of pollutants into receiving waters and help reduce the cost of maintaining the stormwater collection 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). 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 the City's Maintenance Operations Supervisor – Stormwater.

- 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 come in contact.

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 City's Maintenance Operations Supervisor – Stormwater.
- 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 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.

Structural BMPs

- Enclose and/or contain all work while using a spray gun or conducting sand blasting in compliance with applicable air pollution control, Occupational Safety and Health Administration, and Washington Industrial Safety and Health Act.

Vegetation Management

Vegetation management includes maintaining landscaping for landscaped areas associated with municipal buildings and controlling noxious weeds, pests, and unwanted vegetation

Section 6—Municipal Buildings

Continued

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 at the local landfill; landscape material should not be 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.
- 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 the City's SWPPP. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Pesticide and Herbicide BMPs

- Follow federal, state, and city policies and guidelines regarding landscape management decisions. Use integrated best management practices that consider cultural, biological, mechanical, or engineering controls before chemical controls.
- Use mechanical methods of vegetation removal rather than herbicides when practical. Herbicides should be limited to curbs and gutters per manufacturers' recommendations.
- 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 forecasted.
- 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 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 City’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 anti-icing, deicing, 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 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

- Whenever possible, limit the use of chemical deicers. When chemical application is needed, select products with the least adverse environmental impact while still providing for public safety. The City uses the following materials:
 - Magnesium Chloride
 - Calcium Chloride
 - Ice Melt
 - Sand
- Apply sand and deicer 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 system so snow melt can drain.
- Snow removed from sidewalks and municipal parking lots shall be deposited on adjacent landscaped, within a seldom used parking stall.
- 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.

Section 6—Municipal Buildings

Continued

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 collection system to the City's Maintenance Operations Supervisor – Stormwater.

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 system. Material or liquid spills should be promptly reported to the City's Maintenance Operations Supervisor – Stormwater and all paperwork related to the spill and cleanup activities should be maintained at the City's Public Works Department.

Section 7—Parks and Open Space

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.

The Public Works Department is responsible for the maintenance of all City Park and open spaced properties as shown in Figure 2-2.

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). The City's goal 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 City has identified BMPs related to each of the following activities:

- Vegetation Management
- Trash and Debris
- Minor Construction Projects
- Buildings and Structures
- Stormwater Facilities
- 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 system, and to reduce the amount of sediment and debris that is washed into the stormwater collection system. Implementing these BMPs will help prevent the discharge of pollutants into receiving waters and help reduce the cost of maintaining the stormwater collection system.

Section 7—Parks and Open Space

Continued

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.
- Use mulching type mowers or dispose of lawn clippings at the local landfill.
- Dispose of vegetated waste (clippings, leaves, branches) at the local landfill; 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.
- Limit application of 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 City’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.
- Irrigate in the morning or evening to conserve water.

Pesticide and Herbicide BMPs

- Follow federal, state, and City policies and guidelines regarding landscape management decisions. Use integrated best management practices that consider cultural, biological, mechanical, or engineering controls before chemical controls.

- Use mechanical methods of vegetation removal rather than herbicides when practical. Herbicide use should be limited to curbs and gutters per manufacturer recommendations.
- 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 forecasted.
- 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 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 City'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 City's parks. Prompt trash removal also helps prevent garbage and leachate from entering the stormwater collection system and polluting receiving waters.

Trash and Debris Removal BMPs

- Cover garbage containers to prevent contact with precipitation. When possible, store garbage containers beneath covered structures.
- 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.

Section 7—Parks and Open Space

Continued

- Properly dispose of hazardous waste, gasoline, oil, and other chemical liquids. Never dispose of hazardous waste in park dumpsters or garbage containers.
- Consider the installation of pet waste kiosks, providing signage and collection bags, to encourage responsible pet waste clean-up.

Minor Construction Activities

The following BMPs apply when small construction or repair activities include grading, soil transfer, or vegetation removal.

Minor Construction BMPs

- Minimize land disturbance and exposed slope length.
- Whenever possible, avoid land disturbance prior to forecast storm events.
- 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 inlets 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 Permit for Stormwater Discharges Associated with Construction Activities* 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 add new impervious surfaces, modify components of the stormwater system, disturb large areas of soil or include any in-water work, follow the construction activity guidelines in Section 8.

Buildings and Structures

The building facilities in all City Parks shall be maintained according to the BMPs in Section 6 of this O&M Plan.

Stormwater Facilities

The Public Works Department is responsible for the maintenance of stormwater management



facilities in South Highlands Park, Coyote Park and Bombing Range Sports Complex. Stormwater management facilities should be inspected and maintained according to the schedules and maintenance standards in Section 3.

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 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 collection 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

Recordkeeping is a condition of the Phase II Permit. The City's Maintenance Operations Supervisor – Stormwater is responsible for keeping records of stormwater system maintenance activities within South Highlands Park, Coyote Park and Bombing Range Sports Complex. 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 management facilities;
- Records of spot checks performed following major storm events, and
- Repairs or maintenance actions completed as a result of inspections and spot checks.

The recordkeeping required by the Phase II Permit is limited to documenting any liquid or material spills that could carry pollutants into the stormwater system. Material or liquid spills should be promptly reported to the City's Maintenance Operations Supervisor –

Section 7—Parks and Open Space

Continued

Stormwater and all paperwork related to the spill and cleanup activities should be maintained at the City's Public Works Department.

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 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 *General NPDES Permit for Stormwater Discharges Associated with Construction Activities* (Construction Permit). Refer to Ecology's website or regional office for additional information.

- Clearing, grading and/or excavation (including forest practices) 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 stormwater 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 permit should refer to Ecology's website for information regarding the required erosion and sediment control practices.

Section 9—Industrial Activities

Section 9—Industrial Activities

The Department of Ecology issues the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* (Industrial 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. The City of West Richland currently does not have any activities, or facilities covered under the Industrial Permit.

In addition to the facility listed above, 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.

Section 9—Industrial Activities

Continued

- 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 City properties are covered by the SWPPP which is included in Appendix D:

- City Maintenance Facility
- City Campus Facilities
- Wastewater Treatment Plant

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

Section 11—Flood Management Projects

Section 11—Flood Management Projects

Overview

The City currently does not own or operate any flood management facilities, but reserves this section in the event the City should construct, or acquire such a facility.

Section 12—Other Facilities and Activities

Section 12—Other Facilities and Activities

The City also conducts several other maintenance activities that have the potential to impact stormwater runoff. This section covers the following municipal activities:

- Water Utility System
- Wastewater Collection System

The BMPs associated with each activity are listed in the individual sections below.

Water Utility System

The Public Works Water and Sewer Divisions are responsible for operation and maintenance of a water utility system and a wastewater collection system. Maintenance and repairs to the water utility and wastewater collection systems has the potential to impact receiving waters.

Water Line & Hydrant Flushing

The Phase II Permit allows planned discharges from potable water sources into the stormwater collection and conveyance system under certain conditions. These conditions apply to potable water line flushing, fire hydrant system flushing, and pipeline hydrostatic testing.



- The velocity and volume of discharge must be controlled so as not to mobilize sediment deposits or cause soil erosion around the storm drain system.
- Discharges must be de-chlorinated to a concentration of 1.0 ppm or less and be pH-adjusted. Excessive chlorine concentrations may kill nitrifying bacteria and other aquatic life necessary for sustenance for the aquatic food chain. At the same time, overuse of common chemicals used for the de-chlorination process has the potential to deplete dissolved oxygen or alter the pH of receiving waters.

The chlorine field test kit is kept at the City's Maintenance Facility. Every field personnel responsible for dechlorination activities shall be trained in proper use of the test kit. When water line flushing is likely to drain into the stormwater collection and conveyance system, the preferred dechlorination method is:

Section 12—Other Facilities and Activities

Continued

- Using a de-chlorinating diffuser and chemical tablet chamber,
- Laying a de-chlorination mat or strip across the flow path and over the nearby storm drains to diffuse sodium sulfite into the chlorinated flow prior to discharge into the stormwater collection and conveyance system.
- Placing a catch basin insert at the point of discharge into the stormwater system and allowing the water to flow over de-chlorination tablets placed in the insert.

Minor Construction Activities

Sediment and erosion control measures should be implemented when water or wastewater repair or replacement projects include grading, soil transfer, or vegetation removal. The following BMPs apply when making structural repairs or replacing components of the water or wastewater utility infrastructure:

- Minimize land disturbance and exposed slope length.
- Whenever possible, avoid land disturbance prior to forecast storm events.
- 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 inlets 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 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 Permit for Stormwater Discharges Associated with Construction Activities* 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 collection and conveyance system components or the replacement of culverts in streams or other perennial water bodies, follow the construction activity guidelines in Section 8.

Wastewater Collection System

The City operates and maintains approximately 46 miles of sewer lines as well as 5 sewer lift stations. Maintenance and repairs to the sewer collection system has the potential to impact receiving waters.

Collection System Maintenance Activities

The primary goal of collection system maintenance is to insure that waste is conveyed to the wastewater treatment plant without overflows or back-ups. When a sanitary sewer overflow occurs, there is a potential for raw sewage to enter the stormwater collection system. To prevent this situation the city implements several BMPs:

- The City has a Collection System Maintenance Program that addresses operation and maintenance activities, including procedures and recordkeeping.
- Sewer lift stations are maintained and cleaned regularly using high pressure water and the vacor truck. The lift stations are also equipped with alarms to notify wastewater staff of any equipment malfunctions.
- The City videos all mains throughout the system on a routine basis.
- Public outreach brochures and newsletters are used to educate the public on what can and cannot be flushed in the sewer system. Some products cause blockage in sewer mains as well as problems at the lift stations.

Wastewater Treatment Plant

The wastewater treatment plant is located at 801 North 46th Avenue. Landscaping and building maintenance is conducted by wastewater treatment plant staff, or other public works staff as needed. BMPs from Section 6 Municipal Buildings and Section 7 Parks and Open Spaces are applicable at the wastewater treatment plant.

Section 13—Permit Coordination and Recordkeeping

Section 13—Permit Coordination 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 included in this plan were already being implemented by city staff. However, the Public Works Department is responsible for implementing the new activities associated with the stormwater collection and conveyance system inspections and maintenance requirements outlined in Section 3 and the street sweeping practices and winter activities to comply with the BMPs included in Section 4.

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 system. Beyond that, the Permit is prescriptive when it comes to implementing BMPs for other City 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 Public Works Director; and
- The maintenance frequencies needed to prevent costly repairs of the stormwater 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.

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 City’s operations and maintenance activities. Implementing this O&M Plan will assist the City with compliance with the following:

Section 13—Permit Coordination and Recordkeeping

Continued

Illicit Discharge Detection and Elimination

Maintenance crews and field inspectors play a key role in verifying and updating information in the City’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 City’s Maintenance Operations Supervisor – Stormwater and all paperwork related to the spill and cleanup activities should be maintained at the City’s 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 system. The inspection checklists in Appendix A are a key component to the City’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

The City’s Maintenance Operations Supervisor – Stormwater is also responsible for keeping records of crew activities for the overall maintenance program.

Appendix A
Stormwater Facility Inspection Checklists

Inspection and Maintenance Checklist Stormwater System

Date of Inspection: _____ Inspection Zone: _____ Inspection Type (circle): Routine / Suspect / Repair

Field Inspector(s): _____

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

Facility Type (CB, Pond, etc)	Facility Location Information			Sediment Build-up		Maintenance Needed		Maintenance Follow-up	
	Name (? - #)	Dir. (→)	Street Name	Depth (in)	Removal? (Yes / No)	Codes	Description of Action	Date Completed	Initials

Maintenance Codes:

- | | | |
|----------------------------|------------------------|-------------------------------|
| 1 – Accumulated Sediment | 5 – Impeded Water Flow | 9 – Damaged Pipes |
| 2 – Trash & Debris | 6 – Erosion | 10 – Mosquito/Vector Breeding |
| 3 – Vegetation Concerns | 7 – Structural Repairs | 11 – Other |
| 4 – Water Quality Concerns | 8 – Cover/Frame/Grate | 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).

Supervisor Signature: _____ Date: _____

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 3/4 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 1/2 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.

City of West Richland Stormwater Facility Inspection Checklists

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	<p>Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.</p> <p>Catch basin insert requires replacement if:</p> <ul style="list-style-type: none"> • 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.

City of West Richland Stormwater Facility Inspection Checklists

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

Maintenance Standards Control Structures

Maintenance Code	Type	Conditions When Maintenance Is Needed
1	Sediment	<p>Sediment depth exceeds 60% of sump depth.</p> <p>Sediment accumulated within 6 inches of the orifice plate or lowest pipe invert.</p>
2	Trash & Debris	<p>Trash or debris exceeds 60% of sump depth.</p> <p>Trash or debris within 6 inches of the orifice plate or lowest pipe invert.</p> <p>Trash or debris blocking openings in the control structure.</p> <p>Trash or debris blocking more than 1/3 of any inlet or outlet pipe.</p> <p>Dead animals or vegetation that generate odors and cause complaints or dangerous gases (e.g., methane).</p>
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	<p>Cover is missing or only partially in place.</p> <p>One maintenance person cannot remove lid after applying normal lifting pressure.</p> <p>Frame separated by more than 3/4 inch from top slab.</p> <p>Frame not securely attached.</p> <p>Locking mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.</p>
8	Structure	<p>Damaged or missing orifice plate.</p> <p>Control structure is not securely attached to manhole wall.</p> <p>Control structure is not in upright position.</p> <p>Connection between control structure and outlet pipe is not water tight.</p> <p>Holes (other than design openings) in the control structure.</p> <p>Cleanout gate is not watertight, is missing, is rusted, or cannot be moved up and down by one maintenance person applying normal pressure.</p> <p>Top slab with holes larger than 2 square inches or cracks wider than 1/4 inch.</p> <p>Fractures or cracks in basin walls or bottom.</p> <p>Grout at inlet/outlet pipes has separated or cracked wider than 1/2 inch and longer than one foot.</p> <p>Soil is entering the catch basin through cracks in the structure.</p> <p>Settlement has created a safety, function, or design problem.</p> <p>Field inspector judges that structure is unsound.</p>

Maintenance Code	Type	Conditions When Maintenance Is Needed
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, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.
12	Could Not Locate	Field inspectors are unable to locate the structure.

City of West Richland Stormwater Facility Inspection Checklists

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

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 3/4 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 1/2 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 to 1/2 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	<u>Erosion</u> 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.

City of West Richland Stormwater Facility Inspection Checklists

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

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.

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	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.

City of West Richland Stormwater Facility Inspection Checklists

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

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 B
Waste Disposal Protocol

Waste Disposal Protocol For Streets and Stormwater Management Facilities West Richland

This Waste Disposal Protocol addresses waste generated from stormwater maintenance activities such as street sweeping, the cleaning of catch basins, and the cleaning of other stormwater conveyance and treatment facilities such as retention/detention ponds and swales. Proper disposal of cleaning wastes from roadways, streets, parking lots and other impervious surfaces is crucial to prevent pollutants from entering the stormwater conveyance system or surface waters and to keep solid wastes from impeding stormwater runoff flow or causing damage to the stormwater system.

This Protocol outlines the City of West Richland's procedure for characterization, reuse, and disposal of sediment and debris from street sweeping and stormwater facility cleaning and maintenance. These procedures are consistent with applicable federal and state requirements and the requirements of the Benton Franklin Health District.

Definition

For the purposes of this Protocol, "Street Waste" is defined as liquid and solid waste collected during the maintenance and cleaning of stormwater catch basins, detention/retention ponds, ditches and similar stormwater treatment and conveyance structures, and solid waste collected during street and parking lot sweeping. Street Waste does not include solids and liquids from street washing using detergents, cleaning of electrical vaults, vehicle wash sediment traps, restaurant grease traps, industrial process waste, sanitary sewage, combined sewage/stormwater wastes, or waste from oil/water separators at sites that load fuel.

Collection and Storage

Street Waste, including sediment collected from stormwater facilities, should be collected and stored until it has been tested to determine the characterization of the waste. The City temporarily stores street waste at our wastewater treatment plant. The City is currently negotiating with neighboring cities to discuss permanent storage and disposal options within these neighboring cities and is engaged in seeking an inter-local agreement by the end of the 2012 year.

Dangerous Waste

Dangerous waste is defined as those solid wastes that are dangerous or extremely hazardous to the public health and environment. Per Chapter 173-303-9904 WAC, characteristics of dangerous waste are: ignitable, corrosive, reactive, or toxic. Dangerous wastes may be identified by: unusual color, staining, corrosion, unusual odor, fumes, and oily sheen. Street waste that is suspected of being dangerous waste should not be collected or stored with other street waste. Material in catch basins with obvious contamination should be left in place or segregated until tested. Potentially dangerous waste should be handled and stored separately until a determination as to proper disposal is made.

Potentially dangerous waste should be handled following the Dangerous Waste Regulations (Chapter 173-303 WAC) unless testing determines it is not dangerous waste.

Disposal and Reuse of Liquid Materials

Wastes collected during street sweeping and stormwater treatment facility cleaning and maintenance should be dewatered. Decant liquid collected from cleaning catch basins and de-watering liquid from street cleaning activities is discharged to a dyke protected dry basin located at the wastewater treatment plant for temporary storage.

Testing

Street waste should be tested to characterize the waste prior to reuse or disposal. Testing should be conducted on a representative sample before co-mingling with other material. Multiple composite samples may be needed depending on the volumes of material (Refer to Table 2 below). Sampling requirements may be modified over time based on accumulated data. The City of West Richland is currently negotiating with neighboring cities regarding permanent storage, testing and disposal of the City's street waste and is engaged in seeking an inter-local agreement by the end of the 2012 year.

Re-Use and Disposal of Solid Waste

Street waste that exceeds the maximum values in Table 1 should be handled as dangerous waste and must be properly disposed of.

Street and stormwater system wastes that are not contaminated and that do not exceed the maximum values in Table 1 should be disposed of or recycled through Basin Disposal, Inc., Waste Management, Inc., or another waste management contractor. Coarse sand from street sweeping after recent road sanding should be screened from trash and stockpiled at the City Maintenance Facility for re-use on roads, or for pipe bedding.

The following tables are taken from the Department of Ecology 2004 Eastern Washington Stormwater Manual.

Table I	
Recommended Parameters and Suggested Values for Determining Reuse and Disposal Options	
Parameter	Suggested Maximum Value
Arsenic, total	20.0 mg/kg
Cadmium, total	2.0 mg/kg
Chromium, total	42 mg/kg
Lead, total	250 mg/kg
Nickel	100 mg/kg
Zinc	270 mg/kg
Mercury (inorganic)	2.0 mg/kg
PAHs (Carcinogenic)	0.1-2.0 mg/kg
TPH (heavy fuel oil)	200-460 mg/kg
TPH (diesel)	200-460 mg/kg
TPH (gasoline)	100 mg/kg
Benzene	0.03 mg/kg
Ethylbenzene	6 mg/kg
Toluene	7 mg/kg
Xylenes (total)	9 mg/kg

Table Notes:

- (a) Arsenic: from MTCA Method A - Table 740-1: Soil cleanup levels for unrestricted land uses.
- (b) Cadmium: from MTCA Method A – Table 740-1: Soil cleanup levels for unrestricted land uses.
- (c) Chromium; from MTCA Method A - Table 740-1: Soil cleanup levels for unrestricted land uses.
- (d) Lead; from MTCA Method A – Table 740-1: Soil cleanup levels for unrestricted land uses.
- (e) Nickel and Zinc; from MTCA Table 749-2: Protection of Terrestrial Plants and Animals.
- (f) Mercury; from MTCA Method A – Table 740-1: Soil cleanup levels for unrestricted land uses.
- (g) PAH-Carcinogenic; from MTCA Method A – Table 740-1: Soil cleanup levels for unrestricted land uses and Table 745-1, industrial properties, based on cancer risk via direct contact with contaminated soil (ingestion of soil) in residential land use situations and commercial/industrial land uses. Note: The local health department may permit higher levels as part of a Plan of Operation, where they determine that the proposed end use poses little risk of direct human contact or ingestion of soil.
- (h) TPH: from MTCA Tables 749-2 & 749-3: Protection of Terrestrial Plants and Animals. Values up to 460 mg/kg may be acceptable where the soils are capped or covered to reduce or prevent exposure to terrestrial plants and animals. Where the laboratory results report no ‘fingerprint’ or chromatographic match to known petroleum hydrocarbons, the soils will not be considered to be petroleum contaminated soils.
- (i) BETX; from MTCA Method A - Table 740-1: Soil cleanup levels for unrestricted land uses.

Please note that some of the suggested maximum values in Table 1 are based on soil cleanup criteria for unrestricted land uses.

Table 2 provides recommended sampling frequency for street waste solids based on cubic yards of solids.

Table 2 Recommended Sampling Frequency for Street Waste Solids	
Cubic Yards of Solids	Suggested Minimum Number of Samples
0 – 100	3
101 – 500	5
501 – 1000	7
1001 – 2000	10
<2000	10 + 1 for each additional 500 cubic yard

Appendix C
Private Facility Inspection and Enforcement Protocol

Private Facility Inspection and Enforcement Protocol

City of West Richland

The Eastern Washington Phase II Municipal Stormwater Permit (Permit) requires that the City of West Richland protect water quality and reduce the discharge of pollutants into receiving waters. As part of the Permit, the City must reduce pollutant discharges from stormwater management facilities through implementation of the Stormwater Management Ordinance codified as West Richland Municipal Code (WRMC) 13.86 and the Stormwater Pollution Prevention Operations and Maintenance Plan dated August 201, Revised May 10, 2016 (O&M Plan).



This protocol outlines the City's procedures for ensuring private stormwater facilities are maintained according to City 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. (The City may choose to expand the inspection program to include infiltrating facilities, but it is not a requirement of the Permit.)

Transfer of Ownership

The City may assume ownership of privately-owned facilities where there is a regional benefit to the utility and if certain conditions stated in WRMC 13.86.070 (G) (4) have been met.

Inspection and Enforcement

The City's Stormwater Management Ordinance WRMC 13.86 states that all privately-owned stormwater facilities are to submit an Operations and Maintenance plan for the related property. In that document at a minimum, shall address all stormwater facilities and BMPs at the site and address the long-term funding mechanism to support the O&M. It should also include the schedule of maintenance and cleaning of the on-site stormwater facility. The O&M plan shall be submitted to the City prior to the Certificate of Occupancy being issued. These facilities must be maintained in accordance City code and the City's O&M Plan. The following protocol describes the City's procedures for inspecting and enforcing maintenance standards for private facilities.

The City's requirement is that all stormwater on private property be maintained on-site. The private land owner will enter into a "Stormwater Agreement" with the City. The private land owner will be

Appendix C-1

required to inspect or hire a third party inspector and provide an annual report to the City by January 1st. The purpose of the inspection is to assure safe and proper functioning of the stormwater facility. The inspector shall cover the entire facility, catch basins, manholes, drywells, berms, outlet structure, pond areas, access roads, etc.

At any time the City Engineer may request an inspection of the stormwater facility. The purpose of the inspection is to verify the stormwater facility is being maintained and functioning in the manner it was designed.

Overview:

Owner(s) 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. Currently the City requires all private property and facilities to contain storm water runoff onsite with no discharges allowed to the City owned MS4. The City requires inspections of private facilities at this time.

The City's private facility inspection and enforcement protocol is as follows:

- The owner of the private facility shall register all underground injection control (UIC) facilities, such as infiltration trench systems, and/or drywells. The City must receive a copy of the registration form issued by the Washington State Department of Ecology as confirmation.
- The private facility inspection is the responsibility of the private owner. Any enforcement is respectively the responsibility of the City Engineer and Public Works Director should there be failure of inspection, or enforcement be needed.
- The City maintains a map and database of private facilities. There are no facilities or outfalls into the City's stormwater system.
- The City may send a reminder letter to all facility owners each year in the fall. The annual inspection report shall be completed and submitted to the City by January 1st. The applicable inspection checklist from Appendix A of the O&M Plan.
- Private facilities owners shall inspect or hire a third party hired. Identified maintenance activities must be completed and records submitted to the City prior to January 1st of each year.
- The Public Works Department will review all inspection and maintenance reports verifying requirements are met and record the information. Inspection and maintenance records will be maintained for at least five (5) years.
- Spot-checks may be performed by City staff to verify inspections and maintenance activities.

Appendix D

Stormwater Pollution Prevention Plan

For:
City Campus
City Maintenance Facility

**KEEP THIS SWPPP
ON-SITE AT ALL
TIMES**

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

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West Richland City Campus and Maintenance Facility SWPPP

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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).

Acronyms, Abbreviations, and List of Definitions

Continued

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 City of West Richland consists of the following staff members:

<u>Name</u>	<u>Job Title</u>	<u>Contact Number</u>
Roscoe Slade	Public Works Director	(509) 967-5434
Don Klages	Stormwater Operations Supervisor	(509) 967-3838
Drew Woodruff	City Engineer	(509) 967-5434

Section I—Introduction

The City of West Richland 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. A revised permit was issued on June 17, 2009.

The City 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 facilities:

- Maintenance Facility

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: City Clerk, 3801 W. Van Giesen, West Richland, WA 99353.

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

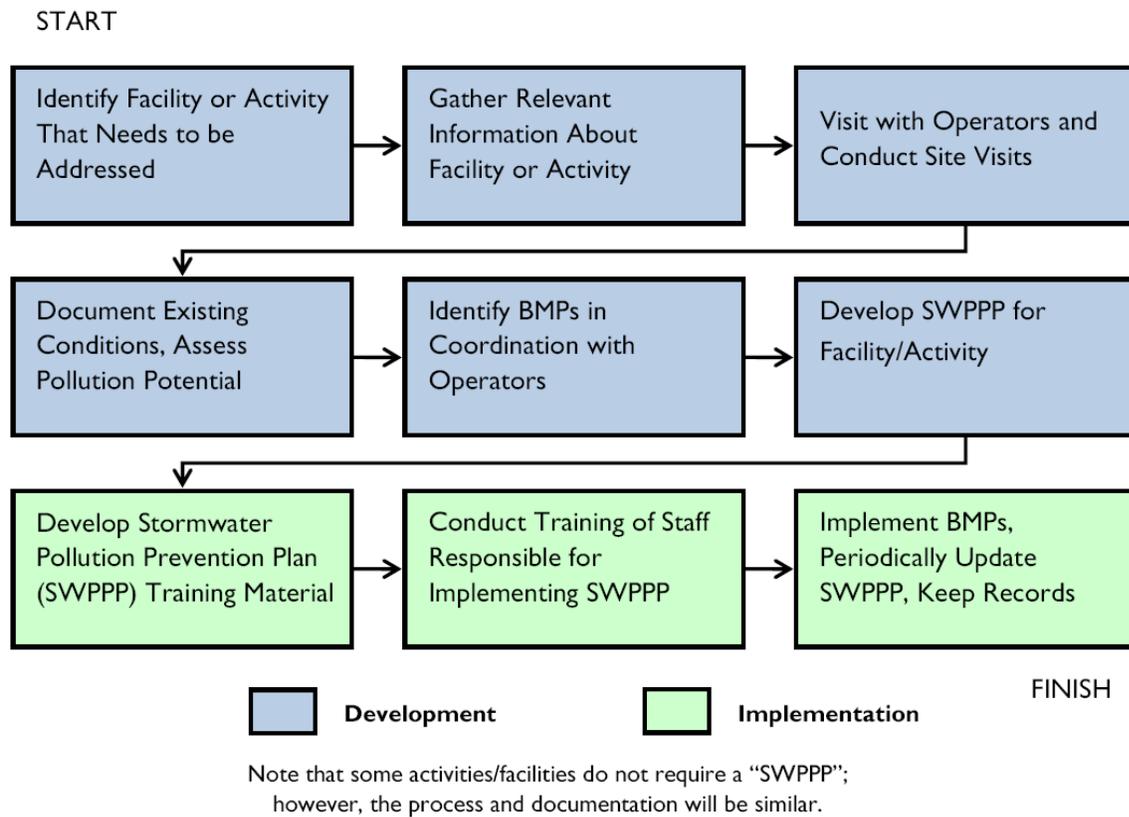
1.4 SWPPP Development and Implementation Process

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



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;
- The City purchases or develops a new property to be used for municipal storage activities;
- The City 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 City of West Richland City Campus is located at 3801 W. Van Giesen (SR 224). The site is located at the intersection of W. Van Giesen (SR 224) with S. 38th Ave. The site is approximately 3.1 acres in area, including 1.5 acres of impervious surface and 1.6 acres of bare ground, gravel and vegetation. Site facilities consist of four permanent buildings; including a library, police station, administration building and public works/community development building. There is also one temporary storage trailer on site. Activities include office equipment storage, building repair and washing, landscaping and vehicle parking areas. A site map is shown in Appendix A.

The City of West Richland Maintenance Facility is located at 5456 W. Van Giesen (SR 224). The site is located one block east of the intersection of Grosscup Blvd. with W. Van Giesen (SR 224). The site is approximately 1.0 acre in area, including 0.3 acres of impervious surface and 0.7 acres of bare ground, loose gravel and vegetation. Site facilities consist of 2 permanent buildings; including a maintenance shop/administration building and a material storage building. Activities include equipment storage, repair and washing, heavy equipment and vehicle parking areas, and the storage of raw materials; such as de-icing chemicals and cold mix asphalt. A site map 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 city campus or the maintenance facility.

2.1.2 Production and Application Activities

No production or application activities (such as vehicle painting or sign fabrication) are currently performed on-site.

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 that 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 contaminants 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 10 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).

Section 2—Site Assessment & Best Management Practices

Continued

2.4 Employee Training and Education

A formal training seminar will be provided for all municipal field staff upon completion of the SWPPP. The City 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 I Building and Ground Maintenance BMPs	
Issue:	Stormwater can be contaminated from dusts deposited on surfaces or from sediment due to erosion of exposed soils.
Facility Assessment:	There are six permanent buildings with landscaping, parking and stormwater systems that require regular maintenance to keep the buildings and grounds operational and safe.
Problem(s) Observed:	Exposed soils around the maintenance facility susceptible to erosion due to winds, or heavy rains. Possible source of dust pollution due to high winds.
Current BMPs:	<ul style="list-style-type: none"> • Covered parking and storage is utilized whenever possible. • Sweep paved areas on a regular basis. • Inspect and clean stormwater systems as needed. • Properly dispose of lawn clippings, tree trimmings and shrub clippings as solid waste.
Improvements:	<ul style="list-style-type: none"> • Limit the exposure of soils and cover with gravel, or vegetation where necessary to prevent erosion and control dust.

Section 2—Site Assessment & Best Management Practices

Continued

Table 2 Floor Drains BMPs	
Issue:	Stormwater should not come in to contact with pollutants before discharging to a drywell, drainage ditch, or any other stormwater conveyance structure. Understanding how stormwater drains from a particular site will help determine how to best protect it from potential pollutants.
Facility Assessment:	All floor drains at the city facilities are connected to the city wastewater treatment system. All catch basins on the city campus drain to manholes and percolation trenches where stormwater infiltrates into the ground. There is no stormwater collection or conveyance system at, or near the maintenance facility, all stormwater naturally infiltrates into the ground.
Problem(s) Observed:	No problems observed.
Current BMPs:	<ul style="list-style-type: none"> • Floors are swept as needed. • Spills are cleaned up immediately.
Improvements:	None

Table 3 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 and outdoors at the following locations: <ul style="list-style-type: none"> • Material storage building • Maintenance building • Well #9
	Types of liquids transferred: <ul style="list-style-type: none"> • Diesel fuel, oil & antifreeze • Paints • Pesticides, herbicides and fertilizers • Cleaning products • Deicer
	Types of solids transferred: <ul style="list-style-type: none"> • Equipment and parts • Bags of cement • Sand and aggregates • Bags of cold mix • Bags of deicer
Problem(s) Observed:	No problems were observed.
Current BMPs:	<ul style="list-style-type: none"> • Indoor loading and unloading areas are swept regularly. • Ensure the cleanup of material spills in the loading/unloading area immediately if a significant spill occurs and upon completion of the transfer activity for minor spills. • When possible, loading and unloading are conducted under a roof or covered area.
Improvements:	Be sure all employees involved in loading and unloading of materials are trained in spill containment and cleanup.

Section 2—Site Assessment & Best Management Practices

Continued

Table 4 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:	All raw materials are stored in covered, or closed areas. Any liquids stored outside the buildings are kept within tanks, drums, or barrels.
	Types of liquids stored include: <ul style="list-style-type: none"> • Diesel fuel and used oil
	Types of solid materials stored include: <ul style="list-style-type: none"> • Sand and aggregates • Equipment and parts • Spare lumber products • Metal signs • Recyclable metals
Problem(s) Observed:	Leaky secondary containment structure for used oil tank.
Current BMPs:	<ul style="list-style-type: none"> • Materials are stored away from any stormwater drainage systems, or watercourses. • Materials are stored indoors, or under covered areas whenever possible.
Improvements:	Replace, or repair secondary containment structure for used oil tank and provide a cover, or sheeting over the tank and structure.

Table 5 Storage of Liquids, Solid Waste, and Hazardous Materials BMPs	
Issue:	The storage of supplies and 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:	Most of the liquid and solid materials are stored indoors in the material storage building and the maintenance building. There is a trash dumpster and recycling bin respectively located on city campus at the SE corner of the library and the far west end of the site. Two trash dumpster and a couple scrap metal recycling bins are located at the maintenance facility near the southeast end of the site.
	Diesel fuel is stored outside in a covered tank with secondary containment.
	Used oil is stored outside in a large oil tank with secondary containment.
Problem(s) Observed:	Some full and empty hazardous waste containers do not have secondary containment.
	Hazardous waste storage areas are missing appropriate signage and/or labels.
	Possible storage of incompatible hazardous materials within the same storage area without separation barriers, or secondary containment as specified in the Uniform Fire Code.
Current BMPs:	<ul style="list-style-type: none"> • Store materials indoors or in covered areas with secondary containment whenever possible. • Place tight fitting lids on all containers. • Maintain original labels on materials and liquids. • Regularly inspect container storage areas for corrosion structural failure, spills, leaks, overfills, and failure of piping systems. Replace as needed. • Maintain a spill kit on site. • Spills and leaks are promptly addressed and reported to the city operations supervisor. • Cover dumpsters with lids to prevent stormwater from entering and causing possible leakage.
Improvements:	<ul style="list-style-type: none"> • Provide secondary containment for code specified materials and/or look for a more suitable storage location if feasible. • Label all cabinets, storage sheds, etc. containing hazardous chemicals with proper hazardous material signage and or labels. • Store reactive, ignitable, or flammable materials in compliance with Uniform Fire Code.

Section 2—Site Assessment & Best Management Practices

Continued

Table 6 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 of equipment and tractors is currently performed along the north side of the maintenance building. The location currently puddles and infiltrates into the ground.
	Utility trucks, pickups and passenger vehicles are washed off site at a designated commercial washing facility.
	Types of materials cleaned or washed include: <ul style="list-style-type: none"> • Paint sprayers (used with water based paints) • Backhoe • Lawn tractors • Street sweeper
	The chemicals used during washing include: <ul style="list-style-type: none"> • Car wash soap
Problem(s) Observed:	No problems were observed.
Current BMPs:	<ul style="list-style-type: none"> • Equipment washing area is inspected and cleaned regularly. • Water usage is kept to a minimum. • Whenever possible equipment washing is conducted off site at a designate commercial washing facility.
Improvements:	<ul style="list-style-type: none"> • If feasible, look at washing all equipment at a designated commercial washing facility, or developing a closed washing system.

Table 7 Vehicle and Equipment Fueling BMPs	
Issue:	Vehicles and heavy equipment require fueling with hazardous liquids (fuel) that can contaminate stormwater.
Facility Assessment:	Heavy equipment refueling is conducted at the north side of the maintenance building from a diesel tank that is manually pumped.
Problem(s) Observed:	No problems were observed
Current BMPs:	<ul style="list-style-type: none"> • Employees are trained on the proper use of fuel dispensers. • Keep suitable clean up materials, such as dry absorbent materials, on site to allow prompt cleanup of a spill. • A person is present at the fuel pump during fueling at all times. • Fueling tank is covered with a roof and has secondary containment measures in place.
Improvements:	<ul style="list-style-type: none"> • Use drip pans under all hose connections when transferring fuel to manage any leaks, or spills.

Section 2—Site Assessment & Best Management Practices

Continued

Table 8 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 both inside and outside the maintenance shop.
	Potential stormwater contaminants used in the operation or maintenance of vehicles and equipment on-site include: <ul style="list-style-type: none"> • Oil and fuel • Batteries • Antifreeze • Hydraulic fluid • Carwash soap
Problem(s) Observed:	No problems were observed.
Current BMPs:	<ul style="list-style-type: none"> • Maintain dry absorbent materials on-site to promptly clean up any spills, or leaks. • Outdoor maintenance is not performed during rain events, or prior to forecasted rain, unless required by emergency conditions. • Inspect vehicle and equipment regularly for leaks and other maintenance needs. • Empty oil and fuel filters before disposing. • Use drip pans or containers under parts or vehicles that drip or are likely to drip. • Transfer removed vehicle and equipment fluids from drip pans or other temporary containers into recycling storage tanks or drums by the end of the day.
Improvements:	None

Table 9 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:	Storage and parking of large vehicles and equipment occurs in a dedicated uncovered area east of the material storage building that has a surface composed of gravel. Smaller vehicles and equipment are stored outside the maintenance building along the south side. There is also covered parking both indoors and outdoors at the maintenance building for the street sweeper and herbicide tractor. City Campus has vehicle parking around all public buildings for both city staff and public use.
	Types of vehicles and equipment that are stored or parked on-site include: Passenger vehicles, utility trucks, various trailers, dump trucks, water truck, lawn tractors, tumble weed burner and backhoe. There are also chain saws, circular saws, small mowers, weed whackers, blowers, etc.
Problem(s) Observed:	No problems were observed.
Current BMPs:	<ul style="list-style-type: none"> • Covered parking is utilized whenever possible. • Sweep paved areas and storage areas as needed • Drip pans or containers are placed under vehicles and equipment that drip or are likely to drip. • Maintain dry absorbent materials on-site for prompt clean up of spills or leaks. • Remove liquids from vehicles that are retired for scrap. • Report vehicle and equipment leaks, or drips to the city operations supervisor for repair and reporting.
Improvements:	None

Section 2—Site Assessment & Best Management Practices

Continued

Table 10 Vegetation Management BMPs	
Issue:	Fertilizer and pesticides contain nutrients and chemicals that can contaminate stormwater.
Facility Assessment:	The city campus facility has lawn and landscaped areas located around the buildings.
Problem(s) Observed:	No problems were observed.
Current BMPs:	<ul style="list-style-type: none"> • Minimize the use of chemical fertilizers. • Inspect irrigation systems regularly. • Maintain vegetation cover. • Dispose of wastes in dumpsters. • Only use pesticides for pest problems. • Clean up any chemical spills promptly and report to the city operations supervisor.
Improvements:	None

Section 3—Illicit Non-Stormwater Discharges

The City 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 the City's Illicit Discharge Detection and Elimination ordinance WRMC 13.82.

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

<Replace this page with the facility site map (or maps) when assembling the SWPPP>

Appendix B—Facility Assessment Questionnaire

Municipal Facility Assessment Questionnaire

I 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:	<u>City Campus</u>
Facility Location:	<u>Corner of W. Van Giesen (SR 224) & S. 38th Ave.</u>
Facility Description:	<u>Administration building, Community Development /</u> <u>Public Works building, Police Station, Library and</u> <u>temporary storage container</u>
Mailing Address:	<u>3801 W. Van Giesen</u>
Contact Name:	<u>Roscoe Slade III</u>
Contact Phone:	<u>(509) 967-5434</u>
SIC Code (If Applicable):	<u></u>
Main Site Activities:	<u>Administration and management of city and public</u> <u>services, office material storage, vehicle parking and</u> <u>building and landscaping maintenance.</u>
Area of Facility (in acres):	<u>3.1 acres</u>
Surface Types:	<input checked="" type="checkbox"/> Permanent Buildings: <u>4</u> number of buildings <u>15,194</u> square feet <input checked="" type="checkbox"/> Temporary Buildings: <u>1</u> number of buildings <u>300</u> square feet <input checked="" type="checkbox"/> Pavement: <u>1.0</u> acres <input checked="" type="checkbox"/> Gravel: <u>0.3</u> acres <input checked="" type="checkbox"/> Bare Ground: <u>0.6</u> acres <input checked="" type="checkbox"/> Vegetation: <u>0.8</u> acres

(Check all that apply and fill in approximate area)

Municipal Facility Assessment Questionnaire

Continued

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: One dumpster for trash and debris located at the SE corner of the library and another dumpster is located on the south side of the police station.

Trash compactor, located: _____

Recycling Containers, located: There are recycling bins for the public located on the far west end of the site. Items collected are plastics, paper and cardboard.

Used Oil Container, located: _____

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: On the buildings themselves.

Cleaning or washing area / structure:

Self-Contained Building

Covered Pad

Designated Open Area

Other: _____

Surface of cleaning or washing area:

Asphalt

Concrete

Municipal Facility Assessment Questionnaire

Continued

 Compacted Gravel Soil

Type(s) of materials cleaned or washed:

 Vehicles, describe: _____ Equipment, describe: _____ Buildings Paved areas Other: _____

Chemical(s) used in washing:

 Soaps or detergents: _____ Abrasives: _____ Acids: _____ Solvents: _____ Other: _____Drainage characteristics of wash area(s): Drains to landscaping around buildings and then infiltrates into the ground. Very little if any reaches catch basins which go to perc trenches.

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

Municipal Facility Assessment Questionnaire

Continued

 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: _____

Type of transfer:

 Bulk liquid Mobile fueling Liquid filled container: Small Containers Drums

Municipal Facility Assessment Questionnaire

Continued

 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.): _____ Other: _____

Equipment involved in transfer:

 Top pick Forklift Crane

Municipal Facility Assessment Questionnaire

Continued

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, or 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: All walkways of city campus buildings.

Description of production and/or application activities: Application of deicer as needed when ice is thick and cannot be shoveled.

Drainage characteristics of work area; are there any pretreatment BMPs? These work areas are outside of the entrances to the city campus buildings which drain to nearby landscaping and to catch basins located in the parking lots.

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:

Type and Number of vehicles and equipment that are stored or parked on site:

Passenger vehicles: The Public Works / Community Development departments, the library and the city administration have six city vehicles and the Police Department has approx. ten department vehicles that share the parking lots with employee vehicles and customer vehicles.

Location of storage or parking area: Parking lots surround city campus buildings.

Municipal Facility Assessment Questionnaire

Continued

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 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: Any drips of oil, or gas on the asphalt parking lots could potentially drain to the catch basins and into the percolation trench, or drywells which infiltrate into the ground.

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 that could contaminate stormwater runoff.
- Material storage is performed as follows:

Location(s) of where materials are stored: Archives are stored in a large metal Conex building west of the public works building and south of library in the gravel area.

Storage area structure:

- Covered

Municipal Facility Assessment Questionnaire

Continued

 Designated Open Area Other: Enclosed in a water proof Conex Storage Building.

Surface of Storage Area:

 Asphalt Concrete Compacted Gravel SoilType(s) of Liquids Stored: (N/A) 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: Office materials and archivesType(s) of Equipment Stored: (N/A) Equipment with galvanized metal components

Municipal Facility Assessment Questionnaire

Continued

- Equipment with fluid filled reservoirs
- Equipment with greased joints or other moving parts
- Other: _____

Drainage characteristics of material storage area: The Conex building does not store any material that could drain, or contaminate stormwater.

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: _____

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

Municipal Facility Assessment Questionnaire

Continued

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:

Herbicidal use is very limited on site and only applied after manual methods of weed removal haven't been successful. Fertilizers are also used occasionally on lawns, but are applied sparingly at rates equal to or less than recommended by the manufacturers.

Mowing / Trimming / Planting

If vegetated areas exist on site please describe their maintenance and waste disposal procedures: During the warmer months lawn are mowed regularly as needed and grass clippings are disposed of in the dumpsters. Tree trimmings and shrub clippings are also disposed of in the dumpster when trimming is required. Lawns, trees and plants are watered regularly and manicured to prohibit overgrowth on a as needed basis.

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 leaving the site. All stormwater, or non-stormwater discharges would infiltrate through the percolation trenches.

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.

Municipal Facility Assessment Questionnaire

Continued

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: Infiltration trenches

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

- Sanitary Sewer
- Ground
- Drywells / Infiltration Trenches

I 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:	<u>City Maintenance Facility</u>
Facility Location:	<u>East of Grosscup Blvd. intersection with W. Van Giesen (SR 224).</u>
Facility Description:	<u>City Maintenance and Material Storage Buildings</u>

Municipal Facility Assessment Questionnaire

Continued

Mailing Address: 5456 W. Van Giesen

Contact Name: Dan Hughes

Contact Phone: (509) 967-3838

SIC Code (If Applicable): _____

Main Site Activities: City maintenance work, offices and material and equipment storage.

Area of Facility (in acres): 1.0 acres

Surface Types:

Permanent Buildings: 2 number of buildings
7,600 square feet

(Check all that apply and fill in approximate area) Temporary Buildings: _____ number of buildings
_____ square feet

Pavement: _____ acres

Gravel: 0.6 acres

Bare Ground: 0.1 acres

Vegetation: 0.1 acres

Municipal Facility Assessment Questionnaire

Continued

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: Two dumpster for trash are located near the SE corner of the site.

Trash compactor, located: _____

Recycling Containers, located: There are recycling bins for scrap metals along the east property line north of the dumpsters.

Used Oil Container, located: On the north side of the maintenance building.

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: North side of the maintenance building.

Cleaning or washing area / structure:

Self-Contained Building

Covered Pad

Designated Open Area

Other: _____

Surface of cleaning or washing area:

Asphalt

Concrete

Compacted Gravel

Municipal Facility Assessment Questionnaire

Continued

 Soil

Type(s) of materials cleaned or washed:

 Vehicles, describe: Street sweeper Equipment, describe: Paint sprayers, lawn mowers and tractors Buildings Paved areas Other: _____

Chemical(s) used in washing:

 Soaps or detergents: Carwash soap Abrasives: _____ Acids: _____ Solvents: _____ Other: _____Drainage characteristics of wash area(s): Infiltration into the ground

Discharge location for wash water:

 Storm Sewer; Treated? No Yes, please describe: _____ Sanitary Sewer Other: On the ground

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

Municipal Facility Assessment Questionnaire

Continued

- Loading dock
 Permanent fueling station (North side of maintenance building)
 Open area (South side of maintenance garage bay)
 Indoors (Inside of maintenance garage bay)
 Other: _____

Transfer Area Structure(s):

- Self-Contained Building
 Covered Pad
 Designated Open Area (South side of maintenance building)
 Other: _____

Surface of Transfer Area:

- Asphalt
 Concrete (inside of buildings)
 Compacted Gravel (outside of buildings)
 Soil

Type(s) of liquids transferred:

- Fuels, oils, or greases: Diesel fuel (mobile fueling) oil and antifreeze (drums) _____
 Paints: 5 gallon buckets _____
 Acids: _____
 Pesticides, Herbicides, Fertilizers: Mobile refilling of tanks and containers and small container deliveries. _____
 Cleaning products: Small containers of common household cleaning products. _____
 Other: Deicer _____

Type of transfer:

- Bulk liquid
 Mobile fueling
 Liquid filled container:
 - Small Containers
 - Drums
 - Totes

Municipal Facility Assessment Questionnaire

Continued

 Bunker Other: _____ Transfer of solids is performed as follows:

Location(s) where transfer occurs:

 Railroad yard Loading dock Open area (between maintenance and material storage buildings) Indoors Other: _____

Transfer Area Structure:

 Self-Contained Building Covered Pad Designated Open Area (between maintenance and material storage buildings) Other: _____

Surface of Transfer Area:

 Asphalt Concrete (inside buildings) Compacted Gravel (outside buildings) Soil

Type(s) of solids transferred:

 Shipping Containers: _____ Equipment: Signs, valves, pipe, fittings _____ Packaged goods: Cold mix, cement, fertilizer, salt, _____ Bulk materials (aggregate, debris, etc.): Sands and gravel _____ Other: _____

Equipment involved in transfer:

 Top pick Forklift Crane Dump truck (end, side, bottom, etc.): End dump _____

Municipal Facility Assessment Questionnaire

Continued

Other: Manually _____

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, or 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: _____

Description of production and/or application activities: _____

Drainage characteristics of work area; are there any pretreatment BMPs? _____

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:

Type and Number of vehicles and equipment that are stored or parked on site:

Passenger vehicles, utility trucks, dump trucks, vector truck, water truck: The City has a total of 31 vehicles. The majority of these are stored, or parked at the maintenance facility.

Equipment, trailers, mowers, forklifts, backhoes, loaders, tractors: The City has approximately of 32 pieces of equipment. As with the vehicles, most of these are stored at the maintenance facility.

Location of storage or parking area: Employee parking at the maintenance facility is generally along the south end of the site outside the fence, with heavy equipment and utility vehicles parked just inside the fence on the east side of the material storage building and

Municipal Facility Assessment Questionnaire

Continued

south end of the maintenance building. The street sweeper is parked inside the shop and the herbicide tractor is stored in covered stall on the east side of the maintenance building. _____

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: The site is fairly flat and there is no stormwater system near by. All stormwater infiltrates into the ground.

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: North side of material storage building and maintenance building and along the east side of maintenance building. Also along east property line perimeter.

Municipal Facility Assessment Questionnaire

Continued

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: Mobile plastic tank attached to the flat bed of a utility truck. _____

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 (few scrap pieces)
- Other: _____

Municipal Facility Assessment Questionnaire

Continued

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: The site is flat and does not drain to a stormwater system as there is no nearby system. All stormwater infiltrates into the ground.

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: Inside of the maintenance building.

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: North side of maintenance building

Slope: flat ground, or level

Reason soils remain exposed: Experiences a lot of equipment traffic.

- 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: _____

Municipal Facility Assessment Questionnaire

Continued

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:

Herbicidal use is very limited on site and only used when needed to control noxious weeds.

Mowing / Trimming / Planting

If vegetated areas exist on site please describe their maintenance and waste disposal procedures: During the warmer months there is a small area that is vegetated and requires occasional mowing to control grass and weeds from becoming a fire hazard around buildings.

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 on site, or leaving the site. All stormwater discharges infiltrate into the ground.

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

Municipal Facility Assessment Questionnaire

Continued

- 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: Natural infiltration
-

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

- Sanitary Sewer
- Ground
- Drywells / Infiltration Trenches

Appendix C—Facility Assessment
Photolog and Site Visit Form

Facility Assessment Photolog and Site Visit Form

Facility Assessment Site Visit Form

Date: 06/27/11 Facility: City Campus and Maintenance Facility

Waste Management



Trash Dumpster @ SE corner of Library

1. Right plastic cover is detached. Reattach to allow dumpster to be covered securely.



Trash Dumpster at South End of Police Station

1. Keep covered



Trash Dumpster @ SE Corner of Maintenance Facility

1. Keep covered

Facility Assessment Photolog and Site Visit Form

Continued

Cleaning and Washing



City Campus building occasionally washed on campus



Typical City Campus Stormwater Collection System



City Vehicles are Washed at this Commercial Facility

Production and Application Activities



Application of Ice Melt on Campus Walkways

SWPPP—Appendix C
Facility Assessment Photolog and Site Visit Form
Continued

Material Storage



Conex Building for Office Storage and Archives



Fuel Containers Stored In Cabinets



Gravel at SE Corner of Maintenance Facility



Sand on East Side of Maintenance Building



Diesel Fuel Tank and Use Oil Tank and Barrels



Misc. Material Along North Property Boundary

Facility Assessment Photolog and Site Visit Form

Continued



Parks Maintenance Tractors and Materials



Water Department Parts and Materials



Sewer Department Camera Trailer

Vehicle and Equipment Parking and Storage



Employee parking for com. dev. and public works bldg.



Police station and library vehicle parking

Facility Assessment Photolog and Site Visit Form

Continued



Equipment Parking at Maintenance Facility



Utility Truck Parking at Maintenance Facility



Earthmoving Equipment Parking at Maintenance Facility



Herbicide Tractor Parking at Maintenance Facility

Vehicle and Equipment Maintenance and Repair



Minor Vehicle and Equipment Maintenance Area

Appendix D—General Operational Source Control BMPs

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 chlorinated 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	
I. Building and Ground Maintenance	
<p>Typical Activities Care of landscaped areas around each facility, cleaning of parking areas and pavements, dust control, and maintenance of the stormwater drainage system.</p>	<p>Environmental Concerns Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Sediment • Sewage • Litter • Trash • Non-Stormwater liquids • Herbicides • Vehicle Fuel and Fluids
<p>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.</p>	

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	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Fuel • Vehicle/Equipment Fluids • Paint Products • Metals
<p>Pollutant Control Approach</p> <p>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.</p>	

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	
<h2>3. Loading and Unloading of Materials</h2>	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Asphalt Products • Paint • Epoxy Resins • Cement • Herbicides • Solvents • Vehicle Fluids • Fertilizer • Fuel
<p>Pollutant Control Approach</p> <p>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.</p>	

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	
<h2>4. Outdoor Storage of Raw Materials</h2>	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Asphalt Products • Sand and aggregates • De-icing Agents
<p>Pollutant Control Approach</p> <p>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.</p>	

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	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Asphalt Products • Paint • Epoxy Resins • Cement • Herbicides • Solvents • Fertilizer • Vehicle Fluids • Fuel
<p>Pollutant Control Approach</p> <p>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.</p>	

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	
<h2>6. Vehicle and Equipment Washing</h2>	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Cleaning Agents • Non-Stormwater fluids • Sediment • Fuel • Vehicle Fluids • Metals
<p>Pollutant Control Approach</p> <p>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.</p>	

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	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Fuel • Vehicle Fluids
<p>Pollutant Control Approach</p> <p>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.</p>	

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	
<p>Typical Activities Vehicle and equipment maintenance and repair may include vehicle fluid removal, engine and parts cleaning, body repair and painting.</p>	<p>Environmental Concerns Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Fuel • Vehicle Fluids • Used Oil Filters • Lead-Acid Batteries • Paint Products • Metal
<p>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.</p>	

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	
<h2>9. Vehicle and Equipment Parking and Storage</h2>	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Fuel • Metal • Vehicle Fluids • Lead-Acid Batteries
<p>Pollutant Control Approach</p> <p>Provide impervious containment with berms, dikes, etc. and/or store under cover to prevent run-on and discharge of hazardous pollutants.</p>	

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	
<p>Typical Activities</p> <p>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.</p>	<p>Environmental Concerns</p> <p>Discharge of the following materials into the stormwater drainage system or watercourse:</p> <ul style="list-style-type: none"> • Fertilizer • Pesticides • Herbicides • Sediment
<p>Pollutant Control Approach</p> <p>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.</p>	

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. 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 $\frac{3}{4}$ -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 $\frac{1}{3}$ 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.

Appendix F—Spill Response Plan



City of West Richland 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 Form):

- 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:

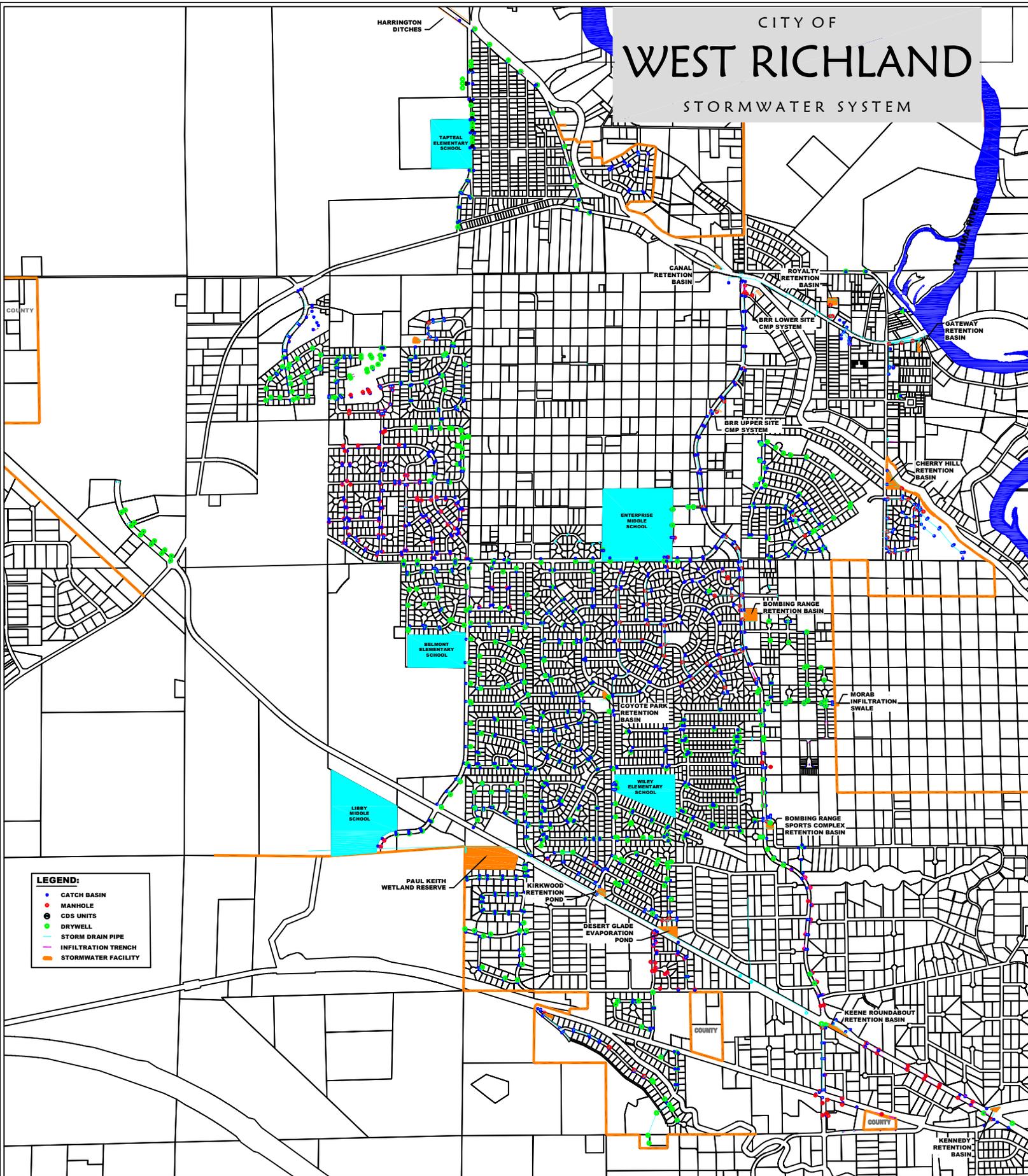
Section 3: Incident Information			
Incident		Description:	
Incident	Date:	Time of Discovery:	Cause:
Address:	City:	State:	County:
Material	Involved:	Amount Released:	
Water	Body	Affected:	Sheen Length:
Sheen Width:		Sheen (rainbow, silver, grey, etc.)	Color:
Odor	Description:	Weather Conditions:	

Section 4: Other
Actions Taken:

Annual Report

Inspection checklists and maintenance records developed during the implementation of this O&M Plan will assist the City 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 City does have an obligation to supply Ecology with the records if requested.

CITY OF
WEST RICHLAND
STORMWATER SYSTEM



- LEGEND:**
- CATCH BASIN
 - MANHOLE
 - CDS UNITS
 - DRYWELL
 - STORM DRAIN PIPE
 - INFILTRATION TRENCH
 - STORMWATER FACILITY

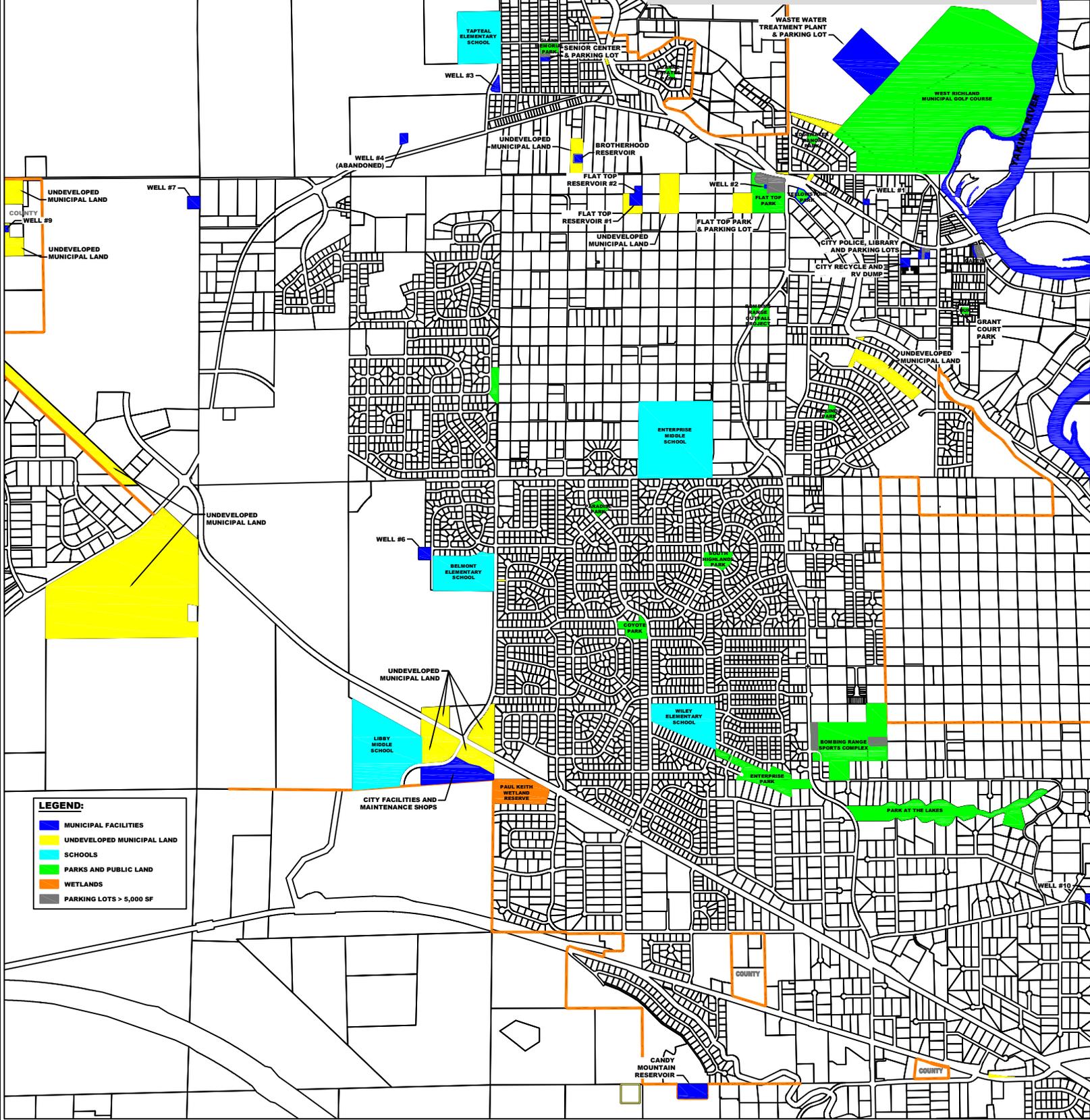
FIGURE 2-1

MAP OF STORMWATER SYSTEM



CITY OF WEST RICHLAND

MUNICIPAL FACILITIES



LEGEND:

- MUNICIPAL FACILITIES
- UNDEVELOPED MUNICIPAL LAND
- SCHOOLS
- PARKS AND PUBLIC LAND
- WETLANDS
- PARKING LOTS > 5,000 SF

FIGURE 2-2
MAP OF MUNICIPAL FACILITIES

