CITY OF WEST LINN'S STORMWATER MANAGEMENT PLAN (2010)

SWMP Overview

In accordance with the City of West Linn's Municipal Separate Storm Sewer (MS4) National Pollutant Discharge Elimination System (NPDES) Permit, Permit number XXXX and effective date XXX, the City of West Linn implements the following Stormwater Management Plan (SWMP). This SWMP (dated 2010) was developed based on an iterative review process with the Oregon Department of Environmental Quality (DEQ). This SWMP was originally submitted to DEQ in accordance with the City's MS4 NPDES Permit Renewal Application (September 2008), and has since been updated to correspond with permit language reflected in the City's most recent (DATE) MS4 NPDES permit.

City of West Linn SWMP (2010)

The SWMP is organized into the eight major stormwater program elements listed below. The eight major elements correspond to those outlined in the MS4 NPDES permit (i.e., Schedule A(4)(a-h).

Element #1: Illicit Discharge Detection and Elimination

Element #2: Industrial and Commercial Facilities
Element #3: Construction Site Runoff Control

Element #4: Education and Outreach

Element #5: Public Involvement and Participation

Element #6: Post-Construction Site Runoff

Element #7: Pollution Prevention for Municipal Operations

Element #8: Structural Stormwater Facilities and Controls Operations and

Maintenance

SWMP Element #1 Illicit Discharge Detection and Elimination

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.a for the City's MS4 NPDES Permit. **See Table 1** for the City of West Linn's BMP fact sheets that address the permit requirements that are listed below.

	SWMP Element #1: Illicit Discharge Detection and Elimination Summary			
		App	icable BM	lPs .
	Schedule A.4.a Permit Requirement	Implement the Illicit Discharges Elimination Program	Conduct Annual Dry Weather Field Screening	Implement the Spill Response Program
i.	Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.	-		
ii.	Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.	-		
iii.	Develop or identify dry-weather field screening pollutant parameter action levels that will be used as part of the field analysis to identify the source of an illicit discharge or other type of dischargeby November 1, [DATE].		•	
iv.	Conduct annual dry-weather inspection activities during the term of the permit. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.		•	
v.	Require investigations of portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, indicates the presence of illicit discharges or non-stormwater discharges.		•	

	SWMP Element #1: Illicit Discharge Detection and Elimination Summary			
		Appl	icable BM	Ps
	Schedule A.4.a Permit Requirement	Implement the Illicit Discharges Elimination Program	Conduct Annual Dry Weather Field Screening	Implement the Spill Response Program
vi.	Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4			•
vii.	Take appropriate action to remove illicit discharges from the MS4 within [X working days] of detection The copermittee must develop an action plan to eliminate the illicit discharge and submit the action plan to the Department within 15 working days of detection. The action plan must include an appropriate timeframe for elimination.	•		
viii.	Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.			
ix.	In the case of a known illicit discharge that originates within the City's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the City must notify the affected municipality as soon as practicable, but no longer than one working day.	•		
х.	In the case of a known illicit discharge that is identified within the City's permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the City must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.	•		
xi.	Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.		-	
xii.	Unless identified as a significant source of pollutants to waters of the State by a co-permittee or the Department, the following non-stormwater discharges are not considered illicit discharges: (see Schedule A.4.a.xi for list of discharges). If a non-stormwater discharge is identified as a significant source of pollutants, the co-permittees must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.			

TABLE 1 – Illicit Discharge Detection and Elimination BMPs

City of West Linn BMP Descriptions BMP Implementation Tracking Measures

NPDES Permit Requirement – (i) Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.

NPDES Permit Requirement – (ii) Describe in an enforcement response plan or similar document by **[DATE]** the enforcement response procedures the permittee will implement when an illicit discharge investigation identifies a responsible party.

NPDES Permit Requirement – (vii) By [DATE] the program procedures should ensure appropriate action is taken to remove illicit discharges from the MS4 within [X working days] of detection. If it has been determined that removal of the illicit discharge will take more than 5 working days due to technical or other reasonable issues, the co-permittee must notify the Department within 5 working days of detection. The co-permittee must develop an action plan to eliminate the illicit discharge and submit the action plan to the Department within 15 working days of detection. The action plan must include an appropriate timeframe for elimination.

NPDES Permit Requirement – (viii) Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.

NPDES Permit Requirement – (ix) In the case of a known illicit discharge that originates within the City's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the City must notify the affected municipality as soon as practicable, but no longer than one working day.

NPDES Permit Requirement -(x) In the case of a known illicit discharge that is identified within the City's permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the City must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.

NPDES Permit Requirement – (xii) Unless identified as a significant source of pollutants to waters of the State by a co-permittee or the Department, the following non-stormwater discharges are not considered illicit discharges: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated groundwater infiltration; uncontaminated pumped ground water; discharges from potable water sources; start up flushing of groundwater wells; aquifer storage and recovery (ASR) wells; potable groundwater monitoring wells; draining and flushing of municipal potable water storage reservoirs; foundation drains; air conditioning condensate; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash waters; discharges of treated water from investigation, removal and remedial actions selected or approved by the Department pursuant to Oregon Revised Statute (ORS) Chapter 465, the state's environmental cleanup law; and discharges or flows from emergency fire fighting activities where discharges or flows from fire fighting activities are identified as not a significant source of pollutants to waters of the state. If a non-stormwater discharge is identified as a significant source of pollutants, the co-permittees must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
Implement the Illicit Discharges Elimination Program	 Responsible Department: City of West Linn Operations and Engineering Departments Permit Year: Ongoing BMP Description: The City of West Linn prohibits illicit discharges to their MS4 system in conjunction with their (City of West Linn Municipal Code and Community Development Code). The City has the authority to conduct appropriate response procedures and enforce against responsible parties per City of West Linn Municipal Code and Community Development Code). If an illicit discharge is discovered, the City will conduct appropriate action to remove the illicit discharge in accordance with the City's Illicit Discharge Detection and Elimination Standard Operating Procedures (IDDE SOP) manual to be developed by June 30, 2013. The manual will be developed and implemented to address the City's MS4 NPDES permit requirements for illicit discharges. Currently, illicit discharges suspected and/ or identified by City staff (either independently or in conjunction with public reporting) are recorded in a tracking database. Procedures for recording such discharges and appropriate follow up activities will be outlined in the IDDE SOP. Measurable Goals: Document and implement the details of the City's IDDE program in a Standard Operating Procedures manual by June 30, 2013. For identified illicit discharges, conduct appropriate actions to remove the discharge in conjunction with time frames outlined in the City's MS4 NPDES Permit. Track and record all identified illicit discharges and how such discharges were removed. 	 (1) Track the status of completing the IDDE SOP manual. (2) Track the number, location, resolution and enforcement activities related to any illicit discharge investigation conducted.

NPDES Permit Requirement - (iii) Develop or identify dry-weather field screening pollutant parameter action levels that will be used as part of the field analysis to identify the source of an illicit discharge or other type of discharge. The pollutant parameter action level and rationale for using the action level must be documented and reported to the Department by November 1, [DATE].

NPDES Permit Requirement – (iv) Conduct annual dry-weather inspection activities during the term of the permit. The dry-weather inspection activities must include annual field screening of all priority locations identified and documented by the co-permittee. Priority locations must, where possible, be located at an accessible location downstream of any source of suspected illegal or illicit activity or other location as identified by the co-permittee. Priority locations must be based on a consideration of hydrological conditions, total drainage area of the location, population density of the location, traffic density, age of the structures or building in the area, history of the area, land use types, personnel safety, accessibility, historical complaints or other appropriate factors as identified by the co-permittee. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.

NPDES Permit Requirement – (v) Require investigations of portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, indicates the presence of illicit discharges or non-stormwater discharges not exempted under the provisions of 4.a.xii of this section.

NPDES Permit Requirement – (xi) Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.

Conduct Annual Dry Weather Field Screening

Responsible Department: City of West Linn Engineering Department

Permit Year: Ongoing

BMP Description: The City of West Linn conducts illicit discharge inspections, monitoring, and investigations annually during dry-weather conditions (between July and September) at all priority outfall locations. Priority outfall locations are identified based on contributing land use and development activities and orientation within the watershed.

Trained personnel complete data inspection forms consistent with those shown in Part 1 of the City's original NPDES Permit Application while inspecting each of the outfalls. Trained personnel also document the inspection results. Dry weather flows are currently inspected for a variety of visual characteristics, and sources of flows are characterized as either permissible (as listed in Schedule A.4.a.xi of the City's MS4 NPDES permit), non-permissible or unknown.

If unknown or non-permissible discharges are discovered, sampling, analysis, and investigation are conducted according to the following procedures:

- 1. General field observations are documented including visual presence of flow, turbidity, oil sheen, etc. that indicates the presence of illicit discharges.
- 2. A water sample is collected and general field parameters (temperature, dissolved oxygen, etc) are analyzed. The City will improve upon this process by developing pollutant parameter action levels to assist in the identification of non-permissible discharges by June 30, 2013.

- (1) Track the number and location of high priority outfalls inspected during dry weather illicit discharge inspection activities.
- (2) Summarize inspection results and indicate outfalls requiring sampling and/or investigations.
- (3) Indicate the outcome and resolution of any investigation activities conducted.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
	3. If the source of the illicit discharge can not be verified at the time of the initial investigation, laboratory analysis will be conducted for the suspected contaminant groups	
	4. Using a drainage map and other source identification data, an attempt is made to locate the potential sources upstream of the discharge location.	
	5. Additional source investigations may be conducted using one or more of the following techniques: onsite inspections, dye-testing, smoke testing, and/or TV inspection of lines.	
	As described in the BMP: Implement the Illicit Discharges Program, these activities and procedures will be documented in an IDDE SOP by June 30, 2013.	
	The Public Works director is notified of all positive identifications of illicit connections and will take all necessary steps to eliminate them.	
	If necessary, in accordance with the annual dry-weather inspection activities, the City updates their GIS files related to existing outfall locations and priority outfall locations.	
	Measurable Goals:	
	Conduct dry weather, illicit discharge inspections annually at all priority outfall locations.	
	 Develop pollutant parameter action levels to assist in the identification of non-permissible discharges by June 30, 2013. 	
	 If necessary, update existing mapping related to outfalls and priority outfall locations in accordance with field observations. 	

NPDES Permit Requirement – (vi) Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4. Spills that may endanger health or the environment must be reported in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System.

Implement the Spill Response Program

Responsible Department: City of West Linn through a contract with Tualatin Valley Fire and Rescue

Permit Year: Ongoing

BMP Description: The City of West Linn Environmental Services initially responds to all calls reporting a spill within the City limits and then calls Tualatin Valley Fire and Rescue. If the spill is minor, Environmental Services will address it; if it is not minor, Tualatin Valley Fire and Rescue will resolve it. Procedures for spill response are outlined in the Fire Departments "Emergency Operations Plan" and coordination efforts by the Fire Department are as follows:

- 1. Contact the State Hazardous Materials Response Team (Tualatin Valley Fire and Rescue)
- 2. Contact the State and National Emergency Response System if the condition requires.
- Contact the police department for traffic controls.
 Contact the Public Works Department for storm system information and containment.
 Public Works staff will install catch basin covers and absorbent pads.

The following procedures are followed for minor spills handled by the City:

- 1. Public Works Department is notified.
- 2. West Linn GIS is used to determine storm drain locations.
- 3. Spill is Contained i.e. Install catch-basin covers and absorbent pads.
- 4. Spill is contained and material is disposed of in an approved manner.

Measurable Goals:

- Respond to minor spills.
- Call Tualatin Valley Fire and Rescue to respond to other spills.

- Indicate the number of spills reported to the City of West Linn Environmental Services.
- (2) Track the number of spills responded to by the city of West Linn Environmental Services and Tualatin Valley Fire and Rescue.
- (3) Indicate sources, causes, and types of discharges resulting from identified spill activities.

SWMP Element #2 Industrial and Commercial Facilities

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.b. **See Table 2** for the City of West Linn's BMPs that address the requirements that are listed above.

	SWMP Element #2: Industrial and Commercial Facilities				
		Applicab	le BMP		
	Schedule A.4.b Permit Requirement	Screen Existing and New Industrial Facilities	Conduct Priority Facility Inspections		
i.	Screen existing and new industrial facilities to assess whether they have the potential to be subject to an industrial stormwater NPDES permit or have the potential to contribute a significant pollutant load to the MS4.				
ii.	Within 30 days after the facility is identified, notify the industrial facility and the Department that an industrial facility is potentially subject to an industrial stormwater NPDES permit.				
iii.	Implement a program that establishes the priorities and procedures for inspection of and implementation of stormwater control measures for discharges from industrial or commercial areas that have been identified as sources that contribute a significant pollutant load to the MS4.		•		

$TABLE\ 2-Industrial\ and\ Commercial\ Facility\ BMPs$

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures						
NPDES Permit Requirement – (i) Screen existing and new industrial facilities to assess whether they have the potential to be subject to an industrial stormwater NPL permit or have the potential to contribute a significant pollutant load to the MS4.								
NPDES Permit Requirem subject to an industrial sto	\mathbf{rent} – (ii) Within 30 days after the facility is identified, notify the industrial facility and the Department that an independent means are the properties.	ustrial facility is potentially						
Screen Existing and New Industrial Facilities	Responsible Department: City of West Linn Engineering Department Permit Year: Ongoing BMP Description: The City of West Linn currently has one industrial facility within its jurisdiction and this facility has obtained a 1200-Z permit for its stormwater discharges. Once during the permit term, the City of West Linn will review their existing business license inventory and new industrial development applications to determine whether any existing or new facilities would be subject to an industrial stormwater NPDES permit. This determination will occur based on a review of the facilities proposed activities and the applicable SIC codes related to the 1200-series NPDES permit. If a facility is identified that would be subject to an industrial stormwater NPDES permit, the facility and DEQ will be notified within 30 days. During the review of the existing business license inventory and new industrial development applications, the City will also consider whether any facilities (industrial or commercial) have been identified that have the potential to contribute significant pollutant load to the MS4 and include such facility in their priority facility inventory. Measurable Goals: Notify DEQ of any existing or new industrial facilities within the City of West Linn jurisdiction that may potentially be subject to an industrial stormwater NPDES permit.	(1) Track the number of existing or new facilities subject to a stormwater industrial NPDES permit during the permit term.						

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures			
	NPDES Permit Requirement – (iii) Implement a program that establishes the priorities and procedures for inspection of and implementation measures for discharges from industrial or commercial areas that have been identified as sources that contribute a significant pollutant load to				
Conduct Priority	Responsible Department: City of West Linn Engineering Department	(1) Track the number and			
Facility Inspections	Permit Year: Ongoing	outcome of priority facility inspections			
	BMP Description:	conducted over the			
	The City of West Linn currently has one industrial facility within its jurisdiction and this facility has obtained a 1200-Z permit for its stormwater discharges.	permit term.			
	In conjunction with the BMP: Screen Existing and New Industrial Facilities, the City of West Linn will inspect identified priority industrial or commercial facilities once during the permit term to ensure that appropriate pollution prevention measures are being implemented.				
	Measurable Goals:				
	• Inspect identified priority industrial or commercial facilities once during the permit term.				

SWMP Element #3 Construction Site Runoff Control

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.c. **See Table 3** for the City of West Linn's BMPs that address the requirements that are listed above.

	SWMP Element #3: Construction Site Runoff Control					
		Ap	Applicable BMPs			
	Schedule A.4.c Permit Requirement	Implement the Erosion Control Manual	Provide Educational Information to Construction Site Operators	Conduct Erosion Control Inspections and Enforcement		
i.	Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State.	•	•			
ii.	Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.	•	•			
iii.	Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.	•	•			
iv.	Establish site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.	•	•			

	SWMP Element #3: Construction Site Runoff Control					
		Ap	plicable BM	Ps		
	Schedule A.4.c Permit Requirement	Implement the Erosion Control Manual	Provide Educational Information to Construction Site Operators	Conduct Erosion Control Inspections and Enforcement		
v.	Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion and sediment control plan is properly implemented Inspections must be documented, including photographs and monitoring results as appropriate.					
vi.	Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.			•		

TABLE 3 – Construction Site Runoff Control BMPs

City of West Linn BMP
Descriptions

BMP Implementation

Tracking Measures

NPDES Permit Requirement - (i) Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State.

NPDES Permit Requirement – (ii) Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.

NPDES Permit Requirement – (iii) Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.

NPDES Permit Requirement – (iv) Establish site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.

Implement the Erosion Control Manual

Responsible Department: City of West Linn Engineering Department

Permit Year: Ongoing

BMP Description:

The City of West Linn development standards require submission of an erosion control permit application and an erosion and sediment control plan for all sites with 1000 ft² of disturbance or greater, consistent with requirements provided in the Municipal and Community Development Codes. For sites disturbing one acre or greater, a 1200-C permit is also required, as issued by DEQ and consistent with the requirements of DEQ's 1200-C Guidance Manual. The City requests copies of all 1200-C permits issued from DEQ as well.

The City recommends the use of the *Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual* (revised Dec. 2008) in preparing the erosion control plans and implementing the erosion control BMPs. This guidance document recommends various non-structural and structural techniques for erosion control and includes measures related to good housekeeping and non-stormwater related waste.

During the plan review process, new and redevelopment will be assessed for compliance with the erosion control standards and provisions outlined in the guidance document. Plans not in compliance will not be approved and will be required to implement appropriate erosion control techniques prior to approval.

- (1) Report any updates or modifications to the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2008).
- (2) Record the number of erosion control permit (City issued and DEQ issued) applications received.
- (3) Track the number of erosion and sediment control plan reviews completed.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
	 Measurable Goals: Require submission of erosion control plans for development greater than 1000 ft². Require a copy of all 1200-C permit applications for development greater than one acre. Assess new and redevelopment applications for erosion control compliance during plan review. Require erosion and sediment control plans not in compliance to be amended prior to approval in conjunction with provisions outlined in the Clackamas County Erosion Prevention and Sediment Control Manual (2008). 	
Provide Educational Information to Construction Site Operators	Responsible Department: City of West Linn Engineering Department Permit Year: Ongoing BMP Description: The City of West Linn makes the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual available to engineers, contractors, and the general public. Educational brochures are attached to building and grading permits. The City of West Linn publicizes (via brochures, flyers, and pamphlets on the City hall bulletin board) a variety of educational opportunities pertaining to erosion prevention geared for construction site operators and the general public. Such opportunities include classes at the Urban Watershed Institute, classes at Portland Community College, and participation in regional erosion control awards. Measurable Goals: • Provide educational information to construction site operators and the general public via brochures, flyers, pamphlets, and attachments to building and grading permit applications.	(1) Verify that this BMP was conducted.

City of West Linn BMP	DMD Implementation	Tracking Measures
Descriptions	BMP Implementation	

NPDES Permit Requirement – (v) Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion and sediment control plan is properly implemented. Inspections of construction sites must include disturbed areas of the site, material and waste storage areas, stockpile areas, construction site entrances and exits, sensitive areas, discharge locations to the MS4 and receiving waters. Inspections must be documented, including photographs and monitoring results as appropriate.

NPDES Permit Requirement - (vi) *Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.*

Conduct Erosion Control Inspections and Enforcement

Responsible Department: City of West Linn Engineering Department

Permit Year: Ongoing

BMP Description: The City of West Linn development standards require erosion control to be in place prior to issuance of a construction and/or building permit. All sites greater than 1000 ft² of disturbance are required to have an erosion and sediment control plan on record and are inspected during construction activities.

Small residential developments are inspected for erosion control twice, at a minimum. Large development and commercial developments are also inspected a minimum of twice for erosion control and more frequently as part of construction inspections. Additional inspections are conducted if permit violations occur. Erosion control inspections are conducted in accordance the City's erosion and sediment control inspection form. Erosion and sediment control enforcement procedures are outlined on the City's website as part of a three step progression. For sites with an initial erosion control violation, a written notice of inspection findings and required corrections is issued. 24 hours is typically given to correct the initial problem. If not resolved, a notice of non-compliance will be issued with required corrections. Should required corrections not be addressed, a stop work order will be issued and other penalties such as fines and suspension/ withdrawal of development approvals may be imposed. Engineering or building inspections will also not be conducted while an erosion control violation exists. Before the final engineering or building inspection, all disturbed area must be permanently stabilized or revegetated.

Measurable Goals:

- Inspect all sites with an erosion control plan for appropriate erosion control.
- As necessary, enforce appropriate erosion and sediment control in conjunction with the three-step progression as outlined on the City's website.
- Require all disturbed areas to be permanently stabilized or revegetated prior to final engineering or building inspection.

- (1) Track the number of erosion control inspections conducted each year.
- (2) Report the number of notices of non-compliance and stop work orders issued, and describe the measures used to resolve the issue.

SWMP Element #4 Education and Outreach

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.d. **See Table 4** for the City of West Linn's BMPs that address the requirements that are listed above.

	SWMP Element #4: Education and Outreach						
Applicable BMPs							
Schedule A.4.d Permit Requirement		Provide Public Education and Outreach Materials Regarding Stormwater Management	Implement a Pet Waste Program	Participate in a Public Education Effectiveness Evaluation	Ensure Staff Training for Pest Management	Ensure Staff Training in Spill Response	Promote Staff Education Related to Environmentally Friendly Solutions
i.	Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater dischargesThe public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.	•					
ii.	Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.	•	•				

	SWMP Element #4: Education and	Outreach					
				Applicabl	e BMPs		
	Schedule A.4.d Permit Requirement	Provide Public Education and Outreach Materials Regarding Stormwater Management	Implement a Pet Waste Program	Participate in a Public Education Effectiveness Evaluation	Ensure Staff Training for Pest Management	Ensure Staff Training in Spill Response	Promote Staff Education Related to Environmentally Friendly Solutions
iii.	Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the copermittees.	-	•				
iv.	As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.	See Element #8: Structural Stormwater Facility Operations and Maintenance BMP: Private Water Quality Facility Maintenance Program			nd		
v.	Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.	See Element #3: Construction Site Runoff Control BMP: Provide Educational Information to Construction Site Operator			Operators		
vi.	Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program.			•			

SWMP Element #4: Education and	Outreach					
	Applicable BMPs					
Schedule A.4.d Permit Requirement	Provide Public Education and Outreach Materials Regarding Stormwater Management	Implement a Pet Waste Program	Participate in a Public Education Effectiveness Evaluation	Ensure Staff Training for Pest Management	Ensure Staff Training in Spill Response	Promote Staff Education Related to Environmentally Friendly Solutions
vii. Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open			vithin the C	City of West		
space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance.				•	•	
viii. Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.	•	•				

TABLE 4 – Education and Outreach BMPs

City of West Linn BMP Descriptions

BMP Implementation

Tracking Measures

NPDES Permit Requirement – (i) Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges....The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.

NPDES Permit Requirement – (ii) Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.

NPDES Permit Requirement - (iii) Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the co-permittees.

NPDES Permit Requirement – (viii) Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.

Provide Public Education and Outreach Materials regarding Stormwater Management **Responsible Department:** City of West Linn Engineering Department

Permit Year: Ongoing

BMP Description: The City of West Linn continues to employ a public education strategy aimed at reducing the discharge of pollutants associated with a variety of activities including but not limited to:

- 1. The application of pesticides, herbicides and fertilizers by citizens.
- 2. Illicit discharges and dumping of waste materials into the storm drainage system.
- 3. Disposal of waste oil and toxic materials.

Such educational materials are distributed throughout the City via newsletter publications, brochures, bill inserts, the City web page, and radio advertisements. Newsletter articles typically include information on recycling locations, local disposal programs, and other coordinated efforts with METRO. Other educational topics include: naturescaping and alternative pesticide/fertilizer use.

Additionally, the City of West Linn coordinates with other local jurisdictions and organizations (i.e., ACWA, Regional Coalition for Clean Rivers and Streams) and makes monetary contributions to the Tualatin Basin Public Awareness Committee (TB PAC) to promote public awareness of water quality issues related to the above-mentioned practices.

- (1) Track the number, types, and topics of public educational materials dispersed to the public annually.
- (2) Indicate any largescale public educational campaigns initiated during a given year.
- (3) Track coordinated public outreach activities with local co-permittees.
- (4) Record the number of catch basins stenciled in a given year.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
	To aid in public education related to proper disposal of waste materials, the City of West Linn also works with individuals and groups who volunteer to conduct catch basin stenciling. The Public Works Department provides direction and materials to volunteers for catch basin stenciling efforts.	(5) Track amount donated to TB PAC each year.
	Measurable Goals:	
	 Utilize newsletters, brochures, bill inserts, City web page, and radio advertisements to promote public awareness of stormwater quality issues and to provide information to encourage public reporting of illicit discharges. 	
	 Continue to make annual monetary contributions to TB PAC. 	
Implement a Pet Waste Program	Responsible Department: City of West Linn Parks and Operations Department Permit Year: Ongoing BMP Description: During maintenance activities on public property (i.e., parks), staff look for evidence of domestic animal waste. If problems are identified, signs are installed to educate citizens about the effects of animal waste on stormwater. Staff will also leave educational door hangers in the immediate area to make citizens aware of the problem, and they provide baggies and disposal areas for cleanup of domestic animal waste. Measurable Goals: • If pet waste is observed as a problem upon routine maintenance activities at public property, install educational signs and distribute educational door hangers at homes in the immediate vicinity of the identified problem areas.	(1) Report on activities conducted annually.
	 Continue to provide pet waste baggies and disposal areas in City parks for disposal of domestic animal waste. 	

NPDES Permit Requirement - (iv) As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.

See Element #8: Structural Stormwater Facility Operations and Maintenance

BMP: Private Water Quality Maintenance Program (Table 8)

NPDES Permit Requirement -(v) *Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.*

See Element #3: Construction Site Runoff Control

BMP: Provide Educational Information to Construction Site Operators (Table 3)

NPDES Permit Requirement -(vi) Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program.

Participate in a Public Education Effectiveness Evaluation

Responsible Department: City of West Linn Engineering Department

Permit Year: Ongoing

BMP Description:

Over the permit term, the City of West Linn will coordinate with other local, Phase 1 jurisdictions to provide information related to an effectiveness evaluation. The effectiveness evaluation information will focus on assessing changes in targeted behaviors and will allow for additional information that can be used in adaptive management of the City's education and outreach strategy.

Measurable Goals:

• Coordinate with other local, Phase 1 jurisdictions in providing/ compiling information regarding a public education effectiveness evaluation over the permit term.

(1) Report on activities conducted annually.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
pollution prevention an facility construction an	rement – (vii) Include training for municipal employees involved in MS4-related activities, as appropriate. The training showed reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building mad related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire figure system maintenance	aintenance, new municipal
	e Element #7: Pollution Prevention for Municipal Operations ith the Local Fire Department Related to Pollutant Discharge from Fire Fighting Training Activities (Table 7)	
Ensure Staff Training for Pest Management	 Responsible Department: City of West Linn Parks Department and Operations Department Permit Year: Ongoing BMP Description: The City of West Linn informally follows the Portland Integrated Pest Management (IPM) Plan. In accordance with the program, crews from Public Works and the Parks Department are trained once every two years on proper pesticide and fertilizer application rates and techniques in conjunction with guidelines outlined in the IPM Plan. Measurable Goals: Provide training to Public Works and Parks department crews once every two years on proper pesticide and fertilizer application rates and techniques in conjunction with guidelines outlined in the IPM Plan. 	(1) Report on training conducted every two years.
Ensure Staff Training in Spill Response	Responsible Department: City of West Linn through a contract with Tualatin Valley Fire and Rescue Permit Year: Ongoing BMP Description: The City of West Linn, through a contract with Tualatin Valley Fire and Rescue, provides Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training to staff that initially respond to spills. Annual refresher courses are also provided to these staff members by an in-house crew chief. Measurable Goals: Provide OSHA HAZWOPER training and refresher courses to staff initially responding to spills annually.	(1) Track the number of employees receiving OSHA HAZWOPER training annually.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
Promote Staff Education Related	Responsible Department: City of West Linn Operations and Engineering Departments	(1) Track the number
to	Permit Year: Ongoing	of employees receiving training
Environmentally Friendly Solutions	BMP Description: A variety of training is provided to City staff associated with stormwater management in the City. Such training is conducted annually or every other year, depending on the number of employees with which to train.	in stormwater management annually.
	City of West Linn Public Works and Engineering Staff also attend a variety of educational presentations and	(2) Track Environmental staff participation in professional
	City staff participate in the regional erosion control awards committee, Tualatin Basin Policy Advisory Committee and other professional meetings, seminars and conferences. The City of West Linn continues to coordinate with other local, Phase 1 MS4 NPDES jurisdictions including other Clackamas County copermittees regarding regional water quality efforts. Areas for coordination include MS4 issues, education, public outreach and monitoring.	organizations and attendance at relevant conferences.
	Measurable Goals:	
	 Conduct municipal training for employees associated with stormwater management in the City. 	
	 Continue to participate in, and attend environmental and water quality related professional meetings and conferences. 	
	 Continue to maintain a budget for employee attendance of conferences. 	
	• Continue to coordinate with other local Phase 1 jurisdictions regarding regional water quality efforts.	

SWMP Element #5 Public Involvement and Participation

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.e. **See Table 5** for the City of West Linn's BMPs that address the requirements that are listed above.

SWMP Element #5: Public Involvement and Participation	
	Applicable BMPs
Schedule A.4.e Permit Requirement	Provide for Public Participation with SWMP and Benchmark Submittals
e. Co-permittees must adopt a public participation approach that provides opportunities for the public to effectively participate in the development, implementation and modification of the co-permittee's stormwater management program. The process must include provisions for receiving and considering public comments on the SWMP and the TMDL pollutant load reduction benchmark development. This public involvement does not apply to adding BMPs, and revisions or updates to existing BMPs that do not change the substance of the BMPs.	•

TABLE 5 – Public Involvement and Participation

City of West Linn BMP Descriptions	BMP Implementation	Performance Measures
NPDES Permit Requirement development, implementation public comments on the SWM updates to existing BMPs that	receiving and considering	
Provide for Public Participation in SWMP	Responsible Department: City of West Linn Engineering Department	
Updates and	Permit Year: Five	
Benchmark Submittals	BMP Description:	
	Schedule A.4.e of the City's MS4 NPDES permit requires the City to provide opportunity for public participation in the development, implementation, and modification of the City's Stormwater Management Plan (SWMP) and pollutant load reduction benchmark development.	
	SWMP revisions and pollutant load reduction benchmarks are required for submittal to DEQ at the permit renewal submittal (180-days prior to permit expiration). Prior to submittal of these items, the City will provide the public with an opportunity to comment on the revisions to the SWMP and proposed pollutant load reduction benchmarks for a minimum of 30 days. Comments on the documents will be collected and considered and response to comments will be publically provided.	
	Measurable Goals:	
	 Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline. 	

SWMP Element #6 Post-Construction Site Runoff

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.f. **See Table 6** for the City of West Linn's BMPs that address the requirements that are listed above.

	SWMP Element #6: Post-Construction Site Runoff			
		Applica	able BMPs	
	Schedule A.4.f Permit Requirement	Implement Community Development Code and Public Works Design Standards for Stormwater Treatment	Review and Update Applicable Code and Development Standards related to Stormwater Control	
i.	By [DATE], the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace X ft² of impervious surface must meet the following conditions:1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Minimize site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4); 3) Prioritize and implement Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and, 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.	•		
ii.	Co-permittees must eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permitteeCo-permittees must review code and development standards, and modify barriers, such as by policy, code, rules, ordinance or similar mechanism, as required within three years of identification.	•	•	

	SWMP Element #6: Post-Construction Site Runoff				
		Applica	able BMPs		
	Schedule A.4.f Permit Requirement	Implement Community Development Code and Public Works Design Standards for Stormwater Treatment	Review and Update Applicable Code and Development Standards related to Stormwater Control		
iii.	To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the copermittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by [DATE] that, at a minimum, includes the following: 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold; 2) A defined design storm that allows for or identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume; 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches; 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and, 5) Best Management Practices.	•			
iv.	Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.	•	•		
v.	Where a project site is characterized by factors limiting on-site stormwater capture and treatment or flow reduction the Post-Construction Stormwater Management program must require equivalent measures, such as off-site stormwater quality management. Off-site stormwater quality management may include off-site mitigation, a stormwater quality structural facility mitigation bank or a payment-in-lieu program.	•	•		

TABLE 6 – Post-Construction Site Runoff BMPs

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
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NPDES Permit Requirement – (i) By [DATE], the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace X ft^2 of impervious surface must meet the following conditions:1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Minimize site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4) to lessen hydrological and water quality impacts from impervious surfaces; 3) Prioritize and implement Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and, 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.

NPDES Permit Requirement – (ii) Co-permittees must eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permittee. The co-permittees must minimize the applicable code and development standard barriers if a co-permittee identifies that the elimination of a code and development standard barrier conflicts with public and environmental health and safety standards. Co-permittees must review code and development standards, and modify barriers, such as by policy, code, rules, ordinance or similar mechanism, as required within three years of identification.

NPDES Permit Requirement – (iii) To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by [DATE] that, at a minimum, includes the following: 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold; 2) A defined design storm that allows for or identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume; 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches; 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and, 5) Best Management Practices.

NPDES Permit Requirement – (iv) Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.

NPDES Permit Requirement – (v) Where a project site is characterized by factors limiting on-site stormwater capture and treatment or flow reduction... the Post-Construction Stormwater Management program must require equivalent measures, such as off-site stormwater quality management. Off-site stormwater quality management may include off-site mitigation, a stormwater quality structural facility mitigation bank or a payment-in-lieu program.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
Implement Community Development Code and Public Works Design Standards for Stormwater Treatment	Permit Year: Ongoing BMP Description: The City of West Linn reviews development submittals for conformance with the City's Community Development Code and Public Works Design Standards with regards to stormwater treatment and control. The City's Community Development Code serves to protect surface waters in the City by outlining overlay zones, stormwater control objectives, and erosion control measures (Section 33.030 of the CDC). Applicable provisions for stormwater treatment are also outlined in Section 2 of the City's Public Works Standards. Overlay zones are generally buffer areas that exist to protect, conserve, and enhance streams, wetlands, riparian areas, and other surface waters. The plan review process identifies impacted overlay zones and addresses appropriate mitigation efforts or poses restrictions for these areas. Stormwater treatment is required for new developments in order to control phosphorus loading and reduce high velocity flows. The City references use of the current City of Portland Stormwater Management Manual, which requires treatment for projects that develop or redevelopment more than 500 ft² of new impervious surface. In an effort to promote low-impact development, the City currently has City-specific standard details for rain gardens. Section 2.0051 of the City's Public Works Design Standards outline development factors that limit use of an on-site stormwater treatment facility and outline the equivalent measures that a developer would have to implement. Measurable Goals: • Continue to require stormwater treatment in conjunction with provisions outlined in the City of Portland's Stormwater Management Manual.	 Track the number of development applications reviewed for compliance with the current stormwater requirements for treatment and detention. Track any modifications to the list of currently approved structural stormwater treatment facilities. Track private BMPs that are implemented and their associated drainage areas.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
	Responsible Department: City of West Linn Development Services Permit Year: Three (June 30, 2014) BMP Description: In conjunction with the provisions and timeframe outlined in the City's MS4 NPDES permit, the City of West Linn will review their existing stormwater treatment design standards and applicable code provisions to ensure that barriers that could inhibit LID are minimized and eliminated where practicable. As part of the review, the City will review, and consider for adoption other jurisdiction's stormwater management manuals for consistency with applicable permit language. Such review will ensure that the manual is promoting the design and implementation of practices to minimize impervious surfaces and reduce stormwater runoff, optimizing onsite retention practices, and reducing post-construction stormwater runoff volumes and rates. With the adoption of a stormwater management manual, as applicable, the City will update their impervious area threshold for stormwater pollutant and runoff control and their design storm that would result in capture and treatment of 80% of the average annual runoff volume. Measurable Goals: • Review the City's current stormwater treatment standards for compliance with new MS4 NPDES permit language.	(1) Track progress related to the review of the City's code and development standards per provisions in the MS4 NPDES permit.
	 Review the City's current public works development code provisions to ensure that applicable barriers related to the use of LID or GI techniques are minimized and eliminated where practicable. Update the City's existing post-construction stormwater design standards and code language by June 30, 2014. 	

SWMP Element #7 Pollution Prevention for Municipal Operations

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.g. **See Table 7** for the City of West Linn's BMPs that address the requirements that are listed above.

	SWMP Element #7: Pollution Prevention for Municipal Operations								
				Applicable BMPs					
	Schedule A.4.g Permit Requirement	Conduct Street Area Repair	Maintain Public Streets	Implement an Integrated Pest Management Program	Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	Control Infiltration and Cross Connections to the Stormwater Conveyance System	Conduct Master Planning for Stormwater Quality Improvements		
i.	Operate and maintain public streets, roads and highways for which the permittee has authority in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activities and yard debris reduction and disposal programs;	•	•						
ii.	Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;			•					
iii.	Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;				•				

	SWMP Element #7: Pollution Prevention for Municipal Operations								
				Applicable BMPs					
	Schedule A.4.g Permit Requirement	Conduct Street Area Repair	Maintain Public Streets	Implement an Integrated Pest Management Program	Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	Control Infiltration and Cross Connections to the Stormwater Conveyance System	Conduct Master Planning for Stormwater Quality Improvements		
iv.	Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary;					•			
v.	Implement a program to control the release of materials related to fire-fighting training activities; and,								
vi.	Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;						•		

TABLE 7 – Pollution Prevention for Municipal Operations BMPs

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
	nt – (i) Operate and maintain public streets, roads and highways for which the permittee has authority in a manner a utants to the MS4, including pollutants discharged as a result of deicing activities and yard debris reduction and disp	
Conduct Street Area Repair	Responsible Department: City of West Linn Public Works Department, Street Department Permit Year: Ongoing BMP Description: The City of West Linn conducts road maintenance and repair activities continuously to prevent erosion and stormwater pollutant generation. Repair work is generally scheduled during the dry season when possible, to minimize pollutant discharge into the stormwater conveyance system. Applicable erosion and sediment control practices and provisions are implemented in conjunction with repair activities that meet the threshold requirement.	
	Measurable Goals: • Ensure road maintenance and repair activities include consideration of water quality impacts.	
Maintain Public Streets	Responsible Department: City of West Linn Operations Department Permit Year: Ongoing BMP Description: The City of West Linn Operations Department conducts contracted street sweeping activities throughout the City and has recently purchased their own sweeper to support the contracted sweeping activities on more of the high traffic streets. Each street in the City is swept approximately 3 - 6 times per year. Regenerative air sweeping techniques are employed to minimize wash water from entering the stormwater conveyance system. Leaf and yard debris pick up occurs weekly within the City limits. Additionally, the City maintains a drop off location for yard debris not collected during the weekly pick-up activities. A Deicing agent (Magnesium Chloride) is occasionally used during icy weather conditions at select locations within the City (bridges, steep slopes). Measurable Goals: • Sweep each street between 3 and 6 times per year.	 Track the number of sweeps conducted annually. Track the volume of debris removed during sweeping activities. Track the amount (volume) of deicing agent used annually.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement properties;	\mathbf{nt} – (ii) Implement a management program to control the use and application of pesticides, herbicides and fertilizers	s on municipally-owned
Implement an Integrated Pest Management Program	Responsible Department: City of West Linn Operations Department, Parks Department Permit Year: Ongoing BMP Description: As an informal guide, the City of West Linn refers to the Portland Integrated Pest Management (IPM) Program, which defines appropriate pesticide and fertilizer application procedures and protocols along roadways, within City parks, and around water quality facilities. Staff adheres to such guidelines during maintenance activities. Per the IPM program, the following activities are typically implemented: • Application of chemicals is eliminated where possible; • Regular removal of invasive plant species is conducted; • Native plants are used for revegetation projects; and • Only spot spraying is conducted for blackberry removal. In addition, any work conducted within public right-of-ways requires certified, licensed chemical applicators. Education measures and staff training related to pest management and control are outlined under Element #4: Public Education and Outreach. Measurable Goals: • Use the Portland Integrated Pest Management (IPM) Program as a guide for appropriate pesticide and fertilizer application procedures along roadways, within City Parks, and around water quality facilities. • Conduct work within public right-of-way only with certified, licensed applicators.	 (1) Track any updates or modifications to the referenced IPM procedures and protocols. (2) Track the amount of money spent on pest management chemicals each year.

NPDES Permit Requirement – (iii) Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;

Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities

Responsible Department: City of West Linn Operations Department

Permit Year: Ongoing **BMP Description:**

The City of West Linn currently operates various maintenance facilities that have the potential to treat, store, or transport municipal waste.

Over the permit term, the City of West Linn will inventory these facilities and assess strategies to minimize pollutant discharge from these facilities.

Measurable Goals:

- Inventory municipal facilities subject to this permit requirement.
- Over the permit term, identify strategies to minimize discharge from these facilities.

(1) Track strategies used to minimize pollutant discharge.

NPDES Permit Requirement – (iv) Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary

Control Infiltration and Cross Connections to the Stormwater Conveyance System

Responsible Department: City of West Linn Operations Department

Permit Year: Ongoing

BMP Description: The City of West Linn implements an inflow and infiltration (I&I) abatement program for the sanitary sewer system. Sanitary lines are tested via smoke-testing, T.V. techniques, and flow metering for any cracking or breakage that would possibly result in infiltration from the sanitary to the storm system.

The City's Development Services Department reviews new and redevelopment plans for possible cross-connections. The City also implements an illicit discharge detection and elimination program that works to identify and remove any cross-connections during dry-weather field screening activities.

Measurable Goals:

- As necessary and as funding allows, test sanitary lines using smoke-testing, T.V. techniques, and flow metering.
- Review new and redevelopment plan submittals for possible cross-connections.
- Inspect for potential cross-connections during dry weather field screening activities.

- a. Indicate whether any sanitary sewer cross-connections were identified during sanitary line testing, during the plan review process, or during dryweather field screening activities on an annual basis.
- b. Describe any follow-up activities required for identified cross-connections.

NPDES Permit Requirement – (v) Implement a program to control the release of materials related to fire-fighting training activities;

Fire fighting activities are contracted to the Tualatin Valley Fire and Rescue Department, who implements fire fighting activities for a number of local jurisdictions in Clackamas, Multnomah, and Washington counties. No fire fighting training activities are conducted within the City of West Linn.

NPDES Permit Requirement – (vi) Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;

Conduct Master Planning for Stormwater Quality Improvement

Responsible Department: City of West Linn Engineering Department

Permit Year: Ongoing

BMP Description: The City of West Linn updated their Stormwater Master Plan in 2006. The most recent Master Planning efforts were conducted to update the current City drainage system inventory and prioritize future capital improvement projects for flood control and water quality benefits. Prioritization is generally based on overall planning goals, cost, public safety, and environmental impacts. Current capital improvement projects (CIPs) being implemented are focused on fish passage, and culvert upsizing and replacement for capacity. Updates are made to the CIP inventory and mapped accordingly.

This requirement is expected to be addressed in the hydromodification and retrofit assessments required, per the City's new MS4 NPDES permit.

Measurable Goals:

• Ensure water quality is considered during the development of flood control CIPs.

- (1) Track any updates or modifications to the current Stormwater Master Plan approved by the City.
- (2) Track the number of CIP projects implemented each year and discuss the added benefit (water quality, habitat restoration, etc) of each.
- (3) Map the location and drainage area of water quality CIPs as they are constructed.

SWMP Element #8 Structural Stormwater Facility Operations and Maintenance

NPDES permit requirements are listed below, followed by West Linn's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.h. **See Table 8** for the City of West Linn's BMPs that address the requirements that are listed above.

	SWMP Element #8: Structural Stormwater Facility Operations and Maintenance				
			Applical	ole BMPs	
	Schedule A.4.h Permit Requirement	Conduct Stormwater Conveyance System Cleaning and Maintenance	Conduct Catch basin Cleaning and maintenance	Public Structural Control Facility Cleaning and Maintenance	Private Water quality Facility Maintenance Program
i.	Co-permittees must implement a program by [DATE] to verify that stormwater structural facilities and controls are inventoried, mapped, inspected, operated and maintained for effective pollutant removal, infiltration and/or flow control. At a minimum, the program must include the following: 1) Legal authority to inspect and require effective operation and maintenance; 2) A program to inventory and map public and private stormwater treatment facilities as provided under Schedule A.4.h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater facilities that have been inventoried and mapped as provided under Schedule A.4.h.ii.	•	•	•	
ii.	As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a plan or approach by [DATE] that guides the long-term maintenance and management of all publicly-owned and identified privately-owned stormwater structural facilities and controls. At a minimum, the plan or approach must describe the following: 1. Publicly-owned or operated stormwater quality facilities inventory and mapping process, inspection and maintenance schedule, inspection, operation and maintenance criteria and priorities, description of inspector type and staff position or title, and, inspection and maintenance tracking mechanisms; and			•	

SWMP Element #8: Structural Stormwater Facility Operations and Maintenance				
		Applical	ole BMPs	
Schedule A.4.h Permit Requirement	Conduct Stormwater Conveyance System Cleaning and Maintenance	Conduct Catch basin Cleaning and maintenance	Public Structural Control Facility Cleaning and Maintenance	Private Water quality Facility Maintenance Program
2. Privately-owned or operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and mapped, inspection criteria, rationale, priorities, inspection frequency and procedures, required training or qualifications to inspect private stormwater facilities, reporting requirements, and, inspection and maintenance tracking mechanism.				

TABLE 8 – Structural Stormwater Facilities Operations and Maintenance BMPs

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures			
mapped, inspected, operated 1) Legal authority to inspect provided under Schedule A.4	nt – (i) Co-permittees must implement a program by [DATE] to verify that stormwater structural facilities and control and maintained for effective pollutant removal, infiltration and/or flow control. At a minimum, the program must indicate and require effective operation and maintenance; 2) A program to inventory and map public and private stormwater .h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater faciliti trovided under Schedule A.4.h.ii.	clude the following: treatment facilities as			
implement a plan or approd	NPDES Permit Requirement – (ii) As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop an implement a plan or approach by [DATE] that guides the long-term maintenance and management of all publicly-owned and identified privately-owned stormwate structural facilities and controls. At a minimum, the plan or approach must describe the following:				
	operated stormwater quality facilities inventory and mapping process, inspection and maintenance schedule, a and priorities, description of inspector type and staff position or title, and, inspection and maintenance tracking me				
2) Privately-owned or	operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and a	mapped, inspection criteria,			

rationale, priorities, inspection frequency and procedures, required training or qualifications to inspect private stormwater facilities, reporting requirements, and,

Conduct Stormwater
Conveyance System
Cleaning and
Maintenance

Responsible Department: City of West Linn Operations Department

Permit Year: Ongoing

inspection and maintenance tracking mechanism.

BMP Description: The City of West Linn annually inspects their stormwater conveyance system including: manholes, sewer pipes, culverts, and ditches. System components requiring repair or replacement will be maintained promptly following inspection.

Measurable Goals:

• Perform cleaning and repair promptly based on inspection results.

- (1) Track the length of conveyance system inspected.
- (2) Track the volume of debris removed during cleaning activities.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
Conduct Catch basin Cleaning and Maintenance	Cleaning and Maintenance BMP Description: The City of West Linn inspects all public catch basins at least once per year. Cleaning activities are conducted as needed based on inspection and primarily occur during the dry weather season. A database tracking system is updated during each maintenance cycle to allow the City to better track catch basins requiring more frequent maintenance. Catch basins requiring repair or replacement will be maintained promptly. Measurable Goals: Inspect all public catch basins once per year, and clean as needed based on inspection results.	
	 Repair or replace catch basins promptly based on inspection results. Update tracking database during each maintenance cycle. 	
Public Structural Control Facility Cleaning and Maintenance	Responsible Department: City of West Linn Operations Department, Environmental Services Division Permit Year: Ongoing BMP Description: The City of West Linn owns and operates approximately 200 public structural water quality facilities. Such public structural facilities currently include ponds, swales, detention tanks, rain gardens, and pollution control manholes. Following construction of such public structural control facilities, asbuilt information is provided to the City's GIS department where the facility location and associated drainage area is mapped. Public structural control facilities are currently inspected annually and cleaned and maintained when inspections show it is needed Measurable Goals: Inspect public structural water quality facilities annually and maintain based on inspection results.	 Track the number and frequency of structural facilities inspected and maintained. Track the volume of debris removed during cleaning activities.

City of West Linn BMP Descriptions	BMP Implementation	Tracking Measures
	BMP Owner: City of West Linn Operations and Engineering Departments, Permit Year: Ongoing BMP Description: There are currently approximately 150 private structural water quality facilities in West Linn. The City of West Linn has provisions in its Municipal Code, including enforcement language, to require private facility owners to submit maintenance agreements to the City to ensure ongoing maintenance of these private water quality facilities. Such private water quality facilities tracked by the City include rain gardens, swales, ponds pollution control manholes, filters, and detention tanks. The maintenance agreement requires the owner to provide an annual report summarizing inspection and maintenance activities regarding the water quality facility, including verification by a maintenance contractor that maintenance was conducted. As maintenance agreements are submitted to the City, the City maps the facility location and contributing drainage area. The City is also working to collect annual reports of inspection and maintenance activities for existing water quality facilities that do not currently have maintenance agreements. The City mails letters annually to all private water quality facility owners, regardless of whether they have a maintenance agreement with the City, requesting annual inspection and maintenance reports for the facilities. Annual reports are maintained on file at the City. In accordance with the schedule outlined under BMP: Public Water Quality Facility Maintenance Program, the City is formalizing inspection and maintenance schedules, inspection and maintenance criteria, and inspection and maintenance tracking mechanisms for structural control facilities by June 30, 2015. Such information will also be made available private facility owners. Additionally, by June 30, 2015, the City will formalize a program to further follow-up and enforce maintenance for existing water quality facilities that do not currently have maintenance agreements. • Require new private water quality facilities	Tracking Measures (1) Track number of maintenance agreements submitted to the City each year. (2) Track number of annual maintenance reports received each year.
	 facilities that do not have an existing maintenance agreement. Provide formalized structural stormwater facilities inspection and maintenance documentation to private facility owners by June 30, 2015. 	