

CITY OF GLADSTONE'S STORMWATER MANAGEMENT PLAN (2010)

SWMP Overview

In accordance with the City of Gladstone's Municipal Separate Storm Sewer (MS4) National Pollutant Discharge Elimination System (NPDES) Permit, Permit number **XXXX** and effective date **XXX**, the City of Gladstone 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 Gladstone 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 Gladstone’s relevant BMPs that address the permit requirement. In some cases, listed permit requirements have 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 Gladstone’s BMP fact sheets that address the permit requirements that are listed below.

SWMP Element #1: Illicit Discharge Detection and Elimination Summary			
Schedule A.4.a Permit Requirement	Applicable BMPs		
	Implement the Illicit Discharges Elimination Program	Conduct Annual Dry Weather Field Screening	Spill Response
<i>i. Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee’s MS4.</i>	■		
<i>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.</i>	■		
<i>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....by November 1, [DATE].</i>		■	
<i>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.</i>		■	
<i>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.</i>		■	
<i>vi. Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4....</i>			■

SWMP Element #1: Illicit Discharge Detection and Elimination Summary

Schedule A.4.a Permit Requirement	Applicable BMPs		
	Implement the Illicit Discharges Elimination Program	Conduct Annual Dry Weather Field Screening	Spill Response
vii. <i>Take appropriate action to remove illicit discharges from the MS4 within [X 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.</i>	■		
viii. <i>Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.</i>	■		
ix. <i>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.</i>	■		
x. <i>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.</i>	■		
xi. <i>Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.</i>		■	
xii. <i>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.</i>	■		

TABLE 1 – Illicit Discharge Detection and Elimination BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>NPDES Permit Requirement – (i) <i>Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee’s MS4.</i></p> <p>NPDES Permit Requirement – (ii) <i>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.</i></p> <p>NPDES Permit Requirement – (vii) <i>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.</i></p> <p>NPDES Permit Requirement – (viii) <i>Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.</i></p> <p>NPDES Permit Requirement – (ix) <i>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.</i></p> <p>NPDES Permit Requirement – (x) <i>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.</i></p> <p>NPDES Permit Requirement – (xii) <i>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.</i></p>	

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>Implement the Illicit Discharges Elimination Program</p>	<p>Responsible Department: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone prohibits illicit discharges to their MS4 system in conjunction with their Gladstone Municipal code; Chapter 8, Section 8.04 related to nuisance abatement. The City has the authority to conduct appropriate response procedures and enforce against responsible parties per (Gladstone Municipal Code – Section 8.04).</p> <p>If an illicit discharge is discovered, the City will conduct appropriate action to remove the illicit discharge in accordance with the City’s Guidelines for Illicit Discharge Investigations, as outlined in the City’s MS4 NPDES Implementation Guide. The guidelines will be updated by June 30, 2013, to address new requirements in the City’s MS4 NPDES permit requirements for illicit discharges.</p> <p>Currently, illicit discharges suspected and/ or identified by City staff (either independently or in conjunction with public reporting) are recorded on an illicit discharge inspection form (also included in the City’s MS4 NPDES Implementation Guide). Procedures for recording such discharges and appropriate follow up activities are also outlined in the City’s Guidelines for Illicit Discharge Investigations (per the MS4 NPDES Implementation Guide).</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Update the City’s Guidelines for Illicit Discharge Investigations and enforcement response procedures for consistency with MS4 NPDES permit requirements 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. 	<p>(1) Track the status of updating the City’s Guidelines for Illicit Discharge Investigations.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (iii) <i>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].</i></p> <p>NPDES Permit Requirement – (iv) <i>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 occur at least 72-hours after a precipitation event. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.</i></p> <p>NPDES Permit Requirement – (v) <i>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.</i></p> <p>NPDES Permit Requirement – (xi) <i>Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.</i></p>		
<p>Conduct Annual Dry Weather Field Screening</p>	<p>Responsible Party: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone conducts illicit discharge inspections, monitoring, and investigations annually during the dry weather period of the year (typically August) on all major outfalls (36” in diameter and greater) and select minor outfalls. City personnel complete data inspection forms during inspection of each outfall. Additional information is contained in the City’s Guidelines for Illicit Discharge Investigations per the City’s MS4 NPDES Implementation Guide.</p> <p>During the inspections, if the outfall is suspected of an illicit connection, sampling, analysis, and investigation are conducted according to the following procedures:</p> <ol style="list-style-type: none"> 1) Collect a water sample and have it analyzed for the suspected contaminant group. 2) Identify the water quality problem and use a drainage map and other source identification data to locate the potential sources. 3) Investigate the potential sources using one or more of the following techniques: on-site inspections, smoke-testing drain lines, dye tracing potential connections, and/or TV inspection of lines. <p>As described in the IDDE Program BMP, these procedures will be updated in accordance with the City’s MS4 NPDES permit requirements by June 30, 2013.</p>	<ol style="list-style-type: none"> (1) Track the number and location of major and minor outfalls inspected annually. (2) Indicate all illicit discharge inspection results and specify these outfalls requiring monitoring (sampling) and/or investigation annually. (3) Describe the resolution of any investigation activities conducted annually. (4) Track the status of outfall mapping activities.

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>The Public Works Supervisor notifies the City Administrator of all positive identifications, and the appropriate actions are taken to eliminate the discharge. Actions generally include initial letter notifications, and if the illicit discharge is not removed, a formal citation with penalty.</p> <p>The City is currently in the process of developing a GIS inventory of outfalls. During annual dry-weather inspection activities, the City will update their existing hardcopy map of outfalls and transfer such information into GIS when available.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Inspect all major outfalls and select minor outfalls annually for illicit discharges. • Follow appropriate follow-up procedures to identify the source of any illicit discharges discovered. • Notify the City Administrator of all positive identifications of illicit discharges and take appropriate actions to eliminate the discharge. • Develop a digital outfall map by the end of the permit term. 	
<p>NPDES Permit Requirement – (vi) <i>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.</i></p>		
<p>Spill Response</p>	<p>Responsible Party: Gladstone Fire Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone has an “Emergency Operations Plan”, which specifies appropriate procedures to contain and respond to chemical and hazardous waste spills within the City. Initial spill response within the City is the responsibility of the Gladstone Fire Department. When a spill is reported, the Fire Department is initially dispatched, and they determine whether or not to contact the DEQ Hazardous Materials Team for additional assistance and whether notification of the Oregon Emergency Response System is required.</p> <p>The Fire Department is trained and certified in accordance with OSHA Hazardous Materials Awareness and Response Level training. Generally, the Fire Department focuses on containment of spills and the protection of surface waters through the use of absorbent pads and booms. The Public Works Department may assist the Fire Department with containment and/or clean up, depending on the volume and hazardous rating of the spilled material. The non-emergency number for the Fire Department (503-557-2775) is the number provided to the public for reporting of spills. Notification of public works occurs as needed for spill response and follow-up.</p> <p>Measurable Goal:</p> <ul style="list-style-type: none"> • Conduct spill containment and/or cleanup activities in coordination with the Fire Department and/or DEQ Hazardous Materials Team, depending on the volume and hazardous rating of spill. 	<p>(1) Indicate the number of spills reported to the Gladstone Fire Department annually.</p> <p>(2) Indicate spill sources, causes, and types of discharges resulting from spill activities annually.</p>

**SWMP Element #2
Industrial and Commercial Facilities**

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

SWMP Element #2: Industrial and Commercial Facilities		
Schedule A.4.b Permit Requirement	Applicable BMP	
	Screen Existing and New Industrial Facilities	Conduct Inspections of High Priority Facilities
i. <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.</i>	■	
ii. <i>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.</i>	■	
iii. <i>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.</i>		■

TABLE 2 – Industrial and Commercial Facility BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (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.</p> <p>NPDES Permit Requirement – (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.</p>		
<p>Screen Existing and New Industrial Facilities</p>	<p>Responsible Department: City of Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone maintains a business license inventory of all local businesses, including industrial facilities, throughout the City. The inventory is maintained to aid with Business inspections. Facilities that either have an industrial stormwater NPDES 1200-Z permit or historically may contribute increased pollutant loads to the stormwater system are identified as potential high source facilities and thus inspected for stormwater related impacts during the business inspection program.</p> <p>Annually, the City of Gladstone will review their existing business license inventory 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.</p> <p>During the review of the existing business license inventory and new industrial development applications, the City will also update, as necessary, their inventory of industrial or commercial facilities that have been identified as having the potential to contribute significant pollutant load to the MS4.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Notify DEQ of any existing or new industrial facilities within the City of Gladstone’s jurisdiction that may potentially be subject to an industrial stormwater NPDES permit. • Maintain list of high priority facilities. 	<ol style="list-style-type: none"> (1) Track the number of existing or new facilities subject to a stormwater industrial NPDES permit during the permit term. (2) Track changes made to list of high priority facilities.

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (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.</p>		
<p>Conduct Inspections of High Priority Facilities</p>	<p>Responsible Party: City of Gladstone Public Works Department and Fire Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone maintains an inventory of potential high pollutant source facilities in conjunction with their BMP: Screen Existing and New Industrial Facilities. Guidelines outlining selection of such facilities or businesses is provided in the City’s Guidelines for Conducting Industrial and Commercial Facility Inspections per the City of Gladstone MS4 NPDES Implementation Guide.</p> <p>The business inspection program is implemented by the City’s Fire Department. As part of the business inspections, the Fire Department will inspect five high source facilities during the permit term for appropriate stormwater controls and surface water pollution prevention. A checklist is used during inspections, to assist the inspectors in checking for the appropriate stormwater controls. Inspection results are recorded on the inspection checklist and maintained on file. Facilities may also be inspected in accordance with illicit discharge investigations.</p> <p>If during the business inspection, a facility is discovered to be contributing to excessive pollutant discharges, the site is reported to the City Administrator and the industry is required to either stop the discharge or monitor to ensure compliance with ambient water quality standards.</p> <p>During the first year of the permit term, the City’s Guidelines for Conducting Industrial and Commercial Facility Inspections per the City of Gladstone MS4 NPDES Implementation Guide will be updated for consistency with the MS4 NPDES permit language.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Update the City’s Guidelines for Conducting Industrial and Commercial Facility Inspections for consistency with the MS4 NPDES permit language by June 30, 2012. • Inspect five high source facilities during the permit cycle.. • Report any facilities found to contribute excessive stormwater pollutant discharges to the City Administrator for follow-up. 	<p>(1) Indicate the number of high source facility inspections conducted (during the business inspection activities) during the permit cycle.</p> <p>(2) Report abatement measures for any facility found to be inappropriately discharging to the municipal stormwater system.</p>

**SWMP Element #3
Construction Site Runoff Control**

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

SWMP Element #3: Construction Site Runoff Control			
Schedule A.4.c Permit Requirement	Applicable BMPs		
	Require Erosion Control for New and Redevelopment	Educational Training Measures for Construction Site Operators	Conduct Erosion Control Inspections and Enforcement
i. <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.</i>	■	■	
ii. <i>Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.</i>	■	■	
iii. <i>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.</i>	■	■	
iv. <i>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.</i>	■	■	
v. <i>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.</i>			■

SWMP Element #3: Construction Site Runoff Control

	Applicable BMPs		
	Require Erosion Control for New and Redevelopment	Educational Training Measures for Construction Site Operators	Conduct Erosion Control Inspections and Enforcement
Schedule A.4.c Permit Requirement			
vi. <i>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.</i>			■

TABLE 3 – Construction Site Runoff Control BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (i) <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.</i></p> <p>NPDES Permit Requirement – (ii) <i>Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.</i></p> <p>NPDES Permit Requirement – (iii) <i>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.</i></p> <p>NPDES Permit Requirement – (iv) <i>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.</i></p>		
<p>Require Erosion Control for New and Redevelopment</p>	<p>Responsible Party: City of Gladstone Public Works, City of Gladstone Administration, and Clackamas County Service District #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Erosion control standards were adopted into the Gladstone Municipal Code in 1996 (Gladstone Municipal Code – Section 15.06). The City’s erosion control standards include various methods of erosion prevention including seeding, straw application, use of rip rap and other devices to prevent bank erosion, and other control methods as included in the “<i>Erosion Prevention and Sediment Control Planning and Design Manual (2008)</i>”. Erosion control measures must be included on the earthwork plans for all development disturbing an area greater than 1,000 ft² per compliance with the Manual. Submitted earthwork plans must include methods (non-structural BMPs) or interim facilities (structural BMPs) to be constructed or used during construction activities. Additionally, the manual includes measures related to good housekeeping and control of non-stormwater waste that would need to be implemented.</p> <p>The City of Gladstone has an IGA with Clackamas County Service District #1 (CCSD#1) for a variety of erosion control services including review and approval of erosion control plans, attendance at pre-construction conferences, site inspections during construction activities, and notification to the City of enforcement needs. Plan review is conducted by CCSD#1 in accordance with the guidelines established in the City of Gladstone’s Municipal Code. The County issues erosion and sediment control permits on the City’s behalf. For sites disturbing one acre or greater, a 1200-C permit as issued by DEQ is also required, consistent with the requirements of DEQ’s 1200-C Guidance Manual.</p>	<ol style="list-style-type: none"> (1) Report any updates or modifications to the approved erosion control standards or the <i>Erosion Prevention and Sediment Control Planning and Design Manual (2008)</i>. (2) Report renewals of the IGA with CCSD#1 for erosion control services and document any changes made to the IGA. (3) Track the number of erosion control plans reviewed for the City.

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>Measurable Goals:</p> <ul style="list-style-type: none"> Require erosion control measures on earthwork plans for development disturbing areas greater than 1,000 ft². Review erosion control plans, attend pre-construction meetings, and conduct erosion control site inspections through an IGA with CCSD#1. 	
<p>Educational Training Measures for Construction Site Operators</p>	<p>Responsible Party: City of Gladstone Public Works</p> <p>Permit Year: Ongoing</p> <p>BMP Description: A planning conference is required as part of pre-construction activities per the City of Gladstone’s Municipal Code. Typically, a City representative is in attendance as well as CCSD #1. During the conference, the prime-contractor is given a copy of the <i>Erosion Prevention and Sediment Control Planning and Design Manual (2008)</i> (Design Manual) and made aware of the City’s Municipal Code requirements regarding erosion control.</p> <p>Measurable Goal:</p> <ul style="list-style-type: none"> Provide a copy of the Design Manual to all contractors and inform them of Municipal Code requirements at pre-construction planning meetings. 	<p>(1) Track number of planning conference meetings attended by City staff.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (v) <i>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.</i></p> <p>NPDES Permit Requirement – (vi) <i>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.</i></p>		
<p>Conduct Erosion Control Inspections and Enforcement</p>	<p>Responsible Party: CCSD#1 conducts erosion control inspections on the City’s behalf. Inspections are done on all sites disturbing a minimum area of 1,000 ft². During construction activities, sites will be inspected a minimum of twice during construction activities, consistent with County’s current inspection frequency. Sites are required to pass an initial inspection prior to beginning work, and a final inspection prior to final building and engineering inspections. Sites will be inspected more frequently if needed, specifically during periods of higher activity and greater soil disturbance. The City of Gladstone occasionally conducts windshield inspections of construction sites and will inform the County of any potential violations. CCSD#1 will then inspect that site promptly.</p> <p>As part of the IGA, CCSD#1 is responsible for enforcement of erosion control standards and the County informs the City of enforcement actions as necessary. For sites with an erosion control violation or where ineffective erosion control is observed, a Notice of Non-Compliance is issued, and contractors are required to install effective control measures. If not resolved within the required time frame, Stop Work Orders are issued. Fines may be imposed for continued non-compliance in accordance with procedures outlined in the City’s Municipal Code (15.06.08).</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Inspect all sites requiring erosion control a minimum of twice during construction (conducted through an IGA with CCSD #1). • Impose penalties such as fines and stop work orders if corrective actions aren't taken. • Require sites to pass a final erosion control inspection prior to receiving a final engineering or building inspection (conducted through an IGA) with CCSD #1. 	<ol style="list-style-type: none"> (1) Report the number of erosion control inspections conducted annually. (2) Report the number of erosion control violations discovered during inspections, and describe methods used to resolve the issue. (3) Report number of fines and Stop Work Orders issued.

**SWMP Element #4
Education and Outreach**

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

SWMP Element #4: Education and Outreach			
	Applicable BMPs		
	Provide Public Education and Outreach Materials Regarding Stormwater Management	Participate in a Public Education Effectiveness Evaluation	Ensure Municipal Staff Training for Stormwater Pollution Prevention
Schedule A.4.d Permit Requirement			
<p>i. <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.</i></p>	■		
<p>ii. <i>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.</i></p>	■		

SWMP Element #4: Education and Outreach			
	Applicable BMPs		
	Provide Public Education and Outreach Materials Regarding Stormwater Management	Participate in a Public Education Effectiveness Evaluation	Ensure Municipal Staff Training for Stormwater Pollution Prevention
Schedule A.4.d 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.	■		
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		
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: Educational Training Measures for Construction Site 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		
	Provide Public Education and Outreach Materials Regarding Stormwater Management	Participate in a Public Education Effectiveness Evaluation	Ensure Municipal Staff Training for Stormwater Pollution Prevention
Schedule A.4.d Permit Requirement			
vii. <i>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 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.</i>	See Element #7: Pollution Prevention for Municipal Operations BMP: Coordinate with the Local Fire Department Related to Pollutant Discharge from Fire Fighting Training Activities		
			■
viii. <i>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.</i>	■		

TABLE 4 – Education and Outreach BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>NPDES Permit Requirement – (i) <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.</i></p> <p>NPDES Permit Requirement – (ii) <i>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.</i></p> <p>NPDES Permit Requirement – (iii) <i>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.</i></p> <p>NPDES Permit Requirement – (viii) <i>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.</i></p>	

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>Provide Public Education and Outreach Materials Regarding Stormwater Management</p>	<p>Responsible Party: City of Gladstone Public Works and City Administration</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone continues to implement a public education strategy aimed at reducing the discharge of pollutants associated with a variety of activities including but not limited to:</p> <ol style="list-style-type: none"> 1. Application of pesticides, herbicides, and fertilizers by citizens. 2. Illicit discharges and dumping of waste material into the storm drainage system. 3. Disposal of waste oil and toxic material. <p>The City of Gladstone coordinates with a number of local agencies and organizations to provide outreach materials to residents regarding stormwater quality. As a member of the <i>Clean River Partners of Clackamas County</i>, the City of Gladstone participates in the <i>Regional Coalition for Clean Rivers and Streams</i>. Outreach materials provided as a result of participation include articles in local newspapers, various mailings including the <i>Trash Talk and Streamlines</i> newsletter, and various bill inserts. Topics addressed with the materials include natural lawn care practices, landscaping techniques for clean water, recycling, and waste reduction.</p> <p>Gladstone also uses the City newsletter to provide information regarding stormwater protection and quality to City residents. The City newsletter is generated monthly and mailed to City residents as well as made available on the City website. A couple of times per year, it generally includes articles and information as related to: methods, rates, and equipment for pesticide and fertilizer application; locations and hours of waste disposal facilities; contact information for City Hall for public reporting of illicit discharges; recycling and litter control tips; and general water quality concerns.</p> <p>To aid in public education as related to proper disposal of waste materials, the City of Gladstone also performs annual catch basin stenciling on all City catch basins as a part of catch basin cleaning.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Utilize newsletters, brochures, bill inserts, and local newspapers to promote public awareness of stormwater quality issues and sources, including reporting of illicit discharges. • Continue as a member of Clean River Partners of Clackamas County and participate in the Regional Coalition of Clean Rivers and Streams. • Stencil public catch basins annually, if needed. 	<ol style="list-style-type: none"> (1) Track the number and content of informational articles published in the City newsletter annually. (2) Record the percentage of public catch basins stenciled each year.

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (iv) <i>As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.</i></p>		
<p>See Element #8: Structural Stormwater Facility Operations and Maintenance BMP: Private Water Quality Maintenance Program (Table 8)</p>		
<p>NPDES Permit Requirement – (v) <i>Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.</i></p>		
<p>See Element #3: Construction Site Runoff Control BMP: Educational Training Measures for Construction Site Operators (Table 3)</p>		
<p>NPDES Permit Requirement – (vi) <i>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.</i></p>		
<p>Participate in a Public Education Effectiveness Evaluation</p>	<p>Responsible Department: City of Gladstone Permit Year: Ongoing BMP Description: Over the permit term, the City of Gladstone 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 Goal:</p> <ul style="list-style-type: none"> • Coordinate with other local, Phase 1 jurisdictions in providing/ compiling information regarding a public education effectiveness evaluation over the permit term. 	<p>(1) Report on activities conducted annually.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (vii) <i>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 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</i></p>		
<p>See Element #7: See Element #7: Pollution Prevention for Municipal Operations BMP: Coordinate with the Local Fire Department Related to Pollutant Discharge from Fire Fighting Training Activities (Table 7)</p>		
<p>Ensure Municipal Staff Training for Stormwater Pollution Prevention</p>	<p>Responsible Department: City of Gladstone Permit Year: Ongoing BMP Description: The City of Gladstone is a member of various local organizations (i.e. Regional Coalition of Clean Rivers and Streams , Willamette River Water Coalition, and ACWA) intended to improve local water quality conditions, and as a result attends various educational meetings, presentations and conferences. Additionally, the City coordinates with Clackamas County and other Clackamas County co-permittees regarding regional water quality and stormwater management efforts. Specific areas of coordination include monitoring efforts and public education and outreach. In addition, the City will conduct regular staff meetings one to two times per year for staff with BMP implementation responsibilities. Meetings will be used to track progress on BMP implementation and to present training type materials related to stormwater quality and the MS4 NPDES permit requirements. Measurable Goals:</p> <ul style="list-style-type: none"> • Conduct regular stormwater staff meetings one to two times per year. • Continue coordination with other co-permittees regarding regional water quality efforts. • Continue participation with agencies and groups involved in water quality issues. 	<ol style="list-style-type: none"> (1) Track the number of employees receiving training in stormwater management annually. (2) Track staff participation in professional organizations. (3) Track regular stormwater staff meetings conducted.

**SWMP Element #5
Public Involvement and Participation**

NPDES permit requirements are listed below, followed by Gladstone’s relevant BMPs that address the permit requirement. In some cases, listed permit requirements have been condensed. Applicable provisions are outlined under Schedule A.4.e. **See Table 5** for the City of Gladstone’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 in SWMP Updates and Benchmark Submittals
<p><i>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.</i></p>	■

TABLE 5 –Public Involvement and Participation

City of Gladstone BMP Descriptions	BMP Implementation	Performance Measures
<p>NPDES Permit Requirement - (e) <i>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.</i></p>		
<p>Provide for Public Participation in SWMP Updates and Benchmark Submittals</p>	<p>Responsible Department: City of Gladstone</p> <p>Permit Year: Five</p> <p>BMP Description:</p> <p>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.</p> <p>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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline. 	<p>N/A</p>

**SWMP Element #6
Post-Construction Site Runoff**

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

SWMP Element #6: Post-Construction Site Runoff		
Schedule A.4.f Permit Requirement	Applicable BMPs	
	Review New and Redevelopment Plans for Stormwater Components	Review and Update the Applicable Code and Development Standards Related to Stormwater Control
<p>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.</p>	■	■
<p>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....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.</p>	■	■

SWMP Element #6: Post-Construction Site Runoff

	Applicable BMPs	
	Review New and Redevelopment Plans for Stormwater Components	Review and Update the Applicable Code and Development Standards Related to Stormwater Control
Schedule A.4.f Permit Requirement		
iii. <i>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.</i>	■	■
iv. <i>Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.</i>	■	■
v. <i>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.</i>	■	■

TABLE 6 – Post-Construction Site Runoff BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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 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) 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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>Review New and Redevelopment Plans for Stormwater Components</p>	<p>Responsible Party: Gladstone Public Works Department, Clackamas County Department of Transportation and Development (DTD), and Clackamas County Service District #1 (CCSD #1)</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone is a primarily developed city with minimal new development and only limited redevelopment activities occurring. In 2009, the City adopted interim design standards for stormwater treatment and detention in coordination with Clackamas County Water Environment Services current stormwater management requirements. The interim design standards are outlined in the City’s MS4 NPDES Implementation Guide and the City’s Municipal Code (Chapter 17.56).</p> <p>The City of Gladstone has an intergovernmental agreement (IGA) with Clackamas County Department of Transportation and Development (DTD) and Clackamas County Service District #1 (CCSD #1) for assistance with development review activities including land use planning, zoning, drainage and facility design, and enforcement.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Require all new and redevelopment to meet general stormwater quality provisions in the Municipal Code. • Maintain IGA with DTD and CCSD #1 to continue to conduct planning and design review activities on behalf of the City. 	<p>(1) Record the number of development applications reviewed for compliance with the stormwater regulations annually.</p>
<p>Review and Update the Applicable Code and Development Standards Related to Stormwater Control</p>	<p>Responsible Department: Gladstone City Administration and Public Works Department</p> <p>Permit Year: Three (June 30, 2014)</p> <p>BMP Description: In conjunction with the provisions and timeframe outlined in the City’s MS4 NPDES permit, the City of Gladstone will review their existing stormwater treatment design standards and applicable code provisions over the first three years of the permit to ensure that barriers that could inhibit low impact development 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 promotes the design and implementation of practices to minimize impervious surfaces and reduce stormwater runoff, optimizes onsite retention practices, and reduces post-construction stormwater runoff volumes and rates.</p>	<p>(1) Track progress related to review of the City’s code and development standards per provisions in the MS4 NPDES permit.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>With the selected 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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Review the City’s current stormwater quality standards for compliance with new MS4 NPDES permit language. • 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. • As necessary to meet permit requirements, 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 Gladstone’s relevant BMPs that address the permit requirement. In some cases, listed permit requirements have been condensed. Applicable provisions are outlined under Schedule A.4.g. **See Table 7** for the City of Gladstone’s BMPs that address the requirements that are listed above.

SWMP Element #7: Pollution Prevention for Municipal Operations						
Schedule A.4.g Permit Requirement	Applicable BMPs					
	Street Maintenance	Minimize Impacts Associated with Landscape Maintenance Activities	Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	Control Infiltration and Cross Connections to the Stormwater Conveyance System	Coordinate with the Local fire Department related to Pollutant discharge from Fire Fighting Training Activities	Conduct Master Planning for Stormwater Quality Improvements
i. <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;</i>	■					
ii. <i>Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;</i>		■				
iii. <i>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;</i>			■			

SWMP Element #7: Pollution Prevention for Municipal Operations

Schedule A.4.g Permit Requirement	Applicable BMPs					
	Street Maintenance	Minimize Impacts Associated with Landscape Maintenance Activities	Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	Control Infiltration and Cross Connections to the Stormwater Conveyance System	Coordinate with the Local fire Department related to Pollutant discharge from Fire Fighting Training Activities	Conduct Master Planning for Stormwater Quality Improvements
iv. <i>Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary;</i>				■		
v. <i>Implement a program to control the release of materials related to fire-fighting training activities; and,</i>					■	
vi. <i>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;</i>						■

TABLE 7 – Pollution Prevention for Municipal Operations BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (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;</p>		
<p>Street Maintenance</p>	<p>Responsible Party: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone conducts street sweeping throughout the City. Each city street is swept approximately 3 – 6 times per year. Sweeping is typically conducted once every two to three months, but is conducted twice during leaf pick up activities when there is the most debris on the roads. The City also conducts scheduled winter leaf pick up (October to January) and weekly curbside collection of yard debris with garbage collection in order to minimize flooding and prevent transport of organics into the stormwater conveyance system.</p> <p>Road repair activities are conducted during the dry season to minimize transport and runoff of sediment and other pollutants. When possible, phased construction will occur to minimize the disturbed area and limit erosion.</p> <p>Occasional deicing activities occur throughout the City during the winter months. The City generally applies crushed aggregate to roadway areas and avoids the use of chemicals. Following application of aggregate the City recycles the applied material for use during general construction activities and sweeps the roadway for residual materials.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Sweep each City street a minimum of four times per year. • Provide weekly curbside yard debris pickup and scheduled winter leaf pickup for city residents. 	<p>(1) Track the number of city-wide sweeps conducted each year.</p> <p>(2) Estimate the proportion of residences participating in the winter leaf collection program.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – (ii) <i>Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;</i>		
<p>Minimize Impacts Associated with Landscape Maintenance Activities</p>	<p>Responsible Party: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone conducts landscape maintenance and pest management activities on public park, roadside, and open space areas. The City maintains copies of MSDS sheets for chemicals used on City property, and provides them to the public on request. There is currently one City employee that applies pesticides and fertilizers within the City. This employee is trained and certified in accordance with OSHA requirements.</p> <p>As an informal guide, the City of Gladstone refers to the Portland Integrated Pest Management (IPM) Program, which defines appropriate pesticide and fertilizer application procedures and protocols. Provisions of the Portland IPM Program are outlined in the City’s MS4 NPDES Implementation Guide and include activities generally focused on low pollutant generating practices including the manual removal of non-native vegetation species and the avoidance of herbicide application near waterways.</p> <p>Educational activities associated with pest management are described under Element #4, Table 4.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Require all City employees that apply herbicides within the City to be OSHA trained and certified. 	<p>(1) Estimate the relative volume of herbicides applied by the City, based on purchasing records each year.</p> <p>(2) Track the manual removal of non-native vegetation from parks and ditch lines.</p>
NPDES Permit Requirement – (iii) <i>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;</i>		
<p>Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities</p>	<p>Responsible Department: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description:</p> <p>The City of Gladstone currently owns and operates maintenance facilities that have the potential to treat, store, or transport municipal waste.</p> <p>Over the permit term, the City of Gladstone will inventory these facilities and assess strategies to</p>	<p>(1) Track strategies used to minimize pollutant discharges at municipal facilities.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>minimize pollutant discharge from these facilities.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Inventory municipal facilities subject to this permit requirement. • Over the permit term, identify strategies to minimize discharge from these facilities. 	
<p>NPDES Permit Requirement – (iv) <i>Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary.</i></p>		
<p>Control Infiltration and Cross Connections to the Stormwater Conveyance System</p>	<p>Responsible Party: City of Gladstone Public Works Department and various departments of Clackamas County</p> <p>Permit Year: Ongoing</p> <p>BMP Description: During review and inspection for new development, the City verifies all new sanitary connections to ensure no cross connections are installed. In addition, the City’s coordination with Clackamas County DTD and the City’s illicit discharge inspection and investigation program all work to prevent and resolve any possible cross-connections of sanitary and storm lines.</p> <p>The City of Gladstone contracts with Clackamas County for emergency services activities including inflow and infiltration (I & I) investigations for their sanitary collection system. Sanitary lines are generally smoke tested for any cracking or breakage that would result in infiltration to and/or from the storm system. Smoke testing activities were most recently conducted in 2004 per Gladstone’s request and are conducted on an as-needed basis as determined by the City of Gladstone. Based on the smoke test results, the dilapidated sewer lines and joints are repaired and/or replaced by the City of Gladstone, and the work is cost shared by the Tri-City Service District, as managed by Clackamas County Water Environment Services (WES).</p> <p>The City’s illicit discharge inspections and investigations also help in preventing and resolving any existing cross-connections.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Maintain a contract with Clackamas County for I&I investigations. • Repair/resolve any cross-connections immediately once discovered. 	<p>(1) Indicate any cross-connections discovered during the plan review process or during illicit discharge investigations and describe resolution activities.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – (v) Implement a program to control the release of materials related to fire-fighting training activities;		
<p>Coordinate with the Local Fire Department related to Pollutant Discharge from Fire Fighting Training Activities</p>	<p>Responsible Department: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Over the permit term, the City will contact the City’s fire marshal to determine what activities they conduct to minimize pollutant discharge associated with fire fighting training activities. If applicable, the City will provide educational materials to assist the fire department in reducing pollutant discharges.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Contact the City fire marshal to determine what activities are conducted to minimize pollutant discharge associated with fire fighting training activities. • As applicable, provide educational information to the City fire department. 	<p>(1) Track communications with the fire department.</p>
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;		
<p>Consideration of Water Quality with Flood Control Projects</p>	<p>Responsible Party: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone is generally built-out and does not have any current master plan or proposed capital improvement projects. In conjunction with the City’s current MS4 NPDES permit requirements, the City intends to prepare a stormwater master plan over the permit term to outline capital improvement projects for stormwater quality and quantity control.</p> <p>In the interim, public works projects may occur to address flooding concerns. Per the City’s current stormwater treatment and detention standards, such standards would be applied as necessary to public works projects. There are no existing flood control facilities in the City. Therefore, there are no current opportunities to retrofit facilities for water quality.</p>	<p>(1) Track the development of a stormwater master plan over the permit term.</p> <p>(2) Track completion of any public works projects that also implemented stormwater controls in conjunction with the City’s stormwater treatment and detention standards.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>Measurable Goals:</p> <ul style="list-style-type: none"> • Seek opportunities to incorporate water quality into public works projects as applicable. • Prepare a stormwater master plan, including provisions related to hydromodification and retrofit opportunities during the permit term. 	<p>(3) Track all public works projects that were considered for water quality enhancements, the decision made, and reasoning.</p>

SWMP Element #8
Structural Stormwater Facility Operations and Maintenance

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

SWMP Element #8: Structural Stormwater Facility Operations and Maintenance		
Schedule A.4.h Permit Requirement	Applicable BMPs	
	Conduct Stormwater Conveyance System Cleaning and Maintenance	Structural and Pollution Control Facility Cleaning and Maintenance
<p>i. <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.</i></p>	■	■
<p>ii. <i>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:</i></p> <ol style="list-style-type: none"> 1. <i>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</i> 2. <i>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.</i> 	■	■

TABLE 8 – Structural Stormwater Facilities Operations and Maintenance BMPs

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (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.</p> <p>NPDES Permit Requirement – (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:</p> <ol style="list-style-type: none"> 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 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. 		
<p>Stormwater Conveyance System Cleaning and Maintenance</p>	<p>Responsible Party: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone inspects, maintains and/or repairs stormwater conveyance system components including culverts, conveyance ditches, and catch basins. Culverts and conveyance ditches are inspected annually and cleaned as needed, as determined by the Public Works Supervisor. Catch basins are inspected and cleaned annually at a minimum, and more frequently as determined necessary by the Public Works Supervisor. The majority of inlet grates are generally cleaned after major rainfall events.</p> <p>Culverts and catch basins are inspected annually for any cracking or breakage that would limit the structural integrity and performance of the system. If repair or replacement is necessary, the Public Works Supervisor will schedule the appropriate activity following inspection.</p> <p>Conveyance ditches are inspected for trash and debris that may prevent stormwater from freely discharging through the conveyance system. Typical maintenance activities include the removal of garbage and vegetative debris and the removal or reshaping of soil to re-establish the channel and flow path.</p>	<ol style="list-style-type: none"> (1) Record the length or number of conveyance system facilities (ditches, culverts, catchbasins) maintained annually. (2) Estimate the volume of debris removed during catch basin cleaning annually.

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<p>Stormwater conveyance systems inspection and maintenance guidelines are outlined in the City’s MS4 NPDES Implementation Guide.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Inspect all public culverts, catchbasins, and the public conveyance system annually. • Conduct maintenance of the stormwater system based on inspections. 	<p>(3) Track changes to the inspection and maintenance procedures. (aka: ODOT’s Road Maintenance Guide)</p>
<p>Structural and Pollution Control Facility Cleaning and Maintenance</p>	<p>Responsible Party: Gladstone Public Works Department</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The City of Gladstone inspects, maintains and/or repairs public structural control facilities within the City. Currently, the only public structural control facility is an oil/water separator located at the public works fleet maintenance yard. Inspection and maintenance guidelines for pollution control facilities are outlined in the City’s MS4 NPDES Implementation Guide.</p> <p>Public structural control facilities within the City of Gladstone currently include oil/water separators, a wetland, and a bioswale. The City conducts annual inspections of the existing private structural control facilities and maintains them in accordance with provisions outlined in the City’s MS4 NPDES Implementation Guide. Per the recent adoption of the City’s stormwater treatment and detention standards, private stormwater facility maintenance agreements will have to be submitted to the City in conjunction with building permit applications and as a condition of plan approval for new private structural controls. Such agreement will establish a record of private facilities within the City. The City will conduct annual spot inspections of new private structural control facilities.</p> <p>The City currently does not have a GIS inventory of their public or private structural control facilities. By June 30, 2013, the City is formalizing their inspection and maintenance tracking mechanisms for public and private structural controls.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Inspect the public and existing private structural stormwater quality control facilities annually and maintain as necessary. • Conduct annual spot inspections of all new private structural stormwater quality control facilities. 	<p>(1) Record the structural control inspection and maintenance activities that occur annually.</p> <p>(2) Track any additional (public and private) structural control facilities installed within the City on an annual basis.</p>

City of Gladstone BMP Descriptions	BMP Implementation	Tracking Measures
	<ul style="list-style-type: none"> • Require signed maintenance agreements for new private structural stormwater facilities as a condition of plan approval. • Formalize the inspection and maintenance tracking mechanisms for public and private structural controls by June 30, 2013. 	