

# City of Gladstone, Oregon

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## National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit

### 2011–2012 Annual Report

*Prepared for the*

Oregon Department of Environmental Quality

November 1, 2012

*Assisted by:*



CITY OF GLADSTONE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
MUNICIPAL STORMWATER SYSTEM ANNUAL REPORT

JULY 1, 2011 – JUNE 30, 2012

The undersigned hereby submits this National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater System Annual Report in accordance with NPDES Permit Number 101348. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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Peter Boyce, City Administrator  
City of Gladstone

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## **1.0 Introduction**

### **1.1 Permit Background**

The Oregon Department of Environmental Quality (DEQ) regulates stormwater runoff from the City of Oregon City through the Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) Permit No. 101348, issued to Clackamas County and its co-permittees. Clackamas County co-permittees include the City of Oregon City along with the cities of Lake Oswego, Gladstone, West Linn, Milwaukie, Wilsonville, Happy Valley, Johnson City, and Rivergrove, the Oak Lodge Sanitary District, and Clackamas County. Each co-permittee is a relatively small community, most having populations between 15,000 and 25,000 with some (Johnson City, Rivergrove) having populations significantly smaller.

The City's MS4 NPDES permit was reissued March 16, 2012, after a multi-year negotiation process with DEQ and an additional year-long delay related to an appeal. The 2012 reissued permit was not appealed, and thus maintains an effective date of March 16, 2012.

Each co-permittee is required to submit an annual report, summarizing accomplishments and implementation of their individual Stormwater Management Plans (SWMPs). In conjunction with the reissuance of the City's permit, SWMP updates to address requirements of the reissued permit were submitted and approved by DEQ. This annual report documents stormwater management activities from July 1, 2011 to June 30, 2012. Because the permit was reissued in the middle of the reporting year, this annual report documents stormwater management efforts under Oregon City's 2004 MS4 permit (and 2006 SWMP) and, to the extent applicable, documents stormwater management efforts under Oregon City's 2012 MS4 permit (and 2012 SWMP). Please note that activities and requirements of the 2012 permit and 2012 SWMP are only applicable after the permit reissuance date of March 16, 2012.

### **1.2 Document Organization**

The following table (Table 1) outlines the organization of this annual report document, with respect to the annual reporting requirements per Schedule B(5) of the City's 2012 MS4 NPDES permit. Because the permit reissuance occurred in the middle of the reporting year, annual reporting requirements applicable to just the 2012 permit are specifically identified.

**Table 1: Summary of the MS4 NPDES Annual Report Requirements**

| Annual reporting requirement   | Location in document     | 2012 MS4 NPDES requirement only |
|--|--------------------------|---------------------------------|
| a) Status of implementing SWMP elements, including progress in meeting measurable goals.   | Appendix A               |                                 |
| b) Status of any public education effectiveness evaluation conducted during the reporting year, and a summary of how results were used in adaptive management.   | Appendix A               | Yes                             |
| c) Summary of the adaptive management process implementation during the reporting year including new BMPs.   | Section 2.0              |                                 |
| d) Proposed changes to SMWP program elements to reduce TMDL pollutants to the MEP.   | Section 2.0              | Yes                             |
| e) A summary of total stormwater program expenditures and funding sources over the reporting fiscal year, and those anticipated in the next fiscal year.   | Section 3.0              |                                 |
| f) A summary of monitoring program results, including monitoring data that is accumulated throughout the reporting year.   | Section 4.0 & Appendix B |                                 |
| g) Any proposed modifications to the monitoring plan necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.   | Section 4.0              | Yes                             |
| h) A summary describing the number and nature of enforcement actions, inspections, and public education programs. <sup>a</sup>   | Appendix A               |                                 |
| i) An overview, as related to MS4 discharges, describing land use changes, UGB expansions, land annexations, and new development activities. The number of new post-construction permits issued and estimate of new and replaced impervious surface must also be included. | Section 3.0              | Yes (partially)                 |
| j) A summary related to MS4 discharges describing concept planning or other activities in preparation of UGB expansions or land annexations.   | Section 3.0              |                                 |

<sup>a</sup> Enforcement actions, inspections, and public education programs are included in the City's SWMP as BMPs, and are reported along with the status of implementing all components of the SWMP in Appendix A.

Each section of this report corresponds to the specific permit requirements in Schedule B(5). This report emphasizes efforts and activities associated with individual Best Management Practices (BMPs) from the City's 2006 SWMP and their effective, 2012 SWMP, as summarized in Appendix A.

## 2.0 Adaptive Management Process Implementation

### 2.1 Adaptive Management Program

In accordance with the issuance of the City's renewed MS4 NPDES permit (in 2012), the City was required to document their adaptive management approach to assess annually and modify, as necessary, existing and new SWMP components. The City submitted their approach to DEQ on November 1, 2012.

Historically, the City has implemented adaptive management principals to annually refine implementation methods and data collection activities in conjunction their effective SWMP and BMPs. Generally, more significant modifications to SWMP activities occur every five years, in conjunction with their permit renewal application and updated permit requirements. Documentation of such process was not explicitly required until issuance of this permit (2012).

Over this permit term (2012–2017), the City will be implementing adaptive management activities as outlined in their adaptive management approach, in order to continually refine their and meet their measurable goals under the MEP standard.

## **2.2 SWMP Updates and Adaptive Management**

The City has been conducting ongoing review and modifications to their SWMP since 2008, in anticipation of their MS4 NPDES permit reissuance. In 2008, the City evaluated their stormwater management program and SWMP during development of their MS4 NPDES permit renewal application. The City's program was evaluated in accordance with three MEP factors requested by DEQ: program effectiveness, local applicability, and program resources. As a result of the stormwater management program and SWMP evaluation in 2008, there were some general modifications made to the SWMP:

- Added measurable goals: Measurable goals are meant to provide quantification of efforts proposed by the BMPs in the SWMP by identifying what a permittee intends to do and when an activity or milestone is to be completed.
- Included more detail on BMP activities: Clarifying details were provided to better describe the intent of each BMP or actions included in the BMP.
- Revised tracking measures: Tracking measures were revised to reflect updated details in each BMP or to improve the definition of measures being tracked.

The SWMP resulting from this evaluation was submitted with the City's permit renewal submittal on September 2, 2008.

Since 2009, the City of Gladstone has coordinated with other local Phase I jurisdictions and with DEQ on the issuance of a renewed Clackamas County MS4 NPDES permit. Such coordinated efforts included meeting attendance, submittal of comment letters on proposed permit language, and completion of technical studies to support the development of permit language. On February 12, 2010, the City met with DEQ to discuss aspects of their existing stormwater program and concerns related to proposed permit language and requirements.

DEQ provided Phase I jurisdictions with draft MS4 NPDES permits in 2010. Prior to issuance of the draft permits for public comment, the permittees' SWMP had to be attached, as the SWMP is incorporated into the permit by reference.

The City reviewed and updated their 2008 SWMP in conjunction with the 2010 draft MS4 NPDES permit language and submitted their SWMP to DEQ in August 2010. Modifications to the City's 2008 SWMP included the following:

- Reorganization of the SWMP: The City's SWMP was reformatted to reflect the proposed permit language and BMP elements outlined in the draft permit.
- Addition and Modification of BMPs: The draft permit contained additional requirements not previously reflected in the SWMP. Such requirements were related to illicit discharge detection and elimination, public education, public involvement, post-construction stormwater management, and pollution prevention for municipal operations. Existing BMPs were modified to address the additional requirements as applicable, and BMPs were added to address new requirements.
- Update of Measurable Goals: Measurable goals were modified to more specifically indicate the activity or activities to be conducted, in accordance with EPA's guidance document: "Measurable Goals Guidance for Phase II Small MS4s."

- Inclusion of Compliance Dates: Some of the requirements outlined in the draft permit will require planning and funding by the City in order to address. As a result, compliance dates are included in the draft permit language to allow the City time to implement such requirements. Such dates are also reflected in the SWMP.

For Clackamas County co-permittees, permit issuance was delayed in 2011 due to appeal. Following resolution of the permit appeal (in November 2011), the permit was submitted for public comment and the City of Gladstone's 2010 SWMP (with minor modifications) was attached to the public comment version of the draft Clackamas County MS4 NPDES permit. The Clackamas County MS4 NPDES permit was reissued on March 16, 2012. Minor modifications to the City's 2010 SWMP were made in conjunction with the finalized permit language and compliance dates and submitted to DEQ on May 1, 2012.

## **2.3 SWMP Updates for the 2011–2012 Reporting Year**

The City Gladstone's 2012 SWMP reflects the addition of multiple BMPs including:

- Screen Existing and New Industrial Facilities
- Participate in a Public Education Effectiveness Evaluation
- Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities
- Review and Update the Applicable Code and Development Standards Related to Stormwater Control

Additionally, significant modifications and changes to implementation activities were made to the following BMPs:

- Implement the Illicit Discharges Elimination Program
- Conduct Erosion Control Inspections and Enforcement
- Conduct Master Planning for Stormwater Quality Improvements
- Structural and Pollution Control Facility Cleaning and Maintenance

Implementation of identified new and modified BMPs reflect an adaptive management process to address new permit requirements but also build on past, successful implementation efforts. Specific to targeted reduction in TMDL pollutants, the City's updated SMWP should address TMDL pollutants through a combination of public education efforts, enhanced maintenance activities, and programmatic changes to their post-construction standards and water quality facility tracking efforts.

## **3.0 Additional Annual Report Requirements**

### **3.1 Summary of Program Expenditures**

The City of Gladstone's storm water management program is unique in that it is not funded by a separate storm water utility. Currently, it is funded entirely from rates and utility bills paid by sewer customers. Last year, total revenue from the sewer fund equaled \$2.3 million dollars. Of that revenue, approximately \$175,000 was spent on the City's stormwater management program. This includes costs for administrative staff support, street sweeping, catchbasin cleaning, and consulting services. Such expenditures represent an increase from the previous year's expenditures, as a result of the significant permit negotiation efforts and multiple updates to the city's SWMP and stormwater monitoring plan.

The City is in the progress of developing a stormwater master plan including a stormwater utility rate study. Development of a specific stormwater funding source may be necessary in order to meet new regulatory commitments and implement programs and activities. The City anticipates completing work on the stormwater utility rate during 2013.

### **3.1 Overview of Planning and Land Use Changes, UGB Expansions and New Development Activities**

In May 2012, the City of Gladstone solicited qualifications and proposals for a combined stormwater and water master plan. Completion of the master plans would include a utility rate assessment (and development), CIP development, and a system inventory and survey. A consultant was selected in July 2012, and work has begun on the system inventory and assessment.

During the 2011–2012 reporting year, there were no code modifications.

Very little development occurred in the City over the last reporting year. The City did develop an on-call services contract with Sisul Engineering during the year to perform development review services (including stormwater review). Private maintenance agreements are being collected by the City as part of their development review process. A total of two development applications were received and reviewed by Clackamas County Department of Transportation and Development (DTD) between July 1, 2011 and June 30, 2012:

#### Z0047-12-D, Western Psychological, SE 82nd Drive:

Construction is in progress on Tax Lot 1700. Stormwater review activities were performed in September 2011 by WES and Brown and Caldwell. Stormwater facilities installed include bioswales and detention pipe. The total parcel size is 51,000 square feet with 32,000 square feet of new/ redeveloped impervious area (which includes a 6,100 square foot building).

#### Z0199-12-D, Mueller tax office, 525 W. Gloucester:

A development review application was approved, but stormwater plans have not yet been submitted or approved for review. Therefore, no stormwater treatment facility or new/ replaced impervious estimates are currently applicable.

In June 2011 (outside of the reporting period for this annual report), stormwater design review was conducted for a Taco Bell facility along 99E, for which development approval had previously been granted. Construction of said facility commenced during the summer of 2011. The development includes three trapped catch basins, detention pipe, and three infiltration planters. For this development, the total replaced impervious area was approximately 15,000 square feet (total parcel area = 19,560 square feet).

Did any land use/ zoning changes occur? During the 2011-2012 reporting year, there was one annexation of a 0.3 acre parcel, comprised of a single residential house with no redevelopment potential (zoned residential). Per Clackamas County DTD, the decision was made in September 2011 and the actual annexation occurred in June 2012.

For additional information, please contact Clay Glasgow at Clackamas County DTD.

## **4.0 Environmental Monitoring**

### **4.1 Summary of the Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP)**

Per the 2004 MS4 NPDES permit requirements (Schedule B), the City of Gladstone, along with Clackamas County and other co-permittees, was required to develop and implement a stormwater monitoring program. Given the effort associated with implementing an effective environmental monitoring program that adequately met all permit requirements and objectives, Clackamas County (i.e., CCSD#1 and SWMACC) and six other co-permittees including the City of Gladstone agreed to consolidate efforts and prepare one comprehensive stormwater monitoring plan. This plan, called the Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP), was prepared for submittal with the 2006 NPDES Permit Annual Compliance Reports. The plan was implemented beginning July 1, 2007 and minor editorial changes were made in 2008. For this reporting year (2011–2012), the 2008 CCCSMP is the effective, implemented monitoring plan for the City of Gladstone.

As described in the CCCSMP, the MS4 NPDES stormwater monitoring program requires two components. The first component is program monitoring, which involves the tracking and assessment of programmatic activities, as described in the individual permittees SWMP, through the use of performance indicators or metrics. Results of the program monitoring are reported in Appendix A as the annual tracking measures. The second component is environmental monitoring, which includes visual monitoring and the actual collection and analysis of samples. Visual monitoring efforts include dry weather field screening as described in the City's SWMP under the following BMP: "Implement the Illicit Discharge Elimination Program." Results of the visual monitoring efforts are reported in Appendix A under the applicable BMPs. Environmental monitoring also consists of in-stream and/or outfall sample collection, and the City's sampling efforts are outlined in more detail in Section 4.2 and 4.3 and in the CCCSMP. Results of the in-stream and outfall sample collection efforts are provided in Appendix B.

### **4.2 CCCSMP Updates and Modifications for the 2011–2012 Reporting Year**

New requirements related to stormwater monitoring were outlined in the City's reissued MS4 NPDES permit (dated March 16, 2012). New requirements included the documentation of a rationale related to the time-composite sampling methodology, documentation of laboratory quality assurance and control procedures, and inclusion of mercury (for some jurisdictions), pesticide, and macroinvertebrate monitoring. Monitoring frequencies and parameters were also revised.

As a result, permittees participating in the CCCSMP modified the CCCSMP in 2012 to reflect the new permit language and requirements. The revised CCCSMP was submitted to DEQ on September 1, 2012. Implementation of the revised CCCSMP will begin October 1, 2012. Some activities (training, monitoring procedures, etc) were conducted during the 2011–2012 reporting year in anticipation of the reissued MS4 NPDES permit and updated CCCSMP.

### **4.3 Summary of Monitoring Data**

The City of Gladstone has one in-stream monitoring location on Rinearson Creek at Risley Avenue. Time-weighted composite samples are required three times per year during rainfall events. In late 2007, the City and Clackamas County Water Environment Services (WES)

signed an intergovernmental agreement (IGA) for stormwater monitoring, and WES now monitors Gladstone's location on the City's behalf. Results of the monitoring effort are summarized in Appendix B.

# **Appendix A**

## **Gladstone SWMP Implementation Status**

**Appendix A. Status of Implementing Components of Gladstone's MS4 NPDES Permit SWMP**

Key to Pollutant Symbols

A full circle (●) indicates the BMP is expected to address the parameter.

An empty circle (○) indicates the BMP may be expected to address the parameter.

A blank cell indicates that the effect of the BMP is unknown at this time.

| 2012 Best Management Practice or Activity                         | Addresses Bacteria? | Addresses Mercury? | Responsible Department                    | Annual Performance Measures (2006 SWMP)   | Measurable Goals (2012 SWMP)  | Tracking Measures (2012)   | Annual Report Information: Tracking Measure Status, Permit Year 2011-2012  | Additional Detail Related to Activities Conducted   | Additional Activities to Address Requirements of the 2006 SWMP  |
|---|---------------------|--------------------|---|---|---|--|--|---|---|
| <b>Element #1<br/>Illicit Discharge Detection and Elimination</b> |                     |                    |   |   |   |  |  |   |   |
| Implement the Illicit Discharges Elimination Program              | ●                   | ●                  | City of Gladstone Public Works Department | Former BMP Name: <b>Illicit Discharges Elimination Program</b><br><br>(1) Track the number and location of outfalls inspected annually.<br><br>(2) Indicate all illicit discharge inspection results and indicate outfalls requiring monitoring and/or investigation. | <ul style="list-style-type: none"> <li>Update the City's Guidelines for Illicit Discharge Investigations and enforcement response procedures for consistency with MS4 NPDES permit requirements by November 1, 2012.</li> <li>For identified illicit discharges, conduct appropriate actions to remove the discharge in conjunction with time frames outlined in the City's MS4 NPDES Permit.</li> <li>Track and record all identified illicit discharges and how such discharges were removed.</li> </ul>  | (1) Track the status of updating the City's Guidelines for Illicit Discharge Investigations.   | (1) The City of Gladstone is coordinating with other Clackamas co-permittees to develop an updated IDDE SOP including enforcement procedures, pollutant parameter action levels, and priority locations by November 1, 2012.   |   | The BMP: <b>Conduct Annual Dry Weather Field Screening</b> contains additional activities to address 2006 SWMP Implementation activities reported for this BMP. |
| Conduct Annual Dry Weather Field Screening                        | ○                   | ○                  | City of Gladstone Public Works Department | <b>New BMP per 2012 SWMP.</b>   | <ul style="list-style-type: none"> <li>Inspect all major outfalls and select minor outfalls annually for illicit discharges.</li> <li>Follow appropriate follow-up procedures to identify the source of any illicit discharges discovered.</li> <li>Notify the City Administrator of all positive identifications of illicit discharges and take appropriate actions to eliminate the discharge.</li> <li>Update the existing hardcopy map of outfalls by November 1, 2012, and develop a digital outfall map by the end of the permit term.</li> </ul> | (1) Track the number and location of major and minor outfalls inspected annually.<br><br>(2) Indicate all illicit discharge inspection results and specify these outfalls requiring monitoring (sampling) and/or investigation annually.<br><br>(3) Describe the resolution of any investigation activities conducted annually.<br><br>(4) Track the status of outfall mapping activities. | (1) 3 outfalls were inspected as part of the annual dry weather field screening activities in August 2011. Please note that the identification and prioritization of outfalls is being refined in conjunction with the IDDE SOP.<br><br>(2) and (3) Flow was observed at the 24" outfall at Portland Avenue. Visual inspection results indicated that the flow was attributed to groundwater.<br><br>(4) Updated outfall mapping is being conducted in conjunction with the City's Stormwater Master Plan development. |   |   |
| Spill Response  | ○                   | ○                  | Gladstone Fire Department                 | (1) Indicate the number of spills reported to the Gladstone Fire Department annually.<br><br>(2) Indicate sources, causes, and resulting water quality problems resulting from spill activities.  | <ul style="list-style-type: none"> <li>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.</li> </ul>  | (1) Indicate the number of spills reported to the Gladstone Fire Department annually.<br><br>(2) Indicate spill sources, causes, and types of discharges resulting from spill activities annually.   | (1) No spills were reported to the Gladstone Fire Department during the 2011-2012 reporting year.<br><br>(2) N/A   |   | 2006 SWMP Implementation activities are consistent with requirements of the 2012 SWMP.  |
| <b>Element #2<br/>Industrial and Commercial Facilities</b>        |                     |                    |   |   |   |  |  |   |   |
| Screen Existing and New Industrial Facilities                     |                     |                    | City of Gladstone Public Works Department | <b>New BMP per 2012 SWMP.</b>   | <ul style="list-style-type: none"> <li>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.</li> <li>Maintain list of high priority facilities.</li> </ul>   | (1) Track the number of existing or new facilities subject to a stormwater industrial NPDES permit during the permit term.<br><br>(2) Track changes made to list of high priority facilities.  | (1) The City is awaiting guidance from DEQ related to development of a process to identify such facilities.<br><br>(2) Business license applications were recently updated to reference more specific questions related to onsite stormwater management. Public Works is currently reviewing business license applications (annually) to update the list of high priority facilities.  | Gladstone's consultant has coordinated with DEQ related to the methodology and process for identifying "potential" 1200-Z permittees. DEQ will be providing additional guidance to help jurisdictions identify potential permittees based on SIC code and other public information. |   |

| 2012 Best Management Practice or Activity                                       | Addresses Bacteria? | Addresses Mercury? | Responsible Department  | Annual Performance Measures (2006 SWMP)  | Measurable Goals (2012 SWMP)   | Tracking Measures (2012)  | Annual Report Information: Tracking Measure Status, Permit Year 2011-2012   | Additional Detail Related to Activities Conducted   | Additional Activities to Address Requirements of the 2006 SWMP   |
|---|---------------------|--------------------|---|--|--|---|---|---|--|
| Conduct Inspections of High Priority Facilities                                 | ○                   | ○                  | City of Gladstone Public Works Department and Gladstone Fire Department   | Former BMP Name: <b>Industrial Inspections and Control</b><br><br>(1) Indicate the number of industrial inspections conducted (during the business inspection activities) for stormwater.<br><br>(2) Report status and abatement measures for any industry found to be inappropriately discharging to the municipal stormwater system. | <ul style="list-style-type: none"> <li>Update the City's Guidelines for Conducting Industrial and Commercial Facility Inspections for consistency with the MS4 NPDES permit language by July 1, 2013.</li> <li>Inspect five high source facilities during the permit cycle.</li> <li>Report any facilities found to contribute excessive stormwater pollutant discharges to the City Administrator for follow-up.</li> </ul>   | <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>   | <p>(1) High pollutant source facilities were inspected in conjunction with the business inspection program. A total of 35 businesses were inspected. Note that the City's guidelines for inspections will be updated during the next reporting term.</p> <p>(2) During the business inspections, no abatement measures were identified.</p>   |   |  |
| <b>Element #3</b>   |                     |                    |   |  |  |   |   |   |  |
| <b>Construction Site Runoff Control</b>   |                     |                    |   |  |  |   |   |   |  |
| Require Erosion Control for New and Redevelopment                               | ●                   | ○                  | City of Gladstone Public Works Department, City of Gladstone Administration, and Clackamas County Service District #1 | (1) Report any updates or modifications to the "Erosion Prevention and Sediment Control Planning and Design Manual (2000)" (the City's source for their erosion control standards).<br><br>(2) Renew the IGA with CCSD#1 for erosion control services as needed.   | <ul style="list-style-type: none"> <li>Require erosion control measures for development disturbing areas greater than 800 ft<sup>2</sup>.</li> <li>Conduct review of erosion control plans, attend pre-construction meetings, and conduct erosion control site inspections through an IGA with CCSD#1.</li> <li>Update City Municipal Code provisions related to erosion and sediment control by November 1, 2014 in order to reflect permit requirements and accurately describe coordination with Clackamas County.</li> </ul> | <p>(1) Report any updates or modifications to the approved erosion control standards or the Erosion Prevention and Sediment Control Planning and Design Manual (2008).</p> <p>(2) Report renewals of the IGA with CCSD#1 for erosion control services and document any changes made to the IGA.</p> <p>(3) Report updates or modifications to the Gladstone Municipal Code related to erosion and sediment control.</p> <p>(4) Track the number of erosion control plans reviewed for the City.</p> | <p>(1) There have been no updates to the 2008 "Erosion Prevention and Sediment Control Planning and Design Manual".</p> <p>(2) The City is still operating under their existing IGA for erosion control services (expiration 2011). Renewal of the IGA was awaiting terms of the renewed MS4 NPDES permit.</p> <p>(3) No changes to the municipal code have been made during the reporting year.</p> <p>(4) 8 erosion control plan reviews were conducted during the 2011-2012 reporting year.</p>  |   | 2006 SWMP Implementation activities are consistent with requirements of the 2012 SWMP.   |
| Educational Training Measures for Construction Site Operators                   | ○                   | ○                  | City of Gladstone Public Works Department   | Former BMP Name: <b>Provide Educational Information to Construction Site Operators</b><br><br>(1) Indicate the number of Design Manuals distributed each year.   | <ul style="list-style-type: none"> <li>Provide a copy of the Design Manual to all contractors and inform them of City and County requirements at pre-construction planning meetings.</li> </ul>  | <p>(1) Track number of planning conference meetings attended by City staff.</p>   | <p>(1) City staff did not attend any pre-construction conferences. Pre-construction meetings are attended by WES staff on behalf of the City per their IGA.</p>   |   | Per requirements of the 2006 SWMP, distribution of design manuals is tracked. There were no design manuals distributed by City staff this reporting year.  |
| Conduct Erosion Control Inspections and Enforcement                             | ●                   | ○                  | Clackamas County Service District #1  | Former BMP Name: <b>Conduct Erosion Control Inspections</b><br><br>(1) Report the number of erosion control inspections conducted each year.<br><br>(2) Report the number of erosion control violations discovered during inspections, and describe methods to resolve the issue.  | <ul style="list-style-type: none"> <li>Inspect all sites requiring erosion control a minimum of three times (conducted through an IGA with CCSD #1).</li> <li>Impose penalties such as fines and stop work orders if corrective actions aren't taken.</li> <li>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.</li> </ul>  | <p>(1) Report the number of erosion control inspections conducted annually.</p> <p>(2) Report the number of erosion control violations discovered during inspections, and describe methods used to resolve the issue.</p> <p>(3) Report number of fines and Stop Work Orders issued.</p>  | <p>(1) There were 13 erosion control inspections conducted during the 2011-2012 reporting year (8 commercial and 5 single family residential).</p> <p>(2) No erosion control violations were identified by WES during routine inspections. The City of Gladstone observed two erosion control violations this reporting year:<br/> <ul style="list-style-type: none"> <li>20000 McLaughlin Blvd due to the contractor stock piling material on a vacant lot.</li> <li>Western Gladstone Annex due to an insufficient sill fence installation. Both were given verbal warnings and problems resolved.</li> </ul> </p> <p>(3) No fines or stop work orders were issued.</p> |   | 2012 SWMP Implementation activities took effect on March 16, 2012. Prior to the effective date of the 2012 MS4 NPDES permit, regular inspections were conducted but the required frequency (three inspections/ site) is applicable to only those new construction activities initiated after the effective date of the permit. |
| <b>Element #4</b>   |                     |                    |   |  |  |   |   |   |  |
| <b>Education and Outreach</b>   |                     |                    |   |  |  |   |   |   |  |
| Provide Public Education and Outreach Materials Regarding Stormwater Management | ○                   | ○                  | City of Gladstone Public Works Department and City of Gladstone Administration  | (1) Track the number and content of informational articles published in the City newsletter.<br><br>(2) Indicate participation in any cooperative public education campaign.<br><br>(3) Record the number of catch basins stenciled in a given year.   | <ul style="list-style-type: none"> <li>Utilize newsletters, brochures, bill inserts, and local newspapers to promote public awareness of stormwater quality issues and sources, including reporting of illicit discharges.</li> <li>Continue as a member of Clean River Partners of Clackamas County and participate in the Regional Coalition of Clean Rivers and Streams.</li> <li>Stencil public catch basins annually, if needed.</li> </ul>   | <p>(1) Track the number and content of informational articles published in the City newsletter annually.</p> <p>(2) Record the percentage of public catch basins stenciled each year.</p>   | <p>(1) Educational materials associated with the City's stormwater program were provided in the following newsletter articles:<br/> Leaf Pick up program – October 19, 2011 and November 16, 2011<br/> Gladstone High School becoming a green high school – November 16, 2011<br/> Recycling tips – December 21, 2011 and January 18, 2012</p> <p>(2) Due to staff limitations, no catch basins were stenciled during the 2011-2012 reporting year.</p>   | The City has recently began providing bags for pet waste at local parks.  |  |
| Participate in a Public Education Effectiveness Evaluation                      | ○                   | ○                  | City of Gladstone Administration  | <b>New BMP per 2012 SWMP.</b>  | <ul style="list-style-type: none"> <li>Coordinate with other local, Phase 1 jurisdictions in providing/ compiling information regarding a public education effectiveness evaluation by July 1, 2015.</li> </ul>  | <p>(1) Report on activities conducted annually.</p>   | <p>(1) No specific activities to date.</p>  | The ACWA Stormwater Committee is currently working to compile results from existing, recent public surveys to inform the content and scope of the new effectiveness survey. |  |

| 2012 Best Management Practice or Activity   | Addresses Bacteria? | Addresses Mercury? | Responsible Department   | Annual Performance Measures (2006 SWMP)  | Measurable Goals (2012 SWMP)   | Tracking Measures (2012)  | Annual Report Information: Tracking Measure Status, Permit Year 2011-2012   | Additional Detail Related to Activities Conducted  | Additional Activities to Address Requirements of the 2006 SWMP   |
|---|---------------------|--------------------|--|--|--|---|---|--|--|
| Ensure Municipal Staff Training for Stormwater Pollution Prevention                           | ○                   | ○                  | City of Gladstone Administration   | Former BMP Name: <b>Intergovernmental Coordination</b><br><br>(1) Indicate groups, committees, and organizations with which the City is currently participating as related to stormwater.<br><br>(2) Report any revised and/or updated IGAs.   | • Conduct regular stormwater staff meetings one to two times per year.<br>• Continue coordination with other co-permittees regarding regional water quality efforts.<br>• Continue participation with agencies and groups involved in water quality issues.  | (1) Track the number of employees receiving training in stormwater management annually.<br><br>(2) Track staff participation in professional organizations.<br><br>(3) Track regular stormwater staff meetings conducted. | (1) The Public Works Superintendent attended a certified stormwater inspector class July 2011 and attended the Clackamas Water School (March 2012)<br><br>(2) The City of Gladstone continues its partnership with the following groups and organizations:<br>• Clackamas County NPDES Co-Permittees<br>• Oregon Association of Clean Water Agencies<br>• Regional Coalition of Clean Rivers and Streams<br>• SOLV<br>• Friends of Rinearson Creek<br>• Ivy Warriors<br>• Willamette Riverkeeper<br>• DEQ's Volunteer in Action<br>• Oregon Dept. of Fish and Wildlife<br>• Clackamas Soil & Conservation District<br>• Rinearson Neighborhood Association<br>• Audubon Society<br><br>(3) No staff meetings were held between March 16 and June 30 2012. |  | Per requirements of the 2006 SWMP, updates to IGAs need to be documented. During the 2011-2012 reporting year, no renewed or reissued IGAs occurred. Reporting on staff training and tracking stormwater staff meetings is a new requirement of the 2012 SWMP. Reporting on such activity is only applicable for actions after the effective date of the 2012 SWMP (March 16, 2012). |
| <b>Element #5<br/>Public Involvement and Participation</b>                                    |                     |                    |  |  |  |   |   |  |  |
| Provide for Public Participation with Submittals  |                     |                    | City of Gladstone Administration   | New BMP per 2012 SWMP.   | • Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline.<br>• Provide a public comment period for the updated monitoring plan and annual reports prior to submittal to DEQ.  | N/A   | N/A   |  |  |
| <b>Element #6<br/>Post-Construction Site Runoff</b>   |                     |                    |  |  |  |   |   |  |  |
| Review New and Redevelopment Plans for Stormwater Components                                  | ●                   | ●                  | City of Gladstone Public Works Department, Clackamas County Department of Transportation and Development (DTD), and Clackamas County Service District #1 (CCSD #1) | Former BMP Name: <b>Review of New and Redevelopment Plans for Stormwater Components</b><br><br>(1) Record the number of development applications reviewed for compliance with stormwater regulations.<br><br>(2) Track any modifications made to City of Gladstone Municipal Code, to incorporate more specific stormwater guidelines. | • Require all new and redevelopment to meet general stormwater quality provisions in the Municipal Code.<br>• Maintain IGA with DTD and CCSD #1 or other contract mechanisms to continue to conduct planning and design review activities on behalf of the City.   | (1) Record the number of development applications reviewed for compliance with the stormwater regulations annually.   | (1) One development application (Western Gladstone Annex) was reviewed for compliance with stormwater requirements during the 2011-2012 reporting year. Additional detail is provided in Section 3.2 of the NPDES annual report.  | Post-construction stormwater review activities are conducted by WES on behalf of the City. The City recently established an IGA with Sisul Engineering (May 2012) to assist in plan review activities. |  |
| Review and Update the Applicable Code and Development Standards Related to Stormwater Control | ●                   | ●                  | City of Gladstone Public Works Department and City of Gladstone Administration   | New BMP per 2012 SWMP.   | • Review the City's current stormwater quality standards for compliance with new MS4 NPDES permit language.<br>• 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.<br>• As necessary to meet permit requirements, update the City's existing post-construction stormwater design standards and code language by November 1, 2014. | (1) Track progress related to review of the City's code and development standards per provisions in the MS4 NPDES permit.   | (1) No progress made.   | Completion of the review and updated standards is not required until November 1, 2014.   |  |

| 2012 Best Management Practice or Activity   | Addresses Bacteria? | Addresses Mercury? | Responsible Department  | Annual Performance Measures (2006 SWMP)  | Measurable Goals (2012 SWMP)  | Tracking Measures (2012)   | Annual Report Information: Tracking Measure Status, Permit Year 2011-2012   | Additional Detail Related to Activities Conducted  | Additional Activities to Address Requirements of the 2006 SWMP   |
|---|---------------------|--------------------|---|--|---|--|---|--|--|
| <b>Element #7</b>   |                     |                    |   |  |   |  |   |  |  |
| <b>Pollution Prevention for Municipal Operations</b>  |                     |                    |   |  |   |  |   |  |  |
| Street Maintenance  | ●                   | ●                  | City of Gladstone Public Works Department   | (1) Track the number of miles of road swept per year.<br>(2) Estimate the proportion of residences participating in the winter leaf collection program.  | • Sweep each City street a minimum of four times per year.<br>• Provide weekly curbside yard debris pickup and scheduled winter leaf pickup for city residents.   | (1) Track the number of city-wide sweeps conducted each year.<br>(2) Estimate the proportion of residences participating in the winter leaf collection program.  | (1) A total of 703 miles of roadway were swept during the 2011-2012 reporting year. This translates to approximately 15 city-wide sweeps over the year.<br>(2) Approximately 85% of residences participate in the leaf collection program.  |  |  |
| Minimize Impacts Associated with Landscape Management Activities  | ○                   | ○                  | City of Gladstone Public Works Department   | (1) Estimate the relative volume of herbicide and fertilizers applied by the City, based on purchasing records.<br>(2) Track the development of a more formal pest management program (per City's consideration of Portland's IPM program).      | • Require all City employees that apply herbicides within the City to be OSHA trained and certified.<br>• Implement the City's IPM guidelines on all public parks, roadsides, and open space areas.   | (1) Estimate the relative volume of herbicides applied by the City, based on purchasing records each year.<br>(2) Track the manual removal of non-native vegetation from parks and ditch lines.  | (1) Approximately 6 gallons of herbicides were applied during the 2011-2012 reporting year.<br>(2) Manual removal of vegetation by volunteers, schools, and City staff occurred along Meldrum Bar and Rinearson Creek, and Dahl Beach during the 2011-2012 reporting year. A total of 3,470 labor hours were spent.   | Tracking manual non-native vegetation removal is a new requirement of the 2012 SWMP. Reporting on such activity is only applicable for actions after the effective date of the 2012 SWMP (March 16, 2012).   | There have not been any policy or procedural changes regarding pest management activities during the 2011-2012 reporting year. |
| Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities                         | ○                   | ○                  | City of Gladstone Public Works Department   | <b>New BMP per 2012 SWMP.</b>  | • Inventory municipal facilities subject to this permit requirement by July 1, 2013.<br>• By July 1, 2013, identify and implement strategies to reduce the impact of pollutant discharges from these facilities.  | (1) Track strategies used to minimize pollutant discharges at municipal facilities.  | (1) No progress made as of yet.   | Completion of the review and strategies is not required until July 1, 2013.  |  |
| Control Infiltration and Cross Connections to the Stormwater Conveyance System                                  | ●                   |                    | City of Gladstone Public Works Department and various departments of Clackamas County | (1) Indicate whether any cross-connections were discovered during illicit discharge investigations, and describe follow-up activities.   | • Maintain a contract with Clackamas County for I&I investigations.<br>• Repair/resolve any cross-connections immediately once discovered, in conjunction with the timeframes documented in Schedule A.4.a.vii.   | (1) Indicate any cross-connections discovered during the plan review process or during illicit discharge investigations and describe resolution activities.  | (1) No cross connections were observed.   | During the 2010-2011 reporting year, a potential cross connection (SSO) was identified. As a result, the City has contracted with a consulting firm to investigate options for removal. A survey of 31,000 ft. of sanitary sewer lines are being cleaned and tv'd to document the condition, and determine if ground water is infiltrating the sanitary system and causing the SSO. Survey is not complete at this date. |  |
| Coordinate with the Local Fire Department related to Pollutant Discharge from Fire Fighting Training Activities |                     |                    | City of Gladstone Public Works Department   | <b>New BMP per 2012 SWMP.</b>  | • By November 1, 2012, contact the City fire marshal to determine what activities are conducted to minimize pollutant discharge associated with fire fighting training activities.<br>• As applicable, provide educational information to the City fire department. | (1) Track communications with the fire department.   | (1) Public Works staff confirmed with the Fire Department that dechlorinating occurs during Hydrant flushing. The Fire Department is also aware of the 1,000' rule when practicing during wet drills.   | Coordination with the fire department is not required until November 1, 2012, which is outside of the reporting period for this report. The City continues to coordinate of additional pollution prevention measures (biobags, catch basin inserts, etc).  |  |
| Conduct Master Planning for Stormwater Quality Improvements   | ●                   | ●                  | City of Gladstone Public Works Department   | Former BMP Name: <b>Consideration of Water Quality with Flood Control Projects</b><br>(1) Record public works projects constructed annually.<br>(2) Track the development of a process to assess water quality during flood management projects. | • Seek opportunities to incorporate water quality into public works projects as applicable.<br>• Prepare a stormwater master plan by January 1, 2014.   | (1) Track the development of a stormwater master plan.<br>(2) Track completion of any public works projects that also implemented stormwater controls in conjunction with the City's stormwater treatment and detention standards.<br>(3) Track all public works projects that were considered for water quality enhancements, the decision made, and reasoning. | (1) The City of Gladstone finalized their RFQ and an RFP to provide stormwater master planning services in May 2012. The City solicited proposals from select consultants to conduct a combined water and stormwater master plan effort. The awarded consultant obtained notice to proceed September 11, 2012.<br>(2) No public works or capital projects were constructed this reporting year.<br>(3) The City solicited bids to complete sanitary sewer cleaning and TV inspections that would further inform potential cross-connections and illicit discharges. Work will be conducted during the 2012-2013 reporting year. |  |  |

| 2012 Best Management Practice or Activity                          | Addresses Bacteria? | Addresses Mercury? | Responsible Department                    | Annual Performance Measures (2006 SWMP)   | Measurable Goals (2012 SWMP)  | Tracking Measures (2012)  | Annual Report Information: Tracking Measure Status, Permit Year 2011-2012   | Additional Detail Related to Activities Conducted  | Additional Activities to Address Requirements of the 2006 SWMP   |
|--|---------------------|--------------------|---|---|---|---|---|--|--|
| <b>Element #8</b>  |                     |                    |   |   |   |   |   |  |  |
| <b>Stormwater Management Facilities Operation and Maintenance</b>  |                     |                    |   |   |   |   |   |  |  |
| Stormwater Conveyance System Cleaning and Maintenance              | ●                   | ●                  | City of Gladstone Public Works Department | (1) Record the number of conveyance system facilities (ditches, culverts, catchbasins) maintained annually.<br><br>(2) Estimate the volume of debris removed from catch basins during cleaning activities.<br><br>(3) Track changes to the inspection and maintenance procedures. | <ul style="list-style-type: none"> <li>Inspect all public culverts, catchbasins, and the public conveyance system annually.</li> <li>Conduct maintenance of the stormwater system based on inspections.</li> </ul>  | (1) Record the length or number of conveyance system facilities (ditches, culverts, catch-basins) maintained annually.<br><br>(2) Estimate the volume of debris removed during catch basin cleaning annually.<br><br>(3) Track changes to the inspection and maintenance procedures. (aka: ODOT's Road Maintenance Guide) | (1) A total of 515 catch basins were cleaned<br><br>(2) A total of 35 cubic yards of debris was removed.<br><br>(3) No changes were made to the inspection and maintenance procedures.  |  |  |
| Structural and Pollution Control Facility Cleaning and Maintenance | ●                   | ●                  | City of Gladstone Public Works Department | (1) Track the number of structural facilities inspected and maintained.<br><br>(2) Track the volume of debris removed during cleaning activities.   | <ul style="list-style-type: none"> <li>Inspect the public and existing private structural stormwater quality control facilities annually and maintain as necessary.</li> <li>Conduct annual spot inspections of all new private structural stormwater quality control facilities.</li> <li>Require signed maintenance agreements for new private structural stormwater facilities as a condition of plan approval.</li> <li>Formalize the inspection and maintenance tracking and inventory mechanisms for public and private structural controls by July 1, 2013.</li> </ul> | (1) Record the structural control inspection and maintenance activities that occur annually.<br><br>(2) Track any additional (public and private) structural control facilities installed within the City on an annual basis.   | (1) Visual inspections were conducted at the following public facilities. No maintenance was required.<br>Oil/ water separator at fleet maintenance yard<br>Detention pond at Gladstone High School<br><br>Visual inspections were also conducted at the following private facilities.<br>Bioswale at 175 W Berkeley<br>Bioswale at Walgreens (99E)<br><br>(2) In conjunction with new development activities, private water quality facilities were installed at the following locations:<br>Taco Bell (McLaughlin Blvd): Infiltration planters<br>Western Gladstone Annex: Bioswales and detention vaults | A formal inspection and maintenance procedure will be developed by July 1, 2013. Currently, facility inspections involve windshield surveys. | Tracking private facility maintenance is a new requirement of the 2012 SWMP. Reporting on such activity is only applicable for actions after the effective date of the 2012 SWMP (March 16, 2012). |

# **Appendix B**

## **Gladstone Monitoring Results**

| Instream Monitoring - Gladstone 2011-12 |           |                              |                              |        |         |
|---|-----------|------------------------------|------------------------------|--------|---------|
| Location - Risley Ave                   |           |                              |                              |        |         |
| Stream Name - Rinearson Creek           |           |                              |                              |        |         |
|   |           | Results                      |                              |        |         |
|   |           | Composite Rain Event 1/19/12 | Composite Rain Event 3/21/12 | Mean   | Notes   |
| Analysis                                | Units     |                              |                              |        |         |
| Total Phosphate Seal                    | mg/L      | 0.26                         | <0.08                        | 0.26   |         |
| Dissolved Oxygen - Winkler              | mg/L      | 7.70                         | 10                           | 8.85   |         |
| Dissolved Oxygen - Field                | mg/L      | Not Required                 | Not Required                 | NA     |         |
| Conductivity Field                      | uS        | 45.4                         | 208                          | 126.70 |         |
| Temperature Field                       | °C        | 8.5                          | 6.5                          | 7.50   |         |
| pH Field                                | Std Units | 7                            | 6.4                          | 6.70   |         |
| Dissolved Copper                        | ug/L      | 1.60                         | 1.50                         | 1.55   |         |
| Total Copper                            | ug/L      | 6.80                         | 2.24                         | 4.52   |         |
| Dissolved Lead                          | ug/L      | 0.20                         | 0.19                         | 0.20   |         |
| Total Lead                              | ug/L      | 4.10                         | 0.80                         | 2.45   |         |
| Dissolved Zinc                          | ug/L      | 26.00                        | 19.20                        | 22.60  |         |
| Total Zinc                              | ug/L      | 61.00                        | 23.80                        | 42.40  |         |
| E. coli - Colilert                      | MPN/100mL | 1373                         | 687                          | 1030   | (1) (2) |
| Ammonia Nitrogen Low Seal               | mg/L      | <0.05                        | <0.05                        | <0.05  |         |
| Nitrate-Nitrite                         | mg/L      | 1.01                         | 1.12                         | 1.07   |         |
| Ortho Phosphate                         | mg/L      | 0.03                         | 0.02                         | 0.03   |         |
| Total Dissolved Solids                  | mg/L      | 49                           | 56                           | 53     |         |
| Total Solids mg/L                       | mg/L      | 117                          | 109                          | 113    |         |
| Total Suspended Solids                  | mg/L      | 68                           | 7                            | 38     |         |
| Volatile Solids                         | mg/L      | 63                           | 62                           | 63     |         |
| Hardness                                | mg/L      | 30                           | 50                           | 40     |         |

Notes:

(1) MPN = Most Probable Number

(2) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.