

# TECHNICAL MEMORANDUM

**Date:** August 24, 2017

**To:** Jeremy Metzler, PE, City of Edgewood

**From:** Rebecca Dugopolski, PE; Meghan Mullen; and Joy Michaud, Herrera Environmental Consultants

**Subject:** City of Edgewood Stormwater Program Gap Analysis and Needs Assessment

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## BACKGROUND

The City of Edgewood (City) currently implements its Stormwater Management Program (SWMP) to achieve regulatory compliance and to minimize the adverse impacts of stormwater on the natural and built environments (i.e., managing peak flow volumes to avoid flooding and providing water quality treatment to mitigate impacts on receiving waters). Implementation of the SWMP is primarily the responsibility of the Public Works Department, with support provided by the Operations and Maintenance division of Public Works, Community Development Department, and Parks and Recreation Department.

The current SWMP activities are described in the 2017 SWMP and 2016 annual report that was submitted to the Washington State Department of Ecology (Ecology) in March 2017. The SWMP includes information on planned SWMP activities to meet the requirements of Ecology's National Pollutant Discharge Elimination System Western Washington Phase II Municipal Stormwater Permit (NPDES Phase II Permit), which is the most significant regulatory requirement driving the City's stormwater program. The NPDES Phase II Permit, requires that the City prepare annual reports to document activities taken to meet the associated requirements.

In preparation of this report, the City's SWMP activities and documentation were reviewed to identify gaps in the SWMP. The primary focus of this effort was to evaluate the program against requirements of the NPDES Phase II Permit; however, other program needs have also been included if they were identified by City staff. Appendix A contains a detailed matrix of the City's activities, provides recommendations for meeting identified data gaps, and includes funding and staffing estimates associated with the recommendations. The purpose of this memorandum is to provide an overview of the gap analysis process and briefly summarize the recommendations from Appendix A. The recommendations will be used by City staff to direct further SWMP activities and to help guide the City's Stormwater Management Plan update.



## METHODS OF ANALYSIS

Potential gaps and areas for improvement were identified through a review of available documents, a questionnaire sent to City staff, a project kickoff meeting with City staff, and follow-up discussions.

### Document Review

Document review included pertinent documents identified and/or provided by the City, including City codes and policies, maps and GIS data, SWMP documents, public education materials, and operations and maintenance (O&M) information. These were reviewed to provide a foundation for characterizing the existing SWMP.

### Questionnaire and Kickoff Meeting

To examine the components of the City's SWMP in more detail and to identify gaps and potential issues, City staff members representing various aspects of the City's stormwater program attended a project kickoff meeting with Herrera staff on May 12, 2017.

A Gap Analysis questionnaire was distributed to participants in advance of the meeting to gather staff input and perspective on key stormwater issues. Questionnaire responses were used to shape and facilitate the meeting discussion, focusing on NPDES Phase II Permit requirements, staffing needs, and other issues of concern to City staff.

## NPDES PHASE II PERMIT REQUIREMENTS

The most significant regulatory requirement facing the City's SWMP is Ecology's NPDES Phase II Permit, which addresses a variety of issues associated with stormwater runoff and requires the City to develop several distinct SWMP components. The current NPDES Phase II Permit (issued by Ecology on August 1, 2012; effective on August 1, 2013) specifies requirements for the following:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination (IDDE)
- Controlling runoff from new development, redevelopment, and construction sites
- Municipal operations and maintenance (O&M)
- Compliance with Total Maximum Daily Load (TMDL) Requirements

- Monitoring and Assessment
- Reporting Requirements

Recommendations associated with each of these components are provided in Appendix A along with additional resources (e.g., staffing and equipment) required to implement these recommendations.

## CONCLUSIONS

The City’s SWMP meets a majority of the NPDES Phase II Permit requirements; however, there are two primary areas where additional resources are needed: Public Education and Outreach and Controlling Runoff from New Development, Redevelopment, and Construction Sites. Two additional areas (IDDE and Municipal O&M) could also use a slight increase in funding or staff support to meet existing NPDES Phase II Permit requirements. Based on the recommendations provided in Appendix A, one-time funding needs have been estimated at \$50,000; and ongoing funding needs have been estimated at \$1,000. One-time funding needs have been identified to support requirements of the City’s IDDE program and to support Controlling Runoff from New Development, Redevelopment, and Construction Sites. Ongoing funding would support the replacement of equipment used for illicit discharge field screening and source tracing as part of the City’s IDDE program.

Additional City staff support needed has been estimated at 840 hours (or 0.48 Full Time Equivalent [FTE]). This additional staff support is needed to support requirements of the City’s Public Education and Outreach program, to Controlling Runoff from New Development, Redevelopment, and Construction Sites, and to support Municipal O&M.

Permit Section	Funding		Staff Support	
	One-time	Ongoing	Hours	FTE
Public Education and Outreach	\$10,000	\$0	440	0.25
Public Involvement and Participation	\$0	\$0	0	0
IDDE	\$15,000	\$1,000	0	0
Controlling Runoff from New Development, Redevelopment, and Construction Sites	\$25,000	\$0	320	0.18
Municipal O&M	\$0	\$0	80	0.05
Compliance with TMDL Requirements	\$0	\$0	0	0
Monitoring and Assessment	\$0	\$0	0	0
Reporting	\$0	\$0	0	0
<b>Total</b>	<b>\$50,000</b>	<b>\$1,000</b>	<b>840</b>	<b>0.48</b>



## APPENDIX A

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# City of Edgewood Stormwater Management Program Activities and Recommendations





**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Public Education and Outreach (continued)</b>				
S5.C.1.b – Stewardship opportunities “Each Permittee shall create stewardship opportunities and/or partner with existing organizations to encourage residents to participate in activities such as stream teams, storm drain marking, volunteer monitoring, riparian plantings and education activities.”	No specific stewardship opportunities have been identified.	<ul style="list-style-type: none"> <li>Develop a plan and a schedule for complying with this permit requirement.</li> <li>Move forward with planned activities in the 2017 SWMP:                             <ul style="list-style-type: none"> <li>Coordinate with Pierce Conservation District Stream Teams for the Puyallup River watershed.</li> </ul> </li> <li>Consider implementing a tree planting community event.</li> <li>Consider distributing free trees or rain barrels at a community event.</li> <li>Consider a tree coupon program similar to the City of Tacoma: <a href="http://www.cityoftacoma.org/cms/one.aspx?objectId=66710">www.cityoftacoma.org/cms/one.aspx?objectId=66710</a>.</li> <li>Consider implementing a catch basin marking program with local scouts or other community groups.</li> </ul>	80 hours (0.05 FTE)	Assumes 80 hours of outreach needed per year (ongoing).
S5.C.1.c – Measure the understanding and adoption of targeted behaviors “Each Permittee shall measure the understanding and adoption of the targeted behaviors for at least one target audience in at least one subject area. No later than February 2, 2016, Permittees shall use the resulting measurements to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors. Permittees may meet this requirement individually or as a member of a regional group.”	Based on the 2016 Annual Report: <ul style="list-style-type: none"> <li>City has identified target audience: engineers, contractors, and developers.</li> <li>City has identified subject areas:               <ul style="list-style-type: none"> <li>Technical standards for stormwater site development</li> <li>LID techniques</li> </ul> </li> <li>Developed “Storm drainage minimum design requirements for small projects” handout.</li> </ul>	<ul style="list-style-type: none"> <li>Submit a G20 Non-Compliance Notification letter to Ecology with a plan and schedule for complying with the evaluation component of this permit requirement.</li> <li>Develop and conduct a survey for the target audience to follow up on effectiveness of this form.</li> <li>Develop a short report or memorandum summarizing the results of the survey.</li> <li>Update handout based on survey feedback.</li> </ul>	80 hours (0.05 FTE) \$10,000 (one-time)	Assumes 80 hours needed initially to write the G20 letter, develop the survey approach, and work with an external consultant/contractor to implement the survey.  Ongoing costs would be to update the survey and to implement changes in the public education program.  External support budget assumes 100 hours at a rate of \$100/hour.
<b>Public Education and Outreach Subtotal</b>			<b>440 hours (0.25 FTE) and \$10,000 (one-time)</b>	
<b>Public Involvement and Participation</b>				
S5.C.2.a – Create opportunities for public participation “Permittees shall provide ongoing opportunities for public involvement and participation through advisory councils, public hearings, watershed committees, participation in developing rate-structures or other similar activities. Each Permittee shall comply with applicable state and local public notice requirements when developing elements of the SWMP.”  The minimum performance measures are: “Permittees shall create opportunities for the public to participate in the decision-making processes involving the development, implementation and update of the Permittee’s SWMP.”	Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>The City provides public notice for review and update of all codes, comprehensive plans, and capital improvement programs. The first stop in the review process for any proposed change is the City’s Planning Commission, where there are both formal and informal public review opportunities.</li> <li>Recommendations of the Planning Commission are forwarded to the City Council for final review and action, which includes another public notice and hearing opportunity.</li> <li>Larger programs and projects, such as comprehensive plan updates, typically include more involved public participation, such as workshops and town halls.</li> </ul> Based on Questionnaire: <ul style="list-style-type: none"> <li>The Citizen Action Request (CAR) form is available at the counter and on the website. The system allows for complaints to be filed, investigated and resolved by members of City Staff.</li> </ul>	<ul style="list-style-type: none"> <li>No gaps identified.</li> </ul>	NA	NA

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions																														
<b>Public Involvement and Participation (continued)</b>																																		
<p>S5.C.2.b – Post the SWMP Plan and annual report on City’s website</p> <p>“Each Permittee shall post on their website their SWMP Plan and the annual report required under S9.A no later than May 31 each year. All other submittals shall be available to the public upon request.”</p>	<p>Current SWMP, annual report, and attachments are posted on the City’s website: <a href="http://www.cityofedgewood.org/government/public_works/surface_water_management.php">www.cityofedgewood.org/government/public_works/surface_water_management.php</a>.</p>	<ul style="list-style-type: none"> <li>No gaps identified.</li> </ul>	NA	NA																														
<b>Public Involvement and Participation Subtotal</b>			<b>NA</b>																															
<b>Illicit Discharge Detection and Elimination (IDDE)</b>																																		
<p>S5.C.3.a – Ongoing mapping requirements</p> <p>“Mapping of the MS4 shall continue on an ongoing basis. MS4 maps shall be periodically updated. Update maps if necessary to meet the requirements of this section no later than February 2, 2018.</p> <p>At a minimum, maps shall include the following information:</p> <ul style="list-style-type: none"> <li>i. Known MS4 outfalls and known MS4 discharge points.</li> <li>ii. Receiving waters, other than ground water.</li> <li>iii. Stormwater treatment and flow control BMPs/facilities owned or operated by the Permittee.</li> <li>iv. Tributary conveyances to all known outfalls and discharge points with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems. The following attributes shall be mapped: <ul style="list-style-type: none"> <li>o Tributary conveyance type, material, and size where known.</li> <li>o Associated drainage areas.</li> <li>o Land use.</li> </ul> </li> <li>v. All connections to the MS4 authorized or allowed by the Permittee after February 16, 2007.</li> <li>vi. Connections between the MS4 owned or operated by the Permittee and other municipalities or public entities.</li> <li>vii. Geographic areas served by the Permittee’s MS4 that do not discharge stormwater to surface waters.”</li> </ul>	<p>Based on the 2017 SWMP:</p> <ul style="list-style-type: none"> <li>MS4 base map available through Pierce County’s CountyView GIS platform developed in 2009 and updated each year: <a href="http://www.co.pierce.wa.us/2281/GIS-Applications">www.co.pierce.wa.us/2281/GIS-Applications</a>. <ul style="list-style-type: none"> <li>o Pierce County has mapped streams and wetlands as receiving waters.</li> <li>o Pierce County has mapped stormwater treatment and flow control structures including catch basins, control structures, dry wells, manholes, and vaults.</li> <li>o Pipes and channels mapped by Pierce County include material, type, size, and a description of discharge points. Possible outfalls based on this data are summarized in the table below:</li> </ul> </li> </ul> <table border="1"> <thead> <tr> <th>Conveyance Structure</th> <th>Ponds</th> <th>Streams</th> <th>Potholes</th> <th>Ravines</th> <th>Wetlands</th> </tr> </thead> <tbody> <tr> <td>All Pipes</td> <td>71</td> <td>86</td> <td>55</td> <td>17</td> <td>18</td> </tr> <tr> <td>Pipes over 24-inch diameter</td> <td>0</td> <td>17</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>All Channels</td> <td>18</td> <td>9</td> <td>34</td> <td>8</td> <td>19</td> </tr> <tr> <td>Channels over 24 inches deep</td> <td>1</td> <td>0</td> <td>1</td> <td>1</td> <td>6</td> </tr> </tbody> </table> <p>Based on the May 12, 2017, kickoff meeting:</p> <ul style="list-style-type: none"> <li>The City has identified five known outfalls: <ul style="list-style-type: none"> <li>o At 114th north of Jovita (24-inch diameter)</li> <li>o At the pond south of 24th on Meridian (Simon’s Creek) (12-inch diameter)</li> <li>o Edgewood Drive (southeast corner into Sumner) (12-inch diameter, discharges into a ravine)</li> <li>o At the corner of 32nd Street East and 94th Avenue East (Simon’s Creek) (12-inch diameter)</li> <li>o At the crossing of the Surprise Lake discharge channel at 92nd Avenue East (south of 20th) (48-inch diameter)</li> </ul> </li> </ul> <p>Based on the City’s website:</p> <ul style="list-style-type: none"> <li>The City has mapped land use designations: <a href="http://www.cityofedgewood.org/government/planning_and_land_use/index.php">www.cityofedgewood.org/government/planning_and_land_use/index.php</a></li> </ul>	Conveyance Structure	Ponds	Streams	Potholes	Ravines	Wetlands	All Pipes	71	86	55	17	18	Pipes over 24-inch diameter	0	17	0	0	0	All Channels	18	9	34	8	19	Channels over 24 inches deep	1	0	1	1	6	<ul style="list-style-type: none"> <li>Update outfall inventory to include discharges to pothole/closed depression areas that should be classified as outfalls.</li> <li>Map the tributary area for the known outfalls of 24-inch diameter or greater.</li> </ul>	\$10,000 (one-time)	Assumes contract (or intern) support is needed (100 hours at \$100/hour).
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**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>IDDE (continued)</b>				
S5.C.3.b – Illicit discharge ordinance “Each Permittee shall implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges into the Permittee’s MS4 to the maximum extent allowable under state and federal law.”	Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>EMC 13.25 – Illicit Stormwater Discharges updated by Ordinance 16-482 on November 8, 2016.</li> </ul>	No gaps identified.	NA	NA
S5.C.3.c – Ongoing program implementation to identify and detect illicit discharges  The program shall include the following components: i. Procedures for conducting investigations of the Permittee’s MS4, including field screening and methods for identifying potential sources.	Based on 5/12/17 kickoff meeting: <ul style="list-style-type: none"> <li>The City has an interlocal agreement (ILA) with Pierce County to perform catch basin inspections and cleaning.</li> <li>There are boxes on the Pierce County inspection form to check for oil presence, condition, and comments.</li> </ul> Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>40 percent of MS4 coverage area screened in 2016.</li> </ul>	<ul style="list-style-type: none"> <li>Provide recommendations to Pierce County staff on information that the City would like to track for compliance with this permit requirement. <ul style="list-style-type: none"> <li>Consider modifying “oil presence” field to apply to other illicit discharges or adding another field for non-oil discharges.</li> </ul> </li> </ul>	NA	Complete with current staffing.
ii. A publicly listed and publicized hotline or other telephone number for public reporting of spills and other illicit discharges.	Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>City Hall contact information: 253-952-3299.</li> <li>4 calls received in 2016.</li> </ul>	<ul style="list-style-type: none"> <li>Spill hotline is the same as the City Hall general information line and is not well publicized.</li> <li>Place hotline more prominently on the City’s website or create a hotline specific to reporting spills.</li> </ul>	NA	Complete with current staffing.
iii. An ongoing training program for all municipal field staff, who, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge and/or illicit connection to the MS4, on the identification of an illicit discharge and/or connection, and on the proper procedures for reporting and responding to the illicit discharge and/or connection. Follow-up training shall be provided as needed.	No established training program for IDDE.	<ul style="list-style-type: none"> <li>Require applicable City staff to watch Illicit Connection and Illicit Discharge (IC/ID) Field Screening and Source Tracing Guidance Manual videos:  <a href="http://www.wastormwatercenter.org/illicit-connection-illicit-discharge">www.wastormwatercenter.org/illicit-connection-illicit-discharge</a>.</li> <li>Attend in-person IC/ID field screening training in late 2018.</li> </ul>	NA	Complete with current staffing.
iv. Permittees shall inform public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste.	<ul style="list-style-type: none"> <li>General information provided on website (see S5.C.3.a).</li> <li>Property/business owners are educated upon discovery of potential hazards/illicit discharges.</li> </ul>	Consider providing the following resources on the City’s website: <ul style="list-style-type: none"> <li>Dump Smart Program (carpet cleaners, painters, and pressure washers): <a href="http://www.wastormwatercenter.org/dump-smart">www.wastormwatercenter.org/dump-smart</a></li> <li>Ecology pollution prevention by business type website: <a href="http://www.ecy.wa.gov/programs/hwtr/p2/ta.html">www.ecy.wa.gov/programs/hwtr/p2/ta.html</a></li> <li>Ecology hazardous substances website: <a href="http://www.ecy.wa.gov/hsieo/index.html">www.ecy.wa.gov/hsieo/index.html</a></li> <li>City of Seattle resources (restaurants): <a href="http://www.seattle.gov/util/ForBusinesses/GreenYourBusiness/ToolsResourcesGuides/index.htm">www.seattle.gov/util/ForBusinesses/GreenYourBusiness/ToolsResourcesGuides/index.htm</a></li> <li>Clark County dumpster maintenance brochure: <a href="http://www.clark.wa.gov/sites/default/files/dept/files/environmental-services/Stormwater/what-you-can-do/Dumpster%20maintenance%20web%202_16.pdf">www.clark.wa.gov/sites/default/files/dept/files/environmental-services/Stormwater/what-you-can-do/Dumpster%20maintenance%20web%202_16.pdf</a></li> </ul>	NA	Complete with current staffing or proposed Public Education and Outreach staff under S5.C.1 above.

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>IDDE (continued)</b>				
<p>S5.C.3.d – Ongoing program implementation to address illicit discharges</p> <p>“Each Permittee shall implement an ongoing program designed to address illicit discharges, including spills and illicit connections, into the Permittee’s MS4.</p> <p>The program shall include:</p> <ul style="list-style-type: none"> <li>i. Procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee. Procedures shall address the evaluation of whether the discharge must be immediately contained and steps to be taken for containment of the discharge.</li> <li>ii. Procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures.</li> <li>iii. Procedures for eliminating the discharge; including notification of appropriate authorities; notification of the property owner; technical assistance; follow-up inspections; and use of the compliance strategy developed pursuant to S5.C.3.b.v, including escalating enforcement and legal actions if the discharge is not eliminated.</li> </ul>	<p>Based on May 12, 2017, kickoff meeting:</p> <ul style="list-style-type: none"> <li>• City staff investigate calls about IDDE issues.</li> <li>• Current equipment includes: flashlight, catch basin hooks, turbidimeter.</li> <li>• Pierce County can assist with IDDE response if requested as part of the ILA.</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt and/or modify the IC/ID Field Screening and Source Tracing Guidance Manual.</li> <li>• Purchase basic equipment to assist with field screening and source tracing: <ul style="list-style-type: none"> <li>○ Mirror and pole</li> <li>○ Dye testing supplies</li> <li>○ Sand bags</li> <li>○ Smoke testing equipment</li> <li>○ Ammonia test strips</li> <li>○ pH probe (with temperature probe)</li> <li>○ Surfactant test kit</li> <li>○ Potassium meter</li> </ul> </li> </ul>	<p>\$5,000 (one-time)</p> <p>\$1,000 (annual replacement/restocking cost)</p>	<p>Adopting and/or modifying the IC/ID Field Screening and Source Tracing Guidance Manual will be completed with current staffing.</p>
<p>S5.C.3.e – Ongoing staff training program</p> <p>“Permittees shall train staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, and illicit connections, to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements or staffing. Permittees shall document and maintain records of the training provided and the staff trained.”</p>	<p>No established training program for IDDE.</p>	<ul style="list-style-type: none"> <li>• Require applicable City staff to watch IC/ID Field Screening and Source Tracing Guidance Manual videos: <a href="http://www.wastormwatercenter.org/illicit-connection-illicit-discharge">www.wastormwatercenter.org/illicit-connection-illicit-discharge</a>.</li> <li>• Attend in-person IC/ID field screening training in late 2018.</li> <li>• Develop a spreadsheet or simple tracking form to document staff training.</li> </ul>	<p>NA</p>	<p>Complete with current staffing.</p>
<p>S5.C.3.f – Track and maintain records</p> <p>“Recordkeeping: Permittees shall track and maintain records of the activities conducted to meet the requirements of this section.”</p>	<p>Based on Questionnaire responses:</p> <ul style="list-style-type: none"> <li>• The City tracks all complaints, including spills, with the Citizen Action Request (CAR) program which includes an online reporting option: <a href="http://cityofedgewood.org/government/city_clerk/citizen_action_form.php">http://cityofedgewood.org/government/city_clerk/citizen_action_form.php</a>.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>
<b>IDDE Subtotal</b>			<b>\$15,000 (one-time) and \$1,000 (ongoing)</b>	

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Controlling Runoff from New Development, Redevelopment, and Construction Sites</b>				
<p>S5.C.4.a – Ordinance to address runoff from development, redevelopment, and construction sites</p> <p>“Implement an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment, and construction site projects ...”</p>	<p>Based on 2017 SWMP:</p> <ul style="list-style-type: none"> <li>Policy requires that stormwater facilities are owned and maintained by HOAs, property owners, or another private party. The developer is required to execute and record an <i>Agreement to Maintain Stormwater Facilities and Implement a Pollution Source Control Plan</i>:                             <ul style="list-style-type: none"> <li>O&amp;M Plan and facility inspection requirements.</li> <li>Requires annual inspection and reporting by responsible party which is an education and outreach opportunity for city staff.</li> <li>Contains an O&amp;M facility plan.</li> </ul> </li> <li>EMC Chapter 13.05 (Stormwater Manual – Site Development Regulations) updated by Ordinance 16-482 on November 8, 2016.</li> <li>The City has adopted the 2015 Pierce County Stormwater Management and Site Development Manual (PCM).</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>
<p>S5.C.4.b – Permitting process with site plan review, inspection, and enforcement</p> <p>i. Review of all stormwater site plans for proposed development activities.</p>	<p>Based on 2016 Annual Report:</p> <ul style="list-style-type: none"> <li>119 stormwater site plans were reviewed.</li> </ul> <p>Based on Questionnaire:</p> <ul style="list-style-type: none"> <li>Each plan is carefully reviewed for conformance with the adopted manual, including review and verification of calculations, existing conditions, and potential impacts to adjacent areas/property.</li> <li>The City has developed the following handouts for project proponents:                             <ul style="list-style-type: none"> <li>Surface Water Compliance Application <a href="http://www.cityofedgewood.org/document_center/Surface_Water_Compliance_Application1.pdf">www.cityofedgewood.org/document_center/Surface_Water_Compliance_Application1.pdf</a></li> <li>Surface Water Compliance Application Information Sheet <a href="http://www.cityofedgewood.org/document_center/Surface_Water_Information_Sheet.pdf">www.cityofedgewood.org/document_center/Surface_Water_Information_Sheet.pdf</a></li> <li>Storm Drainage Minimum Design Requirements for Small Projects <a href="http://www.cityofedgewood.org/document_center/SD%20Minimum%20Requirements%20(2016-12-01).pdf">www.cityofedgewood.org/document_center/SD%20Minimum%20Requirements%20(2016-12-01).pdf</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Update Surface Water Compliance Application and Surface Water Compliance Application Information Sheet for consistency with the 2015 PCM.</li> <li>Post SWPPP short form on City’s website.</li> <li>Consider developing additional checklist(s) and/or BMP sizing guidance.</li> </ul>	<p>\$25,000 (one-time)</p>	<p>Minor edits to existing handouts and posting the SWPPP short form can be completed with current staffing.</p> <p>Development of up to 5 new checklists assumes an external support budget of 150 hours at a rate of \$100/hour.</p> <p>Development of simplified BMP sizing guidance assumes an external support budget of 100 hours at a rate of \$100/hour.</p>
<p>S5.C.4.b – Permitting process with site plan review, inspection, and enforcement</p> <p>ii. Inspect, prior to clearing and construction, all permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Determining Construction Site Sediment Damage Potential ...</p> <p>iii Inspect all permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.</p> <p>iv. Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities ...”</p>	<p>Based on 2016 Annual Report:</p> <ul style="list-style-type: none"> <li>30 construction sites inspected prior to construction.</li> <li>73 construction sites inspected during construction.</li> <li>1 enforceable action taken.</li> </ul> <p>Based on the 2017 SWMP:</p> <ul style="list-style-type: none"> <li>Staff inspect all permitted development sites prior to clearing and construction activity.</li> <li>Staff verify installation and maintenance of temporary erosion and sediment control (TESC) and stormwater BMPs.</li> <li>Enforcement actions are based on inspection results and Citizen Action Requests.</li> </ul> <p>Based on 5/12/17 kickoff meeting with City Staff:</p> <ul style="list-style-type: none"> <li>New Engineering tech performs in-house inspection program.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Controlling Runoff from New Development, Redevelopment, and Construction Sites (continued)</b>				
<p>S5.C.4.c – Long term operations and maintenance of stormwater treatment and flow control BMPs/facilities</p> <p>i. Implementation of an ordinance or other enforceable mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities ... and establishes enforcement procedures.</p>	<p>Based on the 2017 SWMP:</p> <ul style="list-style-type: none"> <li>EMC Chapter 13.05 (Stormwater Manual – Site Development Regulations) updated by Ordinance 16-482 on November 8, 2016.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>
<p>ii. Each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the Stormwater Management Manual for Western Washington. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.</p>	<ul style="list-style-type: none"> <li>Policy requires that stormwater facilities are owned and maintained by HOAs, property owners, or another private party. The developer is required to execute and record an <i>Agreement to Maintain Stormwater Facilities and Implement a Pollution Source Control Plan</i>:                             <ul style="list-style-type: none"> <li>O&amp;M Plan and facility inspection requirements.</li> <li>Requires annual inspection and reporting by responsible party which is an education and outreach opportunity for city staff.</li> </ul> </li> <li>The City has adopted the 2015 PCM which includes maintenance standards.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>
<p>iii. Annual inspections of all stormwater treatment and flow control BMPs/facilities that discharge to the MS4 and were permitted by the Permittee according to S5.C.4.b ...</p> <p>iv. Inspections of all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new residential developments every six months until 90 percent of the lots are constructed ...</p> <p>vii. The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records ..."</p>	<p>The City is performing construction inspections (per S5.C.4.c.iv), but is not performing ongoing annual inspections of private stormwater treatment and flow control BMPs/facilities (per S5.C.4.c.iii).</p>	<ul style="list-style-type: none"> <li>Finalize private facility database.</li> <li>Develop a list of private facilities that are required to be inspected.</li> <li>Finalize access easements with landowners to perform private facility inspections.</li> <li>Submit a G20 Non-Compliance Notification letter to Ecology with a plan and a schedule for complying with the private facility inspection requirement.</li> </ul>	<p>320 hours (0.18 FTE)</p>	<p>Initial and ongoing effort to keep private facility database, access easements, and mapping up to date is estimated as 160 hours per year. Conducting annual private stormwater facility inspections is estimated as 160 hours per year.</p>
<p>S5.C.4.d – Notice of Intent copies</p> <p>"The program shall make available as applicable copies of the "Notice of Intent for Construction Activity" and copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment."</p>	<p>Based on 2016 Annual Report:</p> <ul style="list-style-type: none"> <li>Copies are provided.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Controlling Runoff from New Development, Redevelopment, and Construction Sites (continued)</b>				
S5.C.4.e – Ongoing staff training program to control stormwater runoff  “Each Permittee shall ensure that all staff whose primary job duties are implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.”	Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>Two City staff are Construction Erosion and Sediment Control Lead (CESCL) certified.</li> <li>Staff currently receive on-the-job training.</li> </ul>	<ul style="list-style-type: none"> <li>Identify additional off-site trainings related to permitting, plan review, construction site inspections, and enforcement such as: <ul style="list-style-type: none"> <li>Statewide LID Training Program: <a href="http://www.wastormwatercenter.org/lidswtrainingprogram">www.wastormwatercenter.org/lidswtrainingprogram</a></li> <li>Ecology SWMMWW Training: <a href="http://www.ecy.wa.gov/programs/wq/stormwater/manual/2014SWMMWWinteractive/2014%20SWMMWW.htm#Resources/DocsForDownload/TrainingVideos/August2016Training/August2016Training.html">www.ecy.wa.gov/programs/wq/stormwater/manual/2014SWMMWWinteractive/2014%20SWMMWW.htm#Resources/DocsForDownload/TrainingVideos/August2016Training/August2016 Training.html</a></li> <li>PCM Training</li> </ul> </li> <li>Develop template and populate training tracking log with City training records.</li> </ul>	NA	Complete with current staffing.
S5.C.4.f – LID code related requirements “i. Permittees shall review, revise and make effective their local development-related codes, rules, standards, or other enforceable documents to incorporate and require LID principles and LID BMPs ... ii. The summary shall include existing requirements for LID principles and LID BMPs in development-related codes ...”	Based on the 2017 SWMP: <ul style="list-style-type: none"> <li>Revised local development code, rules, and standards to incorporate LID principles so it is the preferred commonly used approach to site development.</li> </ul> Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>City of Edgewood – LID Review and Revision Summary submitted with 2016 Annual Report.</li> <li>EMC 13.05 (Stormwater Manual – Site Development Regulations) updated by Ordinance 16-482 on November 8, 2016.</li> </ul>	No gaps identified.	NA	NA
S5.C.4.g – Watershed-scale stormwater planning	The City is not a participant.	<i>Not applicable to the City because it is not located in any of the proposed Phase I basins.</i>	NA	NA
<b>Controlling Runoff from New Development, Redevelopment, and Construction Sites Subtotal</b>			<b>320 hours (0.18 FTE) and \$25,000 (one time)</b>	
<b>Municipal Operations and Maintenance (O&amp;M)</b>				
S5.C.5.a – Implement SWMMWW O&M standards or equivalent  “Each Permittee shall implement maintenance standards that are as protective, or more protective, of facility function than those specified in Chapter 4 of Volume V of the Stormwater Management Manual for Western Washington ...”	The City has adopted the 2015 Pierce County Stormwater Management and Site Development Manual (PCM).	No gaps identified.	NA	NA
S5.C.5.b – Annual inspection of stormwater treatment and flow control facilities/BMPs  “Annual inspection of all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities, and taking appropriate maintenance actions in accordance with the adopted maintenance standards.”	Based on questionnaire responses: <ul style="list-style-type: none"> <li>Annual inspection frequency of city-owned facilities.</li> </ul> Based on 2016 Annual Report: <ul style="list-style-type: none"> <li>There are 10 municipally owned facilities, all of which were inspected and maintained last year.</li> </ul>	No gaps identified.	NA	NA

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Municipal O&amp;M (continued)</b>				
<p>S5.C.5.c – Spot checks of potentially damaged stormwater treatment and flow control facilities/BMPs</p> <p>“Spot checks of potentially damaged permanent stormwater treatment and flow control BMPs/facilities after major storm events (24 hour storm event with a 10 year or greater recurrence interval).”</p>	<p>Based on questionnaire responses:</p> <ul style="list-style-type: none"> <li>Both Pierce County staff and City staff are responsible for spot checks.</li> <li>City staff are mostly responsible for spot checks during storm events.</li> <li>Spot checks are performed annually at a minimum.</li> <li>Spot checks are performed before forecasted significant storm events.</li> <li>Spot checks are performed after major storm events.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>
<p>S5.C.5.d – Inspection of catch basins and inlets</p> <p>“... inspection of all catch basins and inlets owned or operated by the Permittee at least once no later than August 1, 2017, and every two years thereafter ...”</p>	<p>Based on 2016 Annual Report:</p> <ul style="list-style-type: none"> <li>1725 CBs, 767 inspected in 2016, 175 cleaned in 2016.</li> </ul> <p>Based on questionnaire responses:</p> <ul style="list-style-type: none"> <li>Based on the ILA, Pierce County staff perform a majority of the catch basin inspections and clean as needed based on inspection results.</li> <li>City staff perform inspections on demand as flooding and other problems arise.</li> </ul>	<p>No gaps identified.</p>	<p>NA</p>	<p>NA</p>
<p>S5.C.5.f – Practices, policies, and procedures to reduce stormwater impacts</p> <p>“Implement practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the Permittee, and road maintenance activities under the functional control of the Permittee ...</p> <p>The following activities shall be addressed:</p> <ul style="list-style-type: none"> <li>Pipe cleaning</li> <li>Cleaning of culverts that convey stormwater in ditch systems</li> <li>Ditch maintenance</li> <li>Street cleaning</li> <li>Road repair and resurfacing, including pavement grinding</li> <li>Snow and ice control</li> <li>Utility installation</li> <li>Pavement striping maintenance</li> <li>Maintaining roadside areas, including vegetation management</li> <li>Dust control</li> <li>Application of fertilizers, pesticides, and herbicides according to the instructions for their use, including reducing nutrients and pesticides using alternatives that minimize environmental impacts</li> <li>Sediment and erosion control</li> <li>Landscape maintenance and vegetation disposal</li> <li>Trash and pet waste management</li> <li>Building exterior cleaning and maintenance”</li> </ul>	<p>Based on questionnaire responses:</p> <ul style="list-style-type: none"> <li>Pierce County has a maintenance contract to perform regular street sweeping.</li> <li>The City owns a skid steer and small dump truck for performing small maintenance tasks without County involvement.</li> </ul> <p>Based on 5/12/17 kickoff meeting:</p> <ul style="list-style-type: none"> <li>City has adopted Pierce County SOPs with some modifications.</li> </ul>	<p>Finalize SOPs documenting City practices, policies, and procedures.</p>	<p>80 hours (0.05 FTE)</p>	<p>Initial and ongoing effort to finalize SOPs with internal staff, review annually, incorporate necessary updates, and track regional programs that may trigger updates.</p>

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Municipal O&amp;M (continued)</b>				
S5.C.5.g – Ongoing training program to protect water quality  “Implement an ongoing training program for employees of the Permittee whose primary construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or staffing. Permittees shall document and maintain records of training provided and the staff trained.”	Based on the 2017 SWMP: <ul style="list-style-type: none"> <li>Two City staff are CESCL certified.</li> </ul> Based on Pierce County’s 2017 SWMP: <ul style="list-style-type: none"> <li>Pierce County Maintenance crews receive quarterly Stormwater Pollution Prevention Plan (SWPPP) and BMP trainings from the County’s NPDES Stormwater Permit Training Coordinator.</li> <li>Road Operations provides ongoing CESCL hands-on refreshers and quarterly safety meetings that cover Regional Roads Maintenance Endangered Species Act (ESA) Program Guidelines topics and other stormwater pollution prevention BMP issues, including SWPPP related issues.</li> </ul>	<ul style="list-style-type: none"> <li>Request training records from Pierce County from County crews that perform City’s O&amp;M activities.</li> <li>Develop template and populate training tracking log with City and County training records.</li> </ul>	NA	Complete with current staffing.
S5.C.5.h – SWMP implementation  “Implement a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit ...”	Based on questionnaire responses: <ul style="list-style-type: none"> <li>The City does not currently have any City facilities that require a SWPPP.</li> </ul>	No gaps identified.	NA	NA
S5.C.5.i – Maintain records of inspections and maintenance  “Maintain records of inspections and maintenance or repair activities conducted by the Permittee.”	Based on questionnaire responses: <ul style="list-style-type: none"> <li>Pierce County tracks inspections through GIS database and project/activity billing and invoices.</li> <li>City staff track inspections through hardcopy report forms.</li> </ul>	No gaps identified.	NA	NA
<b>Municipal O&amp;M Subtotal</b>			<b>80 hours (0.05 FTE)</b>	
<b>Compliance with Total Maximum Daily Load (TMDL) Requirements</b>				
Implement TMDL requirements.	Based on the 2017 SWMP: <ul style="list-style-type: none"> <li>The City is part of the Puyallup TMDL for fecal coliform bacteria listed in Appendix 2 of the NPDES Permit.</li> <li>The City is required to track construction activities in the basin and prioritize field screening for illicit discharges. Several permitted construction activities occurred in 2016; however, no illicit discharges were detected from these construction sites. The City also did not detect any illicit discharges during routine field screening.</li> </ul>	No gaps identified.	NA	NA
Comply with applicable TMDLs not in the permit.	Does not apply.	No gaps identified.	NA	NA
Comply with permit modifications and TMDL implementation plans.	Does not apply.	No gaps identified.	NA	NA
<b>Compliance with TMDL Requirements Subtotal</b>			<b>NA</b>	

**Table A-1 (continued). City of Edgewood Stormwater Management Program Activities and Recommendations.**

Permit Section	Current Activities	Recommendations	Additional Support Needed (staff/funding)	Support Assumptions
<b>Monitoring and Assessment</b>				
Description of stormwater monitoring or stormwater-related investigations.	Based on the 2017 SWMP: <ul style="list-style-type: none"> <li>Hydrologic Surface Water Analysis commissioned for 108th Avenue East neighborhood (not yet complete).</li> </ul>	Provide a description of the study (and a summary of the results when available) in the annual report to Ecology.	NA	Complete with current staffing.
Regional Stormwater Monitoring Program participation.	Based on the 2017 SWMP: <ul style="list-style-type: none"> <li>The City contributes to a collective fund to implement RSMP.</li> </ul>	No gaps identified.	NA	NA
<b>Monitoring and Assessment Subtotal</b>			<b>NA</b>	
<b>Reporting</b>				
Submit annual report.	The City submits annual reports as required by Ecology.	No gaps identified.	NA	NA
Maintain records for 5 years.	Records related to the permit will be kept for at least 5 years as required by the Permit.	No gaps identified.	NA	NA
Make records available to the public.	The City makes records available to the public upon request.	No gaps identified.	NA	NA
Internal coordination mechanisms summary.	Internal coordination mechanisms summary was submitted with the 2014 Annual Report: <a href="http://www.cityofedgewood.org/Edgewood_Policy_internal_coordination.pdf">www.cityofedgewood.org/Edgewood_Policy_internal_coordination.pdf</a> .	No gaps identified.	NA	NA
<b>Reporting Subtotal</b>			<b>NA</b>	
			<b>Total</b>	<b>\$50,000 (one-time)</b> <b>\$1,000 (ongoing)</b> <b>840 hours (0.48 FTE) (ongoing)</b>

