

#29

COMPLETE

Collector: Web Link 3 (Web Link)
Started: Wednesday, October 24, 2018 11:48:14 AM
Last Modified: Wednesday, October 24, 2018 1:16:15 PM
Time Spent: 01:28:01
IP Address: 74.120.152.116

Page 1: Introduction & General Questions

Q1 Please provide the name of the jurisdiction you are representing:

City of Portland

Q2 Please provide the names of the individual who are completing this survey:

Loren Shelley

Q3 Please provide the titles of the individual(s) completing this survey:

Manager, MS4 & TMDL Compliance

Q4 Please provide the jurisdiction's address:

1120 SW 5th Ave, Portland, Oregon, 97204-1912

Q5 Please note below the County where this jurisdiction is located:

Multnomah

Q6 Please provide the email of the person(s) completing this survey:

loren.shelley@portlandoregon.gov

Q7 Please provide the telephone number of the person completing this survey:

503-823-5275

Q8 What is the most recent TMDL Implementation Plan approval date for this jurisdiction: Date **02/28/2014**

DEQ TMDL Five Year Review 2018 for DMAs

Q9 Has this jurisdiction's council, commission, or governing board approved the most recent TMDL Implementation Plan? **Yes**

Q10 Were the required annual reports submitted over the last reporting period of four years?

Answer

Report 1 **Yes**

Report 2 **Yes**

Report 3 **Yes**

Report 4 **Yes**

Q11 Did you address or discuss with DEQ all comments provided on each annual report that was submitted? **Yes**

Q12 Did DEQ provide an annual report acceptance letter and/or email for each annual report that was submitted? **Yes**

Q13 Please identify the DEQ Basin Coordinator(s) assigned to this jurisdiction (check all that apply): **Andrea Matzke, Wade Peerman**

Q14 Please identify the TMDL(s) that apply to this jurisdiction: **Columbia Slough (1998), Tualatin Subbasin (2001 and amended 2012), Lower Willamette (2006), Willamette Basin (2006)**

Q15 Please identify the population size for this jurisdiction: **> 10,000**

Q16 Please indicate this jurisdiction's status: **City National Pollutant Discharge Elimination System (NPDES) MS4 Phase I Permittee**

Page 2: Riparian Protection

Q17 Does this jurisdiction have a riparian protection program developed following the Statewide Planning Goal 5? **Yes**

DEQ TMDL Five Year Review 2018 for DMAs

Q18 Did this jurisdiction use the Safe Harbor option during the Goal 5 process?

No

Q19 What year was the riparian map or inventory developed for this jurisdiction?

1989

Q20 Select the items below that this jurisdiction uses as part of a riparian protection program (check all that apply):

Voluntary approach (e.g., education, outreach) includes periodic monitoring using remote sensing (LiDAR, aerial photos etc.) of riparian areas that can be used to determine if this voluntary approach provides the needed protection to help meet TMDL allocations (e.g. bacteria, temperature, mercury).

,

Regulatory approach (e.g., ordinance, codes) that (1) restricts - within limits (e.g., no more than 50% of riparian buffer width lost) - the removal of riparian vegetation during development and redevelopment, (2) enforces these restrictions using reviews of site development plans coupled with site inspections, and (3) requires the replacement of riparian vegetation when removal is necessary to protect private property rights and avoid a regulatory taking.

,

Regulatory approach (e.g., ordinance, codes) that (1) requires the replacement of riparian trees removed during development or redevelopment and (2) enforces these restrictions using reviews of site development plans coupled with site inspections.

,

Other (please specify):

The City also provides protection of drainageways through the development review process implemented under Portland City Code 17.38 (Drainage & Water Quality). This is done primarily to facilitate flow conveyance and limit flooding, but required setbacks also help protect riparian areas.

Q21 To avoid a taking of private property rights, does this jurisdiction have rules (e.g., development codes) giving the development community tools (e.g., Low Impact Development approach) to avoid the loss of riparian vegetation and the shade it provides to streams during development?

Yes

Q22 Write the code citation for this jurisdiction's riparian protection program below. Write "NA" if this jurisdiction does not have a riparian protection program.

Portland City Code, Title 33 - Planning & Zoning. Greenway Overlay Zones (33.440), River Overlay Zones (33.475), Environmental Zones (33.430), Streams, Springs & Seeps (33.640)

Q23 Please briefly describe any additional information you would like to share about this jurisdiction's riparian protection program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

Follow-up #18: The City conducted full ESEE's as a part of the Goal 5 plan and map development. The Safe Harbor option was not used. (Note: For the Willamette River, Goal 15 supersedes Goal 5 so an ESEE was not produced for this area.)

Follow-up #19: Initial maps & inventories for specific parts of the city were developed between 1989 and 2003. The City's Natural Resources Inventory was last updated in 2012, as a part of the Comprehensive Plan update. Another map update was initiated for July 2018-January 2021. <https://www.portlandoregon.gov/bps/76989>

Follow-up #20b: The City conducts photo-point and onsite monitoring at City restoration sites on BES or Parks-managed property.

Page 3: Riparian and Stream Restoration

Q24 Does this jurisdiction implement riparian restoration projects? **Yes**

Q25 How many linear feet of riparian restoration projects has this jurisdiction implemented or funded in the last four years? **Greater than 7000 feet**

Q26 How many stream restoration projects has this jurisdiction either implemented or funded in the last four years? **>10**

Q27 What type of stream restoration projects has this jurisdiction completed (check all that apply)?

Restoration of stream channel form after water control structures such as dikes and berms are removed.

,

Installation of stream flow deflectors.

Enhancement, rehabilitation, or reestablishment of riffle and pool stream structure.

,

Placement of in-stream habitat structures such as large wood structures.

,

Removal of stream barriers such as undersized culverts, fords, and grade control structures.

,

Backfilling of artificial channels.

Removal of existing drainage structures such as drainage tiles and the filling, blocking, or reshaping of existing drainage structures such as drainage ditches to restore wetland hydrology.

,

Installation of structures or fills necessary to restore or enhance wetland or stream hydrology.

,

Re-establishment of tidal wetlands in tidal waters where those wetlands previously existed.

Q28 For designated management agencies located along the lower Willamette River (i.e. river mile 50 down to confluence with Columbia River), how many projects were implemented by this jurisdiction to identify, enhance or protect cold water refuges for migrating salmon (e.g., restoration such as floodplain reconnection on tributaries to Willamette mainstem)?

5

Q29 Please briefly describe any additional information you would like to share about this jurisdiction's riparian and stream restoration program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

Follow-up #25, 26: The City completed a total of 22 restoration projects with a total linear footage of 24,292 feet. Numbers reflect the previous five years since the last review.

Additional riparian and stream restoration programs include:

The BES Watershed Revegetation Program, which works to improve water quality and native habitats by removing non-native invasive plants, reintroducing native vegetation, creating habitats, and reducing erosion and pollutant transport. The program actively manages riparian areas on properties with BES maintenance responsibilities and O&M agreements. More riparian & stream restoration work could be performed if we had access to privately-owned properties.

Natural Area Restoration Partnerships & Stewardship Program. Through partnerships with non-profits, community groups, and schools, the City actively enhances natural watershed areas using volunteer support. Activities include invasive plant species removal, native plant and tree installation, and community education. The Natural Areas Stewardship program in Portland Parks & Recreation (PP&R) works with volunteers to help restore our natural areas to encourage native species regeneration, provide habitat to wildlife and insects and provide safe trails to park visitors.

Page 4: Wetlands Protection

Q30 Does this jurisdiction have a wetland protection program developed following Statewide Planning Goal 5? **Yes**

Q31 To avoid a taking of private property rights, does this jurisdiction have rules (e.g., development codes) giving the development community flexibility (e.g., Low Impact Development approach) to avoid wetland loss and the loss of their cool water inflows from groundwater during development? **Yes**

Q32 Does this jurisdiction have a local wetlands mitigation bank to perform mitigations within the same subwatershed when it is not possible to avoid impacts to wetlands during development? **No**

Q33 Select the items below that this jurisdiction uses as part of its wetland protection program

Regulatory approach (e.g., ordinance, codes) that uses site plan reviews, site inspections and, if necessary, requires the mitigation of wetland impacts when development causes wetland loss.

Other (please specify):

BES has initiated the Wetland Inventory Project which is mapping all wetlands on public property (through field determinations) including ORWAP functional assessments, and is initiating Phase 2 on private property in 2019. The currently mapped wetlands are being integrated into the e-zone map update process so they can be protected under the city's environmental codes. Currently almost 400 wetlands totaling 168 acres on public property have been added to the city's inventory.

Q34 Write the code citation for this jurisdiction's wetland protection program below. Write "NA" if this jurisdiction does not have a wetland protection program.

Portland City Code, Title 33 - Planning & Zoning. Greenway Overlay Zones (33.440), River Overlay Zones (33.475), Environmental Zones (33.430), Streams, Springs & Seeps (33.640)

Q35 Please briefly describe any additional information you would like to share about this jurisdiction's wetland protection program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

The City pursues opportunities for land acquisition to protect and restore watershed functions such as stormwater filtration, groundwater recharge, storage and retention of flood waters, sediment delivery, and nutrient recharge. Programs in place to acquire land include the Johnson Creek Willing Seller Program, the Grey to Green Land Acquisition Program, and other acquisition and management efforts in conjunction with PP&R and BES.

Protection challenges include a lack of accurate mapping and gaps in adequate protections for small wetlands or isolated wetlands outside of existing environmental zones.

Page 5: Drinking Water/Source Water Protection

Q36 Does this jurisdiction have a drinking water/source water protection program to protect the watersheds that furnish drinking water for this jurisdiction?

Yes

Q37 Does this jurisdiction have the authority to administer this drinking water/source water program in its code?

Yes

DEQ TMDL Five Year Review 2018 for DMAs

Q38 Write the code citation for this jurisdiction's drinking water/source water protection program below. Write "NA" if this jurisdiction does not have a drinking water/ source water program.

Portland City Code, Chapter 21.36 (Bull Run Protections); Portland City Code, Chapter 21.35 (Columbia South Shore Well Field Protections)

Q39 Does this drinking water protection program include a Statewide Planning Goal 5 inventory with ordinance specifying source water protection requirements? **Yes**

Q40 Does this jurisdiction's drinking water protection program include the acquisition of land for protection and/or conservation easements? **Yes**

Q41 Please briefly describe any additional information you would like to share about this jurisdiction's drinking water/ source water protection program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

In general, the Bull Run Watershed and Columbia South Shore Well Field protection programs are managed by the Water Bureau independently of the City's MS4 & TMDL programs. However, the CSSWF program is listed as an MS4/TMDL strategy due to the pollution prevention activities that are implemented within the City's stormwater drainage area.

Page 6: Tree Protection

Q42 Does this jurisdiction have a tree protection ordinance to help retain stormwater on a development site to reduce temperature increases of stormwater on impervious surfaces and/or assist with stormwater management by retaining more stormwater on a site to reduce runoff carrying pollutants? **Yes**

Q43 Please write the code citation for this jurisdiction's tree protection program below. Write "NA" if this jurisdiction does not have a tree protection program.

Portland City Code, Title 11 - Trees

also Portland City Code, Title 33 - Planning & Zoning [Greenway Overlay Zones (33.440), River Overlay Zones (33.475), Environmental Zones (33.430), Scenic Resource Overlay Zones (33.480), Johnson Creek Basin Plan District (33.537), Pleasant Valley Plan District (33.564) and Parking Lot Landscaping requirements (33.266)]

Q44 Please briefly describe any additional information you would like to share about this jurisdiction's tree protection program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

The City of Portland's Urban Forestry department (in PP&R) manages Portland's urban forest infrastructure, which consists of 218,000 street trees, 1.2 million park trees, and innumerable private property trees. Urban Forestry is involved in managing or regulating these trees to differing degrees- creating and implementing the city's Urban Forest Management Plan, fostering community tree awareness and stewardship, developing tree policies and programs, monitoring and assessing the urban forest, issuing permits for planting, pruning, and removal of public and some private trees, and responding to tree emergencies. More staffing and maintenance resources are needed to perform this work and keep up with the constantly increasing tree inventory.

The BES Tree Program plants trees in the built environment. BES contractors and their volunteers provide post-planting establishment care (e.g., watering, mulching, and weeding) and technical support to residents with long-term tree-care responsibilities. BES also provides incentives to preserve and plant trees on private property to manage stormwater. BES' Treebate program provides rate payers with a reimbursement for the purchase of a tree for their private property.

Page 7: In-stream Water Transfers

Q45 Does this jurisdiction have a program to purchase or adopt permanent instream transfers through the Oregon Water Resources Department to support flows during the Summer and late Fall periods? **No**

Q46 Please briefly describe any additional information you would like to share about this jurisdiction's instream water transfer program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

The Portland Water Bureau implements a Habitat Conservation Plan for the Bull Run Water Supply that includes considerations for maintaining in-stream flows in the Bull Run River during Summer & early Fall periods.

Page 8: Illicit Discharge Detection and Elimination

Q47 Does this jurisdiction have an Illicit Discharge Detection and Elimination Program (IDDE)? **Yes**

Q48 Does this jurisdiction have the authority to prohibit illicit discharges to your stormwater system and require their removal when discovered and a source is identified? **Yes**

Q49 Please write the code citation for this jurisdiction's IDDE Program below. Write "NA" if this jurisdiction does not have an IDDE program.

Portland City Code, Chapter 17.39 - Storm System Discharges

Q50 Please check the elements below that are currently part of this jurisdiction's IDDE program: **Development of a stormwater conveyance system map and/or database.**

,

A tracking system for illicit discharges.

Procedures for responding to illicit discharges and enforcing compliance with an illicit discharge ordinance.

,

Procedures for prioritizing illicit discharge investigations using dry weather outfall screening (i.e., outfall reconnaissance inventory) for illicit discharges using the timing of screening, flow traps, and/or optical brighteners to minimize false negatives.

,

Procedures for prioritizing illicit discharge investigations using an assessment of existing information (e.g., desktop assessment) to identify areas where the probability of illicit discharges is higher.

,

Procedures for prioritizing illicit discharge investigations by sampling any flow in the stormwater system for indicator pollutants (i.e., indicator monitoring).

,

Conducting on-site investigations for illicit discharges using smoke, dye, and/or closed circuit TV.

,

Conducting septic system investigations for illicit discharges using ground surface inspections, dye, and/or remote sensing techniques when runoff from septic systems drain field has the potential to drain to your stormwater collection system (e.g., stormwater ditch, swale, or pipe).

,

Other (please specify):

The City implements curbside collection services (residential garbage, recycling, yard debris, and food scrap collection) to help prevent illegal dumping and has a partnership with the Neighborhood Coalition Offices and Metro to administer community collection events. BES conducts activities in conformance with Portland City Code (PCC) 17.33 (Required Public Sewer Connection) which mandates that properties using onsite wastewater disposal systems or nonconforming private sewer systems connect to an available public sewer. BES also coordinates risk analysis efforts under the Stormwater System Plan to identify areas in the city where existing sewage collection systems may be in poor condition and have the potential to pose contamination threats to surface waters and groundwater. BES continues to

evaluate the sanitary and combined sewers under the BES System Plan to implement an inflow and infiltration program for these systems, which helps address sewer capacity problems. These combined efforts along with the Sanitary Sewer Overflow program help to minimize sewage releases to the environment and receiving waters. BES continues to prioritize the repair, rehabilitation or replacement of system components in vulnerable areas.

Q51 Please briefly describe any additional information you would like to share about this jurisdiction's IDDE program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

Follow-up #50c: The City's Spill Protection & Citizen Response (SPCR) Program investigates pollution complaints that have the potential to impact the MS4 and enforces prohibited discharge violations of Portland City Code 17.39. The SPCR operates a 24-hour spill response hotline and administers a Duty Officer program that responds to pollution complaints 365 days a year. During the 2017-18 permit year, SPCR received and responded to roughly 1,975 calls regarding pollution complaints, spills, sewer overflows, dye tests, and other pollution related inquiries.

Page 9: Post-Construction Stormwater Management

Q52 Does this jurisdiction have a post-construction stormwater control program? **Yes**

Q53 Does this jurisdiction have the authority to administer this post-construction stormwater control program in your code? **Yes**

Q54 Please write the code citation for this jurisdiction's post-construction stormwater control authority as well as the title and - if available - a hyperlink to any stormwater design manual used to implement this authority. Write "NA" if this jurisdiction does not have a post-construction stormwater program.

Portland City Code, Chapter 17.38 - Drainage and Water Quality

<https://www.portlandoregon.gov/bes/64040>

Q55 Did this jurisdiction conduct a review of its code to identify barriers to the use of nonstructural stormwater controls (e.g., smaller lot size, smaller front yard setbacks etc.) and structural stormwater controls (e.g., bioswales, planter boxes etc.) characteristic of Low Impact Development (LID) before it drafted code or revised its code for the post-construction stormwater control program? **Yes**

Q56 Is the implementation of this jurisdiction's post-construction stormwater control program limited to its NPDES MS4 Phase I or II Permit boundary? **No**

Q57 Indicate which LID post-construction stormwater requirements presented below are included in this jurisdiction's post-construction stormwater control program (check all that apply):

A specified volume of stormwater that must be treated prior to discharge (e.g., treat 80% of the average annual rainfall).

,

A specified volume of stormwater that must be retained on a developed site (i.e., retention requirement).

,

A requirement for off-site mitigation of stormwater when a retention requirement cannot be met on a site.

,

A performance standard to prevent stormwater discharge from causing stream bed and bank erosion and releasing pollutants from this erosion (e.g., protect pre-development hydrology).

,

A performance standard for the level of stormwater treatment required (e.g., reduce 80% of the Total Suspended Solids).

,

A requirement to prioritize the use of stormwater controls that infiltrate and evapotranspire stormwater.

,

An allowance for stormwater mitigation when a requirement to retain a percentage of the stormwater on a site cannot practicably be met during development (e.g., off-site mitigation, payment-in-lieu etc.).

,

A list of approved structural stormwater controls including controls that can be characterized as green infrastructure controls (e.g., bioswales, planter boxes, vegetated filter strips) including information on their application, conditions limiting their use, operation & maintenance procedures, maintenance schedule, and design and specifications.

,

Requirements for submitting post-construction stormwater control plans for your jurisdiction's review and approval.

,

A requirement for the maintenance of privately-owned stormwater controls discharging into your jurisdiction's stormwater system.

,

Other (please specify):

DEQ TMDL Five Year Review 2018 for DMAs

BES's Development & Pollution Prevention Plan Review team conducts early assistance activities, land use and pollution source control reviews associated with commercial and industrial properties subject to requirements in the City's Source Control Manual (SCM). In 2016, BES separated Chapter 4 out of the SWMM into the stand-alone SCM. The SCM specifies pollution control requirements for development and post-development activities considered to be "high-risk" or pollutant-generating. The manual identifies structural, operational, and treatment BMPs designed to prevent or control conventional and toxic pollutants in stormwater, groundwater, and wastewater.

Q58 Does your post-construction stormwater program have a system for documenting the performance of scheduled maintenance of post-construction stormwater controls (e.g., asset management system)? **Yes**

Q59 Has your jurisdiction instituted a stormwater fee to generate revenue to support the maintenance of your post-construction stormwater controls and/or administration of your post-construction stormwater control program? **Yes**

Q60 Has your jurisdiction instituted system development charges to fund future stormwater infrastructure including water quality controls supporting new development and redevelopment in your jurisdiction? **Yes**

Q61 Please briefly describe any additional information you would like to share about this jurisdiction's post-construction stormwater program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

The City's Storm Water Management Manual was originally adopted in 1999 and has been referenced nationwide as a model for post-construction runoff management. It has since gone through a number of revisions and is updated on a regular basis. It provides stormwater management principles and techniques that help preserve or mimic the natural hydrologic cycle, minimize sewer system problems, and improve water quality. The manual provides developers and design professionals with specific requirements for reducing the impacts of stormwater from new development and redevelopment. BES conducts monitoring, research, and evaluation projects related to the SWMM to continually adapt and improve the technical and policy specifications within the manual.

Page 10: Construction Stormwater Management

Q62 Does this jurisdiction have a construction stormwater control program (e.g., erosion and sediment control program)? **Yes**

DEQ TMDL Five Year Review 2018 for DMAs

Q63 Does this jurisdiction have a construction stormwater control program for the following activities:

An acre or more of land disturbing activities ,

An acre of less of land disturbing activities ,

Other (please specify):

Yes - 500 sq ft or more

Q64 Please write the code citation for this construction stormwater authority below as well as the title and - if available - a hyperlink to any construction stormwater design manual or standards this jurisdiction uses to help administer this code. Write "NA" if this jurisdiction does not have a construction stormwater control program.

Portland City Code, Title 10 - Erosion & Sediment Control Regulations

<https://www.portlandoregon.gov/bds/article/192327>

Q65 Is the implementation of this jurisdiction's construction stormwater control program limited to its NPDES MS4 Phase I or II Permit boundary?

No

Q66 Please indicate which of the following are part of your construction stormwater program?

A determination on whether a construction site needs a NPDES Construction Stormwater Permit.

,

A requirement that a developer receives DEQ approval for a NPDES 1200-C permit prior to receiving a land use permit to commence construction activities.

,

A requirement for the review and approval of an erosion and sediment control plan for a construction site without a NPDES 1200-C Permit.

,

A requirement for the review and approval of an erosion and sediment control plan for a construction site with a NPDES 1200-C Permit.

,

Inspection of construction sites to determine the presence of non-stormwater (e.g., illicit discharges) into your stormwater system.

,

A system for tracking inspections of construction sites and any follow-up actions associated with these inspections.

,

Procedures for enforcing compliance with ordinance prohibiting sediment and other illicit discharges to your stormwater system.

Q67 Does this jurisdiction have a hillside or steep slope development protection code to minimize or prevent soil erosion and/or mass soil wasting?

Yes

Q68 Write the code citation for your jurisdiction's hillside or steep slope development requirements. Write "NA" if this jurisdiction does not have hillside or steep development protection code(s).

Portland City Code, Title 33 - 33.430 Environmental Zone, 33.632 Sites in Potential Landslide Hazard Areas

Q69 Please briefly describe any additional information you would like to share about this jurisdiction's construction stormwater program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

Over the past three years, the City of Portland Bureau of Development Services in partnership with BES has made a number of improvements to the construction stormwater program. Improvements include hiring three new Site Development Inspectors, facilitating an erosion and sediment control training event for City staff and industry partners, improving enforcement procedures, implementing an advisory committee, improved inspection documentation, and improved coordination with BES spill responders.

Page 11: Pollution Prevention/Good Housekeeping

Q70 Does this jurisdiction have a pollution prevention and good housekeeping program for its operations and activities?

Yes

Q71 Does this jurisdiction implement any of the following management strategies for pollution prevention in municipal operations (check all that apply)?

- Sweeping of streets** ,
- Sweeping of parking lots** ,
- Integrated pest management policy for the public works department and/or parks department** ,
- Practices to reduce or avoid fertilizer use maintenance operations for landscape areas** ,
- Minimize the use of deicing agents** ,
- Employee training on construction and maintenance practices to protect water quality** ,
- Maintenance program for stormwater treatment controls (e.g., catch basins, bioswales, planter boxes, wet ponds, constructed wetlands etc.)** ,
- Purchase of electric, hybrid, or low miles per gallon vehicles for your transportation fleet to reduce mercury emissions** ,
- No wildlife feeding ordinance or signs in public parks near waterways to limit wildlife waste from entering streams** ,
- Pet waste stations in public spaces** ,
- Dog parks sited away from waterways** ,
- Pet waste clean-up outreach program for public spaces** ,
- Port-a-Potties in parks and other public spaces that have no facilities** ,
- A program to minimize inflow and infiltration (I/I) into your wastewater collection system causing sanitary**

sewer overflows

,

Other, please
specify::

The City of Portland's Bureau of Transportation (PBOT) evaluates the use of alternative products and practices for rights-of-way to reduce and prevent pollution associated with streets. For example, PBOT is now using a UV-protection and anti-graffiti coating on new street signs that will further reduce the need for chemical cleaners. PBOT also has a Street Leaf Removal Program for traffic safety and water quality protection. The City operates several maintenance yards that receive, store, and transport municipal waste collected during routine maintenance activities and support additional City operations such as parks maintenance and fleet services. The City employs a variety of structural stormwater and non-structural source controls at each site. Typical controls include use of covers, berms, and other containment strategies for waste and recyclables; sweeping and good housekeeping practices; installation of filtration and absorbent inlet inserts in catch basins; use of oil-water separators and other pollution prevention facilities. PP&R implements responsible irrigation management principles to conserve water, minimize runoff and increase infiltration, and optimize fertilizer use. Over the past several years, PP&R has also been installing computerized equipment to monitor irrigation flow. The City's Sustainable Procurement Policy directs City bureaus to include environmentally preferable product and service specifications in City solicitations and contracts. Stormwater pollution prevention is addressed in construction and architectural/engineering design services, for example. Specifications reference BMPs like zero-sediment runoff at construction sites, onsite stormwater management, restrictions on zinc or copper-containing exterior materials, and use of untreated wood for boardwalks and similar exterior wood features.

Q72 Please briefly describe any additional information you would like to share about this jurisdiction's pollution/ good housekeeping program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

In 2016, the City of Portland became the first city in the world to achieve Salmon-Safe Certification for its work to improve water quality and restore salmon habitat. Portland City Council formally adopted the findings of Salmon-Safe's assessment, which was the culmination of a years-long process. Portland's designation means that city operations have conditionally passed the organization's comprehensive science-based evaluation of land and water management practices. Salmon-Safe certification affects day-to-day city operations that potentially impact downstream water quality as well as the construction and maintenance of City-managed properties, including City-owned buildings and the City's fleet of vehicles and bureau maintenance yards.

Q73 Does this jurisdiction implement a stormwater public education, outreach, and involvement program? **Yes**

Q74 Does this jurisdiction have any quantitative results and/or opinions on how effective these outreach efforts are (e.g., what activities are the most or least successful or which activities are most cost effective)? **No**

Q75 What activities are part of this jurisdiction's public involvement, education, and outreach program (check all that apply):

- Stormwater public education, outreach, and involvement program posted on a stormwater and/or water quality webpage**
- ,
- Collaborating on region-wide stormwater education campaigns (e.g., Clean Rivers Coalition)**
- ,
- Riparian information posted on a stormwater or water quality webpage**
- ,
- Mailers on the value of protecting riparian buffers are sent out with our correspondence**
- ,
- Incentivize riparian protection on private property**
- ,
- Mailers on the value of managing stormwater quality are sent out with our correspondence**
- ,
- Mailers on the value of protecting wetlands are sent out with correspondence**
- ,
- A tree planting program to educate the public about the role of trees in water quality protection**
- ,
- Offer and/or advertise erosion and sediment control training to the development community**
- ,
- Promote carpooling and public transportation as a strategy to reduce emissions with mercury**
- ,
- K-12 educational programs focused on water quality and pollution prevention activities**
- ,
- Organize school programs to educate students about water quality activities that can impair it**
- ,

Workshop or training on a water quality topic ,

Annual city cleanup day ,

Tree Committee meetings,

City development and planning committee meetings ,

Water quality brochure, utility bill insert, city newsletter ,

Media release (Newspaper, Radio, Television, Cable Access Channel)

,

Website utilized for posting and storing water quality documents

,

Water quality complaint resolution,

Fund, attend, and/or participate in watershed council meeting

,

Free or reduced cost tree planting program,

Riparian restoration projects on private property ,

This jurisdiction does not have a public education and outreach program.

,

Other (please specify):

The BES Clean Rivers Education program, in addition to leading science education classroom and field trip programs for K-12 students, works with schools and community groups to provide storm drain curb marking projects to inform community members about ways to protect water quality in their neighborhoods. BES is also launching a new outreach effort in areas where we are working on pipe solutions to add value to our capital improvements. The "Your Neighborhood to the River" program engages communities in neighborhood and natural area plantings as well as other education and involvement projects. BES's Community Watershed Stewardship Grants Program, in place since 1995, provides up to \$10,000 per project to citizens and organizations to encourage watershed protection. Projects must be within the City of Portland, promote citizen involvement in watershed stewardship, and benefit the public. The City's stewardship activities vary by watershed and include sponsorship, presentation, partnership, and public participation efforts. The City actively

DEQ TMDL Five Year Review 2018 for DMAs

works with and co-sponsors activities with the Columbia Slough Watershed Council, the Johnson Creek Watershed Council, the Tryon Creek Watershed Council, Crystal Springs Partnership, Tualatin Basin Public Awareness Committee, Friends of Trees and more. Resident outreach is routinely conducted to neighborhood associations and other community groups, newsletters, open houses, and individual outreach to property owners. Topics include invasive species and riparian restoration, watershed stewardship, green streets and stormwater facility installations, tree planting and community greening, and other pollution prevention efforts.

Q76 Please briefly describe any additional information you would like to share about this jurisdiction's public education, outreach and participation program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

Follow-up #74: BES has conducted focus groups and post-CIP construction surveys in order to understand the best communication methods and public awareness of those efforts. However, we do not have quantitative data on whether or how our education and outreach programs are affecting public behavior change related to stormwater or watershed health. The latter is a complex undertaking that does not provide useful information unless substantial resources are pooled collectively and the process is carried out with great deliberation. This was demonstrated in an ACWA study that assessed information from 11 Phase I jurisdictions and was subsequently submitted to DEQ.

Follow-up #75d: General information that supports riparian protection (stormwater management, floodplain issues, watershed health, etc.) is provided through newspaper inserts, billing inserts, open houses and other public events/meeting participation.

Follow-up #75j: PBOT and BPS implement a number of outreach programs to encourage the use of public transportation, carpooling and driving zero emission vehicles. The City is working to develop policies that make the most environmental choice the easiest, fastest and most convenient transportation option. More funding is needed for education and outreach for the general public.

Follow-up #75m:

TMDL issues are addressed with City Council as needed as key developments arise. This does not occur with any recurring frequency.

Page 13: TMDL Pollutant Load Reduction Benchmark Evaluation

Q77 Did this jurisdiction do a TMDL pollutant load reduction benchmark analysis in response to a NPDES MS4 Phase I Permit? **Yes**

Q78 Based on this jurisdiction's most recent TMDL pollutant load reduction benchmark evaluation:

Did not meet TMDL benchmarks for the following pollutants::

Did not meet TMDL benchmarks for the following pollutants:

Bacteria (E.coli) - Springbrook Creek (Willamette tributary)
Springbrook Creek is a small watershed with only about 28 acres within the City of Portland. The 2013 benchmark was based on a load reduction from redevelopment projections. Because redevelopment did not occur at predicted levels, the load reduction from structural BMPs was lower than estimated. The evaluation of progress toward benchmarks does not account for the effectiveness of non-structural BMPs which, if accounted, would likely result in meeting the benchmark. This is supported by monitoring results taken close to the mouth of Springbrook Creek by the City of Lake Oswego, which shows a significantly improving trend in E.coli concentrations.

Q79 Briefly describe this jurisdiction's progress towards attaining TMDL wasteload allocations. Please identify any successes and challenges.

Part C of the City's 2014 MS4 Annual Compliance Report details results and methods of the most recent TMDL Pollutant Load Reduction Evaluation. Table C-6 lists the WLAs that were met and not met.

Successes: The City continues to make progress in achieving greater pollutant load reductions overall and a number of the WLAs are being met despite the difficult targets. The City has met all TMDL benchmarks with the one exception as noted above. In general, despite the significant development that has occurred in the Portland area since the City's first MS4 permit (1995) there have been a number of improving water quality trends as demonstrated by our monitoring and the City continues to prioritize stream restoration and pollutant-reducing retrofits.

Challenges:

- Bacteria WLAs in the Willamette TMDL are nearly impossible to meet. Studies have shown that even if we controlled all human sources of bacteria, we would not meet the WLAs as the predominant sources of bacteria are birds and rodents. Our Wasteload Allocation Attainment Assessments showed that hundreds of millions of dollars would be required to meet the WLAs and in some cases we could never achieve the WLA even if 100% of the watershed was treated with BMPs.
- Since there is not any effectiveness data for non-structural BMPs (education, erosion control, street sweeping, IDDE, etc.) only structural BMPs are included in our pollutant load reduction models. Yet we know that non-structural controls are extremely beneficial for pollutant removal and we expend significant resources to implement those activities.
- MS4 drainage boundaries are constantly changing with new development, redevelopment and retrofitting, which makes pollutant load comparisons from year to year extremely difficult and highly variable.

Q80 Please briefly describe any additional information you would like to share about your jurisdiction's TMDL pollutant load benchmark analysis, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

- Please refer to the MS4 Annual Compliance report(s) for more details and performance measures related to the programmatic activities covered in this evaluation. Overall the City has had great success implementing both the MS4 and TMDL programs as demonstrated by improving water quality trends and pollutant evaluations.
- The resources required to monitor and evaluate water quality trends are substantial. The City of Portland spent well over a quarter of a million dollars to conduct instream and stormwater monitoring last year alone. Those costs do not include data evaluation, modeling or reporting costs. Unfortunately, DEQ does not seem to have a comprehensive or consistent process to request, collect or evaluate the data, which places additional burden on permittees and impedes the value and usefulness of collecting the data in the first place. It is also difficult to interpret results in some watersheds when large portions of the upstream watershed are located in other jurisdictions outside of the City's control.
- DEQ's inconsistent methods for developing and documenting TMDLs result in confusing requirements and unclear targets, which then impacts DMAs' ability to implement or target pollutant reducing activities. For example, the bacteria WLA is much higher in the Tualatin than in the Willamette and the TMDLs are not clear or consistent on specifying MS4 NPDES permits as point sources of urban stormwater so it is not always clear which, if any, WLA applies. It is recommended that DEQ find opportunities to better align the MS4 and TMDL programs. TMDL requirements and associated wasteload allocations must be clear and implementable for DMAs responsible for urban stormwater runoff.
- Significant constraints that exist in a built-out city like Portland make it highly challenging to implement green infrastructure and surface vegetated facilities. We do, however, continue to work hard to find and develop innovative ways to get these BMPs in the ground despite the high costs and site and space constraints.

Page 14: Water Quality Monitoring

Q81 Did this jurisdiction conduct and/or collaborate with other entities on water quality monitoring? **Yes**

Q82 During this five year plan implementation cycle, did this jurisdiction monitor (check all that apply):

- Stormwater,**
- Surface water,**
- Groundwater,**
- Drinking water source (includes groundwater or surface water drinking water sources)**

Q83 What parameters are monitored?

Bacteria,
Temperature,
Mercury,
Dissolved Oxygen,
Lead,
Phosphate,
DDE 4,4,
DDT 4,4,
Dieldrin,
Iron,

Other (please specify):

In addition to instream monitoring, the City also conducts monitoring of stormwater, river and inline sediments and fish tissue. Additional parameters for these projects include full suite of metals, VOCs, SVOCs (including PAHs), PCBs, Pesticides.

Q84 Does this jurisdiction use water quality data to assess progress towards meeting load allocations for applicable TMDLs?

Yes

Q85 Besides evaluating progress towards meeting a load allocation, are there other ways this jurisdiction uses the water quality monitoring data it collects and, if so, how:

Yes, BES uses monitoring data to assist with planning efforts and to evaluate water quality status and trends, assess risk, perform pollutant source investigations and adaptively manage stormwater programs. BES uses the data to evaluate areas of potential pollutant loading and to target areas that may require further investigation. Additionally, BES uses water quality data to evaluate potential stream restoration projects.

Q86 Please briefly describe any additional information you would like to share about this jurisdiction's water quality monitoring program and activities, e.g. progress, challenges, resource and technical assistance needs, etc. Write NA if you have nothing additional to provide.

Follow-up #84: We use data to inform related modeling and have used monitoring data directly in benchmarking in the past.

BES is beginning the process of evaluating the Portland Area Watershed Monitoring and Assessment Program (PAWMAP). PAWMAP uses a probabilistic survey design to monitor the City's aquatic resources--including water quality sampling. We have now completed two full survey cycles and have enough data to begin evaluating how the program is functioning.

Challenges include staffing resources and coordination with overlapping regulatory requirements. Probabilistic stormwater and instream monitoring are incredibly resource-intensive, as is our flow-weighted stormwater monitoring. The City of Portland spent well over a quarter of a million dollars to conduct this monitoring last year alone. Frequent data submittals and requests also place a high burden on regulatory and monitoring staff with little or no assurances that the data will be used to enhance or inform future requirements.

Page 15: Other Actions and Efforts

Q87 Any other programs or projects implemented by this jurisdiction but not captured in this survey? Write NA if you have nothing additional to provide.

Yes, please specify::

The Industrial Stormwater Program (ISW) administers 1200-Z General NPDES Industrial Stormwater Discharge Permits in Portland through an intergovernmental agreement with DEQ. Program staff conduct annual compliance inspections of permitted sites, provide technical assistance on BMP implementation, and issue enforcement referrals for instances of non-compliance. The City is a member of the Regional Pollution Prevention Outreach Team (P2O Team) and the Eco-Logical Business Program (EcoBiz) to reduce pollutant discharges from commercial business operations. The EcoBiz Program members certify automotive and landscaping businesses in the Portland metropolitan region to ensure sustainable and environmental practices. The City's Sustainability at Work (SAW) program continued to assist Portland businesses with resources and information to promote pollution prevention and environmental sustainability. As part of SAW, the City conducts site visits to assist businesses on a broad range of topics, including water conservation, stormwater management, hazardous waste, energy efficiency, renewable power, alternative transportation, and waste prevention. Clean River Rewards is Portland's stormwater utility discount program. With Clean River Rewards, Portland ratepayers can save money and work for clean rivers and healthy watersheds at the same time. Properties that manage stormwater on-site qualify for up to a 100 percent discount on their on-site stormwater management charges. The program rewards private property owners who conduct stormwater retrofits and help protect rivers, streams and groundwater. BES' Private Property Retrofit Program works with private property owners to manage stormwater on-site by aiding with the installation of rain gardens, stormwater planters, swales, ecoroofs, and pervious pavement on sites that meet program criteria. The City provides substantial financial and technical assistance for project construction in targeted neighborhoods. The City continues to implement retrofit projects to roadways and the existing storm drainage system to address water quality and stream health. These retrofits include construction of stand-alone treatment facilities or the conversion of existing drainage infrastructure to facilities that promote watershed health and treatment and/or infiltration of runoff (e.g., roadside ditches to swales or porous shoulder). One method of system retrofitting is the construction of green streets. The City maintains an active program to identify potential green street opportunities and install green street features (e.g., roadside planters, curb bump outs, etc.), either as part of a

subsequent utility improvement or roadway and sidewalk improvement project. The City implements actions outlined in the Climate Change Preparation Strategy (adopted in 2014). The Strategy recognizes the critical role of the urban forest and natural systems in making the City more resilient to potential climate-related changes in summer air and water temperatures, urban heat islands, storm intensity and flooding patterns, and frequency of landslides and wildfires.

Page 16: Funding Limitations

Q88 Did this jurisdiction have funding and resource limitations identified in the last 5 year review?

No

Q89 Has this jurisdiction identified strategies for overcoming these limitations?

NA- This jurisdiction does not have funding or resource limitations.

Q90 Does this jurisdiction partner with other jurisdictions, Non-governmental organizations, etc. in its effort to meet TMDL load allocations?

Yes, please identify these partners and briefly note the area(s) of collaboration::

- Port of Portland (MS4 co-permittee)
- Oregon Association of Clean Water Agencies (DMA coordination on TMDL developments, evaluation, guidance, etc.)
- Watershed Councils (various watershed education and restoration activities)
- Inter-jurisdictional committees (e.g. Johnson Creek IJC; watershed monitoring, restoration activities)
- Stewardship partners as noted in public education section
- Land Trusts (conservation, etc.)
- Soil and Water Conservation Districts
- Drainage Districts (asset management, hydrology, etc.)
- Non-Profit Organizations (watershed education, restoration, etc.)
- Adjacent partner cities (Lake Oswego, Gresham)
- Multiple other parties through Intergovernmental Agreements, etc

Q91 What sources of funding does this jurisdiction use to support its TMDL compliance actions (check all that apply):

**Grants,
Stormwater fees,
System development charges**

Page 17: Projects to Showcase

Q92 Does this jurisdiction have any projects or actions that are particularly commendable that were accomplished in the last four years which this jurisdiction would like to showcase?

Yes, please

specify::

BES has begun a new comprehensive approach to citywide stormwater planning. It evaluates risks from a number of stormwater-related categories, compiling water quality, habitat, flooding, and more in a single plan. It will guide and prioritize city investments to reduce risks, protect existing infrastructure, meet regulations, and improve watershed conditions to protect public health and the environment.

BES's Stormwater System Planning will allow us to compare stormwater priorities across all parts of the City and integrate with other infrastructure needs. Some notable projects are listed below, but there have been many other large-scale projects and programs the City has implemented over the last few years. Please see MS4 and TMDL annual reports submitted between 2013 and 2017 for more details. * Oaks

Bottom Habitat Restoration:

<https://www.portlandoregon.gov/bes/article/680770> *

Restoration Creek Daylighting at Albert Park:

<https://www.portlandoregon.gov/bes/article/575733> * Fanno

Creek Culvert Replacement @ SW 45th Ave:

<https://www.portlandoregon.gov/bes/article/573861> *

Columbia Slough Refugia Project:

<https://www.portlandoregon.gov/bes/article/633543> * Crystal

Springs Culvert Replacement:

<https://www.portlandoregon.gov/bes/article/439240> * Tryon

Creek Roadside Swales:

<https://www.portlandoregon.gov/bes/article/444481> *

Beaverton-Hillsdale Hwy Water Quality Improvement

Project: <https://www.portlandoregon.gov/bes/article/445983> *

Crystal Springs / Westmoreland Park Restoration:

<https://www.portlandoregon.gov/bes/article/439236> *

Johnson Creek Luther Road Restoration Project:

<https://www.portlandoregon.gov/bes/52686>

Q93 Does jurisdiction propose changes or updates to its TMDL Implementation Plan for the next five year cycle?

Yes, please briefly specify the management strategies where changer/updates are planned::

Updates to the City's TMDL Implementation Plan (TIP) will be evaluated and addressed following submittal of this 5-year review and as needed thereafter. The City's current TIP cycle, as approved by DEQ, is from March 2014 to March 2019. Revisions will likely include updates to key strategies where needed and appropriate, better alignment with and references to MS4 permit strategies to facilitate annual reporting, updates to the temperature management section where appropriate, and formatting changes. Possible revisions to the TIP will also be considered following renewal of our MS4 permit and associated Stormwater Management Plan.

Page 19: Feedback for DEQ

Q94 DEQ should improve upon or expand its efforts in the following areas (check all that apply):

TMDL- related information and guidance is accessible on DEQ's website.

,

The relationships between TMDL's, DEQ's Willamette Basin Water Quality Management Plan, nonpoint source DMA implementation plans, and point source NPDES permits are clearly communicated in meetings, in materials on DEQ's website, and in personal communication with DEQ staff.

,

Water quality monitoring includes TMDL implementation effectiveness monitoring.

,

Water quality data and trends are summarized in the context of TMDL implementation progress and challenges.

,

The topics and materials included in the Willamette Basin TMDL DMA meetings are informative and pertinent to DMAs.

Page 20: Certification Statement

DEQ TMDL Five Year Review 2018 for DMAs

Q95 Certification: The person certifying the report should be a principal executive officer (e.g., Public Works Director, City Administrator) or ranking elected official (e.g., Mayor). By putting my name, title, and date below, I certify that the information contained in this document is true, accurate, and complete to the best of my knowledge and belief.

Date: (mm/dd/yyyy)

10/24/2018

Name of certifying official:

Michael Jordan

Title:

**Director, Bureau of Environmental Services, City of
Portland**
