

**City of Portland, Oregon**

**Total Maximum Daily Load (TMDL) Implementation Plan  
Seventh Annual Status Report**

**Fiscal Year 2014-2015  
(July 1, 2014 – June 30, 2015)**

**Submitted to:  
Oregon Department of Environmental Quality  
November 1, 2015**



**City of Portland, Oregon**  
**TMDL Implementation Plan**  
**Seventh Annual Status Report**  
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**INTRODUCTION**

This *Total Maximum Daily Load (TMDL) Implementation Plan Seventh Annual Status Report* summarizes key activities and accomplishments for the City of Portland (City) during fiscal year (FY) 2014-2015 (July 1, 2014 to June 30, 2015). It summarizes the implementation status of the City's management strategies to reduce TMDL pollutants, in accordance with the City's *Total Maximum Daily Load (TMDL) Implementation Plan* dated February 28, 2014.

**Report Organization**

This annual report covers implementation actions and accomplishments that occurred during FY 2014-15. The report is organized into the following sections:

- Adaptive management
- Citywide management activities
- Temperature management strategies

**ADAPTIVE MANAGEMENT**

The City uses an adaptive management approach for its TMDL program to determine if the *TMDL Implementation Plan* needs to be modified to improve effectiveness. This includes both an annual process and a more comprehensive longer-term process.

**Annual Process**

The City conducts an annual adaptive management process in conjunction with preparing each annual TMDL status report to determine if the City's TMDL program is being implemented in accordance with the *TMDL Implementation Plan* and identify whether any program adjustments are needed. The City's annual review determined that the TMDL program is being implemented in accordance with the *TMDL Implementation Plan* and that no program adjustments are needed.

**Comprehensive Process**

- The City conducted a comprehensive process as part of the *TMDL Implementation Plan Fifth Year Review Report*. This included conducting in-stream water quality trend analyses for TMDL parameters for which data were available. The trend analyses document (titled *Appendix B: Summary of Water Quality Monitoring Trend Analyses*) was submitted to DEQ November 1, 2013. Not all TMDL parameters had observable trends; however, those that

were observed showed improving trends for all watersheds. The only exception was a declining dry season trend for total phosphorus in Fanno Creek.

- As described in the *TMDL Implementation Plan*, the City also considers effectiveness evaluations developed for the City's NPDES Municipal Separate Storm Sewer System (MS4) program. As reported in last year's TMDL annual report, MS4 effectiveness evaluations (which were included in the *NPDES MS4 Year 19 Annual Compliance Report* dated November 1, 2014) showed the following results:
  - EPA-approved stormwater-related TMDL Waste Load Allocations (WLAs) were met for all TMDL parameters in Rock Creek (total phosphorus, TSS and E. coli), Balch Creek (E. coli), and the Willamette River (E. coli). In Fanno Creek and Johnson Creek, WLAs were met for TSS and DDT, respectively.
  - All MS4 pollutant load reduction benchmarks were met, with the exception of E. coli in Springbrook Creek. If non-structural as well as structural BMPs were to be considered, it is likely that the E. coli benchmark in Springbrook Creek would be achieved. In 2014, monitoring conducted by the City of Lake Oswego close to the mouth of Springbrook indicated a significantly improving trend in E. coli concentration.
- The City provided an *MS4 Permit Renewal Submittal* to DEQ in July 2015. The submittal includes new benchmarks for all TMDL parameters where WLAs have not been achieved. The benchmarks are estimated pollutant load reductions. They are set for the year 2021 to reflect the anticipated end of the next MS4 permit term.

The benchmarks reflect projected best management practices (BMPs) that will be implemented under the *MS4 Stormwater Management Plan (SWMP)*. The submittal describes how these BMPs will contribute to the overall reduction of the TMDL pollutants. Since many of the strategies in the *TMDL Implementation Plan* are based on the SWMP, these projected BMPs will also apply to the TMDL program and contribute to its effectiveness.

In summary, both the water quality trends analyses and the results of the NPDES MS4 progress to WLAs and benchmarks indicate that the TMDL program is effective. Implementation of the strategies included in the MS4 SWMP and the *TMDL Implementation Plan* will continue to contribute to the overall reduction of TMDL pollutants. No major program adjustments are needed at this time.

## **CITYWIDE MANAGEMENT STRATEGIES**

Table 1 shows activities conducted in FY 2014-15 to implement the Citywide management strategies identified in section 3 of the *TMDL Implementation Plan*. As mentioned above, many of the strategies are based on the City's SWMP. Additional information and greater detail on SWMP BMP implementation can be found in the NPDES MS4 *Annual Compliance Report for Permit Year 20*, submitted to DEQ on November 1, 2015.

## **TEMPERATURE MANAGEMENT STRATEGIES**

Table 2 shows activities conducted in FY 2014-15 to implement temperature management strategies identified in section 4 of the *TMDL Implementation Plan*.



**TABLE 1: ACTIVITIES CONDUCTED TO IMPLEMENT CITYWIDE MANAGEMENT STRATEGIES**

| <b>PUBLIC INVOLVEMENT (PI)</b>   |  |
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| <b>Strategy</b>  | <b>Implementation Activities FY 2014-15</b>  |
| 1. Provide water quality education and curriculum resources for K-12 students. | <ul style="list-style-type: none"> <li>• Reached 5,168 students (grades K-12+) with 220 classroom programs that provide hands-on, interactive science education about stormwater and other environmental issues.</li> <li>• Involved 3,727 students (K-12) in 165 education field programs that offer watershed investigations and field assessments, stormwater tours, boat tours, and restoration experiences. Of these, 1,528 students in 71 classes combined education with natural area restoration service projects.</li> <li>• Provided canoe trips to 385 students in the Columbia Slough watershed. These trips were preceded by classroom studies and stewardship projects related to stormwater pollution.</li> <li>• Checked out stormwater and watershed curriculum kits and field equipment to five Portland elementary and middle school teachers.</li> <li>• Presented Stormwater - Soak It Up, a 75-minute classroom program for 12 classes in grades 4-12 and special interest groups, totaling 306 students and teachers</li> <li>• Presented Tours of Stormwater Solutions to 292 students. Students visited swales, stormwater planters, ecoroofs, porous pavement, and creative downspout disconnections.</li> <li>• Presented Watershed Awareness to 474 students in 22 classes, grades 3-6. This program focuses on common non-point sources of pollution and pollution prevention.</li> <li>• Continued the permanent storm drain curb marker program. Participating community and school volunteers also distributed doorhangers with stormwater pollution prevention messages and clean river tips to nearby residences. Number of participants: 20</li> <li>• Targeted schools with onsite stormwater facilities for extended outreach. Students learned about stormwater pollution prevention and their school's sustainable stormwater facilities and participated in maintenance activities for their facilities. Number of students: 48</li> <li>• Presented <i>Futures Working for Clean Rivers</i> career education classroom and field programs to 65 students in the Columbia Slough watershed.</li> </ul> |

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| <p>2. Educate the public about stormwater and surface water quality protection/pollution prevention and riparian and wetland protection via websites, workshops, fact sheets, and other outreach materials.</p> | <ul style="list-style-type: none"> <li>• Mailed Riverviews newsletter to over 309,000 residential ratepayers. The focus of the newsletter was BES’s new Watershed Report Cards, which help BES evaluate the effect of its work on the watersheds and identify work still needed.</li> <li>• Included inserts in City water/sewer bills mailed to more than 200,000 customers: <ul style="list-style-type: none"> <li>– First quarter: “Portland Has Changed a Lot since the 1930s” provided information about the city’s aging sewer system and current projects to replace older sewers in danger of failing.</li> <li>– Second Quarter: “Finding Green Solutions” provided information about green infrastructure and BES’s stormwater discount program (Clean River Rewards).</li> <li>– Third Quarter: “Living in a Floodplain” provided information about resources for residents living in a floodplain.</li> <li>– Fourth Quarter: “Working for Clean Rivers” provided information about what residents can do at home to protect water quality, including not using garden chemicals and reporting spills.</li> </ul> </li> <li>• Updated and posted fact sheets, brochures, and educational materials on the BES website about sustainable stormwater management (163,250 page views); Treebate incentive for planting yard trees (17,991 page views); Green Street Stewards Program (35,565 page views); Native Plant Resources (7,783 page views); and Brownfield Program (36,614 page views).</li> <li>• Maintained the City Green blog and Facebook page to highlight BES’s green infrastructure work and the work of partner organizations, including watershed councils, Friends of Trees, stewardship groups, soil and water conservation districts, and local governments. In FY 14-15, posted 96 articles and received over 565,000 hits.</li> <li>• Continued to educate and recruit volunteer Green Street Stewards. In FY14-15, the program reached over 1,585 individuals through tabling events and trainings. Twenty-two people volunteered to become Green Street Stewards and adopt 63 Green Street facilities.</li> <li>• Developed and distributed a variety of educational materials at community meetings and events.</li> </ul> |
| <p>3. Involve citizens in water quality improvement activities through community events, stewardship projects, and restoration projects.</p>  | <p>Columbia Slough Watershed:</p> <ul style="list-style-type: none"> <li>• Co-sponsored and participated in numerous community events, including Slough 101, Groundwater 101, Explorando El Columbia Slough, three Canoe the Slough events, the Columbia Slough Regatta, Aquifer Adventure, the Columbia Slough Corps of</li> </ul>  |

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|  | <p>Rediscovery, Soup on the Slough event, one Great Blue Heron Week Event, and three Sunday Parkways events, where stormwater was a topic of instruction. The City was a co-sponsor of the Columbia Slough Watershed Awards program. The total participation was approximately 2,300 persons.</p> <ul style="list-style-type: none"> <li>• Participated in Friends of Force Lake, Friends of Smith and Bybee Lakes, Let’s Build Cully Park Committee, Columbia Biogas Community Advisory Committee, and Colwood Golf Course Acquisition community advisory groups, providing stormwater, watershed, surface water, and pollution prevention education and professional guidance.</li> </ul> <p>Willamette Watershed</p> <ul style="list-style-type: none"> <li>• Conducted public involvement and information activities for Willamette watershed projects via presentations to neighborhood associations, newsletter articles, an annual open house, and an annual street fair. Participated in over 32 community events, reaching over 1,500 citizens, including Multnomah Days, Sunday Parkways, rain garden workshops with East Multnomah Soil &amp; Water Conservation District, neighborhood association meetings, and The Art of Stormwater exhibitions.</li> <li>• Distributed over 30 copies of “Be a Partner for Watershed Health” brochure through citywide mailings and community events.</li> <li>• Through a BES/Parks and Recreation partnership, involved citizens in their local natural areas, where 8,938 volunteers spent 27,780 volunteer hours on restoration activities. The Youth Conservation Corps spend 860 hours working in Willamette Watershed parks.</li> <li>• Hosted citizens at the SW Watershed Resource Center (WRC); provided technical assistance and project support to neighborhood and Friends groups in the SW Willamette River watersheds.</li> <li>• Partnered with SOLV and the Friends of Baltimore Woods to engage community volunteers in watershed restoration at Baltimore Woods in North Portland. Over 696 volunteers provided erosion reduction, invasive plant removal, and native tree and shrub planting.</li> <li>• In partnership with Portland Parks and the Mt. Tabor Park Weed Warriors, community volunteers spent 2,480 volunteer hours at 17 events to enhance over 7 acres of parkland.</li> </ul> |
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|  | <p><b>Johnson Creek Watershed</b></p> <ul style="list-style-type: none"> <li>• Continued working with the Johnson Creek Watershed Council and streamside property owners to encourage watershed stewardship.</li> <li>• Through the Johnson Creek Watershed Interjurisdictional Committee, continued to work with multiple agencies and jurisdictions throughout the Johnson Creek Watershed to conduct watershed-wide monitoring, including water quality and macroinvertebrates.</li> <li>• Supported the Johnson Creek Watershed Council’s 17<sup>th</sup> annual Johnson Creek Watershed-wide Restoration Event, where 415 volunteers participated in watershed improvement activities.</li> <li>• Provided grant funding to support the Johnson Creek Watershed Council’s Annual Creek Cleanup, which involved 150 volunteers.</li> <li>• Continued to support the Johnson Creek Watershed Council and the Crystal Springs Partnership in their efforts to remove invasive species and improve conditions along Crystal Springs, a tributary to Johnson Creek.</li> <li>• Worked with community partners, including the Crystal Springs Partnership, Native Americans, TriMet, the Army Corps of Engineers, and Portland Parks &amp; Recreation, to celebrate completion of the Westmoreland Park restoration project. Shared information about the project and the arrival of native salmon that spawned in Crystal Springs via blog posts, Facebook, and local media.</li> <li>• Hosted a major public event at the Foster Floodplain Natural Area in May 2015, with about 3,000 people attending. Provided information about City efforts to improve water quality, mitigate flooding and enhance wildlife habitat at the site, as well as information about native wildlife, water quality issues in urban watersheds, tree planting and community greening efforts.</li> <li>• Supported environmentally friendly farming and wetland education programs at Zenger Farm, which is the site of a renovated farmhouse with a zero net energy design and sustainable stormwater features. Supported the completion of their Urban Grange, which will include an ecoroof and stormwater planters. In 2014, Over 8,700 students and adults visited the farm, with more than 43 percent being repeat visitors. About 330 youth participated in the summer camps. Adult education classes were conducted in sustainable/environmental farming practices. About 290 volunteers contributed more than 8,500 hours of service to the farm.</li> </ul> |
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|  | <p>Fanno and Tryon Creek Watersheds</p> <ul style="list-style-type: none"> <li>• Conducted public involvement and information activities for Fanno and Tryon Creek watershed projects via direct mail, presentations to neighborhood associations and coalition committees, newsletter articles, an advisory committee, an annual open house, and an annual street fair. Projects included SW Boones Ferry Road culvert replacement, Beaverton Hillsdale Highway stormwater retrofits, South Ash Creek sewer repair and enhancement, SW Stevenson and Hamilton roadside swales, SW 45<sup>th</sup> at Fanno Creek culvert replacement project, and stream daylighting projects at Albert Kelly Park and Jackson Middle School.</li> <li>• Worked with Southwest Neighborhoods Inc. (SWNI) to provide public information about watershed improvement and pollution prevention work conducted by the City and partner organizations. In FY 14-15, SWNI hosted a watershed open house and published monthly articles in its newsletter, which is distributed to over 9,000 homes and is available on-line.</li> <li>• Responded to over 25 citizen concerns relating to stormwater issues, invasive plants, project ideas, wildlife issues, pollution or dumping concerns, and requests for stewardship and involvement.</li> <li>• Sponsored the Tryon Creek Watershed Council’s Volunteer Program to support an Americorps Volunteer Coordinator.</li> <li>• Sponsored the Friends of Tryon Creek State Park in the removal of approximately 4,000 square feet of invasive species and the support of field trip scholarships for 100 students.</li> <li>• Hosted citizens at the SW Watershed Resource Center (WRC), located in the Southwest Neighborhoods, Inc. office at Multnomah Arts Center. Provided technical assistance and project support to neighborhood and Friends groups in the Willamette River and Fanno and Tryon Creek watersheds. Activities included: <ul style="list-style-type: none"> <li>– Hosting of visitors in the WRC room, open during regular business hours</li> <li>– 37 stewardship events, where 696 attendees contributed over 1,682 hours</li> <li>– 11 presentations and outreach events, with 411 total attendees</li> <li>– 44 landowner inquiries, with 18 onsite consultations</li> <li>– 38 restoration tool and equipment checkouts</li> </ul> </li> <li>• Through a BES/Parks and Recreation partnership, involved citizens in their local natural areas. In the Fanno Creek Watershed, 503 volunteers spent 1,271 volunteer hours at 29 restoration events, and the Youth Conservation Corps spent 204 hours working in Fanno Creek parks. In the Tryon Creek Watershed, 209 volunteers spent 554 volunteer hours at</li> </ul> |
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|   | <p>11 restoration events, and the Youth Conservation Corps spent 3 hours working in Tryon Creek Watershed parks.</p> <ul style="list-style-type: none"> <li>• Worked with the Tualatin Basin Public Awareness Committee (TB-PAC), a partnership of agencies and non-profits working to educate and involve Tualatin Basin residents. Partners sponsored \$5,462 in activities, including \$1,000 from BES. Activities included: <ul style="list-style-type: none"> <li>– Two Naturescaping for Clean Rivers workshops, with 36 attendees</li> <li>– Bus funding for watershed field trips</li> <li>– Five Clean Tualatin Assembly shows with Will Hornyak reaching 1,600 students.</li> </ul> </li> </ul> <p>Citywide</p> <ul style="list-style-type: none"> <li>• BES’s Tree Program conducted the following activities: <ul style="list-style-type: none"> <li>– Provided staff support and resources through a contract with Friends of Trees (FOT) to foster recruitment, retention, and education of volunteers, with the purpose of maximizing tree planting, community involvement, and long-term survival of FOT-planted trees.</li> <li>– Provided support for outreach and educational programming through a partnership with Portland Parks Urban Forestry to foster a more tree-literate populace, with the purpose of maximizing urban forest education and outreach, community involvement and awareness, and long-term stewardship of the urban forest.</li> <li>– Provided information at community events to educate Portlanders about the importance of urban trees for clean rivers, healthy watersheds, and livable, sustainable communities; reached 611 people at 12 events.</li> </ul> </li> </ul> |
| <p>4. Implement Multnomah County's pet waste pick-up ordinance in City parks.</p> | <ul style="list-style-type: none"> <li>• Portland Parks &amp; Recreation encourages compliance with leash and scoop laws through education, enforcement, and by providing off-leash areas. Programs include: <ul style="list-style-type: none"> <li>– Education campaigns, such as Pet Health for Parks, Dogs for the Environment, and Pettiquette for Parks</li> <li>– Developing park signs, presentations, and flyers to increase awareness and understanding of leash/scoop laws</li> <li>– Park Ranger patrols, which use park warnings and citations to increase leash/scoop law compliance</li> </ul> </li> </ul>  |
| <p>5. Promote carpooling, use of public transportation, walking and biking.</p>   | <ul style="list-style-type: none"> <li>• Portland’s Bureau of Transportation (PBOT) and Drive Less Connect match carpooling partners and provide discounted carpool parking.</li> </ul>   |

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|   | <ul style="list-style-type: none"> <li>• PBOT sponsored International Walk+Bike to School day with 65 schools participating.</li> <li>• PBOT provided the Bicycle Lunch and Learn series, Portland by Cycle rides and classes, and Bike and Walk maps covering Portland.</li> <li>• PBOT coordinated the Safe Routes to School program, which included over 100 schools in the City of Portland.</li> <li>• PBOT coordinated Sunday Parkways, a series of free events that this year allowed 119,000 participants to use non-motorized modes of transportation along Portland streets.</li> <li>• The Tillikum Crossing, Bridge of the People commuter-only bridge opened in August 2015. In September, there were 92,500 bike trips over the bridge. The average weekday ridership is 8,000 passengers on the MAX Orange line across the bridge and 5,200 passengers on the bus lines across the bridge.</li> </ul> |
| <p>6. Coordinate and implement education and outreach programs and strategies with other jurisdictions.</p> | <ul style="list-style-type: none"> <li>• The City of Portland continues to participate in education and outreach opportunities with other jurisdictions through its Association of Clean Water Agencies (ACWA) membership and other opportunistic and seasonal campaigns such as “Freeze the Grease, Save the Drain.” While no longer participating as a funding member of the Regional Coalition for Clean Rivers and Streams, the City anticipates sharing the Coalition’s messaging and information on an informal basis, as well as participating in future campaigns on a more formal basis, including potentially funding specific campaigns. The Coalition’s website and other media include information about proper disposal of pet waste; vehicle care, washing, and oil; organic/chemical-free lawn care; composting; native plants; trees; household chemicals, and dumping.</li> </ul>                  |
| <p>7. Post the <i>TMDL Implementation Plan</i> and annual reports on the City website.</p>                  | <ul style="list-style-type: none"> <li>• The <i>TMDL Implementation Plan</i> was posted February 2014, and the FY 2014-15 TMDL annual report was posted November 2015.</li> </ul>  |

| <b>OPERATIONS AND MAINTENANCE (OM)</b>   |   |
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| <b>Strategy</b>  | <b>Implementation Activities FY 2014-15</b>   |
| 1. Implement an inspection, maintenance, and repair program for public stormwater collection and treatment systems.  | <ul style="list-style-type: none"> <li>• Inspected all public stormwater management facilities (SMFs) at least once during the year. These include: <ul style="list-style-type: none"> <li>– 152 proprietary BMPs (StormFilter, Vortech, Stormceptor, etc.)</li> <li>– 248 surface SMFs (swales, wetlands, ponds, sand filters, etc.)</li> <li>– 1,783 Green Streets</li> </ul> </li> <li>• Cleaned: <ul style="list-style-type: none"> <li>– 77 SMFs</li> <li>– Approximately 14,157 catch basins and inlets</li> <li>– Approximately 32,910 linear feet of ditch and 32,051 linear feet of culvert</li> </ul> </li> <li>• Repaired 9 SMFs.</li> <li>• Repaired or constructed 216 inlets and inlet leads and 684 linear feet of culvert.</li> </ul> |
| 2. Implement an inspection program for private stormwater management facilities.                                     | <ul style="list-style-type: none"> <li>• Under the Maintenance Inspection Program (MIP), inspected 645 properties with 1,340 associated private stormwater management facilities. Provided technical assistance and education to ensure facilities are sufficiently operated and maintained.</li> </ul>   |
| 3. Review BES stormwater facility operations and maintenance practices and update them as necessary.                 | <ul style="list-style-type: none"> <li>• The BES <i>Stormwater Operations and Maintenance Manual</i> was last updated in 2012-2013.</li> <li>• The BES <i>Green Streets Maintenance Protocol</i> was last updated in 2011.</li> </ul>   |
| 4. Operate and maintain public streets and roads in a manner that reduces the discharge of pollutants in stormwater. | <ul style="list-style-type: none"> <li>• The 2011 <i>PBOT Maintenance Environmental Handbook</i> is used by road maintenance staff to ensure proper practices are used during maintenance and repair of streets.</li> <li>• In 2014, the City changed from calcium magnesium acetate (CMA) to magnesium chloride (MgCl<sub>2</sub>) for deicing roads. MgCl<sub>2</sub> is effective at lower temperatures and uses less sand and gravel.</li> </ul>  |
| 5. Provide employee training on maintenance and construction practices to protect water quality.                     | <ul style="list-style-type: none"> <li>• BES provides annual construction erosion control training to BES and BDS staff.</li> <li>• PBOT provides training on the <i>Environmental Handbook</i> for street maintenance crews.</li> </ul>  |

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| <p>6. Implement the City's Integrated Pest Management (IPM) program to minimize the use and application of fertilizers, herbicides, and pesticides on publicly owned properties.</p> | <ul style="list-style-type: none"> <li>• Since 1988, Portland Parks and Recreation has used IPM to manage over 10,000 acres of land at more than 250 locations including (but not limited to) implementing the following: <ul style="list-style-type: none"> <li>– Utilizing plants with natural resistance to pests.</li> <li>– Proper mowing and irrigation of park turf to increase vigor and reduce weed populations.</li> <li>– Mulching of planting beds to reduce establishment of weeds.</li> <li>– Application of selected herbicides to control invasive weeds to prevent infestation spread.</li> <li>– Release of natural biological control insects to control purple loosestrife infestations.</li> </ul> </li> </ul> |
| <p>7. Maintain pet waste stations and signage in parks.</p>  | <p>Portland Parks &amp; Recreation encourages compliance with leash and scoop laws through education, enforcement, and by providing off-leash areas. Programs include:</p> <ul style="list-style-type: none"> <li>– Education campaigns, such as Pet Health for Parks, Dogs for the Environment, and Pettiquette for Parks</li> <li>– Developing park signs, presentations, and flyers to increase awareness and understanding of leash/scoop laws</li> <li>– Park Ranger patrols, which use park warnings and citations to increase leash/scoop law compliance</li> <li>– Special events like Flicks with Fido, and participating community and partner events like Doggie Dash and Aarf in the Park</li> </ul>                    |
| <p>8. Incorporate electric vehicles into the transportation fleet.</p>   | <p>The City of Portland currently uses 70 all-electric vehicles and 148 electric or partial electric passenger sedans in the City fleet. Overall, 15% of the City fleet are electric vehicles.</p>  |

| <b>ILLCIT DISCHARGE DETECTION AND ELIMINATION (ILL)</b>  |  |
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| <b>Strategy</b>  | <b>Implementation Activities FY 2014-15</b>  |
| 1. Require new development or properties using nonconforming sanitary sewer connections to connect to the public sewer system when a public sanitary sewer is available. | <ul style="list-style-type: none"> <li>Portland City Code (PCC) 17.33 (Required Public Sewer Connection) mandates that properties using onsite wastewater disposal systems or nonconforming private sewer systems connect to an available public sewer and/or otherwise make approved sewer connection upon notice to comply with city code and/or failure of the existing system.</li> </ul>  |
| 2. Limit infiltration of seepage from the sanitary sewer system to the MS4.  | <ul style="list-style-type: none"> <li>BES evaluated its sanitary and combined sewer pipe segments using a geographical information system (GIS)/database tool to prioritize and map potential spot repairs and whole pipe rehabilitation/replacement. This pipe rehabilitation asset management tool was used to effectively address rehabilitation/replacement needs of the sanitary and combined sewer collection systems, which includes prevention of infiltrated seepage from the sanitary sewer system to the MS4.</li> </ul> |
| 3. Implement and enforce designated prohibitions on discharges to the City MS4.  | <ul style="list-style-type: none"> <li>Six illicit discharges were identified and subsequently corrected and/or mitigated. Follow-up and/or enforcement letters were issued to responsible parties as appropriate, and penalties totaling \$10,650 were assessed.</li> </ul>   |
| 4. Identify, respond to, and eliminate illicit discharges and cross connections.   | <ul style="list-style-type: none"> <li>Illicit discharge monitoring during dry weather included 132 inspections conducted at 109 major outfalls. During 61 inspections, flow was observed. Based on samples and follow-up investigations, two illicit discharges were identified. The City repaired a sanitary main that was causing one of the illicit discharges, and the commercial business responsible for the other redesigned its waste area and modified procedures to eliminate the illicit discharge.</li> </ul>           |
| 5. Require Porta-potties at parks for public events and sporting events.   | <ul style="list-style-type: none"> <li>Portland Parks and Recreation requires large events to provide one portable restroom for every 125 people of estimated attendance.</li> </ul>   |

| <b>NEW DEVELOPMENT STANDARDS (ND) (during construction and post-construction)</b>                             |  |
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| <b>Strategy</b>   | <b>Implementation Activities FY 2014-15</b>  |
| 1. Implement an erosion and sediment control program for ground-disturbing activities.                        | <ul style="list-style-type: none"> <li>• Title 10 of the Portland City Code (PCC) provides requirements for development and construction-related activities in order to control the creation of sediment and to prevent the occurrence of erosion at the source during construction and development. The Erosion and Sediment Control Regulations seek to:               <ul style="list-style-type: none"> <li>– Reduce the sediment and pollutants contained in erosion caused by construction and development;</li> <li>– Reduce the amount of sediment and pollutants entering storm drainage systems and surface waters from all ground disturbing activity;</li> <li>– Reduce the amount of erosion placing dirt and mud on the public right-of-way and surrounding properties during construction and development; and,</li> <li>– Reduce the amount of soil and dust placed into the air during ground disturbing activity.</li> </ul> </li> </ul> |
| 2. Require erosion and sediment control plans, when applicable, during the building permit application phase. | <ul style="list-style-type: none"> <li>• An Erosion, Sediment, and Pollutant Control Plan (ESPCP) is required for ground-disturbing activity that exceeds 500 square feet and that requires a City of Portland building, public works, or development permit (Portland City Code 10.40). In addition, an ESPCP may be required for sites on steep slopes, in environmental zones, in greenway overlay zones, or in response to a violation of the City’s erosion control requirements.</li> </ul>  |
| 3. Require BMPs to prevent and control erosion and construction-associated pollutants.                        | <ul style="list-style-type: none"> <li>• The 2008 City of Portland Erosion Control Manual, Chapter 5 (Development Activity Controls) lists the BMPs required for construction-associated pollutants. Chapter 4 of the Erosion Control Manual lists the BMPs required for erosion.</li> </ul>   |
| 4. Implement a hillside development protection code to minimize soil erosion from steep slopes.               | <ul style="list-style-type: none"> <li>• PCC 24.70.020 B.1 prohibits grading of areas from which adverse erosion impacts can result.</li> <li>• PCC 24.70.020 C requires a permit and erosion minimizing measures for tree cutting on slopes with a gradient exceeding 25%.</li> <li>• PCC 10.30.030 includes additional requirements for slopes greater than 10%.</li> </ul>  |

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| <p>5. Through the City's <i>Stormwater Management Manual</i>, implement stormwater management requirements for new development and redevelopment to treat stormwater and control post-development peak runoff rates to levels similar to pre-development levels.</p> | <ul style="list-style-type: none"> <li>• The City's <i>Stormwater Management Manual</i> (section 1.3.2) requires development and redevelopment to maintain peak flow rates at their predevelopment levels for the 2-, 5-, and 10-year, 24-hour runoff events.</li> </ul>  |
| <p>6. Require new development and redevelopment to manage stormwater onsite to the maximum extent practicable.</p>   | <ul style="list-style-type: none"> <li>• The City's <i>Stormwater Management Manual</i> (section 1.3) requires onsite infiltration to the maximum extent feasible. Where complete onsite infiltration is not feasible, vegetated onsite retention facilities, ecoroofs, and pervious pavement are required to the maximum extent feasible.</li> </ul>   |
| <p>7. Promote the use of low-impact development techniques such as bioswales, rain gardens, and other vegetated stormwater management techniques</p>   | <ul style="list-style-type: none"> <li>• The <i>Stormwater Management Manual</i> (SWMM) includes a stormwater management hierarchy requirement to consider vegetated stormwater management options for new development and redevelopment projects.</li> </ul>   |
| <p>8. Promote and incorporate the use of green street facilities in public and private development.</p>  | <ul style="list-style-type: none"> <li>• The City's " % for Green Funding" program supports construction of green street facilities. There were 12 green street facilities under the program in FY14-15.</li> </ul>   |
| <p>9. Continue to review and update the <i>Stormwater Management Manual</i>.</p>   | <ul style="list-style-type: none"> <li>• The City revised the <i>Stormwater Management Manual</i> in January 2014. Highlights of the 2014 SWMM include: <ul style="list-style-type: none"> <li>– New submission and review requirements for manufactured stormwater treatment technologies</li> <li>– Added tree credit on private property as an impervious area mitigation technique, similar to existing tree credit in the right-of-way</li> <li>– Added downspout extension and curb extension as facility types with design criteria.</li> <li>– Updated operations and maintenance requirements to provide consistency with Maintenance Inspection Program administrative rules and best practices</li> <li>– Clarified the update and amendment process</li> </ul> </li> <li>• The City is reviewing Chapter 4 of the SWMM to identify potential source control requirement updates.</li> </ul> |

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| <p>10. Enforce stormwater ordinances that protect water quality.</p> | <ul style="list-style-type: none"> <li>• BES Enforcement Program Administrative Rules [Portland Policy Document (PPD) item ENB-4.15] describe BES procedures for assessing violations of stormwater-related Portland City Code (PCC) provisions, administrative rules and permits related to the following: <ul style="list-style-type: none"> <li>– Stormwater Management Manual [Portland Policy Document (PPD) item ENB-4.01]</li> <li>– Sewer Development Services Program (PPD item ENB-4.07)</li> <li>– Stormwater Discharge Program (PPD item ENB-4.13)</li> <li>– Sewer and Drainage Facilities Design Manual (PPD item ENB-4.14)</li> <li>– BES Public Works Enforcement (PPD item ENB-4.22)</li> <li>– BES Title 10 Discharge Enforcement Program (PPD item ENB-4.30), and</li> <li>– Maintenance Inspection Program (PPD item ENB-4.31)</li> </ul> </li> </ul> |
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| <b>NATURAL SYSTEMS (NS)</b>  |   |
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| <b>Strategy</b>  | <b>Implementation Activities FY 2014-15</b>   |
| 1. Implement provisions of City Code that protect floodways and floodplains.   | <ul style="list-style-type: none"> <li>• PCC 33.430.015 (Environmental Protection Zone) provides the highest level of protection to the most important resources and functional values, including floodways and floodplains. The resources and functional values are identified and assigned value in the inventory and economic, social, environmental, and energy (ESEE) analysis for each specific study area. Development will be approved in the environmental protection zone only in rare and unusual circumstances.</li> </ul>  |
| 2. Implement programs to protect riparian buffers and corridors, headwaters, springs and seeps, wetlands, and native vegetation. | <ul style="list-style-type: none"> <li>• The City applies environmental overlay zones to significant natural resources, including rivers, streams, drainageways, wetlands, riparian areas, forests and other special habitat areas. There are five different types of environmental overlay zones in the city: conservation (c), protection (p), water quality (q), natural (n) and Pleasant Valley (v). The overlay zones allow for low impact development that is setback from waterbodies and requires mitigation for negative impacts on the resources. In total, there are 22,207 acres of natural resources within environmental overlay zones.</li> </ul>  |
| 3. Restore riparian buffers by removing invasive species and planting with native shrubs and trees.                              | <ul style="list-style-type: none"> <li>• In partnership with the SW Watershed Resource Center: <ul style="list-style-type: none"> <li>– Facilitated the restoration (invasive removal, erosion control, and/or native planting) on 60 linear feet of streambank</li> <li>– Installed 560 native plants</li> <li>– Removed 7,500 square feet of invasive plants</li> <li>– Reduced stormwater runoff by at least 11,2000 gallons per year to reduce soil erosion through amendments, installation of porous walkways, native plants and other stormwater management best practices</li> </ul> </li> <li>• Supported the Johnson Creek Watershed Council's 17<sup>th</sup> annual Johnson Creek Watershed-wide Restoration Event, where volunteers planted 6,795 native trees and shrubs, removed 33 cubic yards of invasive plant material, applied 3 units of mulch, and installed 1,000 feet of protective fencing.</li> <li>• Partnered with SOLV and the Friends of Baltimore Woods (FOBW) to engage community volunteers in watershed restoration at Baltimore Woods in North Portland. Cleared 98,243 square feet of invasive plants, removed 5,280 pounds of trash, and planted 768 native trees and plants.</li> </ul> |

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|   | <ul style="list-style-type: none"> <li>• Continue to support the Johnson Creek Watershed Council and the Crystal Springs Partnership in their efforts to remove invasive species and improve conditions along Crystal Springs, a tributary to Johnson Creek.</li> <li>• Sponsored the Friends of Tryon Creek State Park in the removal of approximately 4,000 square feet of invasive species.</li> <li>• In partnership with Portland Parks and the Mt. Tabor Park Weed Warriors, used community volunteers to enhance over 7 acres of parkland; removed 11 truckloads of invasive plants and debris and planted 431 native trees and plants.</li> <li>• Under BES’s Community Stewardship Grants Program, awarded 13 stewardship grants totaling \$95,000 for projects that included planting approximately 5,803 native trees, shrubs, and groundcover.</li> </ul> |
| <p>4. Implement an invasive species removal program, including education and outreach.</p>                              | <ul style="list-style-type: none"> <li>• The Portland City Council passed Resolution 36726 in August 2009 to establish the <i>Invasive Plant Strategy</i> as Portland’s management plan for invasive plants. The resolution directed the City to adopt the 10-year management goals outlined in the Invasive Plant Strategy report. In addition to prohibiting the planting of nuisance plants in natural resource overlay zones and City-required landscaped, the City established a Required Eradication List in Title 29, Property Maintenance. The intent of this new rule is to control the spreading of highly invasive plants that have not yet become widespread in Portland.</li> </ul> <p>– See the list in response to Strategy #3 (above) for specific projects.</p>  |
| <p>5. Implement tree protection ordinances that provide stormwater benefits and mitigate urban heat island effects.</p> | <ul style="list-style-type: none"> <li>• The Tree Policy Review and Regulatory Improvement Project was adopted in April 2011. A consolidated Portland City Code title (Title 11: Trees) establishes new tree preservation and planting requirements on development sites and standardizes the City’s tree removal permit system.</li> <li>• Effective January 2, 2015, the Bureau of Development Services (BDS) and Urban Forestry, Bureau of Parks &amp; Recreation (UF/PP&amp;R) started implementation of the City’s new tree regulations contained in Title 11: Trees. All building permit applications submitted to BDS will be reviewed for compliance with the new requirements. The tree code also applies to non-development related tree planting/pruning/and removal on private property and in public right-of-way planting strips.</li> </ul>            |

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| 6. Implement a Revegetation Program.   | <ul style="list-style-type: none"> <li>• Under the City of Portland Watershed Revegetation Program, many public agencies, businesses, and other landowners participated in and helped fund revegetation projects on their properties and neighboring properties. The program is currently managing 1,748 project acres on both public and private property. In FY 2014-15, 32,944 trees (23,194 deciduous and 9,750 coniferous) were planted on 189.8 acres.</li> </ul>  |
| 7. Implement a street tree planting program.   | <ul style="list-style-type: none"> <li>• In partnership with Friends of Trees, planted 2,802 street trees and 1,072 yard trees in City of Portland right-of-way, on school properties, and in private yards.</li> </ul>  |
| 8. Work with watershed partners to support and coordinate tree planting and riparian restoration programs. | <ul style="list-style-type: none"> <li>• Partnered with SOLV and the Friends of Baltimore Woods (FOBW) to engage community volunteers in watershed restoration at Baltimore Woods in North Portland. Cleared 98,243 square feet of invasive plants and planted 768 native trees and plants.</li> <li>• Through a BES/Parks and Recreation partnership, involved citizens in their local natural areas. Activities included invasive plant species removal and native plant installation.</li> <li>• In partnership with Portland Parks and the Mt. Tabor Park Weed Warriors, used community volunteers to enhance over 7 acres of parkland; removed 11 truckloads of invasive plants and debris and planted 431 native trees and plants.</li> </ul>        |
| 9. Implement stream restoration projects and provide floodplain reconnection.                              | <ul style="list-style-type: none"> <li>• Acquired one acre of land in the Willamette Watershed and one-half acre of conservation easement area in the Johnson Creek Watershed as part of the Grey to Green Land Acquisition Program.</li> <li>• Partnered with Portland Parks &amp; Recreation to construct a stream enhancement project in the Ash Creek Natural Area/Taylor's Woods portion of Dickinson Park. Construction started early April 2015 and is expected to be completed by fall 2015.</li> <li>• Continued work on the Luther Road Habitat Restoration, which has restored 2,200 lineal feet of stream and added two backwater channels, restored nearly 9.5 acres of floodplain, and restored nearly 3 acres of upland habitat.</li> </ul> |
| 10. Work with public and private partners on culvert replacement, stream and wetland restoration projects. | <ul style="list-style-type: none"> <li>• Under BES's Community Stewardship Grants Program, funded the following restoration projects: SOLV Trillium Creek Restoration Project (\$9,550), Tryon Creek Watershed Council Restoration Mentors (\$8,000), and Momentum Alliance Environmental Camp and Restoration Project (\$8,000).</li> <li>• Partnered with SOLV and the Friends of Baltimore Woods to engage community volunteers in watershed restoration at Baltimore Woods in North Portland. Over 696 volunteers provided erosion reduction, invasive plant removal, and native tree and shrub planting.</li> </ul>   |

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|  | <ul style="list-style-type: none"> <li>• Worked with community partners, including the Crystal Springs Partnership, Native Americans, TriMet, the Army Corps of Engineers, and Portland Parks &amp; Recreation, to celebrate completion of the Westmoreland Park restoration project.</li> <li>• Began Leif Erikson Drive Culvert pre-design to restore failing culverts along Leif Erikson Drive in Forest Park. The project will replace non-functioning culverts that are a source of sediment to drainage basins that discharge to the Willamette River.</li> </ul> |
| 11. Identify and protect cold water refugia in the Willamette River.                                     | SEE TABLE 2 OF THIS REPORT.   |
| 12. Use updates to the citywide <i>Natural Resource Inventory</i> to inform zoning and planning updates. | <ul style="list-style-type: none"> <li>• The City of Portland's Comprehensive Plan Update requires periodic review and updating of the Natural Resource Inventory. An update was approved on June 11, 2014.</li> </ul>  |

| <b>STRUCTURAL CONTROLS (STR)</b>  |   |
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| <b>Strategy</b>   | <b>Implementation Activities FY 2014-15</b>   |
| 1. Implement retrofits to the existing storm drainage system, including use of green infrastructure.  | <ul style="list-style-type: none"> <li>• The following retrofit projects were either in construction or were completed during FY14-15: <ul style="list-style-type: none"> <li>– Safe Routes to School, stormwater facilities for transportation improvements, 1 acre</li> <li>– SW Boones Ferry &amp; Stephenson Green Street, 0.7 acre</li> </ul> </li> <li>• The following retrofit projects were in the design phase during FY14-15: <ul style="list-style-type: none"> <li>– Beaverton Hillsdale Highway Drainage Retrofits, 23.5 acres</li> <li>– Stephens Creek Tributary Outfall Repair, 24 acres</li> <li>– Outfall 77a – NE 63<sup>rd</sup> Ave &amp; Columbia Blvd, treatment facilities, 1.2 acres</li> <li>– SW Stephenson &amp; Hamilton Drainage / Roadway Improvements, 4,700 feet</li> <li>– NE 112<sup>th</sup> &amp; Marx LID Green Street &amp; Storm Sewer, 1 acre</li> <li>– N Lagoon Avenue, green street facilities, 0.54 acre</li> <li>– Centennial Oaks in Willamette Park, 1.4 acres</li> <li>– NW Front Avenue, green street facilities, 1 acre</li> </ul> </li> </ul> |
| 2. Identify, prioritize, and construct new stormwater management facilities.                          | <ul style="list-style-type: none"> <li>• The City has been implementing stormwater management facilities since the beginning of the first permit term (1995) to reduce water quality impacts from development that drains to the MS4. Various City policies, programs, and plans identify, prioritize, and implement construction of stormwater management facilities. <ul style="list-style-type: none"> <li>– Capital Program: The Capital Improvement Program (CIP) includes a Surface Water Management program area. The CIP project list is developed through a multi-step process to identify, develop, review, score and rank projects for funding and scheduling priority.</li> <li>– The City has constructed lined swales and other stormwater management facilities under other City programs to treat stormwater from existing rights-of-ways in select areas to reduce TSS loadings.</li> <li>– See the list in response to Strategy #1 (above) for specific projects.</li> </ul> </li> </ul>  |
| 3. Maintain stormwater conveyance system maps and database to track system components and conditions. | <ul style="list-style-type: none"> <li>• BES's Asset System Management group tracks assets, such as pipes and ancillary infrastructure, and the number, type, size, drainage area, and location of stormwater facilities constructed annually.</li> </ul>   |

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| <p>4. Develop a comprehensive Stormwater System Plan.</p>  | <ul style="list-style-type: none"> <li>• BES completed the combined and sanitary sewer elements of its most recent System Plan in 2012 and is currently working on the Stormwater System Plan (SWSP), a multi-year project to fully define and plan for the City’s stormwater system needs. In FY2014-15, the Stormwater System Plan team worked on the following: <ul style="list-style-type: none"> <li>– Continued development of a citywide risk assessment for water quality that will incorporate the MS4 retrofit strategy.</li> <li>– Initiated development of a citywide risk assessment for approvable stormwater discharge points.</li> <li>– Continued predesign of several water quality and flow control projects in the Stephens Creek watershed, in partnership with the Willamette Watershed team.</li> <li>– Continued preliminary design and community outreach to explore retrofit options for the underserved Errol Heights neighborhood in southeast Portland, in partnership with the Johnson Creek Watershed team.</li> <li>– Initiated preliminary design and community outreach to explore retrofit options for Capitol Highway in southwest Portland, in partnership with the Fanno Tryon Watershed Team.</li> </ul> </li> </ul> |
| <b>PROGRAM MANAGEMENT (PM)</b>   |   |
| <b>Strategy</b>  | <b>Implementation Activities FY 2014-15</b>   |
| <p>1. Develop annual reports by November 1 that provide an overview of the <i>TMDL Implementation Plan</i> status.</p> | <ul style="list-style-type: none"> <li>• This FY 2014-15 TMDL Annual Report will be completed on November 1, 2015.</li> </ul>   |
| <b>MONITORING</b>  |   |
| <b>Strategy</b>  | <b>Implementation Activities FY 2014-15</b>   |
| <p>1. Implement a monitoring program that includes stormwater and surface water.</p>                                   | <ul style="list-style-type: none"> <li>• The <i>Monitoring Compliance Report</i> is published as part of the NPDES MS4 Annual Report submitted to DEQ on November 1, 2015. Table B-1 in Schedule B of the 2011 NPDES permit summarizes required monitoring types, locations, frequency, and analytic parameters. The required monitoring information is included in Section 3 of the <i>Monitoring Compliance Report</i>, in the order listed in Table B-1.</li> <li>• In 2015, BES updated the City of Portland MS4 Quality Assurance Monitoring Plan and submitted the draft plan to Oregon Department of Environmental Quality (DEQ) for approval and implementation in FY16-17.</li> </ul>  |

**TABLE 2: ACTIVITIES CONDUCTED TO IMPLEMENT TEMPERATURE MANAGEMENT STRATEGIES**

| Strategy             | Implementation Activities FY 2014-15   |
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| Riparian Protection  | <ul style="list-style-type: none"> <li>• In partnership with the SW Watershed Resource Center facilitated the restoration (invasive removal, erosion control, and/or native planting) on 60 linear feet of streambank, including installing 560 native plants.</li> <li>• Through a BES/Parks and Recreation partnership, involved citizens in their local natural areas, where 8,938 volunteers spent 27,780 volunteer hours on restoration activities. The Youth Conservation Corps spend 860 hours working in Willamette Watershed parks.</li> <li>• Partnered with SOLV and the Friends of Baltimore Woods to engage community volunteers in watershed restoration at Baltimore Woods in North Portland. Over 696 volunteers cleared 98,243 square feet of invasive plants, removed 5,280 pounds of trash, and planted 768 native trees and plants.</li> <li>• Supported the Johnson Creek Watershed Council’s 17th annual Johnson Creek Watershed-wide Restoration Event, where 415 volunteers planted 6,795 native trees and shrubs, removed 33 cubic yards of invasive plant material, applied 3 units of mulch, and installed 1,000 feet of protective fencing.</li> <li>• Under BES’s Community Stewardship Grants Program, awarded 11 mini-grants totaling \$3,700 in fiscal year 2014-2015. Mini-grants provided a variety of community groups and private property owners with native plant gift certificates for riparian and upland restoration and revegetation projects in all Portland watersheds. Approximately 852 trees, shrubs and groundcover were planted with mini-grants.</li> <li>• Continued to protect riparian vegetation through natural resource inventories, protection plans, and environmental overlay zones.</li> </ul> |
| Revegetation Program | <p><u>Willamette River</u></p> <ul style="list-style-type: none"> <li>- Planted 37,374 plants on 60.9 acres. This included 2,176 deciduous trees, 5,020 coniferous trees, and 28,605 shrubs.</li> </ul> <p><u>Columbia Slough</u></p> <ul style="list-style-type: none"> <li>- Planted 62,078 plants on 14,525 linear feet of riverbanks and 89.3 acres. This included 12,940 deciduous trees, 550 coniferous trees, and 48,588 shrubs.</li> </ul>   |

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|                   | <p><u>Johnson Creek</u></p> <ul style="list-style-type: none"> <li>- Planted 24,059 plants on 5,230 linear feet of streambank and 22.9 acres. This included 6,493 deciduous trees, 2,000 coniferous trees, and 15,566 shrubs.</li> </ul> <p><u>Tryon Creek</u></p> <ul style="list-style-type: none"> <li>- Planted 2,040 plants on 70 linear feet of streambank and 2.6 acres. This included 335 deciduous trees, 205 coniferous trees, and 1,500 shrubs.</li> </ul> <p><u>Fanno Creek</u></p> <ul style="list-style-type: none"> <li>- Planted 13,495 plants 2,618 linear feet of streambank and 14.1 acres. This included 1,250 deciduous trees, 1,975 coniferous trees, and 10,270 shrubs.</li> </ul>  |
| Coldwater Refugia | <p>Planning continued on the Powers Marine logjam structures. This project will build historic-scale logjams along a reach of state-owned submerged lands that are adjacent to property owned by Portland Parks and Recreation. The primary objective of the project is to enhance the value of BES' Riverview asset of multiple cold-water inputs to the Willamette mainstem along the Powers Marine Park shoreline/shallow water habitat bench. During the summer and fall seasons when the mainstem temperature in the Willamette rises above optimum levels, the Riverview inputs become increasingly important as cold water sources of thermal refugia to many species of aquatic fish and wildlife.</p> <p>By building large logjam structures along the shoreline, this project will expand the depth and breadth of the tributaries' cold water mixing zones in the river, and increase resting, feeding and rearing opportunities for Willamette fish and wildlife for years to come (designed for a 50+ year lifespan). Additionally, this project aims to increase the Riverview asset's value by enhancing the existing riparian and floodplain zone's plant community with native hardwoods, conifers, and shrubs so that the reach is guaranteed a supply of future woody debris for these and other logjams downstream.</p> <p>Environmental Services also recently finished installing 35 engineered log jams ("ELJs") in the Lower Columbia Slough. These structures provide shelter and habitat for migrating salmon that are resting and feeding in the slough enroute to the ocean.</p> |
| Land Acquisition  | <ul style="list-style-type: none"> <li>• Acquired one acre of land in the Willamette Watershed and one-half acre of conservation easement area in the Johnson Creek Watershed as part of the Grey to Green Land Acquisition Program.</li> </ul>  |