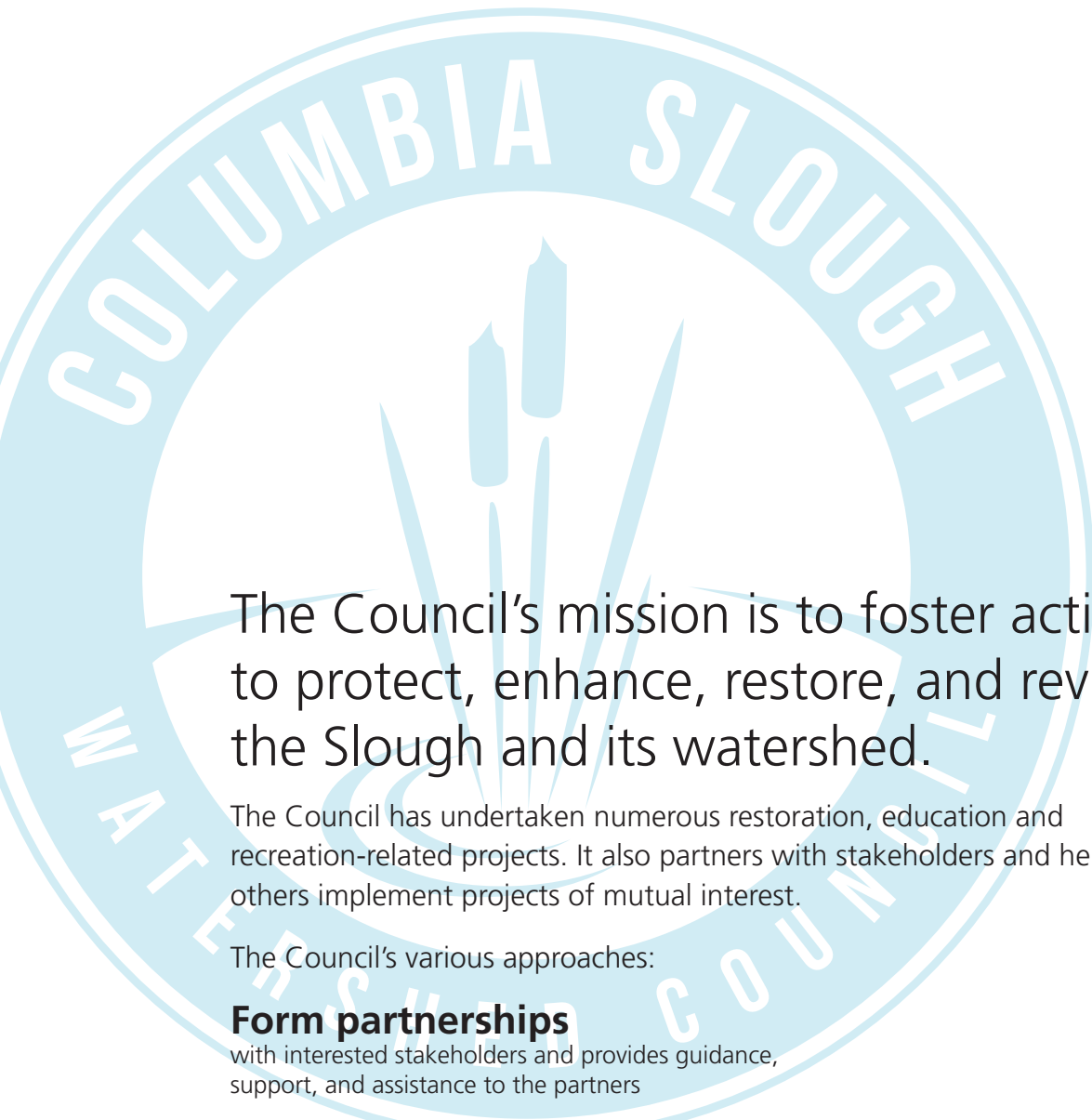


Columbia Slough Watershed
PROJECTS AND PROGRAMS
2003-2013

Columbia Slough Watershed Council
November 2013



The Council's mission is to foster action to protect, enhance, restore, and revitalize the Slough and its watershed.

The Council has undertaken numerous restoration, education and recreation-related projects. It also partners with stakeholders and helps others implement projects of mutual interest.

The Council's various approaches:

Form partnerships
with interested stakeholders and provides guidance, support, and assistance to the partners

Support activities
that have a champion: individuals or groups with a strong interest and commitment to a project or action

Respond to concerns
of private landowners and businesses regarding regulatory impediments to restoration actions

Seek funding sources

Provide information
and education about the watershed and its needs

Monitor projects
and programs to evaluate their success and identify needed improvements

Acknowledgements

Thank you to everyone—Council, staff and the many other contributors who helped develop this report. Ten years ago the Council adopted its **Action Plan** which identified more than one hundred watershed projects to establish healthy habitats and clean water.

Recently, as we began work on this report, in addition to the council's work, programs, and activities, we were pleased to see the astonishing number of projects and programs that other organizations and jurisdictions have initiated. The watershed today is truly a place rich in nature and people working to improve the Columbia Slough and its neighborhoods.

This report captures a review of all the original projects and includes an analysis of the status of projects old and new. New projects are numbered and categorized. While this report is a snapshot in time, it also adds the element of interactive web-based maps.

Finally, this report could not have been completed without the generous in-kind efforts of the City of Portland's Environmental Services staff. Thank you all for your time and effort.



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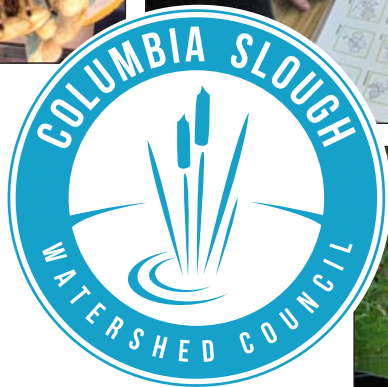
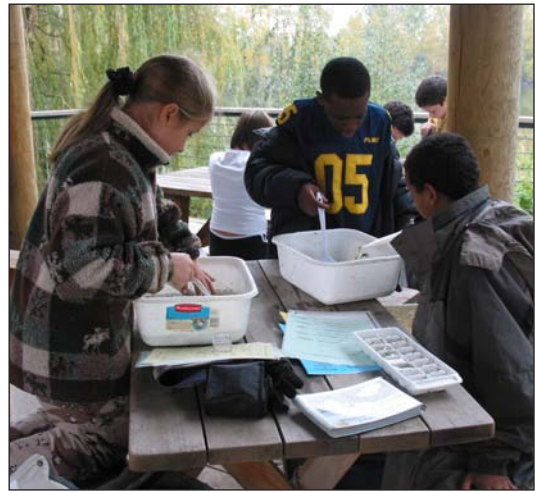
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PHOTO CREDITS

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For Council, watershed, and Google Maps links: **www.columbiaslough.org**.

Additional links provide information on the many organizations
working on watershed activities.



The Columbia Slough Watershed Council sponsors many educational opportunities for students and community outreach events throughout the year.

Introduction

The Columbia Slough Watershed is a place rich in natural resources and vibrant with people.

Located in the historic floodplain of the Columbia River in Portland, Gresham, Fairview, and Multnomah County, the watershed is a diverse urban environment. Native Americans fished, hunted, and traded here at the confluence of the Willamette River with the Columbia. The Lewis and Clark expedition explored in the area during their historic journey. The 1903 Olmsted Brothers report laid out a comprehensive park system for Portland including areas along the slough for a meadow park, golf courses, and boating. As the area grew, significant changes were made to the landscape. Farming gave way to industrial development and marine and airport terminals. In 1972, growing public awareness and concern for pollution led to the Clean Water Act. Under the act, DEQ listed the slough as water quality limited for temperature, dissolved oxygen, bacteria, lead, and pH. Other concerns included contaminated sediments and stormwater.

Today the watershed contains over 20 parks and natural areas and is also part of the City of Portland's Industrial Sanctuary. The watershed provides critical habitat for numerous wildlife species and provides important ecosystem functions. At the same time, it is a thriving urban area that provides many opportunities for development and economic growth. The watershed is a place to work, live, and play.

The Columbia Slough Watershed Action Plan

The Columbia Slough Watershed Council was established in 1994 to bring together multiple stakeholders who share a common interest in the watershed and watershed health. The Council adopted the *Columbia Slough Watershed Action Plan* in 2003 to establish a unified approach to protect, enhance, and restore the watershed's natural and recreational resources. The *Action Plan* identified specific projects and programs that could be implemented to improve watershed conditions.

What This Report Contains

This report provides an update on the status of the projects and programs identified in the *Action Plan*. It also identifies additional projects and programs that were undertaken by public, non-profit, and private entities over the past 10 years. It presents an overview of the extensive work being done to help restore the watershed's land, water resources, and wildlife habitat, while allowing for additional development and economic vitality.

Next Steps

This report is not intended to evaluate the progress of the *Action Plan* or suggest additional or alternate approaches. The Council and the community will next develop a new *Action Plan*, which will assess work accomplished to date and determine priorities for future action. The new plan will continue outstanding efforts and set a course for the future that reflects the Council's mission and vision.



Report Organization

The tables and maps on the following pages identify and briefly describe projects and programs that have been identified and initiated during the past 10 years.

1 Categories

The projects/programs are grouped into the following six categories that were originally identified in the *Action Plan*:



Restoration and Enhancement

Foster and assist restoration and enhancement projects that protect and enhance fish and wildlife habitat.



Water Quality and Quantity

Foster and assist in implementing measures that improve water quality and quantity.



Resource Collection

Develop and maintain a web-accessible bibliography.



Outreach and Education

Develop, support, and implement programs focused on watershed's urban character and opportunities that enhance watershed health.



Monitoring

Evaluate program and project effectiveness; broaden citizen involvement.



Recreation

Promote and assist in the development of recreation facilities and experiences that foster stewardship and watershed health.

2 Status

The tables identify the status of each project/program, as follows:

COMPLETED

All elements of project/ program have been finished.

ONGOING

The project/program is well defined and repeats on an ongoing basis.

UNDERWAY

Some elements of the project/program have been started.

NOT STARTED

No element(s) of the project/program has been started.

NOT FEASIBLE

The project/program is highly unlikely to be undertaken or highly unlikely to succeed, based on new information received since 2003.

3 Project/Program Numbering

Projects and programs numbered 1–138 were included in the *2003 Action Plan*. Additional projects and programs undertaken by the Council, its partners, and other organizations are numbered 200–280. Sub-letters identify additional projects that are a part of the same overall effort.

Educational and programmatic activities that are not location specific, and projects that have multiple locations, are not included on the maps. These are indicated in the tables with an asterisk.

Web based interactive versions of the maps, with location information and brief project descriptions, can be found at maps.google.com/maps?q=http://columbiaslough.org/files/uploads/CSCW_Action_Plan_Projects.kmz. The GIS database will allow the Council and others to track and evaluate information easily.

NOTE: The numbering system does not reflect any kind of geographical clustering and is not always consecutive—e.g., there is a gap between #81 and #100.

Abbreviations

The tables use the following abbreviations:

40 Mile Loop	A connected system of trails and greenways throughout Multnomah County, first envisioned in 1904 and now comprising over 140 miles
Action Plan	Columbia Slough Watershed Action Plan (June 2003)
BES	Bureau of Environmental Services, Portland
BPA	Bonneville Power Administration
CNRP	Comprehensive Natural Resources Plan (Metro)
CSWC	Columbia Slough Watershed Council
CWSP	Community Watershed Stewardship Program (a City of Portland grant program that funds Portland-based community watershed projects)
DEQ	Department of Environmental Quality (State of Oregon)
EMSWCD	East Multnomah Soil and Water Conservation District
EPA	Environmental Protection Agency
LCREP	Lower Columbia River Estuary Partnership
MCDD	Multnomah County Drainage District
NOAA	National Oceanic and Atmospheric Administration
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OSU	Oregon State University
OWEB	Oregon Watershed Enhancement Board
PBOT	Portland Bureau of Transportation
PIR	Portland International Raceway
Port	Port of Portland
Portland	City of Portland
PPR	Portland Parks and Recreation
PSU	Portland State University
PWB	Portland Water Bureau (also called Bureau of Water Works, Portland)
Smith Bybee	Smith and Bybee Wetlands Natural Area (formerly known as Smith and Bybee Lakes)
USACE	U.S. Army Corps of Engineers



CATEGORY

Restoration and Enhancement

Project Number	Project/Program Name	Description
COMPLETED		
2	Develop a renewed vision for entire Ramsey Lake site: Ramsey stormwater wetlands project	BES developed a constructed wetlands site that treats stormwater from the St Johns and Rivergate area; further upgraded the site in 2010.
3a	Improve fish habitat conditions in Lower Slough: Ramsey Refugia, Phase I	BES removed a berm and fill in historic wetland channels of Ramsey Lake; revegetated site. Fish use began immediately after project completion in 2005.
3b	Improve fish habitat conditions in Lower Slough: Confluence project	BES anchored 24 log structures to provide fish habitat and wood accretion near the confluence of the Slough and Willamette River. Completed in 2010. Minor wood accretion has occurred. Fish and wood monitoring is ongoing. Funders included NOAA, LCREP, BPA, PPR, BES.
3f	Improve fish habitat conditions in Lower Slough: Smith Bybee water control structure and fish ladder	The earth dam was replaced with a water control structure, including a fish ladder, in 2003. Funding was from North American Waterfowl Conservation Act, OWEB, BES, and Metro; partnered with Ducks Unlimited.
6	Expand Columbia sedge meadow at Smith Bybee	A variety of plantings have occurred in this area in the last 10 years.
9	Improve turtle habitat at Smith Bybee	Metro moved a canoe/kayak launch site away from turtle habitat in 2004-05; also removed an old parking lot and revegetated the area to buffer waterways from public use areas.
12a	Add Triangle Piece to Smith and Bybee Wetlands Natural Area	Metro's Comprehensive Natural Resources Plan (CNRP) includes adjustments to the Smith Bybee boundary, adding the trailhead/parking area ("Triangle Piece") at the St. Johns Landfill entrance. Adoption of the CNRP is anticipated in 2013.
24	Create West Bridgeton Slough meander	MCDD excavated a meander in West Bridgeton Slough to deepen the channel; created an estimated 1.5 acres of emergent wetland benches and additional flood storage capacity. Completed in 2004.

Project Number	Project/Program Name	Description
45	Create/improve turtle habitat at Whitaker Slough: Replace East Whitaker Pond culvert	MCDD replaced the culvert joining the east and west ponds in 2012. Funded by PPR, BES, CSWC, and MCDD. CSWC, BES and PPR will further enhance habitat.
56b	Restore land around Whitaker Ponds for Whitaker Ponds area enhancements: Bunn property acquisition	BES and PPR acquired the Bunn property in 2004. The house is now the Council's office and the Watershed Education Center. EMSWCD funded installation of a rain garden in 2010. Completion of a sanitary sewer pump station on the site is anticipated in 2015.
56c	Restore land around Whitaker Ponds for Whitaker Ponds area enhancements: Removal of Talbert House	PPR removed the house in 2010. The next phase of Whitaker Ponds Master Plan improvements includes replanting, creation of a visitor viewpoint area, and removal of excess trail and asphalt.
56d	Restore land around Whitaker Ponds for Whitaker Ponds area enhancements: Portland Public Schools sale to Portland Parks	Portland Public Schools sold its portion of the site to Portland for \$1.00, encompassing the northernmost baseball field, part of the baseball field south of East Whitaker Pond, a large portion of West Whitaker Pond, and a smaller portion of East Pond. Revegetation and vegetation management continue with various agencies, schools, and stewardship groups.
65a	Explore acquisition of the Spada/Rockwood site: Spada acquisition	PPR acquired the Spada property at Big Four Corners and NE 185th in 2002. The trail on this site is complete.
66	Acquire Galitzki springs property	Portland acquired this 21-acre site in 2002 as part of the USACE 1135 program. The site contains important cold water springs and large native oak habitat. Portland's revegetation program has been active on the site.
73	Acquire privately owned parcel east of Water Bureau boat launch at NE 112th and Simpson	BES acquired this 2.1-acre site in 2011. Called the Columbia Slough Natural Area park, the site is undeveloped, but invasive species control is underway. PPR has developed a design; development standards require substantial road and infrastructure improvements. Funding is being sought for the project.
77	Construct Time Oil Road wildlife undercrossing	The Port of Portland completed the undercrossing in 2005, providing passage between active use sites for painted turtles and other wildlife. Photo monitoring is ongoing.
100	Restore Catellus woods and wetlands	Portland acquired these 115 acres of wetlands and forest in 2005, with OWEB as a funding partner. Catellus donated a part of the site. BES, PPR, and CSWC are involved in restoration plantings. This site is a portion of the Big Four Corners natural area and includes some wetland mitigation bank and extremely large oak trees.
103b	Add lakefront and protective border along south and west sides of Johnson Lake site: Pollution reduction facility	Owens-Illinois and BES completed construction of a jointly funded pollution reduction facility on the south bank in 2008. Vegetation management and planting occurred in 2008-09. The facility provides stormwater treatment for both public right-of-way and Owens-Illinois stormwater.
111c	Restore wetlands/ uplands at Big Four Corners and Gresham/Portland border: Portland wetlands	Portland now owns the wetlands west of NE 185th and north of the Slough. Limited restoration work has occurred. The Columbia Slough trail borders the site on the north.

*Not shown on map.

Project Number	Project/Program Name	Description
126	Improve wildlife passage at N. Lombard and Columbia Slough	PBOT completed the North Lombard Bridge overcrossing project in 2004. The structure improved wildlife passage.
129	Resolve wildlife passage pinch point at NE 142nd Avenue cross-levee	Portland owns the northeast, northwest, and southwest sides, and BES has revegetated beyond the toe of the levee. The southeast side landowner currently is not amenable to changes.
130	Improve wildlife habitat on parcel upstream of NE 142nd Avenue cross-levee	Portland owns and BES has revegetated this parcel on the northeast side of the levee.
138	Restore Fairview Creek at Salish Ponds and Fairview Community Park	Gresham completed this project in 2006, with Metro bond monies. Improvements included planting native vegetation; resurfacing and regrading existing trails; installing an ADA fishing and viewing area; and relocating and adding benches. In 2009, over 500 native trees and shrubs were planted at five locations to enhance the riparian buffer and improve shading of the creek.
218	Green Rigler Project	Construction of an outdoor learning lab at Rigler Elementary School was completed in 2007, with funding from EMSWCD.
219	Bunn House Raingarden (Watershed Education Center)	The raingarden, completed in 2008, treats roof runoff and impervious areas. Funded by EMSWCD.
221	Sabin Native Garden	This Sabin School project installed native plants and developed education, stewardship, and interpretation materials for the school-based garden. Completed in 2010; funded by EMSWCD.
226	Groundwater well #29 riparian restoration project	PWB developed production well 29 on the north side of the Slough near NE 112th Avenue in 2001. The site development work included later restoration of the riparian area at the site.
257	Lower Slough fish population studies	Portland and ODFW conducted fish monitoring in the Lower Slough in 2008-2009. The presence/absence and quantity of salmonids (and other fish) were recorded. Fish monitoring continued at Portland's Confluence Project until 2011.
262b	Grey2Green land acquisition: Whitbread property	BES acquired the site in 2011.
262c	Grey2Green land acquisition: Anderson property	BES acquired the site in 2011.
263*	Mussel studies	BES conducted mussel studies in 2009-10.

Project Number	Project/Program Name	Description
ONGOING		
5	Revegetate Smith Bybee with woody plants	Metro's management of water levels supports regeneration of willows. Funding is being sought for planting an additional 80 acres of bottomland (floodplain) forest dominated by Oregon ash. An additional 250 acres could also be restored.
29*	Develop Riparian Tree Protection Plan to address beaver predation	Various projects have been undertaken by CSWC, BES, MCDD, Gresham, Friends of Force Lake, and Reynolds Learning Academy. Funding is limited and not programmatic. Project sites are designated by predation pressure and tree risk on an ad hoc basis.
38	Remove trash from Whitaker Slough	CSWC's Great Slough Cleanup has been an annual event since 2007.
50*	Develop a comprehensive list of revegetation sites. Restore native plant communities.	Portland's revegetation program maintains a list of its restoration sites. Metro, Port of Portland, Gresham, and CSWC maintain lists; however, a master list does not currently exist.
56a	Restore land around Whitaker Ponds for Whitaker Ponds area enhancements: Revegetation	Revegetation by CSWC, PPR, and BES continues. More than 9,000 trees, shrubs, and native plants have been installed. Revegetation is continuous because of predation and the need to increase understory diversity. Many large trees were killed by extended flooding on the East Pond in 2010-11, so that area warrants additional restoration work. Yellow flag iris is a serious invasive in this location, with spread despite some early control efforts.
61*	Develop funding and incentives to maintain existing revegetation sites	Portland, CSWC, Port, and Gresham have conducted stewardship and shared project costs. No cash subsidies have been developed.
69	Restore floodplain capacity and native plants on Fairview Creek near SE 202nd Avenue	Gresham acquired vacant land near Fairview Creek north of Division and west of Birdsdales. An 8-acre vegetated water quality facility collects and treats stormwater from 900 acres of commercial and residential properties.
76	Enhance north wetland at Old Marine Drive	This wetland receives stormwater from multiple businesses. Two businesses applied to Portland and DEQ for stormwater permits in 2012-13. These businesses will construct a stormwater swale, install plantings, and remove and cap contaminated soils on industrial lands bordering the wetland. Construction is slated for 2013.
78	Enhance Time Oil wildlife corridor between the Port of Portland West Wye mitigation site and Bonneville ponds	Under an intergovernmental agreement between the Port of Portland and BES, some maintenance was conducted around the Bonneville ponds in 2005-2006. Earlier plantings by BES had limited survival because of sandy substrate. The Port landscaping group in Rivergate conducts limited invasive species control.
103c	Add lakefront and protective border along south and west sides of Johnson Lake site: Illegal campsite cleanups	Owens-Illinois and PPR conduct cleanups on an as-needed basis.

*Not shown on map.

Project Number	Project/Program Name	Description
105*	Restore areas of the watershed with appropriate assemblages of native plants	Portland's Watershed Revegetation Program, Metro's Smith Bybee teams, CSWC, PPR, Gresham, and Fairview are planting native plant assemblages.
107f*	Continue Slough School and other education programs offered through CSWC, and collaborate with other such watershed-focused education programs: CSWC's Stewardship Program	CSWC has developed 19 stewardship projects, organized 29 Stewardship Saturday events, and conducted 29 volunteer events using 1,158 volunteers from 2010-2013. Projects are volunteer events that focus on either restoration or waterway cleanup. Volunteers typically install or maintain plantings of native plants, trees, and shrubs and remove invasive species. CSWC staff plan and manage the projects.
205a*	Turtle research: Gresham	<p>Dan Rosenberg (OSU) conducted a comprehensive study in 2011-12.</p> <p>Sue Beilke (Northwest Ecological Research Institute--NERI) conducted studies in 2004 and 2009.</p> <p>Laura Guderyahn (Gresham) has conducted turtle surveys and western painted turtle population analysis at four sites along the Fairview Creek, Fairview Lake, and Gresham portions of the Columbia Slough from 2007 to the present.</p>
205b*	Turtle research: Portland	<p>NERI/Beilke conducted a live/mark capture survey at Smith Bybee and bordering the Columbia Slough in 1999-2000; funded by Metro.</p> <p>NERI Beilke conducted a survey in the Slough main channel in 2004; funded by MCDD.</p> <p>NERI/ Beilke, McGinnis, & Rombough conducted a status, distribution and site assessment at selected sites in the Columbia Slough in Portland (as well as in Johnson Creek) in 2009; funded by BES.</p> <p>The Oregon Wildlife Institute/Rosenberg & Gervais developed a Conservation Plan for Native Turtles in the Columbia Slough in 2012. It includes a survey, habitat assessments, mercury sampling, prey sampling, and Slough conservation plan. Funded by Portland, Port of Portland, Metro, Oregon Wildlife Heritage Foundation, Oregon Zoo, ODFW.</p>
217	Revegetate riparian areas—Fairview Creek from Burnside to Stark Street	<p>During 2005-2012, Gresham worked with 25 properties to conduct watershed education and outreach and install more than 1,000 native plants along 1,650 linear feet of Fairview Creek to enhance the riparian buffer for stability, provide shade, and protect the stream from non-point source runoff. Over the years, repeated attempts were made to contact and engage non-participating properties.</p> <p>In 2009, Gresham expanded the area to include the 10-acre Robbins property just north of Stark St. To date, the City has installed more than 400 plants along 350 linear feet of Fairview Creek on this property (out of a total of 1,350 total linear feet). CSWC plans to assume maintenance of the 350 linear foot portion of this property. CSWC has a stewardship agreement with Scott Robbins to expand riparian enhancement with an ongoing enhancement project along the Conifer Park Homeowners Association property. Gresham has funds to purchase plants for this work.</p>

Project Number	Project/Program Name	Description
220*	Backyard Habitat Certification Program	This program provides technical assistance to private property owners of small lots (under 1 acre) to restore native wildlife habitat in their backyards and help manage onsite stormwater runoff. The program was launched in January 2009 within the City of Portland. It is funded and organized by Audubon, Columbia Land Trust, EMSWCD, and others. Goals for 2013 include certifying 1,500 lots.
222	Verde Nursery	Funding in 2010 from EMSWCD enabled Verde to create curriculum, install bioswales and drip irrigation, and train a diverse population in green jobs. Verde's native plant garden is located at Thomas Cully Park.
223b	Columbia Children's Arboretum: Restoration projects	EMSWCD funds invasive species control and native plantings. CSWC's Slough School conducts its SERVE program here. PPR also uses the site for various youth group activities.
224	Blue Heron Wetlands <i>Ludwigia</i> control	EMSWCD funded field study and scientific field trials for removal of invasive <i>Ludwigia</i> at this site. The work includes volunteer education and coordination. BES, Metro, and the East Columbia Neighborhood Association provide assistance.
234*	Continue Portland's Watershed Revegetation Program	Portland's Watershed Revegetation Program has treated 473 acres, planted 83,414 linear stream feet, and planted 116,999 native trees and 155,032 shrubs in the Columbia Slough Watershed from 2003-2011.
255	Land acquisition: NE 142nd levee natural area	Portland acquired this 11-acre parcel in 2004 and has fully revegetated it.
262a	Grey2Green land acquisition: Wilkes Headwaters Park	Metro and Portland acquired this 20-acre site in 2011. The site will be two-thirds natural area and one-third active park. A rundown home and farm buildings, holly orchard, contaminated soils, and stream impoundment were removed in 2011-2012. Revegetation began in 2011 and continues. A stream culvert will be replaced with a bridge in 2013.
262d	Grey2Green land acquisition: Columbia Edgewater wetland	Portland acquired the site in 2012. Some minor site restoration and invasives control has occurred.
262e	Grey2Green land acquisition: Richards property	Portland and Metro acquired the site in 2012. Site stabilization and restoration projects are anticipated during 2013-2018.
264*	Bird counts and studies	Yearly bird counts occur around Christmas in Portland. PAWMAP studies are ongoing. Portland initiated a nesting /breeding bird construction policy 2011. Portland is signatory to the international Migratory Bird Act treaty. Volunteers and Metro staff have conducted breeding bird monitoring at Smith Bybee. Citizen volunteers have conducted weekly bird monitoring for 15 years at Smith Bybee.

Project Number	Project/Program Name	Description
265*	Friends of Trees: Street and yard tree planting watershed-wide	Friends of Trees has conducted street tree and natural area plantings in the watershed since 1989. To date, 8,559 trees have been planted in the watershed. Portland has provided subsidies to low-income homeowners for more than five years.
272*	Community Watershed Stewardship Grants—City of Portland BES	BES's Community Stewardship Grants Program has funded 46 projects in the Columbia Slough Watershed through 2012. They include two ecoroof projects, 19 restoration projects, and 23 revegetation projects.
UNDERWAY		
3d	Improve fish habitat conditions in Lower Slough: Wright and Moore islands	BES has begun design and permitting for this project, with construction anticipated 2014.
3e	Improve fish habitat conditions in Lower Slough: Ramsey Reach	BES began planning for the Lower Slough refugia project in 2011 and anticipates implementation within five years. Funding is being sought.
7	Restore wet meadows at Smith Bybee lake margins	Metro has been working to restore the wet meadow for the last 10 years. Plantings are incremental. The project will include up to 50 acres.
16a	Establish native grassland plants at St. Johns Landfill cap: Triangle site	Portland owns the Triangle site, located on the former City ash dump. BES has partially revegetated the site.
16b	Establish native grassland plants at St. Johns Landfill cap: Streaked horned lark project	The Metro-funded five-acre streaked horned lark pilot project began at St. Johns Landfill in 2007, incorporating dredge spoils donated by the Port of Portland on the prairie. In 2011, Metro established an additional five-acre lark habitat patch. Metro's CNRP calls for upland prairie conservation targets.
16c	Establish native grassland plants at St. Johns Landfill cap: Prairie project	Metro uses a combination of seeding trials, rotating mowing and grazing, and other techniques to improve prairie habitat. The CNRP calls for an additional 10 acres of prairie habitat improvement in the next five years.
22	Enhance Schmeer Road Forebay Slough	Portland's revegetation program has partially planted the site; must provide clear waterway for drainage purposes.
28*	Inventory, assess, and restore all secondary drainage ditches in Multnomah County Drainage District No. 1, Peninsula Drainage District No. 1, and Peninsula Drainage District No. 2	MCDD is developing a stormwater master plan that includes inventory, assessment, and condition evaluation. Fazio ditches restoration was done in 2007. A MCDD and CSWC made a preliminary effort to create a wetlands mitigation bank, but it has not been developed.
72	Secure "first right of refusal" from all privately owned golf courses in the watershed	Although this project has not been pursued, Portland and Metro acquired a 54-acre wetland Broadmoor Golf Course in 2012. The Trust for Public Lands is currently negotiating a purchase of the Colwood Golf Course.
79	Restore upland grass area adjacent to T-5 mitigation site	This site is leased to a Port tenant, but is not used at this time. The Port does limited invasive species control on the site. The Port seeded the site with native grasses in 2002 to establish grassland/prairie habitat.

Project Number	Project/Program Name	Description
80	Restore Force Avenue property (across from Force Lake)	The Port owns this approximately 10-acre property and began annual invasive vegetation control in 2009. The Port conducted a feasibility study to determine if the site could be used for wetland mitigation, and rejected the proposal because of the significant amount of material that would have to be removed to bring the site down to wetland hydrology. The Port is now proposing to plant native trees and shrubs on the site in the future.
101	Preserve and enhance Subaru wetlands	Portland and Metro purchased 53 acres of wetland, commonly called Subaru Wetlands, from the Broadmoor Golf Course owners in 2012. The site includes waterway, wetlands, and planned Columbia Slough trail connections. Invasives control and restoration planning is underway.
103a	Add lakefront and protective border along south and west side of Johnson Lake site: Revegetation	Owens- Illinois funded revegetation and invasives control on Owens-Illinois property. Portland's revegetation team planted the site in 2004 or 2005.
114	Fujitsu Ponds area improvements	Gresham is conducting site investigations and project concept scoping for this 59-acre site.
249	Nadaka Park: Acquisition and restoration	Gresham acquired this 12-acre property, located in west Gresham, in 2011. Planning and construction for a nature play area, community garden, and picnic area began in 2012. Friends of Nadaka Park are active partners with Gresham and CSWC. The project was awarded a large Oregon State Parks grant in 2013 and has received funding from Metro and EMSWCD. Additional construction is planned for 2014.
NOT STARTED		
8	Improve bat habitat conditions at Smith Bybee Wetlands	Improve bat habitat conditions, focusing on roosting habitat in the ash forest. Build large colonial roosting structures. Work with Bat Conservation International.
11	Restore three inholdings at Smith Bybee area	Metro maintains regular contact with landowners to determine if they are interested in selling these properties.
115	Improve wetland next to Blue Heron Estates—eastern watershed	This is a commonly owned space with a creek running through it. It is the last stretch before Fairview Creek enters Fairview Lake.
19	Encourage transfer of Kenton Cove ownership to Portland Parks	This property was formerly leased long term to PPR, but is no longer under lease. The site is heavily impacted by transients and PPR is reluctant to assume ownership.
21	Enhance Portland Meadows drainage way	Restoration depends on the redevelopment of Portland Speedway and East Delta Park fields. The site must provide sufficient waterway for drainage purposes. MCDD will be developing a drainage plan.
23	Enhance GI Joe drainage way	MCDD will be developing a waterway/stormwater plan for this area.
40*	Implement a "Project of the Year"	CSWC will select one "Project of the Year" on which to focus.

*Not shown on map.

Project Number	Project/Program Name	Description
104	Acquire Heron Lakes heron rookery/Harsh Investments wetland	Portland's watershed revegetation team, in conjunction with the landowners, has revegetated this area. However, the site has not been acquired.
111a	Restore wetlands/uplands at Big Four Corners and Gresham/Portland border: Gresham wetlands	A private mitigation bank was planted, but not maintained. The viability of restoration is limited at this time because of the challenge of planting a riparian area dominated by reed canary grass and nutria predation, along with periodic disturbance from MCDD deposits of dredge materials in the riparian area. The land is currently in private ownership, and the undeveloped portion is slated for industrial development.
112	Acquire Columbia Edgewater strip along Columbia River	Some of this land drains to the Columbia River and is technically in the Columbia Slough Watershed. This site constitutes "the plug" of the Peninsula Canal levee at its junction with the river. This plug was originally caused by shoaling, but was enhanced to safe standards after the 1948 Vanport flood, when the canal was decommissioned as an open channel of the slough.
125	Improve riparian vegetation along south side of Columbia Slough across from Peninsula 1 and Peninsula 2 levees	This area is not leveed and could be restored and vegetated.
127	Improve vegetative corridor along secondary levee (Peninsula Canal) from Columbia Slough to Columbia River	The east side of the Peninsula Canal is primary levee, which limits vegetation, per post-Katrina USACE regulations. MCDD has pursued further vegetation management on the west side of the canal. Some further improvements could be possible with MCDD approval.
128	Resolve wildlife passage pinch point along upstream edge of Peninsula 1 levee near MCDD office. Identify and establish wildlife corridor.	Some of this area is not levee and could be vegetated. Patches of cover and a good linkage to the riparian area across the levee (to the east) are needed to provide connectivity and a corridor.
133	Improve riparian corridor along Fairview Creek downstream from NE 223rd Avenue: Heron Point (FV-6) and McDonald Brothers (FV-7) riparian restoration	The degraded stream edge needs revegetation with riparian plants to improve structure and function.
134	Enhance wetland along Fairview Creek near Fairview Lake: Heron Point (FV-6)	Three acres of the site could be re-contoured to establish an off-line high-flow water quality treatment facility, such as a forested wetland.
135	Enhance habitat in Fairview Creek watershed woods just east of NE 223rd Avenue and downstream	This private property within the City of Fairview has a single owner.
225	NN-3 No Name Creek revegetation behind Fairview Oaks Apartments	This project is included in Gresham's Consolidated Stormwater Master Plan.

Project Number	Project/Program Name	Description
NOT FEASIBLE		
3c	Improve fish habitat conditions in Lower Slough: Ramsey Refugia, Phase II	Ground elevations are too high to proceed. Alternate locations are being proposed.
12b	Add Wapato Wetlands to Smith and Bybee Wetlands Natural Area	On the advice of the Smith and Bybee Wetlands Advisory Committee, Metro did not add the Wapato Wetlands to the CNRP.
26	Protect and enhance "brownfield" site between Children's Arboretum and Brandwein	This property has been privately purchased and developed for industrial use.
65b	Explore acquisition of the Spada/Rockwood site: Rockwood acquisition	The Rockwood Water District owns this site and provides drinking water to its customers from site wells. The site is not for sale.
75	Restore riparian habitat at old Marine Drive along 40 Mile Loop Trail	Port and Metro research found the cost of pavement removal prohibitive. The road is heavily used as a 40 Mile Loop bike/ hike trail.
111b	Restore wetlands/ uplands at Big Four Corners and Gresham/Portland border: Rockwood Water District	This site contains drinking water wells, and the landowner not interested in providing access to this area.
132*	Establish wildlife corridor from west end of Fairview Lake to Sandy River Delta	These potential projects are not located within the watershed.
136*	Restore Clear Creek riparian area	This potential project is not located within the watershed.
137*	Enhance habitat in headwater forest of Clear Creek	This potential project is not located within the watershed.



CATEGORY
Water Quality and Quantity

Project Number Project/Program Name Description

COMPLETED

4	Remove water control structure at Smith Bybee	Metro replaced the earth dam with a water control structure, including a fish ladder in 2003. Funded by North American Waterfowl Conservation Act, OWEB, Portland, Metro, and Ducks Unlimited.
56e	Restore land around Whitaker Ponds for Whitaker Ponds area enhancements: Ned and Sis Hayes family land donation and restoration	Landowners Ned and Sis Hayes donated a portion of the West Whitaker Ponds and land south of West Whitaker Pond shoreline to Portland in 1999. Revegetation by BES, PPR, and CSWC continues.
58	Enhance riparian land south of Prison Pond on NE 112th and Simpson	Portland’s revegetation program planted the south riparian area at east “Prison Pond.” The program attempted to create turtle basking sites in 2010, but this was largely unsuccessful because there was no access for anchoring logs.
63	Preserve and enhance wetlands at NE 33rd Avenue	The parcel is the Port-owned Elrod mitigation wetland, with mitigation completed in 2000.
67	Preserve and enhance land surrounding Osborne Creek	In 2012, Fairview reduced riparian buffer width along Osborne Creek to 35 feet from centerline. CSWC organized stewardship activities in 2012 and 2013, which included invasives control and riparian plantings.
70	Remove and replace culvert west of Fairview Lake Dam	Gresham, with MCDD, completed this project in 2000.
81	Create a wetland bench, and plant mainstem Slough from NE 91st to I-205 to prevent bank erosion	MCDD created the bench and BES planted it. The Port is working on controlling knotweed and other weeds in this area. The Port’s Vegetation Management Plan includes the site for annual control of invasive species.

Project Number	Project/Program Name	Description
109a	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: East culvert replacement at Broadmoor Golf Course	BES replaced this culvert with a bridge in 2004 through the USACE 1135 program.
109b	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: West culvert replacement at Broadmoor Golf Course	BES replaced this culvert with a bridge in 2004 through the USACE 1135 program.
109c	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: Culvert removal at 112th Avenue & Marx/ Prison Pond	BES, with MCDD, removed this culvert in 2010. The waterway is now an open channel.
109d	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: East culvert replacement at Colwood Golf Course	BES, with MCDD, replaced this culvert with a bridge through the USACE 1135 program in 2009.
109e	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: West culvert replacement at Colwood Golf Course	BES, with MCDD, replaced this culvert with a bridge in 2009 through the USACE 1135 program.
109f	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: West Whitaker Pond culvert replacement	MCDD and Portland installed a bridge in 2010. CSWC and PPR installed native plants in the impact area.
116f	Enhance vacant lands for development of water quality facilities: WQ 4A, Boeing Site #1	Boeing donated 13.5 acres to Gresham for construction of a vegetated regional water quality facility that treats stormwater runoff from 800 acres of industrial and commercial land use and includes spill control containment. Wetland terraces were created, and the riparian area for the short "Stormwater Creek" (which runs between Sandy and the Columbia Slough) was improved. Phase 1 (Site #1) was completed in 2009.
116g	Enhance vacant lands for development of water quality facilities: WQ 4B, Boeing Site #2	Boeing donated 13.5 acres to Gresham for construction of a vegetated regional water quality facility that treats stormwater runoff from 800 acres of industrial and commercial land use and includes spill control containment. Wetland terraces were created, and the riparian area for the short "Stormwater Creek" (which runs between Sandy and the Columbia Slough) was improved. Phase 2 (Site #2) was completed in 2012.
116j	Enhance vacant lands for development of water quality facilities: Mason Flats wetland enhancement	BES began the project in 2011 and completed it in 2012. The project combines stormwater treatment and restoration of former agricultural land into wetlands and habitat for painted turtles and willow flycatcher.

Project Number	Project/Program Name	Description
131	Replace Upper Columbia Slough culverts (numerous) with bridges: North Slough culvert replacement—Big Four Corners	The culvert on North Slough at Big Four Corners was replaced by a pedestrian bridge. Other North Slough bridge crossings are not feasible. Note: PBOT replaced mainstem culverts (NE 138th, NE 148th, NE 158th) during upgrades of NE Airport Way.
223a	Columbia Children's Arboretum: Culvert replacement projects	Portland City Council adopted the Master Plan. MCDD replaced two culverts with bridges in 2008 to improve water quality and flow. Riparian plantings have improved habitat. BES and MCDD funded the bridges and restoration.
227a	Columbia Slough USACE 1135 Ecosystem Restoration Program: Instream wetland benches	MCDD created instream wetland benches, with funding from Portland. The project stretches from NE 21st to NE 158th.
227b	Columbia Slough USACE 1135 Ecosystem Restoration Program: Alice Springs land acquisition	Portland acquired the 27-acre Alice Springs site, which secures forested land and several productive cold water springs that feed into the Upper Slough at about NE 170th Avenue.
228*	EMSWCD's home garden pilot projects	EMSWCD funded pilot projects to study and implement home garden fruit trees/shrubs and water conservation with low-income residents in N/NE Portland. Completed in 2008.
230	Holy Redeemer stormwater project #2	Holy Redeemer removed stormwater and pervious surfaces and installed a community garden of native plants and food. Funded by EMSWCD and completed in 2012.
231	Historic Kenton rain garden	The Kenton community constructed a rain garden to handle some of the site runoff. Funded by EMSWCD.
232*	Neighborhood Forest Management Plan: Concordia Neighborhood	Portland's Urban Forestry Program and citizen volunteers inventoried street trees, established tree goals, and wrote a neighborhood tree plan. Funded by EMSWCD and completed in 2010.
233	June Key Delta Community Center green street	Portland's CWSP and other partners provided plants and project management funding for the community group that developed a green street at this nonprofit brownfield reuse site, completed in 2011. EMSWCD funded the rain garden.
235	Sumner community garden	A community garden was installed in 2011, made possible by a grant from EMSWCD and a partnership of Friends of Portland Community Gardens, Cully Area Neighbor's and PPR's Community Garden Program.
236	Helensview community garden	PPR and the Parkrose School District developed and installed a community/school garden at Helensview School in 2011. Funded by EMSWCD.
240	Brownfield cleanup on North Portland Road	DEQ issued a "No Further Action" (NFA) decision for a brownfield property at 10145 N Portland Rd. The property was virtually abandoned and presented a public safety problem. A new owner paid for the brownfield cleanup. The site now provides employment and tax income.
242	Slough bridge reconstruction at Kelley Point Park/Lombard	PBOT reconstructed the Slough bridge at Kelley Point Park, adding stormwater treatment swales plus pedestrian and bicyclist trail passage.

Project Number	Project/Program Name	Description
245	Eastminster community garden	Grow Portland established a 100-plot community garden at 12505 NE Halsey St. in 2011. Funded by EMSWCD and the East Portland Action Plan.
246	Glendoveer Golf Course management and fitness trail improvements	Since acquiring this golf course, Metro has reduced chemical use, removed and controlled invasive species, and planted trees. More improvements are planned on this property of 300+ acres, most of which lies in the watershed. The remainder is located in the Willamette Watershed.
247	Portland Water Bureau groundwater treatment systems improvement project	In 1994, PWB constructed a vegetated stormwater treatment swale and made outfall improvements at the groundwater pumping station at NE 165th and Airport Way. This reduces the amount of untreated stormwater entering the Slough and dissipates the energy of the discharge.
252*	DEQ Columbia Slough bioaccumulation study—2010-12: DEQ cleanup (EPA grant)	DEQ completed the report in fall 2012. A feasibility study is expected. See DEQ ECSI database (site #164) for more details.
253	Johnson Lake sediment cleanup: DEQ cleanup (ECSI #1311)	Owens Illinois completed a sediment cap and mitigation projects under DEQ supervision in spring 2012. Ongoing monitoring of the sediment cap will occur to verify performance. See DEQ ECSI database (site #1311) for details.
254*	Downspout Disconnection Program	Between 1993 and 2011, Portland disconnected more than 56,000 downspouts and removed 1.3 million gallons of rainfall from its combined sewer system. Approximately 20 percent of the area is in the Columbia Slough Watershed. This program allows recharge of groundwater.
269	Harbor Oil Superfund: cleanup process	The Harbor Oil Community Advisory Group has monitored the activities of the EPA and voluntary groups since 2005. A "No Further Action" decision by EPA is anticipated in 2013.
270	Sanitary sewer expansion: Columbia Boulevard Wastewater Treatment Plant	Portland expanded the Columbia Boulevard Treatment Plant to provide treatment for increased flows resulting from the control of combined sewer overflows into the Columbia Slough (completed in 2000) and the Willamette River (completed in 2011).
ONGOING		
44	Construct sanitary sewer in unsewered area around Whitaker Ponds	Portland has constructed a sanitary sewer force main on NE 47th and Columbia Boulevard. Pump station construction is occurring, with completion scheduled for 2015 at Whitaker Ponds and NE 42nd Avenue. Service will be available to properties in the sewer subbasins in 2015
52*	Replace 10 acres of parking lots outside wellfield area with porous paving in appropriate areas	A number of sponsors have removed paving, including Depave, CSWC, Gresham, and Portland's Green Streets Program and CWSP. Many of the CWSP grants contain an element of pavement removal. The number of acres is not available at this time.

*Not shown on map.

Project Number	Project/Program Name	Description
53*	Develop one to three ecoroof demonstration projects for commercial and industrial buildings	Portland's Ecoroof Program has promoted ecoroof development and installation. As of 2011, 28 projects with 48,500 square feet of ecoroof have been installed in the Columbia Slough Watershed. There are 370 ecoroofs in Portland as of 2012. The program has provided ecoroof subsidies. Installations include residences, schools, office buildings, restaurants, condos, and auxiliary buildings. Additional installations are in process, including a partial ecoroof at Walmart in East Delta Park.
68	Restore and enhance stream site near Division and 202nd	TriMet, Gresham, and Knife River are potential participants in this project.
71*	Pretreat parking lot stormwater on I-5 privately owned sites	Two sites have been completed. Depave and Portland CWSP grants support this work. CWSP grants have also partly supported numerous other depaving projects.
203*	Street tree plantings west of 82nd	Friends of Trees has conducted street tree and natural area plantings in the watershed since 1989. To date 8,559 trees have been planted in the watershed. Portland has provided subsidies to low-income homeowners for at least five years.
229*	Depave: Removing pavement at seven sites	Depave is a non-profit organization that advocates for and organizes pavement removal and re-greening events. It has conducted projects at seven sites in the watershed to date: Word and Spirit Church, James John School, Chief Joseph School, Disjecta Arts Center, Holy Redeemer Church and School, Fargo Forest Garden, and a private driveway.
237	Gresham's FV-3e floodplain storage/water quality facility	This project involves re-contouring five acres of the field north of East Salish Pond to provide off-channel floodplain storage, from 196 to 194 feet (to provide 10 acre-feet of storage), and enhancing water quality treatment by planting five acres with native wetland and upland vegetation. It is included in Gresham's Consolidated Stormwater Master Plan.
238	Gresham's FV-4 Salish Ponds and Wetlands	This project involves shoreline repair and revegetation in conjunction with establishing designated fishing locations. It also includes adding more public education signs about water quality, wetlands, fisheries, etc. and more "Dogi Pot" waste disposal bags and bins. Gresham has completed preliminary design. Funding is through the Metro bond measure.
241*	Cascade Wellfield Protection Program	Gresham's voluntary Cascade Wellfield Protection Program extends Portland's Wellhead Protection Program to within Gresham boundaries. Seventy businesses are participating in this program.
243*	Naturescaping workshop series	EMSWCD offers free workshops to guide homeowners through the sustainable landscape design process.
244*	Rain garden workshop series	EMSWCD offers free workshops to guide homeowners through the rain garden design process.
248a	Green hotel initiatives—Pollin Hotels: Aloft Hotel	The Aloft participates in "Clean The World," which sends partially used soaps and amenities to a facility that hygienically converts them to soaps and shampoo sent worldwide for reuse. Premium parking spaces are reserved for electric and hybrid vehicles.

Project Number	Project/Program Name	Description
248b	Green hotel initiatives—Pollin Hotels: Sheraton-Airport Hotel	The Sheraton-Airport Hotel participates in “Clean The World,” which sends partially used soaps and amenities to a facility that hygienically converts them to soaps and shampoo sent worldwide for reuse. Premium parking spaces are reserved for electric and hybrid vehicles.
266	ODOT tree planting	Multiple partners planted trees along I-205 in 2011-2012, including ODOT, CSWC, Verde, and Friends of Trees.
267*	Treebate	Portland provides partial subsidies to homeowners who plant trees in their yards and sidewalk planter strips. Through 2012, 429 trees have been planted.
268*	Install green facilities: Portland and Gresham green street facilities	Portland has installed and maintains 400+ green street facilities in the Columbia Slough Watershed, including rain gardens, swales, street planters, and constructed wetlands. Gresham has installed 111 facilities.
271*	Groundwater Protection Plan: Outreach to businesses	Portland developed the Columbia South Shore Wellfield in the 1980s and included groundwater protections. The Portland Groundwater Protection Program covers the areas (east of I-205). The program was significantly expanded in 2003 and now includes substantially more acres, especially to the south. Content for outreach to businesses was completed in 2004 and updated in 2012. Over 100 businesses participate in the program, which focuses on pollutants that may find their way into groundwater aquifers. CSWC and the Columbia Corridor Association have provided education.
UNDERWAY		
31*	Develop landowner incentive program for proper vegetation maintenance in environmental zones	BES and CSWC have provided a variety of stewardship and partnership opportunities. Projects are not specific to E-zone areas.
37	Remediate sediment at all 13 former CSO outfalls in Lower Slough	DEQ is directing some cleanup activities. It is not clear that all 13 CSOs require cleanup. Efforts are now also focused on controlling upland sources to avoid recontamination of cleaned areas. DEQ’s cleanup timeline is uncertain. BES’s priority stormwater outfalls project is in process and will provide upland stormwater treatment in the next 10 years.
57	Increase street tree plantings east of 82nd Avenue	Friends of Trees, Verde, ODOT, Portland, Gresham, and Fairview have made major efforts. Friends of Trees has planted 184 street trees east of 82nd and 8,559 in the watershed. Verde is an active participant, but does not keep statistics by geographic area.
109g	Replace 14 culverts on Slough (mainstem and Whitaker arms) with bridges: NE 33rd Avenue culvert replacement	Culverts under NE 33rd will be replaced by a bridge. The project is scheduled for completion in 2013. Funded by Portland and the USACE 1135 Program.
116i	Enhance vacant lands for development of water quality facilities: NE 148th Avenue constructed wetland	Planning is complete, and Portland will construct this facility in 2014-15.

*Not shown on map.

Project Number	Project/Program Name	Description
202	Construct sanitary sewers in South Airport sewer area	Portland has completed construction of the sewer force main and of pump stations at NE 59th, 63rd and 33rd. Construction of pump stations at NE 47th and 42nd avenues is expected to be completed in 2014-15. Sanitary service has been provided to other unsewered areas along Columbia Blvd.
250a*	DEQ - Whitaker Slough Sediments Remedial Investigation and Feasibility Study (Settlement Project): DEQ cleanup—Lower Slough	DEQ finished additional sampling in spring 2013. This area incorporates several DEQ cleanup sites.
250b	DEQ - Whitaker Slough Sediments Remedial Investigation and Feasibility Study (Settlement Project): DEQ cleanup—Whitaker Priority Area 1: Portland Willamette inlet cleanup	DEQ issued a remedial action Record of Decision in April 2013. Cleanup actions are anticipated in late fall 2013.
250c	DEQ - Whitaker Slough Sediments Remedial Investigation and Feasibility Study (Settlement Project): DEQ cleanup—Whitaker Priority Area 28/12/2013 Nuway-Halton Area	DEQ conducted sampling in 2013-14. Results are pending for the Lower Slough and Priority Area 1. This area incorporates several DEQ cleanup sites.
251	St. John's landfill cleanup: DEQ cleanup (ECSI #164)	DEQ has completed a Remedial Investigation report and completed a Feasibility Study in spring 2013. See DEQ ECSI database (site #164) for more details. Metro will undertake a variety of proactive actions in the future.
NOT STARTED		
62*	Remove old pilings within waterway	Remove old pilings throughout Columbia Slough waterways.
64	Preserve and enhance Interlachen wetland site	Explore acquisition of the Interlachen converted wetland site.
108	Preserve and enhance land at Big Four Corners/Marine Drive	These upland lots remain for sale. Some of the site has been "preloaded" with fill to raise ground elevation, which allows development to occur.
116a	Enhance vacant lands for development of water quality facilities: 15.4 acres at outfall of 162nd Avenue pipe system	Projects 116 a, b, c, d, and h are potential acquisitions and are part of the West Gresham stormwater plan. All the sites collect drainage from residential and industrial areas, and could be passive treatment wetlands. If not acquired, some of the land could be developable.
116b	Enhance vacant lands for development of water quality facilities: 12.6 acres at 162nd and I-84	Projects 116 a, b, c, d, and h are potential acquisitions and are part of the West Gresham stormwater plan. All the sites collect drainage from residential and industrial areas and could be passive treatment wetlands. If not acquired, some of the land could be developable.

Project Number	Project/Program Name	Description
116c	Enhance vacant lands for development of water quality facilities: 3.2 acres at 162nd	Projects 116 a, b, c, d, and h are potential acquisitions and are part of the West Gresham stormwater plan. All the sites collect drainage from residential and industrial areas and could be passive treatment wetlands. If not acquired, some of the land could be developable.
116d	Enhance vacant lands for development of water quality facilities: 3.3 acres at 181st and Halsey	Projects 116 a, b, c, d, and h are potential acquisitions and are part of the West Gresham stormwater plan. All the sites collect drainage from residential and industrial areas, and could be passive treatment wetlands. If not acquired, some of the land could be developable.
116h	Enhance vacant lands for development of water quality facilities: 2.1 acres at cul-de-sac at 194th on south side on I-84	Projects 116 a, b, c, d, and h are potential acquisitions and are part of the West Gresham stormwater plan. All the sites collect drainage from residential and industrial areas and could be passive treatment wetlands. If not acquired, some of the land could be developable.
239	Gresham's NN-2 No Name Creek, 22820 NE Halsey	This project is included in Gresham's Consolidated Stormwater Master Plan. No City surface water conveyance projects are proposed for this area. The correction of flooding at this site should be addressed through the design of this parking area and could include raising inlet grate elevations, installing flap gates, etc.
NOT FEASIBLE		
39	Replace NE 63rd Avenue/Whitaker Slough culvert with bridge	BES replaced the infrastructure above the culvert as part of the South Airport Sewer project. Other action is unlikely because of the cost.
102	Preserve and enhance land at Big Four Corners wellhead habitat	A private developer has acquired and developed this property. The Columbia Slough trail with riparian buffer passes through this area.
110*	Purchase macrophyte harvester to improve water flow during warm-weather months	MCDD used rented equipment to conduct a limited effectiveness test on the Upper Slough and Fairview Lake in 2011. The cost was prohibitive for use on Fairview Lake. Additional concerns were raised about pieces of macrophyte that travel downstream and are able to reestablish, spreading the problem of excessive macrophyte growth.
116e	Enhance vacant lands for development of water quality facilities: 20.7 acres along 181st and just south of Sandy Blvd.	This property is being developed.



CATEGORY Resource Collection

Project Number	Project/Program Name	Description
ONGOING		
59*	Develop a fundraising strategy for CSWC operation	Fundraising is an ongoing element of CSWC's workplans and efforts.
204*	Maintain CSWC web access	CSWC maintains event registration; information about classes; volunteer, stewardship, and donation opportunities; and general information on its webpage. It also uses Facebook, YouTube and Twitter.
277*	Update Columbia Slough Watershed bibliography semi-annually	The bibliography was online and up to date in 2003. It currently is not accessible on the web because the initial link is no longer operational.
278*	Update GIS map products that identify the location of Action Plan projects and related watershed information	CSWC will begin work on a new Action Plan in late 2014, which will provide updates and additional information.
279*	Maintain internet access to the bibliography and GIS map products.	These products have been static since 2004 and need to be updated.



CATEGORY

Outreach and Education

Project Number Project/Program Name Description

COMPLETED

13 Build shelter at Smith Bybee for year-round education activities Metro constructed a covered picnic shelter and restroom facility in 2010. An education facility is no longer proposed, primarily because of flooding in 1996 and 2012, cost, and the direction of the Smith and Bybee Wetlands Advisory Committee. No additional shelters within the natural area are planned.

32a Develop an Upper Columbia Slough interpretive center to provide watershed education and showcase upper watershed projects: NE 165 trailhead interpretation PWB installed a Slough informational kiosk at the trailhead at NE 165th and Airport Way, on PWB property.

32b Develop an Upper Columbia Slough interpretive center to provide watershed education and showcase upper watershed projects: Columbia Slough water quality facility interpretation Gresham installed interpretation signs at the Columbia Slough water quality facility (19950 NE Sandy Blvd, Gresham) in 2011.

43 Enhance and develop an expanded environmental learning center and Council office at Whitaker Ponds CSWC substantially completed phase 1 of the Watershed Education Center in 2011 by upgrading and renovating the Bunn House at Whitaker Ponds. Funded by Meyer Memorial Trust and IKEA; donations from David Kennedy, architect, and various CSWC members and staff were also critical.

*Not shown on map.

Project Number	Project/Program Name	Description
74	Develop education programs at Columbia Children's Arboretum	CSWC, PPR and BES' Clean Rivers Education program have developed education activities for this park
207	Emerson Garden Project	In 2010, neighborhood youth and children planted a garden and invited the neighborhood to participate. In 2011, science teacher Derek Grant's eighth grade class at King School helped build the outdoor learning center with City of PWB engineers and architects and the Emerson Working Group. Da Vinci Arts School seventh and eighth graders designed and helped build a raised garden bed and front gate, incorporating artwork, poetry space and local history. Team Green (second and third graders from King School's SUN Program) worked the garden and conducted a science experiment.
208*	Growing Huertos	Growing Gardens sponsored this Spanish-language program, which taught environmentally sound gardening practices; completed in 2010.
209	Cully Young Farmers	This project, completed in 2012, matched the Concordia University Teaching Program and Service Corps with eighth through tenth grade students at Trinity Lutheran School in a garden education program. Funded by EMSWCD.
210*	Audubon Internship Academy	Completed in 2012, this Audubon program provided environmental and conservation training to grade 8-12 youth. Funded by EMWSCD.
211*	Green Team Education and Training	Through a CWSP grant, Groundwork of Portland provided job training for young women through hands-on restoration, education, and environmental justice programs and activities; completed in 2012.
212*	Congregations Caring for Land, Watersheds and Wildlife	Ecumenical Ministries of Oregon Interfaith Network for Earth Concerns and EMSWCD presented workshops for the faith-based community.
256*	Development of groundwater curriculum for the public	CSWC, PWB, and the Columbia Corridor Association developed curriculum for Groundwater 101 (see 107b below).
ONGOING		
107a*	Continue Slough School and other education programs offered through the Council, and collaborate with other such watershed-focused education programs: CSWC's Slough School	CSWC's Slough School (a classroom and field-based science education program) has provided classes and field trips and transportation for 41,836 students and 6,182 teachers and adults from 2004-2012. Classes are free.

Project Number	Project/Program Name	Description
107b*	Continue Slough School and other education programs offered through the Council, and collaborate with other such watershed-focused education programs: CSWC workshops (Slough 101, Groundwater 101, Wetlands 101, teacher workshops, Brunch with the Birds, and Soup on the Slough)	These workshops give participants a background on the history, ecology, hydrology, natural history and natural resources, economics, and current issues of the watershed. Workshops have been given more than 35 times; most are offered annually.
107c*	Continue Slough School and other education programs offered through the Council, and collaborate with other such watershed-focused education programs: CSWC paddle events (Columbia Slough Regatta, Canoe the Slough, Moonlight Paddle, Bring Your Own Boat, Evening Canoe the Slough)	CSWC paddling trips in the watershed typically draw 15-35 people for small events and up to 500 for large events. The annual regatta is the most popular event.
107d*	Continue Slough School and other education programs offered through the Council, and collaborate with other such watershed-focused education programs: Explorando el Columbia Slough	This very popular bilingual festival-style family event, held at Whitaker Ponds, began in 2002. The activities are unique in their accessibility and environmental focus. They include canoe trips (generally accommodating more than 250 people), gardening, environmental activities and games, storytelling, and folk music and folk dancing. Total attendance to date is 3,728 people.
107e*	Continue Slough School and other education programs offered through the Council, and collaborate with other such watershed-focused education programs: Aquifer Adventure	This family-focused festival highlights groundwater resources and the resources of the Portland wellfield. Many interactive activities (boating, games and costuming with a pirate theme) have contributed to the event's growth and popularity. Publicity through the schools has been very successful. Attendance in 2012 was 850 people; total attendance to date is 4,185 people.
107g*	Continue Slough School and other education programs offered through the Council, and collaborate with other such watershed-focused education programs: CSWC additional activities and events	CSWC sponsors a wide range of other events—e.g., Owl Prowl, an annual awards celebration, watershed tours and walks, and cycling. It also participates in a myriad of community activities, such as Sunday Parkways, neighborhood association events, and other environmental and recreational events.
200*	Metro environmental education programs	Metro provides 0.5 FTE education staff for programs in the watershed at Smith Bybee. From 2002-2011, student field trip attendance was 9,541, public program attendance was 3,840, and group programs attendance was 2,465. Educator James Davis's series of wildlife and environmental education videos are posted online at Metro's website.

Project Number	Project/Program Name	Description
201*	Portland Water Bureau education programs	The PWB delivers water resource education throughout the Portland area and for residents, businesses, teachers, and students in the watershed. Topics include water quality testing, conservation, and salmonid life cycles.
206*	GRUNT (Greenspaces Restoration and Urban Naturalist Team)	This PPR program provides naturalist training and job training to disadvantaged teens. Funded by EMSWCD and Metro Nature in Neighborhoods
213	Native plants sale	EMSWCD holds an annual native plants sale open to district landowners.
258*	Portland's Clean Rivers Education Program	BES's Clean Rivers Education Program provides education and science programs to school students. From 2003-04 through 2010-2011, the numbers of students reached were 14,377 (in the classroom), 2,610 (field trips), and 12,212 (field trips with partners).
259*	Portland Parks nature/ environmental programs	PPR provides classes, summer camps, and activities for preschoolers. Services are often based at Whitaker Ponds and the Columbia Children's Arboretum.
260*	Gresham environmental education programs in the Columbia Slough Watershed	Gresham's Department of Environmental Services supports a variety of ongoing activities, including hazardous waste collection and compost bin sales, Naturescaping and rain garden workshops, homeowner pesticide/fertilizer elimination and reduction, and invasive plant education.
261*	Fairview environmental education programs in the Columbia Slough Watershed	CSWC provides environmental education activities to Fairview students through Slough School.



CATEGORY Monitoring

Project Number **Project/Program Name** **Description**

ONGOING

273* Evaluate effectiveness of CSWC education, outreach, and stewardship activities CSWC members and staff have regularly conducted evaluations of CSWC's function, workplan, and board organization from 2006-11 and submitted them to OWEB as a condition for grant acceptance. Staff has submitted evaluations to funders, as required for grants. PSU has evaluated Slough School programs.

274* Promote efforts to identify, track, and record conditions of mitigation sites in accessible database and GIS Portland created a report on state and federal mitigation projects in the Columbia Slough watershed in 2003. No up-to-date comprehensive report of local mitigation projects exists in Portland. It is not known if this information exists for Gresham and Fairview.

275* Support efforts to share monitoring information among stakeholders, regulated parties, and agencies CSWC provides information about water quality, sediment and Lower Slough fish monitoring at its meetings. Slough 101 and website links provide ongoing information about water quality, revegetation, stewardship, regulatory measures, and compliance.

NOT STARTED

276a* Foster development of a forum to share monitoring information every three years

NOT FEASIBLE

276b* Participate in/foster National Monitoring Day or other regional volunteer monitoring efforts CSWC has participated in two of these events. Although Slough water quality monitoring is a relevant educational activity for citizens and students, however, the data obtained is not robust enough for regulatory agencies to use.

*Not shown on map.



CATEGORY Recreation

Project Number	Project/Program Name	Description
COMPLETED		
1	Improve boat launch facility inside Kelley Point Park	Portland completed a gravel parking area for eight vehicles in 2010.
10	Improve recreation facilities and construct a boat launch into Smith Bybee on Marine Drive	Metro completed trailhead facilities and a canoe launch 2004-05; paddlers now launch directly into Smith Lake. Metro has completed a Trails Master Plan.
17g	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Trail from Marine Drive to NE 158th Avenue	The PWB developed a short trail segment and installed a dock in 2001 as part of developing the groundwater production well system. The dock was repaired and improved in 2010.
42	Build boat launch at Whitaker Ponds nature area, 7040 NE 47th Avenue	MCDD and CSWC partnered to improve access to the Whitaker Slough at Whitaker Ponds in 2005-08. Upgrades included steps and handrails; an all-weather, movable, floating dock was also installed.
49	Relocate the sewer pipe that blocks the Slough near the Gresham Treatment Plant	Gresham completed this project in 2004. The project raised three outfall pipes and two force mains out of the 100-year floodplain.
113	North Lombard to Kelley Point Park trail segment	PBOT constructed this section of trail, which contains roadway bike lane and sidewalk segments.

Project Number	Project/Program Name	Description
216	Chimney Park Dog Park improvements	PPR installed trees, fencing and gates, and a new water faucet at this park in 2010.
ONGOING		
17a	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Design and construct low-impact trail segments surrounding the Smith Bybee area	Metro completed a trails feasibility study in 2005 and incorporated alignments into its CNRP. Metro secured a grant for the bridge between Chimney and Pier Parks and is constructing that link. Construction of other segments will proceed as funding is available.
17b	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Connect to the Springwater Corridor	Metro and Gresham have acquired parcels and easements. Gresham has constructed segments of the Gresham-Fairview Trail.
17c*	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Build Lewis & Clark Greenway trail projects	PPR constructed segments of Marine Drive trail. Some segments are not yet constructed.
17d*	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Explore acquisition of trail easements for 40 Mile Loop segments	Metro has been acquiring easements since PPR lost its trail planning staff position in 2009. Gresham wrote segments of the Fairview-Springwater Trail into its 2011-2012 Capital Improvement Program. Current easement acquisitions extend to Halsey; it is uncertain whether easements to connect to the Marine Drive Trail will be acquired.
41*	Expand Regatta as a yearly festival	The Columbia Slough Regatta is a yearly event. (See item #107c under Outreach and Education.)
60*	Acquire trail easements for 40 Mile Loop segments	Metro and Gresham have acquired parcels and easements. Gresham has constructed segments of the Gresham-Fairview Trail, and PPR has constructed several segments in its jurisdiction.
214	Gateway Green	This 38-acre parcel of land between I-84 and I-205 is being developed as a bicycle park and natural area. More than 50 partners are involved in securing the rights, developing designs, beginning restoration, and raising funds. Fourteen acres are in the Slough watershed and 24 acres in the Willamette watershed. The Gateway Green community group is heading the project, working with PPR, ODOT, and many others. Long-range plans include linking the park to the I-84 bike trail and the trails and parks on Rocky Butte.
215	Groundwater Well #29 canoe launch upgrade	PWB developed a small slough trail segment and installed a dock in 2001 as part of the bureau's development of the groundwater production well system. The dock was repaired and improved in 2010. The trail segment at the site is complete.

*Not shown on map.

Project Number	Project/Program Name	Description
UNDERWAY		
15	Improve the boat launch at the St. Johns Landfill bridge	This paved ramp is the only paved launch along the entire slough. Because nuisance dumping and various other illegal activities occur at a high rate at this site, drive-in access to the ramp is currently limited to special events and official and emergency vehicles. A trailhead and parking area is envisioned at the north eastern edge of the property when the North Portland Greenway trail link to Smith Bybee gets constructed here. This property, called the Triangle Site, is the former City ash dump and has been partially revegetated by BES. The site is listed as a fish restoration site in Portland's Water Resource Development Act program. BES owns the property and leases part of the site to Metro for landfill operations.
17e	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Construct Vancouver Avenue to Denver Avenue trail segment	PPR is constructing this trail section.
17f	Resolve 40-mile Loop Trail planning, design, and construction, including a bridge: Grade separated crossing of Columbia Blvd. to connect N. Portland Greenway and Smith Bybee Wetlands trails	Funding is being sought from various sources for construction of a grade-separated crossing of Columbia Blvd. to link the North Portland Greenway and Smith Bybee Wetlands trails. These critical trails are separated from traffic.
20	Construct a public access boat launch in the Lower Slough between NE 18th Street levee and Denver Avenue or (Kenton) area boat launch	Preliminary design of a ramp launch at Denver Avenue and Schmeer Road has been proposed and partly funded through BES's Community Benefit Opportunity grants. However, construction of the project at that location is not feasible because of MCDD concerns and safety issues. CSWC, PPR, and BES are pursuing relocation of the project to the underside of I-5. Challenges include permitting by USACE and Endangered Species Act (salmon) considerations.
33	Build Columbia Slough trail segment underneath Denver Avenue/Schmeer Road underpass to provide safe access to the existing trail west of Denver Avenue	PPR has acquired easements for trail building from Vancouver Avenue to Denver Avenue, and trail construction is planned for 2015. The trail connection on the west end at PIR and Denver Avenue is pending the relocation of Schmeer Road to the north. ODOT anticipates completion of the road relocation project by early 2015.
34	Construct Slough trail segment between N. Denver Ave. and Martin Luther King Blvd.	PPR has begun easement acquisition on this trail segment. The Denver Avenue -Vancouver Avenue section is currently under construction.
35	Build Peninsula Canal levee trail segment from Multnomah County Drainage District No. 1 (1880 NE Elrod) to Marine Drive	Metro has acquired four of five easements, and PPR is planning construction for the top of the levee. The Lower Willamette Turtle Working group suggests that trail placement on the eastern side of the levee is desirable to avoid turtle and wildlife impacts with top-of-levee trail placement. Trail relocation options are unknown at this time.

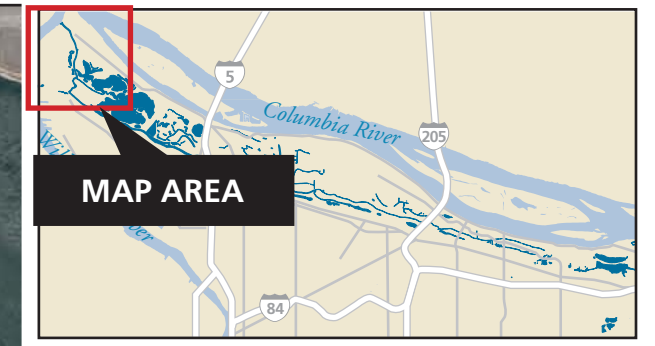
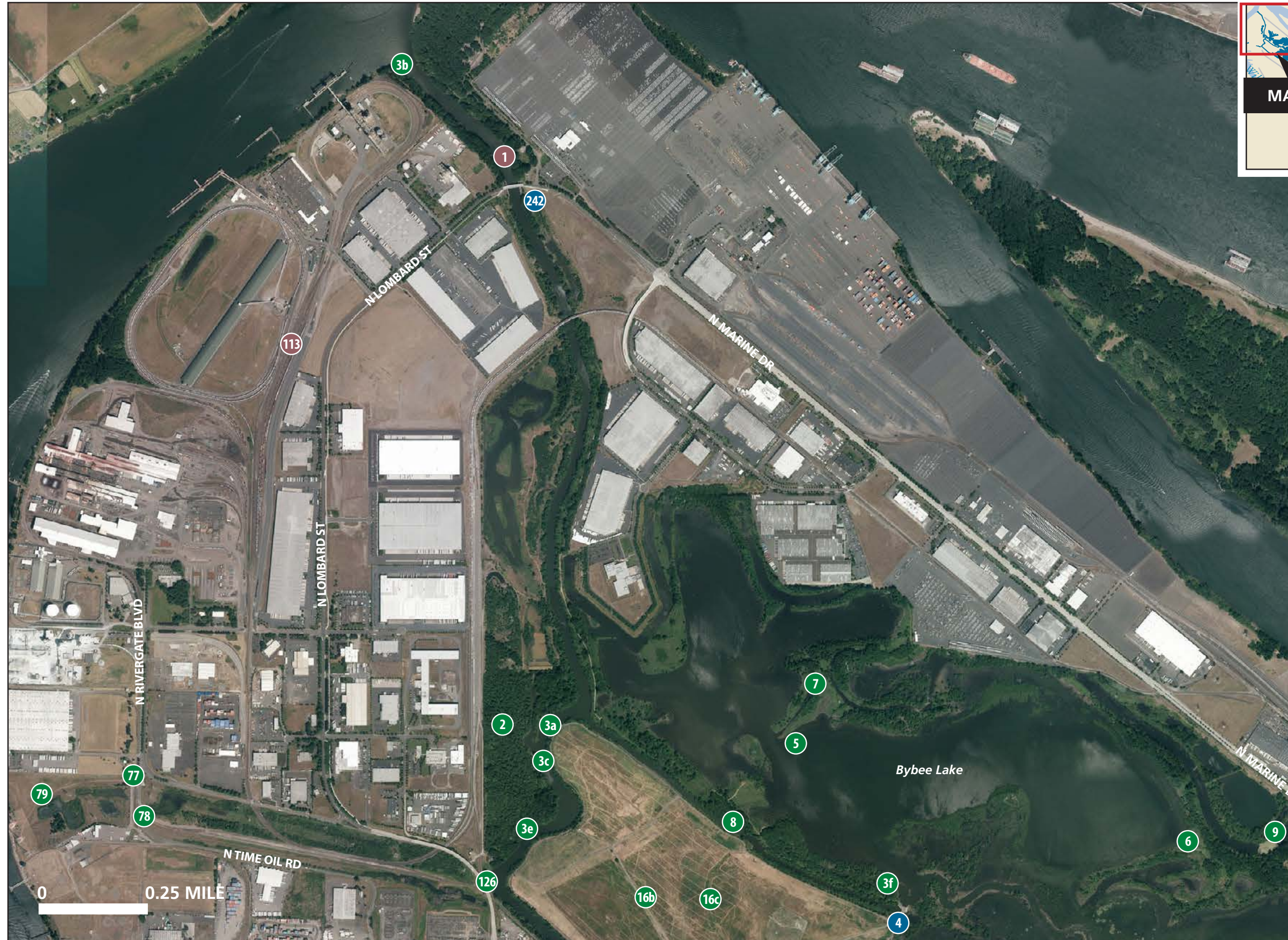
Project Number	Project/Program Name	Description
280	Let's Build Cully Park	The Let's Build Cully Park community-based effort has developed a phased master plan approach to develop this capped 26-acre landfill as a park. To date, the site contains community gardens. There will be a focus on native plants and an area for native plant gathering. Additional development will bring an off-leash dog area, trails and sports fields, street access, and parking. Verde is taking the lead on raising funds. Funders to date include PPR, Metro, Port of Portland, and others.

NOT STARTED

25	Construct trail linkages from Interstate Max station at PIR/ Expo Center to Columbia Slough trails	This is included in PPR, community, and Metro plans.
27	Construct (non-motorized) boat landings at MCDD offload sites	Ramps would serve as canoe/kayak landings and provide equipment access for MCDD waterborne maintenance. This is conceptual and would include 10-15 potential sites, but the project needs investigation and property owner permission before site locations can be specified. The goal is to identify sites, develop public support, and secure access.
46	Build boat landing on east and west sides of 143rd Avenue levee	Portland owns the property on the northwest and west side and is likely to provide access. The southeast side is owned by a property owner who is not interested in improving access. The site has an overlay for levee maintenance.
47	Build a boat launch below Fairview Lake dam to provide paddler access to Upper Slough	The Blue Heron Shores Phase 1 Homeowners Association (HOA) owns about 180 feet of north slough bank immediately west of the bridge. There is also a right-of-way that underlies some of this easement. The HOA is concerned about the liability of providing a public boat launch on its communal property and the potential lack of parking. Gresham owns a portion of the south slough bank west of the bridge.
48	Relocate water level sewer pipe at NE 118th and Inverness to provide water level passage	This sewer pipe is about 5 feet in diameter. Budget constraints make this project unlikely at present.

NOT FEASIBLE

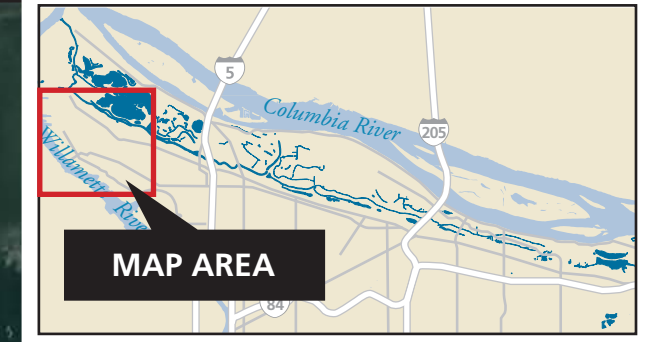
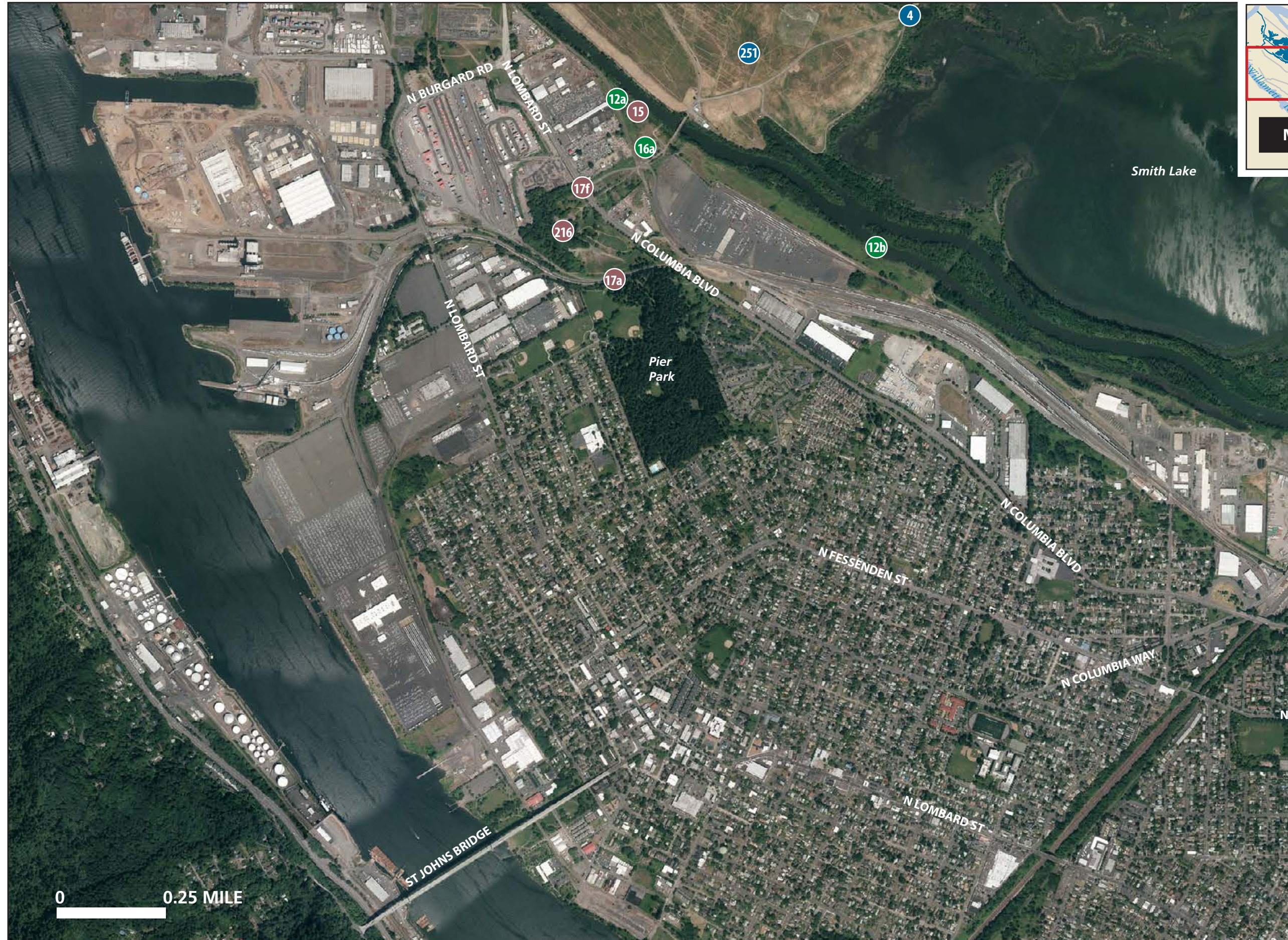
36a	Rebuild levees at NE 18th and NE 143rd for improved water flow and recreation: NE 143rd level improvement	At present, MCDD has indicated it is not interested in pursuing this project because of cost and operational challenges.
36b	Rebuild levees at NE 18th and NE 143rd for improved water flow and recreation: NE 18th Street levee improvement	This project presents the challenge of avoiding ESA-listed salmonid fish entrapment. At present, MCDD has indicated it is not interested in pursuing this project because of cost and operational challenges. Post-Katrina USACE regulations may further complicate any project.



-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

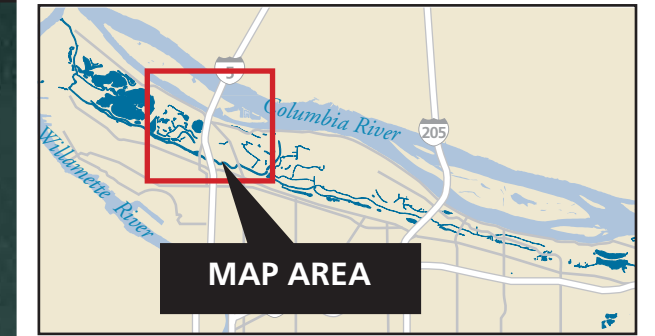
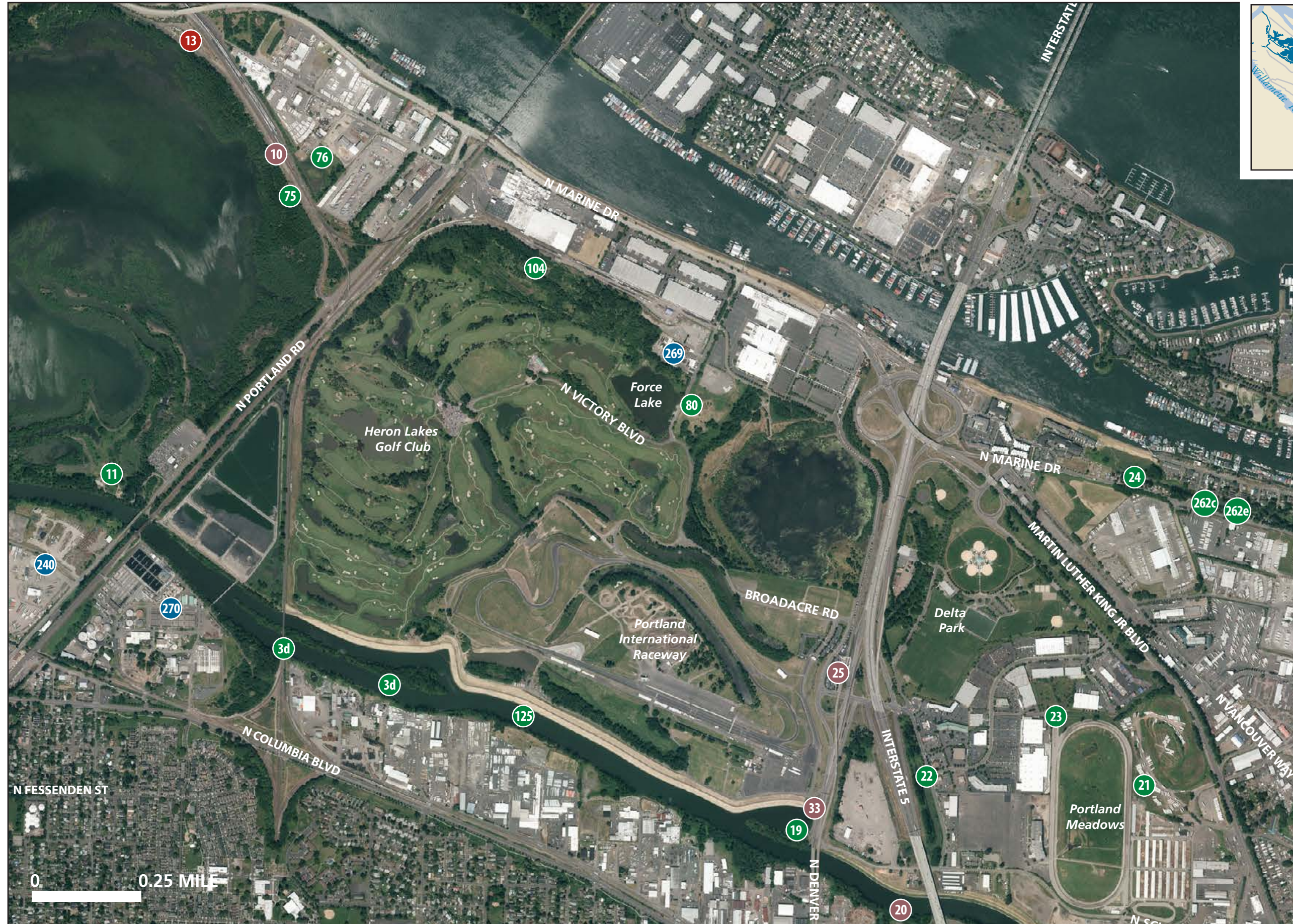


MAP-1



-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

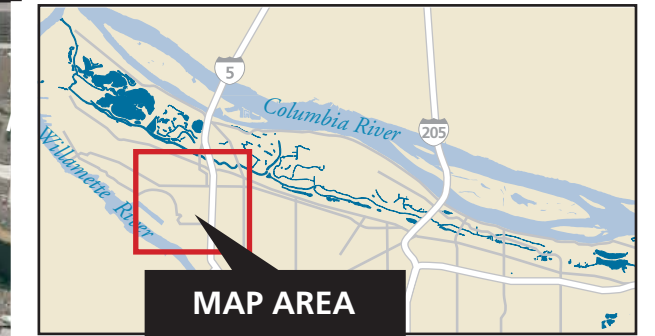
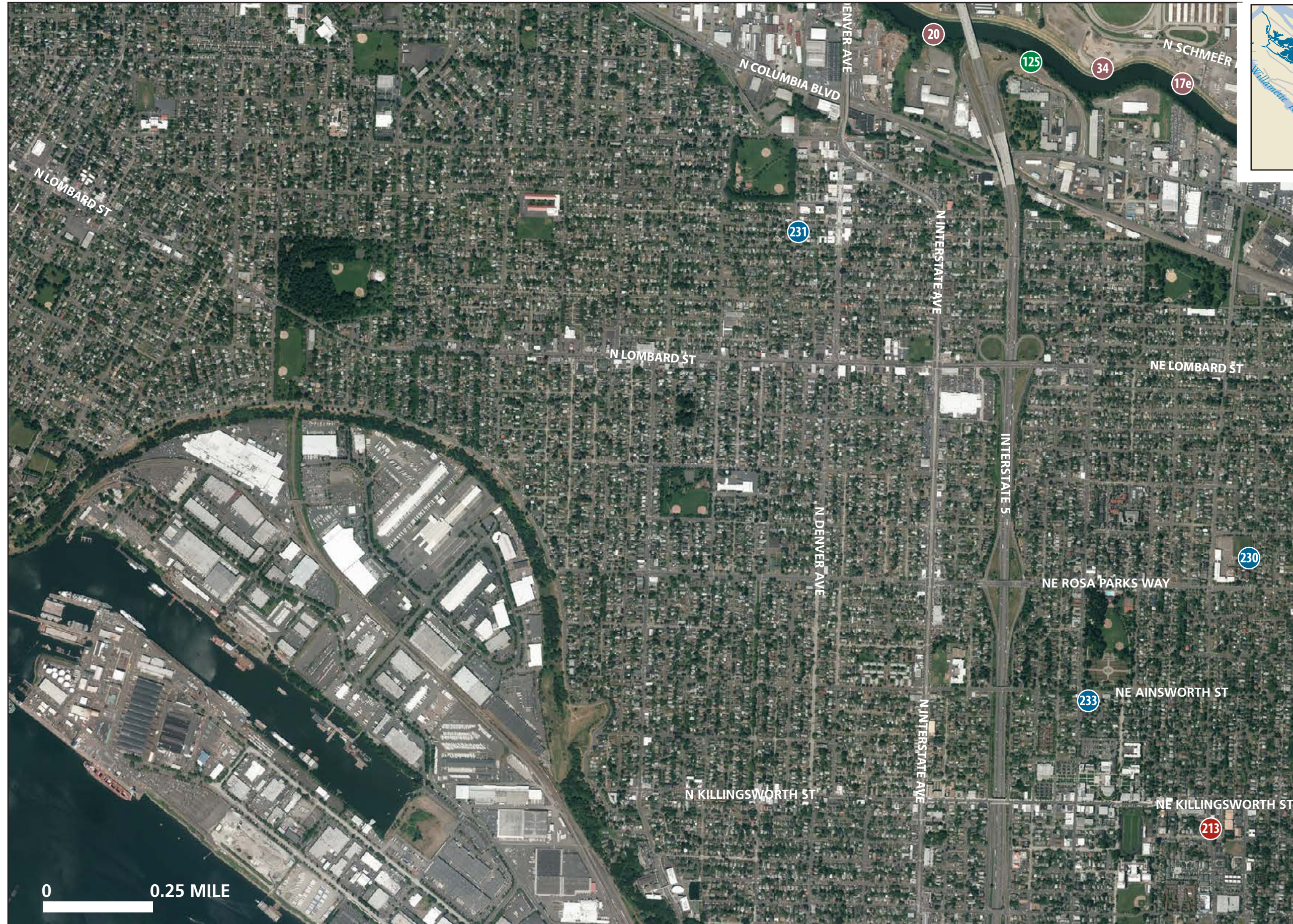




-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

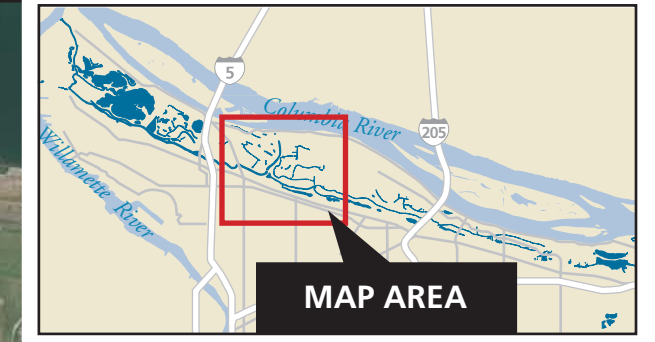


MAP-3



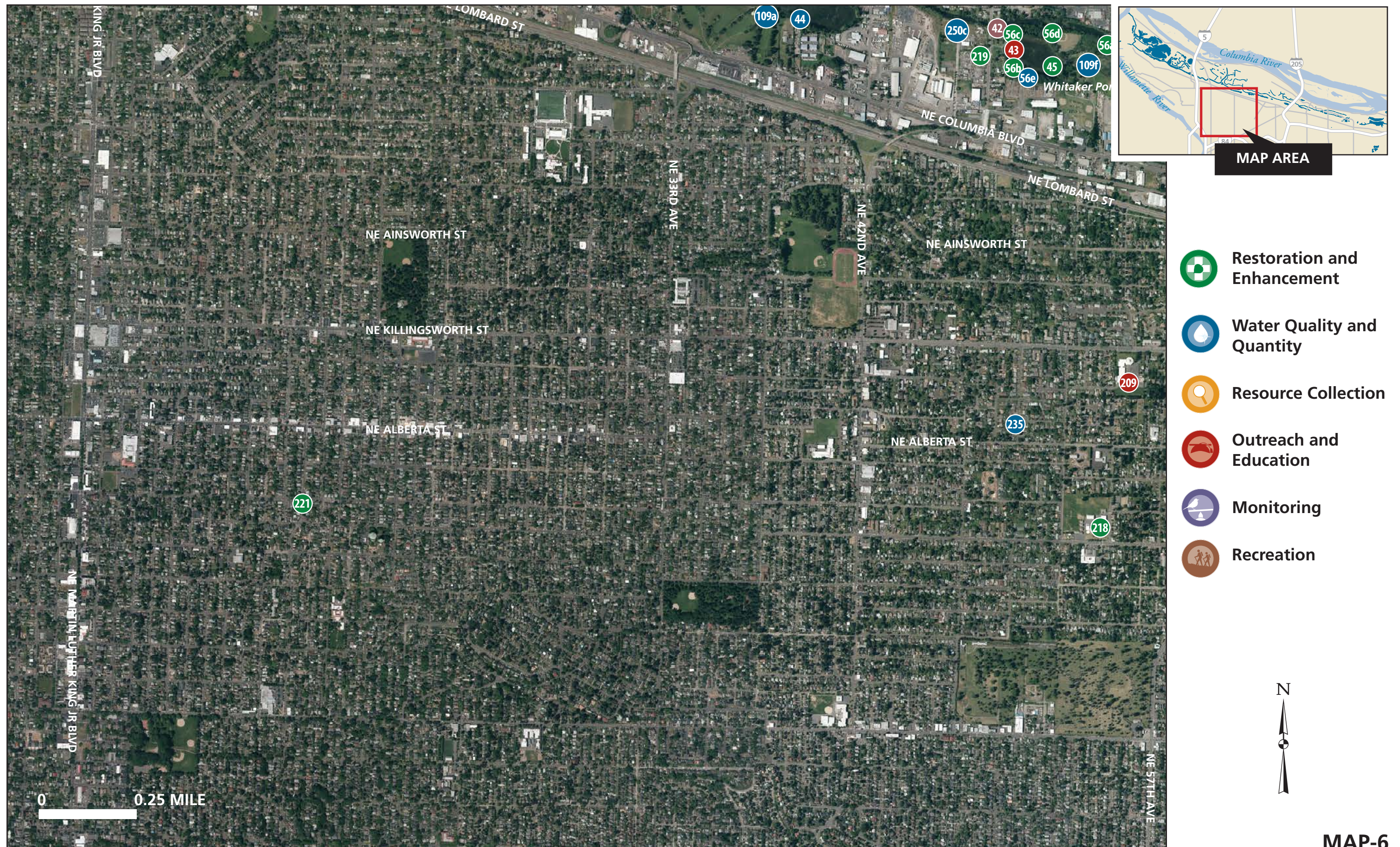
-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

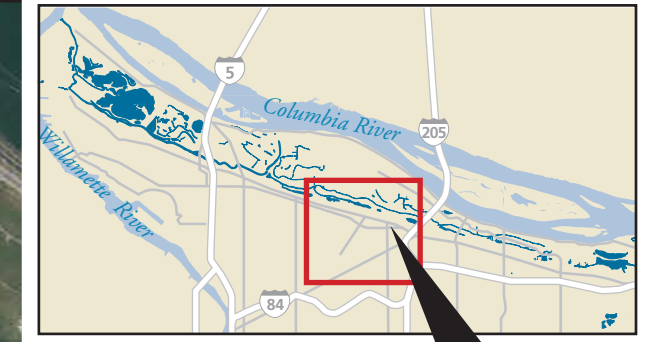
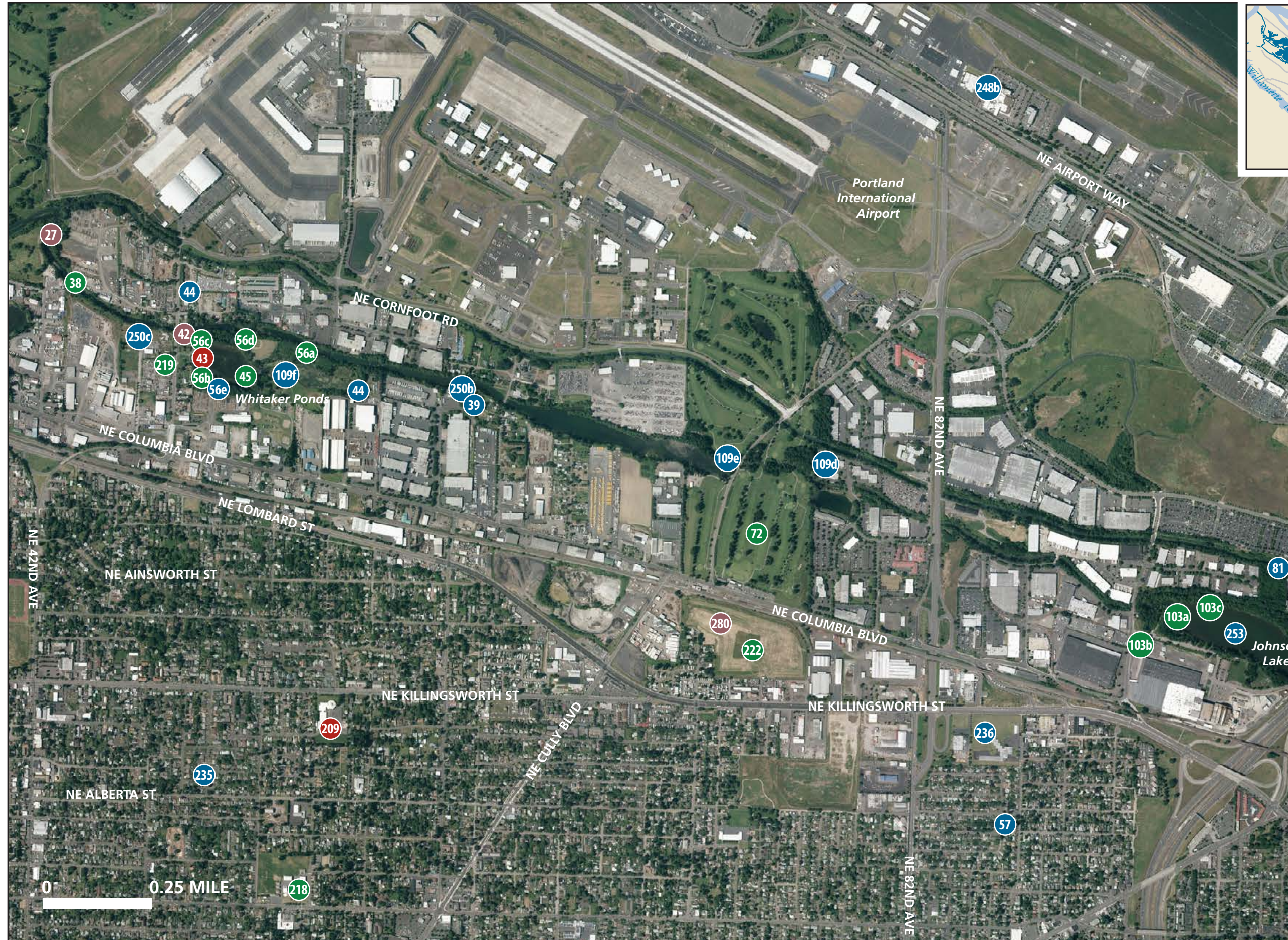




-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation





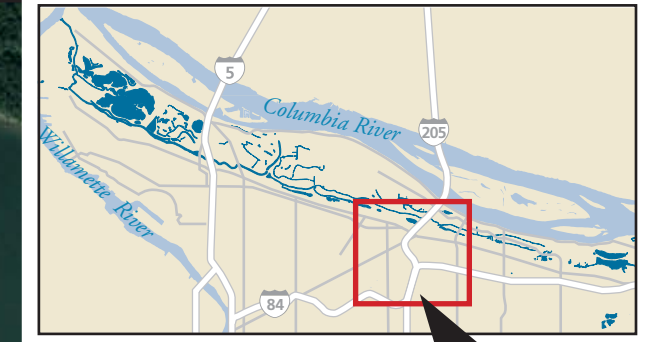
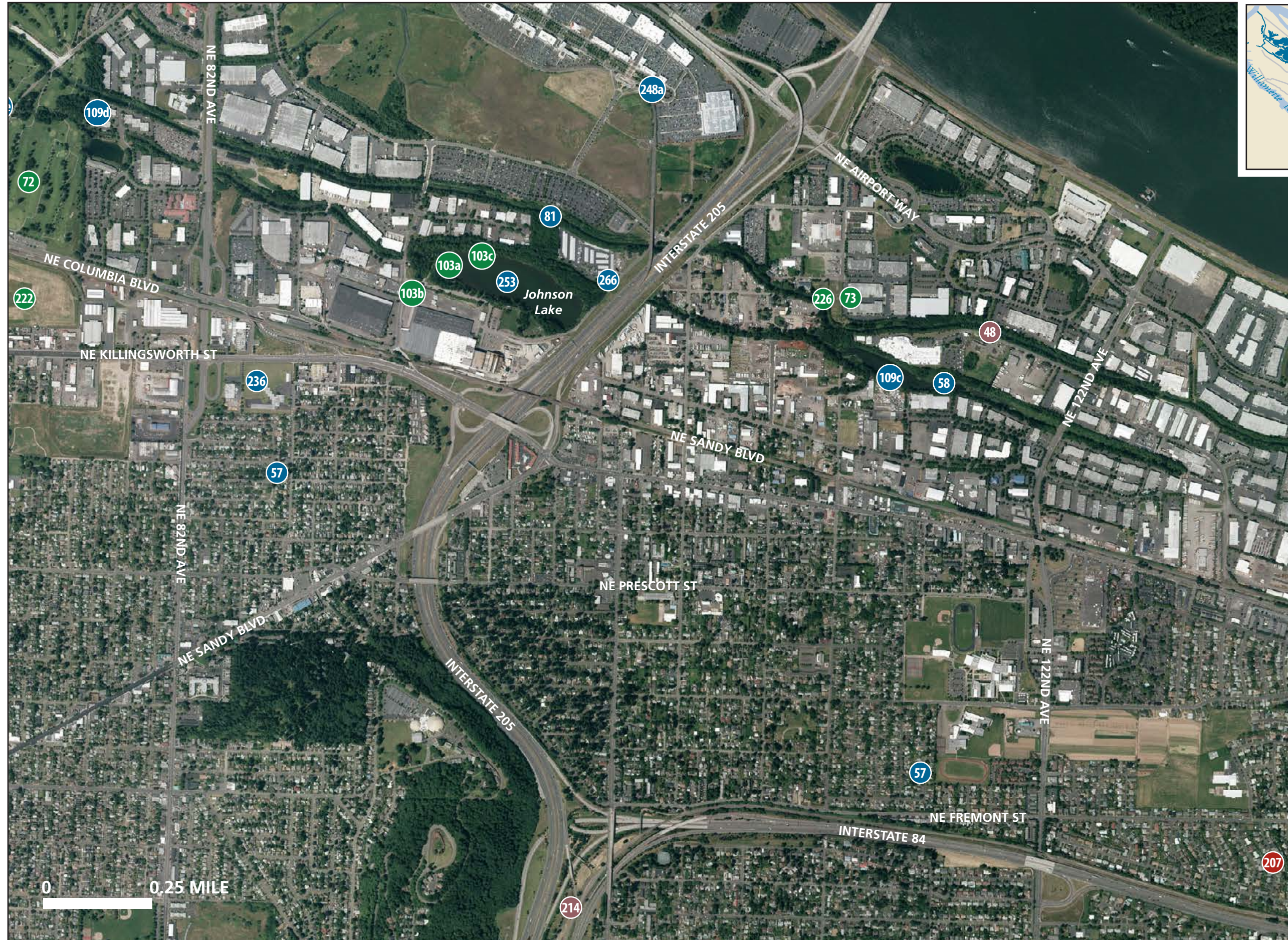


MAP AREA

-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation



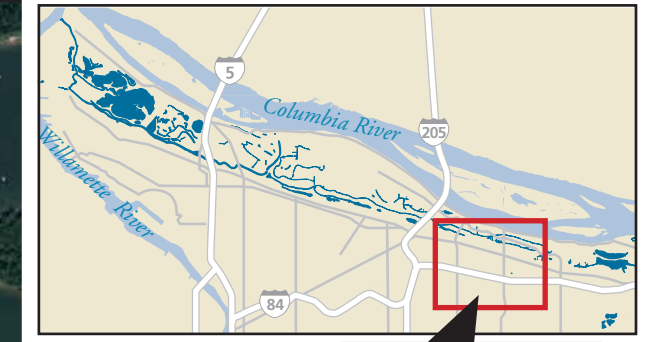
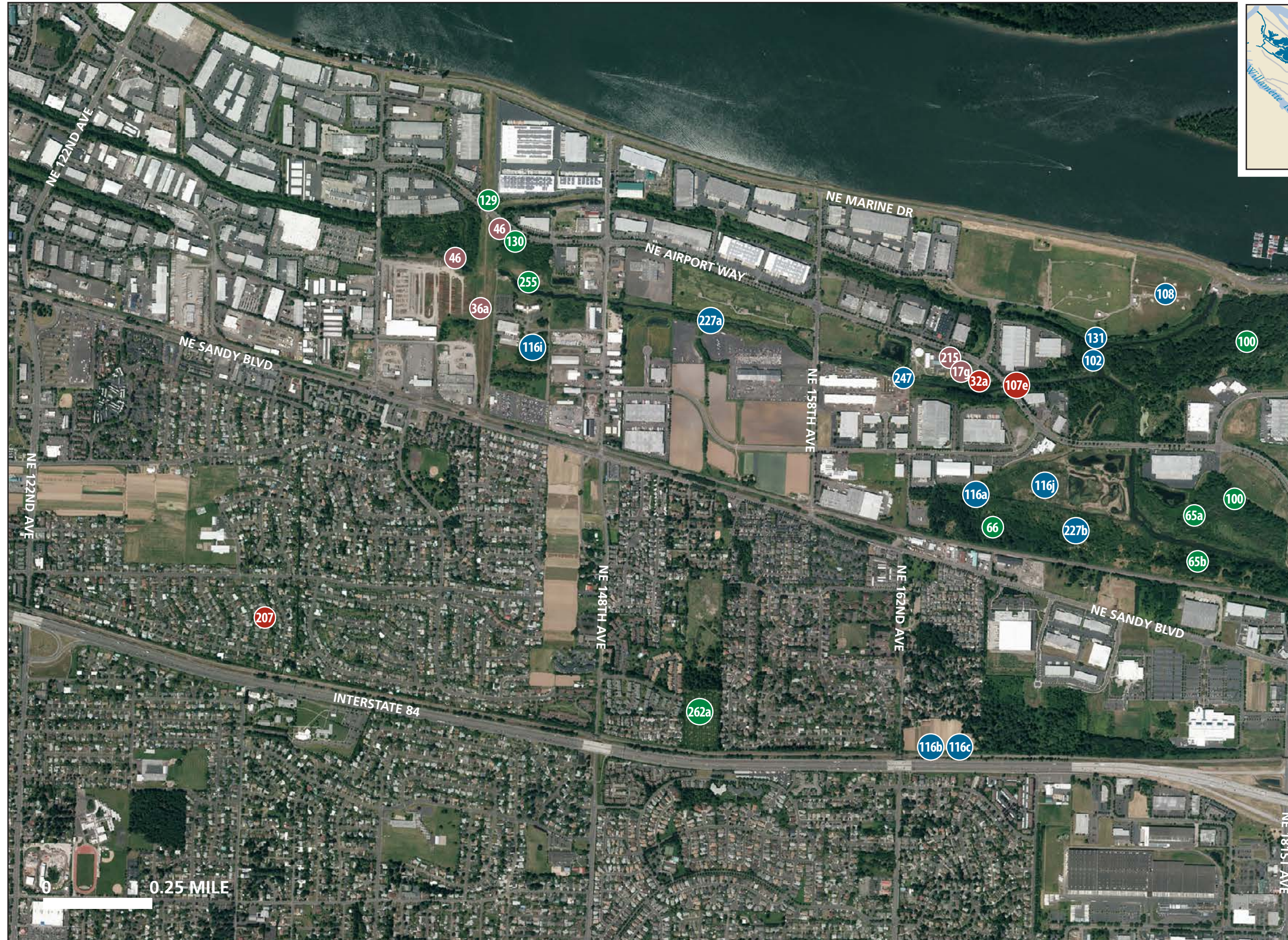
MAP-7



MAP AREA

-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

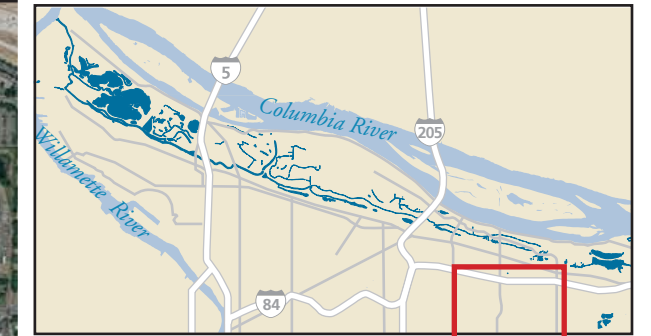
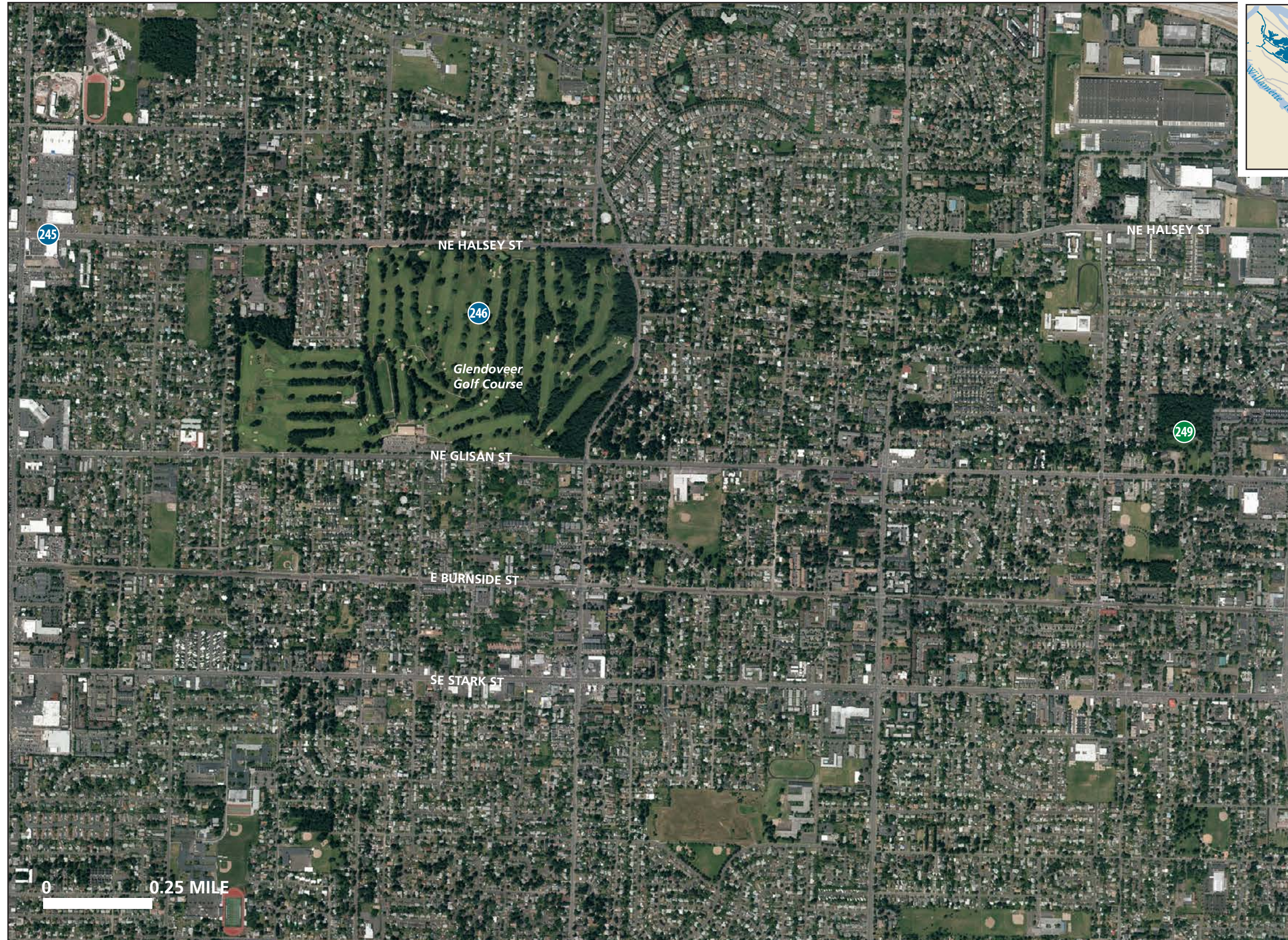




MAP AREA

-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

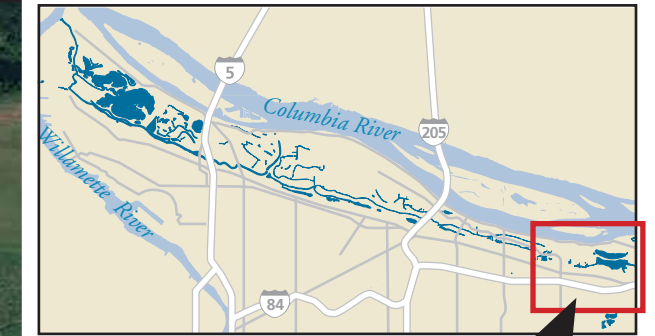
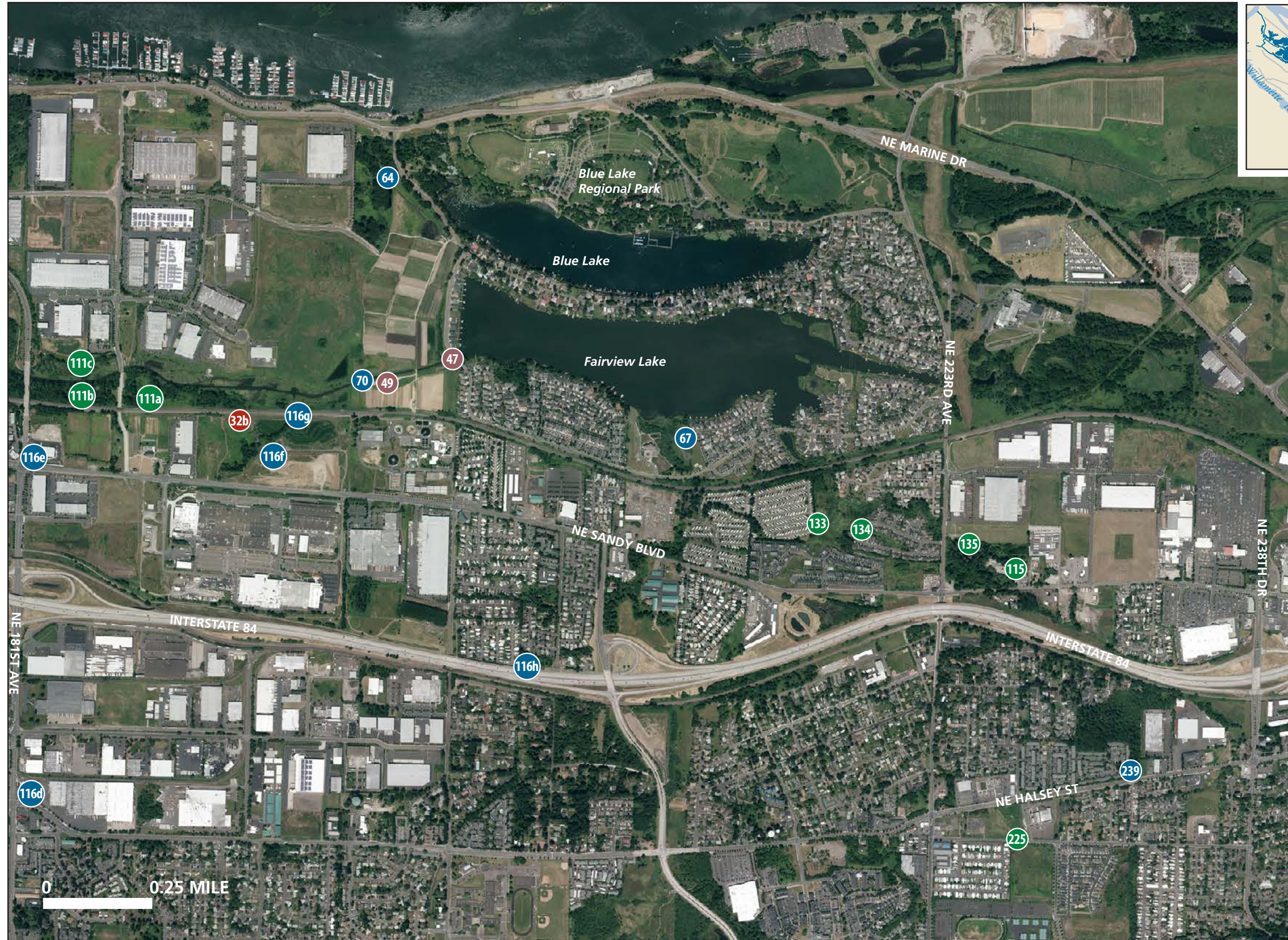




MAP AREA

-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation

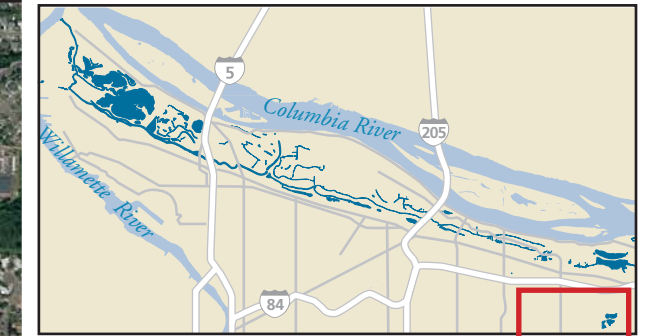
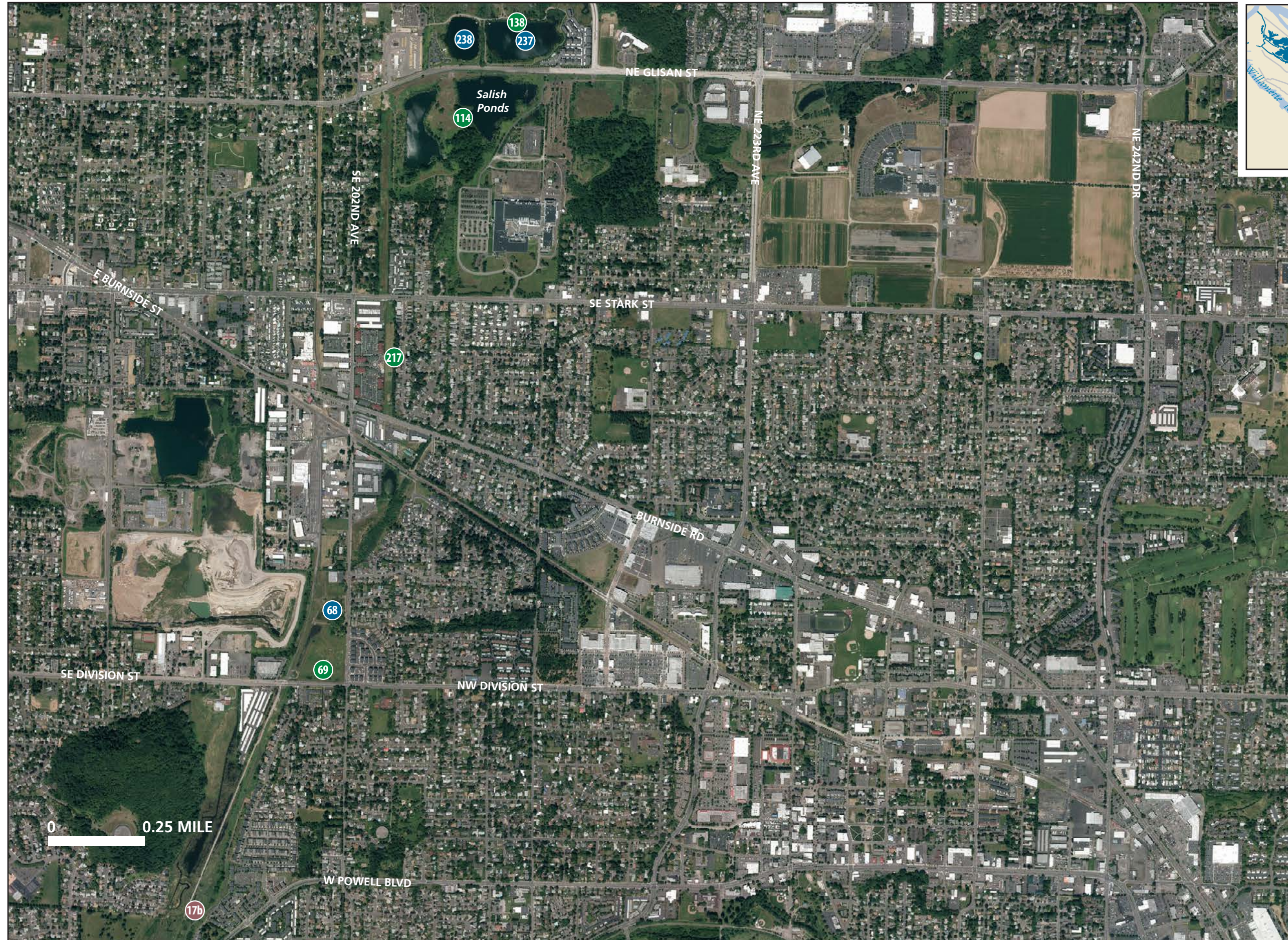




MAP AREA

-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation





MAP AREA

-  Restoration and Enhancement
-  Water Quality and Quantity
-  Resource Collection
-  Outreach and Education
-  Monitoring
-  Recreation



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