

River Plan / South Reach

EXISTING CONDITIONS REPORT

May 2018 – DRAFT



Bureau of Planning and Sustainability
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City of Portland, Oregon
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Acknowledgements

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I. INTRODUCTION

The Willamette River is a defining resource in the City of Portland and State of Oregon. Oregon Statewide Planning Goal 15, Willamette River Greenway, mandates jurisdictions along the Willamette River “protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River.” In 1987 the City of Portland adopted the *Willamette Greenway Plan* to manage the river and development along and adjacent to its shoreline.

Since then the City’s approach to planning for the Willamette River has evolved. After the development of a new vision and strategy for the entire river in *River Renaissance* (2001), *River Concept* (2006) established a process by which the City would complete updates to the *Willamette Greenway Plan* for three individual reaches, the North Reach, Central Reach and South Reach. This three-phase multi-objective approach allows for recognition of the unique character of each reach and ensures appropriate plans and regulations are developed to address those unique features. The South Reach retains the most undisturbed character of the three reaches, with its multitude of parks and open spaces, while also providing for a diversity of residential uses along the riverfront.

The River Plan / South Reach project will update the *Willamette Greenway Plan* for the City’s southern reach of the Willamette River by:

- Establishing a renewed vision for the area.
- Updating existing policies and regulations.
- Identifying implementation actions.
- Prioritizing future South Reach investments.

Map 1, 2017 Aerial, shows the River Plan / South Reach project boundary. The project area primarily includes the established Willamette Greenway boundary for the portion of the river/riverfront between the Ross Island Bridge and just south of the Sellwood Bridge (City limits) on the east side and from the southern boundary of the South Waterfront District south to properties in the unincorporated Multnomah County neighborhood of Dunthorpe on the west side. The Dunthorpe neighborhood is included in this project because the City of Portland and Multnomah County have an agreement by which the City provides land use planning services for urban unincorporated County areas adjacent to the City. The *Willamette Greenway Plan* applies also applies to this area.

This *Existing Conditions Report* is a compilation of current information that describes the South Reach project area and adjacent environs. This information is a starting place to understand the geography; its physical and other characteristics, issues and opportunities and help set direction for project work and plan development.

“Enhance the role of the Willamette River South Reach as fish and wildlife habitat, a place to recreate, and as an amenity for riverfront neighborhoods and others.”

- *Comprehensive Plan Policy 3.81*

II. CURRENT POLICIES AND PREVIOUS PLANNING

The River Plan / South Reach project builds on a variety of previous planning efforts and existing requirements. The project team will draw on the guidance, directives and actions included in these documents in planning for the South Reach. This section provides a summary of the key efforts that will serve to help shape the concepts and recommendations included in the final plan.

CITYWIDE PLANS

Willamette Greenway Plan

The *Willamette Greenway Plan* (1987) was adopted by the City to meet the statutory requirements of Statewide Planning Goal 15 Willamette River Greenway. It has a primary goal to protect, conserve, maintain and enhance the scenic, natural, historical, economic and recreational qualities of lands along the Willamette River. The Willamette River and the lands adjacent to it are unique and valuable natural resources which require special protection. The Plan addresses the quality of the natural and human environment along the river.

The major objectives of the *Willamette Greenway Plan* are:

- Restoring the Willamette River and its bank as a central axis and focus for the City and its neighborhoods and residents.
- Increasing public access to and along the Willamette River.
- Conserving and enhancing remaining natural river banks and riparian habitat.

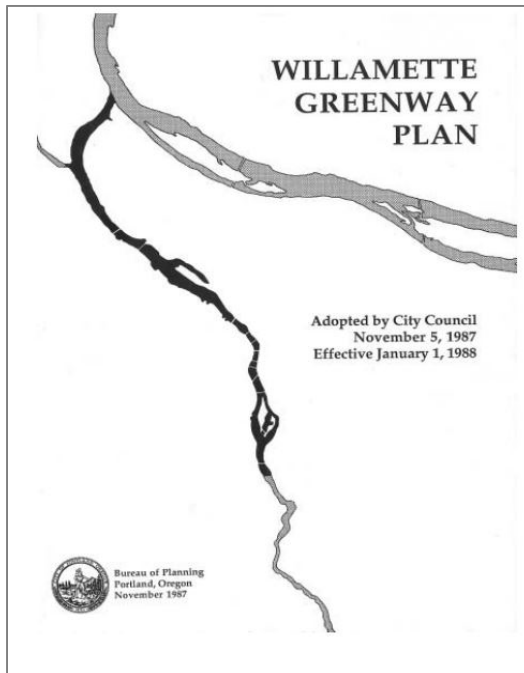
- Maintaining the economic viability of Portland's maritime economy for river-dependent and river-related industrial uses.
- Reserving land within the Greenway for river-dependent and river-related recreational uses.

In addition to the goal and objectives, the plan maps a greenway concept and includes relevant zoning code regulations and design guidelines. The River Plan / South Reach will update the *Willamette Greenway Plan* for the City's southern reach of the Willamette River.

The City adopted an updated inventory for the Willamette River Greenway in 2014. It replaces the riverwide inventory completed in 1987 and includes mapped and descriptive information on topics specifically cited in Statewide Planning Goal 15: Willamette River Greenway. The inventory details zoning, land uses, ownership, natural resource features and ranks, recreation and historic and cultural resources. The inventory serves to inform river planning projects and activities.

This River Plan / South Reach Existing Conditions Report and forthcoming Natural Resources Inventory will build upon the existing inventory, while providing up-to-date information for this reach.

Once completed, guidance in the River Plan / South Reach will replace relevant portions of the *Willamette Greenway Plan*.



2035 Comprehensive Plan

The *2035 Comprehensive Plan* was adopted by Portland City Council in 2016 and will go into effect in Spring 2018. It updates the original *Comprehensive Plan* completed in 1980 (and amended many times since), and guides future growth and development in Portland.

The *2035 Comprehensive Plan* defines “River Pattern Areas.” Two pattern area policies directly relate to the South Reach planning effort and its update to the *Willamette Greenway Plan*:

Policy 3.82 **Willamette River South Reach**. Enhance the role of the Willamette River South Reach as fish and wildlife habitat, a place to recreate, and as an amenity for riverfront neighborhoods and others.

Policy 3.83 **Willamette River Greenway**. Maintain multi-objective plans and regulations to guide development, infrastructure investments, and natural resource protection and enhancement within and along the Willamette Greenway.

The River Plan / South Reach will be consistent with and implement numerous relevant goals and policies that relate to urban form, design and development, environment and watershed health, public facilities and services, transportation, and land use and zoning.

The *Transportation System Plan* (TSP) is the transportation element of the *2035 Comprehensive Plan*; it was adopted by Portland City Council in 2002, updated in 2007 and is being amended in 2018. It includes transportation policies, plans, a financial plan, transportation projects with cost estimates and strategies and regulations for implementation.

It addresses unincorporated Multnomah County urban areas like Dunthorpe, which the City plans for per an agreement with Multnomah County. The TSP meets state and regional planning requirements. It strives for a balanced transportation system that supports neighborhood livability and economic development.

River Concept

The Portland City Council endorsed the *River Concept* in 2006, as a synthesis of policy direction for the Willamette River at that time. A primary purpose of the *River Concept* was to provide policy guidance for the River Plan, a three-phase multi-objective plan replacing the *Willamette Greenway Plan* (1987) for the river’s reaches.

The vision theme for the South Reach was “Neighborhoods and Natural Areas.” Key South Reach guidance is described below.

South Reach Vision

The South Reach will provide unique fish and wildlife habitat, parks and trails in the center of the city, easily reached from established neighborhoods.

Themes and Objectives

Clean and Healthy River

- Opportunities to protect, conserve and restore fish and wildlife habitat, including streams, wetlands, riparian areas and upland vegetation will be explored and implemented through public and private actions. In the south reach, restoration of Ross Island will result in the highest quality riverine habitat in Portland. Mitigation required of public and private parties will improve habitat functions.

- Stormwater quality and quantity will be managed at the source where practicable, using approaches that suit the site conditions and the type of development. In the south reach this will often be achieved through landscaping and pervious pavement.
- Innovative bank treatments and plantings that work for riverfront development and provide fish and wildlife habitat will be achieved through public and private investment.
- Riverfront and watershed actions achieved through public and private investments will improve water quality and help make the river swimmable.

- Transit and trail improvements in the South Waterfront and Macadam areas will provide strong connections to downtown and areas to the south.
- River access in the John's Landing and Macadam area will improve as areas along the riverfront redevelop.

Portland's Front Yard

- Access from the Brooklyn neighborhood to the river will be improved across McLoughlin Boulevard.
- Access from southwest neighborhoods to the river will be improved across Macadam and Barbur Boulevards.
- The riverfront south of the Ross Island Bridge will continue to offer a fully connected riverfront trail, water access, several riverfront parks, and natural areas.
- Existing gaps in the Willamette Greenway Trail will be completed. The existing trail will be upgraded to current standards as opportunities arise.

Prosperous Working Harbor

- Public improvements to truck routes such as McLoughlin Boulevard will enhance freight mobility.
- The river channel will be maintained to allow easy passage for barges and other river traffic.

Specific Area Guidance

Sellwood/Oaks Bottom

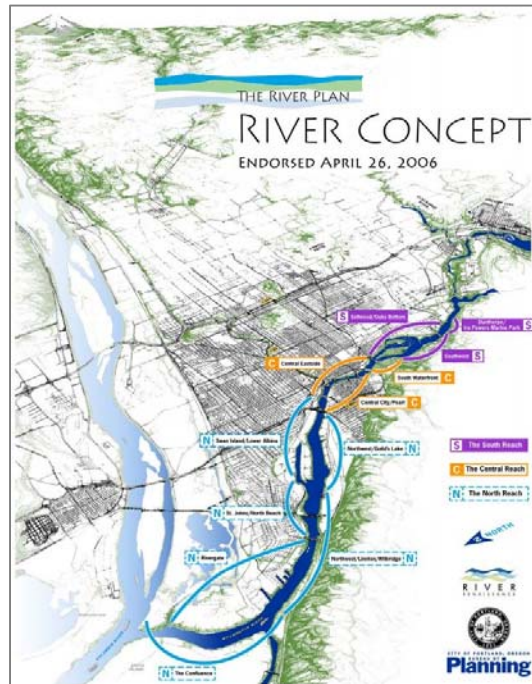
- Ross Island, once mined for gravel, will be transferred from private ownership into the City's open space portfolio.
- Continued restoration of Oaks Bottom and Ross Island will ensure they provide an oasis for bald eagles and other wildlife.
- Oaks Bottom is easily accessible from the riverfront and will be increasingly accessible from the bluff neighborhood of Brooklyn across McLoughlin Boulevard to viewpoints and trailheads leading to the river.

Vibrant Waterfront Districts and Neighborhoods

- Sellwood will continue to be a vibrant neighborhood with both natural areas and parks on its waterfront. Connection to the waterfront will be improved with the completion of the Springwater Corridor, a new Sellwood Bridge, and commercial activity at the bridgehead on Tacoma Street.

Vibrant Waterfront Districts and Neighborhoods

- Existing floating home moorages, marinas, water related business, and recreation will play an important role in the vitality of Portland's waterscape through the acknowledgement and support of the City and its partners.



- The Sellwood area offers opportunities for people to experience the river from trails, parks, picnic sites, beaches, docks, viewpoints, non-motorized boat launches, and from floating homes.

Southwest

- Access to the river will be improved through clearer connections, smoother trail surfaces, and places to sit.
- Willamette Park continues to be one of the most heavily used parks on the river, offering a motorized boat launch, playground equipment, an off-leash dog park, and lawns that support field sports. Ongoing restoration efforts will continue to add to its value in the region’s natural resource system.

Dunthorpe/Ira Powers Marine Park

- Dunthorpe, a residential area outside of the City of Portland, but within its planning jurisdiction, will remain a community of single-family homes on large lots with a prime riverfront location.
- The extensive tree cover and other natural vegetation contribute significantly to the natural resources in this reach of the river.
- The confluence of Stephens Creek with the Willamette and the Powers Marine Park area will remain important habitat areas that warrant continued restoration.
- Dunthorpe will connect to Portland neighborhoods to the north and east through trail improvements in Ira Powers Marine Park and improvements to the Sellwood Bridge.

Improved trail and transit options will better connect Portland with Lake Oswego.

Willamette River Recreation Strategy – Public Boating Facilities

The *Willamette River Recreation Strategy – Public Boating Facilities* (2012) offers a vision for Willamette River water-based recreation and strategies for enhancing river recreation, such as improvements to specific boat docks. The vision looks to increase Portlanders’ enjoyment of and direct experience with the Willamette River among other desires. Portland Parks and Recreation’s goals for Willamette River recreation are:

- Increase Portlanders’ enjoyment of, and direct experience with, the Willamette River.
- Bring people closer to the river to foster an improved understanding of river history, economy and ecology.
- Manage recreation in concert with other City priorities to secure a net improvement in river health by reducing or eliminating historic hazards for threatened fish and wildlife and protecting high-value habitat.
- Provide for safe, enjoyable and valuable on-water recreational experiences for all users.

The report includes a strategy for boating facilities in the South Reach and addresses short- and long-term improvements to the following South Reach public boating facilities: Willamette Park Boat Ramp, Sellwood Riverfront Park dock, Former Staff Jennings site, and SE Spokane Street Light Watercraft node. Some of these improvements have already been completed.



Public dock at Sellwood Riverfront Park.

Willamette Park Redevelopment and Phasing Plan

Completed in 2012, this plan developed a long-term concept and a short-term improvement plan to enhance this riverfront park. To date a number of changes have been implemented, including:

- Internal circulation and Greenway Trail improvements.
- Relocation of the off-leash dog park.
- Oak habitat restoration along on the western park boundary.
- Construction of a new sewer pump station and redesign of the south entrance (SW Miles Place).

Portland Watershed Management Plan

The *Portland Watershed Management Plan* (2006) describes the approach the City uses to evaluate watershed conditions and implement projects to improve watershed health. The goal is to protect natural resources, restore critical ecosystems, and implement stormwater solutions that integrate the urban area with the natural environment. The Plan characterizes conditions of the Willamette River and sets watershed goals and objectives for planning actions to restore watershed health. Two areas, Ross Island/Oaks Bottom and the Stephens Sub-watershed, are defined as Watershed Priority Areas.

NEIGHBORHOOD PLANS

Sellwood-Moreland Neighborhood Plan

The vision statement for the *Sellwood-Moreland Neighborhood Plan* (1997) foresees:

- The river's edge as an active corridor for a mix of residential, commercial and recreational uses, all co-existing with an improved fish and wildlife habitat.
- The bridgehead area links riverfront activity to SE Tacoma Street.
- The new Sellwood Bridge provides viewing turnouts and is a favorite place for bicyclists and pedestrians to traverse and enjoy the river.
- The restored health of Crystal Springs and Johnson Creek streambeds and connections to the Springwater Corridor and Willamette Greenway have brought more wildlife into the corridor.
- The north edge of Oaks Bottom with access to the Willamette Greenway Trail, provides natural getaways for residents of multi-story buildings.

The river's edge policy and associated objectives make it integral to the community by strengthening public access to the river, protecting Oaks Bottom Wildlife Refuge, preserving multiple views from the Sellwood Bridge, using the public areas near the river's edge to create community identity and supporting commercial

activity at the bridgehead that is compatible with river's edge resources and connects to Tacoma Street area commercial and residential development. For example, one action in the plan aims to attract more pedestrian-oriented uses at the river's edge south of Spokane Street.

The Environment and Greenspaces policy and associated objectives foster community care and respect for the environment by creating more opportunities for public interaction with the natural environment, protecting and preserving greenspaces and wildlife habitat, creating linkages between greenspaces and natural resource areas with corridors of natural plantings, guarding against inappropriate use and storage of toxic materials and pollutants, and connecting major trails through the neighborhood. Additionally, an action in the plan promotes the use of native plants in future development and rehabilitation efforts.

The transportation policy includes objectives to retain a bridge crossing that avoids increasing traffic capacity for a regional facility and to enhance or expand accessibility across the Willamette River for pedestrians, bicyclists and transit. A notable transportation action supports development of river access transportation (i.e., water taxis).

Brooklyn Neighborhood Plan

The *Brooklyn Neighborhood Plan* (1991) includes a section on the Willamette River, Ross Island and McLoughlin Boulevard. The plan identifies McLoughlin Boulevard as a "formidable barrier" between the neighborhood and the Willamette River. Other access constraints for residents accessing the river's edge including steep banks and dense plantings on the river bank.

The plan also identifies "Haig Park", undeveloped park land between the river and McLoughlin Boulevard, south of the SE Franklin Street alignment and north of the Haig Street alignment. Development of the Springwater Corridor Trail as the primary north-south pedestrian and bicycle greenway improved connectivity to this area.

Improved access to the riverfront has been a longstanding priority of the Brooklyn neighborhood. The Plan has policies, objectives and strategies to:

- Re-establish Brooklyn's access and historic link to the Willamette River.
- Advocate for the redevelopment of Ross Island as a natural area with limited public access through the creation of a master plan.
- Advocate development of pedestrian and bicycle routes between parks and other gathering places.
- Explore opportunities for the development of "Haig Park" located at the foot of Haig Street on the east bank of the Willamette.
- Support wildlife refuge status for Oaks Bottom.
- Support public and private actions that will contribute to the construction and improvement of the Greenway Trail as a link between OMSI and Oaks Bottom as required by the *Willamette Greenway Plan*.

Southwest Community Plan: Vision, Policies and Objectives

The *Southwest Community Plan* (2000) has designated the Willamette River Greenway as a special area. It seeks protection of the river and greenway through the *Willamette Greenway Plan*, its regulations, resolutions and visions. The Plan also seeks the completion of the Willamette Greenway Trail through the plan area and its connections to other Southwest bicycle and pedestrian routes.

Adopted Southwest Community Plan Comprehensive Plan/Zoning Map

Completed in 2001, the adopted Comprehensive Plan and Zoning map for the *Southwest Community Plan* area implements the 2000 vision, policies and objectives and designated properties on the west side of the Willamette River for residential, commercial and open space uses and development.

Macadam Corridor Design Guidelines

The Macadam Corridor parallels the Willamette River in Southwest Portland. Redevelopment of this area south of the Central City from industrial to mixed-uses was accelerated in the 1970s with the Johns Landing urban renewal project. This project, completed in 1985, sparked a new level of design and redevelopment considerations for guiding new development along and near this main transportation and commercial corridor, including its relationship to the Willamette River. Properties with a Design 'd' Overlay designation are required to address the design guidelines when a development application is submitted to the City.

The goals of the *Macadam Corridor Design Guidelines* are to:

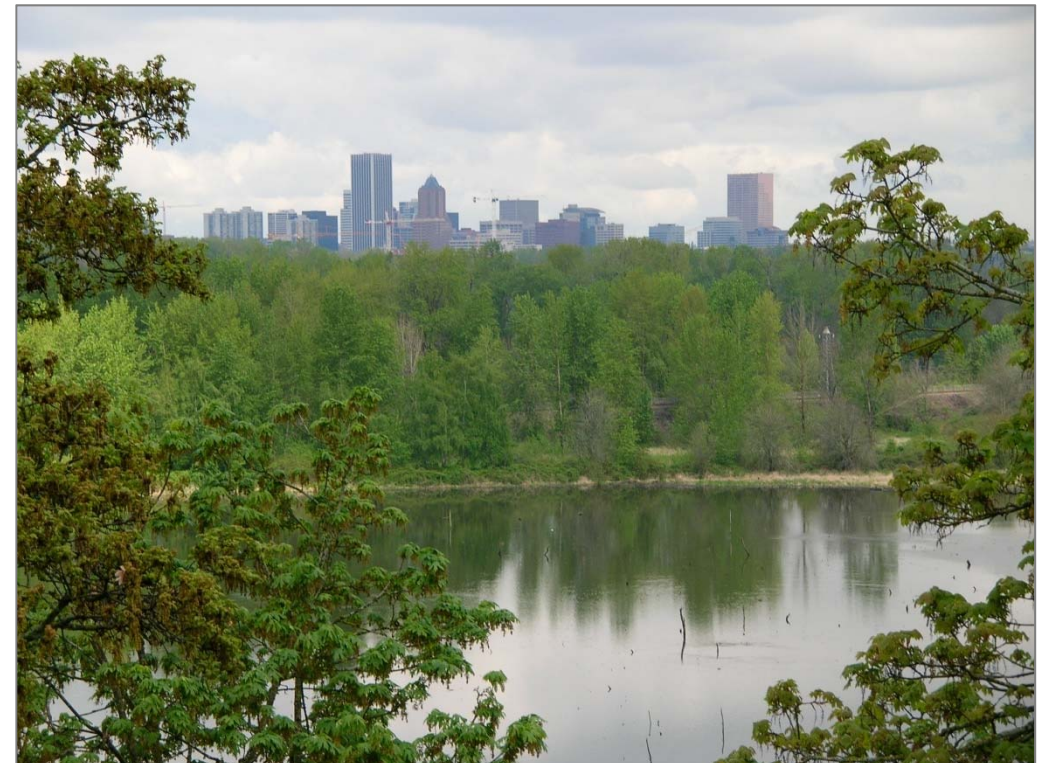
- Create and improve physical and visual connections between the river, Greenway Trail, Willamette Park and residential community west of Macadam.
- Encourage public opportunities for public use and enjoyment of the riverfront.
- Promote quality development that complements Macadam's landscape treatment.
- Require excellence in design projects through a mixture of uses and styles in scale with each other.
- Add to the scenic qualities of the river and the Greenway Trail.
- Promote compatibility with new development with the river, surrounding uses and neighborhood.

There are 8 specific guidelines that implement these goals. The Bureau of Planning and Sustainability is currently updating and improving design guidelines citywide through the Design Overlay Zone Amendments (DOZA) project. The over 30-year old *Macadam Corridor Design Guidelines* will be reviewed and updated as a part of the DOZA project.

OTHER RELEVANT EFFORTS

A number of additional past planning efforts provide important context for River Plan / South Reach and will inform the development of the plan. Below is a list of these efforts. More detail on each of them can be found in Appendix A.

- *River Renaissance Vision (2001) and River Renaissance Strategy (2004)*
- *Economic, Social, Environmental, and Energy Analysis and Recommendations for Natural, Scenic, and Open Space Resources within Multnomah County Unincorporated Urban Areas (2001)*
- *Oaks Bottom Wildlife Refuge Coordinated Resource Management Plan (1988)*
- *Oregon Dept. of Environmental Quality (DEW) Record of Decision Remedial Action for Ross Island Sand and Gravel (2005)*
- *Recreational Trail Strategy (2006)*
- *Willamette River Ferry Feasibility Study (2006)*
- *Water Recreation Report and Recommendations (2006)*
- *Portland Parks and Recreation Vision 2020 Plan (2001)*



View of downtown from the bluff east of Oaks Bottom Wildlife Refuge.

III. EXISTING CONDITIONS

A. HISTORY AND CULTURE

Prior to European settlement in the mid-19th century, the Willamette and Columbia rivers supported Native villages and fostered a vigorous trade network throughout the basin and beyond. The Willamette Valley was the traditional homelands for the Kalapuya peoples; a non-homogeneous tribal entity made up of multiple subdivisions loosely related by dialects. Their population is estimated at 9,000 at the time of white contact and dwindled to less than 1,000 after diseases like measles and small pox were introduced by settlers.

The Willamette River was a primary transportation corridor since it was easier to navigate in canoes than traversing through dense forests. In the South Reach, the relatively-flat riverfront area that is now Willamette Park was a popular location for Native Americans to camp during the salmon runs while en route from Wapato (or Sauvie) Island on the Columbia River to the Willamette Falls at Oregon City. Native Americans also hunted and collected native berries, nuts and other plants along the riverfront for sustenance, as well as medicinal and cultural purposes.

Portland was founded by European-Americans in the 1840s because of its deep-water moorage, location at the head of the ocean-going navigation on the Willamette River and link to the Pacific Ocean via the Columbia River. However, large sailing ships rarely ventured upriver of Portland because of their deep keels, the narrow river channels and winds. In its natural state, the river was a half-mile wide at Ross Island but only 9 feet deep.

Treaties between the tribes and US government executed in the 1850s resulted in the resettlement of many tribes to the Grande Ronde Agency and, subsequently, reservations. Many of these individuals ended up at the Siletz, Warm Springs and Yakama reservations. Frequently, descendants married into other tribes throughout the Northwest.

During the mid- and late-1800s, ferries connected the two river banks in the South Reach. In 1908 a steel cable was stretched between the two shorelines to allow the donkey-powered Sellwood Ferry to run across the river, until 1926 when the original Sellwood Bridge was opened in that location. The Ross Island Bridge and Sellwood Bridge were built the same year. Both bridges were completed by a world-famous engineer from New York City, Gustav Lindenthal. The original Sellwood Bridge was a narrow 28 feet in width with two travel lanes and a narrow 4-foot sidewalk on the north side. In recent decades the bridge deteriorated in structural safety; Multnomah County replaced the Sellwood Bridge with a new structure that opened for public use in 2016.

A few distinct communities developed along the riverfront area in the South Reach. In 1882 a real estate company purchased 321 acres of land from Reverend John Sellwood. The town of "Sellwood" incorporated on the east side of the river in 1883 but was annexed into the City of Portland just a decade later in 1893. In 1892, the first interurban electric rail line in the U.S. began passenger and freight services between Portland, Sellwood, Milwaukie and Oregon City. Agricultural products from towns were transported by trains to Portland along this route. The railroad line ceased passenger operations in the 1950s and freight service in the 1970s. The railroad right-of-way was purchased by a few public entities and became the Springwater Corridor Trail in the 1990s.

On the west side across the river from Sellwood, a boat landing was established in the 1850s where a wagon road from the Tualatin Valley ended. The location became known as Taylor’s Ferry, named after John A. Taylor, who made his home in the area. Another westside town called “Fulton” was developed by Robert R. Thompson, a ship owner and merchant who bought and developed 35 acres near Taylor’s Ferry. Examples of early businesses are Jones Lumber Company and a butcher shop.

North of Taylor’s Ferry and Fulton, but south of downtown Portland, on the west side of the Willamette was a primary location for immigrants to settle when they came to Portland. The multi-ethnic neighborhood was a first neighborhood for many Italian, German, Irish and Jewish immigrants.

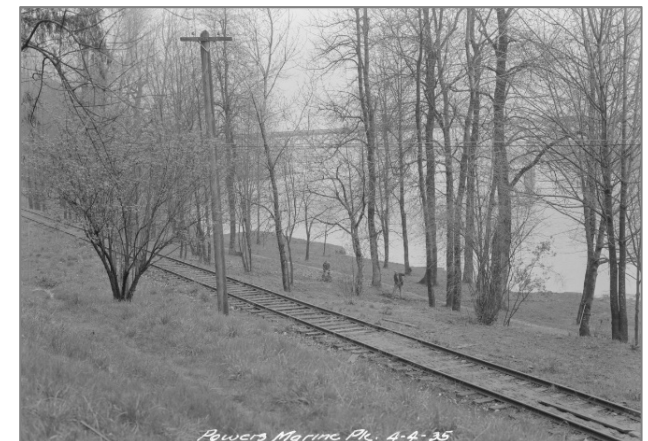
In the late 1800s, the William Ladd family purchased considerable real estate along the Willamette River four miles south of downtown Portland (known as Rivera-Dunthorpe). The Ladd, Corbett and Failing families together developed the bucolic Riverview Cemetery in this location, a place for prominent European-American families of Portland to be buried.

In 1916, William Ladd filed a 125-acre plat near Riverview Cemetery for Upper Dunthorpe residential development. Property deed requirements for each plat ensured an exclusive character of the development – minimum cost requirements for home construction and prohibition on non-white property ownership. Peter Kerr was another early developer in the Dunthorpe area. He built an estate with formal gardens and lived on Elk Rock until his death in 1957. His family gave the estate to the Episcopal Diocese and the gardens were preserved and can be visited by the public today. The gardens are known today as the Elk Rock Garden at Bishop’s Close.

A railroad line on the west bank of the Willamette riverfront and Macadam Road opened in 1887, encouraging industrialization of the flood plain. Factories including the Fulton tannery located in the riverfront area. Johns Landing is another westside location that was transformed with businesses. The area was named after B.P. John’s Furniture Company, located near SW Macadam Ave and SW Boundary St, which operated for 90 years before closing in 1977. Since that time, two developers, John Storrs and John Gray, transformed Johns Landing into a residential and commercial neighborhood.

The South Reach area in the late 1800s was largely settled with factories, houseboats and worker cottages. Along the river on the west side, some houseboats washed up on the river bank in 1894 after a large flood. The houseboats remained after the river receded and became known as the Miles Place colony. These homes transformed over time to withstand flooding. Early homes were also built on nine continuous blocks of residential lots between Nevada and Carolina streets. In Sellwood, worker housing developed in part for families of individuals who worked at the nearby red brick electric car barns (terminal point for electric interurban railroad service).

The late 1800s and early 1900s brought the establishment of the Portland Rowing Club and Oaks Amusement Park; two significant recreation facilities on the Willamette River. The Portland Rowing Club is the oldest private rowing club west of the Mississippi River, founded in 1879. The facility includes boat slips and floating home moorages in addition to boathouse facilities and boat storage for nonmotorized vessels.



Historic photo of Powers Marine Park, 1935.

Ross Island was originally made up of four islands: Ross, Hardtack, East, and Toe. The islands have long attracted attention as a destination. Sherry Ross settled on the approximately 400-acre collection of islands in 1850. Mrs. Ross took over the land claim after her husband's death in 1867. Ownership changed to John Kierman in 1908. In 1912 and again in 1924, the island was proposed as a City park site. In 1926 the Ross Island Sand and Gravel company was

formed and acquired a long-term lease from the City. The City allowed the company to construct a tramway with hoppers to service the sand and gravel bunkers on Hardtack Island.

OAKS AMUSEMENT PARK

Location: Eastside of the Willamette River; north of the Sellwood Bridge.

Area: Approximately 44 acres

Park Activities:

- Midway with games
- Two dozen rides
- Dance hall
- Year-round roller skating rink with a pipe organ
- Picnic grounds.



Description: Oaks Amusement Park is a privately owned and operated amusement park that opened in 1905. This Portland treasure is one of the oldest operating amusement parks in the country and was historically known as the “Coney Island of the Northwest”. The Oaks purchased park benches, a gazebo, an amusement ride and lamp posts from the Lewis & Clark Exposition after it closed in 1905. The electric interurban railroad had a passenger stop at Oaks Amusement Park until the 1950s.

The park formerly included a swimming pavilion and bathhouse on the river.

Notable flooding of the amusement park occurred in 1948 (Vanport flood) and in 1996 (Willamette Valley flood). The flood of 1948 prompted the owner to rebuild the skating rink to withstand future flooding.

Historic Resources

Map 2, Historic Resources, highlights designated and inventoried historic resources within and near the South Reach area. There are three National Register resources within the project area, all on the east side of the Willamette River:

- **Johan Poulsen House (1891)** – Three story Queen Anne Style mansion in the Brooklyn neighborhood.
- **Herschell-Spillman “Noah’s Ark” Carousel (1913)** – Oaks Amusement Park carousel with hand-carved animals by the Herschell-Spillman Company.
- **St John’s Episcopal Church (1851)** – Oldest church building and first Episcopal church in Oregon. Moved from Milwaukie, OR, to Oaks Pioneer Park in 1969, avoiding demolition. Also known as Oaks Pioneer Church.



Historic photo of view of the original Sellwood Bridge from the western shore of the Willamette River.

There are also structures on the east side of the river listed in the 1984 Historic Resources Inventory, including a few homes, the Ross Island Bridge and Oaks Amusement Park.

A few structures east of the South Reach project area have historic significance to Portland’s African American history (see Map 2). This information is from *Cornerstones of Community: Buildings of Portland’s African American History*, completed by the Bosco-Milligan Foundation Architectural Heritage Center in the late 1990s.

HISTORY & CULTURE ISSUES TO BE EXAMINED FURTHER

1. Potential for Native American and cultural landmark identification along the river. This could take the form of art, educational markers and/or other displays.

B. DEMOGRAPHICS

Communities in and adjacent to the South Reach study area are predominantly comprised of white individuals who speak English. These communities are also characterized by higher incomes and lower poverty rates, when compared to the City of Portland as a whole.¹

Individuals

It is estimated that a total of 1,905 people lived within the South Reach study area in 2015. These individuals reside in the mix of single-family and multi-family residential developments located on both sides of the Willamette River, as well as the floating home communities on it. Of this total, 102 school-age children reside in the study area, representing 5.3 percent of the South Reach population. This percentage is significantly less than the City of Portland as a whole, where approximately 14 percent of the population is school-age children. Approximately 20 percent (368 people) of the South Reach population are 65 years or older. This percentage is significantly higher than the City as a whole, where 11.3 percent of the population is in this age group.

Census Block Groups that intersect South Reach study area are also characterized by a highly educated population. Most Census Block Groups around the South Reach are characterized by individuals with at least a Bachelor's degree. Over 50 percent of the individuals in

all of the Census Block Groups to the west and most of the Block Groups on the east side exceed the 50 percent threshold for a Bachelor's degree. This is almost double the citywide achievement of a Bachelor's degree (27.2 percent) in 2015.

As stated above, English was the primary language spoken by almost all the population of the South Reach in 2015. Based on responses to ACS surveys, less than one percent of people in the South Reach are estimated to speak English either "not well" or "not at all".

The proportion of individuals living below the poverty level within the South Reach was also significantly lower than the City as a whole in 2015. In the South Reach, it is estimated that 10.5 percent (194 individuals) of the population earned an income below the poverty level in the 12 months prior to 2015. This percentage is substantially lower than the 18.0 percent of the City of Portland estimated to earn an income below the poverty level during that same period.

In addition to individuals' income related to the poverty line, a second metric that is often used to determine whether a family is taking on an excessive financial burden is an evaluation of the family's income compared to Portland's median family income (MFI). The City of Portland commonly uses an income at or above 80 percent MFI as a proxy for the minimum income needed to pay living expenses. A low percentage of families on the west side of the river earn less than 80 percent of MFI, while a slightly higher percentage of families on the east side fall into this category.

¹ It should be noted that data for specific areas within the South Reach study area are not readily available. Population and demographic data is generally collected and estimated by the Federal government at the Census Block Group level for both the Census (every 10 years) and American Community Survey (ACS) (estimated annually). Therefore, some analysis and

assumptions are needed to estimate the proportion of the Census Block Group population that resides within the South Reach project area. City staff utilized the proprietary algorithms that are a part of ArcGIS Business Analyst to estimate the share of the population within the study area.

Workers in the South Reach generally utilized alternative transportation or worked at home at higher rates than other areas of the city. An estimated 22.9 percent of South Reach residents commuted via public transportation or a bicycle in 2015. This compares to less than 20 percent for the citywide population.

Similarly, 7.4 percent of South Reach residents walked to work, compared to 5.9 percent for the entire city. This high utilization of alternative transportation options is likely a result of the close proximity of the South Reach to Downtown Portland. An additional nine percent of the South Reach working population is estimated to work from home, compared to an estimated 7.4 percent for the city as a whole.

Table B-1. Estimated Racial and Ethnic Composition¹

Population Characteristic	Number	%	City %
Total	1,965	100.0	100.0
White alone	1,719	87.5	77.7
Asian alone	114	5.8	7.6
Black alone	18	0.9	5.7
American Indian alone	13	0.7	0.7
Pacific Islander alone	4	0.2	0.6
Some other race alone	18	0.9	2.5
Two or more races	79	4.0	5.2

¹ ArcGIS Business Analyst (<http://www.esri.com/software/businessanalyst/get-started/saas>) 2017 estimates building upon 2010 Census data and trends.

In contrast to the data described above, which focused on 2015 estimates, 2017 estimates were used to characterize the racial and ethnic composition of the South Reach. As shown in Table B-1, a majority (87.5 percent) of South Reach residents are classified as white. The second largest group are Asian residents, which make up 5.8 percent of the South Reach population. African-Americans, American Indians and Pacific Islanders each represent less than one percent of the South Reach population. Individuals of mixed racial/ethnic make-up are estimated to comprise four percent of the population.

To characterize these key indicators of vulnerability, the City of Portland uses a measure of “Vulnerability Risk”, which includes the collective ranking of the following factors: (1) Renters; (2) Communities of color; (3) Educational attainment; and (4) Households with income at or below 80 percent of median family income (MFI) for the city. Map 3, Vulnerability Risk, depicts the vulnerability risk of communities in and adjacent to the South Reach project area.

Households

In addition to individual estimates, the Census and ACS also evaluate household characteristics. These estimates can be useful to understand community issues and dynamics, more generally.

Using the ArcGIS Business Analyst estimates for 2017, the average household size within the South Reach study area is 1.79 persons. Median household income for this area in 2017 is estimated to be \$71,937. Approximately 12.8 percent of households in the South Reach are estimated to earn over \$150,000 (or more than double the area’s median household income).

A broader range of household characteristics in the South Reach have been estimated for 2015. These estimates are shown in Table B-2. Non-family households represent almost 60 percent of the households in the study area. Roughly 10 percent of South Reach households include a child 18 years old or younger, while almost 29 percent of households include an individual over 65 years of age. Additionally, individuals with a disability reside in approximately 20 percent of South Reach households.

Household data for 2015 provided in Table B-2 further reinforce the comparatively low percentage of low-income individuals in the area. Approximately 10 percent of households earned an income below the poverty level for the previous 12 months. A similar percentage utilized Supplemental Nutrition Assistance Program (SNAP) (also known as food stamps) during that time. Less than one percent of households in the South Reach received public assistance, a very small number when compared to the city as a whole (4.1 percent).

Table B-2. Household Demographic Characteristics

Household Characteristic	Number ¹	%	City, %
Total	1,095	100.0	100.0
Non-family ²	655	59.8	49.2
With one or more children (<18 yrs)	112	10.2	22.8
With individuals 65+ years old	317	28.9	20.2
With 1+ persons w/disability	223	20.4	12.9
Below poverty level (last 12 months)	113	10.3	17.8
Receiving public assistance (last 12 months)	8	0.7	4.1
With food stamps/Supplemental Nutrition Assistance Program (SNAP)	116	10.6	19.5

¹ American Community Survey (2010-15) estimates generated for the study area by ArcGIS Business Analyst (<http://www.esri.com/software/businessanalyst/get-started/saas>).

² “Non-family” includes households of individuals living alone or with non-relatives only.

C. Land Use and Zoning

Each reach of the Willamette River is unique in its land uses and zoning composition. The South Reach is distinctive from the North and Central reaches in that it is predominantly defined by natural resources, parks and open spaces, and residential uses of varying densities and character. As such, the South Reach offers more opportunities for recreational activities, both on land and in water, while also providing a key habitat corridor for fish and wildlife. In general, land uses within the River Plan / South Reach project area are subject to regulations aimed at limiting potential impacts on the river by ensuring appropriate development within and adjacent to the Willamette River Greenway overlay.

This section provides a summary of the South Reach’s existing land uses and zoning designations.

Land Use

The River Plan / South Reach project area comprises approximately 1,612 acres, approximately 55 percent (8,947 acres) of which is water. A map of land uses within and adjacent to the study area can be found in Map 4, Land Use.

As shown in Table C-1, the most prevalent existing land use in the remaining 718 acres is recreation and open space. Recreation and open space cover approximately 305 acres, or 42.5 percent of the land area. Industrial uses represent the second largest land use category, with the Ross Island Sand and Gravel Co. (RISG) making up more than 95 percent of that total. Most of that acreage is comprised of land RISG owns on Ross Island. In-water mining activities ended on the island in 2001. Industrial processing of

aggregate materials is ongoing. The remaining industrial uses are located along Macadam Boulevard.

A mix of residential use types represents another portion of land uses in the South Reach (see Table C-1). Collectively, residential uses cover approximately 140 acres in the study area. A total of 241 tax lots are dedicated to single-family residential uses and the lots cover over 75 acres. Multi-family residential units – both apartments and condominiums – are common along the western side of the Willamette River, comprising over 50 acres.

In addition to land-based residential uses, the South Reach also offers the opportunity to live in a floating home. Approximately 90 floating homes have been established in three marinas in the South Reach. This is the only area for floating homes on the Willamette River in the city, creating a unique character in this stretch.



The South Reach is the only area on the Willamette River with floating homes.

Table C-1. Land Uses in the South Reach

Land Use, General	Tax Lots	Acres
Recreation/Open Space	77	305.12
Residential	279	140.14
Single-family residential	242	75.52
Floating homes	3	13.46
Multi-family residential (condos)	14	40.91
Multi-family residential (apts)	20	10.24
Industrial	16	136.51
Commercial (incl. vehicle-related)	58	77.47
Institutional	10	8.70
Vacant	81	21.85
Other	35	23.24
No Data	4	5.23
TOTAL	560	718.26

The City of Portland Zoning Code establishes that no new floating homes or structures are allowed on the Willamette River without a Greenway Goal exception. Meeting the approval criteria for a Greenway Goal exception is very challenging.

Commercial uses, primarily located along Macadam Boulevard, represent the final sizeable land use in the South Reach. Commercial uses cover over 77 acres, which represent approximately 11 percent of the land area in the area. These commercial uses include a mix of neighborhood-serving and regionally-focused businesses.

Zoning

A base zone designation is applied to every parcel of land within the City and establishes the uses and development types allowed on a parcel. As shown in Map 5, Adopted Zoning, the zoning designations in the South Reach follow a similar pattern to the existing land uses. The Open Space zoning designation makes up the majority in the study area, with almost 58 percent of the land area. Single-family and multi-family residential zoning cover most of the remaining area, covering a total of 201 acres (28 percent of the land area) (see Table C-2). These zoning designations range from low density zones, such as Residential Farm/Forest and Residential 20,000 (R20), to higher density multi-dwelling zones, such as High Density Residential (RH).

Mixed use zoning is applied in areas expected to have more activity throughout the day by encouraging the incorporation of commercial and residential uses. The Commercial Mixed Use 2 (CM2) zone, which makes up most of mixed use zoning in the study area, is focused along Macadam Boulevard and the east end of the Sellwood Bridge. The Commercial Mixed Use 1 (CM1) zone has been applied to a small number of additional parcels. Buildings in the CM1 zone are expected to be of a slightly smaller scale, when compared to those in the CM2 zone.

Commercial Employment (CE) and Employment General 2 (EG2) comprise the remainder of the South Reach study area. These zones aim to support the preservation and expansion of employment within the study area.

Overlay Zones

Overlay zones are applied to individual parcels in addition to the base zone to account for unique aspects and priorities within a given area. A given parcel may have overlapping overlay zones applied in addition to the base zone, depending on the variety of considerations in the area. When an overlay zone regulation is different than the requirements of the base zone, the overlay zone requirements take precedence and must be met.

As shown in Map 6, Overlay Zones, and Table C-3, a range of overlay zones exist in the South Reach. As stated previously, greenway overlay zones are focused on areas adjacent to the Willamette River and implement Statewide Planning Goal 15, Willamette River Greenway. Greenway overlay zones aim to protect and enhance the unique qualities of the Willamette River, including natural and scenic amenities, recreation, and others, as well as providing for public access to the river and ensuring continued water quality. Greenway overlay zones applied in the South Reach are described below:

- **River General (g)** – Allows for uses and development that are consistent with the base zoning, allow for public use and enjoyment of the waterfront and enhance the river’s natural and scenic qualities.
- **River Natural (n)** – Protects, conserves and enhances land of scenic quality or of significant importance as wildlife habitat.

Table C-2. 2035 Comprehensive Plan
Zoning Designations

Zoning Designation	Acres
<i>Single-family</i>	
Residential 2,500 (R2.5)	3.82
Residential 5,000 (R5)	27.62
Residential 10,000 (R10)	0.65
Residential 20,000 (R20)	66.69
Residential Farm/Forest (RF)	43.38
<i>Multi-family</i>	
High Density Residential (RH)	19.82
Residential 1,000 (R1)	38.32
Residential 2,000 (R2)	0.95
<i>Commercial & Mixed-use</i>	
Commercial Employment (CE)	10.52
Commercial Mixed Use 2 (CM2)	56.77
Commercial Mixed Use 1 (CM1)	9.41
<i>Employment</i>	
General Employment 2 (EG2)	25.84
<i>Open Space</i>	
Open Space (OS)	414.48
TOTAL	718.26

- **River Recreational (r)** – Encourages river-dependent and river-related recreational uses that provide a variety of public access opportunities to and along the river and enhances the river’s natural scenic qualities.
- **River Water Quality (q)** – Protects functional values of water quality resources by limiting or mitigating the impact of development in the setback. The (q) overlay zone overlaps other greenway overlay zones.

Specific development standards have been adopted by the City to achieve the goals of each greenway overlay zone. These development standards are applied with new development and redevelopment projects. The standards address allowable uses within the overlay zone, required setbacks, the maximum floor-to-area (FAR) ratio, the design of public trails, and other considerations. A sample of the greenway overlay zones’ development standards is provided in Table C-4.

In addition to greenway overlay zones, environmental overlay zones have been applied to a number of parcels in the unincorporated Multnomah County pocket at the south end of the study area. These overlay zones recognize the connections of riverfront properties to habitat adjacent to the Willamette River. The Environmental Conservation (c) overlay zone makes up the large majority of these zones (Table C-3). Environmental overlay zones have not been applied on City of Portland properties also subject to Greenway overlay zone regulations.

Scenic and design overlays represent the final two key overlay zones in the study area. The Scenic Resource (s) overlay zone is used to ensure the effective implementation the policies of Portland’s Scenic Resources Protection Plan (1991). It identifies where specific

development standards for view corridors and scenic corridors are applied in relation to new development or redevelopment. There are approximately 76 acres of land in the (s) overlay zone in the South Reach.

The Design overlay zone (d) is applied on approximately 30 percent of the land area in the South Reach. The Design Overlay Zone is applied to areas where the design character of new development and site alterations is of special concern. In the South Reach, the zone is used to ensure appropriate development within the Macadam Plan District, located to the west of the Willamette River, and selected portions of the Sellwood neighborhood.

Table C-3. Overlay Zones in the South Reach

Overlay Zone	Acres
Greenway	
River, General (g)	306.45
River, Natural (n)	388.42
River, Recreational (r)	92.36
River, Water Quality (q)	511.25
Environmental	
Protection (p)	13.88
Conservation (c)	54.07
Scenic (s)	77.59
Design (d)	211.99
Alternative Design Density (a)	33.54
Buffer (b)	18.59

LAND USE & ZONING ISSUES TO BE EXAMINED FURTHER

1. Appropriate development setback for riverfront properties
2. Existing development in the Greenway overlay development setback
3. Alignment of Greenway Trail “stars on the map” for riverfront properties currently without them
4. Alignment in the application overlay zones for riverfront properties in the project area

Table C-4. Sample of the Development Standards in Existing Greenway Overlay Zones

Category	River General (g)	River Natural (n)	River Recreational (r)	River Water Quality (q)
Use	No special use restrictions	No special use restrictions	Limited to river-dependent or river-related recreational uses	No special use restrictions
Required development setback from top of back	25 feet	25 feet	25 feet	50 feet for sites with less than 25 percent slope; up to 200 feet with slope of 25 percent or greater 50 feet from delineated edge of any wetlands on site
Maximum floor area ration (FAR)	2:1 for first 200 feet from the ordinary high water line, unless the base zone FAR is more restrictive	Same as (g)	Same as (g)	Same as (g)

D. PROPERTY OWNERSHIP AND DEVELOPMENT

Existing property ownership characteristics and future development potential within the South Reach is critical to understanding how the area may be expected to evolve over time. This section provides a summary of existing property ownership and development characteristics in the South Reach.

Property Ownership

As shown in Map 7, Property Ownership, public entities own and manage a large percentage of the land area in the South Reach project area. Public agencies represent four of the top six land owners (see Table D-1, Top 10 Property Owners). The City of Portland owns approximately 37 percent of the total land area, with 266.55 acres. A variety of parks and open spaces make up this sizeable amount of land. Metro, Portland’s regional government, owns 46.3 acres focused along and adjacent to the Springwater Corridor and ranks third. The State of Oregon owns a total of 16.4 acres, largely containing Department of State Lands along the shoreline and adjacent to SE McLoughlin Blvd, at the northeast corner of the study area. TriMet, the regional transit agency, ranked 6th, with 15.3 acres of land west of the river. TriMet land encompasses the track and surrounding right-of-way currently used by the Willamette Shore Trolley.

The remaining large property owners in the study area represent a mix of commercial and higher density residential developments. Ross Island Sand and Gravel, with property within the Ross Island Complex and along SE McLoughlin Blvd, ranks second in the study area with 133.2 acres. Oaks Park Association owns and operates Oaks

Amusement Park, located on a 34-acre parcel along the east shoreline just north of the Sellwood Bridge. Portland Memorial Mausoleum properties encompass 5.8 acres along the top of the bluff just east of Oaks Bottom Wildlife Refuge.

A collection of mostly residential properties rounds out the ten largest property owners in the South Reach. The Oregon Yacht Club’s 8.8 acres, located just to the north of the Oaks Amusement Park, includes the property used to access this floating home community. Six properties owned by WL-SKB Johns Landing, totaling 6.4 acres, include a collection of multi-family residential and office uses between SW Macadam Avenue and the Willamette River. Lastly, the Sellwood Harbor Condominiums encompasses 5.4 acres on the east side of the river just south of the Sellwood Bridge. This parcel contains both multi-family residential units and townhouses not far from the river’s edge.

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Table D-1. Top 10 Property Owners (by Land Area)

Rank	Ownership	Parcels	Acres
1	City of Portland	72	266.5
2	Ross Island Sand & Gravel Co.	10	133.2
3	Metro	12	46.3
4	Oaks Park Association	1	34.5
5	State of Oregon	21	16.4
6	TriMet	16	15.3
7	Oregon Yacht Club, Ltd	1	8.8
8	WL-SKB Johns Landing	6	6.4
9	Portland Memorial, Inc.	6	5.8
10	Sellwood Harbor Assoc of Unit Owners	1	5.4
TOTAL (all owners)		560	718.3

ROSS ISLAND

Location: Northern portion of the South Reach; just south of the Ross Island Bridge.

Area: 168 total acres – Ross Island Sand & Gravel owns 121 acres; City of Portland owns 47 acres.

Description: In 1850, Sherry Ross settled on the island which included approximately 400 acres at the time. Ross Island was originally a collection of four islands: Ross Island and Toe Island to the west and Hardtack Island and East Island to the east.

In 1926, Ross Island Sand and Gravel (RISG) obtained a long-term lease from the City of Portland and began dredging on site. An earthen connection between Ross and Hardtack islands was constructed in 1926-27, creating the lagoon that remains today. By 1950, the company was the largest pre-mix concrete company in Oregon. It is estimated that RISG dredged over 290 acres before dredging ceased in 2001. The company continues to process aggregate on their property located on Hardtack Island.

Portland Parks and Recreation manages approximately 47 acres at the northwest end of the island as wildlife habitat. Forty-four of these acres were donated to the City by the current owner of RISG, Dr. Robert Pamplin Jr., in 2007 and an additional 2.6 acres were donated by the Port of Portland in 2015. Public access is limited to invasive species removal and other habitat management efforts, with no general public access allowed. Wildlife on the island can be viewed from the river or east- and west-side riverfront trails. The riverine island is designated as a Special Habitat Area (SHA) due to a number of factors, including migratory bird stopover potential, the presence of bottomland hardwood forest habitat, and others. The islands retain forested riparian zone remnants used by at least 50 species of birds including ospreys, herons and eagles



Photo provided by Mike Houck, Urban Greenspaces Institute.

Buildable Lands Inventory (BLI) Sites

The Buildable Lands Inventory (BLI) is the City’s estimate of how much development potential is available under current City plans and zoning. This development potential estimate is then used to understand where future development might occur and whether existing and proposed zoning and regulations may accommodate projected household and job growth. Individual properties are evaluated to determine whether they are a) vacant and developable under the property’s zoning or b) currently underutilized, based on existing site and building characteristics compared with the development potential of the zoning designation.

The City of Portland most recently updated its BLI in 2016, as a part of the 2035 Comprehensive Plan. As shown in Map 8, Urban Renewal Areas and Potential Redevelopment Sites, a number of parcels in the South Reach study area were identified as vacant and non-vacant “underutilized”. In total, approximately 84 acres (11.6 percent of the land area) are defined as vacant and developable, while an additional approximately 51 acres (7.1 percent) were determined to be underutilized. Vacant redevelopable parcels include currently undeveloped sites (including privately- owned shoreline parcels), parking lots, and private roads. Underutilized parcels include a mix of existing low-rise office buildings, single-family residential structures on parcels zoned for higher density, and others.

Urban Renewal Areas (URA)

A small portion of the study area falls within one of the City’s urban renewal areas (see Map 8). Urban renewal areas are portions of the city identified as key target areas for economic development programs and real estate development. The northwestern portion of the study area includes approximately 32.5 acres of the North

Macadam Urban Renewal Area (URA). The North Macadam URA also includes all of the South Waterfront District and the southern end of downtown (including the South Auditorium District and surrounding areas). Additionally, the Central Eastside URA abuts the northern border of the River Plan / South Reach project area on the east side of the Willamette River.

Oregon Department of Environmental Quality (DEQ) Contaminated Sites

A small number of contaminated sites have been identified in the South Reach (see Map 8). A total of 12 sites have been identified as being suspected of or having contamination. Of those 12, seven of them have been determined to require no further action by the Oregon Department of Environmental Quality (DEQ). Contamination has been discovered at four of the five remaining sites. DEQ investigations of these sites are on-going. The final site is suspected to be contaminated but DEQ is still working to confirm the presence of contamination.

In 2017, as a part of the implementation of the Portland Harbor Superfund Record of Decision, the Oregon DEQ initiated the Upriver Reach Sediment Characterization study to evaluate potential contaminant sources along a 10-mile stretch of the Willamette River, from Willamette Falls in Oregon City/West Linn to the Sellwood Bridge. Potential contamination sources that may be investigated as a part of the project include stormwater outfalls, industrial uses along the riverfront, areas where the application of potential contaminants, such as pesticides, are likely, and land use that has the potential to impact the river; and confluences of tributaries that have upstream sources of contamination. This project is expected to be completed in the summer of 2018.

E. RECREATION, PUBLIC ACCESS AND SCENIC VIEWS

The South Reach’s public parks, natural areas, and multi-use trails provide a variety of year-round recreational opportunities and public access to the Willamette River. These are defining features of this reach. The following parks and open spaces are located along the riverfront in the South Reach and are identified on Map 9, Parks, Open Space, Trails and Viewpoints.

There are two regional multi-use trails along the river that are part of the Willamette Greenway and 40-mile loop trail systems: one on the east side (Springwater Corridor Trail) and the other on the west side (Willamette Greenway Trail).

Springwater Corridor Trail was built in an abandoned rail line corridor that was acquired by the City of Portland in 1990. Master planning and construction followed with development of the trail in 1996. In the South Reach, the trail begins south of the Central City at SE Ivon Street at the north end, and traverses south and east to Boring in Clackamas County. The Springwater Corridor parallels the Willamette River through the South Reach to Sellwood Riverfront Park before the alignment shifts to the southeast. It includes a paved regional trail with furnishings, and it is mostly well-separated from roads. The trail connects users to natural areas along the way and there are a variety of habitats for bird species and other wildlife found along the trail corridor.

Willamette Greenway Trail extends south from South Waterfront Park through the South Reach plan area to the Sellwood Bridge. It is nearly continuous with a few small gaps in trail connection. The trail provides recreation, scenic views and nonmotorized transportation

access for the public. The trail provides connectivity to the Macadam District and west side riverfront parks, open spaces and docks.

Willamette Park is a regional- and local-serving park of nearly 27 acres located west of SW Macadam Avenue at Nebraska Street, along the Willamette River. The park, managed by Portland Parks and Recreation (PP&R), offers a multitude of public recreation opportunities and river access. The park has tennis courts, a playground, soccer fields, a picnic shelter and picnic areas, an off-leash dog area, a boat ramp and docks, multi-use pathways, and access to the Willamette River. The park shoreline also contains mudflat habitat used by shorebirds (primarily north of the boat ramp) and shallow water habitat for salmonid fish species.

A recent master plan update in 2012 led to park improvements in 2015-2017 to the following: pedestrian and bicycle circulation; the Willamette Greenway Trail; three park entry points; an oak habitat area; the off-leash dog area and the playground. In 2016 PP&R received Oregon State Marine Board funds for maintenance of the boating facility, including repair to the toe of the boat ramp to eliminate a drop-off, a new debris boom, and dredging of accumulated sediment to make the boat launch area more usable.

Sellwood Riverfront Park is a regional and local park of 7.62 acres located on the east side of the Willamette River north of the Sellwood Bridge and south of the Oaks Bottom Wildlife Refuge. This public park has a boat dock and beach area, an off-leash dog area, restrooms, pathways, park furnishings, and a medium-sized parking lot. There is also high-quality woodland vegetation on the site that supports at-risk wildlife and there is a small pond that is home to red-legged frogs in the northeast corner. A boardwalk crosses the pond for wildlife viewing.

Willamette Moorage Park is a linear park that stretches from SW Miles Place on the north to just short of the Sellwood Bridge on the south. The 17.2-acre park encompasses Butterfly Park, a small area of undeveloped Willamette River shoreline whose deciduous woodland provides habitat for butterflies and insects. Stephens Creek flows into the Willamette River in this park. The confluence provides important rearing and refuge habitat for salmon, trout, and lamprey species. The houseboat community at Macadam Bay has one slip on its dock available for short-term public use. Also, there is a public walkway and viewing area inside the moorage gates. There are seven public parking spaces next to the floating home community, accessible from the driveway off SW Macadam Avenue.

Powers Marine Park is a 14-acre park that is located east of SW Macadam Avenue and south of the Sellwood Bridge on the west side of the Willamette River. The park provides riverfront views, soft surface pathways, and natural areas. There are seven streams in the park that flow from the River View Natural Area to the Willamette River. Stream restoration for salmon habitat was completed at the confluence of two of the streams and the Willamette River. The area along the river provides quality resting and a feeding habitat for juvenile salmon because of the cold water inputs from the streams.

Miles Beach is a narrow strip of beach adjacent to SW Miles Place. PP&R restored the beach with pacific willow habitat straddling the ordinary high water line. However, due to various reasons the restoration was not successful.

Multnomah County property (former Staff Jennings Marina) is located on the west side of the Willamette River on the north side of the Sellwood Bridge. This former privately-owned boating center, marina, dock and parking area was purchased by Multnomah County

as part of the Sellwood Bridge replacement project (completed in 2016). The Willamette Greenway Trail is accessible from the property. The City of Portland is currently working to enter into an agreement with Multnomah County for approximately 10,000 sq. feet of the property for river access and possibly a picnic area. Multnomah County manages the rest of the site as stormwater runoff and tree mitigation for the Sellwood Bridge Project.

Oaks Bottom Wildlife Refuge is Portland's first official urban wildlife refuge. Acquired in 1959, it is a 141-acre complex of meadows, woodlands and wetlands on the east bank of the Willamette River north of the Sellwood Bridge. There are opportunities for bird watching along a 2-mile loop trail. A hiking trail and a paved multi-use trail connect the refuge with two visitor parking lots and the Sellwood neighborhood to the east.

Part of the park is built on a sanitation landfill consisting of 400,000 cubic feet of construction waste material layered with soil. The City of Portland acquired the landfill property from the Donald M. Drake Company to block its development as an industrial park. The area was believed, at the time, to be one of the few remaining marshland areas in Portland, and local residents were strongly opposed to its development as industrial property. More information on Oaks Bottom Wildlife Refuge is provided in the Watershed Health section.

Oaks Crossing Natural Area is approximately 6 acres adjacent to Sellwood Riverfront Park to the north and south of Oaks Amusement Park, adjacent to the Springwater Corridor. The riverside natural area is made up of a soft-surface trail, beach, wetlands and riparian habitat. This area is popular for wading, sunbathing and dog walking.

Toe Island City Park is a small, natural, undeveloped island to the southwest of Ross Island. It is used by boaters as a destination and has a rocky beach area with a restoration component and upland habitat habitat that support fish and other wildlife. The island is often underwater during winter months.

Ross Island Natural Area is a 47-acre natural area at the north end of Ross Island located in the middle of the Willamette River. PP&R's portion of Ross Island is a natural area for wildlife viewing from the river by boat or from the Willamette Greenway and Springwater Corridor trails. Public access is limited to habitat management projects and volunteer work parties organized by PP&R or its community partners. Additional information on Ross Island can be found in the Property Ownership and Development section.

Cottonwood Bay Park is a small riverside natural area of .67 acres located off SW Hamilton Court. In the 1990s the City of Portland worked with the developer of the Avalon Hotel to create the natural area for the public to enjoy. The City acquired this site in 1995. Today, the park provides riverfront views and access to the Willamette River and it is one of the few remaining stands of cottonwood trees on the west bank of the Willamette River.



A private moorage located on the western shore of the Willamette River.

Public Water Recreation

There are numerous opportunities for the public to access and recreate on/in the Willamette River. Public docks and beach areas noted in the above section and on Map 9, provide nonmotorized and motorized boat access and swimming access into the river from both sides of the river. PP&R does not have a public river swimming program. Swimmers access the river at their own risk.

Private Recreation

Below are brief descriptions of a few private recreation facilities where members of the public may pay a one-time fee or a membership to use the facilities. In addition, there are private docks along the Willamette River in the South Reach associated with floating home communities and single-family residences.

Oaks Amusement Park is a 44-acre privately owned and operated amusement park located on the east side of the Willamette River, just north of the Sellwood Bridge. The Springwater Corridor Trail is located along the eastern side of the park and provide easy access from downtown or outer Southeast Portland. The amusement park opened in 1905, making it one of the oldest operating amusement parks in the country. The park contains a midway, rides, roller skating rink, picnic grounds, and a boathouse.

Oaks Amusement Park boathouse is a cluster of 3 buildings with a temporary dock that is used by the Portland Kayak and Canoe Team, the Lewis & Clark College rowing team and the Willamette Rowing Club. These organizations have a long-term lease with the property owner. During the summer between 200-250 youth and adults use this facility.

Willamette Sailing Club is a center for small boat sailing on the west bank of the Willamette River that has been in existence since 1961. The club hosts sailing classes, races and cruising events that are open to the public. The sailing club also is the headquarters for youth, high school and college competitive sailing teams. Sailing club memberships are offered for a fee and allow members to take advantage of facilities, which may include boat moorage, and club socials and boating events.

Portland Rowing Club is the oldest rowing club west of the Mississippi River, founded in 1879. The boathouse and dock are located on the east side of the Willamette River south of the Sellwood Bridge. Paid memberships allow use of the boathouse facilities and includes boat storage for rowing shells, canoes and kayaks. Boat slips may also be available for seasonal fishing. The facility also provides moorage memberships for floating homes.

Public Views and View Corridors

The City’s *Scenic Resources and Protection Plan* (1991) and the *Willamette Greenway Plan* (1987) identify scenic views, view corridors, scenic corridors and other scenic features. At these public locations one may enjoy a view of one or more features valued for aesthetic qualities that are natural or manmade. There are a number of these public resources in the South Reach. A few public views

within the South Reach are views of the downtown area. These were revisited as part of the 2035 *Central City Plan* in a Recommended Draft of the *Scenic Resources Protection Plan* (July 2017), that will be adopted in spring 2018. These views are indicated on Map 9, Parks, Open Spaces, Trails, and Viewpoints, beginning with CC (e.g. CC SE 26) and are described below.

The remaining views were adopted by City Council in the *Scenic Resources Protection Plan* (1991) and are described below. These are public views and related resources that are seen from within the South Reach area or are views of the Willamette River and other South Reach features (e.g. Ross Island).



Viewing looking south from the Greenway Trail, with Ross Island at the left.

Table E-1. Viewpoints and View Corridors

Viewpoint/ Corridor	Location	Description
CCSE24	Ross Island Bridge – north side, center, looking south	Looks up the Willamette River (south) toward Ross Island and South Waterfront. Since the sidewalk on the bridge is on the north side only, four lanes of traffic in the foreground detracts from the scenic quality of the view. There are also no pedestrian refuges from which to stop and take in the view, making this an unsafe and undeveloped viewpoint.
CCSE25	Brooklyn community garden – SE Franklin St	This view is primarily of the West Hills and Central City skyline. The Tilikum Crossing, the Ross Island Bridge and the Willamette River are also visible. This viewpoint at the Brooklyn Community Garden is at a higher elevation and offers a clearer view of the Central City. Traffic along McLoughlin Blvd. detracts from the view.
CCSE26	Springwater Corridor Trail – between SE Franklin and SE Haig streets, north point	Located on an informal path adjacent to the Springwater Corridor Trail just south of the Ross Island Bridge, this view includes the Willamette River, Ross Island and the Ross Island Bridge. The Tilikum Crossing is also visible in the background. This view includes a bench. Vegetation management could enhance the view. Though the Springwater Corridor Trail is a major bicycle and pedestrian facility, this informal path is not highly trafficked and may feel somewhat unsafe due to houseless camping. There are three developed viewpoints along this informal path (CCSE27 and CCSE28).
CCSE27	Springwater Corridor Trail – between SE Franklin and SE Haig streets, middle point	Located on an informal path adjacent to the Springwater Corridor Trail just south of the Ross Island Bridge, this view includes the Willamette River, Ross Island South Waterfront, the West Hills and the Ross Island Bridge. The Tilikum Crossing is also visible in the background. Similar issues to view CCSE26 above.
CCSE28	Springwater Corridor Trail – between SE Franklin and SE Haig streets, south point	Located on an informal path adjacent to the Springwater Corridor Trail just south of the Ross Island Bridge, this view includes the Willamette River, Ross Island South Waterfront, the West Hills and the Ross Island Bridge. The Tilikum Crossing is also visible in the background. This view also includes a picnic table. Vegetation in the foreground blocks part of the view of the river and Ross Island. Similar issues to views CCSE26 and CCSE27.
CCSE29	Springwater Corridor Trail – SE Rhone St, north point	Located on an informal path adjacent to the Springwater Corridor Trail just north of Ross Island Sand and Gravel’s southern location, this view looks across the Willamette River to Ross Island, South Waterfront, the West Hills and the Ross Island Bridge. The Tilikum Crossing and a portion of the downtown skyline are also visible in the background. Similar issues to views CCSE 26-28 above.
CCSE30	Springwater Corridor Trail – near SE Rhone St, south point	Located near a stone art installation on an informal path adjacent to the Springwater Corridor Trail just north of Rose Island Sand and Gravel’s southern location, this view looks down the Willamette River to the Ross Island Bridge and the downtown skyline. South Waterfront, the West Hills, Ross Island and the Tilikum Crossing are also visible in the background. View amenities include the artwork and a stone seat. Vegetation management could provide a panoramic view. Similar issues to views CCSE 26-29 above.

Viewpoint/ Corridor	Location	Description
VB31-37	View of Ross Island from Springwater Corridor Trail	No description provided.
VB 38-26	View of Sellwood Bridge from Sellwood Riverfront Park	View of the Sellwood Bridge and the West Hills across the river from Sellwood Riverfront Park. Picnic tables at the viewpoint and access to the river.
VB 38-25	View of Sellwood Bridge from Willamette Park	Viewpoint at the south end of Willamette Park on the Willamette Greenway Trail. Excellent view of Macadam Bay houseboats, the Sellwood Bridge and river activities.
VB38-23	View of Sellwood Bridge from Macadam Bay Club	The elevated ramp leading to the Macadam Bay Club provides a view of the Sellwood Bridge to the south. This viewpoint can be accessed from the Willamette Greenway Trail.
VB38-21	View of Sellwood Bridge from Powers Marine Park	This park is located between SW Macadam Avenue and the Willamette River south of the Sellwood Bridge. The view is of the bridge and Oaks Bottom beyond. The vantage point is adjacent to the rail line.
VB 38-24	View of Sellwood Bridge from Pioneer Church	This view of the Sellwood Bridge is from the back of the Pioneer Church, where there is a patio with benches. Vegetation interferes with the view.
VP 38-03	View Sellwood Blvd	The most striking panoramic view along Sellwood Boulevard occurs north of Sellwood Park near SE 11 th Avenue. The view is over Oaks Bottom, the downtown skyline rising out of Ross Island. A large expanse of the West Hills is also visible. Sellwood Boulevard is also a scenic drive (SD 38-29).

Willamette River Greenway Plan Public Viewpoints: #82-85

There are three public viewpoints that were adopted in the *Willamette Greenway Plan* (1987). (See Map 9.). No descriptions are provided for these viewpoints, which are located on both sides of the river within the South Reach project area.

Scenic Corridors

Willamette River

The 1991 *Scenic Resources Protection Plan* identifies the entire stretch of the Willamette River as an important scenic resource in Portland. Table E-2 provides the details on two scenic drives identified in the plan.

Table E-2. *Scenic Resources Protection Plan* Willamette River Scenic Drives

Viewpoint/ Corridor	Location	Description
SD 38-29	Sellwood Boulevard	This scenic drive of less than one mile, begins at SE 7 th Avenue, adjacent to Sellwood Park and leads directly to the end of Sellwood Boulevard. Views are provided of Oaks Bottom, the Willamette River, the West Hills and the downtown skyline. A panoramic view can be seen from VP 38-03.
SD 38-27	SW Macadam / SW Taylor's Ferry / SW Boones Ferry / SW Terwilliger Loop	Part of this scenic drive loop is along SW Macadam Avenue passes by Willamette Park, Riverview Cemetery and Powers Marine Park, where it is known as Riverside Drive. Views of the river are intermittent and best viewed in winter when deciduous trees have dropped their leaves.

RECREATION, ACCESS & VIEWS ISSUES TO BE EXAMINED FURTHER

1. Houseless campers and boaters in parks, open spaces and on the Willamette River; safety and sanitation are key concerns
2. Increased public access to/into river for boating (motorized and non-motorized) and swimming
3. Gaps in Springwater Corridor and Willamette Greenway trails and lack of regional trail connectivity between Portland and Lake Oswego
4. Safety corridor or “no wake zone” in river channel west of Ross Island
5. Evaluate potential for additional boat storage, including underutilized existing moorages

F. WATERSHED HEALTH

Natural beauty and expansive natural resources are distinctive features of the South Reach. The River Plan / South Reach study area encompasses approximately 1,612 acres, including roughly 820 acres of the river itself. The area includes a range of habitat types that support a variety of flora and fauna, including salmonid species federally listed under the Endangered Species Act. Oaks Bottom Wildlife Refuge and Ross Island, among others, are unique assets within the city that provide high quality habitat within close proximity to downtown. Additionally, land adjacent to the river plays a key role in flood storage and management for nearby development. Collectively, the South Reach’s complex of parks and open spaces provides critical ecosystem services at the site and watershed scales.

This section provides some general background on the Willamette River and summarizes existing elements and conditions within the South Reach that contribute to the provision of habitat and watershed health in the area.

Willamette River Basin

Situated in the Lower Columbia River Basin, the Willamette River Basin is an 11,500 square mile watershed between the Cascade Mountains to the east and the Coast Range to the west. The 187-mile long Willamette River flows north through 128 jurisdictions, including Eugene, Corvallis, Salem and Portland, and eight counties. The Willamette River Basin occupies roughly 12 percent of Oregon’s land and plays an important role in the ecology of the region.

Historically, the Willamette River in the Portland area comprised an extensive, interconnected system of tidally-influenced channels,

open slack waters, emergent wetlands, riparian forests, mid-channel islands and adjacent upland forests. Prior to European settlement of the Willamette Valley, the river was used by Native Americans for travel, trade, hunting, fishing and gathering of plant materials. Permanent and seasonal villages existed on both sides of the river to facilitate these uses, and many of these traditional uses are carried on today by local Native Americans.

Flow patterns in the Willamette and Columbia basins have been significantly altered over time, largely due to dam and reservoir operations. Following floods in 1943 and 1945, the U.S. Army Corps of Engineers constructed 13 reservoirs, 11 of which have flood control functions. Operation of the reservoirs reduces winter peak flows in the Willamette River by as much as 30 to 50 percent and augments summer flows to approximately double historical low-flow levels.

The Lower Willamette River is designated critical habitat for a number of anadromous salmonids (i.e., those that migrate from the sea to freshwater to spawn) listed as threatened and endangered under the federal Endangered Species Act (ESA), including:

- Chinook Salmon
 - Lower Columbia River Chinook – listed as Threatened
 - Upper Willamette River Chinook – listed as Threatened
 - Snake River spring-summer Chinook – listed as Threatened
- Coho Salmon
 - Lower Columbia River (the Lower Willamette River is included for this species) – listed as Threatened

- Sockeye Salmon
 - Snake River Sockeye – listed as Endangered
- Steelhead Trout
 - Lower Columbia River Steelhead – listed as Threatened
 - Upper Willamette River Steelhead – listed as Threatened

Federally-listed Endangered species are those that are in danger of extinction throughout all or a significant portion of its range. Threatened species are those that are likely to become endangered within the foreseeable future through all or a significant portion of its range if nothing is done to reverse the trend.

Additionally, the lower Willamette River is key migratory habitat for Pacific lamprey, a federal species of concern. Coastal Cutthroat Trout are also a listed federal species of concern. “Species of concern” is an informal term used to refer to species that may be in need of concentrated conservation actions but such a need has not been confirmed. Species of concern receive no legal protection and may not be defined as Threatened or Endangered in the future.

Critical habitat designated for the Columbia River species identified above includes the lower Willamette River because it is a tributary stream to the Columbia River and may provide rearing and refuge habitat to the Columbia’s migrating salmon and trout populations.

South Reach River Character and Bathymetry

The river banks along the South Reach are substantially less altered than in the North and Central reaches of the Willamette River. As demonstrated in Map 10, River Bank Character and Bathymetry, the

shoreline along this stretch of the Willamette River is predominantly characterized by beaches, with a mix of other bank treatments. Beaches make up approximately two-thirds of the shoreline. Vegetated rip rap and rock shorelines represent 12.7 percent and 10.1 percent of the water’s edge. The remainder of the river bank is comprised of a mix of rock outcropping and unclassified fill, with a very small amount of seawall in a few locations.

Water depth varies substantially from north to south along this stretch of the Willamette River (see Map 10). North of the Sellwood Bridge much of the Willamette River is relatively shallow except for the deeper channel between the western shoreline and the west side of Ross Island. This deeper channel generally continues to the Sellwood Bridge, where fill for the bridge limits water depth. The Holgate Slough, located to the east of the island, is characterized by comparatively shallow waters, mostly less than 50 feet deep.

Water depth in portions of the Ross Island Lagoon is less than 20 feet. As a result of a combination of summer slow water currents and temperature increases in the lagoon, toxic algal blooms have been observed in Ross Island Lagoon in two of the last three years. These toxic algal blooms have prompted a State of Oregon Health Authority health advisory due to potential harm to humans and animals.

South of the Sellwood Bridge the river is generally deeper, with shallow areas along the shoreline in a small number of locations. The river in this area is frequently more than 80 feet deep and, in some areas, exceeds 100 feet. The river is deeper along this stretch because it is confined in a basalt trench upstream of Powers Marine Park. Shallow waters in this stretch are located along the shore at Powers Marine Park, along the bend in the Dunthorpe area, and across the river around Elk Rock. These areas are generally less than 15 feet deep.

Vegetation

As shown in Table F-1, vegetation within the South Reach project area is characterized by a mix of forest, woodlands, shrublands, and herbaceous species. Forested areas make up the large majority of vegetation in the study area. Forest patches cover a range of land types within the area, including substantial portions of Ross Island, much of the shoreline and the bluff east of Oaks Bottom Wildlife Refuge (see Map 11, Vegetation and Steep Slopes). The remaining 42 percent of South Reach vegetation is roughly split between woodlands, shrubland and herbaceous species. Shrublands are generally located in the northern portion of the reach, whereas woodlands and herbaceous vegetation is more evenly distributed.

Floodplain Management

Due to a substantial amount of parks and open spaces, the South Reach provides extensive flood management capacity. The Federal Emergency Management Agency (FEMA) uses the 100-year floodplain as its primary measurement of risk for development adjacent to waterways. The 100-year flood is a flood for which there is a one percent chance of occurrence in a given year. As shown in Map 12, Flood Hazard, areas such as Oaks Bottom Wildlife Refuge, Sellwood Riverfront Park, Oaks Crossing, Willamette Park and Powers Marine Park, all provide a useful buffer from the estimated 100-year flood for adjacent development. However, there are some areas of concern where existing development is located within the 100-year floodplain, including the area just south of Cottonwood Bay and single-family residential development on SW Miles Place on the west shoreline and the office development north of the Sellwood Bridge and the Waverly Yacht Club Condominiums to the south of the bridge. The Ross Island Complex would be expected to be almost

completed inundated, as demonstrated in the map, in the case of a 100-year flood.

A second metric of flood vulnerability is the FEMA-defined 500-year floodplain. The City of Portland considers the 500-year floodplain when evaluating potential future flood risk due to climate change. A 500-year flood is one that is expected to have a 0.2 percent chance of occurring in a given year. FEMA estimates the extent of the 500-year floodplain when determining the 100-year floodplain but the analysis for these areas is not as rigorous as for the 100-year floodplain.

The 500-year floodplain is not substantially different than the 100-year floodplain in most areas, as demonstrated in Map 12. Areas of concern in an estimated 500-year flood include multi-family developments along SW Beaver Ave to the west and the Waverly Yacht Club Condominiums on the east.

In 2016, the National Marine Fisheries Service (NMFS) issued a Biological Opinion for FEMA’s National Flood Insurance Program (NFIP). The Biological Opinion determined that the NFIP is likely to jeopardize 16 Endangered Species Act (ESA)-listed fish species in Oregon and directed FEMA to implement short-term and long-term changes focused on ensuring adequate flood storage and habitat provision to limit impacts in Oregon’s waterways.

Oregon jurisdictions, including Portland, will be required to comply with updated NFIP requirements, once they are finalized. The extent of the 100-year floodplain will likely be modified by FEMA and the City’s floodplain development regulations will need to be updated.

Table F-1. Vegetation Composition in the South Reach

Vegetation Type	Area	%
Forest	245.8	58.2
Woodland	67.5	16.0
Shrubland	48.3	11.4
Herbaceous	60.4	14.3
Total	422.0	100

Natural Resource Inventory

The abundance and diversity of natural resources in the South Reach make it a truly unique place within the city. This is most clearly demonstrated when evaluating the sizeable area that has been designated as either high- or medium-value resource in the City of Portland’s Natural Resources Inventory (NRI), completed in 2012 as a part of the 2035 Comprehensive Plan. The NRI evaluates all natural resources in the city to identify and compare their ecological value and then determine a “Combined Riparian/Wildlife Habitat Relative Rank.” The final combined rank is determined by totaling separate numerical assessments of riparian function and wildlife habitat for the area.

Riparian corridors were assessed based on six characteristics:

1. Microclimate and shade
2. Bank function and control of sediments, nutrients and pollutants
3. Streamflow moderation and flood storage
4. Organic inputs and food web
5. Large wood and channel dynamics
6. Wildlife habitat/corridors

Wildlife habitat assessments were based on three characteristics:

1. Habitat patch size
2. Edge effect
3. Connectivity (including distance and age effect)

As demonstrated in Map 13, Natural Resource Inventory, a total of 1,321 acres fall into either the high- or medium-value resources rank in the NRI. In recognition of its critical role as habitat for a range of aquatic and non-aquatic species, all 820 acres of the Willamette River in this stretch is defined as high-value resource.

Collectively, high- and medium-value resources represent approximately 82 percent of the South Reach study area. The City generally places environmental zoning on high- and medium-value natural resources to protect the ecosystem services they provide.

An additional 76 acres were classified as low-value resources, increasing the percentage of the study area categorized in the NRI to over 86 percent. In the South Reach, the Greenway overlay zone covers almost all of this area, with only a handful of small patches of low- and medium-value habitat not included.

Map 13 also illustrates the 1,204 acres classified as Special Habitat Areas (SHA) in the South Reach. SHAs cover approximately 75 percent of the land and water resources in the study area. Generally, SHAs contain or support:

- Special status fish or wildlife species
- Sensitive/unique plant populations
- Wetlands
- Native oak
- Bottomland hardwood forests
- Riverine islands
- River delta

- Migratory stopover habitat
- Connectivity corridors
- Grasslands
- Other unique natural features

SHAs in the South Reach include:

- Habitat, like the Willamette River, critical to ESA-listed species.
- Ross Island, which provides habitat for migratory birds including bald eagle.

- Oaks Bottom, which is a complex of multiple habitats from wetland to oak to bottomland hardwood forest.
- Ross Island and Sellwood bridges, which can be used for nesting by peregrine falcons.

A number of criteria are evaluated to determine the eligibility of a given area for SHA designation (see Table F-2). An SHA site may be characterized by one or more of the eligibility criteria. Some combination of native oaks (O), wetlands and associated seeps (W), bottomland hardwood forest (B), migratory stopover habitat (M), and/or at-risk wildlife species (S) are most common for South Reach properties. Ross Island is designated as an SHA due to its role as a riverine island (I).

Table F-2. Special Habitat Area (SHA) Designation Criteria

SHA Code	Criteria
P	Area contains sensitive or unique plant populations
W	Wetlands and associated seeps, springs and streams that are part of the wetland complex
O	Native oak
B	Bottomland hardwood forest
I	Riverine island
D	River delta
M	Migratory stopover habitat
C	Corridor between patches or habitats
S	An at risk wildlife species uses the habitat area or feature on more than incidental basis to complete one or more life history stages
E	Elk migratory corridor
G	Upland habitat or landscape feature important to individual grassland-associated species or assemblages of grassland-associated species on more than an incidental basis
U	Resource or structure that provides critical or unique habitat function in natural or built environments (such as bridges or street trees)

Map 13, Natural Resource Inventory, shows that many of the existing parks and open spaces in the South Reach have been designated as SHAs. Table F-3 below lists the SHA designations for South Reach parks and spaces.

The SHA designations identified in Map 13 should not be viewed in isolation. The South Reach study area is relatively narrow to more specifically address the Willamette River and its direct surroundings but, as with all watersheds, the connections to adjacent natural areas is critical to understanding the overall function and health of the river. On the west side of the river, the SHA around Stephens Creek extends across SW Macadam Ave (Hwy 43), into the Riverview Cemetery and associated funeral home properties and to the creek’s main intact riparian corridor known as the Central Canyon near SW Terwilliger Blvd and Interstate 5.

Similarly, a number of smaller streams within Riverview Natural Area terminate at the Willamette River, south of the Sellwood Bridge within Powers Marine Park. Riverview Natural Area streams flowing into Powers Marine Park have been recorded to be five to 7 degrees colder than the mainstem Willamette during summer low flows. These cold water inputs are highly valuable in the lower river basin during the period when water temperatures can induce high stress on listed salmon and trout.

Johnson Creek is another critical consideration, although it is outside the River Plan / South Reach project area. Johnson Creek terminates on the eastern shoreline south of the Waverly Country

Johnson Creek is another critical consideration, although it is outside the River Plan / South Reach project area. Johnson Creek terminates on the eastern shoreline south of the Waverly Country Club (just south of the project area) and extends to east Portland and out to other parts of Multnomah County and Clackamas County. Johnson

Creek is a key waterway within the Willamette River watershed that provides off-channel habitat for salmonids in many of its tributaries, including Crystal Springs Creek. Additionally, salmon spawn and rear throughout Johnson Creek. Habitat connectivity within the South Reach study area will contribute to greater survival for salmonids in Johnson Creek and its tributaries, including Crystal Springs Creek, Kelly Creek, and others. Future habitat restoration projects may also serve to expand the areas utilized by Lower Willamette River salmonids.

Stormwater Management

Stormwater infrastructure within the South Reach project area is generally limited and focused around developed areas along the west side of the river and the multi-family developments south of the Sellwood Bridge on the east side. However, the area plays a significant role in the management of stormwater for adjacent neighborhoods on both sides of the river. Eight stormwater outfalls

Table F-3. Special Habitat Area (SHA) Designations in South Reach Parks and Open Spaces

Park or Open Space	SHA Designation
Cottonwood Bay Park	B, M, C, U
Willamette Park, Miles Beach and Willamette Moorage	S, B, W, M, C, U
Multnomah County property (former Staff Jennings Marina)	None at this time
Powers Marine Park	B, M, C, U
Ross Island Complex	I, S, B, M, C
Oaks Bottom Wildlife Refuge	W, S, O, B, M, C
Oaks Crossing	B, C
Elk Rock (Peter Kerr Property)	P, O

identified on the map serve to direct stormwater from neighboring development into the river (see Map 10, River Bank Character and Bathymetry). One of these (OF01) serves as an emergency bypass during heavy rain events.

Two key stormwater facilities were added to Willamette Park as a part of the Willamette Park Master Plan implementation. The Centennial Oaks stormwater facilities was completed in 2016 at the west end of the park’s parking area to manage and treat runoff from roadways and the parking area, as well as to protect existing white

oak trees and restore native ground cover. A second stormwater facility built in 2000 and upgraded in 2010 is located adjacent to the boat ramp and treats runoff originating in the parking area west of the ramp and slow its entry into the Willamette River.

Ongoing and Future Projects

There are a number of key projects that will restore and improve watershed health and habitat in the South Reach project area. A list of Capital Improvement Program (CIP) projects are provided in the table below.

Capital Improvement Program (CIP) Project	Description	Expected Completion
E10030	SE Interceptor Rehab – Rehabilitate SE Interceptor: 2,038 linear feet of concrete sewer constructed in 1954, located at a depth of 41 to 53 feet, from the intersection of SE Grand and Pine north to NE Davis and west in NE Davis to NE 3rd; and 1,330 lineal feet at a depth of approximately 30 feet located between SE Caruthers and SE 12th.	9/22/18
E11005	Carolina Trunk WZ-02 Rehab – Carolina Trunk Work Zone 2 Rehabilitation, repair of a monolithic concrete pipe in southbound lane of SW Macadam Avenue (ODOT ROW) between SW Mitchell Street and SW Sweeny Ave (Spiral-wound pilot).	3/20/21
E11016	Carolina Trunk WZ-04 Rehab – Carolina Trunk SZ-04 Rehabilitation, stabilization of 821 feet of concrete pipe in the southbound lane of SW Macadam Ave (ODOT ROW) between SW Seymour Ct and SW Mitchell Ave.	12/4/20
E11017	Carolina Trunk WZ-05 Rehab – Carolina Trunk SZ-05 Rehabilitation, stabilization of 2480' (8 reaches) of concrete pipe, southbound lane of SW Macadam Ave (ODOT ROW) between SW Sweeny and Carolina Streets and east to outfall to the Willamette River.	12/4/20
E10845	Riverview Pump Station Wet Well Rehab – Rehabilitate the existing deteriorating wet well and bring it to a sound condition.	5/2/18
E10984	Secondary project under the PS Improvement Program to address miscellaneous pump station issues that occur during FY 2018	7/13/18

WATERSHED HEALTH ISSUES TO BE EXAMINED FURTHER

1. Identification of an appropriate river setback requirement for adjacent land uses to ensure ecosystem function and Endangered Species protection
2. Finding balance between river access and use with environmental protection
3. Strategies to strengthen natural resource functions in the Ross Island Complex
4. Management of South Reach parks and open spaces as a complex
5. Review floodplain development regulations in relation to the forthcoming FEMA NFIP Biological Opinion guidance

OAKS BOTTOM WILDLIFE REFUGE

Location: On the east side of the river, directly east of East Island (east of Ross Island); north of Sellwood Park.

Area: 141 acres; owned by the City of Portland

Description: Acquired in 1959, Oaks Bottom Wildlife Refuge was designated Portland's first official urban wildlife refuge in 1988. The refuge is a complex of meadows, woodlands and wetlands the largest remaining natural area within the lower Willamette River floodplain. The refuge provides habitat for salmon species defined as Threatened via the Endangered Species Act and an estimated 175 bird species. Almost 50 "special status" species (those estimated to be in decline in the region or state) have also been identified in Oaks Bottom, including 44 bird, three bat, and one amphibian species. Native turtles have also been observed at the refuge. The refuge is defined as a Special Habitat Area.

Oaks Bottom Wildlife Refuge is part of a larger natural area known as the Oaks Bottom Complex that includes Oaks Crossing Natural Area, the Holgate Channel and Ross Island.

Oaks Bottom Habitat Enhancement Project

The Bureau of Environmental Services and Portland Parks and Recreation are partnering with the U.S. Army Corps of Engineers on a habitat enhancement project within the refuge. A component of this project will be to replace an existing culvert with a larger natural-bottom arched culvert to improve fish passage between the river and the refuge. The project also includes the excavation of tidal slough channels and replacement of invasive vegetation with native species. Improvement of environmental education and interpretation opportunities in the refuge will also be included. Construction is expected to begin in the summer of 2018.



G. TRANSPORTATION

Street System

The River Plan / South Reach project area is a 5-mile long and narrow area of river and riverfront uplands that borders the Willamette River. There are a limited number of streets that are parallel to or intersect with the river within the project area. The primary transportation corridors in or near the project area are SE McLoughlin Boulevard and SE Milwaukie avenues on the eastside and SW Macadam Avenue and SW Riverside Drive on west side. There are also two bridges that cross the river: Ross Island Bridge at the north end and the Sellwood Bridge further south. The City’s Transportation System Plan (TSP) sets policy direction and guides future transportation improvements. It classifies transportation facilities to inform specific transportation functions design, land uses and investments. Table G-1 lists transportation facilities and their traffic, transit, pedestrian and bicycle modal transportation classifications in or near the South Reach. (See Maps 15, 16 and 17.) A brief definition of each classification can be found in Appendix B. There is street traffic congestion during commuter hours on primary motor vehicular streets such as SE McLoughlin Boulevard and SW Macadam Avenue.

The SW Macadam Avenue area is the only Pedestrian District classified by the TSP in the South Reach area. It roughly encompasses View Point Terrace/Corbett Street on the west side, SW Macadam on the east side, between SW Richardson and Pendleton streets. (See Map 17.)

Bicycle and Pedestrian Trails

The South Reach has two nearly complete trails that are parallel to the river on both sides of it within the City of Portland, but the riverfront trails do not extend beyond the city limits. On the east side, it is the Springwater Corridor Trail, built on the abandoned the historic interurban railroad line. The trail connects to the Eastbank Esplanade in the Central City via on-street connections for a few blocks. It is a well-used trail by bicyclists and pedestrians.

The Willamette Greenway Trail is an off-street bicycle and pedestrian facility along the riverfront on the west side of the Willamette River. It connects to the South Waterfront District to the north and ends near the Sellwood Bridge. It is also well-used by bicyclists and pedestrians. There is no riverfront area trail connection south to the Lake Oswego area.

Most neighborhoods adjacent to the riverfront have some access directly to/into the river. The Brooklyn neighborhood has extremely limited access to the river due to the design of McLoughlin Boulevard and the steep slope at the riverbank’s edge.



The Greenway Trail provides a variety of recreation opportunities, including walking, jogging, and bike riding.

South Reach Greenway Trail Statistics

<u>Trail miles built*</u>	<u>7.3</u>
Springwater Corridor Trail	4.1
Willamette Greenway Trail	3.2
<u>Trail gaps*</u>	<u>3.4</u>
Springwater Corridor Trail	1.1
Willamette Greenway Trail	2.3

* includes unincorporated Multnomah Co.

Table G-1. Transportation System Plan (TSP) Classifications in the South Reach

Street Name (Southeast)	TSP Classifications
McLoughlin Boulevard	Regional Trafficway, Transit Access Street, City Bikeway, City Walkway
Milwaukie Avenue	Neighborhood Collector Street, Transit Access Street, City Bikeway
Bybee Street	Neighborhood Collector Street, Transit Access Street, Major City Bikeway, City Walkway
Sellwood Boulevard	Local service traffic street, City bikeway, off-street pedestrian path
Tacoma Street	District collector street, Transit access street, City bikeway, City walkway
Oaks Park Way	Local service traffic street, Major City bikeway
Spokane Street	Local Service Traffic Street, Major City Bikeway
Umatilla Street	Local Service Traffic Street, Major City Bikeway
Major Public Trail (Southeast)	
Springwater Corridor Trail	Off-street Pedestrian Path, Major City Bikeway
Street Name (Southwest)	
Macadam Avenue	Major City Traffic Street, Major Transit Priority Street, Pedestrian District and City Walkway (south of Pendleton to Riverside Drive), City Bikeway
Moody ext./Railroad ROW	Regional Transitway
Landing Drive	Local service traffic street, City Bikeway
Riverside Drive	Major City Traffic Street, Regional Transitway and Major Transit Priority Street, City walkway, Major City Bikeway
Riverwood Road	Regional Transitway and Major Transit Priority Street, Off-street Pedestrian Path, Major City Bikeway
Miles Street	Local Service Traffic Street, City Bikeway, City Walkway
Miles Place	Local Service Traffic Street, Off-street Pedestrian Path, Major City Bikeway
Boundary Street	Neighborhood Collector Street, Transit Access Street, City bikeway
Nebraska Street	Local Service Traffic Street, Transit Access Street, City Bikeway, City Walkway
Major Public Trail (SW)	
Willamette Greenway Trail	Off-street Pedestrian Path, Major City Bikeway
Bridges	
Ross Island	Major City Traffic Street, Regional Transitway and Major Transit Priority Street, Off-street Bike Path, City Walkway
Sellwood	District Collector Street, Major City Bikeway, City Walkway

Existing Transit Services and Future Service Improvements

There are a few TriMet bus lines that travel through or near the South Reach area. However, most of the bus lines operate on a limited weekday schedule. This is especially true on the west side of the Willamette River. There are a couple of bus lines that are outside of the South Reach area on the east side of the river but can serve the riverfront area within walking or bicycling distance. There is a need for more transit service especially with increased development occurring in/near the project area.

Table G-2. South Reach Bus Routes and Schedules

Bus Line and Name	Route¹	Schedule
#35 - Macadam/Greeley	N. Portland to downtown, south along SW Macadam Ave. to Riverside Dr. then south and east to Oregon City	Every day, not frequent service, morning through evening
#36 – South Shore	Downtown and south via SW Macadam Ave and Riverside Dr. to Lake Oswego and Tualatin	Weekday only, limited to rush-hour only bus service
#43 – Taylors Ferry Road	Downtown south along SW Corbett St. to Taylors Ferry Rd and SW Portland	Weekday service from AM to PM rush-hours only
#99 – Macadam/McLoughlin	Downtown south along SW Macadam Ave. crossing Sellwood Bridge, east and then south to Milwaukie and Oregon City	Weekday only, limited to rush-hour only service
#19 – Woodstock/Glisan	Gateway Transit Center west to downtown then south and east across Ross Island Bridge, Milwaukie Ave to Bybee Blvd. and east to outer SE Portland	Daily AM to late PM service with 20 minute or less frequency on weekdays
#70 – 12 th /NE 33 rd Ave	NE Portland south to SE Milwaukie Ave, 17 th and 13 th avenues through Sellwood, south to Milwaukie	Daily AM to PM service with 20 minute or less frequency on weekdays

¹ Bus lines operate round trip between destinations; routes described are from north or east to south.

Transit Planning

Future Bus Service Improvements

TriMet completed a *Southwest Service Enhancement Plan (2016)* that recommended:

- Highway 43/Macadam (Line 35) – New frequent service between Downtown Portland, Lake Oswego, West Linn and Oregon City to better meet demand in the corridor as future development occurs.
- Line 99 – Add more bus service between Downtown Portland and Milwaukie.
- All local bus service in SW should operate every 15-30 minutes or better during AM and PM rush-hours. Midday service frequency will be determined based on demand.

TriMet also produced a *Southeast Service Enhancement Plan (2016)* that recommended:

- Line 19 – Change route to SE Woodstock and SE Bybee between Southeast and Downtown Portland for direct service.
- Line 99 – Add more bus service between Downtown Portland and Milwaukie.
- Line Y – Add new service along SE Bybee, SE 26th, SE 28th, and SE/NE 20th between NE Portland and Sellwood.

The City of Portland along with Metro, ODOT and TriMet formed a Willamette Shoreline Consortium to investigate potential transit service improvements between the cities of Portland and Lake Oswego. The work began in the 2000's and ended in 2012 after a Draft Environmental Impact Statement (DEIS) was developed. The

DEIS recommended a streetcar alternative instead of expanded bus service and a no build scenario. Different streetcar alignment designs were considered including the Willamette Shoreline corridor along the riverfront, SW Macadam Avenue, Riverwood Road and a Union Pacific railroad right-of-way corridor and Foothills design options in Lake Oswego.

Overall conclusions were that streetcar was a preferred option to limit impacts on area residents. However, the recommendations got mixed reviews from some local governments and residents and the consortium did not move forward on implementation of an expanded streetcar service. There is a SW Streetcar project in Metro's *Regional Transportation Plan* and Portland's *Transportation System Plan*, but it is not prioritized for funding.

Rail Transportation

The Willamette Shoreline Trolley is operated by the Oregon Electrical Rail Historical Society (OERHS) with scenic spring/summer seasonal service between Portland and Lake Oswego on the west side of the Willamette River. The historic trolley generally operates on a narrow right-of-way between Lake Oswego and Bancroft Street in Portland's South Waterfront District. The Willamette Shoreline Trolley began service in 1987 and was taken over by the OERHS in 1995.

See the History and Culture section for more information on the historic rail line.

River Transportation

The City of Portland completed the *Willamette River Ferry Feasibility Study* in June 2006. The report looked at the potential demand for and costs associated with commuter ferry service during peak commute hours from population centers on the Willamette River to

downtown Portland. Terminal sites in the South Reach area evaluated were the: Macadam District, Sellwood Bridge (south side), Waverly Marina, with additional southern locations in Lake Oswego, Milwaukie and Oregon City.

The study also looked at a circulator/visitor/tourist ferry service that would mostly travel to stops within Portland's Central City. It did consider but eliminated two potential sites in the South Reach: Ross Island and Oaks Park.

The report concluded that the potential demand and costs for these ferry services was not feasible at the time and would require substantial public and private financial support that was not available.

In recent years, there is renewed interest and advocacy by private entities to see a Willamette River commuter ferry service come to fruition. The *2035 Central City Plan*, that will be adopted by Portland City Council in spring 2018, includes a vision and future actions that support Willamette River transportation to and within the Central City. The City's *Transportation System Plan* Project List has been updated for the *2035 Central City Plan* and includes a River Transit Feasibility Study that would explore funding mechanisms, phasing and implementation of river transit.

River Excursions

Private companies offer boating trips along the Willamette River. Two popular companies are: American Waterways, Inc. (the Portland Spirit), which offers dining and sightseeing cruises along the Willamette River from two locations in downtown Portland, and Willamette Jetboat. Other companies like Next Adventure hold paddling classes and tours along the Willamette River. These

excursions often travel south from downtown through the South Reach, allowing passengers to view and enjoy the scenic and natural features of the South Reach.

Transportation System Plan (TSP) Study and Projects

The TSP identifies future transportation studies and capital improvement projects for the City and unincorporated Multnomah County urban areas next to Portland. One study identified in the TSP for the study area is the Portland Bureau of Transportation *Brooklyn Neighborhood River Access* project. The study's purpose is to consider pedestrian and bike access from the Brooklyn neighborhood to the Willamette River.

The 1991 Brooklyn Neighborhood Plan identifies improved access to the riverfront as a longstanding neighborhood priority. Objective 6A1 of the plan states: "Re-establish Brooklyn's access and historic link to the Willamette River."

McLoughlin Boulevard creates a barrier that separates the neighborhood from the river. Existing access from the neighborhood to the river is via the lower-level ramps at the Ross Island Bridge, where steep terrain limits easy access, or via Holgate Boulevard, where pedestrians can cross at a stoplight. In the latter case, the river can be reached only by descending a bramble-covered bank. Haig Park is undeveloped parkland between the river and McLoughlin Boulevard, south of the SE Franklin Street alignment and north of the SE Haig Street alignment.

The neighborhood concept plan identifies a pedestrian overpass bridging McLoughlin Boulevard to provide river access. A Central City 2035 study called the *Inner SE Station Areas Concept Plan (2013)* investigated alternative crossing locations of McLoughlin Boulevard and access routes to the Springwater Corridor Trail, and provided rough cost estimates. That study may be detailed enough to identify a preferred alternative for an improvement project. The next step would be to determine if the project responds to a transportation need rather than a recreational need to qualify it for inclusion in the TSP.

Appendix B is a table of *Transportation System Plan* projects within or close to the South Reach area that are identified for transportation improvements over the next 20 years. The TSP is periodically updated including the identification and prioritization of transportation projects citywide. Only one project is funded to be completed within the next 10 years. It is the Springwater Gap Trail project that will construct a trail-with-rail multi-use path between SE Umatilla Street and 19th Avenue to fill in the trail gap in Sellwood (TSP ID 70053). An example of an unfunded project is SW Macadam Pedestrian and Bike Improvements, which will improve pedestrian and bicyclist crossings of Macadam Avenue and connections to the Willamette Greenway Trail (TSP ID 90047).

TRANSPORTATION ISSUES TO BE EXAMINED FURTHER

1. Infrequent and inadequate transit service, especially on the west side of the river
2. Remaining gaps in the Willamette Greenway and Springwater Corridor trails
3. Trail connection to Lake Oswego
4. Lack of safe access from the Brooklyn neighborhood to the river
5. Traffic congestion during peak traffic hours along SW Macadam Ave



The recently completed Sellwood Bridge, seen from the Willamette River.

H. PUBLIC SERVICES AND FACILITIES

This section describes key public services and facilities provided in the project area, including water, sewer, public safety and schools. These are important resources are important for residents, workers, and visitors in the area.

2035 Comprehensive Plan: Citywide Systems Plan

The Citywide Systems Plan (CSP) is a 20-year coordinated municipal infrastructure plan for areas within the City of Portland's urban service boundary. The plan includes transportation networks; water storage and distribution; sewer and stormwater collection and treatment facilities; parks and recreation facilities; and other facilities, such as City Hall; office buildings; and fire and police stations; and technology assets. The CSP guides infrastructure investments to meet the current needs and future demand for many of the services discussed in this chapter.

Potable Water

The Portland Water Bureau manages an extensive public water distribution system that serves development in the neighborhoods on both sides of the Willamette River. However, this system does not extend into the study area, except for select areas along the waterfront requiring water service. As shown in Map 18, Water Distribution System, networks of pressurized water mains exist throughout the South Portland neighborhood to the west and Sellwood and Brooklyn neighborhoods to the east. On the west side, the water mains extend into the South Reach study area to serve Willamette Park and developments to its north, as well as the single-family residential uses along SW Miles Place. Additionally, a water

main extends south along SW Macadam Avenue and along Riverwood Drive in the Dunthorpe neighborhood. On the east side, water mains extend into the study area to serve Sellwood Park and the commercial and residential development just north and south of the Sellwood Bridge. The water system on the west and east side of the river connect via two underground connections. One Connection originates just south of Willamette Park (60-inch main) and connects to the southern end of the Oaks Amusement Park parcel. The second connection crosses the river just north of the Sellwood bridge (30-inch main).

The Water Bureau completed construction of the Hannah Mason Pump Station in the summer of 2017 to serve the adjacent neighborhoods and the southwest hills. This new pump station will replace the existing Fulton Pump Station, built in 1912 and located just west of the Hannah Mason Pump Station site. The new pump station includes five energy-efficient pumps, public restrooms, and park equipment storage.

There are no known deficiencies identified within the study area and no water-related capital improvements expected in the near-term.

Sewer

The Portland Bureau of Environmental Services manages an extensive public sewer system that serves the neighborhoods surrounding the South Reach. As shown in Map 19, Sewer Collection System, a mix of combined gravity mains, sanitary gravity mains, and combined sewer overflow mains serve the neighborhoods of South Portland, Sellwood, and Brooklyn.

There are two cases where combined sewer overflow (CSO) pipes extend to the Willamette River. On the west side, a CSO pipe extends from SW Carolina St and under the Willamette Sailing Club, located just north of Willamette Park, to outfall OF03. On the east side, a second CSO pipe extends from SE Harney St to the river.

Public Safety and Emergency Services

This section provides a brief summary of public safety facilities and services in and around the South Reach. See Map 20, Public Services and Facilities, for the location of these resources in and around the study area.

Fire

Fire protection in the South Reach is provided primarily by Portland Fire and Rescue, with City of Lake Oswego Fire providing service for areas in unincorporated Multnomah County. Three Portland Fire and Rescue stations are located within approximately one-half mile of the River Plan / South Reach project area. City of Lake Oswego Fire serves the unincorporated area from its main fire station, located in downtown Lake Oswego. Additional detail on these fire stations is provided in Table H-1.

Table H-1. Fire Stations Serving the South Reach project area

Station	Jurisdiction	Location	Service Area
10	City of Portland	451 SW Taylors Ferry Rd	South Burlingame, Collins View, Arnold Creek Neighborhood Association and John's Landing
20	City of Portland	2235 SE Bybee Blvd	Sellwood-Moreland, Ardenwald, and Eastmoreland Neighborhood Associations
23	City of Portland	1300 SE Gideon St	Rescue vehicle providing emergency medical services
Main	Lake Oswego	300 B Avenue, Lake Oswego	Neighborhoods north of Oswego Lake and north to the Dunthorpee neighborhoods, and east from the Willamette River to Boones Ferry Road.

Police

Portland Police Bureau and the Multnomah County Sheriff’s Office provide law enforcement services in the South Reach. Portland Police is responsible for activities within the City of Portland boundary while the Multnomah County Sheriff’s Office serves unincorporated Multnomah County portion of the study area. The Portland Police Bureau serves the South Reach from its Central Precinct in downtown Portland. Multnomah County Sheriff’s Office’s headquarters is located at SE 5th Avenue and SE Hawthorne Blvd in Southeast Portland.

In addition to land patrols, the Sheriff’s Office River Patrol also conducts river patrols in partnership with the Oregon State Marine Board, the Port of Portland and the United States Coast Guard. As a part of this effort, River Patrol oversees 110 miles of waterways, including the Willamette River, Columbia River, Multnomah Channel and Sandy River. River Patrol provides law enforcement for moorages, marinas, and houseboat communities within the South Reach.

In the recent past transient boaters – those individuals that live on a boat for extended periods of time, often in substandard vessels – have been recognized as a more prominent issue in the South Reach. These boats often do not have adequate facilities to effectively manage waste and sewage. Their operators often dump this refuse directly into the river. Additionally, the use of substandard vessels creates a substantial sinking risk for the boat’s occupants.

Schools

Public

There is one public school located within the South Reach study area and two others in the nearby vicinity. Below is a summary of each of these schools.

- *Llewellyn Elementary (K-5)* – Located in the Sellwood neighborhood and in the South Reach project area. With its proximity to the South Reach, students often walk down to Oaks Bottom National Wildlife Refuge and other nearby parks and open spaces as a part of the school’s curriculum.
- *Winterhaven School (K-8)* – Located in the Brooklyn neighborhood, east of the north end of the South Reach project area. Winterhaven emphasizes a Science, Technology, Engineering, the Arts, and Math (S.T.E.A.M.) curriculum. The S.T.E.A.M. program is optional for students at the school.
- *Sellwood School (6-8)* – Located in the Sellwood neighborhood, approximately one-half mile from the Sellwood Bridge, this middle school emphasizes core classes in language arts, social studies, math and science, while also providing a Talented and Gifted Program. An outdoor school is also offered for sixth graders.


Private Schools

There are two private schools located in the nearby vicinity of the South Reach study area. Below is a summary of each of these schools.

- *Sunstone Montessori School (Pre-K to 6th grade)* – Located in John’s Landing, the Sunstone Montessori School provides private instruction using the Montessori Method of education. The school offers daycare for infants as young as 16 months and instruction for children up to the 6th grade.
- *L’Etoile French Immersion School (Pre-K to 5th grade)* – Located just outside the study area on SW Pendleton Street (between SW Hood Avenue and SW Kelly Avenue), the L’Etoile French School utilizes the French approach to learning starting in preschool and extending to the 5th grade.



PUBLIC FACILITIES & SERVICES ISSUES TO BE EXAMINED FURTHER

1. Impacts of transient boaters and campers on public safety and natural resources in the project area
- 



IV. SOUTH REACH MAPS

This section contains the maps referenced in the discussions of the various South Reach characteristics above. An explanation of the information portrayed on the maps is provided below.

Explanation of Data on the Maps

Map 1. 2017 Aerials (pg 56)

Map 1 provides a 2017 aerial photograph of the study area, with the city boundary and urban services boundary highlighted. River mile markers are also included on the map. River mile markers are analogous to roadway mile markers. They start at zero at the end of the waterway and increase in the upstream direction. The South Reach study area begins roughly 14 miles upstream from the Willamette River's confluence with the Columbia River.

Map 2. Historic Resources (pg 58)

Map 2 shows properties on the 1984 Historic Resources Inventory, historic landmarks and districts, and Cornerstones of Community structures.

Historic Resource Inventory

This data were derived from the 1984 citywide Historic Resources Inventory (HRI). The last update to the HRI data was in 1984. Additional updates are expected to be completed within the next few years. The inventory identifies potential resources of historic and archaeological significance, including properties within the Willamette River Greenway overlay zone. Being listed in the HRI is not a true historic designation. Since 1984, dozens of properties have been removed from the list through property owner requests and other circumstances.

Historic Districts

The data were derived from the federal National Register of Historic Places. The Oregon State Historic Preservation Office (SHPO) maintains a statewide database of National Register properties. There are no historic districts in the South Reach project area.

Historic Landmarks

There are two types of historic landmarks; local or "Portland" landmarks designated by the City and National Register properties. The landmarks data was derived from the National Register of Historic Places and the City of Portland records. The City requires land use reviews and has zoning regulations for specific alterations and redevelopment associated with historic landmarks. Local and National Register historic landmarks are generally treated the same in the zoning code. There are three historic landmarks in the South Reach project area (see page 13 in History and Culture section).

Cornerstones of Community Structures

This data is derived from *Cornerstones of Community: Buildings of Portland's African American History*, completed by the Bosco-Milligan Foundation Architectural Heritage Center in the late 1990s. The investigation identified and documented structures associated with African-American individuals, institutions and events through Portland's history. There are no *Cornerstones of Community* structures in the project area.

Map 3. Vulnerability Risk (pg 60)

The City of Portland uses a measure of “Vulnerability Risk” to characterize the potential displacement vulnerability risk within a given area. Vulnerability Risk sums the individual risk of the following factors: (1) Renters; (2) Communities of color; (3) Educational attainment; and (4) Households with income at or below 80 percent of median family income (MFI) for the city.

Vulnerability risk was evaluated for all Census tracts in the city. Each of the four risk factors were evaluated on a scale of one to four, with four being the highest level of risk. The individual risk factor scores were added together to calculate a composite risk score. The composite risk score for the South Reach’s Census tracts are shown in Map 3. Census tracts intersecting with the South Reach boundary are in the two bottom vulnerability risk tiers.

Map 4. Land Use (pg 62)

Land use data in Map 4 were derived from the Multnomah County tax assessor data and updated by BPS to reflect the actual but generalized uses of land on May 21, 2018. This differs from Map 5 (Adopted Zoning) and Map 6 (Overlay Zones), which show the zoning that guides future land uses and development. The table to the right provides examples of uses that are included in the South Reach land use categories.

CATEGORY	TYPICAL LAND USES
Recreation/Open Space	Park, wildlife refuge, golf course.
Commercial	Common uses along the river: office, commercial condominium, garage/parking structure, parking lot, restaurant, store. Other uses: bank, bowling alley, funeral home, general shop, health club, hotel, skating rink, lumber yard, medical office, motel, tavern, theater
Commercial, Vehicle Related	Car wash, automobile dealership, gas/oil station, automobile services center.
Single Dwelling Housing	Detached housing, semi-detached housing, floating homes.
Multi-dwelling Housing	Apartments, condominiums.
Institutional	Foster care, cemetery/mausoleum, church, day care, fraternal organization, adult home, nursing home, university, public building.
Industrial	Common uses along the river: general industrial, marine terminal, truck terminal, distribution, warehouse, wholesale, special purpose industrial. Other uses: special purpose industrial, industrial office, mini storage, multi-story storage, showroom.
Vacant	Undeveloped.
Other	Captures land uses that don’t fit under one of the other categories.
No Data	Parcels with no data on the current land use, per the Multnomah County Tax Assessor.

Map 5. Adopted Zoning (pg 64)

Map 5 shows the adopted base zoning designations for all parcels within the South Reach project area, including the new zoning designations to be implemented as a part of the recently-adopted *2035 Comprehensive Plan*. New Comprehensive Plan zoning designations will take effect May 24, 2018.

Base zones can be grouped into a number of general categories. The table below identifies the base zones of South Reach properties in each of seven categories.

Map 6. Overlay Zones (pg 66)

Map 6 shows the adopted overlay zones for parcels within the South Reach project area. Overlay zones contain specialized regulations in addition to those in the base zone (shown in Map 5). In cases where overlay and base zones conflict, the overlay zone requirement must be met.

Greenway overlay zones have been applied to all properties adjacent to the Willamette River, per the requirements of Statewide Planning Goal 15, Willamette River Greenway. Greenway overlay zones include the following:

- **River General (g)** – Allows for uses and development that are consistent with the base zoning, allow for public use and enjoyment of the waterfront and enhance the river’s natural and scenic qualities.
- **River Natural (n)** – Protects, conserves and enhances land of scenic quality or of significant importance as wildlife habitat.

Generalized Base Zone Sub-Categories

OPEN SPACE	SINGLE DWELLING RESIDENTIAL	MULT-DWELLING RESIDENTIAL	CAMPUS INSTITUTIONAL	COMMERCIAL / MIXED USE	EMPLOYMENT	INDUSTRIAL
Open Space (OS)	Residential Farm/Forest (RF) Residential 20,000 (R20) Residential 10,000 (R10) Residential 7,000 (R7) Residential 5,000 (R5) Residential 2,500 (R2.5)	Residential 3,000 (R3) Residential 2,000 (R2) Residential 1,000 (R1) High Density Residential (RH) Central Residential (RX)	Institutional Residential (IR) Campus Institutional 1 (CI1)* Campus Institutional 2 (CI2)*	Commercial Residential (CR) * Commercial Mixed Use 1 (CM1)* Commercial Mixed Use 2 (CM2) * Commercial Mixed Use 3 (CM3) * Commercial Employment (CE)* Central Commercial (CX)	General Employment 1 (EG1) General Employment 2 (EG2) Central Employment (EX)	General Industrial 1 (IG1) General Industrial 2 (IG2) Heavy Industrial (IH)

* New 2035 Comprehensive Plan zoning designations

- **River Recreational (r)** – Encourages river-dependent and river-related recreational uses that provide a variety of public access opportunities to and along the river and enhances the river’s natural scenic qualities.
- **River Water Quality (q)** – Protects functional values of water quality resources by limiting or mitigating the impact of development in the setback. The (q) overlay zone overlaps other greenway overlay zones.

The Environmental overlay zones protect natural resources and functional values identified by the City as providing public benefits. Environmental overlay zones have been applied along the Willamette River in unincorporated urban areas. A summary of the two Environmental overlay zones are as follows:

- **Environmental Protection Overlay Zone (p)** – Provides the highest level of protection to the most important resources and functional values identified by the City. Development in this zone is only approved in rare and unusual circumstances. There are 20 acres of (p) overlay along the Willamette River located at Harborton Wetlands at the confluence with Multnomah Channel and across from Elk Rock Island.
- **Environmental Conservation Overlay Zone (c)** – Conserves important resources and functional values in areas where they can be protected while allowing environmentally sensitive urban development. There are 20 acres of (c) overlay along the Willamette River’s South Reach.

A third important overlay zone in the South Reach is the Scenic (s) overlay zone. The Scenic overlay zone is used to implement the policies of Portland’s Scenic Resources Protection Plan (1991). It identifies where specific development standards for view corridors

and scenic corridors are applied to new development or redevelopment.

Map 7. Property Ownership (pg 68)

Property ownership data in Map 7 identifies properties owned by individual public agencies, as well as private owners. Private owners are not specifically identified in the map, except for those in the Top 10 Owners (acreage) list provided on the map. Property owners in the list can be identified on the map by finding their associated map number. The data depicted in the map is derived from Multnomah County tax assessor data.

Map 8. Urban Renewal Areas and Potential Redevelopment Sites (pg 70)

Map 8 contains a variety of data, including City of Portland’s urban renewal areas, sites likely to redevelop based on the City’s Buildable Lands Inventory (BLI), and Oregon Department of Environmental Quality (DEQ)-defined contaminated sites.

Urban renewal areas are defined portions of the city identified as key target areas for economic development programs and real estate development.

The BLI is the City’s estimate of development potential under current City plans and zoning and how that potential relates to projected household and job growth estimates. A component of this analysis is to evaluate the potential for redevelopment of individual sites. A site is determined to be likely to redevelop if the parcel (1) is vacant; or (2) determined to be “underutilized.” The criteria used to determine whether a parcel is underutilized varies by land use type but depends on a combination of the existing land use, the applicable zoning regulations, and the relationship between land value and the value

of existing structures. More information on the BLI can be found here: <https://www.portlandoregon.gov/bps/59296>.

Additionally, Map 8 shows sites currently or previously identified by DEQ as contaminated. Suspected contamination sites area also identified. This data is derived from the DEQ Environmental Cleanup Site Information database.

Map 9. Parks, Open Space, Trails and Viewpoints (pg 72)

Parks, open spaces, and trails shown in Map 9 are derived from Multnomah County RLIS zoning and ownership data that is maintained by Portland Parks and Recreation (PP&R). PP&R and the Bureau of Planning and Sustainability (BPS) maintain the data identifying the location of public docks and boat launches.

Viewpoints identified in Map 9 are derived from a database maintained by BPS. The Willamette Greenway Plan (1987) identifies viewpoints and view corridors. The plan identifies a number of locations where viewpoints are to be provided as part of new development projects. The purpose of the viewpoints is to establish locations where the public can sit and enjoy nature and the built environment along the Willamette River. Viewpoints and view corridors are implemented through requirements in the Portland Zoning Code and the Willamette Greenway Plan Design Guidelines (part of the Willamette Greenway Plan document).

Scenic views and scenic drives are documented in the Scenic Resources Protection Plan (1991) and protect views of the city, mountains, bridges or the river. These view points and drives are generally located in parks or along public rights-of-way.

Map 10. River Bank Character and Bathymetry (pg 74)

River depth, or bathymetry, in Map 10 is derived from the U.S. Army Corps of Engineers survey information (2011). The bathymetry is mapped from the ordinary high water mark along the river bank.

River bank character data for this map is derived from data maintained by the BPS. A bank survey was completed to characterize the Willamette River in the city limits and unincorporated Multnomah County. Stretches of river bank were classified into one of eight categories, with pilings also characterized as either allowing light or limiting light. This dataset was most recently updated in 2012.

Map 11. Vegetation and Steep Slopes (pg 76)

Mapped vegetation patches are ½-acre or larger and based on information from data source, aerial photos, Parks and Recreation natural area assessments, and vegetation surveys along the banks of the Willamette and Columbia rivers. The ½-acre or larger patches are mapped and classified as forest, woodland, shrubland or herbaceous based on established criteria. The data is updated as needed through project-related updates to the BPS Natural Resource Inventory (NRI).

Map 12. Flood Hazard (pg 78)

There are two sources for flood area data depicted in Map 12. The 100-year and 500-year floodplains are derived from Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps used for the National Flood Insurance Program. FEMA estimates the extent of the 500-year floodplain when determining the 100-year floodplain but the analysis for these areas is not as rigorous as for the 100-year floodplain.

The 1996 flood inundation area is derived from the U.S. Army Corps of Engineers digitized aerial maps of the 1996 flood in the Willamette Valley. The City of Portland regulates development within this area as well as the FEMA 100-year floodplain.

Map 13. Natural Resources Inventory (pg 80)

The Riparian Corridor and Wildlife Habitat GIS models are used to rank natural resource features in Map 13, based on the functions provided. The GIS models were adopted by the City Council as part of the factual basis for the *2035 Comprehensive Plan* and are constantly maintained by BPS. The combined ranks depict all features that provide at least one riparian corridor or wildlife habitat function (e.g., shade, nutrient cycling, food web, interior habitat area). The ranks are relative to each other, meaning a high ranked feature provides more functions than a medium ranked feature; and a low ranked feature provides more functions than a feature that receives no rank. Any feature that receives a rank of high, medium or low by the GIS models is viewed as a significant natural resource.

Special Habitat Areas (SHA) are also shown on Map 13. SHAs are unique, rare or declining features in Portland. The criteria for designating SHAs was also adopted by City Council as part of the factual basis for the *2035 Comprehensive Plan* and is maintained by BPS. SHAs in the Greenway overlays include: habitat, like the Willamette River, critical to ESA-listed species; Ross Island, which provides habitat for migratory birds including bald eagle; Oaks Bottom, which is a complex of multiple habitats from wetland to oak to bottomland hardwood forest; and all Willamette River bridges, which can be used for nesting by peregrine falcons.

Map 14. Existing Transit (pg 82)

The transit data provided in Map 14 is derived from Metro's Regional Land Information System (RLIS), which is a collection of many data layers maintained and provided for use by Metro, Portland's regional government. The map highlights existing bus and light rail transit services.

Map 15. TSP: Traffic Classes, Map 16. TSP: Bicycle Classes, and Map 17. TSP: Pedestrian Classes (pgs 82 – 89)

Transportation System Plan (TSP) classifications are part of a group of layers that make up the TSP, which is the 20-year plan for transportation improvements in the City of Portland. The goal of the TSP is to provide transportation choices for residents, employees, visitors and firms doing business in Portland by describing what the system should look like and what purpose it fulfills.

Maps 15, 16, and 17 provide the TSP classifications for traffic, bicycles, and pedestrians, respectively. TSP classifications designate the type of movement and planning that should be emphasized on each street. Classifications are used to describe how streets should function for each modes of travel, not necessarily how they are functioning at present.

The TSP is in the process of being updated as a part of the *2035 Comprehensive Plan*. Implementation of the TSP update is expected to begin on May 24, 2018. More information on the TSP update is available here:

<https://www.portlandoregon.gov/transportation/73660>.

Map 18. Water Distribution System (pg 90)

The water distribution data provided in Map 18 is managed and maintained by the Portland Water Bureau to enable the bureau to effectively design, construct, analyze and manage the City's water supply and distribution system. The data is continually updated by the Water Bureau.

The boundary of the Palatine Hill Water District is derived from Metro's RLIS database.

Map 19. Sewer Collection System (pg 92)

The sewer collection data provided in Map 19 is maintained by the Portland Bureau of Environmental Services to ensure the effective management of the City's sewer distribution system. The data is continually updated by the Bureau of Environmental Services.

Map 20. Public Services and Facilities (pg 94)

Map 20 identifies the location of a number of important public facilities and assets in and around the study area. The locations of Portland police stations are derived from a database maintained by Portland Police Bureau. Data related to the emergency response routes is derived from a database collaboratively managed and maintained by Portland Fire and Rescue and the Portland Bureau of Transportation. Data for Portland fire stations and other community assets (schools, community centers, and hospitals) is derived from Metro's RLIS database.



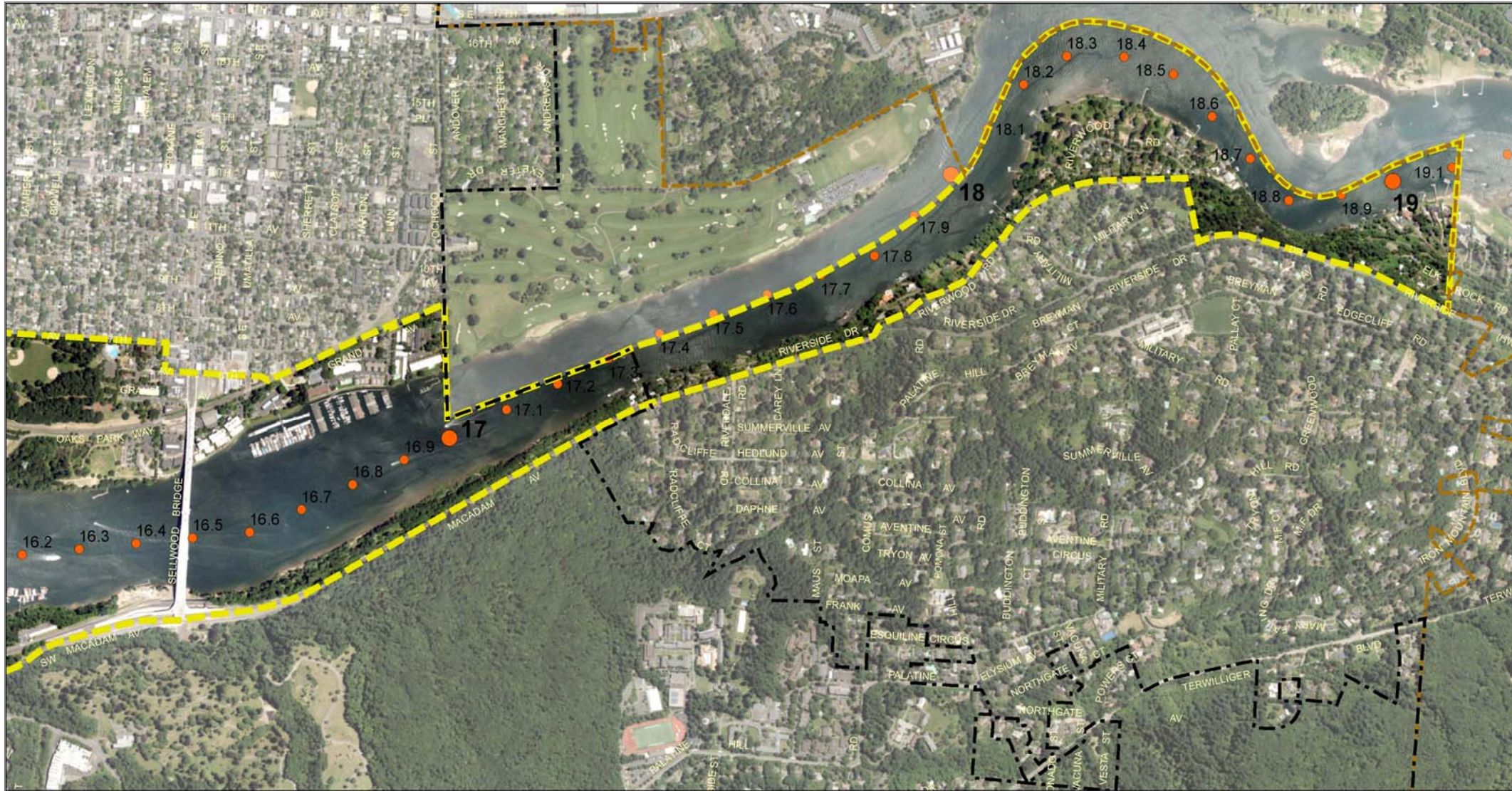
MAP 1.



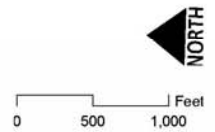
2017 Aerials



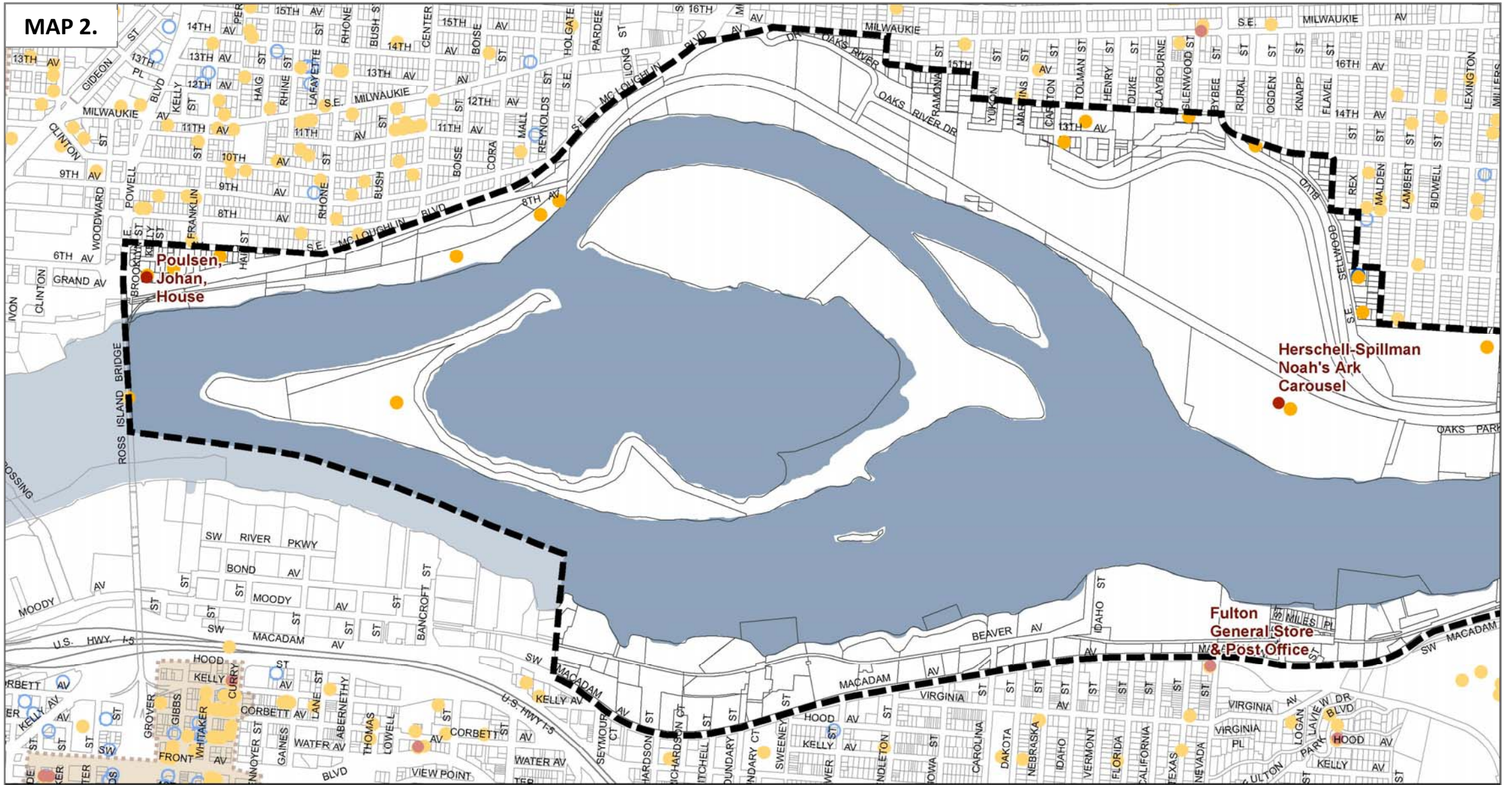
-  River Plan South Reach boundary
-  City Boundary
-  Urban Service Boundary
-  River Mile Markers
-  1/10 Mile Markers



May, 2018



MAP 2.

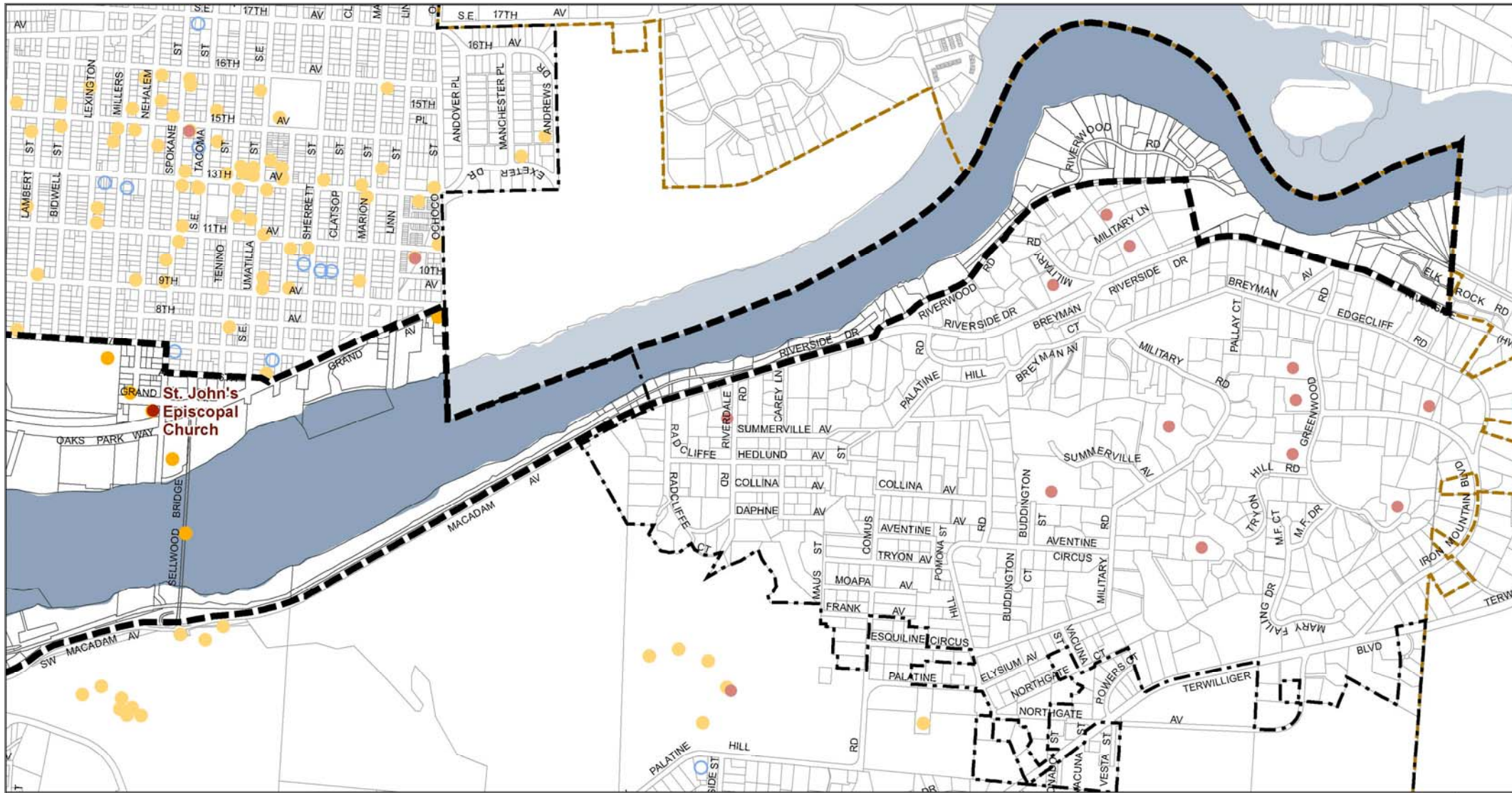


Historic Resources



- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Historic Landmarks (labeled)
- 1984 Historic Resources Inventory
- Cornerstones of Community [Bosco-Milligan]*
- Historic Districts

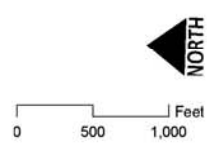
*Cornerstones of Community (1995) identified and documented structures associated with African-American individuals, institutions, and events through Portland's history.



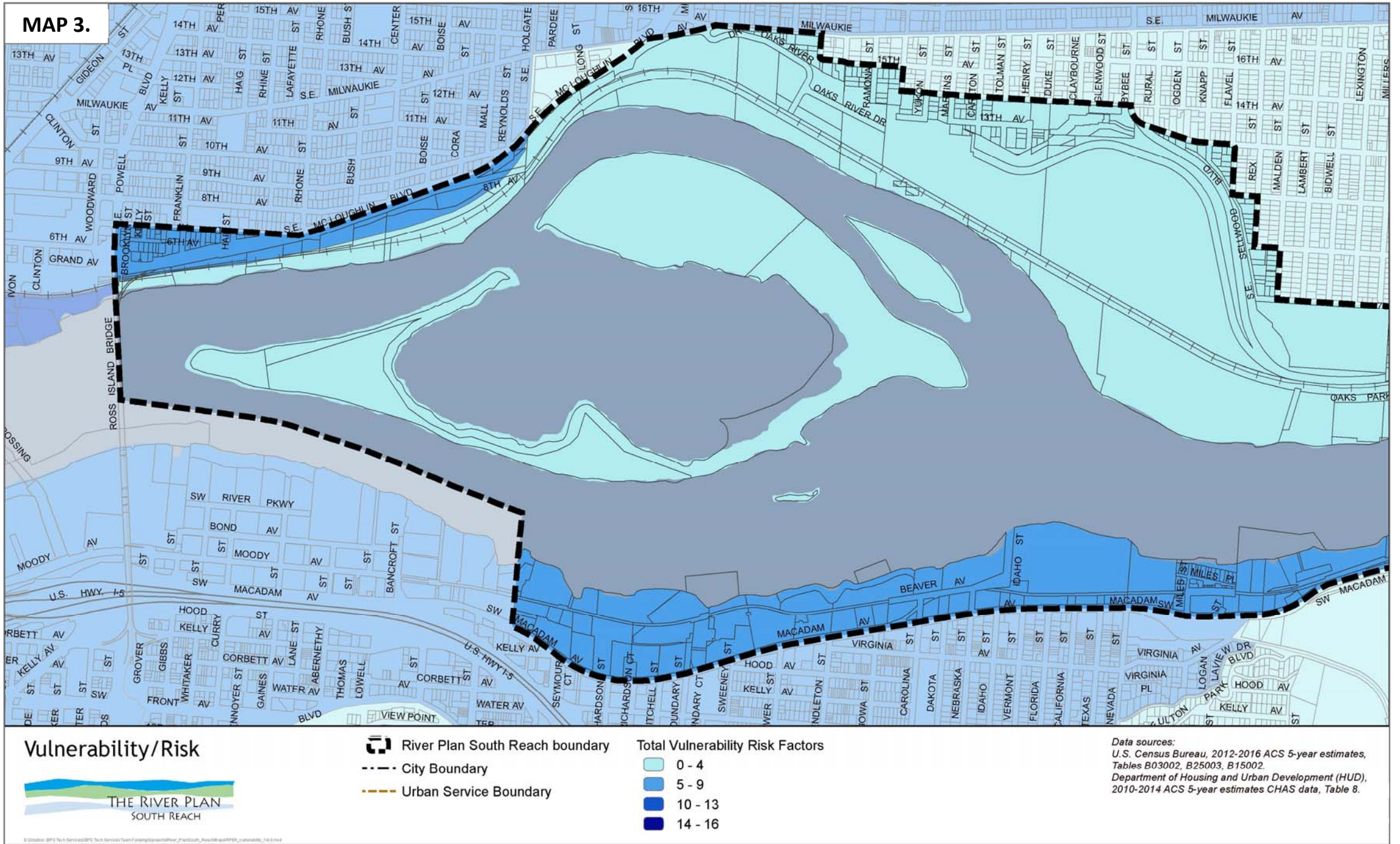
May, 2018

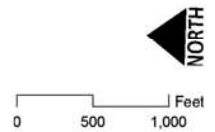
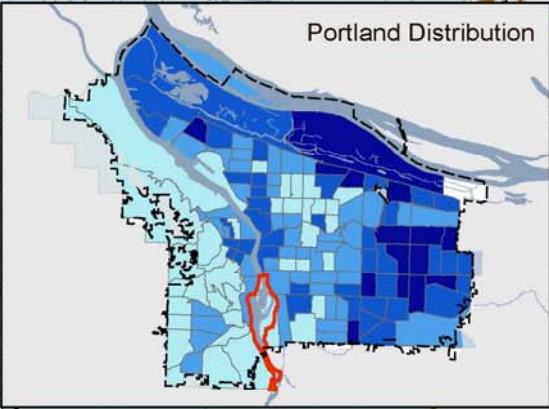
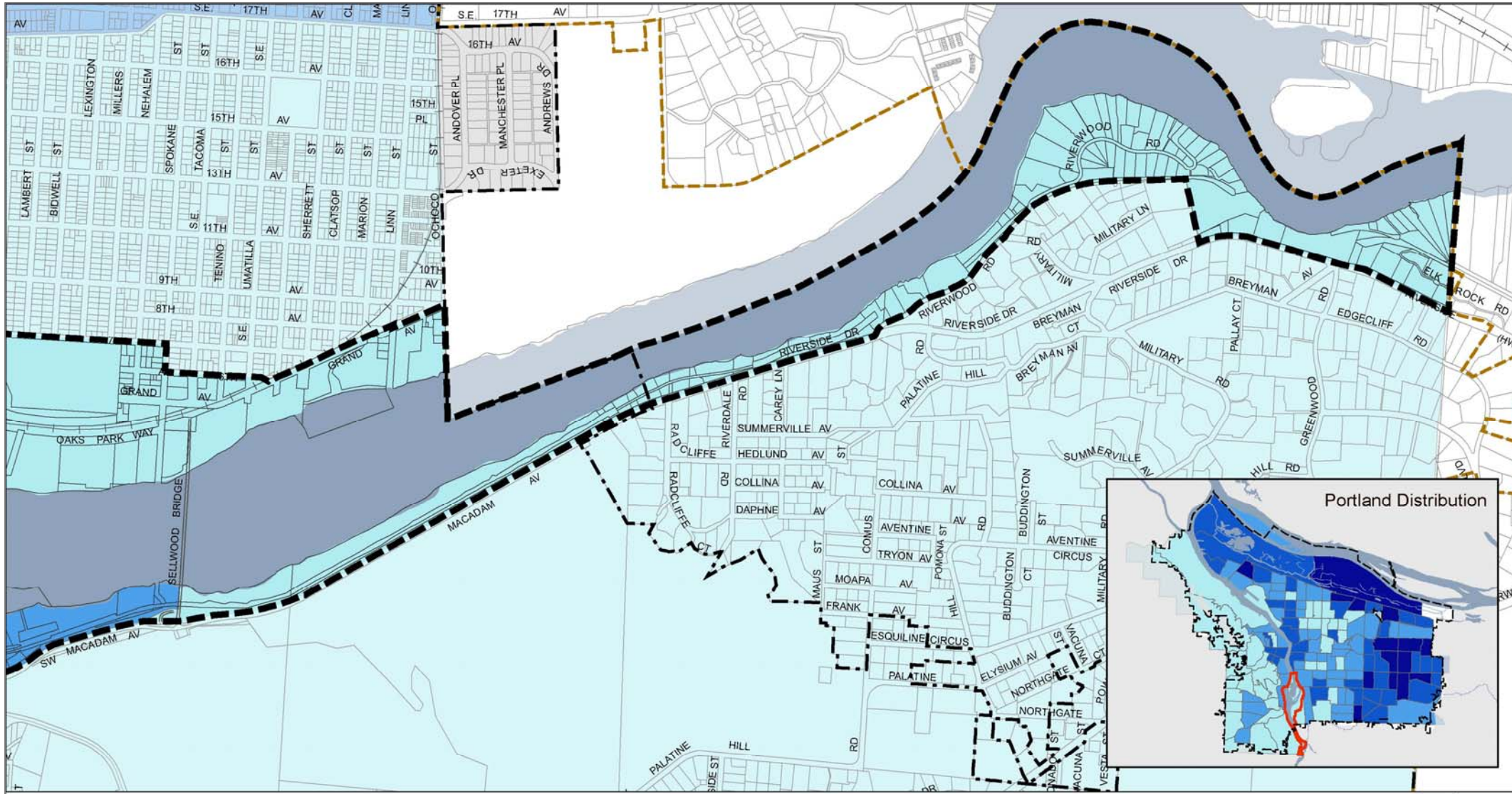
 Bureau of Planning and Sustainability
Department of Public Works, City of Portland, Oregon

 City of Portland, Oregon

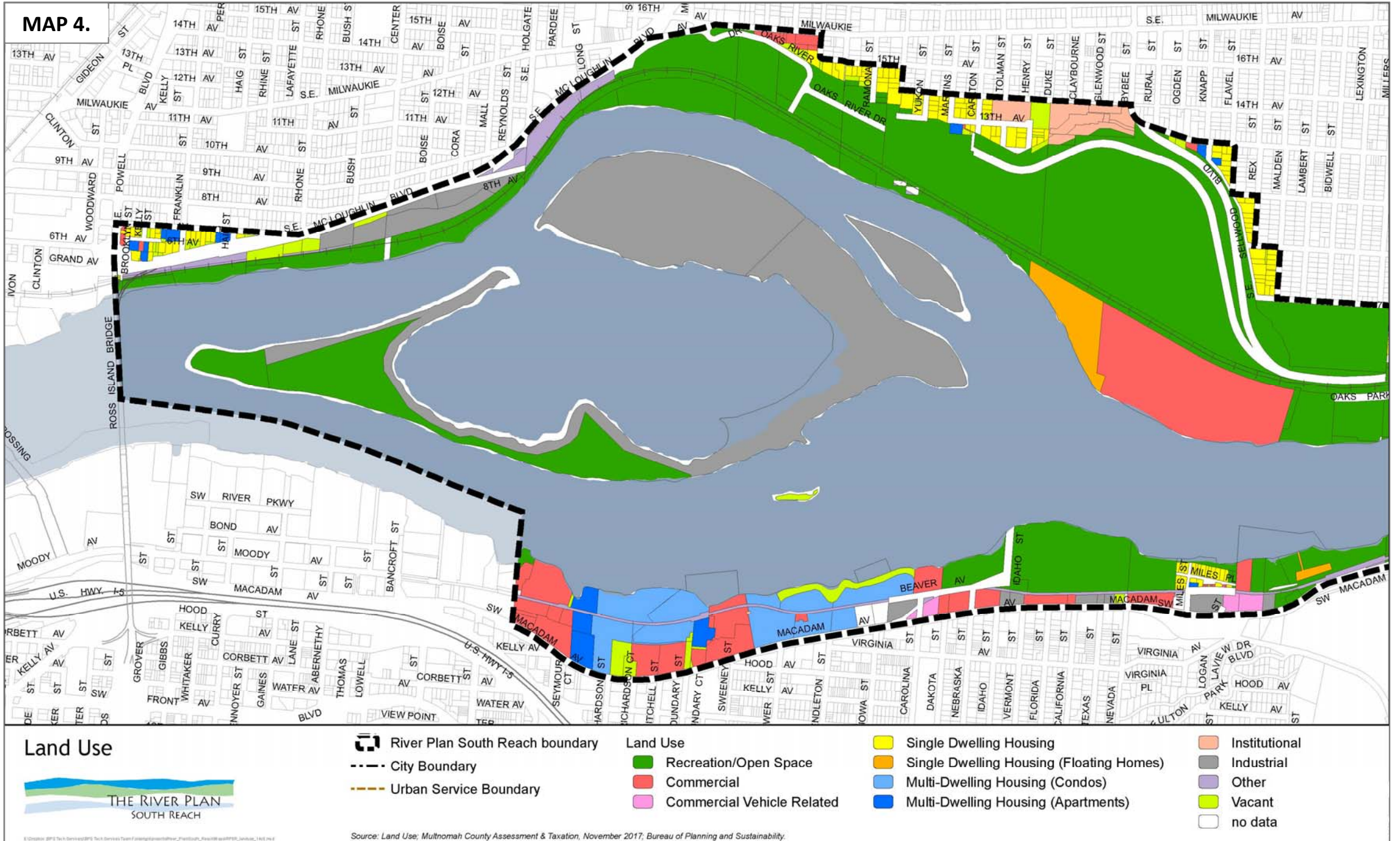


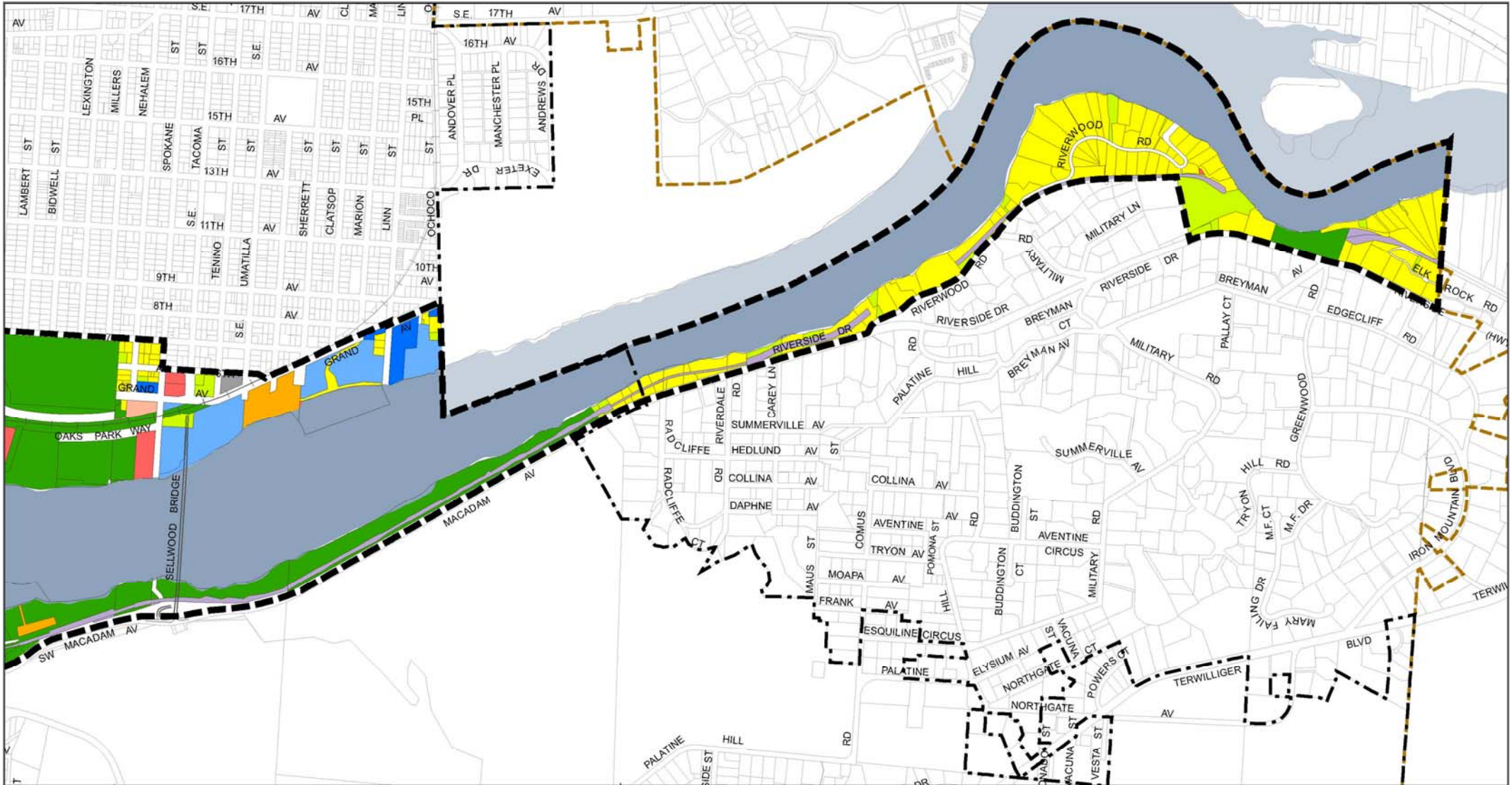
MAP 3.



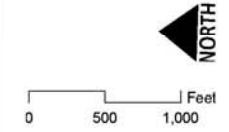


MAP 4.

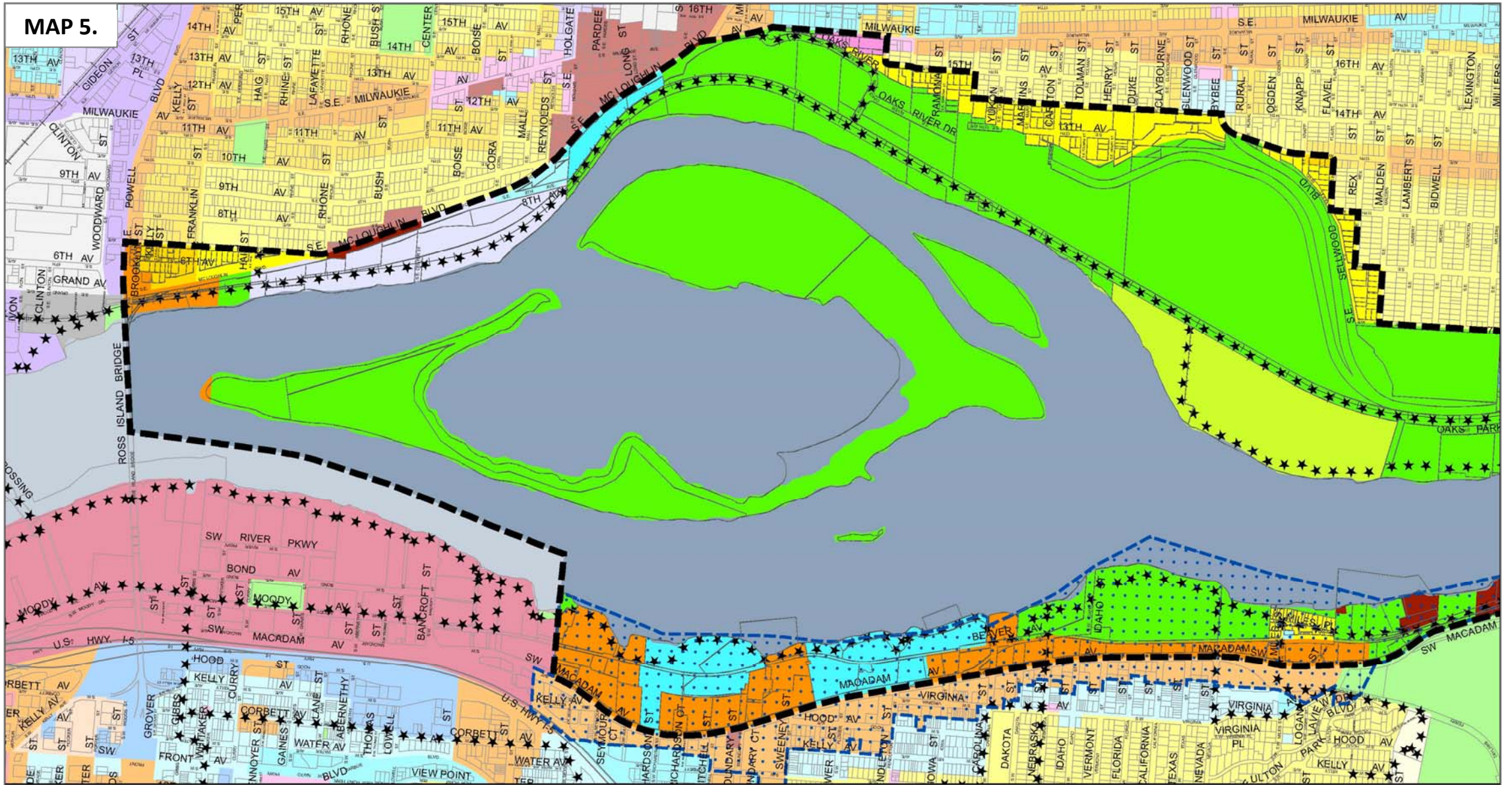




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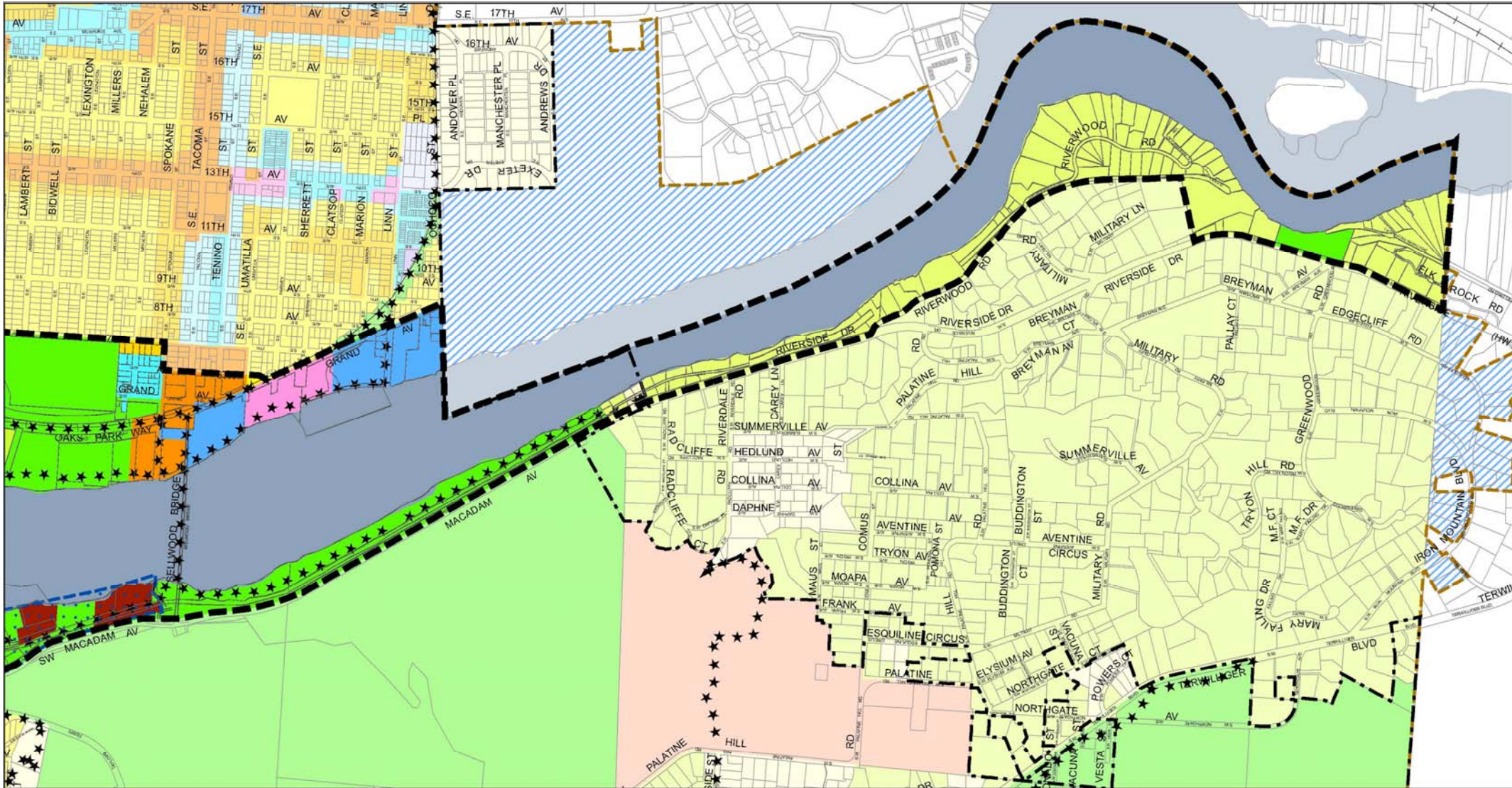
MAP 5.



Adopted Zoning



- River Plan South Reach boundary
 - City Boundary
 - Urban Service Boundary
 - Macadam Plan District
 - Major Public Trails
- Open Space (OS)
 - Residential Farming (RF)
 - Residential 20,000 (R20)
 - Residential 10,000 (R10)
 - Residential 7,000 (R7)
 - Residential 5,000 (R5)
 - Residential 2,500 (R2.5)
- Residential 3,000 (R3)
 - Residential 2,000 (R2)
 - Residential 1,000 (R1)
 - High Density Residential (RH)
 - Central Residential (RX)
 - Institutional Residential (IR)
 - Campus Institutional 1 (C11)
- Campus Institutional 2 (C12)
 - Commercial Residential (CR)
 - Commercial Mixed Use 1 (CM1)
 - Commercial Mixed Use 2 (CM2)
 - Commercial Mixed Use 3 (CM3)
 - Commercial Employment (CE)
 - Central Commercial (CX)
- General Employment 1 (EG1)
 - General Employment 2 (EG2)
 - Central Employment (EX)
 - General Industrial 1 (IG1)
 - General Industrial 2 (IG2)
 - Heavy Industrial (IH)
 - County Zoning (MC, CC, WC)



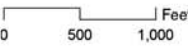
May, 2018

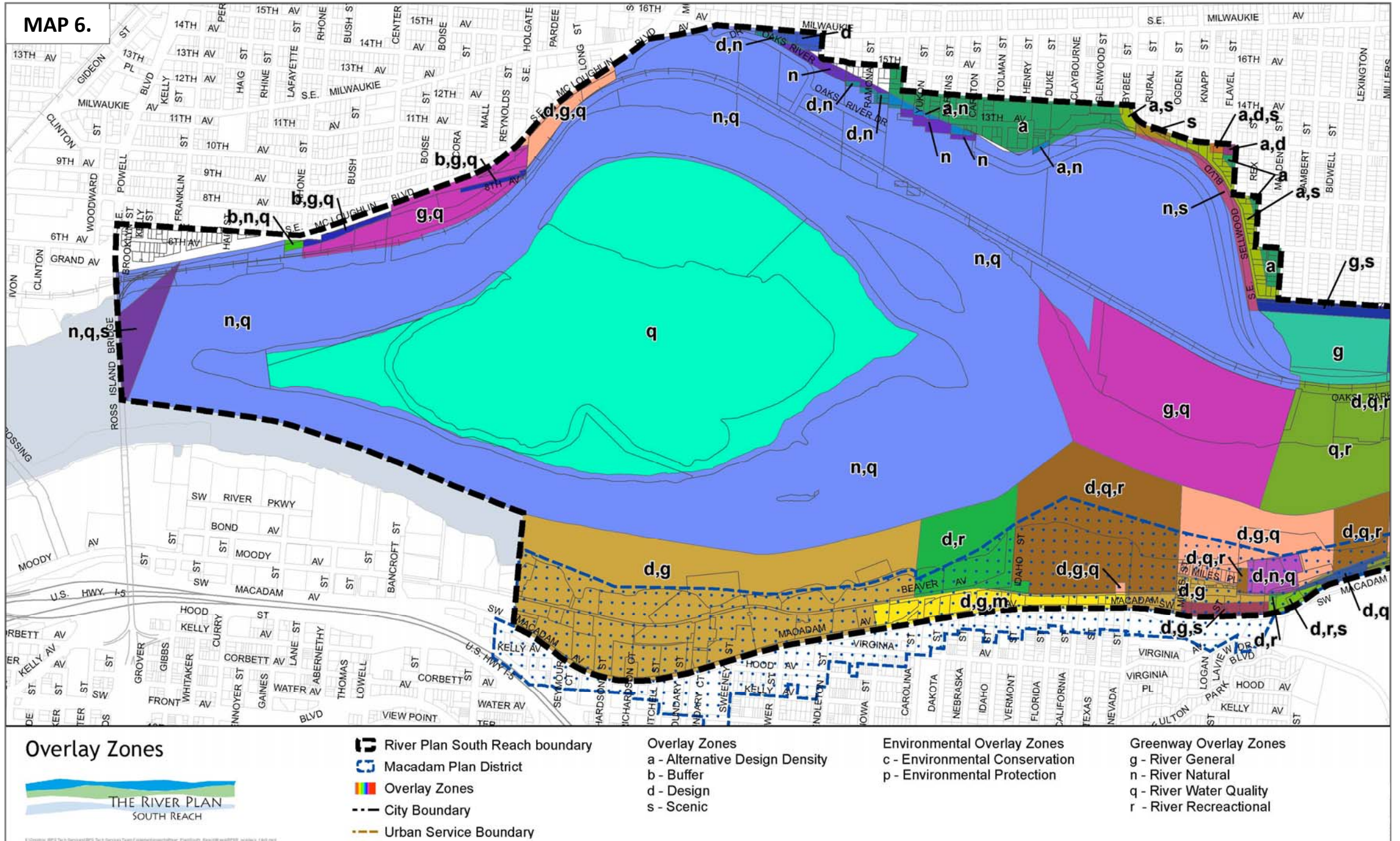


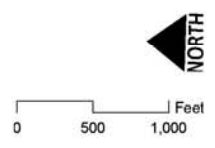
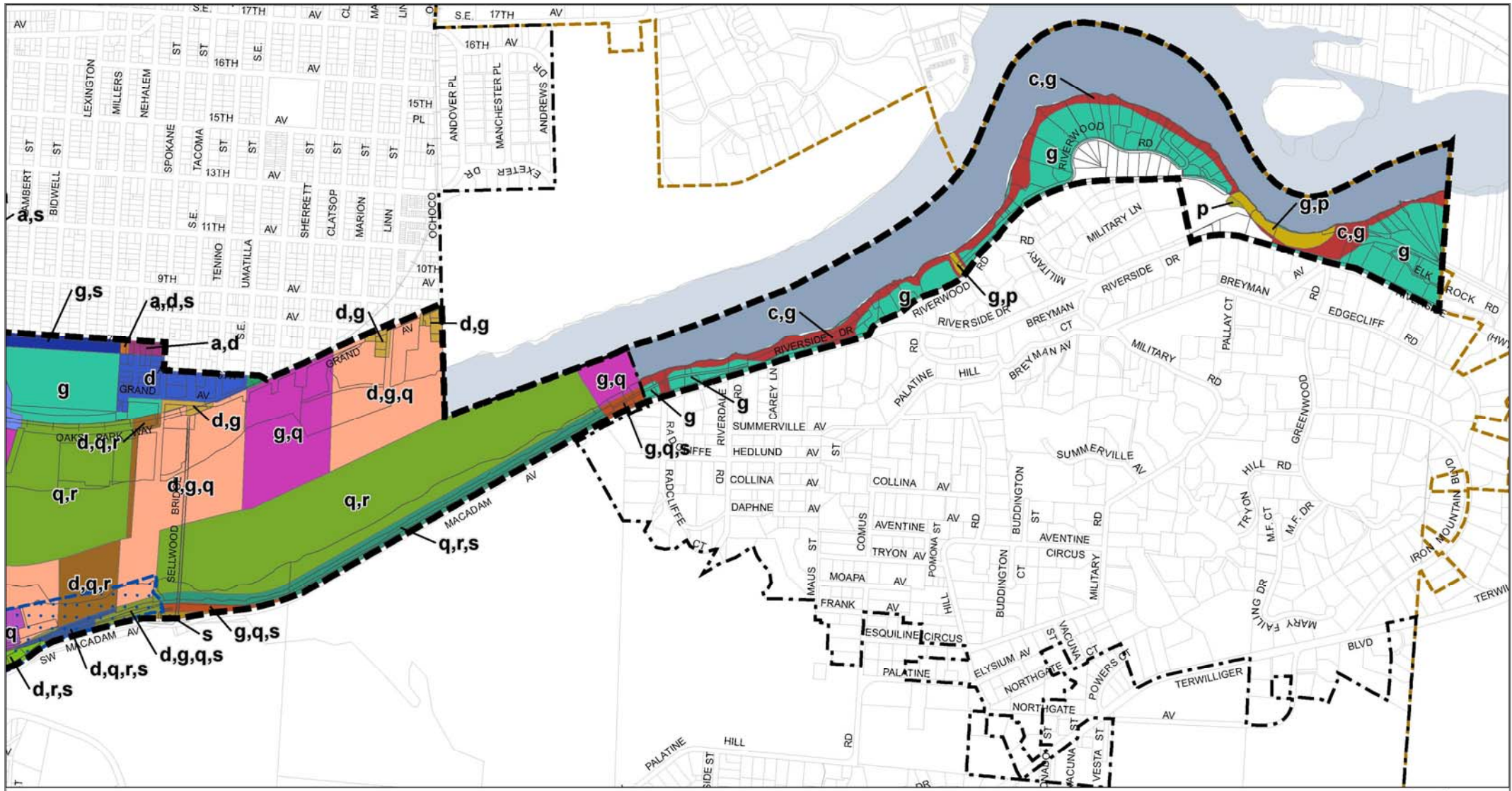
Bureau of Planning and Sustainability



City of Portland, Oregon







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MAP 7.

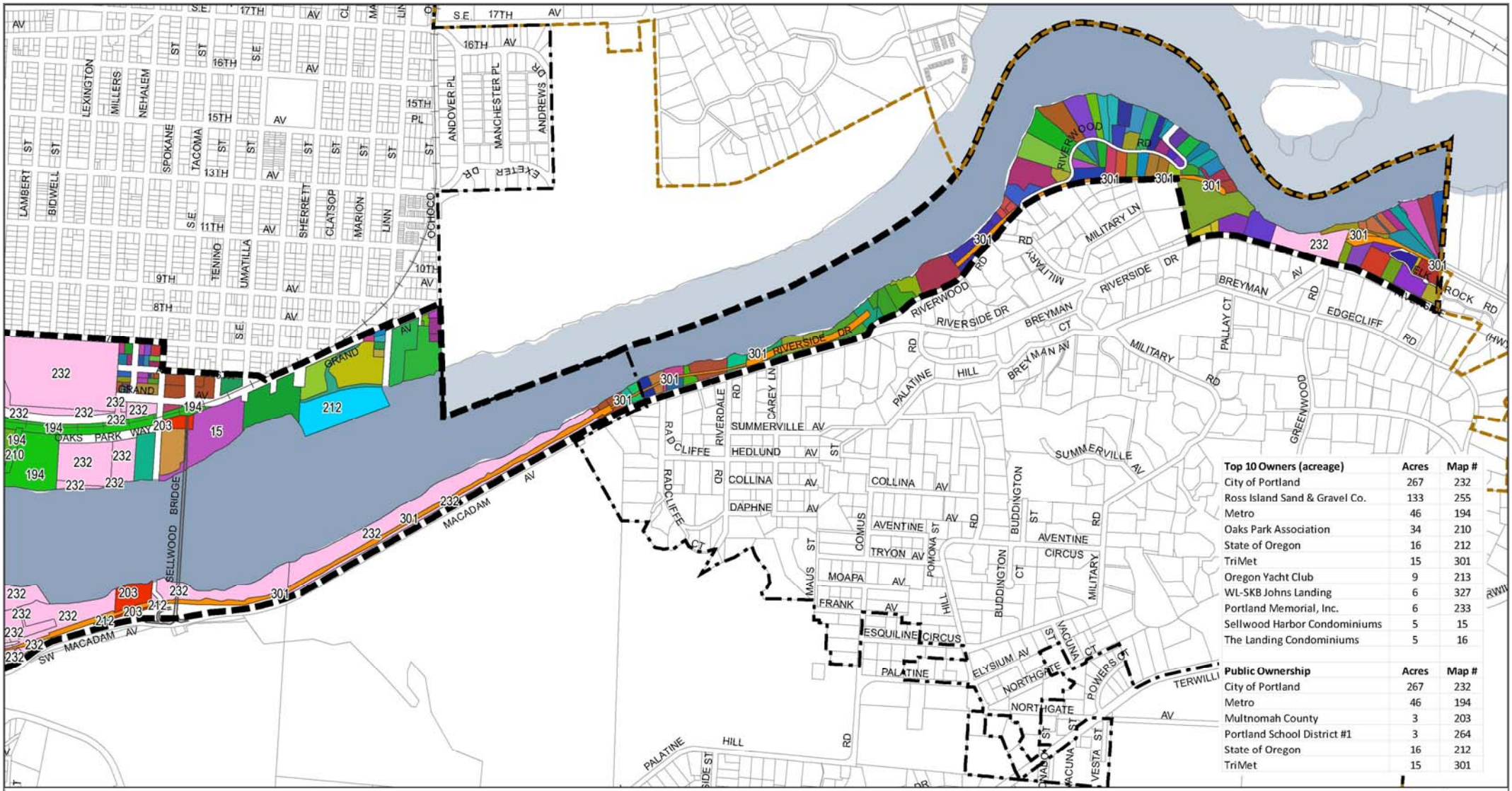


Numbers on properties correspond to table with property owner names with total ownership area > 5 acres or in public ownership.

Property Ownership



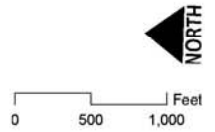
- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Private Ownership
- Public Ownership
- City of Portland
- Metro
- Multnomah County
- Portland School District #1
- State of Oregon
- TriMet



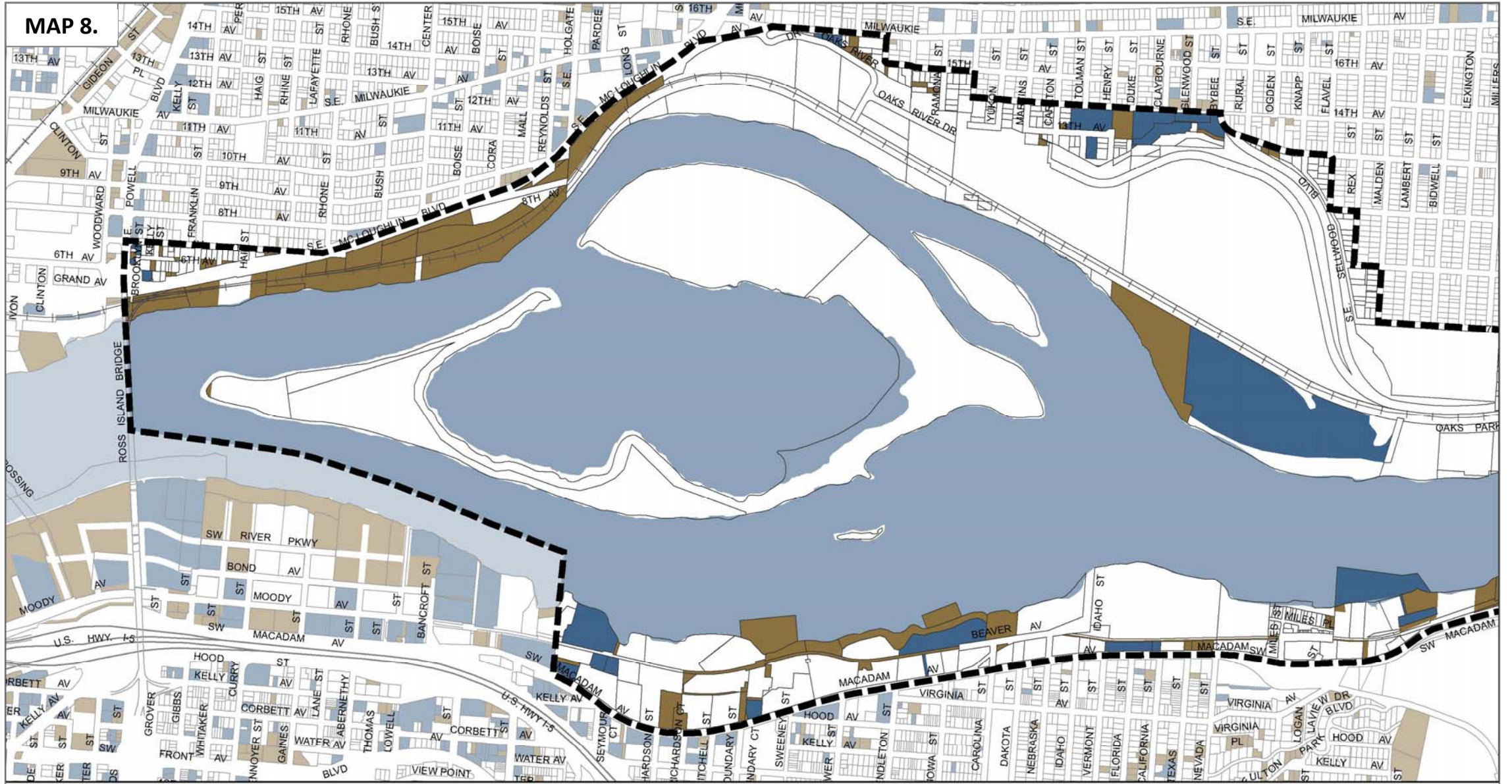
Top 10 Owners (acreage)	Acres	Map #
City of Portland	267	232
Ross Island Sand & Gravel Co.	133	255
Metro	46	194
Oaks Park Association	34	210
State of Oregon	16	212
TriMet	15	301
Oregon Yacht Club	9	213
WL-SKB Johns Landing	6	327
Portland Memorial, Inc.	6	233
Sellwood Harbor Condominiums	5	15
The Landing Condominiums	5	16

Public Ownership	Acres	Map #
City of Portland	267	232
Metro	46	194
Multnomah County	3	203
Portland School District #1	3	264
State of Oregon	16	212
TriMet	15	301

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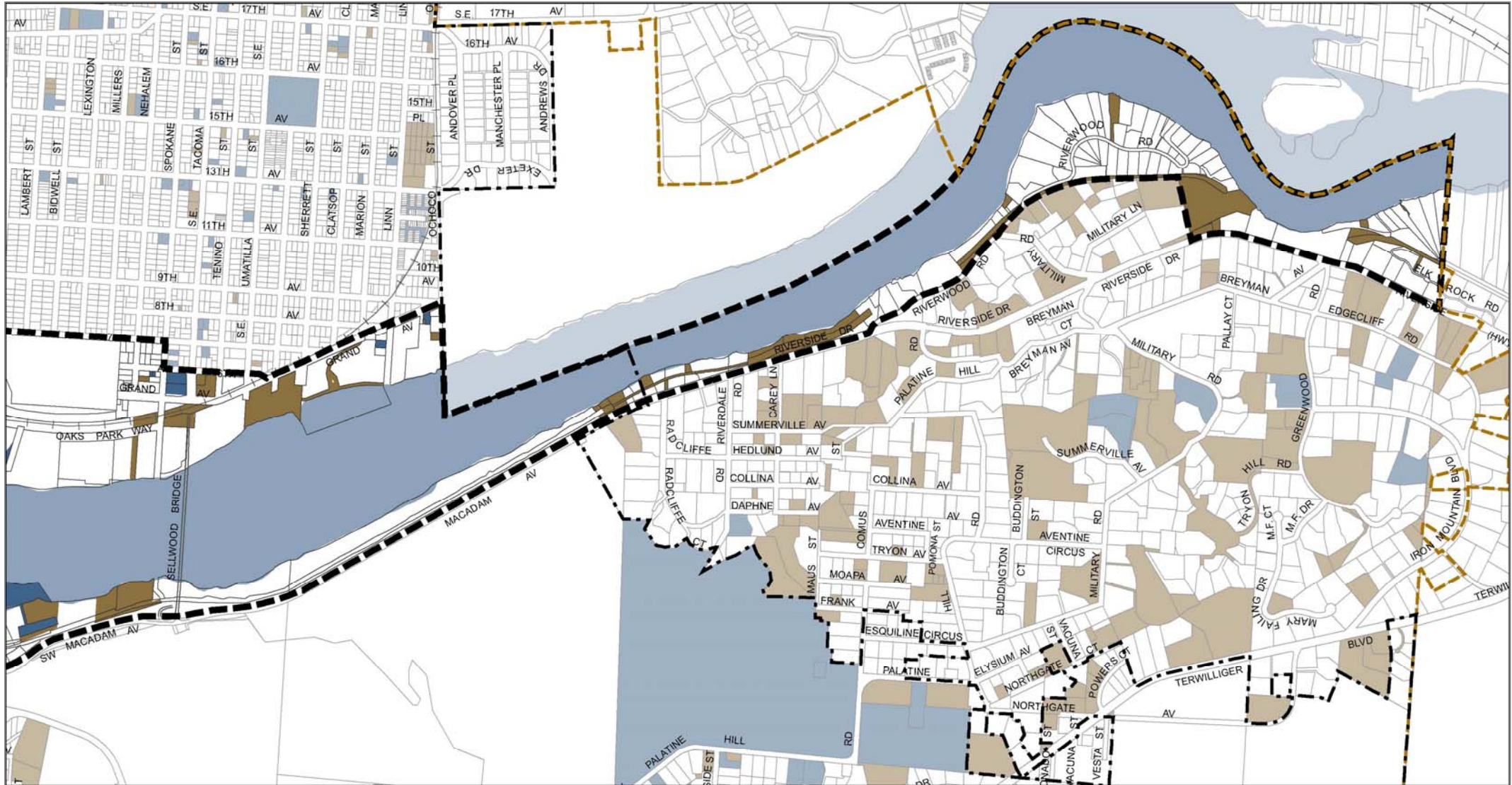
MAP 8.



Vacant and Non-vacant Redevelopable Land

- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Vacant "underutilized" lots
- Non-vacant "underutilized" lots

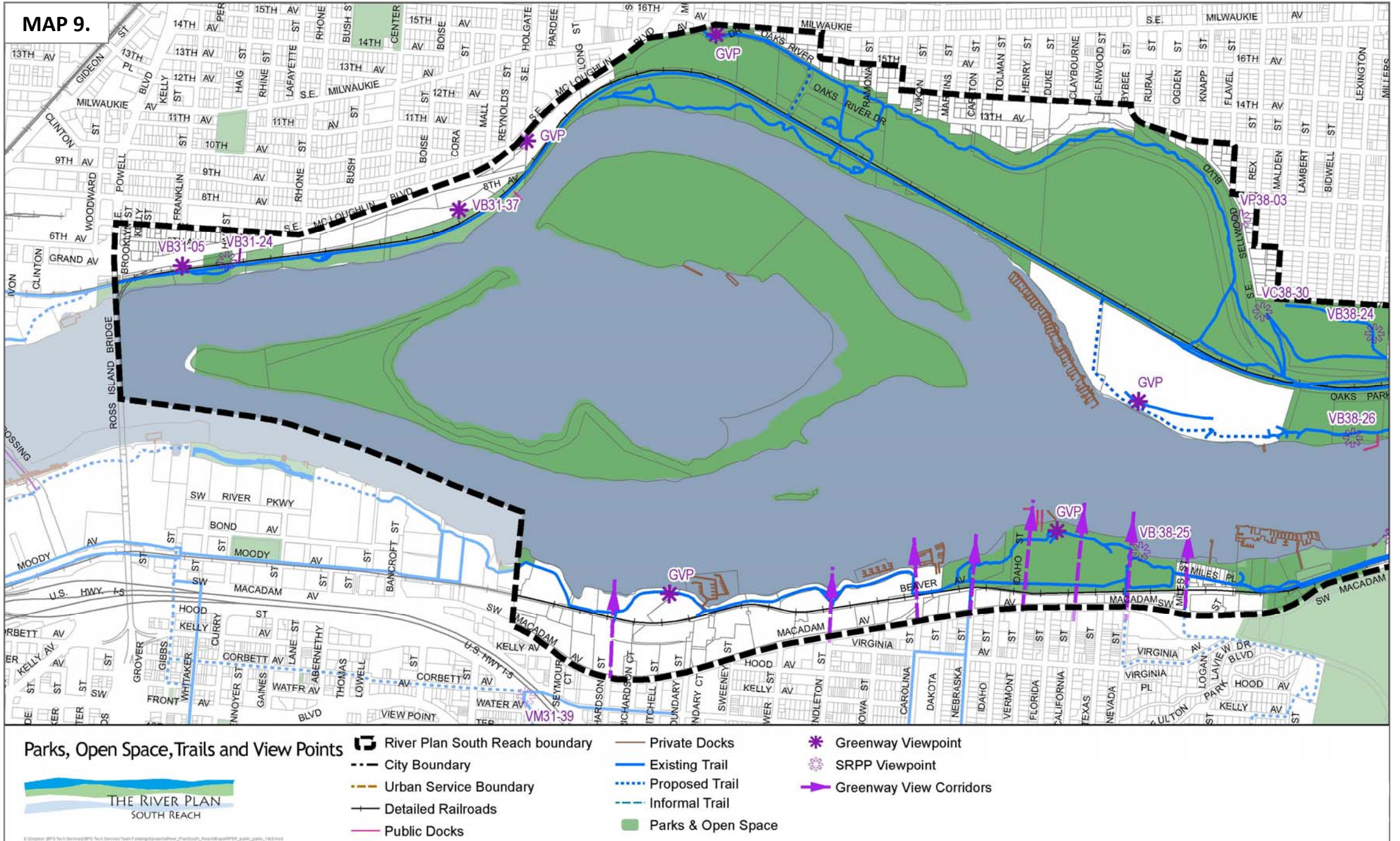


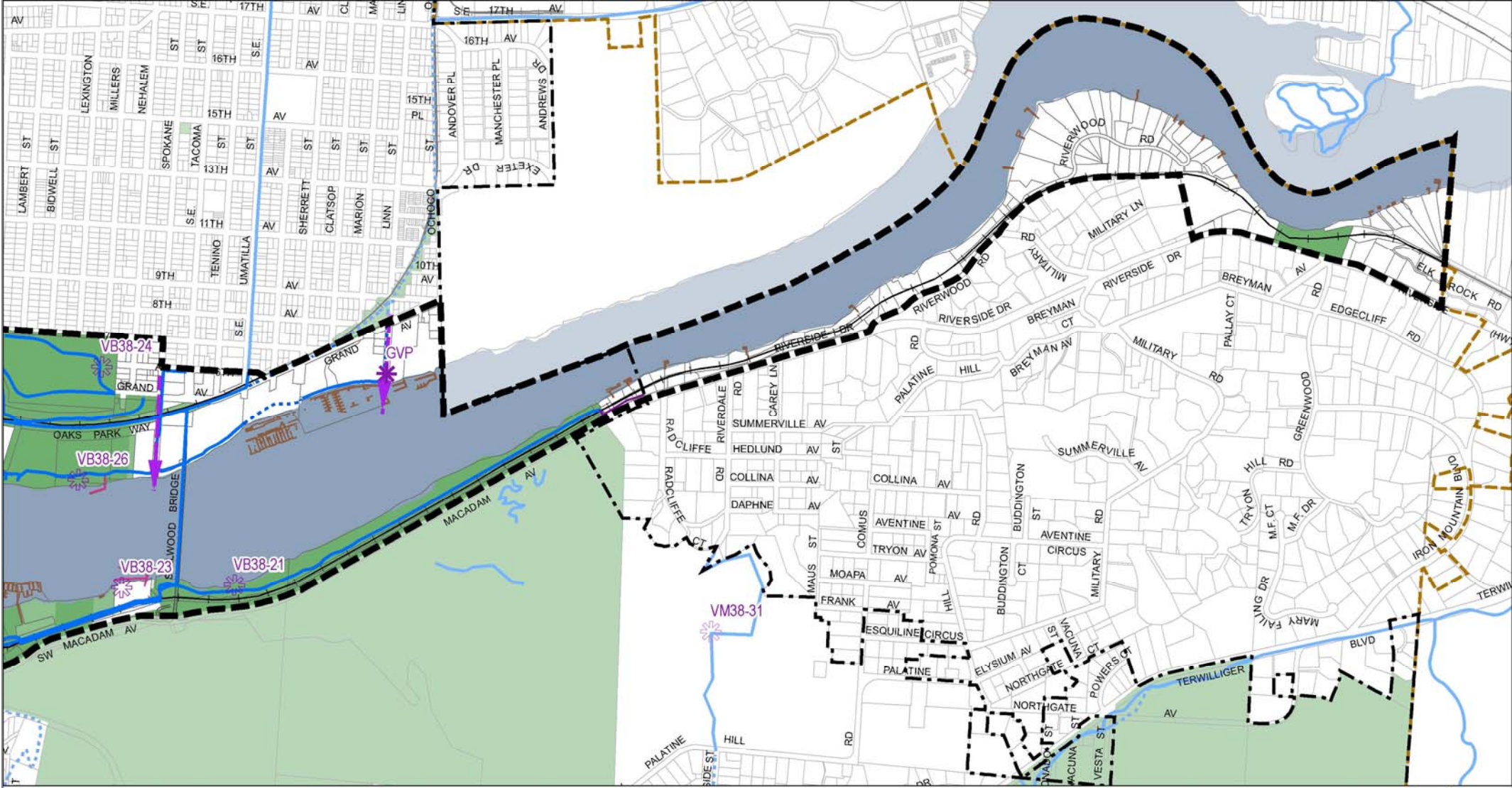


May, 2018



MAP 9.

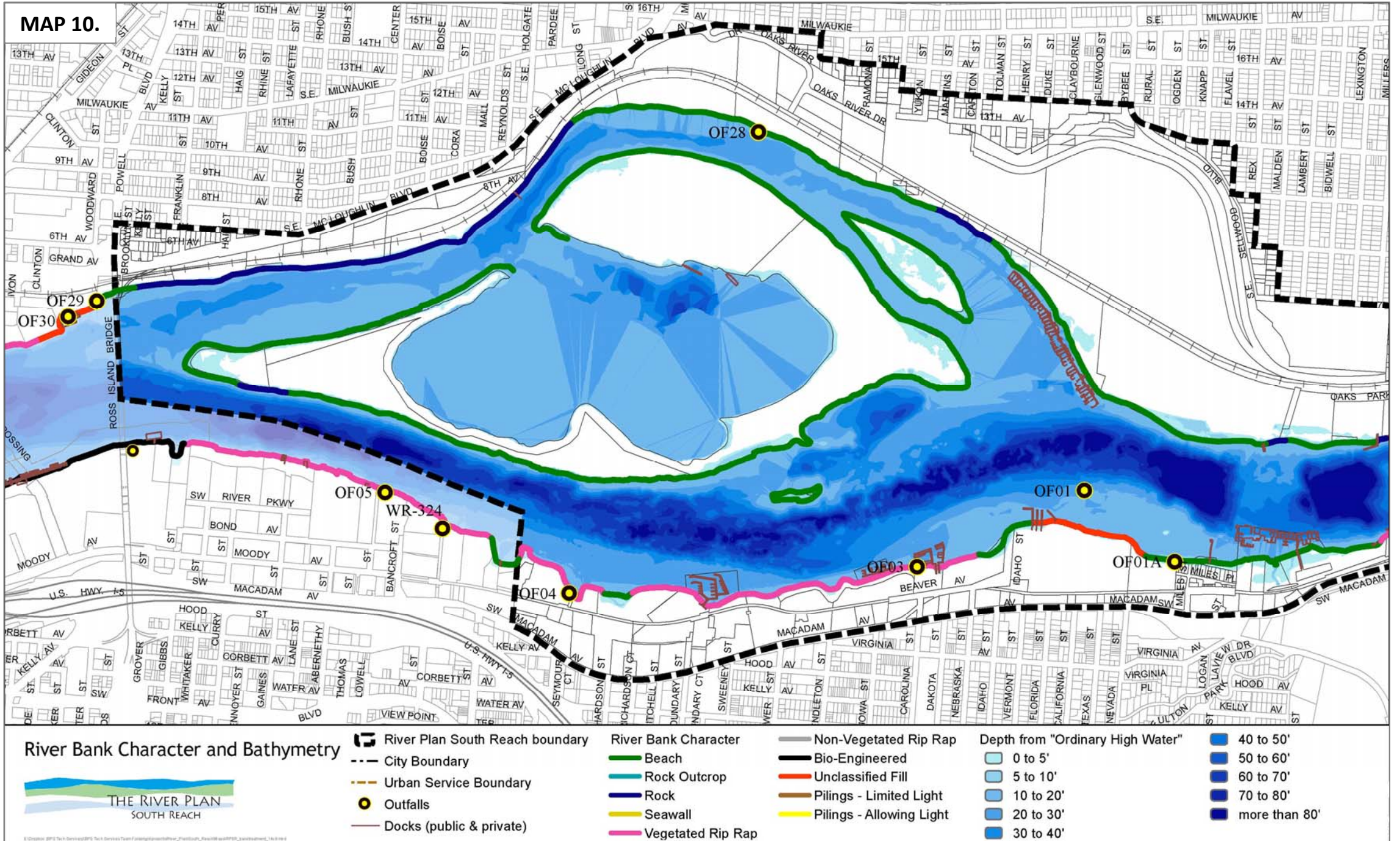


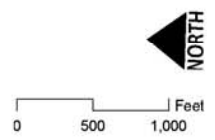
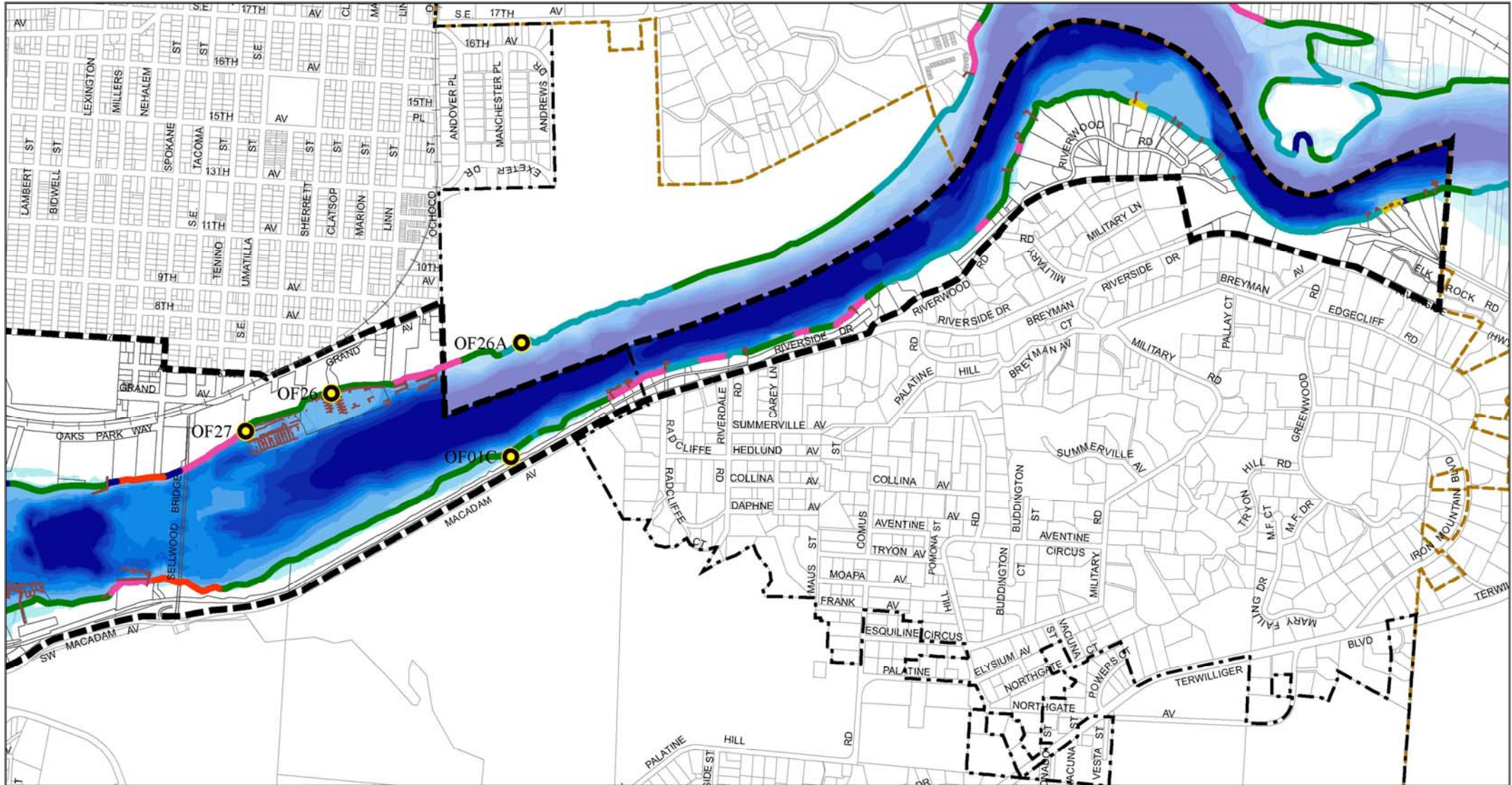


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MAP 10.





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MAP 11.

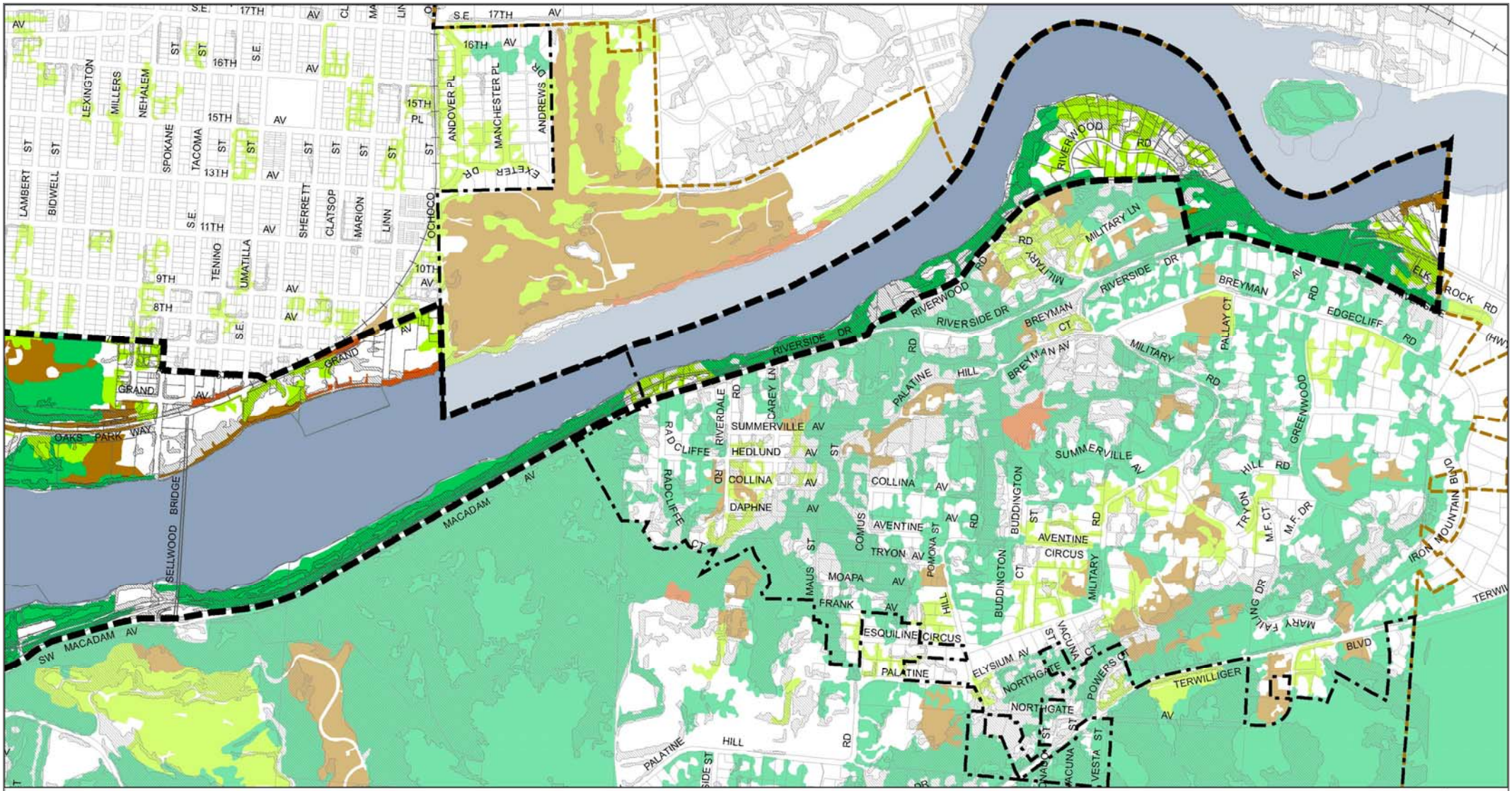


Vegetation and Steep Slopes

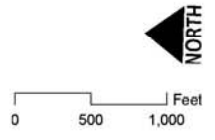


- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- LiDAR Steep slopes (25%+)
- Forest
- Woodland
- Shrubland
- Herbaceous

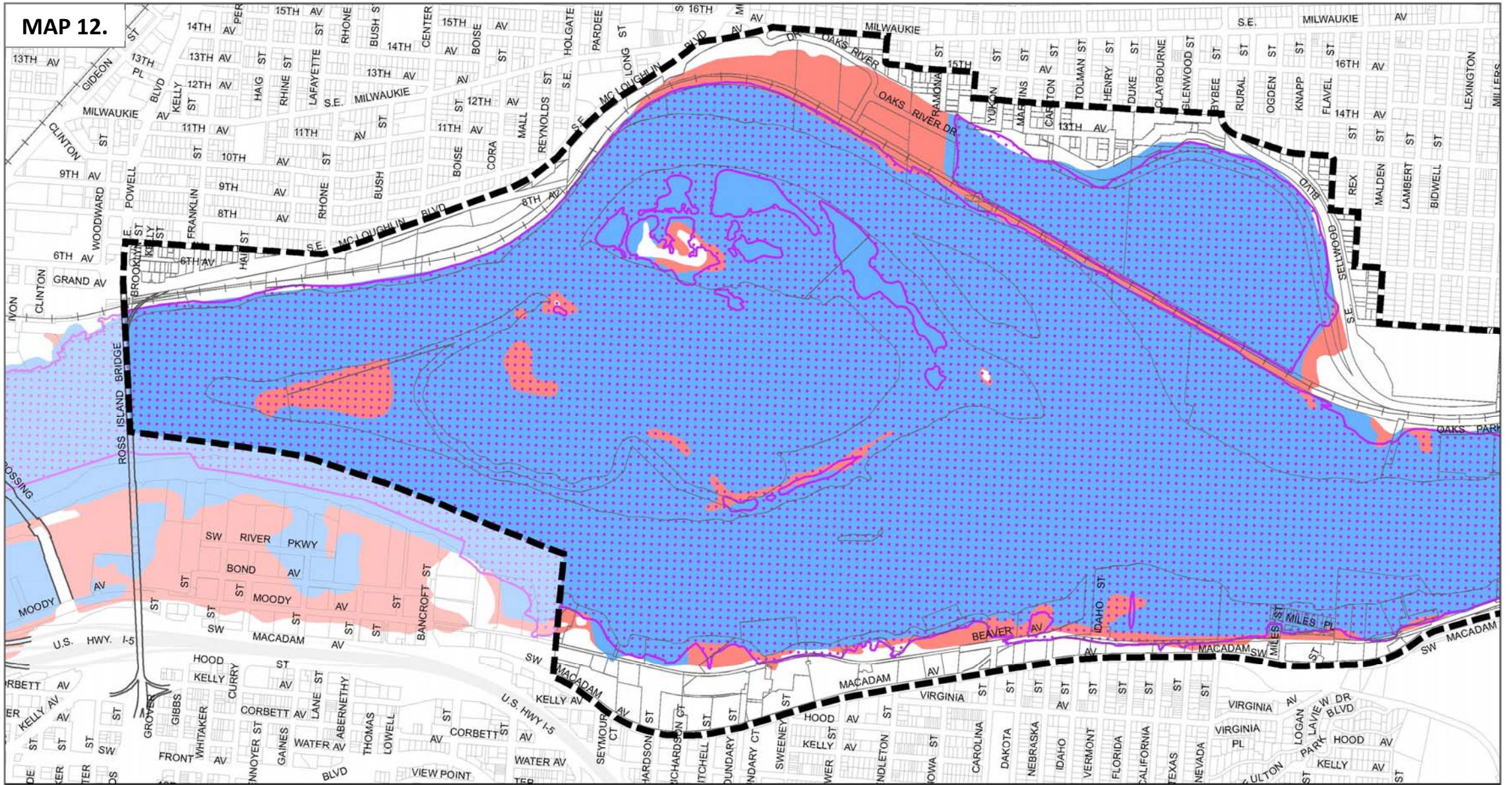
Mapped vegetation patches are 1/2 acre or larger and based on information from data source, aerial photos, Parks and Recreation natural area assessments, and vegetation surveys along the banks of the Willamette and Columbia rivers. Updated as needed through the BPS Natural Resource Inventory (NRI) project.



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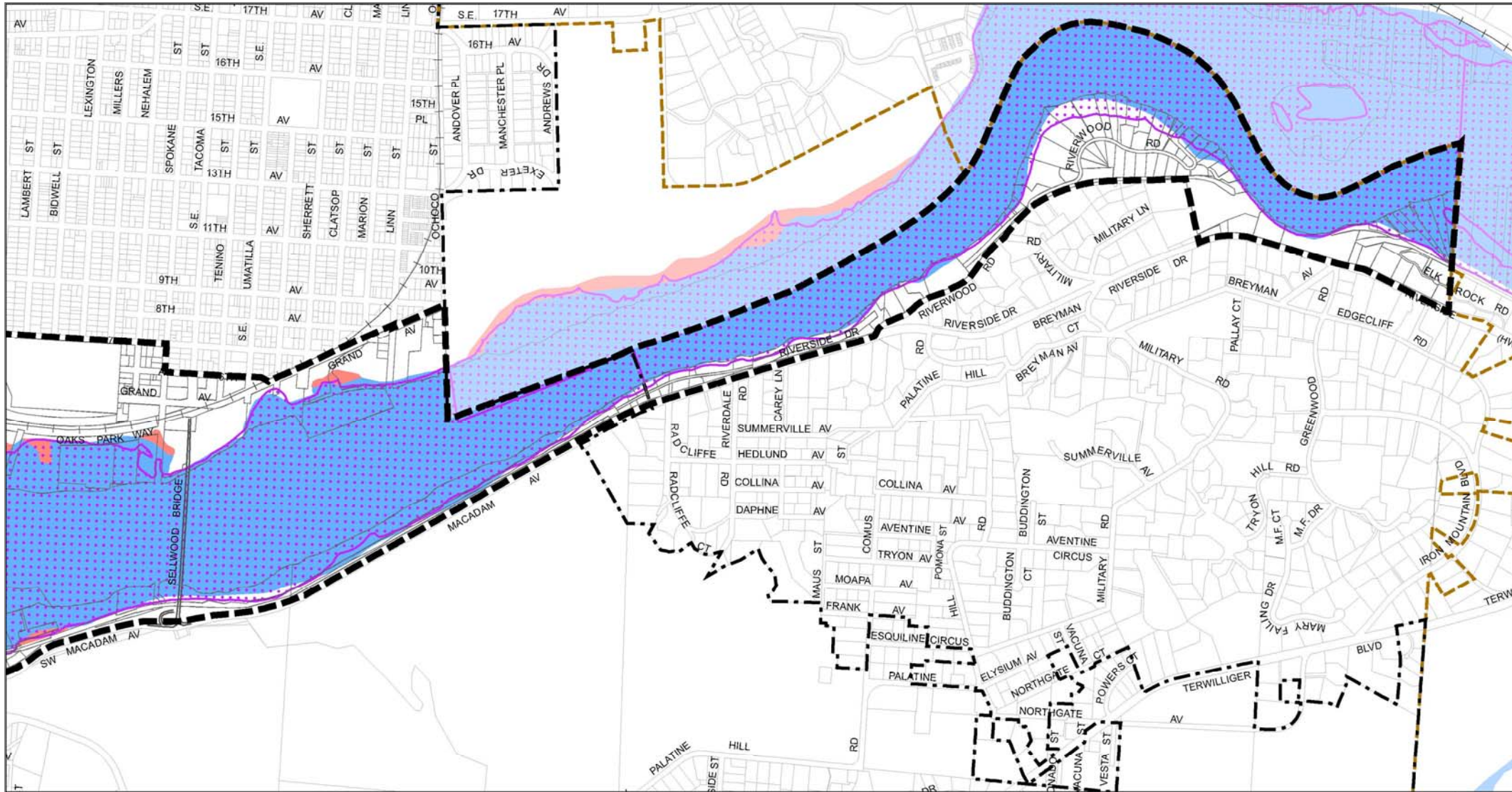
MAP 12.



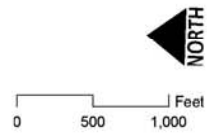
Flood Hazard



- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- 1996 Flood Inundation
- FEMA 100-year floodplain
- FEMA 500-year floodplain



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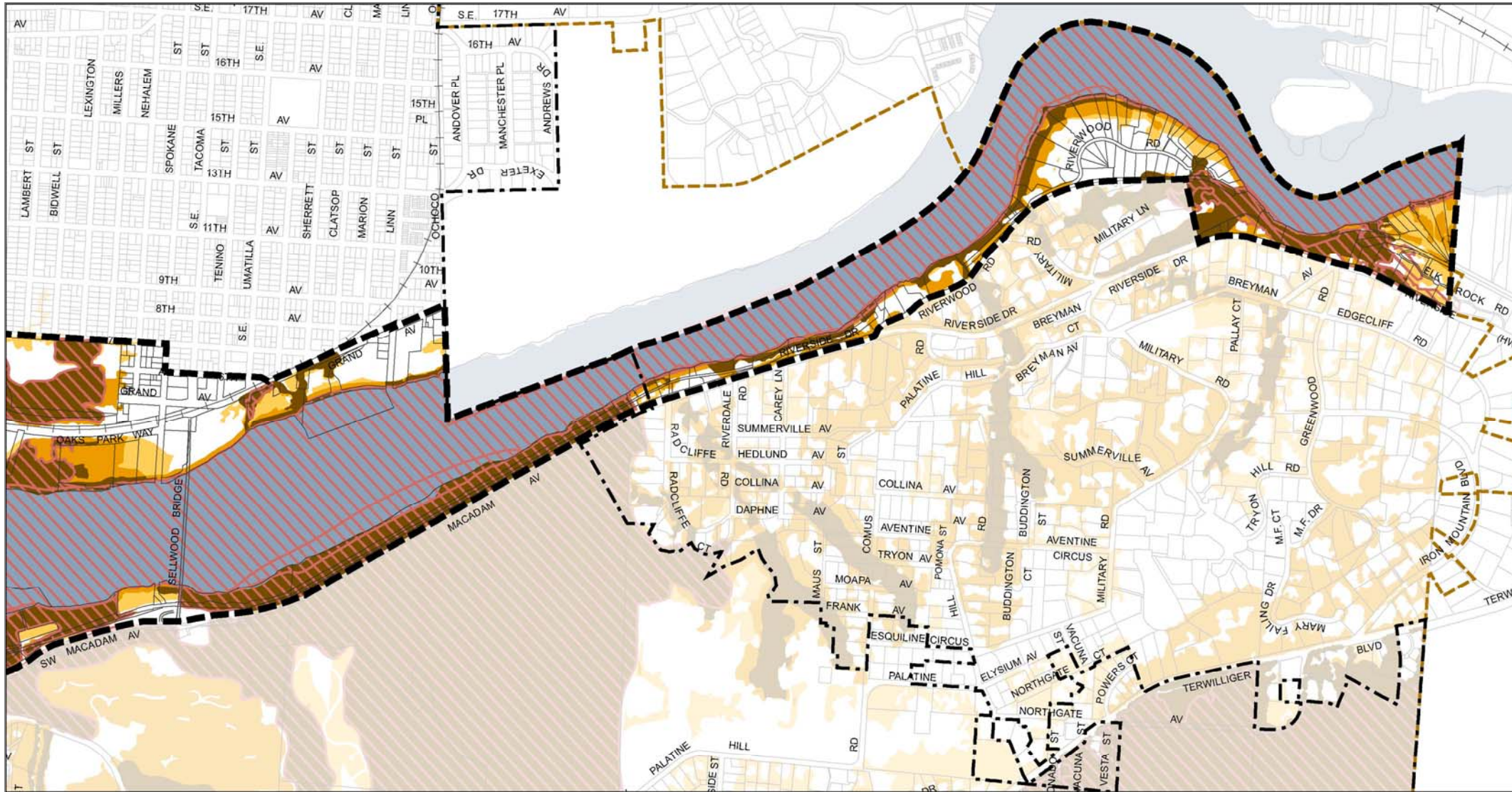
MAP 13.



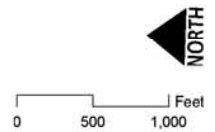
Natural Resource Inventory



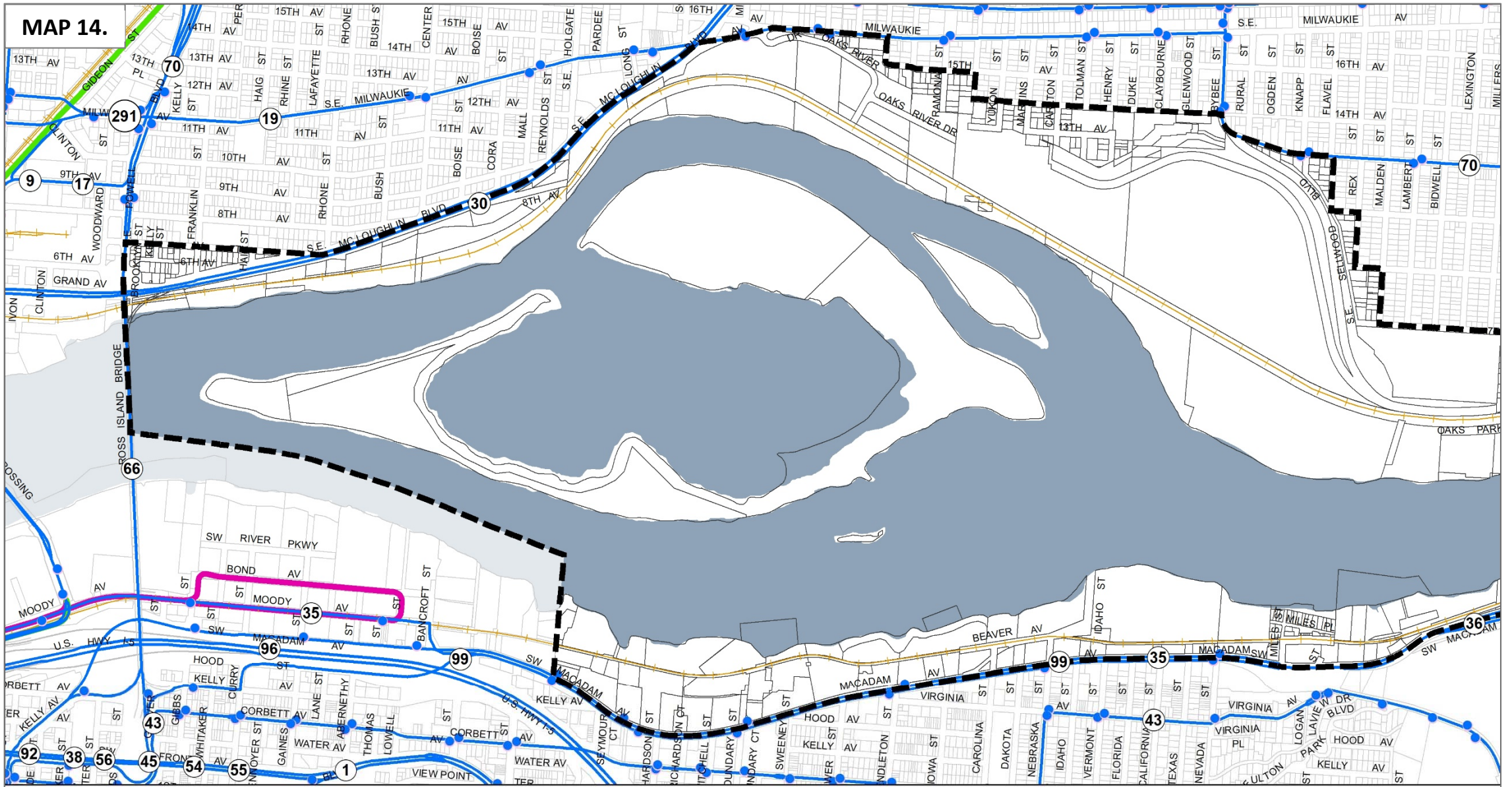
- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- High value resources (1,257 acres*)
- Medium value resources (64 acres)
- Low value resources (76 acres)
- Special Habitat Areas (SHA) (1,204 acres*)
- River (High value) (820 acres)



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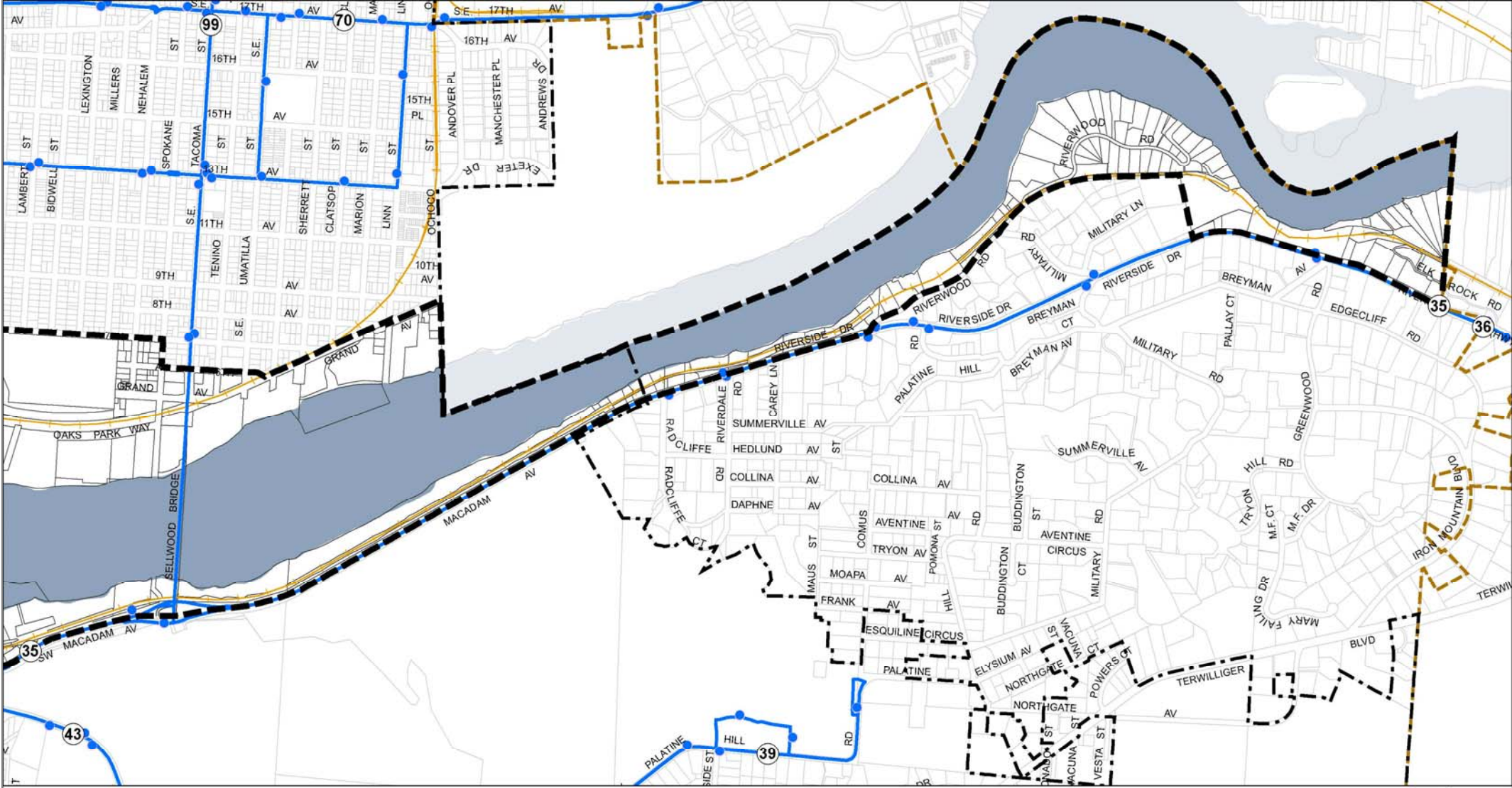
MAP 14.



Existing Transit



- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- MAX Light Rail Line
- Streetcar Line
- Bus Stops
- Bus Line / Route #
- Railroads



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0 500 1,000 Feet

NORTH

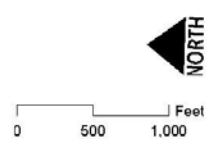
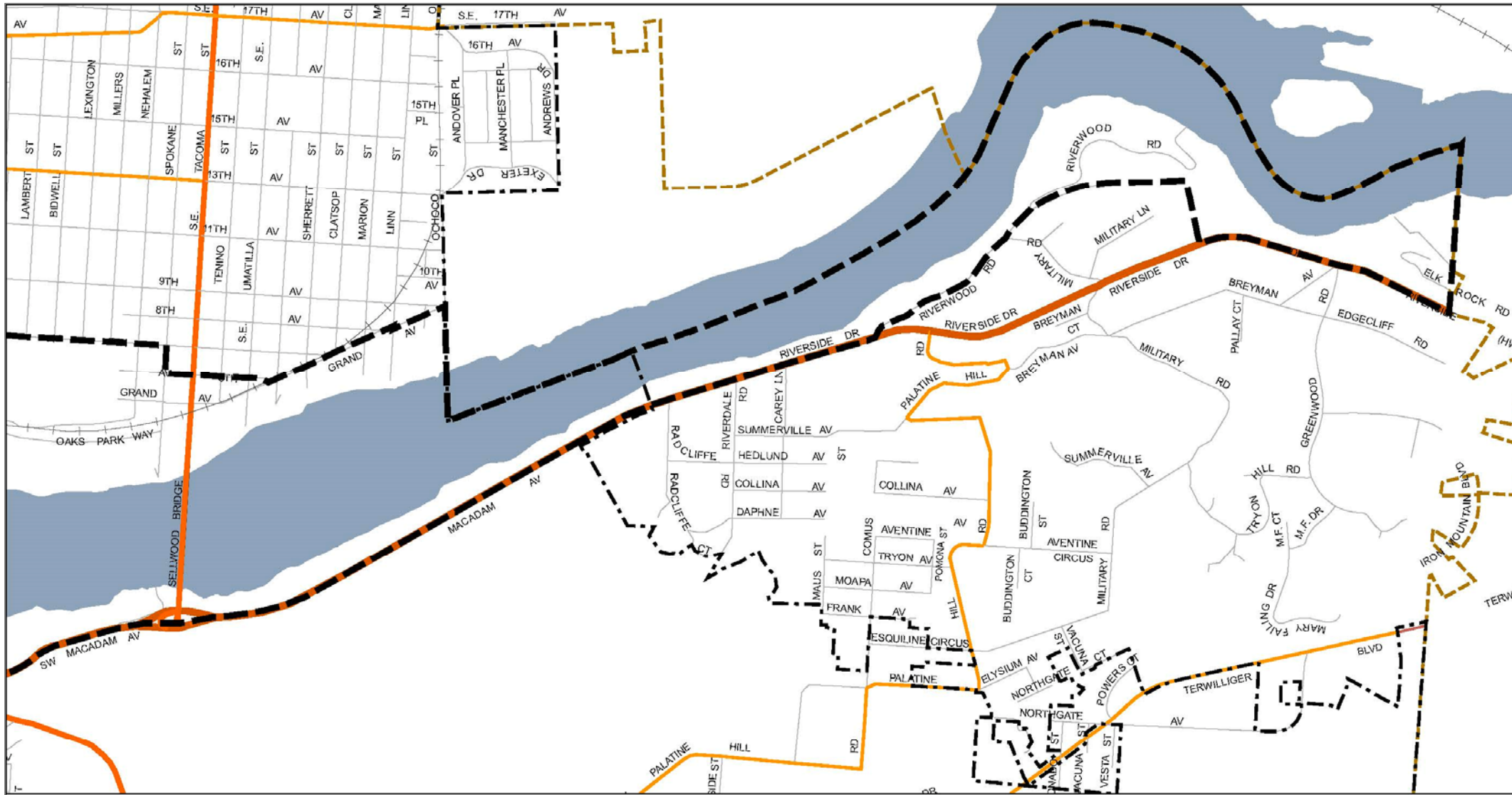
MAP 15.



TSP: Traffic Classes

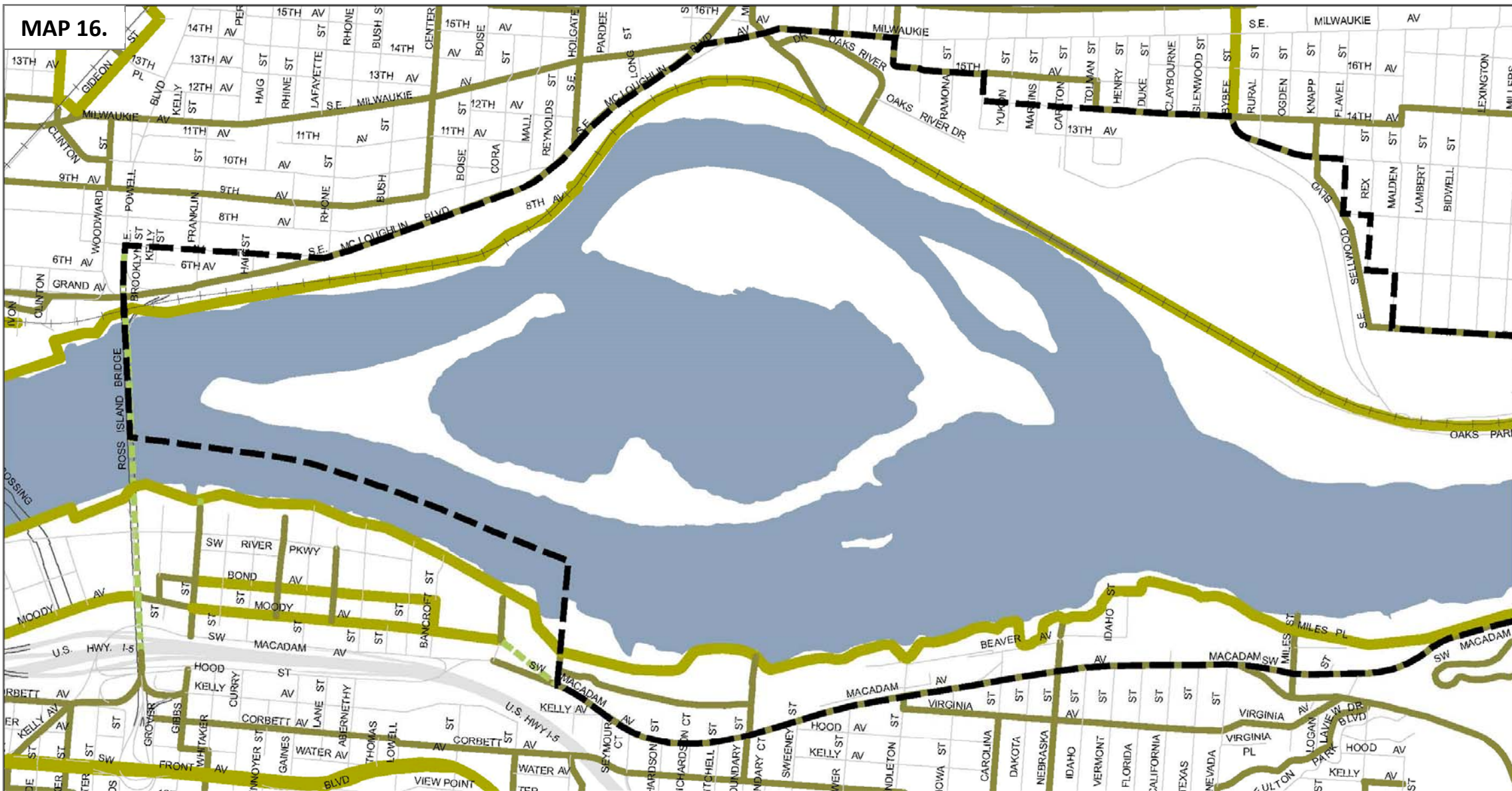


- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Regional Trafficway
- Regional Trafficway & Major City Traffic Street
- Major City Traffic Street
- District Collector Street
- Neighborhood Collector Street
- Traffic Access Street (CCTMP only)
- Local Service Traffic Street



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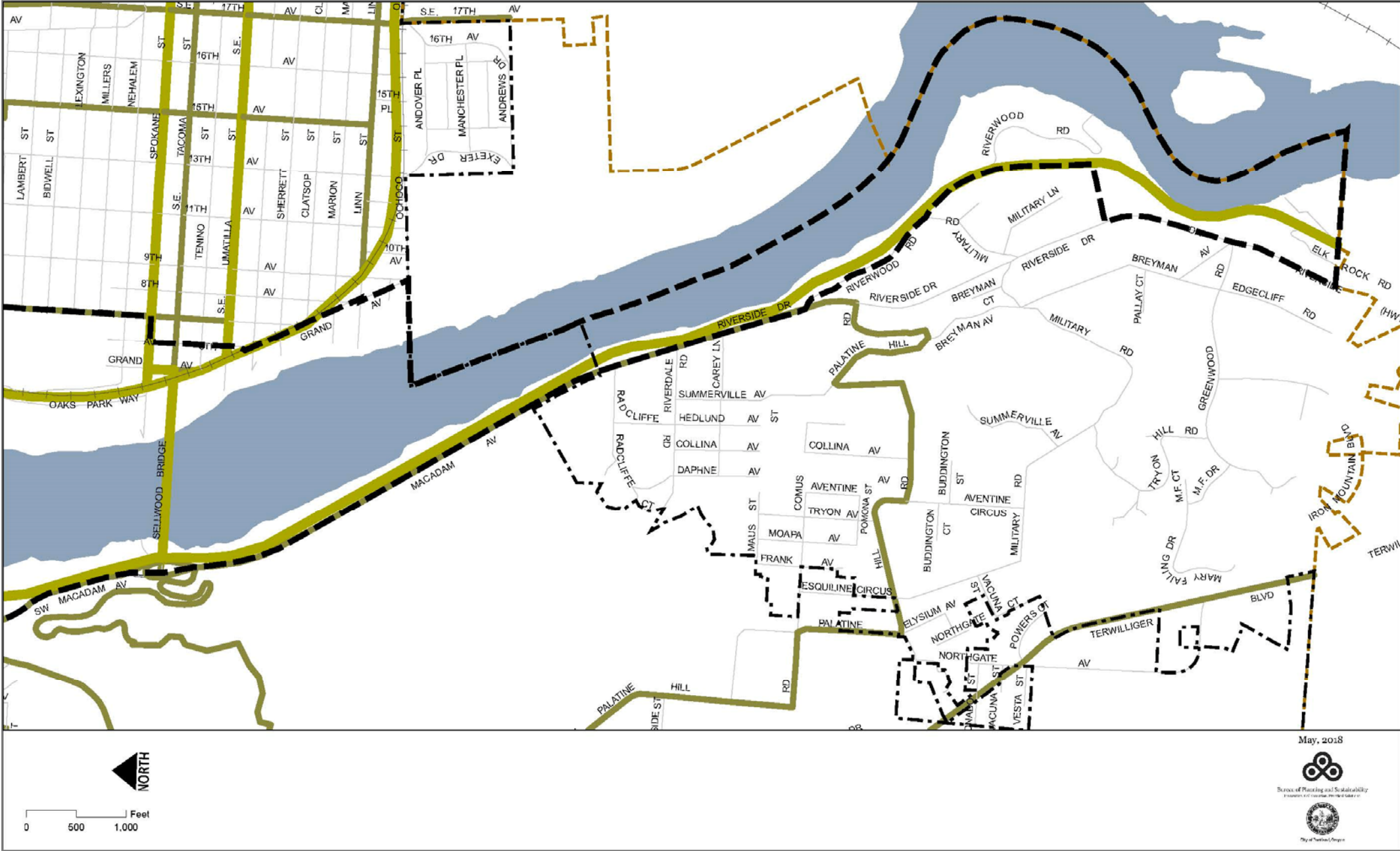
MAP 16.



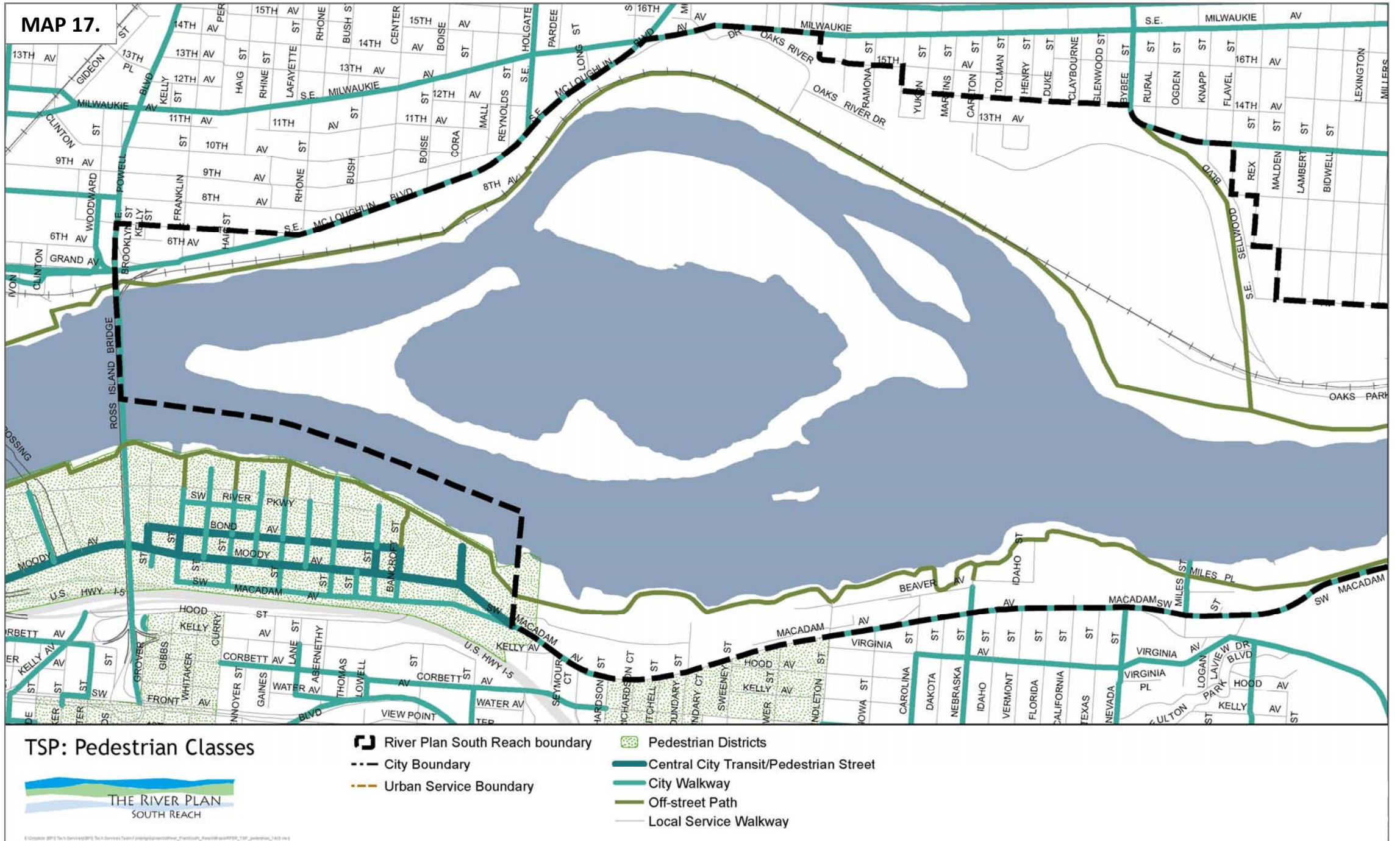
TSP: Bicycle Classes

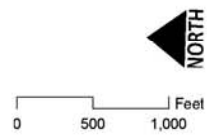
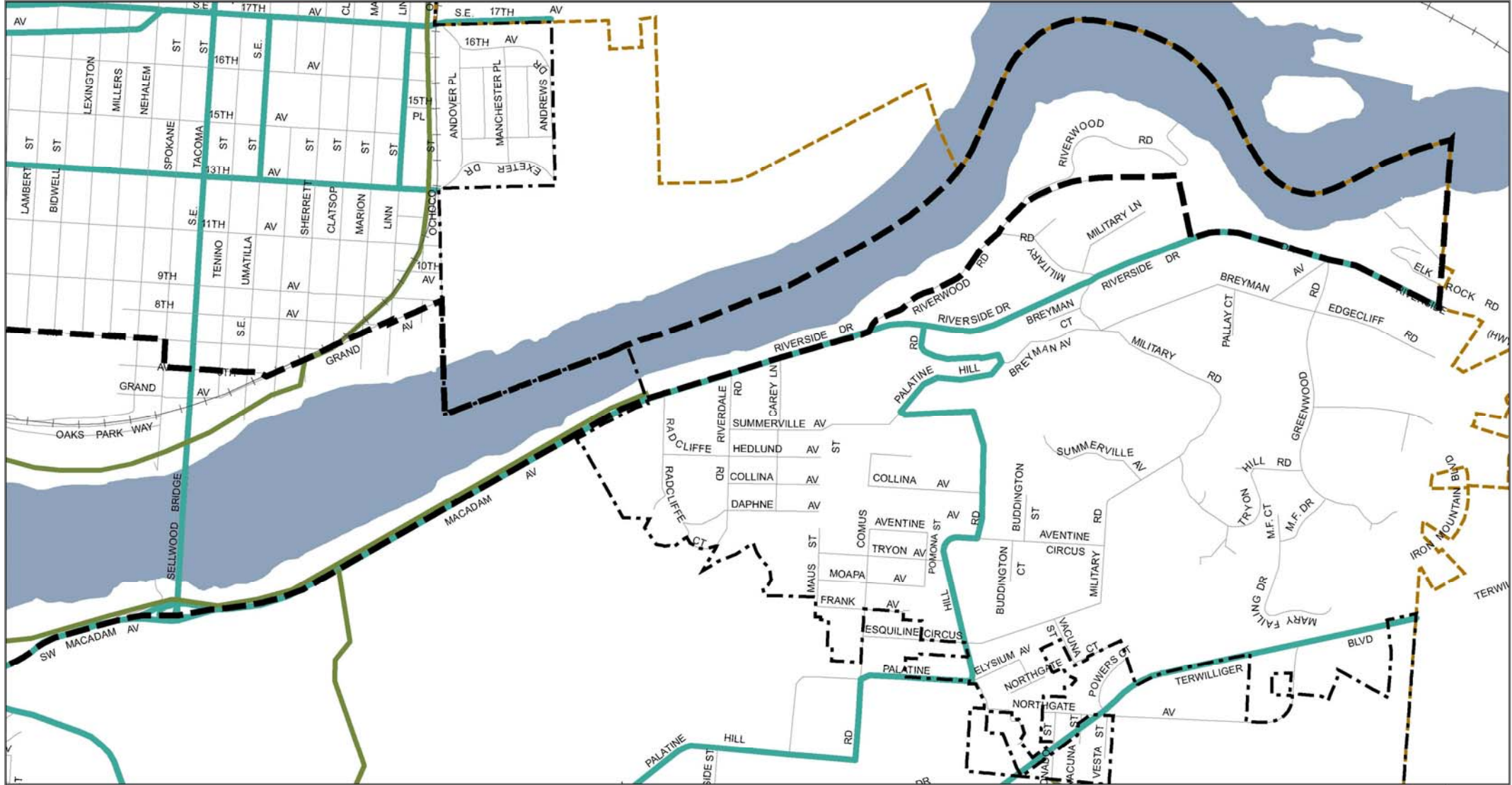


- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Major City Bikeway
- City Bikeway
- Off-street Path
- Local Service Bikeway

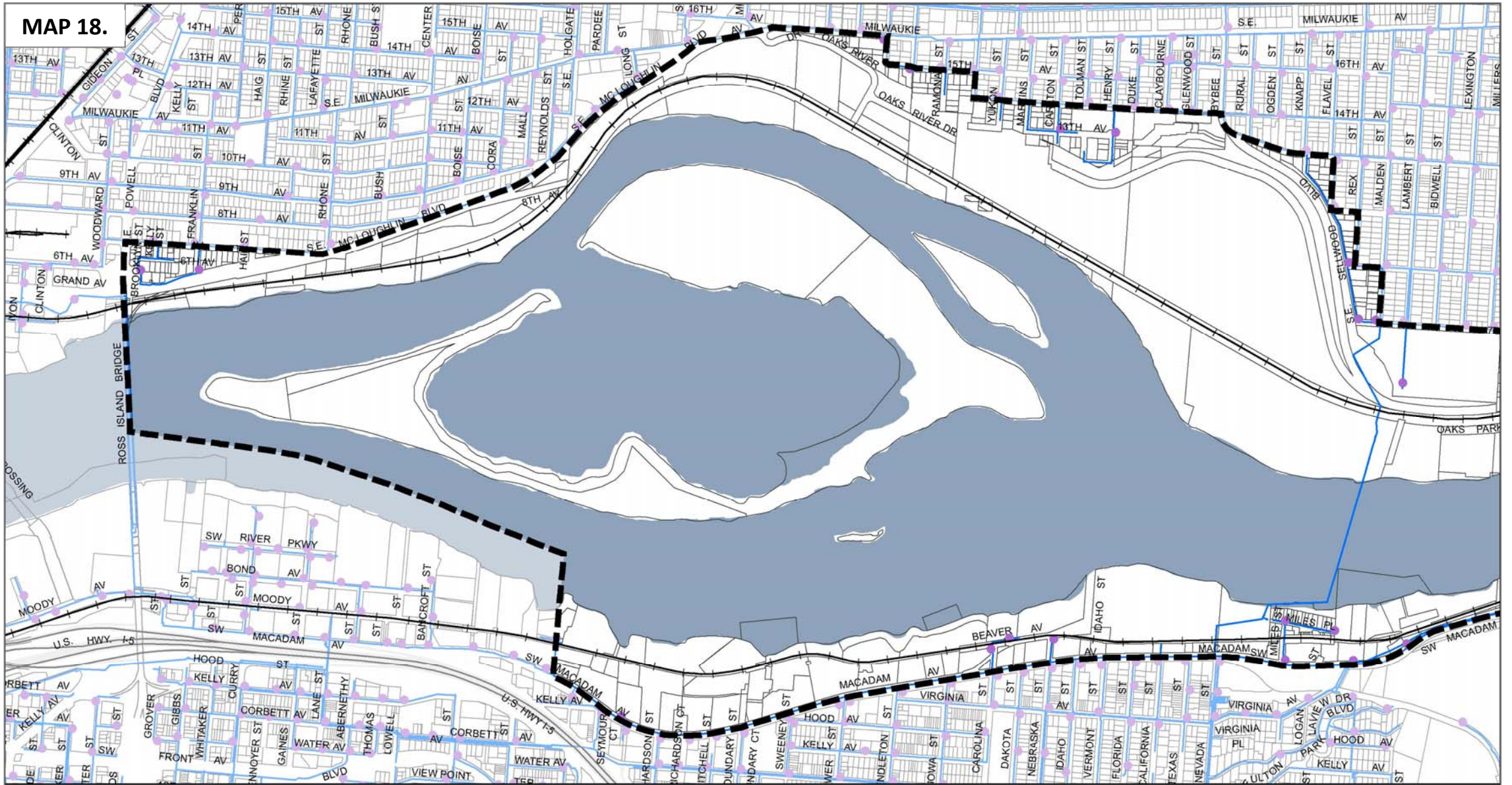


MAP 17.





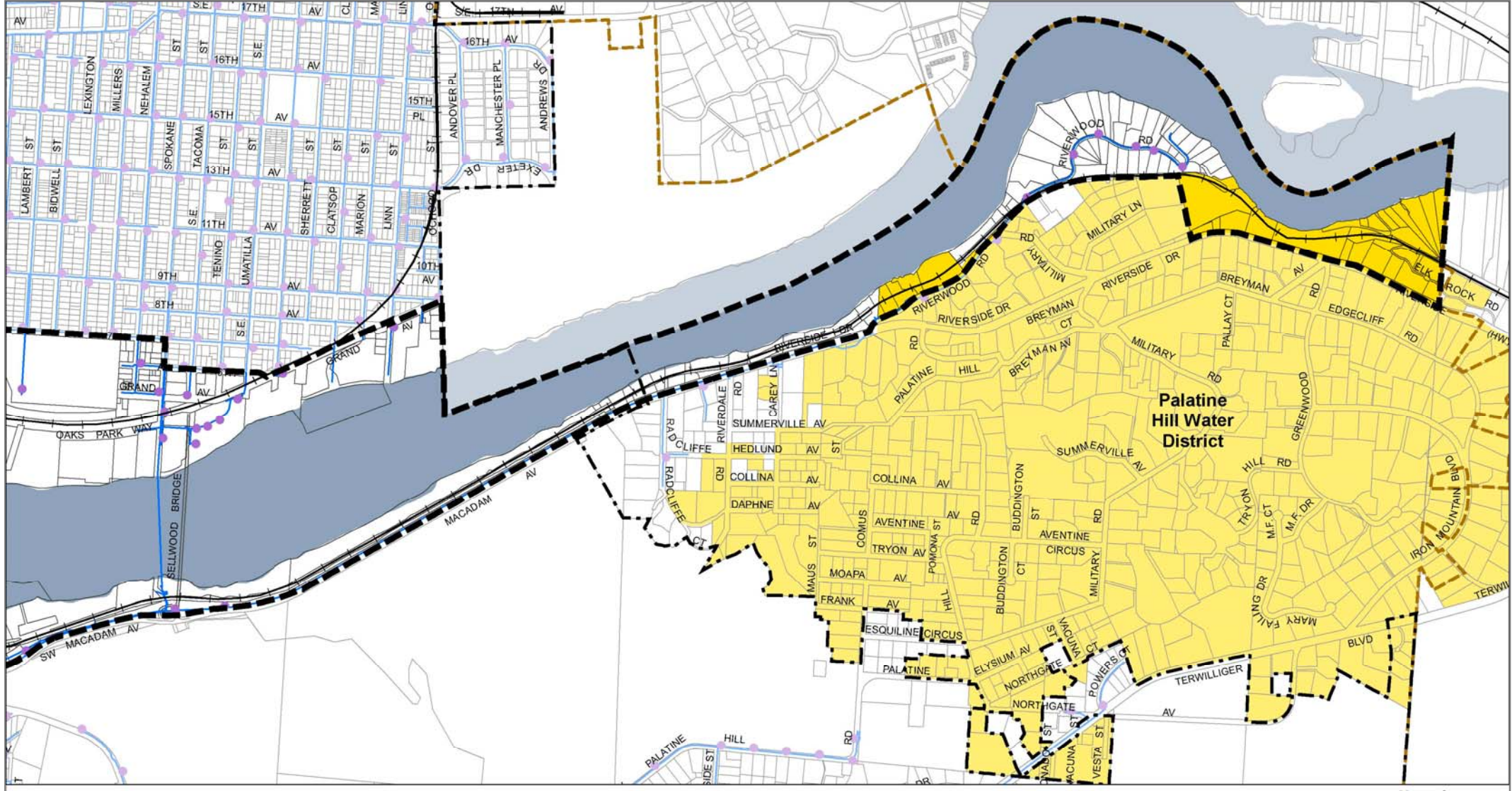
MAP 18.



Water Distribution System



- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Pressurized Water Main
- Hydrants
- Palatine Hill Water District



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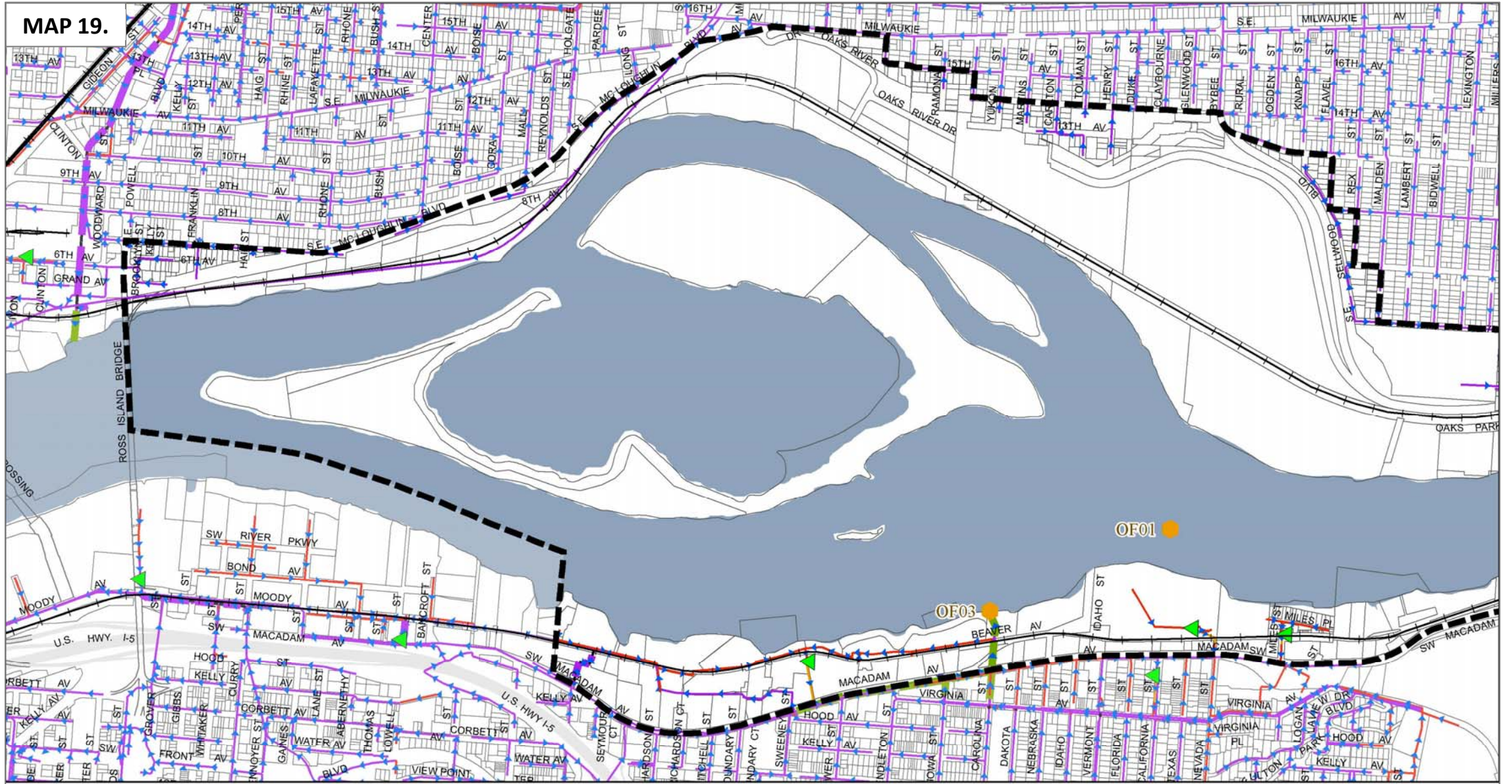


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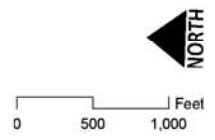
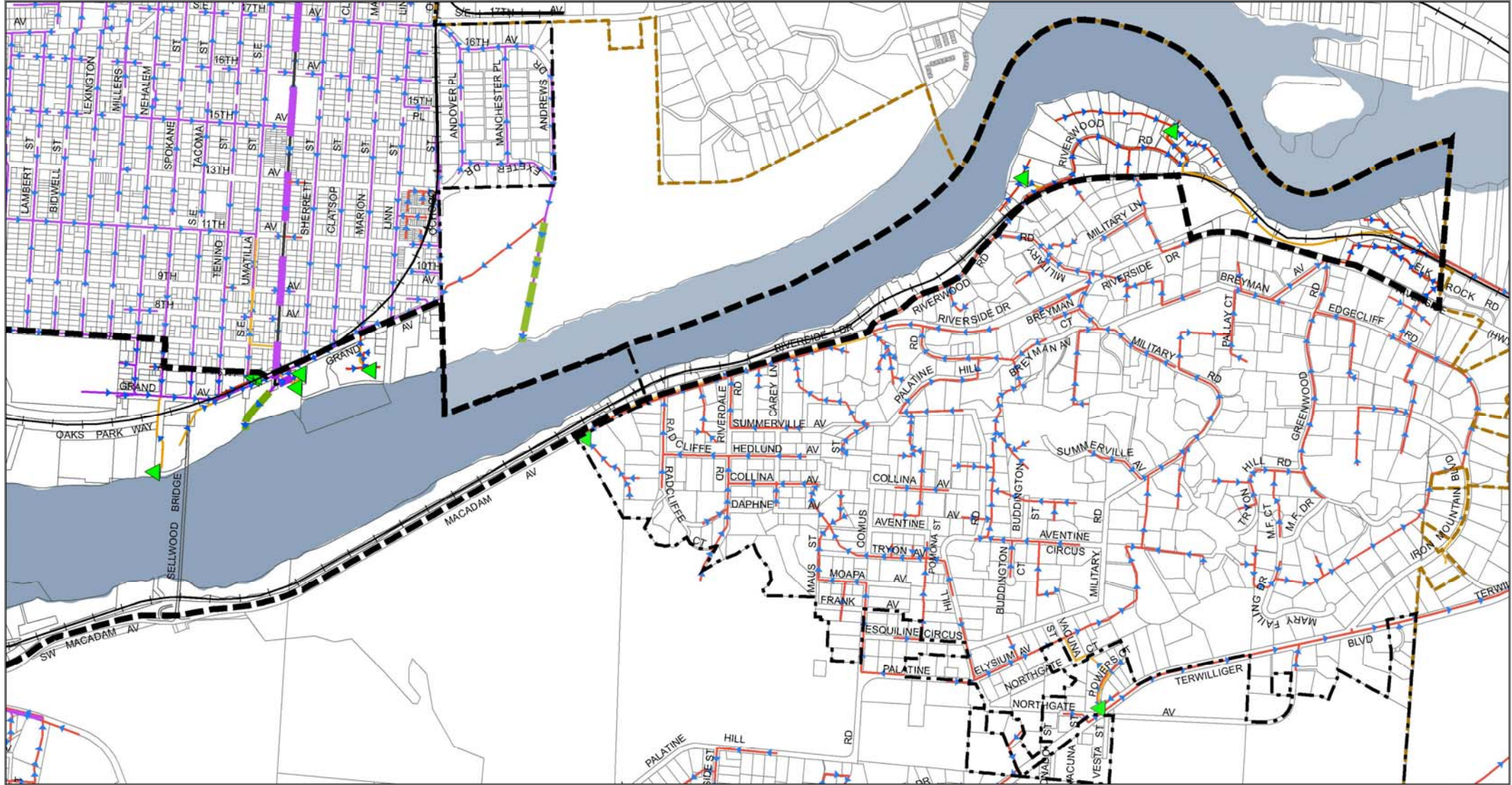
MAP 19.



Sewer Collection System



- River Plan South Reach boundary
- City Boundary
- Urban Service Boundary
- Sanitary Gravity Mains
- Sanitary Pressure Mains
- Combined Gravity Mains
- Combined Pressure Mains
- Combined Sewer Overflow Mains
- Combined Sewer Overflows
- Pump Stations
- Outfalls



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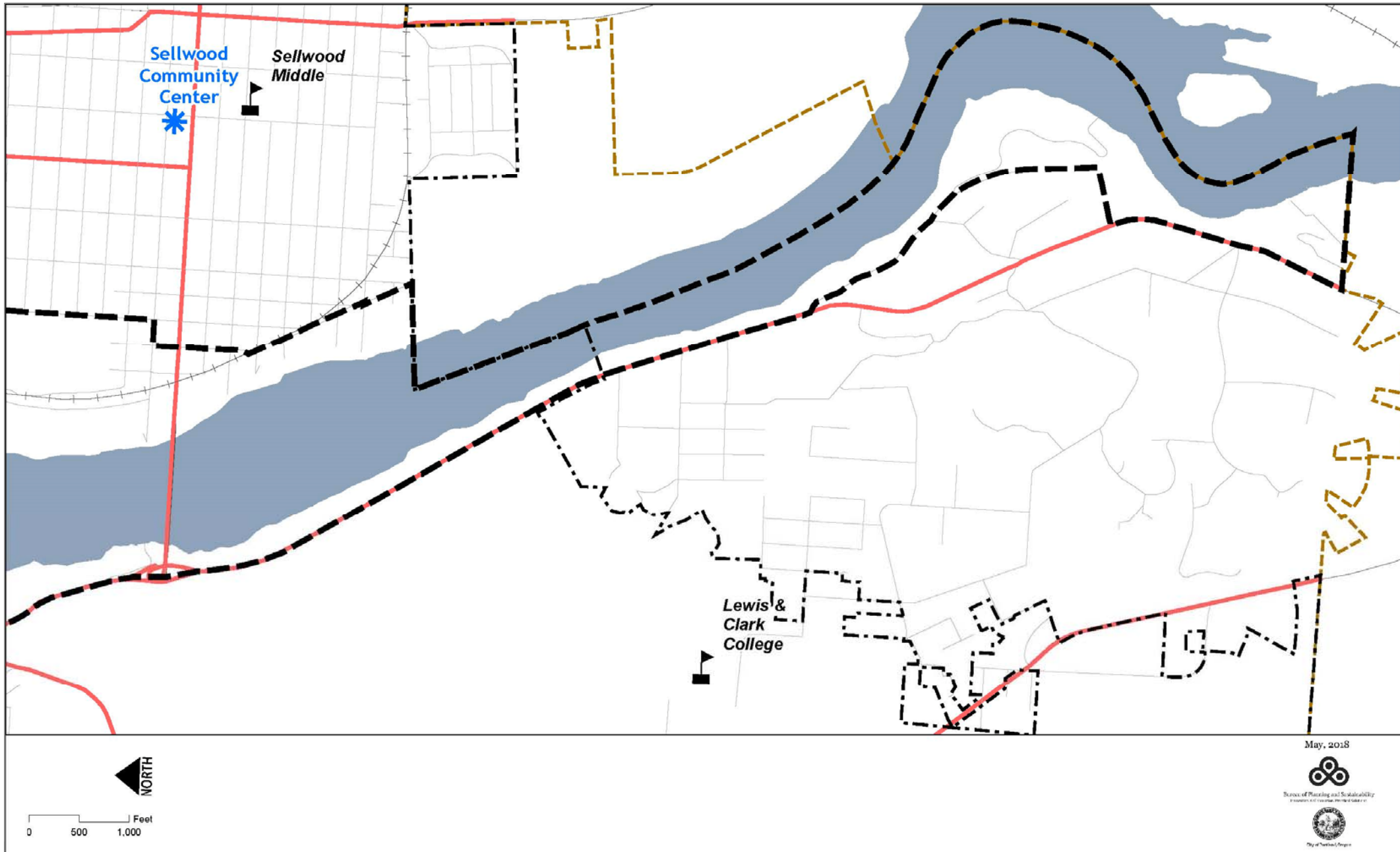
MAP 20.



Public Services and Facilities



-  River Plan South Reach boundary
-  City Boundary
-  Urban Service Boundary
-  Community Centers
-  Schools
-  Portland Police Facilities
-  Hospitals
-  Portland Fire Stations
-  Major Emergency Response Street
-  Minor Emergency Response Street



APPENDICES

APPENDIX A. ADDITIONAL PAST PLANNING EFFORTS

River Renaissance Vision and Strategy

In 2001, the Portland City Council adopted the *River Renaissance Vision* by resolution. The *Vision* describes the Willamette River of the future by articulating long-term aspirations for it. The *Vision* includes five themes aimed at reaching that long-term vision:

- Ensure a clean and healthy river for fish, wildlife, and people
- Maintain and enhance the city's prosperous working harbor
- Embrace the river and its banks as Portland's front yard
- Create vibrant waterfront districts and neighborhoods
- Promote partnerships, leadership and education

The *River Renaissance Strategy*, adopted by resolution in 2004, established specific policy guidance, measures of success, and supporting actions for each of the five themes in the *Vision*. The Strategy will inform the approach and outcomes of the River Plan/South Reach project.

Economic, Social, Environmental, and Energy Analysis and Recommendations for Natural, Scenic, and Open Space Resources within Multnomah County Unincorporated Urban Areas

The City of Portland and Multnomah County have an intergovernmental agreement for the City to provide land use planning services for the areas of unincorporated Multnomah County

located within the City's Urban Services Boundary. As a part of that agreement, in 2001 the City completed an inventory and analysis of economic, social, environmental, and energy resources in these areas. This inventory and analysis then served as the basis for application of environmental overlay zoning to protect key natural resources. Properties outside the City limits and along the west shoreline of the South Reach are subject to these environmental regulations, in addition to the Willamette River Greenway overlay zones.

Oaks Bottom Wildlife Refuge Coordinated Resource Management Plan

The *Oaks Bottom Wildlife Refuge Coordinated Resource Management Plan* (1988) represents the first management plan for the Oaks Bottom area. The plan includes a brief history of the area; a description of existing conditions, including habitats, trails, and signage; a summary of conflicts and issues at the time; specific management guidance for the different areas of Oaks Bottom (e.g., South Fill, North Fill, Swamp Wetland, etc.); and a 4-year implementation schedule for addressing identified issues.

Oregon Dept. of Environmental Quality (DEQ) Record of Decision Remedial Action for Ross Island Sand and Gravel

Dredging of material from Ross Island ceased in 2001. To remediate the impacts of decades of material removal, the Oregon Department of Environmental Quality (DEQ) entered into an agreement for the clean-up of the island. The DEQ's directive addresses the presence of hazardous substances in Ross Island Lagoon and upland portions of the island. Site contaminants identified on the island include polycyclic aromatic hydrocarbons (PAHs), metals (lead, arsenic, copper, chromium, nickel, and zinc), tributyl tins (TBTs), polychlorinated biphenyls (PCBs), pesticides (including DDT and its

breakdown products), and petroleum hydrocarbons (TPH). These identified contaminants were determined to have been brought in fill for the site from local shipyards and other dredged material, legacy contaminants existing on the island as a result of natural processes, and operation and maintenance of gravel processing equipment. Elevated pH was also detected in shoreline portions of the lagoon.

Ross Island Sand and Gravel was required to complete the following tasks to address contamination on the island (taken from the DEQ Record of Decision):

- Capping of shallow surface soil in the processing plant area contaminated with arsenic and zinc (Area A1)
- Stabilization of the slope on the southeastern lagoon shoreline where PCB and PAH concentrations pose a potential threat to the lagoon via erosion (Area A2)
- Long-term management of the existing cap over the TBT-contaminated material confined at the location of the former settling pond (Area B)
- Monitoring of groundwater on the southeastern lagoon shoreline where PAH concentrations in groundwater may pose a threat to the lagoon (Area C)
- Capping and long-term monitoring and management of the surface sediment in the southern portion of the lagoon containing elevated concentrations PCBs and PAHs as a result of the breach of a confined disposal cell (Area D)
- Capping and long-term monitoring of shoreline areas where elevated pH has been detected (Area E)
- Long-term monitoring and management of existing confined disposal cells in the southern portion of the lagoon (Area F)

- Institutional controls to prevent disturbance of all capped areas, and
- Regular reporting on the status of remedial elements, effectiveness in preventing release of contaminants to the environment at levels of concern, and any contingency measures implemented as a result of monitoring data.

The Ross Island Reclamation Plan was approved in 2002 by DSL and was expected to be in effect until 2013. A No Further Action determination was made by DEQ in 2005. Even with the No Further Action determination, RISG is responsible for long-term monitoring and maintenance activities to reach the desired outcome established in the *Record of Decision*.

Based on Ross Island Sand Gravel estimates, the addition of fill and associated activities are expected to continue for at least the next 5-10 years.

Recreational Trail Strategy

This report, completed in 2006, prioritizes trail implementation to eliminate gaps in the Willamette Greenway Trail and identifies possible funding mechanisms.

Willamette River Ferry Feasibility Study (2006)

Completed in 2006, this study evaluated the feasibility of passenger ferry service on the Willamette River. It looked at commuter operations and intracity circulator services and evaluated these river transportation options based on market conditions, potential service locations, vessel types, start-up and operational costs, among other factors.

Two locations in the South Reach (in the Macadam District and at the Sellwood Bridge) were evaluated for terminal sites but neither was

recommended as a long-term site. Both were identified as potential short-term sites while longer-term facilities were constructed.

Water Recreation Report and Recommendations

The *Water Recreation Report and Recommendations* (2006) describes opportunities for water recreation and recommends improvements to the system. It is a guide for City bureaus in their planning, construction and maintenance of facilities.

Portland Parks and Recreation Vision 2020 Plan

The *Vision 2020 Plan* (2001) is the result of a comprehensive, long-range citywide review of parks, recreation and open space facilities and services. The vision sets targets and levels of service for all facilities and services considering existing and future population demands. The vision lists recommendations for recreational lands, facilities and services by geographic districts. Portland Parks and Recreation will be completing an update of this plan in the next few years.

APPENDIX B. SOURCES FOR THE HISTORY AND CULTURE SECTION

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APPENDIX C. TRANSPORTATION SYSTEM PLAN (TSP) PROJECT LIST

TSP ID	RTP ID	Lead Agency	Facility Owner	Project Name	Project Location	Project Description	Estimated Cost (\$2014)	Financially Constrained?	Fully funded?	Time frame
20109	10164	Portland	Portland	Moody Ave Extension	Moody Ave, SW (Bancroft - Hamilton Ct)	Extend SW Moody Ave from Bancroft to Hamilton Ct to improve circulation within the South Waterfront neighborhood.	\$20,590,000	Yes	No	Years 11 - 20
70030		ODOT	ODOT	SE McLoughlin Blvd Roadway Improvements	McLoughlin Blvd, SE (Ross Island Bridge - Tacoma)	Provide access management, operational improvements, and safety improvements from Ross Island Bridge to Harold. Widen to six lanes from Harold to Tacoma and construct pedestrian and bike facilities.	\$96,500,000	No	No	
70033	10307	Portland	Portland	Inner Holgate Bikeway	Holgate Blvd, SE (McLoughlin - 39th)	Design and implement bicycle facilities. Project design will consider freight movement needs, consistent with policies, street classification(s) and uses.	\$2,000,000	Yes	No	Years 11 - 20
70045	10259	Portland	ODOT	Inner Powell Blvd Corridor Improvements	Powell Blvd, SE (Ross Island Bridge - 50th)	Retrofit existing street with multimodal safety improvements including enhanced pedestrian and bicycle crossings, pedestrian and bike activated signals, median islands with trees, redesign of selected intersections and stormwater management facilities. Project design will consider freight movement needs, consistent with policies, street classification(s) and uses.	\$7,997,100	Yes	No	Years 11 - 20
70053	10159	Portland	Portland	Springwater Gap Trail	Springwater Corridor, SE (Umatilla - 19th)	Construct trail-with-rail multi-use path between Umatilla and 19th to fill in the "Springwater Gap."	\$3,032,411	Yes	Yes	Years 1 - 10
70055		Portland	Portland	Tacoma Main Street Improvements	Tacoma St, SE (Sellwood Bridge - McLoughlin)	Implement boulevard design based on Tacoma Main Street study recommendations and incorporate McLoughlin Neighborhoods Project recommendations.	\$5,842,113	Yes	No	Years 11 - 20
70057	10298	Portland	Portland	Tacoma St ITS	Tacoma St, SE (Sellwood Bridge - 45th/Johnson Creek)	Communications infrastructure; closed circuit TV cameras, variable message signs for remote monitoring and control of traffic flow for four signals.	\$231,495	Yes	No	Years 11 - 20
70070		Portland	Portland	SE 14th/15th Neighborhood Greenway	14th/15th Ave, SE (Ellis - Linn)	Design and implement a neighborhood greenway including jogs on Malden, Tolman, and Ellisa.	\$688,530	Yes	No	Years 11 - 20

TSP ID	RTP ID	Lead Agency	Facility Owner	Project Name	Project Location	Project Description	Estimated Cost (\$2014)	Financially Constrained?	Fully funded?	Time frame
90046	10173	Portland	ODOT	Macadam ITS	Macadam, SW (Bancroft - Sellwood Br)	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	\$401,794	Yes	No	Years 11 - 20
90047	10309	Portland	ODOT	SW Macadam Ped/Bike Improvements	Macadam, SW (Bancroft - County line)	Improve pedestrian and bicycle crossings of Macadam and connections to the Willamette Greenway Trail. Project design will consider freight movement needs, consistent with policies, street classification(s) and uses.	\$1,000,000	Yes	No	Years 11 - 20
90071	10087	Lake Oswego	Various	Lake Oswego to Portland Trail	Willamette River Greenway Trail, SW (Sellwood Bridge - Lake Oswego)	3.15 mile multi-use pathway adjacent to existing Hwy 43 Corridor, increasing ROW. Connects Lake Oswego to Portland at Sellwood Bridge. Part of the Willamette River Greenway Trail.	\$80,000,000	Yes	No	Years 11 - 20
90102	11639	Portland	Portland / ODOT	Johns Landing Streetcar Extension	Lowell - Willamette Park, SW	Corridor Alternatives Analysis, public outreach, planning, design, engineering, and construction for future streetcar extension from Portland to Johns Landing.	\$80,000,000	No	No	
90113	10354	Portland	Portland	Red Electric Trail, Segment 6	Red Electric Trail, SW (Terwilliger - Willamette Park)	Construct Segment 6 of the Red Electric Trail as recommended in the Red Electric Trail Planning Study.	\$4,739,000	Yes	No	Years 11 - 20