

## **APPENDICES**

- A. Relevant *2035 Comprehensive Plan Goals and Policies*
- B. Technical Memorandum on South Reach Archaeological Resources (May 3, 2019)

## APPENDIX A. Relevant *2035 Comprehensive Plan Goals and Policies*

**Policy 1.12 Consistency with Statewide Planning Goals.** Ensure that the Comprehensive Plan, supporting documents, and implementation tools remain consistent with the Oregon Statewide Planning Goals.

**Policy 2.1 Partnerships and coordination.** Maintain partnerships and coordinate land use engagement with:

**2.1.a.** Individual community members.

**2.1.b.** Communities of color (including those whose families have been in this area for generations such as Native Americans, African Americans, and descendants of immigrants), low-income populations, Limited English Proficient (LEP) communities, Native American communities, immigrants and refugees, and other under-served and under-represented communities.

**2.1.c.** District coalitions, Neighborhood Associations, watershed councils, and business district associations as local experts and communication channels for place-based projects.

**2.1.d.** Businesses, unions, employees, and related organizations that reflect Portland's diversity as the center of regional economic and cultural activity.

**2.1.e.** Community-based, faith-based, artistic and cultural, and interest-based non-profits, organizations, and groups.

**2.1.f.** People experiencing disabilities.

**2.1.g.** Institutions, governments, and Sovereign tribes.

### **Goal 3.B: A climate and hazard resilient urban form**

Portland's compact urban form, sustainable building development practices, green infrastructure, and active transportation system reduce carbon emissions, reduce natural hazard risks and impacts, and improve resilience to the effects of climate change.

### **Goal 3.G: Nature in the city**

A system of habitat corridors weaves nature into the city, enhances habitat connectivity, and preserves natural resources and the ecosystem services they provide.

**Policy 3.11 Significant places.** Enhance and celebrate significant places throughout Portland with symbolic features or iconic structures that reinforce local identity, histories, and cultures and contribute to way-finding throughout the city. Consider these especially at:

- High-visibility intersections
- Attractions
- Schools, libraries, parks, and other civic places
- Bridges
- Rivers
- Viewpoints and view corridor locations
- Historically or culturally significant places

- Connections to volcanic buttes and other geologic and natural landscape features
- Neighborhood boundaries and transitions

**Policy 3.4 All ages and abilities.** Strive for a built environment that provides a safe, healthful, and attractive environment for people of all ages and abilities.

**Policy 3.61 Integrated system.** Create an integrated City Greenways system that includes regional trails through natural areas and along Portland’s rivers, connected to neighborhood greenways, and heritage parkways.

**Policy 3.64 Urban habitat corridors.** Establish a system of connected, well-functioning, and diverse habitat corridors that link habitats in Portland and the region, facilitate safe fish and wildlife access and movement through and between habitat areas, enhance the quality and connectivity of existing habitat corridors, and establish new habitat corridors in developed areas.

**Policy 3.66 Connect habitat corridors.** Ensure that planned connections between habitat corridors, greenways, and trails are located and designed to support the functions of each element, and create positive interrelationships between the elements, while also protecting habitat functions, fish, and wildlife.

**Policy 3.69 Historic and multi-cultural significance.** Recognize, restore, and protect the historic and multi-cultural significance of the Willamette and Columbia Rivers, including current activities such as subsistence fishing of legally-permitted fish species.

**Policy 3.70 River transportation.** Recognize and enhance the roles of the Willamette and Columbia rivers as part of Portland’s historic, current and future transportation infrastructure, including for freight, commerce, commuting, and other public and private transportation functions.

**Policy 3.71 Recreation.** Improve conditions along and within the Willamette and Columbia rivers to accommodate a diverse mix of recreational users and activities. Designate and invest in strategically-located sites along the length of Portland’s riverfronts for passive or active recreation activities that are compatible with nearby land uses, historically and culturally important sites, significant habitat areas, restoration sites, and native fish and wildlife usage.

**Policy 3.73 Habitat.** Enhance the roles of the Willamette and Columbia rivers and their confluence as an ecological hub that provides locally and regionally significant habitat for fish and wildlife and habitat restoration opportunities.

**Policy 3.75 River neighborhoods.** Enhance the strong river orientation of residential areas that are located along the Willamette and Columbia Rivers.

**Policy 3.76 River access.** Enhance and complete Portland’s system of river access points and riverside trails, including the Willamette Greenway Trail, and strengthen active transportation connections between neighborhoods and the rivers.

**Policy 3.77 River management and coordination.** Coordinate with federal, state, regional, special districts, and other agencies to address issues of mutual interest and concern, including economic development, recreation, water transportation, flood and floodplain management and protection, regulatory compliance, permitting, emergency management, endangered species recovery, climate change preparation, Portland Harbor Superfund, brownfield cleanup, and habitat restoration.

**Policy 3.81 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 3.82 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. See Figure 3-9 — Willamette Greenway Boundaries.

**Goal 4.A: Context-sensitive design and development**

New development is designed to respond to and enhance the distinctive physical, historic and cultural qualities of its location, while accommodating growth and change.

**Goal 4.B: Historic and cultural resources**

Historic and cultural resources are identified, protected, and rehabilitated as integral parts of an urban environment that continues to evolve.

**Policy 4.1 Pattern areas.** Encourage building and site designs that respect the unique built natural, historic, and cultural characteristics of Portland’s five pattern areas described in Chapter 3: Urban Form.

**Policy 4.27 Protect defining features.** Protect and enhance defining places and features of centers and corridors, including landmarks, natural features, and historic and cultural resources, through application of zoning, incentive programs, and regulatory tools.

**Policy 4.3 Site and context.** Encourage development that responds to and enhances the positive qualities of site and context — the neighborhood, the block, the public realm, and natural features.

**Policy 4.38 Light pollution.** Encourage lighting design and practices that reduce the negative impacts of light pollution, including sky glow, glare, energy waste, impacts to public health and safety, disruption of ecosystems, and hazards to wildlife.

**Policy 4.41 Scenic resources.** Enhance and celebrate Portland’s scenic resources to reinforce local identity, histories, and cultures and contribute toward way-finding throughout the city. Consider views of mountains, hills, buttes, rivers, streams, wetlands, parks, bridges, the Central City skyline, buildings, roads, art, landmarks, or other elements valued for their aesthetic appearance or symbolism.

**Policy 4.42 Scenic resource protection.** Protect and manage designated significant scenic resources by maintaining scenic resource inventories, protection plans, regulations, and other tools.

**Policy 4.43 Vegetation management.** Maintain regulations and other tools for managing vegetation in a manner that preserves or enhances designated significant scenic resources.

**Policy 4.44 Building placement, height, and massing.** Maintain regulations and other tools related to building placement, height, and massing in order to preserve designated significant scenic resources.

**Policy 4.45 Future development.** Encourage new public and private development to create new public viewpoints providing views of Portland’s rivers, bridges, surrounding mountains, hills and buttes, the Central City skyline, and other landmark features.

**Policy 4.46 Historic and cultural resource protection.** Within statutory requirements for owner consent, identify, protect, and encourage the use and rehabilitation of historic buildings, places, and districts that contribute to the distinctive character and history of Portland’s evolving urban environment.

**Policy 4.54 Cultural diversity.** Work with Portland’s diverse communities to identify and preserve places of historic and cultural significance

**Policy 4.55 Cultural and social significance.** Encourage awareness and appreciation of cultural diversity and the social significance of both beautiful and ordinary historic places and their roles in enhancing community identity and sense of place.

**Policy 4.58 Archaeological resources.** Protect and preserve archaeological resources, especially those sites and objects associated with Native American cultures. Work in partnership with Sovereign tribes, Native American communities, and the state to protect against disturbance to Native American archaeological resources.

**Policy 4.77 Hazards to wildlife.** Encourage building, lighting, site, and infrastructure design and practices that provide safe fish and wildlife passage, and reduce or mitigate hazards to birds, bats, and other wildlife.

**Policy 4.78 Access to nature.** Promote equitable, safe, and well-designed physical and visual access to nature for all Portlanders, while also maintaining the functions and values of significant natural resources, fish, and wildlife. Provide access to major natural features, including:

- Water bodies such as the Willamette and Columbia rivers, Smith and Bybee Lakes, creeks, streams, and sloughs.

**Policy 4.79 Natural hazards and climate change risks and impacts.** Limit development in or near areas prone to natural hazards, using the most current hazard and climate change-related information and maps.

**Policy 4.81 Disaster-resilient development.** Encourage development and site management approaches that reduce the risks and impacts of natural disasters or other major disturbances and that improve the ability of people, wildlife, natural systems, and property to withstand and recover from such events.

**Policy 5.44 Regional cooperation.** Facilitate opportunities for greater regional cooperation in addressing housing needs in the Portland metropolitan area, especially for the homeless, low- and moderate-income households, and historically under-served and under-represented communities.

**Policy 6.12 Economic role of livability and ecosystem services.**

Conserve and enhance Portland’s cultural, historic, recreational, educational, food-related, and ecosystem assets and services for their contribution to the local economy and their importance for retention and attraction of skilled workers and businesses.

**Policy 6.16 Regulatory climate.** Improve development review processes and regulations to encourage predictability and support local and equitable employment growth and encourage business retention, including:

**6.16.b.** Promote certainty for new development through appropriate allowed uses and “clear and objective” standards to permit typical development types without a discretionary review.

**Policy 7.1 Environmental quality.** Protect or support efforts to protect air, water, and soil quality, and associated benefits to public and ecological health and safety, through plans and investments.

**Goal 7.B: Healthy watersheds and environment**

Ecosystem services and ecosystem functions are maintained and watershed conditions have improved over time, supporting public health and safety, environmental quality, fish and wildlife, cultural values, economic prosperity, and the intrinsic value of nature.

**Goal 7.C: Resilience**

Portland's built and natural environments function in complementary ways and are resilient in the face of climate change and natural hazards.

**Policy 7.4 Climate change.** Update and implement strategies to reduce carbon emissions and impacts and increase resilience through plans and investments and public education.

**Policy 7.6 Hydrology.** Improve, or support efforts to improve, watershed hydrology, through plans and investments, to achieve more natural flow and enhance conveyance and storage capacity in rivers, streams, floodplains, wetlands, and aquifers. Minimize impacts from development and associated impervious surfaces, especially in areas with poorly-infiltrating soils and limited public stormwater discharge points and encourage restoration of degraded hydrologic functions.

**Policy 7.7 Water quality.** Improve, or support efforts to improve, water quality in rivers, streams, floodplains, groundwater, and wetlands through land use plans and investments, to address water quality issues including toxics, bacteria, temperature, metals, and sediment pollution. Consider the impacts of water quality on the health of all Portlanders.

**Policy 7.8 Biodiversity.** Strive to achieve and maintain self-sustaining populations of native species, including native plants, native resident and migratory fish and wildlife species, at-risk species, and beneficial insects (such as pollinators) through plans and investments.

**Policy 7.9 Habitat and biological communities.** Improve, or support efforts to improve, fish and wildlife habitat and biological communities. Use plans and investments to enhance the diversity, quantity, and quality of habitats habitat corridors, and especially habitats that:

- Are rare or declining.
- Support at-risk plant and animal species and communities.
- Support recovery of species under the Endangered Species Act, and prevent new listings.
- Provide culturally important food sources, including those associated with Native American fishing rights.

**7.11.e. Vegetation in natural resource areas.** Require native trees and vegetation in significant natural resource areas.

**Policy 7.12 Invasive species.** Prevent or reduce the spread of invasive plants, remove infestations, and support efforts to reduce the impacts of invasive plants, animals, and insects, through plans, investments, and education.

**Policy 7.14 Natural hazards.** Prevent development-related degradation of natural systems and associated increases in landslide, wildfire, flooding, and earthquake risks.

**Policy 7.17 Restoration partnerships.** Coordinate plans and investments with other jurisdictions, air and water quality regulators, watershed councils, soil and water conservation districts, Sovereign nations, and community organizations and groups including under-served and under-represented communities, to optimize the benefits, distribution, and cost-effectiveness of watershed restoration and enhancement efforts.

**Policy 7.18 Community stewardship.** Encourage voluntary cooperation between property owners, community organizations, and public agencies to restore or re-create habitat on their property, including removing invasive plants and planting native species.

**Policy 7.19 Natural resource protection.** Protect the quantity, quality, and function of significant natural resources identified in the City's natural resource inventory, including:

- Rivers, streams, sloughs, and drainageways.
- Floodplains.
- Riparian corridors.
- Wetlands.
- Groundwater.

**Policy 7.24 Regulatory hierarchy: avoid, minimize, mitigate.** Maintain regulations requiring that the potential adverse impacts of new development on significant natural resources and their functions first be avoided where practicable, then minimized, then lastly, mitigated.

**Policy 7.26 Improving environmental conditions through development.** Encourage ecological site design, site enhancement, or other tools to improve ecological functions and ecosystem services in conjunction with new development and alterations to existing development.

**Policy 7.33 Fish habitat.** Provide adequate intervals of ecologically-functional shallow water habitat for native fish along the entire length of the Willamette River within the city, and at the confluences of its tributaries.

**Policy 7.34 Stream connectivity.** Improve stream connectivity between the Willamette River and its tributaries.

**Policy 7.35 River bank conditions.** Preserve existing river bank habitat and encourage the rehabilitation of river bank sections that have been significantly altered due to development with more fish and wildlife friendly riverbank conditions.

**Policy 7.36 South Reach ecological complex.** Enhance habitat quality and connections between Ross Island, Oaks Bottom, and riverfront parks and natural areas south of the Central City, to enhance the area as a functioning ecological complex.

**Policy 7.38 Sensitive habitats.** Protect and enhance grasslands, beaches, floodplains, wetlands, remnant native oak, bottomland hardwood forest, and other key habitats for native wildlife including shorebirds, waterfowl, and species that migrate along the Pacific Flyway and the Willamette River corridor.

**Policy 7.39 Riparian corridors.** Increase the width and quality of vegetated riparian buffers along the Willamette River.

**Policy 7.40 Connected upland and river habitats.** Enhance habitat quality and connectivity between the Willamette riverfront, the Willamette's floodplain, and upland natural resource areas.

**Policy 7.41 River-dependent and river-related uses.** Develop and maintain plans and regulations that recognize the needs of river-dependent and river-related uses, while also supporting ecologically-sensitive site design and practices.

**Goal 8.B: Multiple Benefits**

Public facility and service investments improve equitable service provision, support economic prosperity, and enhance human and environmental health.

**Goal 8.D: Public Rights-of Way**

Public rights-of-way enhance the public realm and provide a multi-purpose, connected, safe and healthy physical space for movement and travel, public and private utilities, and other appropriate public functions and uses.

**Goal 8.F: Flood Management**

Flood management systems and facilities support watershed health and manage flooding to reduce adverse impacts on Portlanders' health, safety, and property.

**Goal 8.H: Parks, Natural Areas, and Recreation**

All Portlanders have safe, convenient, and equitable access to high-quality parks, natural areas, trails, and recreational opportunities in their daily lives, which contribute to their health and well-being. The City manages its natural areas and urban forest to protect unique urban habitats and offer Portlanders an opportunity to connect with nature.

**Policy 8.9 Internal coordination.** Coordinate planning and provision of public facilities and services, including land acquisition, among City agencies, including internal service bureaus.

**Policy 8.37 Site- and area-specific needs.** Allow for site- and area-specific public facility standards, requirements, tools, and policies as needed to address distinct topographical, geologic, environmental, and other conditions.

**Policy 8.53 Public trails.** Establish, improve, and maintain a citywide system of local and regional public trails that provide transportation and/or recreation options and are a component of larger network of facilities for bicyclists, pedestrians, and recreational users.

**Policy 8.54 Trail system connectivity.** Plan, improve, and maintain the citywide trail system so that it connects and improves access to Portland's neighborhoods, commercial areas, employment centers, schools, parks, natural areas, recreational facilities, regional destinations, the regional trail system, and other key places that Portlanders access in their daily lives.

**Policy 8.55 Trail coordination.** Coordinate planning, design, improvement, and maintenance of the trail system among City agencies, other public agencies, non-governmental partners, and adjacent landowners.

**Policy 8.70 Natural systems.** Protect and enhance the stormwater management capacity of natural resources such as rivers, streams, creeks, drainageways, wetlands, and floodplains.

**Policy 8.76 Flood management.** Improve and maintain the functions of natural and managed drainageways, wetlands, and floodplains to protect health, safety, and property, provide water conveyance and storage, improve water quality, and maintain and enhance fish and wildlife habitat.



**Policy 8.77 Floodplain management.** Manage floodplains to protect and restore associated natural resources and functions and to minimize the risks to life and property from flooding.

**Policy 8.95 Park planning.** Improve parks, recreational facilities, natural areas, and the urban forest in accordance with relevant master plans, management plans, or adopted strategies that reflect user group needs, development priorities, development and maintenance costs, program opportunities, financing strategies, and community input. Consider developing master or management plans for properties that lack guiding plans or strategies.

**Policy 8.97 Natural resources.** Preserve, enhance, and manage City-owned natural areas and resources to protect and improve their ecological health, in accordance with both the natural area acquisition and restoration strategies, and to provide compatible public access.

**Policy 8.103 Public-private partnerships.** Encourage public-private partnerships to develop and operate publicly-accessible recreational facilities that meet identified public needs.

**Policy 9.3 Transportation System Plan.** Maintain and implement the Transportation System Plan (TSP) as the decision-making tool for transportation-related projects, policies, programs, and street design.

**Policy 9.11 Land use and transportation coordination.** Implement the Comprehensive Plan Map and the Urban Design Framework through coordinated long-range transportation and land use planning. Ensure that street policy and design classifications and land uses complement one another.

**Policy 9.16 Design with nature.** Promote street and trail alignments and designs that respond to topography and natural features, when feasible, and protect streams, wildlife habitat, and native trees.

**Policy 9.19 Pedestrian safety and accessibility.** Improve pedestrian safety, accessibility, and convenience for people of all ages and abilities.

**Policy 9.21 Accessible bicycle system.** Create a bicycle transportation system that is safe, comfortable, and accessible to people of all ages and abilities.

**Policy 9.22 Public transportation.** Coordinate with public transit agencies to create conditions that make transit the preferred mode of travel for trips that are not made by walking or bicycling.

**Policy 9.23 Transportation to job centers.** Promote and enhance transit to be more convenient and economical than the automobile for people travelling more than three miles to and from the Central City and Gateway. Enhance regional access to the Central City and access from Portland to other regional job centers.

**Policy 9.55 Parking management.** Reduce parking demand and manage supply to improve pedestrian, bicycle and transit mode share, neighborhood livability, safety, business district vitality, vehicle miles traveled (VMT) reduction, and air quality. Implement strategies that reduce demand for new parking and private vehicle ownership, and that help maintain optimal parking occupancy and availability.

## APPENDIX B. Technical Memorandum on South Reach Archaeological Resources



## **TECHNICAL MEMORANDUM**

South Reach Archaeological Resources: Desktop Review  
Portland and Multnomah County, Oregon

David V. Ellis

May 3, 2019

### **Introduction**

The purpose of this memorandum is to inform the Bureau of Planning and Sustainability's River Plan / South Reach planning process of precontact human activity in the project area, the existence of any known archaeological resources, and the potential for future discovery of such resources. The findings below may be useful as the City considers potential resource protection tools, future cultural programs and other plan proposals for the South Reach.

Our study consisted of a review of SHPO records of archaeological surveys and related studies in the South Reach study area and previously recorded archaeological resources. From these data, we have created two paper maps and two GIS databases, one each for surveys and resources. In addition, we have developed a "sensitivity model" for the South Reach study area. The model—described in more detail below—defines the relative potential for the presence of precontact archaeological resources.

### **Surveys and Archaeological Resources**

The South Reach area has been the subject of relatively little archaeological research in the past. There are no federal lands within the South Reach boundaries and there have been few projects that have triggered federal requirements for surveys (e.g., projects requiring federal permits or with federal funding). SHPO records list only 11 surveys over the past 44 years, 9 of which were conducted since 2000. It should be noted, however, that it's possible some surveys have been conducted in the South Reach area but the reports have not been submitted to the SHPO. Many of the surveys in the South Reach area were for small footprint projects and therefore addressed very limited areas. Only four of the surveys included subsurface probing, which is strongly recommended by the SHPO and is a standard practice for most surveys. However, subsurface probing is less

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common in more urban environments due to the large number of paved surfaces and the presence of many underground utilities.

Where surveys extended outside of the South Reach boundaries, our map shows the survey area up to 500 feet from the South Reach boundaries to provide a broader context for that survey.

Very few archaeological resources have been recorded in the South Reach area, and the few that have been recorded are all historic-period archaeological sites. All four sites were identified during either surveys or construction monitoring for the new Sellwood Bridge. Three of the sites (35MU263, 35MU264, and 35MU274) have been determined to not be eligible for listing on the National Register of Historic Places (NRHP). The fourth site, 35MU258, is currently listed as unevaluated; i.e., its significance is presently undetermined.

We have included in the mapping and GIS data three sunken vessels or possible vessels on the riverbed at the lower end of Ross Island that were recorded in a 2009 hydrographic study (David Evans and Associates 2009). These features were noted in the study report and are in the SHPO GIS database but have not been assigned official archaeological site numbers. It's possible that similar features or artifacts may be present on the riverbed elsewhere with the South Reach boundaries. Historic-period and modern debris is common on riverbeds, and precontact artifacts that have eroded out of archaeological resources along the riverbank may also be present.

As noted below, there are unconfirmed reports of precontact artifacts encountered on Hardtack Island during mining operations. We are not aware of any similar finds but discoveries by private individuals on private or City lands are unlikely to be reported. In addition, given the urban character of much of the South Reach area, most previous surveys have had few or no opportunities for exploratory subsurface probes, which is the most effective means of encountering precontact archaeological resources.

### **Sensitivity model**

The sensitivity modeling for the South Reach area is based on an integration of several variables. We began with a review of the probability model developed in 2004-2005 for the Portland Harbor Superfund data analysis study. That mapping defined probability for the Willamette River shoreline from its mouth to Willamette Falls and addressed the potential for both precontact and historic-period archaeological sites. That modeling also attempted to account for the effects of modern development in considering whether archaeological deposits would be extant (Ellis et al. 2005:96-99).

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For the South Reach modeling, we found the Portland Harbor model was an initial guide but needed more focused and refined research than was possible for the 2004-2005 model. This included

- Review of the GLO surveyor's notes describing landscape features and vegetation when mapped in the 1850s (the Portland Harbor modeling used only the GLO survey maps, not the surveyors' fieldnotes);
- Reviewing landforms using LiDAR imagery; and
- Reviewing current landscapes and terrain using Google Earth (Google Earth was used in the Portland Harbor model but the current version has more advanced features than available in 2004-2005).

In addition to incorporating more or newer data into the current model, the South Reach model differs from the earlier model in that we do not address the potential for historic-period archaeological resources. We have followed the Portland Harbor model in defining three probability zones: high, moderate, and low. There were well-defined criteria for high and low probabilities, with moderate probability serving as a default designation for areas that did not meet the high or low criteria. It is possible to assign a quantitative value to these designations but it is important to consider the limited data presently available and therefore the rather arbitrary basis for the quantification.

In general, high sensitivity areas can be considered to have a greater than 70% likelihood of precontact archaeological resources; low sensitivity areas as less than 20% likelihood. Moderate sensitivity thus spans a range from 20 to 70% potential. It is important to bear in mind that (1) there remains a potential for archaeological resources even in low sensitivity areas; and (2) the percentages are those for the entire mapped areas and not for any specific locations within those areas. Revisiting the Portland Harbor model also led to redesignating Hardtack Island from moderate to high sensitivity, while retaining the moderate sensitivity designation for the rest of the Ross Island complex. The Ross Island is low in elevation (<40 feet) and has been substantially altered by aggregate mining. An archaeological survey by Portland State University in 1974 of portions of the island found no evidence of archaeological resources and concluded such resources were unlikely to be present. However, that survey also reported that precontact artifacts had been found on Hardtack Island in the past (Bogue et al. 1974). This led us to redefine the island as high sensitivity.

A more focused analysis also led to a more significant shift of the left bank of the river immediately above the Sellwood Bridge from low to moderate sensitivity. This stretch of the river is characterized by steep bluffs, with little low ground along the river. This was the basis for the low probability designation in the Portland Harbor model. We revisited this designation after noting that several tributary streams flow into the Willamette in this area from River View Cemetery and the

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River View Natural Area. Although the steep slopes would have likely discouraged precontact use of the inland area, the tributaries are sources of cold water to the Willamette, providing refugia around their mouths for salmonids during hot weather (City of Portland 2015:11-12). This stretch of the river could therefore have served as an attractive fishing area for precontact people, especially during summer and fall runs when river levels are lower and its waters are warmer.

### Conclusions

Our review of SHPO records has provided a basic overview of previous archaeological fieldwork and research in the South Reach area. On the surface—as indicated by the map of previous surveys—it would appear that a considerable portion of the South Reach area has been surveyed. Some of the surveys, however, are decades old and many do not meet current SHPO standards. That most surveys have consisted of only pedestrian survey with no subsurface probing severely constrained the potential archaeological resources, especially precontact resources that may have little or no surface presence. It is therefore not surprising that three of the four known archaeological resources are historic-period artifact scatters observed during monitoring of construction activity.

These data therefore have limited utility in developing a policy or approach to addressing precontact archaeological resources in the South Reach area. The only resource-specific guidance that can be offered is for 35MU258, a historic-period archaeological site that remains unevaluated. Should any City project have the potential of direct or indirect impacts to this site or the immediate area, appropriate research and fieldwork should be undertaken to determine if this site is a significant resource.

The sensitivity model has been prepared as a potential general guide for planning purposes. It is important, however, to emphasize that the model is based primarily on environmental features considered likely to have influenced precontact use or occupation by Native peoples. Direct references to Indians in the South Reach area are absent in written accounts by European American explorers, fur traders, missionaries, travelers, and settlers. The only exception is a reference to Indians gathering wapato at Oaks Bottom by Catholic missionary Father Francis Blanchet in 1841 (Bagley 1932:99, 100). In a list of Indian place names collected from two men with European American fathers and Indian mothers (the two men were cousins through their mothers), Lyman (1900:323) included “Na-ka-poulth” as the name for Oaks Bottom, described as a place where “the Indians dug wapatoes.” A review of ethnographic literature for the South Reach area (Drucker 1934; Gatschet 1877; Gatschet et al. 1945; Jacobs 1958, 1959) found no references to locations in the South Reach area. Although far from exhaustive, Zenk’s (2008) description of Native place names in the Willamette Valley has no names in the South Reach area.

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The model has the potential to be used in several different ways. First, it can be used just as a general guide for planning purposes, indicating those areas within the South Reach with a potential for precontact archaeological resources. Another use of the model would be to help delineate resource protection measures for proposed development projects involving ground disturbance in the South Reach. Those procedures could range from requiring archaeological surveys well in advance of any construction activity to archaeological monitoring during construction to developing an inadvertent discovery plan (IDP) in areas defined as having a moderate to high potential for archaeological resources depending on the horizontal and vertical extent of disturbance. The use of an IDP may be sufficient for addressing construction in those areas defined as having low sensitivity for archaeological resources. The model could also be applied to proposed ground disturbance by private parties requiring City permits (e.g., grading permits). How this is framed would be contingent on the City's legal authority to attach conditions to address archaeological resources on such permits. The City could minimally reference the state law (ORS 358.920) that prohibits disturbing archaeological sites and ORS 97.740, which prohibits disturbing Indian graves.

A tiered approach is another option that has been applied with modest success in Clark County, Washington, as well as in the Cities of Vancouver, Camas, and Washougal and as in the Columbia River Gorge National Scenic Area. These agencies, of course, operate in different statutory and regulatory environments than the City of Portland, but the tiered approach may still be a useful model. This approach typically defines scales of development that intersect with probability or sensitivity designations. For example, proposed development/construction that involves substantial horizontal and vertical ground disturbance in areas defined as having a moderate to high potential for archaeological resources would require an archaeological survey, while projects with minimal ground disturbance in low potential areas may require only an IDP. There can be varying levels of specificity in defining both the scale of ground disturbance and how potential effects to archaeological resources are addressed. (A link to the City of Vancouver's ordinance as an example: [https://www.cityofvancouver.us/sites/default/files/fileattachments/vmc/titles\\_chapters/020.710.pdf](https://www.cityofvancouver.us/sites/default/files/fileattachments/vmc/titles_chapters/020.710.pdf)).

Finally, given the very preliminary character of the South Reach sensitivity model, it is critical that the model be revisited at regular intervals and updated as new data become available. Given that most surveys are conducted to meet state and federal requirements, the associated reports are unlikely to be provided to the City but would be on file at the SHPO. The City should consider developing an agreement with the SHPO for sharing information relevant to the South Reach area. However, knowing SHPO's reluctance to participate in such an agreement, the City may need to contract with an appropriate firm or individual for updating the model. Initially updating the model every five years would be an appropriate interval.

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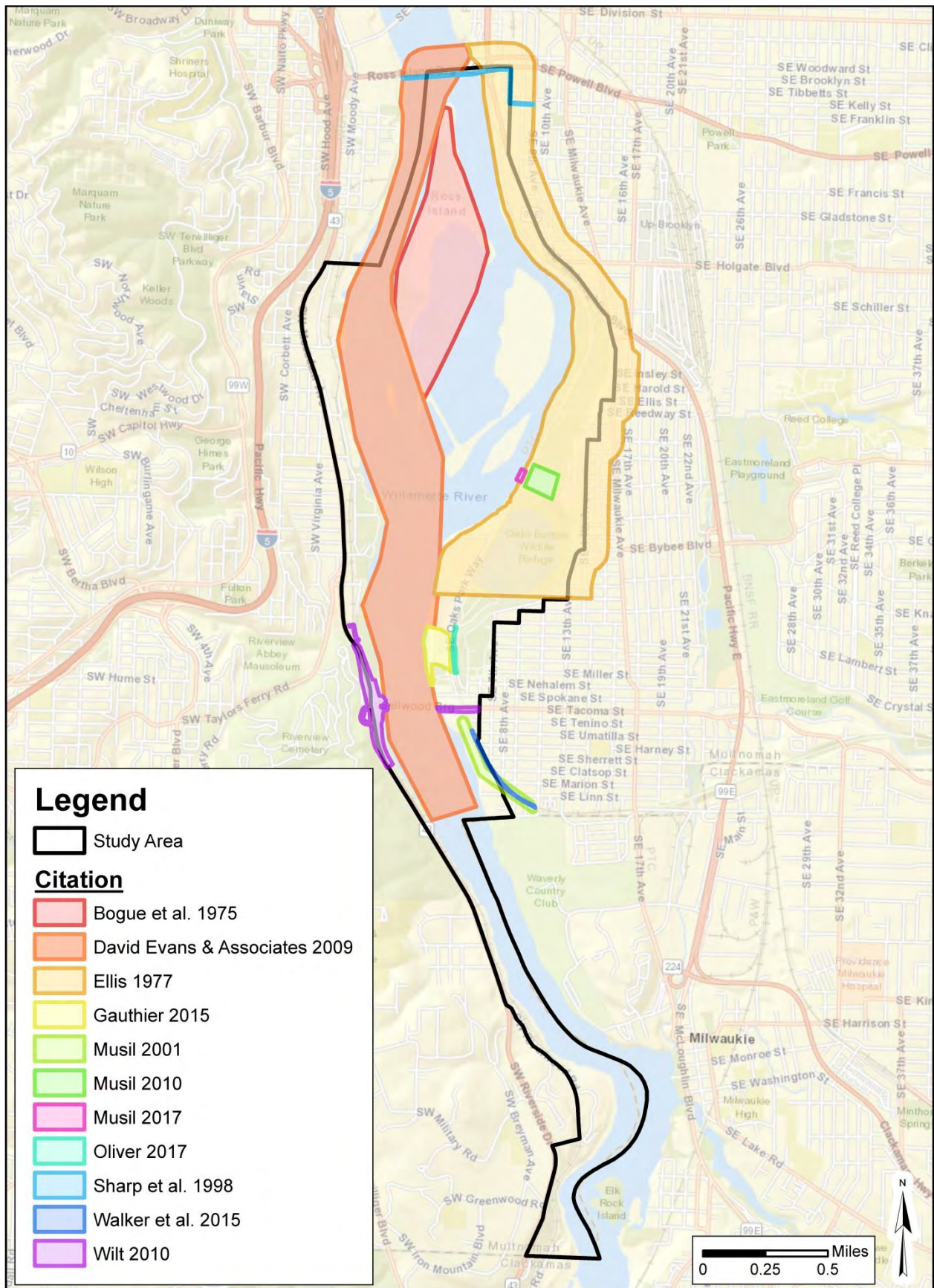


Figure 1. Previous surveys within the study area.

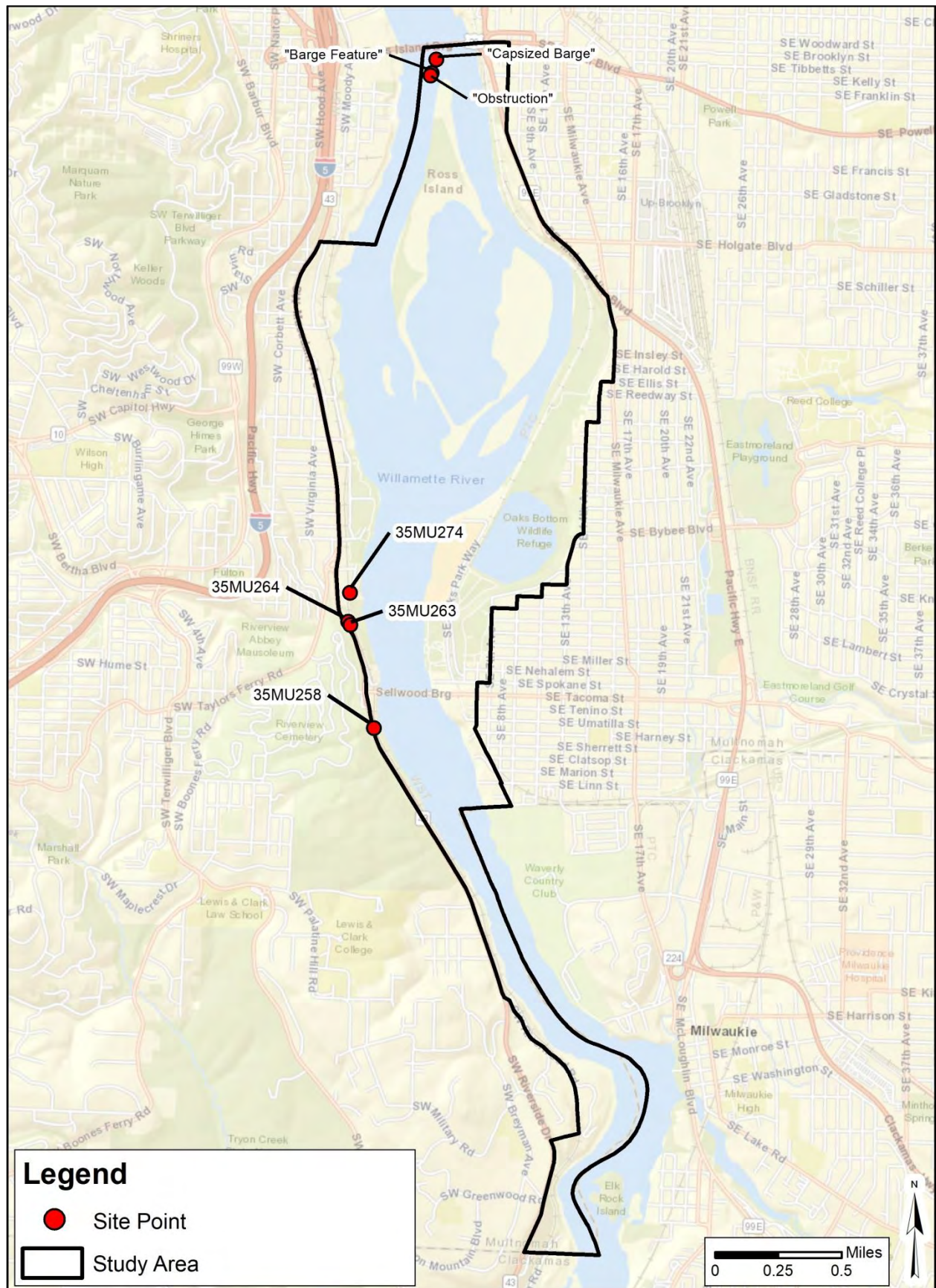


Figure 2. Previously recorded archaeological resources recorded within the study area.

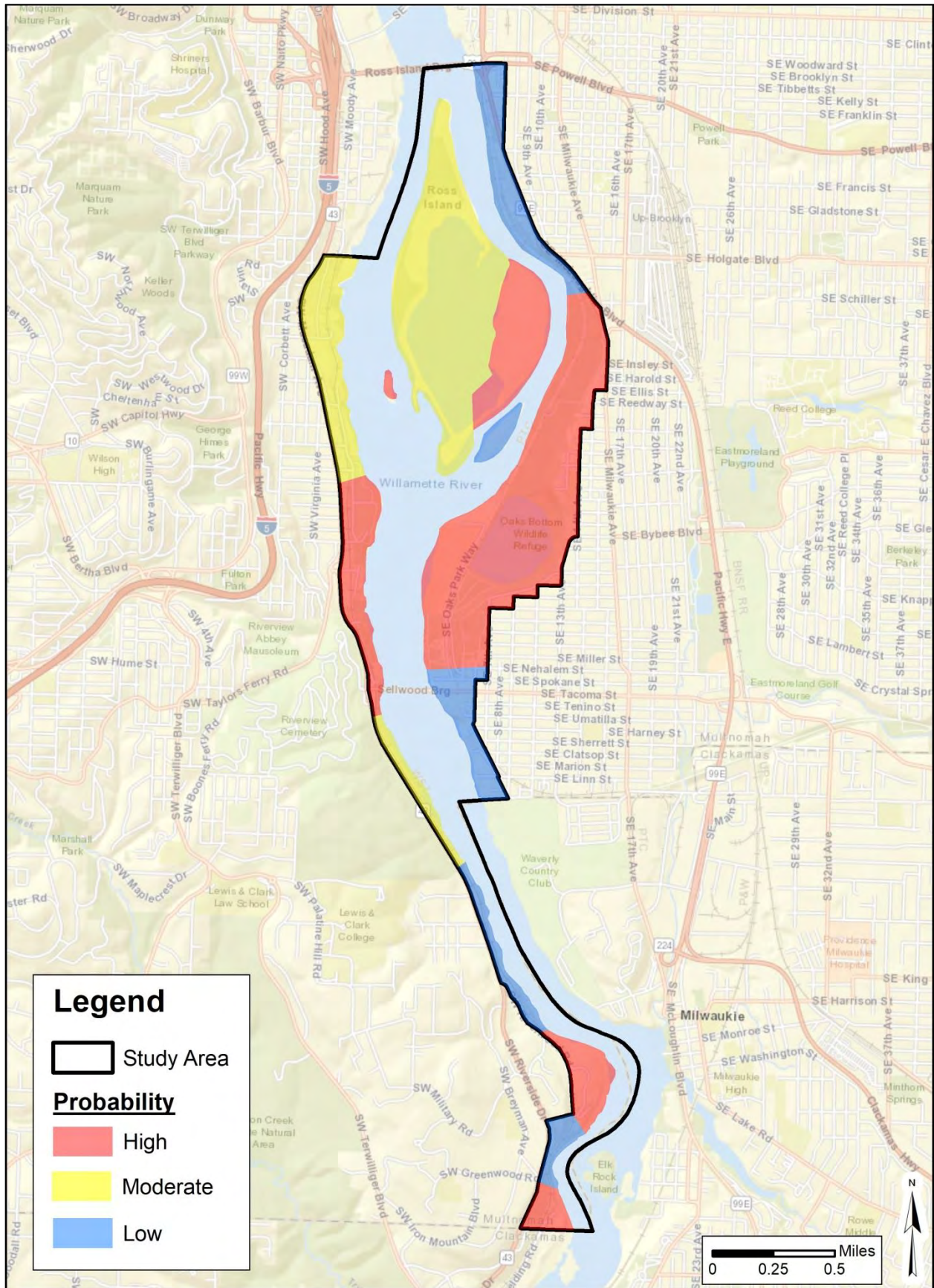


Figure 3. South Reach precontact archaeological sensitivity model.