

Appendix E:
Preliminary
Section 4(f)
Assessment



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APPENDIX E

PRELIMINARY SECTION 4(F) ASSESSMENT

This document addresses how the Lake Oswego to Portland Transit Project is responding to a federal environmental law known as Section 4(f), which protects public parks and recreation areas, wildlife and waterfowl refuges and historic sites. The document describes Section 4(f) of the United States Department of Transportation Act and explains its role in the Federal Transit Administration's (FTA's) decision-making. It also summarizes several key terms, concepts and legal standards that are used here. This description is followed by the preliminary Section 4(f) assessment for the project.

E.1 Section 4(f) Guidelines and Regulations

Federal regulations known as "Section 4(f)" refer to a portion of the U.S. Department of Transportation (USDOT) Act address the use of "public park and recreation lands, wildlife and waterfowl refuges and historic sites" by transportation projects. "Section 4(f)" states in part that "it is the policy of the United States Government that special effort is made to preserve the natural beauty of the countryside and public park and recreation lands...and historic sites." This regulation requires that the United States Department of Transportation (USDOT) avoid "use" of Section 4(f) properties unless there is no feasible and prudent alternative to using the land, unless the impact would be *de minimis*. A *de minimis* impact is defined as an impact that would not adversely affect the features, attributes or activities qualifying the property for protection under Section 4(f).

The USDOT Act of 1966 (49 USC 303) includes regulations that prohibit the use of parks, recreation areas, historic sites or nature refuges for transportation projects except in very unusual circumstances. These regulations, known as Section 4(f), require that USDOT agencies (including the FTA):

... not approve the use of land from a significant publicly-owned park, recreation area or wildlife and waterfowl refuge or any significant historic site, unless there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning to minimize harm to the property resulting from the use.

A use is generally defined as a transportation activity that permanently or temporarily acquires land from a Section 4(f) property. Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49, United States Code. Section 6009 directed the USDOT to issue regulations that clarify the factors to be considered and the standards to be applied when determining whether feasible and prudent alternatives could avoid the use of a Section 4(f) property. On March 12, 2008, the Federal Highway Administration (FHWA) issued a Final Rule on Section 4(f), which moves the Section 4(f) regulation to 23 CFR 774 and provides updated direction for Section 4(f) evaluations. If there is no direct use of a property, 23 CFR 774.15(c) indicates that the project proponents are "not required to document each determination that a project would not result in a constructive use of a nearby Section 4(f) property." Further information about project noise, access, and visual impacts to recreational resources in the project corridor may be found in Chapter 3 of the DEIS.

Section 6009 of SAFETEA-LU also provided regulations simplifying the processing and approval of projects that have only *de minimis* impacts to lands protected by Section 4(f). This revision provides for minor uses that will not adversely affect Section 4(f) properties under certain conditions. If USDOT determines that a transportation use of Section 4(f) property (including any impact avoidance, minimization, and mitigation or enhancement measures) results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete.

This preliminary 4(f) Assessment addresses the Lake Oswego to Portland Transit Project. It identifies potential uses of Section 4(f) properties as outlined in 23 CFR 774.

Section 4(f) properties may not be used for any transportation project receiving federal funds or approval from a USDOT agency, except where a use with *de minimis* impacts occurs, where there is a specific exception to a use in Section 4(f) regulations, or where no feasible or prudent alternative exists. Section 4(f) ensures that all possible planning has been done to minimize harm to those properties covered by the act.

The Area of Potential Effect (APE) for this preliminary assessment is based on the parks that are within the project corridor between the south waterfront area of Portland and downtown Lake Oswego. The evaluation of historic, cultural, and archaeological resources is based on the analysis and documentation provided in the Draft Environmental Impact Statement (DEIS) and its related documentation as required under Section 106 of the National Historic Preservation Act of 1966. The evaluation of potential impacts to parks and recreation resources incorporates findings from the DEIS parks and recreational resources section and other environmental analyses, particularly visual and aesthetic, traffic, transportation, and noise and vibration analyses. Other findings and information from the DEIS and its preceding environmental and planning documents are also used in this preliminary Section 4(f) Assessment to support conclusions regarding other avoidance and minimization alternatives.

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC 303) establishes a national policy “to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” This act applies to three types of resources:

1. Significant publicly-owned parks and recreation areas that are open to the public;
2. Significant publicly-owned wildlife and waterfowl refuges, whether or not they are open to the public; and
3. Historic sites of national, state or local significance, whether or not these sites are publicly owned or open to the public. In most cases, only historic properties listed in or eligible for inclusion in the National Register of Historic Places are protected under Section 4(f).

Section 4(f) resources are presumed to be significant unless the official having jurisdiction over the site, or in the case of historic resources, the State Historic Preservation Officer (SHPO), concludes that the entire site is not significant.¹ Additionally, FTA must confirm that the official’s finding of significance or non-significance is reasonable.

¹ 23 CFR 774.

E.1.1 “Uses” of Section 4(f) Resources

Under Section 4(f), USDOT agencies cannot approve a transportation program or project that incorporates land or substantially affects the essential functions and features of a significant Section 4(f) resource, except under specific circumstances, as defined in the following section.² A use can be permanent, temporary, constructive, or one with *de minimis* impacts, as defined below.

Permanent use includes acquisition and incorporation of the resource into the transportation facility. It includes fee simple and permanent easements use, and involves the taking of any property within the established boundary of a Section 4(f) resource.

Temporary use occurs when a transportation project temporarily occupies any portion of the resource. In order for a temporary use of Section 4(f) land not to be considered adverse, it must meet the following conditions as summarized from 23 CFR 774.13:

- The duration of the occupancy must be less than the time needed for the construction of the project and there must not be a change in ownership.
- Both the nature and magnitude of the changes to Section 4(f) resources are minimal.
- There are no anticipated permanent adverse physical changes or interference with protected activities, features, or attributes of the resource, on a temporary or permanent basis.
- The land is restored to the same or better condition.
- There is a documented agreement of the appropriate federal, state or local officials having jurisdiction over the resource, and authority over use of the property, regarding the above condition.

Constructive, or indirect, use occurs when the proximity effects of the transportation project are so great that the use of the property is substantially impaired. Examples are provided in 23 CFR 774.15.

A use with *de minimis* impacts is allowed after the public has had an opportunity to comment on the proposed finding and the project proponent, in consultation with the resource owner or official with jurisdiction, determines that the use will not “adversely affect the activities, features, and attributes” that make the resource eligible for protection under Section 4(f).

E.1.2 Permitted Uses of Section 4(f) Resources

Approval of a transportation use of a Section 4(f) resource may occur if the project proponent demonstrates that:

- The use of the resource falls within the criteria allowing an exception to Section 4(f) as allowed in 23 CFR 774.13. Particular to this project, this regulation allows an exception for uses that are temporary.
- The use will have no more than a *de minimis* impact on the property; or
- There is no feasible and prudent avoidance alternative to using the property; and

² Section 4(f) “use” is defined and addressed in the FHWA/FTA Regulations at 23 CFR 774.

- The program or project includes all possible planning to minimize harm to the property resulting from the use.

De minimis impacts relate to publicly-owned parks, recreation areas and wildlife and waterfowl refuges. *De minimis* impacts do not “adversely affect the activities, features and attributes” of a Section 4(f) resource.³ Once the USDOT determines that a transportation use of Section 4(f) property results in a *de minimis* impact, the project does not need to analyze avoidance alternatives, and the Section 4(f) evaluation process is complete.

When a project impact is greater than *de minimis*, the project proponent must determine whether there are feasible and prudent alternatives that would not result in an impact. An alternative is feasible if it is technically possible to design and build. An alternative is prudent if:

- It meets the project purpose and need and does not compromise the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It does not require extraordinary operational or safety problems;
- It carries no unique problems or truly unusual factors;
- It has no other unacceptable or severe adverse economic or environmental impacts;
- It would not cause extraordinary community disruption;
- It does not have construction costs of an extraordinary magnitude; or
- There are no other factors that collectively have adverse impacts that present unique problems or reach extraordinary magnitudes.

Once a project proponent demonstrates that an alternative is not feasible and prudent, that alternative may be removed from consideration within the Section 4(f) analysis. When there are no prudent and feasible alternatives that can avoid all Section 4(f) resources, then the Section 4(f) analysis must determine which alternative results in the least overall harm to Section 4(f) resources. Assessing least harm must consider the relative significance of the impacts on the Section 4(f) resources, mitigation incorporated into the proposed project, and impacts on other important resources that would occur from avoiding or minimizing the impact to a Section 4(f) resource.

The regulations list specific factors that FTA must consider when determining which alternative causes the “least overall harm.” See 23 USC 774.3(c)(1). These factors include:

- i. The ability to mitigate adverse impacts to each Section 4(f) property (including mitigation measures that result in benefits to the property);
- ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- iii. The relative significance of each Section 4(f) property;
- iv. The views of the official(s) with jurisdiction over each Section 4(f) property;

³ For historic and archaeological sites, a *de minimis* impact is defined as a “no adverse effect” or “no historic or archaeological properties affected” in compliance with Section 106 of the National Historic Preservation Act. Prior to making a determination of *de minimis* impact, USDOT should receive concurrence on the determination of effect to historic resources from the State Historic Preservation Officer (23 CFR 774.5).

- iv. The degree to which each alternative meets the purpose and need for the project;
- v. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- vi. Substantial differences in costs among the alternatives.

This Draft Section 4(f) Assessment describes the Section 4(f) resources, the uses of those resources by the Lake Oswego to Portland Project alternatives, coordination efforts to protect Section 4(f) resources, and a preliminary determination. These conclusions will be subject to public review and comment prior to making a final determination.

E.1.3 Section 106 Historic and Cultural Resources

Section 4(f) resources include those historic and cultural resources that qualify for protection under Section 106 of the National Historic Preservation Act. This Draft Section 4(f) Assessment incorporates the preliminary findings being developed through the project's Section 106 Consultation process.

Section 106 of the National Historic Preservation Act requires consideration of the impacts of federal transportation projects on historic properties and archaeological resources that are eligible for or listed in the National Register of Historic Places (NRHP). For this project, Section 106 compliance requires consultation between FTA, the SHPO, and federally recognized tribes, if they so choose. TriMet and Metro also coordinated with the SHPO and tribes during preparation of the Section 106 Consultation.

There are four ways, or criteria, through which an historic property or cultural resource can qualify for NRHP eligibility. These criteria are described below:

- Criterion A. The property is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B. The property is associated with the lives of persons significant in our past.
- Criterion C. The property embodies distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D. The property has yielded, or may be likely to yield, information important in prehistory or history. This criterion is generally associated with archaeological resources.

In addition to defining Section 4(f) historic resources based on their eligibility for inclusion in the NRHP, the Section 4(f) evaluation considers the determination of effects from the Section 106 process in determining whether or not there is a use of a Section 4(f) resource.

If an alternative has a direct use of land from an historic site, but there is a written finding of “no adverse effect” in the Section 106 process, a Section 4(f) *de minimis* impact finding may result. If the use results in an “adverse effect” in the Section 106 process, a Section 4(f) *de minimis* impact finding cannot be made. If an alternative avoids a direct use of land from an historic site that is within the area of potential effects, but the alternative is determined to have “no adverse effect” through the Section 106 process, there would likely be no constructive use under the Section 4(f)

evaluation. However, an adverse effect does not necessarily imply a constructive use – there must be a substantial impairment of the historic site for the proximity impact to rise to the constructive-use level.

The Section 106 process requires consultation to resolve any adverse effects. Commitments made in the Section 106 process and documented in the Memorandum of Agreement (MOA) established for the project may also satisfy the requirement under Section 4(f) to minimize harm resulting from the use of a historic property. These agreements have not yet been initiated but will be finalized prior to the publication of the FEIS.

E.1.4 Section 6(f) Resources

State and local governments often obtain grants through the Federal Land and Water Conservation Fund (LWCF) Act of 1965 to acquire or make improvements to parks and recreation areas. Section 6(f) of the LWCF Act prohibits the conversion of property acquired or developed with these funds to a non-recreational purpose without the approval of the U.S. Department of Interior (DOI) and the National Park Service (NPS). A Section 6(f) analysis was also conducted, and it was determined that while Willamette Park received 6(f) funds for the development of the boat ramp, the boat ramp would not be affected by the project and thus the project is not encumbered by the requirements of Section 6(f). The Tryon Creek State Natural Area received 6(f) funding but would not be affected by the project.

E.2 Agency Coordination

The project conducted coordination meetings and correspondence with park owners and managers and the SHPO to guide the preliminary conclusions made in this Draft Section 4(f) Assessment, as summarized below (see Sections 3.6 and 3.5, respectively, for additional detail).

Since initiating the DEIS in 2009, FTA, Metro and TriMet have coordinated with the City of Portland Parks and Recreation Department and the City Lake Oswego Parks and Recreation Department. The project team held preliminary meetings with the City of Portland and the City of Lake Oswego. In these meetings, the team obtained information about the features, activities, and attributes of the park and recreational resources found in the project corridor. These findings are detailed in Section E.3. The cities also participate in regular advisory committee meetings about the project. The cities also were provided the opportunity to review and comment on this appendix and on Sections 3.5 and 3.6 of this DEIS, prior to its publication, in compliance with the project's *Section 6002 Coordination Plan*. Edits were made to the appendix and section in response to those comments and follow-up meetings with the jurisdictions were held from May through September of 2010 to review the comments and revisions and to discuss additional potential mitigation measures that could be considered during preparation of the project's FEIS and potentially incorporated into the project's design and the final Section 4(f) analysis and findings.

FTA sent a letter in October 2009 to the Oregon SHPO requesting concurrence with the project's historic area of potential effect. Further, FTA provided Oregon SHPO with draft determination of eligibility documentation, which was reviewed during a site tour in April 2010, which included local project staff. The project received a letter of concurrence on eligibility of historic properties in July 2010 for all but three properties. In accordance with the FHWA/FTA *de minimis* guidance, FTA (or, through its agents, Metro and TriMet) must notify SHPO that it intends to make a *de minimis* finding

based on the Section 106 finding of “no adverse effect.” As stated in the *Guidance for Determining de Minimis Impacts to Section 4(f) Resources* (FHWA 2005), SHPO must concur in writing with FTA, Metro and TriMet’s Section 106 “no adverse effect” finding for historic resources.

Upon publication of this DEIS and preliminary Section 4(f) analysis, FTA, Metro and TriMet will solicit comments on the project, including design options that could use or impact identified Section 4(f) resources. FTA, Metro and TriMet will conduct a public hearing and comment period for the DEIS that will serve as the opportunity for public review and comments for these impacts, in compliance with NEPA, Section 4(f) and Section 6(f) requirements. Agency and public comments made during the public comment period and hearing will be documented and responded to in the project’s DEIS, with edits reflected in the project’s FEIS and final Section 4(f) analysis, as appropriate.

E.3 Description of Project Alternatives

Chapter 2 of this DEIS includes a detailed description of the study area, alternatives and design options. The projects alternatives include the No-Build Alternative, the Enhanced Bus Alternative and the Streetcar Alternative. The Streetcar Alternative has various design options.

E.4 Affected Environment

This section provides a summary of the Section 4(f) and Section 6(f) resources in the corridor, including public parks and recreation areas, wildlife and waterfowl refuges and eligible historic resources.

Figure E-1 illustrates the location of public parks and recreation areas in the project area, differentiating between those that are and that are not Section 4(f) and Section 6(f) resources. Table E-1 provides a summary description of the parks and recreation areas that are in the project area and it notes which parks and recreation areas would be adjacent to an improvement under the Streetcar Alternative and which parks and recreation areas are publicly and privately owned. Note that there are no public parks or recreation areas that would be adjacent to improvements under the Enhanced Bus Alternative (see Section 3.6 of the DEIS for additional detail on the public park and recreation resources in the project area). In summary, there are 13 public parks and recreation areas in the vicinity of the project that qualify as section 4(f) resources and four resources that do not qualify as Section 4(f) resources.

The other resources listed in Table E-1 (i.e., the Peter Kerr Property and the six publicly-owned tax lots) were analyzed for their potential status as 4(f) resources and were determined not to qualify as Section 4(f) resources. The reasoning for this conclusion follows.

The Peter Kerr property is a natural area located on a steep bluff west of Elk Rock Island. It is owned by the City of Portland and listed in their inventory of natural places. It is not considered a Section 4(f) resource because it is not publically accessible.

The project researched six publicly-owned parcels that are located adjacent to or near Tryon Cove Park to determine if they were qualified as park or recreational facilities under Section 4(f). The six tax lots, located in Lake Oswego, are in ownership by the City of Portland, the City of Lake Oswego or Metro. These parcels are not Section 4(f) resources for the following reasons:

- The adopted Foothills District Refinement Plan does not list these parcels as part of Tryon Cove Park. A parks map published in April 2010 as the City of Lake Oswego shows five of the seven parcels as part of Tryon Cove Park, however, this map is not part of an adopted plan. To date, no Master Plan has been adopted for these parcels.
- The City of Portland owns three tax lots adjacent to Tryon Creek. These parcels are managed by the City's Bureau of Environmental Services and are used for riparian restoration, provision of riparian habitat and restoration for natural resources. The City of Portland has a wastewater treatment facility on the south side of Tryon Creek, adjacent to the subject properties. An above ground sewage pipe and sewage easement runs across these properties. Based on the current intergovernmental agreement (2003) regarding these parcels, the City of Portland is responsible for the management, operations and maintenance. Two of these properties are shown on the April 2010 City of Lake Oswego Parks Map as part of Tryon Cove Park.
- Metro purchased one tax lot in this area using public bonds for open spaces. There are currently no trails, signage, public access or adopted plan for this parcel. Based on the current intergovernmental agreement (2003) regarding this parcel, it is intended as open space, and the City of Lake Oswego may build a trail through the property, but formal use shall not begin until a Resource Management Plan has been adopted. No resource management plan for the parcel has been adopted to date.
- The City of Lake Oswego owns two parcels adjacent to Stampher Road and north of the other public properties. There are no trails, public facilities or signage for these properties. The City of Lake Oswego has not made formal plans for these parcels. Based on the current intergovernmental agreement (2003) regarding these parcels, these parcels were identified as surplus properties, subject to future development or sale by the city.

Two of the resources listed in Table E-1, Willamette Park and the Tryon Creek State Natural Area, had improvements made with Section 6(f) or Land and Water Conservation funds (see Figure E-1). There are no wildlife or waterfowl refuges and no known archeological sites in the project area.

Figure E-2 illustrates the location of 22 eligible historic resources in the project area (see Section 3.5 of the DEIS for additional detail on the analysis of historic resources).

**Table E-1
Parks and Recreation Areas and Natural Areas in the Project Vicinity and their Section 4(f) and 6(f) Status**

Name of Park or Recreation Area	Location	Adjacent to Project? ¹	Owner(s)/ Custodian(s)	Size / Type of Recreational Uses	4(f) Resource?	6(f) Resource?
Willamette River Greenway Trail	Trail along portions of the west side of the Willamette River	Yes	City of Portland, City of Lake Oswego, private property	Trail along parts of the west bank of Willamette River	Yes	No
Lake Oswego to Portland Trail	Planned alignment connecting Lake Oswego and Portland	Yes	To be determined	Planned trail	No ²	No
Cottonwood Bay	Near SW Hamilton Court and Willamette River	No	City of Portland	0.67 acres / Natural area	Yes	No
Willamette Park	North of the Sellwood Bridge near SW Nevada Avenue	Yes	City of Portland	26.85 acres / Boat ramp, picnic area, soccer field, tennis courts, paved and unpaved paths	Yes	Yes ³
Butterfly Park	7720 SW Macadam Avenue	No	City of Portland	1.07 acres / Natural area, paths	Yes	No
Willamette Moorage Park	South of Willamette Park	Yes	City of Portland	10.3 acres / Natural area, path	Yes	No
Powers Marine Park	Sellwood Bridge area south	Yes	City of Portland	13 acres / Natural areas, picnic areas, unpaved trails	Yes	No
Elk Rock Gardens Close	Adjacent to Elk Rock of the Bishop's	No	Episcopal Diocese of Oregon	13 acres / Gardens open to public daily	No	No
Peter Kerr Property	Adjacent to Elk Rock	Yes	City of Portland	3.3 acres / City owned parcel, open space, no public access	No	No
Elk Rock Island	East side of Willamette River	No	City of Portland	13.24 acres / Natural area, hiking trails	Yes	No
Tryon Creek State Natural Area	Boundary of Portland and Lake Oswego, west of Highway 43	No	State of Oregon	645 acres / Nature center, hiking and horse trails, bicycle path	Yes	Yes
Tryon Cove Park Annex	Near Stampfer Road on river	Yes	City of Lake Oswego	0.5 acres / Picnic tables, boat ramp constructed	Yes	No
Tryon Cove Park	At mouth of Tryon Creek	Yes	City of Lake Oswego, Metro, City of Portland	Natural area with access to Willamette River	Yes	No
Six tax Lots north of Tryon Cove Park ⁴	North of Tryon Cove Park	Yes	City of Lake Oswego, Metro, City of Portland	4 acres / Open space, riparian habitat	No	No
Foothills Park	South of Tryon Cove Park, on Willamette River	No	City of Lake Oswego	9 acres / Trails, picnic area, grass amphitheater	Yes	No
Roehr Park	South of Foothills Park	No	City of Lake Oswego	7.5 acres / Amphitheater, paths, benches	Yes	No
Kincaid Curlicue Corridor	Trail linking existing trolley station and Foothills Park	Yes	City of Lake Oswego	3.6 acres / Walking and biking path	Yes	No
Millennium Plaza Park	200 First Street, Lake Oswego	No	City of Lake Oswego	Open space, fireplace, fountain	Yes	No

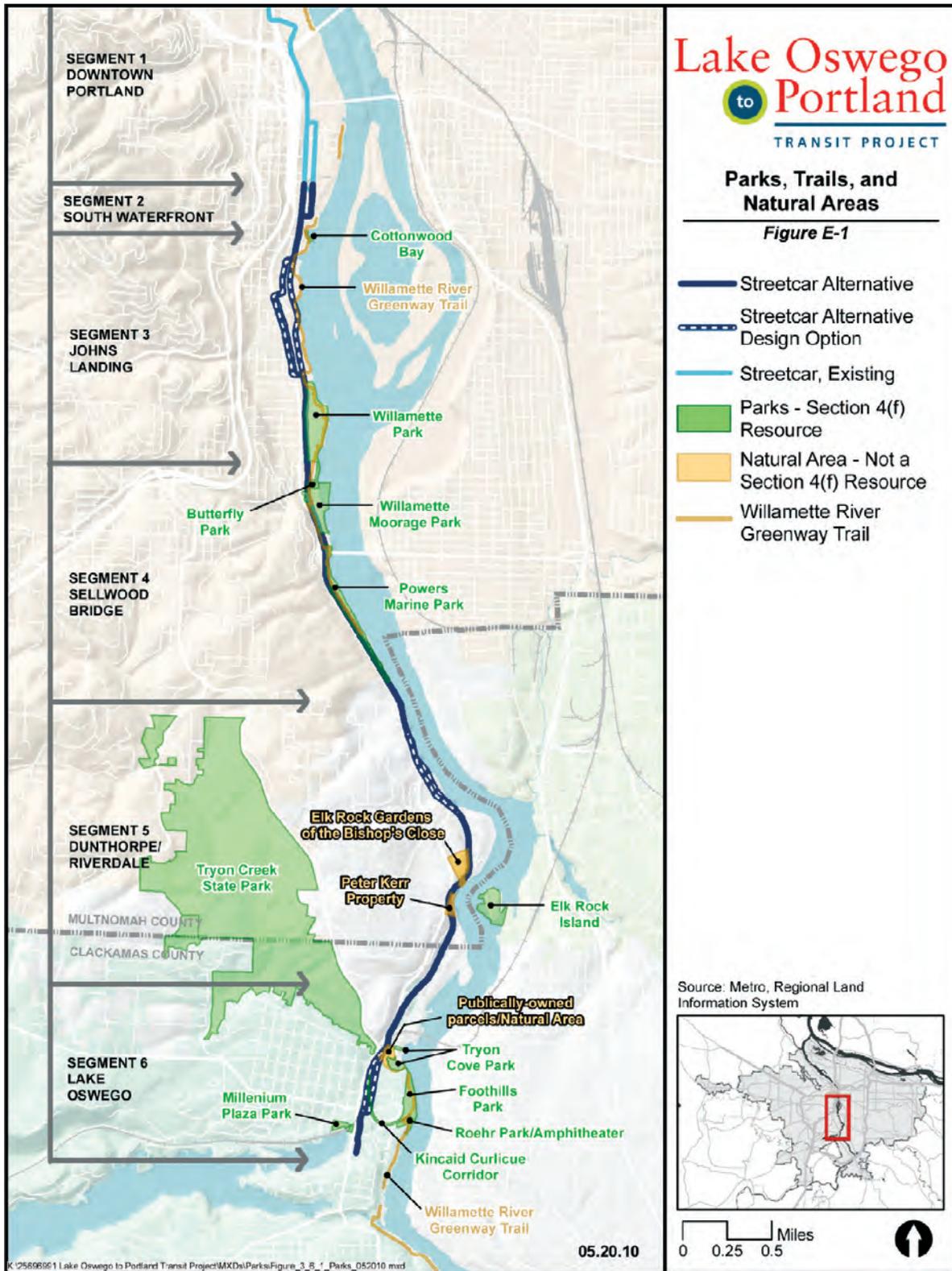
Source: LOPT Parks and Recreation Resources Results Report (Metro, January 2010). See Figure E-1 for an illustration of these resources.

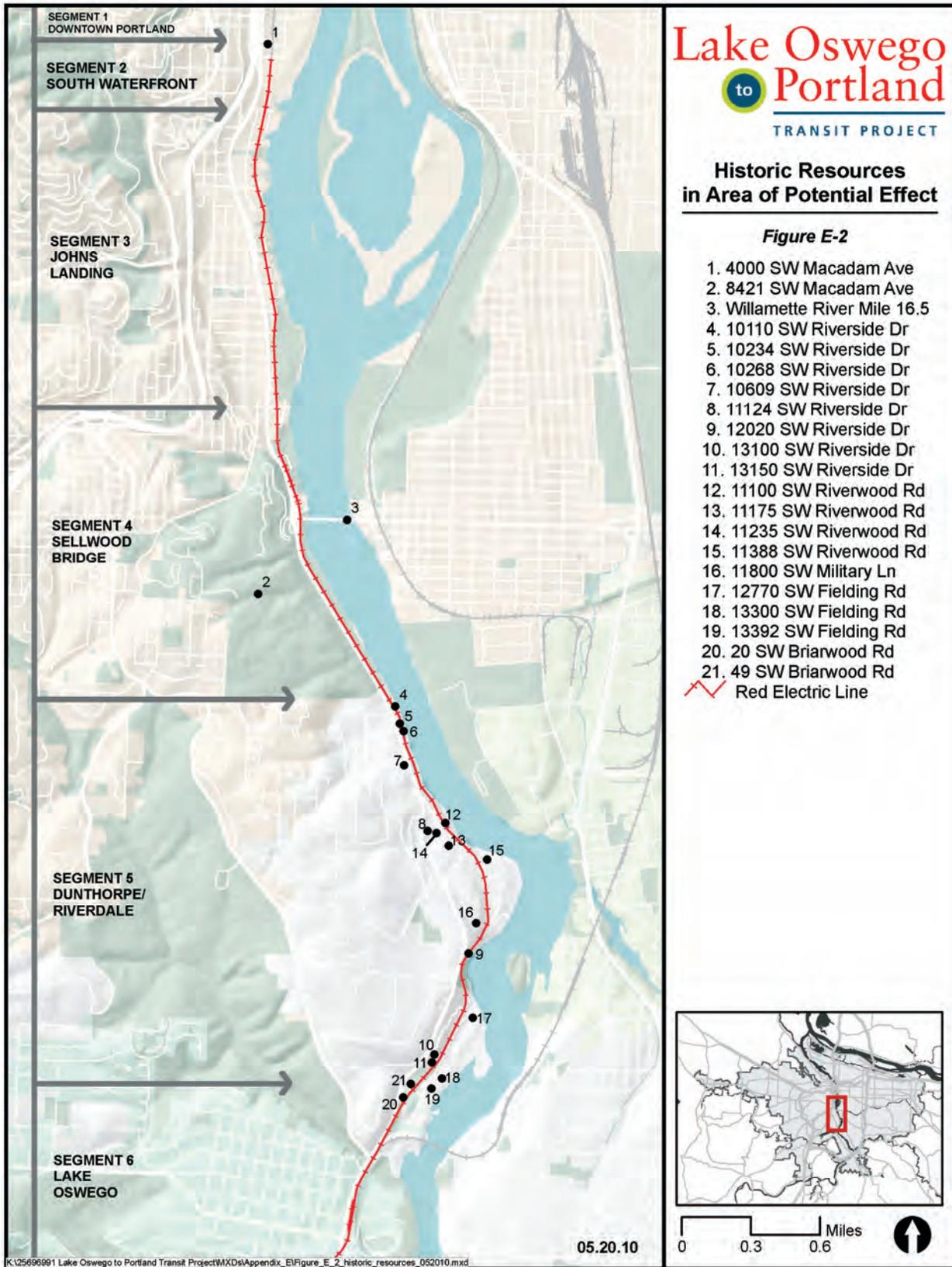
¹ All parks and recreation areas that would be located adjacent to an improvement would be adjacent to an improvement under the Streetcar Alternative – no park or recreation area would be adjacent to an improvement under the Enhanced Bus Alternative.

² The Lake Oswego to Portland Trail has been previously referred to as “Willamette Shoreline Trail.” The proposed trail is not a resource that would be protected by Section 4(f) because even though it is planned to be a public trail, no property is currently publicly owned for this purpose.

³ Section 6(f) funds were used for development of the boat ramp in Willamette Park.

⁴ Tax lot numbers are: 21E02CB02200, 21E02CB02300 (Lake Oswego), 21E02CB02400 (Metro) and 21E02CB02700, 21E02CB00900, and 21E02CB02800 (Portland).





E.5 Evaluation of Section 4(f) Resource by Alternative

This section provides an evaluation of the Section 4(f) resources identified in Section E.4 and how they would be affected by the alternatives and Streetcar Alternative design options. Table E-2 provides a summary of the preliminary Section 4(f) assessment by alternative.

Table E-2
Summary of Preliminary Assessment of Section 4(f) “Use” by Alternative

Measure	No-Build Alternative	Enhanced Bus Alternative	Streetcar Alternative
Public Parks and Recreation Areas	0	0	1 ¹
Wildlife/Waterfowl Refuges	0	0	0
Historic Sites	1 ²	1 ³	0-1 ⁴
Archaeology Sites	0	0	0

Source: *Lake Oswego to Portland Transit Project Streetcar Plan Set*, November 9, 2009, *Lake Oswego to Portland Transit Project: Park and Recreation Technical Report and Preliminary Section 4(f) Analysis* DEA/URS and TriMet/Metro, August 2010, and *Lake Oswego to Portland Transit Project: Historic, Archaeological and Cultural Resources Technical Report*, URS and TriMet/Metro, September 2010.

¹ Preliminarily determined to be a *de minimis* impact to the Kincaid Curlicue Corridor, dependent upon mitigation measures. Under both design options under consideration within the Lake Oswego Segment. See Section E.5.3 for additional detail.

² Likely adverse indirect impact to the Red Electric Eastside Rail Line. See Section E.5.1 for additional detail.

³ Likely adverse indirect impact to the Red Electric Eastside Rail Line. See Section E.5.2 for additional detail.

⁴ A potential effect with no adverse effect (which would be a *de minimis* impact under Section 4(f)) or a potential adverse effect (which would be a use under Section 4(f)) to the Red Electric Eastside Rail Line, depending on further design work, analysis and coordination to be completed during Preliminary Engineering. Under all design options currently under consideration. See Section E.5-3 for additional detail.

E.5.1 No-Build Alternative

The No-Build Alternative would not require the use of any public park and recreation lands, wildlife and waterfowl refuges or archaeological sites.

The No-Build Alternative would result in a constructive use of the Willamette Shore Line right of way, which is historically known as the **Red Electric Eastside Rail Line**, an interurban electric rail service which operated between 1914 and 1929. The rail line was determined eligible for listing on the NRHP during the recent environmental analysis for the Sellwood Bridge Replacement Project. The determination of eligibility defined the Southern Pacific Railroad Red Electric Eastside Line (aka Jefferson Street Line) portion of the Red Electric lines as beginning at the intersection of SW Bancroft Street and SW Moody Avenue in southwest Portland and heading south 6 miles to 0.5 mile north of the intersection of N State Street. The segment of rail line between Portland and Lake Oswego was completed in 1887 and provided both freight and passenger service. In 1914, Southern Pacific electrified the line and it became part of the Red Electric interurban rail network. The full line consisted of a loop from Portland to McMinnville, passing through Lake Oswego, Sherwood, Newberg, McMinnville, Carlton, Forest Grove, and Hillsboro.⁴ The resource was considered eligible for its historic use as part of an interurban passenger rail network that connected Portland and larger communities with smaller Willamette Valley towns and strongly influenced growth and development of the outer suburbs south and west of Portland.

⁴ Dill, Tom & Walter. Grande, *The Red Electrics*, 1994.

During the period of significance, passenger rail service was provided using "Red Electric" interurban trains over the line from Portland to Corvallis. In 1988 a consortium of governments, the Willamette Shore Line Consortium, purchased the Portland to Lake Oswego section for the purpose of preserving the rail right of way for future public rail mass transit use. Currently, the city of Lake Oswego leases the line from the Consortium and it contracts with the Oregon Electric Railway Historical Society to operate interim trolley operation that has operated on a seasonal excursion schedule. The right of way and remaining facilities are maintained by the Willamette Shore Line Consortium. As outlined in the Maintenance Plan, the Willamette Shore Line Consortium performs routine maintenance and ongoing modifications to the rail corridor in order to provide for active rail operation. The line was out of service for much of 2009 and 2010 due to maintenance activities, which included repairs to tracks, ties and trestles. Today, trolley service is provided using the Portland Traction "Broadway Car" Brill Master Unit #813 built in 1932. Due to weight limitations on the existing trestles, there are limited types of trolley cars that can operate on the existing right of way without major improvements to the structures.

The No-Build Alternative would likely result in indirect adverse effects to the Red Electric Eastside Line, because the Consortium purchased and maintains the Willamette Shore Line right of way to preserve it for future passenger rail service and the Consortium could decide to relinquish ownership if its membership determines that passenger rail service in the corridor is not feasible or viable. Alternately, the Consortium could decide to continue ownership and maintenance of the right of way indefinitely pending changes in conditions that would lead to conversion of the line to urban rail service in the future. However, the increasing decline of the condition of the existing track, ties and trestles and escalating maintenance costs would make it difficult for the Consortium to continue ownership and maintenance of the line indefinitely. If passenger rail service is not reintroduced or maintained, the Consortium would consider legal transfer or sale of the right of way. The interim excursion trolley service could be discontinued and ownership of at least portions of the Red Electric Eastside Line could be sold, transferred or abandoned. Alternative uses for the corridor could be considered, including a multi-use path if feasible. Further, contributing elements of the line (e.g., track, ties, ballast, trestles) could fall into disrepair and/or could be removed. If private individuals or other groups attained ownership of portions of the line, they would not be required to comply with Section 106 requirements for those portions of the line.

E.5.2 Enhanced Bus Alternative

The Enhanced Bus Alternative would not require the use of any public park and recreation lands, wildlife and waterfowl refuges, or archaeological sites.

The Enhanced Bus Alternative would likely result in indirect adverse effects to the Red Electric Eastside Line, for the same reasons as the described for the likely adverse effect of the No-Build Alternative to the Red Electric Eastside Line.

E.5.3 Streetcar Alternative and Design Options

The Streetcar Alternative would not require the use of any wildlife and waterfowl refuges nor would it adversely affect any known archaeological sites.

**Table E-3
Public Park Resources Directly Affected by the Streetcar Alternative and Preliminary Section 4(f)
Determination**

Segment/Design Option	Acres of Resource Used	Summary Description of Direct Impacts by Resource	Preliminary Section 4(f) Determination ³
1 – Downtown Portland	N/A	No Section 4(f) resources in this segment.	N/A
2 – South Waterfront¹	0.00	No direct impacts. Formally designated areas of the Willamette River Greenway Trail would be unaffected. There would be changes to temporary connections, including rerouting of the connector trail between SW Bancroft and Hamilton Streets (see temporary impacts).	
3 – Johns Landing			
Willamette Shore Line	0.00	No direct impacts. Streetcar stations would be placed near the north and south ends of Willamette Park . Construction impacts, including potential staging, associated with the stations could temporarily extend into Willamette Park.	No Use/ Temporary occupancy as per 23 CFR 771.135(p)(7)
Macadam In-Street	0.00	No direct impacts. A streetcar station would be placed near the south end of Willamette Park . Construction impacts, including potential staging, associated with the stations could temporarily extend into Willamette Park.	No Use/ Temporary occupancy as per 23 CFR 771.135(p)(7)
Macadam Additional Lane	0.00	No direct impacts. A streetcar station would be placed near the south end of Willamette Park . Construction impacts, including potential staging, associated with the stations could temporarily extend into Willamette Park.	No Use/ Temporary occupancy as per 23 CFR 771.135(p)(7)
4 – Sellwood Bridge²	0.00	No direct impacts. The project would add a pedestrian overpass over the Willamette Shore Line right of way to provide continued access to Powers Marine Park . Up to 8 culverts would be replaced; 2 to 4 of these could result in temporary occupancy for limited construction activities within the park property (see Figure E-6).	No Use. Temporary occupancy as per 23 CFR 771.135(p)(7)
5 – Dunthorpe/Riverdale			
Willamette Shore Line	0.00	No direct impacts.	
Riverwood	0.00	No direct impacts.	
6 – Lake Oswego			
UPRR	0.7 ³	The project would require the use of 0.7 acre of the Kincaid Curlicue Corridor . The corridor's existing path would be relocated to retain the trail function and improved with new connections.	De minimis impact with mitigation
Foothills Realignment	1.0 ³	This design option would result in use of 1.0 acre of the Kincaid Curlicue Corridor . The corridor's existing path would be relocated to retain the trail function and improved with new connections.	De minimis impact with mitigation

Source: *Lake Oswego to Portland Transit Project Streetcar Plan Set*, November 9, 2009 (revised May 2010) and *Lake Oswego to Portland Transit Project: Park and Recreation Technical Report and Preliminary Section 4(f) Analysis*, DEA/URS and TriMet/Metro, August 2010. See Figure E-2 for an illustration of the location of these resources.

¹ | The South Waterfront Segment contains potential construction phasing options associated with the Streetcar alignments. See Section 3.17 Phasing for more information regarding phasing options and differences between those options.

² | The Sellwood Bridge Segment contains potential construction phasing options associated with the Streetcar alignments. See Section 3.17 Phasing for more information regarding phasing options and differences between those options.

³ | Preliminarily determines of *de minimis* impact are based on inclusion of potential mitigation measures to be determined. As per USDOT guidance, documentation of agreement by jurisdictional owners of the resources with determinations of *de Minimis* impacts and temporary occupancy will be obtained prior to publication of the final Section 4(f) Assessment.

Table E-3 summarizes the affects (use, direct, and indirect impacts) that the Streetcar Alternative and design options would have on parks. As currently designed, the Streetcar Alternative and design options would require the use of one park, the Kincaid Curlicue Corridor, and would have short-term and indirect impacts on two other parks: Willamette Park and Powers Marine Park (see Figure E-1).

As documented in Section 3.5 of the DEIS, the Streetcar Alternative would potentially use one historic resource: the Red Electric Eastside Rail Line (see Figure E-2 and Section E.5.2).

E.5.3.1 Streetcar Alternative Effects on Parks and Preliminary Finding of *De Minimis* Impact

The following is a description of the parks that would be used by or would have direct, indirect or temporary construction impacts from the Streetcar Alternative follow, in order from north to south: Willamette Park; Powers Marine Park; and the Kincaid Curlicue Corridor. This section provides: 1) a description of the resource; 2) a description of the potential use and/or impact; 3) any enhancements or mitigation that are being considered; and 4) Metro, TriMet's and FTA's preliminary determination of the status of any use and/or impact. The description also includes Metro, TriMet and FTA's rationale for the preliminary finding of *de minimis* impact for the Kincaid Curlicue Corridor. Each of these conclusions is pending further consultation regarding impacts and potential mitigation with the affected cities, which would occur following publication of this DEIS and preliminary Section 4(f) analysis, if the Streetcar Alternative is selected as the Locally Preferred Alternative (LPA). In addition, further design refinements, if the Enhanced Bus or Streetcar alternatives are selected as the LPA, would be considered by Metro, TriMet and FTA in making their final determinations under Section 4(f). Table E-2 provides a summary of the parks and the preliminary impact assessment.

A. Willamette Park

Willamette Park is located north of the Sellwood Bridge between the Willamette River and the existing streetcar right of way (Figures E-3 and E-4). It is a 26.85-acre park, acquired in 1929. Willamette Park amenities include a dock, boat ramp, disabled access picnic area, disabled access restroom, dog off-leash area, paved and unpaved paths, picnic sites, playground, soccer field and a lighted tennis court. The Willamette Park boat ramp had improvements funded by LWCF in 1980. The recreational features of the park are generally separated from the streetcar alignment by a row of mature oak trees and a roadway that runs parallel to the rail alignment behind the row of trees.

Under the Streetcar Alternative, the streetcar alignment would be adjacent to the park's western boundary along the park's entire length and would operate fully within the Willamette Shore Line right of way. The streetcar alignment, including a streetcar station at SW Nevada Street, would be identical in the Johns Landing Segment south of SW Nebraska Street. Pedestrian access to and from the park across the Willamette Shore Line right of way at SW Nevada Street would be maintained. Vehicle and pedestrian access to and from the park at SW Nebraska Street would be maintained under the Streetcar Alternative and design options. However, there would be a change to the rail crossing signage and controls at SW Nebraska Street. Configuration of those signage and control changes and final determination of the location of the Nebraska Station under the Willamette Shore Line design option would be determined in consultation with ODOT and the City of Portland during Preliminary Engineering and final design, if the Streetcar Alternative is selected as the LPA.



**Willamette Park:
Willamette Shore Line
Design Option**

Figure E-4



- Streetcar alternative alignment
- station
- park-and-ride
- Project footprint
- Railroads
- Park resource

Source: Metro Regional Land Information System, URS



Streetcar improvements in relationship to the park, primarily the location of streetcar stations, would vary by design option north of SW Nebraska Street. Under the Willamette Shore Line design option, there would be a center platform streetcar station just north of SW Nebraska Street, which would be in the streetcar right of way and in close proximity to the park's primary vehicular entrance and exit (see Figure E-4). The station would not require use of park property.

Under the Macadam In-Street design option and the Macadam Additional Lane design option, there would be no station at SW Nebraska Street (see Figure E-3). Instead, transit access to the north end of the park would be provided approximately two blocks north at a streetcar station at SW Carolina Street, between SW Macadam and Beaver avenues. While the location of the streetcar station north of SW Nebraska Street would vary by design option, the streetcar alignment in the vicinity of the park, between SW Nebraska and Dakota streets, would not vary by design option.

Under the Streetcar Alternative, visual changes in Willamette Park would occur at the west side of the park adjacent to the western park boundary. In most areas these visual changes would be obscured by existing vegetation, and would not detract from existing views toward the Willamette River. Some of the trees in Willamette Park have been designated by the City of Portland as "trees of merit" which recognizes the tree(s) as noteworthy trees in the city that have been nominated for Heritage Tree status but, for a variety of reasons, were not given the status. The designation of "trees of merit" does not afford special protection. One of the mature oak trees may be within the existing right of way of the streetcar and its proximity to the proposed streetcar alignment may require it to be removed during construction of the project. Figure E-5 shows a visual simulation of the streetcar alignment adjacent to Willamette Park with the one mature tree removed (pending consideration of potential mitigation measures). Based on the current design, no additional mature oak trees within or directly adjacent to Willamette Park would need to be removed to construct or operate the Streetcar Alternative. The project would develop and consider potential mitigation measures that could avoid the removal of mature oak trees, while maintaining safe streetcar operations, if the Streetcar Alternative is selected as the LPA. Those mitigation measures would be developed and evaluated in consultation with the City of Portland. The project owner would coordinate with the City of Portland regarding minimizing vegetation removal and mitigation for impacts to Willamette Park. A final determination regarding the status of the trees along or in the Willamette Shore Line right of way would be made during Preliminary Engineering. Measures to avoid its removal would be considered as potential Section 4(f) mitigation in consultation with the City Arborist and the City Parks.

In Willamette Park, some users currently access the parks across the streetcar tracks at several locations, and some of these may be modified or relocated as a result of the project. In Willamette Park, there are four formal access points supported with easements (at SW Beaver, Nevada, Nebraska and Miles streets). These access points would be maintained with the Streetcar Alternative. There are at least three additional informal access points that are used by the public, which are generally located on private property. Safety measures installed for the streetcar alignment would likely relocate and/or consolidate these access points; park users would have to cross the tracks at designated locations. For any of the Streetcar Alternative's design options, the pedestrian crossing at SW Nevada Street could be improved as part of the project as mitigation for its effect on pedestrian access to/from the park. The sidewalk improvement would bring the park's sidewalk into compliance with the Americans for Disability Act and it would provide direct pedestrian access between the park and the proposed streetcar station. The City of Portland would likely retain responsibility for maintenance of the sidewalk entering the park and there would be no change to the key characteristics and function of the sidewalk.

Existing View and
Visual Simulation
from Willamette
Park

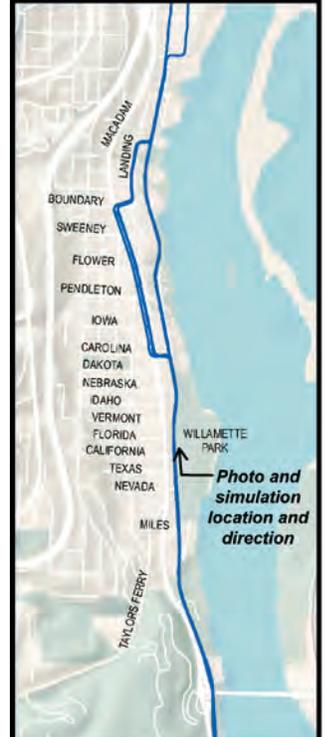
Figure E-5



A - Existing view looking north from Willamette Park.



B - Future view looking north from Willamette Park with Streetcar Alternative (all design options).



5.6.10

Construction impacts, including potential staging, associated with the stations could temporarily extend into Willamette Park. The duration of the construction would be less than the time needed for the construction of the project and there would not be a change in ownership associated with the construction or staging areas.

Based on preliminary project plans which include minimization of vegetation loss and planned improvements to pedestrian environment at park entrances, the indirect effects of the project would not substantially impair affect the features, activities or attributes of Willamette Park. Further, construction activities, such as reconstruction of the sidewalk within the park boundary, are preliminarily determined to be temporary in nature, as defined by 23 CFR 771.135(p)(7), and would likely not constitute a Section 4(f) use.

B. Powers Marine Park

Powers Marine Park is a 13-acre park located on the west side of the Willamette River, primarily south of the Sellwood Bridge that includes natural areas, picnic areas and unpaved trails (Figure E-6). It was acquired in 1926 and named after Ira Powers, owner of Powers Furniture Company, who lived in the area.

In the vicinity of the Powers Marine Park, the streetcar alignment would be located within the existing Willamette Shore Line right of way. The Streetcar Alternative would not use any portion of the Powers Marine Park and it would have no direct long-term impacts to the park. The Streetcar Alternative would have short-term construction-related impacts and indirect impacts (access) to the Powers Marine Park, described below.

The Streetcar Alternative would have short-term effects on park property related to the replacement of culverts that pass under the existing rail tracks used by the excursion trolley. Of the eight anticipated culvert replacements, two to four could have temporary impacts in the park, based on right of way location (see Figure E-6). The construction impacts from replacement of those culverts would likely require less time than the project's overall construction period and would not interfere with the activities or purpose of the park, thus their reconstruction would be preliminarily defined as temporary in nature as per 23 CFR 771.135(p)(7) and would likely not constitute a Section 4(f) use.

In Powers Marine Park, some users currently access the parks across the streetcar tracks away from formal park entry points. There are two park access points identified with easements across the existing tracks (at the north end of the park and near the proposed pedestrian bridge). There are two formal entrance points with associated parking areas, and at least five additional parking spots located along the park on the shoulders of the roadway (Highway 43, SW Macadam Avenue). These additional points that are being used to enter the park may be modified due to safety restrictions with the operation of the streetcar. With the introduction of the streetcar project, people currently entering the park on foot from the south will have to walk along the roadway for approximately 1/2-mile to access the planned pedestrian bridge over the streetcar tracks. If the Streetcar Alternative is selected as the LPA, the project team would continue to work with the City of Portland and the Oregon Department of Transportation (ODOT) regarding design and mitigation for access to Powers Marine Park from Highway 43. Additionally, if the Streetcar Alternative is selected as the LPA, the project would increase the frequency of passenger rail service adjacent to Powers Marine Park, which could impede wildlife access patterns between the Willamette River and the hills to the west. However,



SW Macadam Avenue provides a significant barrier to wildlife crossings between the river and the western hills.

Staging locations in or near Powers Marine Park may be used for the construction of the project, particularly the construction of the pedestrian bridge over the streetcar tracks. The construction and staging for the pedestrian bridge would be minor, would likely require less time than the project's overall construction period and would not interfere with the activities or purpose of the park and would, therefore, preliminarily be determined to be a temporary occupancy, as defined by 23 CFR 771.135(p)(7), and would likely not constitute a Section 4(f) use.

Based on preliminary project plans, which include the provision of safe access across the streetcar line between SW Macadam Avenue and Powers Marine Park, the indirect effects of the project would not substantially impair the features, activities or attributes of Powers Marine Park. Potential mitigation could include fencing for wildlife and safety structures or barriers for pedestrians to deter them from using the tracks or crossing at undesignated locations. Proposed mitigation measures would be discussed and confirmed with the City of Portland during the project's FEIS phase, if the Streetcar Alternative is selected as the LPA.

C. Kincaid Curlicue Corridor

The Kincaid Curlicue Corridor is a multi-use paved trail linking Foothills Road near the existing trolley station and Foothills Park. The main recreational feature of the resource is the multi-use trail, which is used for walking and bicycling. There are two portions of the trail: an upper level that includes a paved trail with a switchback; and a lower portion that connects to Foothills Park. Foothills Road bisects these two sections. The Kincaid Curlicue Corridor is located in an area that is planned to go through redevelopment. The area owned by the City of Lake Oswego for the Kincaid Curlicue Corridor totals 3.6 acres, spanning several parcels. See Figure E-7 for an illustration of the resource and an overlay of current plans for the parcel in conjunction with the project, including the proposed relocation of the existing trail under the Streetcar Alternative, which is described below.

The Streetcar Alternative's design options in this segment have been designed to be consistent with the City of Lake Oswego's plans for a trail linking to Foothills Park under their Foothills redevelopment proposal. The Streetcar Alternative's affect on the Kincaid Curlicue Corridor would be similar under the segment's two design options, but some specifics would vary by design option. Both design options would relocate an approximately 800-foot segment of the existing trail, because both options would construct a surface park-and-ride lot over portion of the existing trail. Under both design options, the relocated portion of the trail would be slightly west of its current location and immediately west of the proposed surface park-and-ride lot (see Figure E-7). Additionally, both design options of the Streetcar Alternative would include the construction of a stairway between State Street (downtown Lake Oswego) and the Foothills area, enhancing connectivity in this area and connecting to the Kincaid Curlicue Corridor trail at two locations. The configuration of the pedestrian facilities in relationship to the vehicular facilities has been designed to separate those activities and to consolidate pedestrian crossings at controlled locations. Overall, initial coordination with the City of Lake Oswego staff indicates that the trail could be satisfactorily modified in response to the design of the project through this area, retaining and even enhancing the path's function and use.



The following is a description of how the segment's two design options would differ in relationship to the Kincaid Curlicue Corridor:

Under the Foothills Realignment design option, the streetcar alignment and B Avenue Station would be located about 200 feet east of the existing UPRR alignment, integrated into a redesigned Foothills development area. The streetcar alignment would cross the Kincaid Curlicue Corridor and path about 300 feet south of the proposed B Avenue Station. The Foothills Realignment design option would result in the likely use of approximately 1.0 acre of the Kincaid Curlicue Park.

Under the UPRR Right of Way design option, the proposed streetcar alignment would be located approximately 50 feet east of the existing UPRR alignment, immediately west of the realigned bike path and park-and-ride lot. The B Avenue Station would be located adjacent to the proposed stairway along the alignment and the realigned path would be designed to be nitrated within the B Avenue Station design. Under the UPRR Right of Way design option, the streetcar alignment would not cross the Kincaid Curlicue Corridor or path. As a result of the design of the UPRR right of way design option, the Streetcar Alternative would result in the likely use of 0.7 acre of the Kincaid Curlicue Corridor.

Under both design options, the primary feature of the corridor (i.e., a trail) and activity on the corridor (i.e., bicycle and pedestrian access between State Street and Foothills Park) would be maintained. The net direct and indirect effects of the project would not adversely affect the features, activities or attributes of the Kincaid Curlicue Corridor. Initial coordination with the city suggests that the trail could be satisfactorily modified in response to the design of the project through this area. Potential mitigation measures that would be considered during Preliminary Engineering, if the Streetcar Alternative is selected as the LPA, would include: design treatments for the relocated portions of the trail, integration of the trail into the project's pedestrian facility improvements and design treatments to address any potential conflicts between vehicular and pedestrian traffic. Based on the initial assessment of impacts, plans for mitigation and coordination with the City of Lake Oswego, FTA has preliminarily determined that with adequate mitigation the Streetcar Alternative would have a *de minimis* impact to the Kincaid Curlicue Corridor, because there would be no adverse affect to the features, activities or attributes of the resource. This preliminary determination requires concurrence with the City of Lake Oswego. The final determination of this finding would be made during the preparation of the FEIS, if the Streetcar Alternative is selected as the LPA.

E.5.3.2 Streetcar Alternative Effects on Historic Resources

Of the eligible historic resources in the corridor, the **Red Electric Eastside Rail Line** (generally the Willamette Shore Line right of way) would be effected by the Streetcar Alternative.

The Streetcar Alternative would use the Willamette Shore Line right of way, which is historically known as the Red Electric Eastside Rail Line. The Streetcar Alternative would result in the restoration of interurban electric rail service between downtown Portland and downtown Lake Oswego, which historically operated between 1914 and 1929. The existing railroad right of way and facilities would be restored, rehabilitated and replaced as needed to allow for the safe and efficient operations of interurban passenger electric rail service, meeting current design standards and permitting requirements.

Effects to the Red Electric Eastside Rail Line would vary by design option. Some segments of the corridor include streetcar design and phasing options that would not use portions of the Red Electric Eastside Rail Line. For the most part, the project would extend the streetcar from its current locations at SW Lowell Street in South Waterfront with the necessary improvements to provide for safe and efficient passage between Lake Oswego and Portland. A more detailed description of the streetcar design and phasing options is discussed in the paragraphs below. Figures E-8 and E-9 illustrate the Streetcar Alternative and design options.

In South Waterfront area, the streetcar could be built in the interim on the Red Electric (For more information, see Chapter 2, section 2.2.3). In the future the streetcar would be integrated into the SW Moody/SW Bond street network expansion as part of the South Portal project. The future street network would use the Red Electric right of way and private property to extend the street network to the south, as planned to accommodate the existing and planned growth in the South Waterfront.

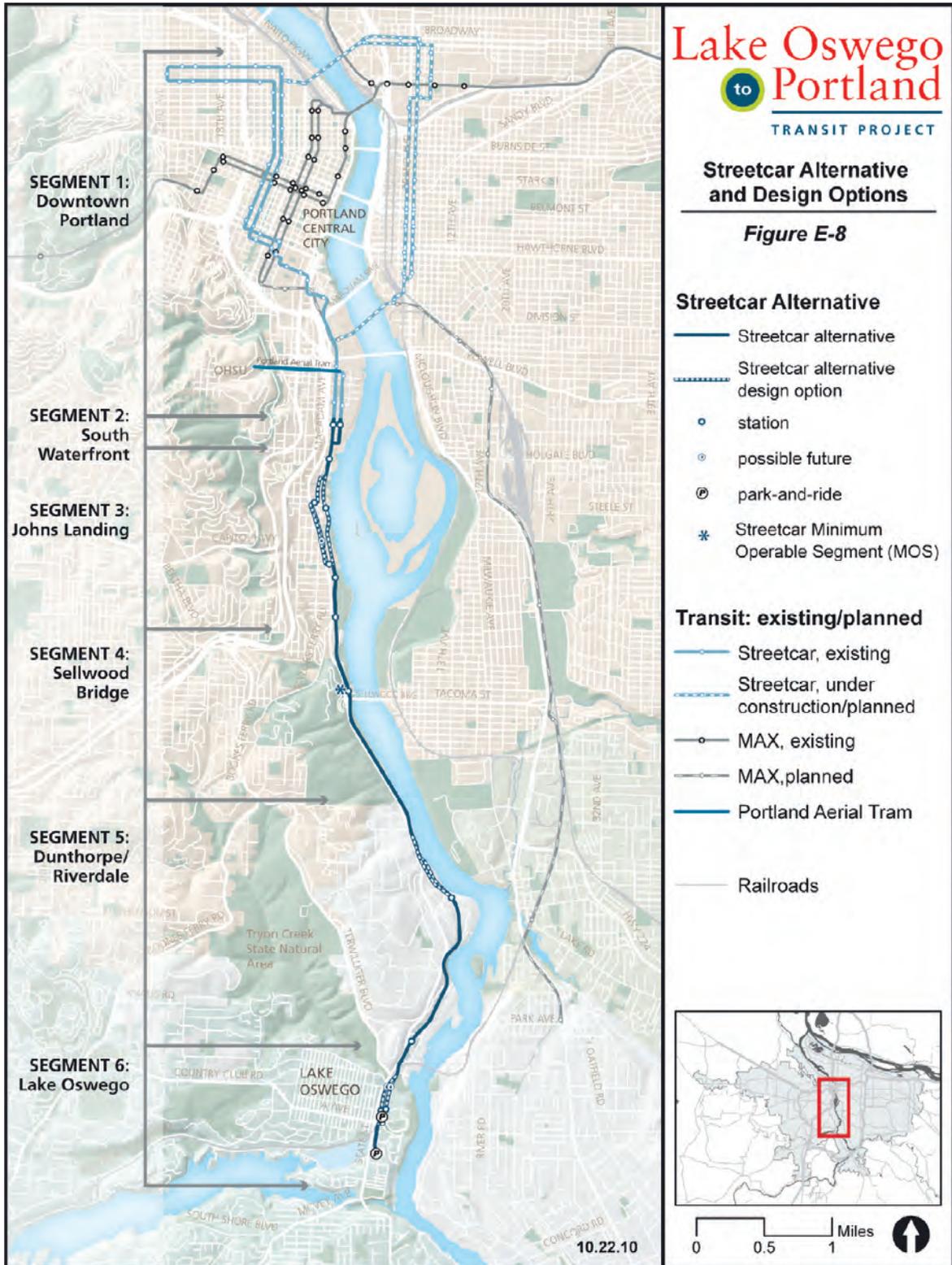
In Johns Landing, the design options would include use of the Red Electric Rail Line for future streetcar use or move the streetcar operations on to local private/public streets for a short distance (see Figure E-9). If the streetcar were to not use the Red Electric Rail Line in this section, there is a strong desire to construct a multi-use trail in this area.

In the Sellwood Bridge area, the existing Red Electric Rail Line would be displaced and moved as part of the Sellwood Bridge project. The Sellwood Bridge project has been designed to accommodate future potential streetcar tracks and concluded through the Sellwood Bridge Final Environmental Impact Statement (FEIS) that there would be no adverse effect on the Red Electric Rail Line. In the interim, there is the option to construct the streetcar alignment in the existing right of way until funding for the west interchange is fully committed.

In the Dunthorpe/Riverdale area, the streetcar would use the Red Electric Rail Line for the entire length of this segment with the Willamette Shore Line design option or would be relocated to SW Riverwood Road for a portion of the alignment with the Riverwood Road design option (see Figure E-9). If the streetcar were to operate in SW Riverwood Road, the Red Electric Rail Line could be sold or abandoned.

In Lake Oswego, there are two design options the UPRR and Foothills design option (see Figure E-9). Both of these design options would be located east of the existing tracks with a terminus at Albertsons. The current location of the Willamette Shore Line right of way in this segment is not in the same location of the historic Red Electric Eastside Rail Line. The original alignment was modified as the district developed.

Based on the project's current conceptual engineering (approximately 8 percent design) of the Streetcar Alternative and design and phasing options, the Streetcar Alternative could result in an effect or an adverse effect on the Red Electric Eastside Rail Line. Future design work during the Preliminary Engineering phase of the selected LPA would further inform the determination of effect. In order to restore regular passenger service in the right of way, the whole line would be re-electrified. Safety improvements would be added to crossings, and stations would be reintroduced at various locations along the line. Streetcar improvements would likely include the replacement and reconstruction of the existing railroad ties and rails. Elk Rock Tunnel, the one tunnel on the corridor, would be reinforced. The six rail trestles on the corridor will be analyzed for potential rehabilitation, restoration or reconstruction. If the Streetcar Alternative is selected as the LPA, all future design



**Streetcar Alternative
Design Option Details**

Figure E-9

Johns Landing Design Options

- Willamette Shore Line
- Macadam In-Street
- Macadam Additional Lane

Dunthorpe/Riverdale Design Options

- Willamette Shore Line
- Riverwood

Lake Oswego Design Options

- UPRR Right-of-Way
- Foothills

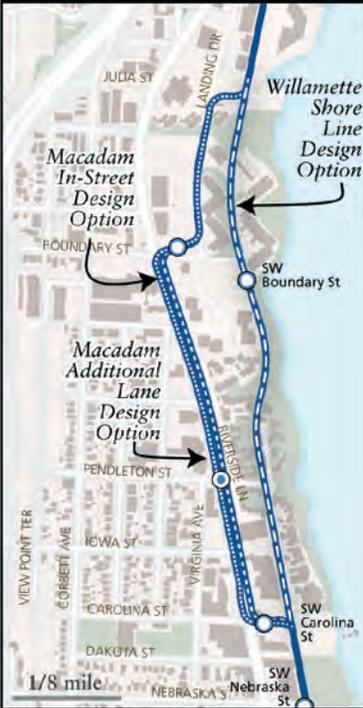
- Streetcar alignment common for all options
- Streetcar design options
- Streetcar station park and ride
- Optional station
- Transit Center

Map Index



Oct 22, 2010

JOHNS LANDING



DUNTHORPE/RIVERDALE



LAKE OSWEGO



work contributing the restoration of the interurban electric rail service would be completed in compliance with applicable elements of the Federal Section 106 regulations and guidelines, such as 36 CFR Part 800 (Protection of Historic Properties) and 36 CFR Part 68 (Secretary's Standards for the Treatment of Historic Properties).

TriMet, Metro and the City of Portland would conduct further design work during the project's Preliminary Engineering phase, prior to publication of the project's FEIS and final Section 106 and Section 4(f) report. That design work would be conducted in consultation with FTA and the Oregon SHPO with the intent to avoid any adverse effect on the Red Electric Eastside Rail Line, while providing for the safe and efficient operations of urban electric rail service, meeting current design standards and permitting requirements. If the design effort for the Streetcar Alternative were to result in an adverse effect on the Red Electric Eastside Rail Line, the project would need to demonstrate, consistent with Section 4(f) requirements that there is no prudent or feasible alternative to that adverse effect and that all possible planning to minimize harm was done. That determination would be made, if warranted, prior to publication of the project's FEIS and final Section 106 and Section 4(f) report.