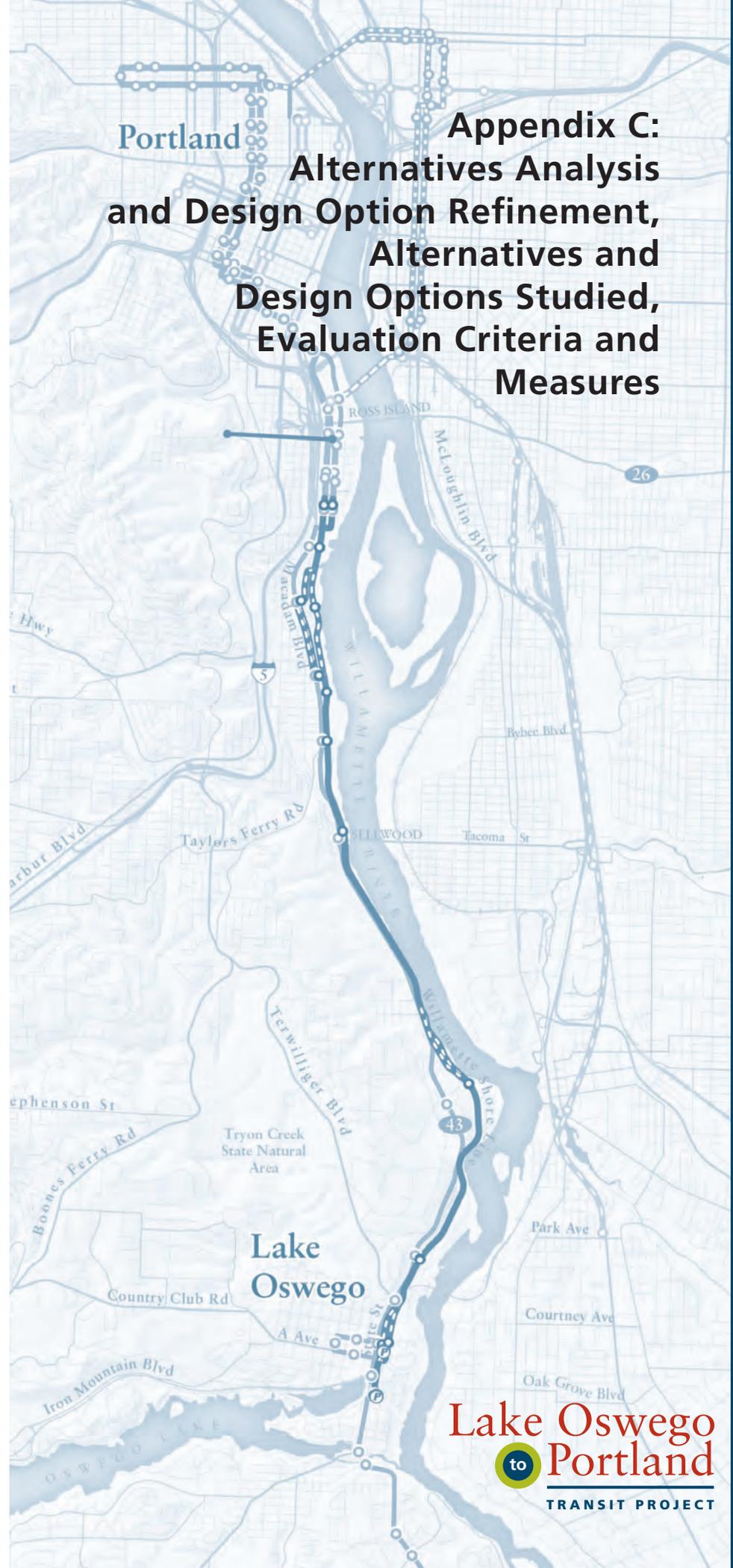


Portland
**Appendix C:
Alternatives Analysis
and Design Option Refinement,
Alternatives and
Design Options Studied,
Evaluation Criteria and
Measures**



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APPENDIX C

ALTERNATIVES ANALYSIS AND DESIGN OPTION REFINEMENT ALTERNATIVES AND DESIGN OPTIONS STUDIED AND EVALUATION CRITERIA AND MEASURES

This appendix provides maps and a summary of the evaluation criteria and measures of the alternatives and options that were proposed and analyzed in the following phases of the Lake Oswego to Portland Transit Project: 1) Alternatives Analysis – Early Screening of the Wide Range of Alternatives; 2) Alternatives Analysis – Narrowed Range of Alternatives; 3) Scoping/Project Refinement Study. Section 2.1.2 of the Lake Oswego to Portland Transit Project DEIS provides a summary of these three phases and the alternatives and options eliminated from and selected for further study. Following is an itemization of the figures and tables that make up this appendix, organized by study phase.

1) Alternatives Analysis – Early Screening of the Wide Range of Alternatives (source: *Lake Oswego to Portland Transit and Trail: Initiation of Alternatives Analysis Planning Study*, September 2006). Figures and Table:

- Figure C.1-1 – Bus Rapid Transit
- Figure C.1-2 – River Transit
- Figure C.1-3 – Rail Transit
- Table C.1-1 – Screening of Alignments through the Purpose and Need

2) Alternatives Analysis – Narrowed Range of Alternatives (source: *Lake Oswego to Portland Transit and Trail Alternatives Analysis: Evaluation Summary Public Review Draft*, July 12, 2007). Figures and Tables:

- Figure C.2-1 – Bus Rapid Transit
- Figure C.2-2 – Streetcar
- Table C.2-1 – Alternatives Analysis – Narrowed Range of Alternatives Evaluation Criteria and Measures for the BRT and Streetcar Alternatives
- Table C.2.2 – Alternatives Analysis – Narrowed Range of Alternatives Advantages and Disadvantages for the BRT and Streetcar Alternatives

3) Scoping/Design Refinement Study

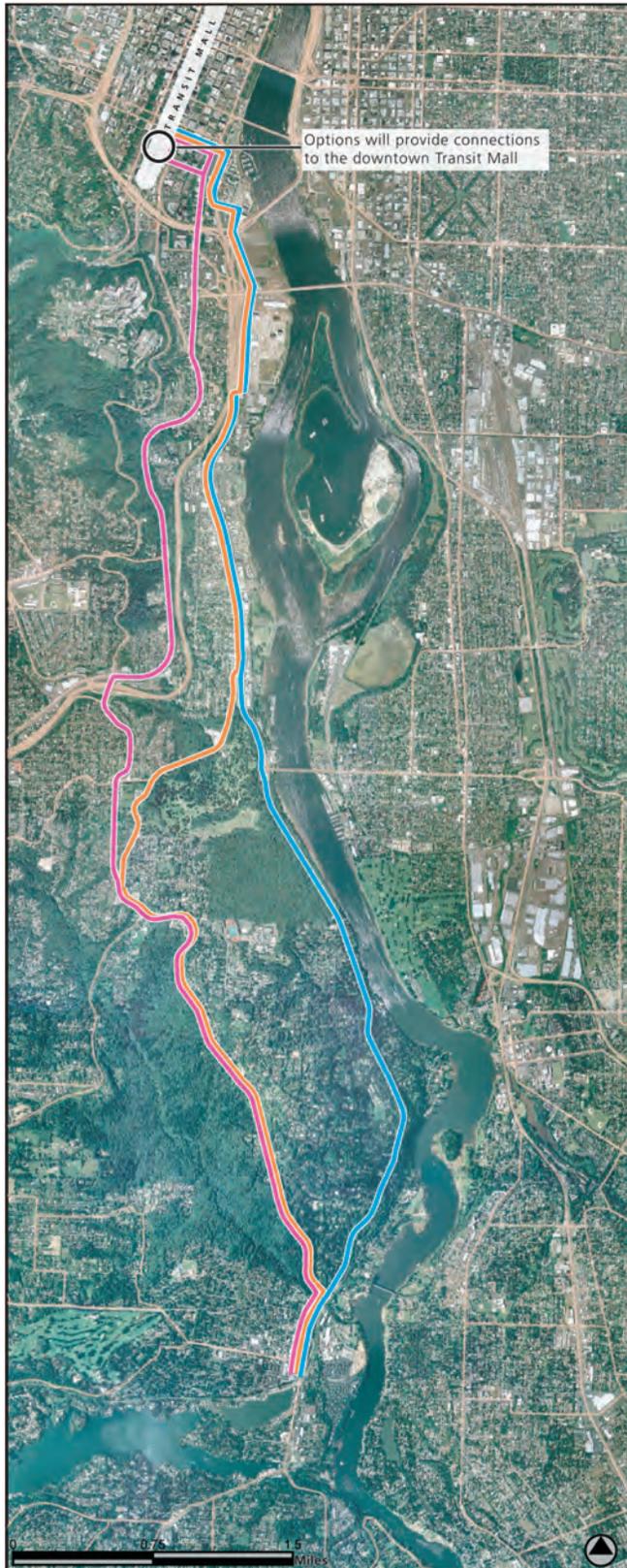
a) Johns Landing Design Options (source: memorandum from Metro to FTA – Re: *Lake Oswego to Portland Transit Project Narrowing of Streetcar Alignments*; August 25, 2009). Figures and Table:

- Figure C.3-1 – Hybrid 1: Macadam
- Figure C.3-2 – Hybrid 2: East Side Exclusive
- Figure C.3-3 – Hybrid 3: Macadam with New North Bound Lane
- Figure C.3-4 – Willamette Shore Line
- Figure C.3-5 – Full Macadam In-Street
- Table C.3-1 – Comparison of Johns Landing Options

b) Terminus Options (source: memorandum from Metro to FTA – Re: *Lake Oswego to Portland Transit Project Narrowing of Streetcar Terminus Options*; October 19, 2009). Figures and Table:

- Figure C.3-6 – Albertsons Terminus
- Figure C.3-7 – Safeway Terminus Option
- Figure C.3-8 – Trolley Terminus Option
- Table C.3-2 – Comparison of Terminus Options

**Figure C.1-1 Bus Rapid Transit Alternative
Alternatives Analysis – Early Screening of the Wide Range of Alternatives**



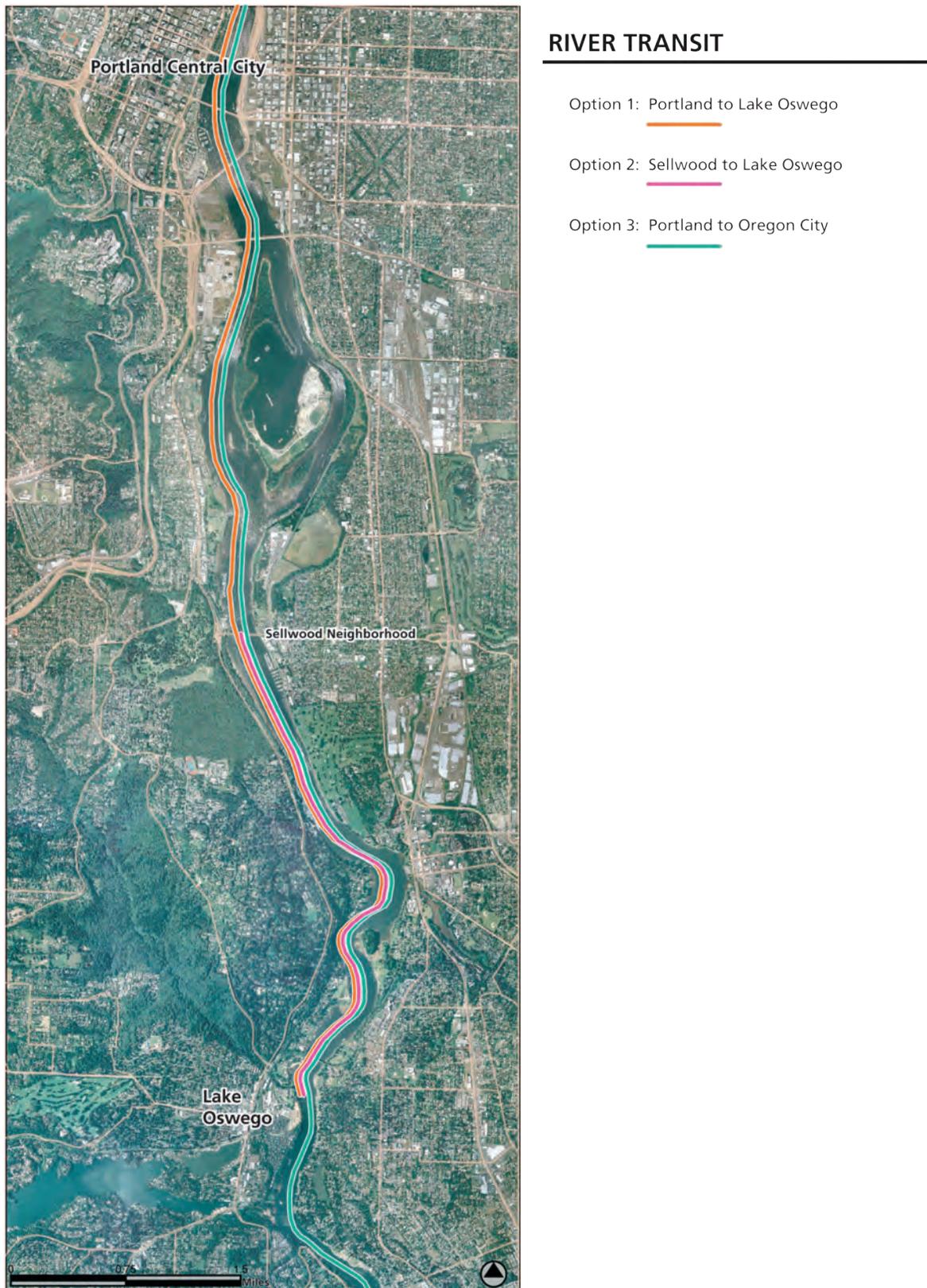
BUS RAPID TRANSIT

Option 1: Portland to Lake Oswego via Highway 43

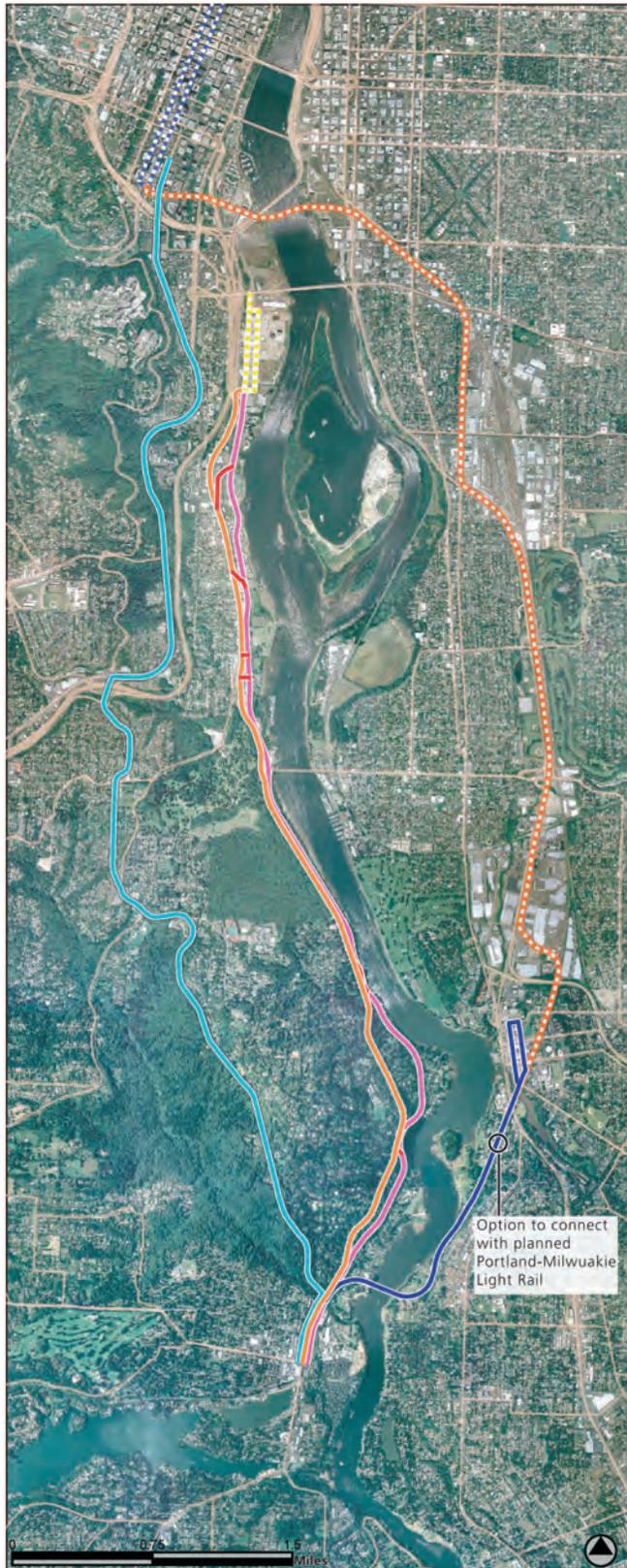
Option 2: Portland to Lake Oswego via Terwilliger and Barbur Boulevards

Option 3: Portland to Lake Oswego via Terwilliger/Boones Ferry/Taylor's Ferry Roads

**Figure C.1-2 River Transit Alternative
Alternatives Analysis – Early Screening of the Wide Range of Alternatives**



**Figure C.1-3 Streetcar Alternative
 Alternatives Analysis – Early Screening of the Wide Range of Alternatives**

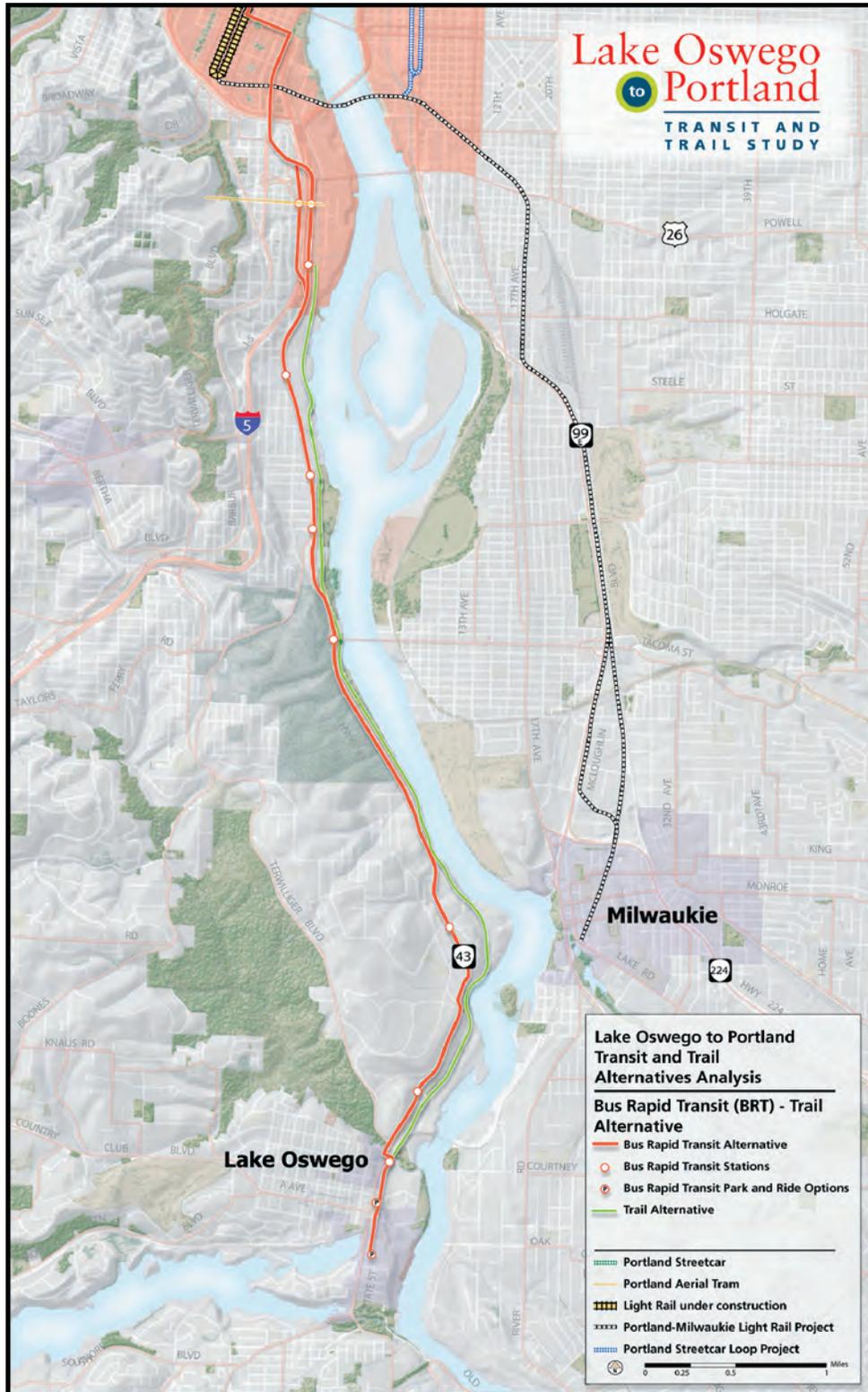


RAIL TRANSIT

- Option 1: Portland to Lake Oswego via the Willamette Shoreline right of way
- Option 2: Portland to Lake Oswego via Highway 43
- Option 3: Portland to Lake Oswego via the Willamette Shoreline right of way/ Highway 43
- Option 4: Portland to Lake Oswego via Terwilliger and Barbur Boulevards
- Option 5: Portland to Lake Oswego via the Portland & Western (P&W) Railroad Bridge to Milwaukie

- Existing and Planned Rail Transit
- Existing Streetcar
- Streetcar under construction
- Existing Light Rail
- Light Rail under construction
- Portland-Milwaukie Light Rail Project

**Figure C.2-1 Bus Rapid Transit Alternative
 Alternatives Analysis – Early Narrowed Range of Alternatives**



**Figure C.2-2 Streetcar Alternative
 Alternatives Analysis – Early Narrowed Range of Alternatives**

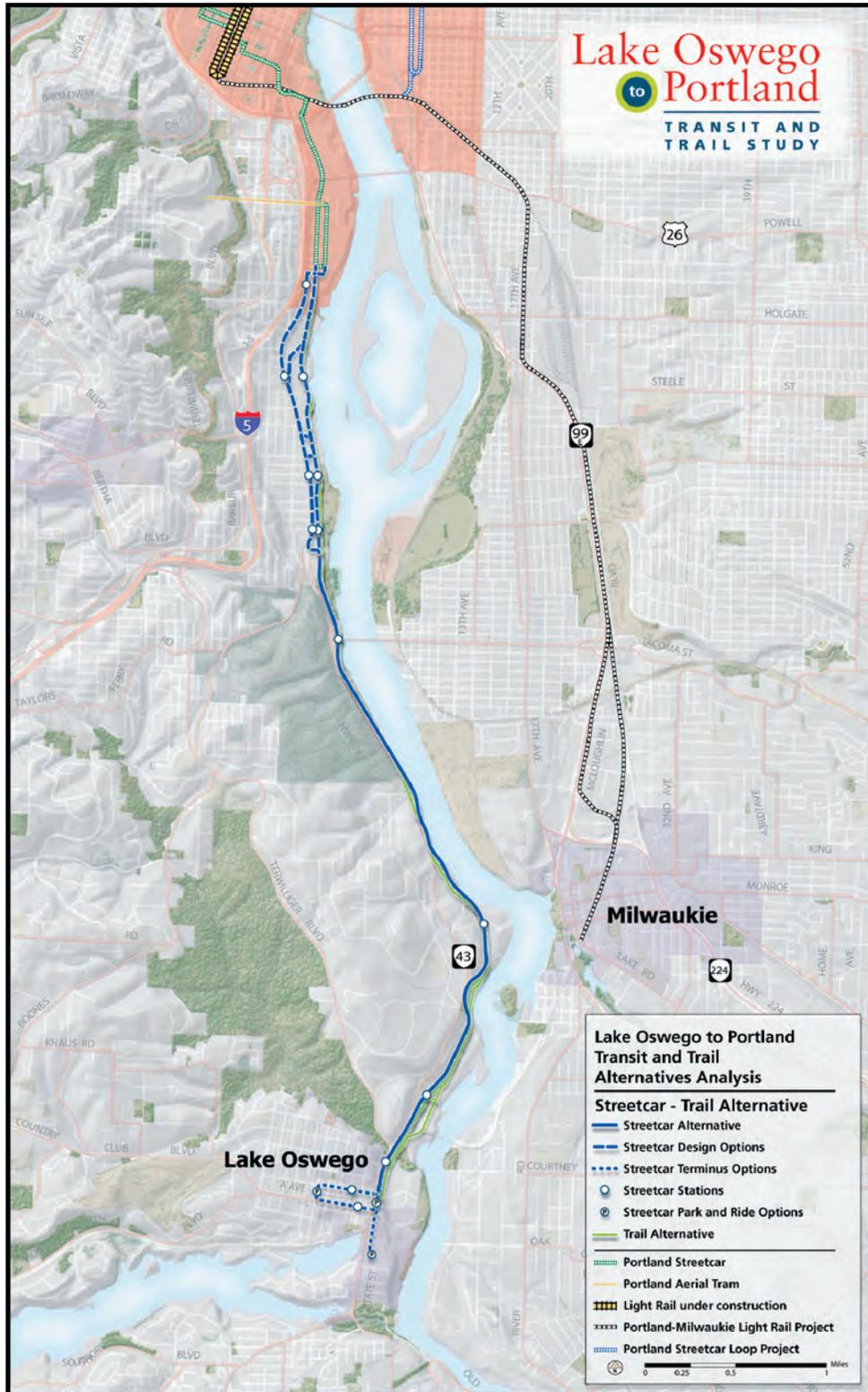


Table C.2-1
Alternatives Analysis – Narrowed Range of Alternatives
Evaluation Criteria and Measures for the BRT and Streetcar Alternatives

Criteria/Measures	BRT	Streetcar
Travel Time/Ridership		
Transit In-Vehicle Travel Time – PSU to Lake Oswego (minutes) ¹	33	24
Transit In-Vehicle Travel Time – PSU to West Linn (minutes) ¹	52	43
Weekday Line Boarding Rides ²	8,700	10,900
Costs³		
Capital Costs (millions of 2007 dollars)	\$50.0	\$138.4 to \$157.0 ⁴
O&M Costs (millions of 2007 dollars)	\$2.3	\$8.0
Net O&M Costs (millions of 2007 dollars)	\$4.61	(\$1.17)
Farebox Recovery Rate ⁵	32%	53%
Cumulative O&M Costs (millions 2007 to 2025)	\$216	\$87
Cost Effectiveness³		
O&M Cost/Boarding Ride (2007 dollars)	\$2.67	\$0.60
Annualized Capital/O&M Cost per Boarding Ride (2007 dollars)	\$3.97	\$3.44
Development Impacts⁶		
	None	Potential
Financial		
Willamette Shore Line Right-of-Way Contribution	\$0.0	\$50.0
Other Local Contribution (60% Federal – millions of 2007 dollars)	\$62.8	\$32.8

Source: Metro; July 2007.

Note: BRT = bus rapid transit; PSU = Portland State University; O&M = operating and maintenance.

¹ Average weekday in 2025, p.m. peak period.

² In 2025.

³ Based on operations in 2025.

⁴ Range reflects different terminus options.

⁵ The farebox recovery rate is the percentage of operating costs that would be covered by collected fares – the remaining percentage of costs would be covered through other sources, primarily revenue from TriMet's payroll tax.

⁶ See the *Lake Oswego to Portland Transit and Trail Study Evaluation Summary – Public Review Draft* (Metro: July 2007) for details on the analysis of potential development impacts.

Table C.2-2

Advantages and Disadvantages

	Advantages	Disadvantages	Issues						
BUS RAPID TRANSIT	Strong ridership - 8,700 daily riders on BRT line	Ridership may not be achievable with transit priority measures assumed in the analysis - future congestion makes intersection queues longer	Queue jump lanes may need to double in length to achieve ridership and travel times, potentially doubling the capital cost and increasing property impacts.	BUS RAPID TRANSIT					
	Low initial capital cost of \$50 million (2007 dollars). Could be funded through federal Small Starts Program	High ongoing local TriMet operating and maintenance costs of \$8.0 million per year for the BRT line	Operating in mixed traffic reduces reliability of service and adds cost over time, creating a cumulative operating cost impact on TriMet's budget		BUS RAPID TRANSIT				
	Could allow Willamette Shoreline to be used as a trail with minimal improvements for a cost of \$7.3 million	Value of Willamette Shoreline right-of-way could be lost as local match to leverage federal funds for a transit project	Willamette Shoreline right-of-way can be used for rail transit, but legal status of trail use either alone or with rail is less clear			BUS RAPID TRANSIT			
	Property impacts limited to eight intersections where some travel time advantage could be gained through queue jumps and signal priority	Highway 43 operating environment is too constrained to allow for an exclusive bus lane that would maximize speed and reliability	Property impacts and costs could increase if queue jump lane lengths are doubled to bypass future congestion				BUS RAPID TRANSIT		
	Operational flexibility allows for future expansion and different operating scenarios to adapt to future conditions	Future reliability is a function of traffic congestion and the ability to maintain schedules	Further development of this alternative will need to address the effects of congestion on the capital facilities in the corridor					BUS RAPID TRANSIT	
STREETCAR	Strongest ridership, with 11,000 rides on the Streetcar line	Single track sections will limit number of trains per hour in the long term	Further study should look at vehicle type and operating plan to maximize future capacity	STREETCAR					
	Operation in exclusive right of way yields higher reliability and faster travel time	Proximity to residences - John's Landing Condos, Dunthorpe, other parcels - creates vehicle speed concerns	Need to make sure that operating speeds are attainable and that mitigation of residential impacts is considered in DEIS		STREETCAR				
	Lower ongoing TriMet operation and maintenance costs - \$2.25 million per year	Higher capital cost, up to \$149 million	Trade-off between one-time only federal funding (New Starts) and ongoing local TriMet operating costs			STREETCAR			
	Design work shows that a continuous trail can be created along with the Streetcar	Trail adds \$69.2 to \$83.3 million to cost of Streetcar	Very expensive to create continuous trail, may need to consider alternatives like putting bikes on Streetcar through the pinch points				STREETCAR		
	Value of Willamette Shoreline right-of-way has potential to reduce local cash contribution to project	Value of Willamette Shoreline right-of-way for local match is partially lost if Macadam design option for BRT) is chosen	Finance Plan will address different funding scenarios and local funding mechanisms					STREETCAR	
	Potential for 3.3 million square feet of total new development in John's Landing and Lake Oswego by 2025								STREETCAR
			STREETCAR						
				STREETCAR					
					STREETCAR				
						STREETCAR			
TRAIL	Continuous trail is technically possible	Legal uncertainty exists about using the Willamette Shoreline right of way for anything except rail					Need to develop alternatives for trail connections such as the Portland and Western railroad bridge connection to Milwaukie and downtown	TRAIL	
	Could meet latent demand of up to 4,000 trips per day	Very costly to use Willamette Shoreline right of way for a trail due to design issues and possible property impacts					May need to develop short segments rather than the entire trail to avoid high costs and potential property impacts		TRAIL
	Strong public support expressed through project meetings	Using the Willamette Shoreline right of way for a trail prevents its use as local match against federal transit dollars					No identified funding source or lead agency for the next phase of planning and development		
	Documented economic benefits such as avoided auto and parking costs, health benefits, support for trail-related retail sales and tourism, increased property values						TRAIL		



Figure C.3-1 Hybrid 1: Macadam Avenue In-Street Design Option Scoping/Design Refinement Study

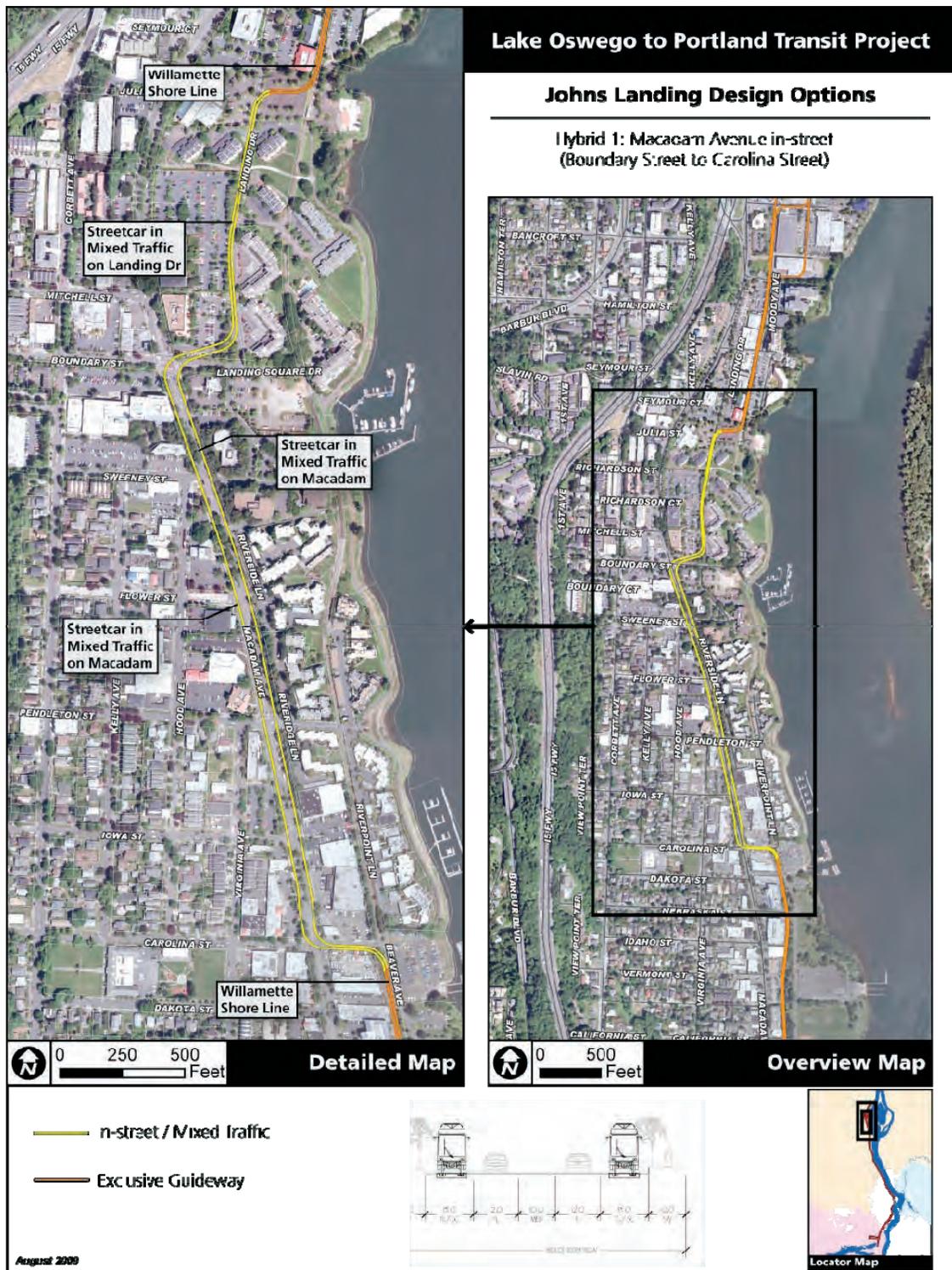


Figure C.3-2 Hybrid 2: Eastside Exclusive Design Option
Scoping/Design Refinement Study

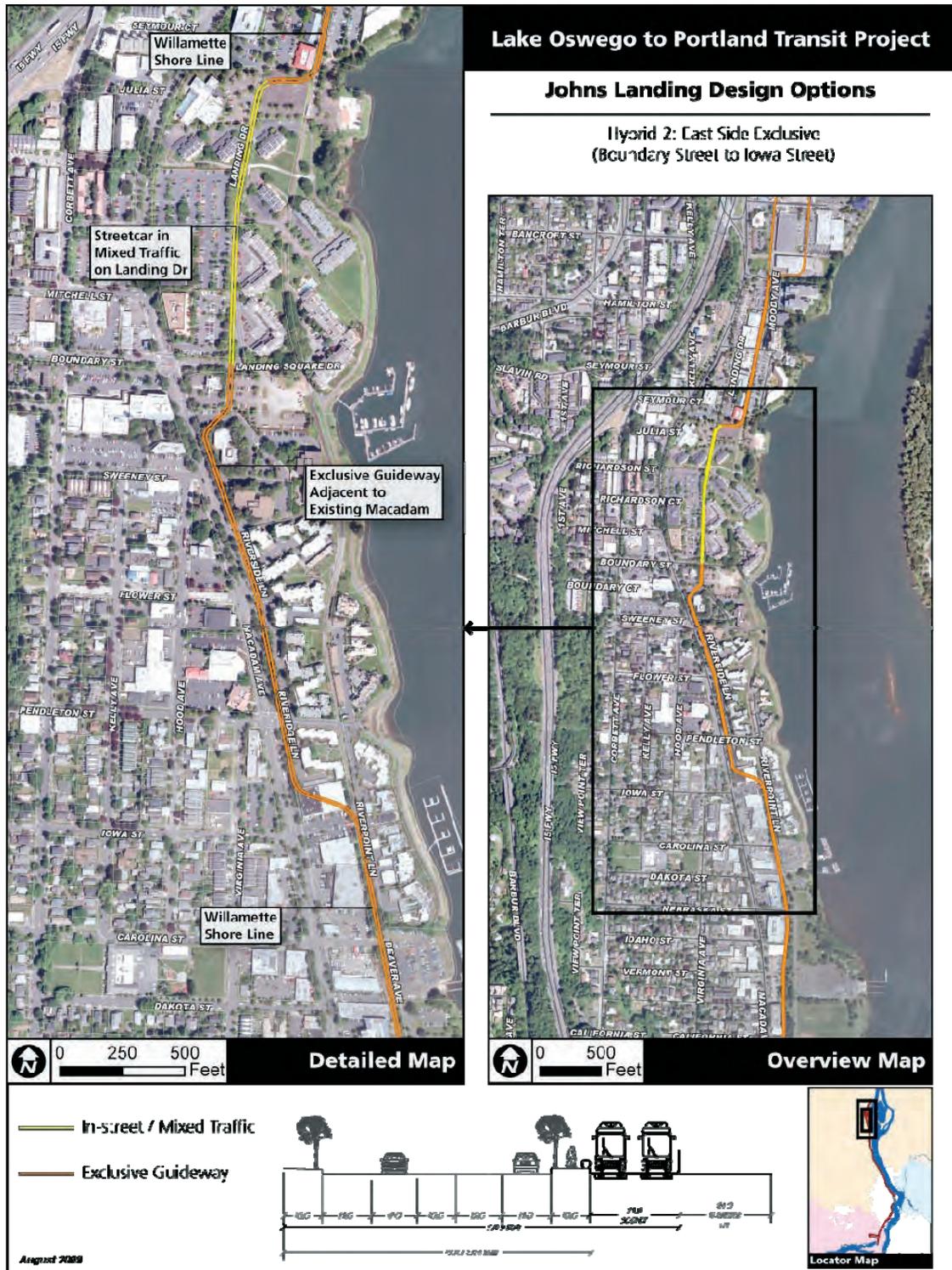


Figure C.3-3 Hybrid 3: Macadam Avenue with new Northbound Lane Design Option Scoping/Design Refinement Study

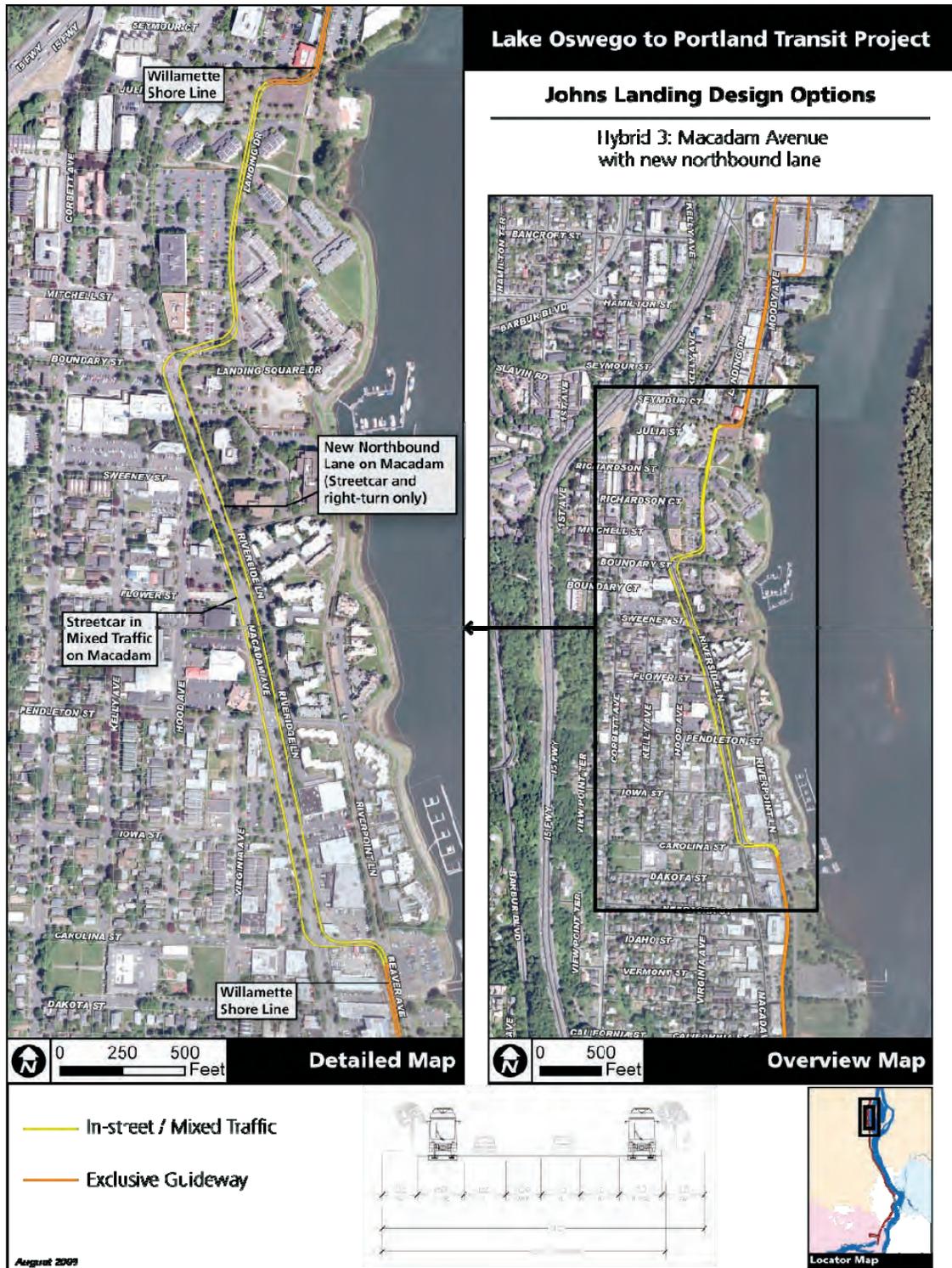


Figure C.3-4 Willamette Shore Line Design Option
Scoping/Design Refinement Study

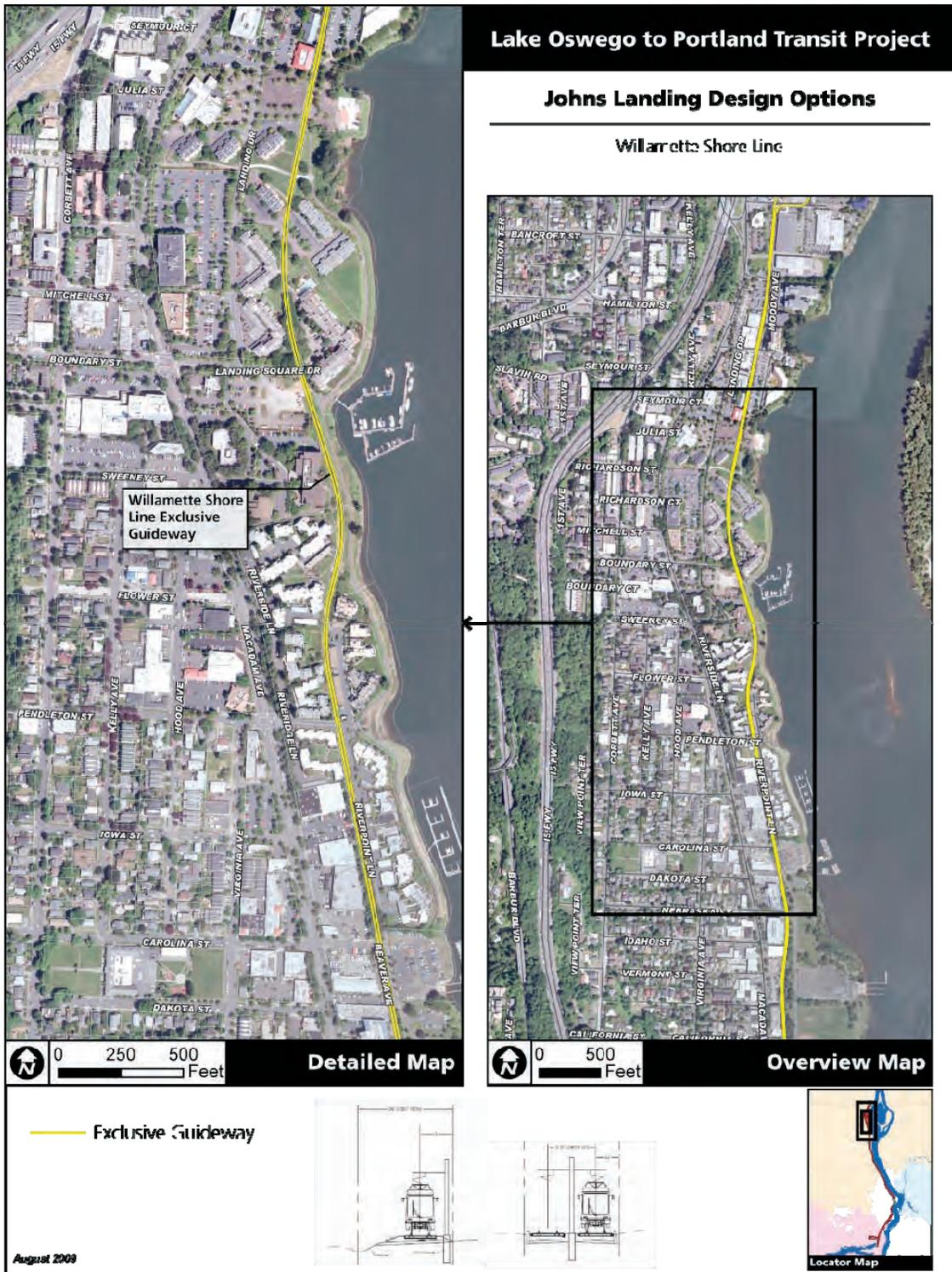


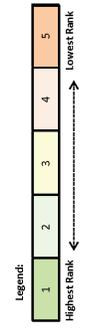
Figure C.3-5 Full Macadam in-Street Design Option
Scoping/Design Refinement Study



Table C.3-1 Comparison of Johns Landing Design Options Scoping/Design Refinement Study



	Hybrid 1: Macadam In-Street (Boundary to Carolina)	Hybrid 2: East Side Exclusive (Boundary to Iowa)	Hybrid 3: Macadam with New North Bound Lane (Boundary to Carolina)	Willamette Shore Line	Full Macadam In-Street
1. OPTIMIZE THE REGIONAL TRANSIT SYSTEM					
GOAL 1A. IMPROVE TRANSIT OPERATIONS					
Minimize travel time (minutes)	8.5 - 9.5 Less reliability, in mixed traffic for a portion of alignment	7.5 - 7.9 Most amount of exclusive transit guideway of the hybrid options	8.5 - 9.5 Provides some reliability in the NB direction	5.2 - 5.9 Most reliable transit service/exclusive guideway	7.7 - 10.7 Least reliable, in mixed traffic.
Maximize reliability of service	Good: double track operations allow for expansion	Less ability to expand service if single track at Pendleton; good if double tracked adjacent to Macadam	Good: double track operations allow for expansion	Less ability to expand service if single track; good if double tracked	Good: double track operations allow for expansion
GOAL 1B. IMPROVE TRANSIT PERFORMANCE					
Maximize ridership	10,300 - 9,900	10,500 - 10,400	10,300 - 9,900	11,100 - 10,900	10,100 - 9,400
Estimated operating costs (millions \$)	\$2.28 - \$2.33 M	\$2.27 - \$2.28 M	\$2.28 - \$2.33 M	\$2.21 - \$2.22 M	\$2.31 - \$2.38 M
Cost/ride	\$0.64 - \$0.67	\$0.63 - \$0.64	\$0.64 - \$0.67	\$0.58 - \$0.59	\$0.67 - \$0.74
2. THE PROJECT SHOULD BE FISCALLY RESPONSIVE AND MAXIMIZE REGIONAL RESOURCES					
GOAL 2A. FISCALLY RESPONSIVE					
Minimize capital cost. (millions \$)	\$36.2 M	\$41.3 M	\$39.4 M	\$28.8 M single track \$21.7 M double track	\$34.1 M
Maximize local match potential	\$20,147,519	\$20,147,519	\$20,147,519	\$29,003,666	\$3,562,679
3. MAXIMIZE THE ECONOMIC DEVELOPMENT POTENTIAL					
GOAL 3A. MAXIMIZE THE ECONOMIC DEVELOPMENT POTENTIAL					
Maximize development potential	Add'l 1,827,000 sf development 740 housing units 2,170 jobs	Add'l 1,744,000 sf development 710 housing units 2,070 jobs	Add'l 1,827,000 sf development 740 housing units 2,170 jobs	Add'l 1,563,000 sf development 620 housing units 1,890 jobs	Add'l 1,957,000 sf development 840 housing units 2,230 jobs
GOAL 3B. MAXIMIZE THE ACCESSIBILITY TO PROMOTE REDEVELOPMENT					
Optimize bicycle and pedestrian access to stops and the Willamette Riverfront	Greater proximity and visibility to both sides of Macadam from Boundary to Carolina; no/minimal potential impact to access to riverfront	Good proximity and visibility from Macadam; increased crossing distance to and from west side of Macadam for pedestrians; no/minimal potential impact to access to riverfront	Greater proximity and visibility to both sides of Macadam from Boundary to Carolina; no/minimal impact to access to riverfront	Less visibility and greater distance from existing bicycle and pedestrian network; controlled access to riverfront	Greater proximity and visibility to both sides of Macadam; no/minimal impact to access to riverfront
Maximize access to commercial, residential & employment nodes	Good proximity to commercial nodes and residences on both sides of Macadam	Good proximity to commercial nodes and residences on both sides of Macadam	Good proximity to commercial nodes and residences on both sides of Macadam	Furthest from commercial nodes and residences on both sides of Macadam	Greater proximity to commercial nodes and residences on both sides of Macadam



This evaluation matrix is based on analysis completed during the Alternatives Analysis process conducted summer 2005 through December 2007 and some additional refinement work done in 2009. Alternatives selected to advance into the Draft Environmental Impact Statement will be analyzed further and in greater detail.

**Table C.3-1 Comparison of Johns Landing Design Options
Scoping/Design Refinement Study**

GOAL 4B. SUSTAIN EXISTING NEIGHBORHOODS			
Compatibility with Existing Development	Would not fit with the proposed foothills development but could support the existing Town Center	Would support the proposed Foothills development and the existing Town Center via a potential pedestrian connection at State St/B Ave	Would support the existing Town Center via a potential pedestrian connection at State St/B Ave; however would require a large park and ride in Foothills District
Minimize ROW Impacts	Would have property impacts to businesses between the WSL and State St	Would have the most right of way acquisitions	Would utilize the existing right of way (unless configured to fit within the Foothills District
Minimize Off-Street Parking Impacts	Coordination with Safeway redevelopment/parking facility (smaller site)	Coordination with Albertsons redevelopment/parking facility (some neighborhood concerns)	No anticipated off-street parking impacts
Minimize Noise Impacts	Potential noise impacts with residential development in Town Center	Potential noise impact with residential area adjacent to the Albertsons site	No anticipated noise impacts
Minimize Visual Impacts	Potential visual impacts with elevated structure from Foothills area to State St	No anticipated visual impacts	No anticipated visual impacts
Minimize Bicycle & Pedestrian Conflicts	Potential Impacts to proposed Willamette Steps idea as part of the Foothills development plans	No anticipated bicycle & pedestrian conflicts. Could provide a new connection from Foothills to the Albertsons site.	No anticipated bicycle & pedestrian conflicts
Maximize Public Support	Would have the least public support	Would have the most public support and most consistent with the DTAAC recommendations	Would not have strong public support
5. BE SENSITIVE TO THE NATURAL ENVIRONMENT			
GOAL 5A. MINIMIZES IMPACTS TO THE NATURAL ENVIRONMENT			
Minimizes impacts to streams, wetlands and waterways	Would cross Tryon Creek	Would cross Tryon Creek	Would cross Tryon Creek
Minimize construction in or proximity to the FEMA 100-year floodplain	Potential floodplain concerns	Potential floodplain concerns	Potential floodplain concerns
Minimize impacts to Metro Title 3 lands (Water Quality, Flood Management and Fish and Wildlife Conservation)	Potential Title 3 land proximity concerns	Potential Title 3 land proximity concerns	Potential Title 3 land proximity concerns
Minimizes impacts to parklands, recreational areas and other Section 4(f)	Potential Tryon Creek State Park impacts	Potential Tryon Creek State Park impacts	Potential Tryon Creek State Park impacts

This evaluation matrix is based on analysis completed during the Alternatives Analysis process conducted summer 2005 through December 2007. Alternatives selected to advance into the Draft Environmental Impact

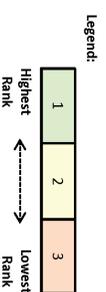
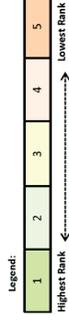


Table C.3-1 Comparison of Johns Landing Design Options Scoping/Design Refinement Study

	Hybrid 1: Macadam In-Street (Boundary to Carolina)	Hybrid 2: East Side Exclusive (Boundary to Iowa)	Hybrid 3: Macadam with New North Bound Lane (Boundary to Carolina)	Willamette Shore Line	Full Macadam In-Street
5. BE SENSITIVE TO THE NATURAL ENVIRONMENT					
GOAL 5A. MINIMIZE IMPACTS TO THE NATURAL ENVIRONMENT					
Minimize impacts to streams, wetlands and waterways	Alignment is moved away from the Willamette River between SW Julia and SW Iowa Sts.	Alignment is moved away from the Willamette River between SW Julia and SW Iowa Sts.	Alignment is moved away from the Willamette River between SW Julia and SW Carolina Sts.	Close proximity to the Willamette River.	Alignment is moved away from the Willamette River between South Waterfront and SW Nevada St.
Minimize construction in or proximity to the FEMA 100-year floodplain	Similar to the WSL between South Waterfront and Julia St and from Carolina St south. Bypasses potential impacts to floodplain between SW Julia and SW Carolina Sts.	Similar to the WSL between South Waterfront and Julia St and from Iowa St south. Bypasses potential impacts to floodplain between SW Julia and SW Iowa Sts.	Similar to the WSL between South Waterfront and Julia St and from Carolina St south. Bypasses potential impacts to floodplain between SW Julia and SW Carolina Sts.	Greatest potential floodplain concerns due to proximity to the Willamette River and the FEMA 100-year floodplain	Least amount of potential concerns regarding Willamette River and FEMA 100-year floodplain between South Waterfront and Nevada. Potential concerns south.
Minimize impacts to Metro Title 3 lands (Water Quality, Flood Management and Fish and Wildlife Conservation)	Similar to the WSL between South Waterfront and Julia St and from Carolina St south. Bypasses small segments of Title 3 lands between SW Julia and SW Iowa Sts.	Similar to the WSL between South Waterfront and Julia St and from Carolina St south. Bypasses small segments of Title 3 lands between SW Julia and SW Iowa Sts.	Similar to the WSL between South Waterfront and Julia St and from Carolina St south. Bypasses small segments of Title 3 lands between SW Julia and SW Carolina Sts.	WSL alignment through some segments of Title 3 lands including a large segment in Willamette Park.	Alignment is outside Title 3 lands from South Waterfront to SW Nevada.
Minimize impacts to parklands, recreational areas and other Section 4(f)	Utilizes right of way in/adjacent to Willamette Park and Buttery Park	Utilizes right of way in/adjacent to Willamette Park and Buttery Park	Utilizes right of way in/adjacent to Willamette Park and Buttery Park	Utilizes right of way in/adjacent to Willamette Park and Buttery Park	Minimizes the use of right of way in/adjacent to Willamette Park. Utilizes the right of way in Buttery Park.



This evaluation matrix is based on analysis completed during the Alternatives Analysis process conducted summer 2005 through December 2007 and some addition refinement work done in 2009. Alternatives selected to advance into the Draft Environmental Impact Statement will be analyzed further and in greater detail.

Figure C.3-6 Albertsons Terminus Option
Scoping/Design Refinement Study

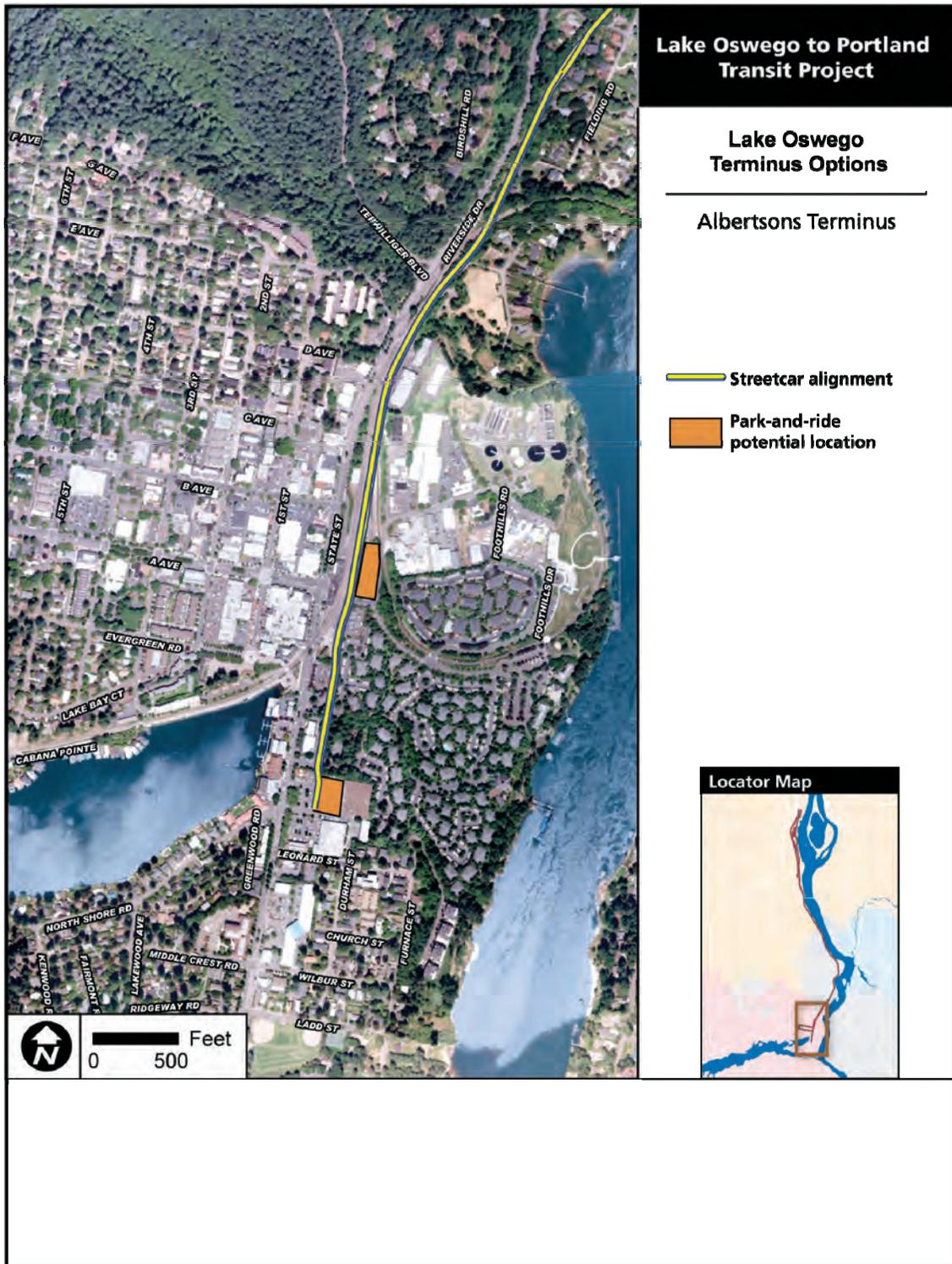


Figure C.3-7 SafewayTerminus Option
Scoping/Design Refinement Study

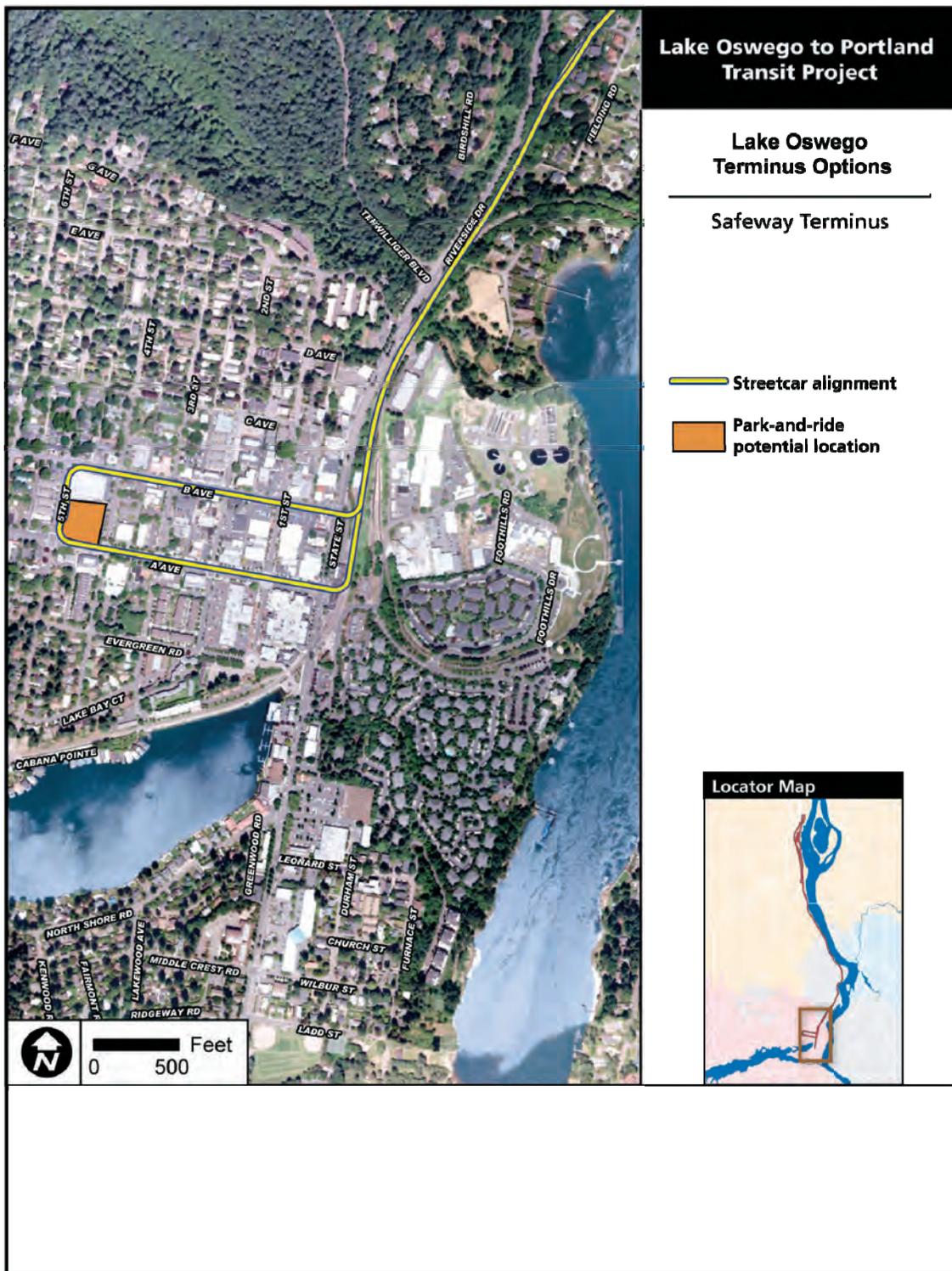
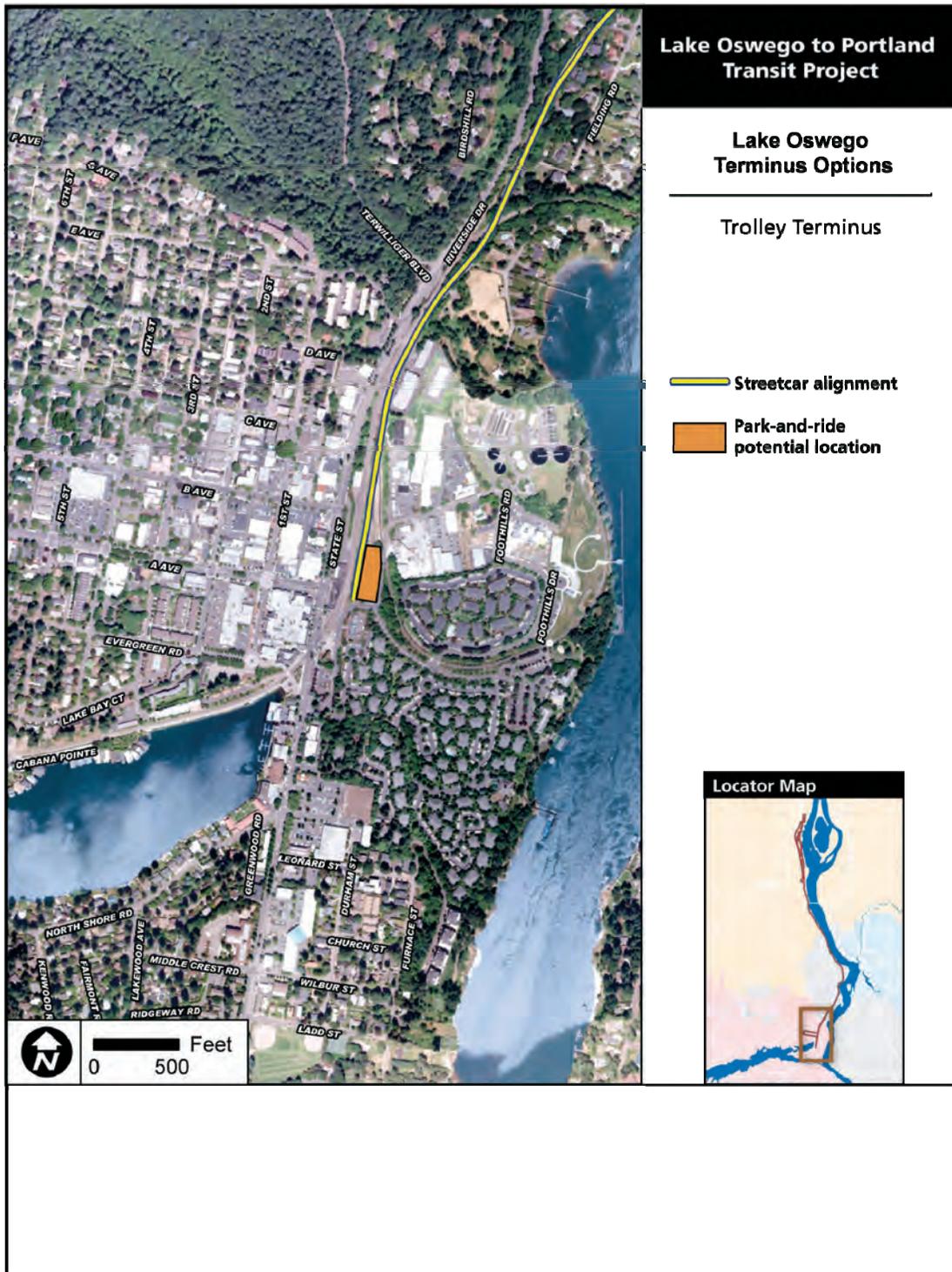


Figure C.3-8 Trolley Terminus Option
Scoping/Design Refinement Study



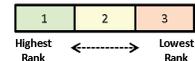
**Table C.3-2 Comparison of Lake Oswego Terminus Options
Scoping/Design Refinement Study**



	Safeway Terminus	Albertsons Terminus	Trolley Terminus
1. OPTIMIZE THE REGIONAL TRANSIT SYSTEM			
GOAL 1A. IMPROVE TRANSIT OPERATIONS			
Minimize Travel Time (minutes)	23	21.6	20.7
Maximize Reliability of Service	Less reliability - dependent on congestion on State St and A/B Aves	Provides reliability with exclusive guideway/low volume streets	Provides reliability with exclusive guideway
Maximize Ability to Expand Service	Good if double track operations	Good if double track operations	Good if double track operations
GOAL 1B. IMPROVE TRANSIT PERFORMANCE			
Estimated Ridership	10,957	10,865	10,642
2. THE PROJECT SHOULD BE FISCALLY RESPONSIVE AND MAXIMIZE REGIONAL RESOURCES			
GOAL 2A. FISCALLY RESPONSIVE			
Minimize Capital Cost (millions \$)	\$42.6	\$36.4	\$30.8
Maximize Local Match Potential	Because the cost is highest, there would be a need for more local match.	Because the right of way is owned by UP, all alternatives would have to acquire the appropriate resources.	Because the cost is the lowest, there would be lesser local match required.
3. MAXIMIZE THE ECONOMIC DEVELOPMENT POTENTIAL			
GOAL 3A. MAXIMIZE THE ECONOMIC DEVELOPMENT POTENTIAL			
Maximize Development Potential	Add'l 1,080,000 sf development 630 housing units 900 jobs	Add'l 904,000 sf development 600 housing units 600 jobs	Add'l 667,000 sf development 450 housing units 440 jobs
GOAL 3B. MAXIMIZE THE ACCESSIBILITY TO PROMOTE REDEVELOPMENT			
Maximize Access to Commercial, Residential & Employment Nodes	Good connectivity to commercial activity in existing Town Center	Best connectivity to proposed Foothills District and South	Good connectivity to Foothills District
Maximize the Potential Future Expansion	Would allow for future expansion to the west; may be redundant to the proposed Clackamas/Washington Square HCT project	Would allow for future expansion to the south	Would not preclude future expansion
Supports Local and Regional Plans	Would not fit with the proposed foothills development but could support the existing Town Center	Would support the proposed Foothills development and the existing Town Center via a potential pedestrian connection at State St/B Ave	Would support the existing Town Center via a potential pedestrian connection at State St/B Ave; however would require a large park and ride in Foothills
4. BE SENSITIVE TO THE BUILT AND SOCIAL ENVIRONMENT.			
GOAL 4A. MINIMIZE TRAFFIC IMPACTS			
Maintain Traffic Progression	Potential change in the intersection operations at State St and A/B Avenues	No change to traffic progression on State St or A/B Avenues	No change to traffic progression on State St or A/B Avenues
Minimize Auto Travel Time	Potential travel time impacts through Town Center because of changes in intersection operations	No impact on auto travel time on State St or A/B Aves	No impact on auto travel time on State St or A/B Aves
Maintain Acceptable Intersection LOS	Potential impact to operations at State St/A Ave due to special streetcar phase	Potential impact to LOS at State St and Albertsons and Foothills - park and ride split between these 2 locations	Potential impact to LOS as State St/Foothills - all park and ride would be accessed via State/Foothills
Traffic Signal Modifications Required	Traffic signal modifications at State/A and State/B	No traffic signal modifications required	Minimal potential traffic signal modifications required (only if additional green time is needed to serve park & riders)
Work Zone/Construction Staging Impacts	Potential construction impacts on State and A/B Aves	Minimal potential construction impacts on existing traffic operations, longer line, more construction required than Trolley	Potential construction impacts
Safe Operations for Bicycles and Motorcycles	Streetcar track in roadway on A Avenue and B Avenue	Exclusive transit right of way reduces potential track conflicts with bicycles and motorcycles. Streetcar track in new shared roadway between Foothills Rd and Albertsons	Exclusive transit right of way reduces potential track conflicts

This evaluation matrix is based on analysis completed during the Alternatives Analysis process conducted summer 2005 through December 2007. Alternatives selected to advance into the Draft Environmental Impact

Legend:



**Table C.3-2 Comparison of Lake Oswego Terminus Options
Scoping/Design Refinement Study**



GOAL 4B. SUSTAIN EXISTING NEIGHBORHOODS			
Compatibility with Existing Development	Would not fit with the proposed foothills development but could support the existing Town Center	Would support the proposed Foothills development and the existing Town Center via a potential pedestrian connection at State St/B Ave	Would support the existing Town Center via a potential pedestrian connection at State St/B Ave; however would require a large park and ride in Foothills
Minimize ROW Impacts	Would have property impacts to businesses between the WSL and State St	Would have the most right of way acquisitions	Would utilize the existing right of way (unless configured to fit within the Foothills District)
Minimize Off-Street Parking Impacts	Coordination with Safeway redevelopment/parking facility (smaller site)	Coordination with Albertsons redevelopment/parking facility (some neighborhood concerns)	No anticipated off-street parking impacts
Minimize Noise Impacts	Potential noise impacts with residential development in Town Center	Potential noise impact with residential area adjacent to the Albertsons site	No anticipated noise impacts
Minimize Visual Impacts	Potential visual impacts with elevated structure from Foothills area to State St	No anticipated visual impacts	No anticipated visual impacts
Minimize Bicycle & Pedestrian Conflicts	Potential Impacts to proposed Willamette Steps idea as part of the Foothills development plans	No anticipated bicycle & pedestrian conflicts. Could provide a new connection from Foothills to the Albertsons site.	No anticipated bicycle & pedestrian conflicts
Maximize Public Support	Would have the least public support	Would have the most public support and most consistent with the DTAAC recommendations	Would not have strong public support
5. BE SENSITIVE TO THE NATURAL ENVIRONMENT			
GOAL 5A. MINIMIZES IMPACTS TO THE NATURAL ENVIRONMENT			
Minimizes impacts to streams, wetlands and waterways	Would cross Tryon Creek	Would cross Tryon Creek	Would cross Tryon Creek
Minimize construction in or proximity to the FEMA 100-year floodplain	Potential floodplain concerns	Potential floodplain concerns	Potential floodplain concerns
Minimize impacts to Metro Title 3 lands (Water Quality, Flood Management and Fish and Wildlife Conservation)	Potential Title 3 land proximity concerns	Potential Title 3 land proximity concerns	Potential Title 3 land proximity concerns
Minimizes impacts to parklands, recreational areas and other Section 4(f)	Potential Tryon Creek State Park impacts	Potential Tryon Creek State Park impacts	Potential Tryon Creek State Park impacts

This evaluation matrix is based on analysis completed during the Alternatives Analysis process conducted summer 2005 through December 2007. Alternatives selected to advance into the Draft Environmental Impact

Legend:

