

 **Metro** | *Agenda*

Meeting: Lake Oswego Steering Committee
Date: Monday, June 1, 2009
Time: 11 a.m. to 1 p.m.
Place: Council Chambers, Metro Regional Center

11:00 a.m. CALL TO ORDER AND DECLARATION OF A QUORUM

11:05 a.m. APPROVAL OF MEETING SUMMARY

11:10 a.m. PUBLIC COMMENT

11:15 a.m. ACTION ITEMS/MEETING GOAL

**11:20 a.m. JOHNS LANDING REFINEMENT ALTERNATIVES
TO BE STUDIED IN DEIS**

Review of Options and Evaluation Results
Public Involvement Report
PMG Recommendation
Steering Committee Preliminary Decision

Bridget Wiegart – Metro
Karen Withrow – Metro
Doug Oblatz – Shiels Oblatz Johnsen

**12:20 p.m. LAKE OSWEGO TERMINUS ALTERNATIVES
TO BE STUDIED IN DEIS**

Review of Options and Evaluation Results
Public Involvement Report
PMG Recommendation
Steering Committee Preliminary Decision

Jamie Snook – Metro
Karen Withrow – Metro
Doug Oblatz – Shiels Oblatz Johnsen

**12:35 p.m. UPDATE ON LAKE OSWEGO TRAIL
REFINEMENT**

Brian Monberg – Metro

**12:45 p.m. UPDATE ON FEDERAL TRANSPORTATION
LEGISLATION**

Rick Gustafson – Shiels Oblatz Johnsen

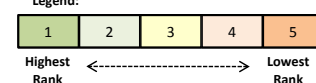
1:00 p.m. ADJOURN

All material will be available at the meeting.

	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
STREETCAR OPERATIONS					
Minimize Travel Time (minutes)	8.5 - 9.5	7.5 - 7.9	8.5 - 9.5	5.2 - 5.9	7.7 - 10.7
Maximize Reliability of Service	Less reliability, in mixed traffic for a portion of alignment	Most amount of exclusive transit guideway of the hybrid options	Provides some reliability in the NB direction	Most reliable transit service/exclusive guideway	Least reliable, in mixed traffic.
Maximize Ability to Expand 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
STREETCAR PERFORMANCE					
Estimated 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
FINANCIAL FEASIBILITY					
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
TRAFFIC IMPACTS					
Maintain Traffic Progression	Potential change in green bandwidth on Macadam from Boundary to Carolina	No change to traffic progression on Macadam	Potential change in green bandwidth on Macadam from Boundary to Carolina	No change to traffic progression on Macadam	Potential change in green bandwidth on Macadam from Bancroft/Hamilton to Nevada
Minimize Auto Travel Time	Some potential travel time impacts on Macadam from Boundary to Carolina	No impact on auto travel time on Macadam	Some potential travel time impacts on Macadam from Boundary to Carolina; potential improvement in NB direction	No impact on auto travel time on Macadam	Some potential travel time impacts on Macadam from Bancroft/Hamilton to Nevada
Maintain Acceptable Intersection LOS	Maintains acceptable intersection LOS	No impact on Macadam LOS	Maintains acceptable intersection LOS	No impact on Macadam LOS	Maintains acceptable intersection LOS
Traffic Signal Modifications Required	Traffic signal modifications at Boundary and new signal at Carolina	No traffic signal modifications required	Traffic signal modifications at Boundary and new signal at Carolina	No traffic signal modifications required	Traffic signal modifications at Bancroft/Hamilton and Nevada
Work Zone/Construction Staging Impacts	Potential construction impacts between Boundary and Carolina	Minimal potential construction impacts on existing traffic operations	Potential construction impacts between Boundary and Carolina	No construction impacts on existing traffic operations	Greatest potential construction impacts to Macadam and traffic operations
Safe Operations for Bicycles and Motorcycles	Streetcar track in roadway from Boundary to Carolina	Exclusive transit right of way reduces potential track conflicts with bicycles and motorcycles	streetcar track in roadway between Boundary and Carolina; more potential conflicts with SB traffic	Exclusive transit right of way reduces potential track conflicts with bicycles and motorcycles	streetcar track in roadway from Hamilton to Nevada
ACCESSIBILITY AND DEVELOPMENT POTENTIAL					
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
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 1,563,00 sf development 620 housing units 1,890 jobs	Add'l 1,957,00 sf development 840 housing units 2,230 jobs
SUSTAIN EXISTING NEIGHBORHOODS					
Compatibility with Existing Development	Minimizes impacts to existing residences and supports development on Macadam	Potential impacts to existing residences	Minimizes impacts to existing residences and supports development on Macadam	Greatest potential impacts and proximity issues to existing residences	Minimizes impacts to residences, commercial/office and supports development on Macadam
Minimize ROW Impacts	Potential right of way impacts - some right of way at transitions	Potential impacts to the parking/vegetation at the residents	Potential impacts to the parking/vegetation at the residents	Potential right of way impacts with single track only at stop locations; potential right of way impacts if double track only at stops; significant potential impacts with double track and trail	Potential right of way impacts at transitions
Minimize Off-Street Parking Impacts	Potential parking impacts at Carolina	60 potential parking spaces lost; loss of vegetation	Reconfiguration of parking sizes to maintain parking spaces; loss of vegetation	Potential impacts to parking - condo parking located across WSL right of way - may have potential impact	No parking impacts
Minimize Noise Impacts	Minimal potential noise impacts to residences	Potential noise impacts due to and gates proximity and loss of vegetation/barrier	Minimal potential noise impacts to residences adjacent to Macadam	Most potential noise impacts due to and gates proximity	No noise impacts
Minimize Visual Impacts	Minimal potential visual impacts to residences	Potential visual impacts to residences adjacent to Macadam	Minimal potential visual impacts to residences adjacent to Macadam	Most potential visual impacts to development adjacent to WSL - condos were designed to face the water	No/minimal potential visual impacts
Minimize Bicycle & Pedestrian Conflicts	Minimal potential change to bicycle and pedestrian environment	Potential increased bicycle and pedestrian crossing distance on Macadam and separated guideway	Less potential change to bicycle and pedestrian environment; increased crossing distance on Macadam	Most potential conflict; would require separated guideway and separated crossings on the WSL	Minimal potential change to bicycle and pedestrian environment
Minimize Impacts to Lake Oswego-to Portland Trail	Greater opportunity to utilize WSL for trail	Greater opportunity to utilize WSL for trail	Greater opportunity to utilize WSL for trail	If double tracked; would require using existing greenway, street connections, and additional right of way for trail	Greatest opportunity to utilize WSL for trail; however, ownership issues to be resolved

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.

Legend:



**Lake Oswego to Portland Transit Alternatives Analysis
Funding Options and Issues for Streetcar Alternatives**

1. Introduction

This report assesses capital funding plan options for the Lake Oswego to Portland Streetcar alternatives.¹ The purpose of the capital financial analysis in the alternatives analysis stage is to determine if there are any distinguishing financial opportunities or impediments to the alternatives, as well as to establish a conceptual plan for further analysis during Preliminary Engineering and Final Design.

This report addresses the full range of streetcar alternatives that were developed in the initial “Lake Oswego to Portland Transit and Trail Alternatives Analysis (LOAA)” phase, as documented in URS plan drawings dated June 2007, and the additional alternatives examined during the “Johns Landing Refinement Study” phase.

As shown in Table 1, between these studies there are a total of nine alignment options were developed for Segment 1 of the corridor (roughly between SW Lowell Street and SW Miles Court), one alignment option was developed for Segment 2 of the corridor (roughly between SW Miles Court (Portland) and Briarwood (Lake Oswego), and three options were developed for Segment 3, the Lake Oswego terminus options. In total these segment options establish twenty-seven distinct alignment permutations.

**Table 1:
Lake Oswego to Portland Streetcar Alignment Alternatives by Segment**

Segment 1: SW Lowell to SW Miles Court, Portland
<ul style="list-style-type: none">• Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada• Alternative 2: Macadam Outside Lanes between SW Hamilton Ct and SW Carolina• Alternative 3: Willamette Shore Line• Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment• Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada• Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina• Alternative 11: Macadam Outside Mixed Traffic: Hybrid 1• Alternative 12: Eastside Exclusive: Hybrid 2• Alternative 13: New Northbound Lane on Macadam: Hybrid 3
Segment 2: SW Miles Court, Portland to Briarwood, Lake Oswego
<ul style="list-style-type: none">• Alternative 7: Willamette Shore Line ROW
Segment 3: Lake Oswego Terminus Options
<ul style="list-style-type: none">• Alternative 8: Albertsons Terminus• Alternative 9: Willamette Shore Line Terminus• Alternative 10: Safeway Terminus

¹ This report does not address the cost or funding plans for the trail alternatives.

2. Capital Costs

2.1 Current Year Estimates: Capital Costs (Excluding the Value of the Willamette Shore ROW)

Current year “order-of-magnitude” cost estimates for all alternatives were prepared by URS as of the 1st Quarter, 2007 (this includes the alternatives identified in the AA and Refinement study phases). This consistency allows the capital costs of the Johns Landing “Hybrid” alternatives to be directly compared to the LOAA alternatives.

These cost estimates cover Preliminary Engineering through Start-Up and address engineering, project administration, civil construction (trackway, excavation, signals, etc.), utilities, structures, stations, communications and control, vehicles, maintenance facility, and fare collection systems costs. The URS cost estimates include the cost of right-of-way (ROW) that must be purchased, but not the value of the right-of-way to be provided as an in-kind contribution. A 30% contingency is included in the cost estimates. Engineering & Administration (E&A) costs are estimated at 32% of hard costs.

Table 2 show the URS current year cost estimates by segment and cost element. Table 3 shows the total URS current year cost estimates for the 27 possible permutations of streetcar alignments.

Table 2: Current Year Capital Cost Estimates by Segment and Cost Element

Millions of 1st Quarter 2007 Dollars

These Costs do NOT include Value of WSL ROW used for In-Kind Match

Alternative	E&A	Hard	Contingency	Total
Segment 1: SW Lowell to SW Miles Court, Portland				
Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada	\$6.74	\$21.05	\$6.32	\$34.10
Alternative 2: Macadam Outside Lanes between SW Hamilton Ct and SW Carolina	\$7.02	\$21.93	\$6.58	\$35.52
Alternative 3: Willamette Shore Line	\$5.66	\$17.69	\$5.31	\$28.66
Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment	\$6.73	\$21.04	\$6.31	\$34.08
Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada	\$6.00	\$18.75	\$5.62	\$30.37
Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina	\$6.02	\$18.80	\$5.64	\$30.46
Alternative 11: Macadam Outside Mixed Traffic Hybrid 1	\$7.15	\$22.35	\$6.71	\$36.21
Alternative 12: Eastside Exclusive Hybrid 2	\$8.16	\$25.52	\$7.65	\$41.33
Alternative 13: New Northbound Lane on Macadam: Hybrid 3	\$7.78	\$24.33	\$7.30	\$39.41
Segment 2: SW Miles Court, Portland to Briarwood, Lake Oswego				
Alternative 7: Willamette Shore Line ROW	\$12.62	\$39.43	\$11.83	\$63.87
Segment 3: Lake Oswego Terminus Options				
Alternative 8: Albertsons Terminus	\$7.19	\$22.47	\$6.74	\$36.40
Alternative 9: Willamette Shore Line Terminus	\$6.09	\$19.03	\$5.71	\$30.83
Alternative 10: Safeway Terminus	\$8.42	\$26.30	\$7.89	\$42.60
System Costs				
Maintenance Facility	\$1.25	\$0.40	\$0.35	\$2.00
Vehicles	\$0.93	\$9.30	\$2.79	\$13.00

Source: URS 2009

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Table 3: Current Year Capital Cost Estimates by Full Alternative

Millions of 1st Quarter 2007 Dollars

These Costs do NOT include Value of WSL ROW used for In-Kind Match

	Alternative 8 Albertson Terminus	Alternative 9 WSL Terminus	Alternative 10 Safeway Terminus
Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada	\$149.38	\$143.78	\$155.58
Alternative 2: Macadam Outside Lanes between SW Hamilton Ct and SW Carolina	\$150.80	\$145.19	\$156.99
Alternative 3: Willamette Shore Line	\$143.94	\$138.33	\$150.13
Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment	\$149.35	\$143.75	\$155.55
Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada	\$145.65	\$140.04	\$151.84
Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina	\$145.74	\$140.13	\$151.93
Alternative 11: Macadam Outside Mixed Traffic Hybrid 1	\$151.48	\$145.87	\$157.67
Alternative 12: Eastside Exclusive Hybrid 2	\$156.58	\$150.97	\$162.77
Alternative 13: New Northbound Lane on Macadam: Hybrid 13	\$154.68	\$149.08	\$160.88

*Note: Segment 2 (Alternative 7), maintenance facility, and vehicle costs are the same for all alternatives and included in totals
Source: URS 2009*

2.2 Year of Expenditure Dollar Estimate: Capital Costs (Excluding the Value of the Willamette Shore ROW)

2.2.1 Assumptions

YOE costs are developed in two stages: (a) Pre-FFGA costs, which are PE, Final Design and related project administration costs, and (b) Post-FFGA costs, which are primarily construction, ROW acquisition, vehicle procurement, system installation, and related project administration. The assumed Pre-FFGA costs are derived from the URS assumptions regarding the composition of engineering and administration costs, which is shown below:

Table 4: Composition of Engineering and Administration Costs

Activity	% of Hard Costs
Preliminary Engineering	4%
Final Design	6%
Project Management for Design and Construction	5%
Construction Administration & Management	8%
Insurance	2%
Legal; Permits; Review Fees by other agencies, cities, etc.	3%
Surveys, Testing, Investigation, Inspection	3%
Start-up Costs & Agency Force Account Work	1%
Total	32%

Source: URS

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This analysis assume that PE (4%), Final Design (6%), and 2% of management and administration costs will be spent prior to executing the FFGA. Since the resulting 12% factor is applied against hard costs, which represent 61.7% of total costs; the Pre-FFGA costs represent 7.407% of the total cost of an alignment.

Conversion of current year cost estimates to year-of-expenditure (YOE) is based on the following project development and inflation assumptions:

- Preliminary Engineering begins July 2010.
- Full Funding Grant Agreement executed July 2012
- Construction occurs July 2012 to July 2014
- Cost escalates at 4.8% per year, per URS assumptions.

In addition to inflation, the YOE capital cost must also reflect any interim borrowing that may be required as a result of the timing of the availability of certain revenues, such as federal appropriations that do not keep pace with project needs and LID contributions that are made available after project is complete. The interim borrowing amount will differ by alternative. These order of magnitude estimates employ a singular interim borrowing add-on of \$3M for all alternatives reflecting a 1-year delay in receipt of federal funds of \$60M at 5% interest.

Table 5: Summary of Factors to Convert Current Year Costs to YOE

Activity	Time Period	Mid-Point of Time Period	Years of Inflation from Current Year Cost Estimate (1)	Inflation from Current Year Cost Estimate (2)	Percent of Total Cost During Period	Interim Borrowing Add-On (3)
Pre-FFGA Costs	7/1/2010 – 6/30/2012	7/1/2011	4.5	1.2349	7.0%	NA
Execute FFGA	6/30/2012	NA	NA	NA	NA	NA
Post FFGA Costs	7/1/2012 - 6/30/2014	7/1/2013	6.5	1.3563	93.0%	\$3M

(1) URS estimates are for 1st Quarter 2007, inflations is to mid-point of time period.

(2) Inflation factor is 4.8%, per URS, compounded through mid-year of time period.

(3) These order of magnitude estimates employ a singular interim borrowing add-on for all alternatives of \$3M reflecting a 1-year delay in receipt of federal funds of \$60M at 5% interest.

2.2.2 YOE Capital Costs (Excluding the Value of the Willamette Shore ROW)

Table 6 shows the YOE capital cost of all of the alternatives based on the factors summarized in Table 5.

Table 6: Year-of-Expenditure Dollar Capital Cost Estimates by Alternative

Millions of Year-of-Expenditure Dollars

These Costs do NOT include Value of WSL ROW used for In-Kind Match

	Alternative 8 Albertson Terminus	Alternative 9 WSL Terminus	Alternative 10 Safeway Terminus
Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada	\$204.26	\$196.71	\$212.60
Alternative 2: Macadam Outside Lanes between SW Hamilton Ct and SW Carolina	\$206.16	\$198.62	\$214.51
Alternative 3: Willamette Shore Line	\$196.93	\$189.38	\$205.27
Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment	\$204.22	\$196.67	\$212.57
Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada	\$199.23	\$191.68	\$207.58
Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina	\$199.35	\$191.80	\$207.70
Alternative 11: Macadam Outside Mixed Traffic Hybrid 1	\$207.08	\$199.53	\$215.43
Alternative 12: Eastside Exclusive Hybrid 2	\$213.95	\$206.40	\$222.30
Alternative 13: New Northbound Lane on Macadam: Hybrid 13	\$211.40	\$203.86	\$219.75

Note: Segment 2 (Alternative 7), maintenance facility, and vehicle costs are the same for all alternatives and included in totals

2.3 Value of Willamette Shore Line (WSL) Right-of-Way (ROW) used as In-Kind Match

2.3.1 Overview of Appraisal: Current Year (June 2008) Estimate

An appraisal of the WSL ROW was prepared in June 2008 by Gail Webb (“Webb Appraisal”).² The Webb Appraisal assessed the value of the corridor on the basis of the “across the fence” or ATF valuation. Webb noted that the WSL ROW had a greater value as a streetcar corridor than reflected in the ATF valuation due to its assemblage or plottage as a complete and improved corridor.

Webb used a methodology to convert the ATF valuation into a plottage value using a methodology established by Clifford Zoll and described in the Webb Appraisal report. The result of this methodology is to factor the ATF valuation by 1.625 to establish the corridor’s plottage value. This analysis assumes that the Zoll plottage methodology would be accepted by FTA.

The resulting valuations by segment of the WSL ROW are shown in Table 7.

² Gail R. Webb, Appraisal Report: Willamette Shore Trolley Railway Corridor, June 3, 2008

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Table 7
Webb Appraisal of WSL ROW
As of June 3, 2008

Segment of WSL ROW	Webb Appraisal
1. Marquam (1)	\$21,624,817
2. Lowell to Bancroft (2)	\$2,005,770
3. Bancroft to Hamilton	\$3,759,795
4. Hamilton to Hamilton Court	\$3,307,200
5. Hamilton Court to Heron Point	\$2,877,225
6. Heron Point to Boundary	\$1,907,978
7. Boundary to Riverpoint	\$5,128,695
8. Riverpoint to Carolina	\$1,819,474
8A. Riverpoint to Carolina	\$407,063
9. Carolina to Nebraska	\$2,552,237
10. Nebraska to Miles	\$2,082,613
11. Miles to Miles Place	\$2,071,875
12. Miles to Sellwood Bridge	\$1,490,804
13. Sellwood Bridge to Powers Marine	\$121,550
14. Powers Marine to Tunnel	\$22,382,166
15. Tunnel land	\$4,082,126
TUNNNEL CONTRIBUTION (3)	\$8,000,000
16. Tunnel to Terwilliger	\$20,659,643
17. Terwilliger Blvd to Lake Oswego	\$2,320,704
Total	\$108,601,735

(1) Segment 1 is not part of Lake Oswego Streetcar ROW and will not be included in in-kind match estimates.

(2) The value of Segment 2 is not included in baseline estimates of in-kind match because it appears to be a public ROW; there is a possibility this value can be captured

(3) The value of the tunnel is not included in baseline estimates of in-kind match because it appears to be captured in the plottage factor; there is a possibility this value can be captured separately.

2.3.2 In-Kind Contribution of WSL ROW by Alternative: Current Year Dollars

Table 8 shows the current year (June 2008) appraised value of the portion of the WSL ROW used as in-kind match for each of the alternatives. The amounts shown represent the value of the full corridor (Portland to Lake Oswego), even though they are titled by their Segment 1 alternative. It is possible that segments of the WSL ROW not used for an alignment may be used for construction mobilization and storage purposes, in which case an in-kind value based on lease rates can be attributed to those portions of the ROW, but that is not accounted for in this analysis.

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Table 8: Current Year Estimates on In-Kind Contribution Value of WSL ROW (1)

June 2008 Dollars

	Alternative 1 Macadam - Outside Lanes Hamilton Ct- Nevada	Alternative 2 Macadam - Outside Lanes Hamilton Ct- Carolina	Alternative 3 Willamette Shore WSL ROW	Alternative 4 Willamette Shore Johns Landing Master Plan	Alternative 5 Macadam - Inside Lanes Hamilton Ct- Nevada	Alternative 6 Macadam - Inside Lanes Hamilton Ct- Carolina	Alternative 11 Outside- Mixed Traffic Hybrid 1- Macadam	Alternative 12 Eastside Exclusive Hybrid 2 - Exclusive	Alternative 13 New North Bound Macadam Lane
1. Marquam	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2. Lowell to Bancroft	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3. Bancroft to Hamilton	\$3,759,795	\$3,759,795	\$3,759,795	\$3,759,795	\$3,759,795	\$3,759,795	\$3,759,795	\$3,759,795	\$3,759,795
4. Hamilton to Hamilton Court	\$0	\$0	\$3,307,200	\$3,307,200	\$0	\$0	\$3,307,200	\$3,307,200	\$3,307,200
5. Hamilton Ct to Heron Point (2)	\$0	\$0	\$2,877,225	\$2,877,225	\$0	\$0	\$2,301,780	\$2,301,780	\$2,301,780
6. Heron Point to Boundary	\$0	\$0	\$1,907,978	\$0	\$0	\$0	\$0	\$0	\$0
7. Boundary to Riverpoint	\$0	\$0	\$5,128,695	\$0	\$0	\$0	\$0	\$0	\$0
8. Riverpoint to Carolina	\$0	\$0	\$1,819,474	\$1,819,474	\$0	\$0	\$0	\$0	\$0
8A. Riverpoint to Carolina	\$0	\$407,063	\$0	\$0	\$407,063	\$0	\$0	\$407,063	\$0
9. Carolina to Nebraska	\$0	\$2,552,237	\$2,552,237	\$2,552,237	\$2,552,237	\$0	\$2,552,237	\$2,552,237	\$2,552,237
10. Nebraska to Miles	\$681,582	\$2,082,613	\$2,082,613	\$2,082,613	\$2,082,613	\$681,582	\$2,082,613	\$2,082,613	\$2,082,613
11. Miles to Miles Place	\$2,071,875	\$2,071,875	\$2,071,875	\$2,071,875	\$2,071,875	\$2,071,875	\$2,071,875	\$2,071,875	\$2,071,875
12. Miles to Sellwood Bridge	\$1,490,804	\$1,490,804	\$1,490,804	\$1,490,804	\$1,490,804	\$1,490,804	\$1,490,804	\$1,490,804	\$1,490,804
13. Sellwood Br to Power Marine	\$121,550	\$121,550	\$121,550	\$121,550	\$121,550	\$121,550	\$121,550	\$121,550	\$121,550
14. Powers Marine to Tunnel	\$22,382,166	\$22,382,166	\$22,382,166	\$22,382,166	\$22,382,166	\$22,382,166	\$22,382,166	\$22,382,166	\$22,382,166
15. Tunnel land	\$4,082,126	\$4,082,126	\$4,082,126	\$4,082,126	\$4,082,126	\$4,082,126	\$4,082,126	\$4,082,126	\$4,082,126
TUNNNEL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16. Tunnel to Terwilliger	\$20,659,643	\$20,659,643	\$20,659,643	\$20,659,643	\$20,659,643	\$20,659,643	\$20,659,643	\$20,659,643	\$20,659,643
17. Terwilliger to Lake Oswego	\$2,320,704	\$2,320,704	\$2,320,704	\$2,320,704	\$2,320,704	\$2,320,704	\$2,320,704	\$2,320,704	\$2,320,704
Total	\$57,570,245	\$61,930,576	\$76,564,085	\$69,527,412	\$61,930,576	\$57,570,245	\$67,132,493	\$67,539,556	\$67,132,493

(1) Values shown are for entire length of the alternative. Where zero (\$0) is shown for segments 4-9 the alignment of the subject alternative does not include the WSL ROW.

(2) Alternatives 11-13 do not use the entire length of the WLS ROW in Segment 5. The value of Segment 5 for these alternatives was pro rated based on the proportionate length of the segment used by the alternative.

2.3.3 In-Kind Contribution of WSL ROW by Alternative: YOE Dollars

The current year value of the in-kind match by alternative shown in Table 8 is converted to YOE dollars based on the following assumptions:

- The donation of the WSL ROW will be required at the time of the FFGA
- Thus the value of the ROW can only be inflated to the assumed date of the FFGA, not to the mid-point of construction.
- As a baseline assumption, the value of the ROW would inflate at the same rate as cost escalation (4.8% per year).

The net result of these assumptions is that the current dollar estimate of WSL is converted to YOE dollars using a conversion factor of 1.20627. The results are shown in Table 9.

Table 9: Year-of-Expenditure Dollar Value of WSL ROW In-Kind Contribution by Alternative

Millions of Year-of-Expenditure Dollars

Alternative	Value of In-Kind ROW in YOES
Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada	\$69.4
Alternative 2: Macadam Outside Lanes between SW Hamilton Ct and SW Carolina	\$74.7
Alternative 3: Willamette Shore Line	\$92.4
Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment	\$83.9
Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada	\$74.7
Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina	\$69.4
Alternative 11: Macadam Outside Mixed Traffic Hybrid 1	\$81.0
Alternative 12: Eastside Exclusive Hybrid 2	\$81.5
Alternative 13: New Northbound Lane on Macadam: Hybrid 3	\$81.0

Note: Includes entire corridor from Portland to Lake Oswego, differences between alternatives only occur in segment 1 (Portland) portion of the corridor.

2.4 Capital Cost of Alternatives in YOE Dollars Including Value of In-Kind ROW Contribution

The total cost of the alternatives, including the value of the in-kind ROW contribution is shown in Table 10, which is derived by summing the ROW YOE values in Table 9 with the base YOE capital costs in Table 6.

It should be noted that if a value is placed on the in-kind ROW contribution, the capital costs shown in Table 10 will be used for cost-effectiveness (TSUB) purposes.

**Table 10: Year-of-Expenditure Dollar Capital Cost Estimates by Alternative with In-Kind ROW Valuation
Millions of Year-of-Expenditure Dollars**

Terminus Alternative:	Alternative 8	Alternative 9	Alternative 10
Segment 1 Alternative:	Albertson Terminus	Willamette Shore Terminus	Safeway Terminus
Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada	\$273.70	\$266.15	\$282.05
Alternative 2: Macadam Outside Lanes betwn SW Hamilton Ct and SW Carolina	\$280.87	\$270.52	\$286.42
Alternative 3: Willamette Shore Line	\$289.29	\$281.74	\$297.64
Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment	\$288.09	\$280.54	\$296.44
Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada	\$273.93	\$266.38	\$282.28
Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina	\$268.79	\$261.24	\$277.14
Alternative 11: Macadam Outside Mixed Traffic Hybrid 1	\$288.07	\$280.52	\$296.42
Alternative 12: Eastside Exclusive Hybrid 2	\$295.42	\$287.87	\$303.77
Alternative 13: New Northbound Lane on Macadam: Hybrid 3	\$292.39	\$284.84	\$300.74

Note: Segment 2 (Alternative 7), maintenance facility, and vehicle costs are the same for all alternatives and included in totals

3. Funding Plan Scenarios

The funding plan scenarios are based on the YOE capital costs including the value of the WSL ROW contribution shown in Table 10. The funding plan scenarios are based on the following assumptions:

- The New Starts share would be 60% of the total project, including the in-kind ROW contribution.
- There is currently \$1.546 million in local funds committed to Preliminary Engineering from Lake Oswego (\$56,000), Clackamas County (\$630,000), and Portland (\$860,000).³
- The WSL ROW will be used as an in-kind contribution at its value described above
- The “gap” that remains as the difference between the YOE cost and the above funding sources will be filled with “Other State and Regional Funds” such as other city and county funds, LIDs, MTIP funds, or state contributions.

This analysis does not explore the possible specific sources for the “Other State and Regional Funds.” Rather it simply sizes the gap that must be filled from these sources as information to be used in determining the financial feasibility of the alternatives.

³ Note that local funds currently committed to AA or DEIS are not applicable to the FTA funding plan, which starts with Preliminary Engineering.

Review Draft No. 1

The funding plan scenarios for the alternatives assuming an Albertson's terminus are shown in Table 11, for the WSL terminus in Table 12, and for the Safeway terminus in Table 13. Table 14 summarizes the gap for all of the alternatives.

Review Draft No. 1

Table 11: Funding Plan Scenarios: Albertsons Terminus Alternatives
Year-of-Expenditure Dollars

	Alternative 1 Macadam - Outside Lanes Hamilton Ct- Nevada	Alternative 2 Macadam - Outside Lanes Hamilton Ct- Carolina	Alternative 3 Willamette Shore WSL ROW	Alternative 4 Willamette Shore Johns Landing Master Plan	Alternative 5 Macadam - Inside Lanes Hamilton Ct- Nevada	Alternative 6 Macadam - Inside Lanes Hamilton Ct- Carolina	Alternative 11 Outside- Mixed Traffic Hybrid 1- Macadam	Alternative 12 Eastside Exclusive Hybrid 2 - Exclusive	Alternative 13 New North Bound Macadam Lane
New Starts Funds	\$164.22	\$168.52	\$173.57	\$172.86	\$164.36	\$161.28	\$172.84	\$177.25	\$175.44
Current Committed Local Funds	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55
In-Kind ROW Contribution	\$69.45	\$74.70	\$92.36	\$83.87	\$74.70	\$69.45	\$80.99	\$81.47	\$80.99
Other State and Regional Funds ("Gap")	\$38.49	\$36.10	\$21.81	\$29.82	\$33.32	\$36.53	\$32.69	\$35.15	\$34.42
	\$273.70	\$280.87	\$289.29	\$288.09	\$273.93	\$268.79	\$288.07	295.42	\$292.39

Table 12: Funding Plan Scenarios: WSL Terminus Alternatives
Year-of-Expenditure Dollars

	Alternative 1 Macadam - Outside Lanes Hamilton Ct- Nevada	Alternative 2 Macadam - Outside Lanes Hamilton Ct- Carolina	Alternative 3 Willamette Shore WSL ROW	Alternative 4 Willamette Shore Johns Landing Master Plan	Alternative 5 Macadam - Inside Lanes Hamilton Ct- Nevada	Alternative 6 Macadam - Inside Lanes Hamilton Ct- Carolina	Alternative 11 Outside- Mixed Traffic Hybrid 1- Macadam	Alternative 12 Eastside Exclusive Hybrid 2 - Exclusive	Alternative 13 New North Bound Macadam Lane
New Starts Funds	\$159.69	\$162.31	\$169.04	\$168.33	\$159.83	\$156.75	\$168.31	\$172.72	\$170.91
Current Committed Local Funds	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55
In-Kind ROW Contribution	\$69.45	\$71.91	\$92.36	\$83.87	\$74.70	\$69.45	\$80.99	\$81.47	\$80.99
Other State and Regional Funds ("Gap")	\$35.47	\$34.76	\$18.79	\$26.80	\$30.30	\$33.51	\$29.67	\$32.13	\$31.40
	\$266.15	\$270.52	\$281.74	\$280.54	\$266.38	\$261.24	\$280.52	\$287.87	\$284.84

Review Draft No. 1

Table 13: Funding Plan Scenarios: Safeway Terminus Alternatives

Year-of-Expenditure Dollars

	Alternative 1 Macadam - Outside Lanes Hamilton Ct- Nevada	Alternative 2 Macadam - Outside Lanes Hamilton Ct- Carolina	Alternative 3 Willamette Shore WSL ROW	Alternative 4 Willamette Shore Johns Landing Master Plan	Alternative 5 Macadam - Inside Lanes Hamilton Ct- Nevada	Alternative 6 Macadam - Inside Lanes Hamilton Ct- Carolina	Alternative 11 Outside- Mixed Traffic Hybrid 1- Macadam	Alternative 12 Eastside Exclusive Hybrid 2 - Exclusive	Alternative 13 New North Bound Macadam Lane
New Starts Funds	\$169.23	\$171.85	\$178.58	\$177.87	\$169.37	\$166.28	\$177.85	\$182.26	\$180.45
Current Committed Local Funds	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55	\$1.55
In-Kind ROW Contribution	\$69.45	\$71.91	\$92.36	\$83.87	\$74.70	\$69.45	\$80.99	\$81.47	\$80.99
Other State and Regional Funds ("Gap")	\$41.83	\$41.12	\$25.15	\$33.16	\$36.66	\$39.87	\$36.03	\$38.49	\$37.76
	<u>\$282.05</u>	<u>\$286.42</u>	<u>\$297.64</u>	<u>\$296.44</u>	<u>\$282.28</u>	<u>\$277.14</u>	<u>\$296.42</u>	<u>\$303.77</u>	<u>\$300.74</u>

**Table 14: Summary of Gap by Alternative
Gap in Millions of Year-of-Expenditure Dollars**

	Terminus Alternative:	Alternative 8	Alternative 9	Alternative 10
Segment 1 Alternative:		Albertson Terminus	WSL Terminus	Safeway Terminus
Alternative 1: Macadam Outside Lanes between SW Hamilton Ct and SW Nevada		\$38.49	\$35.47	\$41.83
Alternative 2: Macadam Outside Lanes betwn SW Hamilton Ct and SW Carolina		\$37.78	\$34.76	\$41.12
Alternative 3: Willamette Shore Line		\$21.81	\$18.79	\$25.15
Alternative 4: Willamette Shore Line-Johns Landing Master Plan Alignment		\$29.82	\$26.80	\$33.16
Alternative 5: Macadam Inside Lanes between SW Hamilton Ct and SW Nevada		\$33.32	\$30.30	\$36.66
Alternative 6: Macadam Inside Lanes between SW Hamilton Ct and SW Carolina		\$36.53	\$33.51	\$39.87
Alternative 11: Macadam Outside Mixed Traffic Hybrid 1		\$32.69	\$29.67	\$36.03
Alternative 12: Eastside Exclusive Hybrid 2		\$35.15	\$32.13	\$38.49
Alternative 13: New Northbound Lane on Macadam: Hybrid 3		\$34.42	\$31.40	\$37.76

Lake Oswego to Portland transit project

Environmental analysis open house questionnaire responses summary

DRAFT – May 27, 2009

154 comments were received in relation to the two environmental analysis open houses on May 14 and 19. The following is a tally of the responses and a detailed summary of the comments. Unless noted, the following statements were given by only one respondent.

In addition, **two e-mails** and **one letter** were received in May 2009. These comments are summarized at the end of this document.

Questionnaire responses

Where do you live?

- 57** Lake Oswego
- 58** Johns Landing or South Waterfront
- 12 Riverdale
- 5 Another area of unincorporated Multnomah or Clackamas County
- 21 Other
- 1 *no answer*

How do you [primarily or most often] commute to work or school?

- 63** Drive alone
- 4 Carpool
- 18 Transit (bus, MAX, streetcar)
- 22 Bike or walk
- 44 Don't commute
- 3 *no answer*

How often do you take transit?

- 19 Daily
- 17 Once a week
- 33 A few times a month
- 49** A few times a year
- 32 Never
- 4 *no answer*

Lake Oswego terminus options

Of the terminus options presented, which do you think should be studied further?

	Definitely consider	Maybe consider	Neutral	Maybe not consider	Definitely not consider	<i>no answer</i>
Safeway terminus	23	21	26	13	24	47
Foothills terminus	28	12	30	27	22	55
Albertsons terminus	50	20	23	3	9	49

Respondents were asked to share anything that they particularly like or do not like about each terminus option. This section provided a wide range of comments.

Safeway is favored for the following reasons:

- Five comments noted the opportunity for development in downtown Lake Oswego.
- Two comments stated that it would best serve downtown Lake Oswego and Lake Oswego residents.

Safeway is disfavored for the following reasons:

- Seven comments stated that the Safeway loop would add to the traffic problems through that area.
- Two comments noted that Safeway would reduce transit time too much.
- Two comments stated that it would encourage too much street parking in the area, one suggesting that a park and ride could be placed at a different location along the route.
- It would be invasive to existing infrastructure.

Foothills is favored because the streetcar would no need to cross Highway 43 and it might be a good option for a park and ride without adding to traffic on State Street. Foothills is disfavored because it would be too far away from neighborhoods and would encourage commuters to park and ride.

Albertsons is favored for the following reason:

- Three comments saw this as the best option for park and ride and other parking needs
- Six comments foresee south or west routes as the most likely for future traffic/transit needs; this terminus offers the best option for future expansion, mentioning a connection to West Linn.
- It would capture Lakewood neighborhood ridership.

Albertsons is disfavored for the following reasons:

- Three comments were concerned with congestion for the surrounding neighborhood.
- It would impact parking to the high-use shopping area and/or displace current businesses.
- The area offers a lack of development opportunity.

Other comments included:

- Two respondents stated that the streetcar should terminate in Johns Landing, with an enhanced bus available for further transport.
- The project should not include a large parking lot at the terminus; it should instead focus on bike and pedestrian access and bike parking.
- The project should consider urban solutions at terminus: create neighborhoods, not parking lots
- Parking will be an issue wherever the terminus is.
- Terminus should be at Albertsons with park and ride structures at terminus and at current trolley terminus.

Johns Landing alignment options

Of the potential alignments in Johns Landing, which do you think should be studied further?

	Definitely consider	Maybe consider	Neutral	Maybe not consider	Definitely not consider	<i>no answer</i>
Willamette Shoreline	59	4	9	8	53	21
Full Macadam in-street	53	13	10	8	38	33
Hybrid 1: Macadam in-street (Boundary to Carolina)	31	24	28	11	24	36
Hybrid 2 East side exclusive (Boundary to Iowa)	15	23	23	14	45	34
Hybrid 3: Macadam with new northbound lane (Boundary to Carolina)	22	26	26	19	23	37

Respondents were asked to share anything that they particularly like or do not like about each potential Johns Landing alignment. This section provided a wide range of comments that mostly focused on the use of the Willamette Shoreline or Macadam Avenue.

Willamette Shoreline is favored for the following reasons:

- Nine comments noted that it would capture the full value of the trolley right of way, one saying that the project would be too expensive otherwise.
- Eight comments stated that it would be the fastest option, one stating that to be successful, streetcar must move faster than it does through Portland, so it needs fewer stops and little or no shared right of way with cars

Willamette Shoreline is disfavored for the following reasons:

- Five comments mentioned concern about noise.
- Four comments stated that it would affect the livability for residents close to the alignment.
- Three comments said that it would impact property values along the alignment.
- It would not connect potential riders from the west side of Macadam.
- It is not feasible due to homes adjacent to tracks.
- It would interfere with the integrity of the neighborhood.
- There is a concern for the safety of children who live along the alignment.
- There is a concern about property acquisition costs along the alignment.
- There is concern about the riparian zone.

Streetcar on Macadam Avenue is favored for the following reasons:

- Seven comments noted that it would serve and help businesses along Macadam.
- It would have less impact to homeowners.
- A Macadam alignment could follow the streetcar model for the rest of the city (frequent stops in mixed-use traffic).

Streetcar on Macadam Avenue is disfavored for the following reasons:

- Ten comments pointed out that Macadam Avenue is already too congested to add streetcar to the mix.
- Two comments expressed concern about access to Macadam Bay's parking lot from Macadam.
- Macadam Avenue is not wide enough for any tracks
- There may be safety issues with debarkation next to busy highway.
- There is a concern about losing the trees on Macadam.

Specific comments regarding hybrid alignment options included:

- Hybrid 1 "shares the pain and disruption."
- Hybrid 2 allows for connection to Macadam businesses.
- Four comments stated concern that Hybrid 2 eliminates condo parking and reduces home value.
- Two comments stated that Hybrid 3 would give land swapping advantages.
- Hybrid 3 gives benefit to Macadam businesses while avoiding some peak-time traffic issues.
- One comment stated preference for the Willamette Shoreline, stating that if a hybrid is chosen, to choose the one with least proximity/use of Macadam.

Other comments included:

- Four comments preferred the fastest trip time, one stating that speed is necessary for popularity with LO residents.
- Two comments stated that Willamette Shoreline homeowners knew [about the easement] when they purchased their property.
- Two comments would like to see the Willamette Shoreline used as a bike/pedestrian trail (see below for other trail comments).
- A preference for alternatives that keep the streetcar away from close proximity of houses.
- The project should choose the most efficient alignment with input from the public.
- Any alignment will increase traffic on Macadam.

Respondents were asked to share any other ideas, concerns or questions about the project. Forty-six comments had to do with a trail through the corridor:

- Thirty-three comments stated that a bike/pedestrian trail should be a priority in the corridor.
- Three comments (tied to a Macadam alignment) stated that the Willamette Shoreline should be used for a bike/pedestrian trail.
- Two respondents asked for hike-friendly trails, one stating a preference for an unpaved trail and the other requesting a soft-surface trail that would suit hikers and bikes.
- Besides the comments specifically tied to the Albertsons alignment, four comments stated that the project should consider future possible rail connections to this line, three calling out the possibility of West Linn or Oregon City (one of whom stated that Lake Oswego should not house a huge parking lot for West Linn residents).
- Three comments stated that the Willamette Shoreline should not be used for streetcar or for a bike/pedestrian trail, two comments suggesting that the existing greenway trail be improved for bikes and pedestrians.
- A trestle should be built for bikes and pedestrians at Elk Rock to protect from falling rocks.

Other comments included:

- Four comments stated preference for an east-west connection: two stated that the streetcar should cross the Sellwood Bridge, one suggested a rail line to Milwaukie across the existing bridge, and one questioned the lack of a Lake Oswego-Clackamas connection as part of the project.
- Four comments offered variations on the idea that the project is not needed, won't be used and/or is a waste of money.
- Three comments would prefer river transit to be further investigated.
- Two comments questioned how a connection from Albertsons to Portland will reduce congestion along Highway 43.
- One comment questioned if it was worth it, asking if buses and the bus network wasn't the best option.
- Safety for older users with balance issues is a concern with streetcar (more so than with buses).
- Streetcar would not resolve the traffic problems associated with access to the Sellwood Bridge.
- Stops should be convenient for residents of First Addition and Evergreen (10-15 minute walk).
- One stop in Riverdale and no stops in Riverwood was recommended.
- Current streetcars are not comfortable for long trips.
- Place park and ride at old Cal's location on Broadway.
- The "forgotten bridge" should be used for a bike/pedestrian path to Milwaukie.
- There should be a bike/pedestrian bridge crossing Highway 43 close to the current trolley terminus.
- A southbound dedicated lane should be explored between Boundary and Carolina on Hood.
- One comment expressed dissatisfaction that the LOPAC decision has not been adequately reflected.
- One comment stated a complete dissatisfaction with the concept.

E-mails and letter

One e-mail addressed the conditions for bike commuters in the corridor and concerns that a trail that follows the existing trolley alignment would not feel safe and secure – especially in the early-dark winter months, requesting instead a safe bike lane along Highway 43.

One e-mail requested further exploration of adding a bike/pedestrian river crossing using the Portland and Western railroad bridge, especially in light of the scheduled 2-year closure of the Oregon City Arch Bridge.

One letter proposed jet boat river transit, using the same or similar crafts as the Willamette Jetboat Excursions that travel between Lake Oswego and Portland in 12 minutes, "make little noise, rile no citizens and give exhilarating rides."



Lake Oswego to Portland

TRANSIT PROJECT

Steering Committee
June 1, 2009

Lake Oswego Terminus Options

Opportunities and Constraints



Terminus Options



Streetcar – Albertsons terminus



Albertsons terminus option

Opportunities:

- provides the best opportunity for extending the streetcar further south in the future
- provides for redevelopment opportunities at the current Albertsons site
- most consistent with DTAAC recommendations

Constraints:

- streetcar proximity to Foothills and State Street
- Crossing under the freight tracks would require coordination with Portland and Western Railroad.



Streetcar - Safeway terminus



Safeway terminus option

Opportunities:

- allows for more transfer opportunities to the different bus lines in Lake Oswego
- circulates through the main commercial core of the Town Center
- allows for streetcar extension to west

Constraints:

- future southward extensions of the streetcar would not be likely
- Requires challenging trackwork to cross State Street
- Proximity to freight railroad tracks



Streetcar – trolley terminus



Trolley terminus option

Opportunities:

- potential for future extension of the streetcar line to the south
- could make use of the existing trolley barn as a storage and maintenance facility

Constraints:

- conflicts with spacing standards between the freight and trolley tracks
- Crossing under the freight tracks would require coordination with Portland and Western Railroad.



**PROJECT MANAGEMENT GROUP (PMG) RECOMMENDATIONS REGARDING
'RANGE OF ALTERNATIVES' TO BE CONSIDERED IN THE DEIS AND LAKE OSWEGO TERMINUS OPTIONS**

May 29, 2009

I. DEIS ALTERNATIVES

A. Effective June 1, advance the following options into the DEIS process on a “provisional” basis:

- No Build;
- Bus;
- Hybrid 1 – Macadam In-Street;
- Hybrid 3 – Macadam with New Northbound Lane; and
- Willamette Shore Line

B. During the month of June, work with ODOT, METRO, Tri-Met and other partner agencies, stakeholders and the FTA to determine which options to carry through to the completion of the DEIS. The focus of this effort will be on determining whether the following options are kept on the table:

Option	Decision Points
Bus	<ul style="list-style-type: none">• FTA feedback based on previous analysis of effectiveness of the bus option
Willamette Shore Line	<ul style="list-style-type: none">• Results of further review of traffic analyses, other factors and follow-on discussions• Outcomes of Johns Landing Stakeholder Meeting No. 4 and additional follow-up with key stakeholders• Assessment of NEPA risk of removal based on purpose and need• FTA feedback• Direction from Steering Committee at July meeting

II. LAKE OSWEGO TERMINUS OPTIONS

Assume the Albertson’s Terminus as the basis for the DEIS, subject to:

- Resolution of justification for, size and location of any park and rides to be developed adjacent to the Albertsons Terminus or elsewhere in Lake Oswego; and
- Addressing neighborhood impacts, including parking, traffic, noise, redevelopment and bike and pedestrian access.



Date: June 1, 2009
To: Lake Oswego to Portland Transit Project Steering Committee
From: Jamie Snook, Metro
Joseph Auth, ODOT
Subject: Johns Landing Refinement Study Traffic Analysis Result Summary

This memorandum summarizes the transportation analysis conducted for streetcar hybrid alignment options in the Johns Landing area of Macadam Avenue. The primary purpose of this study was to evaluate the potential impacts for each streetcar alignment with a focus on future motor vehicle and transit operations.

Metro and project partners conducted a traffic impact study during the Johns Landing Refinement Study. In addition, ODOT conducted an independent traffic analysis using VISSIM (a micro/visual simulation traffic analysis software). Below summarizes the key findings for each study.

Summary of Key Findings, as conducted by DKS associates, associated with the Johns Landing Refinement Study:

The Johns Landing Streetcar Hybrid Alignment Analysis evaluated traffic operations of two hybrid alignments Hybrid Option 1 – Macadam Avenue In-Street Outside Lane (Boundary St to Carolina St) and Hybrid Option 2 – Macadam Avenue Eastside Exclusive (Boundary St to Iowa St). The analysis resulted in the following conclusions:

- The Macadam Avenue/Boundary Street intersection would continue to operate with acceptable operations (level of service and volume/capacity ratio) with the addition of streetcar operations under hybrid option 1.
- The proposed Macadam Avenue/Carolina Street traffic signal under hybrid option 1 could fit into the existing coordinated signal system on Macadam Avenue. The overall existing greenband on Macadam Avenue would not be impacted by the proposed Carolina Street traffic signal.
- The existing signal progression provides a 55 second greenband (measured at Boundary Street) in the southbound direction during the PM peak hour. With the addition of streetcar operations under hybrid option 1, the southbound greenband would be reduced to 38 seconds.
- The future travel time estimates for Macadam Avenue (Hamilton Street to Nebraska Street) show the addition of streetcar operations under hybrid option 1 would add an average of approximately 22 seconds per vehicle to PM peak hour vehicle travel times.

Summary of Key Findings, as conducted by the Oregon Department of Transportation (ODOT):

ODOT conducted a detailed traffic analysis using VISSIM to better understand the traffic impacts and travel time implications with the proposed streetcar operations through Johns Landing. This analysis included the Willamette Shore Line (WSL), Hybrid Option 1 – Macadam Avenue In-Street Outside Lane (Boundary St to Carolina St), Hybrid Option 2 – Macadam Avenue Eastside Exclusive (Boundary St to Iowa St) and Hybrid 3: Macadam with New North Bound Lane (Boundary to Carolina). The analysis resulted in the following conclusions:

- The east leg of the Macadam Avenue/Boundary Street intersection experiences a long vehicle queue in 2025 study year that may impact the streetcar travel time. The Draft Environmental Impact Statement will look at ways to enhance the performance of the streetcar travel time through this intersection. Metro and ODOT traffic impact studies assume a split phase with opportunities to allow dual left-turning movements from the east leg for hybrid option 1 and 3.
- The Macadam Avenue/Bancroft Street/Hood Avenue intersection needs capacity improvements due to development on the South Waterfront in the 2025 study year. This intersection does not fall in the area of the hybrid alternatives, but the demand on Bancroft Street and Hood Avenue may limit availability to provide for traffic progression on the Macadam Avenue corridor.
- The Macadam Avenue/Taylor’s Ferry Road/Miles Street intersection needs capacity improvements due to demand to access Taylor’s Ferry Road. This intersection does not fall in the area of the hybrid alternatives, but the congestion at this intersection may limit availability to provide for traffic progression and travel time on the Macadam Avenue corridor.