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Metro | *Meeting Summary*

Lake Oswego to Portland Transit Project Steering Committee
Monday, June 1, 2009
11:00 a.m. – 1:00 p.m.
Metro Regional Center, Council Chambers

Committee Members Present

Carlotta Collette, Chair	Metro Council
Deborah Kafoury	Multnomah County
Douglas Obletz	Shiels Obletz Johnsen
Fred Hanson	TriMet
Jack Hoffman	City of Lake Oswego
Jason Tell	Oregon Department of Transportation
Lynn Anne Peterson	Clackamas County
Michael Powell	Portland Streetcar, Inc.
Robert Liberty, Vice Chair	Metro Council
Sam Adams	City of Portland

Committee Members Excused

Judie Hammerstad	Portland Streetcar, Inc.

Project Team

Alan Lehto, Ann Becklund, Brant Williams, Brian Monberg, Bridget Wieghart, Elissa Gertler, Jamie Snook, Joseph Auth, Karen Withrow, Leslie Hildula, Mauricio LeClerc, Michael Robert, Neil McFarland, Paul Smith, Ralph Drewfs, Rian Windsheimer, Rick Gustafson, Ross Roberts

I. CALL TO ORDER AND DECLARATION OF A QUORUM

Chair Carlotta Collette of Metro declared a quorum and called the meeting to order at 11:01 a.m.

II. APPROVAL OF MEETING MINUTES

MOTION: Chair Collette moved, seconded by Mayor Sam Adams to approve the May 7, 2009 minutes. Hearing no objections, the motion **passed**.

III. PUBLIC COMMENT

Chair Carlotta Collette opened the floor to public comment; none were presented.

IV. ACTION ITEMS/MEETING GOAL

Co-Chair Liberty called the committee's attention to the action items listed in the agenda.

V. JOHNS LANDING REFINEMENT ALTERNATIVES TO BE STUDIED IN DEIS

Ms. Bridget Wieghart of Metro presented the Comparison of Johns Landing Alternatives (included as part of the meeting record). The Johns Landing Alternatives included Johns Landing Refinement, Willamette Shore Line, Full Macadam, and Hybrid 1, 2 and 3.

Some of the key points presented were:

- Willamette Shore Line has the best travel times and ridership and is the lowest cost option because the right of way is owned. However it has the most neighbor impacts and the least economic development benefits and was the least favored option among Johns Landing stakeholders.
- East side running has the most property impacts and was the most expensive due to the need to purchase the right of way.
- The double track alternative is less expensive than the single track alternative as it requires less equipment.
- Traffic impact report results were consistent in showing limited traffic impacts in 2025.

The Committee discussed estimated ridership and reviewed the DKS Summary of Key Findings memo (included as part of the meeting record). Further redevelopment and streetcar ridership impact will be studied in the EIS.

Some key points of the discussion were:

- Boundary intersection modifications to accommodate the streetcar
- Challenge of analyzing rush hour impacts on travel time and road traffic

Ms. Karen Withrow of Metro appeared before the committee and presented the Public Involvement Report – Environmental Analysis Open House Questionnaire Responses Summary (included as part of the meeting record) featuring feedback and concerns received at both the Johns Landing and Lake Oswego open houses.

Feedback and concerns included:

- Travel time
- Right of way value
- Congestion, access, and room on Macadam
- Traffic impacts of hybrid and in-street options

Mr. Doug Obletz of Shiels Obletz Johnsen appeared before the committee and presented the Project Management Group Recommendation to the Steering Committee (included as part of the meeting record) which summarized the alternatives to be considered in the DEIS and Lake Oswego terminus options.

The Committee inquired about the inclusion and manner of contacting all parties who may be impacted by the project. Mr. Obletz outlined a program of open houses, mailings, etc. to ensure all options are clear to all parties. ODOT requested that outreach be expanded to include commuters further south in the corridor who might be affected by removal of the Willamette Shore Line option.

The Committee discussed possible risks involved in removing any alternatives prematurely. It was concluded that all alternatives will receive equal weight and analysis in conjunction with outreach to all concerned parties prior to any removal decisions. Some key points were:

- Neither the single track nor double track option through Johns Landing and the Willamette Shore Line are favored by the Johns Landing stakeholders.
- The Willamette Shore Line through Johns Landing remaining a viable alternative
- Review of ridership, cost effectiveness and objective standards of alternatives and phasing
- The minimal operating segment and entire line bus option for Lake Oswego would be provided for in the DEIS.
- Temporary and permanent terminuses are both being studied.
- Benefits of a longer Macadam exposure and potential redevelopment must include a review of local match.
- A study of a permanent terminus near the Sellwood Bridge is recommended.
- Hybrid option 2 is a possibility to keep the streetcar off Macadam and out of the middle of the housing areas.
- The study of a temporary or permanent streetcar terminus near the Sellwood Bridge with bus service to Lake Oswego was not part of the Johns Landing Refinement.
- The PSU to Sellwood and Sellwood to Lake Oswego options are still being developed for study in the DEIS per previous Steering Committee direction.

Councilor Liberty presented a summary of the Metro Councils deliberation on the alignments through Johns Landing. Metro Councilors Burkholder, Harrington and Park supported keeping the Willamette Shore Line alignment as one of the options under construction. Council President Bragdon joined the conversation later but agreed on this point at the meeting of the Metro Council.

Councilor Liberty said from his own perspective he wanted to keep the Willamette Shore Line option but felt the big issue with this segment is the trade-off between travel time (which affects ridership) and more development opportunity along Macadam.

Mayor Sam Adams reminded the Committee of his commitment to the stakeholders in Dunthorpe for a permanent terminus at the Sellwood Bridge. Councilor Liberty would like to review for inclusion in the discussion, what assurances were made (letters, etc.), to whom and when.

Chair Collette clarified that the decision before the Committee was whether or not to remove alternatives at the meeting. Mr. Obletz responded that the DEIS would allow for a natural outgrowth of more details for each of the options and discussions could be delayed until the Fall. However, slowing the schedule could limit the ability to capture federal funding. He suggested moving forward with 5 options and working with all partners to make a determination on removing any options prior to the next Steering Committee Meeting on July 8, 2009. The Committee will remain informed via e-mail as the outlying options are screened out after that meeting.

Chair Collette requested the removal the word “any” from the park and ride language in the Lake Oswego terminus options recommended by the PMG.

MOTION: Mr. Michael Powell moved, seconded by Ms. Lynn Anne Peterson to drop the full Macadam and Hybrid 2 options and adopt the PMG recommendations after the removal of the word “any” from the park and ride language in the Lake Oswego terminus options recommended by the PMG. Hearing no objections, the motion **passed.**

VI. LAKE OSWEGO TERMINUS ALTERNATIVES TO BE STUDIED IN DEIS

Ms. Jamie Snook of Metro appeared before the committee and presented Options and Evaluation Results (included as part of the meeting record).

The Albertsons and Safeway terminus options were presented as the most expensive options while having the most ridership and economic development potential. Mayor Jack Hoffman reported the Lake Oswego council and local neighborhoods are in favor of the Albertsons solution although there were some stakeholders concerns including:

- Parking in neighborhoods
- The character of businesses
- Traffic and travel time
- Street side parking loss
- Complexity of design working with freight tracks

Ms. Karen Withrow of Metro appeared before the committee and reported on the Public Involvement Report about park and ride location, size and design. Councilor Liberty asked about other Park and Ride options discussed with community which included shared park and ride and no park and ride options. Mr. Obletz stated park and ride questions were not likely to be resolved given the time allotted, however detailed responses regarding size, location and details of any potential park and rides would be available after the DEIS analysis was completed.

VII. UPDATE ON LAKE OSWEGO TRAIL REFINEMENT

Mr. Brian Monberg of Metro appeared before the committee and presented a trail refinement update noting work is being conducted in response to previous Committee direction. A staff working group convened in May 2009 and the trail designs are being reviewed. All information to date was presented at both Johns Landing and Lake Oswego open houses as stakeholder outreach will continue to advance trail concepts and design.

Three sections of trail were reviewed including South Waterfront to Sellwood Bridge, Sellwood Bridge to Lake Oswego and Lake Oswego. Recommendations should be presented at the next Steering Committee meeting on July 8, 2009.

VIII. UPDATE ON FEDERAL TRANSPORTATION LEGISLATION

Rick Gustafson of Shiels Obletz Johnsen appeared before the committee and presented an update on Federal Transportation Legislation (included as part of the meeting record). He reported that Congress and the Administration have a positive attitude towards transit funding, and that proposed Fast Starts legislation could have potentially beneficial impacts on this project.

Fast Starts is an effort to streamline streetcar projects and action was taken to set aside $300 million for streetcar projects. Everything is moving in the right direction but final results will be determined by Congress and the FTA in the coming months.

VI. ADJOURN

There being no further business, Chair Carlotta Colette adjourned the meeting at 12:57 p.m.

Meeting summary respectfully submitted by:

Michael Robert

Administrative Specialist

Date: 6/23/09

ATTACHMENTS TO THE PUBLIC RECORD FOR JUNE 1, 2009

The following have been included as part of the official public record:

Item	Topic	Document Date	Description	Document Number
I.	Agenda	6/1/09	Lake Oswego Steering Committee Meeting Agenda dated June 1, 2009	060109losc-01
II.	Meeting Summary	5/7/09	Approved Lake Oswego Steering Committee Meeting Minutes dated May 7, 2009	060109losc-02
V.	Alternative Matrix	5/27/09	Johns Landing Refinement Study Comparison of Johns Landing Alternatives	060109losc-03
V.	DKS Memo	6/1/09	To: Lake Oswego Steering Committee From: Jamie Snook and Joseph Auth Re: Johns Landing Refinement Study Traffic Analysis Result Summary	060109losc-04
V.	Response Summary	5/27/09	Lake Oswego to Portland Transit Project Environmental Analysis Open House Questionnaire Responses Summary	060109losc-05
V.	PMG Recommendation	5/29/09	Project Management Group Recommendation Regarding "Range of Alternatives" to be considered in the DEIS and Lake Oswego Terminus Options	060109losc-06
V.	Terminus Options	6/1/09	Lake Oswego Terminus Options	060109losc-07
VI.	Funding Legislation	Undated	Lake Oswego to Portland Transit Alternatives Analysis Funding Options and Issues for Streetcar Alternatives	060109losc-08

Lake Oswego to Portland Transit Project

PROJECT MANAGEMENT GROUP (PMG) RECOMMENDATIONS REGARDING THE 'RANGE OF ALTERNATIVES' TO BE CONSIDERED IN THE DEIS

July 8, 2009

On July 1, 2009, the PMG received and reviewed a draft memorandum from Shiels Obletz Johnsen (SOJ), the Project Manager for the Lake Oswego to Portland Transit Project, entitled *"Further Evaluation of the Johns Landing/Willamette Shore Line"*, copy attached.

The memorandum outlined the attributes and constraints associated with the Willamette Shore Line design option for streetcar in the Johns Landing Neighborhood consistent with the direction received from the Steering Committee on June 1, 2009.

The recommendations contained in the memorandum, including the recommendation not to include the WSL alignment in the DEIS, were supported by PMG members representing the City of Portland, City of Lake Oswego and Portland Streetcar, Inc. However, because TriMet, Metro and Clackamas County representatives felt that the FTA would not support the elimination of the WSL alignment at this time, they did not support the Project Manger's recommendation. ODOT did not support the recommendation because they believe a non-Macadam build option must be included in the DEIS. Ultimately, the PMG agreed to the following recommendation with regard to the options to be considered in the DEIS:

1) The DEIS should consider the following alternatives and design options:
    - No build
    - Streetcar with three (3) design options:
        - Willamette Shore Line
        - Hybrid 1 – "Macadam In-Street"
        - Hybrid 3 - "Macadam with New Northbound Lane"
2) The following options are not recommended to be considered in the DEIS:
    - Enhanced Bus
    - Full Macadam - Macadam in-street running from Hamilton to Nevada
    - Hybrid Option 2 – "East Side Exclusive"
3) Metro and TriMet staff should be directed to immediately commence and expeditiously complete discussions with FTA Region X as necessary to secure their concurrence with the foregoing.
4) SOJ should finalize the memorandum and provide to Metro and TriMet for use in preparation of the DEIS and for discussion with FTA as appropriate.
5) Project staff should immediately communicate the outcomes of Steering Committee action to Johns Landing Stakeholders and other interested parties.

SHIELS | OBLETZ | JOHNSEN

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M E M O R A N D U M

TO: Lake Oswego to Portland Transit Project
Project Management Group

FROM: Douglas L. Obletz, Project Manager

DATE: July 6, 2009

SUBJ: Lake Oswego to Portland Transit Project

RE: Further Evaluation of the Johns Landing/Willamette Shore Line Design Options

BACKGROUND

In 2005 through 2007, Metro, working with regional partners, undertook an Alternatives Analysis (AA) to study potential transit modes and alignments for provision of improved transit service in the Lake Oswego to Portland transit corridor. The AA resulted in the identification of bus and streetcar alternatives along with several alternative alignments in the Johns Landing neighborhood. One key result of the AA process was the identification of potential issues related to the Full Macadam and Willamette Shore Line (WSL) options as preferred by the Steering Committee, and a stated desire by the project partners to explore potential 'hybrid" alternatives in a later phase of the project.

Following a recommendation by the project's Steering Committee, on December 13, 2007, the Metro Council adopted, by Resolution No. 07-3887A, the report entitled *Recommendation Alternatives to be Advanced into a Draft Environmental Impact Statement Work Program Considerations* (amended November 19, 2007). The Metro Resolution and Work Program Considerations specifically directed that the following relative to preparation of a Draft Environmental Impact Statement (DEIS):

- Streetcar mode should be advanced into the DEIS
- Bus Rapid Transit (BRT) should *not* be advanced into the DEIS
- Enhanced bus alternative should be developed and advanced into the DEIS

With regard to alignments, the Metro resolution directed both the WSL and the SW Macadam alignments should be advanced for further study. At the same time, The Metro Council provided the following direction:

> *"The Metro Council finds that the PMG [Project Management Group] should undertake a Johns Landing Alignment Refinement Study that would precede the start of the DEIS. This study would support the DEIS detailed definition of alternatives and should focus on:*
>
> *a) The operational, design and cost trade-offs between the various alignment options in the Johns Landing segment.*
>
> *b) Financial mechanisms to capture the full value of the Willamette Shore Line so that the current value of the WSL right of way could be used to leverage federal dollars and be applied to a project as local match. The mechanisms could include purchase by adjoining property owners, formation of a local improvement district and/or a right of way trade that could be counted as local match.*
>
> *c) Design solutions through and/or around the most constrained parts of the Willamette Shore Line alignment.*
>
> *d) Initial operating concepts for the Streetcar in Macadam Avenue that address ODOT concerns regarding shared traffic operations.*
>
> *e) Refinement of temporary and permanent Johns Landing terminus locations.*
>
> *f) Funding for the refinement study should be equitably shared by participating agencies."*

ALTERNATIVES ANALYSIS (AA) PROCESS

The AA process that was conducted in 2005-7 identified three (3) alignments for constructing streetcar in Johns Landing:

- The WSL right-of-way the entire distance between Hamilton and Nebraska;
- The Macadam Avenue Corridor ("Full Length Macadam") from Hamilton to Nevada; and
- The Johns Landing Master Plan alignment located on an alignment defined in City code documents.

It was apparent that each option represented numerous impacts that were of concern to project participants:

- The WSL option avoided the traffic congestion on Macadam but caused impacts in the residential portion of the area. The WSL option was of particular concern because the right-of-way is narrow and the residential condominiums are so close to the right-of-way that the impacts could be difficult to mitigate. Specifically, the WSL traverses several multi-unit condominium complexes composed of six (6) condominium associations. Among the main features of these residential complexes are unobstructed views and access to the Willamette River, and open, unfenced landscape features. These elements, along with many individual condominium units, could be impacted by development of the WSL as a regional rail corridor. Moreover, the constraints on the right-of-way prevented the ability to provide a station reducing the accessibility to transit. Significant commercial properties on Macadam would not be served effectively by the WSL option.

- The Macadam-only streetcar alignment was able to serve commercial development sites along the corridor and provided better access for the neighborhoods immediately west of Macadam. At the same time, it was recognized that the Macadam Avenue Corridor option would utilize a State Highway that had considerable traffic that would affect transit service and vice-versa.

- The AA also studied the original Johns Landing Master Plan alignment, which was developed during the original planning and construction within Johns Landing. This alignment had substantial impacts to condominiums, parking and commercial uses and was not well received by the neighborhood when reviewed during the AA process.

These concerns were among the key reasons that a "refinement study" was requested.

REFINEMENT STUDY

Since December 2008, Metro, TriMet, the cities of Portland and Lake Oswego, Multnomah and Clackamas counties and the Oregon Department of Transportation (ODOT) have been engaged in a "refinement study" with regard to design options for accommodating streetcar within the Johns Landing neighborhood. This study was intended as a precursor to, and as a means to inform and shape the process for, preparation of a DEIS. A DEIS is required in order for a future project to be considered for Federal funding through the Federal transit Administration (FTA).

The refinement study process has involved identification of potential alternative, or "hybrid", design options that would utilize an alternative alignment to the WSL within a defined area of the Johns Landing neighborhood, generally from SW Hamilton Street to S.W. Carolina Street, a distance of roughly three-quarters of a mile. This "area of concern" results from the proximity of the WSL alignment to a number of residential condominium complexes in the neighborhood. The overall objective of the refinement phase was to identify one or several hybrid alignments and to bring the study of these alignments up to the same level of detail as the alignments studied in the AA.

The refinement phase resulted in the identification of three (3) apparently viable hybrid options:

- Hybrid 1 – "Macadam In-Street"
- Hybrid 2 – "East Side Exclusive"
- Hybrid 3 – "Macadam with New Northbound Lane"

These options were analyzed during the refinement phase and preliminary conceptual design work and evaluation of these options were brought up to the same level of detail as the other options studied in the AA phase. These 'AA options' included:

- Willamette Shore Line (WSL)
- Full Macadam In-Street (Hamilton to Nevada)

The hybrid options, along with the AA Options, were evaluated against a set of criteria (See Appendix A). In addition, a total of four meetings were held with neighborhood stakeholders to review the design options in the Johns Landing neighborhood.

Work on the refinement study was largely completed in June. A report summarizing the overall outcomes of the refinement phase is forthcoming from Metro.

As you are aware, in order to put the project in the position to capture emerging federal funding opportunities, a rigorous and expedited schedule was put in place for completion of the DEIS. Preliminary work on the DEIS commenced June 1. Following the direction from the PMG to advance as expeditiously as possible through the DEIS and preliminary federal funding process, the PMG expressed a desire to narrow design options as much as possible in order to expedite the DEIS analysis and simultaneously advance discussions with the neighborhood regarding the planning and funding for the project. In order to accomplish this, a narrowing of options, subject to a number of critical considerations, was deemed desirable by the PMG.

STEERING COMMITTEE DIRECTIVE

On June 1, 2009, the Lake Oswego to Portland Transit Project Steering Committee approved the following based on a recommendation forwarded by the PMG:

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

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

2. During the month of June, work with ODOT, Metro, TriMet 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	• FTA feedback based on previous analysis of effectiveness of the bus option
Willamette Shore Line	• Results of further review of traffic analysis, other factors and follow-on discussions • Outcomes of Johns Landing Stakeholder Meeting #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

The Steering Committee agreed to further review the options for streetcar in the WSL at its July 8th meeting in order to determine whether or the option would be considered formally in the DEIS. To accomplish this analysis, this report is being prepared along with evaluation of the design considerations for the WSL alignment.

SCOPE OF ANALYSIS

Pursuant to direction from the PMG, The following summarizes the scope of this analysis:

1) Summarize key attributes of the WSL option, utilizing the outcomes of the Refinement Phase analysis, including results of the matrix analysis of Johns Landing Alternatives. From this previous analysis, specifically identify:
   a) Measured benefits of the WSL from the perspective of *Streetcar Operations, Streetcar Performance, Financial Feasibility* and *Traffic Impacts*; and
   b) Opportunities and constraints related to *Accessibility and Development Potential, Sustaining of Existing Neighborhoods* and *Natural Resources*.
2) Summarize key outputs of the ODOT and DKS traffic work;
3) Prepare updated plans and related analyses (to the same level of detail as those prepared for the Hybrid Options) that would serve to:
   a) Identify potential motor vehicle, pedestrian and bicycle crossings and proposed consolidation of such crossings.

i) Identify potential accessibility issues related to WSL stations through private property (identify easements or ROW needed to access stations);

4) Identify potential impacts to the proposed Lake Oswego to Portland Trail (under both the single and double tracked versions of the WSL); and

5) Provide maps and photos (including previously prepared simulations) showing the relationship of the WSL to commercial and residential development.

STUDY AREA AND OPTIONS UNDER CONSIDERATION

The area in question with regard to the WSL option is the section of the right of way generally from SW Hamilton to SW Nevada. Hybrid 1 and 3 options leave the right of way and join Landing Drive and access Macadam for approximately 0.5 miles-- operating in-street for that portion. The hybrid options then return to the Willamette Shore right of way at SW Carolina Street. These options have been reviewed technically and two of the hybrid options considered are recommended to be included in the DEIS.

EVALUATION OF THE WILLAMETTE SHORE LINE OPTION

Evaluation of the Willamette Shore Line during the Refinement Phase resulted in the identification of a series of potential attributes and benefits (see Appendix A for additional detail and comparison of the WSL to the other options under consideration). For the purposes of this report, criteria that result in substantial advantages or disadvantages for the WSL are further elaborated below:

Key Advantages:

Streetcar Operations:	
Travel time	Preliminary studies indicated that the WSL could be the fastest of the options under consideration. This is because the streetcar would not need to wait at signalized intersections to access to/from Macadam Ave. and would avoid traffic conflicts on Macadam. However, this advantage is offset to some degree by the fact that the WSL alignment would potentially have one fewer stop within Johns Landing.
Reliability of service	Given the fact that the WSL provides what amounts to an "exclusive guideway" through Johns Landing, the WSL is deemed to have the opportunity for reliable transit service. Streetcar operations on the WSL would not be subjected to the traffic delays and congestion on SW Macadam Ave.
Ability to expand service	The WSL provides for a lower ability to expand service if single track through Johns Landing and a good

	opportunity for service expansion if double tracked.
Streetcar Performance:	
Ridership/operating Costs/cost/ride	The above factors all contribute to the WSL having high performance characteristics relative to the other options for service between Lake Oswego and Portland. However, these beneficial operating characteristics are partially offset by the fact that service within Johns Landing and between Johns Landing and PSU is less favorable due to the fact that the WSL would potentially have one fewer stop than the hybrid alignments.
Financial Feasibility	
Capital cost	On a preliminary basis, the WSL would have the lowest capital cost of the options under consideration. (Note: capital costs reflect estimated costs of mitigation measures.)
Maximize local match potential	The WSL would generate the highest amount of local match due to the fact that the R-O-W is already in public ownership and can be used as local match. At the same time, moving off the WSL will result in the loss of the local match represented by the portion of the ROW not utilized for the project. This will result in a higher level of required 'cash' local match.
Traffic Impacts:	
Traffic progression	Because the WSL is located entirely off the street system, there would be no change to traffic progression on Macadam.
Auto travel time	For the above reason, there would be no impact on auto travel time on Macadam.
Acceptable level of service (LOS)	For the above reason, there would be to impact to the traffic LOS on Macadam Ave.
Traffic signal modifications required	For the above reason, the WSL would not require any traffic signal modifications.
Work zone/construction staging impacts	For the above reason, there would be no construction impacts on existing traffic operations
Safe operations for bicycles and motorcycles	The exclusive nature of the transit right of way through Johns Landing reduces potential track conflicts with bicycles and motorcycles.

Key Disadvantages:

A number of disadvantages compared to other options were identified. They include:

Accessibility and Development Potential:	
Bicycle and pedestrian access to stops and the Willamette riverfront	Use of the WSL would result in greater limitation to access to the riverfront. Pedestrian and bicycle access to the proposed stop at Boundary street would require additional ROW acquisition or an easement across private property.
Access to commercial, residential & employment nodes	The WSL is the furthest away from commercial nodes and residences on the west side of Macadam where the highest most of the residential uses in the neighborhood exist.
Development potential	Use of the WSL is estimated to result in an additional 1,563,000 SF development, 620 housing units and 1,890 jobs— the lowest if the options under consideration.
Sustain Existing Neighborhoods:	
Compatibility with existing development	The use of the WSL would result in the greatest level of potential negative impacts and proximity issues to existing residences in the Johns Landing district. Specifically, the WSL alignment will bring streetcars within as little as 10' of some residential units and will pass in front of numerous residential units that were sited and constructed to take advantage of river views. (See Appendix D for photographs.) The full use of the WSL, i.e., in the double track configuration, will result in removal of some mature landscaping. Overall, developed of the WSL will significantly impact the unique, riverfront character of the residential areas of Johns Landing.
Right-of-way impacts	Potential right of way impacts with single track only at stop locations; potential right of way impacts if double track only at stops.
Off-street parking impacts	Potential impacts to existing parking which is located across WSL right of way.
Noise/vibration impacts	Particularly in the single-track option, there is the potential for noise impacts resulting from crossing gates. Both single and double track options could result in noise and vibration issues due to the very close proximity of the rail ROW to residential units. (See Appendix D for photographs.)
Visual impacts	Most potential visual impacts to development adjacent to WSL; condos were designed to face the water. (See

	Appendix D for photographs.)
Bicycle & pedestrian conflicts	Most potential conflict; would require separated guideway and separated crossings on the WSL. Existing crossings on the WSL would remain, but there would have to be special crossing installed, possibly including 'z' crossing, gates, warning signs and actuated warning devices.
Impacts to Lake Oswego-to-Portland trail	If double tracked, would require using existing greenway, street connections, and additional right of way for trail.
Natural Resources	
Natural resources factors	See Appendix A. In general, due to the proximity of the WSL to the Willamette River and its floodplain, the WSL has greater potential natural resources impacts than the other options under consideration.

In summary, the WSL option provides the opportunity for faster overall travel time within the Lake Oswego to Portland Transit Corridor. Faster travel times result in the potential for higher transit ridership, particularly from the Lake Oswego area, and the benefits of lower operating costs and cost per ride. In addition, the WSL has the lowest capital cost and highest local match potential of the options under consideration. The WSL option also has benefits resulting from the fact that there would be no impact to traffic on SW Macadam Avenue.

On the other hand, the WSL generates socioeconomic impacts, visual, noise and vibration impacts, and impacts to the Lake Oswego to Portland Trail and access to the Willamette River. The WSL has the greatest impacts on existing development and would generate less redevelopment than the hybrid options. The WSL provides less accessibility to transit than the hybrid options. Mitigation for these issues may be identified during the DEIS process.

SUMMARY OF RESULTS OF METRO AND ODOT TRAFFIC ANALYSES

During the course of the Refinement Phase, Metro commissioned a traffic analysis by DKS. The key findings of this analysis included:

- 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. Future degradation in performance would be due to growth in traffic volumes, not streetcar operations through the intersection.
- 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 traffic signal.
- A southbound streetcar pullout lane on Macadam Avenue at Carolina Street would avoid causing vehicle queues by providing a place for the streetcar to wait for the exclusive traffic signal phase.

- 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.
- The Sellwood Bridge sensitivity analysis found the planned improvements would potentially reduce the southbound vehicle queues on Macadam Avenue during the PM peak hour significantly.
- On Macadam Avenue, Bus Route #35 currently provides 12-minute headways to 11 bus stops in the southbound direction during the PM peak hour. This results in five buses per direction per hour with an average dwell time of 8 seconds (ranging from 4 to 40 seconds at each bus stop.

Toward the end of the Refinement Phase ODOT commissioned its own, independent traffic analysis by Parson Brinkerhoff, which utilized the VISSIM modeling technique. The results of this analysis were presented at the end of May to the PMG. In general, ODOT concluded that: a) the results of their independent analysis comported well with the DKS analysis; and b) that streetcar operations within Macadam Avenue were not fatally flawed from the perspective of ODOT staff. Specifically, ODOT staff has indicated that there are "no obstacles in obtaining signal and signal modification approvals at this time related to running streetcar in Macadam".

EVALUATION OF ISSUES ASSOCIATED WITH THE WSL & HYBRID OPTIONS

The following summarizes some of the key issues associated with the WSL option:

- **Land Use Policy:**
  a) **Comprehensive Plan of the City of Portland:** The City's zoning code and Transit Service Plan (TSP) reference the use of the WSL for future regional light rail service. However, the hybrid options service the higher density commercial properties in the neighborhood and avoid the conflicts with higher density residential properties located in the Willamette Shore corridor. The Johns Landing community developed after the rail right-of-way had been established. The northern portion of the right of way is surrounded by commercial development that will be well served by the improved access with minimal impacts. South of Heron Point, the right of way is surrounded by residential development and experiences considerable pedestrian activity, particularly between residential areas and the Willamette riverfront. The commercial development is located on Macadam, which is the main street for the neighborhood. The hybrid is capable of providing direct access to the commercial properties, which can serve as a catalyst for build of the comprehensive and considerable increase in density.

b) **2040 Main Street:** This corridor is identified as a 2040 Main Street. Metro defines Main Streets as areas with commercial activity and good transit access. The hybrid options are more appropriately located to serve the Main Street area of the corridor.

c) **ODOT Special Transportation Area (STA).** This segment of Macadam is part of a STA. STAs are State highway segments that are recognized to have a local main street function. In STAs there is a desire to balance local access and circulation. Among the local access needs include providing adequate pedestrian, bicycle and transit access. The hybrid options are consistent with the STA designation.

- **Economic Development:** The hybrid options are being considered, in part, because the potential for economic development is greater than the Willamette Shore option. Several issues arise with regard to the potential for additional development. First, the WSL is not located adjacent to the commercially zoned property on Macadam. Economic studies have shown that higher density development occurs within one to three blocks of the streetcar, with the first block having the most economic development potential and a graduated impact over three blocks. Secondly, the WSL also is unable to provide a stop between Boundary and Nebraska, which will further increase the distance of streetcar service from residential and commercial properties.

- **Transit Access:** The Corbett Terwilliger neighborhood located west of Macadam in John's Landing is a mature, higher density neighborhood with considerable transit ridership potential. The hybrid options extend the quarter mile access to cover almost the entire neighborhood. The ability to add the Pendleton stop with the hybrid options further extends the transit afforded to the neighborhood. The WSL alignment can provide stops at Boundary and Nebraska. Unlike, the hybrid options, a potential or optional stop at Pendleton cannot be afforded under the WSL option. If a stop is not located at Pendleton, the walking distance to the streetcar stops reduces the area that is accessible within a quarter mile.

- **Greenway Trail Expansion:** The State of Oregon has established a statewide priority of preserving and enhancing the Willamette River Greenway. The Greenway in Johns Landing established with the current development is recognized to have constraints and conflicts between bicycle and pedestrian uses. The existing trail in this segment is within the floodplain, is steep in some areas, has blind corners, and has very limited right-of-way opportunities to be improved. There is an opportunity to enhance the greenway trail by using portions of the WSL not used for streetcar to allow for improved bicycle access therefore reducing the conflicts on the waterfront trail. This option is removed by the use of the WSL for streetcar.

- **Neighborhood Enhancement:** The WSL Streetcar option would require fencing in portions of the right of way to enable adequate speeds and assure safe operations. The fencing would then separate the residential community and limit access to the Willamette River Greenway. In other words, the more fencing the less access the less fencing the more safety issues associated with the operation.

- **Transit Access:** Either the single track or double track options remove the ability to establish a stop near Pendleton as there is no existing public access to the potential stop

location. It may be impossible to establish such access given the physical layout and land ownership in the vicinity. As such, the access to the streetcar from the Corbett Terwilliger neighborhood is significantly impacted for the ¼ mile distance from the stop. The service profiles provided by TriMet show the reduced access which is likely to result in reduced ridership. A public easement or acquisition of private land is also needed for the public to be able to access the stop at Boundary. In addition, existing modeling technologies do not allow a full accounting for streetcar ridership generated in a built, urban environment. However, the lack of stops within the Johns Landing district with the WSL option is limited; and therefore, "local" ridership from within the district would seem to be negatively impacted.

- **Economic Development:** The Boundary stop is the closest stop to the highest development potential for the area. The Water Tower shopping center is located more than 500 feet from the proposed Boundary St. stop. There are numerous properties located in or around Water Tower that represent the most significant redevelopment opportunity in the corridor. The hybrid options will provide a stop much closer to the Water Tower, likely on Macadam and or on Boundary at Macadam.
- **Trail:** Both Willamette Shore options would eliminate the potential of using the right of way to enhance the Willamette Greenway Trail.
- **Neighborhood Connectivity:** The fencing and crossing controls need to be evaluated in regard to the limitations that are placed on pedestrians. Access to the Willamette River Greenway is highly desired by the neighborhood. Adding fencing and controlled crossings would further impact the connectivity of the Greenway to the neighborhood.

DESIGN ISSUES TO BE ADDRESSED GOING FORWARD

There are a number of significant design issues that need to be addressed should the WSL be one of the design options considered in the DEIS. These include:

- **Single Track or Double Track?** There is currently two design approaches for the WSL: single track and double track. It is recommended that one be selected as the recommended design approach to enable a more accurate evaluation and comparison of the option. The double track option appears necessary to assure expansion capacity for the future and adequate travel time. The double track may require additional right of way where fencing is recommended. The single track is more expensive, requires controlled crossings, fencing, etc. that will significantly increase the impacts (The areas requiring additional fencing and pedestrian/vehicle controls are shown on the plans included in Appendix B).
- **Design Criteria:** If the WSL is to be carried forward into the DEIS, it is recommended that the design criteria be developed for this right of way particularly for the crossings and fencing. Fencing is a critical issue for the neighborhood in assessing the impacts. Fencing protects the right of way for safety but separates a good portion of the residential from Greenway access. Portrayal of the design is essential to present to the neighborhood.
- **Crossings:** If the WSL is carried forward into the DEIS, the conceptual design should designate areas for auto crossings and pedestrian crossings. The auto crossings can be stop

signs but consideration must be given to the streetcar operational controls with regard to its operations. At a minimum, 10-15 mph should be specified for the stop sign crossings. Consideration may be given to having stop signs for streetcar to maximize safety. Similar requirements and protocol need to be established for the pedestrian crossings.

COMMUNITY FEEDBACK

On June 18, 2009, a fourth, lightly attended stakeholder meeting was held with stakeholders in the Johns Landing neighborhood. During the course of the meeting, updated plans for both single and double track versions the Willamette Shore Line design option were presented.

In general, the feedback from the participants was that the hybrid alignments represented far more acceptable options for the community than either the Macadam or the WSL options. Comments from an open house held in Johns Landing reinforced the strong rejection of local residents and stakeholders to this option. Comments received from the stakeholders present at the stakeholder meeting generally found that, between the single and double track options, the double track option was probably the one that should be carried forward for additional analysis, should it be determined that the WSL cannot be dropped from consideration in the DEIS. The reasons stated for this included:

- The double track was able to reduce the amount of fencing along the right of way; and

- The double track included stop signs as intersection controls which would be much more compatible with the neighborhood and would eliminate the need for traditional railroad crossing gates.

FTA COMMUNICATIONS

A conference call briefing with Region X Federal Transit Administration was held on June 15th to discuss the number of options to be considered in the DEIS. The progress on the alternatives analysis, refinement study, and preliminary recommendations on the alternatives to be considered were discussed. Additional, follow-on discussions with FTA, particularly with regard to NEPA-related considerations, are anticipated in the near future. FTA feedback on NEPA-related issues has not been received as of the date of this memorandum.

SUMMARY AND CONCLUSIONS

The argument in favor of dropping the WSL design option from the DEIS is relatively straightforward:

- The AA conducted by Metro had two streetcar options for Johns Landing: Willamette Shore Line and Full Macadam. Both have serious shortcomings, which caused debate at the Steering Committee meetings. A refinement analysis was recommended, as these two options needed more work.

- The Refinement Analysis successfully identified several viable hybrid options which took the best of each option from the AA and created a third alignment (with design variants) that appears to have substantial benefits when compared to the earlier options.

Now the Steering Committee needs to act on the options to be included in the DEIS.

The identification of hybrid options on Macadam has created the opportunity for a "win-win" situation for alignments with the advantages of the hybrids being:

- The best transit access of any of the options;
- An alignment that serves the highest density areas of commercial in the district;
- Minimizes loss in travel time from the Willamette Shore Line (less than 3 minutes); and
- The hybrid options enjoy strong neighborhood support.

At the same time, the PMG should remain cognizant of the influence that FTA will have on the options that will ultimately be included in the DEIS. Based on very preliminary discussions with FTA, it appears that there could be at least three potential outcomes from follow-on discussions with FTA:

- FTA rejects the outcomes of Metro's earlier AA efforts and requests additional technical work prior to moving forward with the DEIS
- FTA directs that the bus, Full Macadam and WSL options be included, along with Hybrid Options 1 and 3; or
- FTA concurs with this report and a potential Steering Committee endorsement of same by agreeing to carry only the No Build and Hybrids 1 & 3 in the DEIS.

The former two outcomes will obviously have a substantial impact on the on-going work and the intended schedule for completion of the DEIS.

RECOMMENDATIONS

Recommended alternatives for the DEIS:

- No build
- Streetcar alternative with two (2) design options:
  - Hybrid 1 – "Macadam In-Street"
  - Hybrid 3 - "Macadam with New Northbound Lane"

Not recommended to be considered as alternates or design options in the DEIS are the following:

- Enhanced Bus
- Streetcar design options:

- Willamette Shore Line
- Hybrid 2 – "East Side Running"
- "Full Macadam"

The bus option has received no support among the participants. The operation of the bus in the Highway 43 corridor is slower, not possible to enhance with right of way improvements, and would not support additional economic development. Consequently, the No Build option would be very similar to a bus option.

The WSL from SW Boundary to SW Carolina is recommended for elimination from further consideration because it is not a viable transit option for this corridor. The refinement study conducted following the initial alternatives analysis called for investigation of options that would improve transit access, support the local development and limit the traffic impacts of Macadam. The refinement process was successful is identifying two viable options for the streetcar option that more effectively provide transit service access for the entire neighborhood, future development opportunities and limit the traffic impacts from Macadam. These compromise options appear to have strong support from the City of Portland, the businesses in the area and residents.

At the June 1, 2009 Steering Committee Meeting, Hybrid 2 ("East Side Running") was eliminated from further consideration. Hybrid 2 resulted in significant impacts to the existing landscape buffer and privately owned parking along the west side of the condominiums, was the most expensive of the hybrids and was not supported by stakeholders.
Similarly, the Steering Committee decided on June 1st to eliminate further consideration of the "Full Macadam" option. The "Full Macadam" option would result in the highest level of impact to traffic operations on Macadam Avenue and would generate the lowest level of local match. A preliminary financial analysis of this option indicated that development of streetcar under the "Full Macadam" option would not be financially feasible.

NEXT STEPS

Submit the recommended options to the Federal Transit Administration and continue forward with completion Draft Environmental Impact Statement by November 2009.

Please feel free to contact me if you have any questions on the foregoing.

DLO/pb

APPENDICES:

A. Comparison of Johns Landing Design Options (Evaluation Matrix)
B. Updated Drawings of Willamette Shore Line Option
C. Maps of Walk Access to Stops
D. Photos of Willamette Shore Line Proximity to Existing Condominiums

APPENDIX A

EVALUATION MATRIX

Lake Oswego to Portland TRANSIT PROJECT

JOHNS LANDING REFINEMENT STUDY

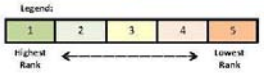
COMPARISON OF JOHNS LANDING DESIGN OPTIONS

Updated July 6, 2009

DRAFT

	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
Estmated 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	$26,003,866	$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 - concerns with South Portal/congestion
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 potnetial 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

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.



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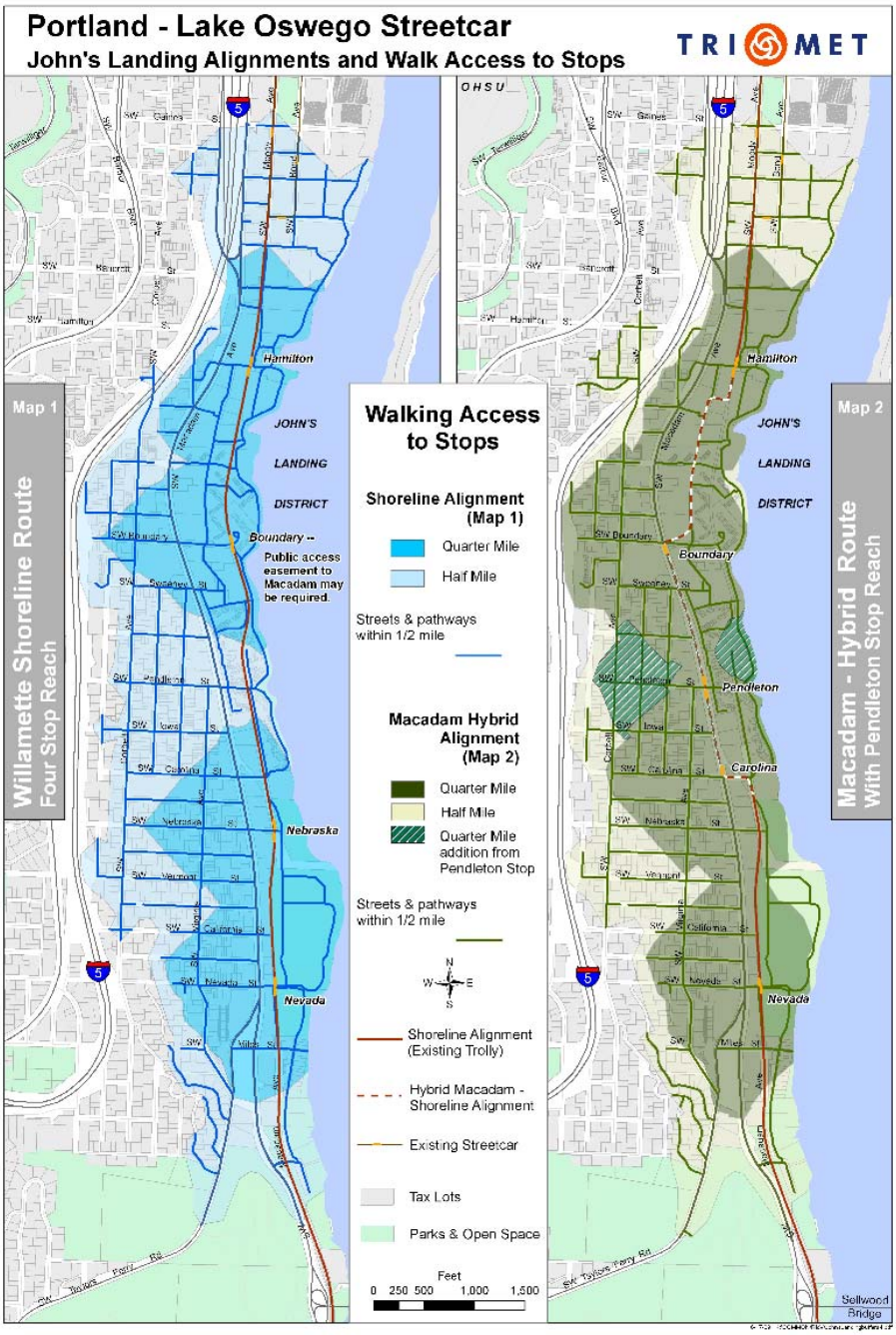
	Hybrid 1: Macadam In-Street (Boundary to Carolina)	Hybrid 2: East Side Exclusive (Boundary to Iowa)	Hybrid 3: Macadam with New North Bound Lane (Boundary to Carolina)	Willamette Shore Line	Full Macadam In-Street
SUSTAIN EXISTING NEIGHBORHOODS					
Compatibility with Existing Development	Minimizes impacts 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 resideetns	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	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 proximity to condos and gates with single track option (no gates with double track option)	Minimal potential 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 seperated 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
NATURAL RESOURCES (SOUTH WATERFRONT TO SELLWOOD BRIDGE)					
Minimizes impacts to streams, wetlands and waterways	Alignment is moved away from the Willamette River between SW Julia and SW Carolina 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 potenail concerns regarding Willamette River and FEMA 100-year floodplain between South Waterfront and Nevada. Potential concerns south.
Mimize 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 Carolina 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.
Minimizes impacts to parklands, recreational areas and other Section 4(f)	Utilizes right of way in/adjacent to Willamette Park and Butterfly Park	Utilizes right of way in/adjacent to Willamette Park and Butterfly Park	Utilizes right of way in/adjacent to Willamette Park and Butterfly Park	Utilizes right of way in/adjacent to Willamette Park and Butterfly Park	Minimizes the use of right of way in/adjacent to Willamette Park. Utilizes the right of way in Butterfly 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.

APPENDIX B

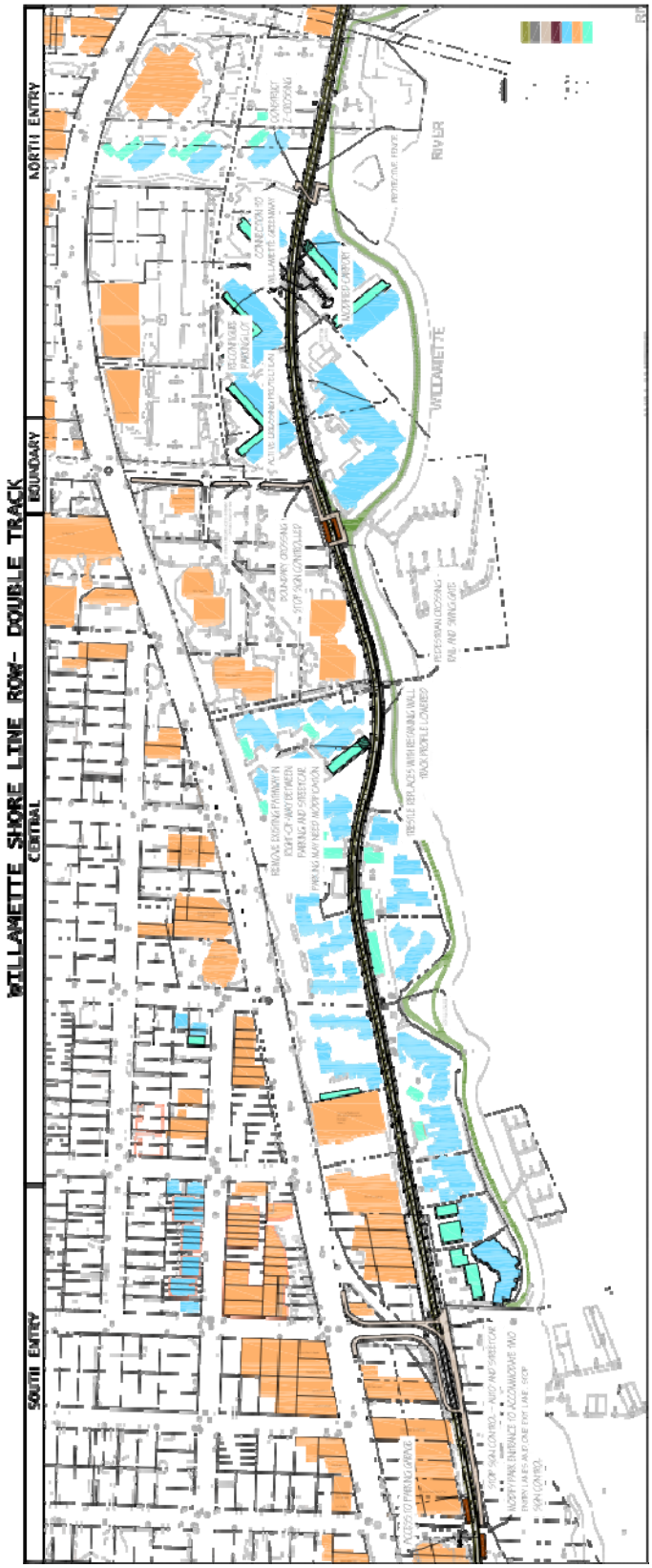
WALK ACCESS TO STOPS

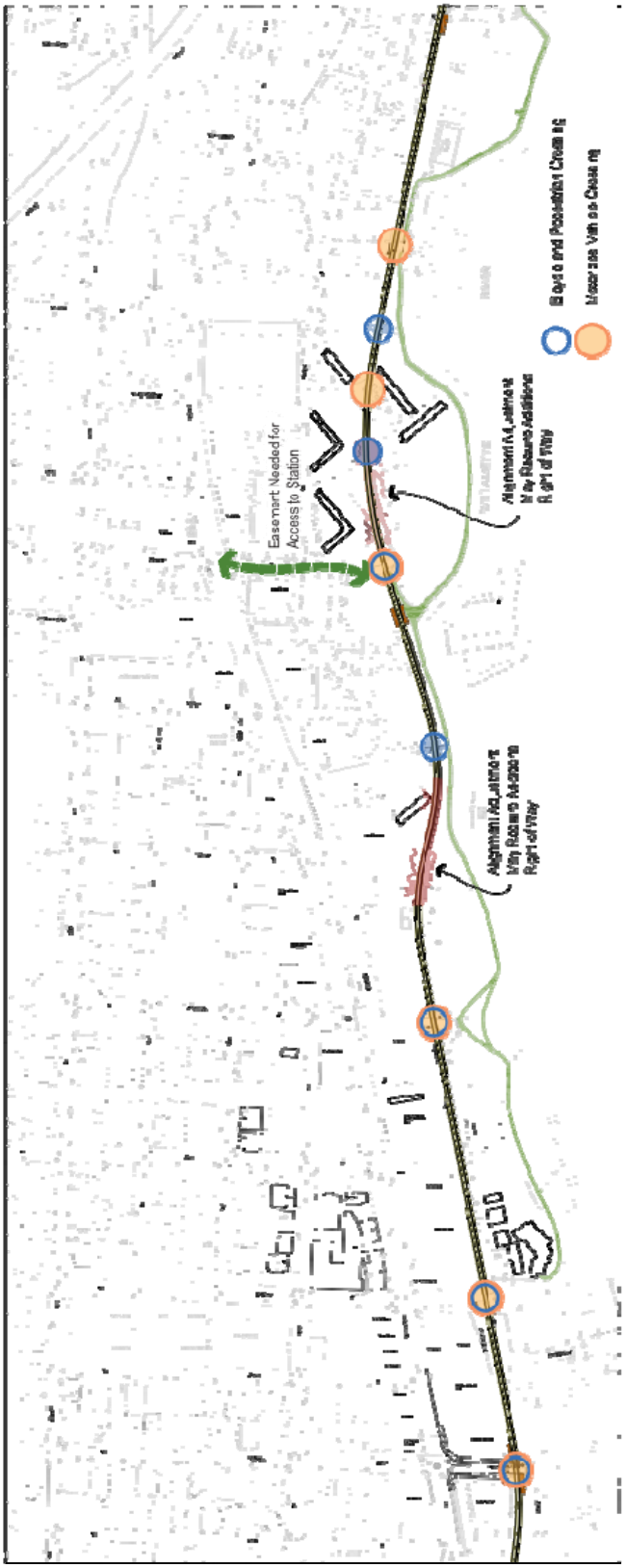


APPENDIX C

UPDATED DRAWINGS OF WILLAMETTE SHORE LINE OPTION

[See following pages]


WILLAMETTE SHORE LINE ROW– DOUBLE TRACK
SOUTH ENTRY
CENTRAL
BOUNDARY
NORTH ENTRY
WILLAMETTE
RIVER


Easement Needed for Access to Station

APPENDIX D

PHOTOGRAPHS OF WILLAMETTE SHORE LINE ALIGNMENT NEAR EXISTING CONDOMINIUMS