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METRO

Agenda

MEETING: METRO COUNCIL WORK SESSION
DATE: February 10, 2009
DAY: Tuesday
TIME: 2:00 PM
PLACE: Metro Council Chamber

CALL TO ORDER AND ROLL CALL

2:00 PM	**1.**	**DISCUSSION OF AGENDA FOR COUNCIL REGULAR MEETING, FEBRUARY 12, 2009/ADMINISTRATIVE/CHIEF OPERATING OFFICER COMMUNICATIONS**	
2:15 PM	**2.**	**OREGON CONVENTION CENTER SOLAR PROJECT**	Blosser
2:30 PM	**3.**	**HIGH CAPACITY TRANSIT PLAN UPDATE**	Roberts, Gardner, Mendoza
3:30 PM	**4.**	**BREAK**	
3:35 PM	**5.**	**I-5/ HIGHWAY 99W CONNECTOR ALTERNATIVES – COUNCIL POLICY DIRECTION**	Cotugno, Turpel, Roberts
4:20 PM	**6.**	**COUNCIL BRIEFINGS/COMMUNICATION**	

ADJOURN

Agenda Item Number 3.0

HIGH CAPACITY TRANSIT SYSTEM PLAN UPDATE

Metro Council Work Session
Tuesday, February 10, 2009
Metro Council Chamber

METRO COUNCIL

Work Session Worksheet

Presentation Date: 2/10/09 Time: 2:30 p.m. Length: 60 minutes

Presentation Title: High Capacity Transit System Plan update

Department: Planning and Development

Presenters: Ross Roberts, Tony Mendoza, Crista Gardner

ISSUE & BACKGROUND
This item is to address any questions about the resolution to be placed before the Metro Council on Feb. 12, 2009 and to introduce the Criterion INDEX tool to be used in the HCT/Local Aspirations workshops.

OPTIONS AVAILABLE

IMPLICATIONS AND SUGGESTIONS
See resolution

QUESTION(S) PRESENTED FOR CONSIDERATION
See resolution

LEGISLATION WOULD BE REQUIRED FOR COUNCIL ACTION X **Yes** __**No**
DRAFT IS ATTACHED X **Yes** __**No**

ATTACHMENTS
Proposed Resolution No. 09-4025 For the Purpose of Adopting the Regional High capacity Transit System Plan Screened Corridor Map and Evaluation Criteria

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF ADOPTING THE REGIONAL HIGH CAPACITY TRANSIT SYSTEM PLAN SCREENED CORRIDOR MAP AND EVALUATION CRITERIA	))))	RESOLUTION NO. 09-4025 Introduced by Councilor Carlotta Collette

WHEREAS, a system-wide examination of a regional high capacity transit system was completed in 1982 and resulted in nearly 90 miles of light rail transit, commuter rail and streetcar being built and/or planned for construction by 2016; and

WHEREAS, ridership of the existing regional high capacity transit system has exceeded expectations; and

WHEREAS, the regional high capacity transit system has been shown to promote sound and sustainable growth patterns; and

WHEREAS, the regional high capacity transit system has improved mobility and accessibility without increased reliance on single occupancy vehicles; and

WHEREAS, trips on transit in the Portland region replace more than 205,000 car trips daily; and

WHEREAS, high capacity transit carries approximately a quarter of afternoon rush-hour commuters traveling from downtown Portland on the Sunset Highway and Banfield Freeway corridors; and

WHEREAS, trips on transit in the Portland region eliminate more than four tons of smog-producing pollutants and more than 540 tons of greenhouse gas emissions daily; and

WHEREAS, the regional high capacity transit system has helped to leverage more than $6 billion of development in centers, corridors and station areas; and

WHEREAS, the regional high capacity transit system has been shown to create jobs through construction and long-term development, including more than 50 new businesses that opened along the most recent line, Interstate MAX, since construction; and

WHEREAS, an expanded regional high capacity transit system will extend these benefits into the future and increase transit use, walking, and biking; and

WHEREAS, a broad list of proposed high capacity transit system corridors (55) developed with the community and local jurisdictions have been screened based on criteria involving ridership, cost, environmental constraints, social equity, transit connectivity, traffic congestion and regional 2040 Growth Concept land uses; and

WHEREAS, the resulting 15 potential high capacity transit system corridors and Central City improvements would be further analyzed based on a set of evaluation criteria that has been reviewed and approved by the Joint Policy Advisory Committee on Transportation (JPACT) and recommended for approval by the Metro Policy Advisory Committee (MPAC). The evaluation criteria are derived from the

three Regional Transportation Plan (RTP) categories of community, environment and economy and also include a high capacity transit-specific category of deliverability. The evaluation criteria also reflect the six Metro Council outcomes for a successful region; and

WHEREAS, the regional high capacity transit system plan will be incorporated into the Regional Transportation Plan and long-range land use and transportation planning efforts; now therefore

BE IT RESOLVED that the Metro Council hereby adopts the regional high capacity transit screened corridor map (Exhibit A) and detailed HCT criteria for evaluation framework (Exhibit B) of those corridors.

ADOPTED by the Metro Council this _____ day of _____ 2009.

_____
David Bragdon, Council President

Approved as to Form:

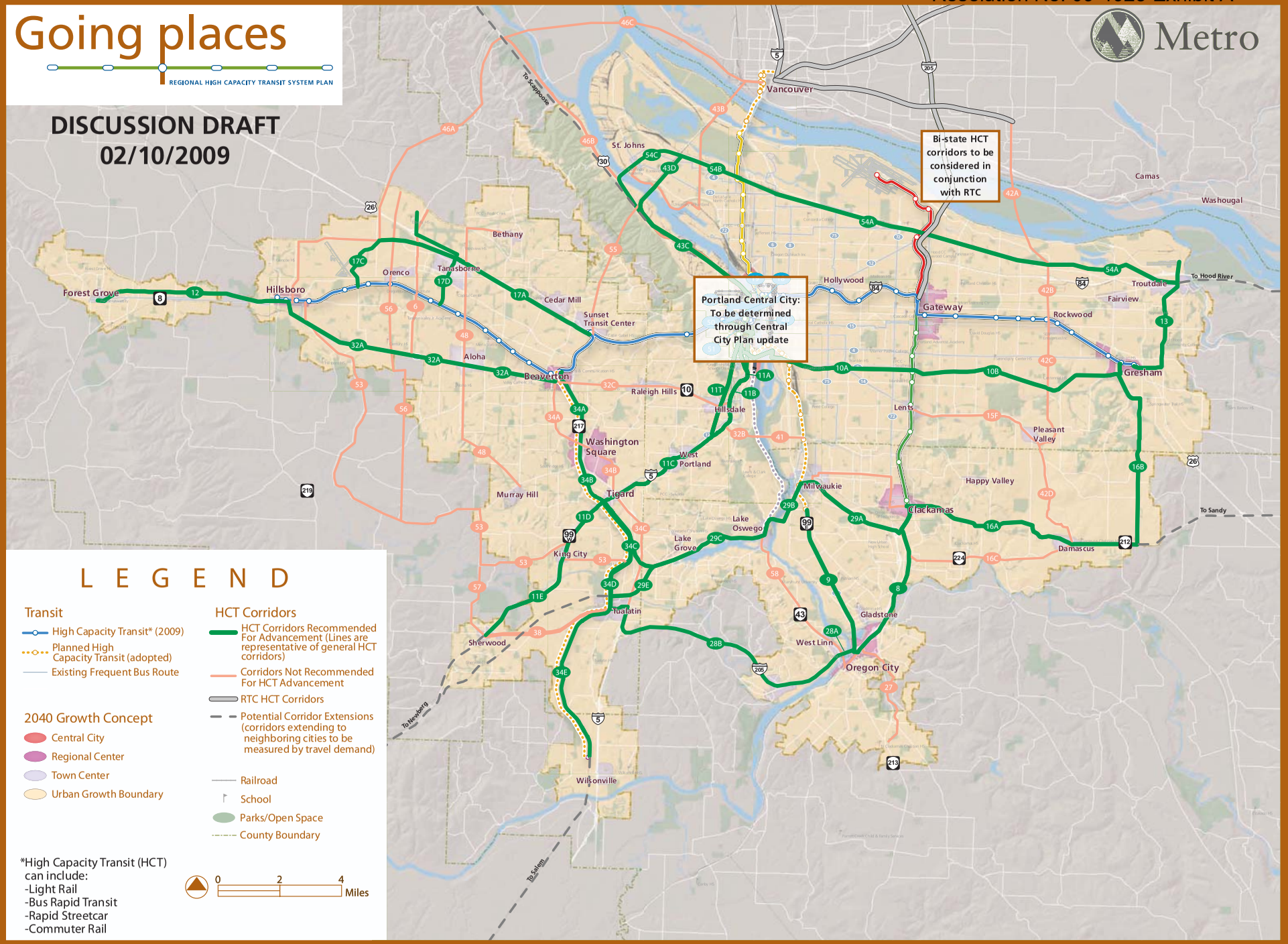
_____
Daniel B. Cooper, Metro Attorney

Going places

REGIONAL HIGH CAPACITY TRANSIT SYSTEM PLAN

Metro

DISCUSSION DRAFT
02/10/2009



L E G E N D

Transit
- High Capacity Transit* (2009)
- Planned High Capacity Transit (adopted)
- Existing Frequent Bus Route

2040 Growth Concept
- Central City
- Regional Center
- Town Center
- Urban Growth Boundary

HCT Corridors
- HCT Corridors Recommended For Advancement (Lines are representative of general HCT corridors)
- Corridors Not Recommended For HCT Advancement
- RTC HCT Corridors
- Potential Corridor Extensions (corridors extending to neighboring cities to be measured by travel demand)

- Railroad
- School
- Parks/Open Space
- County Boundary

*High Capacity Transit (HCT) can include:
-Light Rail
-Bus Rapid Transit
-Rapid Streetcar
-Commuter Rail

0 2 4 Miles

High Capacity Transit System Plan
Initial Screened Transit Corridors
Not in priority order

Segment / Corridor ID*	Segment / Corridor Name
18	Improvements to Steel Bridge
19	Bridge/Rose Quarter Access Improvements
49	Eastside Connector
50	Downtown Tunnel - Lloyd 11th to Goose Hollow 18th
51	Downtown Jefferson/Columbia via 1st Ave
52	Downtown Everett/Glisan to 18th Ave
8	(CTC - OCTC) via I-205
9	(Park - OCTC) via McLoughlin
10	(Portland - Gresham) via Powell
11	(Portland to Sherwood) via Barbur Hwy 99w
12	(Hillsboro - Forest Grove)
13	(Gresham - Troutdale MHCC) via Kane Dr
16	(CTC - Damascus)
17	(STC - Hillsboro)
17D	(Red Line extension to Tanasbourne) - with revisions from WaCo and Hillsboro
28	(Oregon City - WSTC)
29	(Washington Square - Clackamas)
32	(Hillsboro - Hillsdale)
34	(Beaverton - Wilsonville)
43	(St. Johns - Vancouver/Union Station)
54	(Troutdale - St. Johns)
6	(Amber Glen to Tanasbourne)
48	(Murray Hill - Bethany)
56	(Orenco - Clark Hill Rd)
15	(Lents to Pleasant Valley) via Foster Road
27	(Oregon City - Clac CC) - via Hwy213/RRROW
38	(Tualatin - Sherwood) via Sherwood Rd
41	(Lake O - McLoughlin connector)
42	(Vancouver - Damascus)
46	(Cornell - St. Johns)
53	(Hillsboro - Tualatin)
55	(Sunset TC - St. Johns)
57	(Scholls Ferry - Sherwood) via Roy Rogers Rd
17C+46A+46B+43B	(Hillsboro - Vancouver)
41+32B+32C	(McLoughlin - Beaverton)

*Note: Corridors extending to neighboring cities were not considered in this analysis

LEGEND
Central City improvement - staff/Subcomittee recommended for advancement
Corridor - staff/Subcomittee recommended for advancement
Corridor - staff/Subcomittee considered, but not recommended for advancement

memo

To	HCT Team
Cc	
From	Steer Davies Gleave & Nelson\Nygaard
Date	29 January 2009
Project	Portland HCT
Project No.	22026001

Subject Detailed HCT Evaluation Framework –DRAFT FOR DISCUSSION

Overview

In order to select and prioritize the 'best' HCT corridors for investment a robust, coherent and transparent framework for the detailed evaluation of options is required. To date a long list of corridors has been refined to a short list of corridors (~15) that will be subject to the detailed evaluation.

The objective for the detailed evaluation framework is to enable a comparative assessment of the corridors to be made. The framework therefore must:

- Assume a common baseline scenario (2035 Regional Transportation Plan Financially Constrained System) against which each corridor is compared
- Ensure a consistent level of detail across the criteria and be commensurate with the level of project information available
- Enable sufficiently disaggregate scoring, in order that the level of impact can be differentiated between corridors
- Present the information clearly, concisely and on a consistent basis so that decision makers can compare corridors against each other

It is proposed that no explicit weighting is given to the criteria. Having undertaken the initial evaluation there will be a review phase to gain agreement on the prioritization of corridors; for this it is important that decision makers can consider the implications and understand the potential effect of implicitly applying different weightings.

Associated with this approach the assessment of each criterion will be quantified (potentially, as appropriate, as a monetary value) or qualitatively scored, e.g. adverse, beneficial. The intention of this approach is to avoid the addition of scores and the creation of a 'single' number for each corridor, which would negate the whole ethos of undertaking the multiple account evaluation.

Evaluation Approach

The detailed evaluation is not a 'single step' in the process, but rather a tool that is employed on an ongoing basis to assist the shaping and refinement of the corridor prioritization. For each short listed corridor it is anticipated that the project development phase will identify the most plausible forms of mode investment for each corridor based upon the screening assessment (e.g. potential ridership, environmental, land take issues). For example light rail may be the only mode option for corridors which are extensions of the existing system, whereas for other corridors, light rail, BRT, commuter rail and streetcar[1] options may be identified and evaluated.

Therefore for each of the (~15) short listed corridors, it is likely that there will be several plausible mode investments defined. It is against these definitions that the preliminary evaluation will be undertaken.

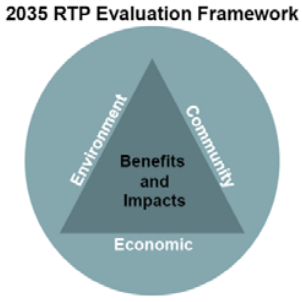
The output from this will support confirmation that the appropriate mode investments have been assumed and inform the strongest candidate, by highlighting the trade-offs that could occur and may deserve further investigation. As appropriate, the draft definition may be refined and the evaluation results revised accordingly.

Supporting this iterative process will be the consideration of the system network effects, in order to ensure the definition of individual corridors does not result in precluding valuable opportunities for integration and delivering benefits due to the 'whole being greater than the sum of the parts'.

Proposed MAE Framework

The Multiple Account Evaluation (MAE) approach is consistent with the Regional Transportation Plan (RTP) Outcomes-Based Evaluation Framework. The framework is organized in three evaluation categories:

- Community
- Environment
- Economy



[1] The 2035 RTP transit policy does not currently contain rapid streetcar as a HCT mode. This concept will be further explored in the context of the HCT system plan, and may result in policy refinements to the 2035 RTP.

Each of the categories is focused upon the effect once the investment is made, namely the transit line opens. However, for the evaluation of the corridors, it is also important to consider the implications of attempting to implement the identified transit solution. A fourth account is therefore included in the MAE to address deliverability.

The MAE framework aligns with the hierarchy of objectives.

- 2040 Growth Concept
- Metro Council adopted definition of what makes a successful region
- 2035 RTP –implementing the region's 2040 Growth Concept
- HCT – supporting the RTP Goals

The Metro Council adopted definition of what makes a successful region includes six goals to promote:

- Vibrant, walkable communities
- Sustained economic competitiveness and prosperity
- Safe and reliable transportation choices
- Minimal contributions to global warming
- Clean air, clean water, healthy ecosystems
- Benefits and burdens of growth distributed equitably

The 10 RTP Goals are:

- Foster vibrant communities and compact urban form
- Sustain economic competitiveness and prosperity
- Expand transportation choices
- Effective and efficient management of transportation system
- Enhance safety and security
- Promote environmental stewardship
- Enhance human health
- Ensure equity
- Ensure fiscal stewardship
- Deliver accountability

These goals can be grouped under the three evaluation categories used in the RTP, which provide the structure for the MAE framework (see Figure 1), alongside the consideration of deliverability and a summary of the corridor characteristics as

produced from the screening exercise. For each evaluation category, criteria addressing different aspects of the category are presented.

The evaluation will be both quantitative and qualitative, depending on the level of project development and extent of information available. As more information becomes available the assessment can be revisited.

Deriving from the framework structure will be a summary sheet designed to provide an overview for each corridor that will allow decision-makers to identify and confirm the mode investments and corridors to be prioritized. Appendix A presents an example of a summary sheet. Associated documentation will provide supporting evidence for the detailed evaluation findings.

In the summary sheet, commentary will present the most significant findings against the criteria and provide a justification of the assessment score (including any assumptions made due to the absence of full information). Where mitigation of a negative impact would be required, it will be described and the score will reflect the mitigated effect.

In the initial stage the scoring will be based upon a seven-point scale:

- Significant benefit
- Moderate benefit
- Slight benefit
- Neutral
- Slightly adverse
- Moderately adverse
- Significantly adverse

Final results will be presented in tiered categories.

Multiple Accounts

The following sections detail the specific criteria that will be used to evaluate corridors against the four accounts:

- Community
- Environment
- Economy
- Deliverability

A description of essential corridor characteristics will also be provided as part of the evaluation. This information is described in the first table of Figure 1.

System Expansion Policy

It is important to note that this level of evaluation is designed to provide a preliminary prioritization of corridors and narrow mode investment options. The assessment will be based on current and projected land use conditions. However, it is recognized that projections are never completely accurate and that conditions will change over time.

To account for these changes, a System Expansion Policy including a separate set of criteria required for project advancement is proposed.

These criteria would provide communities along a corridor an opportunity to make proactive changes to land use and access policies. Jurisdictions benefiting from a proposed alignment or project would be expected to submit Ridership Development and Financial Plans before moving to the next phase of project advancement.

The following graphic illustrates how HCT projects would be prioritized in the System Plan process and the role of proposed project advancement criteria, which would allow jurisdictions to change the priority of an adopted HCT system project.

HCT System Plan Evaluation and System Expansion Policy

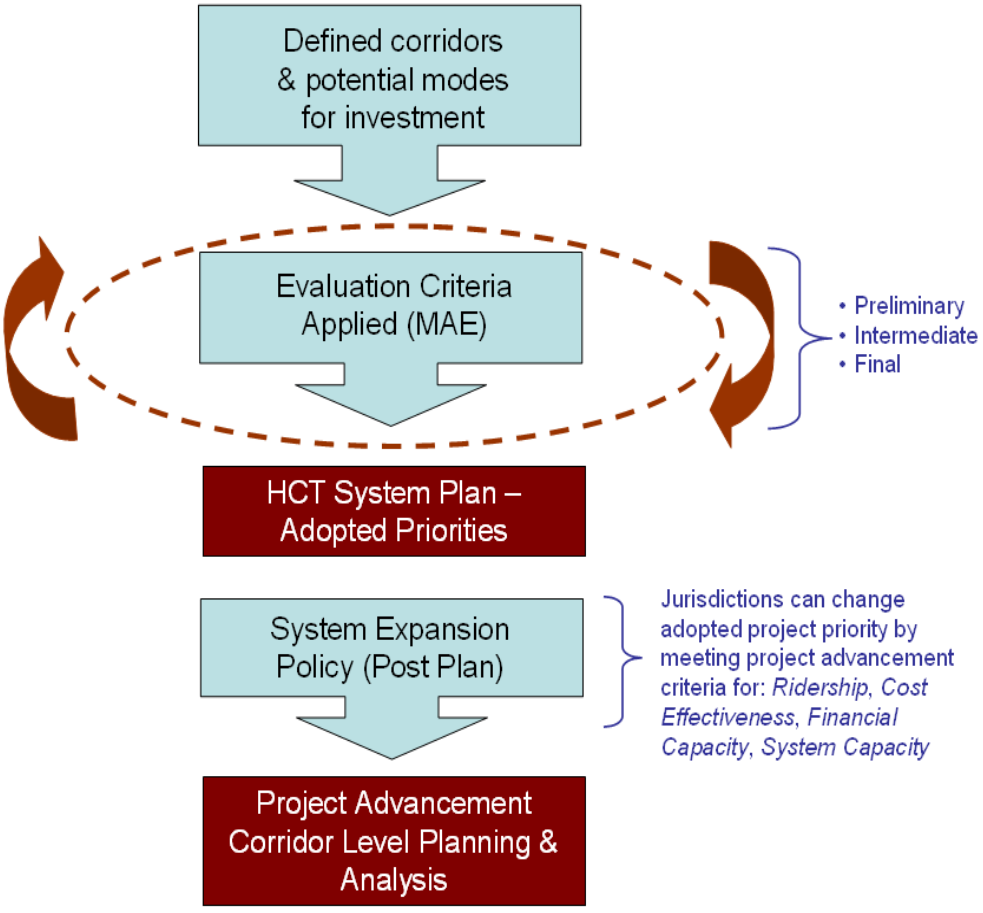


Figure 1 – MAE FRAMEWORK

COMMUNITY EVALUATION CATEGORY

Criteria Measure		Role	Method
Supportiveness of existing local land use and adopted local transportation plans and policies	Qualitative scoring based on plan review	Identification in strategic terms of consistency or inconsistency with other proposed plans or policies	Existing LU
Aspirations of local communities	Qualitative scoring based on *Local Aspirations* process	Local populations may or may not wish to trade-off improved transit against other potential investments or may have concerns about the impact of HCT on urban form. Since a high level of local commitment is required for project development, communities that display strong commitment to project success should be acknowledged.	Rely on Metro Local Aspiration Process (reflective of regional goals/policies) Criterion to support local aspirations process with INDEX model
Ridership generators	Identification of major activity centers served, e.g. ▌ Hospital & medical centers ▌ Major retail sites ▌ Major social service centers ▌ Colleges / universities ▌ Major Federal / State Government offices ▌ Employers > 500 employees ▌ Sports sites / venues	Ensuring the proposed corridor encompasses both current and future key demand attractors and generators and meets the requirements of transit to provide a service to and from where people wish to travel.	Evaluate TriMet's top 30 generators; o-d date from travel demand model. Housing not included as a major activity center, but is captured via TOI analysis

COMMUNITY EVALUATION CATEGORY

Criteria Measure		Role	Method
Support the regional 2040 Growth Concept	1. Central City, Regional Centers, Industrial areas, Freight and Passenger Intermodal facilities 2. Employment areas, Town Centers, Station Communities, Corridors, Main Streets 3. Inner and Outer Neighborhoods	Rank based on Service to 2040 land use types, consistent with RTP for service types related to primary, secondary and other urban components.	Support Region 2040 land use designations based on RTP priority areas
Transportation network integration - Transit	Identification of full trip benefits due to integration with transit transfer centers and interchange opportunities	Consideration of the network benefits that can be achieved, including both physical integration (i.e. good interchange opportunities), system integration (i.e. timetabling connecting services, through ticketing) and redundancy	Metro and TriMet to conduct a similar exercise to the screening criterion
Transportation network integration – Roads, use of ROW	Where roadways may be used for HCT ROW planned status of ROW (i.e. are plans in place to use ROW, including whether the facility is NHS and/or freight route.	Help to clarify what is the function of the facility.	Review of jurisdictional plans.
Transportation network integration – Ability to avoid congestion	Consider HCT ability to bypass congested areas compared to comparable non-HCT transit in mixed traffic		
Equity	Catchment analysis for social groups (low income and minority census tracts) within walking access (1/4 mile) to a stop	Consideration of those who may receive greatest benefit from the transit investment due to reduction of current barriers to travel reduced cost of travel.	Census and Metro Transportation Equity Analysis for the RTP

COMMUNITY EVALUATION CATEGORY

Criteria Measure		Role	Method
	Analysis of % of households with no vehicle available	Members of these households are likely transit consumers. Analysis includes: low and very-low income, racial minority, seniors, disabled people, low car ownership.	
Safety	Qualitative, based on adherence to good design standards	Direct safety impacts due to design and placement of HCT in ROW (i.e. physically segregated, running with general traffic, on-street stops).	Selection of corridors that have extraordinary conditions that may present a safety issue (e.g., freeway, elevated, trench, etc)
Health (Promote physical activity)	Comprehensiveness of pedestrian and cycling network Increase in average bicycle and pedestrian mode share	Assess benefits from increased physical activity caused by greater pedestrian access to transit and increased walking and cycling within the corridor.	Model and spreadsheet analysis
Housing + Transportation Affordability Index	Analysis of housing and transportation costs as percent of total household income.	Indirect measure of areas where transit demand by assessing the impact of transportation costs on housing choices.	Metro
Placemaking/Urban Form	Identification of impacts on urban composition and public space function	Potential to enhance land development; increase mix of land uses; enhance public spaces	Focus this on an assessment of vacant and underdeveloped land. Metro has done work on developable land in the region.
Transportation efficiency (Users)	Average travel time benefit per rider and distribution of benefits across the line and the system. This measure will also determine whether HCT is an effective	The average travel time benefit will demonstrate the effectiveness of the option across the system. The assessment of distribution will identify the 'winners and losers'	Model/TriMet

COMMUNITY EVALUATION CATEGORY

Criteria Measure		Role	Method
	mode compared to non-HCT transit through congested areas.	across the system (e.g. if an extension results in new demand causing crowding on an existing section of route).	

ENVIRONMENT EVALUATION CATEGORY

Criteria Measure		Role	Method
Emissions & disturbance	Change in VMT and resulting emission levels for CO2 and other harmful pollutants such as NOx and SOx. (Potentially for the full project life-cycle)	Impacts on local air pollution, greenhouse gases and noise. Transportation related environmental impacts tend to track closely to VMT, making it a valuable proxy for emissions and air quality related measures.	Model
Natural resources	Length of alignment impacting identified sensitive habitats and/or natural resources	Impacts on environmentally sensitive areas due to land take or proximity to major infrastructure.	RLIS
4(f) resources	Acres of 4(f) resources impacted	Impacts on the amenity value of parkland, schools and other 4(f) resources.	RLIS

ECONOMY EVALUATION CATEGORY

Criteria Measure		Role	Method
Transportation efficiency (Operator)	Cost per rider	To identify the financial performance of the day-to-day operations.	Metro/TriMet
Transportation efficiency (System)	Annualized capital and operating cost per rider	To identify the overall cost-effectiveness of the corridor.	Metro/TriMet
Economic competitiveness	Change in employment catchment	Improved transit and land use will increase the labor market's access to employment centers and promote re-development of employment sites.	Metro
Redevelopment	Vacant and redevelopable land		Metro

DELIVERABILITY EVALUATION CATEGORY

Criteria Measure		**Role**	**Method**
Feasibility (Construction)	Capital cost	Flag for instances where negative impacts from construction of the project may be so great as to outweigh project benefits.	Sketch level engineering
Feasibility (Operations)	Operating cost	Ensure design of the project enables efficient operations; assess impact of project on existing system function/capacity.	Also focus on what impact new corridor operations would have on existing lines. TriMet should be involved in this evaluation.
Ridership	Ridership	Evaluate total ridership, ridership per revenue hour and revenue mile, system ridership impact.	Model
Funding potential	Initial assessment of local and federal funding opportunities to cover estimated capital and operating costs	Most projects will not have funding sources identified. The intent is to identify key obstacles to successful funding or reward any project that has substantial identified local funding. A more detailed funding plan will be required at the project advancement phase.	Not to focus on existing FTA program criteria but assessment of likelihood of receiving federal funds.
Cost per mile	Capital cost per mile	To act as a comparative tool to measure corridors of different length.	Sketch level engineering.

STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 09-4025 FOR THE PURPOSE OF ADOPTING THE REGIONAL HIGH CAPACITY TRANSIT SYSTEM PLAN SCREENED CORRIDORS AND EVALUATION CRITERIA.

Date: January 28, 2009 Prepared by: Tony Mendoza 503-797-1726

BACKGROUND

Introduction

The *Regional High Capacity Transit System Plan* is being developed as a component of the *Regional Transportation Plan (RTP)*. The *Regional HCT System Plan* will be a 30-year plan for prioritizing HCT investments in new corridors and changes to existing corridors. The results will be incorporated and further studied in the *RTP* and will be the basis for initiating future project development steps necessary to qualify for funding. Of the variety of public transit system functions (e.g., local bus, paratransit, regional bus, frequent bus and HCT), the *Regional HCT System Plan* is designed to focus on the HCT element of the public transit system. HCT modes can include light rail, commuter rail, bus rapid transit or rapid streetcar and include a significant amount of exclusive right of way.

A system wide examination of a regional high capacity transit system was completed in 1982 as part of the Regional Transportation Plan, identified as the *Regional Long-range Regional Transitway System.* This plan has resulted in nearly 90 miles of light rail transit, commuter rail and streetcar being built and/or being planned for construction by 2016.

Per tracking by TriMet, documented in its Transit Investment Plan, ridership of the existing regional high capacity transit system has exceeded expectations. The regional high capacity transit system has been shown to promote sound and sustainable growth patterns and has improved mobility and accessibility without increased reliance on single occupancy vehicles, carrying approximately one quarter of afternoon rush-hour commuters traveling from downtown Portland on the Sunset Highway and Banfield Freeway corridors. Trips on transit in the Portland metro region replace over 205,000 car trips per day, averting over four tons of smog-producing pollutants and over 540 tons of greenhouse gas emissions daily. Transportation modeling for the 2035 RTP update establishes that an expanded regional high capacity transit system shows promise for increasing transit use, walking, and biking and extending these benefits into the future.

The regional high capacity transit system has helped to leverage more than $6 billion of development in centers, corridors and station areas. The regional high capacity transit system has been shown to create jobs through construction and long-term development, such as the more than 50 new businesses that opened along Interstate MAX since construction.

The *Regional HCT System Plan* tells us where the best locations are for major rail and bus transit capital investments based on evaluation criteria derived from the *RTP*. The *RTP* tells us whether HCT is the right transportation choice relative to other potential transportation investments. *Making the Greatest Place* tells us whether HCT is the right transportation choice to support the land use in any given corridor or center based on the *2040 Growth Concept*. The function of HCT within the region is being considered as part of this plan, including weighing the benefits of providing more localized direct access compared to faster, regional access.

Non-HCT transit is planned by TriMet, SMART and other transit providers. The *Regional HCT System Plan* is not a funding plan. Future decisions will be made regarding investing in HCT projects versus other needed transportation improvements.

Public Outreach

Feedback from residents, businesses, community organizations and elected officials identified 192 potential connections in about 55 corridors around the regions. Suggestions were requested as part of the update to the *Regional High Capacity Transit System Plan*.

During July through November 2008, more than 50 stakeholders were interviewed, more than 150 people attended public workshops and more than 200 people were informed about the project and offered suggestions at farmers markets and other public events. More than 200 people participated in an interactive questionnaire on Metro's web site from Aug. 12 to Oct. 1, 2008. For more information, please see *Attachment 1: Public outreach summary*.

In addition, the HCT Think Tank serves as a forum for exploring ideas and options at project milestones. Members are asked to deliberate on issues defined by staff. Think Tank deliberations provide the staff with guidance on the appropriateness and comprehensiveness of staff work, as well as the range of issues and implications of options considered at each step of the study.

Process

The 192 potential connections in 55 corridors were assessed based on ridership, cost, environmental constraints, social equity, transit connectivity, traffic congestion and the regional *2040 Growth Concept* land uses to determine viable corridors for the next phase of public review and input.

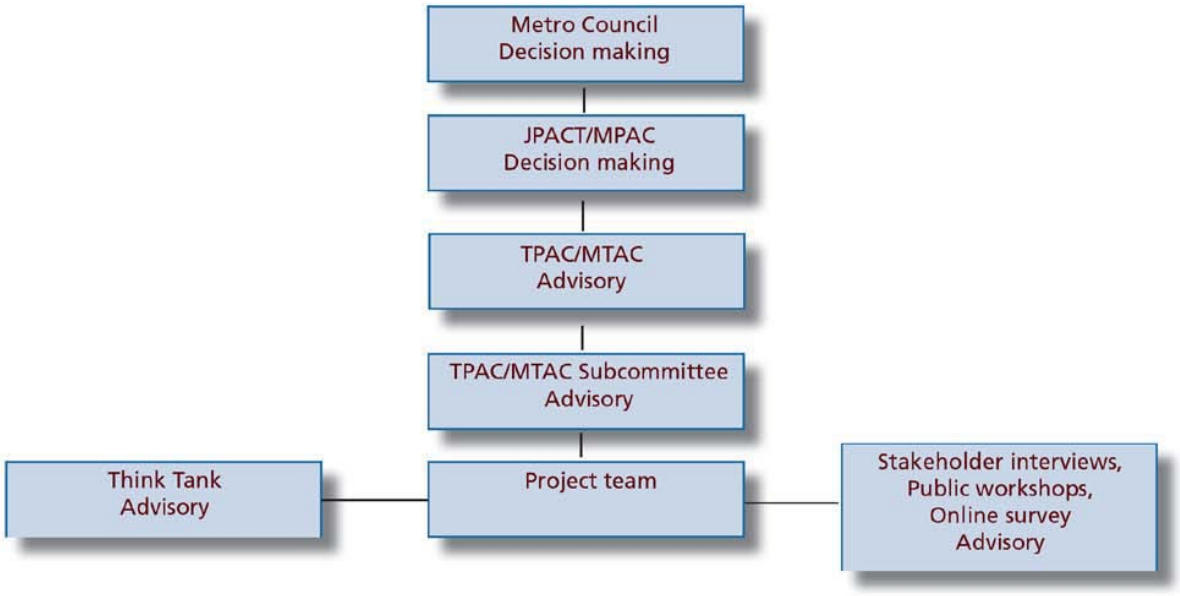
The resulting 15 high capacity transit system corridors and will be evaluated based on a set of evaluation criteria that has been reviewed and approved by MTAC, TPAC, MPAC and JPACT. The evaluation criteria are derived from the three *RTP* evaluation framework categories of community, environment and economy, and also an HCT-specific category of deliverability. The evaluation criteria also reflect the six Metro Council outcomes for a successful region.

In addition to the 15 high capacity transit system corridors, improvements to the system in the and other peak use areas along the existing alignment will be evaluated. The analysis will also examine a number of commuter lines that extend outside the region, looking at transportation demand only.

While applying the evaluation criteria, the study will explore the costs and benefits associated with placement of future high capacity transit in new right of way and placement in existing travel lanes.

The HCT project team used existing committees for advice, feedback and confirmation of key decisions thus far. *Figure 1* illustrates the decision-making and advisory hierarchy.

Figure1. The Regional High Capacity Transit System Plan decision-making structure



The HCT TPAC/MTAC Subcommittee is charged with reviewing public input and technical analysis to provide guidance and consensus-based recommendations that reflect the interests and priorities of local jurisdictions through the *Regional High Capacity Transit System Plan* process. The subcommittee includes 18 representatives from the Metro Technical Advisory Committee (MTAC) and the Transportation Policy Alternatives Committee (TPAC) or the designees of the members. The subcommittee provides ongoing guidance to the project and formal consensus-based recommendations to MTAC and TPAC at key decision points such as the identification of alternatives, development of an evaluation framework and prioritization of alternatives.
The screened corridors and the evaluation criteria have been confirmed by the HCT TPAC/MTAC Subcommittee, TPAC, MTAC, JPACT and MPAC. *Figure 2* shows the proposed and working timeline for this confirmation process.

In addition, the HCT corridors have been coordinated with the City of Portland's developing Streetcar System Plan, TriMet's Transit Investment Plan (FY 08), and the Southwest Washington Regional Transportation Council (RTC) HCT Plan. Jurisdictions have suggested changes which have been addressed through TPAC, MTAC, MPAC and JPACT.

Next Steps

Based on the evaluation, the 15 high capacity transit corridors, Central City and potential system improvements, will be grouped into tiers. Further refinement and discussion will guide future high capacity transit investment decisions, in coordination with the Regional Transportation Plan.

Tasks	Timeframe				
	October 2008	November 2008	December 2008	January 2009	February 2009
Confirm screening criteria	TPAC	MTAC			
Apply screening criteria and confirm initial set of screened corridors and projects		TPAC MTAC	TPAC MTAC MPAC JPACT	MPAC JPACT Metro Council	Metro Council
Approve/confirm evaluation criteria		TPAC MTAC	TPAC MTAC JPACT	MPAC JPACT Metro Council	Metro Council

Resolution Materials

Exhibit B illustrates work on screening the wide range of over 55 potential corridors and improvements to a reasonable set of approximately 15 corridors and Central City improvements as shown in *Exhibit A* to be advanced through a feasibility and prioritization process. The corridors are illustrative for this high level cost analysis. Specific alignments would be determined during further analysis, such as during an Alternatives Analysis or Environmental Impact Statement. The Evaluation Criteria will be applied to these screened corridors for prioritization (*Exhibit B, page 7*).

ANALYSIS/INFORMATION

Known Opposition

No known opposition.

Legal Antecedents

Ordinance No. 82-135 *For the purpose of adopting the Regional Transportation Plan*

Resolution No. 83-383 *For the purpose of endorsing the regional light rail transit (LRT) system plan scope of work and authorizing funds for related engineering services*

Resolution 07-383 1B *For the purpose of approving the federal component of the 2035 Regional Transportation Plan (RTP) Update, Pending Air Quality Conformity Analysis*

Anticipated Effects

Adoption of this resolution would enable the evaluation of high capacity transit corridors to advance. A Resolution to approve the Regional High Capacity Transit System Plan is expected to be presented to the Metro Council in July 2009 after review and recommendation by MTAC, TPAC, MPAC and JPACT.

Budget Impacts

There would be no direct impact on the Metro budget as a result of taking action on this resolution.

RECOMMENDED ACTION

Approve Resolution No. 09-4025 For the Purpose of Adopting the Regional High Capacity Transit System Plan Screened Corridors and Evaluation Criteria.

- Adopt the set of approximately 15 corridors and Central City improvements to be advanced through a detailed evaluation process.
- Adopt the evaluation criteria that will be applied to these screened corridors.

Resolution Exhibits

- Exhibit A: Map of Screened Corridors
- Exhibit B: Memo: Detailed HCT Evaluation Framework – Draft for discussion

Staff Report Attachments

- Attachment 1: Public Outreach Summary
- Attachment 2: Initial Screening Criteria
- Attachment 3: Screening Results
- Attachment 4: Long Range Regional Transitway System (1982 map)

Going places
REGIONAL HIGH CAPACITY TRANSIT SYSTEM PLAN

High Capacity Transit System Plan
Public outreach summary
summer/fall 2008

Project status

Feedback from residents, businesses, community organizations and elected officials identified 192 potential connections in about 55 corridors around the regions. Suggestions were requested as part of the update to the Regional High Capacity Transit System Plan. Metro is currently working to screen and evaluate viable corridors for the next phase of public review and input.

The system plan will help for prioritize high capacity transit investments in new corridors and changes to existing corridors over the next 30 years. The system plan tells Metro where the best locations are for major rail and bus transit capital investments based on evaluation criteria derived from the Regional Transportation Plan. The results will be incorporated into the Regional Transportation Plan, the Portland metropolitan area's blueprint for a multi-modal transportation system.

During July through November, more than 50 stakeholders were interviewed, more than 150 people attended public workshops and more than 200 people were informed about the project and offered suggestions at farmers markets and other public events. More than 200 people participated in an interactive questionnaire on Metro's web site from Aug. 12 to Oct. 1, 2008.

The screening process will assess potential corridors based on existing and future potential ridership, corridor availability and cost, environmental impacts, equity considerations, connectivity to the current system, congestion reduction, and support for regional 2040 land-use designations, among other measures. It is estimated that 10 to 20 viable corridors will pass the screening criteria and be evaluated at a more detailed level.

In spring 2009, Metro will share evaluation results with the public and begin discussing tradeoffs, choices and priorities. An interactive web survey and other public outreach events will happen at this time.

Overview of stakeholder interviews, public workshops, online questionnaire and community events

During July through October, more than 50 stakeholders were interviewed for the High Capacity Transit (HCT) System Plan. To capture as many viewpoints as possible and accurately represent the divergent views found across the region, stakeholders representing viewpoints related to eight of the ten goals for the Regional Transportation Plan (RTP) were identified for interviews. These included business and community leaders, transportation and transit providers, safety and

security experts, developers, economic development professionals, social service and nonprofit organizations, environmental groups and elected officials.

Between Aug. 12 and Aug. 20, Metro held four public workshops to engage participants in a discussion of HCT plan goals and to identify potential high capacity transit corridors. The workshops, held in Hillsboro, Oregon City, East Portland and Tigard, also provided an opportunity to learn about the plan's purpose and schedule and related Metro projects such as the RTP, Urban and Rural Reserves, Performance Measures. A written comment form offered individuals an opportunity to provide feedback in addition to the transit connections drawn on maps in discussion groups. A total of 104 attendees signed in at the four workshops: 26 in Hillsboro, 16 in Oregon City, eight in East Portland and 54 in Tigard.

With the first workshop on Aug. 12, an interactive questionnaire went live on Metro's web site. More than 200 people completed the online questions about which centers and corridors were important to serve with high capacity transit, barriers to using transit and goals for the system. The questionnaire was advertised at the workshops, community group meetings and events, farmers' markets and through blogs and e-newsletters. The questionnaire was removed from the web site and closed on the morning of Oct. 1, 2008.

The project team coordinated with the Drive Less/Save More community event booth to have a presence at the Willamette River Riverfest on Aug. 31 and Sept. 6, talking to more than 100 people about the project, handing out collateral and encouraging visits to the project web site. The project had its own community event booth at the Beaverton, Lents, Portland Ecotrust and Gresham farmers markets in September where staff informed more than 200 residents about the project and collected suggestions for possible connections.

A scaled-down version of the workshop presentations was also given to the Oregon City Rotary Club on Aug. 27. Close to 50 participants offered origins and destinations to be considered. The workshop format was also altered to fit a meeting of the Hillsboro Chamber of Commerce on Sept. 30, where approximately 35 participants gave feedback on the goals as well as potential corridors and other things to consider during the process.

Themes resulting from outreach efforts

Access

- Serve employment areas and major institutions (educational and health), shopping areas and activity centers (e.g. Oregon Zoo, OMSI, Rose Garden, parks and greenspaces) along with regional and town centers.
- Create links between stations and neighborhoods by integrating stations into surrounding communities, considering bike and pedestrian facilities around stations and providing good local transit service to get people to and from stations.

Service and speed

- Provide more suburban-to-suburban connections and faster service through downtown Portland
- Provide flexibility in service times and modes and improved access for transit-dependent groups (low income, elderly, etc.), especially in the suburbs

Safety and security

- Improve safety on transit vehicles and at stations
- Give special attention to crossings where transit vehicles and people or cars interact

Land use

- Connect land use to public transportation to create compact commercial, residential and mixed-use development to support transit ridership

Project timeline

Metro | *People places. Open spaces.*

Initial Screening Criteria FINAL REVISED DRAFT, 11-7-08, based on 10-22-08 Subcommittee, 10-31-08 TPAC and 11-05-08 MTAC

CRITERION	MEASUREMENT	PROPOSED SCREENING TARGET	
QUANTITATIVE CRITERIA			
Existing Potential Ridership	Transit Orientation Index	High	> 5.0 riders per acre
		Medium-High	4.0-5.0 riders per acre
		Medium	3.0-4.0 riders per acre
		Low-Medium	1.5-3.0 riders per acre
		Low	< 1.5 rider per acre
Future Potential Ridership	Transit Orientation Index	High	> 5.0 riders per acre
		Medium-High	4.0-5.0 riders per acre
		Medium	3.0-4.0 riders per acre
		Low-Medium	1.5-3.0 riders per acre
		Low	< 1.5 rider per acre
QUALITATIVE CRITERIA			
Corridor Availability and Cost	Qualitative assessment of right of way availability and associated access improvements (Includes geological hazards)	High	Minimal right of way or few structures required
		Medium	Moderate right of way or structures required
		Low	Major land acquisition, tunneling, bridge work or extensive ROW required
Environmental Constraints	Qualitative assessment of impact on natural resources	High	Minimal potential negative impacts to natural resources
		Medium	Moderate potential negative impacts to natural resources
		Low	Significant potential negative impacts to natural resources
Equity	Qualitative assessment of social equity needs	Does promote equity	Directly serves low-income and minority communities
		Slightly promotes equity	Provides indirect access to low-income and minority communities
		Does not promote equity	No access provided to low-income and minority communities
Connectivity and System	Qualitative assessment of transit system connectivity, intermodal connectivity, maintenance yard site or other transit system needs.	High	Strong connectivity and/or system benefits
		Medium	Moderate connectivity and/or system benefits
		Low	Poor connectivity, and/or system benefits

Congestion	Recognition of congestion parallel to proposed corridor	High	LOS F (2035 PM Peak 2-Hour; Mid-Day 1-Hour); Vehicle/Capacity Ratio
		Medium-High	LOS E (2035 PM Peak 2-Hour; Mid-Day 1-Hour); Vehicle/Capacity Ratio
		Medium	LOS D (2035 PM Peak 2-Hour; Mid-Day 1-Hour); Vehicle/Capacity Ratio
		Low-Medium	LOS C (2035 PM Peak 2-Hour; Mid-Day 1-Hour); Vehicle/Capacity Ratio
		Low	LOS A-B (2035 PM Peak 2-Hour; Mid-Day 1-Hour); Vehicle/Capacity Ratio
2040 Land Use	Support Region 2040 land use designations based on RTP priority areas	High	• Central city • Regional centers • Industrial areas • Freight and Passenger Intermodal facilities
		Medium	• Employment areas • Town centers • Station Communities • Corridors • Main Streets
		Low	• Inner neighborhoods • Outer neighborhoods

Screening Results by Segment/Project

		Screening Results									
		1-3	1-5	1-5	1-5	1-3	1-3	1-3	1-5	1-5	1-3
Segment / Corridor ID	Segment / Corridor Name	Connectivity and System Score	O-D	Existing Potential Ridership	Future Potential Ridership	Corridor Availability and Cost	Environmental Constraints	Equity	Congestion (Midday)	Congestion (Peak)	2040 Land Use
6	(Amber Glen to Tanasbourne)	Low	Low	Low	Low-Medium	Medium	High	Low	Low	Medium-High	Low
8	(CTC - OCTC) via I-205	High	Medium	Low	Low-Medium	Medium	Medium	Medium	Medium-High	High	Medium
9	(Park - OCTC) via McLoughlin	High	Low	Low	Low	Medium	Medium	Low	Low	High	Medium
10	(Portland Mall - Gresham) via Powell	Medium	Low-Medium	Low-Medium	Medium	Medium	Medium	High	High	High	High
10A	(Portland Mall - I-205) via Powell	High	High	Medium	High	Low	Medium	Low	High	High	High
10B	(I-205 - Gresham) via Powell	Medium	Low-Medium	Low	Low	Medium	High	High	High	High	High
11	(Portland to Sherwood) via Barbur Hwy 99w	Low	Low-Medium	Low-Medium	Medium	Medium	Medium	Low	High	High	High
11A	(Portland to Terwilliger) via Barbur Hwy 99W	Medium	Medium-High	High	High	Low	Medium	Low	Low	High	High
11B	(Terwilliger to Multnomah) via Barbur Hwy 99w	Low	Medium	Low	Low	Low	Medium	Low	Low	High	High
11C	(Multnomah to Tigard) via Barbur Hwy 99w	Low	Low	Low	Low-Medium	Medium	Medium	Low	Medium-High	High	High
11D	(Tigard -King City) via Barbur Hwy 99w	Low	Low	Low	Low	Medium	High	Low	High	High	High
11E	(King City - Sherwood) via Barbur Hwy 99w	Low	Low	Low	Low	Medium	High	Low	High	High	High
11T	(Portland to Multnomah) via TUNNEL Barbur hwy 99w	Medium	Medium-High	Medium	High	Low	Medium	Low	Low	High	High
12	(Hillsboro - Forest Grove)	Medium	Medium	Low	Low	High	Medium	High	Medium-High	High	Medium
13	(Gresham - Troutdale MHCC) via Kane Dr	Medium	Low	Low	Low-Medium	Medium	Medium	Low	Low	High	Medium
15	(Lents to Pleasant Valley) via Foster Road	Low	Low	Low	Low	Medium	Medium	Low	Medium-High	High	Low
16	(CTC - Damascus)	Medium	Low-Medium	Low	Low	High	Medium	High	High	High	Medium
16A	(CTC - Damascas) via Sunnyside	Medium	Low-Medium	Low	Low-Medium	Medium	High	Low	Medium	High	Medium
16B	(Gresham - Damascus) via 232nd/242nd Ave	Low	Low	Low	Low	High	High	Low	Medium	High	Medium
16C	(CTC - Damascas) via Hwy 212/224	Medium	Low-Medium	Low	Low	Medium	Medium	High	High	High	Medium
17	(STC - Hillsboro)	Low	Low-Medium	Low	Low-Medium	High	Medium	Low	Medium-High	High	Medium
17A	(Shute - St Vincent) via Evergreen/US26	Medium	Low-Medium	Low	Low-Medium	Medium	Medium	Low	Medium-High	High	Medium
17B	(Hillsboro -Shute) via Evergreen	Low	Medium	Low	Low	Medium	High	Low	Medium	High	Medium
17C	(Hillsboro-Shute) via Cornel/Shute	Low	Medium	Low	Low-Medium	High	Medium	Low	Medium	High	Medium
17D	(Tanasbourne - Blue Line)	Low	Medium	Low	Medium	Medium	Medium	Low	Low	Medium-High	Medium
18	Improvements to Steel Bridge	High	High	High	High	High	High	Low	Low	Medium	High
19	Bridge Improvements	High	High	High	High	Medium	Low	Medium	Low	Medium	High
27	(Oregon City - Clac CC) - via Hwy213/RRROW	Low	Low	Low	Low	Medium	Low	Low	Medium-High	High	Low
28	(Oregon City - WSTC)	Low	Low	Low	Low-Medium	High	Medium	Low	High	High	Medium
28A	(Oregon City - West Linn) via new bridge	Low	Low	Low	Low	Low	Low	Low	High	High	Medium
28B	(West Linn - Tualatin) via I-205	Low	Low-Medium	Low	Low	Medium	Medium	Low	Medium	High	Medium
28C	(Tualatin - Tigard) via WES	Medium	Low	Low-Medium	Low-Medium	High	High	Low	High	High	Medium
28D	(Tigard - WSTC) via WES	Low	Low-Medium	Low-Medium	Medium	High	High	Low	Low	High	Medium
29	(CTC - Clackamas)	Medium	Low	Low	Low-Medium	High	Medium	High	Medium-High	High	Medium
29A	(CTC - Milwaukie) via Hwy 224	Medium	Low-Medium	Low	Low-Medium	Medium	Medium	Medium	Medium	Medium-High	Medium
29B	(Milwaukie - Lake O) via RR bridge	High	Low	Low	Low-Medium	High	Medium	Medium	Medium-High	High	Medium
29C	(Lake O - Tigard TC) via RR ROW	Medium	Low	Low	Low-Medium	High	Medium	Low	Medium-High	High	Medium
29D	Tigard TC - WSTC) via WES ROW	Low	Low-Medium	Low-Medium	Medium	High	Medium	Low	Medium-High	High	Medium
29E	(Boones Ferry - Tualatin) via RR ROW	Low	Low-Medium	Low-Medium	Low-Medium	High	Medium	Low	Medium-High	High	Medium
29F	(Milwaukie - Clackamas)	High	Low-Medium	Low	Low-Medium	Medium	High	Low	Low	Low	Medium
32	(Hillsboro - Hillsdale)	Low	Low	Low	Low-Medium	High	Medium	Medium	Medium-High	High	Medium
32A	(Hillsboro - Aloha - Beaverton) via TV Hwy	Medium	Low-Medium	Low	Low-Medium	High	Medium	High	Medium-High	High	Medium
32B	(Barbur - Lake O connector)	Low	Low	Low	Low	Medium	Medium	Low	Medium-High	High	Medium
32C	(Beaverton - Raleigh Hills - Hillsdale) via Beaverton Hillsdale	Low	Low-Medium	Low	Low-Medium	Medium	Medium	Low	Medium	High	Medium
34	(Beaverton - Wilsonville)	Low	Low	Low	Low-Medium	Medium	Medium	Medium	High	High	Medium
34A	(Beaverton - Washington Sq) via Hall	Medium	Medium	Low-Medium	Medium	Medium	High	Low	Medium	High	Medium
34B	(Washington Sq - Tigard) via Hall	Low	Low-Medium	Low	Low-Medium	Medium	High	Low	Medium-High	High	Medium
34C	(Tigard - Tualatin) via 217/I5	Low	Low	Low-Medium	Medium	Medium	Medium	Low	High	High	Medium
34D	(Tualatin - Wilsonville) via I5	Low	Low	Low	Low	Medium	High	Low	High	High	Medium
38	(Tualatin - Sherwood) via Sherwood Rd	Low	Low	Low	Low	Medium	High	Low	Medium	High	Low
41	(Lake O - McLoughlin connector)	Medium	Low	Low	Low	Low	Medium	Low	High	High	Low
42	(Vancouver - Damascus)	Low	Low	Low	Low	Medium	Low	Medium	Medium-High	High	Medium

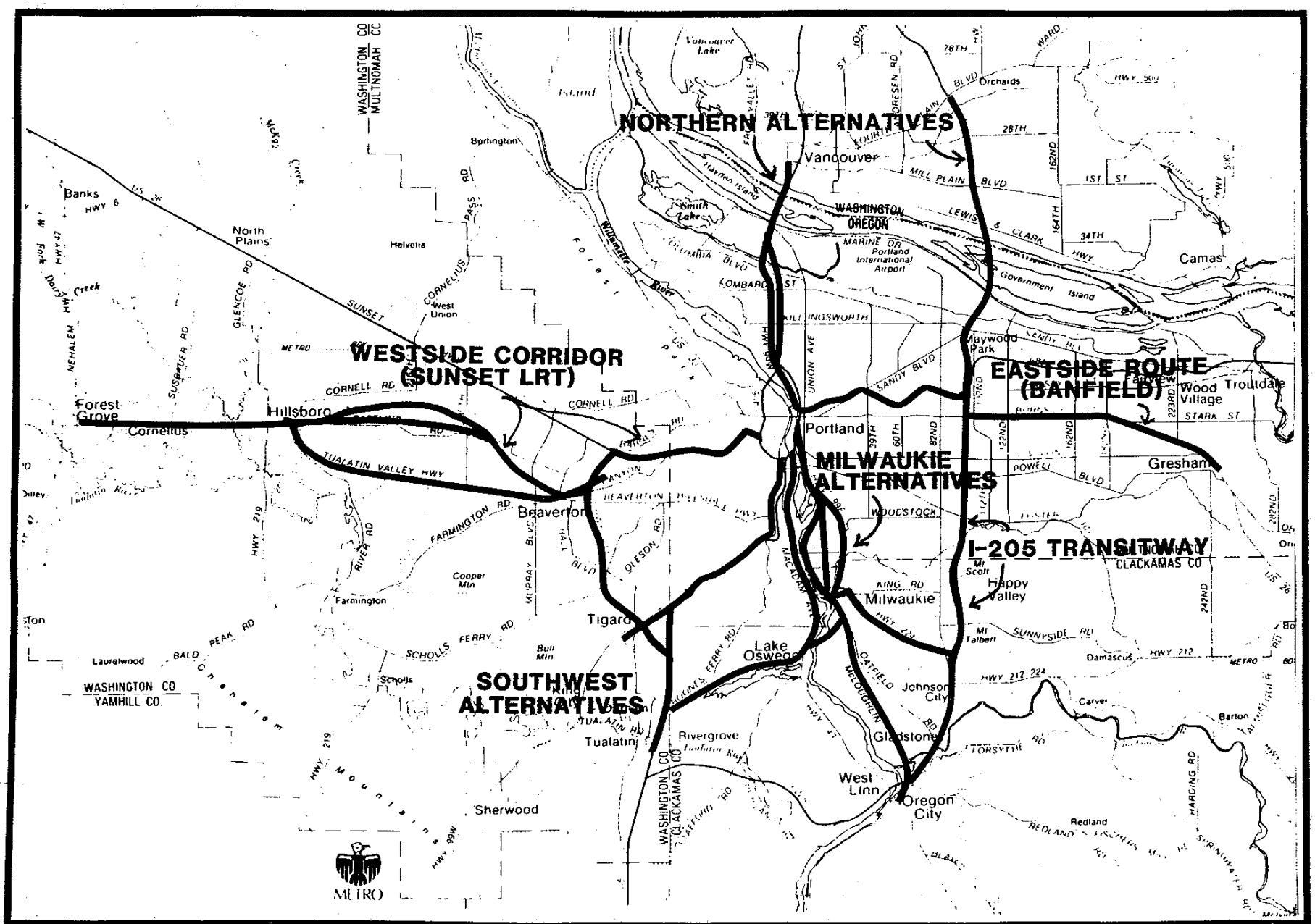
		Screening Results									
		1-3	1-5	1-5	1-5	1-3	1-3	1-3	1-5	1-5	1-3
Segment / Corridor ID	Segment / Corridor Name	Connectivity and System Score	O-D	Existing Potential Ridership	Future Potential Ridership	Corridor Availability and Cost	Environmental Constraints	Equity	Congestion (Midday)	Congestion (Peak)	2040 Land Use
42A	(Marine Drive - Vancouver) via 182nd	Low	Low	Low	Low	Low	Low	Low	Low	Medium-High	Low
42B	(Marine Drive - Rockwood) via 182nd	Low	Low-Medium	Low	Low-Medium	Medium	Medium	Low	Low	Medium-High	Medium
42C	(Rockwood - Pleasant Valley) via 182nd	Low	Low	Low	Low	Medium	Medium	Medium	Low	High	Medium
42D	(Pleasant Valley - Damascas) via Foster	Low	Low	Low	Low	High	High	Low	Medium-High	High	Low
43	(St. Johns - Vancouver/Union Station)	Low	Medium-High	Low-Medium	Medium	High	Low	High	High	High	High
43A	(St. Johns to RR)	Low	Medium	Low	Low-Medium	High	Medium	Low	Low	Low	High
43B	(RR to Vancouver) via UPRR Railroad Bridge	Low	Low	Low	Low-Medium	High	Low	Medium	Low	Medium	High
43C	(Union Station - St. Johns) via RR Bridge	Medium	High	Low-Medium	High	High	Medium	Medium	High	High	High
43D	(St. Johns - Vancouver) via Freight Corridor	Medium	Low	Low	Low	High	Low	Low	Low	High	High
46	(Comell - St. Johns)	Low	Low	Low	Low	High	Low	Low	High	High	Medium
46A	(Comell to UPRR) via Com Pass Tunnel	Low	Low	Low	Low	High	Low	Low	High	High	Medium
46B	(UPRR - St. Johns) via Freight	Low	Low	Low	Low	High	Low	Medium	High	High	Medium
46C	(Com Pass - St. Johns) via Northern Bridge	Low	Low	Low	Low	High	Low	Low	Low	Low	Medium
48	(Murray Hill - Bethany)	Low	Low	Low	Low	Low	Medium	Low	Medium	High	Low
49	Eastside Connector	High	Medium	High	High	Low	Medium	High	Low	Medium	High
50	Downtown Tunnel - Lloyd 11th to Goose Hollow 18th	High	Low-Medium	High	High	Low	Medium	High	Low	Low	High
51	Downtown Jefferson/Columbia via 1st Ave	Low	High	High	High	Low	Medium	Medium	Low	Medium	High
52	Downtown Everett/Glisan to 18th Ave	Low	High	High	High	Low	High	Medium	Medium	Medium	High
53	(Hillsboro - Tualatin)	Low	Low	Low	Low	Medium	Low	High	Low	High	Medium
54	(Troutdale - St. Johns)	Low	Low	Low	Low	High	Low	High	Low	Medium-High	Medium
55	(Sunset TC - St. Johns)	High	Low	Low	Low	Low	Low	Low	High	High	Low
56	(Orenco - Clark Hill Rd)	Low	Low	Low	Low	Medium	Low	Medium	Low	High	Low
57	(Scholls Ferry - Sherwood) via Roy Rogers Rd	Low	Low	Low	Low	Medium	Low	Low	High	High	Low
28A+28B	(Oregon City - Tualatin)	High	Low	Low	Low	Low	Medium	Low	Medium-High	High	Medium
17C+46A+46B+43B	(Hillsboro - Vancouver)	Low	Low	Low	Low	High	Low	High	Medium-High	High	High
41+32B+32C	(McLoughlin - Beaverton)	Medium	Low	Low	Low-Medium	Low	Medium	Low	Medium-High	High	Medium

Note: Methods for determining High, Medium, Low rankings are described in detail in the Screening Results Technical Memorandum
Note: All High ratings indicate positive results as related to project viability; all low ratings indicated negative results

Screening Results by Corridor

		Screening Results									
		1-3	1-5	1-5	1-5	1-3	1-3	1-3	1-5	1-5	1-3
Segment / Corridor ID	Segment / Corridor Name	Connectivity and System Score	O-D	Existing Potential Ridership	Future Potential Ridership	Corridor Availability and Cost	Environmental Constraints	Equity	Congestion (Midday)	Congestion (Peak)	2040 Land Use
6	(Amber Glen to Tanasbourne)	Low	Low	Low	Low-Medium	Medium	High	Low	Low	Medium-High	Low
8	(CTC - OCTC) via I-205	High	Medium	Low	Low-Medium	Medium	Medium	Medium	Medium-High	High	Medium
9	(Park - OCTC) via McLoughlin	High	Low	Low	Low	Medium	Medium	Low	Low	High	Medium
10	(Portland Mall - Gresham) via Powell	Medium	Low-Medium	Low-Medium	Medium	Medium	Medium	High	High	High	High
11	(Portland to Sherwood) via Barbur Hwy 99w	Low	Low-Medium	Low-Medium	Medium	Medium	Medium	Low	High	High	High
12	(Hillsboro - Forest Grove)	Medium	Medium	Low	Low	High	Medium	High	Medium-High	High	Medium
13	(Gresham - Troutdale MHCC) via Kane Dr	Medium	Low	Low	Low-Medium	Medium	Medium	Low	Low	High	Medium
15	(Lents to Pleasant Valley) via Foster Road	Low	Low	Low	Low	Medium	Medium	Low	Medium-High	High	Low
16	(CTC - Damascus)	Medium	Low-Medium	Low	Low	High	Medium	High	High	High	Medium
17	(STC - Hillsboro)	Low	Low-Medium	Low	Low-Medium	High	Medium	Low	Medium-High	High	Medium
18	Improvements to Steel Bridge	High	High	High	High	High	High	Low	Low	Medium	High
19	Bridge Improvements	High	High	High	High	Medium	Low	Medium	Low	Medium	High
27	(Oregon City - Clac CC) - via Hwy213/RRROW	Low	Low	Low	Low	Medium	Low	Low	Medium-High	High	Low
28	(Oregon City - WSTC)	Low	Low	Low	Low-Medium	High	Medium	Low	High	High	Medium
29	(CTC - Clackamas)	Medium	Low	Low	Low-Medium	High	Medium	High	Medium-High	High	Medium
32	(Hillsboro - Hillsdale)	Low	Low	Low	Low-Medium	High	Medium	Medium	Medium-High	High	Medium
34	(Beaverton - Wilsonville)	Low	Low	Low	Low-Medium	Medium	Medium	Medium	High	High	Medium
38	(Tualatin - Sherwood) via Sherwood Rd	Low	Low	Low	Low	Medium	High	Low	Medium	High	Low
41	(Lake O - McLoughlin connector)	Medium	Low	Low	Low	Low	Medium	Low	High	High	Low
42	(Vancouver - Damascus)	Low	Low	Low	Low	Medium	Low	Medium	Medium-High	High	Medium
43	(St. Johns - Vancouver/Union Station)	Low	Medium-High	Low-Medium	Medium	High	Low	High	High	High	High
46	(Cornell - St. Johns)	Low	Low	Low	Low	High	Low	Low	High	High	Medium
48	(Murray Hill - Bethany)	Low	Low	Low	Low	Low	Medium	Low	Medium	High	Low
49	Eastside Connector	High	Medium	High	High	Low	Medium	High	Low	Medium	High
50	Downtown Tunnel - Lloyd 11th to Goose Hollow 18th	High	Low-Medium	High	High	Low	Medium	High	Low	Low	High
51	Downtown Jefferson/Columbia via 1st Ave	Low	High	High	High	Low	Medium	Medium	Low	Medium	High
52	Downtown Everett/Glisan to 18th Ave	Low	High	High	High	Low	High	Medium	Medium	Medium	High
53	(Hillsboro - Tualatin)	Low	Low	Low	Low	Medium	Low	High	Low	High	Medium
54	(Troutdale - St. Johns)	Low	Low	Low	Low	High	Low	High	Low	Medium-High	Medium
55	(Sunset TC - St. Johns)	High	Low	Low	Low	Low	Low	Low	High	High	Low
56	(Orenco - Clark Hill Rd)	Low	Low	Low	Low	Medium	Low	Medium	Low	High	Low
57	(Scholls Ferry - Sherwood) via Roy Rogers Rd	Low	Low	Low	Low	Medium	Low	Low	High	High	Low
28A+28B	(Oregon City - Tualatin)	High	Low	Low	Low	Low	Medium	Low	Medium-High	High	Medium
17C+46A+46B+43B	(Hillsboro - Vancouver)	Low	Low	Low	Low	High	Low	High	Medium-High	High	High
41+32B+32C	(McLoughlin - Beaverton)	Medium	Low	Low	Low-Medium	Low	Medium	Low	Medium-High	High	Medium

Note: Methods for determining High, Medium, Low rankings are described in detail in the Screening Results Technical Memorandum
Note: All High ratings indicate positive results as related to project viability; all low ratings indicated negative results



REGIONAL LRT SYSTEM PLAN Scope Of Work	Long Range Regional Transitway System	Figure 6

Agenda Item Number 5.0

I-5/99W CONNECTOR UPDATE

Metro Council Work Session
Tuesday, February 10, 2009
Metro Council Chamber

METRO COUNCIL

Work Session Worksheet

Presentation Date: February 10, 2009 Time: 3:35pm Length: 45 minutes

Presentation Title: I-5/Highway 99W Connector Alternatives – Council Policy Direction

Service, Office, or Center: Planning and Development

Presenters (include phone number/extension and alternative contact information):
A background presentation will be provided by the project consultant, Scott Richman, David Evans and Associates. Metro staff working on the project include:
Mark Turpel 503.797.1734
Ross Roberts 503.797.1752
Andy Cotugno 503.797.1763

ISSUE & BACKGROUND

Purpose – The purpose of the February 10th Council work session is to provide Metro Council guidance about the seven project alternatives. Councilor Hosticka is a member of the I-5/Highway 99W Connector Project Steering Committee (PSC). The PSC is tentatively scheduled to select an alternative on February 25.

Background - In 1997 the Metro Council, working with the Oregon Department of Transportation and its local government partners, completed the Western Bypass Study and concluded that a number of arterial and highway investments, including an I-5/ Highway 99W Connector, would better serve the transportation needs and land uses of Washington County than other alternatives.[1]

Accordingly, the 2000 Regional Transportation Plan included an I-5/Highway 99W Connector as a four-lane toll way with two alternative corridors – one to the north of the City of Sherwood and one to the south. The northern corridor was within the urban growth boundary (UGB) and the southern was not within the UGB. In the acknowledgement of the 2000 RTP, the Oregon Department of Land Conservation and Development agreed that there was a need for such a facility, but that any corridor or alignment located outside the UGB would have to provide further justification. The 2004 RTP and 2035 RTP continued to include a connector, without a precise location. The project was also included in the Transportation System Plans (TSP) of Washington County and the cities of Sherwood and Tualatin.

In 2005 work began to complete an alternatives analysis to establish the location of the connector and, if needed, provide findings for a goal exception if the location was outside the UGB. The work included adopting a purpose and need, establishing a range of alternatives and evaluation criteria.

[1] See Metro Resolution Number 97-2497, "For the Purpose of Endorsing the Recommended Arterial and Highway Improvements contained within ODOT's Western Bypass Study and Amending the 1995 Interim Federal Regional Transportation Plan".

At Metro Council work sessions in August 2006, the Council concluded three major points should be emphasized with regard to the proposed Purpose and Need of the I-5 to Highway 99W Connector Project as follows:

1) the purpose statement should not pre-suppose a solution, rather, desired outcomes should be stated so that a broad range of alternatives could be considered and local arterial access to the highway system should be part of the statement;

2) as the Metro Council approved an expansion of the region's urban growth boundary in the Tualatin-Wilsonville-Sherwood area in 2004 for new industrial uses, access to this industrial area should be addressed when transportation alternatives are considered; and

3) a concurrent discussion and resolution of land use issues related to possible transportation alternatives should be undertaken.

In the fall of 2006 open houses were held and over 250 ideas were generated as potential transportation solutions in the area. Through technical evaluation and combining similar ideas, the range was narrowed to 27 alternatives.

In an August 2007 work session, the Metro Council reviewed the proposed range of expressway and non expressway alternatives as well as a No Build alternative. The Council recommended that three of the expressway alternatives be advanced along with the other non expressway alternatives for a total of six alternatives as a reasonable range of alternatives. The Council also asked that the draft evaluation criteria, when ready, be brought back for review. These criteria were reviewed by the Metro Council in a September 2007 work session. At this work session concerns were expressed about land use implications, especially commuting, induced demand and jobs/housing balance, the financial costs, grading criteria and east-west traffic loads.

The six alternatives were evaluated and in early 2008 the transportation, social and environmental implications were reviewed and discussed by the PSC. The PSC, after reviewing the six alternatives, concluded that they wanted a seventh alternative which was less costly, could be financed and built in phases and had less social and environmental impacts. Accordingly, a hybrid of some elements of the earlier six alternatives was identified in Fall 2008 and supplemental analysis prepared so that all seven alternatives could be compared using the same measures.

In a separate work effort, Metro lead a technical analysis of induced growth that concluded that an expressway would not induce growth outside the region because travel times with and without the expressway are of minor difference. The study, however, also concluded that decisions to increase land supply would accelerate the rate of development.

On January 28, 2009, the PSC was presented Alternative 7, along with the analysis comparing it with the other alternatives. While there were favorable comments from

many PSC members, the representatives from Clackamas County and the City of Wilsonville expressed reservations. Project staff was charged with providing additional cost information for the project elements that comprise Alternative 7. Councilor Hosticka expressed concern over the current RTP map. He recommended that PSC members consider Alternative 7, and be prepared at the February 25 meeting to state whether they support it, can support it with reservations, or support some other alternative.

Project Alternatives for Consideration

There are seven alternatives that have been proposed and for which technical evaluation has been completed including:

- Alternative 1 - No Build Alternative;
- Alternative 2 - TDM/TSM Alternative (this included the following TDM/TSM assumptions beyond the 2030 baseline – a) parking supply management at several malls in the area, b) transit pass subsidies at malls, c) new transit routes to connect communities were no service currently planned; d) new park and ride facilities; e) completing bike and pedestrian facilities to complete system and connect to transit service; f) corridor management measures on Tualatin-Sherwood Road;
- Alternative 3 - Enhanced Existing System Alternative (EESA) (this included all of the TDM/TSM measures as well as commuter rail to the Sherwood town center and twelve arterial improvements, extensions or additions.)
- Alternatives 4, 5 and 6 - Three expressway alternatives (these included two corridors inside the UGB north of Sherwood and one outside the UGB south of Sherwood)
- Alternative 7 - The "Three Arterials" Alternative. This alternative is a multi-modal approach and includes commuter rail and all of the TDM/TSM measures listed above as well as three east-west arterials - widening Tualatin-Sherwood Road, extending Herman Road and Tualatin Road to become a complete through arterial north of Tualatin-Sherwood Road, and a new southern arterial connecting from I-5 in Wilsonville to the area south of Sherwood as well as a north-south extension of 124th Avenue, northbound and southbound I-5 auxiliary lanes between I-205 and the North Wilsonville Interchange, and a new extension of Bradbury Court crossing I-5 north of the Lower Boones Ferry Road Interchange.

OPTIONS AVAILABLE

Whatever alternative the PSC selects will need to be brought to the Metro Council for consideration to amend the 2035 RTP. The Council could:

a) provide guidance to Councilor Hosticka so that as he participates in the February 25, 2009 PSC meeting he can articulate the Metro Council outlook;
b) consider the alternatives as part of the RTP Update after there is more deliberation by the PSC in order to ensure that full discussion of the alternatives attributes and implications are fully considered by the project partners.

IMPLICATIONS AND SUGGESTIONS

Staff suggest that the Metro Council provides guidance on its preferences about the alternatives now. This will help ensure that project partners know what issues will be of most interest when the Metro Council considers an RTP amendment concerning the PSC's recommendations.

QUESTION(S) PRESENTED FOR CONSIDERATION

1) Is the Council satisfied that the Metro Council policy guidance about project purpose and need has been addressed by one or more of the alternatives?
2) Does the Council have a preferred alternative to recommend to Councilor Hosticka?
3) Would the Council like to consider that the transit component of the alternative be further coordinated with the direction that the Metro High Capacity Transit System Plan is taking?

LEGISLATION WOULD BE REQUIRED FOR COUNCIL ACTION __Yes X_No
DRAFT IS ATTACHED ___Yes ___No

MEMORANDUM

DATE: January 9, 2009

TO: Project Steering Committee (PSC)

FROM: **Executive Management Team (EMT)**

SUBJECT: I-5 to 99W Connector, Recommended Alternative for RTP Amendment

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The Executive Management Team (EMT) recommends selecting Alternative 7 as the Portland metropolitan region's southwest quadrant transportation solution-concept for Metro's consideration and adoption into the Regional Transportation Plan (RTP).

The June 2008 I-5 to 99W Connector Project Alternatives Analysis (AA) evaluated a range of six alternatives including a No-Build. A series of public hearings were held following the AA document's release. Based on consideration of input from the public hearings and subsequent direction from the PSC, a seventh alternative was identified for study. This alternative (Alternative 7) is a combination of key features represented in the original five build alternatives.

The Development of Alternative 7

The PSC direction to the project team was, in a broad sense, to look for a hybrid solution drawing from elements of the Build Alternatives considered in the AA but creating a transportation network rather than relying on a single expressway corridor to address the project purpose and need. The PSC was also concerned about the magnitude and cost of collector/distributor improvements along I-5 to support an expressway connection. The project team's response to this direction led to a strategy of creating three arterial-level corridors that would disperse regional travel between I-5 and OR 99W rather than concentrating it in one connector corridor. The distribution of traffic between these east-west arterial corridors was further enhanced by adding a new north-south arterial (124th Extension). By dispersing the east-west traffic to the three existing interchanges on I-5, the need for an extensive collector/distributor system on I-5 is no longer essential to the performance of this project.

A conceptual representation of Alternative 7 is shown in Figure 1 and the project's elements are described in Table 1. Alternative 7 draws from the five build alternatives studied in the AA and incorporates many projects already identified in the RTP and local Transportation System Plans (TSPs). All of the Transportation Demand Management/Transportation System Management (TDM/TSM) measures contained in Alternative 2 are incorporated in Alternative 7. Many of the roadway improvements as well as the commuter rail extension between Tualatin and Sherwood in Alternative 3 and in adopted plans are also included. Although the expressway-type approaches of Alternatives 4, 5, and 6 were not included, the respective alignments of these facilities and some of their functional characteristics were adapted for use in Alternative 7.

Analysis of Alternative 7

At the direction of the PSC, Alternative 7 was analyzed to compare its transportation performance and effects on the natural and built environments with the other build alternatives studied in the AA. The results of these evaluations are summarized in the attached matrix (Table 2).

Alternatives 1 (No Build) and 2 (TDM/TSM) would not effectively address the project purpose. In general, Alternative 7 addresses the project's purpose as well or better than Alternatives 3, 4, 5, and 6 while having less adverse effects on the human and natural environment. The reduced environmental effects are generally attributed to Alternative 7's smaller area of potential impact (API) or spatial footprint. The main reasons for the reduced footprint are:

- Additional roadways and structures along I-5 would be minimized compared to Alternatives 4, 5, and 6 (the connector alternatives). Alternative 7 would include auxiliary lanes, built within the existing ODOT right-of-way (as modeled for Alternative 3). In contrast, the connector alternatives included an extensive collector-distributor system along I-5 as well as improvements to existing interchanges.
- The southern arterial modeled for Alternative 7 was developed under the assumption that there would be signalized, surface intersections rather than more spatially-intensive grade-separated interchanges.
- The connector alternatives were modeled under the assumption that they would be compatible with expressway design requirements. By changing to an arterial, narrower design widths may be possible.
- Alternative 7 would have a smaller total footprint than Alternative 3, which may seem counter-intuitive since it includes a southern arterial alignment. However, a majority of the 15 road extension and/or widening projects assumed for Alternative 3 are not included in Alternative 7 (e.g., Avery Street, Adams Street, Sagert Street, and OR 99W improvements) and the collective impact area of these elements would exceed that of the southern arterial.

Project Recommendation

The EMT recommends PSC action to select Alternative 7 as the recommended transportation concept for adoption into the region's RTP. This recommendation is based on the following advantages of Alternative 7:

1. Alternative 7 would address the project's purpose by providing an enhanced transportation network of multi-modal improvements that can effectively serve regional and intrastate access to the area's highways while also enhancing local access and circulation in the southwest quadrant of the Metro region.

2. Alternative 7 draws from the best elements of the build alternatives studied in the AA and incorporates additional actions to enhance mobility. In general, Alternative 7's performance would be most similar to Alternative 6 and generally better than Alternatives 3, 4, and 5 while having fewer adverse effects on the human and natural environment and lower overall cost than Alternatives 3, 4, 5, and 6.

3. A significant advantage of Alternative 7 over the connector Alternatives 4, 5, and 6, is it could be more easily implemented in phases over time. This will provide jurisdictions flexibility to strategically adapt to funding availability, and to protect livability and economic viability of communities as increased system

capacity commensurate with development in this part of the Metro region is warranted. Smaller, more affordable individual projects may be advanced with independent utility under the integrated multi-modal framework of Alternative 7. Strategic measures to protect the affordability of right-of-way for future construction elements of Alternative 7 could also occur.

Related Project Issues

As with any large-scale transportation improvement, a number of issues will need to be dealt with in the course of advancing a planning level transportation concept to construction projects. For Alternative 7, these issues would include:

- The Alternative 7 concept provides the general locations for new transportation facilities. Subsequent project development work will need to define the actual alignments and designs of each of these facilities, including performing appropriate community involvement and design-level environmental analyses.
- Portions of Alternative 7 may require exceptions under state land use goals in order to be adopted in the RTP and to achieve needed federal and jurisdictional approvals. The extent of this issue may be affected by Metro's coming decisions on rural/urban land use reserves. Portions of proposed new transportation facilities are outside Metro's jurisdictional boundaries and will require coordination of actions between Metro and other affected jurisdictions.
- Continued coordination with the Tualatin River National Wildlife Refuge will need to occur to address potential impacts to congressionally authorized Refuge acquisition lands.
- State highway system routing and ODOT mobility standards will be key considerations in the design and future ownership of improvements within Alternative 7. Current RTP assumptions are that a new limited-access connector would be built between I-5 and 99W, and that this roadway would become the new state route, possibly replacing OR99W through Tigard. Alternative 7 does not result in a limited-access connector, raising the question whether a new state route is warranted.
- Some level of access management will need to be considered in the designs of new facilities within Alternative 7 to protect their function from present and future development impacts.
- The connector project development process emphasized the need for a corridor study along I-5 from Portland to the Willamette River. The results of this study may affect the timing and designs of some improvements within Alternative 7.

The above issues can be addressed either during the RTP consideration and amendment process or, as appropriate, in subsequent project development phases.

Attachments (3)

Table 1. Project Elements of Alternative 7 (Including possible phases*)

Project Elements	Intended Function
General	
Projects in the RTP Financially Constrained System and from local TSPs that have known funding identified in Alternative 1 (No Build)	Provide additional multimodal capacity and local system improvements
Improvements and measures identified in Alternatives 2 and 3 (TDM/TSM)	Provide additional multimodal capacity
Commuter rail extension to Sherwood identified in Alternative 3 (EESA)	Increase transit share of travel demand
Short-Term Projects (Life Expectancy to 2015*)	
Add auxiliary lanes to I-5 northbound and southbound between I-205 and North Wilsonville Interchange	Improve ability of I-5 to handle growing traffic volumes and efficiently distribute traffic between interchanges
Widen Tualatin-Sherwood Rd. (TSR) to 5 lanes from OR 99W to 124th Ave.	Provide east-west capacity
Extend 124th Ave. as new 2-3 lane roadway between TSR and Tonquin Rd.	Provide a north-south arterial to help distribute traffic to 3 east-west arterial corridors
Acquire right-of-way for a new southern arterial between OR 99W and 124th Ave., and east of 124th Ave. to Boones Ferry Rd. (BFR)	Protect corridor to provide needed east-west capacity and connectivity between I-5 and 99W
Mid-Term Projects (Life Expectancy to 2020*)	
Construct new 2-3 lane southern arterial between OR 99W and 124th Ave.	Provide needed east-west capacity in this corridor
Widen Tualatin Rd. to 4-5 lanes from Herman Rd. to Chinook St., extend Tualatin Rd. as new 4-lane roadway east across the Tualatin River to Lower Boones Ferry Rd. (LBFR), and widen LBFR to 5 lanes from new extension to SW 72nd Ave.	Provide improved corridor connection to I-5 and relieve LBFR
Widen BFR to 5-lanes from new southern arterial to Day Rd. and improve BFR intersections at Day Rd. and SW 95th Ave.	Provides needed system capacity west of the North Wilsonville Interchange
Widen Roy Rogers Rd. between Borchers Rd. and OR 99W to 5-lanes	Provide additional east-west capacity in this corridor
Construct new 2-3-lane extension of Herman Rd. between Tualatin Rd. and OR 99W	Provide improved corridor connection to 99W
Long-Term Projects (Life Expectancy to 2030 and Beyond*)	
Widen TSR to 4-5 lanes from 124th to Teton	Provide needed east-west capacity
Widen and extend 124th as a 4-5 lane roadway between TSR and the new southern arterial	Provides a new north-south element to project area roadway network. Helps distribute traffic to 3 east-west arterial corridors
Construct new 2-lane east-west connection to 72nd Avenue on Bradbury alignment	Removes local traffic and allows LBFR interchange to better serve arterial corridors
Widen and extend southern arterial to complete 4-5-lane roadway from OR 99W to Boones Ferry Road.	Completes a southern arterial. Could have intersections at Ladd Hill Road, Baker Road, Tonquin Road, and 124th Avenue
Construct either a split diamond interchange linked to North Wilsonville interchange or a new I-5 over-crossing north of North Wilsonville Interchange to connect the southern arterial to Elligsen Road east of I-5	Relieves North Wilsonville Interchange

* The life expectancy calculations are a general estimate of the duration of the phased improvements. Interim travel demand forecasting models were developed using data from the 2005 and 2030 models based on the assumption of straight-line growth in land development and trip generation throughout the metropolitan area. The short- and mid-term life expectancy estimates take into account both general congestion measures as well as specific roadway performance during the interim periods.

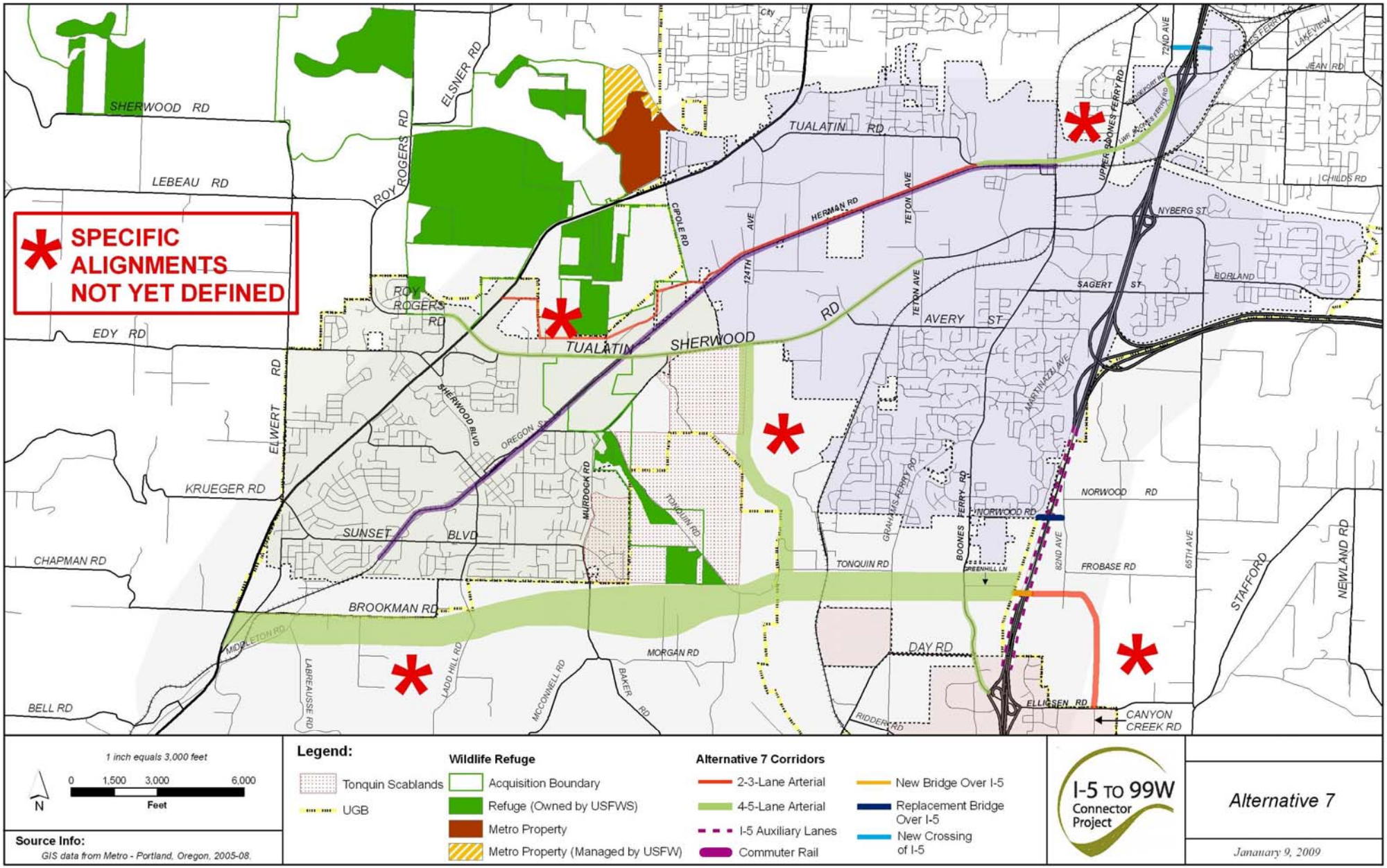
SPECIFIC ALIGNMENTS NOT YET DEFINED
SHERWOOD RD
LEBEAU RD
ROY ROGERS RD
ELSNER RD
TUALATIN RD
HERMAN RD
TETON AVE
CIPOLE RD
124TH AVE
ROY ROGERS RD
EDY RD
TUALATIN SHERWOOD RD
AVERY ST
SAGERT ST
BORLAND
NYBERG ST
CHILDS RD
JEAN RD
LAKEVIEW
72ND AVE
UPPER BOONES FERRY RD
BOONES FERRY RD
ELWERT RD
SHERWOOD BLVD
OREGON ST
MURDOCK RD
KRUEGER RD
SUNSET BLVD
TONQUIN RD
GRAHAMS FERRY RD
MARTINAZZI AVE
NORWOOD RD
CHAPMAN RD
BROOKMAN RD
MIDDLETON RD
LABREAUSSE RD
LADD HILL RD
MCCONNELL RD
BAKER RD
MORGAN RD
DAY RD
RIDDER RD
ELLIGSEN RD
82ND AVE
65TH AVE
FROBASE RD
GREENHILL LN
STAFFORD
NEWLAND RD
CANYON CREEK RD
BELL RD
1 inch equals 3,000 feet
0 1,500 3,000 6,000
Feet
N
Source Info:
GIS data from Metro - Portland, Oregon, 2005-08.
Legend:
Tonquin Scablands
UGB
Wildlife Refuge
Acquisition Boundary
Refuge (Owned by USFWS)
Metro Property
Metro Property (Managed by USFW)
Alternative 7 Corridors
2-3-Lane Arterial
4-5-Lane Arterial
I-5 Auxiliary Lanes
Commuter Rail
New Bridge Over I-5
Replacement Bridge Over I-5
New Crossing of I-5
I-5 TO 99W Connector Project
Alternative 7
January 9, 2009

Table 2: Summary of Transportation and Environmental Impacts

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Vehicle miles traveled in project area during 2030 weekday PM peak period (2 hours) by type of roadway:							
State routes*	200,200 (59%)	199,800 (58%)	233,400 (62%)	275,800 (68%)	280,600 (68%)	282,500 (68%)	204,200 (52%)
Arterials	83,900 (24%)	83,600 (24%)	87,300 (23%)	81,400 (20%)	80,300 (20%)	85,200 (20%)	150,800 (38%)
Non-arterial roads inside UGB	50,300 (15%)	50,000 (15%)	50,400 (13%)	41,800 (10%)	41,700 (10%)	39,500 (10%)	36,600 (9%)
Non-arterial roads outside UGB	8,300 (2%)	8,200 (2%)	6,300 (2%)	6,500 (2%)	6,200 (2%)	6,900 (2%)	5,300 (1%)
Totals	342,700	341,600	377,400	405,500	408,800	414,100	396,900
** Although it would not likely be designated as a state highway, Tualatin-Sherwood Road is expected to function as a route for regional and state travel under EESA. Connector corridors classified as state routes under Alternatives 4, 5, and 6.*	Traffic would use non-arterial roads both inside and outside the UGB to avoid congestion.	No measurable change from No Build Alternative.	Some traffic would shift demand from other roads outside the UGB.	Some traffic would shift from congested arterials to the state highway system and demand would be substantially reduced on other roads both inside and outside UGB.	Some traffic would shift from congested arterials to the state highway system and demand would be substantially reduced on other roads both inside and outside UGB.	Traffic demand would be substantially reduced on other roads both inside and outside UGB.	Traffic demand would substantially increase on three arterial routes and demand would be substantially reduced on other roads both inside and outside the UGB.

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Truck vehicle miles traveled in project area during 2030 weekday PM peak period (2 hours) by type of roadway:							
State routes*	31,500 (86%)	31,500 (86%)	33,800 (89%)	41,400 (92%)	40,100 (92%)	38,400 (91%)	29,800 (76%)
Arterials	3,500 (9%)	3,400 (9%)	2,500 (7%)	2,300 (5%)	2,300 (5%)	2,700 (6%)	8,200 (21%)
Non-arterial roads (inside & outside UGB)	1,700 (4%)	1,800 (5%)	1,800 (4%)	1,200 (3%)	1,200 (3%)	1,100 (3%)	1,400 (3%)
Totals	36,700	36,700	38,100	44,900	43,600	42,200	39,400
** Although it would not likely be designated as a state highway, Tualatin-Sherwood Road is expected to function as a route for regional and state travel under EESA. Connector corridors classified as state routes under Alternative 4, 5, and 6.*	Trucks would use non-arterial roads to avoid congestion.	No measurable change from No Build Alternative.	No shift of trucks from non-arterial roads.	Truck demand reduced on all non-state facilities.	Truck demand reduced on all non-state facilities.	Truck demand reduced on all non-state facilities.	Truck demand substantially increased on three arterial routes.
Vehicle miles traveled in town centers during 2030 weekday PM peak period (2 hours):							
Tualatin	14,520	14,450	15,500	13,480	13,390	13,670	13,280
Sherwood	8,850	8,790	11,920	10,570	9,490	7,460	9,210
Wilsonville	4,140	4,130	4,130	4,450	4,450	4,450	4,060
Tigard	8,260	8,230	8,050	7,940	7,950	8,030	8,050
		No measurable change from No Build Alternative.	Higher mileage in Tualatin and Sherwood.	Reduced mileage in Tualatin but higher in Sherwood.	Reduced mileage in Tualatin but some increase in Sherwood.	Reduced mileage in Sherwood and Tualatin.	Small increase in mileage in Sherwood but decreases in other town centers.

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Trip Types on Tualatin-Sherwood Road (through/regional/local) – near Cipole Road during 2030 weekday PM peak hour	Through – 13% Regional – 60% Local – 27%	Through – 13% Regional – 61% Local – 26% No measurable change from No Build Alternative.	Through – 38% Regional – 51% Local – 11% Through trips would be attracted to Tualatin-Sherwood Road by providing highest carrying capacity in Alternative 3.	Through – 4% Regional – 70% Local – 26% Through demand would be reduced and regional and local demand would increase.	Through – 5% Regional – 65% Local – 30% Through demand would be reduced and regional and local demand would increase.	Through – 6% Regional – 59% Local – 35% Through demand would be reduced; local demand would increase most of any alternative.	Through – 19% Regional – 58% Local – 23% Through demand would increase with 5-lane section on Tualatin-Sherwood Road while other traffic would shift to improved parallel routes.
Percent of traffic on Tualatin-Sherwood Road in Sherwood traveling to/from the Southwest Portal (OR 99W south of Brookman) during 2030 weekday PM peak period (2 hours)	15%	15% No measurable change from No Build Alternative.	17% Would allow more portal traffic by providing highest carrying capacity on Tualatin-Sherwood Road.	14% Portal traffic would remain on Tualatin-Sherwood Road.	2% Portal traffic would shift to connector corridor.	6% Portal traffic would shift to connector corridor.	4% Portal traffic would shift to other arterial corridors.
Number of lane miles in project area where vehicular demand would exceed roadway capacity during 2030 weekday PM peak hour	58 miles	56 miles Small change from No Build Alternative.	44 miles Almost 25% reduction below No Build Alternative.	32 miles 45% reduction below No Build Alternative.	23 miles 60% reduction below No Build Alternative.	24 miles 60% reduction below No Build Alternative.	31 miles More than 45% reduction below No Build Alternative
Vehicle hours of delay on congested roadways in project area during 2030 weekday PM peak period (2 hours)	9,300 hours	9,210 hours Minimal decrease.	8,490 hours Almost 10% reduction below No Build Alternative.	5,030 hours More than 45% reduction below No Build Alternative.	5,320 hours Almost 45% reduction below No Build Alternative.	6,130 hours Almost 35% reduction below No Build Alternative.	6,830 hours More than 25% reduction below No Build Alternative.

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Travel times to/from OR 99W south of Sherwood and the Interstate System during 2030 weekday PM peak hour	27 to 36 min.	27 to 35 min.	26 to 34 min.	22 to 33 min.	18 to 31 min.	14 to 28 min.	20 to 33 min.
Travel times to/from Tualatin Industrial Area and the Interstate System during 2030 weekday PM peak hour	10 to 24 min.	10 to 24 min.	9 to 22 min.	8 to 22 min.	7 to 21 min.	8 to 22 min.	9 to 22 min.
Transit ridership on key routes (total ridership per alternative)	47,850	56,450	62,500	48,450	49,550	49,500	62,750
Cost							
Cost (million 2008 dollars)	--	$40-45	$755-790	$930-1,025	$930-985	$965-1,040	$710-750
Land Use							
Land converted to transportation uses (total acres)	0	0-10	80-115	600-745	630-785	635-795	150-185

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Protecting the vitality of town centers	Would not address regional and through traffic conflicts with local access and circulation. Increasing congestion could reduce economic vitality of Tualatin, Tigard, and Sherwood town centers.	Would increase bike/pedestrian connectivity but would not address regional and through traffic conflicts with local access and circulation. Increasing congestion could reduce economic vitality of Tualatin and Sherwood town centers.	Multimodal access improved; would not address conflicts between local and regional traffic enough to reduce the congestion in Tualatin and Sherwood town centers. Reduced access to Tualatin-Sherwood Road would have an adverse impact on the Tualatin and Sherwood town centers.	Regional and through trips would use the connector, improving local travel in Tualatin, Tigard, and Sherwood town centers. Wilsonville would see a minor increase in regional and through trips accessing the connector.	Regional and through trips would use the connector, improving local travel in Tualatin and Sherwood town centers. Wilsonville Town Center would undergo a small increase in regional and through trips accessing the connector. Loss of access to Sherwood Town Center could affect economic viability of that town center.	Most successful in removing regional and through traffic from the Sherwood Town Center and reduces through and regional demand in the Tigard and Tualatin town centers, but would have a minor increase in regional and through traffic in Wilsonville's town center. Least impact to land uses in Sherwood and Tualatin town centers.	Multimodal access improved. Additional arterial capacity outside of town centers will reduce vehicle miles traveled in town centers, except for Sherwood. Access would be maintained along Tualatin-Sherwood Road, protecting existing businesses.
Consistency with adopted plans and policies *(Qualitative summary based on Land Use analysis)*	Does not meet Oregon Highway Plan (OHP) mobility standards; does not construct corridor as listed in local plans.	Does not meet OHP mobility standards; does not construct corridor as listed in local plans.	Does not meet OHP mobility standards; not consistent with plans identifying a connector but includes several projects identified in local and regional plans.	Consistent with plans identifying a connector.	Consistent with plans identifying a connector.	Consistent with plans identifying a connector. Would require UGB amendment or goal exception.	Consistent with local and regional policies for protecting town centers. Provides improved access to regionally significant industrial land. Would not be strictly consistent with plans identifying a limited access expressway. Southern alignment would require a UGB amendment or goal exception.

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Community Impacts							
Residential displacements (% from I-5)	0 (0%)	0 (0%)	110-130 (0%)	130-160 (80%)	110-140 (90%)	140-180 (70%)	25-30 (0%)
Commercial displacements (% from I-5)	0 (0%)	0 (0%)	10-20 (0%)	80-110 (60%)	60-80 (70%)	60-80 (70%)	10-15 (0%)
Industrial displacements (% from I-5)	0 (0%)	0 (0%)	0-10 (0%)	10-20 (0%)	0-10 (0%)	0-10 (0%)	10-15 (0%)
Community cohesion and connectivity impacts	Growing congestion would continue to degrade access and mobility in project area.	Improved multimodal options, but growing congestion would continue to degrade access and mobility in project area.	Some improvements to bicycle and pedestrian connectivity. Additional roads improve connectivity but would not reduce congestion for communities in project area.	Arterial and collector access would be maintained. Connector may improve community access to the region.	Arterial and collector access would be maintained. Connector may improve access to the region. It is the only alternative that would locate an interchange adjacent to a town center and would require significant access changes. Approximately 40 percent of Sherwood's industrial land supply would be converted to transportation use.	Arterial and collector access would be maintained. Connector may improve access to the region.	Some improvements to bicycle and pedestrian connectivity. Additional roads improve connectivity and circulation for local as well as regional and through travel. Reduces congestion along OR99W in Sherwood.
Potential impacts to minority and low-income populations	No impacts anticipated.	No impacts anticipated.	Minimal impacts anticipated; impacts not disproportionate.	Some displacements anticipated; impacts not disproportionate.	Some displacements anticipated; impacts not disproportionate.	Some displacements anticipated; impacts not disproportionate.	Minimal impacts anticipated; impacts not disproportionate.

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Economy							
Economic impact on commercial/industrial areas	Congestion for freight, consumers, and employers would continue to increase.	Congestion for freight, consumers, and employers would continue to increase.	Some congestion improvement; restricted access to Tualatin-Sherwood Road commercial area.	Improved traffic flow; reduced freight traffic in Tualatin and Sherwood town centers, although Wilsonville Town Center experiences a slight increase in freight traffic accessing state highway system.	Improved traffic flow; reduced freight traffic in Tualatin and Sherwood town centers, although Wilsonville Town Center experiences a slight increase in freight traffic accessing state highway system; state highway access may become more difficult for Tualatin-Sherwood Road businesses.	Direct east-west access; avoids Sherwood Town Center. Improved traffic flow; reduced freight traffic in Tualatin and Sherwood town centers, although Wilsonville Town Center experiences a slight increase in freight traffic accessing state highway system.	Direct east-west access with southern arterial removes some regional trips in Tualatin and Sherwood town centers. Southern arterial in combination with north-south 124th improves connectivity for freight and industrial lands development between Tualatin and Wilsonville and the state highway system. Northern arterial improves access to industrial areas north of Tualatin-Sherwood Road.

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Biology							
Impacts to upland habitat (wooded, grassland, nesting areas)	Little to no impact.	Little to no impact. Least impact of all build alternatives.	Lower impact than the three corridor alternatives, but higher than Alternative 2.	Greater impacts than Alternatives 2 and 3, but less than Alternatives 5 and 6.	Higher impact than Alternative 4, but less impact than Alternative 6.	Highest functional impact. Crosses all major drainages in relatively undeveloped headwater areas.	Functional impacts along southern arterial (though lower than Alternative 6 due to reduced acreage); few impacts along I-5 and OR 99W.
(acres of habitat affected)			(10)	(130-172)	(139-191)	(174-222)	(33-41)
Impacts to riparian habitat	Little to no impact.	Little to no impact. Least impact of all build alternatives.	Lower impact than the three corridor alternatives. Minor impacts to riparian corridors and several creeks. New road and bridge over the Tualatin River may impact wildlife movement.	Greater impacts than Alternatives 2 and 3, but less than Alternatives 5 and 6.	Greater impacts than Alternatives 2, 3, and 4. Potentially higher acreage impacts than Alternative 6 but crosses fewer high quality drainages.	Highest functional impact to riparian corridors since it crosses all major high quality drainages in the project area.	Lower impacts based on acreage than the connector alternatives, but similar functional impacts to Alternative 6 due to southern arterial crossing multiple riparian areas. Minor impacts resulting from 124th Avenue extension.
(acres of habitat affected)			(19)	(91-116)	(101-125)	(89-111)	(23-29)

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Aquatic resources impacts (relative impacts are based on the amounts of new impervious surfaces added by each alternative) (acres of new impervious surface)	Little to no impact.	Minor impact. (44)	Construction impacts to Tualatin River. Lowest potential impact compared to the three connector alternatives to overall project area, and specifically to Saum, Seely/ Coffee, and Chicken/ Cedar subbasins. (177)	Highest impact of the three connector alternatives to Seely/Coffee subbasin. Lowest impact of the three to Rock subbasin. (178-194)	Similar impacts as Alternative 4. (171-195)	Highest impact among the alternatives to Chicken/Cedar subbasins, and highest overall project area impact. (186-209)	Lower impact than Alternatives 3-6. Lowest impact among alternatives with new connection between I-5 and OR 99W due to smaller acreage impacts. (121-133)
Description of wildlife corridor impacts. (acres of wildlife corridor affected)	Little to no impact.	Least impact of all build alternatives.	Least impact in terms of acreage, but limits wildlife movement by widening roads and adding two new crossings of Rock Creek. (6)	Mostly avoids main north-south corridor. (33-43)	Impacts east-west movement between Rock Creek and the Tualatin River. Rock Creek crossing impacts habitat connectivity and wildlife movement. (46-56)	Highest functional impact. Limits east-west and north-south movements. Bisects north-south corridor in three areas. (78-90)	Lower impact than Alternatives 4 through 6. Impact is mainly along southern arterial. (26-32)
Potential effects on threatened and endangered fish species (acres impervious added to Chicken Creek subbasin)	Little to no impact.	Little to no impact.	Least potential effect on listed fish species. (1 acre)	Higher potential of effects than Alternative 3, lower than Alternative 6. (12 acres)	Higher potential of effects than Alternative 3, lower than Alternative 6. (16 acres)	Highest potential effects to listed fish species. (39 acres)	Higher functional effects than Alternatives 4 and 5 because of southern arterial location; but lower impacts than Alternative 6 based on reduced acreage. (17 acres)

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Tualatin National Wildlife Refuge (description of potential impact, including acreage)	No direct impact to refuge or to land within the Congressionally authorized acquisition boundary.	No direct impact to refuge or to land within the Congressionally authorized acquisition boundary.	No direct impact to refuge. Two new roads near Tualatin-Sherwood Road impacts 8 acres of land within the Congressionally authorized acquisition boundary.	No direct impact to refuge. Widening Tualatin Sherwood Road impacts 8-10 acres of land within the Congressionally authorized acquisition boundary.	Slight impact to land within the existing refuge, but only marginal impacts to refuge functions. Requires 40-50 acres of land within the Congressionally authorized acquisition boundary. Rock Creek crossing impacts habitat connectivity and wildlife movement.	The 124th Avenue extension in Tonquin Scablands is within the Congressionally authorized acquisition boundary. Requires 18-22 acres and impacts habitat connectivity and wildlife movement.	No direct impact to refuge. Requires two acres on edge of Congressionally-authorized acquisition area near Tualatin-Sherwood Road.
Wetlands							
Acres of potentially impacted wetlands	N/A	< 1	8-9	25-33	18-24	19-26	4-5
New or modified stream crossings	0	0	18	10-24	9-21	19-29	16-26

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Water Quality							
Acres of increased impervious surface (indicator of potential for water quality impacts) *Alternatives 3-7 all would have additional 44 acres for TDM/TSM measures; these would be 100% treated on-site.	N/A	44	177*	178-194*	171-195*	186-209*	121-133*
Utilities							
Potential for impacting utilities	Low – None	Low	High (Most utilities are near existing roadway right-of-way; expansions will require their relocation.)	Medium (Will cross several utilities.)	Medium (Will cross several utilities; will need to avoid electric substation on OR 99W and alteration of electric transmission lines.)	Low-Medium (Will cross utilities in some areas; location largely outside urbanized zone will allow avoidance of several major lines.)	Medium (Many utilities near existing roadway right-of-way; expansions will require relocation. Additional utilities would be affected by new roadways.)
Visual Resources							
Relative adverse impact to visual / aesthetic resources	Very Low	Very Low	Low	Low-Moderate	Moderate-High	Moderate	Low
Overall estimated visual quality of views to alternative	Moderate	Moderate	Very Low	Low-Moderate	Low	Low	Low
Overall estimated visual quality of views from alternative	Moderate	Moderate	Low	Low-Moderate	Low-Moderate	Moderate	Low-Moderate

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Hazardous Materials							
Number of high-risk sites potentially affected	0	0	33	18	12	8	18
Geology and Soils							
Potential impacts to groundwater resources	No construction; no impacts.	Minor shoulder construction for bicycle and pedestrian facilities; few potential impacts.	Shallow ground-water present; risk of discharge of collected drainage to groundwater.	Shallow ground-water present; risk of discharge of collected drainage to groundwater.	Shallow ground-water present; risk of discharge of collected drainage to groundwater.	Shallow ground-water present; risk of discharge of collected drainage to groundwater. Slope cuts near Brookman/Ladd Hill Road may disturb domestic water supply in areas of uncontained aquifer in the Columbia River basalt.	Shallow groundwater present; risk of discharge of collected drainage to groundwater. Slope cuts near Brookman/Ladd Hill Road may disturb domestic water supply in areas of uncontained aquifer in the Columbia River basalt.
Cultural Resources							
Historic resources likely/possibly affected	0/0	0/0	9/10	15/18	15/15	5/6	7/15
Number of recorded archaeological resources within potential improvement area	N/A	0	5	2	2	2	3
Percent of potentially sensitive archaeological areas within potential improvement area	N/A	None	67%	63%	56%	59%	64%
Noise							
Potential number of residential, recreational, church, school, or hotel noise impacted sites	1,300-1,350	1,300-1,350	1,490-1,540	1,460-1,510	1,410-1,460	1,260-1,310	1,295-1,325
Potential number of commercial or industrial noise impacted sites	90-140	90-140	120-170	100-150	100-150	70-120	125-130

Resource/Measure	Alternative 1 No Build	Alternative 2 TDM/TSM	Alternative 3 EESA	Alternative 4 Corridor 4D	Alternative 5 Corridor 4E	Alternative 6 Corridor 5B	Alternative 7 3 Arterial Corridor
Energy							
Annual fuel consumption (million gallons)	29.29	29.22	32.10	34.98	35.03	35.22	33.74
(Percent compared to No Build Alternative)	(-)	(0%)	(+10%)	(+19%)	(+20%)	(+20%)	(+15%)
Air Quality	• All alternatives, including the No Build, would be in conformance with regional air quality attainment goals. • Compared to the No Build Alternative, Alternatives 2 and 3 have a reduced potential for adverse air quality impacts than Alternatives 4, 5, and 6. • Alternative 7 would have a reduced potential for adverse air quality impacts compared to Alternatives 4, 5, or 6 but a higher potential for adverse air quality impacts than Alternatives 1, 2, or 3.						