A G E N D A

600 NORTHEAST GRAND AVENUE PORTLAND, OREGON 97232-2736

METRO

TEL 503-797-1916 FAX 503-797-1930

MEETING: TRANSPORTATION POLICY ALTERNATIVES COMMITTEE

DATE: September 26, 2008

TIME: 9:30 A.M.

PLACE: Metro Regional Center, Room 370A/B

9:30 AM	**1.**		Call to Order and Declaration of a Quorum	**Robin McArthur**
9:30 AM	**2.**		Citizen Communications to TPAC on Non-Agenda Items	
9:35 AM	**3.**		Future Agenda Items • ODOT Safety, Preservation & Bridge Programs • PSU Bicycle Transportation Study • ODOT's Transportation Enhancement Programs • Review of MTIP Process	**Robin McArthur**
9:40 AM	**4.**	*	Approval of TPAC Minutes for August 29, 2008	**Robin McArthur**
	5.		**INFORMATION ITEMS**	
9:45 AM	**5.1**	#	Status report on the Regional Transportation Plan (RTP) Scenarios – INFORMATION	**Kim Ellis**
10:15 AM	**5.2**	*	High Capacity Transit (HCT) Evaluation Criteria – INFORMATION/DISCUSSION	**Tony Mendoza** **Crista Gardner**
11:00 AM	**6.0**		ADJOURN	**Robin McArthur**

Upcoming Meetings:

MTAC/TPAC Workshop: Monday, Sept. 29, 2008 from 2 – 4 p.m. at Metro, Council Chambers
MTAC/TPAC Workshop: Monday, Oct. 13, 2008 from 2 – 4 p.m. at Metro, Council Chambers
TPAC: Friday, Oct. 31, 2008 from 9:30 a.m. – 12 p.m. at Metro, Rm 370A/B
TPAC: Friday, Nov. 21, 2008 from 9:30 a.m. – 12 p.m. at Metro, Rm 370A/B

* Material available electronically. Please call 503-797-1916 for a paper copy
** Material to be emailed at a later date.
\# Material provided at meeting. All materials will be available at the meeting.

600 NORTHEAST GRAND AVENUE | PORTLAND, OREGON 97232 2736
TEL 503 797 1916 | FAX 503 797 1930

METRO

TRANSPORTATION POLICY ALTERNATIVES COMMITTEE
August 29, 2008
Metro Regional Center, 370A/B

MEMBERS PRESENT	AFFILIATION
Elissa Gertler	Clackamas County
Alan Lehto	TriMet
Nancy Kraushaar	City of Oregon City/Cities of Clackamas County
Keith Liden	Citizen
Dave Nordberg	DEQ
Louis A. Ornelas	Citizen
Ron Papsdorf	City of Gresham
John Reinhold	Citizen
Karen Schilling	Multnomah County
April Siebenaler	Citizen
Rian Windsheimer	ODOT

MEMBERS ABSENT	AFFILIATION
Jack Burkman	WSDOT
Bret Curtis	Washington County
Sorin Garber	Citizen
John Hoefs	C-TRAN
Susie Lahsene	Port of Portland
Dean Lookingbill	SW Washington RTC
Mike McKillip	City of Tualatin/Cities of Washington County
Satvinder Sandhu	FHWA
Sreya Sarkar	Citizen
Paul Smith	City of Portland

ALTERNATES PRESENT	AFFILIATION
Robin McCaffrey	Port of Portland
Margaret Middleton	City of Beaverton/Cities of Washington County
Sharon Zimmerman	

STAFF
Tom Kloster, Mark Turpel, Amy Rose, Ted Wheeler, Kelsey Newell

1. CALL TO ORDER AND DECLARATION OF A QUORUM

Mr. Tom Kloster declared a quorum and called the meeting to order at 9:31 a.m.

2. CITIZEN COMMUNICATIONS TO TPAC ON NON-AGENDA ITEMS

There were none.

3. COMMENTS FROM THE CHAIR

Mr. Kloster briefly overviewed the regional choices engagement events for fall 2008; highlighting the *Making Connections Summit* and joint Metro Policy Advisory Committee (MPAC) and JPACT meetings.

4. FUTURE AGENDA ITEMS

Committee members recommended that the presentations on ODOT's transportation enhancement programs and review of the Metropolitan Transportation Improvement Program (MTIP) process be added to the list of future agenda items.

5. APPROVAL OF TPAC MINUTES FOR JUNE 27, 2008

Approval of TPAC Minutes from June 27, 2008

MOTION: Ms. Karen Schilling moved, Mr. Louis Ornelas seconded, to approve the August 1, 2008 meeting minutes.

ACTION TAKEN: With all in favor, the motion passed.

6. ACTION ITEMS

6.1 Resolution No. 08-3973, For the Purpose of Approving the Air Quality Conformity Determination for the Oregon Highway 213/Redlands Road Improvements as Part of the Federal Component of the Amended 2035 Regional Transportation Plan and Amended 2008-2011 Metropolitan Transportation Improvement Program

Mr. Mark Turpel of Metro provided a brief overview of air quality conformity requirements. Ms. Nancy Kraushaar gave a description of Oregon City's new development site entitled *The Rivers* and the proposed road improvements to Highway 213 and Redland Road.

With the recent adoption of the 2035 Regional Transportation Plan (RTP) air quality conformity determination and its identification of a significant "cushion" on Carbon Monoxide emissions, as well as the cost and time needed to complete a full conformed analysis and the likelihood that this project's impact on air quality would be slight, staff proposed a less extensive qualitative abbreviated analysis of the new transportation facility improvements be completed. The analysis

determined that the Highway 213/Redland Road improvements would not exceed regional Carbon Monoxide air quality standards.

Mr. Dave Nordberg stated that although staff's approach for meeting the regional emissions analysis was not the standard, it does adequately meet the requirements. However, he noted that there are other areas (e.g. "hot spot analysis") that must be satisfied in order to meet the full air quality conformity determination requirements.

Committee members were concerned that incremental allocation of RTP dollars without a full air quality analysis could limit opportunities for future projects and should not become the standard/precedent. Staff agreed with concerns and proposed coming back to TPAC with an approach that addresses future similar requests.

MOTION: Ms. Elissa Gertler moved, Ms. Schilling seconded, to approve Resolution No. 08-3973, with the requirement that ODOT and Oregon DEQ evaluate the air quality conformity determination procedure for future projects of this nature.

ACTION TAKEN: With all in favor, the motion passed.

6.2 Resolution No. 08-3974, For the Purpose of Amending the Federal Component of the 2035 Regional Transportation Plan (RTP) and the 2008-11 Metropolitan Transportation Improvement Program

Mr. Ted Leybold of Metro briefly overviewed the Highway 213 and Redland Road improvement project amendments to the 2035 RTP and 2008-11 MTIP.

Ms. Kraushaar submitted minor corrections to the project description outlined in the RTP Constrained Project list (Exhibit A of Resolution No. 08-3974).

MOTION: Mr. Ron Papsdorf moved, Mr. Ornelas seconded, to approve Resolution No. 08-3974 with the amended language.

ACTION TAKEN: With all in favor the motion passed.

6.3 Oregon Transportation Commission Reauthorization Project List

Mr. Travis Brower of ODOT (with assistance from Rian Windsheimer) provided information on the Oregon Transportation Commission's (OTC) policy for federal reauthorization highway program earmark requests. ODOT Region 1 staff have reviewed and screened each of the project proposals and have recommended 6 local projects for consideration. (Complete list of projects included as part of the meeting record.)

Mr. Dave Nordberg stated that although staff's approach for meeting the regional emissions analysis was not the standard, it does adequately meet the requirements. However, he noted that

there are other areas (e.g. the public comment process) that must be satisfied in order to meet the full air quality conformity determination requirements.

In addition, to these high priority project recommendations, ODOT recommended endorsement for the Columbia River Crossing (CRC) project. The CRC project would compete for separate, national level, discretionary earmark funds such as Projects of National and Regional Significance.

Committee discussion included the US 26 Springwater Interchange, I-84/257th Avenue Troutdale Interchange, statewide support for the CRC project and state highway and transit project funding.

MOTION: Ms. Gertler moved, Ms. Robin McCaffrey seconded, to recommend to JPACT the endorsement of all 8 projects (including the US 26 Springwater Interchange and I-84/257th Avenue Troutdale Interchange projects pending ODOT's approval) in no priority order.

ACTION TAKEN: With all in favor, the motion passed.

6.4 2010-13 Metropolitan Transportation Improvement Program (MTIP) and State Transportation Improvement Program (STIP)

6.4.1 ODOT Proposed Program

Mr. Windsheimer briefly overviewed the 2010-13 State Transportation Improvement Program (STIP) development timeline, project map, Region 1 proposed projects for 2012-13, and public involvement schedule for the draft STIP and first-cut transportation priority list for MTIP.

Committee members recommended contact information for submitting written comments on the STIP and MTIP be added to the public involvement flyer. Additional discussion included bike and pedestrian improvement projects.

6.4.2 Regional Flexible Fund Allocation: Step 2

Mr. Leybold and Ms. Amy Rose of Metro updated the committee on the Regional Flexible Fund (RFF) step 2 local project applications. Their presentation included information on RFF score adjustments and qualitative and quantitative summaries on each of the project categories: 1) Regional Mobility Corridor, 2) Mixed-used Implementation, 3) Industrial and Employment Area Implementation, 4) Environmental Enhancement and Mitigation projects, and 5) Project development.

JPACT is scheduled to release the RFF list for public review and comment at their Sept. 11th meeting.

Committee discussion included project evaluation criteria (e.g. project readiness or geographic region), project cost estimates and adjustments, and bike and pedestrian project ratings. Members

recommended that project scoring be presented to the public in an alternative form that more simply illustrates the results of the technical project.

MOTION: Mr. Nordberg moved, Ms. Margaret Middleton seconded, to recommend that the complete Regional Flexible Fund project list move forward for public review and comment that the project list not be narrowed prior to distributing to the public.

ACTION TAKEN: With all in favor, the motion passed.

7. INFORMATION / DISCUSSION ITEMS

7.1 Regional Infrastructure Analysis

Mr. Andy Shaw of Metro briefed the committee on the regional infrastructure comparative cost analysis. His presentation included information on:

- Growth and Infrastructure
- Infrastructure Types and Needs
- Comparative Costs (e.g. case studies, local and regional community infrastructure and costs, and urbanizing/urban area costs)

Project next steps include increased public involvement and outreach such as the *Making Connections Summit* and numerous joint MPAC/JPACT meetings.

Committee discussion included tax-based and investment benefits, the Big Look Task Force and infrastructure cost estimates.

8. ADJOURN

As there was no further business, Mr. Kloster adjourned the meeting at 12:00 p.m.

Respectfully submitted,

Kelsey Newell
Recording Secretary

ATTACHMENTS TO THE PUBLIC RECORD FOR AUGUST 29, 2008
The following have been included as part of the official public record:

ITEM	TOPIC	DOC DATE	DOCUMENT DESCRIPTION	DOCUMENT NO.
	Agenda	N/A	Revised 8/29/08 TPAC Agenda	082908t-01
	Flyer	N/A	Rail~Volution 2008 flyer	082908t-02
6.1	Resolution	N/A	Updated Resolution No. 08-3973.	082908t-03
6.2	Resolution	N/A	Updated Resolution No. 08-3974.	082908t-04
6.2	Memo	8/28/08	To: Nancy Kraushaar From: Aleta Forman-Goodrich RE: Description Change for the RTP Metro Project ID 10143	082909t-05
6.4.2	Chart	8/29/08	Updated 2010-2013 Regional Flexible Fund – Step 2 Local Projects	082908t-06
6.4.2	Memo	8/29/08	To: TPAC Members and Interested Parties From: Ted Leybold RE: RFF Score Adjustment	082908t-07
6.4.2	Chart	8/29/08	Quantitative Summary	082908t-08
6.4.2	Chart	8/29/08	Qualitative Summary	082908t-09
7.1	PowerPoint	8/29/08	*Regional Infrastructure: Comparative Costs* presented by Andy Shaw	082908t-10
7.1	Report	7/9/2008	Comparative infrastructure costs: local case studies	082908t-11

M E M O R A N D U M

600 NORTHEAST GRAND AVENUE | PORTLAND, OREGON 97232 2736
TEL 503 797 1700 | FAX 503 797 1930

METRO

To: TPAC

From: Tony Mendoza

Subject: HCT Screening and Evaluation Criteria Framework

Attached is a draft screening and evaluation framework prepared for the High Capacity Transit System Plan. An original draft was presented to the HCT MTAC/TPAC Subcommittee on 9/12/08, where members provided several comments and suggested changes to the Screening Criteria (Figure 3). The following suggestions are incorporated in the attached draft:

- Use a "high to low" rating system for each screening criterion that can be incorporated into a "scorecard" matrix for all corridors. A good example of this type of matrix using a simple color code is included in Figure 9 on page 17 of the attached memo.

- Refine the Existing and Future Potential Ridership screening targets to better reflect local conditions. Include a five-tiered rating system from "low" to "high" where the "low" rating is indicative of areas where land use densities are not supportive of any HCT investment.

- Include "congestion" conditions in parallel arterials or freeways as a new screening criterion, favoring corridors where congestion is worse. The assessment would be conducted using the regional travel demand model, focusing on current and predicted levels of congestion using 2005 and 2035 regional travel demand forecasts.

- Include a new screening criterion that addresses the issue of "equity." This is included in the attached memo as a qualitative criterion that would evaluate access to HCT projects from identified census tracks with high densities of low-income and/or minority residents.

TPAC is reviewing the Evaluation Framework at the September 26, 2008 meeting and will be asked to take action on the general Evaluation Framework and the specifics of the Screening Criteria at their October 31st meeting.

Nelson\Nygaard
consulting associates

785 Market Street, Suite 1300
San Francisco, CA 94103
(415) 284-1544 FAX: (415) 284-1554

M E M O R A N D U M

To: HCT Team

From: Jeffrey Tumlin, Nelson\Nygaard
Thomas Brennan, Nelson\Nygaard

Date: September 18, 2008

Subject: Potential HCT Screening and Evaluation Criteria Framework - DRAFT

Summary

This memorandum updates the September 11, 2008 memo sent to the HCT MTAC/TPAC Subcommittee based on the feedback received at their September 12th meeting. This memo is intended to begin the conversation about defining a framework to evaluate and select HCT corridors and projects, and prioritizing them given limited resources and the goals of the Regional Transportation Plan (RTP). The HCT evaluation framework will be part of the broader RTP Evaluation Framework also being developed. The memo starts with a discussion of how the RTP Evaluation Framework is currently defined for context. The memo then examines potential tools for selecting and prioritizing HCT corridors to support the 2040 Growth Concept vision.

Nomenclature

Before beginning a discussion of performance measures and evaluation criteria for High Capacity Transit (HCT), we should first define terms developed for the RTP Evaluation Framework:

- **Goals** are self-evident public goods, something that everyone can agree is a common aspiration. In the RTP, they represent statements of purpose, describing long-term desired outcomes for the region's transportation system to support and implement the Region 2040 vision. They might not ever be achieved, but a successful campaign could be based around them. Example: Achieve world peace.

- **Objectives** describe something we want to achieve in support of a larger, long-term term goal. Objectives are measurable. Example: Create a nuclear non-proliferation agreement between the United States and Soviet Union.

- **Actions** are tasks or strategies that can be assigned, along with matching deadlines, that work toward achieving an objective. Example: Secretary of State to reserve Camp David in May.

- **Performance Measurements** help determine the degree to which a goal or objective is being met. This term is often used interchangeably with "performance indicators." Performance measurements work best when quantitative, but success for many objectives must be judged

qualitatively. Some measurements can be used to predict the future as part of an evaluation process using forecasted data, while other measures can be used to monitor changes based on actual empirical or observed data. In both cases, they can be applied at a system level, corridor level and project level, and provide the planning process with a basis for evaluating alternatives, making decisions on future transportation investments and monitoring progress over time. Example: Percent reduction in number of Intercontinental Ballistic Missiles.

- **Targets** or benchmarks are thresholds that performance measures should hit. Oftentimes, targets vary by date. Example: Reduce Intercontinental Ballistic Missiles by 10% in 1980 and 25% in 1990.

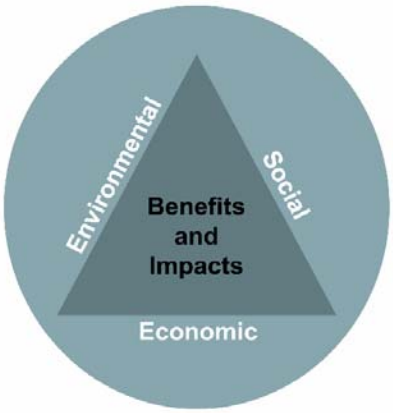
- **Evaluation Criteria** are performance measures, but they are tailored to help make a decision between one thing or another. In transportation analyses, they are used to prioritize investments or select one technology over another in a given corridor or for a specific project. Evaluation criteria are often used together, with some criteria weighted more heavily than others.

- **Screening Criteria** are a short set of evaluation criteria used to reduce the number of potential HCT corridors or projects that move forward to more detailed evaluation.

RTP Performance Evaluation Framework

The primary aim of the 2035 Regional Transportation Plan (RTP) is to implement the Region 2040 vision for land use, transportation, the economy, and the environment. To accomplish this, the 2035 RTP Update is embracing new ways to think more holistically about how to efficiently move people and freight around and through the Portland metropolitan region. A core element of this approach is an outcomes-based evaluation framework that considers economic, social and environmental benefits and impacts as shown in Figure 1.

Figure 1 RTP Outcomes-Based Evaluation Framework



Performance measurement is a critical element of this approach, creating a communication tool to convey progress towards meeting planning goals, provide data for system evaluation and assist policy development and investment decision-making.

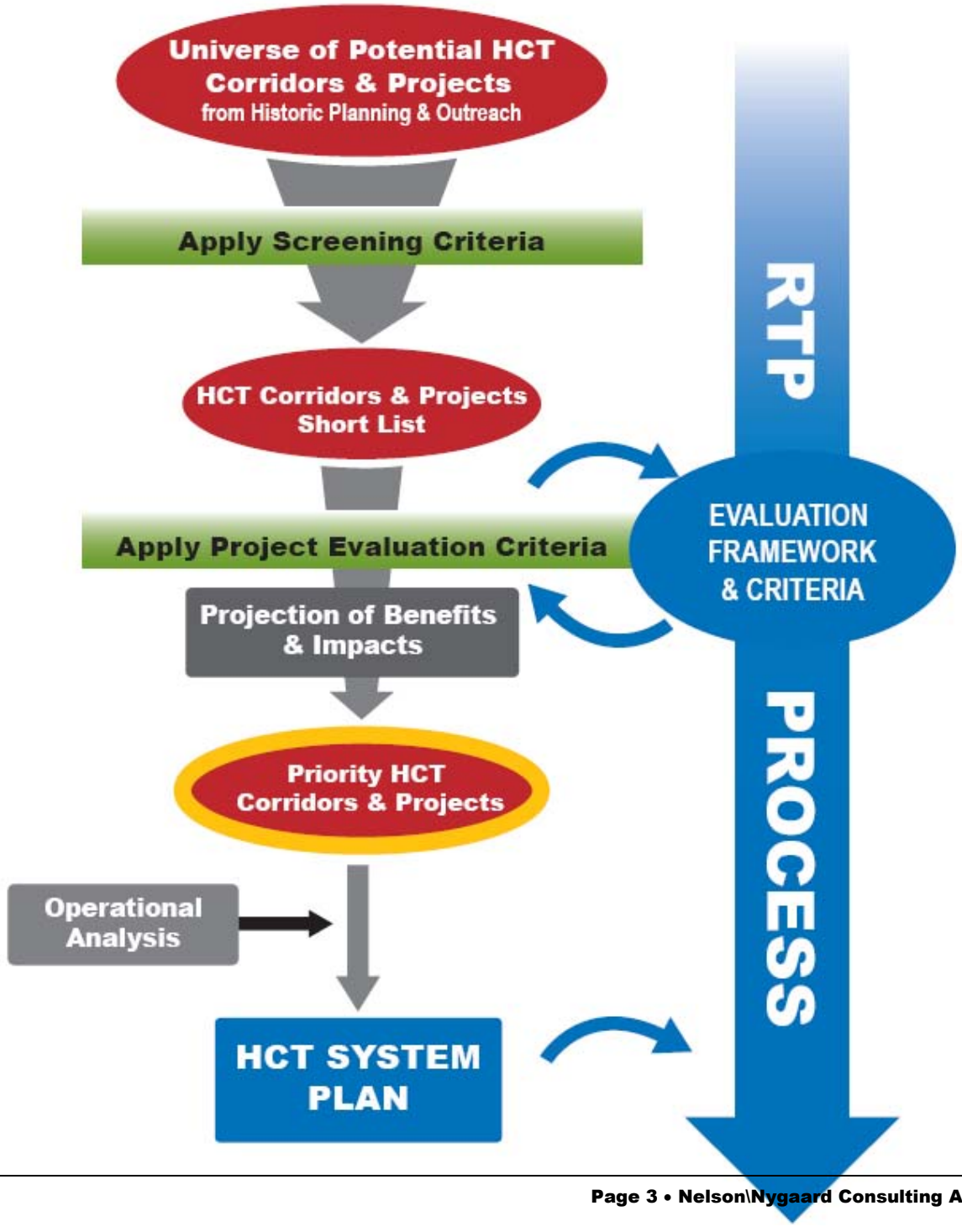
In order to ensure that HCT investments support the larger regional vision, it is important that HCT performance measures and evaluation criteria be compatible with the broader RTP framework.

Development of the HCT evaluation framework will occur in coordination with the RTP team, informing that process and ensuring both frameworks are complementary.

Process

Different screening criteria, evaluation criteria and performance measures will be used at different points in the HCT evaluation and plan development process. Figure 2 summarizes key phases of the process:

Figure 2 Process Diagram



Proposed Screening Criteria

The first criteria needed for the HCT plan development (the Screening Criteria) are those used to "screen" the initial long list of potential HCT corridors and system enhancement projects into a more workable short list. The long list to be screened includes all the corridors modeled in Scenario B (RTP modeling) and those identified in the HCT public workshops and other public outreach activities. This step in the evaluation will create a "short list" that includes any corridor or system enhancement projects that could reasonably support any type of HCT investment, including those that would require significant but achievable land use policy changes. Potential HCT investments include:

- MAX light rail extensions
- New MAX light rail lines
- Commuter rail
- High frequency, dedicated right-of-way streetcar (rapid streetcar)
- Bus Rapid Transit with mainly dedicated right of way
- Other system enhancements (e.g., Rose Quarter, Steel Bridge, etc.)

We propose a list of six initial screening criteria:

1) **Ridership**. A rough estimate of ridership potential would be generated using the Transit Orientation Index, which focuses on the residential, total jobs and retail job densities around potential HCT stations. Two estimates of ridership would be made:

    a. Current ridership potential under existing land uses.
    b. Future ridership potential as supported by local preferences. Local communities would be able to adjust their own future densities and use mixes using the INDEX model to see whether their corridor meets HCT screening thresholds.

    Some ridership adjustment may be considered for stations that would include park-and-ride capacity or regional bus feeder service.

2) **Corridor Availability and Cost.** This would be a qualitative assessment of how costly the construction of a dedicated right-of-way HCT line would be. Alignments or projects that require significant tunneling, bridge construction or new right-of-way acquisition would be disfavored. Cost considerations will be given to areas that need significant improvements to street or sidewalk connections to access the HCT corridor.

3) **Environmental Constraints.** HCT projects that would require valuable habitat destruction would be disfavored. Qualitative assessment would be based on length of alignment in sensitive habitat areas, level of protection called for in those areas, and level of cost to mitigate.

4) **Equity**. This would be a qualitative assessment of potential for an alignment to serve communities of concern. Alignments that serve census tracks identified by Metro as having high concentrations of low-income, minority and/or Hispanic populations would be favored. These are well documented in the background paper, "Environmental Justice in Metro's Transportation Planning Process: Implications for the 2035 RTP and the 2008-2007 MTIP."

5) **Connectivity and System.** HCT lines that connect to important intermodal centers would be favored.

6) **Congestion**. HCT corridors that parallel arterials or throughways where high levels of congestion are forecasted would receive higher rankings. The assessment would be conducted using the regional travel demand model, focusing on current levels of congestion using the 2005 regional travel demand forecasts. Predicted levels of congestion using the 2035 regional travel demand forecasts.

Figure 3 summarizes how these criteria would be used to screen potential corridors or system enhancement projects.

TRANSIT ORIENTATION INDEX

In 1997 Metro and TriMet developed the Regional Primary Transit Network, a policy framework for guiding regional service investment. The primary analytic tool used to develop the PTN is the Transit Orientation Index (TOI). The TOI was developed first for the Portland Metro region, using a detailed regression analysis to evaluate the effectiveness of different land use and demographic variables in predicting transit demand. The analysis showed that the relationship of three key land use variables could be used to predict as much as 80% of the variance in transit demand: household density, employment density and the density of retail employment. Compared to these three key factors, other factors such as income levels, vehicle ownership and age, were not statistically significant predictors of transit demand.

The TOI is a comparative index, not an accurate predictor of daily transit ridership. A key strength of the TOI is that it uses readily available data sets and can be quickly and easily applied to a corridor or station area to evaluate future ridership potential relative to other corridors or station areas. In this plan, Metro's 2035 projected land uses will be the basis for the TOI.

Figure 3 Proposed Initial Screening Criteria – For Discussion

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	> 10.0 riders per acre
		Medium-High	7.0-10.0 riders per acre
		Medium	4.0-7.0 riders per acre
		Low-Medium	2.5-4.0 riders per acre
		Low	< 2.5 rider per acre
QUALITATIVE CRITERIA			
Corridor Availability and Cost	Qualitative assessment of right of way availability and associated access improvements	High	Minimal right of way development needs.
		Medium	Moderate right of way development needs.
		Low	Major land acquisition, tunneling, bridge work or extensive ROW development
Environmental Constraints	Qualitative assessment of habitat loss	High	Minimal potential habitat loss and mitigation
		Medium	Moderate potential habitat loss and mitigation
		Low	Significant potential habitat loss and mitigation
Equity	Qualitative assessment of social equity needs	High	Good access provided to low-income and minority communities
		Medium	Moderate access provided to low-income and minority communities – no change in riders per acre
		Low	Poor access provided to low-income and minority communities
Connectivity and System *	Qualitative assessment of intermodal connectivity, maintenance yard site or other transit system needs.	High	Strong connectivityand/or system benefits –
		Medium	Moderate connectivityand/or system benefits –
		Low	Poor connectivity, and/or system benefits –
Congestion	Assessment of ability to address congestion	High	Significant congestion
		Medium	Moderate congestion
		Low	Minimal congestion

***:** a ridership adjustment factor could be added for stations that would collect from larger catchment or make regional connections or this could simply be accounted for in Connectivity and System criterion.
******: testing is needed to set the exact target values, those included in this figure are placeholders

HCT Project Evaluation Criteria

Following the initial corridor and system enhancement project screening, more detailed evaluation tools would be needed to refine, shape and prioritize projects and determine optimal HCT technologies. Evaluation criteria will be needed that can inform:

- Which corridors and system enhancement projects should be prioritized?
- What is the right technology for each corridor?
- What land use, connectivity, TDM and other thresholds must local jurisdictions meet in order to justify HCT transit?

These criteria will be developed in the coming weeks, using Bay Area Rapid Transit (BART) and London's Multiple Account Evaluation tools as models. These case study examples are described in Appendices I and II. The evaluation criteria will also draw from more standard measures used regionally and nationally (FTA required) Appendix III.

HCT system planning processes are typically based on a set of performance criteria, but often only a subset of applicable criteria are applied in evaluating specific projects. For example, evaluating the benefits of a new type of light rail vehicle would require different criteria from evaluating the potential for a new HCT corridor.

Targets for HCT Evaluation Criteria

Evaluation criteria and specific targets to measure those criteria can act as a "dashboard" against which policy makers can evaluate the impacts and benefits of a single or set of investments. The HCT process is structured to collaborate with the RTP team developing performance measures, providing ideas about how to best measure performance of HCT system investments within the context of RTP goals.

The RTP has ten adopted goals and a list of more than 100 potential performance measures related to those goals (Appendix IV). The RTP measures are being evaluated and will eventually be reduced in number later this fall. As they currently stand, the RTP measures are both too numerous and too broad to be directly useful for a more detailed HCT corridor and project evaluation. To be effective, the HCT framework will need to build from a much smaller set of those measures.

Figure 4 uses the RTP Outcome Based Approach to performance measurement as an organizational framework to propose a set of high-level HCT evaluation criteria and targets. This is an early discussion draft designed to engender discussion about how a simple set of criteria can interact to inform us of the potential outcomes and benefits of specific HCT projects or sets of projects. Additionally, these goals embrace the Definition of a Successful Region, adopted by Metro Council in June 2008. These are:

A Definition of a Successful Region:

> *1. People live and work in vibrant communities where they can choose to walk for pleasure and to meet their everyday needs.*
>
> *2. Current and future residents benefit from the region's sustained economic competitiveness and prosperity.*

3. People have safe and reliable transportation choices that enhance their quality of life.

4. The region is a leader in minimizing contributions to global warming.

5. Current and future generations enjoy clean air, clean water and healthy ecosystems.

6. The benefits and burdens of growth and change are distributed equitably.

Figure 4 Proposed High-Level HCT Goals and Evaluation Criteria (For Discussion)

High-Level Goal from RTP Outcome Based Approach	RTP Adopted Goals	Proposed High-Level Evaluation Criteria and Targets	Discussion
Economic: Support a robust regional economy	1) Foster vibrant communities and efficient urban form. 2) Sustain economic competitiveness and prosperity 3) Expand transportation choices. 4) Emphasize effective and efficient management of the transportation system.	Reduce average regional person delay by X% from 200X levels. Increase average regional jobs + housing density to X% or increase share of region at transit-supportive densities by X% Increase land values in Regional Centers by X% Adopt transit-supportive density and parking requirements for half mile radius around all potential HCT stops in Regional Centers.	In order to reduce person delay at the same time it improves the regional ecology, Metro will need to foster vibrant communities, expand transportation choices and more efficiently manage the transportation system; indeed, these are more strategies than goals. Focusing on person delay rather than vehicle delay helps direct investments to the most efficient modes. Saving farmland requires more infill development; more infill development without added traffic congestion requires focusing it compactly around transit. Local jurisdictions and Metro must work together to adjust zoning codes and market conditions to make this happen.
Environmental: Foster a sustainable regional ecology and promote human health	6) Promote environmental stewardship. 7) Enhance human health.	Reduce per capita VMT by X% from 200X levels. Increase average bicycle + pedestrian mode share by X% from 200X levels. Create no net loss of habitat for endangered species or species of concern.	Per capita VMT is a perfect catch-all for many ecological concerns, including air quality and greenhouse gases. Promotion of physical fitness is the best indicator of human health and favors stations with high rates of walking and cycling, and disfavor stations with little adjacent development or development capacity. Data availability/quality may be an issue. Qualitative based on impact to identified sensitive habitat areas.

High-Level Goal from RTP Outcome Based Approach	RTP Adopted Goals	Proposed High-Level Evaluation Criteria and Targets	Discussion
Social: Promote regional social equity, safety and security	5) Enhance safety and security. 8) Ensure equity.	For (specify income range) households, reduce percentage of income spent on housing + transportation by X% from 200X levels. Percent of identified low-income and minority census tracts with walking access (1/2 mile) to HCT station. Equalize HCT capital investment per rider by home origin station. Equalize HCT farebox return per rider by home origin station. Maximize opportunities for Crime Prevention Through Environmental Design	The first indicator addresses the trend in the Metro region for low-income households to be pushed to the region's edge, increasing their transportation costs. This target can be met by reducing their transportation costs (ie, via affordable public transportation) or by shortening their travel distances through land use changes. The second two indicators seek to address the tension between geographic equity (building new lines to cover every corner of the map) and social equity (investing in transit only where there are enough people to merit it). The security measure is qualitative and would be based on station level environmental assessment.

Two of the RTP goals, "Ensure fiscal stewardship" and "Deliver accountability," are not included in the above list since these are more process directives than transportation system goals. We assume that all HCT options would meet these directives and that they are not useful for differentiating different investment options.

Next Steps

The HCT team will continue to evolve the screening and evaluation criteria framework over the coming weeks in coordination with the RTP Evaluation Framework development. Specific action items include:

- End Public Comment Period (September 30, 2008) *Note: feedback from Stakeholders will continue to be accepted and evaluated through November 5, 2008*
- TPAC discussion on HCT evaluation framework (September 26, 2008)
- MTAC discussion on HCT evaluation framework (October 1, 2008)
- Meet with Think-Tank to solicit feedback (October 7, 2008).
- HCT MTAC/TPAC Subcommittee Finalize evaluation criteria framework and take action Screening Criteria to be applied to proposed HCT corridors and projects for recommendation to TPAC and MTAC (October 22, 2008).
- Take Action on HCT evaluation framework and Screening Criteria TPAC (October 31, 2008)
- Take Action on HCT evaluation framework and Screening Criteria MTAC (November 5, 2008)
- Continue to Develop Evaluation Criteria HCT MTAC/TPAC Subcommittee (November 2008)
- Examine Refined Corridors based on Screening Criteria HCT MTAC/TPAC Subcommittee – November/December
- Take Action on HCT Evaluation Criteria (MTAC/TPAC/JPACT/MPAC/Metro Council) December/January, 2009

Appendices

I. HCT Evaluation Case Studies: Bay Area
II. HCT Evaluation Case Studies: London
III. Library of Criteria Considered
IV. RTP Goal-Performance Measure Matrix

V. APPENDIX I: HCT Evaluation Case Studies: Bay Area

In the San Francisco Bay Area, BART and the Metropolitan Transportation Commission have addressed this topic through BART's System Expansion Criteria and MTC's Transit Oriented Development Policy. Because unmet housing needs are perhaps the largest regional issue in the Bay Area, MTC's criteria set minimum residential density thresholds that local jurisdictions must meet in order to merit a major transportation expansion project. The thresholds are met at the corridor level rather than the individual station level, and local jurisdictions are required to work together, allowing higher densities at some stations in order to offset lower densities at others. Local jurisdictions are also allowed to pay down density requirements through direct contributions to BART.

BART's System Expansion Criteria perhaps offer a useful model for evaluating HCT corridors and system enhancement projects in Portland. They set a high priority on land use, but also allow for rail expansion in order to address intermodal connectivity or to create system efficiency projects like a rail yard. BART projects go through an initial screening process, and successful candidates are evaluated further in the design phase, with each station requiring a "Ridership Development Plan," a combination of increased densities and access improvements to ensure ridership targets are met.

Figure 5 provides an overview of BART's system expansion criteria. More detail on how ratings are measured can be found at: http://www.bart.gov/docs/planning/SYSTEM_EXPANSION.pdf.

Figure 5 BART Adopted System Expansion Criteria

PROPOSED CRITERIA	PROJECT STATUS	
	Strategic Opportunity Assessment	Environmental Clearance/ Ridership Development Plan
Transit Supportive Land Use and Access		
Existing Land Use: Residential and/or Employment	L/LM/M/MH/H	L/LM/M/MH/H
Existing Intermodal Connections	L/LM/M/MH/H	L/LM/M/MH/H
Land Use Plans and Policies	L/LM/M/MH/H	L/LM/M/MH/H
Ridership Development Plan (Comprehensive Station Plan)		
Ridership Threshold		L/LM/M/MH/H
Station Context		L/M/H
Cost Effectiveness		
Cost per New Rider: Base Case	L/LM/M/MH/H	L/LM/M/MH/H
Cost per New Rider: with TOD	L/LM/M/MH/H	L/LM/M/MH/H
Cost per Transportation System User Benefit		L/LM/M/MH/H
Regional Network Connectivity		
Regional Transportation Gap Closure	L/M/H	L/M/H
System and Financial Capacity		
Core System Improvements	L/LM/M/MH/H	L/LM/M/MH/H
Capital Finance Plan	L/M/H	L/M/H
Operating Finance Plan	L/M/H	L/M/H
Partnerships		
Community and Stakeholder Support	L/LM/M/MH/H	L/LM/M/MH/H
Staff Recommendation	**NR/R/HR**	**NR/R/HR**

Rating Legend

L: Low LM: Low-Medium M: Medium MH: Medium-High H: High

For each of the categories in the above evaluation criteria, BART has set specific thresholds that must be met. For example for the Transit Supportive Land Use criterion, BART uses the following chart to score candidate stations areas:

Figure 6 BART Transit Supportive Land Use Scoring Table (within Half Mile of Potential Stations)

Existing Land Use: Residential	Low	Low - Medium	Medium	Medium - High	High
Residential Density (units per gross acre)	< 5	5-9	10-14	15-24	> 25
Residential Density (units per net acre)	< 15	16-25	26-45	46-75	> 75
Total Units w/I ½ mile radius	< 2,500	2,501-5,000	5,001-7,500	7,501-12,500	>12,500
Estimated Trips at **30%** mode share**	< 1,800	1,801-3,600	3,601-5,400	5,401-9,000	>9,000

BART understands that not all station areas will score well in the Transit Supportive Land Use criterion in the initial screening. It therefore includes a qualitative assessment of the development potential of station areas once rail is built – including an assessment of the willingness of local jurisdictions to plan and zone for transit supportive land use patterns. As a rail project moves through design development toward project approval, station area Ridership Development Plans must demonstrate that density, walkability and multimodal targets will indeed be met.

Further Information

A simplified public discussion of BART's System Expansion Criteria is at:
http://www.bart.gov/docs/planning/SYSTEM_EXPANSION.pdf

The Bay Area Metropolitan Transportation Commission (MTC) 2035 RTP documents are at:
http://www.mtc.ca.gov/planning/2035_plan/index.htm

Their summary presentation is especially valuable:
http://www.mtc.ca.gov/meetings/events/forum/Summit_Challenges_Choices.ppt

The technical performance evaluation is at:
http://www.mtc.ca.gov/planning/2035_plan/tech_report.htm

APPENDIX II: HCT Evaluation Case Studies: London

London takes a similar approach as the Bay Area. Drawing from a long list of potential evaluation criteria, London selected five key criteria and various sub-criteria for evaluating and prioritizing what they call "intermediate modes," such as trolley-buses, trams and high frequency buses. These are summarized in Figure 7.

Figure 7 London Intermediate Modes Evaluation Criteria

CRITERIA	SUB-CRITERIA	INDICATORS
1. Environmental Impact	Natural environment	Noise, local air pollution, global emissions, energy and fuel
2. Safety and security	Accidents and personal security	Public and private transport accidents, personal security
3. Economic	Cost, time savings and revenue	Capital and operating costs, public and private use, public and private journey times, revenue cost benefit analysis
4. Accessibility	Public transport accessibility	Pedestrian access to public transport, access to local centres
	Accessibility to other modes	Community severance, pedestrian space, paring and servicing access
5. Integration	Integration with other modes	Interface with other modes
	Accessibility impacts on regeneration and social inclusion	Access to development sites, access to deprived areas, access to employment
	Other local policy/plans	Local policies, tourism
	Regional economic impact	National/EU objectives

These criteria allow planners to compare advantages and disadvantages of different projects on equal terms. First, individual projects are scored according to selected criteria, as shown in the sample evaluation "report card in Figure 6, on the next page.

Figure 8 Sample London Project Evaluation Scorecard

Description of Scheme: Light rail from Liverpool City Centre via West Derby Road/Utting Ave East to Kirkby		Problems: High levels of deprivation in Duke St/Cornwallis, Stanley, Queens, A580, Kirkby & Parks Pathway areas. Poor public transport accessibility within corridor due to poor quality and reliability of bus and absence of rail service.		1)Total Cost of the Proposal £325m (out-turn prices, incl QRA but excluding OB)
OBJECTIVE	**SUB-OBJECTIVE**	**QUALITATIVE IMPACTS**	**QUANTITATIVE MEASURE**	**ASSESSMENT**
ENVIRONMENT	Noise	Noise introduced to environment from tram operation. Potential for some reductions in noise from reduced road traffic.		Slight Adverse
	Local Air Quality	No significant impact from light rail vehicles; car transfer results in lower emission levels.		Slight Beneficial
	Greenhouse Gases	Net reduction as saving from car transfers outweighs increases at power stations. However, overall the effects on greenhouse gas emissions is expected to be negligible.		Neutral
	Landscape	No significant impact		Neutral
	Townscape	Passes through or adjacent to nine Conservation Areas and one proposed Conservation Area. Affects urban green space and public open space. At same time, scheme can act as catalyst for urban renewal. There is a significant loss of trees in some areas which will have an impact on townscape.		Slight Adverse
	Heritage of Historic Resources	Potential impacts on archaeology and potential for impacts on setting of listed buildings.		Slight Adverse
	Biodiversity	Scheme runs adjacent to, and through, non-statutory nature conservation designations.		Neutral
	Water Environment	No significant impact		Neutral
	Physical Fitness	Enhanced provision for pedestrians and cyclists.		Slight Beneficial
	Journey Ambience	High quality in-vehicle environment, stop facilities and travel information.		Strong Beneficial
SAFETY	Accidents	Reduction in accidents to both Merseytram car transferees and to car users remaining on the highway network.	£33m PV resulting from Merseytram car transfers.	Strong Beneficial
	Security	High visibility at stops and accesses from high quality lighting. CCTV at all stops. Park and ride site will be manned and have CCTV.		Beneficial
ECONOMY	Transport Efficiency	Strong operating ratio of 1.15: 1. Full economic BCR of 1.60: 1 demonstrates scheme's overall value.	Consumer Users: £535m PV Business Users & Providers: -£85m PV Central Govt Cost: £236m PV Local Govt Cost: £66m PV	PVB: £483m PVC: £301m NPV: £182m (includes QRA & OB of 6%)
	Reliability	Merseytram will provide a fast reliable service through off vehicle ticket sales, a high level of segregation and priorities at on-street sections.		Strong Beneficial
	Wider Economic Impacts	The LTP strategy, where Line 1 is the highest priority scheme, developed to support the wider regeneration objectives of Merseyside.		Strong Beneficial
ACCESSIBILITY	Option Values	Serves a population of 103,687 within 800m of route, and higher number of within a bus catchment.		Beneficial
	Severance	Some severance on segregated sections--new crossings provided. Enhanced pedestrian facilities at many stops.		Neutral
	Access to Transport System	Route serves areas of high deprivation and low car ownership. All vehicles and stops are fully accessible to the mobility impaired.		Strong Beneficial
INTEGRATION	Transport Interchange	Improved interchange with: Bus - Kirkby, Croxteth, Queens Drive and City Centre, Rail - City Centre, Car - new park and ride, Cycle – facilities at stops. Interchange facilitated by integrated ticketing, network branding		Strong Beneficial
	Land Use Policy	Scheme developed as part of an integrated land use and tranport strategy to promote sustainable regeneration in Merseyside. Fully consistent with national, and regional land use poolicies.		Strong Beneficial
	Other Government Policies	Scheme supportive of a range of Government initiatives and themes – welfare to work, access to education, opportunity for all, reducing social exclusion and access to healthcare.		Strong Beneficial

Next, individual project scorecards can be summarized in a “Consumer Reports” style, so that different potential projects can be compared against each other in equal terms. Figure 7 provides an example.

Figure 9 London Comparison of Multiple Projects

RANKINGS FROM THE ROUTE PRIORITISATION

Rank	Route ID	Route Name	Environment	Economy	Accessibility	Integration	Affordability	Bus Impact
1	B10a	Basildon-Laindon (via Upper Mayne)						
2	B10b	Basildon-Laindon (via Great Knightleys)						
3	B5	Basildon-Pitsea (via Broadmayne)						
4	B11	Basildon-Laindon						
5	B8	Basildon-Dry Street (via Basildon Hospital)						
6	S3b	Southend-The Ranges (via Thorpe Bay)						
7	S9	Ranges Loop						
8	B4	Basildon-Burnt Mills						
9	S3a	Southend-The Ranges (via Southchurch Boulevard)						
10	S1a	Southend-Airport (via Victoria Avenue)						
11	T3b	Lakeside-Tilbury (via Chadwell)						
12	T3a	Lakeside-Tilbury						
13	T4a	Lakeside-Purfleet (via Turrock Way)						
14	S1b	Southend-Airport (via Sutton Road)						
15	B1	Basildon-Wickford						
16	T4b	Lakeside-Purfleet (via Weston Avenue)						
17	S5a	Southend-Leigh On Sea						
18	B7	Wickford-Pitsea						
19	S5b	Southend-Leigh On Sea (via Prittlewell)						
20	S4	Southend Loop						
21	B3	Basildon-Pitsea (via Cranes)						
22	S8b	Southend-Rayleigh (via Bridgewater Drive)						
23	T2	Lakeside-Shell Haven						
24	S7	Southend-Basildon						
25	B9	Basildon-Shell Haven						
26	S8a	Southend-Rayleigh (via Eastwood Road)						
27	S2	Airport-The Ranges						
28	B2	Basildon-Rayleigh						
29	T1b	Lakeside-Basildon (via Grays)						
30	B6c	Basildon-Canvey (via Fryerns & Benfleet)						
31	S6	Southend-Canvey						
32	T1a	Lakeside-Basildon (via Arterial Road)						
33	T1c	Lakeside-Basildon (via South Stifford)						

Key

High Priority | Medium Priority | Low Priority

APPENDIX III: Library of Criteria Considered

A wealth of evaluation criteria exist within Metro, the Portland Metro Region, and the Region's transit related programs. In order to gain a full understanding of the evaluation criteria from which to choose, Metro collected a library of evaluation criteria considered in the Regional Transportation Plan in 2008, the City of Portland Streetcar System Plan in 2008, the Portland-Milwaukie Light Rail Transit FEIS in 2004, the Pilot LEED Neighborhood Development Program, and by the Federal Transit Administration to allocate federal funding for all high capacity transit projects.

The list is organized by the 2004 Regional Transportation Plan (RTP) Goals. Within the RTP performance measure column, measures are further demarcated as additional measures that may be appropriate for evaluating HCT projects (underlined), measures from the RTP that may not be relevant for evaluating HCT projects (~~strikethrough~~), and all additional measures from the RTP process.

This evaluation criteria library criteria is attached in the list below.

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 1: Foster Vibrant Communities and Efficient Urban Form Land use and transportation decisions are linked to promote an efficient and compact urban form that fosters vibrant, healthy communities; optimizes public investments; and supports active transportation options, jobs, schools, shopping, services, recreational opportunities and housing proximity.	– Average trip length. – Total acres of developed land and developable land within one-half mile of high capacity transit. – Density of uses per acre within one-half mile of high capacity transit. – Average commute length. – Percent of high capacity transit~~transportation~~ investments in highest priority land uses (by 2040 land use). – Percent of high capacity transit ~~transportation~~ investments serving high priority land uses (by 2040 land use). – Mode split to determine walking, bicycling and transit ridership rates. – Addresses a system gap or deficiency to reinforce growth in and improve access to or within the primary 2040 target areas. – Number of housing, jobs, schools, parks and other destinations within one-half mile of high capacity transit. – Other RTP Performance Measures – ~~Vehicle miles traveled (VMT) per person.~~ – ~~Percent of population, jobs and homes attracted to UGB (capture rate).~~ – ~~Percent of surface area devoted to parking in 2040 target areas.~~	– Locate the project on an infill site; – Locate the project near existing neighborhood shops, services, and facilities so that the **project boundary** is within ¼ mile walk distance of at least four, or within ½ mile walk distance of at least 6, of the **diverse uses** defined in Appendix A. (Bank, Child Care, Community Center, Convenience Store, Hair Care, Hardware Store, Health Club, Laudry/Dry Cleaner, Library, Medical/dental Office, Pharmacy, Place of Worship, Police/Fire Station, Post Office, Restaurant, Scholl, Senior Care, Supermarket, Theater) – Locate the project on a site served by existing water and wastewater infrastructure. – Locate the **project** in one of the following locations that also earn at least one point for **street grid density** according to the calculation below: • An **infill site** that is also a **previously developed site** (6 points) • An infill site that is not a previously developed site (4 points) • An **adjacent site** that is also a previously developed site (3 points) • A previously developed site that is not an adjacent or infill site (2 points) • An adjacent site that is not a previously developed site – Calculate the street grid density (in street centerline miles per square mile) within a 1 mile radius from the perimeter of the site boundary. Points are added to the above points according to the following street grid density: • 40 centerline miles per square mile or greater (4 points) • 30-39 centerline miles per square mile (3 points) • 20-29 centerline miles per square mile (2 points) • 10-19 centerline miles per square mile (1 point) – Build any residential components of the **project** at an average **density** of seven or more dwelling units per acre of **buildable land** available for residential uses; – Design and build the project to achieve the densities shown in the table below. (10-70/DU per acre) – Within ½ mile **walk distance** of at least two (1 point), four (2 points), seven (3 points) or ten (4 points) of the **diverse uses** defined in Appendix A. – A park, green plaza or square at least	– Corridor and station area population, housing units, and employment (provide information in template form, – Listing and description of high trip generators (examples include colleges/universities, stadiums/arenas, hospitals/medical centers, shopping centers, performing arts centers, and other significant trip generators) – Description of character of existing land use mix and pedestrian environment in corridor and station areas – Existing station area pedestrian facilities, including access for persons with disabilities – Existing corridor and station area parking supply – Concentration of development around established activity centers and regional transit – Transit supportive policies that could include: general policy statements in support of transit as a principal mode of transportation within the corridor; policies that support and promote the use of transit; policies/plans that provide for high density development within the corridor and station areas; and policies that support changes to zoning within the corridor and station areas – Parking policies (allowances for reductions in parking requirements and traffic mitigation requirements for development near station areas, plans for park-and-ride lots, parking management) – Plans and policies to enhance transit-friendly character of station area development – Zoning ordinances that support increased development density in transit station areas – Zoning ordinances that enhance transitoriented character of station area development and pedestrian access – Zoning allowances for reduced parking – Outreach to government agencies and the community in support of land use planning – Regulatory and financial incentives to promote transit-supportive development – Efforts to engage the development community in station-area planning and transit-supportive development – Public involvement in corridor and station area planning	– Ability to serve centers in the corridor as defined in the Region 2040 Growth Concept – Local land use plans – Number of residents within 45 minutes of key corridor work destinations	– Transit Oriented Index (TOI): household density; employment density; and density of retail employment – Presence of primary anchors – Presence of secondary anchors – Metro's 2040 Main Street designation – Third level PTI corridors that have other characters that would support the mission of the streetcar system plan (e.g., large planned or under-study development/redevelopment projects, future population and/or employment centers, planned activity centers, etc.) – Obtain indications of public support for the results of corridor screening – Enhance the pedestrian-oriented character, scale and urban form of the corridor.- Quantity of centers by type – Enhance the pedestrian-oriented character, scale and urban form of the corridor. - Quantitative assessment of corridor anchors – Urban Form - Quantitative assessment of urban identity by number and location – Provide streetcar service to corridors with development and redevelopment potential- Acres of vacant and under-utilized land – block facing and ¼-mile each side of the alignment – Provide streetcar service to corridors with development and redevelopment potential- FAR consumed by existing development and remaining available for future development – Become a catalyst for sustainable, mixed-used development and redevelopment within the streetcar corridor - Market conditions supporting redevelopment – Become a catalyst for sustainable, mixed-used development and redevelopment within the streetcar corridor - Quantitative assessment of the sustainability characteristics of the corridor's building stock – Serve Transit Oriented Development Opportunities - Qualitative assessment of transit oriented development opportunities – Support Existing Neighborhood Plans - Additional residential capacity – Support the efforts of neighborhood and district planning to increase housing and employment development - Qualitative assessment of existing land use – Support the efforts of neighborhood and

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
		1/6 acre in area, and at least 150' in width, lies within 1/6 mile **walk distance** – An active open space facility (e.g., general playfields, soccer, baseball, basketball and other sports fields) of at least 1 acre lies within ½ mile **walk distance** – Located within ¼ mile walk distance of a public recreation center or gym with outdoor facilities or a park with active recreational facilities. – Meet with neighbors and local public officials to solicit input – **Community Supported Agriculture (CSA)** program located within ¼ mile – Within ¼ mile of an established farmer's market (that has been operating for at least two years), with at least three producer vendors, and that operates at least once a week for at least 5 months of the year.	– Demonstrated cases of developments (TODs) affected by transit supportive policies – Station area development proposals and status – Adaptability of station area land for development – · Description or inventory of land near transit stations that is vacant or available for redevelopment, and amount of development anticipated for these parcels – · Projected timeline for development of station area properties – · Amount of development allowed at station area Build-out compared to existing amount of development – · Regional and corridor economic conditions and growth projections – · Development market trends in existing corridors and station areas (for areas with existing transit) – · Demonstrated market support for higher-density and transit/pedestrian-oriented development · Locations of major employment centers in the region, and expected growth in these centers · Projected population, employment, and growth rates in corridor or station areas compared to region		district planning to increase housing and employment development-Comprehensive plan designations within ¼-mile of each side of the corridor – Miles and percent of corridor designated as a Metro 2040 Main Street – Mile/percent of streetcar system along Main Streets – Activity centers connected with streetcar/transit – Quantity of centers by type – Serve Development and Redevelopment Sites - Acres of developable and redevelopable land facing and within ¼-mil of the streetcar alignment – Serve Development and Redevelopment Sites - Floor-area-ratio (FAR) headroom – the ratio of zoned capacity to existing FAR – Qualitative market assessment of the transit oriented development potential of the system – Qualitative assessment of the existing urban form Supports Portland Plan designations within corridor Compatibility of streetcar with corridor plan designations Serve Residential Development and Redevelopment Sites - Additional residential capacity Assessment of public support for the corridors making up the system and for the needed supportive measures Serve Single and Multi-Family Zoned Land - Acres of multi-family and single-family home zoned land within ¼-mile

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 2: Sustain Economic Competitiveness and Prosperity Multi-modal transportation infrastructure and services support the region's well-being and a diverse, innovative, sustainable and growing regional and state economy through the reliable and efficient movement of people, freight, goods, services and information within the region and to destinations outside the region. Table 3.6 Goal 3—Expand Transportation Choices	– Auto and transit travel time contours for the Central city and selected regional centers, –industrial areas and employment areas during peak and off-peak periods. – Percent of jobs retained and created in 2040 centers and industrial areas. – Total person-trip capacity ~~and freight capacity~~ and volumes for regional mobility corridors in peak and off-peak periods. – Auto, truck and transit travel times for peak and off-peak periods. – Traffic congestion (level-of-service) and delay on regional mobility corridors. – Develop a measure to assess the cost benefit to people using transit, walking or bicycling as a corollary to the cost of congestion measure. – Percent of vehicle miles traveled in congestion. – Connects the Central City, Regional Centers and passenger intermodal facilities, consistent with Regional Transit System Map. – Access to community bus and streetcar service connections that serve 2040 Target Areas consistent with Regional Transit System Map. – Other RTP Performance Measures – ~~Percent of industrial areas and freight intermodal facilities served by direct arterial connections to throughways.~~ – ~~Develop an access to rail measure.~~ – ~~Develop a cost of congestion measure.~~ – ~~Variability of travel times on regional freight routes during peak and off-peak periods.~~ – ~~Traffic congestion (level-of-service) and delay on regional freight routes during peak and off-peak periods.~~ – ~~Truck travel time contours for regionally significant industrial areas during peak and off-peak periods.~~ – ~~Regional GDP~~ – Connects two or more passenger modes. – Addresses a gap or deficiency			– Change in employment – Number of resdential units displaced – Number of businesses displaced – Number of public facilites displaced	

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 3: Expand Transportation Choices Multi-modal transportation infrastructure and services provide all residents of the region with affordable and equitable options for accessing housing, jobs, services, shopping, educational, cultural and recreational opportunities, and facilitate competitive choices for goods movement for all businesses in the region.	– Modal share of walking, biking, transit and shared ride by 2040 land use. – Difference between travel time contours for 2040 target areas by mode. (Has competitive travel times compared to the automobile.) – Percent of homes within 30 minutes travel time of employment by auto and transit during peak periods. – Percent of jobs within 30 minutes of travel time to workforce by auto and transit during peak periods. – Percent of homes within 30 minutes' travel time of employment, broken down by mode. – Percent of seniors and people with disabilities within ~~one-quarter~~ one-half mile of ~~regional~~ high capacity transit service via continuous sidewalks/protected crosswalks. – Percent of environmental justice target area households within ~~one-quarter~~ one-half mile of ~~regional~~ high capacity transit service. – Percent of homes and jobs within one-half mile of high capacity transit service. – Percent of arterial network with intersections with ADA-compliant ramps, adequate and unobstructed sidewalks and transit stops that are accessible. – Completes a system gap to improve bicycle, pedestrian or transit access, and connect two or more modes of travel. – Provides passenger rail service corridors to neighboring cities. – Other RTP Performance Measures: – ~~Percent of household income (by quintile) spent on transportation.~~ – ~~Percent of homes and jobs within one-quarter mile of regional and community transit service.~~ – ~~Percent of homes and parks within one-quarter mile of regional multi-use trail system.~~	– Locate **project** on a site with transit service of 20 or more easily accessible transit rides per week day. The number of points available for increasing transit service is indicated in the table below. The total number of rides available during weekdays is defined as the number of buses or streetcars stopping within a ¼ mile **walk distance** of at least 50% of the project's dwellings and business entrances, and the number of bus rapid transit buses, light rail trains, heavy passenger rail, and ferries stopping within a ½ mile walk distance of at least 50% of the project's dwellings and business entrances – Annual **Vehicle Miles Traveled (VMT)** per capita or single occupancy vehicle (SOV) driving mode share has been demonstrated by MPO research derived from a household transportation survey to be no more than 80% of the average of the metropolitan region as a whole. – Locate the project such that 50% of the dwelling units and business entrances are within a ¼ mile walk distance of at least one vehicle that is available through a vehicle-sharing program, and publicize the availability and benefits of the vehicle-sharing program to project occupants. – Design or locate the **project** such that 50% of the dwelling units and business entrances are within 3 miles of at least four or more of the diverse uses listed in Appendix A using an existing **biking network** and/or a biking network that will be completed as part of the project (3 mile distance is measured along the biking network, not as a straight radius); – Within ½ mile walk distance of an existing or planned school. – Locate the project within a region served by a Metropolitan Planning Organization (MPO) and within a transportation analysis zone for which MPO research demonstrates that the average annual home-based and/or non-home-based rate of **Vehicle Miles Traveled (VMT)** per capita is lower than the average annual rate of the metropolitan region as a whole. – Continuous sidewalks or equivalent provisions for walking are provided along both sides of all streets – The front façades of at least 80% of all	– · Normalized Travel Time Savings (Transportation System User Benefits per Project Passenger Mile) – · The Number of Transit Dependent Riders Using the Proposed New Starts Project – · Transit Dependent User Benefits per Passenger Mile on the Project – · The Share of User Benefits Received by Transit Dependents Compared to the Share of Transit Dependents in the Region – **· Incremental Cost per Hour of Transportation System User Benefit (TSUB)** – · Incremental Cost per New Rider (for informational purposes only) – · Requirements and policies for sidewalks, connected street or walkway networks, and other pedestrian facility development plans for station areas – Plans to develop pedestrian facilities and enhance disabled access – · Capital improvement programs to enhance pedestrian-friendly design in station areas – · Curb ramp transition plans and milestones required under CFR 35.150(d)(2), and other plans for retrofitting existing pedestrian infrastructure to accommodate persons with disabilities in station areas – · Street design guidelines or manuals addressing pedestrian and transit-oriented street design (lighting, street furniture, sidewalk width, etc.)	– Annual systemwide transit ridership. – Average weekday systemwide light rail ridership. – Transit mode share from major centers in the corridor. – Total transit travel times between major origins and destinations in the corridor. – In-vehicle transit travel times between major origins and destinations in the corridor. – Bus and LRT travel times. – Additional miles of exclusive transit right-of-way. – Passenger miles and percent of corridor passenger miles on LRT right-of-way. – Number of residential units and population within half-mile station areas. – Number of jobs within half-mile station areas. – Ease of transfers. – Operating effectiveness- safety and security concerns. – Operating effectiveness- operating considerations. – Furture corridor network expansion capability. – Highway system use- PM peak vehicle volumes on parallel roadways at selected roadways. – Traffic and Neighborhood Infiltration Relief - PM peak transit ridership on parallel roadways/rtransitway at selected roadways. – Traffic and Neighborhood Infiltration Relief - Number of park-and-ride spaces.	– Eliminate from consideration streets/corridors that have physical characteristics that have a "fatal flaw" for streetcar construction/operations - Sustained grades greater than 9 percent – Engineer's assessment of the presence of other physical characteristics that would generally prohibit streetcar construction and/or operations – Currently designated in the City's Transportation System Plan as a Potential Bus Rapid Transit/High Capacity Transit line or currently within a Federal transportation study – Traffic engineer's assessment of traffic operations constraints that would generally prohibit streetcar construction and/or operations – **Enhance, complement and integrate streetcar with the regional transit system** – Operating Environment - Corridor operations opportunities and constraints – Operating Environment - Corridor's current transit characteristics – Help manage traffic and parking demand, optimize traffic operations and champion safe multi-modal use of the street right-of-way. - Corridor's current physical and traffic operations characteristics (opportunities and constraints) – ***Reduce Regional VMT*** – Trips not taken – **Existing TriMet bus service frequency** – Efficiency - Originating rides per vehicle revenue hour – Streetcar and transit system ridership – Transit system capital cost – Transit system operating cost and/or Income

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
		buildings are no more than 25 feet from front property line. The front facades of at least 50% of all buildings are no more than 18 feet from the front property line. The front facades of at least 50% of mixed-use and non-residential buildings are contiguous to the sidewalk. – No blank (without doors or windows) walls longer than 50 feet occur along sidewalks. Walls with public art installations such as murals may be exempted. – Any ground-level storefront windows must be kept open and visible (unshuttered) at night, and this must be stipulated to future owners in **CC&Rs** or other binding documents. – In non-residential or mixed use projects, 50% or more of the total number of office buildings include ground floor retail; and all businesses and/or other community services on the ground floor are accessible directly from sidewalks along a public space such as a street, square, or plaza. – On-street parking is provided on 70% of both sides of all new streets. – Street grid density within a ¼ mile radius (20-30 centerline miles/sq.mi.) – Provide shelters, kiosks, buletin boards, etc. – Verify that a pedestrian can reach the uses via routes that do not necessitate crossing any streets that have speed limits of greater than 25 miles per hour, unless those crossings have vehicle traffic controls such as signals and stop signs with crosswalks. – At least one through-street at the **project boundary** every 800 feet, or at existing abutting street intervals, whichever distance is smaller. – Located within ¼ mile walk distance of a multi-use trail or Class I bikeway of at least 3 miles in length			

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 4: Emphasize Effective and Efficient Management of the Transportation System Multi-modal transportation infrastructure and services are well-managed and optimized to improve travel conditions and operations, and maximize the total person-trip capacity and operating performance of existing and future transportation infrastructure and services.	– Percent of all transit stops with connecting sidewalks. – Improves mobility, reliability and safety on an element of the regional mobility corridor system, consistent with the Transportation System Management and Operations (TSMO) Concept. – Other RTP Performance Measures: – ~~Percent of arterial network complete.~~ – ~~Percent of regional bike network complete.~~ – ~~Percent of regional pedestrian network complete~~ – ~~Intervals of controlled crossings of regional arterials.~~ – ~~Percent of regional multi-use trails with a transportation function completed.~~ – ~~Centerline miles per square mile in and around residential neighborhoods.~~ – ~~Share of traffic control devices under active management.~~ – ~~Increased carpool matches and vanpool ridership.~~ – ~~Share of large employers in the region with employer-based trip reduction programs in place.~~ – ~~VMT reduced within trip reduction programs.~~ – ~~Percent of throughway network complete.~~	– Locate the project near existing or planned **adequate transit service** so that at least 50% of dwelling units and business entrances within the project are within ¼ mile **walk distance** of bus or streetcar stops or within ½ mile walk distance of bus rapid transit stops, light or heavy passenger rail stations and ferry terminals. – Create and implement a comprehensive transportation demand management (TDM) program – Provide transit passes valid for at least one year, subsidized to be half of regular price or cheaper, – Provide transit service (with vans, shuttles, buses) to rail, ferry, or other major transit facilities and/or another major destination such as a retail or employment center.			– Third level PTI corridors that would fill a significant gap in streetcar coverage provided by screening using Goals 1.1 and 1.2 and that would provide connections between other streetcar/HCT corridors and/or activity centers – PTI corridors that can and should be consolidated into longer or divided into shorter more logical and/or competitive potential streetcar corridors – Connectivity - Assess overall system performance and transit/transportation connections – Consistency with traffic plans/programs – Quantity of intermodal connections

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 5: Enhance Safety and Security Multi-modal transportation infrastructure and services are safe and secure for the public and for goods movement.	– Per capita crashes, serious injuries and fatalities by mode. – Number of crashes, serious injuries and fatalities in identified safety corridors by mode. – Modal share of non-SOV travel modes. – Other RTP Performance Measures: – ~~Percent and number of Safety Priority Index System (SPIS) locations addressed in past five years.~~ – ~~Number of reoccurring SPIS intersections and segments from year-to-year as identified in ODOT Highway Safety Action Plan.~~ – ~~Regional spending on imported energy.~~ – ~~Regional gasoline consumption.~~ – ~~Number of crashes, serious injuries and fatalities involving bicyclists and pedestrians within one-quarter to one-half mile of a school. Overall VMT.~~ – ~~Measure of personal safety.~~ – ~~Overall vehicle miles traveled.~~ – ~~Per capita crashes, serious injuries and fatalities by census block group.~~ – Creates redundancies in all modes.				

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 6: Promote Environmental Stewardship Promote responsible stewardship of the region's natural, community, and cultural resources during planning, design, construction and management of multi-modal transportation infrastructure and services.	– Acres of environmentally-sensitive land impacted by new transportation infrastructure. – Acres of riparian and wildlife corridors impacted by new transportation infrastructure. – Tons per year of carbon/green house gas emissions. – Calculate estimates of greenhouse gas emissions of potential transportation investments. – Other RTP Performance Measures: – ~~Number and percent of culverts on regional road system that inhibit fish passage.~~ – ~~Percent of street system with street trees that provide canopy for interception of precipitation.~~ – ~~Percent of street system with infiltration capacity.~~ – ~~Runoff volume measurements.~~	– Avoid disturbing slopes greater than 15%; – If significant habitat is found, do not disturb that significant habitat or portions of the site within an appropriate buffer around the habitat. – Locate the project on a site that includes no wetlands, water bodies, or land within 100 feet – Locate the **project** such that the site contains no more than 25% **prime soils**, **unique soils**, or soils of state significance as identified in a state Natural Resources Conservation Service soil survey; – Locate the project such that it is within a designated receiving area for development rights under a publicly administered farmland protection program that provides for the transfer of development rights from lands designated for conservation to lands designated for development; – Locate on a site that does not contain any land within the 100-year floodplain – Locate project on a site, part or all of which is documented as contaminated – Remediate site contamination such that the controlling public authority approves the protective measures and/or clean-up as effective, safe, and appropriate for the future use of the site. – Brownfields Redevelopment, using a site that is in one of the following areas: • Federal Empowerment Zone • Federal Enterprise Community • Federal Renewal Community • Communities with Official Recognition (OR) from the Department of Justice for their Weed and Seed Strategy • Qualified Low-Income Communities (LICs).	– EPA Air Quality Designation Cost Effectiveness	– Noise levels in excess of adopted noise standards with identified mitigation – Vibration levels in excess of adopted vibration standards with identified mitigation – Acres of impacted wetlands – Cubic feet of fill in the 100-year floodplain – Number of acres of parks used – Number of historic resources adversely impacted – Number of archaeologically sensitive areas potentially affected	– Assessment of affects on natural resources – Supports Watershed Plans/Programs - Interconnected stormwater system – Reduced Carbon Footprint - Change in energy use and CO_2 emissions – Support stormwater management - Character of corridor's watershed management plan and infrastructure – Support On-Site Power Generation - Corridor solar exposure and wind potential characteristics – Provide Access to Pedestrian and Bicycle Facilities - Quantitative assessment of bicycle and pedestrian connections – Wind and solar power generation potential

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 7: Enhance Human Health Multi-modal transportation infrastructure and services enhance quality of human health by providing safe and convenient options that support active living and physical activity, and minimize transportation-related pollution that negatively impacts human health.	– Number of walking, bicycling and transit trips per capita per day. – Tons per year of smog forming, particulate and air toxics pollutants released. – Percent of housing, jobs, schools, parks and other destinations within walking distance one-half mile of high capacity transit. – Percent of continuous network of bikeways and pedestrian facilities within one-half mile of high capacity transit – Acres of compact development patterns, as established by zoning, one-half mile from high capacity transit as a way to integrate exercise into daily activity. – Other RTP Performance Measures: – ~~Pedestrian and bike trips to school.~~ – ~~BTU's consumed per capita for transportation.~~ – ~~Obesity rates and rates of diseases associated with low levels of physical activity (e.g. adult onset diabetes).~~ – ~~Rates of asthma or other air-quality-related health incidents~~ – ~~Length of walking and bicycling trips.~~ – ~~Minutes of daily active transportation~~				– Assessment of corridor factors that could affect health

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 8: Ensure Equity Regional transportation planning, programs and investment decisions ensure the benefits and adverse impacts of investments and programs are equitably distributed between different parts of the region and between census block groups with different incomes, races and ethnicities.	– ~~Distribution of transportation investments by~~Percent of high capacity transit routes within one-half mile of environmental justice communities. – Smog, particulate and air toxic pollutant concentrations by census block group and cross-referenced with EJ communities. – Demographic profile of planned transportation project users/beneficiaries, including income, race, age, and household location as compared to demographic profile of community where the investment is being made. – Rates of asthma and air-quality related health incidents by census block group and cross-referenced with EJ communities and EJ population distribution. – Obesity rates and rates of diseases associated with low levels of physical activity by Census block group and cross-referenced with EJ communities and EJ population distribution. – Participation rates of EJ target community members in transportation decision-making. – Community facilities & basic services assessment within ¼ mile radius of transit stops in EJ communities and EJ populations. – Serves special access needs of individuals in this region, including people with low-income, children, elders and people with disabilities. – Percent of sidewalk connections within one-half mile of major high capacity transit stops that serve elderly and disabled developments. – Number of public facilities such as senior centers, libraries and other public services within one-half mile of high capacity transit.	– Households earning below area median income – At least 15% of total rental units are priced for households up to 50% of area median income and units are maintained at affordable levels for a minimum of fifteen years – At least 30% of total rental units are priced for households up to 80% of area median incomeand units are maintained at affordable levels for a minimum of fifteen years – At least 15% of total rental units are priced for households up to 50% of area median income and an additional 15% of total rental units are priced for households at up to 80% of area median income and units are maintained at affordable levels for a minimum of fifteen years – At least 10% of for-sale housing is priced for households up to 80% of the area median income – At least 20% of for-sale housing is priced for households up to 120% of the area median income – At least 10% of for-sale housing is priced for households up to 80% of the area median income and an additional 10% of for-sale housing is priced for households at up to 120% of the area median income			– **Support other City priorities, such as affordable housing.**

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 9: Ensure Fiscal Stewardship Regional transportation planning and investment decisions ensure the best return on public investment in infrastructure and programs .	– Transit trips per transit revenue hour. – Relative cost comparison for roadway and transit system operations and maintenance. – Cost per person trip. – Other RTP Performance Measures: – ~~Percent of road maintenance and preservation needs funded at local and state levels.~~ – ~~Percent of funding spent on high-priority projects that achieve multiple goals.~~ – ~~Return on investment ratio of public to private project and/or district infrastructure and development investments.~~ – ~~Return on investment ratio of public infrastructure and development costs to economic benefit in terms of job creation, retention, tourism, etc.~~ – ~~New transportation funding sources secured beyond existing resources, including those forecasted as necessary for the financially constrained and the illustrative systems.~~ – ~~Transportation investments by funding source or strategy.~~ – ~~Public and private commitments to pursue appropriate revenue sources.~~ – ~~Reductions or increases in total infrastructure costs that the public must pay for new and refill development (includes required capacity increases in other parts of the system.)~~ – ~~Condition of high capacity transit transportation system.~~ – Evaluate the contribution of high capacity transportation investments to the economic competitiveness of the region using Metroscope.		– Share of other Federal funds, including formula and flexible funds; – Required local match; and – Additional capital funding. – · Capital financial condition of the sponsoring agency and funding partners; – · Commitment and availability of Non-Section 5309 New Starts funds for construction of the project; and – Reasonability of capital planning assumptions and capital cost estimates and financial capacity to cover capital cost increases or funding shortfalls. – Operating financial condition; – Commitment of O&M funds needed to fund the transit system's subsidy; and – Reasonability of operating planning assumptions and O&M cost estimates and financial capacity to operate and maintain all proposed, existing and planned transit services.	– Annual operating subsidy per transit trip – Annual operating cost per transit trip – Average weekday transit originating rides per revenue hour – Capital costs – Transit operating costs	

Library of Potential Evaluation Criteria for the Regional High Capacity Transit System Plan - 2008

Goal Statement	RTP Measures adapted to HCT	LEED Neighborhood Development Pilot Measures	FTA Measures	Portland-Milwaukie LRT Evaluation Criteria FEIS July 2004	Streetcar System Planning February 2008
Goal 10: Deliver Accountability The region's government, business, institutional and community leaders work together in an open and transparent manner so the public has meaningful opportunities for input in transportation decisions and experiences an integrated, comprehensive system of transportation facilities and services that bridge governance, institutional and fiscal barriers.	– Inclusiveness of planning process and opportunities for involvement. – Diversity of social and economic backgrounds among meeting attendees. – Percent of population in cities and unincorporated area represented on JPACT and MPAC. – ~~Distribution of transportation investments by environmental justice target area.~~ Percent of environmental justice target area households within one-quarter one-half mile of regional high capacity transit service. – Other RTP Performance Measures: – ~~Percent of regional roadways connected to central operations center and ODOT operations center.~~ – Increases coordination and cooperation of transportation providers. – Expands on current system and demand management coordination efforts at regional level.				

Word = Additional measure that may be appropriate for evaluating HCT projects.
~~Word~~ = Measure from the RTP that may not be relevant for evaluating HCT projects.
Word = Measure from the RTP process.

APPENDIX IV: RTP Goal-Performance Measure Matrix

	Recommended Performance Measures for System Evaluation	Adopted RTP Goals									
		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
1.	**Vehicle miles traveled** (total and per capita)	●	●			*No ability to predict/forecast system safety. To be addressed in plan monitoring and Congestion Management Process (CMP) measures.*	●	●			*No ability to predict/forecast accountability. To be addressed in plan monitoring measures.*
2.	Average **commute length and time** by mode for the region, sub-districts and mobility corridors	●		●							
3.	**Average trip length** by mobility corridor **by trip purpose**	●			●						
4.	Average **travel time for** home-based **non-work trips** region-wide and comparing a regional average with average by land use type and by mode	●			●						
5.	**Motor vehicle and transit travel time** between key origin-destinations for mid-day and PM peak	●	●	●	●						
6.	**Travel Time Index** (ratio of peak period to free flow time) by Corridor		●								
7.	**Miles, percent and location of Throughways and Arterials that exceed RTP LOS-based motor vehicle performance measures** in mid-day and PM peak for the region, sub-districts and Corridors				●						
8.	**Miles, percent and location of regional freight network facilities that that exceed RTP LOS-based motor vehicle performance measures** in mid-day and PM peak for Main Roadways and Roadway Connectors, and by Corridor		●		●						
9.	**Total delay and cost of delay on the regional freight network** in mid-day and PM peak		●		●						
10.	**Non-drive alone trips and mode share** region-wide, by mobility corridor and for central city and individual regional centers (Number of daily walking, bicycling, shared ride and transit trips and % by mode)	●		●	●		●	●			
11.	**Transit Level of Service** (ratio of riders to seating) by Corridor for High Capacity Transit	●	●	●							
12.	**Daily transit trips per revenue hour**	●								●	
13.	**Annual transit riders** (total and per capita)			●			●			●	
14.	Number and percent of **households and jobs within 30 minutes of the central city, regional centers, and key employment/industrial** areas for mid-day and PM peak**	●	●								
15.	Number and percent of **homes within ¼-mile ~~and ½-mile of 2040 central city, regional~~ centers, town centers, mainstreets, or station**	●			●						

	Recommended Performance Measures for System Evaluation	Adopted RTP Goals									
		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
	communities										
16.	Number and percent of **homes within ½-mile of regional multi-use trail system and ¼ mile of parks/greenspaces****	●		●			●	●	●		
17.	Number and percent of **homes within ½-mile of HCT service and ¼-mile of frequent bus service****	●		●					●		
18.	Number and percent of **environmental justice communities (Census data) within ½-mile of HCT or ¼-mile frequent bus service** as compared to the region**			●					●		
19.	**Average housing and transportation costs per household***								●	●	
20.	**User cost per mile** (auto & truck)								●	●	
21.	Tons of transportation-related **air pollutants** (e.g. CO, ozone, and PM-10)			●			●	●			
22.	Tons of transportation-related **greenhouse gas emissions** (e.g. CO_2)			●			●				
23.	**Acres of regionally significant Goal 5 resources potentially affected** by new transportation infrastructure**	●					●				
24.	Total **acres consumed** by household & jobs*	●						●			
25.	**Households per acre** by housing type and 2040 design type	●								●	
26.	**Capture rate** (total number and percent of jobs and households attracted to UGB, neighbor cities, 2040 centers, corridors, and industrial/employment areas)*	●					●	●		●	

High Capacity Transit System Plan
Public outreach update
September 18, 2008

Overview of stakeholder interviews, public workshops and online questionnaire

During July, August and September, over 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 HCT 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 and infrastructure analysis. A written comment form offered individuals an opportunity to provide feedback in addition to the transit connections drawn on maps in discussion groups.

With the first workshop on Aug. 12, an interactive questionnaire went live on Metro's web site. Through Sept. 10, 2008, 155 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 will be removed from the web site on Sept. 30, 2008.

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.

FALL 2008

CLICK HERE FOR REPORT

GreenScene

Your fall guide to great places and green living

www.oregon**metro.gov**

amble

gather

thank

paddle

plant

teach

breathe

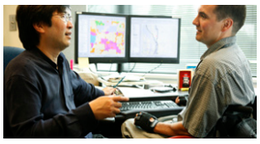
Metro | *People places. Open spaces.*

7:30 P.M. WEDNESDAY SEPT. 24, 2008

TROY RUSS

Rebalancing roadways to build sustainable communities

Troy Russ has extensive experience providing public and private clients with integrated land use and transportation strategies, with implementation focused design solutions for revitalizing urban and suburban environments. He will focus on transportation solutions that are sensitive to both urban and rural contexts.



About Troy Russ, AICP

Troy is the director of the Urban Design and Transportation Practice Group with Glatting Jackson Kercher Anglin, Inc., a community planning and design firm. His work experiences include guiding regional growth strategies around premium transit investments in Edmonton, Canada and Charlotte, North Carolina, and facilitating community oriented highway rebalancing projects in Chattanooga, Tennessee and Trenton, NJ. He is a regular panelist for the NEA's Mayor's Institute on City Design, and is a leading member of Congress for the New Urbanism.

Metro Regional Center

Council Chamber
600 NE Grand Ave., Portland

Trimet bus 6 and MAX light rail Northeast Seventh Avenue stop. Covered bicycle parking is available near the main entrance.

Free and open to the public

This lecture is part of Metro's Transportation Speaker Series. Reservations are not required. For more information, call 503-797-1543 or visit www.oregonmetro.gov.

Metro | *People places. Open spaces.*

08396 Printed on recycled content paper.

Materials following this page were distributed at the meeting.

Updated

600 NORTHEAST GRAND AVENUE | PORTLAND, OREGON 97232 2736
TEL 503 797 1916 | FAX 503 797 1930

METRO

TRANSPORTATION POLICY ALTERNATIVES COMMITTEE
August 29, 2008
Metro Regional Center, 370A/B

MEMBERS PRESENT	AFFILIATION
Elissa Gertler	Clackamas County
Alan Lehto	TriMet
Nancy Kraushaar	City of Oregon City/Cities of Clackamas County
Keith Liden	Citizen
Dave Nordberg	DEQ
Louis A. Ornelas	Citizen
Ron Papsdorf	City of Gresham
John Reinhold	Citizen
Karen Schilling	Multnomah County
April Siebenaler	Citizen
Rian Windsheimer	ODOT

MEMBERS ABSENT	AFFILIATION
Jack Burkman	WSDOT
Bret Curtis	Washington County
Sorin Garber	Citizen
John Hoefs	C-TRAN
Susie Lahsene	Port of Portland
Dean Lookingbill	SW Washington RTC
Mike McKillip	City of Tualatin/Cities of Washington County
Satvinder Sandhu	FHWA
Sreya Sarkar	Citizen
Paul Smith	City of Portland

ALTERNATES PRESENT	AFFILIATION
Robin McCaffrey	Port of Portland
Margaret Middleton	City of Beaverton/Cities of Washington County
Sharon Zimmerman	

STAFF
Tom Kloster, Mark Turpel, Amy Rose, Ted Wheeler, Kelsey Newell

1. CALL TO ORDER AND DECLARATION OF A QUORUM

Mr. Tom Kloster declared a quorum and called the meeting to order at 9:31 a.m.

2. CITIZEN COMMUNICATIONS TO TPAC ON NON-AGENDA ITEMS

There were none.

3. COMMENTS FROM THE CHAIR

Mr. Kloster briefly overviewed the regional choices engagement events for fall 2008; highlighting the *Making Connections Summit* and joint Metro Policy Advisory Committee (MPAC) and JPACT meetings.

4. FUTURE AGENDA ITEMS

Committee members recommended that the presentations on ODOT's transportation enhancement programs and review of the Metropolitan Transportation Improvement Program (MTIP) process be added to the list of future agenda items.

5. APPROVAL OF TPAC MINUTES FOR JUNE 27, 2008

Approval of TPAC Minutes from June 27, 2008

MOTION: Ms. Karen Schilling moved, Mr. Louis Ornelas seconded, to approve the August 1, 2008 meeting minutes.

ACTION TAKEN: With all in favor, the motion passed.

6. ACTION ITEMS

6.1 Resolution No. 08-3973, For the Purpose of Approving the Air Quality Conformity Determination for the Oregon Highway 213/Redlands Road Improvements as Part of the Federal Component of the Amended 2035 Regional Transportation Plan and Amended 2008-2011 Metropolitan Transportation Improvement Program

Mr. Mark Turpel of Metro provided a brief overview of air quality conformity requirements. Ms. Nancy Kraushaar gave a description of Oregon City's new development site entitled *The Rivers* and the proposed road improvements to Highway 213 and Redland Road.

With the recent adoption of the 2035 Regional Transportation Plan (RTP) air quality conformity determination and its identification of a significant "cushion" on Carbon Monoxide emissions, as well as the cost and time needed to complete a full conformed analysis and the likelihood that this project's impact on air quality would be slight, staff proposed a less extensive qualitative abbreviated analysis of the new transportation facility improvements be completed. The analysis

determined that the Highway 213/Redland Road improvements would not exceed regional Carbon Monoxide air quality standards.

Mr. Dave Nordberg stated that although staff's approach for meeting the regional emissions analysis was not the standard, it does adequately meet the requirements. However, he noted that there are other areas (e.g. "hot spot analysis") that must be satisfied in order to meet the full air quality conformity determination requirements.

Committee members were concerned that incremental allocation of RTP dollars without a full air quality analysis could limit opportunities for future projects and should not become the precedent. Staff agreed with concerns and proposed coming back to TPAC with an approach that addresses future similar requests.

MOTION: Ms. Elissa Gertler moved, Ms. Schilling seconded, to approve Resolution No. 08-3973, with the requirement that ODOT and Oregon DEQ evaluate the air quality conformity determination procedure for future projects of this nature.

ACTION TAKEN: With all in favor, the motion passed.

6.2 Resolution No. 08-3974, For the Purpose of Amending the Federal Component of the 2035 Regional Transportation Plan (RTP) and the 2008-11 Metropolitan Transportation Improvement Program

Mr. Ted Leybold of Metro briefly overviewed the Highway 213 and Redland Road improvement project amendments to the 2035 RTP and 2008-11 MTIP.

Ms. Kraushaar submitted minor corrections to the project description outlined in the RTP Constrained Project list (Exhibit A of Resolution No. 08-3974).

MOTION: Mr. Ron Papsdorf moved, Mr. Ornelas seconded, to approve Resolution No. 08-3974 with the amended language.

ACTION TAKEN: With all in favor the motion passed.

6.3 Oregon Transportation Commission Reauthorization Project List

Mr. Travis Brower of ODOT (with assistance from Rian Windsheimer) provided information on the Oregon Transportation Commission's (OTC) policy for federal reauthorization highway program earmark requests. ODOT Region 1 staff have reviewed and screened each of the project proposals and have recommended 6 local projects for consideration. (Complete list of projects included as part of the meeting record.)

In addition, to these high priority project recommendations, ODOT recommended endorsement for the Columbia River Crossing (CRC) project. The CRC project would compete for separate,

national level, discretionary earmark funds such as Projects of National and Regional Significance.

Committee discussion included the US 26 Springwater Interchange, I-84/257th Avenue Troutdale Interchange, statewide support for the CRC project and state highway and transit project funding.

MOTION: Ms. Gertler moved, Ms. Robin McCaffrey seconded, to recommend to JPACT the endorsement of all 8 projects (including the US 26 Springwater Interchange and I-84/257th Avenue Troutdale Interchange projects pending ODOT's approval) in no priority order.

ACTION TAKEN: With all in favor, the motion passed.

6.4 2010-13 Metropolitan Transportation Improvement Program (MTIP) and State Transportation Improvement Program (STIP)

6.4.1 ODOT Proposed Program

Mr. Windsheimer briefly overviewed the 2010-13 State Transportation Improvement Program (STIP) development timeline, project map, Region 1 proposed projects for 2012-13, and public involvement schedule for the draft STIP and first-cut transportation priority list for MTIP.

Committee members recommended contact information for submitting written comments on the STIP and MTIP be added to the public involvement flyer. Additional discussion included bike and pedestrian improvement projects.

6.4.2 Regional Flexible Fund Allocation: Step 2

Mr. Leybold and Ms. Amy Rose of Metro updated the committee on the Regional Flexible Fund (RFF) step 2 local project applications. Their presentation included information on RFF score adjustments and qualitative and quantitative summaries on each of the project categories: 1) Regional Mobility Corridor, 2) Mixed-used Implementation, 3) Industrial and Employment Area Implementation, 4) Environmental Enhancement and Mitigation projects, and 5) Project development.

JPACT is scheduled to release the RFF list for public review and comment at their Sept. 11th meeting.

Committee discussion included project evaluation criteria (e.g. project readiness or geographic region), project cost estimates and adjustments, and bike and pedestrian project ratings. Members recommended that project scoring be presented to the public in an alternative form that more simply illustrates the results of the technical project.

MOTION: Mr. Nordberg moved, Ms. Margaret Middleton seconded, to recommend that the complete Regional Flexible Fund project list move forward for public review and comment that the project list not be narrowed prior to distributing to the public.

ACTION TAKEN: With all in favor, the motion passed.

7. INFORMATION / DISCUSSION ITEMS

7.1 Regional Infrastructure Analysis

Mr. Andy Shaw of Metro briefed the committee on the regional infrastructure comparative cost analysis. His presentation included information on:

- Growth and Infrastructure
- Infrastructure Types and Needs
- Comparative Costs (e.g. case studies, local and regional community infrastructure and costs, and urbanizing/urban area costs)

Project next steps include increased public involvement and outreach such as the *Making Connections Summit* and numerous joint MPAC/JPACT meetings.

Committee discussion included tax-based and investment benefits, the Big Look Task Force and infrastructure cost estimates.

8. ADJOURN

As there was no further business, Mr. Kloster adjourned the meeting at 12:00 p.m.

Respectfully submitted,

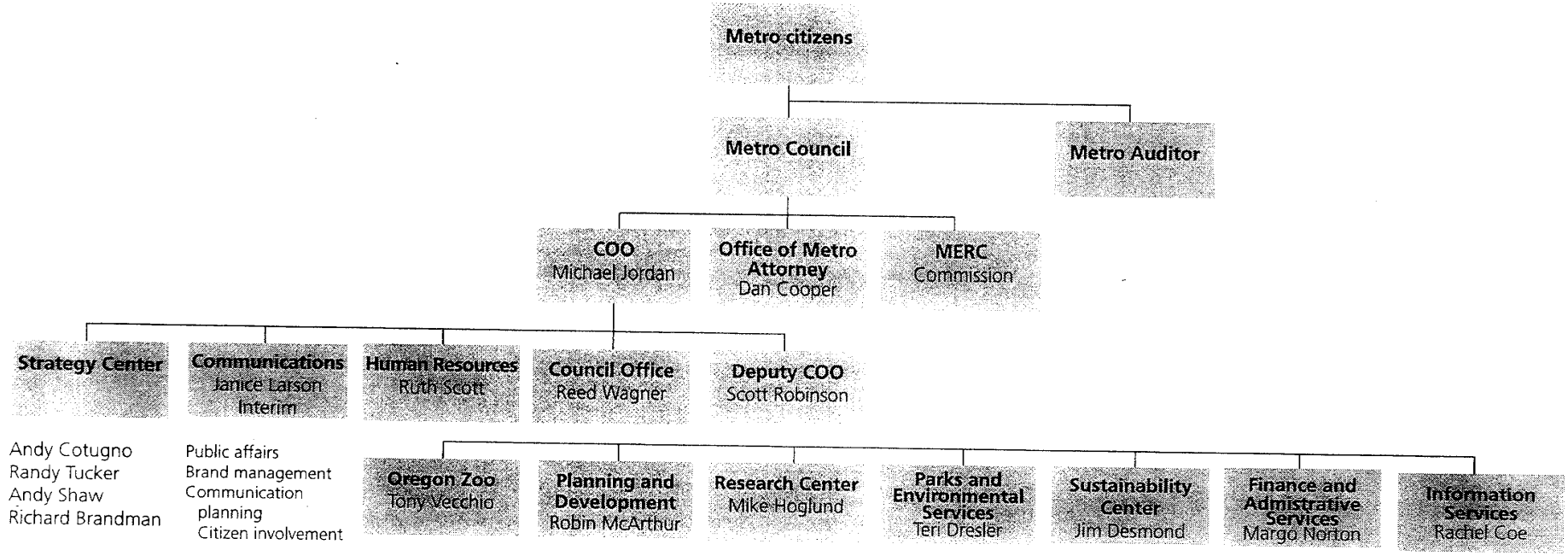
Kelsey Newell
Recording Secretary

ATTACHMENTS TO THE PUBLIC RECORD FOR AUGUST 29, 2008
The following have been included as part of the official public record:

ITEM	TOPIC	DOC DATE	DOCUMENT DESCRIPTION	DOCUMENT NO.
	Agenda	N/A	Revised 8/29/08 TPAC Agenda	082908t-01
	Flyer	N/A	Rail~Volution 2008 flyer	082908t-02
6.1	Resolution	N/A	Updated Resolution No. 08-3973.	082908t-03
6.2	Resolution	N/A	Updated Resolution No. 08-3974.	082908t-04
6.2	Memo	8/28/08	To: Nancy Kraushaar From: Aleta Forman-Goodrich RE: Description Change for the RTP Metro Project ID 10143	082909t-05
6.4.2	Chart	8/29/08	Updated 2010-2013 Regional Flexible Fund – Step 2 Local Projects	082908t-06
6.4.2	Memo	8/29/08	To: TPAC Members and Interested Parties From: Ted Leybold RE: RFF Score Adjustment	082908t-07
6.4.2	Chart	8/29/08	Quantitative Summary	082908t-08
6.4.2	Chart	8/29/08	Qualitative Summary	082908t-09
7.1	PowerPoint	8/29/08	*Regional Infrastructure: Comparative Costs* presented by Andy Shaw	082908t-10
7.1	Report	7/9/2008	Comparative infrastructure costs: local case studies	082908t-11

Metro | Program alignments

Sustainable Metro Initiative
Effective October 1, 2008



Andy Cotugno
Randy Tucker
Andy Shaw
Richard Brandman

Policy planning
Fiscal planning
Legislative and government affairs

Public affairs
Brand management
Communication planning
Citizen involvement

Guest Services
Construction and maintenance
Safety and security
Marketing
Volunteers
Conservation research
Conservation education
Living collections
Horticulture

Transportation planning
Regional Transportation Plan
Metropolitan Transportation Improvement Program
Regional Transportation Options
Land use planning
Periodic planning (urban/rural reserves)
Development Center (TOD)
Corridor planning

Data resources
Transportation modeling
Economic and land use modeling

Solid Waste operations
Transfer stations
Hazardous materials
Metro paint
Landfill management
Parks operations
Metro Regional Center facility

Recycling education
Community involvement
Conservation and natural areas
Acquisition
Restoration
Nature in Neighborhoods
Parks planning

Solid waste regulation
Solid waste fiscal compliance rate setting and rate review
Accounting
Procurement
Budget and finance
Risk management and safety

Security
Application development and maintenance
Technical services
Helpdesk
Records information management

Hard line
functional areas
of responsibility

Dotted line
functional areas
of responsibility

Nature in Neighborhoods
Parks System Planning

Zoo construction and maintenance

Zoo volunteers
Zoo conservation education
Regional Transportation Options

08SEPT

M E E T I N G S

600 NORTHEAST GRAND AVENUE PORTLAND, OREGON 97232 2736
TEL 503 797 1700 FAX 503 797 1794

METRO

Regional Choices: Framing Our Choices
Notice of TPAC/MTAC Workshops

During the next two years, your elected regional and local leaders must answer these questions:

- *What investments are needed to create jobs and livable communities?*
- *What transportation improvements are needed and how do we fund them?*
- *Where and how will the Portland metropolitan area grow during the next 40 to 50 years?*

This fall, the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT) will hold joint meetings to discuss the consequences of different investment choices. In preparation for these meetings, Metro staff will conduct two technical workshops to share information from the land use and transportation scenarios analysis conducted this summer.

The technical workshops are open to all interested parties, including members of TPAC, MTAC and local transportation coordinating committee members. Information provided at the workshops will also be reviewed and discussed at regular MTAC, TPAC, JPACT, MPAC and Metro Council meetings.

The workshops are being conducted as part of the broader "Making the Greatest Place" Initiative - a comprehensive effort to more effectively implement the region's long-range vision for managing growth, the 2040 Growth Concept.

Monday, September 29, 2008 – Land Use and Investment Choices

2 – 4 p.m. Council Chambers, Metro Regional Center

What are the results of a business as usual approach? What are the results of testing different land use policy and investment choices?

Monday, October 13, 2008 – Transportation and Investment Choices

2 – 4 p.m. Council Chambers, Metro Regional Center

What are the results of a business as usual approach? What are the results of testing different transportation policy and investment choices?

Updated September 8, 2008

CLICK HERE FOR REPORT

www.oregon**metro.gov**











An Executive Summary

2035 REGIONAL TRANSPORTATION PLAN

December 13, 2007

Approved by the U.S. Department of Transportation on February 29, 2008.

Metro | *Joint Policy Advisory Committee on Transportation*

Going places

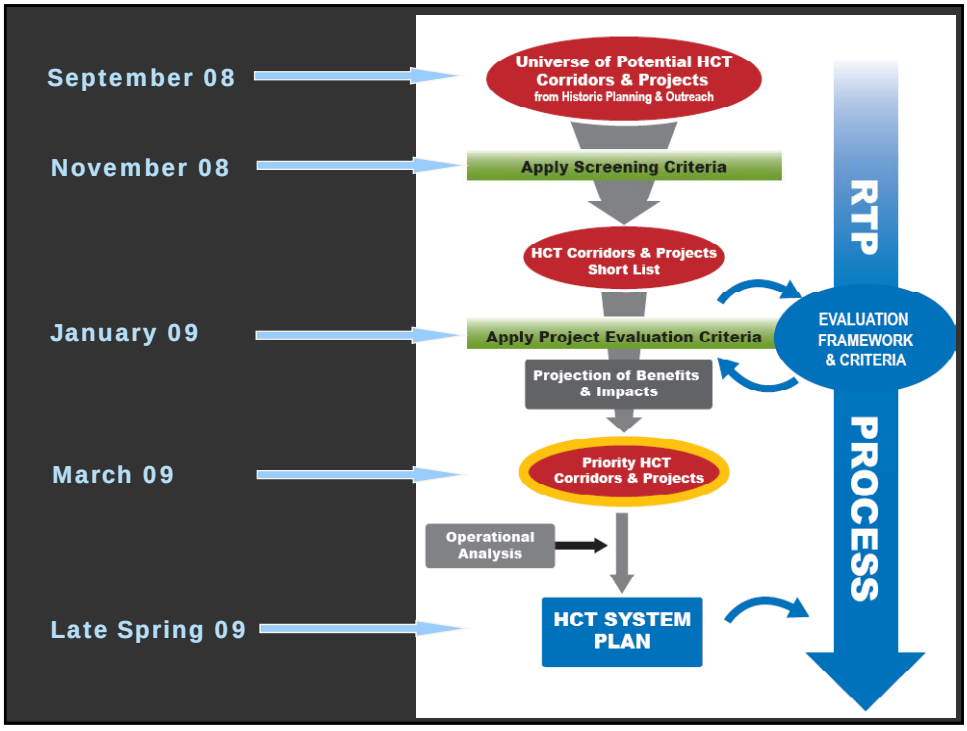
Planning For A High Capacity Transit in the Region

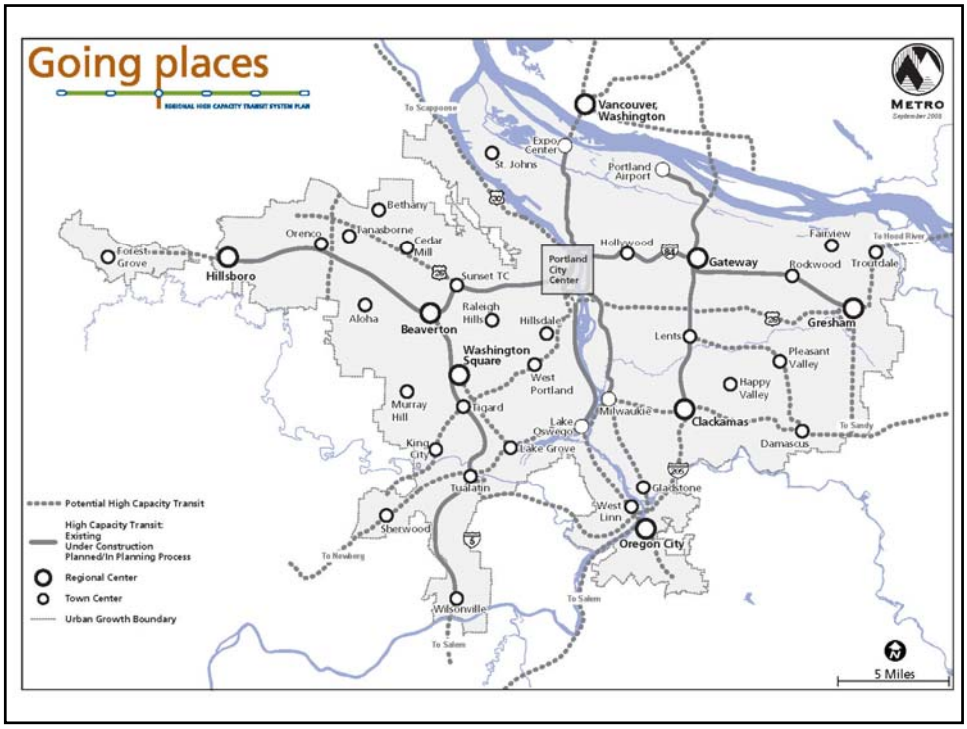
HCT Evaluation Framework

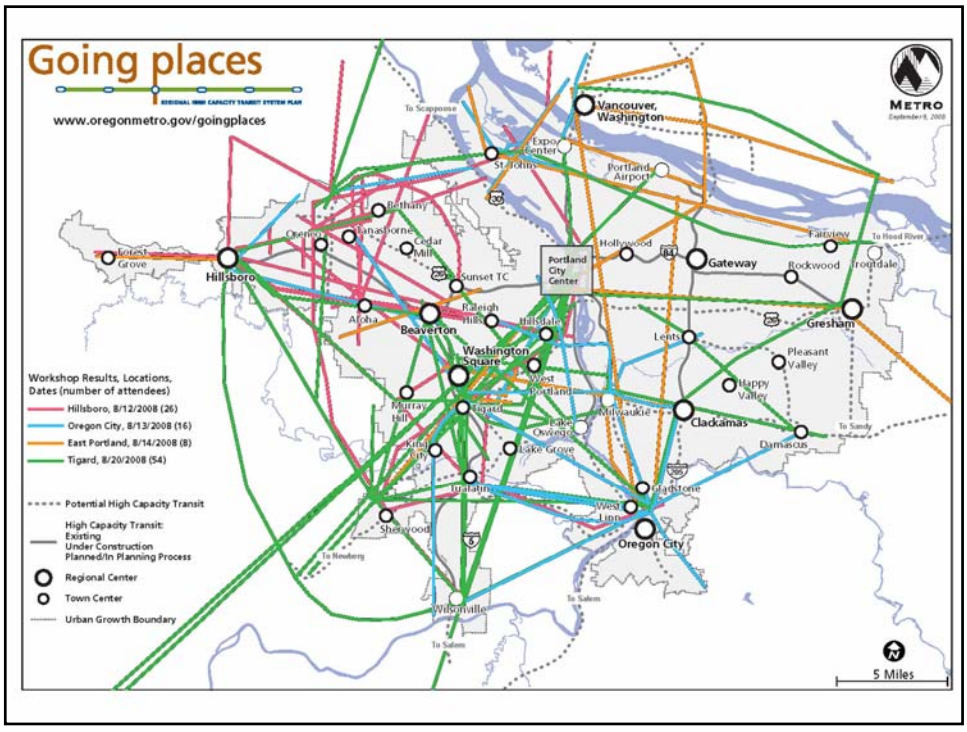
TPAC
September 26, 2008

Nelson / Nygaard Consulting Associates

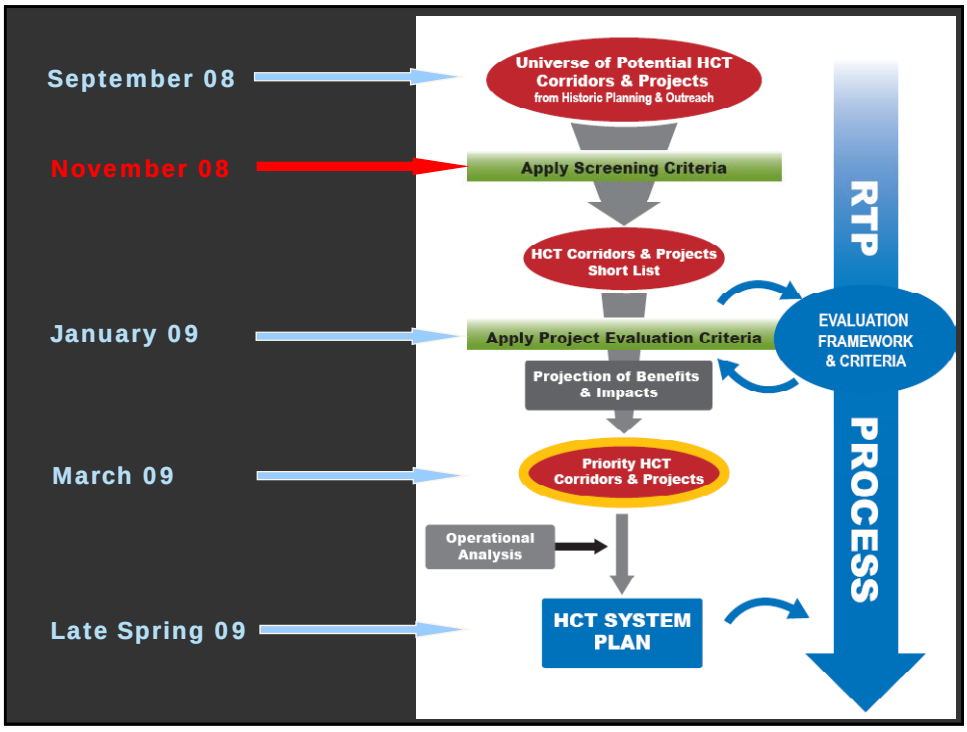
METRO
PEOPLE PLACES
OPEN SPACES




Going places
METRO
Vancouver, Washington
Expo Center
St. Johns
Portland Airport
Bethany
Orenco
Tanasbourne
Cedar Mill
Forest Grove
Hillsboro
Sunset TC
Portland City Center
Hollywood
Gateway
Fairview
Rockwood
Troutdale
To Hood River
Aloha
Beaverton
Raleigh Hills
Hillsdale
Gresham
Lents
Washington Square
West Portland
Pleasant Valley
Happy Valley
Murray Hill
Tigard
Milwaukie
Clackamas
Lake Oswego
Damascus
To Sandy
King City
Lake Grove
Tualatin
Gladstone
West Linn
Oregon City
Sherwood
To Newberg
Wilsonville
To Salem
Potential High Capacity Transit
High Capacity Transit:
Existing
Under Construction
Planned/In Planning Process
Regional Center
Town Center
Urban Growth Boundary
5 Miles


Going places
www.oregonmetro.gov/goingplaces
METRO
Vancouver, Washington
Expo Center
St. Johns
Portland Airport
Bethany
Orenco
Tanasbourne
Cedar Mill
Forest Grove
Hillsboro
Sunset TC
Portland City Center
Hollywood
Gateway
Fairview
Rockwood
Troutdale
To Hood River
Aloha
Beaverton
Raleigh Hills
Hillsdale
Gresham
Lents
Washington Square
West Portland
Pleasant Valley
Happy Valley
Murray Hill
Tigard
Milwaukie
Clackamas
Lake Oswego
Damascus
To Sandy
King City
Lake Grove
Tualatin
Gladstone
West Linn
Oregon City
Sherwood
To Newberg
Wilsonville
To Salem
Workshop Results, Locations, Dates (number of attendees)
Hillsboro, 8/12/2008 (26)
Oregon City, 8/13/2008 (16)
East Portland, 8/14/2008 (8)
Tigard, 8/20/2008 (54)
Potential High Capacity Transit
High Capacity Transit:
Existing
Under Construction
Planned/In Planning Process
Regional Center
Town Center
Urban Growth Boundary
5 Miles


Going places
METRO
Vancouver, Washington
Expo Center
St. Johns
Portland Airport
Bethany
Orenco
Tanasbourne
Cedar Mill
Forest Grove
Hillsboro
Hollywood
Gateway
Fairview
Rockwood
Troutdale
Portland City Center
Sunset TC
Aloha
Beaverton
Raleigh Hills
Hillsdale
Gresham
Lents
Washington Square
West Portland
Pleasant Valley
Happy Valley
Murray Hill
Tigard
Milwaukie
Clackamas
Lake Oswego
Damascus
King City
Lake Grove
Tualatin
Gladstone
West Linn
Sherwood
Oregon City
Wilsonville
Destination/Origination Density Surface
Less Dense
More Dense
Potential High Capacity Transit
High Capacity Transit: Existing Under Construction Planned/In Planning Process
Regional Center
Town Center
Urban Growth Boundary
5 Miles


September 08
November 08
January 09
March 09
Late Spring 09
Universe of Potential HCT Corridors & Projects
from Historic Planning & Outreach
Apply Screening Criteria
HCT Corridors & Projects Short List
Apply Project Evaluation Criteria
Projection of Benefits & Impacts
Priority HCT Corridors & Projects
Operational Analysis
HCT SYSTEM PLAN
EVALUATION FRAMEWORK & CRITERIA
RTP
PROCESS

Going places

Planning For A High Capacity Transit in the Region

Nomenclature

- **Goals:** Self-evident public goods, but not necessarily achievable.
- **Objectives:** Work to achieve goals. Measurable and accomplishable.
- **Actions:** Tasks or strategies to implement objectives.
- **Performance Indicators:** Determine degree to which objective or goal is being met.
- **Target:** Threshold for performance measure to hit.
- **Evaluation Criteria:** Performance measures used to help choose among options.
- **Screening Criteria:** Performance measures used to turn long list into shortlist.

METRO
PEOPLE PLACES
OPEN SPACES

Proposed Screening Criteria –
Quantitative Criteria

CRITERION	MEASUREMENT	PROPOSED SCREENING TARGET	
Existing Potential Ridership	• Transit Orientation Index	High	> 5.0 riders per acre
		High/Medium	4.0-5.0 riders per acre
		Medium	3.0-4.0 riders per acre
		Medium/Low	1.5-3.0 riders per acre
		Low	< 1.5 rider per acre
Future Potential Ridership	• Transit Orientation Index	High	> 10.0 riders per acre
		High/Medium	7.0-10.0 riders per acre
		Medium	4.0-7.0 riders per acre
		Medium/Low	2.5-4.0 riders per acre
		Low	< 2.5 rider per acre

Transit Orientation Index

Predictive tool for identifying ridership potential based on land use (riders/acre)

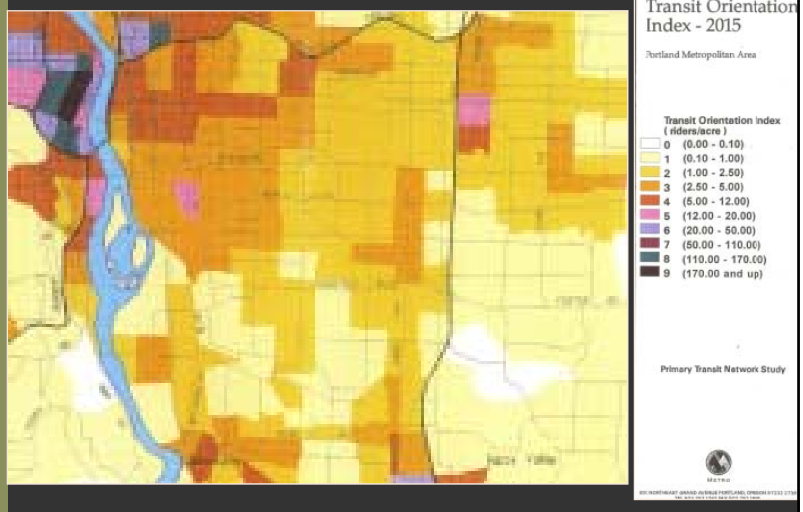
- **Population density**
- **Employment density**
- **Retail employment density**

= 80%+ Variance in Transit Demand

Going places

Planning For A High Capacity Transit in the Region

2015 TOI Map



METRO
PEOPLE PLACES
OPEN SPACES

Proposed Screening Criteria –
Qualitative Criteria

CRITERION	MEASUREMENT	PROPOSED SCREENING TARGET	
Corridor Availability and Cost	• **Qualitative assessment of right of way availability**	High	Minimal right of way development needs
		Medium	Moderate right of way development needs
		Low	Major land acquisition, tunneling, bridge work or extensive ROW development
Environmental Constraints	• **Qualitative assessment of habitat loss**	High	Minimal potential habitat loss and mitigation
		Medium	Moderate potential habitat loss and mitigation
		Low	Significant potential habitat loss and mitigation
Equity	• **Qualitative assessment of social equity needs**	High	Good access provided to low-income and minority communities
		Medium	Moderate access provided to low-income and minority communities – no change in riders per acre
		Low	Poor access provided to low-income and minority communities

Proposed Screening Criteria –
Qualitative Criteria

CRITERION	MEASUREMENT	PROPOSED SCREENING TARGET	
Connectivity & System	• **Qualitative assessment of 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	• **Assessment of ability to address congestion**	High	Significant Congestion
		Medium	Moderate Congestion
		Low	Minimal Congestion

RANKINGS FROM THE ROUTE PRIORITISATION

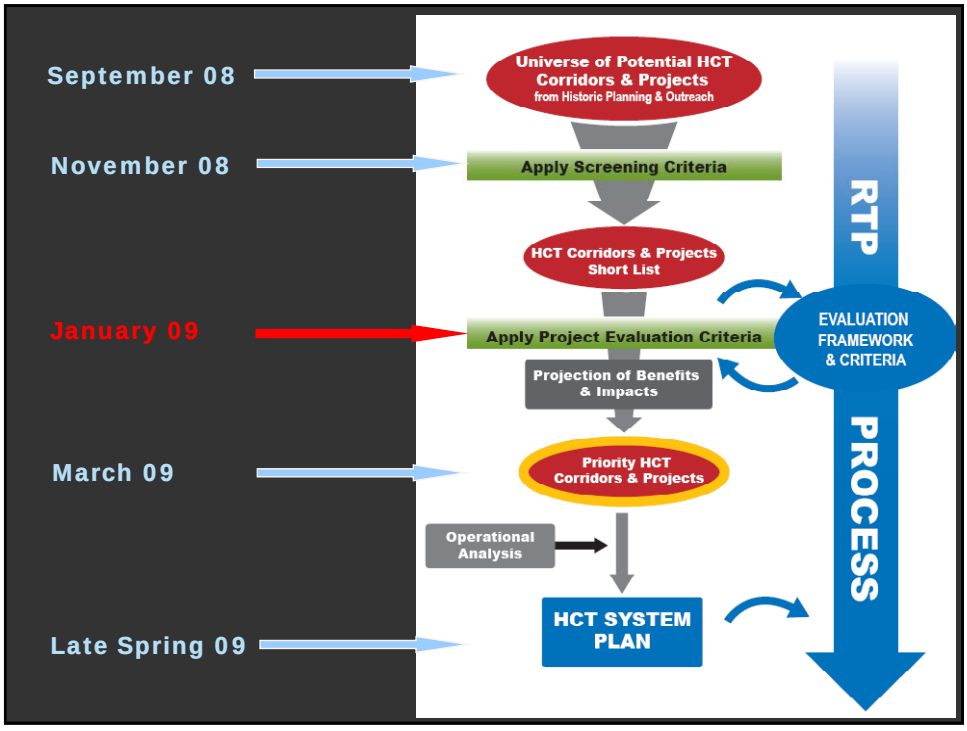
Rank	Route ID	Route Name	Environment	Economy	Accessibility	Integration	Affordability	Bus Impact
1	B10a	Basildon-Laindon (via Upper Mayne)						
2	B10b	Basildon-Laindon (via Great Knightleys)						
3	B5	Basildon-Pitsea (via Broadmayne)						
4	B11	Basildon-Laindon						
5	B8	Basildon-Dry Street (via Basildon Hospital)						
6	S3b	Southend-The Ranges (via Thorpe Bay)						
7	S9	Ranges Loop						
8	B4	Basildon-Burnt Mills						
9	S3a	Southend-The Ranges (via Southchurch Boulevard)						
10	S1a	Southend-Airport (via Victoria Avenue)						
11	T3b	Lakeside-Tilbury (via Chadwell)						
12	T3a	Lakeside-Tilbury						
13	T4a	Lakeside-Purfleet (via Turrock Way)						
14	S1b	Southend-Airport (via Sutton Road)						
15	B1	Basildon-Wickford						
16	T4b	Lakeside-Purfleet (via Weston Avenue)						
17	S5a	Southend-Leigh On Sea						
18	B7	Wickford-Pitsea						
19	S5b	Southend-Leigh On Sea (via Prittlewell)						
20	S4	Southend Loop						
21	B3	Basildon-Pitsea (via Cranes)						
22	S8b	Southend-Rayleigh (via Bridgewater Drive)						
23	T2	Lakeside-Shell Haven						
24	S7	Southend-Basildon						
25	B9	Basildon-Shell Haven						
26	S8a	Southend-Rayleigh (via Eastwood Road)						
27	S2	Airport-The Ranges						
28	B2	Basildon-Rayleigh						
29	T1b	Lakeside-Basildon (via Grays)						
30	B6c	Basildon-Canvey (via Fryerns & Benfleet)						
31	S6	Southend-Canvey						
32	T1a	Lakeside-Basildon (via Arterial Road)						
33	T1c	Lakeside-Basildon (via South Stifford)						

Scorecard Approach

London Intermediate Modes Evaluation

Key

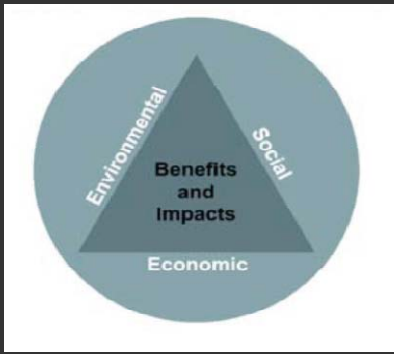
High Priority | Medium Priority | Low Priority



Going places

Planning For A High Capacity Transit in the Region

RTP Outcome Based Evaluation Framework



METRO
PEOPLE PLACES
OPEN SPACES

Going places

Planning For A High Capacity Transit in the Region

Metro & MPAC Adopted Definition of a Successful Region

1. People live and work in vibrant communities where they can choose to walk for pleasure andto meet their everyday needs.
2. Current and future residents benefit from the region's sustained economic competitivenessand prosperity.
3. People have safe and reliable transportation choices that enhance their quality of life.
4. The region is a leader in minimizing contributions to global warming.
5. Current and future generations enjoy clean air, clean water and healthy ecosystems.
6. The benefits and burdens of growth and change are distributed equitably.

METRO
PEOPLE PLACES
OPEN SPACES

Going places

Planning For A High Capacity Transit in the Region

Federal Transit Administration New Starts Evaluation

- Cost & Ridership = Cost Effectiveness
- Mobility Improvements
- Environmental Benefits
- Operating Efficiencies
- Land Use

METRO
PEOPLE PLACES
OPEN SPACES

Going places

Planning For A High Capacity Transit in the Region

BART System Expansion Criteria

PROPOSED CRITERIA	PROJECT STATUS	
	Strategic Opportunity Assessment	Environmental Clearance/ Ridership Development Plan
Transit Supportive Land Use and Access		
Existing Land Use: Residential and/or Employment	L/LM/M/MH/H	L/LM/M/MH/H
Existing Intermodal Connections	L/LM/M/MH/H	L/LM/M/MH/H
Land Use Plans and Policies	L/LM/M/MH/H	L/LM/M/MH/H
Ridership Development Plan (Comprehensive Station Plan)		
Ridership Threshold		L/LM/M/MH/H
Station Context		L/M/H
Cost Effectiveness		
Cost per New Rider: Base Case	L/LM/M/MH/H	L/LM/M/MH/H
Cost per New Rider: with TOD	L/LM/M/MH/H	L/LM/M/MH/H
Cost per Transportation System User Benefit		L/LM/M/MH/H
Regional Network Connectivity		
Regional Transportation Gap Closure	L/M/H	L/M/H
System and Financial Capacity		
Core System Improvements	L/LM/M/MH/H	L/LM/M/MH/H
Capital Finance Plan	L/M/H	L/M/H
Operating Finance Plan	L/M/H	L/M/H
Partnerships		
Community and Stakeholder Support	L/LM/M/MH/H	L/LM/M/MH/H
Staff Recommendation	**NR/R/HR**	**NR/R/HR**

Rating Legend
L: Low LM: Low-Medium M: Medium MH: Medium-High H: High

METRO
PEOPLE PLACES
OPEN SPACES

Going places

Planning For A High Capacity Transit in the Region

Transit Supportive Land Use and Access

Existing Land Use: Residential	Low	Low-Medium	Medium	Medium-High	High
Residential Density (units per *gross* acre)	< 5	5-9	10-14	15-24	> 25
Residential Density (units per *net* acre)	< 15	16-25	26-45	46-75	> 75
Total Units w/i 1/2 mile radius	< 2,500	2,501-5,000	5,001-7,500	7,501-12,500	> 12,500
Estimated Trips at **30%** mode share**	< 1,800	1,801-3,600	3,601-5,400	5,401-9,000	> 9,000

* Residential units within ½ mile radius of stations

** Estimated trips (two-way) based on 1.2 workers per household.

METRO
PEOPLE PLACES
OPEN SPACES

Going places

Planning For A High Capacity Transit in the Region

UK "New Approach to Appraisal"

- Financial Account
  - Capital, operating, maintenance and rehabilitation costs
  - Direct and indirect revenues derived from operation (fares, advertising);.
- User Benefits Account
  - quantifiable and qualitative benefits, such as travel time savings, automobile operating cost savings and safety benefits.
- Environmental Account
  - GHG, etc.
- Economic Account
  - Improved access to employment, higher land values, etc.
- Social Community/Equity Account
  - Support of regional centers concept
  - Placemaking and associated benefits
  - Negative externalities on adjacent properties and community cohesion
  - Public health

METRO
PEOPLE PLACES
OPEN SPACES

London Multiple Criteria Assessment Framework

Built upon the UK's "New Approach to Appraisal"

Criteria	Indicator	Measure
Environment	Noise	Number of properties affec
	Local Air Pollution	Number of properties affe
		CO, HC, NO_x, and Particul
	Global Emissions	Percentage change and c
		SO_x.
	Energy consumption	Change in diesel, petrol an
	Landscape	Qualitative assessment of
	Ecology	Qualitative assessment of
	Townscape	Qualitative assessment of
	Land / Property Take	Square metres required.
	Heritage	Qualitative assessment of
	Water	Risk based assessment
		environment and the poter
	Construction Impact	Number of properties affec
Safety	Public transport	Number of annual accide
		valuation of injuries.
	Private transport	Number of annual injuries
	Security	Number of boarders wh
		CCTV.
Economic	Public Transport Journey Time	Change in annual passeng
	Private Transport Journey Time	Change in annual passeng
	Frequency	Change in frequency and wait time per boarder and total wait time changes.
	Reliability	Change in reliability.
	Capacity of Corridor	Change in capacity of corridors (efficiency of roadspace).
	Capacity of Key Areas	Change in capacity of key areas served.
	Crowding	Change in total crowded hours (rail, bus, and station congestion).
	Convenience	Estimated monetary benefit.
	In-Vehicle Quality	Estimated monetary benefit.
	Out-of Vehicle Quality	Estimated monetary benefit.
	Public Transport Use	Change in annual passenger kilometres.
	Private Transport Use	Change in annual person kilometres.
	Change in Cycle / Walk	Change in cycling and walking trips.
	Relationship with Developments	Total number of trips to development.
	Distribution of Financial Effects	Change in annual public transport revenue.
	Capital Costs	Estimates of incremental initial capital and renewal costs.
	Operating Costs	Estimates of incremental operating costs.
	Third Party Contributions	Four point scale based on influence contributions will have on scheme.
	Risk	Four point scale quantifying the factors that could delay or abandon the project.
	Benefit Cost Ratio	Benefit cost ratio.
Accessibility	Pedestrian Access to Public Transport System	Change in average population weighted access time.
	Access Time to Local Centres	Incremental changes in population catchments based on travel time bands.
	Access Time to City Centre	Average change in travel time to the West End, City, and Docklands.
	Mobility Impaired Access	Number of passengers that benefit from access to MIP facilities.
	Community Severance	Average score relating to the change in community severance across the study area.
	Pedestrian Space	Change in pedestrian space using the Fruin service level.
	Cycling	Checklist quantifying all cycling related measures.
	Parking and Servicing Access	Scoring system based on number of properties and change in parking regulations.
Integration	Interchange	Total savings in time and a monetray value of time savings.
	Flexibility of Journeys Through Ticketing	Total number of interchanges.
	Co-ordination of Timetables	Change in total delay and a monetary value of time savings.
	Park and Ride	Total change in waiting time which is monetised.
	Interface with Other Modes	Total demand associated with park and ride site.
	Access to Key Centres	Change in facilities at interchange stations.
		Incremental changes in population catchments based on travel time bands.
	Access to Development Sites	Changes in population catchments based on travel time bands.
	Access to Deprived Areas	Number of people within the deprived population experiencing changes in travel times to reach the nearest local centre.
	Access to Employment	Total number of jobs available within the catchment based on the occupational characteristics of residents.
	Local Policies	Qualitative assessment of effects based on seven point scale.
	Tourism	Changes in population catchments based on travel time bands.
	Health	
	National / EU Policies	Qualitative assessment of effects based on seven point scale

Going places

Planning For A High Capacity Transit in the Region

"Intermediate Modes" Evaluation

CRITERIA	SUB-CRITERIA	INDICATORS
1. Environmental Impact	Natural environment	Noise, local air pollution, global emissions, energy and fuel
2. Safety and security	Accidents and personal security	Public and private transport accidents, personal security
3. Economic	Cost, time savings and revenue	Capital and operating costs, public and private use, public and private journey times, revenue cost benefit analysis
4. Accessibility	Public transport accessibility Accessibility to other modes	Pedestrian access to public transport, access to local centres Community severance, pedestrian space, paring and servicing access
5. Integration	Integration with other modes Accessibility impacts on regeneration and social inclusion Other local policy/plans Regional economic impact	Interface with other modes Access to development sites, access to deprived areas, access to employment Local policies, tourism National/EU objectives

METRO
PEOPLE PLACES
OPEN SPACES