600 NE Grand Ave.
Portland, OR 97232-2736

Metro | *Agenda*

Meeting: Transportation Policy Alternatives Committee (TPAC)
Date: Friday, Nov. 18, 2011
Time: **10 a.m. to noon *Please note late start**
Place: Metro, Council Chamber

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10 AM	**1.**		**Call to Order and Declaration of a Quorum**	**Elissa Gertler, Chair**
10 AM	**2.**		**Comments from the Chair and Committee Members**	**Elissa Gertler, Chair**
10:05 AM	**3.**		**Citizen Communications to TPAC on Non-Agenda Items** • Certificates of Appreciation for Outgoing TPAC Community Representatives • Welcome and Introduce New TPAC Community Representative Members	
10:10 AM	**4.**	**	**Consideration of the TPAC Minutes for Oct. 28, 2011**	
	5.		**ACTION ITEMS**	
10:15 AM	5.1		Metropolitan Transportation Improvement Program (MTIP) Amendments – RECOMMENDATION TO JPACT REQUESTED	**Ted Leybold** **Rian Windsheimer, ODOT**
		**	o Highway 217: Transportation System Management & Operations project	
		*	o Division Street: Gresham-Fairview Trail to Wallula pedestrian and bicycle improvements	
			• *Purpose*: TPAC consideration of amending the MTIP to add two new projects.	
			• *Outcome*: Recommendation to JPACT on proposed amendments to the MTIP.	
10:25 AM	5.2	*	2014-15 Regional Flexible Fund Allocation – RECOMMENDATION TO JPACT REQUESTED	**Ted Leybold** **Amy Rose** **Dylan Rivera**
			• *Purpose*: TPAC review of proposed allocation.	
			• *Outcome*: Recommendation to JPACT on proposed allocation.	

Continued on back…

6. INFORMATION/DISCUSSION ITEMS

11:35 AM 6.1 * Climate Smart Communities Scenarios – Discussion on Preliminary Results and Findings –DISCUSSION — **Kim Ellis**

- *Purpose*: Continue discussion of preliminary results and findings to identify tradeoffs and policy choices.
- *Outcome*: TPAC input on policy questions to be raised for MPAC and JPACT discussion.

12 PM **7. ADJOURN** — **Elissa Gertler, Chair**

* Material available electronically.
** Material will be provided in advance of the meeting.
# Material will be available at the meeting.

For agenda and schedule information, call Kelsey Newell at 503-797-1916, e-mail: kelsey.newell@oregonmetro.gov.
To check on closure or cancellations during inclement weather please call 503-797-1700#.

Future TPAC discussion items:

- MOVES update
- High Speed Rail
- Context sensitive design and least cost planning
- A briefing on the Metro Auditor's *Tracking Transportation Project Outcomes* report
- Congestion Pricing Pilot Study

2011 TPAC Work Program
11/7/11

October 28, 2011 – Regular Meeting • Climate Smart Communities Scenarios: Briefing of Preliminary Results and Findings • Oregon Highway Plan (OHP) and Transportation Planning Rule (TPR) Action	**November 18, 2011 – Regular Meeting** • Climate Smart Communities Scenarios – Discussion on Preliminary Results and Findings • 2014-15 Regional Flexible Fund Allocation – Recommendation to JPACT
	January 6, 2012 – Regular Meeting • Climate Smart Communities Scenarios - TPAC recommendation to JPACT on Findings Report and transmittal letter to accompany report – Recommendation to JPACT • Draft 2012-13 UPWP – Discussion

January 27, 2012 – Regular Meeting
• Draft 2012-13 UPWP – Discussion
• Draft Regional Safety Plan – Discussion
• Climate Smart Communities Scenarios Phase 2 scenarios analysis – Discussion
• Oregon Sustainable Transportation Initiative (OSTI) - Information
  o Statewide Transportation Strategy (STS)
  o LCDC Rulemaking on selection of preferred scenario
	February 17, 2012 – Regular Meeting
	• Airport Futures – Information
	• Climate Smart Communities Scenarios Phase 2 work plan – Discussion

March 30, 2012 – Regular Meeting • FY2012-12 UPWP Action – Recommendation to JPACT • Climate Smart Communities Scenarios Phase 2 work plan – Recommendation to JPACT	**April 27, 2012 – Regular Meeting** • OSTI draft Statewide Transportation Strategy (STS) – Discussion
May 25, 2012 – Regular Meeting	**June 29, 2012 – Regular Meeting** • Climate Smart Communities Scenarios – Discussion • OSTI draft Statewide Transportation Strategy (STS) – Discussion
July 27, 2012 – Regular Meeting	**August 31, 2012 – Regular Meeting** • Oregon Sustainable Transportation Initiative (OSTI) - LCDC Rulemaking on selection of preferred scenario - Informational
September 28, 2012 – Regular Meeting • Climate Smart Communities Scenarios Phase 2 scenarios analysis – Discussion • Oregon Sustainable Transportation Initiative (OSTI) - LCDC Rulemaking on selection of preferred scenario - Discussion	**October 26, 2012 – Regular Meeting** • Climate Smart Communities Scenarios Phase 2 scenarios analysis – Discussion

Parking Lot:

- MOVES update
- High Speed Rail
- Context sensitive design and least cost planning
- A briefing on the Metro Auditor's *Tracking Transportation Project Outcomes* report
- Congestion Pricing Pilot Study

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AMENDING THE 2010-13 METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM (MTIP) TO ADD A PROJECT ON DIVISION STREET BETWEEN THE GRESHAM-FAIRVIEW TRAIL AND WALLULA AVENUE IN GRESHAM	))))))	RESOLUTION NO. 11-YYYY Introduced by Councilor Collette

WHEREAS, the Metropolitan Transportation Improvement Program (MTIP) prioritizes projects from the Regional Transportation Plan to receive transportation related funding; and

WHEREAS, the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council approved the 2010-13 MTIP on September 16, 2010; and

WHEREAS, JPACT and the Metro Council must approve any subsequent amendments to add new projects to the 2010-13 MTIP; and

WHEREAS, the City of Gresham applied for and was awarded federal Transportation, Community, and System Preservation (TCSP) program funding for pedestrian and bicycle facilities on Division Street between the Gresham-Fairview Trail and Walllula Avenue; and

WHEREAS, this project is included in the current Regional Transportation Plan; and

WHEREAS, the Clean Air Act requires that federally funded transit and highway projects demonstrate conformity with the state's air quality goals; and

WHEREAS, the code of federal regulations 40 CFR 93.126 further exempts pedestrian and bicycle projects from the Clean Air Act's requirements that federally funded transportation projects demonstrate conformity with the state's air quality goals; and

WHEREAS, funding is available for this project within existing revenues, consistent with the MTIP financial plan; and

WHEREAS, JPACT approved this resolution December 9, 2011; now therefore

BE IT RESOLVED that the Metro Council hereby adopts the recommendation of JPACT to add the Division Street pedestrian and bicycle project to the 2010-13 MTIP.

ADOPTED by the Metro Council this ____ day of December 2011.

Tom Hughes, Council President

Approved as to Form:

Alison Kean Campbell, Acting Metro Attorney

STAFF REPORT

FOR THE PURPOSE OF AMENDING THE 2010-13 METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM (MTIP) TO ADD A PROJECT ON DIVISION STREET BETWEEN THE GRESHAM-FAIRVIEW TRAIL AND WALLULA AVENUE IN GRESHAM

Date: December 15, 2011 Prepared by: Ted Leybold, 503-797-1759

BACKGROUND

$832,640 of federal TCSP funds was awarded to the City of Gresham to construct bicycle and pedestrian facilies on Division Street. This is a competitive, discretionary funding program whose award decisions are made by the Federal Highway Administration. To be eligible to receive these fnds the project award must be amended into the Metropolitan Transportation Improvement Program (MTIP).

Project Components
1. New Permeable Multi-Use Path and Permeable Sidewalk: Construction of a new 790' long and 10' wide permeable asphalt multi-use path on the north side of Division St. between Birdsdale Ave. and the Gresham/Fairview Trail will eliminate a gap for pedestrians and bicyclists traveling on Division St. The existing curb-to-curb roadway in this short segment of the corridor is 55' and not wide enough to accommodate bike lanes. It is also topographically constrained on the south side. A new 5' wide permeable concrete sidewalk will be constructed along this same 790' long segment adjacent to the asphalt multi-use path to provide access to a TriMet bus stop as well as to provide an additional pedestrian facility separate from the multi-use trail that serves bicyclists accessing the Gresham-Fairview Trail from east of Birdsdale Ave.

2. New Multi-Use Path between Birdsdale and Wallula Avenues: this 3,800' long segment of Division Street has sporadic and insufficient walk zones that do not meet ADA widths and are obstructed by utility poles, many missing sidewalk links, and is constrained by steep slopes. There is no additional right-of-way to extend the sidewalk other than into the existing roadbed. Improvements in this segment will consist of extending existing curbs to create 10' wide pedestrian/bicycle facilities on both sides of the street. This element of the project will narrow inner travel lanes and create new multi-use paths on both sides of the street, creating physical and visual traffic calming.

Improvements on this segment link to the segment from Birdsdale to the Gresham/Fairview Trail described as project component #1 above, and together they would provide a continuous bicycle system from east to west city limits.

3. Pedestrian Mid-Block Crossing and Safety Features: TriMet, the region's transit service provider, recently recognized the Division Corridor as one of ten critical focus areas for pedestrian and transit needs in the greater Portland region. The TriMet Route 4 bus travels between Gresham and Portland along this corridor and is recorded as having the second-highest ridership in the region. One of the critical safety components of this project is a new mid-block crossing near SE 179th Avenue with a pedestrian refuge and rectangular rapid flashing beacons. This section of roadway is currently used as an informal crossing by many students traveling from a Route 4 bus stop to Centennial High School.

The project is in conformity with the State Implementation Plan for air quality. Air quality conformity was completed on the 2035 Regional Transportation Plan financially constrained system that included this project as constructed in the timeframe as funded. Additionally, pedestrian and bicycle projects are exempt from the requirement that a regional air quality conformity determination be made by the code of federal regulations 40 CFR 93.126.

The Joint Policy Advisory Committee on Transportation and the Metro Council must approve amendments to the MTIP. This amendment will add these three projects to the 2010-13 MTIP with programming as shown in Exhibit A to Resolution No.11-YYYY.

ANALYSIS/INFORMATION

1. **Known Opposition** None known at this time.

2. **Legal Antecedents** Amends the 2010-13 Metropolitan Transportation Improvement Program adopted by Metro Council Resolution 10-4186 on September 16, 2010 (For the Purpose of Approving the 2010-13 Metropolitan Transportation Improvement Program for the Portland Metropolitan Area).

3. **Anticipated Effects** Allows funding to become available to the Division Street project.

4. **Budget Impacts** None.

RECOMMENDED ACTION

Metro staff recommends the approval of Resolution No. 11-YYYY.

Draft

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF ALLOCATING $70.73 MILLION OF REGIONAL FLEXIBLE FUNDING FOR THE YEARS 2014 AND 2015, PENDING AIR QUALITY CONFORMITY DETERMINATION	)))))	RESOLUTION NO. 11-XXXX Introduced by

WHEREAS, approximately $70.73 million is forecast to be appropriated to the metropolitan region through the federal Surface Transportation Program (STP) and Congestion Mitigation – Air Quality (CMAQ) transportation grant programs; and

WHEREAS, the Metro Council and Joint Policy Advisory Committee on Transportation (JPACT) are designated by federal legislation as authorized to allocate these funds to projects and programs in the metropolitan region through the Regional Flexible Fund Allocation (RFFA) process; and

WHEREAS, the Metro Council and JPACT have provided policy guidance to Metro staff to conduct a two-step allocation process, establish the project focus areas of Active Transportation & Complete Streets and Green Economy & Freight Initiatives with funding targets, and development of a collaborative process for nominating projects for funding by Metro Resolution No. 10-4160, For the Purpose of Adopting Policy Direction to the Regional Flexible Funding Allocation (RFFA) Process for Federal Fiscal Years 2014-15, adopted July 8, 2010; and

WHEREAS, a task force was charged by JPACT to develop prioritization criteria for Active Transportation & Complete Streets and Green Economy & Freight Initiatives projects that were adopted by Metro Resolution No. 11-4231, For the Purpose of Adopting the Recommendations of the Regional Flexible Fund Task Force, adopted February 17, 2011; and

WHEREAS, an extensive public process has provided opportunities for comments on the merit and potential impacts of the project and program applications between September 13 and October 1, 2011; and

WHEREAS, TPAC has provided recommendations to JPACT and the Metro Council on a list of projects and programs, as shown in Exhibit A, attached to this resolution, to allocate funding in response to policy direction, consistency with Regional Flexible Fund Task Force criteria, local prioritization processes, and public comments; and

WHEREAS, JPACT took action on the TPAC recommendation December 8, 2011, prior to adoption of this resolution; and

WHEREAS, receipt of these funds is conditioned on completion of requirements listed in the staff report to this resolution; now therefore

BE IT RESOLVED that the Metro Council hereby adopts the recommendation of JPACT on the project and programs to be funded through the 2014-15 Regional Flexible Fund Allocation process as shown in Exhibit A.

ADOPTED by the Metro Council this ____ day of December 2011.

Tom Hughes, Council President

Approved as to Form:

Daniel B. Cooper, Metro Attorney

2014-15 RFFA project and program nominations

Local projects					
Sub-region	**Project**	**Lead agency**	**Focus area**	**Phase**	**RFF request**
Washington Co	Hillsboro Regional Center: Oak and Baseline	Hillsboro	AT/CS	PD	$500,000
	West Fork of the Tonquin Trail-Cedar Creek Greenway Trail	Sherwood	AT/CS	Cons	$5,112,000
	Hwy 8/Hwy 47 Intersection Improvements	Forest Grove/ODOT	GE/FI	Cons	$1,312,000
City of Portland	East Portland Active Transportation to Transit	Portland	AT/CS	Cons	$3,373,000
	Portland Bike Sharing Project	Portland	AT/CS	Cons	$2,000,000
	SE Foster Road Safety Enhancement and Streetscape Project (50th-84th)	Portland	AT/CS	Cons	$1,250,000
	North Burgard-Lombard ("Around the Horn") Project: North Time Oil Road-Burgard	Portland	GE/FI	Cons	$2,363,000
E. Multnomah Co	Arata Road Improvements	Multnomah Co	AT/CS	Cons	$1,669,000
	Sandy Blvd Improvements: 230th - 238th Dr	Multnomah Co	GE/FI	Cons	$659,000
Clackamas Co	17th Avenue Multi-use Trail	Milwaukie	AT/CS	Cons	$2,969,000
	Clackamas County Regional Freight ITS Project	Clackamas Co	GE/FI	PD/Cons	$790,000
Other	Regional Over-dimensional Truck Route Plan	Metro/Portland	GE/FI	Study	$100,000
	Regional Freight/Passenger Rail Investment Strategy	Metro	GE/FI	Study	$400,000
	Vehicle Electrification	Metro	Other	N/A	$500,000
				Total	**$22,997,000**

Region-wide programs	
Transit Oriented Development	$5,950,000
High Capacity Transit Bond	$26,000,000
High Capacity Transit Development	$4,000,000
Transportation System Management & Operations/Intelligent Transportation Systems	$3,000,000
Regional Travel Options	$4,539,000
Regional Planning	$2,244,000
Corridor & Systems Planning	$1,000,000
Metropolitan Mobility Funding Preparedness	$1,000,000
Total	**$47,733,000**

Notes: AT/CS: Active Transportation and Complete Streets, GE/FI: Green Economy and Freight Initiatives,PD: Project Development, Cons: Construction

Draft

STAFF REPORT

FOR THE PURPOSE OF ALLOCATING $70.73 MILLION OF REGIONAL FLEXIBLE FUNDING FOR THE YEARS 2014 AND 2015, PENDING AIR QUALITY CONFORMITY DETERMINATION

Date: November 8, 2011

Prepared by: Ted Leybold
503-797-1759

BACKGROUND

The Regional Flexible Fund Allocation for 2014-15 allocates transportation funding to Metro area transportation agencies from two federal grant programs; the Surface Transportation and Congestion Mitigation/Air Quality programs. The metropolitan region is forecasted to receive $70.73 million from these sources in the federal fiscal years of 2014 and 2015. Previous allocations have identified projects and programs to receive funds during the Federal fiscal years of 2012 and 2013.

POLICY DIRECTION

JPACT established new project focus areas and funding targets - Active Transportation & Complete Streets (75% of local project funds) and Green Economy & Freight Initiatives (25% of local project funds). JPACT also affirmed the two-step process used in the previous cycle for allocating funds to region-wide programs first and then conducting the local project nomination process. The new policies were adopted by Metro Resolution No. 10-4160. Finally, JPACT charged a task force with developing an approach for spending the funds in the two project focus areas and project scoping and prioritization criteria. The resulting task force report was adopted by Metro Council No. 11-4231.

Based on the updated policy direction from JPACT, Metro staff developed a collaborative project nomination process, the result of which are the projects listed in Exhibit A to Resolution No. 11-XXXX.

PROJECT NOMINATION PROCESS

The process used a collaborative model for generating projects and relied on a sub-regional prioritization process to nominate projects for funding consideration. Sub-regional funding targets were established using updated population and system data. The project list reflects the local priorities and projects that meet the task force criteria in each sub-region (Washington County and its cities, East Multnomah County and its cities, Clackamas County and its cities, and the City of Portland) and meets the funding targets established for each sub-region.

PUBLIC COMMENT PROCESS

The new policy development process called for a new public engagement process. This comment period was different from past two-year cycles. The new process involved the three county coordinating committees and the City of Portland conducting their own public involvement and prioritization process among competing projects to nominate a "100 percent" list of projects prior to Metro's regional public comment period. The regional public comment period held from September 13 through October 13, 2011 asked the public to provide refinements – "how can we improve upon the project proposal to address program criteria and meet your needs?" – rather than weighing one project against another. The public comment report documents all of the projects received via the online comment tool, email, and mail. A summary of the report is Attachment 1 to this Staff Report.

VEHICLE ELECTRIFICATION

As part of its 2014-15 RFFA decision, JPACT adopted a one-time set aside of $500,000 for electric vehicle (EV) acquisition and infrastructure development. Metro convened an ad hoc work group comprised of TPAC members and EV knowledgeable staff from partner agencies to craft a recommendation for applying these funds. Participants included:

Andy Back - Washington Co/TPAC

Karen Buehrig – Clackamas Co/TPAC

Peter Brandom – City of Hillsboro

Ronda Chapman-Duer – Washington Co

Katja Dillmann – City of Portland

Warren Fish – Multnomah Co

Ashley Horvat - ODOT

Scott King – Port of Portland

James Mast – Drive Oregon

John Macarthur - OTREC

Young Park - TriMet

Deena Platman - Metro

Eben Polk – Clackamas County

JPACT advanced a set of project options generated by the work group into the RFFA public comment period. Metro received 24 comments on the transportation electrification project proposals. The work group reconvened to prepare a recommendation for expenditure based on the input received during the public comment period.

The recommendation provides for:

Electric Vehicle Fleet Conversion - $400,000 investment in the transition of public and non-profit agency fleets from internal combustion engine vehicles to plug in electric vehicles.
Lead agency: ODOT/Department of Administrative Services
In response to President Obama's call for one million EVs on the road by 2015, Oregon has set an ambitious goal of putting 30,000 EVs on our roads by this date. Increasing visibility and experience with EVs is an important strategy for achieving this goal. The work group's initial concerns regarding the administrative costs of administering this program have been addressed with the opportunity to partner in a statewide EV purchasing program.

Energizing Oregon Plan Implementation - $100,000 investment in implementation of the Energizing Oregon Plan to support public education and outreach activities in partnership with other public and private organizations.
Lead agency: Portland State University
Oregon Business was awarded a Clean Cities grant to create a community plan for electric vehicle adoption. Oregon's readiness assessment found that while we are a making good progress in coordination, infrastructure and supportive regulations and codes for EVs, we need more focus on readying our citizens for this transformative change. Potential education strategies can be link with the companion project to transition local fleets to EV.

Prior to the expenditure of these funds, the Transportation Electrification work group will convene to define the scope of work for each project. TPAC will review and approve the project work scopes.

MOBILITY FUNDING PREPAREDNESS

These program funds were identified to help the region compete for funds that might be available in the next federal transportation authorization bill. Development of that bill in Congress remains undefined since the July 2010 JPACT action. Given there is no consensus on the federal transportation bill, it is premature to define the most effective way to spend these resources.

Therefore, JPACT has endorsed delaying further definition of how these funds will be utilized per the following:

1. The proposal would remain intact as currently defined by the JPACT/Council action of July 2010. Staff would seek JPACT approval of a process for defining the programs at a more timely date.

2. JPACT action to further define this proposal could occur at any of the following times:
   a. When a federal transportation authorization bill provides enough direction and confidence for JPACT action;
   b. When 2014-15 regional flexible fund authority becomes imminent and JPACT decides to proceed with further direction on the proposals; or
   c. At the request of the JPACT chair or a majority of the JPACT members to consider an item on the JPACT agenda to further define these proposals.

3. Unless further action is taken by JPACT prior to the adoption of the 2012-15 Metropolitan Transportation Improvement Program (MTIP), currently scheduled for adoption in December 2011, the proposal will be forwarded for adoption as currently defined with a condition that further policy direction will be acted on by JPACT and the Metro Council prior to those funds being obligated for expenditure. As with any project or program proposal, JPACT can act to modify the proposal during the development of its 2012-15 MTIP recommendation.

CONDITIONS OF APPROVAL
Conditions of approval are mechanisms to ensure the intent of the decision making body approving the projects is followed post allocation and into project design and construction. These conditions are intended to make sure that projects are built according to the elements proposed in the applications and approved by JPACT and Metro Council. Projects can be reviewed at any point in the process for consistency with the conditions of approval and action taken if they are not adhered to.

2014-15 RFFA conditions of approval:

1. Project scopes will include what has been written in their project narrative and project refinements submitted on November 7, 2011. Requests for adjustments to project scopes shall be made in writing to the MTIP Project Manager utilizing the amendment procedures adopted in the MTIP (2010-13 MTIP amendment procedures are defined in Section 1.7).

2. If any project is determined to be infeasible or completed without expending all eligible funding authority, any remaining funding for that project shall revert to the regional pool for the next flex fund allocation (i.e. 2016-17), to be distributed among the region.

3. All projects will meet Metro signage and public notification requirements.

4. Projects need to include public outreach activities that address the unique outreach needs and opportunities of Environmental Justice and underserved communities.

INVESTMENT BENEFITS
A benefit analysis has been completed in response to previous direction to evaluate the investments made through the 2014-15 regional flexible allocation. The analysis in Attachment 2 is intended to highlight the larger benefits of the allocation, communicate the overall benefits of local projects, and show that these investments support the criteria developed to prioritize projects.

ANALYSIS/INFORMATION

1. **Known Opposition** Some projects received negative comments during the regional public comment period. See public comment report for full record and text of comments received.

2. **Legal Antecedents** This resolution allocates transportation funds in accordance with the federal transportation authorizing legislation (currently known as the Safe, Accountable, Flexible, Efficient Transportation Equity Act or SAFETEA). The allocation process is intended to implement the

Regional Flexible Fund 2014-15 program policies as defined by Metro Resolution No. 10-4160, For the Purpose of Adopting Policy Direction to the Regional Flexible Funding Allocation (RFFA) Process for Federal Fiscal Years 2014-15, adopted July 8, 2010.

3. **Anticipated Effects** Adoption of this resolution would instigate an air quality conformity analysis of the effects of implementing these projects and programs for compliance with the State Implementation Plan for air quality.

4. **Budget Impacts** Adoption of the resolution would begin staff analysis of the air quality impacts of implementing the list of projects and programs as provided for in the Unified Work Program. Grant funds allocated to Metro planning require a match totaling 10.27% of project costs. This does not include match for funds passed through to local agencies that they are required to provide.

RECOMMENDED ACTION

Staff recommends the adoption of Resolution 11-XXXX.

Attachment 1

INTRODUCTION: THE FLEXIBLE FUNDS PROGRAM FOR 2014-15 AND PUBLIC INVOLVEMENT APPROACH

Background
Every two years, the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council decide how best to spend money from two federal funds: Congestion Mitigation Air Quality and Surface Transportation Program. In summer 2010, JPACT and the Council approved a new process for allocating funds for the 2014-15 cycle. This created a more intentional program than in past years, directing:

- nomination of region-wide programs (TOD, RTO, TSMO/ITS, MPO & Corridor Planning, HCT Development, and a new Regional Mobility Strategy Planning) at current capacities,

- funding to two new transportation categories that serve the region's goals: Active Transportation & Complete Streets and Green Economy & Freight,

- a one-time allocation of $500,000 to support development of electric vehicles.

This new process also involved the public early in the development of policy guidance. Specifically, a Task Force comprised of residents from across the region developed policies and criteria for selecting projects with the two new project categories. Also, a working group made up of service providers and community advocates advised on how to address the needs of environmental justice and underserved communities. The new process also called for collaboration among Metro and local agencies by having county coordinating committees and the Portland City Council nominate projects to Metro for consideration. The nominations were received by Metro in August, and JPACT on Sept. 8 approved a list of 11 projects and the 6 region-wide programs to be publicized for a 30-day public comment period, Sept. 13-Oct. 13.

Outreach approach
This new policy development process called for a new public engagement process. This comment period was different from past two-year cycles. In the past, JPACT approved a roughly "150 percent" project list and distributed it for public comment. This created intense community and stakeholder interest, as people felt the need to attend to public involvement events and make comments on a web-based comment form to advocate for their favorite projects. Not showing up to defend a project meant that another project might be funded in its place. In 2008, Metro received 801 comments, including 574 from the web-based form.

This time, the three county coordinating committees and the City of Portland conducted their own public involvement process and prioritized among competing projects to nominate a "100 percent" list of projects prior to Metro's regional public comment period. So this fall, Metro asked the public to provide refinements – "how can we improve upon the project proposal to address program criteria and meet your needs?" – rather than weighing one project against another. Members of the public sometimes still wanted to make the case for projects that were rejected at the local level over the summer. But the main ask for the fall comment period focused on refining the proposed projects that made it through local agencies over the summer.

With only 17 projects and programs and a 100 percent list, staff could focus outreach efforts on the communities that would be most impacted by the proposed projects. This meant directing

resources to reaching local community organizations, agencies and community media, rather than entire cities or the region as a whole.

Staff focused on gathering comments with the web comment form. Given the hundreds of comments received in the last cycle, the public clearly finds it accessible. The Communications Department's Community Engagement Best Practices guide indicates that web based comment tools are primarily designed for gathering ideas from the public. They can also help reach Environmental Justice and underserved populations.

Metro's effort to help publicize the comment period and the comment form included:

- E-mail notices to TPAC members and interested parties and to the task force and working group members who were involved in advising on the program last year. Several organizations on those lists, including Latino Network, Verde and Willamette Pedestrian Coalition submitted comments.
- E-mail notices were also sent to contacts interested in trails and freight issues.
- A post on the Metro News web site, the agency's main news blog, which reaches hundreds of news media and community members each day. The exact number of recipients varies depending on their own subscription settings.
- A large image advertising the comment period was posted in a slide show that was the dominant image on oregonmetro.gov, the main page for public readers of the agency's web site, from Sept. 21 to Oct. 13. A post was also published on the agency's "get involved!" web site, the main page for public involvement opportunities.
- A flurry of twitter posts were published from Metro's account in advance of the Sept. 13 start of the comment period and in the first few days. These were redistributed by several major local transportation bloggers and other interested parties.
- In-person interviews with three teenage Latina residents of Leander Court, an affordable housing complex in East Portland within the vicinity of the East Portland Active Transportation to Transit project. The residents were visiting Metro to publicize their own photography exhibit that illustrated community needs regarding active transportation infrastructure.
- Outreach to community news media and local agencies in areas where comments were slow to come in. After the first three weeks of the comment period, no comments were received on the Sherwood project. After outreach to the area news media and lead agency, 47 comments were received through the online comment form and five were submitted by other means.

The web comment form logged 297 comments, including some errata comments that are not included in this report. In addition, about 25 comments were received through the mail, email and other means.

Most of the comments were supportive of the projects, with some commenters offering refinements. A minority of commenters opposed projects for a variety of reasons, including some who were opposed to the active transportation focus of the program and others who had concerns about specific project elements.

A summary of the public comments received was provided to the project applicants. The project applicants were requested to respond directly to questions or comments that were not addressed in their original application submittal and provide any other explanations to comments. The responses received from the applicants will supplement their original application materials that

define the project intent and scope for inclusion in the Metropolitan Transportation Improvement Program (MTIP).

Next Steps

The Transportation Policy Alternatives Committee (TPAC) will receive this public comment report and reactions of local agencies Nov. 18. The panel will also received comments from Metro staff on the projects and programs in response to the comment report. At that meeting, the committee is expected to recommend a list of projects and programs, along with conditions of approval for each. JPACT will receive that recommendation on Dec. 8 and consider approval, pending an air-quality conformity analysis. The Metro Council will consider the recommendation Dec. 15, also pending the further analysis. This marks the last substantive decision on the projects and programs. Final approval, after the air quality study, is expected in spring 2012.

Attachment 1

CHAPTER 1: SUMMARY OF COMMENTS RECEIVED

17th Avenue Multi-use Trail, Milwaukie

All of the comments received express support for the project, with most saying it would help residents get where they need to go without a car by enhancing safety for bicyclists and pedestrians on a key route connecting two popular regional trails. Many commenters said they would like to use the Springwater Corridor and Trolley Trail to reach a variety of destinations in neighboring communities, but they avoid the 17th Avenue corridor because of safety concerns. This comment from Matt Menely, of the Milwaukie area, is typical:

"My family (including my wife and 7 year old son) do not ride our bikes on 17th because of the problems listed by Metro and the high rate of speed which autos travel on this street. We live in Milwaukie and frequently ride to the Springwater trail or north to do business (buy groceries/ go to our PO Box/ eat out) in the Sellwood neighborhood."

The Willamette Pedestrian Coalition said that by providing safety improvements and a direct connection between two regional trails, it would prove useful for everyday travel in addition to recreation.

Several comments mention access to the riverfront and downtown Milwaukie and safe crossings of busy roadways as significant benefits the project would bring.

About a dozen supported the project as described in the materials provided. Many offered ideas for improvements, including: ensure useful wayfinding signage, provide safe crossings of Highway 224 and other major thoroughfares, connect the project to the new Milwaukie MAX line, consider a route along scenic Johnson Creek and build it as soon as possible. A few commenters urged attention to the different needs of bicylcists who travel great distances at high speeds versus pedestrians who tend to travel shorter distances and benefit from sidewalk connections to nearby city streets.

Arata Road Improvements, Multnomah County

All of the comments received were strongly supportive of the project and several called for it to be expanded if resources allow. Nearly all described dangerous conditions for pedestrians and bicylists along Arata Road, saying conditions there hinder access to full service grocery store, schools and churches.

Edna Keller, manager of Wood Village Green Mobile Home Park, said a school bus stops on the park's property because stopping to pick up and drop off children on Arata would be too dangerous. Lacking a safe route, walkers, bicyclists, parents pushing strollers and residents pushing shopping carts travel on the roadway shoulder. "I am also glad to see that the project includes lighting, as safety in the evening is a concern for us as well."

Bill Ehmann, pastor of Wood Village Baptist Church located on Arata Road, expressed similar concerns. Corissa Farrington and Julie Miller, managers with the Fairview Oaks / Woods

Apartments, said residents of the affordable housing center depend on walking, biking and bus service to get around. The building managers sent Metro copies of written comments from 12 residents who all said they see an urgent need for safe bicycle and pedestrian improvements. Some of the comments were generated during the project nomination process over the summer. Comments from Fairview Oaks resident Susan Cecil were typical:

"I feel like it's important that we have wider official sidewalks for all people to move safely along Arata Road, including ability for people in wheelchairs to move safely on a paved sidewalk instead of the gravel on the side of the road. When I go to Fred Meyers now, I have to talk the long way on 223rd because I feel unsafe walking in the unlit and unsafe walkway next to the church, and on the gravel road."

A few commenters included suggestions on how to improve the project. One suggested building crosswalks on Halsey Street between 223 and 238th avenues. The Willamette Pedestrian Coalition emphasized safe street crossings at regular intervals, continuous sidewalk connections and vegetative buffers that don't compromise visibility.

Clackamas County Regional Freight ITS, Clackamas County

Metro received one comment on the Clackamas County Regional Freight ITS project. It was from the BEST freight advocacy group. The organization said it supports the project and it said that generally freight infrastructure investment is needed to help move goods to markets and make the most of the economic recovery.

Corridor & Systems Planning, Metro

No comments received.

East Portland Active Transportation to Transit, Portland

The comments received on the East Portland project were near universally supportive of the project. Most said that providing safer routes for pedestrians, bicyclists and public transit users would be greatly appreciated in a part of the city that has poorly connected streets, inadequate sidewalks and poor bicycle infrastructure. Many commenters mentioned the potential to reach destinations such as school, work and retail centers such as the Gateway area. The comment of retiree Linda Robinson was typical: "This project is long overdue! These are projects that citizens in East Portland have spent a lot of time working on. They are high priority projects for those of us who live east of I-205."

To improve the project, many commenters urged a focus on pedestrian connections to key destinations such as public transit centers, schools such as Alice Ott Middle School, parks such as Raymond Park and senior centers among other places. Several commenters mentioned schools specifically and said that children already walk to school in unsafe conditions in the area and safer facilities would encourage more to walk. Commenters who live in the Leander Court apartments, operated by Rose Community Development Corp. urged more sidewalk improvements.

“First of all I walk to school and when I walk I don't feel safe because the car lane is too close to where I walk, “ said Blanca Guitron, a Leander Court resident. “It will be better that the sidewalks were wider and that they would be completed and that the bike lane would have more room because the bike lane is also really close to the cars.”

The Latino Network commented that more research should be done on use of alternative modes of transportation by communities of color and the underserved. Recent research by IRCO suggests that those communities walk more often than bike, and would therefore benefit more from pedestrian enhancements. Mitigation for potential displacement should be considered, the group said.

The Willamette Pedestrian Coalition said it supports the project, but urged more pedestrian crossings of Southeast Division Street and 122nd Avenue at regular intervals, more connections to schools and other destinations and coordination with TriMet in enhancing transit stops.

High Capacity Transit Bond, Metro

This program received two comments, one in support and one against. The comment in favor of the program stated that even higher priority should be given to expanding the light rail system in the region. The comment against stated that no additional funds should be spent on this system without voter approval.

High Capacity Transit Development, Metro

No comments received.

Hillsboro Regional Center: Oak and Baseline, Multnomah County

Metro received four comments on the Hillsboro proposal – three in favor and one opposed. The comments in favor were from Hillsboro Mayor Jerry Willey, the Willamette Pedestrian Coalition and Allan Rudwick, who lives in Portland but works at Intel. The one opposed was from Jim Ourada with CPO6, from the Reedville/Aloha/Cooper Mountain area.

Mayor Willey said the project area was identified as a priority for investment through the Downtown Framework Plan adopted in 2009. In that process, the public expressed how Oak and Baseline streets function as a barrier because of unsafe pedestrian crossings and the need for beautification. He said the project has the potential to dramatically change the streetscape and the role of these streets in the economic health of the area.

The coalition said the project would improve walking access in the downtown Hillsboro area and specifically said the lane reduction would make more room for active transportation modes and enhance safety and visbility of pedestrians. It also suggested connecting to public transit service to assist low income and minority communities and prioritizing spending so that the most urgent safety and access needs are addressed early in the project.

Rudwick said the project would help pedestrians in the downtown area but should be extended to connect to bike routes that can provide access to neighboring cities.

Ourada said the project should be abandoned in favor of signal timing and other elements that could help motorists from east and west drive cars faster through Hillsboro's downtown.

Hwy 8/Hwy 47 Intersection, Forest Grove

Metro received two comments on the Forest Grove project: one from the Oregon BEST freight advocacy group and one from the Willamette Pedestrian Coalition. Oregon BEST's comments indicated support for the project as a way to speed freight through the region and thereby enhance the economy.

The Willamette Pedestrian Coalition urged pursuit of the identified pedestrian enhancements, specifically mentioning pedestrian countdown signals for long distance crossings, an enhanced pedestrian island for shelter in inclement weather and access to a nearby bus stop. The potential for growth in pedestrian trips because of nearby land uses also was mentioned as a cause for attention to pedestrian safety improvements.

Metropolitan Mobility Preparedness, Metro

No comments received.

Multiple Projects

Metro received a letter from Fairview Mayor Mike Weatherby addressed to Gresham Mayor Shane Bemis regarding the East Multnomah County Transportation Committee's selection of projects to nominate to Metro. Weatherby said that the Sandy Boulevard project east of 230th and the Arata Road project rated highly on objective criteria.

North Burgard-Lombard ("Around the Horn") Project: North Time Oil Road-Burgard), Portland

Metro received two comments on the Around the Horn proposal, both in favor.

Freight advocacy group Oregon BEST said that investments in freight infrastructure are critical as the region's economy recovers. The group also supported project as a way to reduce truck/bike conflict, which it calls "an important safety issue."

Greg Stiles, of the St Johns area, said the project is needed to improve freight mobility on the designated truck route in the area (North Burgard-Lombard) and thereby reduce freight cut-through traffic in the St. Johns neighborhood (on N St Louis Ave/N Fessenden St.). It would support the St Johns Truck Strategy and build on earlier Metro investments.

Portland Bike Share, Portland

Metro received far more comments on the Portland Bike Share proposal than any other project - more than double any other project. In addition, Metro received one comment by email, from The Community for Equity, a collaboration of at least seven grassroots organizations involved in providing services to low income and ethnic minority communities.

There were a variety of comments in favor of the proposal. Many said it would help extend trips made on public transit into downtown and help with local circulation in the downtown area. Many said it would help Portland compete with other cities for public relations as a bike friendly city. Six commenters said they had firsthand experience using a similar system in Paris and found it served them well as a tourist. Others said they would use it to run errands while downtown and that it could ease a shortage of parking for cars in the area. The Bicycle Transportation Alliance and Upstream Public Health both said it would likely increase mobility downtown. Typical comments include:

"The biggest problem with the MAX is that when you get off the stop you still have half a mile to go. Bike share addresses that problem. The other problem is that if you are on one side of downtown where the Max isn't around and you want to get to the other side right now you have a long walk ahead of you," Adam Rose said. "With BikeShare you'd have no problem getting there."

"I used a system similar to this while in Paris. It is really a great concept," Karin Edwards Wagner said. "It allows for one-way bike commuting so you can walk bus or catch a ride on the other end of your trip so it provides flexibility that private bikes do not offer."

Commenters opposed the project for a variety of reasons, but most said they felt it was a relatively poor use of public money compared with other priorities. Among those, some favored less investment in bicycle infrastructure in general. Others said that more bicycle investment is needed in neighborhoods such as Southwest Portland and East Portland that lack sidewalks, bike lanes and other safety elements. Still others said that the downtown area is well served by public transit for transportation circulation purposes.

The Latino Network and the Community for Equity both said the proposal has not demonstrated how it might benefit low income and minority communities; questioned whether the program would be accessible to the elderly, youth and people with limited English proficiency.

"I am a bike commuter in Portland and my issue is safety," Annette Shaff-Palmer said. "We need to make it a lot safer for bicyclists on the road before you start offering people the chance to 'borrow a bike for a quick trip.' Do they get helmets? Do they have reflective clothing so cars can see them? Do they understand bike safety - how to make a left hand turn in traffic or are they going to ride on the sidewalk."

"It will, certainly, also create economic benefits, economic winners and losers, yet its Narrative does not detail how the program will economically benefit underserved communities," said the Community for Equity comment signed by Alan Hipólito. "This is a striking omission, because the Narrative uses action-oriented language and a high level of detail to describe program usage and supporting data - including data from similar programs elsewhere, but it uses soft/future-looking language and provides little detail for its equity goals - and has limited reference to how similar programs have economically benefitted underserved communities."

Many commenters offered suggestions for improvements to the proposal. Many urged locating rental stations near MAX and other public transit lines. Many commenters also urged expanding the program to residential areas and areas of low income and ethnic minority communities. Ten

commenters expressed concern about whether and how people renting bicycles would have access to helmets. Some expressed concern about increased bike traffic volumes on sidewalks and suggested steps to prevent bike riding on sidewalks. Upstream Public Health and Community for Equity said the project should have a workforce development component for the underemployed and build partnerships with social service providers.

Regional Freight/Passenger Rail Investment Strategy, Metro

No comments received.

Regional Over-dimensional Truck Route Plan, Metro/Portland

This study received one comment from the BEST group in support of funding.

Regional Planning, Metro

This program received two comments. The comments provided views about what the priorities should be for regional planning, specifically that more emphasis is placed on transit service and access and the other comment indicated that more bicycle/pedestrian pathways be prioritized.

Regional Travel Options, Metro

Four comments were received regarding the RTO program. Three were in support of continued funding of the program. These comments focused on the benefits the program provides in reducing vehicle miles traveled in a cost effective manner and subsequent benefits to freight and other road users and to the region's air quality.

One comment received said the program was oriented to trails development, which he stated was not an effective use of public monies.

Sandy Blvd Improvements: 230th - 238th Drive, Multnomah County

Metro received five comments through its online comment form on the Sandy Boulevard project and one letter that was sent to the Joint Policy Advisory Committee on Transportation. All comments were supportive of the project, with various recommendations for improvements. Mike Townsend, president of Townsend Business Park, which is along part of the project route, the Willamette Pedestrian Coalition, the West Columbia Gorge Consortium and the BEST freight advocacy group were among the commenters that supported the project.

Most commenters said the project would make it easier for trucks to travel along the corridor and thus help attract business to industrial sites available for lease and new construction. Many also said that proposed sidewalks and public transit enhancements would provide important safety improvements. Pedestrian and public transit access to the Townsend processing plant, Birtcher buildings, Wal-Mart and a manufactured housing park were cited as important by the West Columbia Gorge Consortium, especially at night and during bad weather.

Mike Townsend, president of Townsend Business Park, said unsafe road conditions on Sandy "are a major deterrent to attracting new businesses to this area." He said the project, which enhances the road leading to his industrial park, would better serve his property and the other urbanized land uses in the area. Sandy Boulevard should have sidewalks, a better road surface and improved intersections at industrial site entrances, he said.

Most commenters suggested improvements to the project. Two said it should be expanded to the west to NE 223rd Avenue. David Eatwell, of the West Columbia Gorge Consortium, said this would better prepare the area to handle traffic in 2014 when the USS Ranger, a 1950s era aircraft carrier, is expected to moor at nearby Chinook Landing and attract thousands of tourists.

The pedestrian coalition stressed the need for safe pedestrian connections and crossings as the dimension of the intersections is increased to assist trucks. "Signal phasing needs to provide adequate time for extended crosswalk distances and safe and comfortable refuges may need to be provided. Providing safe direct and even comfortable pedestrian connections could improve the local mode split for lunchtime trips or other activities which could provide further relief to local road congestion," the coalition said.

SE Foster Road Safety Enhancement and Streetscape Project (50th-84th), Portland

Metro received 10 comments on the Foster Road project, including nine on the agency's web comment form and one letter to the Metro Council from the Foster-Powell Neighborhood Association. The comments are all supportive of the project as a way to enhance safety for bicyclists and pedestrians in a corridor that many described as threatening and discouraging for non-automobile transportation use. The Willamette Pedestrian Coalition and the neighborhood association both gave the project strong endorsements, citing recent pedestrian crashes and fatalities as primary concerns. Many commenters said that aesthetic enhancements could encourage pedestrian activity and help local businesses.

"Improvements both physical and aesthetic to Foster Rd from 52nd up past 100th avenue will go a long ways towards improving non car travel and bring more people to the business district from surrounding areas," said Michael Chapman of the Lents area. "I would be riding my bike to work more regularly if I didn't need to go down the Spring-water out of my way in order to get into inner NE."

Nearly all commenters suggested ways to enhance the project. Several urged enhancement of pedestrian safety at the Holgate-Foster intersection, citing incidents of car-pedestrian conflict and the importance of Holgate as an entrance to the "Heart of Foster" business district. Several commenters said the project should enhance pedestrian and bike safety east of Interstate 205 and coordinate with Max station area enhancements. Others suggested coordination with the 50s bikeway project and the city's streetcar plan.

The Latino network said that communities of color would likely use pedestrian enhancements more than bike improvements. But the organization urged an effort to ensure that communities of color are not displaced by the improvements and potential for gentrification.

Transit Oriented Development, Metro

Metro received 15 comments on the TOD program through its online comment form and two comments that were mailed. Nearly all the comments were supportive of the program specifically, and transit oriented development generally. Four comments asked for refinements to the program. Several of these commenters, including Latino Network and AARP, mentioned transportation options for low income residents and prevention of displacement as concerns the program should address. The one comment against the program urged more support of economic development and less on public transit.

About two-thirds of the comments in favor were from developers or public agencies that have been directly involved in projects funded by the program. Most said it fills in a gap in financing that the private sector cannot address. “Financing is a challenge for these transit oriented infill projects,” said Phil Morford of Civitas Inc. “Lenders are very cautious and not fully comfortable with our very low parking ratios.”

Transportation System Management & Operations/ITS, Metro

No comments received.

Vehicle Electrification, Metro

Four options of transportation electrification: Public education, Last-mile electric shuttle, Level III fast charging stations, and Level II charging stations in employment and multi-family residential areas were presented for public comment. Metro received 24 comments on the during the public comment period.

The vast majority of comments favored investing in charging infrastructure. Most of these respondents preferred some combination of DC fast-chargers and Level II charging support for workplace and multi-family locations. Several comments supported the last mile shuttle concept, either vehicle or bicycle, citing the need for improved access to employment sites from transit centers, particularly for low income travelers. Two respondents suggested that the funding be used for purchasing local jurisdiction fleet vehicles to “have clean air and reduce greenhouse gas emissions.” While a few respondents supported using funding for public education, several voiced opposition to funding this activity saying “I think that market research and public education and demonstration site are not needed when the public is already on board.”

Concerns about equity were also raised – how this funding can be used to benefit disadvantaged communities. Also raised was the issue of using this funding to promote vehicle travel, albeit cleaner travel, which “does nothing to address congestion or infrastructure impacts.”

West Fork of the Tonquin Trail-Cedar Creek Greenway Trail, Sherwood

Attachment 1

The comments are generally supportive of the project.

Many commenters said they were concerned about access across Highway 99W. Some said that enhancing access across the highway was the project's main benefit. Others said that providing an overcrossing or under crossing would be the main way they would improve the project.

Many commenters expressed concern about safety on the trail, and suggested lighting and wastebaskets for litter and other enhancements could address that concern. The Willamette Pedestrian Coalition and other commenters said the project should better connect to nearby destinations with on street improvements.

Several commenters said that providing bike/pedestrian access to the National Wildlife Refuge is an important benefit of the project. Others said access to schools are important benefits.

Several commenters, including the group Raindrops to Refuge, said providing access to nature was an important project benefit. Some also mentioned trail maintenance and educational/interpretive signage about nature would be a good enhancement. Others suggested better connections to the regional trail system.

Attachment 2

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Memo*

Date: Wednesday, November 8, 2011

To: JPACT

From: Amy Rose, transportation planner; Chris Myers, RTP intern

Subject: 2014-15 RFFA Investment benefits

Introduction

This benefit analysis has been completed in response to previous direction to evaluate the investments made through the 2014-15 regional flexible allocation. This analysis is intended to highlight the larger benefits of the allocation, communicate the overall benefits of local projects, and show that these investments support the criteria developed to prioritize projects. The information presented here is specific to the anticipated benefits of these investments; actual analysis will be completed in the post construction phase of each project. The analysis consists of a review of the project narratives submitted by nominating agencies and maps created by Metro (Figures 1 - 3) that highlight each project in a regional context. The attachment to this memo has additional information, provided by the nominating agencies, specifically addressing how the high level criteria are addressed by their projects. Active transportation and freight projects have different sets of criteria and therefore are discussed separately.

Active Transportation and Complete Streets

Overview

In contrast to past RFFA cycles, heavy emphasis was placed on investing in areas of the region that have been traditionally underserved and have suffered from disinvestment. The criteria developed by the RFF task force were used by local project applicants to develop their projects around investing in transportation systems in these underserved areas. Looking at Figure 1, it is clear that the criteria did help influence project sponsors to consider the needs of their underserved populations and to propose projects in underserved areas. Almost all of the projects are in moderately to highly underserved areas, meaning that there are concentrations of EJ/underserved populations, and/or a lack of active transportation supportive infrastructure and/or fewer essential services needed for daily life. It is possible that an area is underserved in mobility or access to services, but does not have a significant concentration of Environmental Justice or elderly, disabled or youth (underserved) populations.

Attachment 2

High Level Criteria

The high level criteria used for developing and prioritizing projects is focused around connecting people to priority destinations, improving safety and helping provide transportation access and benefits to underserved communities.

1. Improves access to priority destinations: mixed use centers, large employment areas, schools, essential services for EJ/underserved.
    - Figure 1 shows the proximity of projects to EJ/underserved communities. Almost all of the projects make improvements to multi-modal infrastructure or potentially increase access that will help people travel to areas that are better served in order to meet their daily needs without a car.
    - Figure 2 shows that six of the seven projects directly connect to mixed-use centers in the region.
    - Figure 2 shows that the projects don't connect as strongly to designated 2040 "employment land."
    - Five of the seven projects will improve school access.

2. Improves safety: addresses site issue(s) documented in pedestrian/bike crash data, separates pedestrian/bike traffic from freight and/or vehicular conflicts.
    - Four of the seven active transportation projects are located in areas where there are documented bike or pedestrian crashes (shown on Figure 2).
    - All of the projects, except one, build infrastructure that either corrects a documented safety issue or will develop infrastructure that will aid bikes and pedestrians in traveling safely.
    - Approximately 15 miles of bicycle infrastructure is being added through investment in this package of projects.
    - Five of the seven active transportation projects invest in pedestrian infrastructure either by adding/improving crossings, building multi-use paths, infilling missing sidewalks, or improving the pedestrian environment with street lighting, street trees, benches etc.

3. Serves underserved communities
    - Four of the seven active transportation projects are located in areas that have above average concentrations of EJ/underserved populations.
    - West Fork of the Tonquin Trail-Cedar Creek Greenway Trail will improve active transportation in an area with below average access to non-automobile infrastructure and 17th Avenue Multi-use Trail has below average access to essential services and the trail may help connect people to other areas that are better served.
    - Portland Bike Sharing project (not mapped) has potential to serve a broad range of populations depending on where kiosks are located and if the fee structure provides access to low-income residents. These aspects of the project are still to be determined.

Attachment 2

Green Economy and Freight Initiatives

Overview

Twenty five percent of the funds for local projects were targeted to projects that improve freight movement and/or support the development of the green economy. The approach developed by the RFF task force recommended that projects focus on system management or small capital projects that have regional impacts. The projects submitted for funding from local jurisdictions (shown in Figure 3) generally stay in keeping with this approach and adequately meet the criteria. The projects are not scaled to create large regional impacts on the freight system or industrial lands, but do create benefits that are not strictly local in nature.

The third high level criterion in this project category is a challenge to meet. It is difficult to predict how investments in the transportation system will directly create opportunities for Environmental Justice/underserved communities. Additionally, while "greening the economy" wasn't specifically defined by the RFF task force in the criteria, their intent was to prioritize projects that helped the economy function in more "green"ways. For the most part these projects do not directly green the economy, however these freight investments do have elements that help improve the biking and walking for nearby communities and one project will have a positive impact on air quality, which are all beneficial elements of these projects that should not be overlooked.

High level criteria –

The high level criteria used for developing and prioritizing freight projects relates to reducing vehicle delay, increasing freight access to priority destinations, and greening the economy and providing opportunities to EJ/underserved communities.

1. Reduces freight vehicle delay
    - All four of the projects will reduce freight vehicle delay on freight routes by increasing turn radii, lane widening, or Intelligent Transportation System (ITS) enhancements.

2. Project increases freight access to: industrial lands, employment centers & local businesses, rail facilities for regional shippers.
    - All four projects connect freight routes to industrial areas or improve reliability between the highway system to industrial areas.
        - Sandy Blvd Improvements: 230th - 238th Dr: Improves access from I-84 to CCRD
        - North Burgard-Lombard ("Around the Horn") Project: North Time Oil Road-Burgard: Improves access to Rivergate Industrial area
        - Hwy 8/Hwy 47 Intersection Improvements: Improves access to Forest Grove's industrial lands and movement through Forest Grove from Hwy 26 to southern parts of the region
        - Clackamas County Regional Freight ITS Project: Improves reliability of movements between the Interstate highway system and existing industrial lands in the area
    - Figure 3 shows that all four of the projects connect or are in close proximity to rail facilities.

- The projects are in areas with designated industrial land, but don't connect as strongly to areas identified as 2040 "employment land."

3. Projects that green the economy and offer economic opportunities for EJ/underserved communities.
    - Clackamas County Regional Freight ITS Project: will improve freight system operations and will reduce emissions from freight traffic in the area.
    - Hwy 8/Hwy 47 Intersection Improvements, Sandy Blvd improvements and North Burgard-Lombard projects add pedestrian/bike improvements to help balance pedestrian movements and freight movement.

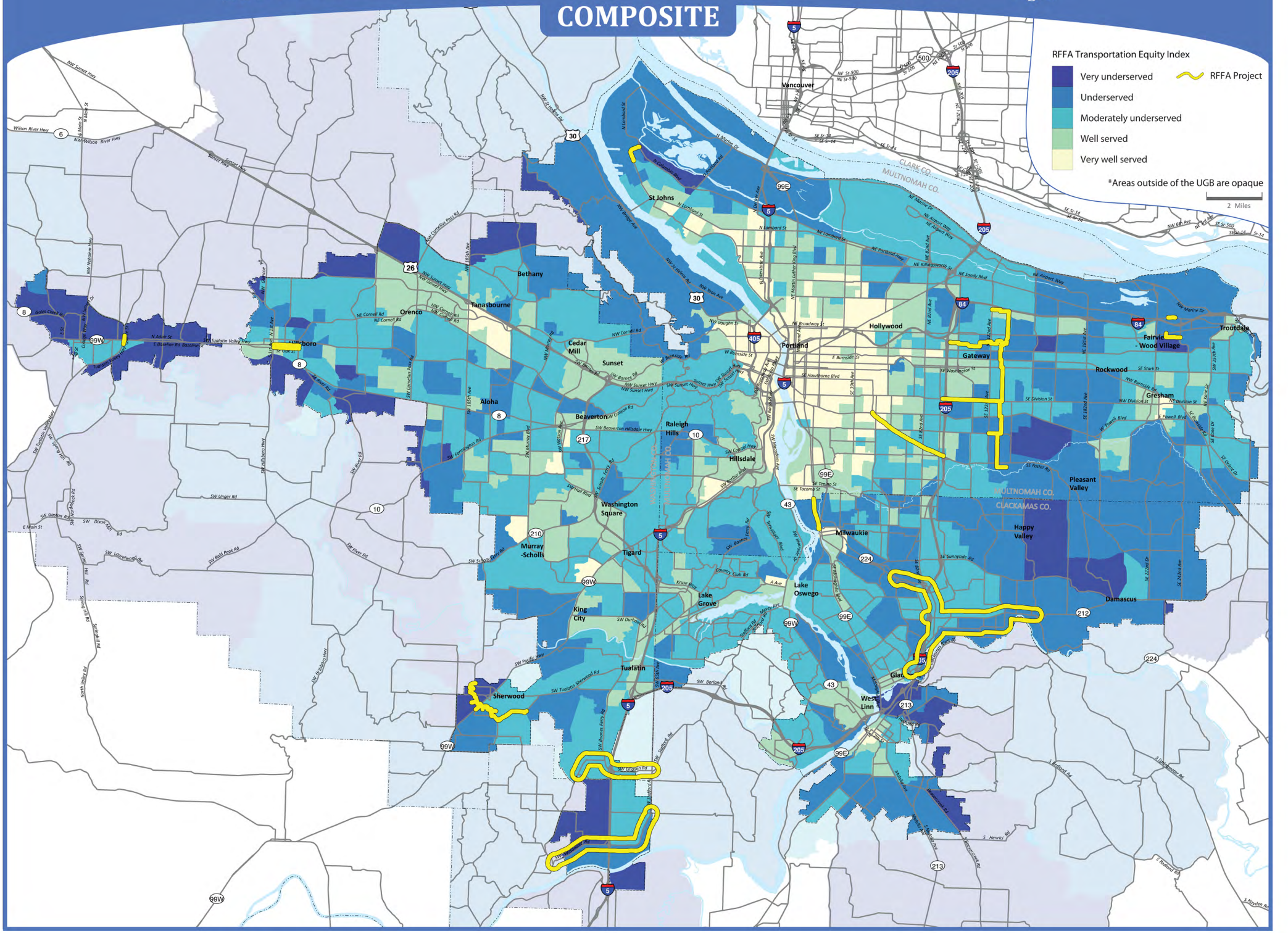
Conclusion

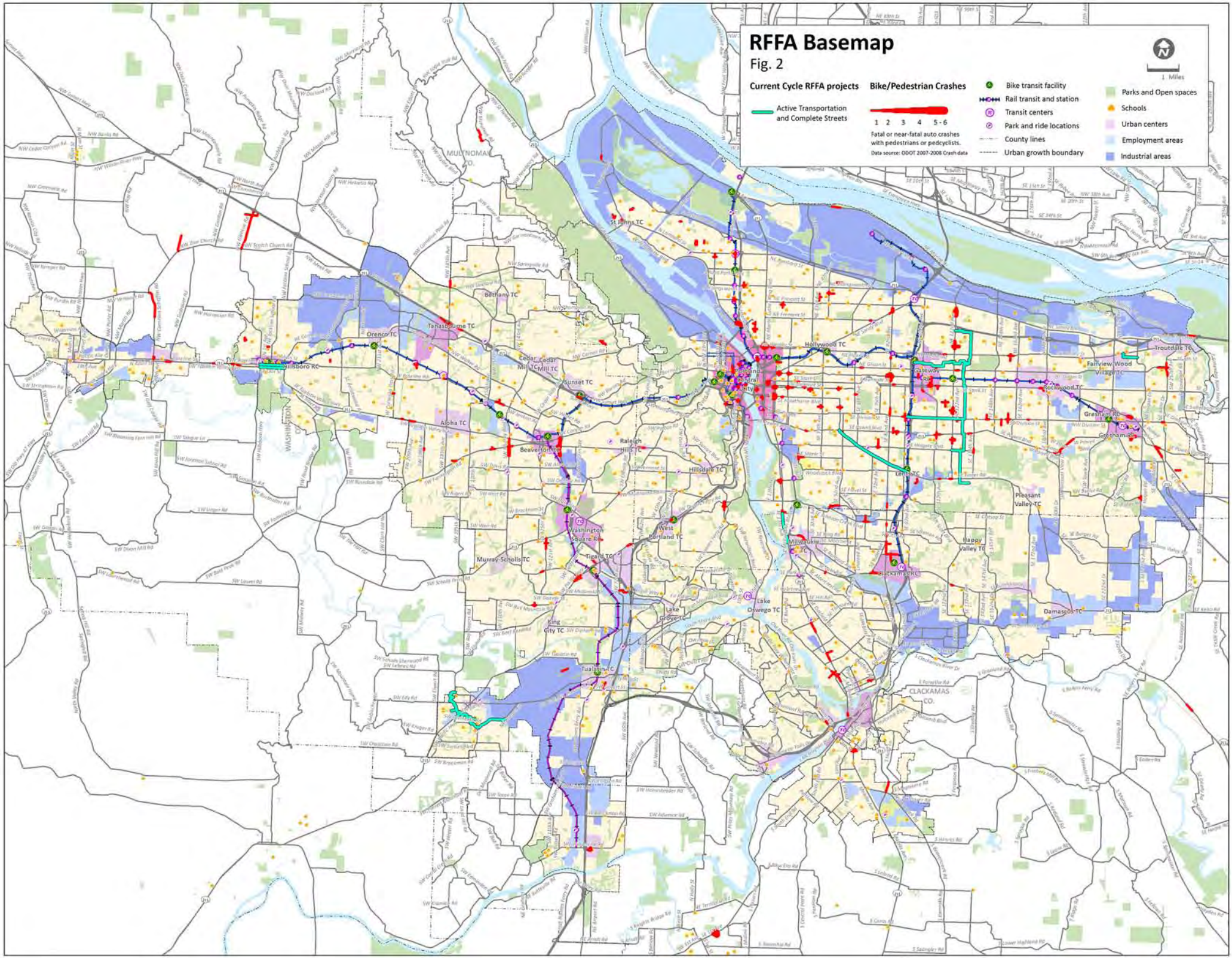
The analysis of projects for this memo compared the project descriptions and locations with the high level criteria developed by the RFF task force in order to gauge how well the overall package of investments meets the intent of JPACT's direction for this allocation cycle. The high level criteria were used because they were most influential in determining project location, purpose and scope. There are projects in the allocation that are not as strong when measured against the high level criteria, but perform very well in the other levels of criteria. Not every project meets each criterion perfectly, but as a package of projects they meet the intent of the criteria overall. The analysis conducted for this memo reveals that the projects proposed in this funding cycle are a good fit with the criteria and approach for both categories.

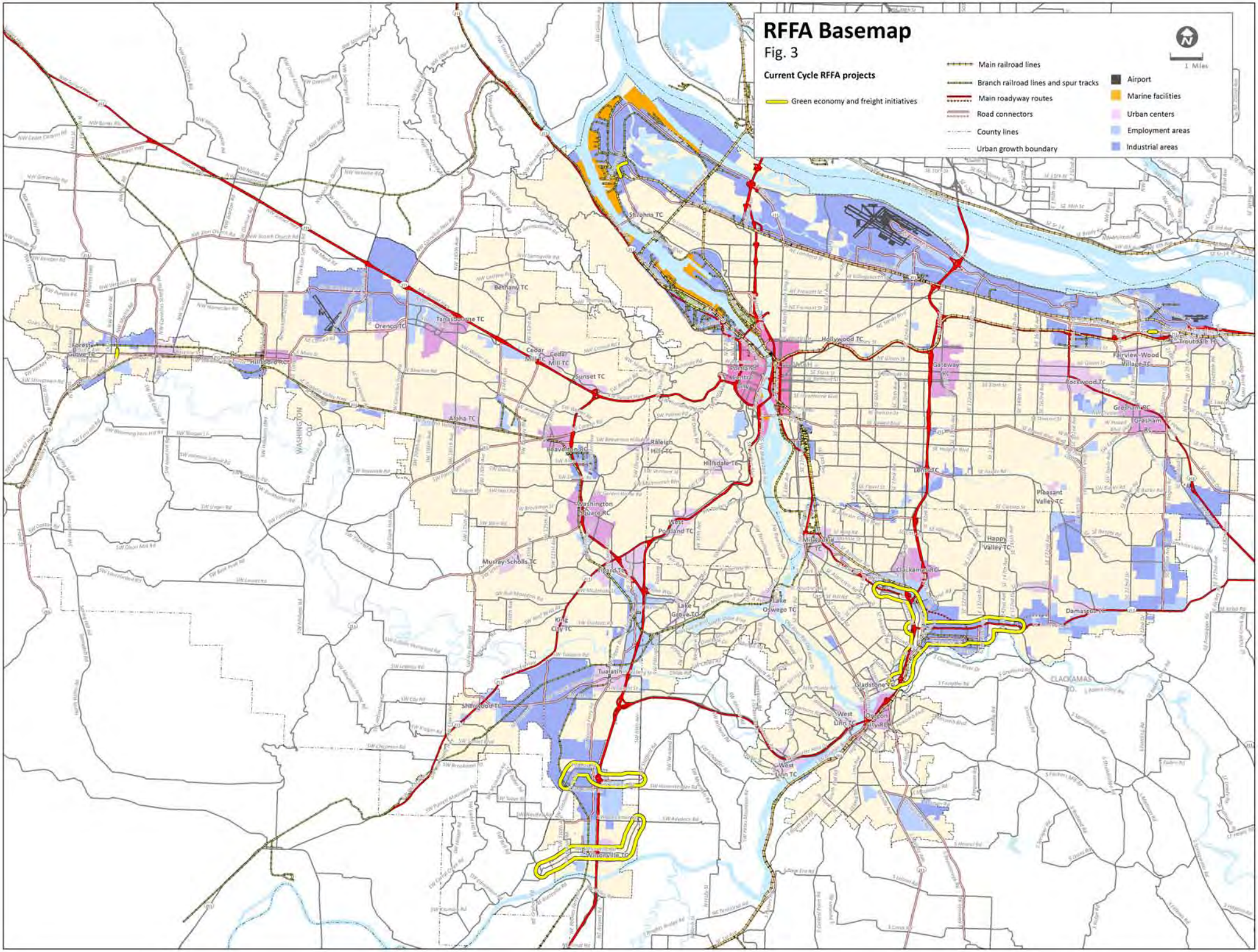
2014-15 RFFA - Equity - Composite with Proposed Projects

Fig. 1

COMPOSITE




RFFA Basemap
Fig. 2
Current Cycle RFFA projects
Active Transportation and Complete Streets
Bike/Pedestrian Crashes
1 2 3 4 5-6
Fatal or near-fatal auto crashes with pedestrians or pedcyclists.
Data source: ODOT 2007-2008 Crash data
Bike transit facility
Rail transit and station
Transit centers
Park and ride locations
County lines
Urban growth boundary
Parks and Open spaces
Schools
Urban centers
Employment areas
Industrial areas
1 Miles
MULTNOMAH CO.
WASHINGTON CO.
CLACKAMAS CO.
St Johns TC
Bethany TC
Tanasbourne TC
Orenco TC
Hillsboro RC
Cedar Mill TC
Sunset TC
Aloha TC
Beaverton RC
Raleigh Hills TC
Hillsdale TC
Washington Square RC
West Portland TC
Tigard TC
Murray-Scholls TC
King City TC
Lake Grove TC
Lake Oswego TC
Tualatin TC
Hollywood TC
Gateway RC
Lents TC
Milwaukie TC
Clackamas RC
Happy Valley TC
Pleasant Valley TC
Damascus TC
Fairview Wood Village TC
Troutdale TC
Rockwood TC
Gresham RC
Gresham TC


RFFA Basemap
Fig. 3
Current Cycle RFFA projects
Green economy and freight initiatives
Main railroad lines
Branch railroad lines and spur tracks
Main roadway routes
Road connectors
County lines
Urban growth boundary
Airport
Marine facilities
Urban centers
Employment areas
Industrial areas
1 Miles
St Johns TC
Bethany TC
Orenco TC
Tanasbourne TC
Cedar Hills TC
Cedar Mill TC
Sunset TC
Hillsboro RC
Forest Grove TC
Aloha TC
Beaverton RC
Raleigh Hill TC
Hillsdale TC
Washington Square RC
West Portland TC
Murray-Scholls TC
Hollywood TC
Portland Central City
Gateway RC
Rockwood TC
Fairview-Wood Village TC
Troutdale TC
Gresham RC
Lents TC
Pleasant Valley TC
Happy Valley TC
Clackamas RC
Lake Oswego TC
Lake Grove TC
Damascus TC
Tualatin
Gladstone
Oregon City RC
West Linn TC
Sherwood TC
Wilsonville TC
WASHINGTON CO.
CLACKAMAS CO.

Appendix – RFFA Project Narrative Excerpts

*Information within this appendix was excerpted from the project narratives written by jurisdictions during the RFFA project application process.

17TH AVENUE MULTI USE TRAIL CONNECTOR

Projects increase access to priority destinations:
Enhancement of bike and ped facilities will increase access from the Milwaukie town center and parts of northern Clackamas County to the City of Portland as well as the Springwater Trail. Access will be enhanced to two mixed-use developments in downtown Milwaukie, employers including Dark Horse Comics, ODS, Advantis Crecit Union, Reliable Credit Union, and the City of Milwaukie. Access will also be improved to the Waldorf School and Sellwood Landing, an elderly housing complex.

Projects improve safety:
Transitions at the Milport and Hwy. 224 intersections are particularly difficult for non-auto travelers. The absence of curbs and storm water drainage along stretches has resulted in erosion and deteriorating conditions in bike lanes. Inserting an off street multi-use path along the west side of 17th Ave will protect bikers and pedestrians from auto traffic.

Project serves underserved communities:
In 2011, at Milwaukie Elementary School and Milwaukie High School more than 50% of the students qualified for free or reduced lunch and at Oak Grove elementary more than 60% of the students qualified for free or reduced lunch. North Main apartments, in downtown Milwaukie, Waverly apartment complex, and Sellwood Landing, a senior care facility, will be served by this project.

ARATA ROAD IMPROVEMENTS

Projects increase access to priority destinations:
This project serves dense, low income, ethnically-diverse neighborhoods and will connect with the commercial and civic amenities of Wood Village and Fairview. Metro data shows significantly above average concentration of EJ and underserved populations south and above average populations north of Arata Road which is a major school bus pick-up/drop-off route for low-income/minority households for Reynolds School District.

Projects improve safety:
There are approximately 5 bus stops located on Arata Road serving approximately 350 students. The project design will improve school bus pick-up/drop-offs, remove standing water from roadway, and reduce the conflict between bicyclists and pedestrians with motor vehicles by adding bicycle lanes and sidewalks along the south side of Arata Rd from Wood Village Blvd to 238th Dr. Safety and access for users will also be substantially improved by providing crossings with pedestrian activated flashers at the intersection of Wood Village Boulevard and Arata Road, and at Halsey and the Wood Village Boulevard Right-of-Way.

Serves underserved communities:
Metro data shows significantly above average concentration of EJ and underserved populations south and above average populations north of Arata. There are three large mobile home parks located along Arata Rd., each with over 100 units and a large subsidized housing complex on Halsey Street.

EAST PORTLAND ACTIVE TRANSPORTATION TO TRANSIT PROJECT

Projects increase access to priority destinations:
The approximate 9 miles of bikeway improvements that are part of this project pass within 1,000 feet of seven public schools (five elementary, one high school and one middle school) and twelve schools in total. The improvements also pass within 1,000 feet of twenty parks of various sizes and provide direct access to the Springwater Corridor.

Projects improve safety:
This project is focused on two principal design tenets for the bicycling environment: safety and comfort (otherwise considered as the "perception of safety"). The design of low-stress bikeways will provide greater separation between cyclists and high volumes of fast-moving automobiles and reduce the complexity of intersection crossing movements. In doing so it will provide better conditions to ride than the demonstrably higher risk conditions that exist today, as evidenced by the 208 recorded bicycle crashes and 255 recorded pedestrian crashes in the project area between 1999 and 2008.

The principal design tenet for pedestrian improvements is to simply provide basic facilities that will allow people to walk on complete sidewalk networks and to have appropriate crossing treatments between signalized intersections.

Serves underserved communities:
This project was developed to address several of the bikeway implementation criteria identified in the Portland Bicycle Plan for 2030. They are: equity, community support, connectivity, access and barrier reduction, visibility of bicycling and return on investment. This project will be one of the first to develop a comprehensive network of low-stress bikeways in an area that is high in indicators of disadvantage.

HILLSBORO REGIONAL CENTER: OAK AND BASELINE

Projects increase access to priority destinations:
There are large employment centers throughout the Hillsboro Regional Center such as the Pacific University Health Professions Campus (including Virginia Garcia Clinic), Tuality Hospital. Washington County and City offices. Pacific University and Tuality Hospital are located directly to the north of Baseline and Oak Streets, the streets are very difficult to cross due to the fast moving traffic and the width of the roadways. In addition the offices of Washington County, including the housing services department and City offices are to the north of these couplets.

Projects improve safety:
There are a number of unsignalized intersections: Baseline at 6th and 4th Avenue, and Oak at 2nd, 4th, 6th, and 8th Avenues. These signals could be interconnected with the existing signals, allowing for the preservation of highway capacity while improving pedestrian access across the highway couplet. Reconstruction of sidewalks, planters, street trees, and ornamental street lighting will enhance the pedestrian feel along these busy streets.

Serves underserved communities:
This project will serve traditionally underserved communities by increasing access to large employment centers as well as services provided by the City, Washington County, Tuality Hospital and the Virginia Garcia Clinic all located to the north of Baseline and Oak Streets.

PORTLAND BIKE SHARE

Projects increase access to priority destinations:
Bike sharing will provide a high level of bicycle and, therefore, transportation access to the region's densest residential, retail and employment districts which contain 150,000 jobs and approximately 31,000 residents. Most of the districts within Central City are composed almost entirely of mixed use centers. It is

the home of the state's largest university student body, Portland State University which is also the region's number one transit destination, along with three other college campuses. It is also contains some of the city's densest census tracts of low-income individuals and contains a high number of organizations serving these populations. Every Census tract in the proposed bike share service area is above, or significantly above the regional average for concentration of essential services, civic establishments, financial and legal establishments, essential retail, health services, and essential food services.

Projects improve safety:
The Central City has the highest concentration of fatal or near fatal auto crashes with pedestrians or bicyclists (2007-08), as defined by Metro's Equity Analysis. While PBOT will require the bike sharing vendor to provide users information on safe bicycling, PBOT expects that the significant increase in bicyclists and bike trips in the Central City due to bike sharing will reduce the rate of Central City crashes. This is due to the "safety in numbers" phenomenon identified by researcher Peter Jacobsen in 2003 in the *Injury Prevention* journal, which found pedestrian and bicycle crashes to decrease as the number of these trips increased.

Serves underserved communities:
The Portland Bike Share service area includes the densest concentration of low income individuals in the region. Bike share provides an inexpensive, active transportation choice for accessing the region's densest concentrations of essential services. Every Census tract in the proposed bike share service area is above, or significantly above the regional average for concentration of essential services. The Community Cycling Center's *Understanding Barriers to Bicycling* report identified lack of bicycle ownership as a significant barrier to bicycling.

SE FOSTER RD SAFETY ENHANCEMENT AND STREETSCAPE PROJECT 50TH – 84TH

Projects increase access to priority destinations:
This project will improve multi-modal access for Environmental Justice and underserved populations along the SE Foster Rd Project Corridor. As indicated on the 2014-15 RFFA - Equity Analysis - Demographics Maps, there is one block group with significantly above average concentration of EJ and underserved populations and two block groups with above average concentrations around 82nd Ave and SE Foster Rd.

Projects improve safety:
The project will build pedestrian and bicycle crossing safety improvements, pedestrian-scale lighting, street trees, landscaping, bike parking and transit stop improvements that will provide safer, more convenient and comfortable access to the following:

- TriMet Busline 14 along SE Foster Rd
- MAX Green Line station at SE Foster Rd and I-205 and the Lents Town Center, which is also a Pedestrian District where MTIP and Lents URA funded transportation investments are currently in design.
- Creston Elementary School, Arleta Elementary School, Mt Scott Center For Learning, and the Training and Education Center at SE 74th and Center.
- Morrison Center Adolescent Day Program
- Library at SE Holgate and 79th Ave
- Fred Meyer Supermarket at SE Foster Rd and 82nd Ave
- Many small businesses along SE Foster Rd that provide local services and places of employment.

Serves underserved communities:
There are significantly above average and above average concentrations of Low Income, Non-white (particularly Asian), Low English Proficiency and Elderly populations in the project area along SE Foster Rd, as identified on the Equity Analysis Demographics maps. This project focuses on improving pedestrian and bicycle crossing safety, coordinated them with bus stops, improvements to transit service, improvements to

the pedestrian environment and bus stops and increased accessibility for the elderly and people with disabilities.

WEST FORK OF THE TONQUIN TRAIL-CEDAR CREEK GREENWAY TRAIL

Projects increase access to priority destinations:
This off-street multimodal trail will connect people to essential places, services and jobs by providing central looping connections between Sherwood's existing town center, Hwy 99W, Old Town area, SW Adams Avenue (re-named "Langer Farms Parkway") and the Tonquin Employment Area. The portion of the trail located in the Cedar Creek Trail corridor is within a ¼ mile of subsidized elderly housing development with approximately 30 units, many other high density units, the Sherwood Senior Center, four schools, a proposed HUD senior housing facility, an assisted living facility, the Sherwood library, businesses, stores and personal services and restaurants.

Projects improve safety:
Primarily off-road, the Trail will provide a safe passage separated from vehicles with the exception of the two major roadway crossings -99W and SW Edy, minimizing interaction with traffic. The City will coordinate with both Washington County and ODOT in order to create the safest route for pedestrians and cyclists. The crash data suggest that these improved intersections will likely decrease the incidents of crashes between non-motorized travelers. The trail will provide a seamless, fast alternate route which will reduce vehicle trips at already congested intersections along Hwy 99W and Tualatin-Sherwood Road. Improvements to the sidewalk system along Hwy 99W between Meinecke and Edy/Sherwood Boulevard to access this trail system will increase safety across and along the highway corridor through Sherwood.

Serves underserved communities:
This Trail will provide an essential safe, healthy alternative route for residents throughout the entire community and especially along SW Sherwood Blvd., home to a considerable proportion of our elder population and those in need of affordable housing. Many who reside along SW Sherwood Blvd. have limited income and mobility issues and rely on transit services as shown in the RFFA data collected. Children make up nearly 35 % of the population in Sherwood, the experience of biking and walking to school and also as a for fun way to travel will be a lasting imprint for establishing healthy, safe travel behavior patterns as adults.

CLACKAMAS COUNTY REGIONAL FREIGHT ITS PROJECT

Projects reduce freight vehicle delay:
The purpose of the project is to improve the reliability of the regional freight system by reducing freight vehicle delay in known congested areas though a variety of ITS system enhancements.

The project would accomplish this by planning and implementing freight ITS improvements specifically focusing on providing truck priority enhancements in industrial and employment areas with a high level of existing recurring and non-recurring freight delays. This project will benefit all travel modes in this congested freight corridors with improved safety and traffic reliability.

Projects increase access to priority destinations:
The enhance travel time reliability and reduce freight traffic delay in the project area will improve the freight access for the Interstate Highway System to the existing industrial lands and employment centers located within the Project Area. These existing industrial lands and employment centers are identifies as important employment area in the Regional 2040 Plan.

Project green the economy and offer opportunities for Environmental Justice/underserved:
There are a limited (2) number of Environmental Justice communities within the Freight ITS Projects areas as identified by Metro in the demographic information prepared for this project. They are –

- A community that has a high proportion of multifamily housing and a higher than average concentration of low income and young residents along 82nd Drive on either side of Highway 212
- A community with a higher than average concentration of elderly residents south Highway 212 between 135th Avenue and 142nd Avenue – primarily in 3 mobile home parks.

HIGHWAY 8/47 INTERSECTION IMPROVEMENTS

Projects reduce freight vehicle delay:
Project corrects access and safety problem at intersection of two regional freight routes and includes Active Transportation component. Oregon Highway 8/47 intersection lacks adequate access for traffic through the City of Forest Grove without improvements. Constructing key improvements including widening westbound right turn lane and increasing the radius, and constructing a crosswalk on east leg of Intersection will increase access and reduce travel time and delays on this section of both highways.

Projects increase access to priority destinations:
Balancing traffic flow and pedestrian movement at the intersection provides better access in/out of the city's local industrial area and improves the freight mobility through City of Forest Grove. Also, this intersection improvement benefits the primary through-route access for freight traveling to/from Highway 26, the Oregon Coast, and further regional travel access south of Forest Grove.

Projects green the economy and offer opportunities for Environmental Justice/underserved communities:
The project helps to encourage more pedestrian and bicycle travel. Adding the fourth crosswalk to the intersection removes a barrier to pedestrian access between a large multi-family residential area to the NE of the intersection and increasing pedestrian travel needs to the SE. Widening the Westbound Right Turn Lane will allow room to continue a westbound bike lane through the intersection.

The intersection improvement project falls within an above average EJ concentration area and connected to a significantly above average EJ concentration area. Decreasing congestion and improving traffic efficiency and safety at the intersection of Highway 8/47 will encourage commercial and industrial development and therefore could create more local jobs.

NORTH BURGARD-LOMBARD PROJECT: NORTH TIME OIL ROAD-BURGARD

Projects reduce freight vehicle delay:
The Burgard/Lombard roadway segment is part of the designated freight route connecting the St. Johns Bridge to the Rivergate Industrial District and Interstate 5. This project will reduce freight delay and truck queuing by widening and adding left turn pockets on N Burgard to accommodate both east and westbound turning movements onto northbound Time Oil Rd and the NW Container Services intermodal facility. These improvements will reduce conflicts between turning and passing trucks and other vehicles and by improving sight distance at the Time Oil intersection.

Projects increase access to priority destinations:
This project is located in a regionally significant industrial district (Rivergate) which contains some of the highest concentrations of industrial-sector employment in the region. Rivergate is Oregon's primary gateway for international trade containing about half of the marine terminals and over three fourths of the marine terminal acreage in the Portland Harbor. This segment of N Burgard/Lombard provides access Terminal 4, Northwest Container Services (a major intermodal truck-to-rail distribution facility), Schnitzer Steel, Northwest Pipe, and other existing and future industrial employment centers.

Projects green the economy and offer opportunities for Environmental Justice/underserved communities:
This project is located in North Portland (US Census Tract # 41.01) which contains a workforce population with a significantly higher and growing percentage of African-American (12 percent) and Latino

populations (24 percent) and lower income households compared with the rest of Multnomah County, which has a 6 percent African-American and 10 percent Latino populations, respectively. This project will serve the EJ community in North Portland by providing multi-modal commuting options to the major employment centers in the Rivergate District.

SANDY BOULEVARD IMPROVEMENTS: 230TH – 238TH DRIVE

Projects reduce freight vehicle delay:
The project will contribute to reduced freight delay and improved freight reliability by improving freight access between I-84 exit 16 and the CCRD industrial area, specifically to the entrance of Townsend Business Park, a 75-acre General Industrial area, by improving pavement conditions and separating conflicts between freight and bicyclists and pedestrians.

Projects increase access to priority destinations:
Construction of the project will increase access to CCRD industrial sites from I-84 Exit 16, as will intersection widening at Sandy and 230th, the entrance to the Townsend Business Park. Improved freight access will also make existing "shovel-ready" industrial properties in the project area more marketable to prospective firms. Townsend Business Park has approximately 30 acres of developable industrial land, there are roughly 250,000 square feet of available vacant build-to-suit industrial space in the LEED Gold Certified Birtcher Building, and approximately 20 acres of vacant commercial land along Sandy Blvd.

Projects green the economy and offer opportunities for Environmental Justice/underserved communities:
This project will contribute to the "greening of the economy" by closing the jobs/affordable housing imbalance in East Multnomah County. Improvements along Sandy Blvd would provide much needed improved access to transit and pedestrian/bike facilities for the multiple underserved communities living in Gresham, Fairview, Troutdale and Wood Village. Metro data indicates that the area along Sandy has an above average concentration of EJ and underserved populations.

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Public comment report

Transportation projects and programs nominated for 2014-15 regional flexible fund allocation

November 2011

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Metro | *Memo*

Date: November 5, 2011

To: MTAC and TPAC members and alternates

From: Nuin-Tara Key, Associate Regional Planner
Kim Ellis, Principal Transportation Planner

Re: Climate Smart Communities Scenarios Phase 1 Preliminary Results – **SUBJECT TO FURTHER ANALYIS AND REFINEMENT**

I. PURPOSE

This memo summarizes background information about the Climate Smart Communities Scenarios Project and presents preliminary results from the Phase 1 scenarios analysis.

II. BACKGROUND

In 2007 the Oregon Legislature established statewide greenhouse gas (GHG) emissions reduction goals. The goals apply to all emission sectors, including energy production, buildings, solid waste and transportation, and - and direct Oregon to:

- Stop increases in GHG emissions by 2010
- Reduce GHG emissions to 10 percent below 1990 levels by 2020
- Reduce GHG emissions to at least 75 percent below 1990 levels by 2050

In 2009, the Legislature passed House Bill 2001, directing Metro to "develop two or more alternative land use and transportation scenarios" by January 2012 that are designed to reduce GHG emissions from light-duty vehicles. The legislation also mandates (1) adoption of a preferred scenario after public review and consultation with local governments; and (2) local government implementation through comprehensive plans and land use regulations that are consistent with the adopted regional scenario.

In 2010, the Legislature approved Senate Bill 1059, providing further direction to GHG scenario planning in the Metro region and the other five metropolitan areas in Oregon. Aimed at reducing GHG emissions from transportation, the legislation mandates several state agencies to work with stakeholders to develop a statewide transportation GHG emission reduction strategy, metropolitan-level GHG emissions reduction targets for cars and light trucks, guidelines for scenario planning, and a toolkit of actions to reduce GHG emissions. While State agencies are looking at the entire transportation sector, Metro—and the other MPOs identified in HB 2001 and SB 1059—are only required to address roadway GHG emissions from light-duty vehicles.

In 2010, Metro's *Making the Greatest Place* initiative resulted in Council adoption of six desired outcomes, the Community Investment Strategy, urban and rural reserves and an updated Regional Transportation Plan. All of these actions provide the policy foundation for better integrating land use

decisions with transportation investments to create prosperous and sustainable communities and meet state climate goals.

STATE RESPONSE – OREGON SUSTAINABLE TRANSPORTATION INITIATIVE[1]

The Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD) are leading the state response through the Oregon Sustainable Transportation Initiative (OSTI). As part of this effort, the Land Conservation and Development Commission adopted per capita roadway GHG emissions reduction targets for light-duty vehicles for all six metropolitan areas within Oregon.

Shown in Table 1, the target for the Portland region calls for a 20 percent GHG emissions reduction below 2005 levels by 2035, in addition to the reductions anticipated from technology and fleet improvements. The LCDC target-setting process assumed fleet and technology would reduce 2005 emissions levels from 4.05 MT CO_2e[2] per capita to 1.51 per capita by 2035.

Table 1. 2035 Roadway GHG emissions reduction target for Oregon metropolitan areas (per capita reduction below 2005 levels)

Metropolitan Area	Adopted Target
Portland Metro**	20%
Eugene-Springfield*	20%
Salem-Keizer	17%
Rogue Valley	19%
Bend	18%
Corvallis	21%

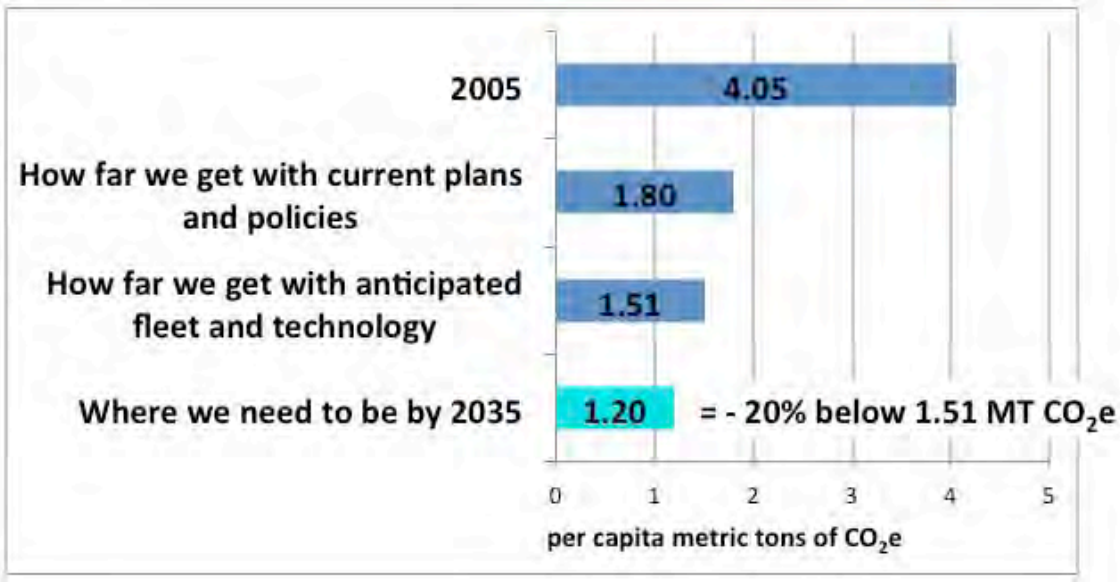
* Scenario planning required.
** Scenario planning and selection of preferred scenario required.

To meet the target the region must reduce roadway emissions to 1.2 MT CO_2e per capita, as shown in Figure 1. While the regional target is based on 2005 values, it has been calibrated to the overall 1990 GHG reduction goal.

[1] For more information, go to http://www.oregon.gov/ODOT/TD/OSTI/

[2] MT CO_2e or Metric Tonne (ton) Carbon Dioxide Equivalent is the standard measurement of greenhouse gas emissions, which include carbon dioxide, methane and nitrous oxide.

Figure 1. Roadway GHG emissions for the Portland metropolitan region (per capita)



REGIONAL RESPONSE – 2040 GROWTH CONCEPT AND CLIMATE SMART COMMUNITIES SCENARIOS

In 1995, the region established a course for growth with the adoption of the 2040 Growth Concept. Metro and its partners have collaborated to help communities realize their local aspirations while moving the region toward its goals: making the region a great place to live, work and play, while balancing growth with sound environmental, social and economic strategies. The Growth Concept provided a guide to actively manage the growth of the region by encouraging development in centers, corridors and employment areas and maintaining a tight urban growth boundary. The efforts of the 2040 Growth Concept provide a good basis for the GHG scenario planning work required of Metro.

Regional and local leaders agree that Oregon and the Portland region must provide leadership in addressing climate change. The Climate Smart Communities Scenarios effort builds on the state-level work conducted to date and the 2010 Council actions with a collaborative regional effort that will advance local aspirations and implementation of the region's 2040 Growth Concept.

There are three phases to the Scenarios' Project as shown in Figure 2. It is recognized that a high degree of community outreach which engages policymakers, local government staff and targeted stakeholders will be required in each phase.

- **Phase 1, Understanding Choices (2011)** consists of testing GHG emission reduction strategies to learn the GHG emissions reduction potential of current plans and policies and what combinations of land use and transportation strategies are needed to meet the state GHG targets. The research and findings from this work will inform subsequent project phases. Metro will seek guidance on the tradeoffs and issues that should be addressed in Phase 2. Outreach activities are focused on key local governments, other public agencies, and business and community leaders to share information and elicit additional information needs during Phase 2 of the project.

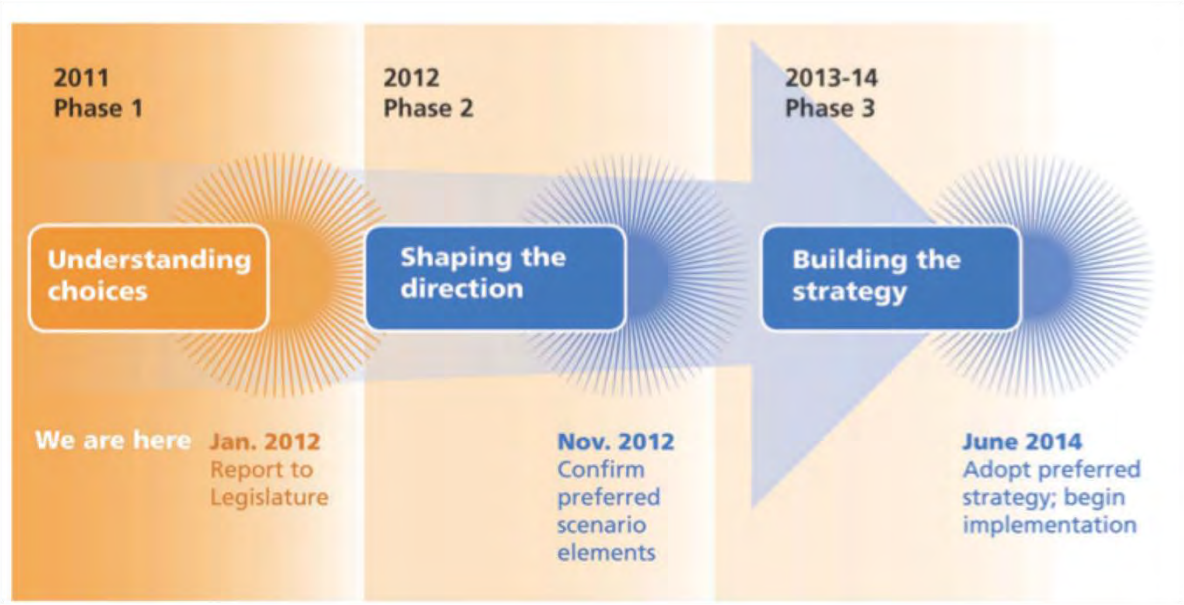
- **Phase 2, Shaping the Direction (2012)** includes developing and evaluating a small number of more tailored theme-based scenarios designed to achieve the state GHG emission reduction target. The scenarios will be informed by the findings from Phase 1 and build on community aspirations, the 2040 Growth Concept and the draft Statewide Transportation Strategy (required in SB 1059, Chapter 85 Oregon Laws, 2010 Session) that is anticipated by summer 2012.

  As the analysis of strategies becomes more refined and geographically specific in 2012, engagement and outreach will broaden to a larger set of stakeholders, including the general public. Design workshops will be used to develop 2 to 4 scenarios. These will be analyzed in more detail, including the opportunities and challenges created by them.

  This information will be important for the discussions about trade-offs, impacts, co-benefits, and feasibility of implementation. The analysis and subsequent stakeholder review will result in a recommended draft "preferred" scenario that will be subject to further analysis and public review in Phase 3. Community outreach will seek input on the integration of land use and transportation strategies at the regional and local levels.

- **Phase 3, Building the Strategy (2013-14)** includes Metro Council consideration of adopting a preferred scenario after public review and consultation with local governments. This phase will define the policies, investments and actions needed to achieve the preferred scenario and result in an updated Regional Transportation Plan and amendments to other regional plans as needed. House Bill 2001 requires local government implementation through comprehensive plans and land use regulations that are consistent with the adopted regional scenario. Community outreach will engage the public more broadly as part of the final public review and adoption process.

Figure 2. Climate Smart Communities Scenarios Timeline



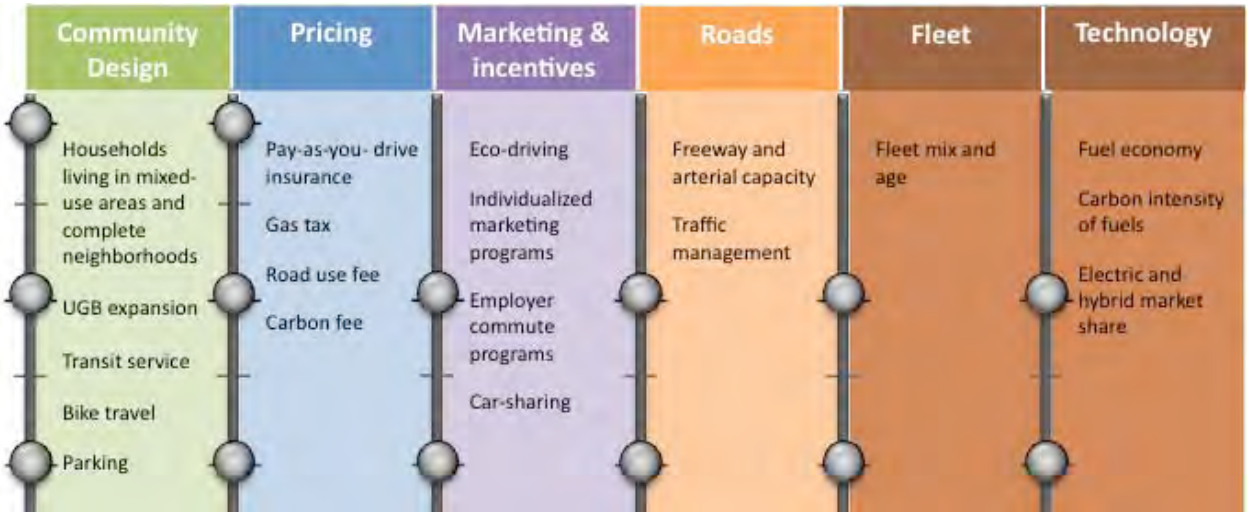
In June 2011, the region discussed and agreed to six guiding principles to undertake this scenario planning effort:

- **Focus on outcomes and co-benefits:** The strategies that are needed to reduce GHG emissions can help save individuals, local governments and the private sector money, grow local businesses and create jobs and build healthy, livable communities. The multiple benefits should be emphasized and central to the evaluation and communication of the results.
- **Build on existing efforts and aspirations:** Start with local plans and 2010 regional actions that include strategies to realize the region's six desired outcomes.
- **Show cause and effect:** Provide sufficient clarity to discern cause and effect relationships between strategies tested and realization of regional outcomes.
- **Be bold, yet plausible and well-grounded:** Explore a range of futures that may be difficult to achieve but are possible in terms of market feasibility, public acceptance and local aspirations.
- **Be fact-based and make information relevant, understandable and tangible:** Develop and organize information so decision-makers and stakeholders can understand the choices, consequences (intended and unintended) and tradeoffs. Use case studies, visualization and illustration tools to communicate results and make the choices real.
- **Meet state climate goals:** Demonstrate what is required to meet state the GHG emission reduction target for cars, small trucks and SUVs, recognizing reductions from other emissions sources must also be addressed in a comprehensive manner.

III. OVERVIEW OF PHASE 1 RESEARCH AND ANALYSIS – UNDERSTANDING CHOICES

Phase 1 of the Climate Smart Communities Scenarios project is focused on understanding the region's choices by testing broad-level, regional scenarios to learn the GHG emissions reduction potential of current plans and policies and what combinations of land use and transportation strategies (grouped in six policy levers) are needed to meet the state GHG targets as shown in Figure 3. While some strategies are new to the region, many of the strategies tested are already being implemented to realize the 2040 Growth Concept and the aspirations of communities across the region.

Figure 3. Policy Levers and Strategies Tested [3]



Background demographic characteristics

The 2035 regional household growth forecast assumed in this analysis comes from the Beta 2050 growth forecast prepared by Metro's Data Resource Center in August 2011. The Beta forecast is an interim forecast that will continue to be reviewed and refined in coordination with local governments in the region prior to being considered for adoption by the Metro Council in 2012. While the regional forecast data will be updated as the project progresses, it is important to note that within each phase of the project regional population will be held constant across the future year alternative scenarios. All Phase 1 and Phase 2 future scenarios will use the same 2035 population forecast and will not adjust the forecast to test alternative population growth assumptions.

Table 2. Metro Beta forecast - Phase 1 2035 population growth assumptions within Metro UGB

2010 Population	2035 Population	Percent change
1.3 million residents	1.8 million residents	38%

These growth rates do not reflect the entire region's projected population growth, but rather the estimated growth within the region's urban growth boundary.

Method and tools

Staff used a regionally tailored version of ODOT's GreenSTEP model to conduct the analysis. Using GreenSTEP—the same model used to set the region's GHG emissions reduction target—ensures compatibility with Oregon's Statewide Transportation Strategy and provides a common GHG emissions reporting tool across the State.

[3] See *Phase 1 Metropolitan GreenSTEP Scenarios Technical Documentation* (November 2011 draft) for more detailed information about the policy levers and strategies tested in this analysis.

In May, a work group of members from the Transportation Policy Advisory Committee (TPAC) and the Metro Technical Advisory Committee (MTAC) was charged with helping Metro staff develop the Phase 1 scenarios assumptions, consistent with the guiding principles and evaluation framework endorsed by the Metro Council, the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Policy Advisory Committee (MPAC) in June.

The technical work group defined the scenarios to be tested while Metro and ODOT staff continued to develop tools to support the analysis. **Table 3** summarizes the input assumptions used in the Phase 1 scenarios analysis. The model development work concluded in September 2011, and the initial metropolitan Greenhouse Gas State Transportation Emissions Planning (GreenSTEP) model runs were completed in October.

To date, 146 scenarios have been analyzed at a preliminary level. The foundation of this work is the development of a Base Case – the existing conditions for 2010 – and a Reference Case – a forecast of how the region will perform in 2035 based on projected population and demographic trends. The Reference Case assumes the realization of existing plans and policies.

Table 3: 2010 Base Year and Alternative Scenarios Inputs

This table summarizes the inputs for the 2010 Base Year and 144 alternative scenarios that reflect different levels of implementation for each category of policies. The inputs were developed by Metro staff in consultation with a technical work group of MTAC and TPAC members. *This information is for research purposes only and does not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.*

Policy		Inputs			
		2010 Base Year *Reflects existing conditions*	**2035 Level 1 Reference Case** *Reflects current plans and policies*	**2035 Level 2** *Reflects more ambitious policy changes*	**2035 Level 3** *Reflects even more ambitious policy changes*
Community Design	Households living in mixed-use areas and complete neighborhoods[4] (percent)	GreenSTEP calculates			
	Urban growth boundary expansion (acres)	2010 UGB	7,680 acres	7,680 acres	No expansion
	Bicycle mode share for tours 6 miles or less (percent)	2%	2%	12.5%	30%
	Transit service level	2010 service level	2035 RTP Financially Constrained service level	2.5 times RTP service level	4 times RTP service level
	Workers / non-work trips paying for parking (percent)	13% / 8%	13% / 8%	30% / 30%	30% / 30%
	Average daily parking fee ($2005)	$5.00	$5.00	$5.00	$7.25
Pricing	Pay-as-you-drive insurance (percent of households participating and cost)	0%	0%	100% at $0.06/mile	*No change from L2*
	Gas tax (cost per gallon $2005)	$0.42	$0.48	$0.18	
	Road use fee (cost per mile $2005)	$0	$0	$0.03	
	Carbon emissions fee (cost per ton)	$0	$0	$0	$50

[4] This input was calculated internally by the GreenSTEP model.

Policy		Input			
		2010 Base Year *Reflects existing conditions*	**2035 Level 1 Reference Case** *Reflects current plans and policies*	**2035 Level 2** *Reflects more ambitious policy changes*	**2035 Level 3** *Reflects even more ambitious policy changes*
Marketing & Incentives	Households participating in ecodriving	0%	0%	40%	*No change from L2*
	Households participating in individualized marketing programs (percent)	9%	9%	65%	
	Workers participating in employer-based commuter programs (percent)	20%	20%	40%	
	Car-sharing in high density areas (target participation rate)	Participation rate of 1 member/100 people	Participation rate of 1 member/100	Double participation to 2 members/100	
	Car-sharing in medium density areas (target participation rate)	Participation rate of 1 member/200 people	Participation rate of 1 member/200	Double participation to 2 members/200	
Roads	Freeway and arterial expansion	2010 system	2035 RTP Financially Constrained System	No expansion	*No change from L2*
	Delay reduced by traffic management strategies (percent)	10%	10%	35%	
Fleet	Fleet mix (proportion of autos to light trucks and SUVs)	auto: 57% light truck/SUV: 43%	auto: 56% light truck/SUV: 44%	auto: 71% light truck/SUV: 29%	
	Fleet turnover rate (age)	10 years	10 years	8 years	
Technology	Fuel economy (miles per gallon)	25 mpg	50 mpg	58 mpg	
	Carbon intensity of fuels	90 g CO_2e/ megajoule	81 g CO_2e/ megajoule	72 g CO_2e/ megajoule	
	Light-duty vehicles that are plug-in hybrids or electric vehicles (percent)	auto: 0% light truck/SUV: 0%	auto: 4% light truck/SUV: 1%	auto: 8% light truck/SUV: 2%	

IV. PHASE 1 SCENARIOS RESULTS AND FINDINGS

The Phase 1 testing was conducted at the regional scale. The next section describes the preliminary results from testing 144 combinations of strategies.

The preliminary results indicate that the region's existing plans through 2035, if realized, would result in substantial reductions of GHG emissions from the 2005 levels. The results also show that 93 tested runs meet the difference between these existing plan outcomes and the additional reductions needed to meet the state target. While these preliminary findings are encouraging and offer a variety of ways to meet the state target, many of the inputs that went into the scenario runs would require bold actions on the part of Metro and local governments, as well as actions needed on the part of the state and federal government.

Phase 1 Metropolitan GreenSTEP Preliminary Results Summary

1. Most of the 144 scenarios (65%) evaluated meet or exceed the 20 percent per capita GHG reduction target. The roadway GHG emissions reductions achieved by the 93 scenarios ranged from 20 percent to 53 percent per capita below 2005 levels.
2. Technology and fleet policies alone do not meet the target.
3. The most ambitious pricing (Level 3) does not meet the target.
4. The most ambitious community design (Level 3) provides one scenario alternative that meets the 20% target.
5. Moderate pricing and community design (Level 2) policies together alone do not meet the target without other policies at Level 2.
6. Community design Level 2 results in a greater emissions reduction then pricing level 2, all else being equal.
7. The most ambitious community design (Level 3) provides a large number of scenarios that meet or exceed the target when combined with technology and fleet.
8. Combining both levels of technology and fleet with moderate community design and pricing (level 2) result in multiple scenarios that meet the target.
9. Marketing (Level 2) provides additional scenarios that meet or exceed the target, especially when implemented in combination with community design.

Understanding the relative GHG emissions reduction potential of each policy lever

To better understand the effects of applying each of the policy levers on roadway GHG emissions reductions, two types of analysis were conducted in partnership with State Agency staff. First, the relative effect of each of the bundles of strategies—assumed within each policy lever—was calculated using linear regression to isolate each level as a separate variable. By starting with the 2035 Reference Case (all policy levers set at level 1) the linear regression analysis estimates the incremental effect of "turning up" each policy lever, all else being equal.

The second approach, referred to as a "paired analysis," shows the range of reductions attributable to each bundle of strategies. This analysis isolates each policy lever at each level of implementation, while also considering the interactions between policy levers. In other words, the results of the "paired analysis" are the range of reductions from each policy lever relative to the 2035 Reference Case. For example, if two scenarios are paired to isolate a single policy lever one of the strategies will be set at the Reference Case level (level 1) while the other tests a more ambitious level of implementation. For example, if the following two scenarios are paired up, then the relative difference between scenarios is attributable to going from Community Design level 1 to Community Design level 2.

1. Community Design1/Pricing2/Marketing2/Roads2/Fleet2/Tech2
2. Community Design2/Pricing2/Marketing2/Roads2/Fleet2/Tech2

The result of pairing all 144 scenarios in this way results in the range of reductions attributable to every policy lever at each level of implementation. After identifying the range of reductions attributable to each policy lever, the average reduction in roadway GHG emissions for each policy level was calculated. It should be noted that these analytical approaches do NOT assess the relative effect of changes in individual strategies (e.g. increased per capita transit investment, urban growth boundary expansion), but rather the range of reductions attributable to each set of bundled strategies – also referred to as policy levers.

Figure 3. Paired analysis: estimated percent reduction in roadway GHG emissions, by policy level

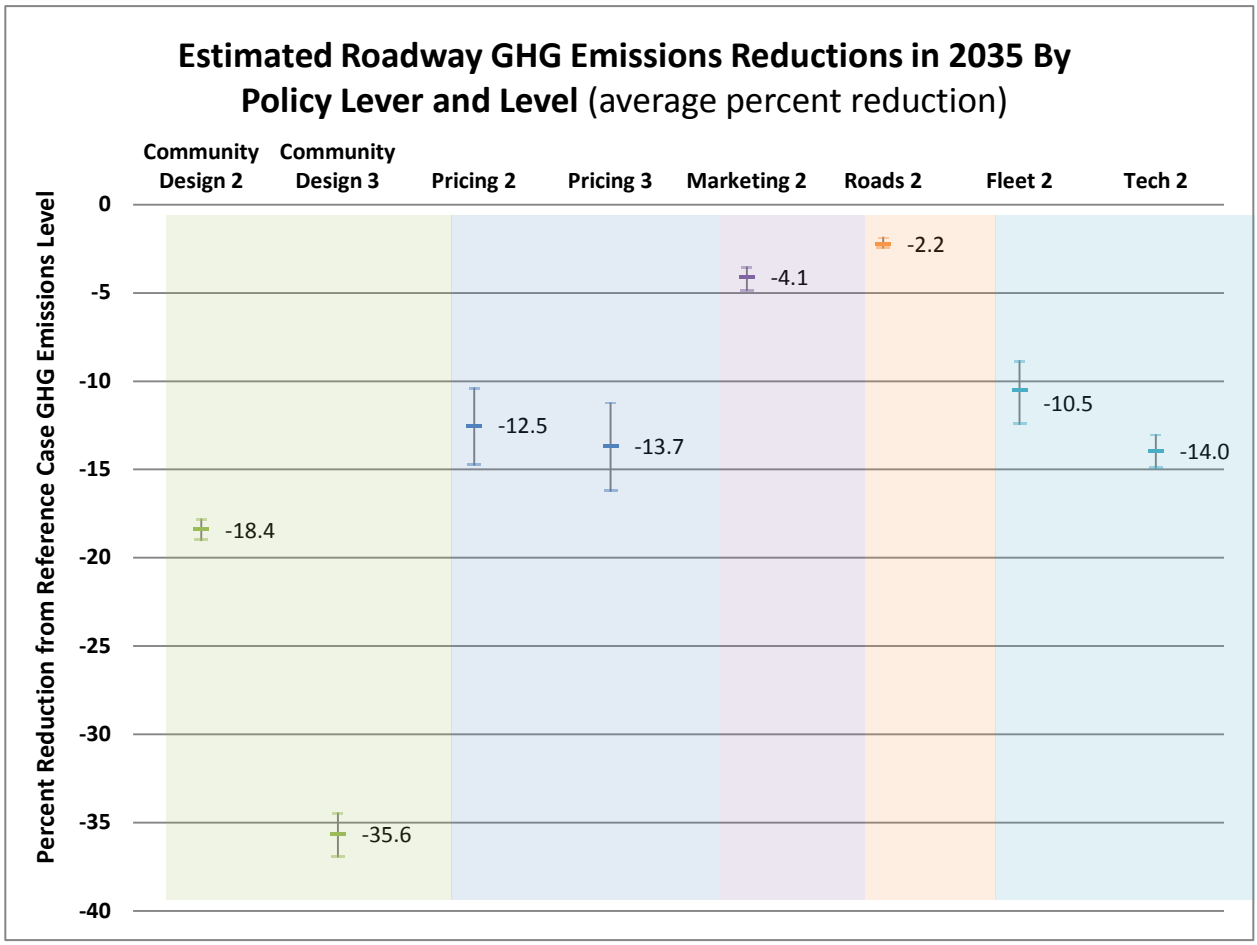


Table 4 provides a comparison of the results of both analytical approaches. It should be noted that results presented below are percent changes (not estimated logarithms) and cannot therefore, be added mathematically to identify the reductions from combining policy levels (e.g. the reductions from Fleet 2 cannot be mathematically added to the reductions from Pricing 2 to calculate the combined effect of these two policy levers).

Table 4. Comparison of analysis results: estimated reduction effects of each policy lever on roadway GHG emissions

Policy Lever and Level	**Estimated percent reduction** (change from 2035 Reference Case)
Community Design Level 2	-18%
Community Design Level 3	-36%
Pricing Level 2	-13%
Pricing Level 3	-14%
Marketing and incentives Level 2	-4%
Roads Level 2	-2%
Fleet Level 2	-11%
Technology Level 2	-14%

The values presented in Table 3 can be interpreted as the average reduction potential of each policy lever relative to the 2035 Reference Case (Level 1). For example, to estimate the impact of going from Community Design 1 to Community Design 2 given the range of all scenarios evaluated, the average reduction in roadway GHG emissions is roughly 18 percent. Given the results above, the bundled Community Design strategies (Levels 2 and 3) achieve the greatest reduction in per capita roadway GHG emissions, followed by Technology Level 2 and then Pricing Level 3.

The following pages highlight the results of selected scenarios to begin to frame potential tradeoffs and choices for policymakers to consider as the Scenarios project transitions into Phase 2. The challenge of determining which strategies should be pursued and how they can be applied to help achieve community aspirations and other desired outcomes will occur in Phase 2.

USER GUIDE: UNDERSTANDING HOW THE RESULTS ARE ORGANIZED

The preliminary analysis includes the following information for each of the analyzed scenarios:

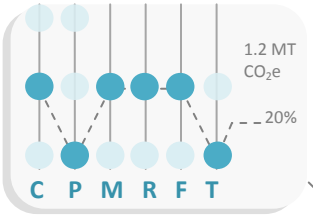
A. Brief narrative explanation of the scenario's assumptions.
B. Conceptual scenario schematic showing each scenario's corresponding levels, by policy lever.
C. Evaluation summary table for each of the evaluation measures.

(A) Brief narrative

State Target alternative scenario (20% reduction in Roadway emissions)

There is one scenario that exactly meets the 20 percent GHG emissions reduction target. This scenario requires more ambitious policies from the reference case for all levels except for pricing and technology. While this scenario exactly meets the GHG emissions reduction target it may not represent the most cost effective approach.

(B) Scenario schematic



Policy Lever Legend

C = Community Design
- Households in mixed-use areas and complete neighborhoods
- Urban growth boundary expansion
- Bicycle mode share
- Transit service
- Parking

P = Pricing
- Pay-as-you-drive insurance
- Gas tax
- Road use fee
- Carbon fee

M = Marketing & incentives
- Employee commute options
- Individualized marketing program
- Car-sharing
- Ecodriving

R = Roads
- Freeway and arterial expansion
- Traffic management delay reduction

F = Fleet
- Fleet mix & turnover rate

T =Technology
- Fuel economy
- Carbon intensity of fuels
- Electric & hybrid vehicle market share

20% reduction target scenario

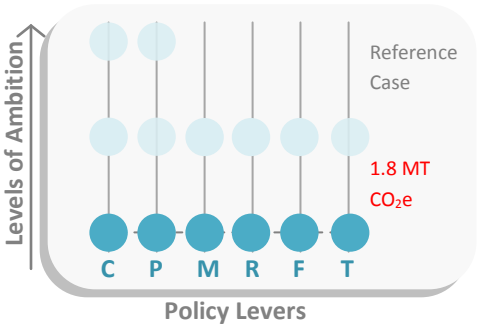
Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	2035 Alternative Scenario *c2p1m2r2f2t1*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	3.7 MT Co_2e	1.8 MT Co_2e	1.2 MT CO_2e	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	14.9	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	189	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

(C) Evaluation summary table

Evaluation Measures

1. Roadway GHG emissions per capita
2. Household daily vehicle miles traveled (DVMT) per capita
3. Households in mixed-use areas and complete neighborhoods
4. Walk trips
5. Urban growth boundary expansion

2010 Base and 2035 Reference Case



The foundation of all scenario work is the development of a regional 2010 Base (where we are today) and a forecasted 2035 Reference Case (our current path under existing local and regional plans and policies as adopted to implement the 2040 Growth Concept). The 2010 Base provides a starting point upon which to consider the effects of different land use and transportation strategies. The 2010 Base presents current regional household and employment demographics, transportation infrastructure, and existing land use and development patterns that, when assembled, provide an "existing conditions" snapshot of our region. The 2035 Reference Case provides a forecast of what our region will look like in 2035, given projected population and demographic trends as well as current land use and transportation plans and policies. While the 2035 Reference Case demonstrates a significant reduction in GHG emissions, it does not meet the 2035 reduction target.

The 2035 Reference Case assumes the following adopted policies and plans:

Adopted 2035 Regional Transportation Plan

- Transit service level
- Freeway widening and management
- Arterial connectivity and widening
- 2% regional bike mode share

Locally adopted land use plans

One-quarter of urban reserves developed by 2035

Funding sources at current levels

- Parking fees at 2005 prices and locations
- State and federal gas tax (48 cents/gallon)

9 percent of households participate in individualized marketing

20 percent of workforce participates in employer-based commute programs

Current fleet mix trend

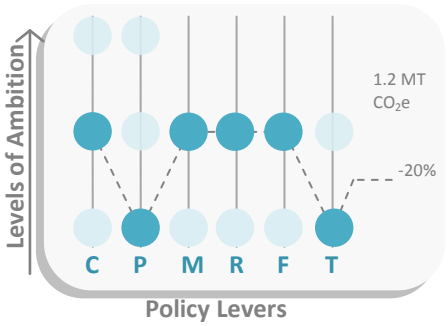
Achieve federal CAFÉ standard of 50 MPG

Electric vehicle share grows to 4 percent

Base and reference case scenarios

Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	3.7 MT CO_2e	1.8 MT Co_2e	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	181	200
5. UGB expansion (acres)	NA	7,680	7,680	0

State Target alternative scenario (20% reduction in roadway emissions)



This scenario assumes more ambitious policies from the 2035 Reference Case for all policy levers Except for pricing and technology and meets the 20 percent reduction target. This scenario demonstrates the effects of:

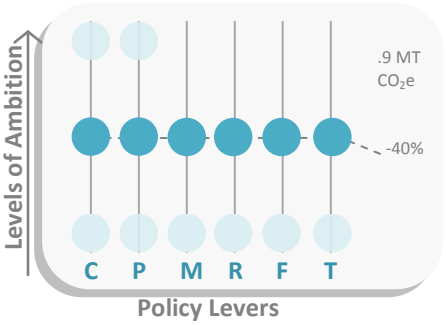
- a regional bike mode share of 12.5 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by almost 2.5 times the level assumed in the 2035 RTP;
- a 7,680 acre expansion of the UGB , representing one-quarter of the urban reserves designated by the Metro Council;
- 13% of area workers and 8% of non-work trips pay for parking. The average daily long-term rate for parking stays the same at $5 per day in 2005 dollars.

This scenario assumes no increase in fuel taxes beyond today's level. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead increase the reliance on traffic management to address 35 percent of the region's delay. The fleet assumptions reflect a change in current fleet mix trends (i.e. a growth in light autos relative to light trucks) and an increased fleet turnover rate. Fleet level 2 represents the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target. This scenario assumes current technology policies remain in place – achieving a fleet average economy of 50 MPG by 2035, the low carbon fuel standard is in effect (carbon content of fuel is 10% below today's values) and electric vehicles represent 4% of auto market and 1% of the light truck market.

20% reduction target scenario

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c2p1m2r2f2t1*	**Alternative scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual per capita)	**3.7 MT Co_2e**	**1.8 MT Co_2e**	**1.2 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	14.9	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	189	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

Medium value alternative scenario (40% reduction in roadway emissions)



If all policy levers are implemented at level 2, the region achieves a 40% reduction in roadway GHG emissions in 2035. In addition to meeting the investment and policy decisions required to implement the 2035 Reference Case (existing plans and policies), this scenario demonstrates the effects of:

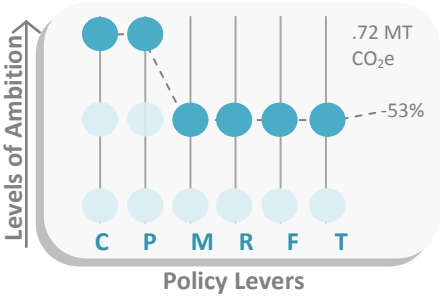
- a regional bike mode share of 12.5 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by almost 2.5 times the level assumed in the 2035 RTP;
- a 7,680 acre expansion of the UGB , representing 1/4 quarter of the urban reserves designated by the Metro Council in 2010 and 2011.
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking stays the same at $5 per day in 2005 dollars.

Pricing Level 2 assumes a transfer of the 2035 RTP assumed state gas tax (including an increase of 1 cent per year) to a mileage-based road use fee of $ 0.03 per mile and implementation of pay-as-you-drive insurance for all insured drivers at $ 0.06 per mile. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Medium value alternative scenario: 40% reduction

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c2p2m2r2f2t2*	**Alternative scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual MT per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**.9 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	13.3	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	189	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

Maximum reduction scenario (53% reduction in roadway GHG emissions)



One scenario achieved a 53 percent per capita roadway GHG emissions reduction. This scenario demonstrates the effects of the following community design strategies:

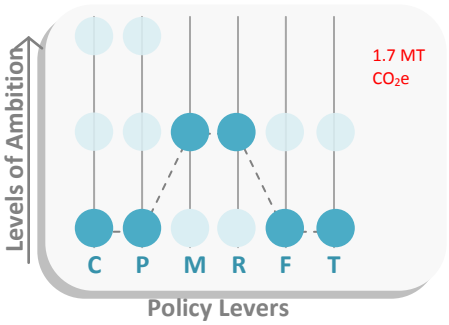
- a regional bike mode share of 30% percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by almost 4 times the level assumed in the 2035 RTP;
- a 7,680 acre expansion of the UGB , representing one-quarter of the urban reserves designated by the Metro Council;
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking increases to $7.25 per day in 2005 dollars.

Pricing level 3 assumes a transfer of the 2035 RTP assumed state gas tax (including an increase of 1 cent per year) to a mileage-based road use fee of $ 0.03 per mile, implementation of pay-as-you-drive insurance for all insured drivers at $ 0.06 per mile and deployment of a carbon emissions fee at $50 per ton, which is the equivalent of $ 0.01 per mile. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Maximum reductions scenario: 53% reduction

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c3p3m2r2f2t2*	**Alternative scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**.71 MT Co_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	10.6	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	34%	33%	34%
4. Walk trips (annual per capita)	144	181	199	181	200
5. UGB expansion (acres)	NA	7,680	0	7,680	0

Evaluating marketing and roads



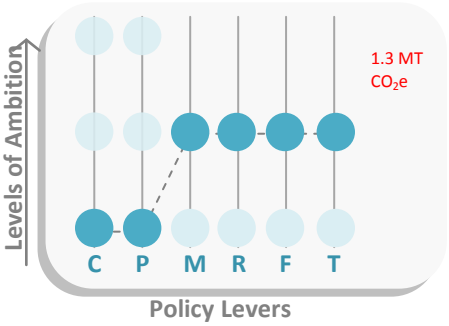
The following scenario demonstrates the effect of testing marketing and roads at level 2 while keeping all other policies levers at level 1 (current plans and policies). This combination of policy strategies does not meet the region's GHG reduction target.

This scenario tests the effect of a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay. The auto and light truck proportions of the light vehicle fleet are the same as today and fleet turnover rate is the same as today – 10 years. Technology level 1 represents a significant improvement in fuel efficiency for automobiles built by 2035 – achieving a fleet average of 50 MPG, the low carbon fuel standard is in effect (carbon content of fuel is 10% below today's values) and electric vehicles represent 4% of auto market and 1% of the light truck market.

Evaluating marketing and roads

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c1p1m2r2f1t1*	**Alternative scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.7 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	17.8	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	181	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

Evaluating marketing, roads, fleet and technology



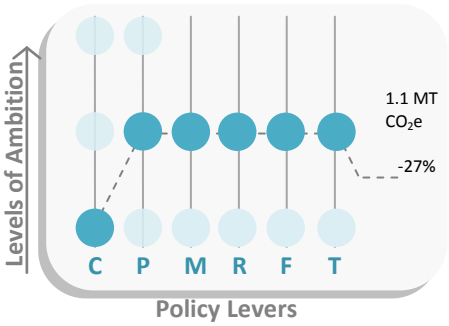
The following scenario demonstrates the effect of testing all policy levers at level 2 except community design and pricing. While this combination of strategies results in significant roadway GHG emissions, it does not meet the region's GHG reduction target.

Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Evaluating marketing, roads, fleet and technology

Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	2035 Alternative Scenario *c1p1m2r2f2t2*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.3 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	18	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	181	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

More ambitious pricing, and most ambitious marketing, roads, fleet and technology



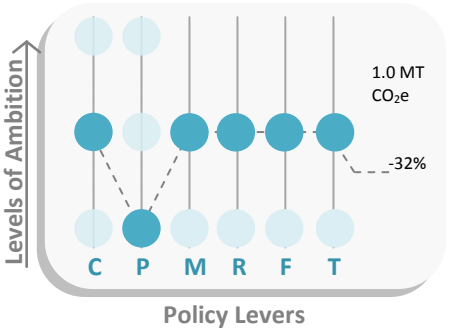
The following scenario builds off of the previous two scenario alternatives and demonstrates the effect of testing all policy levers at level 2 except community design. By adding pricing level 2 this combination of policy alternatives exceeds the region's GHG reduction target, resulting in an annual per capita emissions rate of 1.1 MT CO_2e, which is the equivalent of a 27 percent reduction below 2005 levels.

Pricing Level 2 assumes a transfer of the 2035 RTP assumed state gas tax (including an increase of 1 cent per year) to a mileage-based road use fee of $ 0.03 per mile and implementation of pay-as-you-drive insurance for all insured drivers at $ 0.06 per mile. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Ambitious pricing, marketing, roads, fleet and technology: 27% reduction

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c1p2m2r2f2t2*	**Alternative scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.1 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	16.1	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	181	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

Ambitious community design, marketing, roads, fleet and technology



This scenario builds from the previous three to demonstrate the effect of testing all policy levers at level 2 except pricing. By increasing community design to level 2 and keeping pricing at level 1 this combination of policy levers exceeds the region's GHG reduction target. While this and the previous scenario both exceed the region's reduction target, community design level 2 results in a greater reduction then pricing level 2, all else being equal.

Community design level 2 demonstrates the effects of this scenario demonstrates the effects of:

- a regional bike mode share of 12.5 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by almost 2.5 times the 2035 RTP;
- a 7,680 acre expansion of the UGB , representing 1/4 quarter of the urban reserves designated by the Metro Council.
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking stays the same at $5 per day in 2005 dollars.

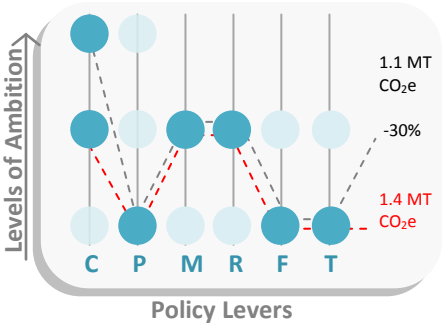
Pricing level 1 assumes existing state and federal gas tax levels. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Evaluating ambitious community design, marketing, roads, fleet and technology: 32% reduction

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c2p1m2r2f2t2*	**Alternative scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.0 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	14.9	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	189	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

Evaluating the influence of community design

The following two scenarios demonstrate the influence of increasing community design from level 2 to level 3, within the context of maintaining current technology and fleet assumptions and ambitious marketing and road policies. The result indicates that without achieving the State's assumed fleet and technology improvements, it is not possible to meet the regional GHG emissions reduction target without achieving community design level 3, even with the most ambitious marketing and road policies. Implementing community design level 3 results in a thirty percent reduction.



Community design level 2 demonstrates the effects of this scenario demonstrates the effects of:

- a regional bike mode share of 12.5 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by almost 2.5 times the level assumed in the 2035 RTP;
- a 7,680 acre expansion of the UGB , representing 1/4 quarter of the urban reserves designated by the Metro Council.
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking stays the same at $5 per day in 2005 dollars.

Increasing to community design level 3 demonstrates the effects of:

- a regional bike mode share of 30 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by 4 times the level assumed in the 2035 RTP;
- no expansion of the UGB
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking increases to $7.25 per day in 2005 dollars.

Pricing level 1 assumes existing state and federal gas tax levels. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay.

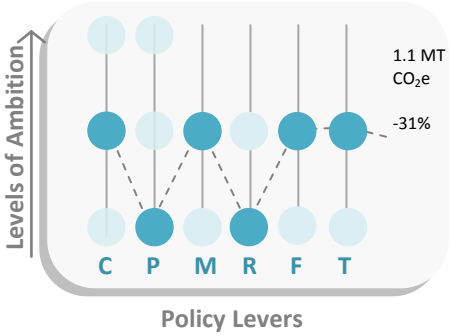
The auto and light truck proportions of the light vehicle fleet are the same as today and fleet turnover rate is the same as today – 10 years. Technology level 1 represents a significant improvement in fuel efficiency for automobiles built by 2035 – achieving a fleet average of 50 MPG, the low carbon fuel standard is in effect (carbon content of fuel is 10% below today's values) and electric vehicles represent 4% of auto market and 1% of the light truck market.

Evaluating the influence of community design

Evaluation measure	**2010**	**2035 Reference Case** *c1p1m1r1f1t1*	**2035 Alternative Scenario** *c2p1m2r2f1t1*	**2035 Alternative Scenario** *c3p1m2r2f1t1*	**Scenarios that meet or exceed target: range of outputs**	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.4 MT CO_2e**	**1.1 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	14.7	11.6	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	34%	33%	34%
4. Walk trips (annual per capita)	144	181	189	199	181	200
5. UGB expansion (acres)	NA	7,680	7,680	0	7,680	0

Evaluating community design, marketing, fleet and technology

Building off the previous two scenarios, this scenario tests the outcomes of applying the State's assumed fleet and technology improvements and keeping community design and marketing at level 2. Unlike the previous scenario with community design at level 2, this scenario exceeds the target, resulting in a reduction of thirty-one percent. This scenario also maintains the planned 2035 RTP road system and assumes 10 percent of the region's delay will be addressed through traffic management.



Community design level 2 demonstrates the effects of this scenario demonstrates the effects of:

- a regional bike mode share of 12.5 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by almost 2.5 times the level assumed in the 2035 RTP;
- a 7,680 acre expansion of the UGB , representing 1/4 quarter of the urban reserves designated by the Metro Council.
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking stays the same at $5 per day in 2005 dollars.

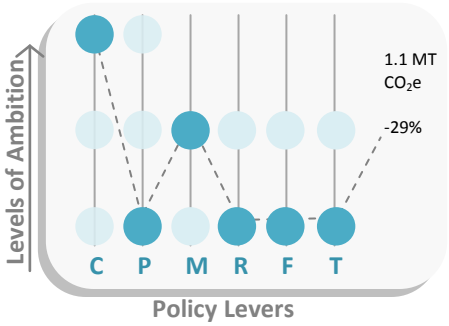
Pricing level 1 assumes existing state and federal gas tax levels. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today. The road assumptions reflect a no-expansion policy and instead rely on traffic management to address 35 percent of the region's delay.

Road level 1 assumptions reflect the existing 2035 RTP road network and rely on traffic management to address 10 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Evaluating community design, marketing, fleet and technology: 31% reduction

Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	2035 Alternative Scenario *c2p1m2r1f2t2*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.1 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	14.9	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	189	181	200
5. UGB expansion (acres)	NA	7,680	0	7,680	0

Evaluating the most ambitious community design and marketing levers



Applying community design level 3 and marketing level 2 (the most ambitious level for each policy lever) results in a scenario that exceeds the regional GHG emissions reduction target, while maintaining the planned 2035 RTP road system. Increasing to community design level 3 demonstrates the effects of:

- a regional bike mode share of 30 percent for all tours 6 miles in length or shorter (3 miles one-way);
- an increase in transit revenue mile service levels by 4 times the level assumed in the 2035 RTP;
- no expansion of the UGB;
- expanding the locations of paid parking from today so that 30% of area workers and 30% of non-work trips pay for parking. The average daily long-term rate for parking increases to $7.25 per day in 2005 dollars.

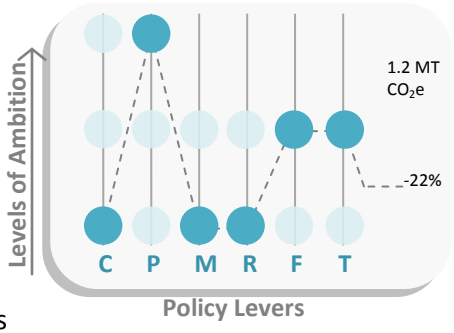
Pricing level 1 assumes existing state and federal gas tax levels. Marketing changes include a large expansion of marketing and incentives programs where 65% of households participate in individualized marketing program and 40% of workers work for employers with strong employee commute options programs, 40% of households use eco-driving practices to conserve fuel consumption; and twice as households participate in car-sharing programs as they do today.

Road assumptions reflect the existing 2035 RTP road network, and rely on traffic management to address 10 percent of the region's delay. The auto and light truck proportions of the light vehicle fleet are the same as today and fleet turnover rate is the same as today – 10 years. Technology level 1 represents a significant improvement in fuel efficiency for automobiles built by 2035 – achieving a fleet average of 50 MPG, the low carbon fuel standard is in effect (carbon content of fuel is 10% below today's values) and electric vehicles represent 4% of auto market and 1% of the light truck market.

Evaluating the most ambitious community design and marketing: 29% reduction

Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	2035 Alternative Scenario *c3p1m2r1f1t1*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	**3.7 MT CO_2e**	**1.8 MT Co_2e**	**1.1 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	11.6	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	34%	33%	34%
4. Walk trips (annual per capita)	144	181	200	181	200
5. UGB expansion (acres)	NA	7,680	0	7,680	0

Evaluating the most ambitious pricing, fleet and technology levers



Applying the most ambitious pricing, fleet and technology levers results in a reduction that slightly exceeds the regional GHG target. This scenario demonstrates that pricing level 3, in combination with the State's assumed fleet and technology assumptions, meet the target within the context of existing land use and transportation plans.

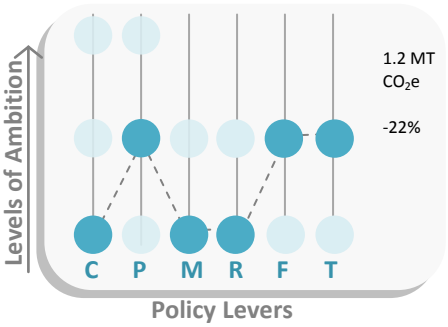
Pricing level 3 assumes a transfer of the 2035 RTP assumed state gas tax (including an increase of 1 cent per year) to a mileage-based road use fee of $ 0.03 per mile, implementation of pay-as-you-drive insurance for all insured drivers at $ 0.06 per mile and deployment of a carbon emissions fee at $50 per ton, which is the equivalent of $ 0.01 per mile. Marketing and incentives programs remain in place as they are today where 9% of households participate in individualized marketing program and 20% of workers work for employers with strong employee commute options programs, zero households use eco-driving practices to conserve fuel consumption; and car-sharing programs as they do today.

Road assumptions reflect the existing 2035 RTP road network, and rely on traffic management to address 10 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Evaluating the most ambitious pricing, fleet and technology levers: 22% reduction

Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	2035 Alternative Scenario *c1p3m1r1f2t2*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	**3.73 MT CO_2e**	**1.8 MT Co_2e**	**1.2 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	16.2	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	33%	33%	34%
4. Walk trips (annual per capita)	144	181	181	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

Evaluating ambitious pricing, fleet and technology



Building off the previous scenario, apply pricing level 2 in combination with the State's assumed fleet and technology assumptions also exceeds the region's reduction target. Comparing these two scenarios highlights the relatively small difference (with respect to reducing roadway GHG emissions) between pricing levels 2 and 3.

Pricing Level 2 assumes a transfer of the 2035 RTP assumed state gas tax (including an increase of 1 cent per year) to a mileage-based road use fee of $ 0.03 per mile and implementation of pay-as-you-drive insurance for all insured drivers at $ 0.06 per mile. Marketing and incentives programs remain in place as they are today where 9% of households participate in individualized marketing program and 20% of workers work for employers with strong employee commute options programs, zero households use eco-driving practices to conserve fuel consumption; and car-sharing programs as they do today.

Road assumptions reflect the existing 2035 RTP road network, and rely on traffic management to address 10 percent of the region's delay. The technology and fleet assumptions reflect the anticipated improvements assumed by the state when setting the region's GHG emissions reduction target.

Evaluating ambitious pricing, fleet and technology levers: 22% reduction

Evaluation measure	2010	2035 Reference Case *c1p1m1r1f1t1*	2035 Alternative Scenario *c1p2m1r1f2t2*	Alternative scenarios that meet or exceed target: range of outputs	
1. Roadway GHG emissions (annual per capita)	**3.73 MT CO_2e**	**1.8 MT Co_2e**	**1.2 MT CO_2e**	1.2	.71
2. Household Light Vehicle DVMT (per capita)	18.9	18.1	16.4	16.4	10.2
3. Households living within mixed-use areas and complete neighborhoods (percent)	24%	33%	34%	33%	34%
4. Walk trips (annual per capita)	144	181	199	181	200
5. UGB expansion (acres)	NA	7,680	7,680	7,680	0

The outputs below are not linked – they result from different combinations. They are assembled in a single table to demonstrate the range of values for each evaluation measure output.

Alternative future scenarios: range of outputs for scenarios that meet or exceed target

Evaluation Measures	Alternative scenarios that meet or exceed the target: range of outputs		Percent Change
1. Roadway GHG emissions (annual per capita)	1.2 MT CO_2e *(20% reduction below 2005 levels)*	.71 MT CO_2e *(53% reduction below 2005 levels)*	-42%
2. Household Light Vehicle DVMT (per capita)	16.4	10.2	-38%
3. Households living within mixed-use areas and complete neighborhoods (percent)	33%	34%	4%
4. Walk trips (annual per capita)	181	200	10%
5. UGB expansion (acres)[5]	7,680	0	3%

[5] The 2010 UGB contains 220,800 acres.

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Climate Smart Communities: Scenarios Project

Phase 1 Metropolitan GreenSTEP Scenarios Technical Documentation

This information is for research purposes only and does not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

October 2011 - **DRAFT**

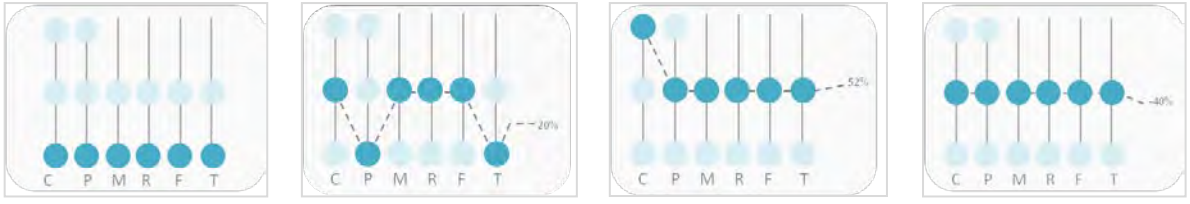

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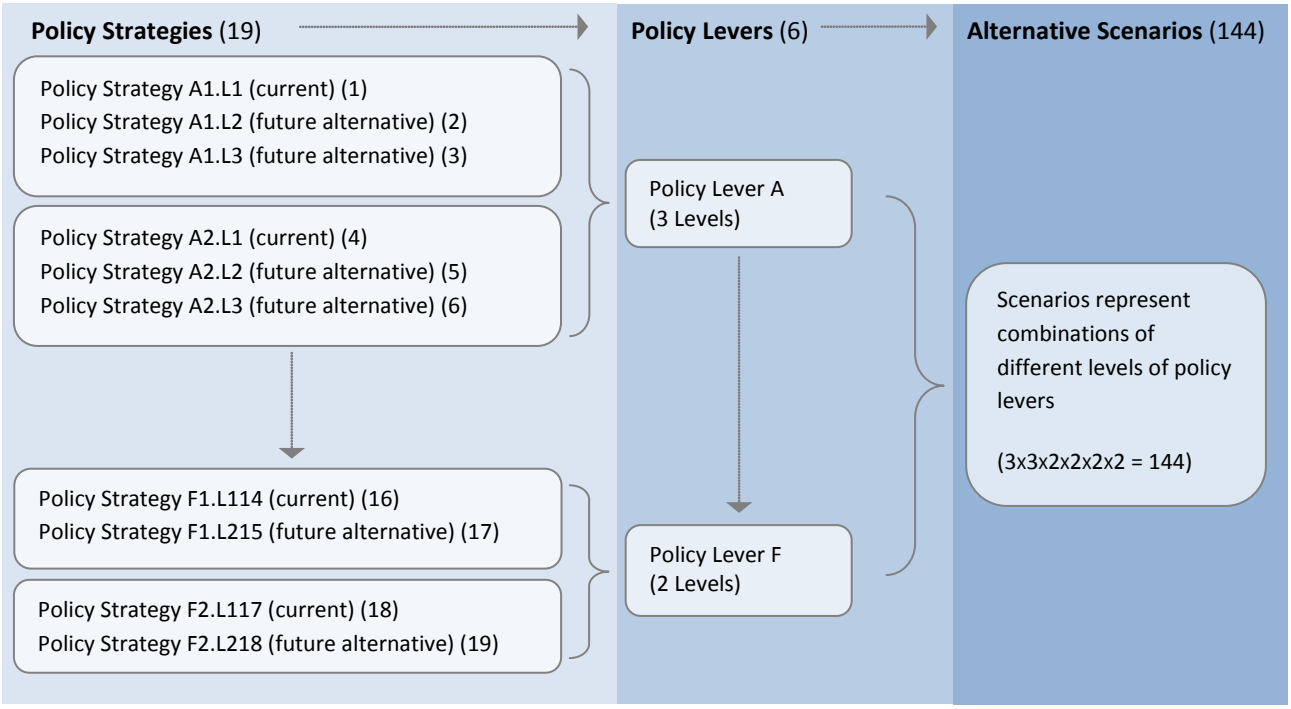
Table of Contents

Purpose and Legislative Background

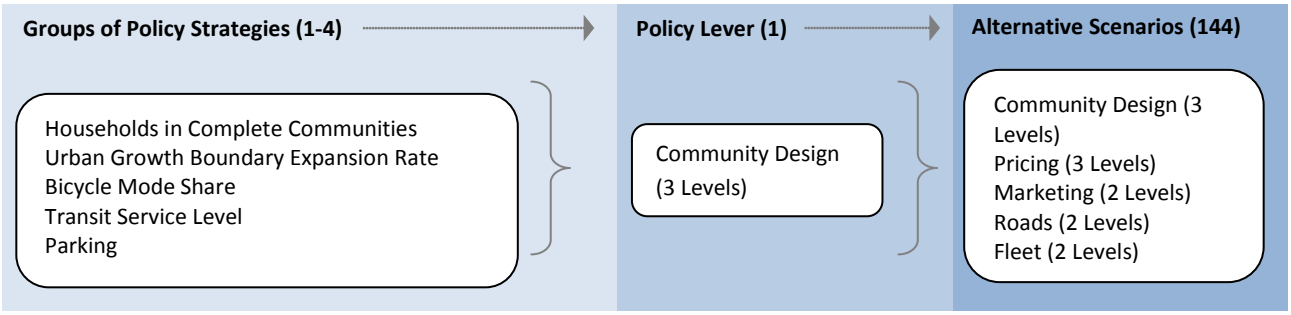
This document provides a detailed description of the rationale behind all Phase 1 Metropolitan GreenSTEP policy inputs. The inputs were developed by Metro staff in consultation with a work group of members of the Metro Technical Advisory Committee (MTAC) and the Transportation Policy Alternatives Committee (TPAC).

The purpose of the analysis is to test the Greenhouse Gas (GHG) emissions reduction potential of current plans and policies, including different combinations of land use and transportation strategies. Metropolitan GreenSTEP, a transportation GHG emissions model developed by the Oregon Department of Transportation (ODOT), provides the opportunity to evaluate a variety of strategies (grouped as six *policy levers*), many of which are already being implemented in an effort to realize the 2040 Growth Concept and the aspirations of communities throughout the region.

Figure 1: Conceptual Metropolitan GreenSTEP Model Framework



Example: Community Design Strategies and Policy Lever



The input data for each of the six GreenSTEP model policy levers are documented and include: (1) a brief description of the policy input tested; (2) input values assumed for each policy lever; (3) supplemental research where applicable; and (4) other background assumptions used in the analysis.

The inputs for each of the strategies are used to create 144 scenarios. The scenarios range from a 2035 Reference Case that reflects current plans and policies to alternative future scenarios that reflect combinations of different levels of implementation for each policy for strategy.

Under the Reference Case, relevant policies and factors continue into the future, more or less at current levels, trends or anticipated changes. The Reference Case will be used to understand the GHG emissions reductions potential of existing plans and policies, and serve as the basis for comparison with the alternative scenarios that assume more aggressive implementation of the range of strategies. Technical inputs were localized using regional data, where possible. Policy inputs for future fuel economy and carbon content, fleet mix and turnover rates and electric vehicle deployment rates were defined in the State Agency Technical Report (March 1, 2011) and assumed for purposes of this analysis to be consistent with the Metropolitan Greenhouse Gas Emissions Reduction Targets.

The results of the analysis will be used to frame policy choices and tradeoffs presented by the most effective strategies and to begin identifying implementation opportunities and challenges associated with different approaches to meeting the GHG emissions reduction target. The findings from this regional-level scenarios analysis and the Strategy Toolbox report (September 2011) will be used to recommend policy options and packages of strategies for further evaluation in 2012. The findings and recommendations also will be included in a progress report that ODOT and DLCD staff will provide to the Oregon State Legislature in January 2012.

Geographic Scope of Analysis: Regional Districts

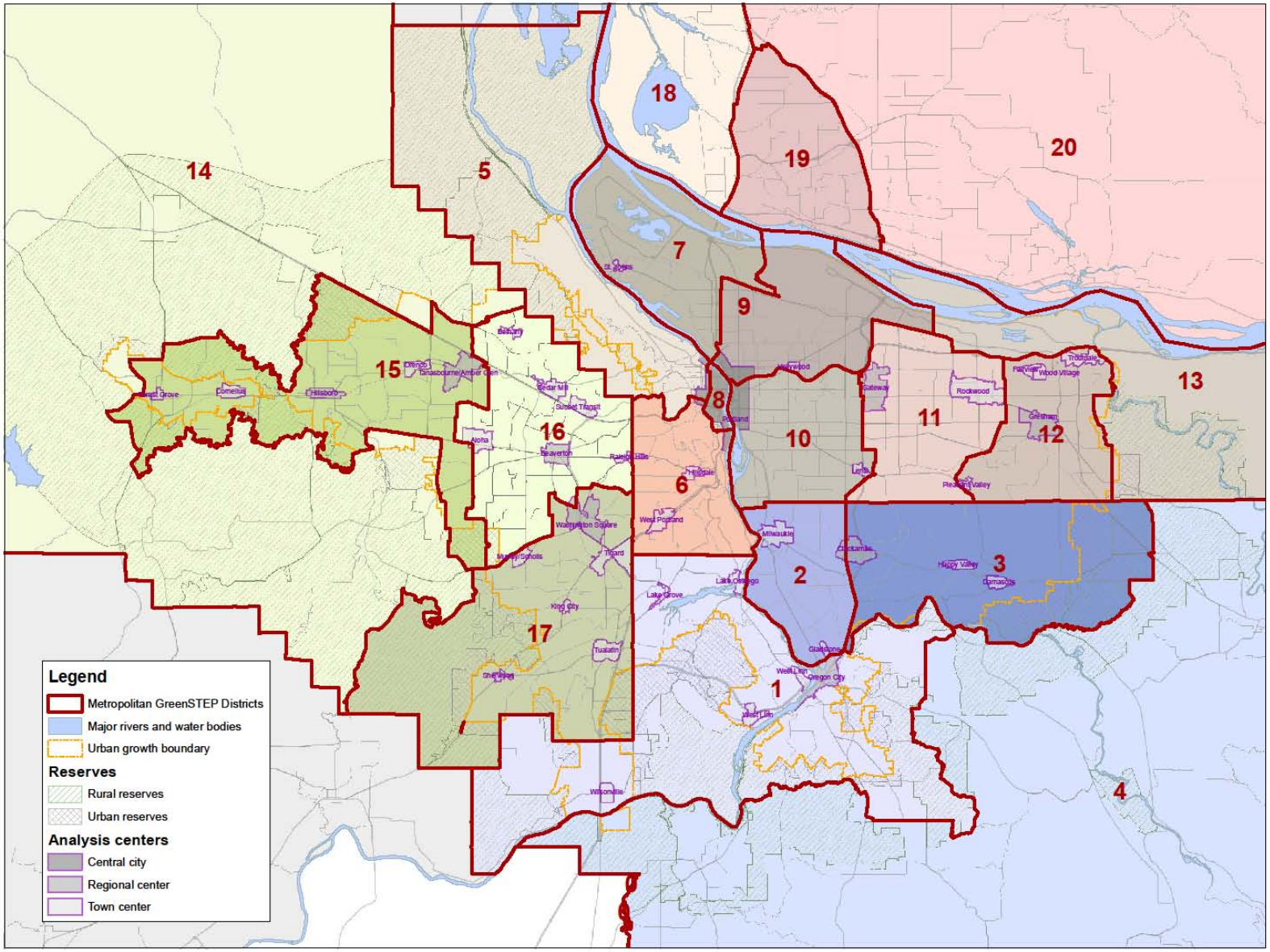
Metropolitan GreenSTEP will run using 20 districts, which provide a comparable structure to the State GreenSTEP model, which runs using the 36 Oregon counties. Figure 2 shows the 20 districts used for this analysis.

Because GreenSTEP calculates greenhouse gas (GHG) emissions from household VMT estimates, Metro adapted the region's 18-district transportation analysis zone (TAZ) map in an effort to define sub-regional geographies with similar travel behavior and land use characteristics. The original 18-district map used TAZs as the base geographic unit. However, in order to have the regional districts nest within county geographies, these boundaries were adjusted to Census tract boundaries. A number of the original 18 districts were adjusted in an effort to keep Regional Centers intact within a single district when possible (most Regional Centers are intact with only a few being intersected by neighboring districts).

In addition, two districts were added in order to better account for local land use and travel characteristics.

1. In Washington County, District 2 was subdivided and District 19 was created to isolate Hillsboro, Forest Grove and Cornelius from the rest of rural Washington County.
2. In Multnomah County, District 13 was subdivided and District 20 was created to isolate Gresham and Troutdale from the rest of Multnomah County.

Figure 2: Metropolitan GreenSTEP 20 Districts Map



Districts 18, 19 and 20 (Clark County, WA) are excluded from this analysis. However, Metro area roadway GHG emissions do account for trips generated from outside the region, including trips from Clark County, WA.

The land use characteristics of the 20 districts influence a number of factors used to estimate household vehicle ownership and vehicle travel. These include the type of area where a household resides (metropolitan, other urban, and rural), population density and urban form characteristics.

Land use characteristics are assigned to households using the following method (from ODOT's GreenSTEP documentation report)[1]:

1. Each household in each county is assigned to one of three land use types - metropolitan, other urban, or rural.
2. The geographic extent of urban growth in metropolitan and other urban areas in each county is calculated.
3. Overall metropolitan, other urban and rural densities are calculated.
4. Households are assigned a Census tract population density based on the overall metropolitan, urban or rural area where it is located.
5. Households in metropolitan areas are designated as being in an urban mixed-use community/neighborhood or not, based on Census tract density and metropolitan goals for urban mixed-use development.

Because the district geographies will be used to calculate the above mentioned background conditions for each of the 20 districts—which in combination with the UGB expansion rates affects the proportion of households in mixed use areas—it is important to net out the land areas that are not designated as developable by 2035 (the planning time horizon of the scenarios project).

After establishing the new district boundaries the following steps were taken to create a net acreage for each district:

1. Total acreage is calculated for each district.
2. Within the UGB, the area designated as parks and rivers is subtracted from the total UGB land area.
3. Outside of the UGB the land area designated as Urban Reserves is added to the net land area in step 2.
4. Outside of the UGB the land area designated as Rural Reserves is subtracted.
5. Similarly, outside of the UGB the Undesignated land area is also subtracted.
6. The land area outside of the Metro MPO boundary, but within a UGB is designated as a "other urban."
7. The remaining land area is identified as Rural.

These seven steps result in the following land area designations by district:

- **"Metropolitan"** includes the land area within the Metro UGB (minus parks and rivers) plus Urban Reserves. This land is the developable land area to be used for the "metropolitan" population density calculation.
- **"Other urban"** includes the land areas within a UGB that are outside of the MPO boundary (conforming to the GreenSTEP model land use definition for "other urban").

[1] Gregor, Brian, ODOT Transportation Planning Analysis Unit, Greenhouse Gas Statewide Transportation Emissions Planning Model (GreenSTEP Model) Documentation, September 2010.

- **"Rural"** designations include all land area outside of the UGB that is a Rural Reserve, Undesignated and/or all remaining county land area that is not included as "metropolitan" or "other urban."

Figure 3 includes the land use designations used for the Phase 1 Metropolitan GreenSTEP scenario runs. It should be noted that assigning a single land use characteristic to each Census tract results in a generalized land use map that does NOT reflect adopted land use policy. Figure 3 only reflects a technical exercise required to provide a generalized land use classification input into the Metropolitan GreenSTEP model. Because the Metro and other UGB boundaries within the tri-county region do not conform to census tract boundaries—and because only a single land use classification can be applied to each census tract—the land use classifications for this model input only roughly resemble UGB boundaries. When a Census tract was bisected by a UGB boundary the classification was designated with the land use type that reflected the majority of the land area within the tract. For example, a tract with two thirds of its land area inside the UGB and one third outside would be designated as "Metropolitan", while if the opposite ratio were to be true, the tract was designated as "Rural".

FIGURE 3

Background demographic characteristics

The 2035 regional household growth forecast assumed in this analysis comes from the Beta 2050 growth forecast prepared by Metro's Data Resource Center in August 2011. The Beta forecast is an interim forecast that will continue to be reviewed and refined in coordination with local governments in the region prior to being considered for adoption by the Metro Council in 2012.

The Beta forecast reflects updated assumptions for redevelopment and infill opportunities and designated urban reserves, and provides the background demographic characteristics that serve as the foundation of the Phase 1 scenarios. The updated assumptions reflect the 2010 Council actions and the urban and rural reserves designated in 2010 and 2011. The Climate Scenarios project will continue to coordinate its technical assumptions with development of the final regional forecast and update the forecast information as data are made available.

While the regional forecast data will be updated as the project progresses it is important to note that within each phase of the project regional population will be held constant across the future year alternative scenarios. All Phase 1 and Phase 2 future scenarios will use the same 2035 population forecast and will not adjust the forecast to test alternative population growth assumptions. The final adopted regional forecast will be used in Phase 3 of the Scenarios Project in 2013. The Metropolitan GreenSTEP results presented in this memo use the forecasted population growth show in Table 2.

Table 2. Metro Beta forecast - Phase 1 2035 population growth assumptions within Metro UGB

2010 Population	2035 Population	Percent change
1.3 million residents	1.8 million residents	35%

These growth rates do *not* reflect the entire region's projected population growth but rather the growth anticipated within the region's urban growth boundary. While Metropolitan GreenSTEP models and estimates the emissions associated with all households within the three-county region, the outputs presented in this memo are associated with the households in census tracts located within the Metro UGB. These growth forecast, and therefore the associated outputs presented below, do not include anticipated growth within the areas of Clackamas, Multnomah, and Washington Counties that are outside of the Metro UGB; or Clark County, WA.

The only exception is for the roadway GHG emissions output. Because the region's target includes roadway GHG emissions, not just regional household GHG emissions, this output captures the emissions associated with all roadway travel within the Metro UGB area, including travel that originated from Clark County, WA. and other areas located outside of the region's urban growth boundary.

Table 2: 2010 Base Year and Alternative Scenarios Inputs

This table summarizes the inputs for the 2010 Base Year and 144 alternative scenarios that reflect different levels of implementation for each category of policies. The inputs were developed by Metro staff in consultation with a technical work group of MTAC and TPAC members. *This information is for research purposes only and does not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.*

Policy		Inputs			
		2010 Base Year *Reflects existing conditions*	**2035 Level 1 Reference Case** *Reflects current plans and policies*	**2035 Level 2** *Reflects more ambitious policy changes*	**2035 Level 3** *Reflects even more ambitious policy changes*
Community Design	Households living in mixed-use areas and complete neighborhoods[2] (percent)	GreenSTEP calculates			
	Urban growth boundary expansion (acres)	2010 UGB	7,680 acres	7,680 acres	No expansion
	Bicycle mode share for tours 6 miles or less (percent)	2%	2%	12.5%	30%
	Transit service level	2010 service level	2035 RTP Financially Constrained service level	2.5 times RTP service level	4 times RTP service level
	Workers / non-work trips paying for parking (percent)	13% / 8%	13% / 8%	30% / 30%	30% / 30%
	Average daily parking fee ($2005)	$5.00	$5.00	$5.00	$7.25
Pricing	Pay-as-you-drive insurance (percent of households participating and cost)	0%	0%	100% at $0.06/mile	*No change from L2*
	Gas tax (cost per gallon $2005)	$0.42	$0.48	$0.18	
	Road use fee (cost per mile $2005)	$0	$0	$0.03	
	Carbon emissions fee (cost per ton)	$0	$0	$0	$50

[2] This input was calculated internally by the GreenSTEP model.

Policy		Input			
		2010 Base Year *Reflects existing conditions*	**2035 Level 1 Reference Case** *Reflects current plans and policies*	**2035 Level 2** *Reflects more ambitious policy changes*	**2035 Level 3** *Reflects even more ambitious policy changes*
Marketing & Incentives	Households participating in ecodriving	0%	0%	40%	*No change from L2*
	Households participating in individualized marketing programs (percent)	9%	9%	65%	
	Workers participating in employer-based commuter programs (percent)	20%	20%	40%	
	Car-sharing in high density areas (target participation rate)	Participation rate of 1 member/100 people	Participation rate of 1 member/100 people	Double participation to 2 members/100	
	Car-sharing in medium density areas (target participation rate)	Participation rate of 1 member/200 people	Participation rate of 1 member/200 people	Double participation to 2 members/200	
Roads	Freeway and arterial expansion	2010 system	2035 RTP Financially Constrained System	No expansion	*No change from L2*
	Delay reduced by traffic management strategies (percent)	10%	10%	35%	
Fleet	Fleet mix (proportion of autos to light trucks and SUVs)	auto: 57% light truck/SUV: 43%	auto: 56% light truck/SUV: 44%	auto: 71% light truck/SUV: 29%	
	Fleet turnover rate (age)	10 years	10 years	8 years	
Technology	Fuel economy (miles per gallon)	25 mpg	50 mpg	58 mpg	
	Carbon intensity of fuels	90 g CO_2e/ megajoule	81 g CO_2e/ megajoule	72 g CO_2e/ megajoule	
	Light-duty vehicles that are plug-in hybrids or electric vehicles (percent)	auto: 0% light truck/SUV: 0%	auto: 4% light truck/SUV: 1%	auto: 8% light truck/SUV: 2%	

Community Design

Households in Mixed Use Areas or Complete Neighborhoods

In GreenSTEP, the land use characteristics of the area where a household resides affects vehicle ownership and travel. Land use characteristics are defined by three broad land use categories (metropolitan, other urban, rural), population density (persons per square mile) and the urban form characteristics. The last two characteristics (density and urban form) are defined at the census tract level. The GreenSTEP model estimates the proportion of households in mixed-use areas or complete neighborhoods using the following approach[3]:

1. Population densities are calculated from the metropolitan population and the metropolitan area for each Census tract.
2. Density is used as a proxy to identify the urban mixed-use characteristics that affect vehicle travel. Mixed-use household estimates are calculated using a probability model to estimate the percent of households in mixed-use areas based on population density. (A number of urban design and form variables – the "5-Ds" – were tested using National Household Travel Survey data and census tract population density was found to be highly significant and is representative of several urban land use characteristics. These characteristics include neighborhood-level mixing of different land uses, well-connected street system, greater pedestrian accessibility orientation of land uses, and greater transit accessibility.)
3. The proportion of households in mixed-use areas by census tract are then summed by county and divided by total county households to estimate the percent households in mixed-use areas by county.

Complete neighborhoods are characterized by a mix of land uses, interconnected streets to minimize travel distances (particularly walking and bicycling), and sidewalks.

Phase 1 (2011): For all policy levels, an estimate proportion of households in mixed-use areas will be calculated using the following:

- Metropolitan GreenSTEP internal mixed use households probability model (summer 2011)
- Metro interim beta forecast (August 2011)

Phase 2 (2012): For all policy levels, the change in proportion of households in mixed-use areas will be calculated using the following:

- *Envision Tomorrow inputs will override the internal mixed use model in Metropolitan GreenSTEP by establishing control totals)*

Because the UGB expansion rates for all levels reflect a decline from current or historic expansion rates population densities will increase (UGB expansion will not grow at the same rate as population growth). As a result, it is anticipated that the proportion of households in mixed-use areas will also increase (resulting from GreenSTEP's internal mixed-use probability model using density as an indicator variable for neighborhood mixed use characteristics).

[3] Ibid.

The following values reflect Metropolitan GreenSTEP calculated inputs for the proportion of households in mixed-use areas:

Level 1

- 33% (GreenSTEP calculation)

Level 2

- 33% (GreenSTEP calculation)

Level 3

- 34% (GreenSTEP calculation)

Urban Growth Boundary

The geographic extent of metropolitan and other urban areas is calculated from base year measurements of urban growth boundary areas and policy inputs which describe how rapidly urban growth boundaries grow relative to population growth. The following reflect Metropolitan GreenSTEP inputs:

Level 1

- Reflects the change in historic UGB expansion relative to population growth (1990 – 2010: Base year = .375:1) to the adopted reserves decision UGB expansion rate relative to population growth (.15:1). This ratio represents the equivalent of 7,680 acres being added to the current UGB.

Level 2

- Same as Level 1.

Level 3

- No expansion of the urban growth boundary is assumed from 2010.

Bicycle Travel

GreenSTEP models bicycle travel as a component of a class of light-weight vehicles (including bicycles, electric bicycles, Segways and similar) that are small, light-weight and can travel at bicycle speeds or slightly higher than bicycle speeds. This class of vehicles, though currently a minor mode of urban transportation has the potential for having a large impact on transportation emissions in the future. Standard bicycles are the dominant form of light-weight vehicle in use in the United States. This could potentially change as electric bicycles and other light-weight electric vehicles grow in market share. The GreenSTEP light-weight electric vehicles model assumes that light-weight vehicles have the potential for substantially increasing light-weight vehicle travel because they increase the ease and convenience of this mode of travel.

Currently, the only data available for this light-weight vehicle model is bicycle mode share. No distinctions are made between bicycles and electric bicycles and there are no data available on neighborhood electric vehicle or Segway use. Therefore, the input values only represent bicycle mode share.

In addition to identifying regional input data, Metro staff conducted background research on bicycle mode share rates and targets in other U.S. and international cities (see Table 1).

Table 1: U.S. and international bike mode share and targets

City or region	Current bike mode share	Adopted/ Defined bike mode share target
Portland, OR	6% (2009 ACS) 7% (2010 Auditor report work trips)	30% of work trips (Draft Portland Plan)
Corvallis, OR	9.4% (2000 Census)	*None*
Davis, CA	14% (2000 census)	25% of all trips by 2012 (adopted in 2009 bike plan)
Boulder, CO	12.3% (2009 ACS) 7% (2000 census) 15.9% (2009 travel diary survey - includes all trips, not just commute)	Increasing the bicycle mode share (all trips) at least 4% between 1994 (11.3%) and 2020 (1996 bicycle system plan). (Goal has been met according to travel diary survey results.) Other related targets are: 75% non-SOV mode share by 2020 (2008 Transportation plan) zero growth in VMT from 1994 levels.
Eugene, OR	10.8% (2009 ACS)	Approximately 22% (Draft bike/ped plan has defined a target of doubling bike mode share by 2020)
Seattle, WA region	0.90% (2009 ACS) Seattle-Tacoma-Bellevue MSA	*None*
San Francisco, CA region	1.5% (2009 ACS) SF-Oakland-Fremont MSA	None, but they have a goal to increase active transportation activity per day from 8 to 15 minutes by 2040
Nashville, TN region	0.10% (2009 ACS) Nashville –Davidson-Murfreesboro-Franklin MSA	None
Sacramento, CA region	1.6% (2009 ACS) Sacramento-Arden-Arcade-Roseville, MSA	Double the percentage of all trips made by bicycling and walking in the Sacramento Region from 6.6%in 2000 to 13.2% of all trips by 2020. (Modeled data)
Copenhagen, Denmark	37%	50% by 2015

Table 2 provides a summary of US cities (population of 65,000 or more) with the highest bicycle mode share. Table 3 provides comparable data for a sample of international cities.

Table 2: Top US cities commuting bicycle mode share (Only cities with 65,000 + population[4])

City	Population	Bicycle Mode Share
Boulder ,CO	100,160	12%
Eugene, OR	153,275	11%
Fort Collins, CO	138,722	10%
Berkeley CA	102,802	9%
Cambridge, MA	108,776	9%
Missoula, MT	68,875	7%
Gainesville, FL	116,615	6%
Portland, OR	566,606	6%
Somerville, MA	76,489	5%
Madison, WI	235,410	5%
Minneapolis, MN	385,384	4%
Boise, ID	205,698	4%

[4] Source: American Community Survey; American Community Survey only includes cities with populations greater than 65,000

Table 3: Sample of International Cities bicycle mode share

City	Population	Bicycle Mode Share
Groningen	188,000	57%
Delft	96,000	43%
Houten	46,000	42%
Amsterdam	750,000	40%
Copenhagen	520,000	37%
Utrecht	300,000	33%
Bogota	7,500,000	5%
Sydney	4,500,000	2%
Brisbane	2,000,000	2%

Level 1

- The 2035 RTP regional bicycle mode share proportion for all trips lengths 3 miles or less is 2%
- Tour length is less than or equal to 6 miles, which reflects the assumptions for bicycle travel for the Portland Plan and better reflects regionally specific bicycle mode share studies (most reflect a roughly 3 mile trip length; 3 mile trips * 2 = 6 mile tour length).

Level 2

- Based on the Level 3 STS Round 1 scenarios, mode share will increase to 12.5%
- Tour length of 6 miles

Level 3

- Based on the Portland Bike Master Plan for 2030 assumption, mode share will increase to 30%
- Tour length of 6 miles

Level 3 reflects a significantly more aggressive bike mode share than the STS Scenarios in an effort to evaluate whether bike mode share, at a regional scale, might have a larger impact on reducing GHG emissions than it would at a state level.

Transit Service

GreenSTEP uses revenue miles, rather than revenue hours in order to quantify GHG emissions. TriMet defines revenue hours as the amount of time a TriMet vehicle and operator are available to serve passengers. Revenue hours describe how much service is available to customers (Transit Investment Plan Glossary). Revenue miles refer to the distance traveled by a TriMet vehicle when they are available to serve passengers. Revenue miles are used to calculate the emissions associated with the provision of service.

In an effort to reconcile these two transit service variables, revenue miles are converted to vehicle miles, and grouped by age, range of fleet, and assumptions of miles per gallon. These are adjusted by estimated congestion levels, the result of which is transit GHG emissions/mile.

TriMet uses revenue hours because it better reflects costs, which makes conversion of revenue hours to revenue miles difficult given revenue hours shift over time due to congestion. However, based on TriMet annual revenue mile and revenue hour data TriMet staff calculated a regional conversion rate of 14 revenue miles per revenue hour.

This conversion rate is based on TriMet annual data on revenue miles and revenue hours for bus-only for the system as a whole from RY1971 to FY2010. In FY10, the figure was 14.68 revenue miles per revenue hour. When assessed on a year-to-year change in revenue miles per revenue hour, there is a very small downward trend. Taking out two years of extreme outliers, the trend during this 40 year period, if continued into the future, would result in 14.06 revenue miles per revenue hour in FY2035. (See Table 4; NOTE: Table 4 does *not* represent a Metropolitan GreenSTEP input level but rather provides an example of how revenue hours are converted to revenue miles.)

Table 4: Ratio of transportation service expansion to population growth (w/revenue mile conversion rate)

Demonstration example: conversion of revenue hours to revenue miles		2005	2035	Percent increase	Ratio (revenue mile growth : population growth)
TriMet service district	Population estimate	1,543,910	2,333,604	51%	
	Revenue Hours	*3,073,579*	*4,433,847*	*44%*	
	Conversion rate (revenue hours to revenue miles)				**.86:1**
	14 RM/RH				
	Revenue Miles	43,030,106	62,073,858	44%	

Level 1

- Reflects current TriMet service trend line comparing service mile per capita, roughly a 1:1 ratio of fixed and bus route transit service growth compared to population growth (see Chart 1). This ratio represents the equivalent of 29 revenue miles per capita.
- The percent of transit service growth that is electrified reflects the current revenue mile mode split of 80/20, which represents 80% B-5 biodiesel and 20% electric.

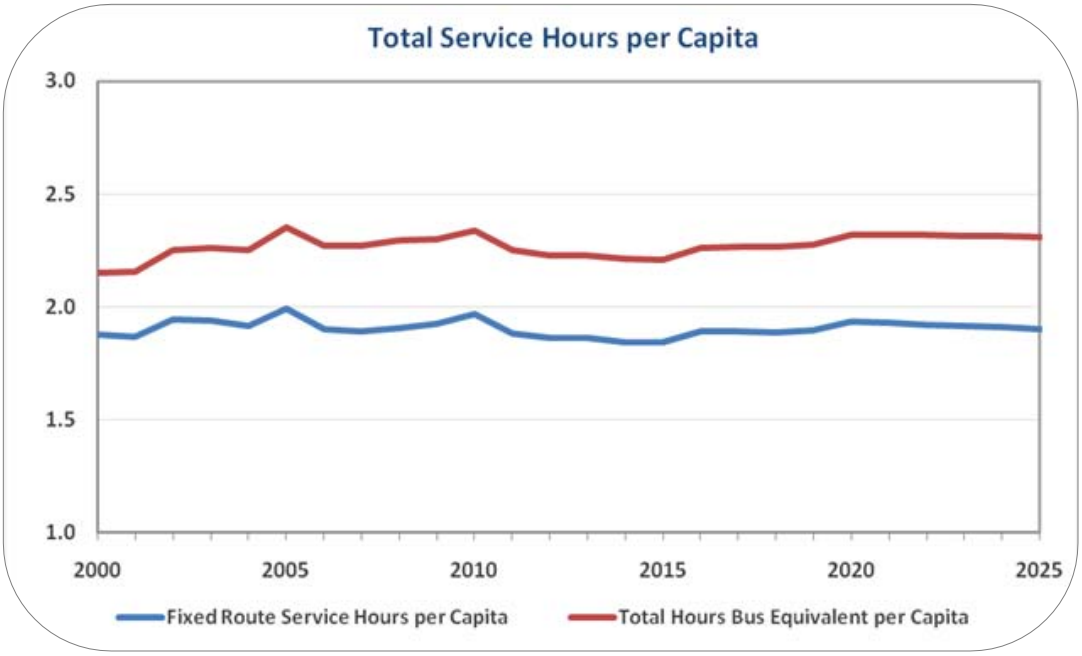
Level 2

- Reflects the Level 3 input value in the RTP transit investment scenario (Scenario B), with a ratio of 2.4:1 service mile growth compared to population growth. This ratio represents the equivalent of 69 revenue miles per capita.

Level 3

- A 4:1 ratio of transit service mile growth compared to population growth, which is more aggressive than the transit scenario analysis conducted for the 2035 RTP. This ratio represents the equivalent of 115 revenue miles per capita.

Figure 3: TriMet total service hours per capita (fixed and bus routes), projected 2000 – 2025



The results of the 2035 RTP transit scenario analysis yield a 2.4:1 ratio of service mile growth compared to population growth. This ratio was calculated by first using TriMet's service hour bus capacity equivalents to calculate the total service hour growth from 2005 to 2035 by mode (light rail, bus, streetcar, commuter rail) in bus service hour equivalents (common unit). These equivalents were summed to calculate a subsequent growth rate, after converting revenue hours to revenue miles. The total revenue hours for 2005 and 2035 are shown in Table 5 for reference. The resulting growth rate of 2.4:1 is less than the proposed 3:1 ratio, which represents a tripling of service levels.

Table 5: 2035 RTP transit investment scenario (Scenario B)

RTP Scenario B		2005	2035	Percent increase	Ratio (revenue mile growth : population growth)
	UGB Population estimate (from RTP)	1,408,207	2,039,195	45%	
	Revenue Hours	8,092	16,865	108%	
	Conversion rate (revenue hours to revenue miles)				**2.4:1**
	14 RM/RH				
	Revenue Miles	113,288	236,110	108%	

To help put the transit service level growth projections for Level 2 and Level 3 into context, TriMet staff sought to identify other regions whose current capacity-weighted per capita service levels represent roughly the same level of service projected using this growth rate. In other words, Level 2, for example, seeks to answer the question, "If transit service levels were to grow at a 2.4:1 ratio until 2035, what other regions' levels of service would this be similar to?"

For this analysis, TriMet staff assessed the per capita capacity-weighted service provision of other regions using data from the 2009 National Transit Database, using a capacity adjustment factor of 4.87 to account for higher-capacity modes such as heavy rail, light rail, and commuter rail.

This capacity adjustment factor is based on TriMet's current MAX-bus capacity ratio (MAX light rail vehicles have 4.87 times the capacity of a bus), as a means of simulating the levels of service likely to be provided in the Portland region. That is, while other regions provide heavy rail service with 8 to 10-car trains with substantially more capacity than MAX, it is assumed for this exercise that constraining the additional vehicle capacity to current MAX levels is more realistic and appropriate for purposes of this analysis.

Using this approach, TriMet staff assessed comparable regions on the basis of both Vehicle Revenue Hours and Vehicle Revenue Miles on a per capita basis to adjust for population growth. This analysis provided a range of results due to differences in the nature of the regions' services (e.g., long-haul commuter rail services vs. downtown core services) as well as in the ratio of regions' vehicle miles to vehicle hours. The results of the analysis are summarized in Table 6.

Table 6: Regional capacity-weighted transit service provisions, National Transit Database 2009

UZA Name	2009 Capacity-Weighted Vehicle Revenue Miles (VRM) (Thousands)	2009 Capacity-Weighted VRM/capita	**Growth ratio needed to equalize (x:1)**	2009 Capacity-Weighted Vehicle Revenue Hours (VRH) (Thousands)	2009 Capacity-Weighted VRH/capita	**Growth ratio needed to equalize (x:1)**
New York-Newark, NY-NJ-CT	2,990,712	168.0	**4.2**	154,295	8.7	**3.0**
Chicago, IL-IN	650,339	78.3	**2.0**	34,060	4.1	**1.4**
Washington, DC-VA-MD	430,460	109.4	**2.7**	20,139	5.1	**1.8**
San Francisco-Oakland, CA	448,781	139.0	**3.5**	19,055	5.9	**2.0**
Portland, OR-WA	63,377	40.0	**1**	4,580	2.9	**1**

The ranges of Service Mile and Service Hour Growth Ratios need to equalize for the Chicago region, the San Francisco Bay Area and the Washington, DC region support the use of the 2.4:1 ratio in Level 2, while the range for New York City region supports the use of 4:1 for Level 3.

Parking fees

GreenSTEP considers parking pricing is a trip-based cost. It is assumed that parking costs are commonly paid for at one or both ends of a trip, and sometimes paid for on a monthly basis. GreenSTEP includes parking pricing as a component of the trip costs for auto travel, but in a more general way than traditional urban travel demand models. There are two types of parking costs addressed in GreenSTEP; (1) parking costs at places of employment and (2) non-work parking costs. Daily parking costs are calculated for each household by estimating the proportion of work and non-work trips with parking factors for each household. These annual parking costs are then added in with other variable transportation costs.

Table 7 provides a summary of the calculated average regional daily parking cost in 2005 dollars and the proportion of work trips where parking factors exist for the 2010 base year and 2035 reference case. All population and employment data are from the 2035 RTP forecast and do not represent 2010 Census

figures (these values will change slightly based on regional population and employment differences between the 2035 RTP forecast and the forthcoming draft interim forecast).

The following description outlines the approach for calculating these regional averages.

1. Sum of total employment for the 4-County area
2. Calculate total employment in the TAZs where a parking factor exists
3. Calculate percent of employees who have to pay for parking (total employment in TAZ with Parking factor divided by total employment)
4. Calculated a weighted average long-term parking "cost" for employment in TAZs with parking factors. This is calculated by multiplying the total employment in each TAZ by the parking factor for each TAZ, and then dividing that total by #2 above.
5. Same as #4, only using short-term parking "cost" (typically 50% of long-term).
6. This is the straight average of #4 and #5.

The following table was prepared using data from Metro's Research Center at the Transportation Analysis Zone (TAZ) level.

Table 7: Regional parking cost, weighted average for work and non-work trips in 2005 dollars

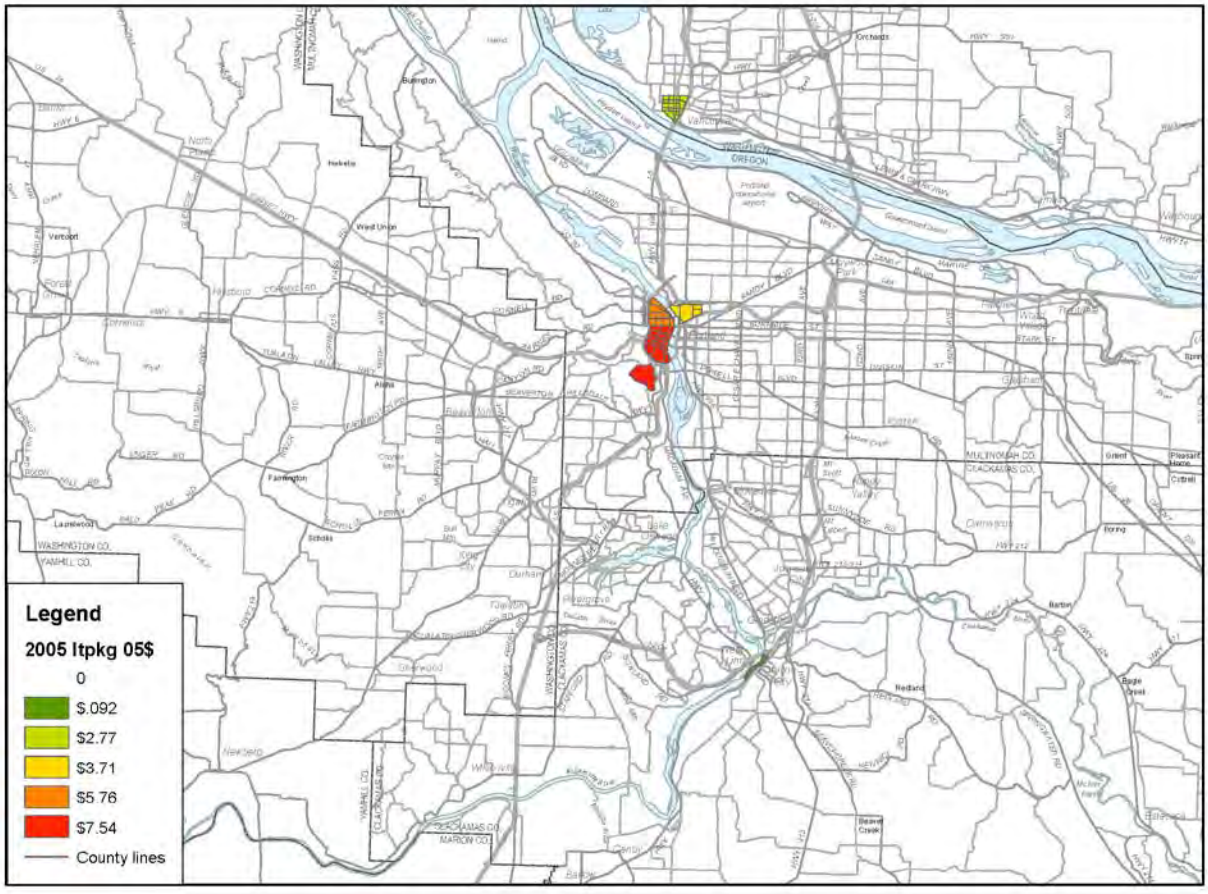
Parking factor approach	**2005**	**2010**	**2035**
1. Total Regional Employment	1,032,246	917,296	1,799,152
2. Employment in TAZs w/ parking factors	142,712	122,770	559,145
3. Regional % of Employment in TAZ w/parking factors	13.8%	13.4%	31.1%
4. Long-term cost, 2005 $ (weighted average for employees in TAZ w/parking factors)	$6.50	$6.52	$5.13
5. Short-term cost, 2005 $ (weighted average for employees in TAZ w/parking factors)	$3.25	$3.25	$2.91
6. Average cost assuming even split, 2005 $ (long-term/short-term)	**$4.87**	**$4.89**	**$4.02**

Note: the 2035 average parking cost is lower because smaller parking factors are scattered throughout the region instead of having fewer, higher valued factors focused in the Central City. Overall, the "cost" is less, but more employment is located in TAZs with parking factors (31% vs. 13.8%).

Level 1

- The percent of workers paying a parking fee reflects current (2010) modeled estimates from the 2035 RTP (13%) (see Figure 1 and Table 8).

Figure 1: 2005 Long Term Parking Factors (2005 $), 2035 RTP



- The percent of non-work trips paying parking fees reflects current (2010) modeled estimates from the 2035 RTP (8%)
- The average daily cost ($5) also reflects current modeled estimates from the 2035 RTP (in 2005$) and captures work and non-work parking factors.

Level 2

- Level 2 tests the affect of increasing the parking fee coverage area (based on the 2035 RTP), without adjusting parking costs (see Figure 2 and Table 8).
- The percent of workers paying a parking fee reflects future modeled estimates from the 2035 RTP (30%).
- The percent of non-work trips paying parking fees reflects future modeled estimates from the 2035 RTP (30%).
- The average daily cost ($5) deviates from the future 2035 modeled estimate in the RTP ($4) to maintain directional consistency with all other Metropolitan GreenSTEP input variables (all input variables increase by level. It is not anticipated that this adjustment will result in a large deviation from adopted policy, nor will it result in significantly altered scenario results).

Figure 2: 2035 Long Term Parking Factors (2005 $), 2035 RTP

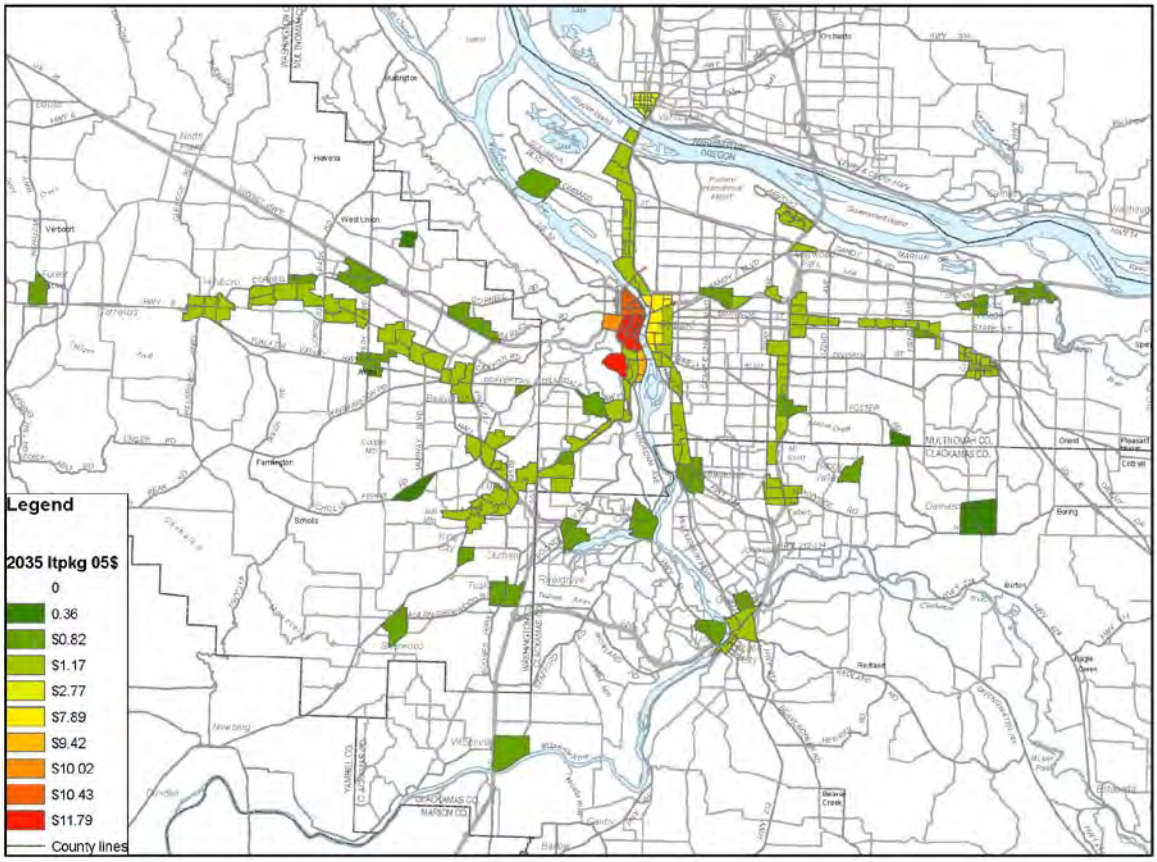


Table 8: Level 2 2035 proportion of regional trips with parking factor, work and non-work

Share of trips with parking factors		
	Work trips	Non-Work trips
Level 1	13%	8%
Level 2	30%	30%
Percent change	*138%*	*263%*

Level 3

- Level 3 tests the affect of increasing parking costs, without adjusting the parking coverage area.
- The percent of workers paying a parking fee reflects the Level 2 input value from the 2035 RTP (30%).
- The percent of non-work trips paying parking fees reflects the Level 2 input value from the 2035 RTP (30%).
- Based on the 2035 RTP, the City of Portland parking price increases roughly 1.5% per year over inflation (since 1994). The average parking price in 2035 for Level 3 assumes this growth rate from 2005 (see Table 9).

Table 9: Parking pricing increase for Level 3

2005 parking cost	1.5% annual increase over 25 years
$5	$7.25

Pricing

Pay as you drive insurance

This pricing strategy converts a portion of liability and collision insurance from dollars-per-year to cents-per-mile (or cents-per-minute/hour if advanced tracking technology is utilized) to charge insurance premiums based on the total amount of miles driven per vehicle on an annual basis and other important rating factors, such as the driver's safety record. If a vehicle is driven more, the crash risk consequently increases.

Description of pay-as-you-drive (PAYD) insurance from the GreenSTEP documentation report[5]: "PAYD insurance is automobile insurance that is paid strictly on a mileage traveled basis, rather than on a lump-sum periodic basis. On average, PAYD insurance does not change the amount that households pay for insurance. However, since the cost of PAYD to the motorist varies with the number of miles driven, there is an incentive to reduce travel to save money. It has been estimated that a PAYD insurance rate of 4 to 6 cents per mile, could reduce VMT from light vehicles by about 3.8%.[6] The estimates of the effect of PAYD insurance is on based on assumptions about the price elasticity of vehicle travel. The right value to use is uncertain.[7] Since GreenSTEP treats variable costs as a budget effect, price elasticity depends on the sum of all variable costs, therefore the estimated effect of PAYD insurance will depend on what other costs are being paid as well."

Level 1

- Reflects current policy - no participation in pay as you drive insurance options
- No cost associated with pay as you drive insurance

Level 2

- Reflects the Level 2 input value in the STS Round 1 Scenarios analysis (100% of households participate in pay as you drive insurance programs). The intent of this level is to test the impact of a relatively new and untested policy strategy.
- Reflects the Level 2 input value in the STS Round 1 Scenario analysis ($.06/mile).

Gas tax, mileage-based road use fee & carbon emissions fee

The model inputs for the gas tax, and road use and carbon emissions fees were developed with the goal to better understand the relationship between these three pricing mechanisms. First, it is assumed that the current gas tax mechanisms do not provide stable revenue streams when considering the effects of increased fuel efficiency and inflation. While the pricing mechanisms tested in the Phase 1 scenarios do not provide guidance on how transitioning to alternative pricing mechanisms can address this issue, they do provide insight into how improvements in fuel efficiency may effect revenue generation.

[5] Gregor, Brian, ODOT Transportation Planning Analysis Unit, Greenhouse Gas Statewide Transportation Emissions Planning Model (GreenSTEP Model) Documentation, September 2010.
[6] U.S. Department of Transportation, Report to Congress, Transportation's Role in Reducing U.S. Greenhouse Gas Emissions, Volume 2: Technical Report, April 2010, pp. 5-22
[7] U.S. Department of Transportation, Report to Congress, Transportation's Role in Reducing U.S. Greenhouse Gas Emissions, Volume 1: Synthesis Report, April 2010, pp. 3-15.

Table 10: Background calculations for gas tax, carbon emissions & vehicle travel fee inputs (Levels 1–3)

Pricing mechanism	Level 1 Cost (2005 Dollars)	Level 2 Cost (2005 Dollars)	Level 3 Cost (2005 Dollars)
2010 Federal gas tax ($/gallon)	$ 0.18	$ 0.18	$ 0.18
2011 State gas tax ($/gallon)	$ 0.30		
Road use fee ($/mile)		$ 0.03	$ 0.03
Carbon emissions fee ($/ton)[8]			$ 50.0

Because all pricing inputs are in 2005 dollars it is assumed (within Metropolitan GreenSTEP) that the pricing mechanisms discussed below are adjusted to account for inflation between 2005 and 2035. It is also important to note that the costs per mile presented in tables 11-13 should not be used to estimate revenue generation for each scenario without also considering changes in DVMT. Further analysis will be completed during Phase 2 to better understand the role of these pricing mechanisms in supporting reinvestment of revenues generated to address implementation costs and anticipated funding shortfalls for achievement of existing plans and policies.

Base year

- In 2010, State and Federal gas taxes were $.42/gallon, assuming a $.24/gallon state gas tax and an $.18/gallon federal gas tax.

Level 1

Level 1 represents existing pricing mechanisms, which demonstrate a declining revenue stream based on anticipated fuel efficiency and technology gains (including Level 1 technology levels).

- In 2011, the State gas tax was increased to $.30/gallon while the Federal gas tax did not change. The input value for level 1 reflects this State gas tax increase, with a combined gas tax of $.48/gallon.
- No road use fee is assumed for Level 1 (no current policy).
- No carbon emissions fee is assumed for Level 1 (no current policy).

Level 2

Level 2 represents an attempt to model the pricing mechanisms needed to maintain a level State revenue source based on current policies (current state gas tax and average fuel efficiency). Because these pricing mechanisms have not previously been tested using Metropolitan GreenSTEP, the following assumption represents an attempt to model the transition from the state gas tax to a mileage-based road use fee.

- The current Federal gas tax ($.18/gallon) is applied as a cost/gallon (declining revenue).
- Level 2 includes the current $.30/gallon tax[9] and an annual increase of $.01 per year ($.55/gallon in 2035), which reflects the financial assumptions used in the 2035 RTP.[10] However, these gas tax assumptions are modeled as a cost per mile equivalents. In addition, the road use fee was rounded to $.03/mile to better test the affects of different pricing mechanisms (by rounding up to $.03/mile, there is a greater distinction between Levels 1 and 2).

[8] Cambridge Systematics, Inc. *White Paper: Costs of Motor Vehicle Travel*. Prepared for ODOT for the purpose of modeling Statewide Transportation Scenarios. Accessed at http://www.oregon.gov/ODOT/TD/OSTI/docs/TAC/Sept22/WP.pdf

[9] As provided for in the Oregon Jobs for Transportation Act (House Bill 2001).

[10] ODOT Financial Services Policy and Economic Analysis Unit, Financial Assumptions for the development of Metropolitan Transportation Plans 2005 - 2030, 2004.

- No carbon emissions fee is assumed for Level 2.

Level 3

Level 3 reflects a pricing strategy that converts the State gas tax to a road use fee (consistent with Level 2), and begins to account for the estimated external climate costs of greenhouse gas emissions.

- The current Federal gas tax ($.18/gallon) is applied as a cost/gallon (declining revenue).
- The vehicle travel fee reflects the Level 2 input value of $.03/mile (2011 State gas tax plus a 1.5% gas tax increase, in cost per mile equivalents).
- The carbon emissions fee represents an estimated value of the external costs of transportation GHG emissions ($50/Ton CO_2e).[11]

Tables 11-13 demonstrate the implications of fuel efficiency changes relative to the pricing mechanisms tested in Phase 1[12].

Table 11: 2010 Base Year fuel efficiencies, cost per mile equivalent [13]

Cost per mile equivalents

Pricing mechanism	Level 1 Cost (2005 Dollars)	Level 2 Cost (2005 Dollars)	Level 3 Cost (2005 Dollars)
2010 Federal gas tax ($/mile)	$ 0.007	$ 0.007	$ 0.007
2011 State gas tax ($/mile)	$ 0.012		
Road use fee ($/mile)		$ 0.03	$ 0.03
Carbon emissions fee ($/mile)[14]			$ 0.018
Total (rounded)	**$ 0.02**	**$ 0.04**	**$ 0.06**

Table 12: 2035 Level 1 estimated fuel efficiencies, cost per mile equivalent [15]

Pricing mechanism	Level 1 Cost (2005 Dollars)	Level 2 Cost (2005 Dollars)	Level 3 Cost (2005 Dollars)
2010 Federal gas tax ($/mile)	$ 0.004	$ 0.004	$ 0.004
2011 State gas tax ($/mile)	$ 0.006		
Road use fee ($/mile)		$ 0.03	$ 0.03
Carbon emissions fee ($/mile)			$ 0.01
Total (rounded)	**$ 0.01**	**$ 0.03**	**$ 0.04**

[11] ODOT, Statewide Transportation Strategy (STS) Technical Advisory Committee meeting, 5/31/11 (value from forthcoming Cambridge Systematics report on external costs to households related to their vehicle travel, Date TBD)

[12] State GreenSTEP input assumption for the Portland Metro area (the average fuel efficiency for all light vehicles is not weighted by proportional share of light trucks to automobiles)

[13] Assuming average fuel efficiency of 25 mpg, which reflects the State GreenSTEP input assumption for the Portland Metro area (the average fuel efficiency for all light vehicles is not weighted by proportional share of light trucks to automobiles)

[14] All carbon emissions fee cost per mile estimates assume 19.4 lbs CO2/gallon. Accessed at: www.epa.gov/otaq/climate/420f05001.htm

[15] Assuming average fuel efficiency of 50 mpg, which reflects the State GreenSTEP Reference Case input assumption for the Portland Metro area (the average fuel efficiency for all light vehicles is not weighted by proportional share of light trucks to automobiles)

Table 13:2035 Level 2 estimated fuel efficiencies, cost per mile equivalent[16]

Pricing mechanism	Level 1 Cost (2005 Dollars)	Level 2 Cost (2005 Dollars)	Level 3 Cost (2005 Dollars)
2010 Federal gas tax ($/mile)	$ 0.003	$ 0.003	$ 0.003
2011 State gas tax ($/mile)	$ 0.005		
Road use fee ($/mile)		$ 0.03	$ 0.03
Carbon emissions fee ($/mile)			$ 0.01
Total (rounded)	**$ 0.01**	**$ 0.03**	**$ 0.04**

Marketing

Individualized marketing programs

Individualized marketing (IM) programs are travel demand management programs focused on individual households. IM programs involve individualized outreach to households that identify household travel needs and ways to meet those needs with less vehicle travel.

Level 1

- Reflects the current results of the City of Portland and Regional Travel Options (RTO) Individualized Marketing Program (given current funding); 9% of households in the region participate in an Individualized Marketing Program.

Level 2

- Reflects the Financially Constrained 2035 RTP "percent covered households" 65%. This represents the percent of households (peak) within ½ mile of a light rail transit stop or ¼-mile of a bus stop.

Employee commute options programs

Employee commute options (ECO) programs are work-based travel demand management programs. They may include transportation coordinators, employer-subsidized transit passes, bicycle parking, showers for bicycle commuters, education and promotion, carpool and vanpool programs, etc.

Research conducted using the Washington State Commute Trip Reduction (CTR) database provide a detailed information on both TDM strategies implemented by employer, worksite characteristics and employees' travel behavior and their job related characteristics. Similar to Oregon, employers in the state of Washington that have 100 or more full-time employees are required to implement a Commute Trip Reduction program. The state CTR database tracked more than 1,000 worksites and around 300,000 individual employees from 1993 to 2005. The analysis of the longitudinal CTR data indicates that for the employees affected by a CTR program, the participation rates of compressed work week increased steadily from 14.5 percent in 1993 to 20 percent in 2005. This evaluation focused on one TDM strategy, and may underestimate the participation rate when taking into account the range of employer-based

[16] Assuming average fuel efficiency of 58 mpg, which reflects the State GreenSTEP input assumption used to determine the Metro region's GHG emissions reduction target (the average fuel efficiency for all light vehicles is not weighted by proportional share of light trucks to automobiles).

TDM programs available – parking cash out, telecommuting, transit passes, preferential parking for carpools and vanpools, etc.[17]

Level 1

- Reflects the best available data for current regional participation in ECO programs; 20% of working age persons participate in an ECO program.
- Assumes a steady participation rate while accounting for population growth.
- While Metro's current Regional Travel Options program estimates roughly 20% of the region's workforce has access to a transportation options program, this value does not reflect all worksites that meet the State ECO Rule threshold (sites with 100+ employees) in the region. In addition, this estimate does not account for regional participation rates. Given these limitations, and based on the research discussed above, it is assumed that the RTO access rate underestimates regional access and potential participation rates.

Level 2

- Demonstrates an increase in participation rate of 40% (doubling of Level 1), which could reasonably be accomplished with increased programmatic resources/funding and would not require a legislative change to the State ECO Rule.

Car-sharing

Because car-sharing is a relatively new phenomenon, GreenSTEP models the approximate effects of car-sharing on vehicle travel (there is currently no National Household Travel Survey data on car-sharing). However, based on *Moving Cooler*, it is assumed that on average there are 20 participating households per car-share vehicle.[18] By using this participation rate per car-share vehicle, the target number of "car-share" households is calculated in GreenSTEP using a rate of 2,000 inhabitants of medium-density census tracts and 1,000 inhabitants for high-density census tracts.

No low-density target is set for GreenSTEP because of the synergistic relationship between density and car-share participation rates. In other words, if the participation rate for an average car-share vehicle is 20 households, the lower the density the greater the catchment area needs to be to meet the participation rate. This would result in the walk distance for a participating household to increase beyond a reasonably expected distance. However, because of the synergistic relationship within GreenSTEP between density car-share participation, the VMT (and GHG) benefits of car-share programs can be tested through the community design policy lever (as low-density areas meet the medium-density population threshold the average car-share participation rates are assumed within GreenSTEP). The car-share input variable is the estimated population needed per vehicle to support a viable car-share market.

Level 1

- The input value of 10,000 people per car-share vehicle in medium density areas reflects the State's input assumptions for the 1st round of STS scenarios (the best available data).

[17] Zhou, Liren, University of South Florida. *Modeling the impacts of an employer based travel demand management program on commute travel behavior*. Thesis and Dissertations, Paper 581. University of South Florida, June, 2011, p. 46.

[18] Cambridge Systematics, "Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions", Urban Land Institute, Washington, D.C., October 2009.

- The input value of 5,000 people per car-share vehicle in high density areas reflects the State's input assumption for the 1st round of STS scenarios (the best available data).

Level 2

- The input value of 5,000 people per car-share vehicle in medium density areas reflects the State's input assumptions for the 1st round of STS scenarios (the best available data).
- The input value of 2,500 people per car-share vehicle in high density areas deviates from the State's input assumption for the 1st round of STS scenarios. The rationale for using a value other than the State's input assumption is to test a comparable order of magnitude difference between the levels 1 and 2 for both medium and high density areas.

NOTE: The State did not model this input for the Agency Technical Report, the scenario runs used to establish the Metro Region's GHG emissions reduction target. Therefore, modifying the input assumption for this variable does not limit Metro's ability to consistently evaluate the region's conformity to the GHG emissions reduction target.

Eco-driving

Eco-driving involves educating motorists on how to drive in order to reduce fuel consumption and cut emissions. Examples of eco-driving practices include avoiding rapid starts and stops, matching driving speeds to synchronized traffic signals, and avoiding idling. Practicing eco-driving also involves keeping vehicles maintained in a way that reduces fuel consumption such as keeping tires properly inflated and reducing aerodynamic drag. For the purposes of GreenSTEP, fuel economy benefits of improved vehicle maintenance are included in the eco-driving benefit. The effect of eco-driving programs is modeled by identifying participating households based on a policy assumption about the proportion of participating households. A default 19% improvement in vehicle fuel economy is assumed within the GreenSTEP model based on information in the "Moving Cooler" study.[19]

Level 1

- Because eco-driving is a relatively new phenomenon and there is currently no existing regional eco-driving marketing program, there is no supporting data to indicate the proportion of households that follow eco-driving practices; 0% households follow eco-driving practices.

Level 2

- Given current data limitations for this GHG emissions reduction strategy, Level 2 reflects the input assumption for the 1st round of STS scenarios; 40% of households follow eco-dirving practices.

Roads

System management

GreenSTEP models mean travel speeds with and without incidents to compute an overall average speed by road type and congestion level. The approach provides a simple level of sensitivity testing of the potential effects of system management programs on GHG emissions. Overall average speeds by congestion level are calculated based on input assumptions about the degree of system management,

[19] Cambridge Systematics, "Moving Cooler", Urban Land Institute, Washington, D.C., 2009, Technical Appendix, Table 7.1, page B-63.

which includes traffic signal timing and incident management. The input is defined as the percent of delay addressed through system management.

Level 1

- There is no existing regional data or modeling assumptions available for this input. Level 1 reflects the input assumption for the 1st round of STS scenarios; 10% of delay is addressed through system management.

Level 2

- Reflects the input assumption for the 1st round of STS scenarios data set that accounts for the percent of delay addressed through system management programs; 35% of delay is addressed through system management

Road capacity

The road capacity input in GreenSTEP only models the affect of roadway expansion relative to population growth. GreenSTEP does not reflect the impact of street connectivity projects. Metropolitan area freeway supply (lane-miles per capita) is a significant predictor of metropolitan household vehicle ownership and travel, however arterial supply (lane-miles per capita) is not. Both freeway and arterial lane-mile supply are important inputs for estimating traffic congestions levels. GreenSTEP calculates future year growth rates of freeway and arterial lane miles relative to metropolitan area population growth rates, from a defined inventory of lane-miles.

Level 1

- Reflects the 2035 financially constrained RTP (see Table 14)

Level 2

- No change from level 1 (2035 financially constrained RTP)

Level 3

- No roadway expansion relative to population growth

Table14: Ratio of road expansion to population growth

Regional Transportation Plan		2005	2035	Percent increase	Ratio (lane mile growth : population growth)
2035 RTP Financially Constrained	Population estimate	1,961,153	3,096,746	58%	
	Freeway lane miles	1,206	1,318	9%	**.16:1**
	Arterial lane miles	8,416	8,921	6%	**.10:1**
2035 State RTP network	Population estimate	1,961,153	3,096,746	58%	
	Freeway lane miles	1,206	1,318	9%	**.16:1**
	Arterial lane miles	8,416	8,996	7%	**.11:1**

Fleet

All fleet assumptions reflect the values defined in the State Agency Technical Report and assumed in the Metropolitan GHG Reduction Targets Rule.

Auto/light truck proportions

The vehicle type model in GreeenSTEP calculates the likelihood that a vehicle is a light truck, by county; based on National Household Travel Survey data, western states tend to have higher light truck (pickups, vans, sport utility vehicles) ownership than the U.S. national average.

Level 1

- Reflects the Level 1 values used in the 1st Round of STS scenarios, by county; Clackamas 51%, Multnomah 42%, Washington 46% (regional average of 43%).

Level 2

- Reflects the Level 3 values used in the 1st Round of STS scenarios, by county (assumed in the Metropolitan GHG Reduction Targets Rule; Clackamas 34%, Multnomah 28%, Washington 31% (regional average of 29%).

Fleet turnover rate

Fleet turnover reflects the rate at which new vehicles will replace exiting vehicles. Since newer vehicles are typically more fuel efficient than older vehicles, newer fleets will yield greater GHG reductions.

Level 1

- Reflects the Level 1 value used in the 1st Round of STS scenarios.
- Captures the current replacement rate observed statewide, 10 years to replace vehicle, as reported in the Agency Technical Report.

Level 2

- Reflects the Level 3 value used in the 1st Round of STS scenarios.
- Captures the current replacement rate observed in other parts of the country, 8 years to replace vehicle, as reported in the Agency Technical Report; about a year or older than other parts of the country.

Technology

All technology assumptions reflect the values defined in the State Agency Technical Report and assumed in the Metropolitan GHG Reduction Targets Rule.

Fuel economy

The fuel economy values, used in the Agency Technical Report, assume the current Federal Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards for Model Years 2017-2025.

Level 1

- Reflects the Level 1 value used in the 1st Round of STS scenarios.
- The 2035 light-duty vehicle fuel economy is estimated to be 59.7 mpg and light truck is 41 mpg; regional fleet average is 50 mpg.

Level 2

- Reflects the Level 3 value used in the 1st Round of STS scenarios.
- The 2035 light-duty vehicle fuel economy is estimated to be 68.5 mpg and light truck is 47.7 mpg; regional fleet average is 58 mpg.

Carbon intensity of fuels

The values for carbon intensity of fuels, used in the Agency Technical report, assume the proposed low carbon fuel standard is adopted. These assumptions are modeled in the 1st Round of STS Scenarios and used for the Metropolitan GHG Reduction Targets Rule.

Level 1

- Reflects the Level 1 value used in the 1st Round of STS scenarios.
- Assumes the carbon intensity of vehicle fuels will be 10% below the current average by 2035.

Level 2

- Assumes the carbon intensity of vehicle fuels will decline to a level 20% below the current average by 2035.
- Reflects the Level 3 value used in the 1st Round of STS scenarios.

Electric vehicles market share

The values for this technology input represent the proportion of electric vehicles (EV) as a share of total fleet that are driven within the average range of EVs, by model year as documented in the Agency Technical Report and used in the 1st Round of STS Scenarios.

Level 1

- Reflects the Level 1 value used in the 1st Round of STS scenarios.
- Assumes 26% of the 2035 model year for autos, that are driven within the average range of EVs for that model year (175 miles) are EVs.
- Assumes 26% of the 2035 model year for light trucks, that are driven within the average range of EVs for that model year (175 miles) are EVs.

Level 2

- Reflects the Level 3 value used in the 1st Round of STS scenarios.
- Assumes 26% of the 2035 model year, that are driven within the average range of EVs for that model year (175 miles), are EVs.

Plug-in hybrids market share

The values for technology this input represent the proportion of plug-in hybrids as a share of total fleet that are driven within the average range of EVs, by model year as documented in the Agency Technical Report and used in the 1st Round of STS Scenarios.

Level 1

- Reflects the Level 3 value used in the 1st Round of STS scenarios.
- Assumes 4% of the 2035 model year for autos, that are driven within the average range of plug-in hybrids for that model year (175 miles), are plug-in hybrids.

- Assumes 1% of the 2035 model year for light trucks, that are driven within the average range of plug-in hybrids for that model year (175 miles), are plug-in hybrids.

Level 2

- Reflects the Level 3 value used in the 1st Round of STS scenarios.
- Assumes 8% of the 2035 model year for autos, that are driven within the average range of plug-in hybrids for that model year (175 miles), are plug-in hybrids.
- Assumes 2% of the 2035 model year for light trucks, that are driven within the average range of plug-in hybrids for that model year (175 miles), are plug-in hybrids.

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Date:	Oct. 18, 2011
To:	TPAC Members, Alternates and Interested Parties
From:	Kelsey Newell
Re:	2012 TPAC meeting schedule

Please mark your calendars with the following 2012 TPAC meeting dates. TPAC meetings will be held from 9:30 a.m. to noon in the Metro Council Chamber:

Friday, Jan. 6, 2012	Regular TPAC meeting
Friday, Jan. 27, 2012	Regular TPAC meeting
Friday, Feb. 17, 2012	Regular TPAC meeting
Friday, March 30, 2012	Regular TPAC meeting
Friday, April 27, 2012	Regular TPAC meeting
Friday, May 25, 2012	Regular TPAC meeting
Friday, June 29, 2012	Regular TPAC meeting
Friday, July 27, 2012	Regular TPAC meeting
Friday, Aug. 31, 2012	Regular TPAC meeting
Friday, Sept. 28, 2012	Regular TPAC meeting
Friday, Oct.26, 2012	Regular TPAC meeting
Friday, Nov. 30, 2012	Regular TPAC meeting

Materials following this page were distributed at the meeting.

Metro Research Center

The Metro Research Center supports the Metro Council, Metro staff, external clients and the public by providing accurate and reliable data, information, mapping, and technical services to support public policy and regulatory compliance. The center coordinates data and research activities with local government partners, academic institutions, and the private sector.

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Metro Research Center open house

From data to decisions:

Fostering innovation in modeling and analysis through regional partnerships

Friday, Nov. 18, 2011
8 a.m. to 1 p.m.
Oregon Convention Center
Rooms D135 and D136

8 a.m.
Continental breakfast

Schedule

8:30 to 10 a.m.
Plenary session

Welcome

Metro President **Tom Hughes**

Panel discussion

Sheila Martin, Director
Institute of Metropolitan Studies, PSU
Community Indicators as Regional Governance

Ethan Seltzer, Director
Nohad A. Toulan School of Urban Studies, College of Urban and Public Affairs, PSU
Beyond the Black Box: RLIS at 50

Jennifer Dill, Director
Oregon Transportation Research and Education Consortium, PSU
How Data Can Drive Better Transportation Decisions

10:30 a.m. to 1 p.m.

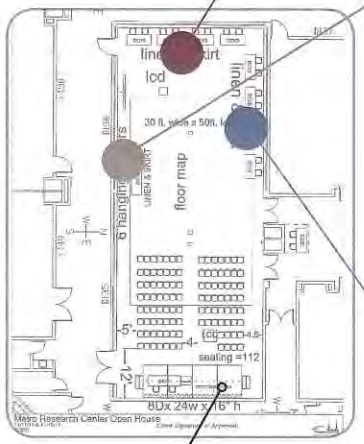
Demonstrations

10:30 a.m.	3-D Buildings
11 a.m.	Context Tool
11:30 a.m.	Dynamic Traffic Assignment
noon	Community Maps
12:30 p.m.	Dynamic Traffic Assignment

Poster session

10:30 a.m. to 1 p.m.
Poster session and demonstrations

Open house floor plan



Demonstrations

Data Resource Center and partners
Metro's context tool and its role in regional modeling
RLIS Live
GIS Connection Project
3-D Buildings
Community Maps

Economic land use forecasting
MetroScope – Simulating urban development
The regional econometric model
Urban simulation modeling – Metro's unique and tested tool kit
How economic land use forecasting and the Research Center inform 2040 policy
Measuring refill rates

Transportation research and modeling services
Corridor planning
DASH tour based travel demand model
Household travel and activity survey
Bicycle model
Dynamic traffic assignment
Metropolitan GreenSTEP model

Tools and applications
Metro greenhouse gas emission analysis toolkit
Greater Portland Pulse – Measuring results, inspiring action
Altas of mobility corridors
Transportation equity analysis

Federal Grant Opportunities Announced

FHWA discretionary grant opportunity announced The Federal Highway Administration (FHWA) has officially announced their solicitation for FY 2012 grants of about $200 million in funding under a dozen discretionary programs. In the last round of funding, ODOT and local governments received nearly $20 million from these programs for 16 different projects.

Information on these programs, as well as grant applications and instructions, are available on FHWA's website at http://www.fhwa.dot.gov/discretionary/. The primary funding programs available to local governments are:

- Transportation, Community, and System Preservation
- Public Lands Highways
- Ferry Boat
- National Historic Covered Bridge Preservation
- National Scenic Byways

FHWA requires that all applications be submitted through state DOTs, and they ask that state DOTs review and prioritize applications. n order to give ODOT time to review and prioritize applications, all applicants for Public Lands Highways Discretionary and Transportation, Community and System Preservation funding must submit draft applications to ODOT by ***Wednesday, December 14***.

Final applications will be due to ODOT at least two working days before they are due to FHWA to give us time to process and submit dozens of applications. ODOT will provide instructions for submission of final applications at a later date.

Other specialty programs — such as National Scenic Byways, Historic Covered Bridges, and Ferry Boats — will have different processes and timelines. Please contact the ODOT staff listed below for information on processes for these other programs.

Updates to the Oregon Department of Transporation's process to administer these applications can be found at: http://www.oregon.gov/ODOT/HWY/federal_affairs.shtml

Submitting the Draft Application

Draft applications are due to ODOT for prioritization by close of business ***Wednesday, December 14***.

In submitting draft applications, please follow the following instructions.

- Please e-mail all draft applications to travis.brouwer@odot.state.or.us and john.j.baker@odot.state.or.us.
- Please send the application and any supporting documentation for the project in a single e-mail, with only one project per e-mail.
- The e-mail subject line should be "[Program abbreviation, i.e. TCSP] application for [brief project name] from [project sponsor]."
- The application filename should be "[Program abbreviation, i.e. PLHD] application for [brief project name]."
- Feel free to include supplemental materials such as a map. Please send all supporting documentation as a single PDF if at all possible. The filename should be "[Program abbreviation, i.e. PLHD] supporting documents for [brief project name]." This file should not exceed 2 megabytes if at all possible to avoid overloading our e-mail system. Letters of support are not needed at this time but should be included with the final application.

Contact Information for Programs
The following are the ODOT contacts for each of the major programs.

- ***Transportation, Community and System Preservation:*** John Baker, ODOT Government Relations, (503) 986-3445, john.j.baker@odot.state.or.us
- ***Public Lands Highways Discretionary:*** Travis Brouwer, ODOT Government Relations, (503) 986-3448, travis.brouwer@odot.state.or.us
- ***Scenic Byways:*** Pat Moran, ODOT Active Transportation Section, (503) 986-4261, patrick.m.moran@odot.state.or.us
- ***Historic Covered Bridge:*** Chris Leedham, ODOT Bridge Section, (503) 986-3383, christopher.r.leedham@odot.state.or.us
- ***Ferry Boats:*** Alan Lively, ODOT Active Transportation Section, (503) 986-0295, alan.d.lively@odot.state.or.us

For any other program, contact John Baker, (503) 986-3445.

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TRANSPORTATION POLICY ALTERNATIVES COMMITTEE
October 28, 2011
Metro Regional Center, Council Chamber

MEMBERS PRESENT	AFFILIATION
Chris Beanes	Citizen
Karen Buehrig	Clackamas County
Elissa Gertler, Chair	Metro
Mara Gross	Citizen
Katherine Kelly	City of Gresham, Representing Cities of Multnomah Co.
Scott King	Port of Portland
Nancy Kraushaar	City of Oregon City, Representing Cities of Clackamas Co.
Alan Lehto	TriMet
Dean Lookingbill	Southwest Washington Regional Transportation Committee
Satvinder Sandhu	Federal Highway Administration
Karen Schilling	Multnomah County
Charlie Stephens	Citizen
Tracy Ann Whalen	Citizen
Sharon Zimmerman	Washington State Department of Transportation

MEMBERS EXCUSED	AFFILIATION
Brent Curtis	Washington County
Heidi Guenin	Citizen
John Hoefs	C-TRAN
Scott King	Port of Portland
Dave Nordberg	Oregon Department of Environmental Quality
Paul Smith	City of Portland
Jenny Weinstein	Citizen
Rian Windsheimer	Oregon Department of Transportation

ALTERNATES PRESENT	AFFILIATION
Andy Back	Washington County
Courtney Duke	City of Portland
Lainie Smith	Oregon Department of Transportation

STAFF: Aaron Brown, Kim Ellis, Tom Kloster, John Mermin, Kelsey Newell, Sherry Oeser, Dylan Rivera, Ray Valone

1. CALL TO ORDER AND DECLARATION OF A QUORUM

Chair Elissa Gertler called the meeting to order and declared a quorum at 9:36 a.m.

2. COMMENTS FROM THE CHAIR AND COMMITTEE MEMBERS

Chair Gertler announced the visit of Dr. Lawrence Frank, who will be giving a presentation in the Council Chambers at 7:30am on Friday, November 4th, and the open house event hosted by the Data Research Center on Friday, November 18th. Chair Gertler encouraged TPAC members to attend these events; information on these events are included in the meeting packet.

Mr. Alan Lehto of TriMet spoke of the residents and businesses in the City of Boring who are petitioning to be removed from TriMet's jurisdiction. Mr. Lehto was also questioned by committee members about the agency's budget shortfall; he noted that TriMet's board members noted at a recent meeting that "everything is on the table" to close the deficit.

TPAC Member Ms. Karen Buehrig requested the addition of a future agenda which would allow the committee to consider having a "floating" location for TPAC meetings.

Chair Gertler introduced Ms. Kim Ellis of Metro, who detailed the contents of a memo regarding amendments to the Regional Transportation Plan (RTP). The memo, written by Mr. Josh Naramore of Metro, explains the timeline for jurisdictions to give information and provide input on to the RTP as a result of jurisdictional updates to their respective Transportation System Plans. Any amendment must be approved by the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council; the memo is attached in the meeting packet.

3. CITIZEN COMMUNICATIONS TO TPAC ON NON-AGENDA ITEMS

There was none.

4. CONSIDERATION OF THE TPAC MINUTES FOR SEPTEMBER 23, 2011

Ms. Nancy Kraushaar asked that the minutes be amended to reflect the absence of Mr. Dave Williams, who was not in attendance.

MOTION: Ms. Tracy Ann Whalen moved, Ms. Karen Schilling seconded, to approve the TPAC minutes for September 23, 2011.

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

5. Regional Flexible Fund Allocation (RFFA) and ODOT Transportation Improvement Program (TIP) Process and Public Comment Update

Mr. Ted Leybold of Metro and Mr. Jeff Flowers of the Oregon Department of Transportation (ODOT) to discuss the Regional Flexible Fund Allocation and the MTIP improvement process. TPAC is asked to make a recommendation to JPACT regarding the projects chosen by

Mr. Leybold asked Mr. Dylan Rivera of Metro to discuss the feedback received during the public comment period. Mr. Rivera noted that they received roughly 300 comments online, 20-30 via email or fax; over a third of these comments regarded the City of Portland's plans for a bike share facility. The full report of public comments will be available in early November and will be provided to the committee before TPAC is asked to make a recommendation.

Mr. Flowers described his experiences at three different public outreach meetings, noting the success of the events and the value of providing maps to the public to encourage dialogue on the proposed projects. He directed the committee to save their questions on the merits and details of individual projects for the next TPAC meeting.

6. Comments on Proposed Revisions to the Oregon Highway Plan (OHP) and Amendments to the Transportation Planning Rule (TPR)

Chair Gertler introduced Mr. Tom Kloster of Metro to discuss the proposed revisions to the OHP and the TPR documents.

Mr. Kloster concluded his presentation by reminding the Committee of the upcoming Oregon Transportation Committee (OTC) hearing in Silverton on November 16 and the Department of Land Conservation and Development's (DLCD's) hearing in The Dalles on December 8-9; he encouraged committee members to consider attending and testifying on behalf of these amendments, and asking elected officials to write a letter from their respective jurisdictions.

Mr. Kloster introduced three documents to the committee; the first included a chart which documented the possible additional changed to TPR and OHP that TPAC could choose to specifically endorse; the second was a letter to be signed by the Metro Council and leaders of JPACT and the Metropolitan Policy Advisory Committee (MPAC) stating broad support at the metropolitan level for these changes, and the final was a letter written by Mr. Stephan Lashbrook of the City of Wilsonville highlighting their specific concerns with these changes as proposed. Mr. Kloster stated his preference was to find which of the items presented as possible changes could be recommended by the TPAC consensus, and to draft a letter which highlighted the items of committee consensus that reflected the interests of the region. All three documents are available in the meeting packet. The committee confirmed an overall concern to avoid "wordsmithing" by recommending inclusion of specific language and instead stated a desire to provide general recommendations for policy direction to the OTC and DLCD.

Ms. Smith recommended amendments to the letter, two of the changes reflected in the Revised Letter included in the meeting packet. These changes would amend the letter to specify encouragement of flexibility of policy focused toward multi-modal corridors and to reflect that the Southwest Corridor extends to "Tualatin/Sherwood." She also asked for a change not included in the revised letter, noting the importance of clarification that the Region's 2040 centers are not currently "safe harbors" for exemptions (as emphasized in point 2 of the TPR section of Mr. Kloster's proposed letter) but would provide a pathway to safe harbor since these designated zones can easily be translated into Multi-Modal Areas (MMAs).

MOTION: Mr. Andy Back moved, Mr. Satvinder Sandhu seconded, to move the letter as amended by Ms. Smith.

ACTION TAKEN: With all in favor and two abstentions (Smith, Zimmerman), the motion passed.

With the committee in agreement over the content of the letter, Mr. Kloster led the committee through the proposed options for additional language to the OHP document; the committee agreed to include these provisions in their letter of recommendation:

- Option 1, which would encourage ODOT to carry the revisions of the OHP through other relevant, implementing documents, specifically the Oregon Highway Design Manual. TPAC members expressed concern about the value of using the specific policy language recommended in Mr. Kloster's document, but agreed upon supporting the intent of the proposal.
- Option 2, which encourages ODOT to work towards reconciling the MMA proposal used in these proposed OHP amendments with ODOT's existing unique designated Special Transportation Areas (STAs).

The committee chose not to include Option 4, which would change "mainline speed" to "prevailing speed" in the document, due to the technical nature of the recommendation.

Mr. Kloster then led the committee discussion on the proposed options for amendments to the TPR document. The committee supported the inclusion of Option 1, which refined the definition of "written concurrence" for Multi-Modal Areas (MMAs) near interchanges to be made by ODOT Region Manager. TPAC members decided against specifically referencing amendments to Options 2, 3a-d, and 4 due to the high level of detail in these proposals, and did not request to include any of the comments included in Mr. Lashbrook's letter.

6.1 Climate Smart Communities Scenarios: Discussion of Preliminary Results and Findings

Chair Gertler introduced Ms. Kim Ellis and Ms. Nuin-Tara Key of Metro, who presented on the Climate Smart Communities (CSC) project and provided additional materials in advance of the forthcoming November TPAC meeting. This meeting was designed to provide an overview of the work conducted to date and initial findings in advance of the next meeting, in which the committee would delve into more specific details of the initial results. Ms. Ellis explained the history of the project, noting its roots in House Bill 2001 and Senate Bill 1059, which directed the Land Conservation and Development Commission to establish targets for greenhouse gas (GHG) emission reduction for each of Oregon's six metropolitan areas. The Climate Smart Communities project is currently in Phase 1, which does not entail making any specific decisions about preferred alternatives but rather understanding the choices available to meet the region's target. With the assistance of a technical work group, Metro staff tested broad-level, regional scenarios to learn the GHG emissions reduction potential of current plans and policies and what combinations of land use and transportation strategies (grouped in six policy levers) are needed to meet the state GHG targets. Ms. Ellis explained that while some strategies are new to the region, many of the strategies tested are already being implemented to realize the 2040 Growth

Concept and the aspirations of communities across the region. The research so far suggests that past land-use and transportation decisions and current plans and policies have provided a strong foundation for the region to meet the GHG reduction goals, but that more actions will be needed. Ms. Ellis explained continue to invest in livable communities and projects as called for in local plans and the Regional Transportation Plan. The early results from the CSC project suggest that while there is "no silver bullet" for particular policy mechanisms to reduce the region's GHG emissions, policies encouraging smart community design appear to have the largest impact on GHG emission reduction. Ms.Ellis encouraged members to review the factsheets included in the packet that summarize other research staff recently completed, and that is included in the Strategy Toolbox report. The final report summarizes local, national and international research related to land use and transportation strategies that can help reduce transportation-related GHG emissions and meet other policy objectives, and is intended to complement the scenarios analysis. Ms. Ellis and Ms. Key asked for feedback on their presentation noting that they anticipated sharing their concerns with various policymakers and technical staff across the region; committee discussion included:

- Questions regarding whether it was appropriate to specifically highlight that "community design" was the "most effective" at reducing emissions. Committee members noted that the CSC project would need information on the cost of policies relative to their benefits to truly determine which policy was the most "efficient" or "effective." Ms. Ellis explained that Phase 2 of the Climate Smart Communities, set to begin next year, will study the costs and potential cost savings of implementing these policies, and that this presentation is intended to provide a general overview of which policies have the largest GHG emissions reduction. Others noted that it is important to not overstate the value of "Community Design" policies; it negates the finding that there is "no silver bullet."
- Questions from the committee about how to effectively convey the message to elected officials and policymakers that continued increased action is necessary for the region to meet its emission reduction goals.
- The possibility of redesigning Slide 7. Committee members were confused as to the difference between the expected reduction of emissions due to technical innovation in the region's fleet to the expected reduction of these innovations plus the implementation of other policies evaluated in the scenarios.
- The daunting nature of achieving current plans and reaching these goals. TPAC members noted the fiscal difficulty of significantly expanding transit service from current levels and the political difficulty of increased daily parking fees across the region.
- A general note of appreciation for the tremendous amount of work and analysis present in these documents. TPAC staff unanimously lauded the project team for their important work.

Ms. Ellis encouraged TPAC members to continue to contact her with more questions, and closed by noting that she looked forward to discussing more of the tradeoffs and choices in the forthcoming November TPAC meeting. The presentation slides and documents provided by Ms. Ellis at the meeting are available in the meeting packet.

7. ADJOURN

Chair Kloster adjourned the meeting at 12:01 p.m.

Respectfully submitted,

Aaron Brown
Recording Secretary

ATTACHMENTS TO THE PUBLIC RECORD FOR OCTOBER 28, 2011
The following have been included as part of the official public record:

ITEM	DOCUMENT TYPE	DOC DATE	DOCUMENT DESCRIPTION	DOCUMENT NO.
1.0	Agenda	10/28/11	REVISED: 10/28/11 TPAC Agenda	102811t-01
2.0	Flyer	10/28/11	REVISED: 11/04/11 Dr. Lawrence Frank Presentation Information	102811t-02
2.0	Memo	10/27/11	Re: 2035 Regional Transportation Plan Project Amendment Requests	102811t-03
2.0	Memo	10/26/11	Re: Regional Flexible Fund Allocation process update	102811t-04
2.0	Summary	10/2011	Summarization of Public Input on the Draft 2012-2015 Statewide Transportation Improvement Program	102811t-05
5.0	Chart	10/26/11	TPAC Options for Additional Recommended Changes to Proposed Revisions to OOHP Policy 1F and TPR	102811t-06
5.0	Letter	11/15/11	REVISED: Letter to LCDC and OTC re: TPR and OHP edits	102811t-07
5.0	Letter	10/26/11	From: City of Wilsonville Re: Proposed Changes to the TPR and OHP	102811t-08
5.0	Draft	10/25/11	Public Review Draft: Amendments to TPR 0060	102811t-09
5.0	Draft	10/2011	OHP Policy 1F Proposed Revisions Public Review DRAFT	102811t-10
6.0	Memo	10/24/11	Climate Smart Communities Scenarios – Report on Preliminary Findings and Next Steps	102811t-11

6.0	Attachment	10/24/11	2010 Base Year and Alternative Scenarios Inputs	102811t-12
6.0	Attachment	10/24/11	Mixed-Use Development in Centers and Corridors	102811t-13
6.0	Attachment	10/24/11	Climate Smart Communities Scenarios TPAC/MTAC Work Group Members	102811t-14
6.0	Powerpoint	10/28/11	Climate Smart Communities Scenarios Project	102811t-15

DRAFT

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AMENDING THE 2010-13 METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM (MTIP) TO ADD THE OR217: ACTIVE TRAFFIC MANAGEMENT PROJECT AND REMOVE THE PROJECT DEVELOPMENT STUDY OF MODIFYING INTERCHANGE RAMPS ON HIGHWAY 217 BETWEEN BEAVERTON-HILLSDALE HIGHWAY AND ALLEN BOULEVARD	))))))	RESOLUTION NO. 11-XXXX Introduced by

WHEREAS, the Metropolitan Transportation Improvement Program (MTIP) prioritizes projects from the Regional Transportation Plan to receive transportation related funding; and

WHEREAS, the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council approved the 2010-13 MTIP on September 16, 2010; and

WHEREAS, JPACT and the Metro Council must approve any subsequent amendments to add new projects to the 2010-13 MTIP; and

WHEREAS, the Oregon Department of Transportation recently led a study of the operations of the Highway 217 Corridor in collaboration with other transportation agencies to prioritize system management projects to improve the safety and reliability and reduce congestion of motor vehicle traffic in the corridor; and

WHEREAS, variable message signs along the corridor to inform drivers of travel times and incidents on the highway and shoulder widening to allow space for stalled and emergency service vehicles off of through lanes were priorities identified in the study; and

WHEREAS, funding was identified from savings from previous ODOT administered projects on Highway 217, the 2012-13 Region 1 Operations funding program, and by changing the scope of an existing project on Highway 217 allocated regional flexible funds; and

WHEREAS, the Clean Air Act requires that federally funded transit and highway projects demonstrate conformity with the state's air quality goals; and

WHEREAS, the code of federal regulations 40 CFR 93.126 further exempts system management and operations projects from the Clean Air Act's requirements that federally funded transportation projects demonstrate conformity with the state's air quality goals; and

WHEREAS, funding is available for these projects within existing revenues, consistent with the MTIP financial plan; and

WHEREAS, JPACT approved this resolution December 8, 2011; now therefore

BE IT RESOLVED that the Metro Council hereby adopts the recommendation of JPACT to add the Highway 217 system management project to and remove the Highway 217: Beaverton-Hillsdale Hwy to Allen Boulevard interchange project from the 2010-13 MTIP.

ADOPTED by the Metro Council this ____ day of December 2011.

Tom Hughes, Council President

Approved as to Form:

Daniel B. Cooper, Metro Attorney

STAFF REPORT

FOR THE PURPOSE OF AMENDING THE 2010-13 METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM (MTIP) TO ADD THE OR217: ACTIVE TRAFFIC MANAGEMENT PROJECT AND REMOVE A PROJECT DEVELOPMENT STUDY OF MODIFYING INTERCHANGE RAMPS ON HIGHWAY 217 BETWEEN BEAVERTON-HILLSDALE HIGHWAY AND ALLEN BOULEVARD

Date: December 8, 2011 Prepared by: Ted Leybold, 503-797-1759
Jeff Flowers, 503-731-8235

BACKGROUND

The Oregon Department of Transportation received a federal appropriation to study the operations of the Highway 217 corridor and prioritize near-term projects that improve traffic safety and congestion. The *OR 217 Interchange Management Study* was recently completed and two of the priority projects identified were traveler information in the corridor and targeted widening of shoulders at specific high crash locations.

The first step in implementing traveler information in the corridor is providing 17 variable message signs on Highway 217 and connecting arterial roads that will provide information to drivers about congestion and incidents. Primary messages displayed will include travel times to common destinations and advanced warnings of congested conditions or incidents.

Targeted shoulder widening is intended to improve incident response and maintain system capacity during an incident. Increasing the shoulder width in key areas will allow emergency response vehicles to reach and clear incidents faster, and will also provide an area where an incident (such as a stalled vehicle or debris) can be moved to the shoulder. It also provides space for errant vehicles to avoid rear end collisions, thus reducing non-recurring delay (estimated to represent approximately 60% of the total delay on Highway 217) and reducing the number and cost associated with crashes.

In several locations along OR 217 the outside shoulder is less than a lane width (sometimes as narrow as three to four feet wide). When an incident occurs in one of these sections, the through capacity on the freeway is significantly reduced. In a two-lane section, a one-lane blockage actually results in a 65% reduction to capacity, not 50%. This may seem counterintuitive, but the additional lost capacity is due to vehicles slowing down in the adjacent lane as they approach and pass the incident (gawking effect). Based on a conservative estimate of restoring 30% of lost capacity during an incident and reducing 5% of crashes in the target shoulder widening areas, each segment of shoulder widening (on average) could save motorists up to $1 million over a five-year period.

The three sections identified for improvement are:
* Southbound from Scholls Ferry Rd to Greenburg Rd
* Northbound from Greenburg Rd to Scholls Ferry Rd
* Southbound from Denny Rd to Hall Blvd

Variable message signs and shoulder widening projects are exempt from the requirement that a regional air quality conformity determination be made by the code of federal regulations 40 CFR 93.126.

Funding for the project will come from several sources. First are remaing funds from the federal appropration to the corridor. ODOT is also dedicating funds from its Operations program reserve, and its Urban & Rural Intelligent Transporation System (ITS) reserve. Finally, Washington County has requested

transfer of funds from a regional flexible fund award for project development work to consider interchange ramp improvements on Highway 217 between Beaverton-Hillsdale Highway and Allen Boulevard. This action will remove this project development award from the MTIP and transfer its $373,000 of federal funding authority to the new OR217: Active Traffic Management project.

The Joint Policy Advisory Committee on Transportation and the Metro Council must approve amendments to the MTIP. This amendment will add this project to the 2010-13 MTIP. It will also combine funding from the 2012-13 ODOT Operations program ($1,110,000), the Urban & Rural ITS program ($2,500,000), and utilize funds from the Highway 217: Beaverton-Hillsdale to Allen Boulevard project development study and remove that project from the 2010-13 MTIP.

ANALYSIS/INFORMATION

1. **Known Opposition** None known at this time.

2. **Legal Antecedents** Amends the 2010-13 Metropolitan Transportation Improvement Program adopted by Metro Council Resolution 10-4186 on September 16, 2010 (For the Purpose of Approving the 2010-13 Metropolitan Transportation Improvement Program for the Portland Metropolitan Area).

3. **Anticipated Effects** Allows funding to become available for the new OR217 Active Traffic Management project. The project uses funding from the 2012-13 ODOT Operations reserve, the 2012-13 Urban & Rural ITS program, and utilizes funds from the Highway 217: Beaverton-Hillsdale to Allen Boulevard development study of interchange ramps on and removes that project from the 2010-2013 MTIP.

4. **Budget Impacts** None.

RECOMMENDED ACTION

Metro staff recommends the approval of Resolution No. 11-XXXX.

OR 217 Interchange Management Study
Project Update October 25, 2011

Beginning in the summer of 2009, the OR 217 Interchange Management Study has represented a new approach to transportation corridor planning; utilizing least cost planning strategies to quickly investigate a wide range of fundable projects capable of providing immediate improvement in travel safety, performance, and reliability. By April 2010, a menu of projects divided among the following four major system management categories was recommended for advancement:

- Targeted Shoulder Widening
- Traveler Information
- Variable Speed System
- Ramp Management and Associated Street Improvements

Since then, ODOT has proceeded to refine these recommended projects in preparation for near-term implementation, while delivery of other projects in the OR 217 corridor continues (see reverse side of page).

Implementing the OR 217 Interchange Management Study

In taking the *first step* toward implementing the menu of projects from the OR 217 Interchange Management Study, ODOT has developed a Traveler Information Signing Master Plan. This plan is a refinement of the traveler information and variable speed system project that provides information to drivers about congestion and incidents using a shared system of signs to realize a significant portion of the benefits at a substantially lower cost than two separate projects would require. Primary messages displayed will include travel times to common destinations and advanced warnings of congested conditions or incidents.

To complete this project ODOT is moving forward with detailed construction plans for 17 new message signs on OR 217 and the connecting arterials in 2011. By advancing funding from the 2014-15 STIP, in addition to existing Federal, State, and regional funding programmed for OR 217, we expect to begin construction of the signs in 2012.

In addition, ODOT is moving forward with three targeted shoulder widening projects. These projects would compliment the traveler information signing system by providing needed space to clear incidents from the roadway more quickly and provide more room for emergency responders to navigate during a call. The remaining recommended shoulder widening sections are currently unfunded, but could be advanced quickly if funding is secured.

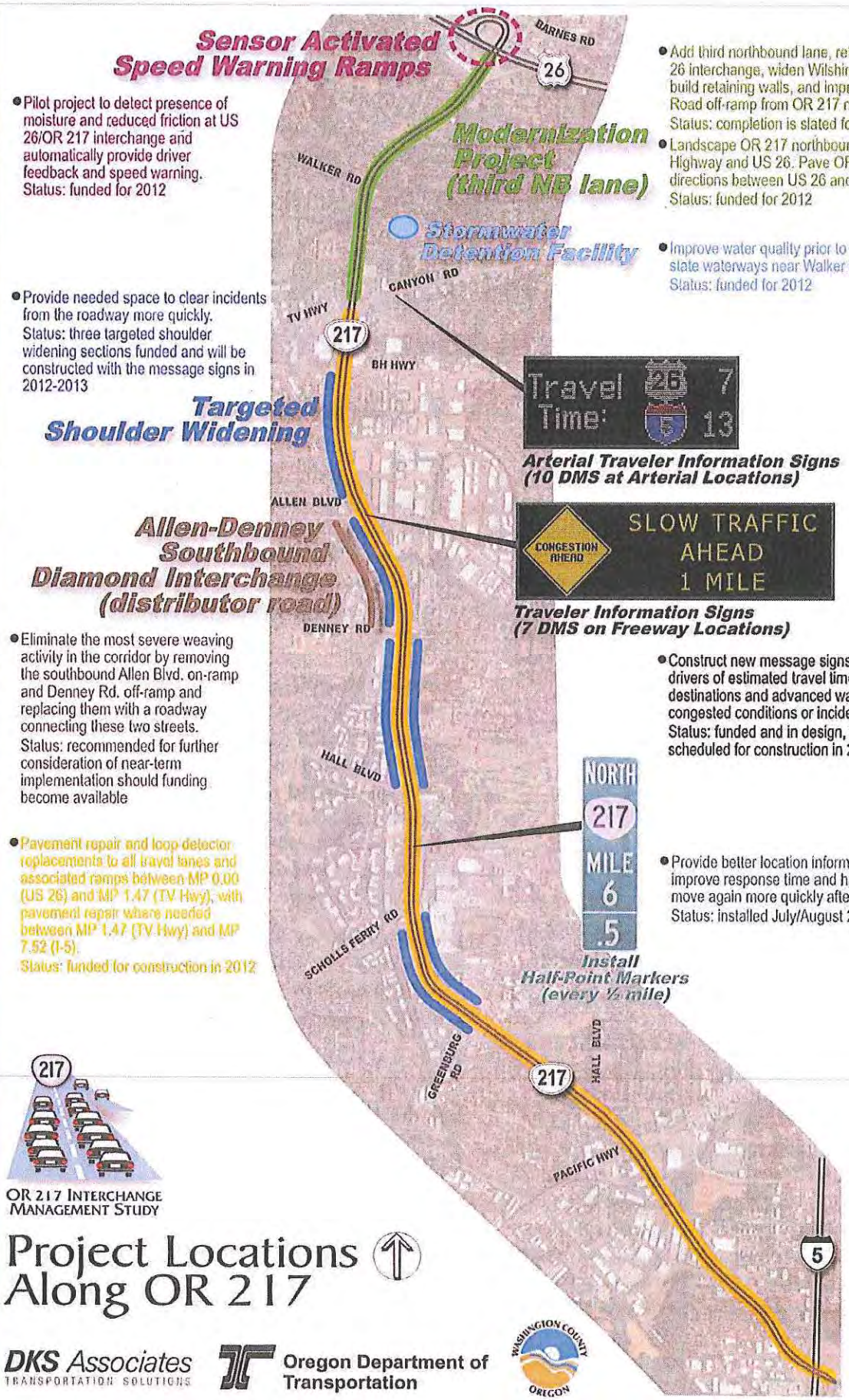
Further refinement of the Allen-Denney southbound distributor road is recommended for further consideration along with shoulder widening should funding become available.

Find Out More

To find out more, you can contact your local agency staff from the cities of Beaverton and Tigard, as well as Washington County, or Lili Boicourt at the Oregon Department of Transportation.

Lili Boicourt
ODOT Community Affairs
Lili.D.Boicourt@odot.state.or.us
(503) 731-8247

Oregon Department of Transportation



OR 217 Interchange Management Study

Project Locations Along OR 217

DKS Associates TRANSPORTATION SOLUTIONS

Oregon Department of Transportation

Washington County Oregon

CLICK HERE FOR FULL REPORT

www.oregon**metro.gov**

Public comment report

Transportation projects and programs nominated for 2014-15 regional flexible fund allocation

November 2011

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503-797-1700
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Metro | *Memo*

Date: November 18, 2011

To: TPAC and interested parties

From: Josh Naramore, Associate Transportation Planner

Re: UPDATE: Proposed 2035 Regional Transportation Plan Project Amendments

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Background

On October 21, the City of Hillsboro requested a Regional Transportation Plan (RTP) project amendment to be considered by JPACT and the Metro Council by January 2012. The City's request presents an opportunity for other local jurisdictions to request potential RTP project amendments that have been identified through planning processes completed since June 2010. Given the significant amount of staff time and resources both from Metro and affected local jurisdictions required for RTP amendments, Metro staff recommended proposed RTP amendments be bundled together periodically for consideration by JPACT and the Metro Council to be more efficient.

At the October 28 TPAC meeting, Metro staff made a request for any potential amendments to the 2035 RTP to be submitted by November 11. The following are the projects that have been identified for an RTP amendment to the financially constrained (FC) project list in early 2012:

- The City of Beaverton has requested to delete two projects from the RTP FC project list: #10632 Allen Blvd (Hwy 217-Murray Blvd) $41,600,000 and #10640 Nimbus Ave (Hall Blvd-Denney Rd) $21,500,000. During the final adoption of Beaverton's TSP after the RTP was adopted in June 2010, the City Council made changes to the project list and removed these two projects as priorities.

- The City of Portland has requested to add the Bikeshare project that is currently part of the Regional Flexible Funds allocation process to the FC RTP project list.

- The City of Hillsboro has requested to add the Cornelius Pass Rd. to US 26 Eastbound the FC RTP project list. ODOT has allocated Immediate Opportunity Funds to fund the addition of turn lanes at the interchange.

- Multnomah County has requested to add construction of the Sellwood Bridge Project to the FC RTP project list. The financially constrained RTP only included the PE and ROW phases. With the initiation of the local vehicle registration fee, the project has sufficient funding to add the construction phase to the FC RTP project list.

Timeline/Process

All of the above projects are currently being assessed for potential air quality conformity analysis and require a federal and state air quality consultation. Additionally, Metro staff is assessing whether a 30-day public comment period in December will be needed. Action on the amendments is anticipated at TPAC's January 6 meeting and JPACT action on January 12. Metro Council action is anticipated on January 19.

Future RTP Amendments

Because the typical RTP amendment process takes nearly 3 months to complete the required review and approval process, Metro staff is proposing two calls for potential RTP amendments each year. These will take place in April and again in October. Official calls for RTP amendments will take place at the April and October TPAC meetings. Between now and April, local governments are encouraged to contact Metro staff and submit the following information:

- A brief description of the desired timeline for the amendment.
- A description of the project's anticipated funding.
- A description of the project's scope and design details, if known, and a project location map.

Metro staff will keep a list of proposed amendments and will then prepare a packaged RTP amendment for consideration by TPAC, JPACT and the Metro Council in spring 2012, as needed. To submit potential RTP amendments or for more information, contact Josh Naramore at 503-797-1825 or joshua.naramore@oregon.metro.gov.

2014-15 RFFA – Draft conditions of approval

All projects

1. Project scopes will include what is written in their project narrative and project refinements submitted on November 7, 2011. Requests for adjustments to project scopes shall be made in writing to the MTIP Project Manager utilizing the amendment procedures adopted in the MTIP (2010-13 MTIP amendment procedures are currently defined in Section 1.7).

2. If any project is determined to be infeasible or completed without expending all eligible funding authority, any remaining funding for that project shall revert to the regional pool for the next flex fund allocation (i.e. 2016-17), to be distributed among the region.

3. All projects will meet street design guidelines as defined in the Creating Livable Streets guidebook (Metro; 2nd edition; June 2002 or subsequent edition), as determined by the MTIP Manager.

4. All projects will meet Metro signage and public notification requirements.

5. Projects need to include public outreach activities that address the unique outreach needs and opportunities of Environmental Justice and underserved communities.

West Fork of the Tonquin Trail-Cedar Creek Greenway Trail

1. Metro staff to review the project scope after the project development phase of this project. Should issues arise concerning ability to build the project as proposed in the application, the information learned during the project development phase would be used by Metro and the City of Sherwood to propose a modified project scope and phasing strategy that is mutually agreeable to both agencies.

Planning and Region-wide programs

1. Planning activities and region-wide programs funded with regional flexible funds must be implemented consistent with the Unified Planning Work Program (UPWP). Additionally, the following programs and planning activities are guided by and must be consistent with the following plans and legislation or as updated by any subsequent legislation (including most current UPWP) adopted by JPACT and the Metro Council directing program or plan activities:

    - Transit Oriented Development: TOD Strategic Plan
    - Regional Travel Options: RTO Strategic Plan
    - Corridor and Systems Planning: 2035 RTP – Mobility Corridor component, 2035 RTP – section 6.3.1, Metro Resolution No. 10-4119
    - Transportation System Management and Operations: 2035 RTP – TSMO plan component

- High Capacity Transit development: 2035 RTP - HCT system plan component, Metro Resolution No. 10-4118

Requests for adjustments to program activities shall be made in writing to the UPWP Project Manager utilizing the amendment procedures adopted in the UPWP. Requests for changes in regional flexible fund allocations to region-wide programs or planning shall be made in writing to the MTIP Project Manager utilizing the amendment procedures adopted in the MTIP.

2. JPACT and the Metro Council must act to provide further policy direction on the use of regional flexible funds for Metropolitan Mobility program activities prior to funds being obligated for expenditure.

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Memo*

Date: November 14, 2011
To: TPAC
From: Amy Rose, Ted Leybold
Subject: 2014-15 RFFA – project scope clarifications

Introduction

As the decision date approaches for the 2014-15 RFFA, Metro staff is working to ensure that the proposed projects meet the criteria developed by the RFF Task Force and meet community needs to the greatest degree possible. To achieve this, Metro staff identified issues for further clarification about the proposed projects and asked for a written explanation of how project applicants planned to respond. The issues were identified by reviewing the public comments and project narratives. The issues for clarification are provided below with a summary of the responses from project applicants. The full written responses are provided in Attachment 1 to this memo. TPAC may recommend additional conditions of project approval to address issues that remain unresolved.

Hillsboro Regional Center: Oak and Baseline

Issues for clarification

1. Provide a draft budget itemizing and describing the major tasks of the project with estimated costs and duration.

2. Clarify whether implementation of an ODOT Special Transportation Area (STA) is a task associated with this work and included in the project budget. If not, explain how the STA designation will be sought.

Applicant response

Applicant provided a draft scope and budget detailing the major tasks of project for which they have included the implementation of the STA as a task in the work plan.

West Fork of the Tonquin Trail-Cedar Creek Greenway Trail

Issues for clarification

1. Metro staff is concerned about available funding being adequate to complete the project as proposed and the effect segmentation may have on the safety of users crossing Highway 99-W. Please respond to the following prioritization proposal should funding be determined insufficient to build the entire project.

    a. Unless a direct crossing of 99-W is included, for safety reasons, trail segments shall be prioritized in the following three tiers, with latter tiers only permitted if prior tiers are included: 1) the two trail segments between 99-W/Old Town and Old Town/T-S Road; 2)

the connection to Meinecke Parkway (or a more direct route) including the reopening of the east crosswalk of 99-W; 3) segments north of 99-W. Tier 3 (segments north of 99-W) shall not proceed without completion of tiers 1 and 2 due to the potential safety risk of users crossing 99-W without a crosswalk.

Applicant response

Applicant responded to the identified issues with a prioritized list of segments to be built in the event that the project needs to be phased. They provided an explanation for why they have chosen not to prioritize the segments in the same order as recommended by Metro staff.

Hwy 8/Hwy 47 Intersection Improvements

No issues for clarification

East Portland Active Transportation to Transit Project

Issues for clarification

1. Describe how measurement of post-construction effectiveness will be conducted. Options include before/after user counts, transit stop on/off counts, safety data, bike locker usage, etc.

Applicant response

Applicant provided a response describing the ways in which effectiveness will be gauged. The main components of the approach are:

- Expansion of Portland's annual bicycle counts
- On-off transit boardings, particularly at those locations where improvements will facilitate pedestrian access to bus stops
- Bicycle parking usage at targeted light rail parking facilities

Portland Bike Sharing Project

Issues for clarification

1. Serving traditionally underserved populations and providing access to essential services to those populations are key prioritization criteria for these funds and was the subject of several comments on this project. Please further describe how the project will be developed to address benefits and accessibility barriers to underserved populations through such elements as:
    a. Partnering with social service agencies for locating bicycles at residential and service locations with concentrations of underserved populations or clients.
    b. Partnering with service agencies to facilitate access to bikes at free/reduced rates.
    c. Alternatives to full-cost memberships.
    d. Apprenticeship or work force development program.

Applicant response

Applicant provided a response detailing the ways in which the project will address equity concerns through partnerships with local agencies, thoughtful placement of kiosks for use by low-income persons and pursuit ways to help make the service affordable.

SE Foster Road Safety Enhancement and Streetscape Project (50th-84th)

Issues for clarification

1. Clarify whether new crossing treatments of Foster at Holgate are a potential option for "Heart of Foster" segment of project.

2. Describe any communication with ODOT staff regarding project elements described at intersection of Foster and 82nd Avenue.

Applicant response

Applicant provided a response clarifying where new treatments will be placed and where existing treatments have potential for enhancements and the work done to date to coordinate with ODOT on enhancements at the intersection of Foster and 82nd.

North Burgard-Lombard ("Around the Horn") Project: North Time Oil Road-Burgard

No issues for clarification.

Arata Road Improvements

Issues for clarification

1. Clarify intention to conduct bike and pedestrian safety education campaign in association with opening of project.

2. Clarify intention to measure project effectiveness by conducting before and after pedestrian and bicycle counts, safety analysis and/or user experience survey.

Applicant response

Applicant stated their intent to organize a bicycle and pedestrian campaign with an event and production of written materials to promote the improvements post construction. They will also continue the work already begun on measuring effectiveness by conducting before and after counts.

Sandy Blvd Improvements: 230th – 238th Dr

No issues for clarification.

17th Avenue Multi-use Trail

Issues for clarification

1. Budget for wayfinding signage to Trolly Trail, Springwater Trail and Tacoma LRT station, Waterfront Park, Milwaukie Business District, Milwaukie transit center, Lake Road LRT station, most relevant bike route east to Clackamas, etc. consistent with The Intertwine wayfinding guidelines.

2. Inclusion of gateway style signage identifying project partners. May be combined with wayfinding elements.

Applicant response

Applicant responded with an explanation of intent to include wayfinding and gateway style signage in the project area.

Clackamas County Regional Freight ITS Project

No issues for clarification.

WORK PLAN – DOWNTOWN HILLSBORO ACCESSIBILITY PROJECT

Great streets rarely happen by accident; they require vision and knowledge to make them happen.

In Hillsboro, the Baseline/Oak couplet (Oregon Highway 8) has long had some negative impacts on the City. The couplet is a deterrent to business investment due to the poor condition of the sidewalk zone, the rapidly-moving traffic, and the lack of on-street parking (except on one side of Oak). The streets create a barrier between the low-income, ethnically diverse neighborhood to the south, and the City's core (including important government and commercial functions) lying to the north. Both streets are undesirable to walk or bike along and difficult to walk or bike across. Bus stops are difficult for pedestrians to access. Moreover, the couplet fails to direct people driving and others to the nearby Main Street business district.

The City is considering several alternatives to improve conditions along Oak and Baseline. One alternative is the concept of a "road diet" to reduce the number of vehicle lanes on stretches of Baseline and Oak and repurpose that right-of-way to other uses such as on-street parking, pedestrian curb extensions, enhanced street "furniture" including lighting and trees, way-finding elements, consideration for bike facilities, and other active transportation safety features, while providing sufficient mobility for freight and people driving. The current study, funded by Metro's Regional Flexible Fund program, is intended to evaluate the road diet concept as part of the City's broader study of alternatives.

As part of the Metro-funded work, the City of Hillsboro intends to work with its partner agencies (including ODOT, Washington County, TriMet, and Metro), the Greater Hillsboro Chamber of Commerce, the Hillsboro Downtown Association, adjoining cities (Cornelius and Forest Grove) as well as affected businesses, property owners, and residents to consider whether a road diet is desirable to the community and if so, develop a plan for how it could best be implemented in this location. We anticipate that the work plan outlined below will cost between $250,000 to $300,000 and take approximately one year to complete. The Work Plan for this effort is described below.

Task 1 – City/Metro Staff/Consultant Coordination and Project Management

- To achieve efficient communication and delivery of services

Subtasks

- Facilitation of kick-off meeting
- Coordination of meeting schedule throughout project
- Preparation of meeting agendas and notes

City Subtasks & Deliverables

- Provide meeting announcements and locations
- Approve meeting agendas
- Attendance of required personnel at project meetings
- Provide consultant with documentation of City concerns and requests

Consultant Deliverables

- Meeting schedule, agendas and notes
- Up to six meetings over course of project

Schedule

Ongoing throughout project

Subtask 1.1 – Scope Refinement

Objective

- Focus scope of services to activities that will contribute to a successful project outcome

Subtasks

- Review and revise project objectives
- Refine work tasks, products and schedule as needed

Consultant Deliverable

- Final Scope of work

Schedule
Weeks 3-5

Task 2 – Community, Property Owner and Stakeholder Outreach

Objective

- Engage community on potential benefits/impacts and applications of road diet projects
- To verify existing plans and concerns of key participants
- Consultant to work with City staff to conduct interviews with a diverse set of stakeholders such as ODOT, County, Tri-Met, property owners, Chamber of Commerce, Hillsboro Downtown Association, area merchants and local citizens on the road diet concept.

Subtasks

- Review work completed to date by AECOM, City, and Metro
- Review project goals and scope of effort with property owners and stakeholders
- Contact and meet with property owners, merchants, residents and stakeholders (up to 4 community workshops and 40 stakeholder interviews) to identify issues of concern and desired outcomes for the road diet project
- Identify concerns of key participants
- Summarize results of meetings in writing.

City Subtasks and Deliverables

- Attend meetings/interviews as required

Consultant Deliverables

- 3 to 4 Community workshops on road diet projects and as potentially applied in Hillsboro
- Up to 40 stakeholder interviews
- Summary memorandum of Stakeholder Interests and Concerns
- Develop draft project design objectives

Task 3- Data Collection and Analysis

Objective
Identify appropriate planning and design objectives

Subtasks

- Consultant will work with City and Metro staff to develop and identify criteria and supporting data analysis to evaluate design options and no-build alternative. Criteria should be comprehensive in its assessment of community values and objectives and address the regional flexible funds active transportation program intent and prioritization criteria.
- City to compile all relevant information about the selected study area and provide to the consultant. The consultant will use this information to prepare base maps of the area. The AECOM work will be shared with the consultant to inform the process.
- Metro will provide regional flexible fund description of active transportation program and prioritization criteria and some relevant data regarding these criteria.
- Motor vehicle traffic data will be analyzed to determine the performance of the road diet. Collected data such as ADT, speed, accessibility, delay and emissions before and after the road redesign will be analyzed using micro-simulation software. This data is being produced today.
- Active transportation data will be reviewed to establish the performance of Oak and Baseline for people walking, biking, and accessing transit. Collected data will include bus stop locations and usage, crosswalk location (improved and unimproved), crossing delay, vehicle yield compliance, and pedestrian and bicyclist counts.
- Description of tasks in EA and PE phases that will need to be addressed to implement a preferred road diet design (design exceptions, TPR approvals, permits, etc.) and the policy direction and data analysis necessary to implement those tasks.

Task 4- Task Force Formation & Monthly Meetings

Objective

- Compile list of names and representatives from the impacted and affected agencies and respective private property owners in the study area
- Form City Council approved Task Force
- Assemble Task Force and technical Advisory Committee (TAC) and meet regularly
- Establish program of activities and task force involvement to support decision-making process
- Monthly meetings (6 total)

City Deliverables

- Provide consultant with lists of final task force members and City contacts
- Facilitate approval of Task Force through City Council
- Approve Task Force Activities and Involvement Plan

Consultant Deliverables

- Task Force Activities and Involvement Plan
- Preparation for and attendance at up to 6 Task force Meetings

Schedule
Weeks 4-28

Task 5 – Land Use and Urban Design Analysis

Objective

- Identify development opportunities and constraints of blocks along Oak and Baseline
- Identify land use and transportation strategies to maximize likelihood of economic development consistent with City land use objectives, particularly in support of the City's goals to attract more private development in support of the goals and objectives of the Downtown Hillsboro Urban Renewal Plan

Task 5 – Design Alternatives

Develop up to six road diet design alternatives and No-build or baseline project data with consultant, all partner agency staff and community partners.

City Deliverables

- Provide consultant with input and feedback on design alternatives

Consultant Deliverables

- After initial public outreach, develop draft project design objectives.
- Up to six road diet design alternatives that respond to community input, project design objectives, best design practices, prioritization criteria and local conditions.
- Concept-level cost estimates of each alternative
- No-build or baseline conditions for comparison to design alternatives.
- Analysis of design alternatives and baseline relative to prioritization criteria.

Task 6 – Selection of Preferred Alternative

Objective

- Select a preferred design alternative and obtain necessary state approvals.

City Deliverables

- Scheduling and lead staffing of selection process for city commissions and Council
- Facilitate recommendation of Task Force through City Council

Consultant Deliverables

- Facilitation of Task Force recommendation through the project Task Force with summary memorandum describing recommendation process and outcome.
- Submit materials to support state designation as a Special Transportation Area (STA)
- Consult with Statewide Freight Committee to identify cross-section(s) that are compatible with freight movement

Task 7 – Concept Plans and Final Report

Objective

- Identify the strategy and draft scope of work to implement the preferred design alternative through the Environmental Assessment and Preliminary Engineering phase of the project.

Consultant Deliverables

- Concept-level (15%) design plans for the preferred alternative
- Final report documenting prior work, analysis, process, and scope of work for the next phase of the project (EA/PE)

The concept plans will include proposed plans, cross-sections, locations of pedestrian and bicyclist facilities and amenities, transit facilities and amenities, and concept-level signal modifications.

Final report will describe the preferred concept for improving the Baseline Oak corridor and scope of work for implementation (permits, plan amendments, legal actions, etc.).

The report will be prepared in traditional published format and in an electronic format as well. Completed final report in both formats will be provided to Metro.

City of Sherwood
Oregon

Home of the Tualatin River National Wildlife Refuge

City of Sherwood
22560 SW Pine St.
Sherwood, OR 97140
Tel 503-625-5522
Fax 503-625-5524
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2009 Top Ten Selection

2007 18th Best Place to Live

November 7, 2011

Metro
ATTN: Ted Leybold
MTIP Manager
600 NE Grand Avenue
Portland, OR 97232

RE: RFFA Response to Comments on the West for of the Tonquin Trail-Cedar Creek Greenway Trail Project

Dear Ted,

Thank you for the opportunity to respond to the comments received about the Cedar Creek Greenway Trail during the public comment period. In general, the response from the residents and community leaders appears positive about the prospect of connecting the City together with a multimodal trail. The comments received thus far will aid in gauging the importance of the design components and other trail priorities and amenities as we move forward with the planning for this project.

We would like to respond to the comment received from Metro regarding segment prioritization should adequate funding not be available to complete the project in its entirety as proposed. First and foremost, we trust that we proposed a project and corresponding budget that can be constructed as described and there will not be a need to scale back the scope. That said, Metro staff recommended that the first priority should be the connection from Old Town to 99W and then Old Town to SW Tualatin-Sherwood Road. First to clarify, the City proposes to extend the trail from Old Town to SW Murdock Road rather than SW Tualatin-Sherwood Road. Initially, that extension was considered, but with the new multimodal pathway adjacent to SW Langer Farms Parkway (formerly SW Adams Avenue), there will be a direct route from Old Town to SW Tualatin-Sherwood Road, making an additional pathway along SW Oregon from SW Murdock Road to SW Tualatin-Sherwood Road less of a priority and not part of this particular grant funding application.

As a result of the Cedar Creek Feasibility Study and the public input received, the City would contend that should staging the project be necessary, we would respectfully prefer to prioritize the segments in the following manner:
1) Old Town to 99W- improvements along 99W and the crossing at SW Meinecke/99W
2) 99W to SW Edy Road
3) Crossing on SW Edy Road along the Cedar Creek Greenway to SW Roy Rogers
4) SW Old Town along SW Oregon to SW Murdock Road

Although the City has recognized the entire route as integral for improving multimodal transportation options within the City, creating a better connection across Highway 99W has been identified as a top priority by our elected officials and community. As you are aware, Highway 99W poses a significant travel barrier for all forms of multimodal travel within and through Sherwood. Signalized intersections are extremely limited along the corridor and having pedestrians cross the highway can be a

dangerous undertaking. Creating both segments on either side of Highway99W along with the improvements adjacent to the highway, as well as the intersection itself will allow this connection to occur in a timely manner.

We have begun work with the Oregon Department of Transportation on evaluating the improvements to the "at grade" crossing at the SW Meinecke and the Highway 99W intersection. These upgrades will likely include improved access and safety along 99W from the trail to the Meinecke intersection, improved signalization, adding an additional pedestrian crossing at the other side of the intersection and creation of pedestrian islands within the intersections. During the course of the Cedar Creek Feasibility Study, this crossing was evaluated as an interim solution to improve the connection at the highway rather than the "final" solution of a direct route between the segments of the Cedar Creek Trail. The City is confident that by creating the trail segments on either side of Highway 99W, new grant opportunities could become available to enable a direct trail connection under or over Highway 99W in the not so distant future.

Other reasons for this phasing include:

- Less costly permitting process if done in one phase within this environmentally constrained area
- More local amenities and services including schools located along these sections of the trail
- Connection to existing neighborhood feeder trails
- Connection to the Tualatin River National Wildlife Refuge

The Old Town to SW Murdock Road trail segment serves a critical connection to our future industrial area, as well as serving as the connection to SW Tonquin Road and the Regional Tonquin Trail; however we have envisioned this as a lower priority connection should funds fall short through this grant. Most of the industrial area along this segment is still undeveloped and this segment will ultimately be the least challenging to construct because it does not include significant natural resource areas. We believe that other financing opportunities are available should funding not be available with this grant. Specifically, although there are no sidewalks along portions of SW Oregon, all of the properties north of the roadway are vacant; therefore construction of the pathway could be conditioned and funded as part of any new development project. Also, any roadway improvement project to SW Oregon Street could include construction of a multimodal trail.

The City looks forward to working with Metro on this project and appreciates the thoughtful consideration given to this proposal.

Sincerely,

Michelle Miller, AICP
Associate Planner
City of Sherwood
(503) 625-4242
millerm@sherwoodoregon.gov

CITY OF PORTLAND BUREAU OF TRANSPORTATION

Sam Adams
Mayor

Tom Miller
Director

November 7, 2011

Ted Leybold, MTIP Manager
Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Dear Ted,

This is in response to your letter of 10/21/11 presenting issues for further clarification on the city's Regional Flexible Fund application for the East Portland Active Transportation to Transit project. I appreciated receiving the overall comments and it was gratifying to see such enthusiasm for the project. The one issue you identified for further clarification is:

1. Describe how measurement of post-construction effectiveness will be conducted. Options include before/after user counts, transit stop on/off counts, safety data, bike locker usage, etc.

We intend to use multiple strategies to measure the effectiveness of the completed project. They include:

- Expansion of Portland's annual bicycle counts
- On-off transit boardings, particularly at those locations where improvements will facilitate pedestrian access to bus stops
- Bicycle parking usage at targeted light rail parking facilities

In addition to these efforts, the Smart Trips-style encouragement program that is written into the grant request will include a before- and after- travel behavior survey. This instrument is a standard element of the city's Smart Trips programs.

Of course, the longer-term change in behavior will also be monitored, perhaps most effectively through the annual American Community Survey.

While we certainly will monitor crash reports for both bicycles and pedestrians, interpreting them typically requires a long-term perspective to understand if patterns are emerging.

Please let me know if any other issues arise with this proposed project. We look forward to getting to work on this as soon as possible!

Best,

Roger Geller, Bicycle Coordinator
City of Portland

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CITY OF PORTLAND BUREAU OF TRANSPORTATION

Sam Adams
Mayor

Tom Miller
Director

Date: November 7, 2011
To: Ted Leybold, Metro
From: Dan Bower
Re: Portland Bike Share RFF Proposal

Background
The purpose of this memo is to provide a response to the comments Metro received regarding Portland's bike share proposal during the public comment phase for the Regional Flexible Funds allocation.

Over 80% of the 118 the comments submitted about to the proposed bike share program were positive, many were extremely positive; it's clear that residents of Portland are eager for this service. The residents that have experienced bike share in other cities provided useful feedback on how to improve the system, and further made the case that bike share can be transformational for this region, particularly for underserved populations.

When evaluating the proposed bike share project, it is important to understand the vision for bike share as it has been articulated by Mayor Adams. Bike sharing is not another bike project; it's an entirely new transportation option that the City hopes to provide to every citizen, visitor or commuter in Portland. The Federal funds dedicated to the project through the Regional Flexible Funds allocation process and significant private match will fund the first phase of citywide bike share program in Portland. Like building a regional light rail system, the City feels it is extremely important that the first phase of bike share be successful to ensure the program can ultimately serve all users.

Based on the experience of the dozens of North American cities, we are proposing to launch bike share in the parts of Portland that make the most sense in terms of ridership and public benefit, including accessibility for underserved residents. Consistent with this approach, the City is committed to using bike share as a means for furthering the region's goals for providing affordable transportation options to all Portlanders.

PBOT welcomes the opportunity to better integrate equity into the project and Metro's guidance to do so. Throughout the project PBOT has met with community groups, including several that provided comments to Metro. Community partners have strengthened the Portland Bike Share Project through their insights. Before specifically addressing Metro's questions specifically, PBOT's original RFF Narrative application provides context on PBOT's existing commitments to incorporating equity into the Portland Bike Share project:

- Improving quality of life by reducing vehicle emissions. Portland's highest concentration of low income residents are breathing some of the region's most toxic air. Emissions from motor vehicles in the project area are 52 times the ambient benchmarks set by the Department of Environment Quality. By significantly reducing automobile trips, Portland Bike Share will provide Central City residents with cleaner air.
- Exploring and incentiving partnerships with community service providers to pilot a membership program for low income Portlanders without credit or debit card access. Staff is proposing a program that no other US bike sharing system has implemented.
- Locating service in Portland's lowest income neighborhoods. Census and American Community Survey data shows that the bike share service area includes the densest concentration of low income residents in the region.

Bike sharing will extend the transit network, it will provide a twenty-four hour seamless mobility option between destinations across town and it will do so in a cost-effective manner for both the City and the system users. On average, an annual membership to a bike share system in North America is less than the cost of a *monthly* transit pass, and it typically provides *free* access to the system for trip less than 30 minutes (three miles or less, on average). The City and its partners are also exploring technology and pricing structures that make transfers between transportation systems as simple and affordable as possible for all users.

These measures provide a strong base for launching a successful bike share system with respect to ridership and financial responsibility, while providing equitable and affordable access to all users. Staff have had detailed conversations with every major city in North America with bike share; the efforts detailed in the project narrative exceed any measures taken to date by other cities. Many cities have learned valuable lessons about station location, price, and access after launching bike share; our intention is to incorporate those lessons by addressing issues in a pro-active manner.

Project Process

Also of importance, bike sharing will be successful in Portland to the extent that the private sector embraces it. Bike sharing will be a public-private partnership at the outset; a vendor and operator will be selected through a traditional purchasing process. Due to its size, Portland is not in a position to pursue a system with zero public funding; however, the inclusion of public funding enhances our ability to influence the project at the outset to meet certain goals, including equity. It is the role of Metro and the City to articulate a vision for the bike share system and to select a vendor and operator that best embodies that vision to ensure all Portlanders have access to the economic and mobility benefits provided by a bike share system.

Upon receiving the public comments from Metro, PBOT staff reached out to several groups and had very productive conversations with the community.

What we heard in these conversations is the importance of providing for economic opportunities for low income and minority groups at the outset of the bike share project. Others suggested bike share can provide an affordable mobility option for all Portlanders if properly managed. The City shares those ideals and we look forward to the opportunity to work with the community on furthering them.

Response to Metro

Metro provided the following guidance for providing further detail on the bike share project:

> *Please further describe how the project will be developed to address benefits and accessibility barriers to underserved populations through such elements as:*
>
> - *Partnering with social service agencies for locating bicycles at residential and service locations with concentrations of underserved population or clients.*
> - *Partner with service agencies to facilitate access to bike at free or reduced rates*
> - *Alternatives to full-cost membership*
> - *Apprenticeship or work force development programs*

Understanding the process described above, all of these measures are appropriate for inclusion in the City's purchasing process. The RFP process allows the City and its partners to articulate a vision for bike share in Portland, including the desire and potentially incentives for partnerships, station locations, and memberships. The City is working to identify specific equity goals, consistent with goals for ridership and financial stability. Further equity criteria, which are a required element of all City purchasing processes, could include incentives (ie, points on the RFP scoring) to include partnerships with specific communities or service agencies, or data driven analysis of station locations that include equity as equal factor along with origin and destination pairs.

Bike share, like all projects in Portland, will enjoy a healthy public engagement process wherein the public can provide insight in to station locations and suggest innovative partnerships. Many other North American bike share cities have a website dedicated to suggesting station locations as well. Identifying locations for bike share stations in Portland will necessarily be a partnership between the City of Portland, non-profits, service agencies, schools, and the private sector.

Thank you for the opportunity to further comment on these matters, we look forward to continuing this process as the Portland Bike Share project evolves.

CITY OF PORTLAND BUREAU OF TRANSPORTATION

Sam Adams
Mayor

Tom Miller
Director

Date: November 7, 2011

To: Ted Leybold, Metro MTIP Manager

From: April Bertelsen, Pedestrian Planning Coordinator

RE: City of Portland RFF Proposal for SE Foster Road Safety Enhancement and Streetscape Project (50^{th}-84^{th})

The purpose of this memo is to provide further clarification about this project proposal as requested by Metro in your letter to me on October 12, 2011. Below you will find answers to the two questions posed in your letter.

1. **Clarify whether new crossing treatments of Foster at Holgate are a potential option for the "Heart of Foster" segment of the project.**

There is an existing traffic signal at the intersection of SE Foster Rd, SE Holgate and 63^{rd} Ave. There is an existing pedestrian activated signal one block away at SE Foster and 64^{th} Ave. The *Foster Road Transportation and Streetscape Plan (2003)* does not propose or prioritize additional crossing treatments at the signalized intersection of SE Foster Rd, SE Holgate and 63^{rd} Ave.

However, during the project design phase, our traffic engineers will look at additional treatments at this intersection that may reduce conflicts between pedestrians and motor vehicles to enhance safety and access for crossing pedestrians. For example, they will evaluate and consider adding a pedestrian leading phase on legs of the intersection where data shows there to be a conflict between turning vehicles and crossing pedestrians. We will also provide any necessary upgrades to the ADA curb ramps, pedestrian signal heads and accessible push buttons at this intersection

The 2003 plan does identify the intersection as the entry to the Heart of Foster. Plan recommendations for this intersection include vertical identity features or banners, ornamental lighting and street trees. Street trees would be selected and placed to ensure businesses remain visible from the street.

The RFF Proposal for SE Foster Road Safety Enhancement and Streetscape Project (50^{th}-84^{th}) does include ornamental lighting and street trees in the Heart of Foster, including at the intersection. The proposal includes a budget for Art based on the City of Portland Percent For Art policy. This Percent for Art allocation applies to eligible funds only. It is currently envisioned that the art budget will be applied to creating vertical identity features at locations identified in the 2003 Plan. These vertical identity features may be located at the intersection of SE Foster Rd, Holgate and 63^{rd} Ave to mark the entry into the Heart of Foster. This element will ultimately be decided during the project with further public input.

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The RFF Proposal for SE Foster Road Safety Enhancement and Streetscape Project (50th-84th) does include new crossing treatments at two intersections in the vicinity of the intersection of SE Foster Rd, Holgate and 63rd Ave. These enhanced crossings will provide alternative crossing opportunities. The existing signal are 64th Ave will also be upgraded. The new locations include SE 61st Ave and SE 65th Ave. Both of these locations would be improved with Rectangular Rapid Flashing Beacons, median refuge islands, signage and pavement markings, as described in the project nomination narrative submitted to Metro.

2. **Describe any communication with ODOT-staff regarding project elements described at the intersection of Foster and 82nd Avenue.**

PBOT staff discussed this proposal during two separate meetings with ODOT staff in August, 2011, first with planning staff, second with engineering staff. Excerpts from the *Foster Road Transportation and Streetscape Plan (2003)* focused on the Crossroads District at 82nd Ave were shared with ODOT in early August for their advanced review. A draft of the RFF project nomination narrative was shared with ODOT staff in late August.

PBOT and ODOT staff met on August 31, 2011 to discuss Crossroads District at 82nd Ave in more depth. This meeting was attended by myself and Peter Koonce, Division Manager for the PBOT Street Signals and Street Lighting Division, Shellie Romero – ODOT, Kate Freitag – ODOT Traffic Engineer, and an additional ODOT staff member.

At this meeting, ODOT staff indicated that the proposed signal improvements seem straight forward. They are similar to improvements that have been installed on 82nd Ave at SE Powell Blvd. ODOT expressed concern about additional new vertical elements near the roadway along SE 82nd Ave, including the gateway marker elements. Locating the vertical gateway markers on the island near the northeast corner were of particular concern. There was a suggestion from ODOT to consider possibly hanging art off of the signal pole if it has to be on the island. The further these elements were from the roadway and clear zone, the better.

Region 1 staff provided "conceptual" approval. Foundations may need special approval. Full approval cannot be provided until such time that detailed plans are developed and submitted to ODOT for review.

ODOT staff requested a meeting with PBOT and RACC first, prior to initiation of a public process for any art that may be installed near 82nd Ave. ODOT would like to be involved early to help define the parameters for considering, siting and designing art at 82nd Ave.

PBOT will take this feedback under advisement as this project proceeds into further planning and design. PBOT will look to locate art and vertical gateway markers first at other locations within the project before looking to 82nd Ave.

Arata Road

Issues for further clarification

Please provide further refinement or clarification to the following issues:

1. Clarify intention to conduct bike and pedestrian safety education campaign in association with opening of project.

Multnomah County will conduct bike and pedestrian safety education campaigns in association with opening of the project. Multnomah County will work with the County's Community Health Services Program and organizations such as Trauma Nurses Talk Tough, the Reynolds School District, the Multnomah County Bicycle/Pedestrian Citizen Advisory Association and the Bicycle Transportation Alliance to design elements of an outreach program for implementation occur prior to, during and post construction. Staff will ensure the outreach is multi-lingual to serve the high number of non-English speakers in the area.

We will develop handouts on bicycle and pedestrian laws and safety practices, and organize an event that will be held in the neighborhood, likely adjacent within the County's right-of-way adjacent to the proposed multi-use path. This event may include demonstrations on bike and pedestrian safety, a bike rodeo and potentially a subsidized bike helmet distribution program.

2. Clarify intention to measure project effectiveness by conducting before and after pedestrian and bicycle counts, safety analysis and/or user experience survey.

In order to measure project effectiveness, Multnomah County will conduct before and after pedestrian and bicycle counts, safety analysis and /or user experience surveys for the project. Outreach/education/engagement elements have been occurring and will continue to occur as the project moves forward. The County conducted its first pedestrian and bicycling field counts on Arata Road and the multi-use path to Halsey St. in October, 2011, and will continue field surveys for two years after the facilities are functional. We will also collect before and after motor vehicle traffic counts on Arata Road.

Staff will involve the County Bicycle and Pedestrian Committee in developing survey methodology and conducting the counts. In addition, staff will gather information on user experience before and after the project is constructed through survey forms. The user survey will aim to gather information on demographic factors of the area, travel patterns, destinations, modes of travel, barriers to access, and safety. Information from the survey will be compiled and maintained by Multnomah County's Transportation Planning Program, and will be used to inform the bike and pedestrian safety education campaign for with opening of the new facilities.

November 4, 2011

Amy Rose
Metro
600 NE Grand Ave
Portland OR 97232

Dear Amy:

In Metro's October 21, 2011 letter to Milwaukie you requested clarification of two issues related to the 17th Avenue Bike /Ped Path. I have addressed the issues you raised below.

1) **Budget for wayfinding signage to Trolley Trail, Springwater Trail and Tacoma LRT station, Waterfront Park, Milwaukie Business District, Milwaukie transit center, Lake Road LRT station, most relevant bike route east to Clackamas, etc, consistent with The Intertwine wayfinding guidelines**.

   In 2009, the City adopted the Milwaukie Bicycle Wayfinding Signage Plan. The plan can be found on the City's web site at www.ci.milwaukie.or.us on the Planning Department page. As part of this plan, we have already installed many wayfinding signs along streets and trails in the City. We plan to use the sign specifications in this plan to augment existing signage along 17th Avenue as part of the 17th Avenue project.

   The 17th Avenue project construction will include the production and installation of signage at strategic locations directing walkers and bikers to, among other important areas, the Trolley Trail, the Springwater Trail, the Tacoma LRT station, Milwaukie Riverfront Park, Milwaukie's downtown business district, the Lake Road LRT station, and Monroe Blvd, the most direct bike route east to Clackamas. Based on our most recent experience, each of the 30" x 24" signs should cost about $100.00 to produce and install. We expect that no more than 5 signs will be installed, resulting in a final cost of about $500. The project will allocate about $1,000 toward wayfinding signage to cover any unexpected expenses or additional signs that we might want to install.

   The City will ensure that all signage used in this plan is consistent with The Intertwine wayfinding guidelines as soon as they are formalized.

2) **Inclusion of gateway style signage identifying project partners. May be combined with wayfinding elements.**

The City will install gateway signs at either end of the 17th Avenue trail, boasting Metro, City and Park District logos. These signs will draw attention to the trail and its funding source while blending in with the surrounding traffic signage. One sign will be placed near the intersection of 17th and 99E and another will be placed near Ochoco and 17th. The cost of these signs will be covered by the $1,000 allocated for wayfinding signage.

Please contact me at 503-786-7508 if you need additional detail on the signage plan or associated costs.

Sincerely,

JoAnn Herrigel

4-81; McLoughlin Blvd. at SE Harrison St. (NB)

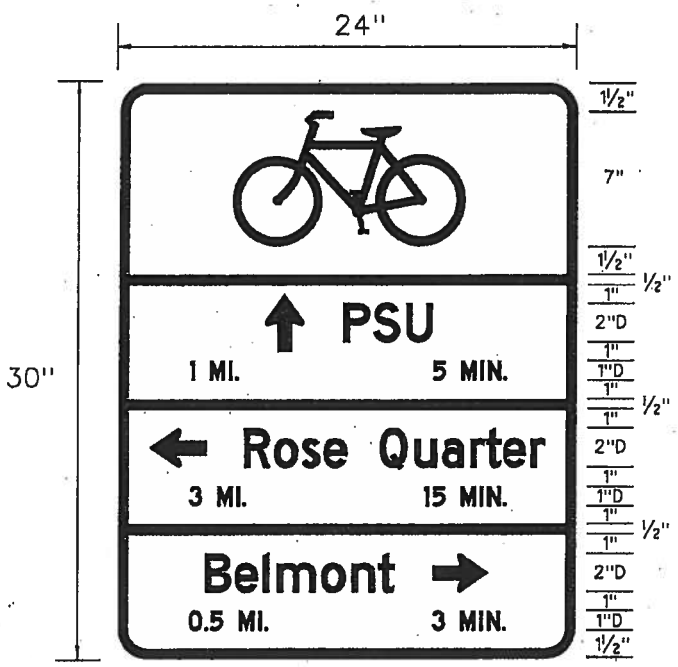
~ 100' S of CW at SE Harrison St.; Center of PS

Consider adding Trolley Trail as a combined future destination with Kellogg Creek Trail

4-82; SE 17th Ave. at McLoughlin Blvd. (EB)

~ 750' W of SL at McLoughlin Blvd.; Behind guardrail

Sign No. OBD1-3c



Border = ½"
Radius = 1½"
2" x 3" Arrows

Sign Background: Green, Retro-Reflective

Sign Legend: White, Retro-Reflective

The bike directional sign can be used as a replacement for the D1-3c sign shown in the MUTCD.

SIGNSTDPG.F15

OREGON DEPARTMENT OF TRANSPORTATION

Approved By: S.T.E.	Date: 7/08	Publication Date: 7/08

2014-15 Regional Flexible Funds

Final recommendation

TPAC - November 18th, 2011

Metro | People places. Open spaces.

Federal and state capital investments in the Portland metropolitan area

2014-15 RFFA process milestones

Spring 2010 through Fall 2011

- JPACT/Council Summit
- Policy update
- Task Force Report
- Region-wide programs review/Sub-regional workshops
- Project nomination/narrowing process/applications due
- Vehicle electrification work group recommendation/Regional public comment period

Regional flexible fund investments

Metropolitan Mobility Funding Preparedness

- $1,000,000 set aside for funding preparedness strategy development
  - To be determined following transportation authorization bill.

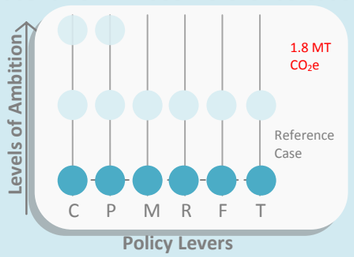
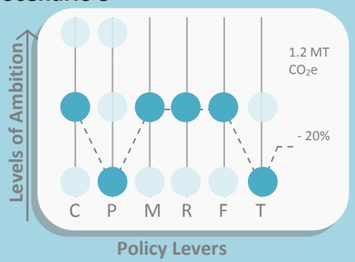
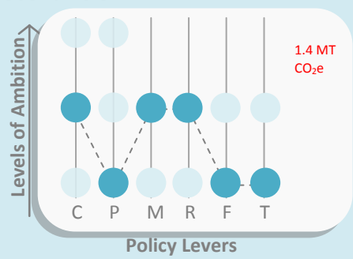
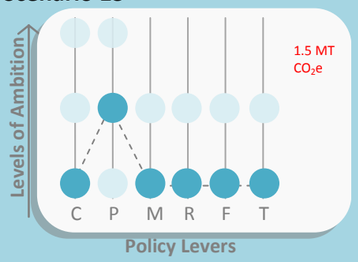
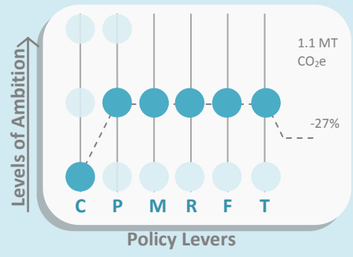
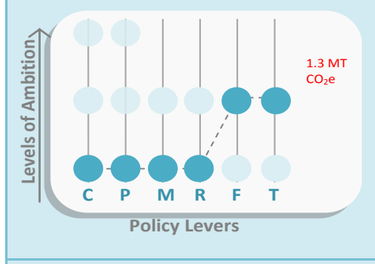
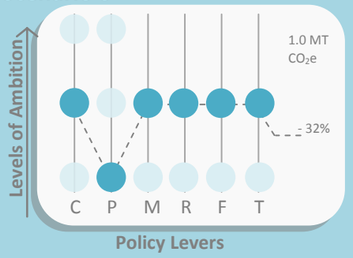
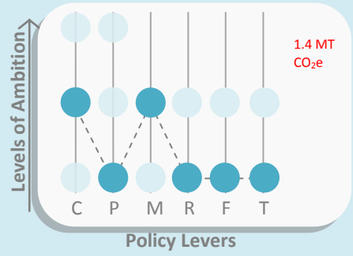
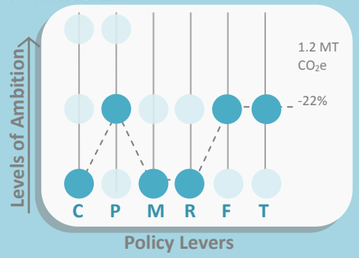
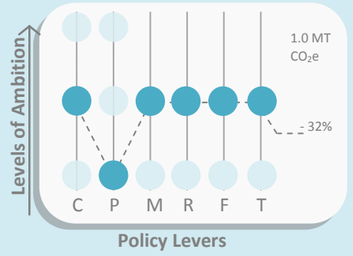
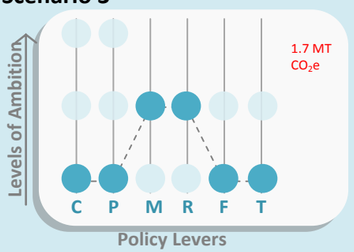
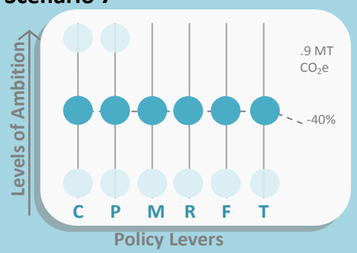
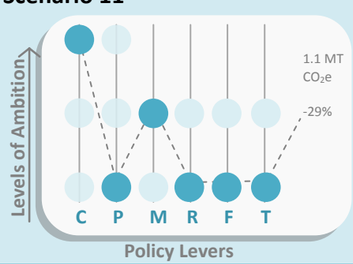
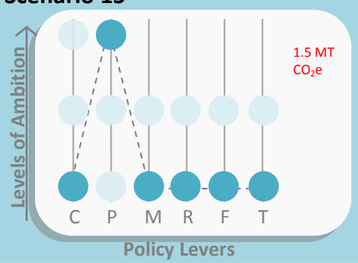
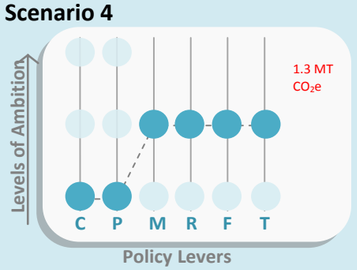
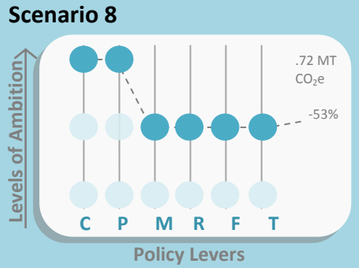
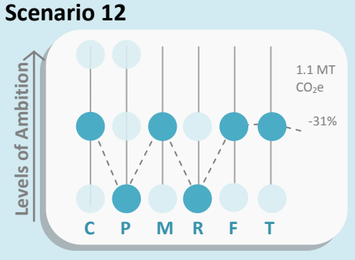
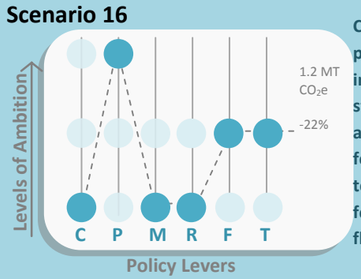
Vehicle electrification recommendation

- **Electric vehicle fleet conversion** - $400,000
  -public and non-profit agency fleets
- **Energizing Oregon plan implementation** - $100,000
  -public education and outreach activities

Conditions of approval

- Mechanisms for ensuring project consistency with intent of decision-making body

Discussion of recommendation

HOW FAR DO CURRENT POLICIES GET US?	WHAT IS THE RANGE OF REDUCTIONS POSSIBLE?	WHAT IS THE EFFECT OF THE BUILT ENVIRONMENT?	WHAT IS THE EFFECT OF PRICING?	WHAT CHOICES ARE EMERGING?
Scenario 1 – 2035 Reference Case  Current policies	**Scenario 5**  Boost all policies but pricing and tech	**Scenario 9**  Current policies & boost community design and system efficiency	**Scenario 13**  Current policies & increased state gas tax as a road use fee	**Scenario 17**  Boost all policies but community design
Scenario 2  Current policies & boost fleet and tech	**Scenario 6**  Boost all policies but pricing	**Scenario 10**  Current policies & boost community design and marketing	**Scenario 14**  Current policies, increased state gas tax as a road use fee & boost fleet and tech	**Scenario 18**  Boost all policies but pricing
Scenario 3  Current policies & boost system efficiency	**Scenario 7**  Boost all policies to level 2	**Scenario 11**  Boost community design even more	**Scenario 15**  Current policies, increased state gas tax as a road use fee & add carbon fee	**Finding:** *Community design 2 and pricing 2 yield similar GHG emissions reductions, however the cost, level of effort and type of actions needed to go from C1 to C2 is not the same as going from P1 to P2.*
Scenario 4  Current policies & boost fleet, tech and system efficiency	**Scenario 8**  Boost all policies to their most ambitious levels	**Scenario 12**  Boost tech and fleet instead of community design	**Scenario 16**  Current policies, increased state gas tax as a road use fee, add $50/ ton carbon fee and boost fleet/ tech	**Finding:** *Each set of policy levers presents its own opportunities and challenges that must be considered in defining the region's preferred strategy in Phase 2 – including effects on the economy and equity, cost and cost savings, public acceptance, and actions needed to implement a particular strategy.*
Findings: *Current plans and policies are on the right track, but do not meet the target. No single policy alone meets the target. Community design and/or pricing must be more ambitious than current policies to meet target.*	**Findings:** *Ninety-three out of 144 scenarios meet or exceed the target. The reductions achieved by the 93 scenarios ranged from 20 percent to 53 percent below 2005 levels on a per capita basis.*	**Finding:** *Similar reductions are possible through the most ambitious community design and fleet/technology strategies.*	**Findings:** *A$50 per ton carbon fee has little effect, but when combined with the most ambitious technology and fleet strategies the region meets the target.*	

www.oregonmetro.gov/climatescenarios

Climate Smart Communities Scenarios Project

Transportation Policy Alternatives Committee
November 18, 2011

Metro | *Making a great place*

1

Phase 1 purpose

- How far do current plans and policies get us?
- What is the relative GHG emissions reduction potential of different policies?
- What are our choices?

Not to choose a preferred alternative

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2

2035 GHG Targets for Oregon MPOs

per capita light vehicle GHG emissions reduction below 2005 levels

Metropolitan Area	Adopted Target
Portland Metro*	20%
Eugene-Springfield**	20%
Salem-Keizer	17%
Rogue Valley	19%
Bend	18%
Corvallis	21%

Approved by the Land Conservation and Development Commission in May 2011.

* Required scenario planning & adoption
** Required scenario planning

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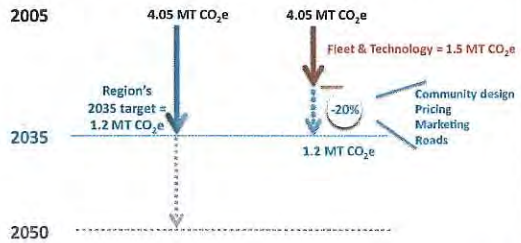
3

Region's 2035 GHG emissions reduction target (in per capita terms)



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4

Building blocks for regional scenarios

Testing bundles of plausible strategies

5

Level 1 assumptions = current plans and policies...

- Adopted 2035 Regional Transportation Plan
  - Transit service level
  - Freeway widening and management
  - Arterial connectivity and widening
  - 2% regional bike mode share
- Locally adopted land use plans
- Some urban reserves anticipated to be developed by 2035

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6

...Level 1 assumptions = current plans and policies

- Gas tax and parking fees at current levels
- 9% of households participate in individualized marketing
- 20% of workforce participates in employer-based commute programs
- Fleet mix same as today
- Achieve federal CAFÉ standard of 50 MPG
- Electric vehicle share grows to 4%

Metro 7

Most ambitious community design policies resulted in greatest reductions

Policy Lever and Level	Estimated percent reduction (from 2035 Reference Case)
Community Design 2	-18%
Community Design 3	-36%
Pricing 2	-13%
Pricing 3	-14%
Marketing and incentives 2	-4%
Roads 2	-2%
Fleet 2	-11%
Technology 2	-14%

Metro 8

Discussion

- Questions?
- Other scenarios to illustrate results ?
- Policy questions to raise for MPAC and JPACT discussion?

Metro 9