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Metro | *Agenda*

Meeting: Metro Technical Advisory Committee

Date: Wednesday, June 20, 2012

Time: 10 a.m. – 12 p.m.

Place: Metro Regional Center, council chamber

Time	Agenda Item	Action Requested	Presenter(s)	Materials
10:30 a.m.	**CALL TO ORDER / ANNOUNCEMENTS**	Information	John Williams, Chair	none
10:05 a.m.	**Regional brownfields scoping project** *Objective: Prioritize issues identified through the data gap and socio-economic analyses*	Recommendation	Miranda Bateschell, Metro; Seth Otto, Maul Foster, Alongi Lorelei, EcoNW	In packet
11:05 a.m.	**Climate Smart Communities: Project Update and Discussion on Framing Scenario Options** *Objective: Input on proposed framework for framing scenario options*	Discussion	Kim Ellis	In packet
12:00 p.m.	**ADJOURN**			

MTAC meets on the 1st & 3rd Wednesday of the month. **The next meeting is scheduled for July 18, 2012.**

For agenda and schedule information, call Alexandra Roberts Eldridge at 503-797-1839, email: Alexandra.Eldridge@oregonmetro.gov. To check on closure or cancellations during inclement weather, please call 503-797-1700#.

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Metro | *Memo*

Date: Wednesday June 20, 2012
To: MTAC
From: Miranda Bateschell, Senior Regional Planner
Subject: Regional brownfields scoping project update
Purpose: Share initial data gap and socio-economic analyses
Gain input on which findings resonate the most and prioritization for which issues should be addressed first

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Background
As you will recall, the goal of the regional brownfields scoping project is to demonstrate the need for brownfield restoration and redevelopment in our region, and outline a range of solutions and best practices that could be applied in the metro area. The final report will illustrate and estimate the extent of brownfields in the region's 2040 design types and outline potential initiatives for regional discussion.

At your May 2nd meeting, you discussed the project's initial findings related to the challenges highlighted from the redevelopment case studies and Oregon's existing regulatory policies and programs for brownfield redevelopment. Staff also received your input on the initial brownfield typologies document.

Presentation and discussion
At the June 20th meeting, the consultant team will present preliminary findings from our data gap and socio-economic analyses. This will include a brief overview of our methodology and the results of our estimation of the extent of brownfields in the region and the financial, economic, and environmental impacts of these sites at the regional level.

After the presentation, staff will be requesting your input and recommendations on:

- How does the information compare to your observations of local conditions?
- What questions do these findings raise?
- What additional information would you want to know? *(acknowledging that additional research may be out of scope, it would be good for framing future studies and continuing the conversation)*
- How does this information influence your thoughts about potential solutions in your communities, the region, and the state?
- Does it seem like the information is presented in an effective way?

Your comments and priorities will be summarized for the Metro Council and MPAC as they consider these findings and policy options for addressing the region's brownfield issues and challenges.

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Metro | *Memo*

Date: May 25, 2012

To: TPAC, MTAC and interested parties

From: Kim Ellis, Principal Transportation Planner

Re: Climate Smart Communities – Proposed Framework and Approach for Defining Scenario Options

Action requested

Input on the proposed framework and approach for defining scenario options and assumptions during Phase 2.

This will be discussed at the joint MTAC/TPAC meeting on June 18, MTAC on June 20 and TPAC on June 29.

Purpose

This memo summarizes suggestions and concerns raised by local partners and describes a proposed framework and process for developing scenario assumptions with local partners using Envision Tomorrow and through other stakeholder engagement activities.

Background

The Climate Smart Communities project is a multi-year, collaborative effort to help communities in the Portland metropolitan region achieve the things they want – clean air, healthy communities and jobs close to home – while at the same time attaining state, regional and, in some communities, local greenhouse gas reduction goals. Phase 1 focused on understanding available choices by testing a variety of possible actions to reduce emissions from cars and small trucks. In Phase 2 (this year), the project will focus on working with local governments and community stakeholders to shape scenarios options to be evaluated in more detailed in 2013.

Phase 2 includes:

- working with local partners to confirm community ambitions and develop case studies, review Phase 1 sensitivity analysis and the draft Statewide Transportation Strategy to identify most effective strategies, and frame a range of scenario options that support community and regional ambitions
- working with local partners and other stakeholders to refine the scenarios evaluation framework and criteria to create a score card
- facilitating a regional discussion with local government, business and community leaders to review the scenario options and assumptions to be tested in 2013.

In December, MPAC, JPACT and Council will be asked to provide direction to staff on the scenario options to be evaluated.

Local partner suggestions and concerns raised to date

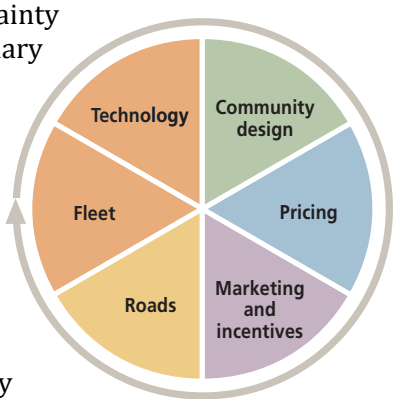
A number of comments and concerns have been raised during project discussions with Metro Policy Advisory Committee, the Joint Policy Advisory Committee on Transportation, City Councils and briefings of other elected officials and local agency staff. Suggestions and concerns raised include:

- The focus on greenhouse gas emissions from light-duty vehicles in state legislation is too narrow, and the process has been overly focused on meeting the state target. It is important to make a good-faith effort to meet the target, but also recognize that other sectors may provide

significant reductions. In the end, local and regional policymakers should agree collectively on what is best for each community and the region, not just focus on meeting the target for light-duty vehicles.

- More clarity is needed on what the scenarios options and the preferred scenario could be. It is important to provide more concrete examples of things that are already going on in communities in the region – e.g., integrating and coordinating investments to advance/leverage existing efforts to achieve each community's vision.
- There is uncertainty about what the project will recommend in the end and providing more concrete examples of how things will be implemented will be helpful. Some have wrongly translated a "preferred scenario" to mean a one-size fits all, top down strategy that is disconnected from what communities want for their future. The preferred scenario (at end of process) should be a compilation of local ambitions and a toolbox with a menu of choices for each community that fit together to shape the region's strategy.
- Local partners need to be part of defining the options and the assumptions used in the analysis. The assumptions should be tailored for each community and reflect local ambitions.
- The Phase 2 scenario options should be more fiscally pragmatic than what was assumed in Phase 1, particularly for TriMet transit service; the South Metro Area Regional Transit (SMART) district has not experienced service declines. There is concern about being able to fund the investments that may be needed, and the challenge of building support for sustainable financing solutions.
- Work to date is too focused on the urban core and strategies that will work in these areas; more work is needed to address the unincorporated areas of the region. The counties should play a coordinating role to ensure the needs and ambitions of these areas are included in the process.
- Project engagement needs to be a dialogue and ongoing, with more discussion with Mayors and City Councils beyond sharing the Phase 1 findings.
- Staff and resource capacity is an issue for every agency, not just Metro – this project takes away from other priorities and every agency does not have the staff and/or time to participate. Local government work sessions to define community ambitions should include interested elected officials and be organized around subareas if resources are insufficient to convene them individually.

To jumpstart the policy conversation and begin to provide more certainty without driving to pre-determined outcomes, staff drafted a preliminary framework and approach for defining the scenario options. The proposed framework and scenarios are intended to create policy bookends for developing a preferred scenario – and position community plans and ambitions as the foundation.



Policy areas tested in Phase 1

Framing scenario options – a proposed framework

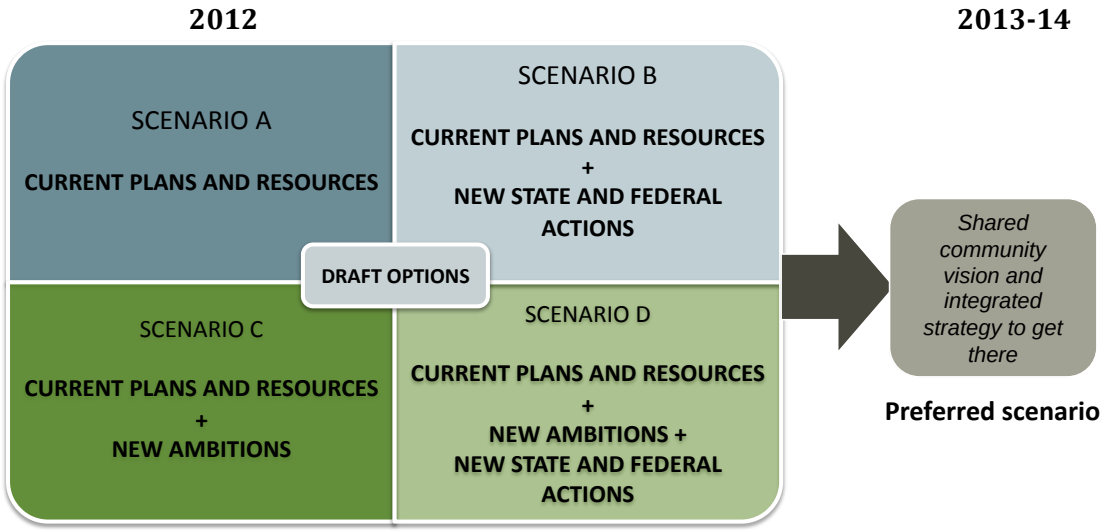
The purpose of the scenarios is to provide distinct options about the region's future to clearly articulate local, regional and state choices and tradeoffs based on more detailed evaluation of those options in 2013. The framework is intentionally simplistic to be easily communicated and provide flexibility and range of assumptions for defining a preferred scenario in 2013-14. The scenarios will include refined assumptions for each of the policy areas tested in Phase 1.

Figure 1 illustrates a proposed framework that structures the scenario options so that local community goals and investments are at the forefront and to better communicate that the region's preferred scenario will represent a compilation of local ambitions that have been tailored in each community, and be complemented by state and federal policies being considered in the Statewide Transportation Strategy.

The proposed framework structures the scenario options to demonstrate what communities and the region can do to build each community's vision with existing plans, investment tools and resources (Scenario A) and what could be done with additional investments and tools (Scenario C). Scenarios B and D show how state and federal policies being considered in the Statewide Transportation Strategy can complement local and regional policies to build great communities and meet the state target.

This framework is consistent with state direction but allows the project to do so with a focus on building ownership and support for the investment tools and resources needed achieve community visions, while at the same time reducing greenhouse gas emissions. In the end, the preferred scenario will reflect community ambitions and may include parts of each of the four scenarios tested.

Figure 1. Framing the Scenarios – A Starting Point for Discussion



Defining assumptions for scenario options – the proposed approach

DEFINING ASSUMPTIONS FOR THE COMMUNITY DESIGN POLICY AREA

The compilation of community plans and ambitions will be defined by local government staff and elected officials through the Southwest Corridor work[1] that has already been completed and the local partner work sessions and community case studies described below using Envision Tomorrow.

<u>Local partner work sessions to confirm community ambitions and goals</u>
Local partner work sessions are planned to confirm community ambitions that can be translated into assumptions for the scenarios to be evaluated in 2013. Participants are recommended to

[1] Local Southwest Corridor Plan partners include Portland, Sherwood, Tigard, Tualatin, Beaverton, Durham, King City and Lake Oswego.

include: Metro staff, community planning director, community development director, work group member, and senior staff. Participants may engage their respective City Councils, Planning Commissions, County Boards, as desired, for additional input. These work sessions provide an informal setting for local partners to test different desired land use changes to tailor scenario assumptions for their community. This will ensure the scenarios reflect new ambitions that have been adopted since 2010 or that are being contemplated through periodic review and other local or regional planning efforts. In some communities the "Reference Case" assumed in Phase 1 may adequately reflect those ambitions, and no additional work is needed.

The work sessions will be held with interested local jurisdictions not covered by the Southwest Corridor project outreach. Pending case study locations and interest, this could include Gresham, Hillsboro, Beaverton, Portland, Gladstone, Fairview, Wood Village, Troutdale, Cornelius, Forest Grove, Happy Valley, Damascus, Milwaukie, Oregon City, Maywood Park, Rivergrove, Johnson City, West Linn, Wilsonville and unincorporated areas in Clackamas and Washington counties.

Community case studies to illustrate community ambitions, goals and the strategies needed to achieve them

Five case study locations are proposed to include an employment area, a regional center, a town center and a corridor. Opportunities to convene two or more jurisdictions together will be sought to discuss connecting focus areas, shared ambitions and investment needs. The Southwest Corridor project will develop an integrated investment strategy for each of the project's focus areas that will inform additional community case studies for this part of the region. More information will be provided as the details are finalized.

Envision Tomorrow training opportunities for Metro staff and local government partners

Between mid-2011 and April 2012, Metro staff worked with Fregonese and Associates to incorporate 2010 and 2035 Reference Case land use data into the Envision Tomorrow software. Envision Tomorrow will be used in Phase 2 to work with local government staff and policymakers to confirm community land use ambitions and develop case studies. Envision Tomorrow will continue to be used in Phase 3 to support analysis and refinement of the scenario options developed in Phase 2. The Southwest Corridor effort also plans to use Envision Tomorrow for the focus areas work sessions the project will convene in 2012. *Other regional tools and models will be used in the scenarios evaluation in 2013, including the travel demand model, MetroScope and Metropolitan GreenSTEP.*

In advance of the local partner work sessions, TPAC, MTAC, JPACT, MPAC, the Metro Council and others have been invited to attend a 90-minute broad-level overview of Envision Tomorrow, *on June 12, from 11:30 - noon at Metro in the Council Chamber*. The presentation and overview will include a live demonstration of the tool to build awareness and understanding of the potential application of this tool in the Climate Smart Communities effort, Southwest Corridor effort as well as local planning efforts now and in the future.

Metro and local government staff trainings will be held in June to build Metro's internal capacity for conducting the local partner work sessions and providing technical support to local partners in the future. To date, the following local jurisdictions have indicated a desire to have one or two staff from their agency participate in the user group training:

- City of Gresham
- City of Hillsboro
- City of Beaverton
- City of Portland
- City of West Linn
- City of Oregon City
- Washington County
- Clackamas County
- TriMet

Limited space is available. Please contact Molly Vogt, Metro's Client Services Supervisor, as soon as possible if you would like staff from your jurisdiction to participate in the user group "hands-on" training by sending email to molly.vogt@oregonmetro.gov.

Other engagement activities and opportunities to provide input on the scenario options

Engagement in 2012 will be focused on local jurisdiction staff and elected officials, targeted community and business leaders (especially from the public health, equity/environmental justice, environmental, and business/economy sectors), and mayors and city councils. The primary goals of engagement are to (1) understand local community aspirations, (2) develop a shared understanding of the local and regional benefits possible through working together, (3) develop clear criteria for measuring the benefits and impacts of policy choices, and (4) build local ownership of and support for the project.

More extensive public engagement will not commence until Phase 3 in 2013-14 when there will be more opportunity for discussions on specific options and tradeoffs; however the public will continue to be informed about the project and issues this year through the project website, a series of newsfeeds and an online opinion tool in the fall.

In addition to the local engagement activities described in the previous section, staff will use the following approach to foster collaboration between local community leaders and elected officials, MPAC, JPACT and the Metro Council, incorporate feedback and new community aspirations, build community ownership and, ultimately, support for the narrowing process this fall:

- **Metro advisory committees** discuss project information and provide direction on assumptions related to the regional transit service; road management and capacity; marketing and incentives; and draft Oregon Statewide Transportation Strategy recommendations for pricing, fleet and technology policy areas. *(Ongoing)*
- **Scorecard workshops** (three workshops, focusing on public health, equity/environmental justice, and environment and three focus groups of businesses and developers) to provide input on how the scenarios should be evaluated in Phase 3. *(June-July)*
- **Coordination with the Southwest Corridor Project**, sharing information and building on focus area workshops with stakeholders in project jurisdictions (e.g., Tigard, Tualatin, Portland, Sherwood, Beaverton, Durham, King City and Lake Oswego). *(Ongoing)*
- **Briefings with Local Elected Officials and Planning Directors** to share and discuss project information and facilitate an ongoing dialogue with local and community partners on the scenario options and assumptions to be tested to ensure they reflect community ambition. *(Ongoing)*
- **Seminar series** to highlight successful strategies and build understanding of specific topic areas in coordination with other Metro programs and speakers' series. *(Ongoing)*
- **On-line engagement** to gather input on the range of scenario options and evaluation criteria being considered. *(October)*
- **Summit** in October/November to share and discuss case studies, additional analysis findings, evaluation criteria and scenario options to be tested in Phase 3. *(Proposed summit participants include Metro Council, JPACT, MPAC, scorecard workshop participants, local elected officials and other key business and community leaders)*

Technical work group role

A work group of members of the Transportation Policy Alternatives Committee and the Metro Technical Advisory Committee was created in 2011 to provide technical support to the Climate Smart Communities Scenarios process. The active participation and input provide by work group members provided a strong foundation for successful completion of Phase 1.

Metro staff will continue to convene the technical work group – made up of staff from local jurisdiction planning departments and community organizations – to conduct the technical work in Phase 2 and review products and materials in advance of Metro technical and policy advisory committee discussions.

Key work group tasks for Phase 2 include:

- Help review Phase 1 sensitivity testing and district results. *(April - July 2012)*
- Help frame scenario options, including regional and state policy options. *(April - July 2012)*
- Help define the Scenarios Score Card and the measures and methods used to evaluate the scenarios. *(June – September 2012)*
- Help coordinate development of community case studies and identification of focus areas. *(June – September 2012)*
- Review products and materials in advance of Metro technical and policy advisory committee discussions. *(On-going)*
- Serve as liaison, sharing project information with local government leaders and staff of their respective jurisdiction, Metro technical and policy advisory committees and planning efforts underway in the region (e.g., Southwest Corridor, local comprehensive plan updates, state and regional planning grants, etc.). *(On-going)*

TPAC/MTAC Climate Smart Communities Scenarios Technical Work Group *(as of May 25, 2012)*

	Name	Affiliation	Membership
1.	Tom Armstrong	City of Portland	MTAC alternate
2.	Andy Back	Washington County	TPAC alternate & MTAC alternate
3.	Chuck Beasley	Multnomah County	MTAC member
4.	Lynda David	Regional Transportation Council	TPAC member
5.	Jennifer Donnelly	DLCD	MTAC member
6.	Denny Egner	City of Lake Oswego	MTAC member
7.	Karen Buehrig	Clackamas County	TPAC member
8.	Chris Beanes	TPAC community member	TPAC member
9.	Jon Holan	City of Forest Grove	MTAC alternate
10.	Katherine Kelly/Jonathan Harker	City of Gresham	TPAC member/MTAC member
11.	Nancy Kraushaar Kenny Asher	City of Oregon City City of Milwaukie	TPAC member TPAC alternate
12.	Alan Lehto Eric Hesse/Jessica Tump	TriMet	TPAC/MTAC member TPAC/MTAC alternates
13.	Mary Kyle McCurdy	MTAC citizen/community group	MTAC member
14.	Ben Bryant	City of Tualatin	Local government staff
15.	Tyler Ryerson	City of Beaverton	MTAC alternate
16.	Margaret Middleton	City of Beaverton	TPAC member
17.	Lainie Smith	ODOT	TPAC alternate and MTAC member
18.	Dan Rutzick/Peter Brandom	City of Hillsboro	Local government staff
19.	Mara Gross	Coalition for a Livable Future	Community member

For more information or to be added to the Climate Smart Communities scenarios project interested parties list, contact Kim Ellis at kim.ellis@oregonmetro.gov.

Materials following this page were distributed at the meeting.

Climate Smart Communities

Framing the scenarios

The scenarios will test possible futures to understand the impacts of different levels of transportation investment, and are intended to create policy bookends for developing a preferred scenario.

2012-13

2013-14

INPUTS:

CURRENT PLANS AND POLICIES

Community plans and visions
as defined by cities and counties for downtowns, main streets and employment areas

Statewide Transportation Strategy
for fleet and technology

Baseline assumptions
for marketing/ incentives, system management and roads

SCENARIOS:

MORE INVESTMENT SCENARIO
Current plans and policies with higher level of investment than current regional and local transportation plans

CURRENT INVESTMENT SCENARIO
Current plans and policies with same level of investment as current regional and local transportation plans

LESS INVESTMENT SCENARIO
Current plans and policies with lower level of investment than current regional and local transportation plans

PREFERRED INVESTMENT SCENARIO
Current plans and policies with preferred level of transportation investment and strategies to implement

June 18, 2012

Framing the scenarios

The scenarios will test possible futures to understand the impacts of different levels of transportation investment, and are intended to create policy bookends for developing a preferred scenario.

INPUTS:

CURRENT PLANS AND POLICIES

Community plans and visions
as defined by cities and counties for downtowns, main streets and employment areas

Statewide Transportation Strategy
for fleet and technology

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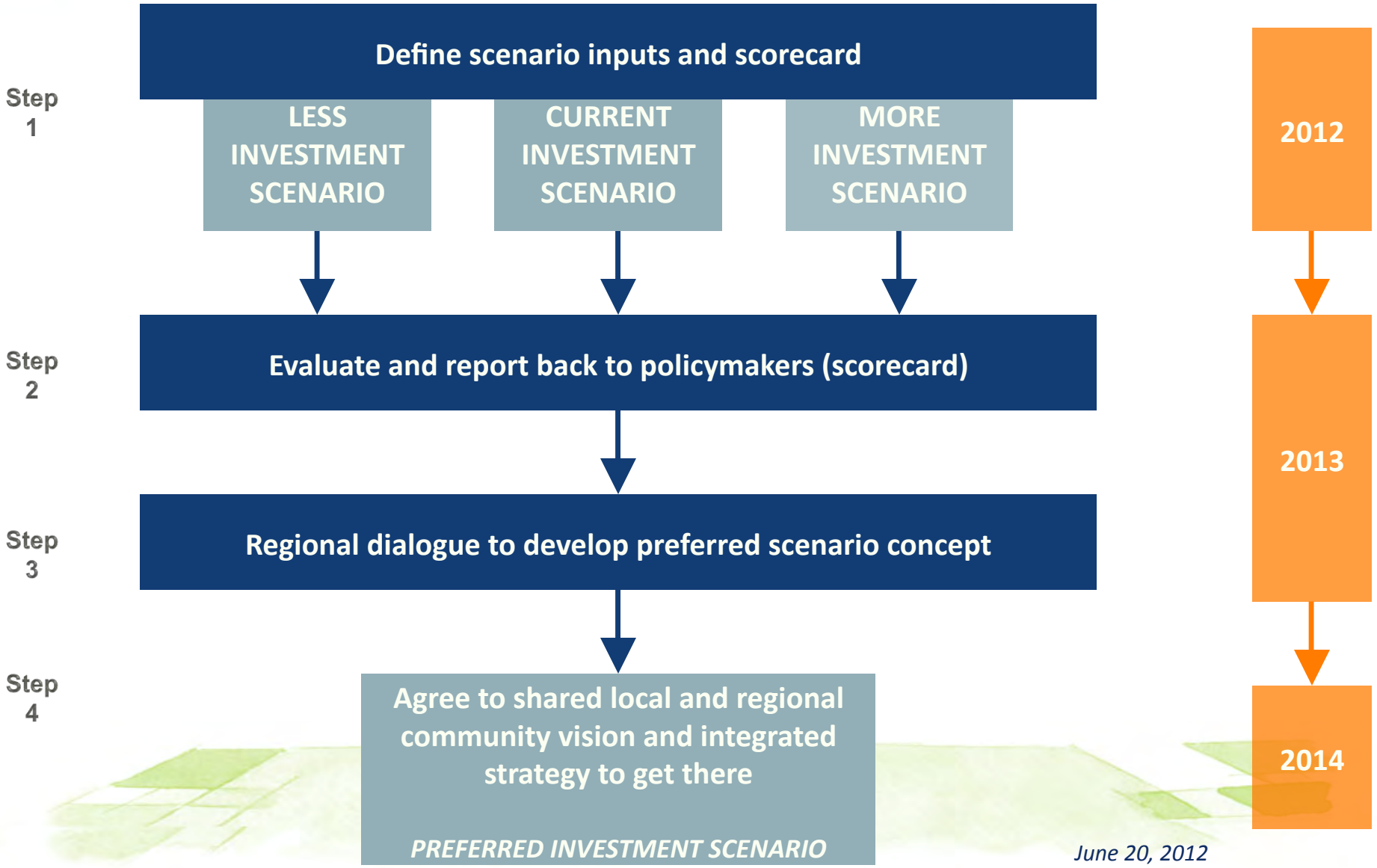
Current plans and policies with lower level of investment than current regional and local transportation plans

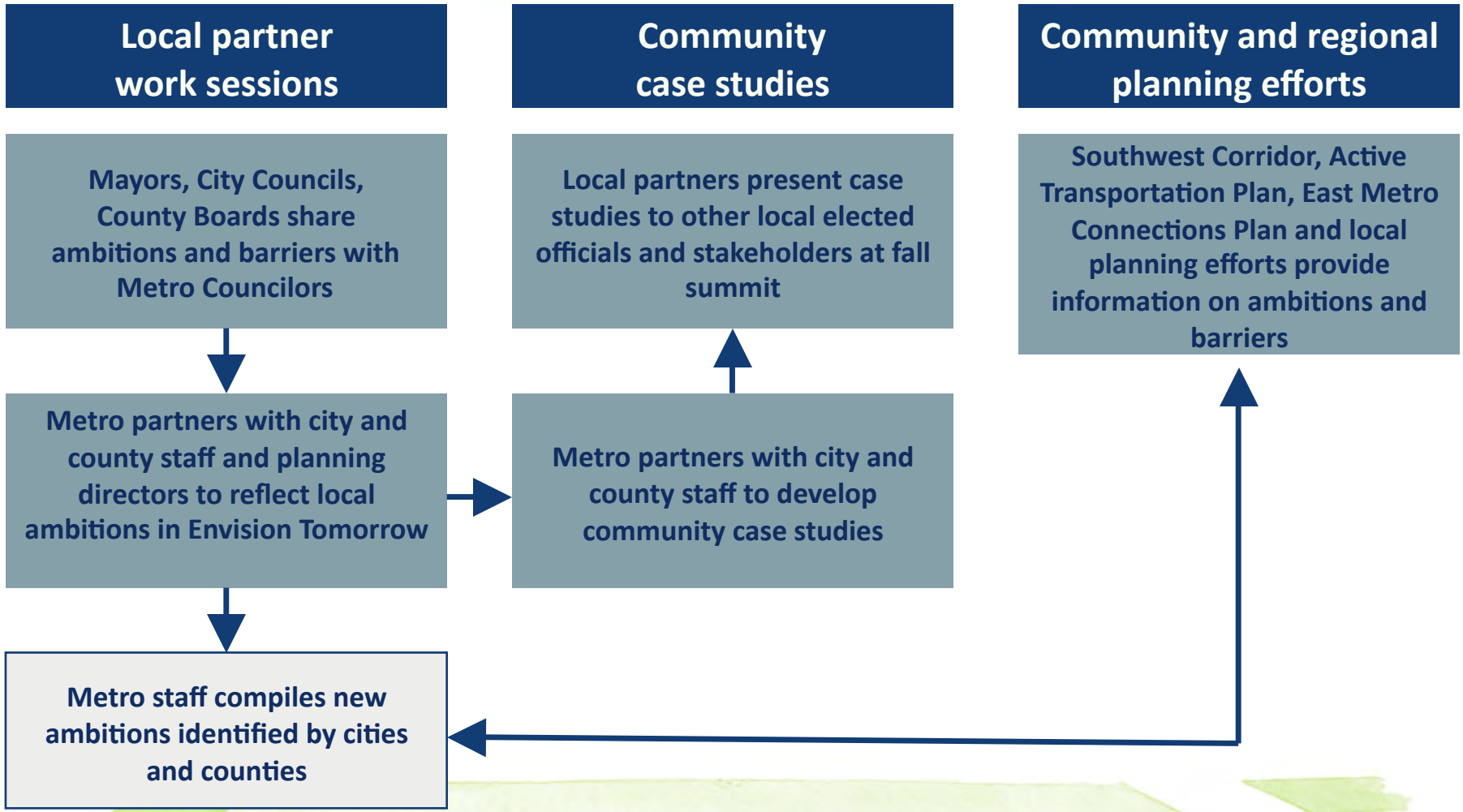
June 18, 2012

Approach and timeline



Local partners define community assumptions to reflect ambitions

Summer – December 2012



Phase 1: 2010 base year and alternative scenario inputs

The input assumptions are for research purposes only and do not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

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. Documentation of the inputs and rationale behind each input can be found in the Phase 1 Metropolitan GreenSTEP Scenarios Technical Documentation report (January 2012). This information is for research purposes only and does not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

			Reference case		
		2010	2035		
	Strategy	**Base Year** Reflects existing conditions	**Level 1** Reflects current plans and policies	**Level 2** Reflects more ambitious policy changes	**Level 3** Reflects even more ambitious policy changes
Community design	Households living in mixed-use areas and complete neighborhoods (percent)	GreenSTEP calculates			
	Urban growth boundary expansion (acres)	2010 UGB	7,680 acres	7,680 acres	No expansion
	Bicycle mode share[1] (percent)	2%	2%	12.5%	30%
	Transit service level	2010 service level	2035 RTP 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 Level 2
	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

[1] Percent of all tours less than 6 miles roundtrip.

	Strategy	2010	Reference case 2035		
		Base Year Reflects existing conditions	**Level 1** Reflects current plans and policies	**Level 2** Reflects more ambitious policy changes	**Level 3** Reflects even more ambitious policy changes
Marketing and incentives	Households participating in eco-driving	0%	0%	40%	No Level 3
	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 people	
	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 people	
Roads	Freeway and arterial expansion	2010 system	2035 financially constrained system	No expansion	
	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)	auto: 29.2 mpg light truck/SUV: 20.9 mpg	auto: 59.7 mpg light truck/SUV: 41 mpg	auto: 68.5 mpg light truck/SUV: 47.7 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 electric or plug-in electric vehicles (percent)	auto: 0% light truck/SUV: 0%	auto: 4% light truck/SUV: 1%	auto: 8% light truck/SUV: 2%	

Our starting point is the Reference Case – current plans and policies

Key population and household assumptions

- Between the years 2010 and 2035, the population within the Metro urban growth boundary is forecast to increase by more than 625,000 residents. This assumption is based on Metro's draft Beta forecast and represents the lower end of the middle-third of the population growth forecast range. This range value is consistent with Metro Council's recent adoption of an ordinance (in October 2011), which focused its growth management decision on the lower end of the middle-third of the population growth forecast range.
- Metropolitan GreenSTEP travel behavior estimates are made irrespective of housing choice or supply. Therefore, there is no assumption about the type of housing assumed to be built in the future.
- The following housing supply growth characteristics are presented for context purposes only. Recently, approximately 40 percent of new housing units constructed in the region are multi-family (MF), and 60 percent is single-family (SF). The draft Beta forecast reflected a marginal growth split of 78 percent MF and 22 percent SF by 2035, which would result in a total housing stock split of 34 percent MF and 66 percent SF by 2035. However, Metro in coordination with regional partners, have refined these assumptions resulting in a draft Gamma forecast. The Gamma forecast demonstrates that over the next 25 years approximately 59 percent of new housing units in the region will be MF, and 41 percent will be SF. This growth split results in a total housing stock split of 35 percent MF and 65 percent SF.

Key pricing assumptions

- The federal gas tax is 18 cents per gallon – the same as today.
- State gas tax is 30 cents per gallon – the same as today.
- The average daily cost of parking is $5 per day – the same as in 2005.
- Locations with paid parking are limited to downtown Portland, the Oregon Health Science University campus and the Lloyd District, representing approximately 13 percent of the region's workers and 8 percent of other trips made each day – the same as in 2005.
- Zero households participate in pay-as-your-drive insurance.

Key marketing and incentives assumptions

- 9 percent of households participate in individualized marketing – the same as today.
- 20 percent of workforce participates in employer-based commute programs – the same as today.
- Participation in carsharing programs remains the same as today: one member for every 100 people in higher-density areas like the Pearl District in Portland and one member for every 200 people in medium-density areas like inner eastside Portland neighborhoods.

Key fleet and technology assumptions

- The region's fleet mix stays nearly the same as today – 56 percent of the fleet is passenger cars and the remaining 44 percent is small trucks and sport utility vehicles.
- The Low Carbon Fuel Standard (as proposed by the Oregon Department of Environmental Quality) is adopted; carbon intensity of fuels will decline by 10 percent below today's average.
- Federal Corporate Average Fuel Economy (CAFÉ) standards calling for a fleet average of 50 miles per gallon for model years 2017-2025 are achieved. This fleet average represents a fuel economy of 59.7 mpg for passenger cars and 41 mpg for light-trucks.
- Electric vehicles and plug-in hybrid electric vehicles represent 4 percent of the total passenger vehicle fleet and 1 percent of the light-truck fleet.

Key transportation system assumptions

- The 2035 Financially-Constrained Regional Transportation Plan includes $13.6 billion of investments, reflecting the amount of revenue reasonably expected to be available in the Metro region from 2007 to 2035.
- The 2035 RTP financial strategy assumes existing federal, state and local funding plus new revenues that are not part of the Phase 1 modeled pricing assumptions. Significant increases in transportation revenue are likely to be needed if anticipated improvements in vehicle fuel economy are realized.

Key road assumptions

- The 2035 Regional Transportation Plan financially constrained system of highway and investments is implemented.
- Future delay on the highway and arterial network is reduced by 10 percent through traffic management, such as clearing crashes and breakdowns more quickly, traffic signal timing and other strategies.

Targeted highway investments

- I-5 / Columbia River Crossing (CRC) Project is completed.
- Interchanges in the OR 217, US 26, I-205 corridors and at the junction of I-5/I-84 are improved.
- The Sunrise Project connection from I-205 to 172nd Avenue is built.
- US 26 West is widened to six through lanes to Cornelius Pass Road.

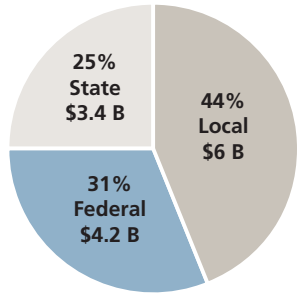
Regional transit investments

- Milwaukie light rail and Columbia River Crossing light rail are constructed.
- Lake Oswego streetcar, Portland streetcar loop, and Burnside/Couch streetcar to Hollywood Transit Center are constructed.
- Frequent bus service is expanded in key transit corridors.

Other multi-modal investments

- On-street bicycle and pedestrian projects, such as bicycle lanes, cycle tracks, bicycle boulevards, sidewalks and crossing improvements are constructed.
- Off-street regional trail projects are constructed, such as the Lake Oswego to Portland trail, Fanno Creek (Red Electric) trail, Beaverton Creek Trail, Westside trail, Tonquin trail, Columbia Slough trail, Scouter's Mountain trail, E. Buttes Loop trail, and the Gresham-Fairview trail.
- New street connections that build out the regional street grid are constructed.
- Freight rail and street extensions and expansions focused on serving industrial areas are constructed.
- Major streets are widened or retrofitted with sidewalks, bicycle facilities and other multi-modal designs.

2035 RTP Funding Sources



Source: 2035 Regional Transportation Plan (approved June 10, 2010)

2035 RTP by investment type and share of total cost

Investment type	Cost	Percent of total RTP cost
Sidewalks, bike facilities and trails	$948 M	7%
Freight rail and road access to industrial areas	$623 M	5%
Traffic management, signal timing and other ITS projects	$ 19 M	<1%
Regional programs • Regional Travel Options • Regional Transportation System Management and Operations • Regional Transit-Oriented Development	$196 M	1%
Multi-modal roads and bridges	$4.3 B	32%
Highway widening and fixing bottlenecks	$4.0 B	29%
Public transit	$3.5 B	25%
Total (costs have been rounded)	**$13.6 B**	**100%**

Source: 2035 Regional Transportation Plan (approved June 10, 2010)

Ground/Commercial Recommendations

Vehicle and Fuel Technologies

- More fuel-efficient and lower emissions vehicles
- Cleaner fuels

Land Use

- Compact, mixed-use development
- Limited Urban Growth Boundary expansion

System and Mode Optimization

- Transportation system operations optimization *(e.g., ITS)*
- More local SOV trips shift to zero-emission modes *(e.g., bicycling, walking)*
- Public transportation infrastructure and operations investments
- Carpool/vanpool, carsharing, and TDM programs
- Road expansions and parking management

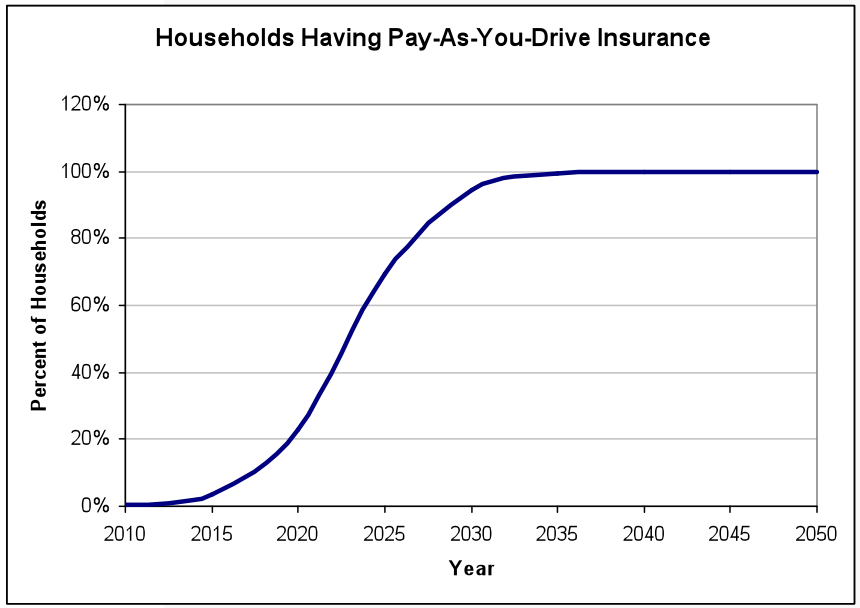
Pricing and Markets

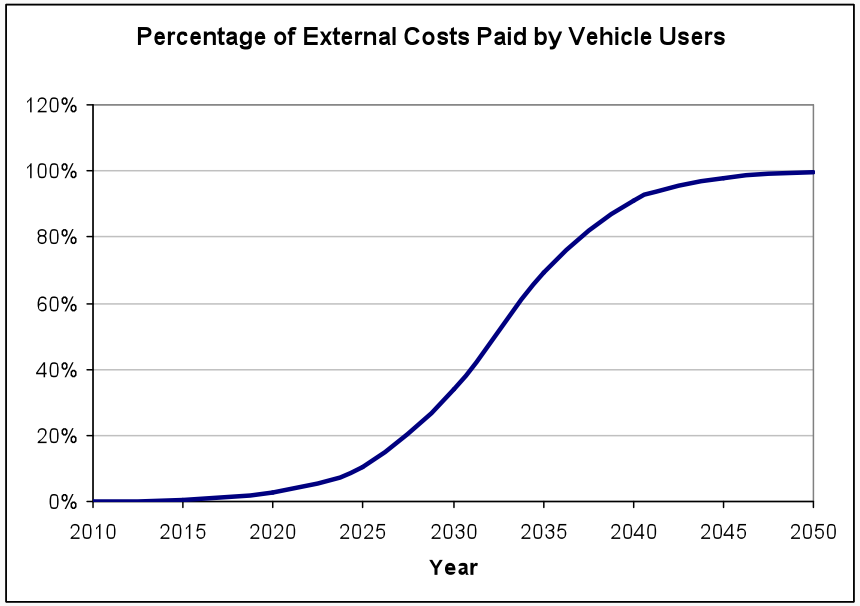
- Funding sources for transportation system operations and maintenance

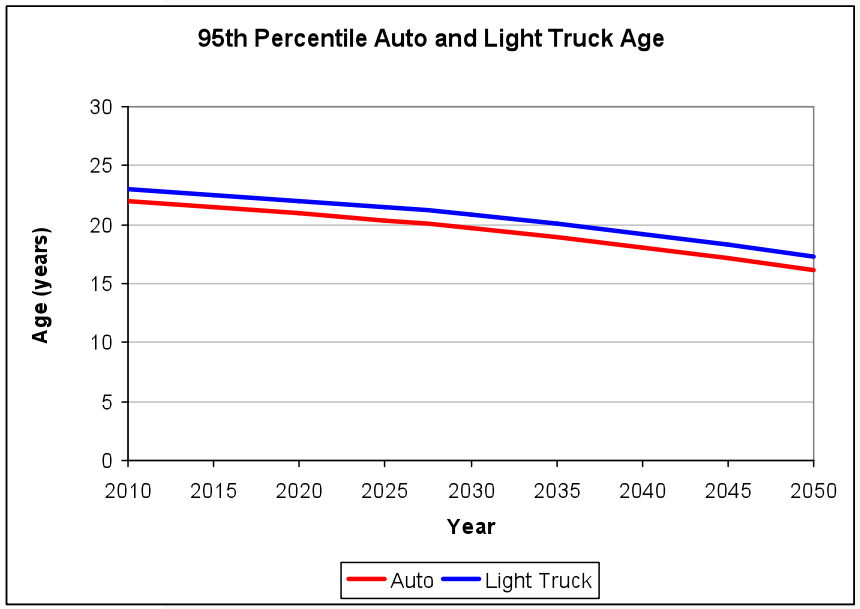
2035 Vehicle Technology Assumptions

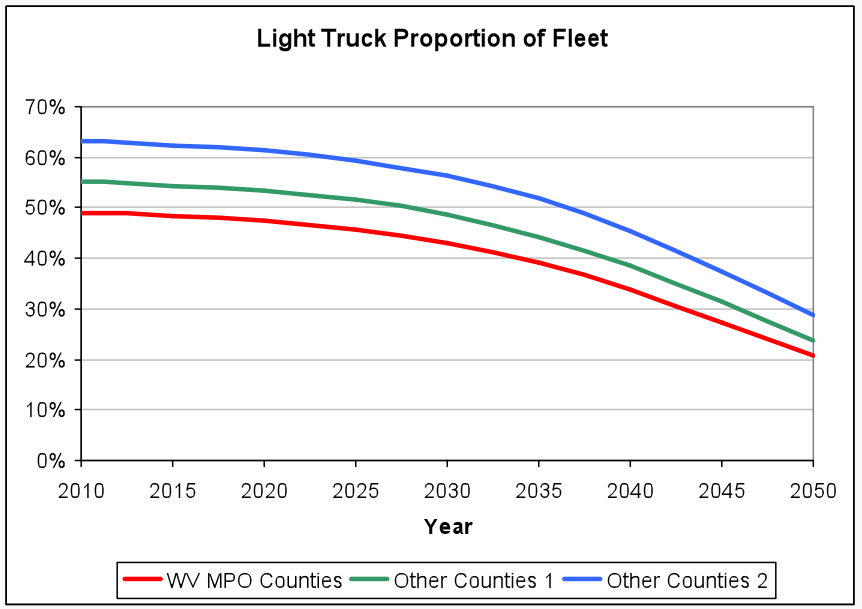
Characteristic	Rules Default	STS Vision
Auto fuel economy: ICE & HEV (MPG)	68	68
Light truck fuel economy: ICE & HEV (MPG)	48	49
Auto fuel economy—plug-in hybrids in charge sustaining mode (MPG)	81	71
Light truck fuel economy—plug-in hybrids in charge sustaining mode (MPG)	56	55
Proportion of autos that are plug-in hybrids or electric vehicles	8%	23%
Proportion of light trucks that are plug-in hybrids or electric vehicles	2%	20%
Plug-in hybrids battery range (miles)	35	35
Electric vehicles battery range: auto and light truck (miles)	175	
Electric vehicles battery range: auto (miles)		215
Electric vehicles battery range: light truck (miles)		144
% reduction in fuel carbon intensity from current levels	20%	20%
Electric power sources compared to current Renewable Portfolio Standard	Meet	Exceed
Average vehicle replacement rate (years)	8	9

Examples of Cost and Vehicle Fleet Assumptions









Examples of Urban Area Assumptions