600 NE Grand Ave.
Portland, OR 97232-2736
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Metro | *Agenda*

Workshop: MTAC/TPAC workshop on Climate Smart Communities Scenarios Project

Date: August 18, 2014

Time: 2 -5 p.m.

Place: Council chamber, 600 NE Grand Ave., Portland OR

2:00 p.m.	**WELCOME**	Tom
2:05 p.m.	**SCHEDULE UPDATE** *Outcome: Understand final schedule and milestones*	Kim
2:20 p.m.	**DRAFT APPROACH EVALUATION** *Outcome: Review highlights from evaluation* *Surprises? Suggestions for presenting to decision-makers?*	Kim
3:05 p.m.	**DRAFT EARLY ACTIONS** *Outcome: Input on toolbox of proposed early actions - non-binding recommendations for the State, Metro, local governments, TriMet, SMART and the Port to consider* *What's missing? Refinements?*	Kim
3:50 p.m.	**BREAK**	
4:00 p.m.	**IDEAS FOR MONITORING AND REPORTING** *Outcome: Input on ideas for monitoring and reporting* *What's most important? Anything missing?*	Kim
4:30 p.m.	**ENGAGEMENT (SEPT. – DEC. 2014)** *Outcome: Review fall engagement activities and MTAC/TPAC role* *Questions? Suggestions?*	Peggy
4:50 p.m.	**WORK IN PROGRESS** *Outcome: Understand work remaining for September roll-out* • Regional Framework Plan amendments to reflect policies in draft approach (draft available for Aug. 29 TPAC meeting and Sept. 3 MTAC meeting) • Report summarizing process, key elements of draft approach, draft early actions and next steps (released Sept. 15)	Kim
5:00 p.m.	**ADJOURN**	Tom

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Metro | *Memo*

DATE: August 11, 2014

TO: TPAC and MTAC members and alternates

FROM: Kim Ellis, Principal Transportation Planner

SUBJECT: Climate Smart Communities Scenarios Project: August 18 TPAC/MTAC workshop materials

****

PURPOSE

The purpose of this memo is to:

- transmit key planning assumptions and results from the evaluation of the draft approach recommended for testing by the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT) on May 30
- seek input on proposed early actions that can be implemented at the state, regional and local levels to support implementation of the draft approach
- seek input on initial ideas for monitoring and reporting progress on implementation of the final approach selected by the Metro Council

ACTION REQUESTED

Input on the results of the evaluation, proposed early actions to begin implementation and performance monitoring of implementation activities.

BACKGROUND

The Climate Smart Communities Scenarios Project was initiated in response to a mandate from the 2009 Oregon Legislature to reduce per capita greenhouse gas emissions from cars and small trucks by 20 percent below 2005 levels by 2035. The reduction is in addition to significantly greater reductions anticipated to occur from advancements in cleaner, low carbon fuels and more fuel-efficient vehicle technologies.

In June, the Metro Council directed staff to test the draft approach as unanimously recommended on May 30 by the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT). Staff completed the evaluation in August and prepared materials that are proposed to be subject to a 45-day public comment period to be held from September 15 to October 30, 2014.

The purpose of the public review is to provide an opportunity for further refinement of the draft approach and the policies and actions needed to support implementation. The draft public review materials are included in Attachments 3-9. Attachments 3 - 7 will be summarized and incorporated into a report that provides a broader overview of the project and the collaborative

process used shape the draft approach that reflects four years of research, analysis, community engagement, and deliberation.

The region has identified a draft approach that achieves a 29 percent reduction in per capita greenhouse gas emissions while also supporting many other state, regional and local goals, including clean air and water, transportation choices, healthy and equitable communities, and a strong regional economy. The draft approach relies on nine policies and a toolbox of proposed early actions that the State of Oregon, Metro, local governments and TriMet, the South Metro Area Rapid Transit (SMART) District and the Port of Portland can choose from as the state and region move forward together to begin implementation in a manner that builds on and advances local and regional plans, social equity and leadership on climate change. The toolbox includes a comprehensive set of policy, program and funding actions that are focused on specific steps that can be taken in the next five years. Medium and longer-term actions will be identified as part of the 2018 Regional Transportation Plan update.

The initial ideas for monitoring and reporting rely on existing regional performance monitoring and reporting procedures as allowed by OAR 660-044, which directs Metro to identify performance measures and targets to monitor and guide implementation of the preferred approach. The purpose of performance measures and targets is to enable Metro and area local governments to monitor and assess whether key elements or actions that make up the preferred approach are being implemented, and whether the preferred approach is achieving the expected outcomes.

ATTACHMENTS

Attachment 1. Climate Smart Communities 2014 milestones and decisions *(8/8/14)*

Attachment 2. Climate Smart Communities Project Update *(July 2014)*

Attachment 3. Climate Smart Communities Phase 3 evaluation results *(8/7/14)*

Attachment 4. Draft Approach Transportation System Assumptions *(8/8/14)*

Attachment 5. CSC Streets and Highways System Performance *(8/8/14)*

Attachment 6. CSC Phase 3 Transit access at-a-glance *(7/28/14)*

Attachment 7. Draft Approach Comparative Costs *(8/4/14)*

Attachment 8. Climate Smart Communities Strategy Scoping | Toolbox of proposed early actions (2015-2020) *(8/11/14)*

Attachment 9. Climate Smart Strategy Scoping | Initial ideas for performance monitoring and reporting *(8/11/14)*

Attachment 10. CSC GreenSTEP evaluation measures *(7/23/14)* and Regional Travel Model System Performance Measures for intra-UGB trips and total region *(8/3/14)*

Updated August 7, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

Metro

2014 DECISION MILESTONES

1. Receive Council direction on Draft Approach	June 19, 2014
2. Release Draft Approach for 45-day public comment period	September 15, 2014
3. Seek Council adoption of recommended preferred approach	December 18, 2014

EVENTS AND PRODUCTS TO ACTUALIZE DECISION MILESTONES

Milestone 1

Jan. - Feb. 2014	Metro Council, MPAC and JPACT confirm process & policy areas to discuss in 2014
	Conduct interviews with community and business leaders and elected officials
Feb. – March 2014	MPAC and JPACT discuss background information on policy areas
	Launch public opinion research (telephone survey) and on-line public comment tool
	Convene discussion groups to gather input on strategies to include in draft approach
	MTAC and TPAC help frame policy choices for MPAC and JPACT discussion
April 11	Joint MPAC/JPACT meeting to discuss policy choices
April 2014	Public engagement report prepared for policy advisory committees and Metro Council
	MTAC and TPAC provide input on elements of draft approach and make recommendation to MPAC and JPACT
May 30	Joint MPAC/JPACT meeting to recommend draft approach to test
June 19, 2014	**Seek Council direction on draft approach to test**

Milestone 2

June – Sept. 2014	Staff evaluates draft preferred approach and develops implementation recommendations
	MTAC and TPAC provide input on draft approach evaluation results, estimated costs and implementation recommendations
	Brief local officials on draft approach and upcoming adoption process through quarterly updates and other means

Week of Aug. 25, 2014	Public notice published on upcoming public comment period
	Send DLCD notice of initial evidentiary hearing
Sept. 2-11, 2014	Metro Council, MPAC and JPACT discussions on evaluation results, estimated costs and draft implementation recommendations
Sept. 15, 2014	**Release draft approach and implementation recommendations for 45-day public comment period**

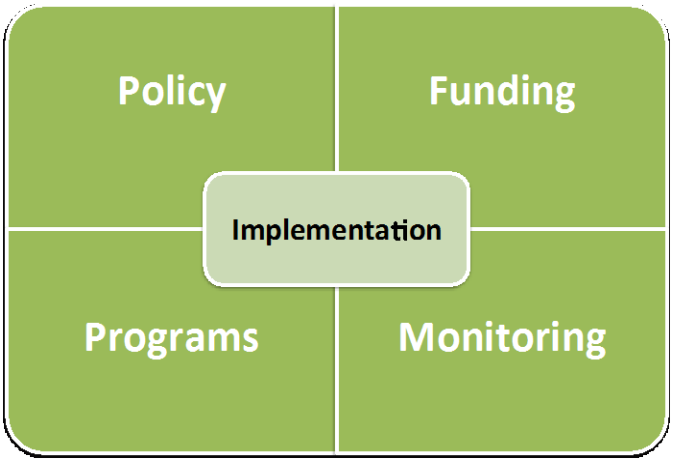
Milestone 3

Sept. – Oct. 2014	Brief local officials, TriMet, the Port of Portland and ODOT on the draft approach and upcoming adoption process through county-level coordinating committee meetings, quarterly updates, and other means
Sept. 26, 2014	TPAC discussion on draft approach and implementation recommendations
Oct. 7, 2014	Council discussion on draft approach and implementation recommendations *(if needed)*
Oct. 9, 2014	JPACT discussion on draft approach and implementation recommendations
Oct. 15, 2014	MTAC discussion on draft approach and implementation recommendations
Oct. 22, 2014	MPAC discussion on draft approach and implementation recommendations
Oct. 30	Public hearing (also first reading and initial evidentiary hearing)
Oct. 31	TPAC begins discussion of public comments and recommendation to JPACT
Nov. 4	Council discussion of public comments and prep for 11/7 MPAC/JPACT meeting
Nov. 7	MPAC/JPACT joint meeting to discuss potential refinements & recommendation to the Metro Council *(8am to noon, location TBD)*
Nov. 12	MPAC discussion on public comments, potential refinements & recommendation to the Metro Council
Nov. 13	JPACT discussion on public comments, potential refinements & recommendation to the Metro Council
Nov. 19	MTAC makes recommendation to MPAC on adoption of the preferred approach
Nov. 21	TPAC makes recommendation to JPACT on adoption of the preferred approach
Dec. 9	Council discussion of potential refinements being considered by MPAC and JPACT
Dec. 10	MPAC recommendation to the Metro Council on adoption of the preferred approach
Dec. 11	JPACT recommendation to the Metro Council on adoption of the preferred approach
Dec. 18, 2014	**Seek Metro Council adoption of recommended preferred approach** (2nd reading, public hearing and action)
January 2015	Transmit adopted preferred approach to LCDC for review

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT UPDATE July 2014

BACKGROUND | The 2009 Oregon Legislature required the Portland metropolitan region to reduce per capita greenhouse gas emissions from cars and small trucks by 20 percent below 2005 levels by 2035.

The region has identified a draft approach that is expected to meet the target while also supporting many other state, regional and local goals, including clean air and water, transportation choices, healthy and equitable communities, and a strong regional economy. The draft approach is the result of a four-year collaborative process informed by research, analysis, community engagement, and deliberation.



KEY ELEMENTS OF THE DRAFT APPROACH RECOMMENDED FOR TESTING BY MPAC, JPACT AND THE METRO COUNCIL

1. **Support Oregon's transition to cleaner, low carbon fuels, more fuel-efficient vehicles and private vehicle insurance paid by the miles driven**
2. **Implement the 2040 Growth Concept and local adopted land use plans**
3. **Make transit more convenient, frequent, accessible and affordable**
4. **Use technology to actively manage the transportation system**
5. **Provide information and incentives to expand the use of travel options**
6. **Make biking and walking more safe and convenient**
7. **Make streets and highways more safe, reliable and connected**
8. **Manage parking to make efficient use of parking resources**

As recommended by the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT) on May 30, 2014 and the Metro Council on June 19, 2014.

WHAT'S NEXT

Metro staff is evaluating the draft approach and working with the technical committees to identify potential actions for reducing greenhouse gas emissions that can be integrated with ongoing efforts to create great communities.

Summer Staff evaluates draft approach and identifies potential implementation actions

September Staff reports back results of the analysis to Metro Council and regional advisory committees

Fall Public and local government review results and draft approach

December 2014 MPAC and JPACT make recommendation to Metro Council on draft approach

December 2014 Metro Council considers adoption of draft approach

January 2015 Submit adopted approach to Land Conservation and Development Commission for approval

TPAC/MTAC workshop review draft

www.oregonmetro.gov/climatescenarios

Climate Smart Communities Scenarios Project

Draft Climate Smart Results

August 7, 2014

Metro | *Making a great place*

1

Purpose of today's workshop

- Recap of modeling inputs
- Share results
- Review potential implementation recommendations (non-binding)
- Review timeline and next steps

2

TPAC/MTAC workshop review draft

Draft Climate Smart Approach

Implement 2040 Growth Concept and adopted local plans

KEY PLANNING ASSUMPTIONS	2010	2035
Population living in the urban growth boundary	1,484,000	1,974,000
Jobs located in the urban growth boundary	753,000	1,118,000
Households living in the urban growth boundary	593,000	837,000
Households living in mixed-use areas (percent)	26%	37%
Urban growth boundary expansion (acres)	2010 UGB	12,000 acres

Source: Growth assumptions reflect the regionally-coordinated 2035 growth distribution adopted by the Metro Council in November 2012 by Ordinance No. 12-1292A . Numbers are rounded to the nearest thousand.

4

Draft Climate Smart Approach

Support Oregon's transition to cleaner, low carbon fuels and fleet

KEY PLANNING ASSUMPTIONS	2005 & 2010	2035
Fleet mix (percent)	Auto: 57% Light truck: 43%	Auto: 71% Light truck: 29%
Vehicle replacement rate (average age)	10 years	8 years
Fuel economy for autos (miles per gallon)	28 mpg	68 mpg
Fuel economy for light trucks (miles per gallon)	20 mpg	48 mpg
Plug-in hybrid electric or all electric vehicles (percent)	2%	8%

Source: OAR 660-044-0010, Table 1 and Table 2
http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_660/_tables_660/660-044-0010_5-26.pdf

5

Draft Climate Smart Approach

Cleaner, low carbon fuels

KEY PLANNING ASSUMPTIONS	2010	2035
Carbon intensity of fuels	90 g CO_2e/ megajoule	72g CO_2e/ megajoule (20% reduction)

Source: OAR 660-044-0010, Table 1
http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_660/_tables_660/660-044-0010_5-26.pdf

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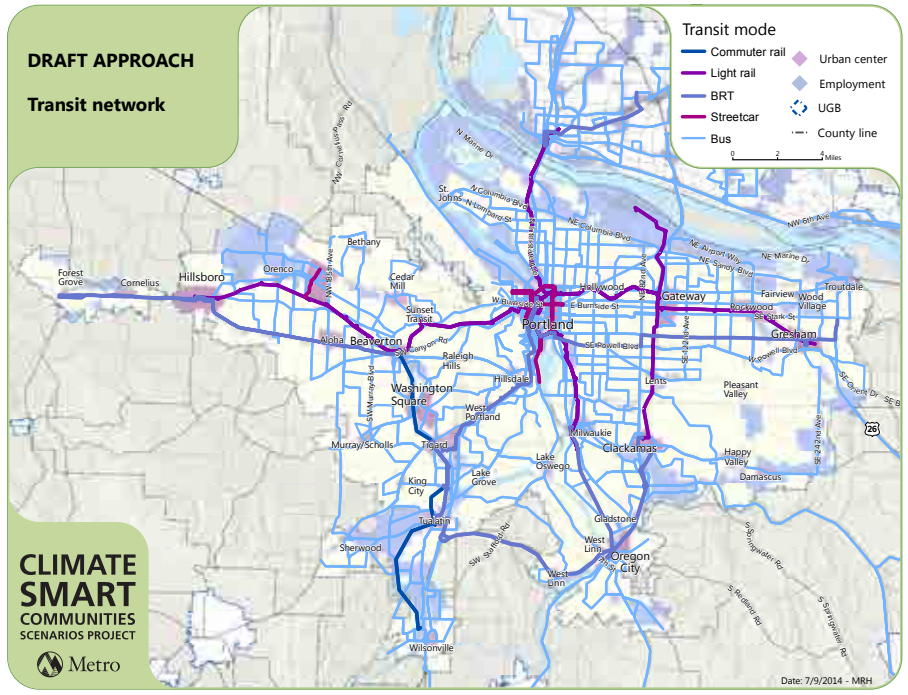
TPAC/MTAC workshop review draft



Draft Climate Smart Approach

Transit capital

2014 RTP Financially Constrained System capital projects and capital-related investments needed to support increased service and operations

- Columbia River Crossing LRT extension
- Streetcar extension to AmberGlen
- Bus rapid transit as proxy for corridors undergoing regional or local planning and project development and all next-phase priority corridors (e.g., Division/ Powell, SW Corridor, I-205, Oregon City, and TV Highway to Forest Grove)
- Fleet replacement/expansion and maintenance & operations facilities expansion
- Transit centers, bus stop and ROW improvements

8

Draft Climate Smart Approach

Transit operations

2014 RTP State System (full RTP) service levels in transit network (approximately 9,400 daily revenue hours)

- Partially implements TriMet Service Enhancement Plans (SEPs)
- Implements existing SMART Transit Master plan
- Bus Rapid Transit service for Near-Term and Next Phase Priority Corridors in HCT plan
- Reflects 83% increase in revenue hours from 2010 levels

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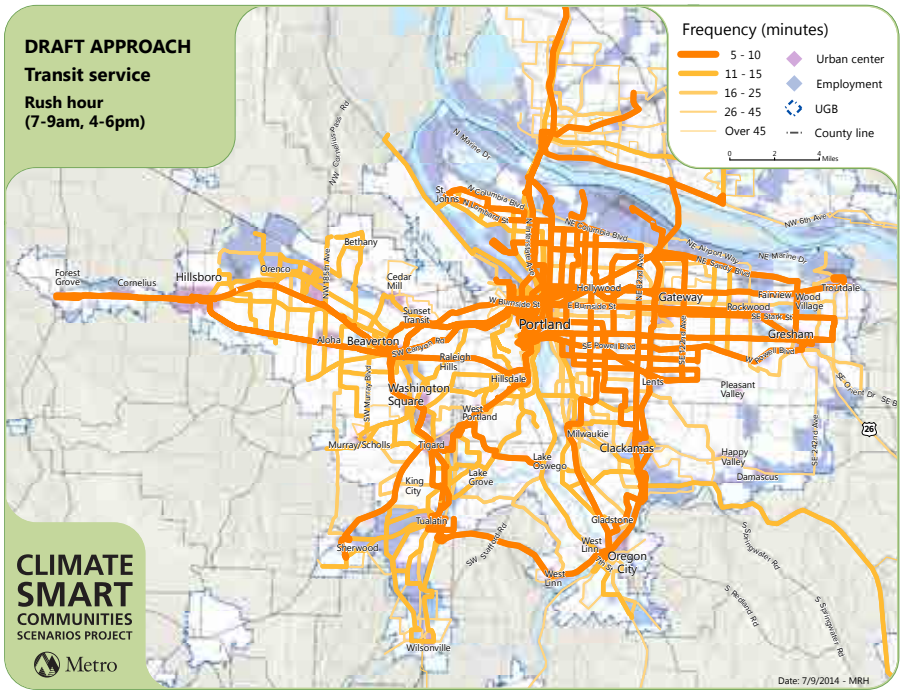

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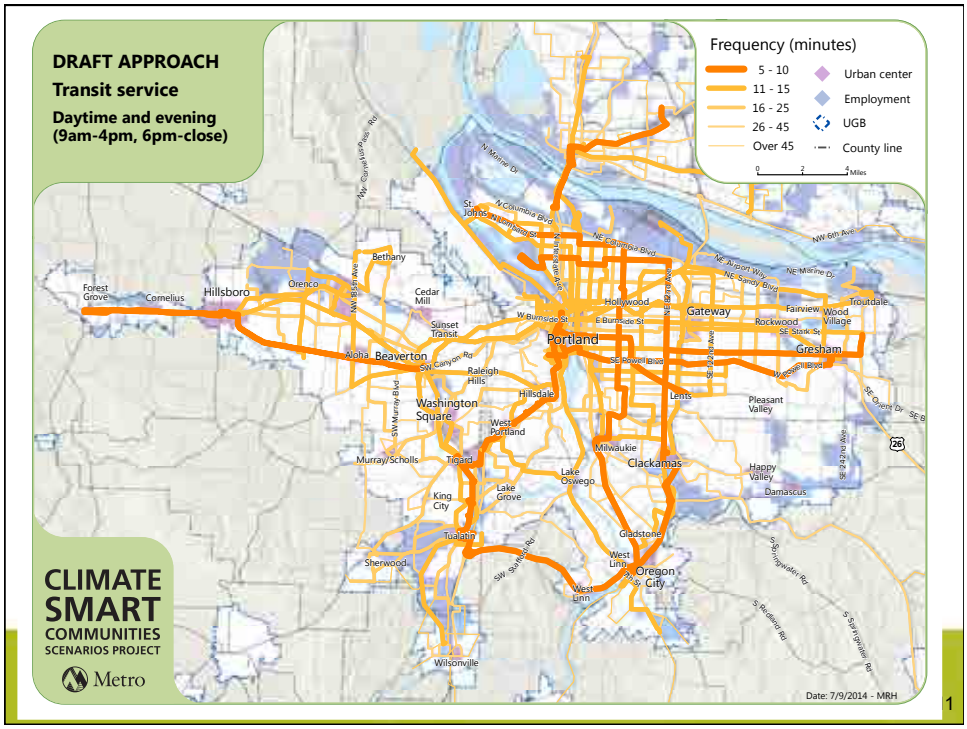
TPAC/MTAC workshop review draft



Draft Climate Smart Approach

Travel information and incentives

KEY PLANNING ASSUMPTIONS	2010	2035
Households participating in eco-driving* (percent)	0%	45%
Households participating in individualized marketing programs (percent)	9%	45%
Workers participating in employer-based commuter programs (percent)	20%	30%
Car-sharing	One car share per 5,000 vehicles	Twice the number of car share vehicles available

* The Statewide Transportation Strategy vision assumes approximately 30% of households in Oregon practice eco-driving by 2020 and 60% by 2035.

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Draft Climate Smart Approach

Technology to manage the system

KEY PLANNING ASSUMPTIONS	2010	2035
Estimated delay reduction from transportation management strategies	9%	35%

Key investments

- interconnect and coordinate timing of all traffic signals in the region
- deploy transit signal priority on all bus routes with 15-min. or better service
- expand incident response patrols to all area freeways and major streets adjacent to freeways

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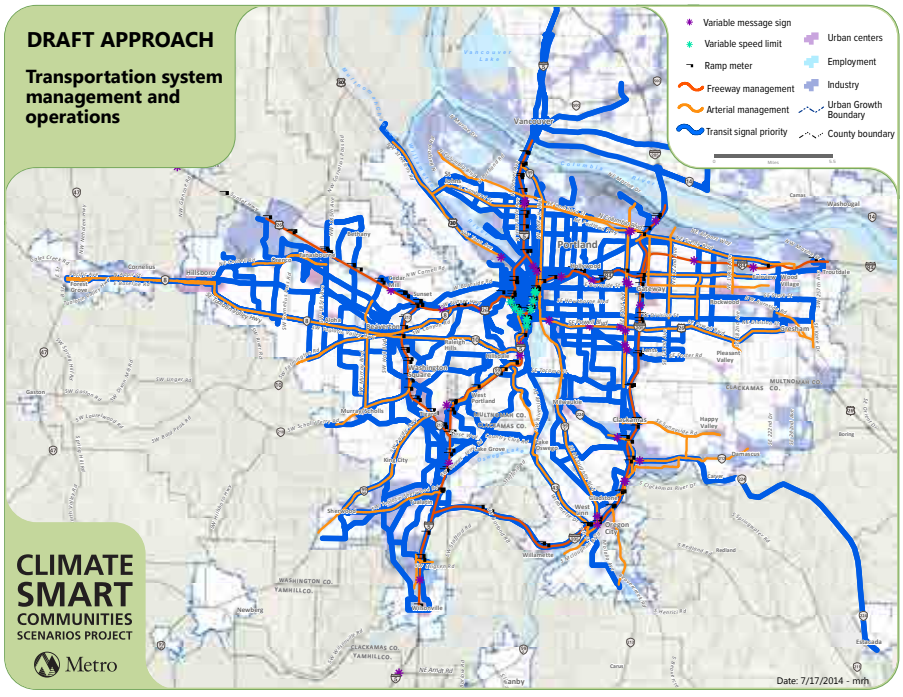

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TPAC/MTAC workshop review draft

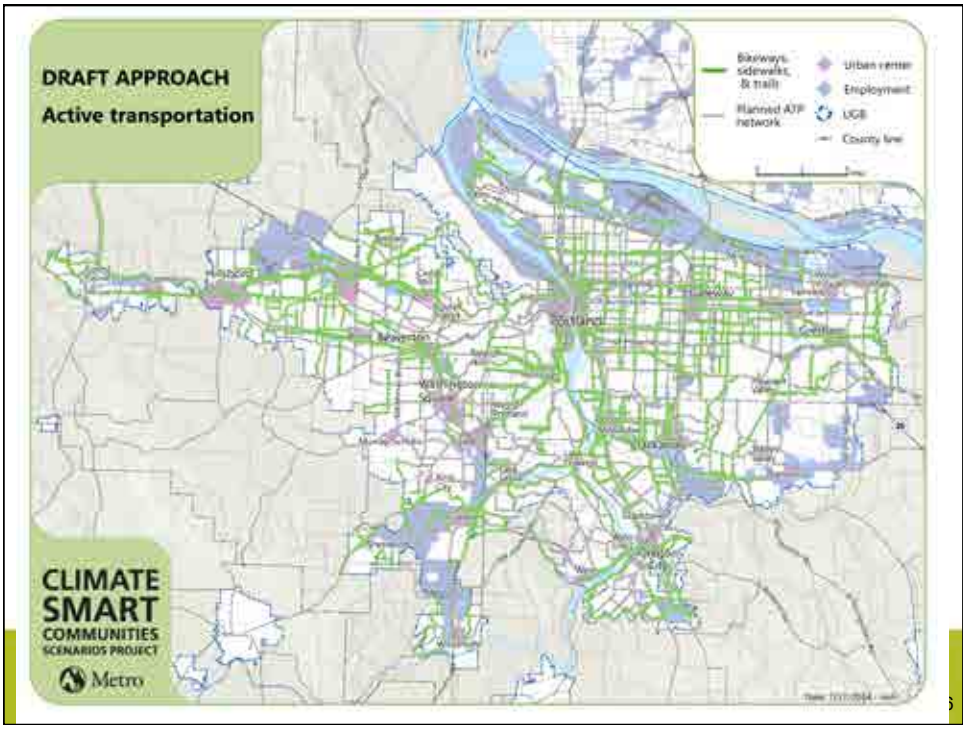
Draft Climate Smart Approach

Active transportation

KEY PLANNING ASSUMPTIONS	2010	2035
Drive alone trips that shift to bicycles (percent)	9%	17%
Regional trails * (miles added)	n/a	223
Bikeway facilities* (miles added)	n/a	126
Pedestrian facilities* (miles added)	n/a	138
Projects with bikeway and pedestrian facilities* (miles added)	n/a	176

** Reflects all 2014 Regional Transportation Plan (Financially Constrained System) bike and pedestrians projects; additional miles of bikeway and pedestrian facilities would be added through road projects.*

15



TPAC/MTAC workshop review draft

Draft Climate Smart Approach

Streets and highways

KEY PLANNING ASSUMPTIONS	2010	2035
Freeway expansion (lane miles added from 2010)	n/a	52
Arterial expansion (lane miles added from 2010)	n/a	386
Total	n/a	438

Source: Reflects 2014 Regional Transportation Plan (Financially Constrained System) street and highway investments; nearly two-thirds of these projects also include bicycle and pedestrian improvements.

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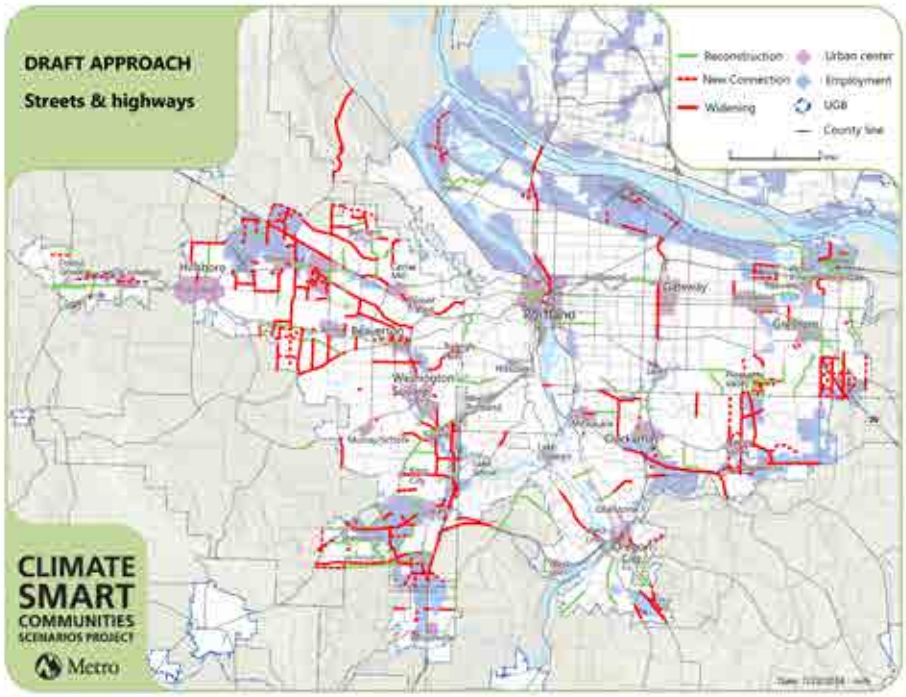

Draft Climate Smart Approach

Parking

KEY PLANNING ASSUMPTIONS	2010	2035
Work trips to areas with parking pricing and other parking management strategies (percent)	13%	30%
Non-work trips to areas with parking pricing and other parking management strategies (percent)	8%	30%

Source: 2014 Regional Transportation Plan

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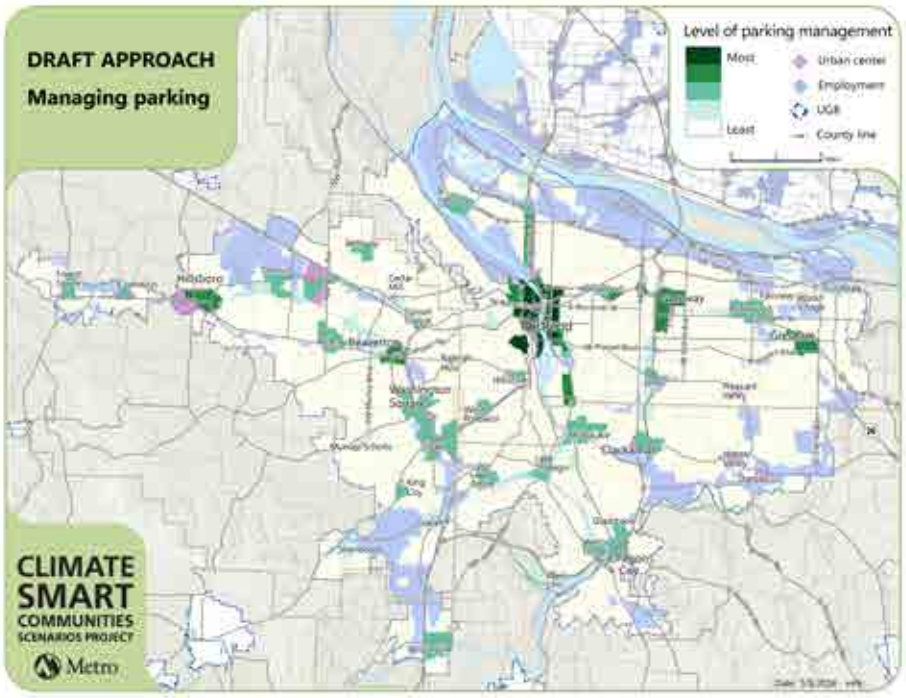
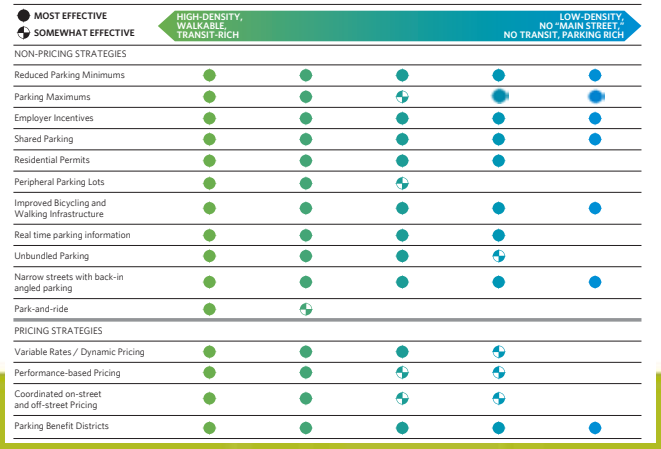


Draft Climate Smart Approach

What is parking management?

The most appropriate parking strategies for each community will depend on their unique characteristics and their vision for the future. Some of the factors affecting parking needs include: population and employment density, presence of high capacity transit, presence (or absence) of frequent bus service as well as infrastructure supporting bicycling and walking in an area. Each community should determine appropriate strategies for particular locations, recognizing that some communities may not be ready to implement the parking strategies below, and may need to phase them in over time. Parking studies, surveys and other research can provide additional localized data to identify community-specific methods for phasing in parking management strategies over time.



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Draft Climate Smart Approach

Other state-wide assumptions

KEY PLANNING ASSUMPTIONS	2010	2035
Fuel price (2005$)	$2.43	$5.53
Gas tax* (dollars per gallon)	$.424	$.484
Pay-as-you-drive insurance** (percent of households participating)	0%	40% at $.05/mile

Note: All costs are in 2005 dollars, which includes adjustment for inflation.

* This reflects current federal and state gas tax costs in constant dollars and does not account for local gas taxes collected in the some parts of the region.

** The STS Vision assumes approximately 20% of households have vehicle insurance paid by the miles driven by 2020 and nearly 100% by 2035.

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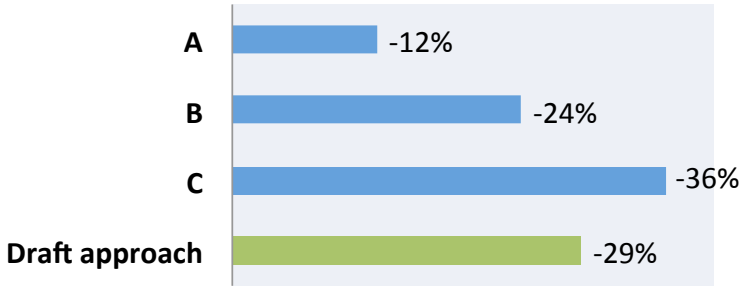
TPAC/MTAC workshop review draft

Our region can meet the target

Per capita greenhouse gas emissions reduction from 2005 levels by 2035

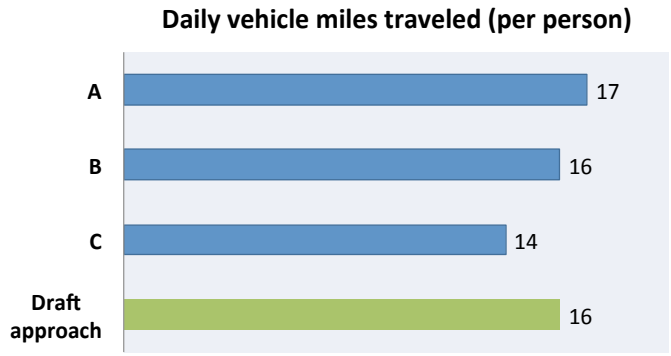


Note: The percent reduction is in addition to reductions anticipated from advancements in cleaner, low carbon fuels and more fuel efficient vehicles

Source: GreenSTEP

24

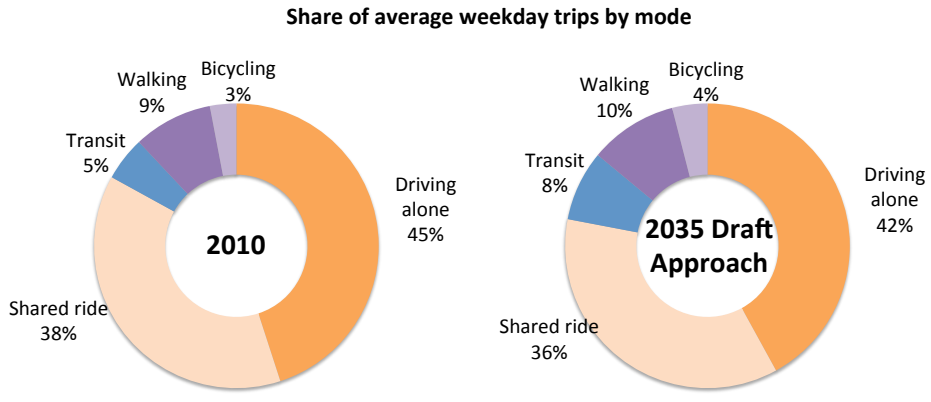
Land use and investment help reduce the need to drive



Source: GreenSTEP

25

Investment expands use of travel options



Source: Regional travel model

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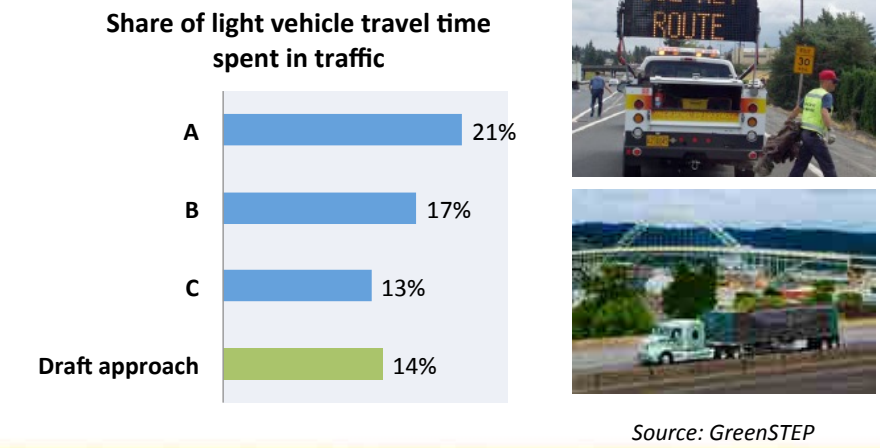
TPAC/MTAC workshop review draft

Investment helps reduce time spent in traffic



Source: GreenSTEP

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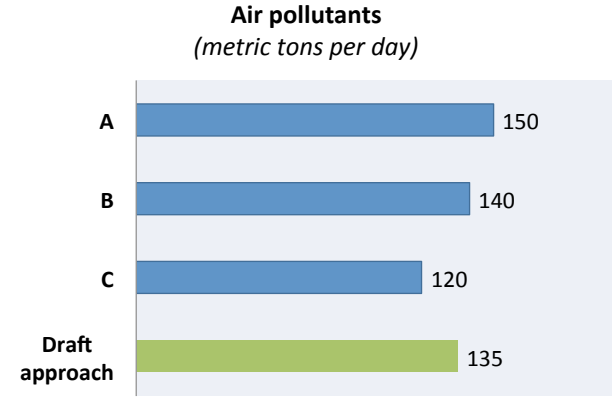
Cleaner fuels, more fuel efficient vehicles and investment help keep our air clean

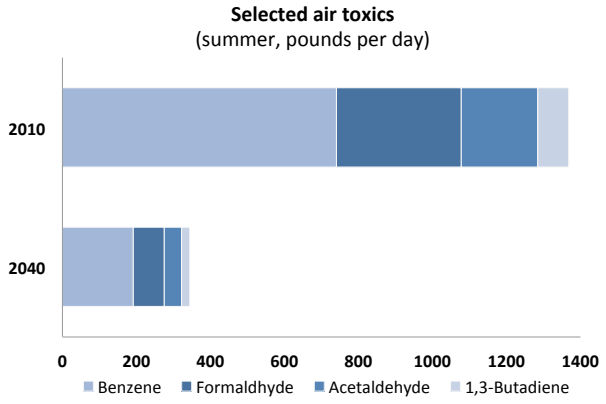


Analysis includes $PM_{2.5}$, hydrocarbons and nitrogen oxides.

Source: GreenSTEP

28

Cleaner fuels, more fuel efficient vehicles and investment will reduce air toxics

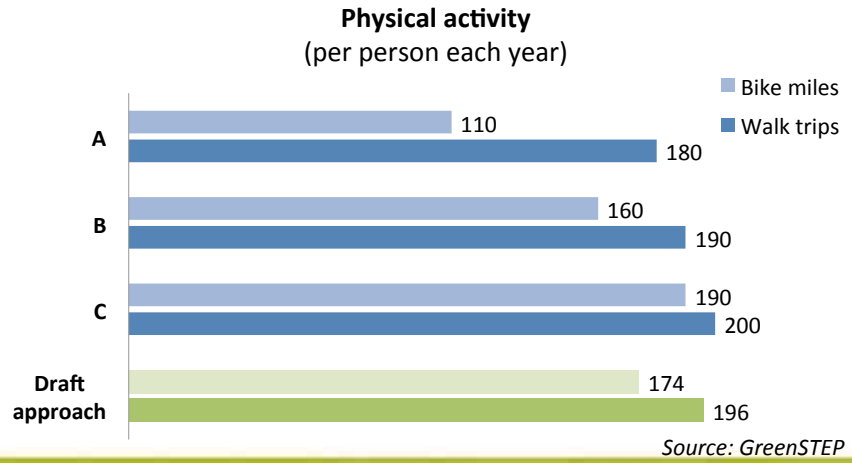


Data from air quality conformity analysis conducted for the 2014 Regional Transportation Plan

Source: 2014 RTP

29

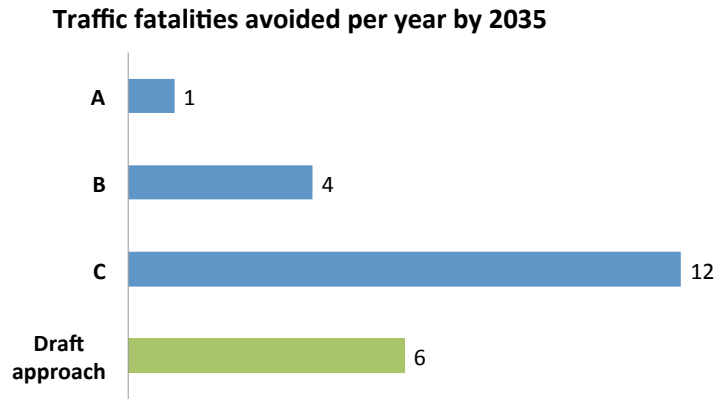
Community design and investment help increase physical activity



Source: GreenSTEP

30

Investment helps improve traffic safety



Source: ITHIM, Oregon Health Authority

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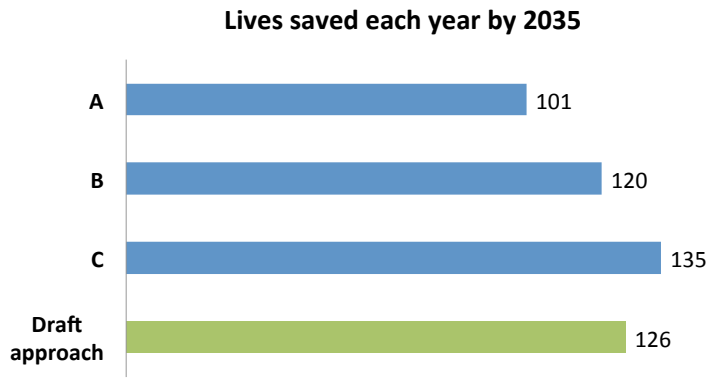
Less air pollution, more physical activity & improved safety help save lives

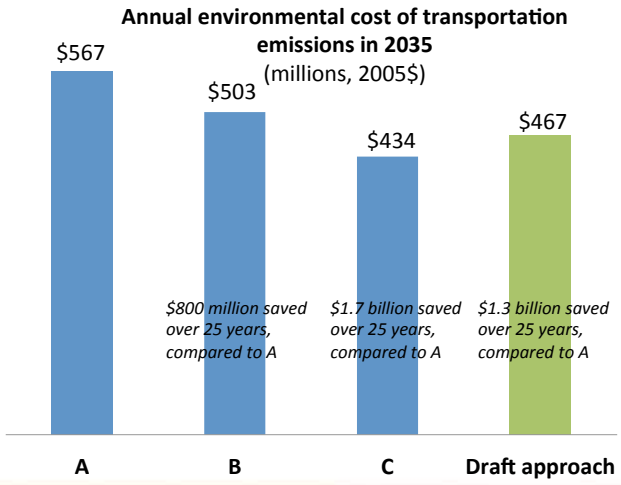


Source: ITHIM, Oregon Health Authority

Note: Phase 2 results for A, B and C have been updated.

32

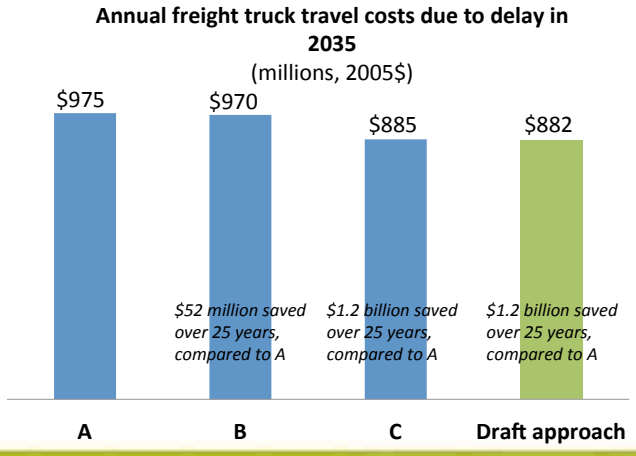
Our economy benefits from reduced emissions



Source: GreenSTEP

33

Our economy benefits from reduced delay



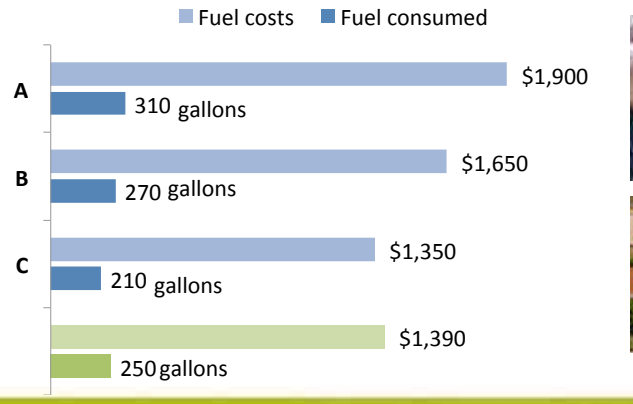
Source: GreenSTEP

Note: Phase 2 results for A, B and C have been updated.

34

Households save money by driving less and more fuel-efficient vehicles

Annual household fuel costs and consumption in 2035
(in 2005$ and gallons)

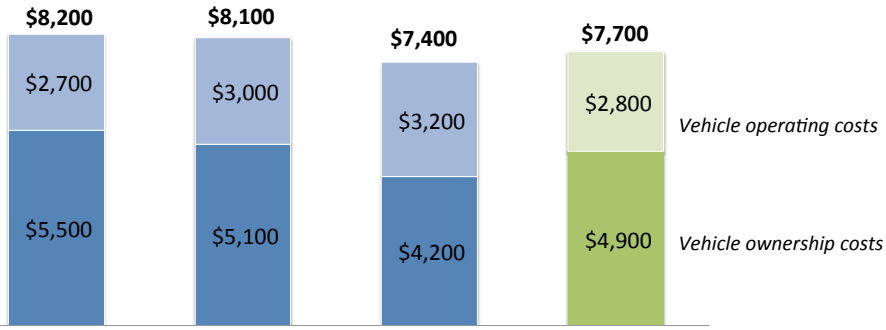


Source: GreenSTEP

35

Overall vehicle-related travel costs decrease due to lower ownership costs

Average annual household vehicle ownership & operating costs
(2005$)

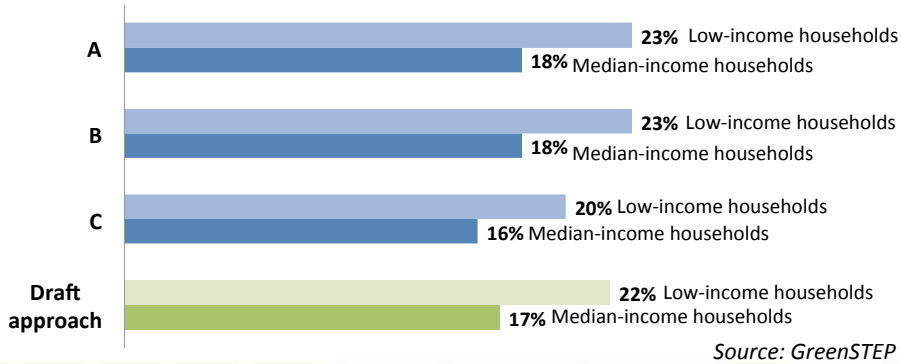


Source: GreenSTEP

36

Lower vehicle travel costs help household budgets

Share of annual household income spent on vehicle travel



Source: GreenSTEP

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Draft Climate Smart Approach
WHAT DOES IT COST?

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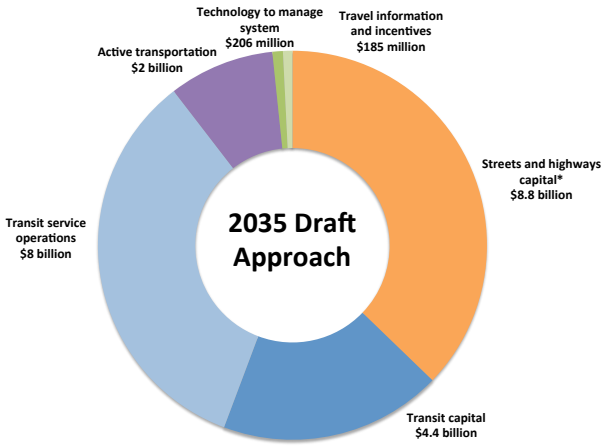
TPAC/MTAC workshop review draft

Draft Climate Smart Approach

WHAT DOES IT COST?



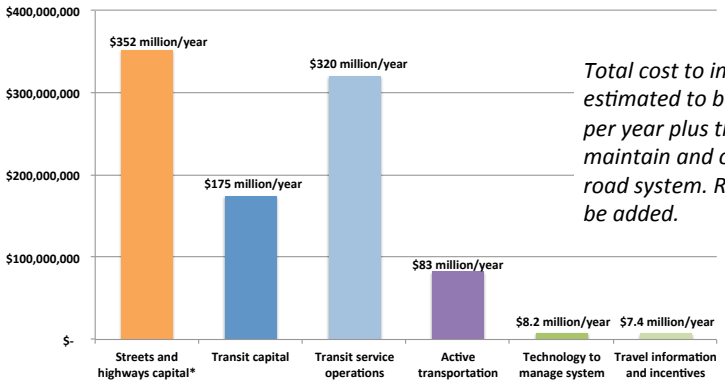
Costs are estimated in 2014$.

**Road-related maintenance operations and preservation costs to be added.*

39

Draft Climate Smart Approach

HOW MUCH WOULD WE NEED TO SPEND EACH YEAR TO IMPLEMENT?

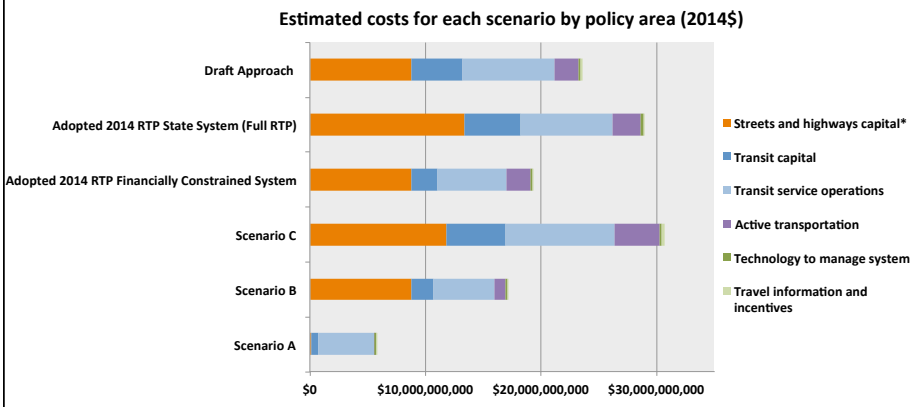


Total cost to implement is estimated to be $945 million per year plus the cost to maintain and operate the road system. Road OMP to be added.

40

Draft Climate Smart Approach

HOW DOES IT COMPARE?



Costs are estimated in 2014$ and do not include road-related maintenance, operations and preservation costs.

41

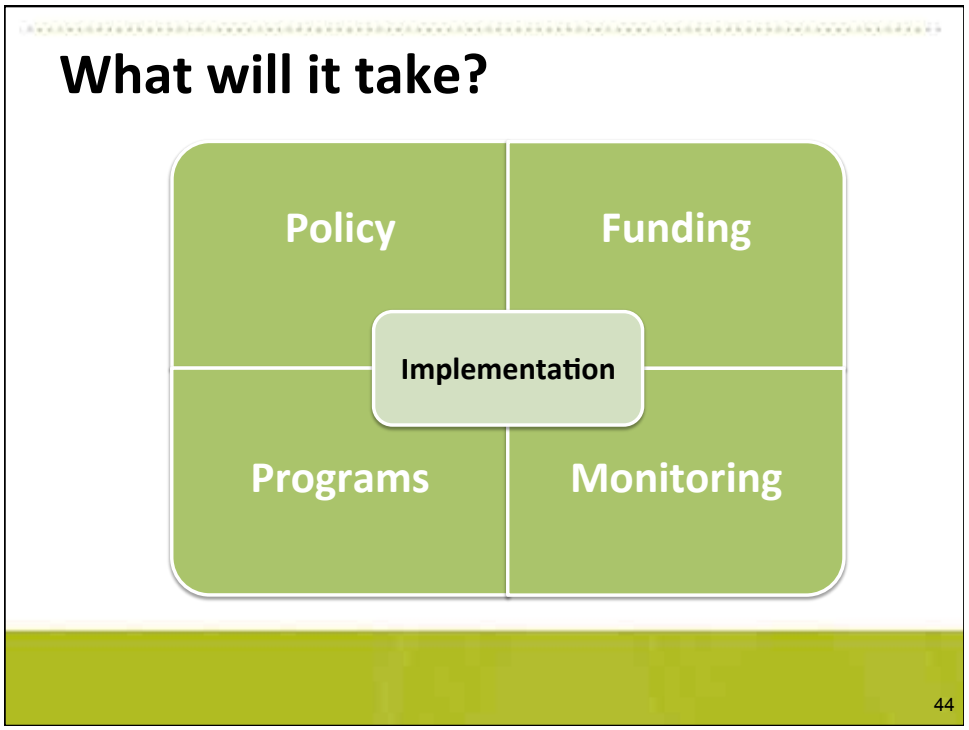
Draft Climate Smart Approach

POTENTIAL FUNDING MECHANISMS BY INVESTMENT TYPE

Under construction

42

TPAC/MTAC workshop review draft



TPAC/MTAC workshop review draft

Our shared path forward...

1. Build on existing efforts and aspirations
2. Focus on outcomes and seek strategies with multiple benefits
3. Advance social equity with implementation
4. Be bold and innovative, yet well-grounded
5. Prioritize short time-frame, equitable and cost-effective strategies

45

…our shared path forward

6. Provide incentives and flexibility
7. Build partnerships and capacity
8. Initiate a coordinated strategy to secure stable funding
9. Begin assessing and building resiliency
10. Monitor progress and update approach as needed

46

Recommended state actions

Under construction

47

Recommended regional actions

Under construction

48

TPAC/MTAC workshop review draft

Recommended local actions

Under construction

49

Recommended monitoring

Under construction

50

TPAC/MTAC workshop review draft

Final steps in 2014

AUG. 18	MTAC/TPAC workshop to review draft materials
SEPT. to OCT.	Report back results to advisory committees and stakeholders
SEPT. 15 – OCT. 30	Public review of draft preferred approach
OCT. 30	Council public hearing
NOV. - DEC.	Advisory Committees consider potential refinements
DEC. 10 & 11	MPAC and JPACT make recommendation to the Metro Council
DEC. 18	Final action by Council

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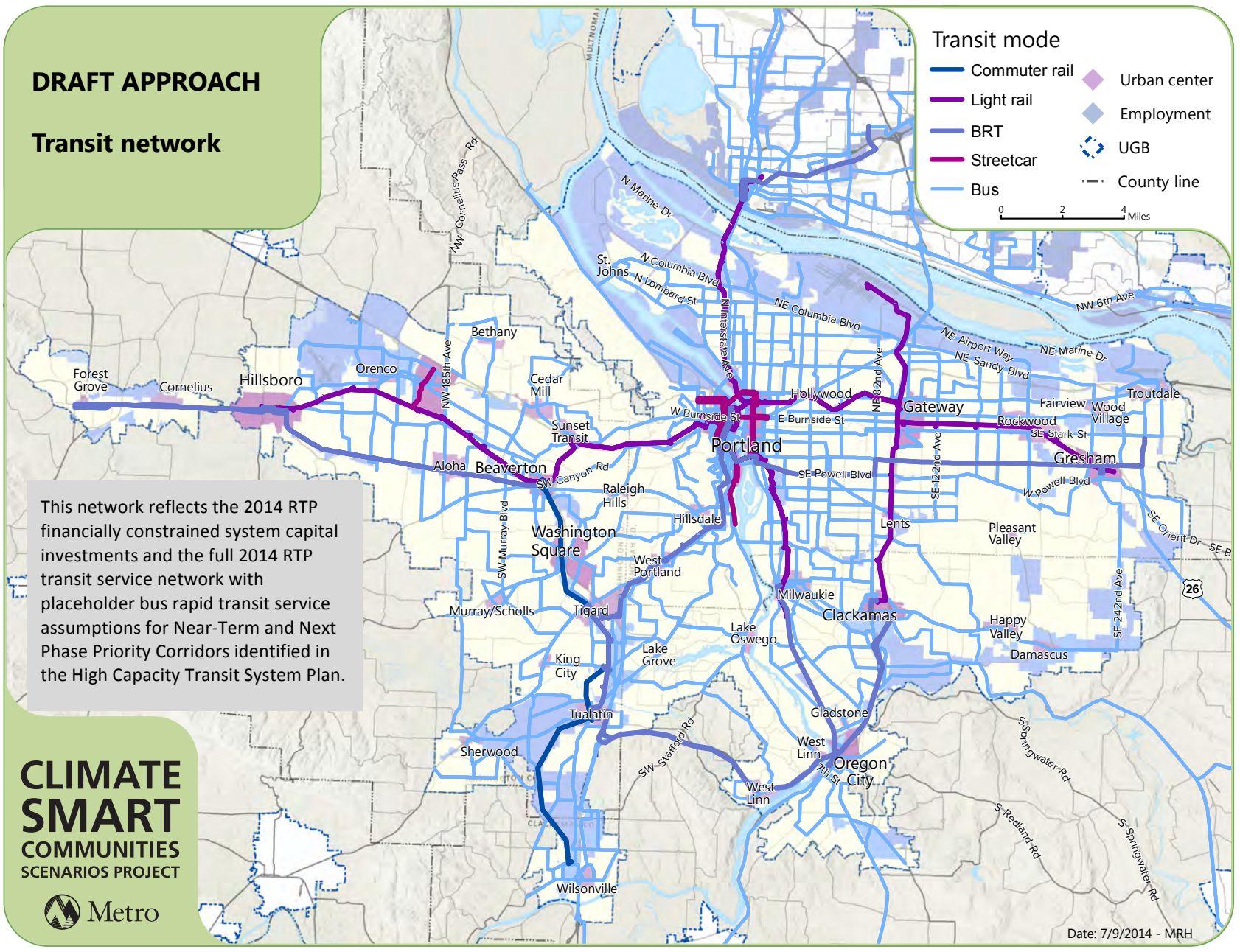
CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

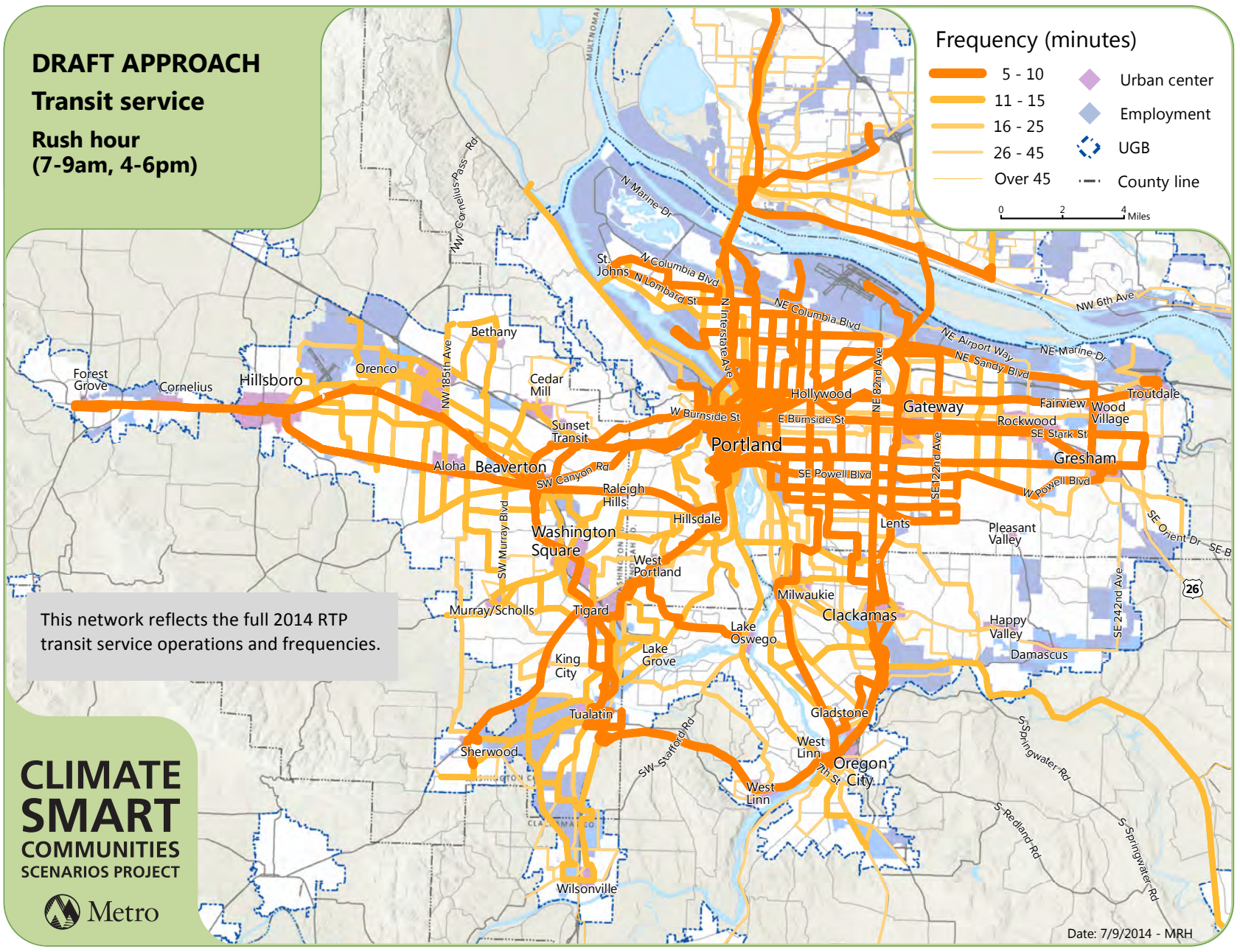
DRAFT APPROACH TRANSPORTATION SYSTEM ASSUMPTIONS

The following maps illustrate investments assumed in the draft approach.

2035 Transit Network



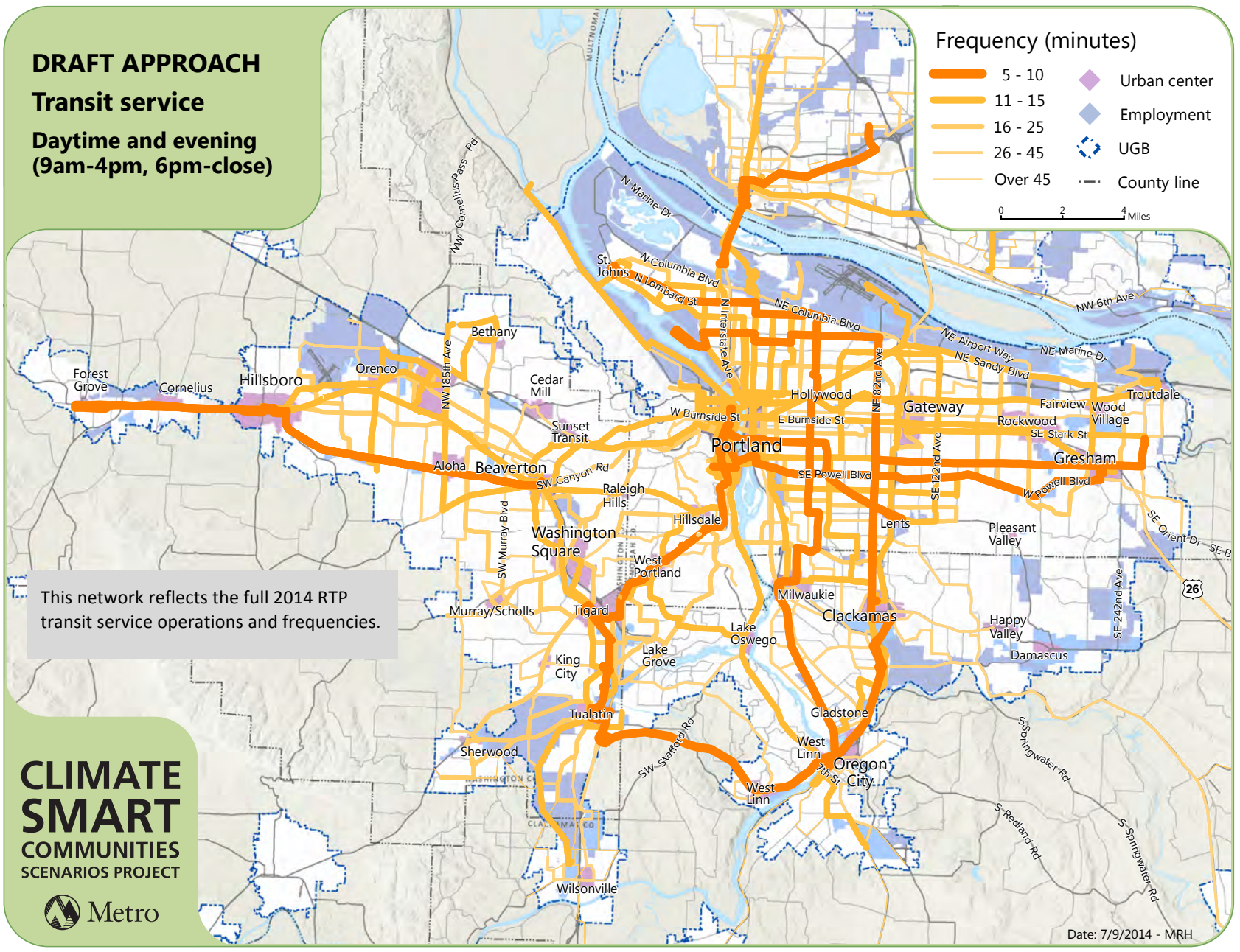
2035 Transit Service (rush hour)



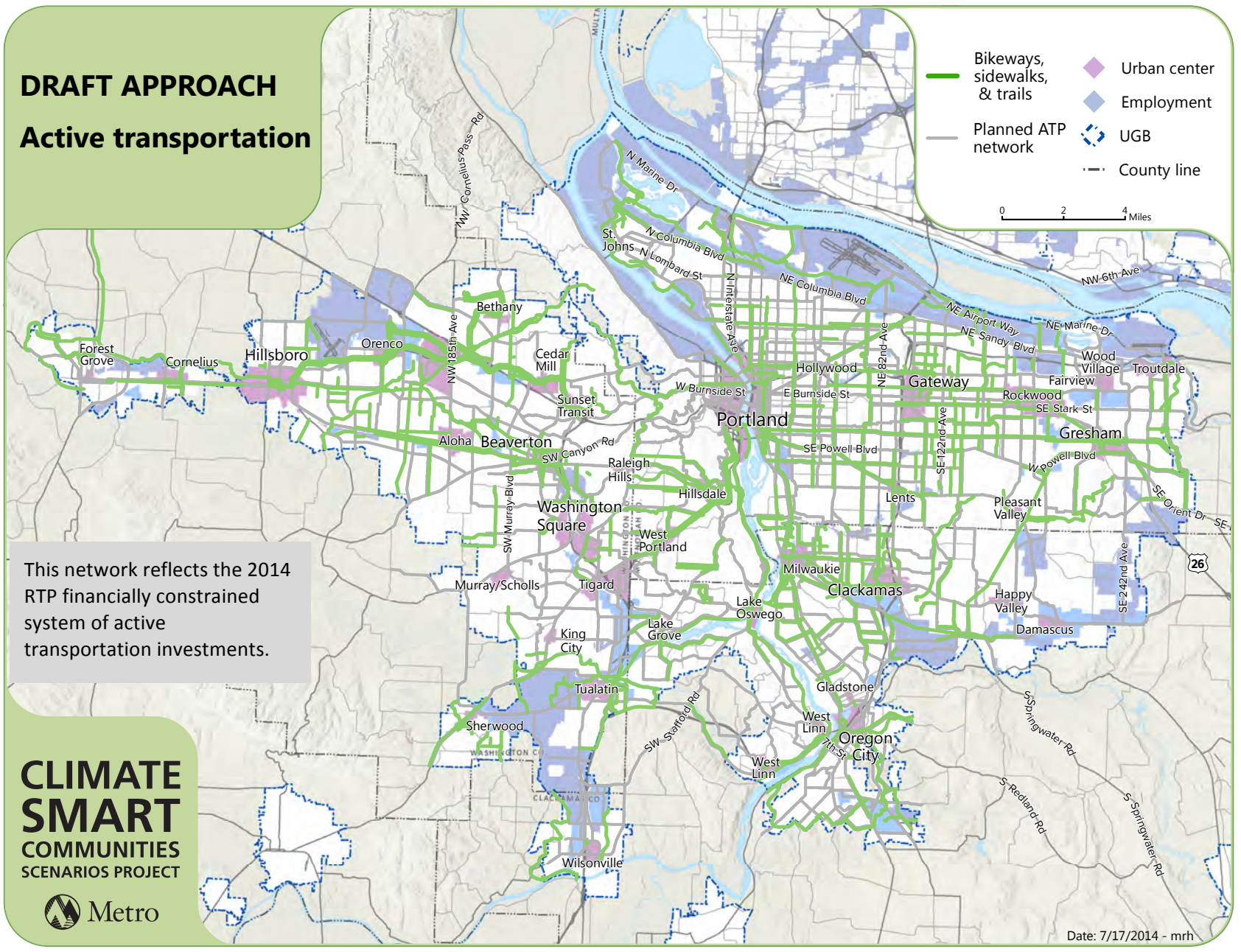
CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

DRAFT APPROACH TRANSPORTATION SYSTEM ASSUMPTIONS

2035 Transit Service (daytime and evening)



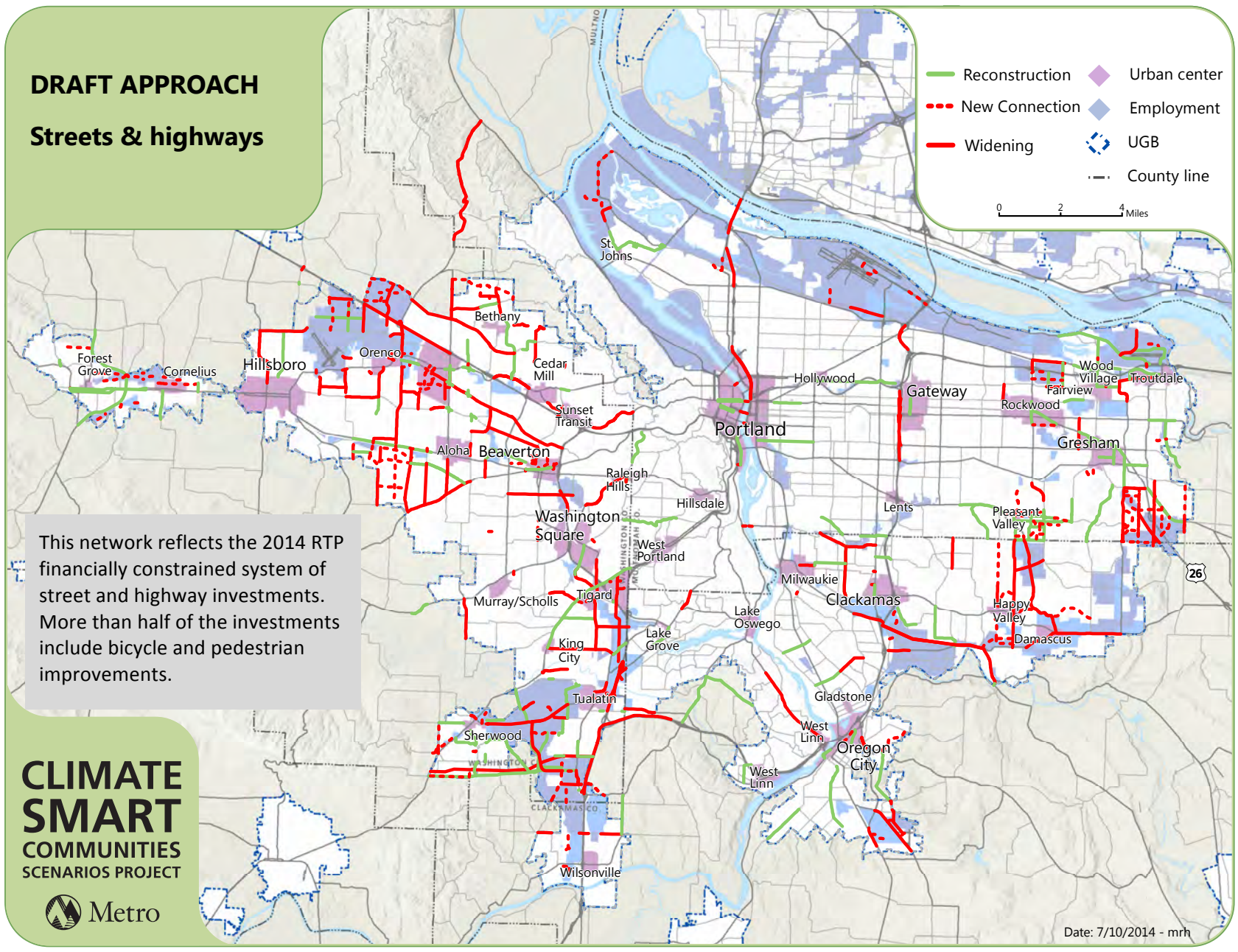
2035 Regional Active Transportation Network



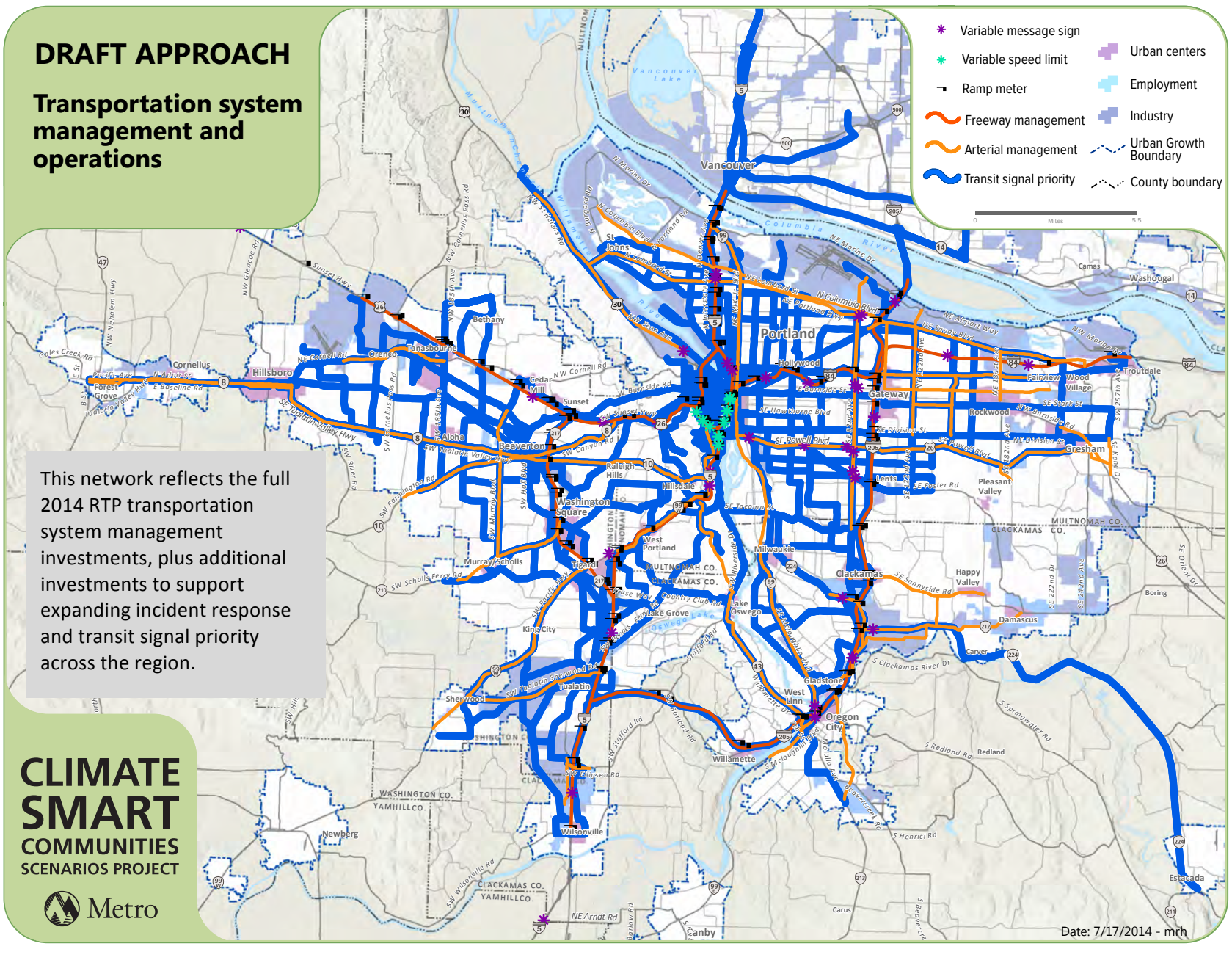
CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

DRAFT APPROACH TRANSPORTATION SYSTEM ASSUMPTIONS

2035 Streets and Highways Network



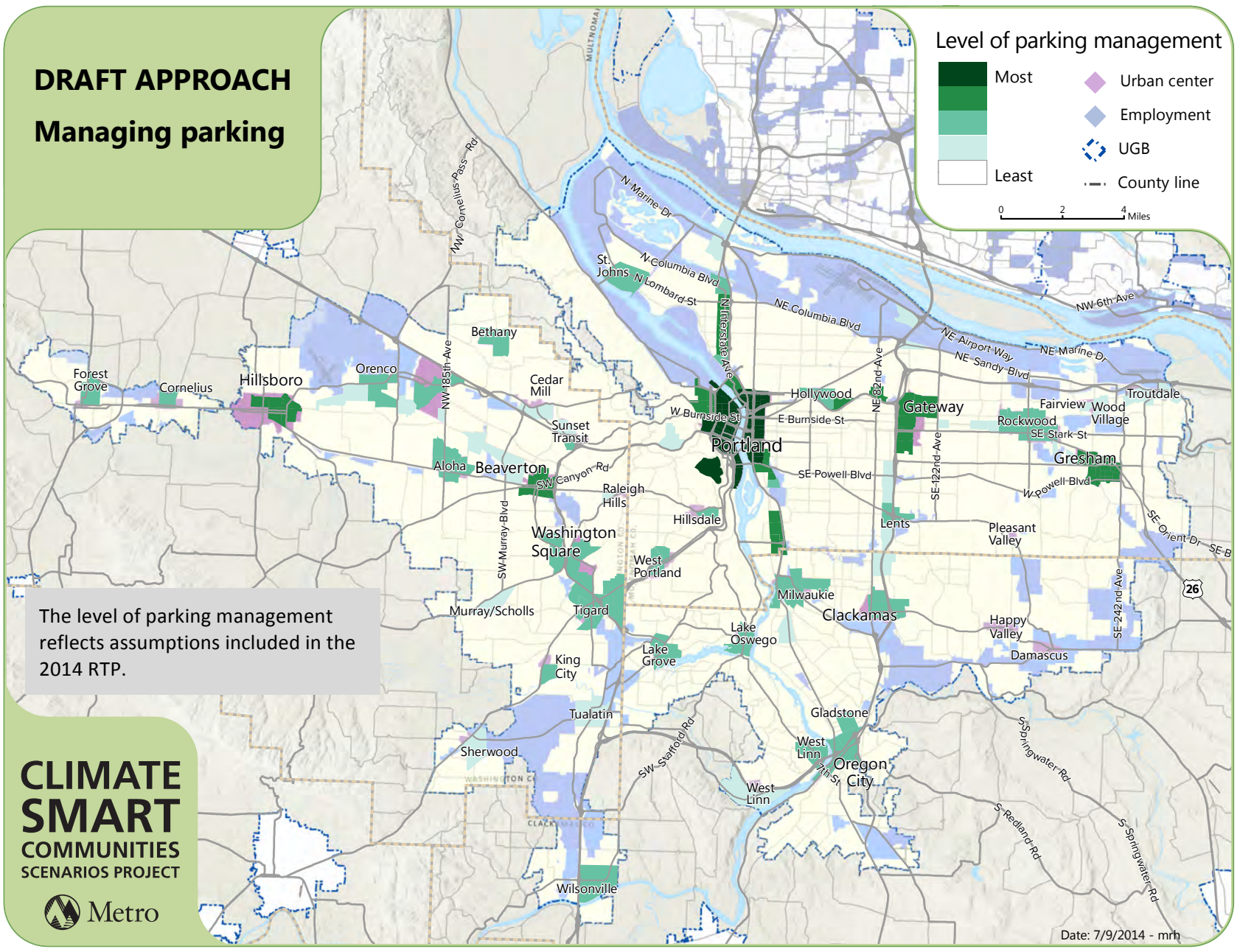
2035 Transportation System Management and Operations



CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

DRAFT APPROACH TRANSPORTATION SYSTEM ASSUMPTIONS

2035 Parking Management



What is Parking Management?

The most appropriate parking strategies for each community will depend on their unique characteristics and their vision for the future. Some of the factors affecting parking needs include: population and employment density, presence of high capacity transit, presence (or absence) of frequent bus service as well as infrastructure supporting bicycling and walking in an area. Each community should determine appropriate strategies for particular locations, recognizing that some communities may not be ready to implement the parking strategies below, and may need to phase them in over time. Parking studies, surveys and other research can provide additional localized data to identify community-specific methods for phasing in parking management strategies over time.

● MOST EFFECTIVE
◒ SOMEWHAT EFFECTIVE

	HIGH-DENSITY, WALKABLE, TRANSIT-RICH				LOW-DENSITY, NO "MAIN STREET," NO TRANSIT, PARKING RICH
NON-PRICING STRATEGIES					
Reduced Parking Minimums	●	●	●	●	●
Parking Maximums	●	●	◒	●	●
Employer Incentives	●	●	●	●	●
Shared Parking	●	●	●	●	●
Residential Permits	●	●	●	●	
Peripheral Parking Lots	●	●	◒		
Improved Bicycling and Walking Infrastructure	●	●	●	●	●
Real time parking information	●	●	●	●	
Unbundled Parking	●	●	●	◒	
Narrow streets with back-in angled parking	●	●	●	●	●
Park-and-ride	●	◒			
PRICING STRATEGIES					
Variable Rates / Dynamic Pricing	●	●	●	◒	
Performance-based Pricing	●	●	◒	◒	
Coordinated on-street and off-street Pricing	●	●	◒	◒	
Parking Benefit Districts	●	●	●	●	●

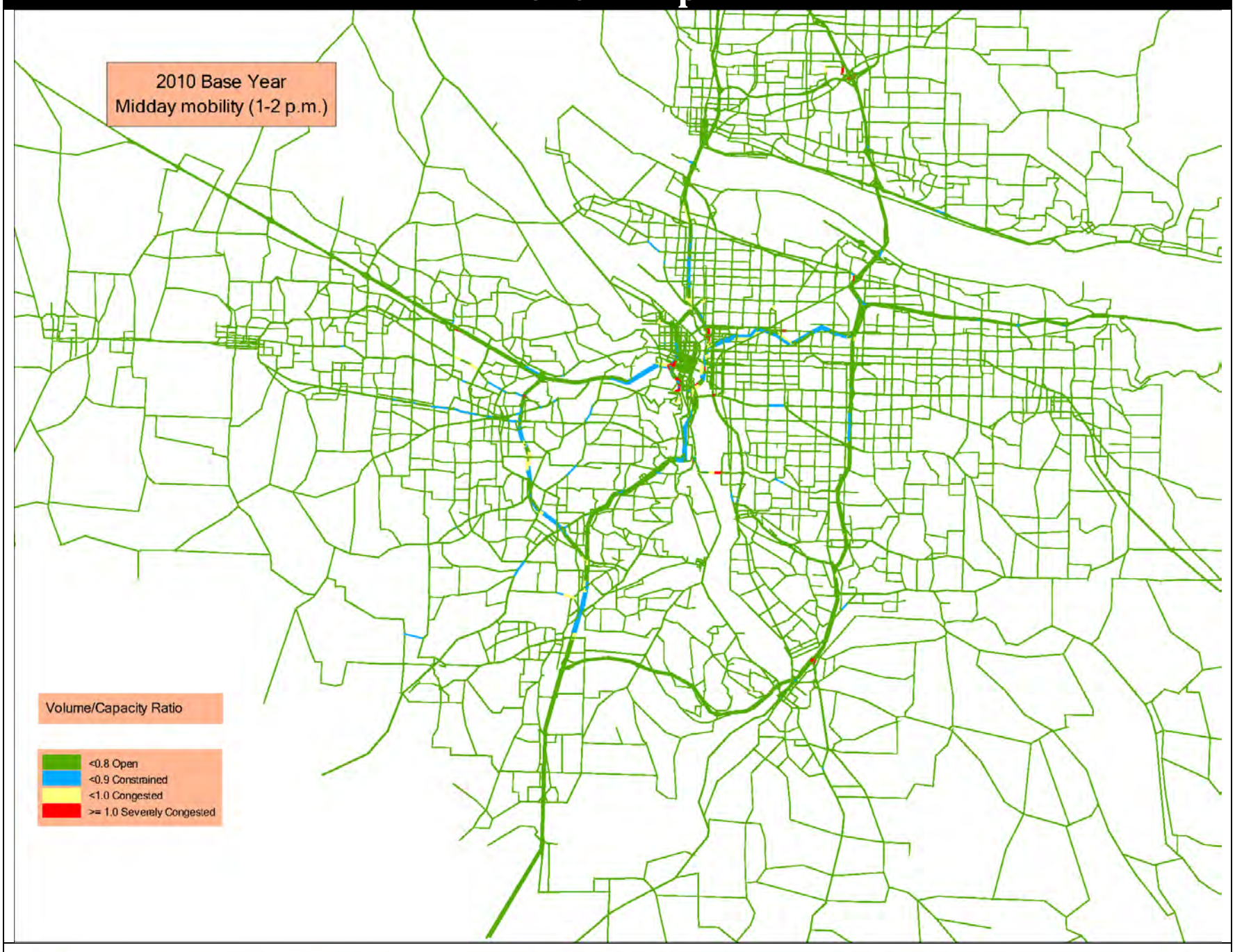
Source: Parking Strategies to Support Livable Communities (April 2012)

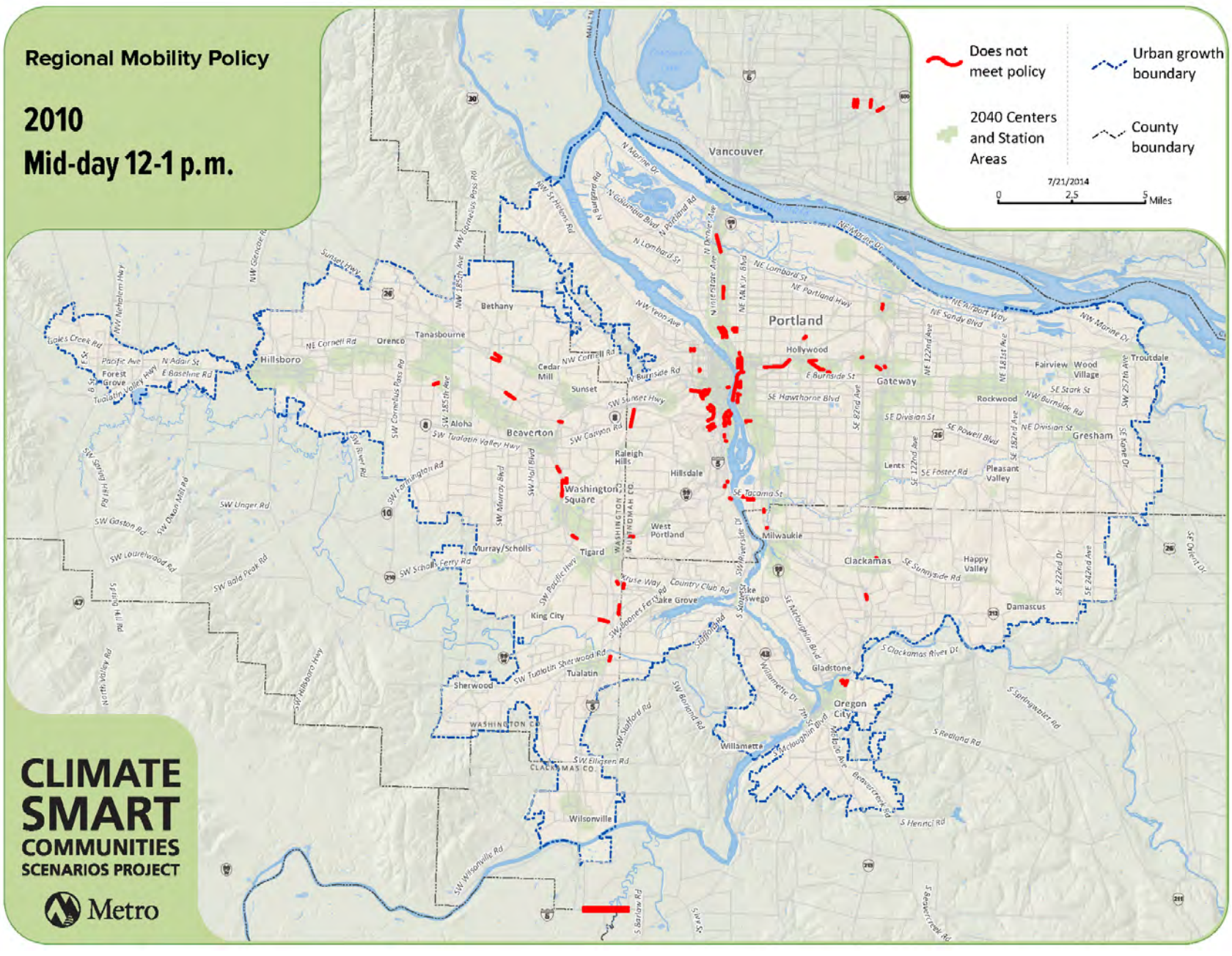
August 8, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

STREETS AND HIGHWAYS - System performance

2010 12-1pm



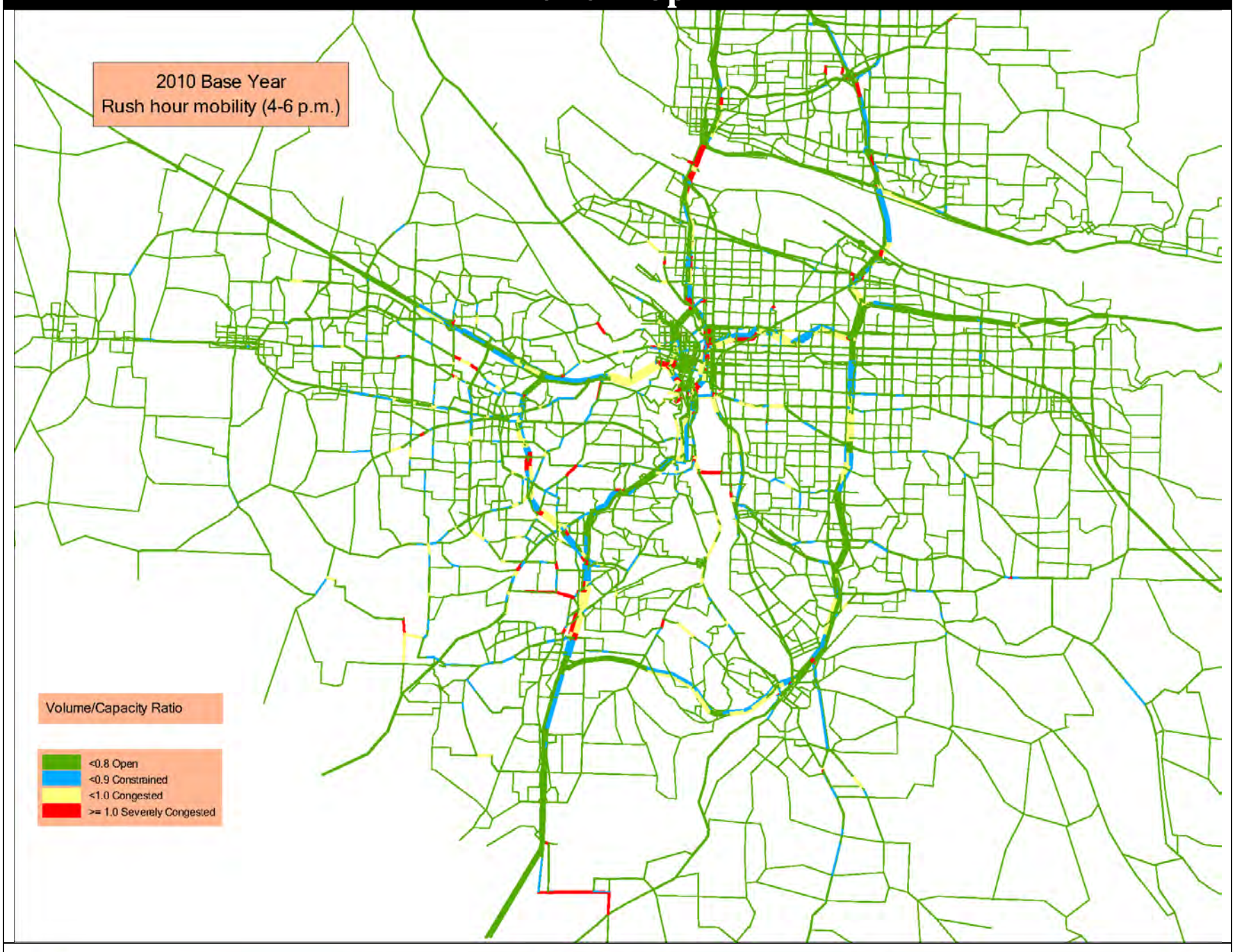


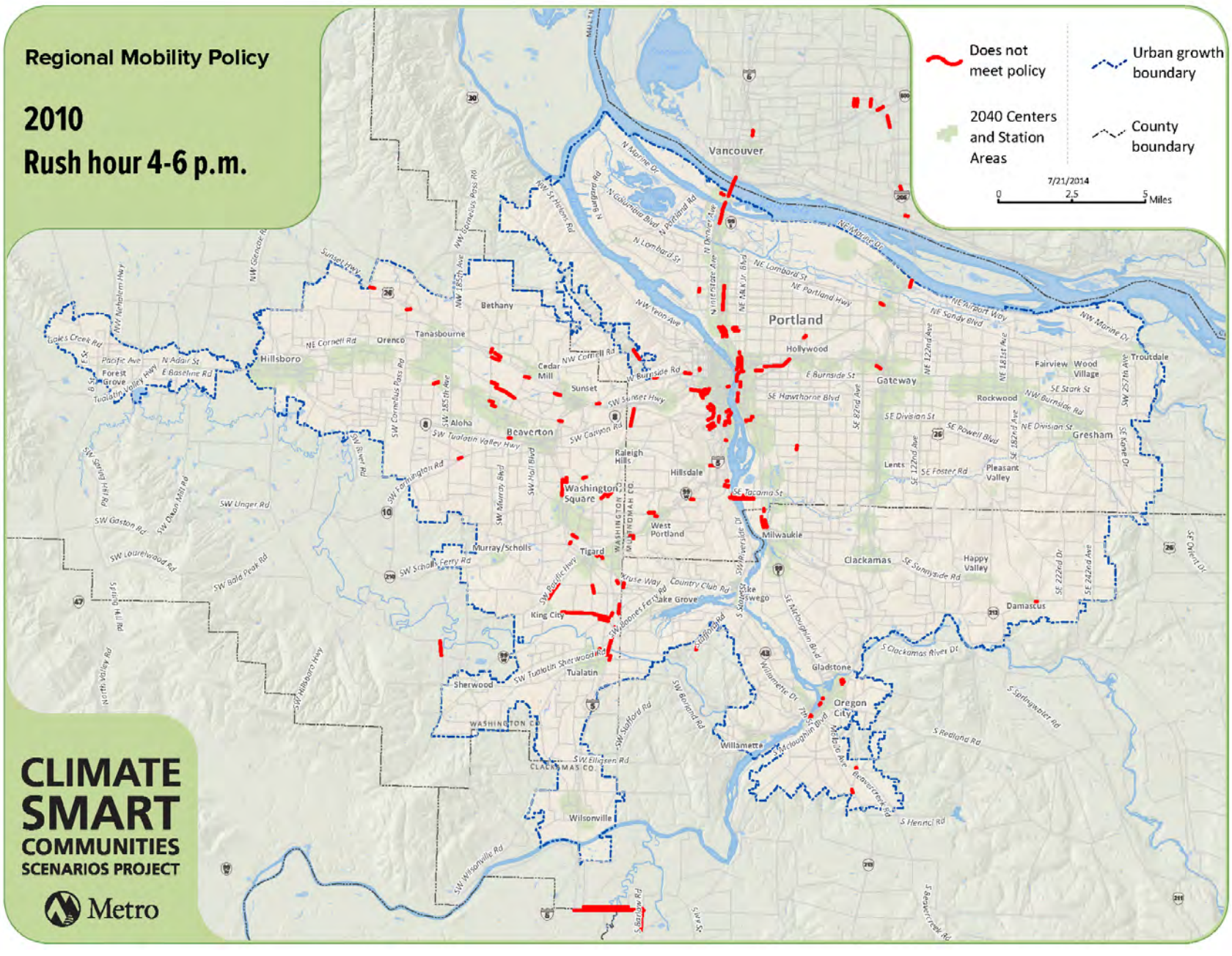
August 8, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

STREETS AND HIGHWAYS - System performance

2010 4-6pm



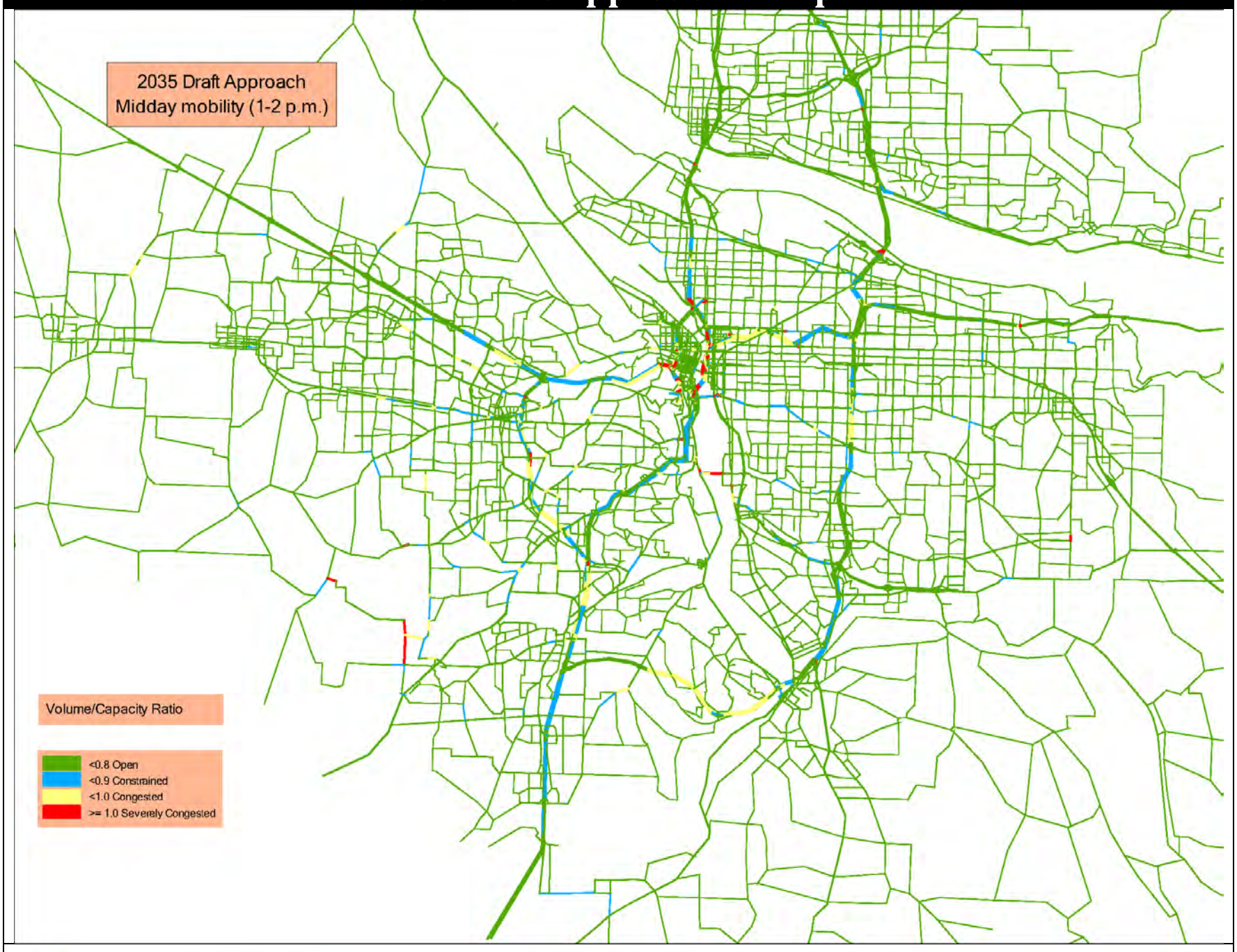


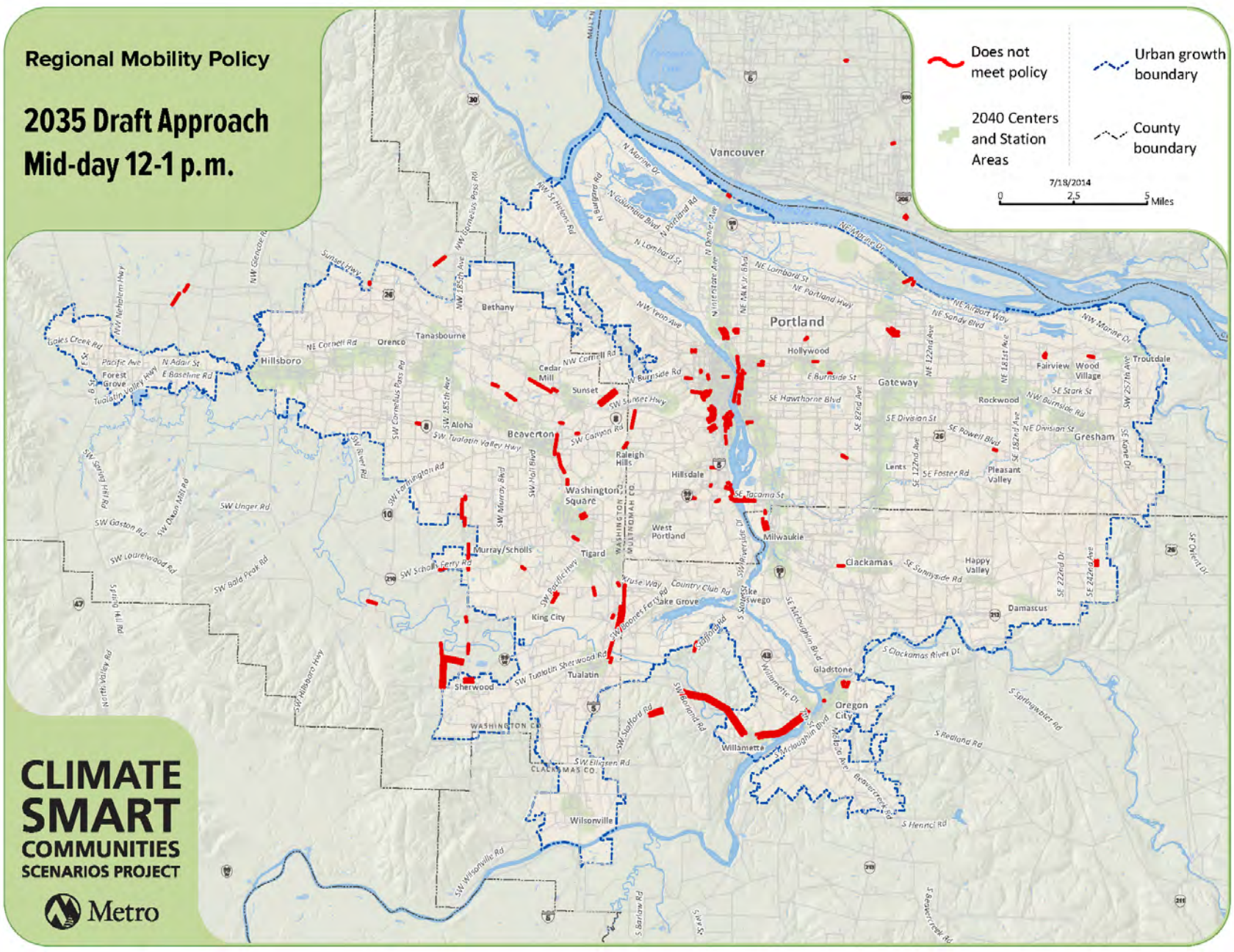
August 8, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

STREETS AND HIGHWAYS - System performance

2035 Draft Approach 12-1pm



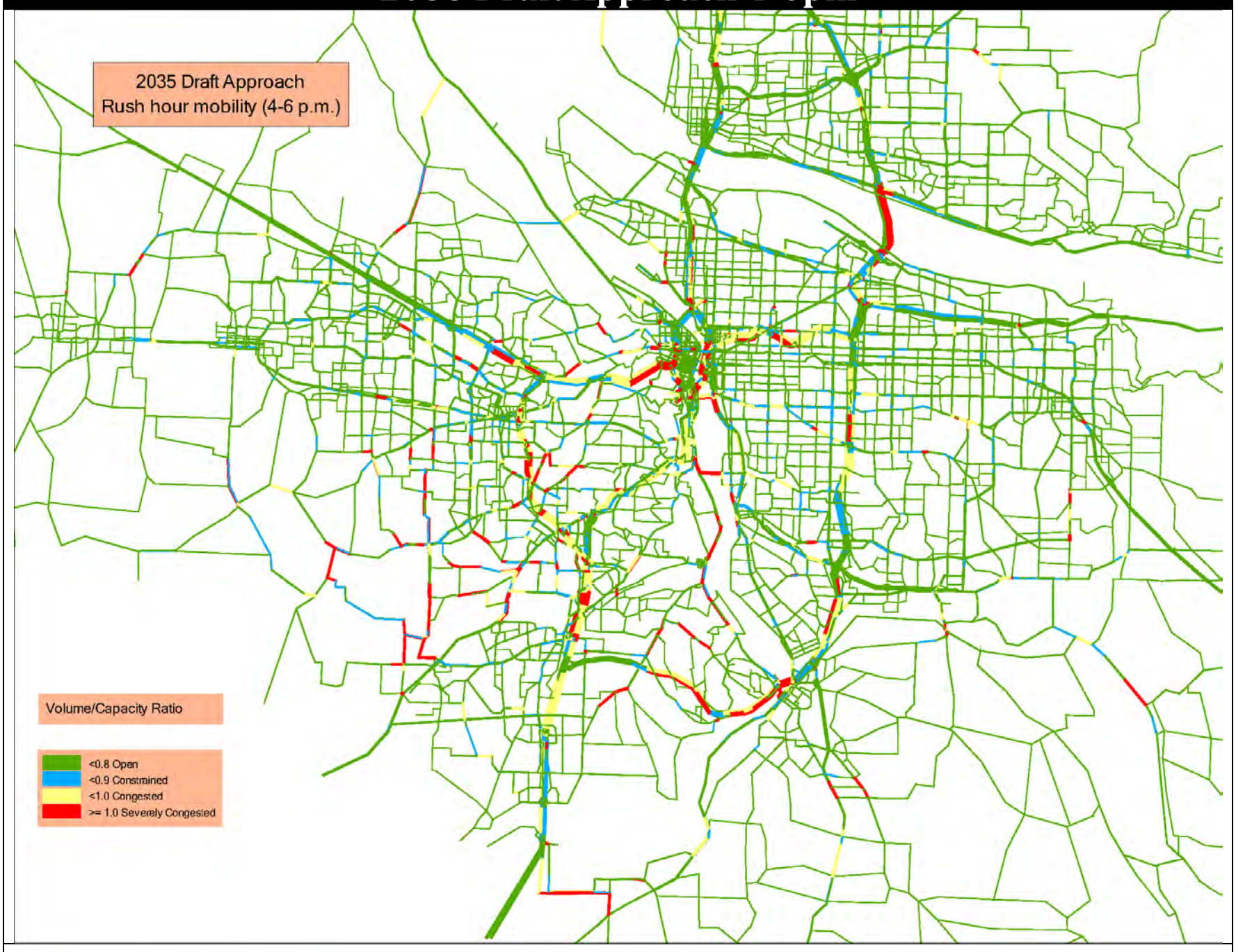


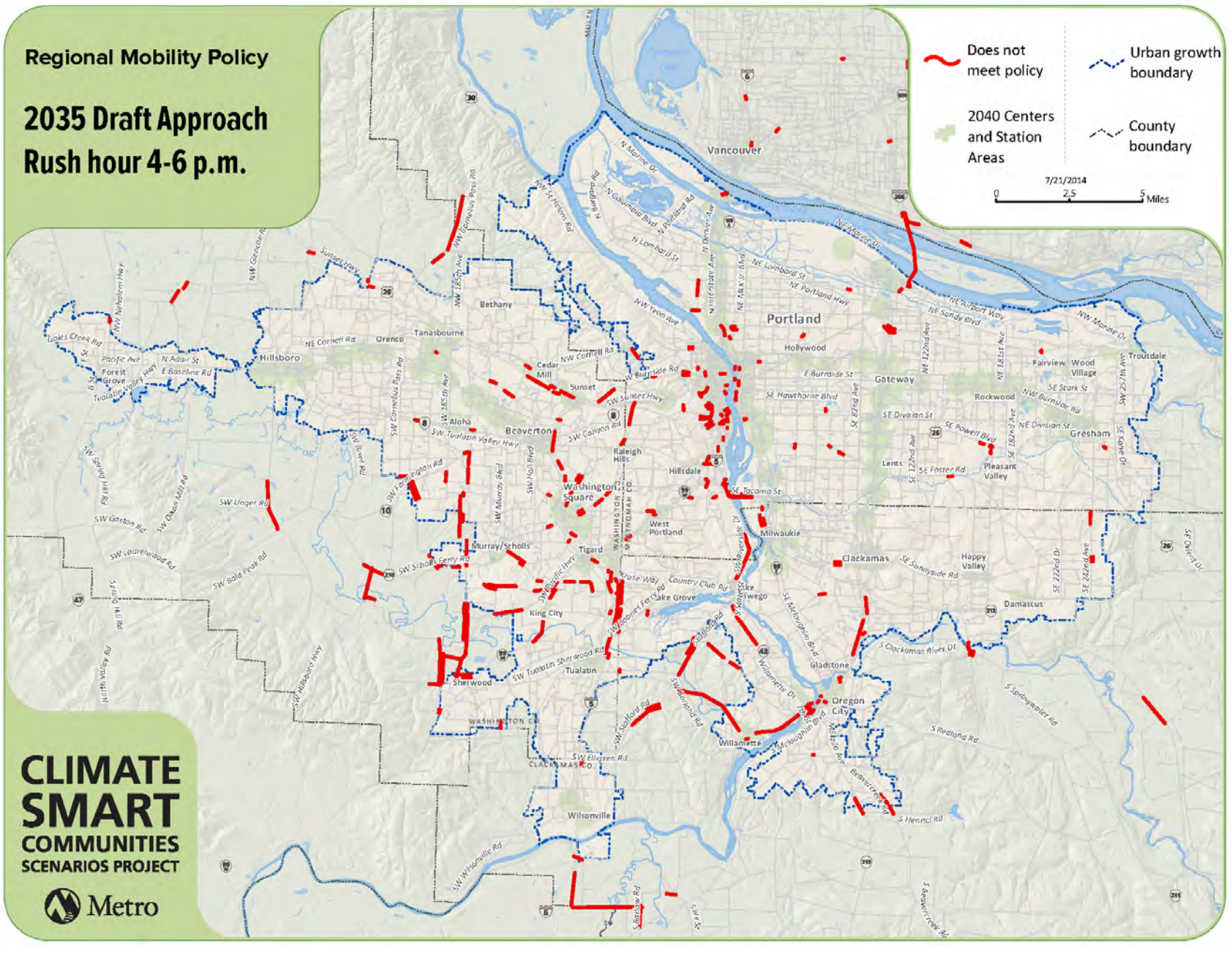
August 8, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

STREETS AND HIGHWAYS - System performance

2035 Draft Approach 4-6pm



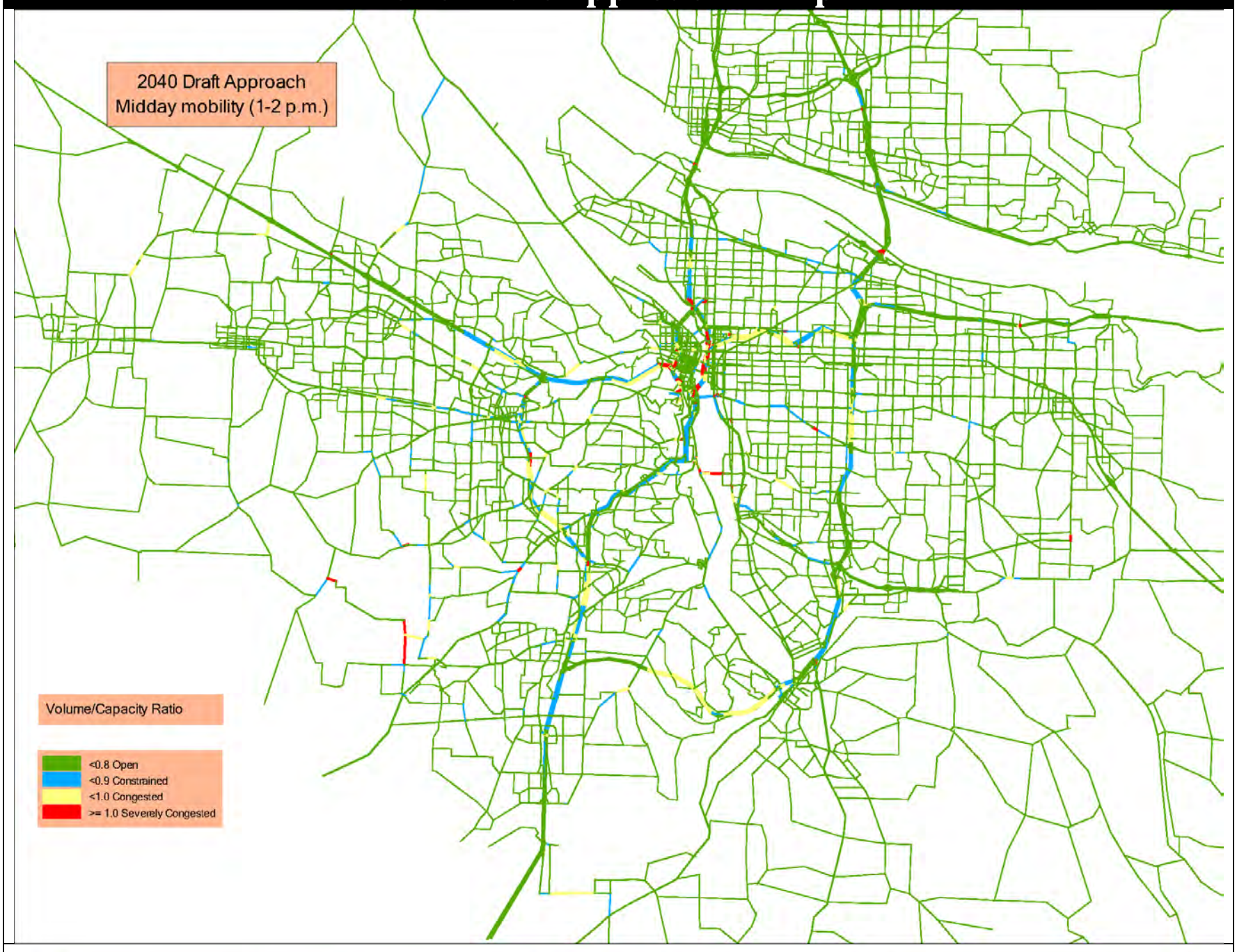


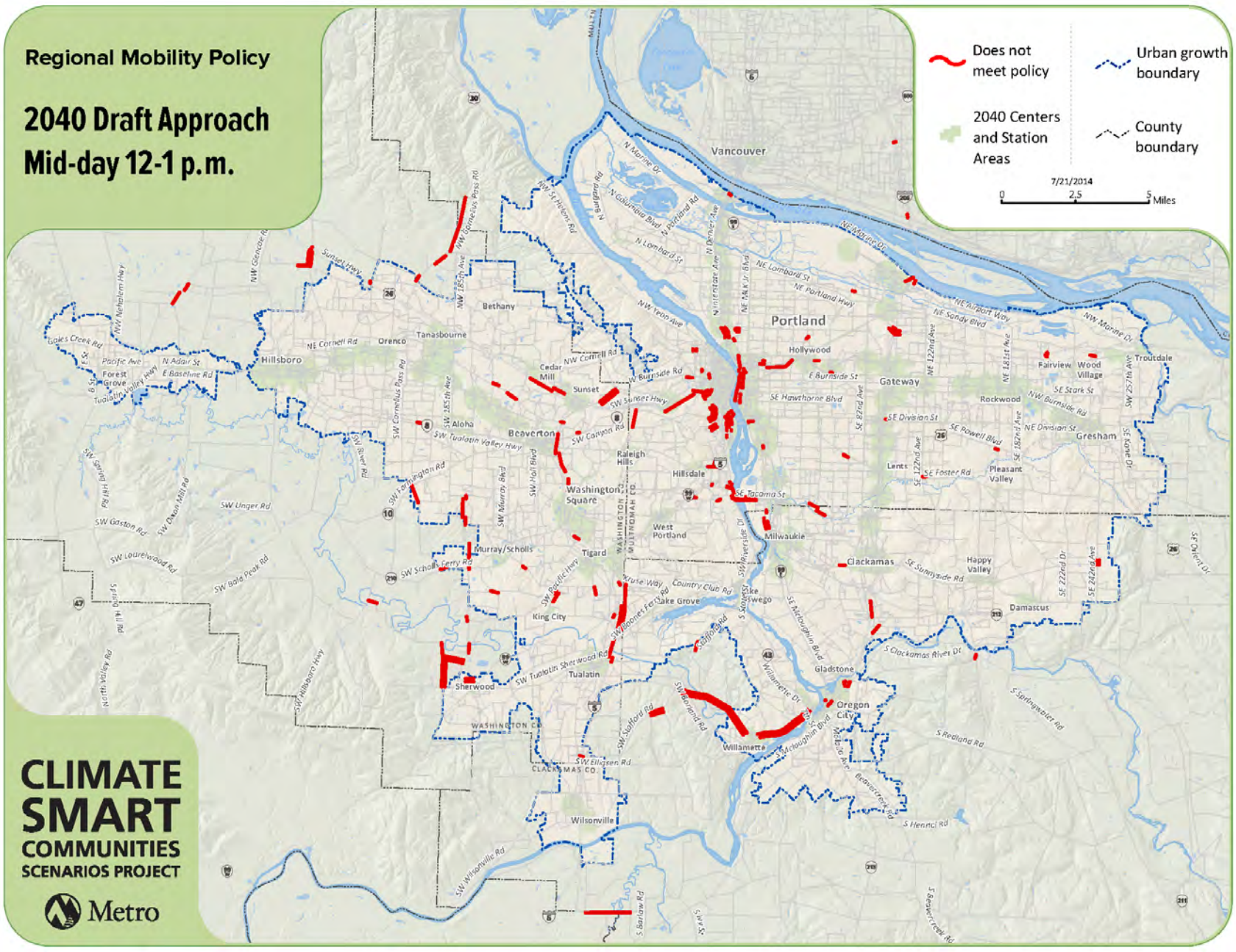
August 8, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

STREETS AND HIGHWAYS - System performance

2040 Draft Approach 12-1pm



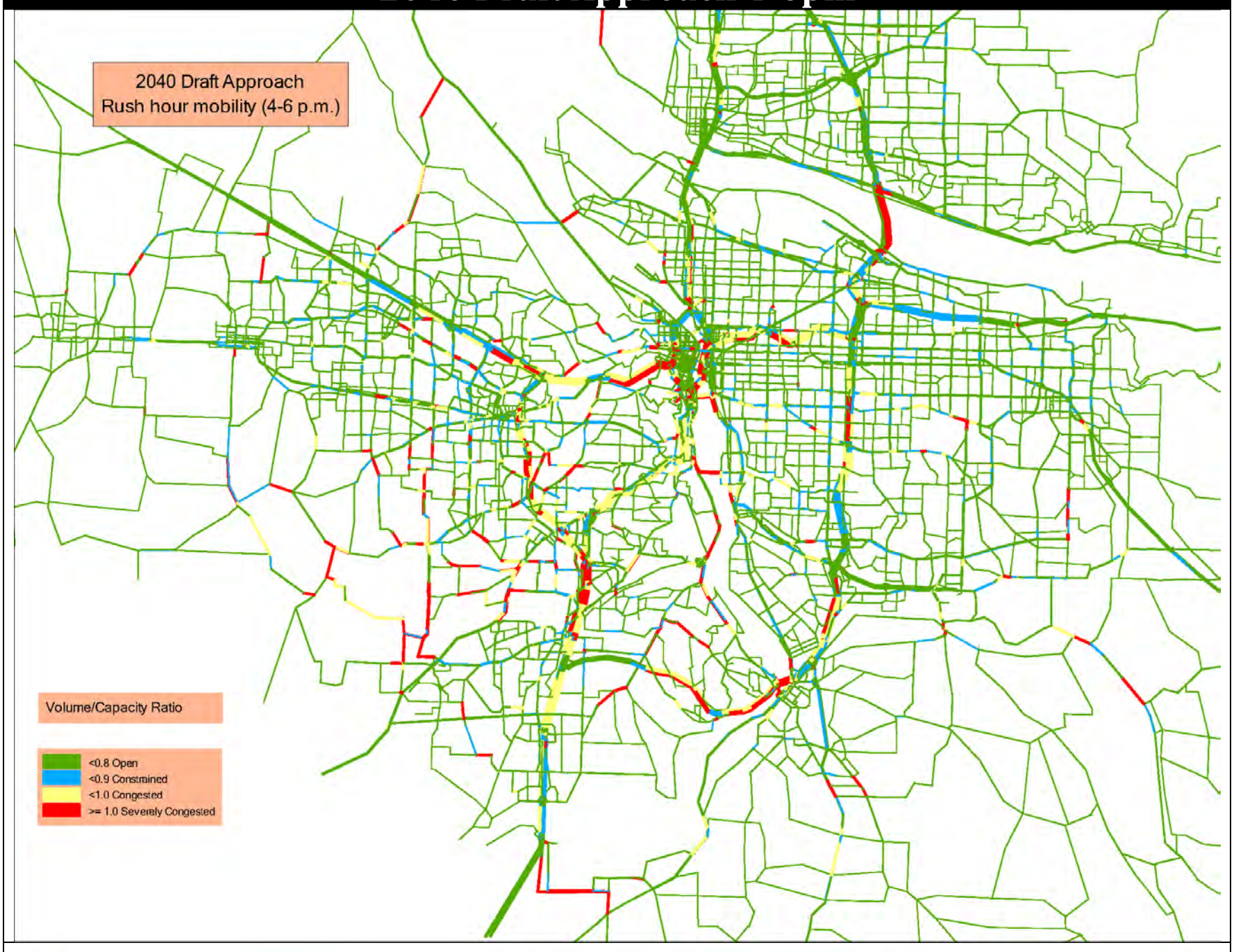


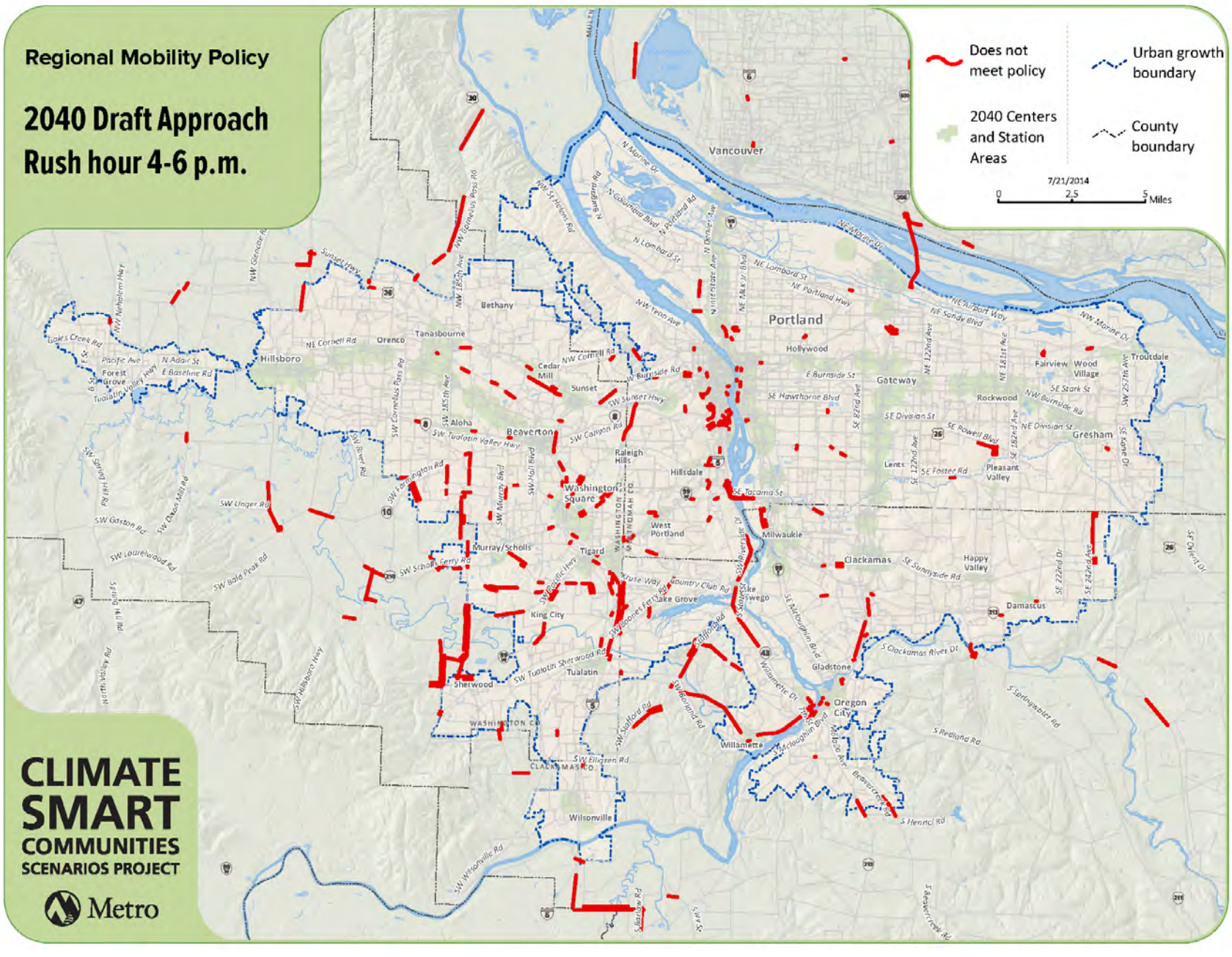
August 8, 2014

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

STREETS AND HIGHWAYS - System performance

2040 Draft Approach 4-6pm





PHASE 3: TRANSIT ACCESS AT A GLANCE | The tables below summarize access to transit for each scenario.

HOUSEHOLD ACCESS TO TRANSIT AT A GLANCE | *Share of total households within ¼-mile of transit*

SERVICE FREQUENCY	2010		Scenario A RECENT TRENDS		Scenario B ADOPTED PLANS		Scenario C NEW PLANS AND POLICIES		DRAFT APPROACH	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
At least every 10 minutes	21%	4%	24%	4%	27%	4%	32%	20%	31%	10%
11-15 minute service	22%	26%	20%	29%	21%	32%	17%	18%	18%	27%
16-25 minute service	10%	6%	9%	5%	8%	4%	9%	7%	9%	6%
More than 26 minute service	22%	34%	18%	28%	17%	28%	16%	26%	16%	27%
No fixed-route service	25%	30%	29%	34%	28%	32%	26%	29%	26%	30%

LOW-INCOME HOUSEHOLD ACCESS TO TRANSIT AT A GLANCE | *Share of low-income households* within ¼-mile of transit*

SERVICE FREQUENCY	2010		Scenario A RECENT TRENDS		Scenario B ADOPTED PLANS		Scenario C NEW PLANS AND POLICIES		DRAFT APPROACH	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
At least every 10 minutes	25%	5%	31%	5%	34%	6%	40%	26%	39%	14%
11-15 minute service	29%	34%	27%	39%	26%	42%	21%	23%	23%	35%
16-25 minute service	9%	7%	8%	5%	7%	5%	7%	7%	7%	6%
More than 26 minute service	20%	34%	16%	28%	15%	27%	14%	24%	14%	25%
No fixed-route service	17%	20%	19%	22%	18%	21%	17%	20%	17%	20%

*$24,999 per year or less

JOB ACCESS TO TRANSIT AT A GLANCE | *Share of jobs within ¼-mile of transit*

SERVICE FREQUENCY	2010		Scenario A RECENT TRENDS		Scenario B ADOPTED PLANS		Scenario C NEW PLANS AND POLICIES		DRAFT APPROACH	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
At least every 10 minutes	33%	5%	31%	6%	33%	6%	42%	23%	31%	21%
11-15 minute service	19%	36%	19%	35%	22%	38%	17%	25%	24%	31%
16-25 minute service	11%	4%	12%	4%	9%	3%	9%	7%	10%	4%
More than 26 minute service	24%	36%	22%	33%	20%	32%	17%	26%	20%	25%
No fixed-route service	13%	19%	16%	22%	16%	21%	15%	19%	15%	19%

Draft Approach Comparative Costs

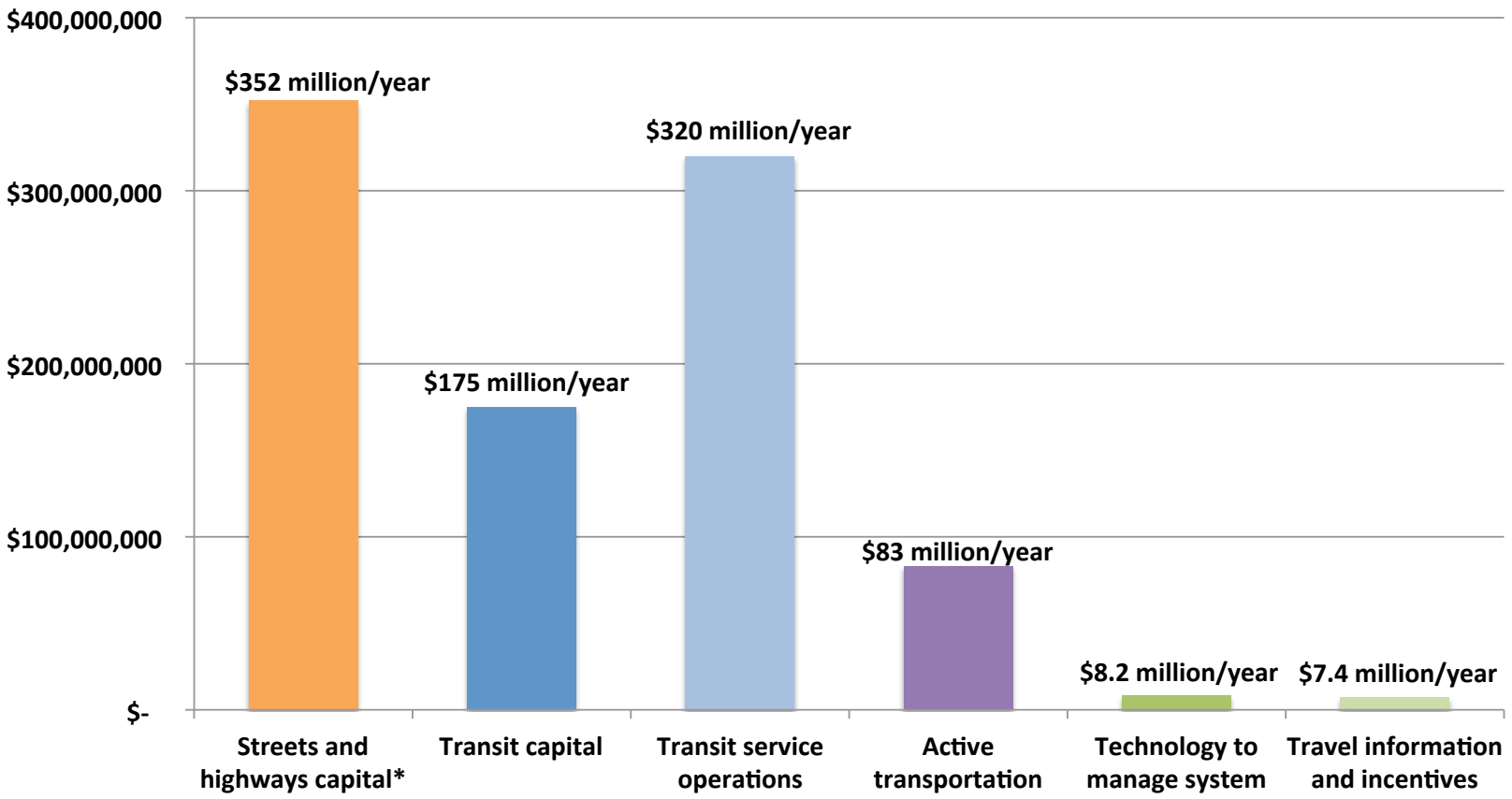
August 4, 2014

	Scenario A	Scenario B	Scenario C	Adopted 2014 RTP Financially Constrained System	Adopted 2014 RTP State System (Full RTP)	Draft Approach
Streets and highways capital*	$0.16 B	$8.80 B	$11.80 B	$8.80 B	$13.40 B	$8.80 B
Transit capital	$0.59 B	$1.90 B	$5.10 B	$2.20 B	$4.80 B	$4.40 B
Transit service operations	$4.80 B	$5.30 B	$9.50 B	$6.00 B	$8.00 B	$8.00 B
Active Transportation	$0.06 B	$0.95 B	$3.90 B	$2.10 B	$2.40 B	$2.10 B
Technology	$0.11 B	$0.14 B	$0.19 B	$0.16 B	$0.21 B	$0.21 B
Information	$0.10 B	$0.12 B	$0.23 B	$0.07 B	$0.10 B	$0.19 B
Total (2014$)	**$6 B**	**$17 B**	**$31 B**	**$19 B**	**$29 B**	**$24 B**

Total rounded to nearest billion

* does not include road-related operations, maintenance and preservation costs

How much we need to spend each year to implement by 2035 (total = $945 million per year)



* Does not include annual road-related operations, maintenance and preservation costs.

CLIMATE SMART COMMUNITIES STRATEGY SCOPING | TOOLBOX OF PROPOSED EARLY ACTIONS (2015-2020)

BACKGROUND | The 2009 Oregon Legislature required the Portland metropolitan region to reduce per capita greenhouse gas emissions from cars and small trucks by 20 percent below 2005 levels by 2035. The region has identified a comprehensive strategy that meets the target while also supporting many other state, regional and local goals, including clean air and water, transportation choices, healthy and equitable communities, and a strong regional economy. The strategy relies on ten policies and a toolbox of actions that the State of Oregon, Metro, local governments, TriMet, the South Metro Area Rapid Transit (SMART) district and the Port of Portland can choose from as the state and region as the state and region move forward together to begin implementation in a manner that builds on and advances local and regional plans, social equity and leadership on climate change. The policies and actions are the result of a four-year collaborative process informed by research, analysis, community engagement, and deliberation.

PROPOSED STRATEGY | A comprehensive set of policy, program and funding actions that are focused on specific steps that can be taken in the next five years. Medium and longer-term actions will be identified as part of the 2018 Regional Transportation Plan update.

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	WHAT CAN METRO DO?	WHAT CAN CITIES AND COUNTIES DO?	WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?
1. Support Oregon's transition to cleaner, low carbon fuels, more fuel-efficient vehicles and pay-as-you-drive private vehicle insurance	**Immediate (2015-16)** ☐ Reauthorize Oregon Clean Fuels Program ☐ Implement Oregon Zero Emissions Vehicle Program and 2013 MOU with California and other states ☐ Lead by example by increasing public electric vehicle fleet ☐ Continue to provide funding to Drive Oregon to advance electric mobility ☐ Work with insurance companies to offer and encourage private insurance paid by the miles driven **Near-term (2017-20)** ☐ Provide consumer and business incentives to purchase new electric vehicles ☐ Promote and provide information, funding and incentives to encourage the provision of electric vehicle charging stations and infrastructure in residences, work places and public places ☐ Encourage private fleets to purchase, lease or rent electric vehicles (EVs) ☐ Develop model code for electric vehicle infrastructure and partnerships with businesses ☐ Continue to remove barriers to EV charging and fueling station installations ☐ Promote EV infrastructure planning and investment by public and private entities ☐ Provide clear and accurate signage to direct EV users to charging and fueling stations and parking ☐ Expand communication efforts to promote electric vehicle tourism activities ☐ Continue participation in the Pacific Coast Collaborative, Western Climate Initiative, and West Coast Green Highway Initiative and partner with members of Energize Oregon coalition	**Immediate (2015-16)** ☐ Support the Oregon Zero Emissions Vehicle Program and the reauthorization of the Oregon Clean Fuels Program through Legislative agenda, testimony, endorsement letters or similar means **Near-term (2017-20)** ☐ Lead by example by increasing public electric vehicle fleet ☐ Support state efforts to build public acceptance of private vehicle insurance paid by the miles driven ☐ Partner with state agencies to hold regional planning workshops to educate local governments on electric vehicle issues ☐ Develop EV readiness strategy for region in partnership with local governments, state agencies, Drive Oregon and others	**Immediate (2015-16)** ☐ Support the Oregon Zero Emissions Vehicle Program and the reauthorization of the Oregon Clean Fuels Program through Legislative agenda, testimony, endorsement letters or similar means **Near-term (2017-20)** ☐ Lead by example by increasing public electric vehicle fleet ☐ Pursue grant funding and partners to expand the growing network of electric vehicle fast charging stations ☐ Partner with local dealerships, Department of Energy (DOE) Clean Cities programs, non-profit organizations, businesses and others to incorporate electric vehicle outreach and education events for consumers in conjunction with such events as Earth Day celebrations, National Plug-In Day and the DOE/Drive Oregon Workplace Charging Challenge ☐ Adopt policies and update development codes to support private adoption of electric vehicles, such as streamlining permitting for alternative fueling stations, planning for access to charging stations, allowing charging stations in residences, work places and public places, and providing preferential parking for electric vehicles ☐ Encourage new construction to include necessary infrastructure to support use of electric and alternative fuel vehicles	**Immediate (2015-16)** ☐ Support the Oregon Zero Emissions Vehicle Program and the reauthorization of the Oregon Clean Fuels Program through Legislative agenda, testimony, endorsement letters or similar means **Near-term (2017-20)** ☐ Provide EV charging stations in public places (e.g., park-and-rides, parking garages) ☐ Provide preferential parking for electric vehicles and vehicles using alternative fuels

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	WHAT CAN METRO DO?	WHAT CAN CITIES AND COUNTIES DO?	WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?
	☐ Track and report progress toward adopted state goals related to greenhouse gas emissions reductions and electric vehicle deployment			
2. Implement the 2040 Growth Concept and local adopted land use and transportation plans	**Immediate (2015-16)** ☐ Reauthorize Oregon Brownfield Redevelopment Fund ☐ Support brownfield redevelopment-related legislative proposals ☐ Begin implementation of the Statewide Transportation Strategy Vision and short-term implementation plan to support regional and community visions **Near-term (2017-20)** ☐ Seek opportunities to leverage local, regional, state and federal funding to achieve the region's desired outcomes ☐ Provide increased funding and incentives to local governments, developers and non-profits to encourage brownfield redevelopment and transit-oriented development to help keep urban areas compact	**Immediate (2015-16)** ☐ Continue to implement policies and investments that align with regional and community visions to focus growth in designated centers and employment areas ☐ Support reauthorization of Oregon Brownfield Redevelopment Fund through Legislative agenda, testimony, endorsement letters or similar means ☐ Continue to facilitate regional brownfield coalition to develop legislative proposals and increase resources available in the region for brownfield redevelopment ☐ Maintain a compact urban growth boundary ☐ Review functional plans and make amendments needed to implement Climate Smart Strategy **Near-term (2017-20)** ☐ Seek opportunities to leverage local, regional, state and federal funding to achieve the region's desired outcomes ☐ Expand on-going technical assistance and grant funding to local governments, developers and others to incorporate travel information and incentives, transportation system management and operations strategies, parking management approaches and transit-oriented development in local plans and projects ☐ Continue to convene regional brownfield coalition and strengthen regional brownfields program by providing increased funding and technical assistance to local governments	**Immediate (2015-16)** ☐ Continue to implement policies and investments that align with community visions, focus growth in designated centers and employment areas ☐ Support reauthorization of Oregon Brownfield Redevelopment Fund through Legislative agenda, testimony, endorsement letters or similar means ☐ Participate in regional brownfield coalition to develop legislative proposals and increase resources available in the region for brownfield redevelopment **Near-term (2017-20)** ☐ Pursue opportunities to locate higher-density residential development near activity centers such as parks and recreational facilities, commercial area, employment centers, and transit ☐ Locate new schools, services, shopping, and other health promoting resources and community destinations close to neighborhoods ☐ Seek opportunities to leverage local, regional, state and federal funding to achieve the region's desired outcomes ☐ Develop brownfield redevelopment plans and leverage local funding to seek state and federal funding ☐ Review air filtration system design guidance and incentives for new residential development along transit corridors and in designated growth areas	**Near-term (2017-20)** ☐ Continue to implement policies and investments that align with community visions, focus growth in designated centers and employment areas ☐ Support reauthorization of Oregon Brownfield Redevelopment Fund through Legislative agenda, testimony, endorsement letters or similar means ☐ Seek opportunities to leverage local, regional (, state and federal funding to achieve the region's desired outcomes ☐ Share brownfield redevelopment expertise with local governments and expand leadership role in making brownfield sites development ready
3. Make transit more convenient, frequent, accessible and affordable	**Immediate (2015-16)** ☐ Begin update to Oregon Public Transportation Plan ☐ Provide state funding for transit ☐ Maintain existing intercity passenger rail service and develop proposals for improvement of speed, frequency and reliability	**Immediate (2015-16)** ☐ Build a diverse coalition that includes elected officials and community and business leaders at local, regional and state levels working together to: ○ Seek and advocate for new, dedicated funding mechanism(s)	**Immediate (2015-16)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Participate in development of TriMet Service Enhancement Plans (SEPs) ○ Provide more community to community transit connections	**Immediate (2015-16)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Grow transit service by X% per year ☐ Expand transit payment options (e.g., electronic e-fare cards) to increase affordability, convenience and flexibility

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	**WHAT CAN METRO DO?**	**WHAT CAN CITIES AND COUNTIES DO?**	**WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?**
	☐ Provide technical assistance to help establish local service **Near-term (2017-20)** ☐ Adopt Oregon Public Transportation Plan with funding strategy to implement ☐ Begin implementation of incremental improvements to intercity passenger rail service ☐ Lift ban on inclusionary zoning in areas served by high capacity transit ☐ Make funding for access to transit a priority	○ Seek transit funding from Oregon Legislature ○ Consider local funding mechanism(s) for local and regional transit service ○ Support state efforts to consider carbon pricing ○ Fund reduced fare programs and service improvements for youth, older adults, people is disabilities and low-income families ☐ Update High Capacity Transit System Plan in 2015 **Near-term (2017-20)** ☐ Support reduced fares and service improvements for low-income families, youth, older adults and people with disabilities through testimony, endorsement letters or similar means ☐ Make funding for access to transit a priority ☐ Research and develop best practices that support equitable growth and development near transit without displacement and strategies that provide for the retention and creation of businesses and affordable housing near transit ☐ Update Regional Transportation Plan by 2018	○ Identify community-based public and private shuttles that link to regional transit service ○ Link service enhancements to transit-supportive development, areas with communities of concern[1], and other potential high ridership locations ☐ Consider local funding mechanism(s) for local and regional transit service **Near-term (2017-20)** ☐ Make funding for access to transit a priority ☐ Complete gaps in pedestrian and bicycle access to transit ☐ Create “jump lanes” for transit ☐ Continue to implement policies and zoning that direct higher density, mixed-use zoning and development near transit ☐ Support reduced fares and service improvements for low-income families, youth, older adults and people with disabilities through testimony, endorsement letters or similar means	☐ Seek state funding sources for transit and alternative local funding mechanisms ☐ Complete development of TriMet Service Enhancement Plans (SEPs) ○ Provide more community to community transit connections ○ Identify community-based public and private shuttles that link to regional transit service ○ Link service enhancements to transit-supportive development, areas with communities of concern, and other potential high ridership locations **Near-term (2017-20)** ☐ Seek resources to support youth pass program and expanding reduced fare program to low-income families ☐ Expand transit service to serve communities of concern, transit-supportive development and other potential high ridership locations, etc. ☐ Continue to improve and increase the availability of transit route and schedule information
4. Use technology to actively manage the transportation system	**Immediate (2015-26)** ☐ Integrate transportation system management and operations strategies into project development activities **Near-term (2017-20)** ☐ Expand deployment of intelligent transportation systems (ITS), including active traffic management, incident management and traveler information programs ☐ Partner with cities, counties and TriMet to provide transit signal priority along transit corridors with 15-minute or better service	**Immediate (2015-16)** ☐ Seek Metro Council/JPACT commitment to fund more investment in TSMO projects using regional flexible funds ☐ Advocate for increased state commitment to fund more investment using state funds **Near-term (2017-20)** ☐ Build capacity and strengthen interagency coordination ☐ Provide technical assistance and grant funding to support integrate transportation system management operations strategies in local plans, project development, and development review activities ☐ Update Regional TSMO Strategic Plan by 2018	**Immediate (2015-16)** ☐ Advocate for increased state commitment to fund more investment using state funds ☐ Continue shift to using LED lights **Near-term (2017-20)** ☐ Expand deployment of intelligent transportation systems (ITS) and active traffic management in regional freight corridors that provide access to Interstate system, industrial areas, intermodal facilities, distribution facilities, and major employment areas and coordinate with capital projects ☐ Partner with TriMet to provide transit signal priority along transit corridors with 15-minute or better service	**Near-term (2017-20)** ☐ Partner with cities, counties and ODOT to provide transit signal priority along transit corridors with 15-minute or better service
5. Provide information and incentives to expand the use of travel options	**Immediate (2015-16)** ☐ Adopt Statewide Transportation Options Plan with funding strategy to implement ☐ Deploy statewide eco-driving educational effort, including integration of eco-driving information in driver’s education training courses, Oregon Driver’s education manual and certification	**Immediate (2015-16)** ☐ Seek Metro Council/JPACT commitment to fund more investment using regional flexible funds to expand direct services and funding provided to local partners (e.g., local governments, transportation management associations, and other non-profit organizations) to implement	**Immediate (2015-16)** ☐ Advocate for increased state and regional funding to expand direct services provided to local partners (e.g., local governments, transportation management associations, and other non-profit organizations) to implement programs in coordination with other capital	**Immediate (2015-16)** ☐ Expand employer program capacity and staffing to support expanded education and outreach efforts

[1] The 2014 Regional Transportation Plan defines communities of concern as people of color, people with limited English proficiency, people with low-income, older adults, and young people.

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	WHAT CAN METRO DO?	WHAT CAN CITIES AND COUNTIES DO?	WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?
	programs ☐ Review EcoRule to identify opportunities to improve effectiveness ☐ Increase state capacity and staffing to support on-going EcoRule implementation and monitoring ☐ Deploy video conferencing, virtual meeting technologies and other communication technologies to decrease ☐ Partner with TriMet, SMART and media partners to link the Air Quality Index to transportation system information outlets **Near-term (2017-20)** ☐ Promote and provide information, funding and incentives to encourage commuter programs and individualized marketing to provide employers, employees and residents information and incentives to use travel options ☐ Integrate transportation demand management practices into planning, project development, and development review activities ☐ Establish a state vanpool strategy that addresses urban and rural transportation needs	programs in coordination with other capital investments ☐ Partner with community-based organizations to develop culturally relevant information materials ☐ Develop best practices on how to integrate transportation demand management in local planning, project development, and development review activities ☐ Integrate transportation demand management practices into planning, project development ad development review activities **Near-term (2017-20)** ☐ Expand on-going technical assistance and grant funding to local governments, transportation management associations, business associations and other non-profit organizations to incorporate travel information and incentives in local planning and project development activities and at worksites ☐ Establish an on-going individualized marketing program that targets deployment in conjunction with capital investments being made in the region ☐ Begin update to Regional Travel Options Strategic Plan in 2018	investments ☐ Host citywide and community events like Bike to Work Day or Sunday Parkways **Near-term (2017-20)** ☐ Integrate transportation demand management practices into planning, project development, and development review activities ☐ Provide incentives for new development over a specific trip generation threshold to provide travel information and incentives to support achievement of EcoRule and mode share targets adopted in local and regional plans ☐ Partner with businesses and/or business associations and transportation management associations to implement demand management programs in employment areas and centers served with active transportation options, 15-minute or better transit service, and parking management ☐ Expand local travel options program delivery through new coordinator positions and partnerships with business associations, transportation management associations, and other non-profit organizations	
6. Make biking and walking more safe and convenient	**Immediate (2015-16)** ☐ Adopt Oregon Bicycle and Pedestrian Plan with funding strategy ☐ Seek and advocate for new, dedicated funding mechanism(s) for active transportation projects ☐ Review driver's education training materials and certification programs and make changes to increase awareness of bicycle and pedestrian safety ☐ Complete Region 1 Active Transportation Needs inventory ☐ Maintain commitment to funding Safe Routes to School programs statewide ☐ Adopt a complete streets policy ☐ Partner with local governments to conduct site-specific evaluations from priority locations identified in the ODOT Pedestrian and Bicycle Safety Implementation Plan ☐ Improve bicycle and pedestrian crash data collection ☐ Support local and regional health impact assessments	**Immediate (2015-16)** ☐ Continue to fund construction of active transportation projects as called for in air quality transportation control measures ☐ Build a diverse coalition that includes elected officials and community and business leaders at local, regional and state levels working together to: ○ Build local and state commitment to implement Active Transportation Plan and Safe Routes to Schools programs ○ Seek and advocate for new, dedicated funding mechanism(s) ○ Advocate to maintain eligibility in federal formula programs (i.e., NHPP, STP, CMAQ) and discretionary programs (New Starts, Small Starts, TIFIA, TIGER) ☐ Seek opportunities to implement Regional Transportation Safety Plan recommendations in planning, project development and development review activities **Near-term (2017-20)**	**Immediate (2015-16)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Continue to leverage local funding with development for active transportation projects ☐ Seek opportunities to coordinate local investments with investments being made by special districts, park providers and other transportation providers ☐ Seek and advocate for new, dedicated funding mechanism(s) ☐ Seek opportunities to implement Regional Transportation Safety Plan recommendations in planning, project development and development review activities **Near-term (2017-20)** ☐ Develop and maintain a city/county-wide active transportation network of sidewalks, on- and off-street bikeways, and trails to provide connections between neighborhoods, schools, civic center/facilities, recreational facilities, transit centers, bus stops and major activity	**Immediate (2015-16)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Complete Port of Portland 2014 Active Transportation Plan ☐ Seek grant funding to prepare a TriMet Bicycle Plan **Near-term (2017-20)** ☐ Invest in trails that increase equitable access to transit, services and community destinations

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	WHAT CAN METRO DO?	WHAT CAN CITIES AND COUNTIES DO?	WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?
	Near-term (2017-20) ☐ Continue to provide technical assistance and expand grant funding to support development and adoption of complete streets policies and designs ☐ Expand existing funding for active transportation investments	☐ Provide technical assistance and planning grants to support development and adoption of complete streets policies ☐ Provide technical assistance and funding to support complete street designs in local planning and project development activities ☐ Review the regional transportation functional plan and make amendments needed to implement the Regional Active Transportation Plan ☐ Update and fully implement the Regional Transportation Safety Plan ☐ Update best practices in street design and complete streets, including: ○ develop a complete streets checklist ○ provide design guidance to minimize air pollution exposure for bicyclists and pedestrians	centers ☐ Build infrastructure and urban design elements that facilitate and support bicycling and walking (e.g., completing gaps, wayfinding signs, bicycle parking, bicycle sharing programs, lighting, separated facilities) ☐ Invest to equitably complete active transportation network gaps in centers and along streets that provide access to transit stops, schools and other community destinations ☐ Link active transportation investments to providing transit and travel information and incentives ☐ Partner with ODOT to conduct site-specific evaluations from priority locations identified in the ODOT Pedestrian and Bicycle Safety Implementation Plan ☐ Implement Safe Routes to Schools programs ☐ Adopt “complete streets” policies and designs ☐ Establish local funding pool to leverage state and federal funds	
7. Make streets and highways more safe, reliable and connected	**Immediate (2015-16)** ☐ Maintain existing highway network ☐ Increase state gas tax (indexed to inflation and fuel efficiency) ☐ Update the Oregon Transportation Safety Action Plan ☐ Review driver’s education training materials and certification programs and make changes to increase awareness of safety for all system users **Near-term (2017-20)** ☐ Work with Metro and local governments to consider alternative performance measures ☐ Invest in regional freight corridors that provide access to Interstate system, industrial areas, intermodal facilities, distribution facilities, and major employment areas ☐ Integrate multi-modal designs in road expansion and maintenance projects ☐ Pilot new pavement and hard surface materials proven to help reduce heat gain associated with infrastructure	**Immediate (2015-16)** ☐ Build a diverse coalition that includes elected officials and community and business leaders at local, regional and state levels working together to: ○ Ensure adequate funding of local maintenance and support city and county efforts to fund maintenance and preservation needs locally ○ Support state and federal efforts to increase gas tax (indexed to inflation and fuel efficiency) ○ Support state and federal efforts to implement mileage-based road usage charge program ☐ Seek opportunities to implement Regional Transportation Safety Plan recommendations in planning, project development and development review activities **Near-term (2017-20)** ☐ Work with ODOT and local governments to consider alternative performance measures ☐ Provide technical assistance and grant funding to support integrated transportation system management operations strategies in local plans, projects and project development activities	**Immediate (2015-16)** ☐ Maintain existing street network ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Seek opportunities to implement Regional Transportation Safety Plan recommendations in planning, project development and development review activities **Near-term (2017-20)** ☐ Work with ODOT and Metro to consider alternative performance measures ☐ Invest in regional freight corridors that provide access to Interstate system, industrial areas, intermodal facilities, distribution facilities, and major employment areas ☐ Support railroad grade separation projects in key corridors to allow for longer trains and less disruption to other modes ☐ Invest in making new and existing streets “complete” and connected ☐ Pilot new pavement and hard surface materials proven to help reduce heat gain associated with infrastructure ☐ Integrate multi-modal designs in road expansion projects and maintenance projects	**Near-term (2017-20)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Support railroad grade separation projects in key corridors to allow for longer trains and less disruption to other modes

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	**WHAT CAN METRO DO?**	**WHAT CAN CITIES AND COUNTIES DO?**	**WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?**
		☐ Update and fully implement Regional Transportation Safety Plan		
8. Manage parking to make efficient use of parking resources	**Immediate (2015-16)** ☐ Provide technical assistance and grant funding to support development of parking management plans at the local and regional level ☐ Distribute "Parking Made Easy" handbook and provide technical assistance, planning grants, model code language, education and outreach **Near-term (2017-20)** ☐ Provide preferential parking for electric vehicles, vehicles using alternative fuels and carpools ☐ Prepare inventory of state-owned public parking spaces and usage ☐ Provide monetary incentives such as parking cash-out and employer buy-back programs	**Immediate (2015-16)** ☐ Build a diverse coalition that includes elected officials and community and business leaders at local, regional and state levels working together to: ○ Discuss priced parking as a revenue source to help fund travel information and incentives programs, active transportation projects and transit service **Near-term (2017-20)** ☐ Expand on-going technical assistance to local governments, developers and others to incorporate parking management approaches in local plans and projects ☐ Pilot projects to develop model parking management plans and model ordinances for different development types ☐ Research and update regional parking policies to more comprehensively reflect the range of parking approaches available for different development types and to incorporate goals beyond customer access, such as linking parking approaches to the level of transit service and active transportation options provided ☐ Amend Title 6 of Regional Transportation Functional Plan to update regional parking map and reflect updated regional parking policies	**Immediate (2015-16)** ☐ Consider charging for parking in high usage areas served by 10-minute or better transit and active transportation options **Near-term (2017-20)** ☐ Prepare community inventory of public parking spaces and usage ☐ Adopt shared and unbundled parking policies ☐ Provide preferential parking for electric vehicles, vehicles using alternative fuels and carpools ☐ Provide incentives for large employers to offer employees a parking cash-out option where the employee can choose a parking benefit or the cash equivalent of the benefit ☐ Require safe, secure and convenient bicycle parking at key destinations ☐ Reduce requirements for off-street parking and establish off-street parking supply maximums, as appropriate ☐ Prepare parking management plans tailored to 2040 centers served by high capacity transit (existing and planned)	**Near-term (2017-20)** ☐ Provide preferential parking for electric vehicles, vehicles using alternative fuels and carpools
9. Secure stable funding for needed investments	**Immediate (2015-16)** ☐ Seek and advocate for new, dedicated funding mechanism(s) for active transportation and transit	**Immediate (2015-16)** ☐ Update research on regional infrastructure gaps and potential funding mechanisms to inform communication materials that support	**Immediate (2015-16)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Support state efforts to implement a mileage-	**Immediate (2015-16)** ☐ Support and/or participate in efforts to build transportation funding coalition ☐ Seek and advocate for new, dedicated funding

POLICY	TOOLBOX OF EARLY ACTIONS (2015-2020)			
	WHAT CAN THE STATE DO?	**WHAT CAN METRO DO?**	**WHAT CAN CITIES AND COUNTIES DO?**	**WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?**
	☐ Research and consider carbon pricing models to generate new funding for clean energy, alleviating regressive impacts to businesses and communities of concern ☐ Increase state gas tax (indexed to inflation and fuel efficiency) ☐ Implement a mileage-based road usage charge program as called for in Senate Bill 810 **Near-term (2017-20)** ☐ Expand funding available for active transportation and transit investments ☐ Broaden implementation of the mileage-based road usage charge	engagement activities and development of a funding strategy to meet current and future transportation needs ☐ Build a diverse coalition that includes elected officials and community and business leaders at local, regional and state levels working together to: ○ Seek and advocate for new, dedicated funding mechanism(s) for transit and active transportation ○ Seek transit and active transportation funding from Oregon Legislature ○ Consider local funding mechanism(s) for local and regional transit service ○ Support state efforts to research and consider carbon pricing models ○ Build local and state commitment to implement Active Transportation Plan and Safe Routes to Schools programs ○ Ensure adequate funding of local maintenance and support city and county efforts to fund maintenance and preservation needs locally ○ Support state and federal efforts to increase gas tax (indexed to inflation and fuel efficiency) ○ Support state and federal efforts to implement road usage charge program ○ Discuss priced parking as a revenue source for travel information and incentives programs, active transportation projects and transit service	based road usage charge program ☐ Support state efforts to research and consider carbon pricing models ☐ Consider local funding mechanism(s) for local and regional transportation needs, including transit service and active transportation **Near-term (2017-20)** ☐ Work with local, regional and state partners, including elected officials and business and community leaders, to develop a funding strategy to meet current and future transportation needs	mechanism(s) for active transportation and transit ☐ Support state efforts to research and consider carbon pricing models **Near-term (2017-20)** ☐ Work with local, regional and state partners, including elected officials and business and community leaders, to develop a funding strategy to meet current and future transportation needs
10. Demonstrate leadership on climate change	**Near-term (2017-20)** ☐ Update statewide greenhouse gas emissions inventory and track progress toward adopted greenhouse gas emissions reduction goals	**Near-term (2017-20)** ☐ Update regional greenhouse gas emissions inventory and track progress toward adopted greenhouse gas emissions reduction target	**Near-term (2017-20)** ☐ Sign U.S. Mayor's Climate Protection Agreement ☐ Prepare and periodically update community-wide greenhouse gas emissions inventory	**Near-term (2017-20)** ☐ Prepare and periodically update greenhouse gas emissions inventory of transportation operations

OTHER ACTIONS PROPOSED FOR CONSIDERATION AS PART OF FUTURE EFFORTS TO IMPLEMENT CLIMATE SMART STRATEGY

	WHAT CAN THE STATE DO?	**WHAT CAN METRO DO?**	**WHAT CAN CITIES AND COUNTIES DO?**	**WHAT CAN TRIMET, SMART AND THE PORT OF PORTLAND DO?**
	☐ Develop and implement an action plan for ODOT'S Climate Change Adaptation Strategy Report ☐ Support local government and MPO planning for	☐ Assess potential risks and identify strategies to address potential climate impacts to transportation infrastructure and operations, including critical needs for emergency response	☐ Expand urban tree canopy to support carbon sequestration and use green street designs that include tree plantings	☐ Identify strategies to address potential climate impacts to transportation infrastructure and operations, including critical needs for emergency response and community access

	resilience, targeting natural hazards and climate change mitigation ☐ Periodically update Oregon Natural Hazard Mitigation Plan ☐ Expand urban tree canopy to support carbon sequestration and use green street designs that include tree plantings	and community access ☐ Expand urban tree canopy to support carbon sequestration and encourage green street designs that include tree plantings ☐ Partner with DEQ to convene a work group to identify regional actions during “moderate” and “unsafe for sensitive groups” air quality episodes	

CLIMATE SMART STRATEGY SCOPING

INITIAL IDEAS FOR PERFORMANCE MONITORING AND REPORTING

BACKGROUND | The 2009 Oregon Legislature required the Portland metropolitan region to reduce per capita greenhouse gas emissions from cars and small trucks by 20 percent below 2005 levels by 2035. The region has identified an approach that meets the target while also substantially contributing to many other state, regional and local goals, including clean air and water, transportation choices, healthy and vibrant communities and a strong economy.

OAR 660-044 directs Metro to identify performance measures and targets to monitor and guide implementation of the preferred approach, including performance measures already adopted by Metro to meet requirements of OAR 660-012-0035(5). The purpose of performance measures and targets is to enable Metro and area local governments to monitor and assess whether key elements or actions that make up the preferred approach are being implemented, and whether the preferred approach is achieving the expected outcomes. The rule allows for reporting to occur as part of existing procedures for coordinated regional planning in the Portland metropolitan area.

PROPOSED MONITORING AND REPORTING STRATEGY | Rely on existing regional performance monitoring and reporting procedures.

POLICY	PERFORMANCE MONITORING AND REPORTING	
	HOW WILL PROGRESS BE MEASURED?	WHO/WHEN
1. Support Oregon's transition to cleaner, low carbon fuels, more fuel-efficient vehicles and pay-as-you-drive private vehicle insurance	☐ Share of registered light duty vehicles in Oregon that are low emissions and zero emissions vehicles ☐ Changes in share of Oregon households using pay-as-you-drive private vehicle insurance	☐ State agencies will collect data to support reporting on state-related actions ☐ Oregon Global Warming Commission progress reports to the Oregon Legislature ☐ State agencies provide data and work together to periodically update greenhouse gas inventory for all sectors for use by State and MPOs
2. Implement the 2040 Growth Concept and local adopted land use and transportation plans	☐ Changes in share of households and jobs in mixed-use areas** ☐ Changes in infill and development in urban growth boundary** ☐ Changes in vehicle miles traveled per capita* ☐ Changes in housing and transportation cost burden per household*	☐ Metro Urban Growth Report ☐ Metro performance monitoring per ORS 197.301
3. Make transit more convenient, frequent, accessible and affordable	☐ Changes in transit mode share* ☐ Changes in household and job access to transit* ☐ Changes in transit service daily revenue hours*	☐ Metro Regional Transportation Plan updates
4. Use technology to actively manage the transportation system	☐ Changes in share of region's transportation system covered with transportation system management and operations (TSMO) strategies *(new)*	☐ Metro Regional Transportation Plan updates
5. Provide information and incentives to expand the use of travel options	☐ Changes in biking, walking, transit and shared ride mode shares* ☐ Changes in share of workforce participating in commuter programs*** ☐ Share of population with awareness of travel options programs***	☐ Metro Regional Travel Options Program evaluations
6. Make biking and walking more safe and convenient	☐ Changes in biking and walking mode shares* ☐ Changes in bike and pedestrian fatalities and severe injuries* ☐ Changes in number local plans with adopted "complete street" policies *(new)*	☐ Metro Regional Transportation Plan updates
7. Make streets and highways more safe, reliable and connected	☐ Changes in intersection density in region** ☐ Changes in motor vehicle fatalities and severe injuries* ☐ Reliability measure TBD in 2018 RTP update	☐ Metro performance monitoring per ORS 197.301 ☐ Metro Regional Transportation Plan updates
8. Manage parking to make efficient use of parking resources	☐ Changes in designated areas of the region that have implemented parking management *(new)*	☐ Metro Regional Transportation Plan updates
9. Secure stable funding for needed investments	☐ The Metro Council and JPACT adopt an updated funding strategy	☐ Metro Regional Transportation Plan updates
10. Demonstrate leadership on climate change	☐ Changes in roadway greenhouse gas emissions per capita*	☐ Metro Regional Transportation Plan updates ☐ Metro will periodically update regional greenhouse gas emissions inventory in collaboration with state agencies ☐ Metro will analyze the greenhouse gas emissions impacts of land use and transportation plans as part of future regional growth management and transportation decisions

Notes:

* Metro reports on these and other performance measures through regular updates to the Regional Transportation Plan.

** Metro reports on these and other performance measures to LCDC on a periodic basis per ORS 197.301 and through development of the Urban Growth Report.

*** Metro reports on these and other performance measures through periodic evaluations of the Regional Travel Options program to monitor effectiveness.

TECHNICAL REVIEW DRAFT

7/23/14 SUBJECT TO FURTHER REFINEMENT	2010	SCENARIO A RECENT TRENDS	SCENARIO B ADOPTED PLANS	SCENARIO C NEW PLANS AND POLICIES	DRAFT APPROACH	
GreenSTEP Evaluation Measures						**Unit**
Greenhouse gas emissions						
Total CO2e emissions from light vehicles	5,400,000	2,700,000	2,300,000	1,900,000	2,000,000	metric tons of roadway CO2e per year
percent change from 2010	*n/a*	*-50%*	*-57%*	*-65%*	*-63%*	
Greenhouse gas emissions reduction from 2005 per capita	n/a	-12%	-24%	-36%	-29%	percent change from 2005 (in addition to reductions expected from fleet and technology)
Total CO2e emissions per capita	3.7	1.3	1.1	0.9	1.0	metric tons of roadway CO2e per capita per year
percent change from 2010	*n/a*	*-65%*	*-70%*	*-75%*	*-74%*	
Travel						
Vehicle miles traveled per capita	20	17	16	14	16	miles per capita per day
percent change from 2010	*n/a*	*-15%*	*-19%*	*-30%*	*-20%*	
Walk trips per capita	150	180	190	200	196	trips per capita per year
percent change from 2010	*n/a*	*20%*	*27%*	*33%*	*31%*	
Bike miles per capita	110	110	160	190	174	miles per capita per year
percent change from 2010	*n/a*	*0%*	*45%*	*73%*	*58%*	
Delay as a percent of auto/light truck travel time	15%	21%	17%	13%	14%	percent of total auto time attributed to delay
Vehicle minutes of delay per capita	7	10	7	4	5	minutes per capita per day
percent change from 2010	*n/a*	*43%*	*0%*	*-43%*	*-29%*	
Households in walkable, mixed-use areas	26%	36%	37%	37%	37%	percent of total households
Air and Energy						
Criteria pollutant emissions	360	150	140	120	135	metric tons per day
percent change from 2010	*n/a*	*-58%*	*-61%*	*-67%*	*-63%*	
Fuel consumption [1]	760	310	270	220	250	gallons per household per year
percent change from 2010	*n/a*	*-59%*	*-64%*	*-71%*	*-67%*	
Costs [2]						
Fuel costs	$1,850	$1,900	$1,650	$1,350	$1,390	per household per year in 2005$
percent change from 2010	*n/a*	*3%*	*-11%*	*-27%*	*-25%*	
Average household transportation cost - auto and light truck only	$8,000	$8,200	$8,100	$7,400	$7,700	per household per year in 2005$
percent change from 2010	*n/a*	*3%*	*1%*	*-8%*	*-4%*	
Travel costs [3]	$2,600	$2,700	$3,000	$3,200	$2,790	per household per year in 2005$
Ownership cost	$5,400	$5,500	$5,100	$4,200	$4,910	per household per year in 2005$
Median-income household travel costs [4]	18%	18%	18%	16%	17%	percent of annual household income
Low-income household travel costs [5]	24%	23%	23%	20%	22%	percent of annual household income
Freight truck travel time costs [6]	$950	$1,100	$1,100	$1,000	$1,000	per household per year in 2005$
percent change from 2010	*n/a*	*16%*	*16%*	*5%*	*5%*	
External social costs [7]	$970	$640	$570	$490	$530	per household per year in 2005$
percent change from 2010	*n/a*	*-34%*	*-41%*	*-49%*	*-45%*	
Partial estimate of travel costs [2, 8]						
Fuel taxes	$320	$150	$180	$25	$175	per household per year in 2005$
Parking charges	$390	$380	$800	$660	$790	per household per year in 2005$
Mileage-based road use fees	$0	$0	$0	$350	$0	per household per year in 2005$
Carbon fee	$0	$0	$0	$100	$0	per household per year in 2005$
Sum of partial estimate of travel costs	$710	$530	$980	$1,135	$965	per household per year in 2005$

[1] Petroleum-based, liquid and gaseous fuels consumed in light vehicle engines.

[2] All costs reported per household only. All dollar values are reported in 2005 dollars, accounting for inflation. The presentation as household averages is to allow the magnitude of the values to be compared. It is not meant to to imply that all households will pay the amounts shown or that only households will pay. The estimates only show the revenues from light duty vehicles and include the proportion of infrastructure costs attributable to passenger vehicle travel, and not the revenues or costs attributable to heavy duty vehicles.

[3] Travel costs include the cost of fuel, fuel taxes and other fees that were tested within an individual scenario. This does not include the cost of vehicle ownership or maintenance.

[4] Median-income households are defined as households that earn between $40,000 and $60,000 per year.

[5] Low-income households are defined as households that earn less than or equal to $20,000 per year.

[6] A computed value of truck time cost on a per household basis. Truck Time costs are calculated using a factor of $35 per hour based on the "Costs of Congestion to the Economy of the Portland Region."

[7] A computed value of unpaid external social costs (e.g., climate change damage and adaptation, energy security, air and noise pollution, crash costs to non-drivers and other environmental impacts)

[8] The tranportation revenues side of the evaluation is partial because it only includes the taxes and fees that were accounted for in GreenSTEP, e.g., fuel, parking, mileage-based road use and carbon fees. Because GreenSTEP is a quantitative model that cannot distinguish between parking management strategies such as timed parking or residential permits, a dollar value(or cost), is used as a proxy. The cost of parking and the amount each household may pay depends on how parking charges are levied or whether other parking strategies are implemented, such as minimum requirements for parking spaces in residential developments, timed/zoned parking, residential permits, limited supply relative to demand, and shared parking.

Metro | *Making a great place*

8/3/14

Climate Smart Communities Scenarios Project

Numbers subject to refinement

System Performance Measures for Intra-UGB* Trips

* within Metro UGB (excludes Clark County, Washington)

		2010 Base	2040 NB	2035 CSC	2040 CSC	2040 FC	2040 ST
		2010	**2040 No Build**	**2035 Draft Approach**	**2040 Draft Approach****	**2040 FC**	**2040 ST**
Demographic Data							
1	Population	1,477,626	2,074,386	1,988,457	2,074,386	2,074,386	2,074,386
	Population growth change % from 2010			35%	40%	40%	40%
2	Households	594,898	884,855	846,620	884,855	884,855	884,855
	Household growth change % from 2010			42%	49%	49%	49%
3	Employment	754,321	1,189,516	1,120,446	1,189,516	1,189,516	1,189,516
	Employment growth change % from 2010			49%	58%	58%	58%
Network Data							
1 a	Total Miles in Network	3,202	3,223	3,346	3,346	3,346	3,361
b	Freeway Miles	201	201	212	212	212	212
c	Arterial Miles	3,001	3,023	3,134	3,134	3,134	3,148
d	HOV Miles	3.4	3.4	3.4	3.4	3.4	3.4
2 a	Total Lane Miles	4,832	4,902	5,306	5,306	5,306	5,393
b	Freeway Lane Miles	550	561	610	610	610	625
c	Arterial Lane Miles	4,282	4,342	4,696	4,696	4,696	4,768
3 a	Total Roadway Capacity Miles	4,410,965	4,480,619	4,836,426	4,836,426	4,836,426	4,920,271
b	Freeway Capacity Miles	1,075,860	1,097,220	1,197,916	1,197,916	1,197,916	1,229,263
c	Arterial Capacity Miles	3,335,104	3,383,399	3,638,511	3,638,511	3,638,511	3,691,008
4	Total Lane Miles Added (from 2010)	-	70	474	474	474	561
Motor Vehicle Data - Average Weekday (AWD)							
1 a	AWD Total Auto Person Trips	4,464,778	6,422,308	5,925,422	6,180,834	6,230,555	6,171,021
b	AWD Total SOV Trips	2,482,293	3,628,726	3,267,184	3,402,958	3,449,912	3,393,641
c	AWD Total HOV Vehicle Trips	845,612	1,177,783	1,113,106	1,159,239	1,167,616	1,158,889
d	AWD Total Vehicle Trips	3,327,905	4,806,509	4,380,290	4,562,197	4,617,528	4,552,530
e	AWD Total Shared Ride Person Trips	1,982,485	2,793,582	2,658,238	2,777,876	2,780,643	2,777,380
f	AWD Total Person Trips	5,570,374	8,179,819	7,798,744	8,177,405	8,174,083	8,177,898
2	AWD Total VMT	19,226,604	25,699,002	24,316,085	25,085,431	25,307,208	25,261,656
	AWD Total VMT % change from 2010	-	34%	26%	30%	32%	31%
3	AWD VMT/Capita	13.01	12.39	12.23	12.09	12.20	12.18
	VMT/Capita % change from 2010	-	-5%	-6%	-7%	-6%	-6%
4	AWD VMT/Employee	25.49	21.60	21.70	21.09	21.28	21.24
	VMT/Employee % change from 2010	-	-15%	-15%	-17%	-17%	-17%
5	Single Occupant Vehicle (SOV) Percent of Person Trips	44.56%	44.36%	41.89%	41.61%	42.21%	41.50%
6	Non-SOV Percent of Person Trips (shared ride, walk, bike, transit)	55.44%	55.64%	58.11%	58.39%	57.79%	58.50%
7	AWD Motor Vehicle Average Trip Length (miles)	5.62	5.18	5.38	5.33	5.31	5.38
8	Home-Based-Work Average Trip Length (miles)	8.06	7.51	7.81	7.75	7.74	7.81
9	Auto Occupancy	1.34	1.34	1.35	1.35	1.35	1.36
Motor Vehicle Data - PM 2 Hour Peak							
1	PM 2-HR Motor Vehicle Average Travel Time (minutes)	13.15	14.50	13.79	13.97	14.01	13.92
2	PM 2-HR Average Motor Vehicle Travel Speed (miles per hour)	26.75	22.52	24.54	23.99	23.86	24.29
3 a	PM 2-HR Total Congested miles (0.9 <= v/c < 1) (percentage of total miles in network)	64(1.99%)	168(5.21%)	121(3.62%)	137(4.10%)	140(4.18%)	127(3.79%)
b	PM 2-HR Freeway Congested miles (percentage of freeway miles in network)	35(17.30%)	48(24.14%)	55(26.12%)	58(27.13%)	56(26.29%)	55(25.71%)
c	PM 2-HR Arterial Congested miles (percentage of arterial miles in network)	29(0.96%)	120(3.96%)	66(2.10%)	80(2.54%)	84(2.68%)	73(2.31%)
4 a	PM 2-HR Total Severely Congested miles (v/c >=1) (percentage of total miles in network)	22(0.69%)	151(4.69%)	71(2.13%)	87(2.59%)	90(2.69%)	76(2.27%)
b	PM 2-HR Freeway Severely Congested miles (percentage of freeway miles in network)	9(4.62%)	42(20.82%)	25(11.56%)	28(13.36%)	30(14.30%)	23(11.00%)
c	PM 2-HR Arterial Severely Congested miles (percentage of arterial miles in network)	13(0.42%)	110(3.62%)	47(1.49%)	58(1.86%)	60(1.90%)	53(1.68%)
5	PM 2-HR Motor Vehicle Hours	111,804	177,515	154,220	162,706	165,065	161,789
6 a	PM 2-HR Motor Vehicle Hours of Delay (percentage of total PM 2 Motor Vehicle Hours)	4,144(3.71%)	20,874(11.76%)	11,136(7.22%)	13,226(8.13%)	13,820(8.37%)	12,354(7.64%)
b	PM 2-HR Freeway VHD (percentage of total PM 2 Motor Vehicle Hours)	2,693(2.41%)	11,746(6.62%)	7,014(4.55%)	7,985(4.91%)	8,339(5.05%)	7,479(4.62%)
c	PM 2-HR Arterial VHD (percentage of total PM 2 Motor Vehicle Hours)	1,451(1.30%)	9,128(5.14%)	4,123(2.67%)	5,242(3.22%)	5,480(3.32%)	4,874(3.01%)
	Vehicle Hours of Delay (VHD) is the time accrued above the travel time at v/c=0.9						
Motor Vehicle Data - Midday 1 Hour							
1	MD 1-HR Motor Vehicle Average Travel Time (minutes)	11.26	11.48	11.53	11.54	11.53	11.55
2	MD 1-HR Average Motor Vehicle Travel Speed (miles per hour)	29.70	27.00	27.96	27.69	27.62	27.93
3 a	MD 1-HR Total Congested miles (0.9 <= v/c < 1) (percentage of total miles in network)	12(0.37%)	56(1.74%)	42(1.24%)	47(1.40%)	48(1.44%)	36(1.06%)
b	MD 1-HR Freeway Congested miles (percentage of freeway miles in network)	8(3.91%)	31(15.43%)	27(12.75%)	29(13.50%)	30(13.95%)	19(9.08%)
c	MD 1-HR Arterial Congested miles (percentage of arterial miles in network)	4(0.13%)	25(0.84%)	15(0.47%)	18(0.59%)	19(0.59%)	16(0.52%)
4 a	MD 1-HR Total Severely Congested miles (v/c >=1) (percentage of total miles in network)	4(0.12%)	14(0.45%)	11(0.32%)	11(0.34%)	11(0.34%)	10(0.31%)
b	MD 1-HR Freeway Severely Congested miles (percentage of freeway miles in network)	2(0.77%)	6(3.24%)	5(2.28%)	5(2.49%)	5(2.49%)	5(2.23%)
c	MD 1-HR Arterial Severely Congested miles (percentage of arterial miles in network)	2(0.07%)	8(0.26%)	6(0.19%)	6(0.20%)	6(0.20%)	6(0.18%)
5	MD 1-HR Motor Vehicle Hours	37,564	55,384	50,952	53,157	53,685	53,088
6 a	MD 1-HR Motor Vehicle Hours of Delay (percentage of total MD 1 Motor Vehicle Hours)	273(0.73%)	1462(2.64%)	933(1.83%)	1076(2.02%)	1122(2.09%)	971(1.83%)
b	MD 1-HR Freeway VHD (percentage of total MD 1 Motor Vehicle Hours)	172(0.46%)	957(1.73%)	633(1.24%)	722(1.36%)	753(1.40%)	656(1.24%)
c	MD 1-HR Arterial VHD (percentage of total MD 1 Motor Vehicle Hours)	101(0.27%)	505(0.91%)	300(0.59%)	354(0.67%)	370(0.69%)	315(0.59%)
	Vehicle Hours of Delay (VHD) is the time accrued above the travel time at v/c=0.9						
Freight Data - Average Weekday (AWD)							
1	AWD Total Truck Trips	25,688	48,279	46,177	48,279	48,279	48,279
2	AWD Truck Average Trip Length (miles)	12.90	14.26	14.23	14.26	14.26	14.25
4	Freight Network Miles	752	761	795	795	795	797
	Freight Network Miles added from 2010	-	9	43	43	43	45
3	Freight Network Lane Miles	1,622	1,665	1,811	1,811	1,811	1,858
	Freight Network Lane Miles added from 2010	-	42	188	188	188	235
Freight Data - PM 2 Hour Peak							
1	PM 2-HR Truck Average Travel Time (minutes)	25.95	33.98	31.64	32.15	32.33	31.87
2	PM 2-HR Truck Hours	987	2,423	2,169	2,292	2,305	2,272
3	PM 2-HR Truck Vehicle Hours of Delay (time accrued above v/c > 0.9)	117	783	478	488	507	453
4	PM 2-HR Congested Freight Network Miles (0.9 <= v/c < 1)	56	105	92	99	100	91
5	PM 2-HR Severely Congested Freight Network Miles (v/c >=1)	15	98	49	58	61	52
Freight Data - Midday 1 Hour							
1	MD 1-HR Truck Average Travel Time (minutes)	23.10	28.36	27.44	27.68	27.75	27.48
2	MD 1-HR Truck Hours	750	1,726	1,604	1,685	1,689	1,673
3	MD 1-HR Truck Vehicle Hours of Delay (time accrued above v/c > 0.9)	17	152	95	99	103	88
4	MD 1-HR Congested Freight Network Miles (0.9 <= v/c < 1)	9	50	34	40	41	31
5	MD 1-HR Severely Congested Freight Network Miles (v/c >=1)	3	13	11	12	12	9
Transit Data							
1	AWD Total Transit Trips (originating riders)	251,313	404,050	587,543	618,096	556,120	637,094
2	AWD Transit Revenue Hours	5,130	5,881	9,431	9,489	7,190	9,507
	Revenue hours growth change % from 2010		*15%*	*84%*	*85%*	*40%*	*85%*
	AWD Transit Revenue Miles	75,948	83,277	147,439	147,439	107,616	147,384
3	Transit Percent of Person Trips	4.51%	4.94%	7.53%	7.56%	6.80%	7.79%
4	AWD Originating Riders Per Revenue Hour *	49	69	62	65	77	67
5	Percent Covered Households - Peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	66%	65%	73%	73%	72%	74%
6	Percent Covered Employment - Peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	86%	81%	87%	87%	84%	86%
7	Percent Covered Households off peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	64%	63%	72%	72%	70%	73%
8	Percent Covered Employment off peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	83%	78%	86%	86%	84%	85%
* AWD Transit Revenue Hours were calculated using existing daily peak and off-peak expansion factors							
Pedestrian Data							
1	Total Walk Trips (does not include walk trips to transit)	504,512	816,459	768,014	829,578	837,136	823,553
2	Walk Percent of Person Trips	9.06%	9.98%	9.85%	10.14%	10.24%	10.07%
Bicycle Data							
1	Total Bike Trips	178,530	297,487	287,945	309,626	310,998	306,953
2	Bike Percent of Person Trips	3.20%	3.64%	3.69%	3.79%	3.80%	3.75%

** = This scenario assumes the Climate Smart Communities draft approach policies and investments and the 2040 growth distribution used for the 2014 Regional Transportation Plan update to provide context.

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8/3/14

Climate Smart Communities Scenarios Project

Numbers subject to refinement

System Performance Measures for Total Region* Trips

* includes Clackamas, Multnomah, Washington and Clark counties

		2010 Base	2040 NB	2035 CSC	2040 CSC	2040 FC	2040 ST
		2010	**2040 No Build**	**2035 Draft Approach**	**2040 Draft Approach****	**2040 FC**	**2040 ST**
Demographic Data							
1	Population	2,061,226	2,945,185	2,901,629	2,945,185	2,945,185	2,945,185
	Population growth change % from 2010			41%	43%	43%	43%
2	Households	811,730	1,210,551	1,189,325	1,210,551	1,210,551	1,210,551
	Household growth change % from 2010			47%	49%	49%	49%
3	Employment	916,407	1,491,536	1,446,786	1,491,536	1,491,536	1,491,536
	Employment growth change % from 2010			58%	63%	63%	63%
Network Data							
1 a	Total Miles in Network	6,849	6,874	7,100	7,100	7,100	7,114
b	Freeway Miles	502	502	514	514	514	514
c	Arterial Miles	6,347	6,372	6,586	6,586	6,586	6,599
d	HOV Miles	3.4	3.4	3.4	3.4	3.4	3.4
2 a	Total Lane Miles	9,407	9,497	10,242	10,242	10,242	10,337
b	Freeway Lane Miles	1,222	1,234	1,318	1,318	1,318	1,339
c	Arterial Lane Miles	8,185	8,263	8,924	8,924	8,924	8,999
3 a	Total Roadway Capacity Miles	8,841,476	8,950,139	9,633,266	9,633,266	9,633,266	9,731,479
b	Freeway Capacity Miles	2,127,980	2,162,032	2,325,563	2,325,563	2,325,563	2,369,253
c	Arterial Capacity Miles	6,713,497	6,788,107	7,307,704	7,307,704	7,307,704	7,362,227
4	Total Lane Miles Added (from 2010)	-	90	835	835	835	930
Motor Vehicle Data - Average Weekday (AWD)							
1 a	AWD Total Auto Person Trips	6,281,952	9,367,445	8,966,467	9,108,832	9,162,943	9,098,382
b	AWD Total SOV Trips	3,478,732	5,277,911	4,953,408	5,028,130	5,078,360	5,017,917
c	AWD Total HOV Vehicle Trips	1,195,867	1,730,282	1,690,467	1,714,030	1,723,321	1,713,787
d	AWD Total Vehicle Trips	4,674,599	7,008,193	6,643,875	6,742,160	6,801,681	6,731,704
e	AWD Total Shared Ride Person Trips	2,803,220	4,089,534	4,013,059	4,080,702	4,084,583	4,080,465
f	AWD Total Person Trips	7,717,944	11,666,232	11,425,376	11,666,232	11,666,232	11,666,232
2	AWD Total VMT	31,650,396	44,323,070	43,781,682	44,015,949	44,263,206	44,255,748
	AWD Total VMT % change from 2010	-	40%	38%	39%	40%	40%
3	AWD VMT/Capita	15.36	15.05	15.09	14.95	15.03	15.03
	VMT/Capita % change from 2010	-	-2%	-2%	-3%	-2%	-2%
4	AWD VMT/Employee	34.54	29.72	30.26	29.51	29.68	29.67
	VMT/Employee % change from 2010	-	-14%	-12%	-15%	-14%	-14%
5	Single Occupant Vehicle (SOV) Percent of Person Trips	45.07%	45.24%	43.35%	43.10%	43.53%	43.01%
6	Non-SOV Percent of Person Trips (shared ride, walk, bike, transit)	54.93%	54.76%	56.65%	56.90%	56.47%	56.99%
7	AWD Motor Vehicle Average Trip Length (miles)	6.59	6.13	6.39	6.33	6.31	6.38
8	Home-Based-Work Average Trip Length (miles)	9.63	9.00	9.40	9.32	9.30	9.38
9	Auto Occupancy	1.34	1.34	1.35	1.35	1.35	1.35
Motor Vehicle Data - PM 2 Hour Peak							
1	PM 2-HR Motor Vehicle Average Travel Time (minutes)	15.01	16.35	15.51	15.70	15.73	15.67
2	PM 2-HR Average Motor Vehicle Travel Speed (miles per hour)	30.48	25.95	28.38	27.87	27.74	28.11
3 a	PM 2-HR Total Congested miles (0.9 <= v/c < 1) (percentage of total miles in network)	75(1.09%)	215(3.13%)	156(2.19%)	166(2.33%)	168(2.37%)	154(2.16%)
b	PM 2-HR Freeway Congested miles (percentage of freeway miles in network)	39(7.85%)	60(11.92%)	64(12.36%)	62(12.15%)	60(11.61%)	60(11.58%)
c	PM 2-HR Arterial Congested miles (percentage of arterial miles in network)	35(0.56%)	155(2.43%)	92(1.40%)	103(1.57%)	109(1.65%)	94(1.43%)
4 a	PM 2-HR Total Severely Congested miles (v/c >=1) (percentage of total miles in network)	28(0.41%)	207(3.01%)	103(1.46%)	127(1.79%)	131(1.84%)	113(1.59%)
b	PM 2-HR Freeway Severely Congested miles (percentage of freeway miles in network)	10(1.94%)	49(9.68%)	28(5.49%)	32(6.24%)	34(6.62%)	25(4.81%)
c	PM 2-HR Arterial Severely Congested miles (percentage of arterial miles in network)	18(0.29%)	158(2.48%)	75(1.14%)	95(1.45%)	97(1.47%)	88(1.34%)
5	PM 2-HR Motor Vehicle Hours	187,705	304,146	274,362	282,226	284,921	281,203
6 a	PM 2-HR Motor Vehicle Hours of Delay (percentage of total PM 2 Motor Vehicle Hours)	4,585(2.44%)	24,569(8.08%)	12,909(4.71%)	15,048(5.33%)	15,671(5.50%)	13,845(4.92%)
b	PM 2-HR Freeway VHD (percentage of total PM 2 Motor Vehicle Hours)	2,953(1.57%)	13,837(4.55%)	7,765(2.83%)	8,646(3.06%)	9,006(3.16%)	7,889(2.81%)
c	PM 2-HR Arterial VHD (percentage of total PM 2 Motor Vehicle Hours)	1,632(0.87%)	10,732(3.53%)	5,144(1.87%)	6,402(2.27%)	6,665(2.34%)	5,956(2.12%)
	Vehicle Hours of Delay (VHD) is the time accrued above the travel time at v/c=0.9						
Motor Vehicle Data - Midday 1 Hour							
1	MD 1-HR Motor Vehicle Average Travel Time (minutes)	12.90	12.98	13.01	13.06	13.04	13.06
2	MD 1-HR Average Motor Vehicle Travel Speed (miles per hour)	33.39	30.74	31.88	31.58	31.51	31.77
3 a	MD 1-HR Total Congested miles (0.9 <= v/c < 1) (percentage of total miles in network)	12(0.18%)	70(1.01%)	50(0.71%)	61(0.85%)	62(0.87%)	44(0.62%)
b	MD 1-HR Freeway Congested miles (percentage of freeway miles in network)	8(1.56%)	32(6.40%)	32(6.19%)	33(6.50%)	34(6.69%)	19(3.75%)
c	MD 1-HR Arterial Congested miles (percentage of arterial miles in network)	4(0.07%)	37(0.59%)	18(0.28%)	27(0.41%)	28(0.42%)	25(0.37%)
4 a	MD 1-HR Total Severely Congested miles (v/c >=1) (percentage of total miles in network)	4(0.07%)	21(0.31%)	14(0.19%)	14(0.20%)	15(0.20%)	13(0.19%)
b	MD 1-HR Freeway Severely Congested miles (percentage of freeway miles in network)	2(0.31%)	6(1.29%)	5(0.94%)	5(1.02%)	5(1.02%)	5(0.92%)
c	MD 1-HR Arterial Severely Congested miles (percentage of arterial miles in network)	3(0.05%)	15(0.23%)	9(0.13%)	9(0.14%)	9(0.14%)	9(0.13%)
5	MD 1-HR Motor Vehicle Hours	61,635	92,303	87,966	89,673	90,316	89,592
6 a	MD 1-HR Motor Vehicle Hours of Delay (percentage of total MD 1 Motor Vehicle Hours)	278(0.45%)	1551(1.68%)	959(1.09%)	1116(1.24%)	1166(1.29%)	1006(1.12%)
b	MD 1-HR Freeway VHD (percentage of total MD 1 Motor Vehicle Hours)	172(0.28%)	977(1.06%)	635(0.72%)	726(0.81%)	758(0.84%)	656(0.73%)
c	MD 1-HR Arterial VHD (percentage of total MD 1 Motor Vehicle Hours)	106(0.17%)	573(0.62%)	324(0.37%)	390(0.44%)	408(0.45%)	350(0.39%)
	Vehicle Hours of Delay (VHD) is the time accrued above the travel time at v/c=0.9						
Freight Data - Average Weekday (AWD)							
1	AWD Total Truck Trips	66,948	117,631	121,042	117,631	117,631	117,631
2	AWD Truck Average Trip Length (miles)	26.43	25.12	25.65	25.10	25.10	25.10
4	Freight Network Miles	1,232	1,242	1,289	1,289	1,289	1,291
	Freight Network Miles added from 2010	-	10	57	57	57	58
3	Freight Network Lane Miles	2,580	2,625	2,836	2,836	2,836	2,891
	Freight Network Lane Miles added from 2010	-	45	256	256	256	311
Freight Data - PM 2 Hour Peak							
1	PM 2-HR Truck Average Travel Time (minutes)	40.82	48.25	44.87	44.66	44.85	44.35
2	PM 2-HR Truck Hours	3,988	8,283	7,950	7,666	7,700	7,614
3	PM 2-HR Truck Vehicle Hours of Delay (time accrued above v/c > 0.9)	132	944	561	571	592	518
4	PM 2-HR Congested Freight Network Miles (0.9 <= v/c < 1)	62	131	112	119	119	110
5	PM 2-HR Severely Congested Freight Network Miles (v/c >=1)	16	125	62	76	79	70
Freight Data - Midday 1 Hour							
1	MD 1-HR Truck Average Travel Time (minutes)	36.90	40.31	39.40	39.02	39.10	38.80
2	MD 1-HR Truck Hours	3,084	5,920	5,967	5,731	5,742	5,698
3	MD 1-HR Truck Vehicle Hours of Delay (time accrued above v/c > 0.9)	17	168	100	106	110	94
4	MD 1-HR Congested Freight Network Miles (0.9 <= v/c < 1)	9	61	43	51	52	37
5	MD 1-HR Severely Congested Freight Network Miles (v/c >=1)	3	17	12	13	13	10
Transit Data							
1	AWD Total Transit Trips (originating riders)	282,546	441,433	651,364	680,062	616,593	699,861
2	AWD Transit Revenue Hours	5,669	6,456	10,382	10,439	8,085	10,447
	AWD Transit Revenue Miles	87,334	95,008	165,620	165,620	124,192	165,460
3	Transit Percent of Person Trips	3.66%	3.78%	5.70%	5.83%	5.29%	6.00%
4	AWD Originating Riders Per Revenue Hour *	50	68	63	65	76	67
5	Percent Covered Households - Peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	55%	54%	62%	62%	61%	63%
6	Percent Covered Employment - Peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	80%	74%	79%	79%	78%	80%
7	Percent Covered Households off peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	54%	52%	60%	60%	59%	61%
8	Percent Covered Employment off peak(w/in 1/2 mile of MAX or WES, .35 miles of streetcar or 1/4 mile of bus stop)	78%	71%	77%	77%	77%	78%
* AWD Transit Revenue Hours were calculated using existing daily peak and off-peak expansion factors							
Pedestrian Data							
1	Total Walk Trips (does not include walk trips to transit)	684,913	1,118,415	1,084,665	1,128,229	1,136,187	1,121,672
2	Walk Percent of Person Trips	8.87%	9.59%	9.49%	9.67%	9.74%	9.61%
Bicycle Data							
1	Total Bike Trips	216,541	362,378	353,841	372,549	373,947	369,756
2	Bike Percent of Person Trips	2.81%	3.11%	3.10%	3.19%	3.21%	3.17%

** = This scenario assumes the Climate Smart Communities draft approach policies and investments and the 2040 growth distribution used for the 2014 Regional Transportation Plan update to provide context.