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**2014
RTP
UPDATE**



2014 Regional Transportation Plan Overview Workshop

September 11, 2013



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Today's Topics

1. 2014 RTP background
2. Existing Conditions:
demographic/economic trends
3. Policy edits from state/fed mandates
4. Policy edits from regional initiatives
5. Travel model enhancements

What is an RTP?

- Required for all metropolitan regions
- Long range (20 years +) blueprint – guides regional and local planning
- Meets several federal & state requirements
- Financially constrained list of projects provides threshold for federal funding
- Supports the 2040 Growth Concept & desired outcomes.

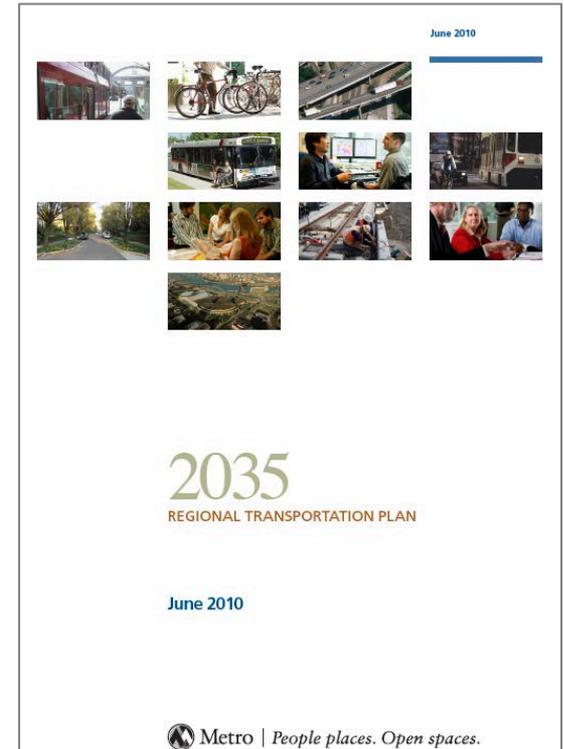
What outcomes does the RTP help achieve?

- Vibrant Communities
- Equity
- Economic prosperity
- Clean Air & Water
- Transportation choices
- Regional climate change leadership



Why Now?

- Required every 4 years
- Current plan expires September 2014
- If plan “lapses” we **cannot obligate any federal transportation funds**



Timeline...

September 23, 2013

- Project solicitation packet completed
- Financial assumptions finalized
- Policy updates prepared
- Existing conditions “snapshot” completed

December 6, 2013

- Updated project lists submitted to Metro
- Collaboration with Metro equity initiative
- Updated policies

...Timeline

End of March 2014

- Initial air quality testing and system performance complete
- Draft plan released for public review

July 2014

- Final air quality conformity completed
- Plan adopted and submitted to USDOT and DLCD

Coordination with other Metro initiatives

- Corridor planning efforts
 - SW Corridor
 - Powell/Division
- Metro Equity Strategy
- Climate Smart Communities
(e.g. existing conditions “snapshot”)
- Metropolitan Transportation Improvement Program (MTIP)

Questions?



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Demographic and Economic Trends in Metro region

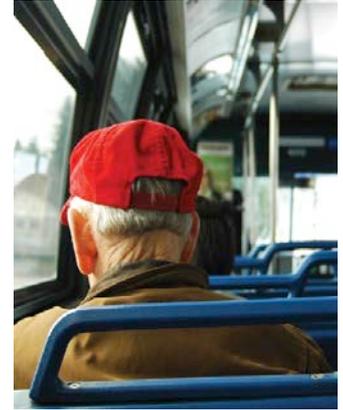
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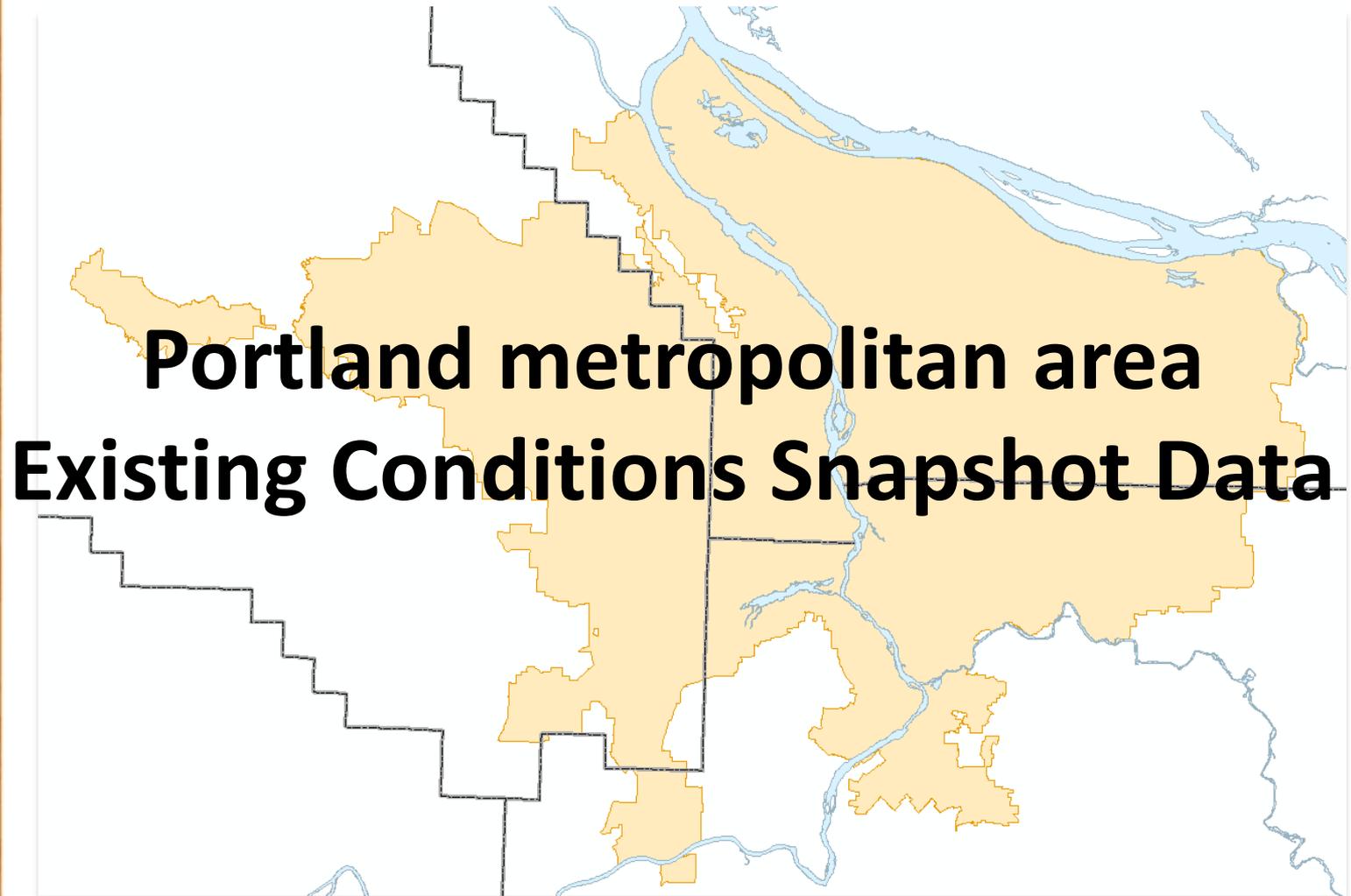
John Mermin, RTP update Project manager

Emerging themes

- Our region is growing and changing
- *Who we are*
 - Continued population growth
 - Racial diversity increasing
 - Retiring baby boom generation
 - Burgeoning millennial generation
- *What we do*
 - Poverty as regional issue
 - Recovery from recession
- *Where we live*
 - Housing options needed



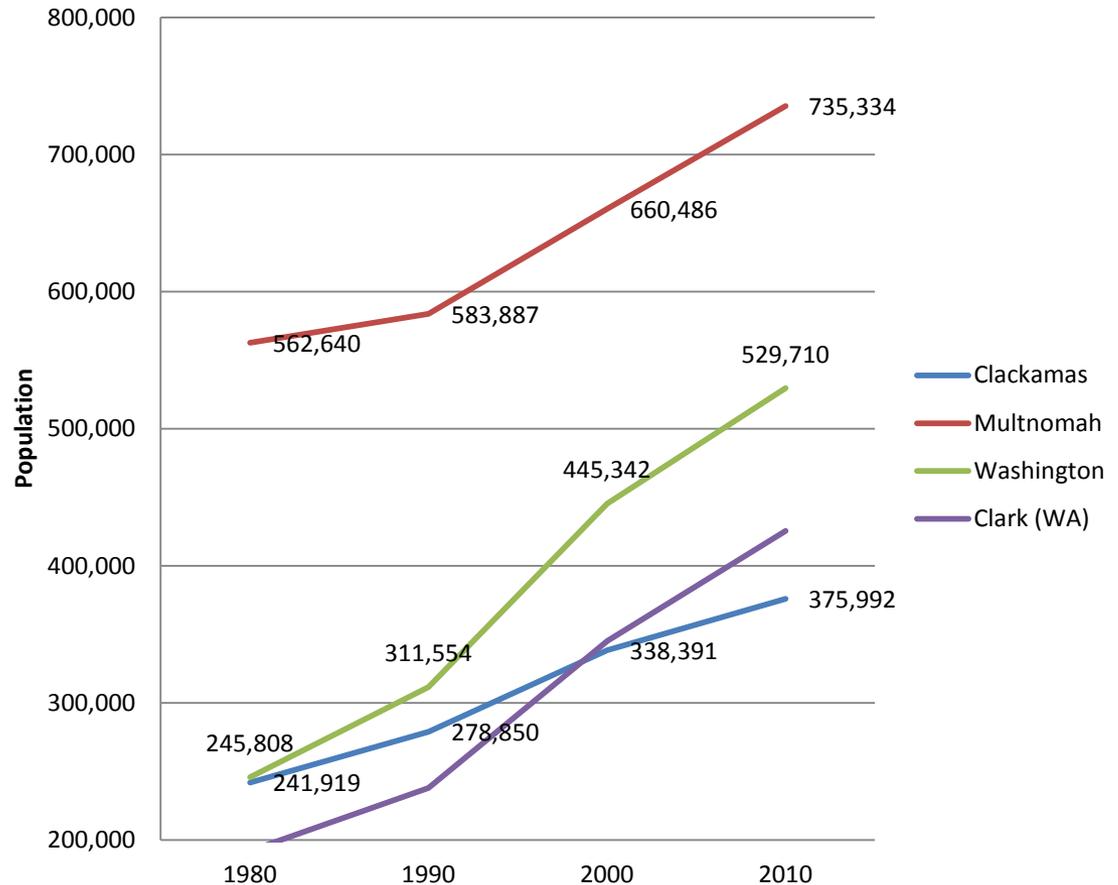
Who we are



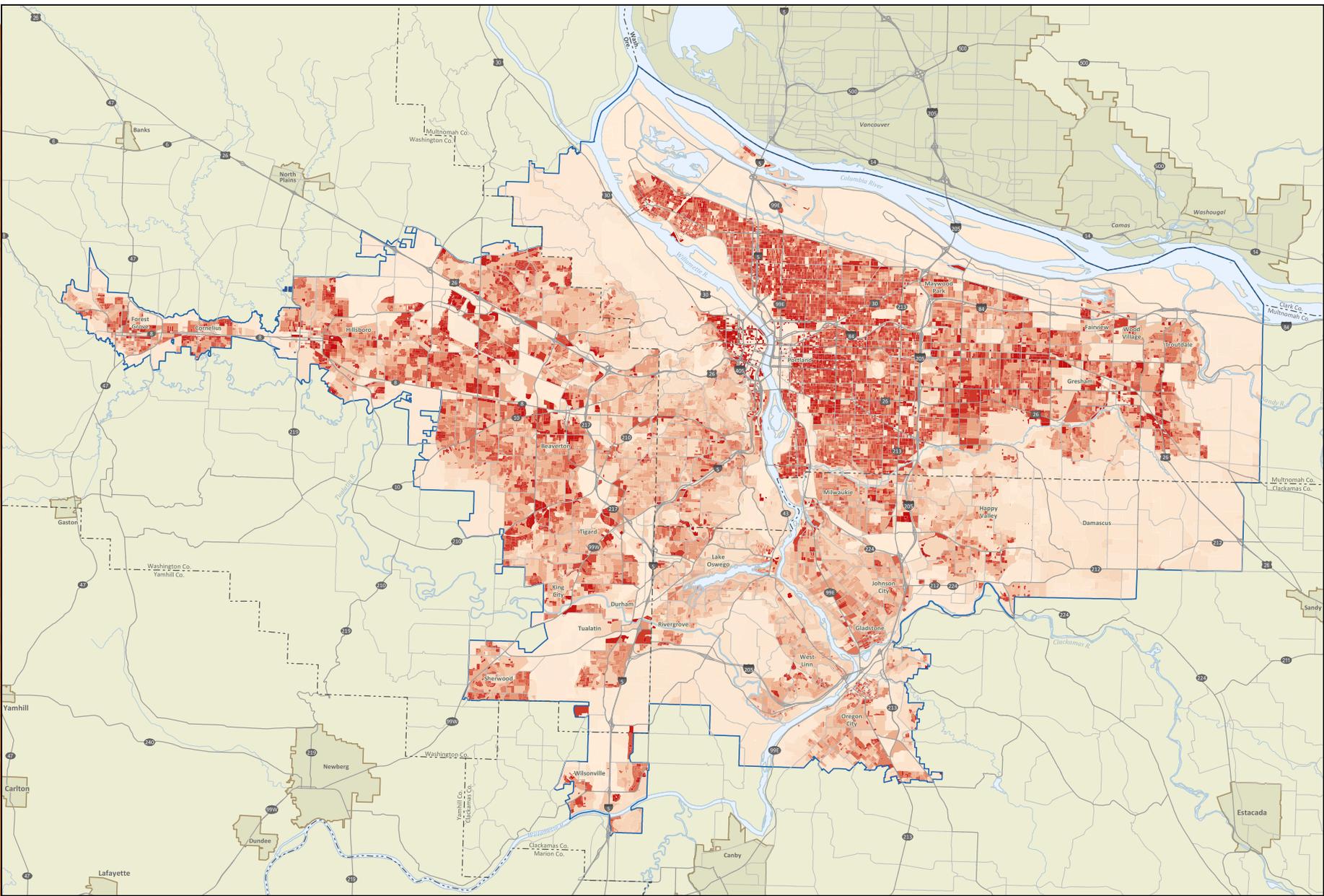
Growing population

The Portland metropolitan region continues to grow, even during the “lost decade.”

Four County Population Total, 1980-2010



Source: 2010 Decennial Census



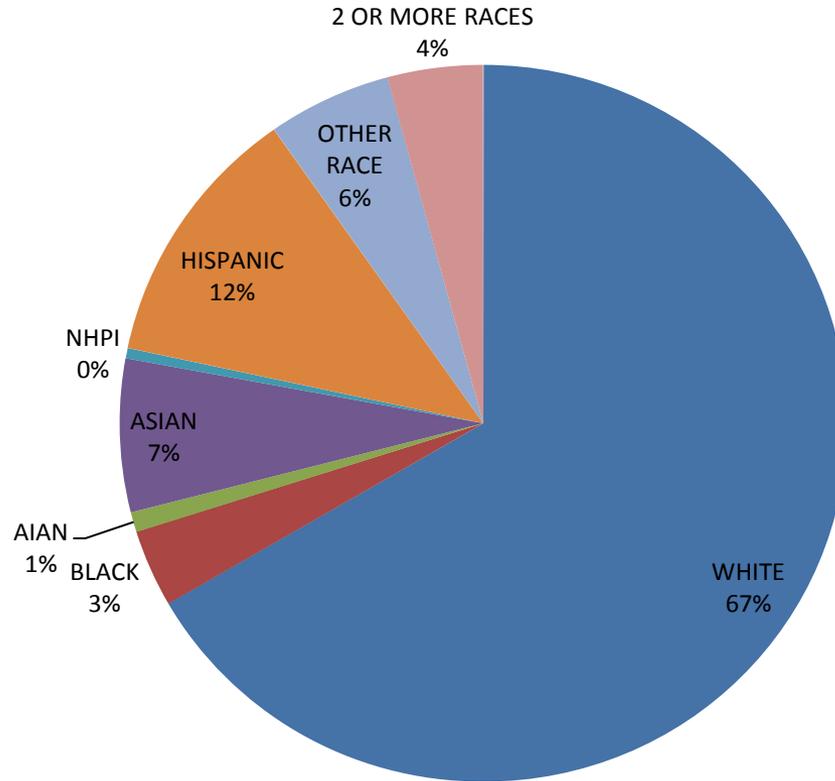
Population density (380 people/acre)

Increasing Diversity

UGB Diversity

■ WHITE ■ BLACK ■ AIAN ■ ASIAN ■ NHPI ■ HISPANIC ■ OTHER RACE ■ 2 OR MORE RACES

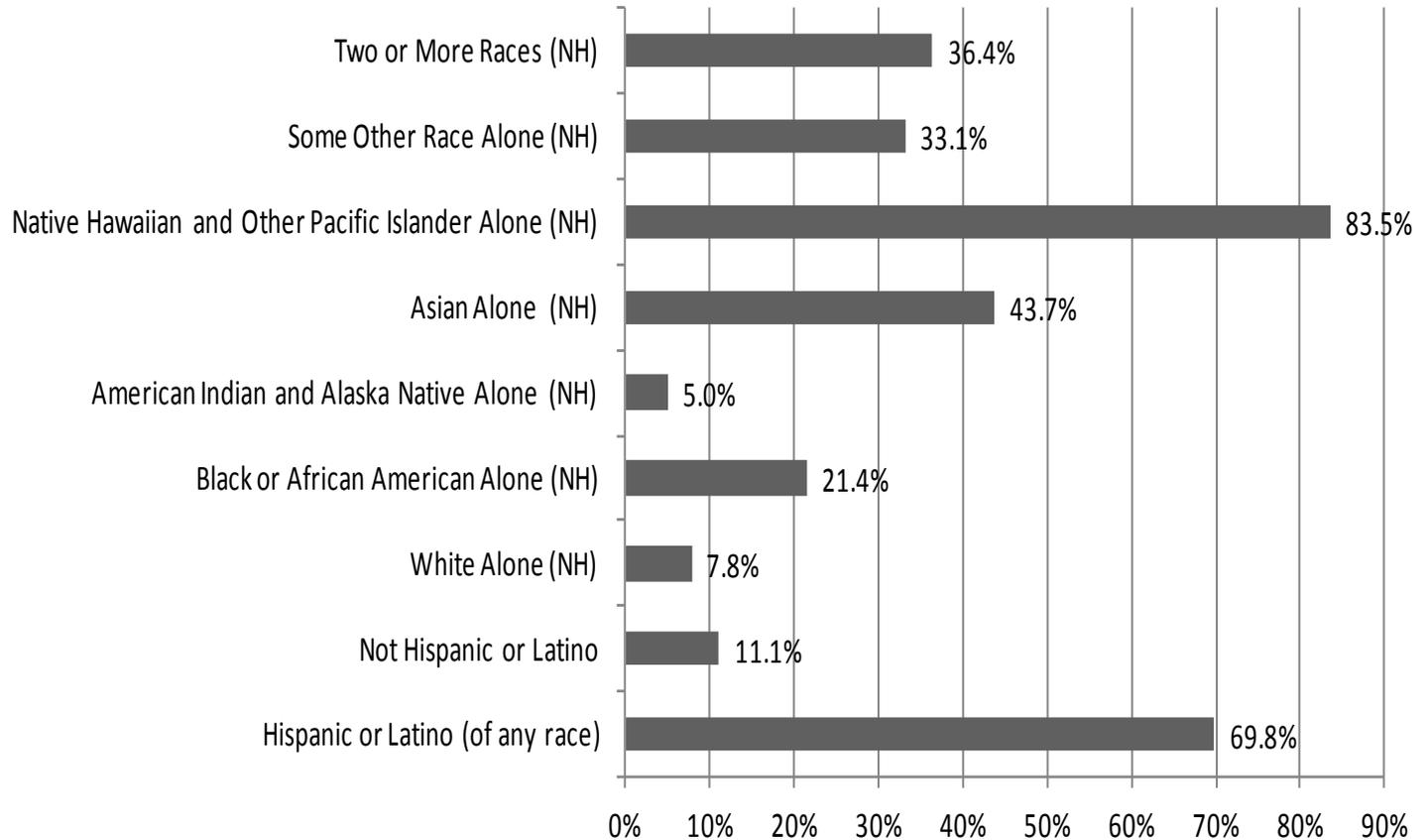
The Portland metropolitan region continues to grow more diverse with each decade.



Source: 2010 Decennial Census

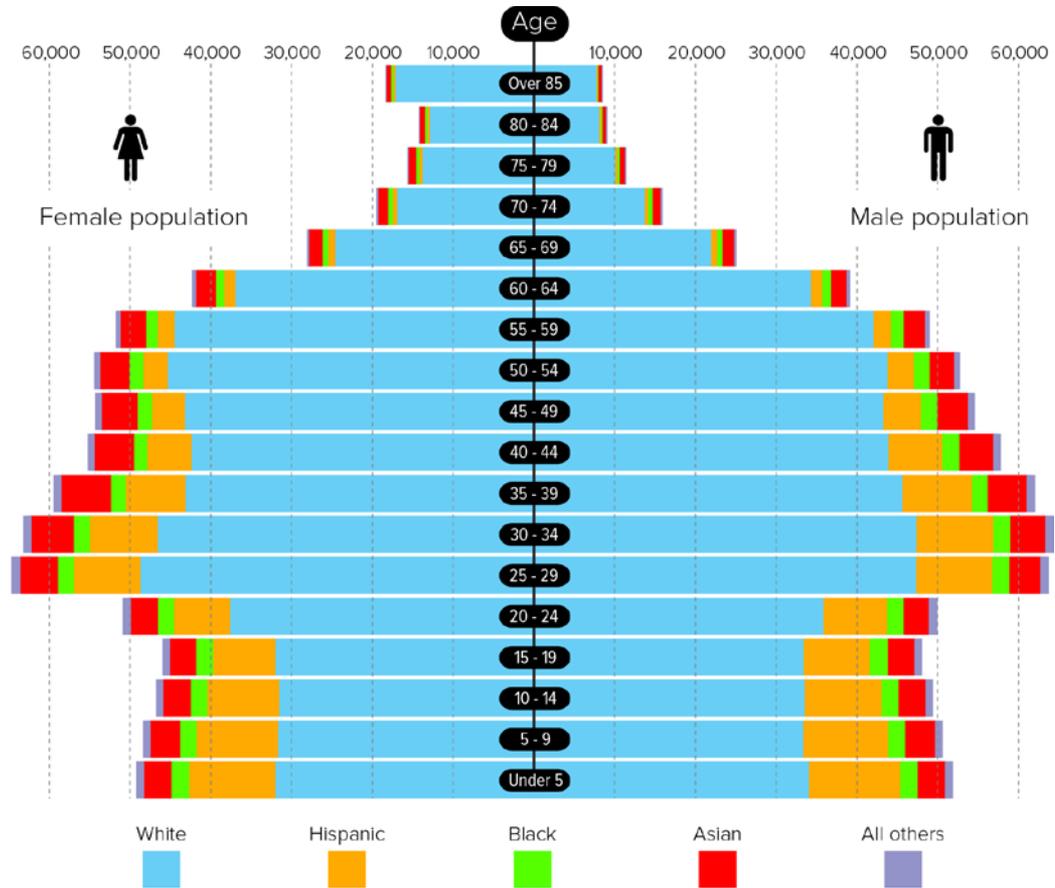
Increasing Diversity

Change in Demographic Composition 2000-2010



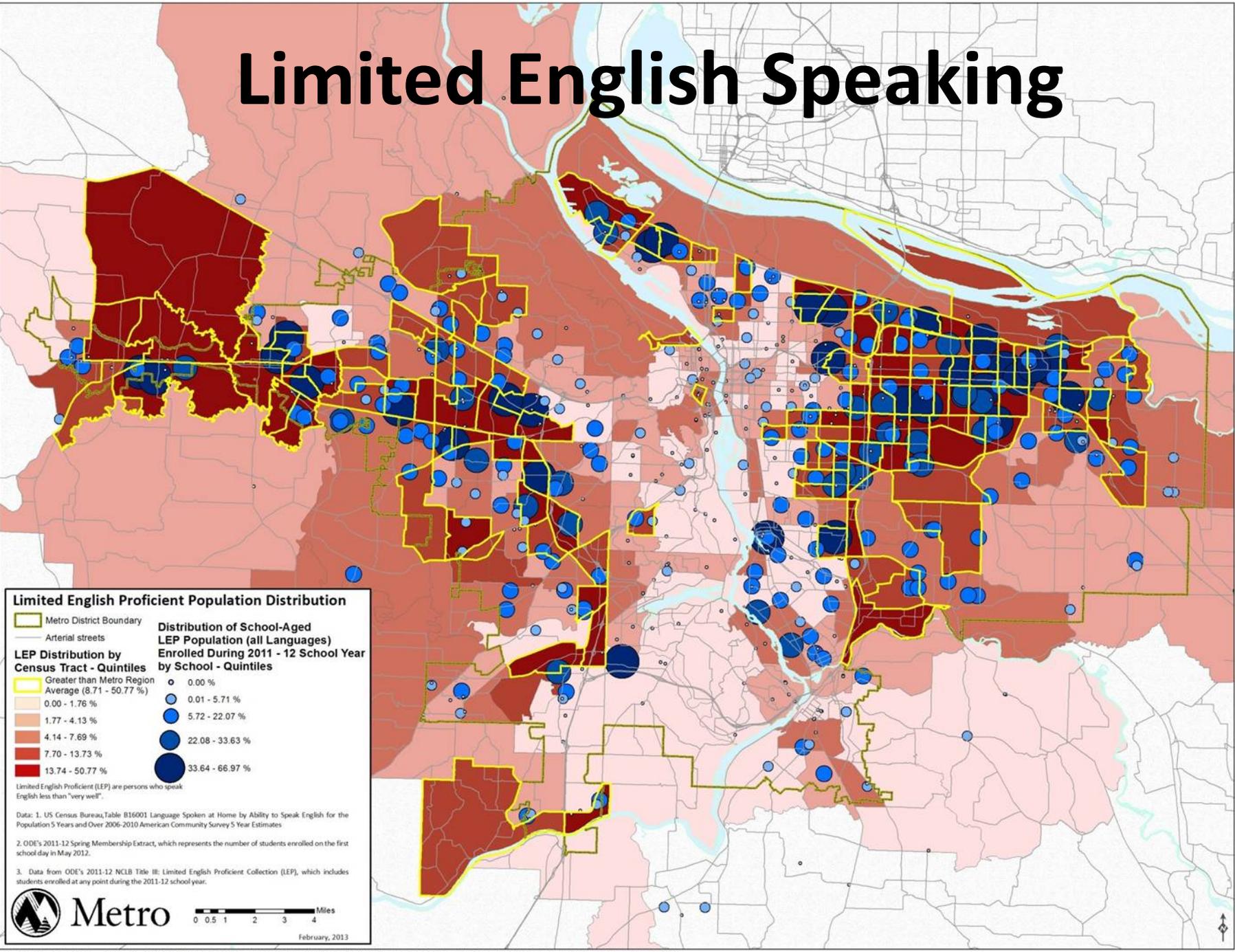
Source: Census

Age

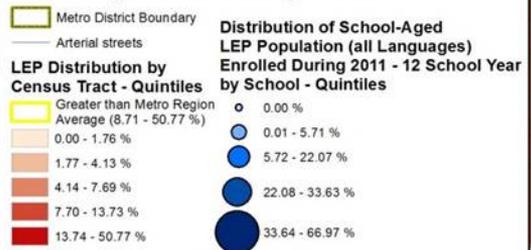


Source: 2010
LEHD data

Limited English Speaking



Limited English Proficient Population Distribution



Limited English Proficient (LEP) are persons who speak English less than "very well".

1. US Census Bureau, Table B16001 Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over 2006-2010 American Community Survey 5 Year Estimates.
2. ODE's 2011-12 Spring Membership Extract, which represents the number of students enrolled on the first school day in May 2012.
3. Data from ODE's 2011-12 NCLB Title III: Limited English Proficient Collection (LEP), which includes students enrolled at any point during the 2011-12 school year.

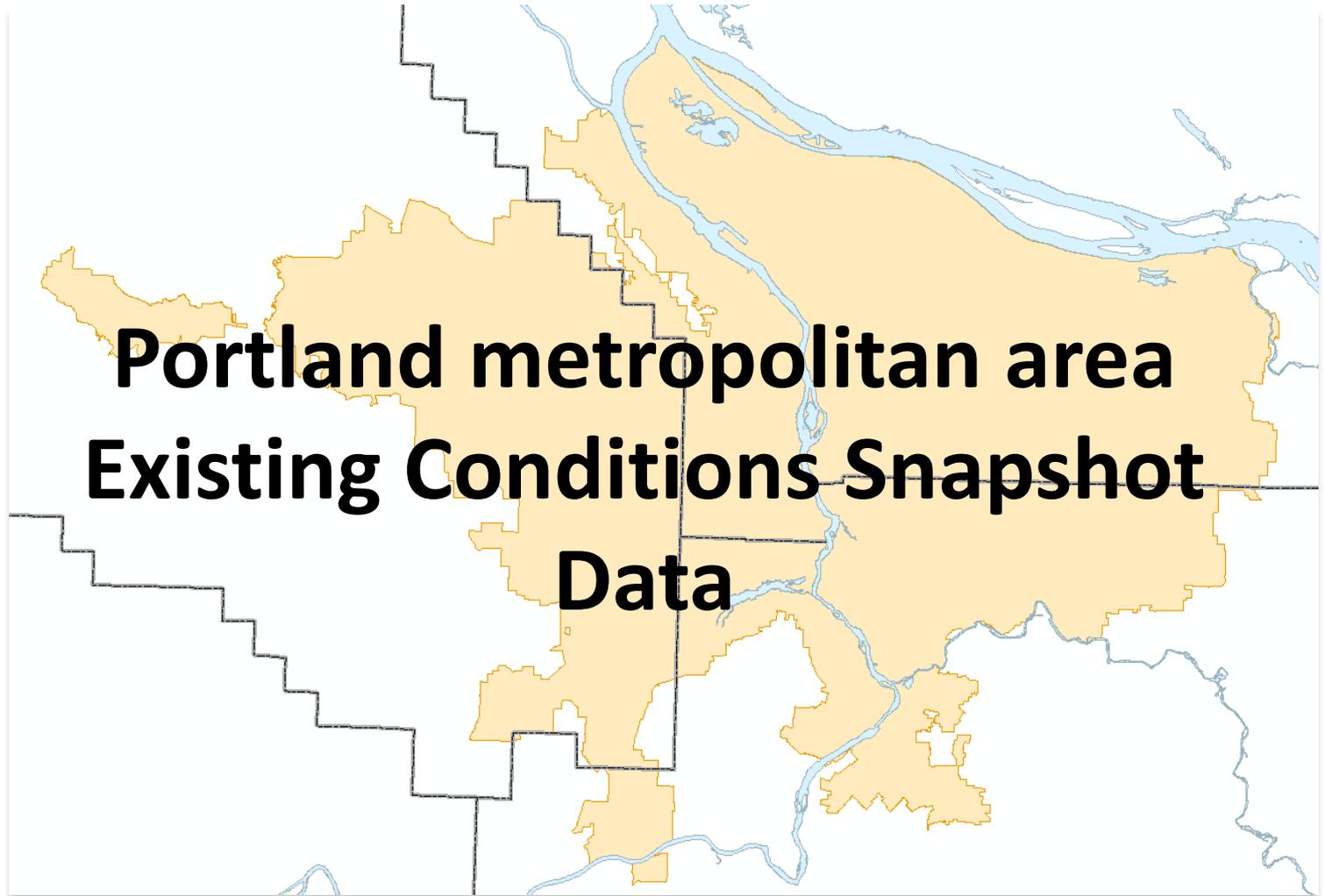
Metro

0 0.5 1 2 3 4 Miles

February, 2013

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What we do



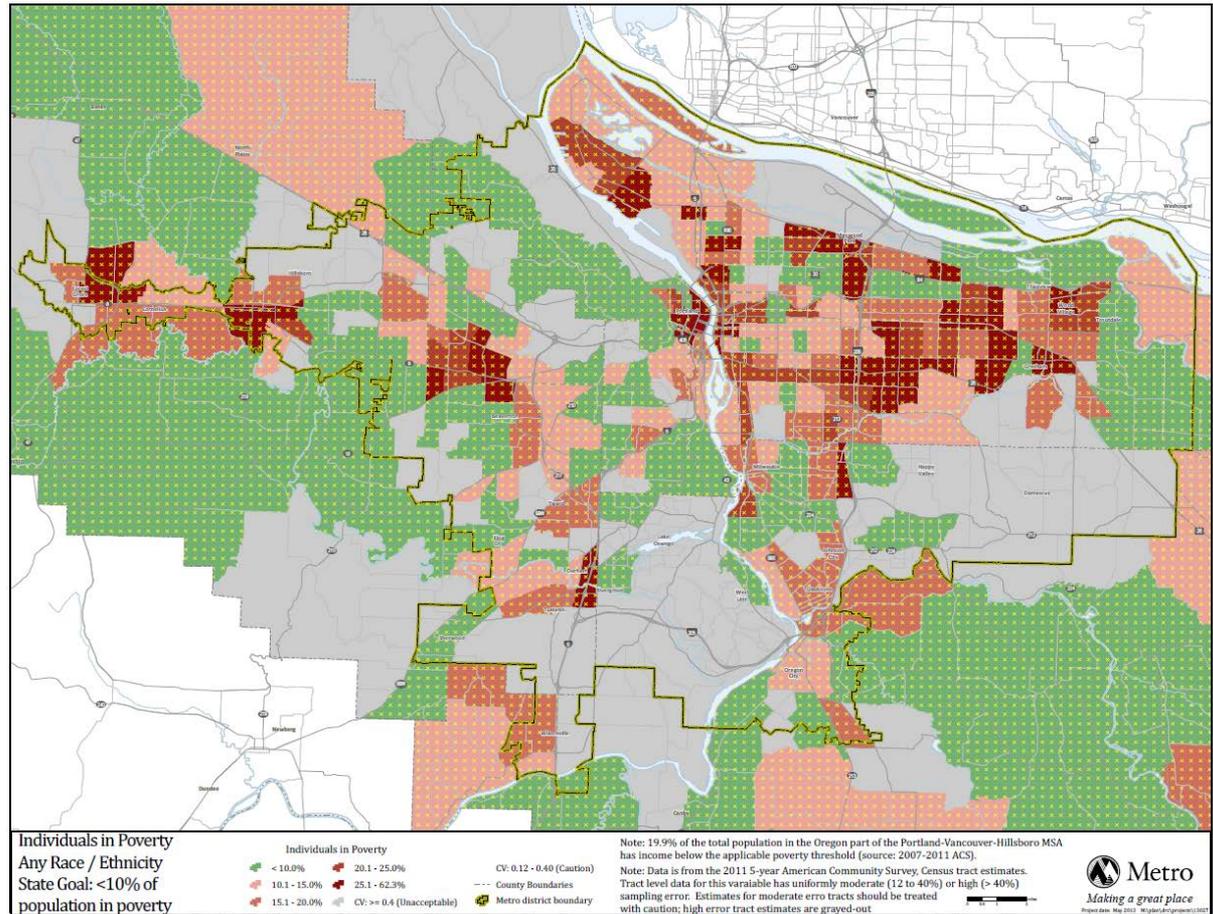
Jobs and income

Poverty exists across the region

Green represents less than 10% of individuals in poverty

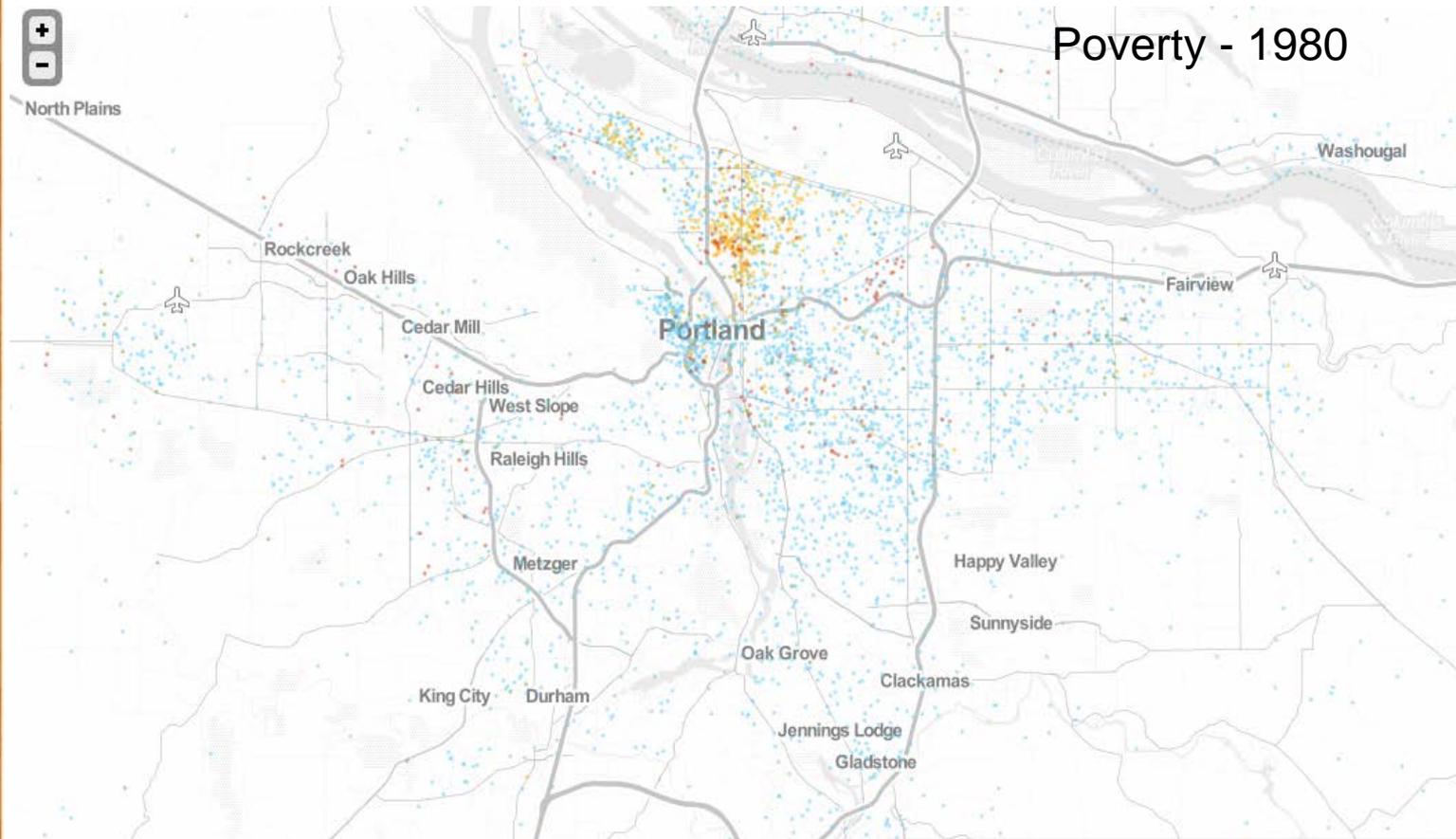
Darker red represents more than 25% of individuals in poverty

Source: ACS 2007-11



Jobs and income

Poverty has become a regional issue



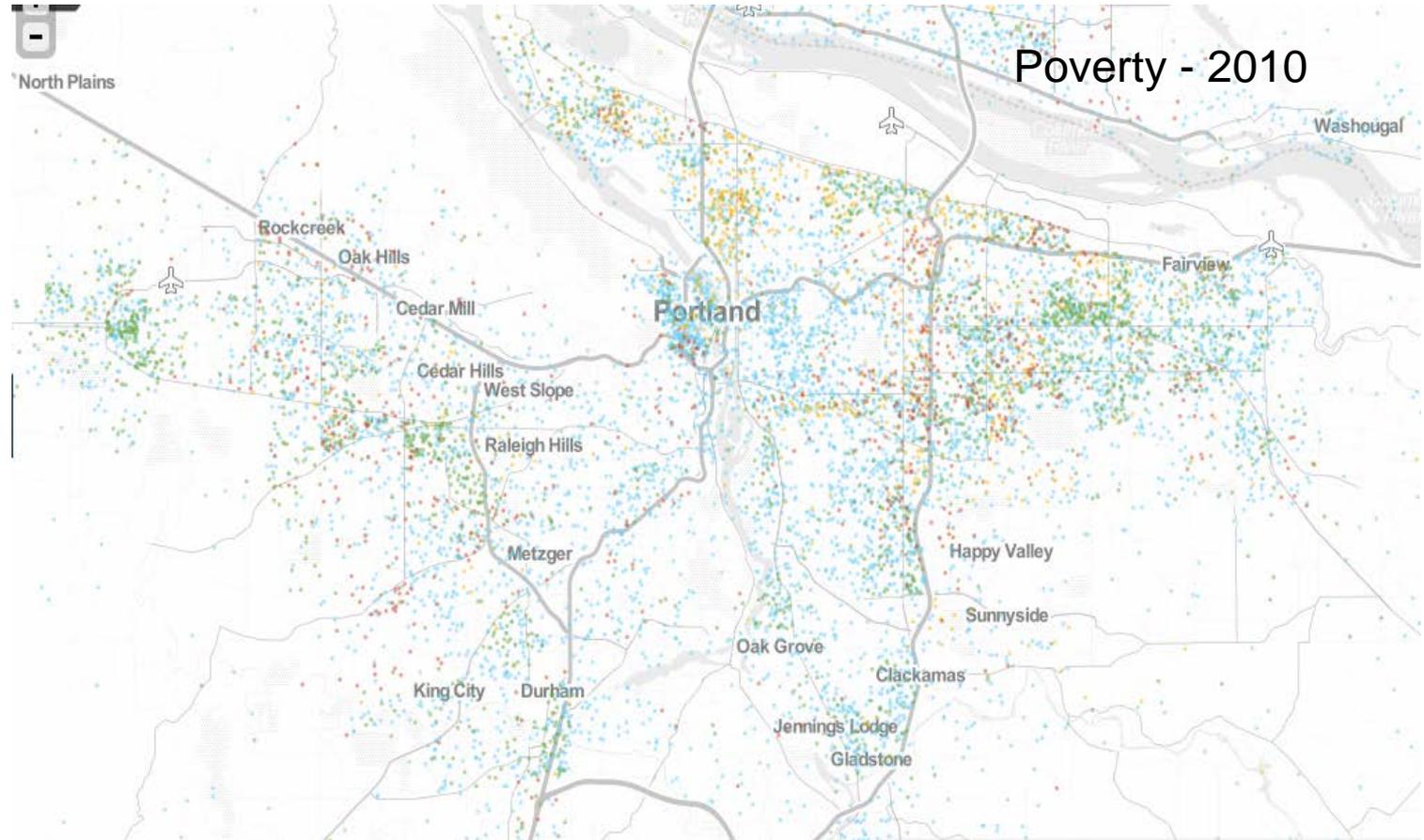
Each dot represents 20 people with income below the poverty line

● White ● Black ● Hispanic ● Asian/Pacific Islander

Source: Urban Institute, Metro Trends, 2013

Jobs and income

Poverty has become a regional issue



Each dot represents 20 people with income below the poverty line

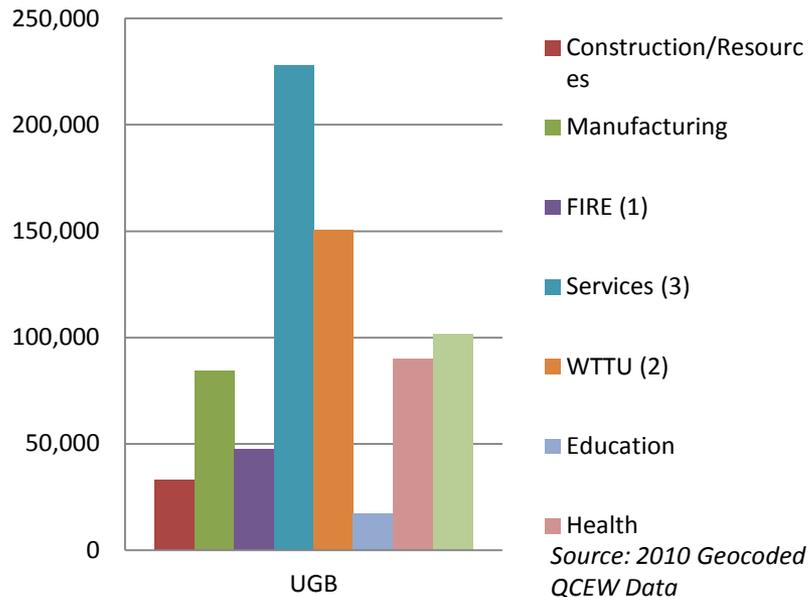
● White ● Black ● Hispanic ● Asian/Pacific Islander

Source: Urban Institute, Metro Trends, 2013

Job growth

Greatest growth in jobs in the past decade was in Washington County. Multnomah County, the largest county, saw a loss in jobs. Professional services jobs comprise the largest number of jobs in the region.

Covered Employment - Urban Growth Boundary



County	Total Jobs (2000)	Total Jobs (2011)	% Change in Jobs
Clackamas County	133,056	137,330	3.2%
Multnomah County	453,254	430,662	-5.0%
Washington County	224,015	243,132	8.5%
Clark (WA)	113,758	126,704* (indicates 2010 jobs)	11.4%

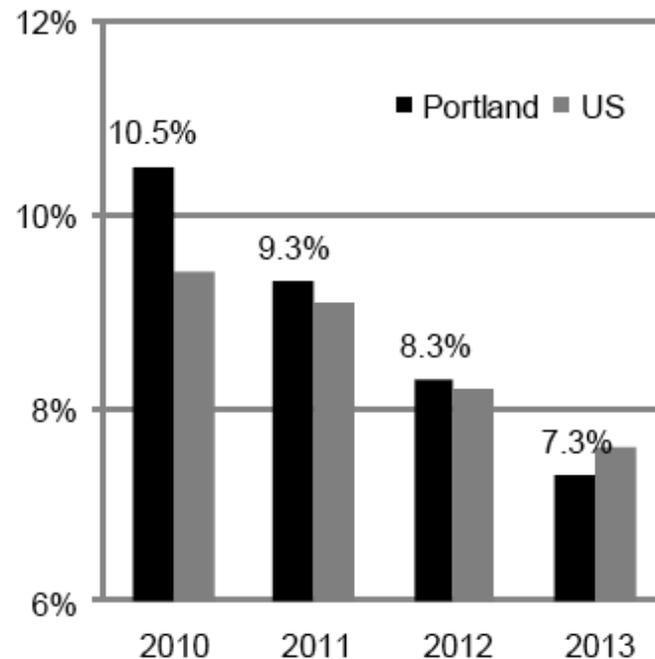
- (1) Finance, Insurance, Real estate
- (2) Warehousing, Trade, Transportation and Utilities
- (3) Services is broad category including retail, professional, etc.

Labor trends

The June unemployment rate of 7.3 percent is down a full point from a year ago.

This places the regional unemployment rate below the US rate, after several years of being higher.

Unemployment Rates - June
June 2013 (Seasonally adj.)



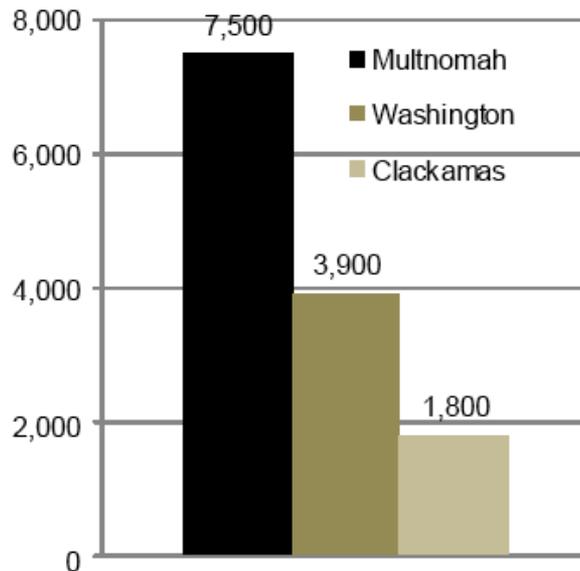
Source: State of Oregon Employment Department,
July 2013

Recession recovery

Recent job growth in the Portland region has brought back almost all of the jobs lost in the recession. The recovery varies by county - Washington county has already recovered all the jobs lost. Multnomah county will likely do the same in a few months. Clackamas are recovering much more slowly.

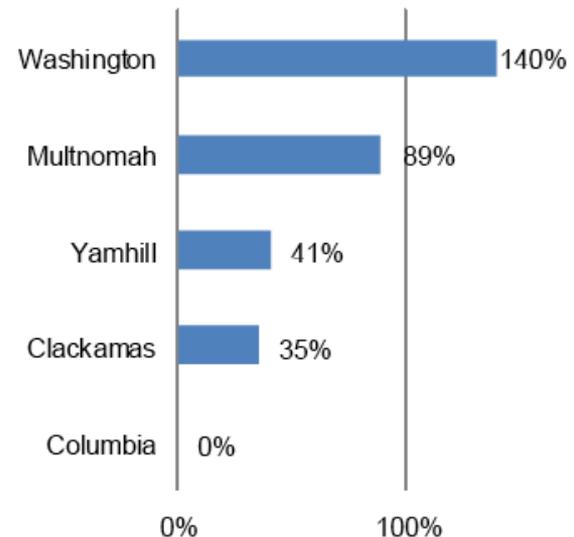
Employment Growth - June

Increase on a year earlier



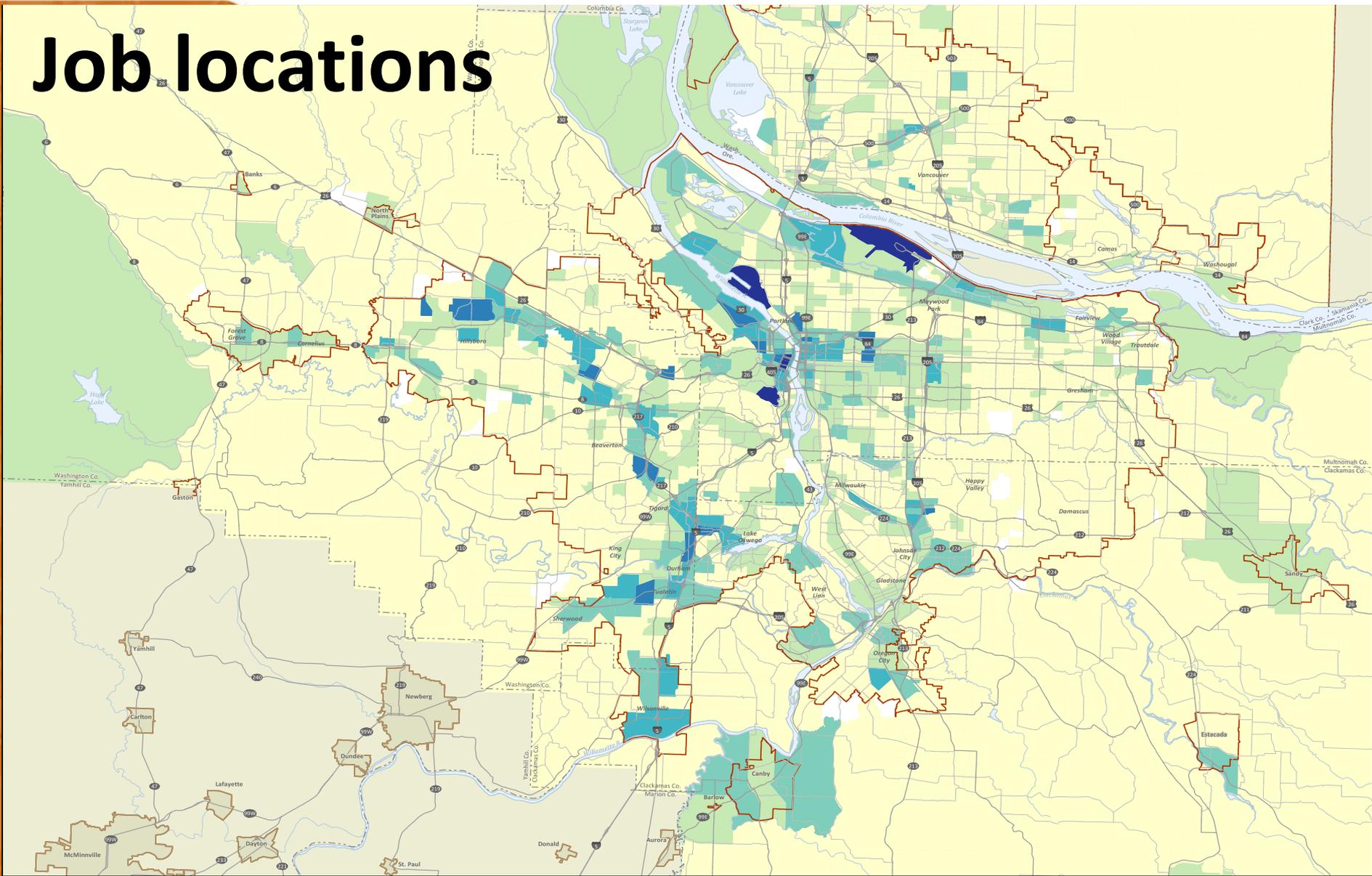
Job Recovery by County

Growth from 2010 to 2013 vs. Loss from 2008 to 2010



Source: State of Oregon Employment Department, July 2013

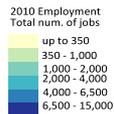
Job locations



2010 Total Employment TAZ Gamma Forecast March 2013

Data shown here are based on the MetroScope jurisdictional-reviewed TAZ 'Gamma' forecast.

Disclaimer: This map is for research purposes only, and does not reflect policy decisions by any jurisdictional authority.

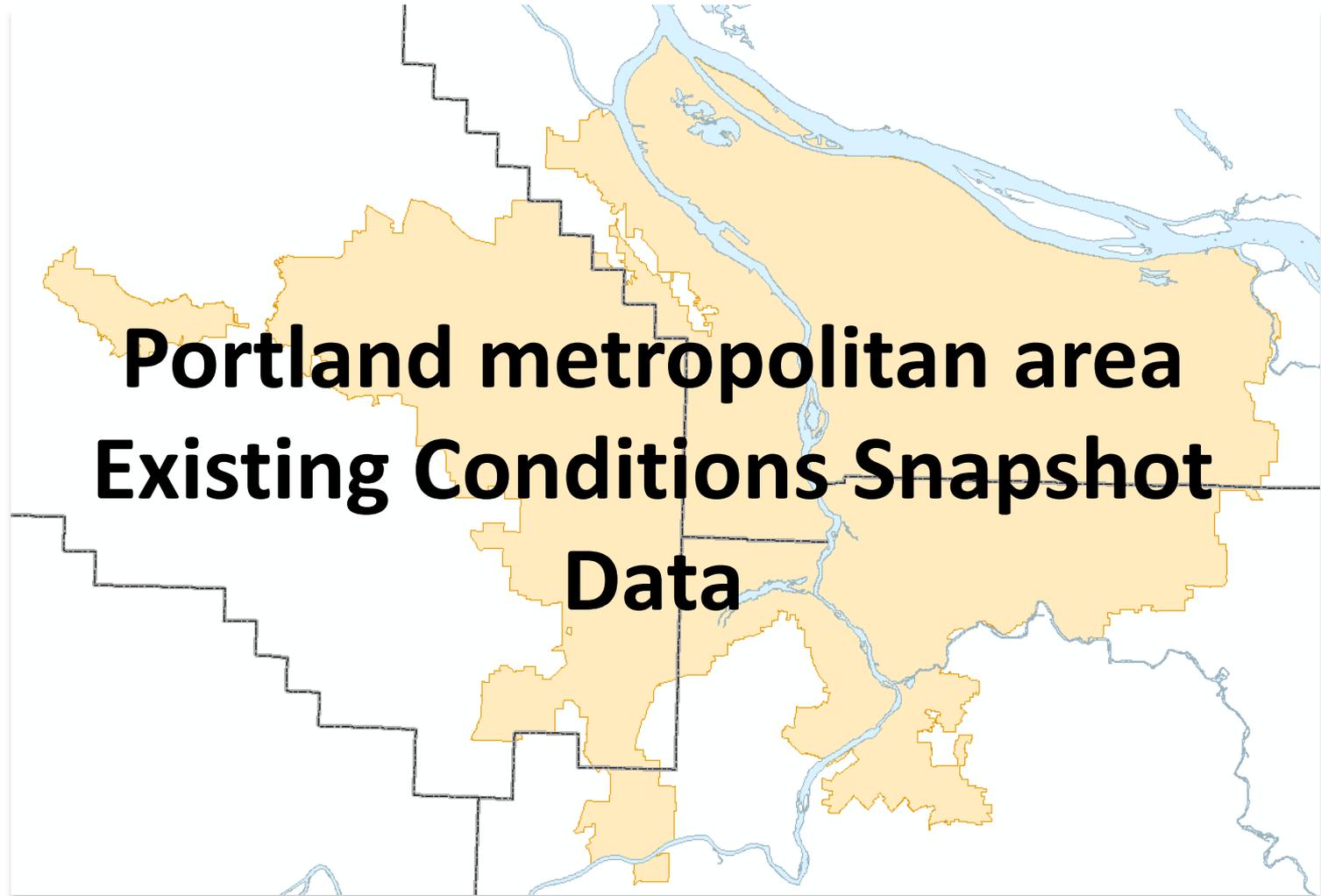


- Urban growth boundaries
- Neighboring cities
- County boundaries

0 1 2 4 miles

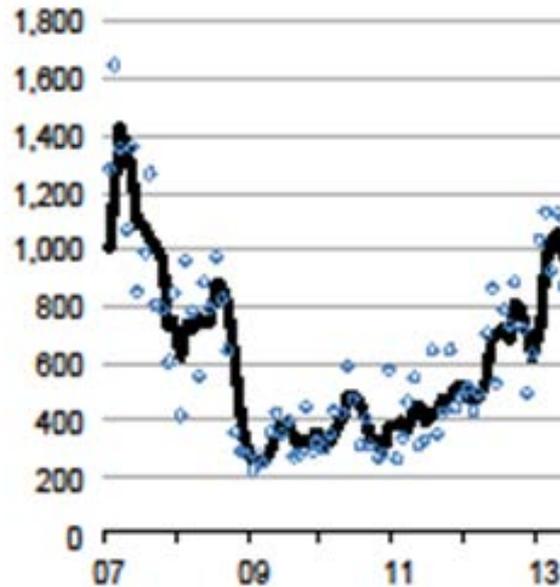
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Where we live



New Housing

Residential Building Permits
Portland Metro Region - 3 month average



Permits by City—1st Half of 2013
Residential building permits per 1,000 people

	Population	Permits	Permits per Capita
Portland	587,865	1,660	5.6
Vancouver	165,489	665	8.0
Gresham	105,970	52	1.0
Hillsboro	92,550	551	1.9
Beaverton	91,205	225	4.9
Tigard	48,695	104	4.3
Lake Oswego	36,770	38	2.1
McMinnville	32,435	30	1.8
Oregon City	32,500	105	6.5
Tualatin	26,120	4	0.3
West Linn	25,370	25	2.0
Forest Grove	21,460	122	11.4
Milwaukie	20,435	2	0.2
Wilsonville	20,515	158	15.4

- Residential building permits are on the rise again in the first half of 2013 after a long period of minimal activity.

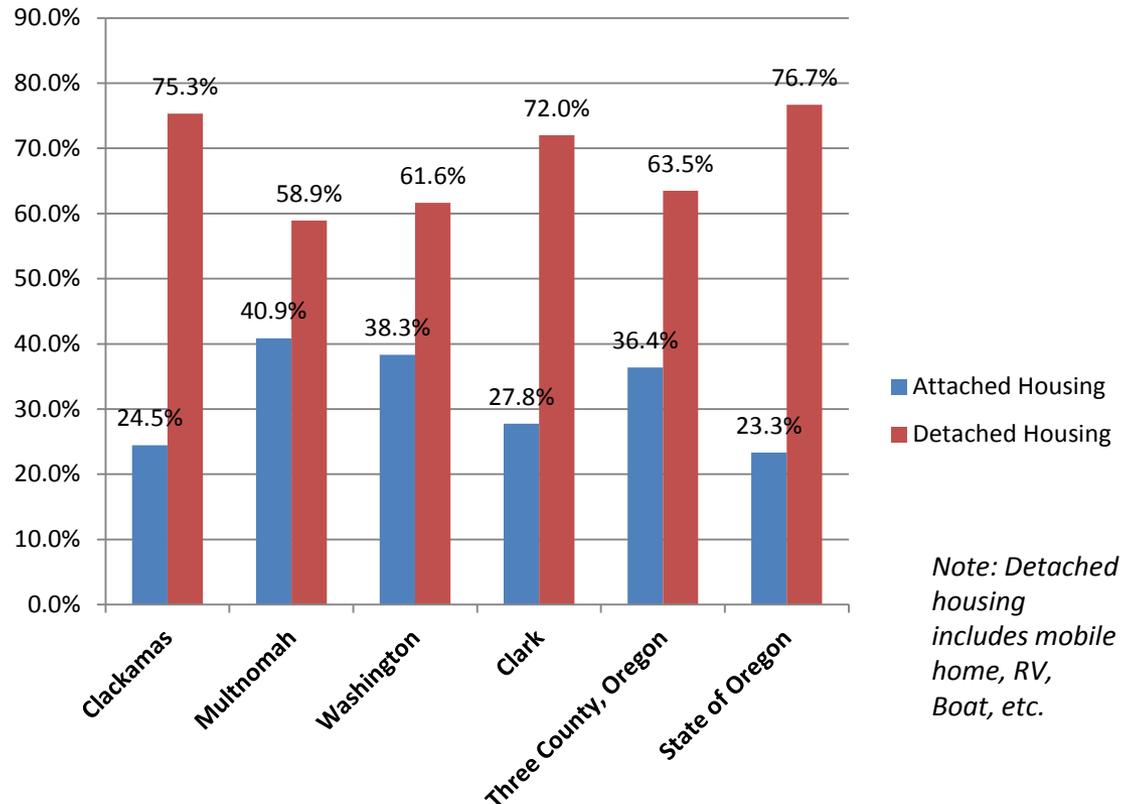
Source: State of Oregon Employment Department, July 2013

Housing Types

- 437,845 detached units (3 county) ~ 63.5%
- 250,880 attached units (3 county) ~ 36.4%

The majority of the region's housing is detached, but with regional population growth trends other housing options will be needed.

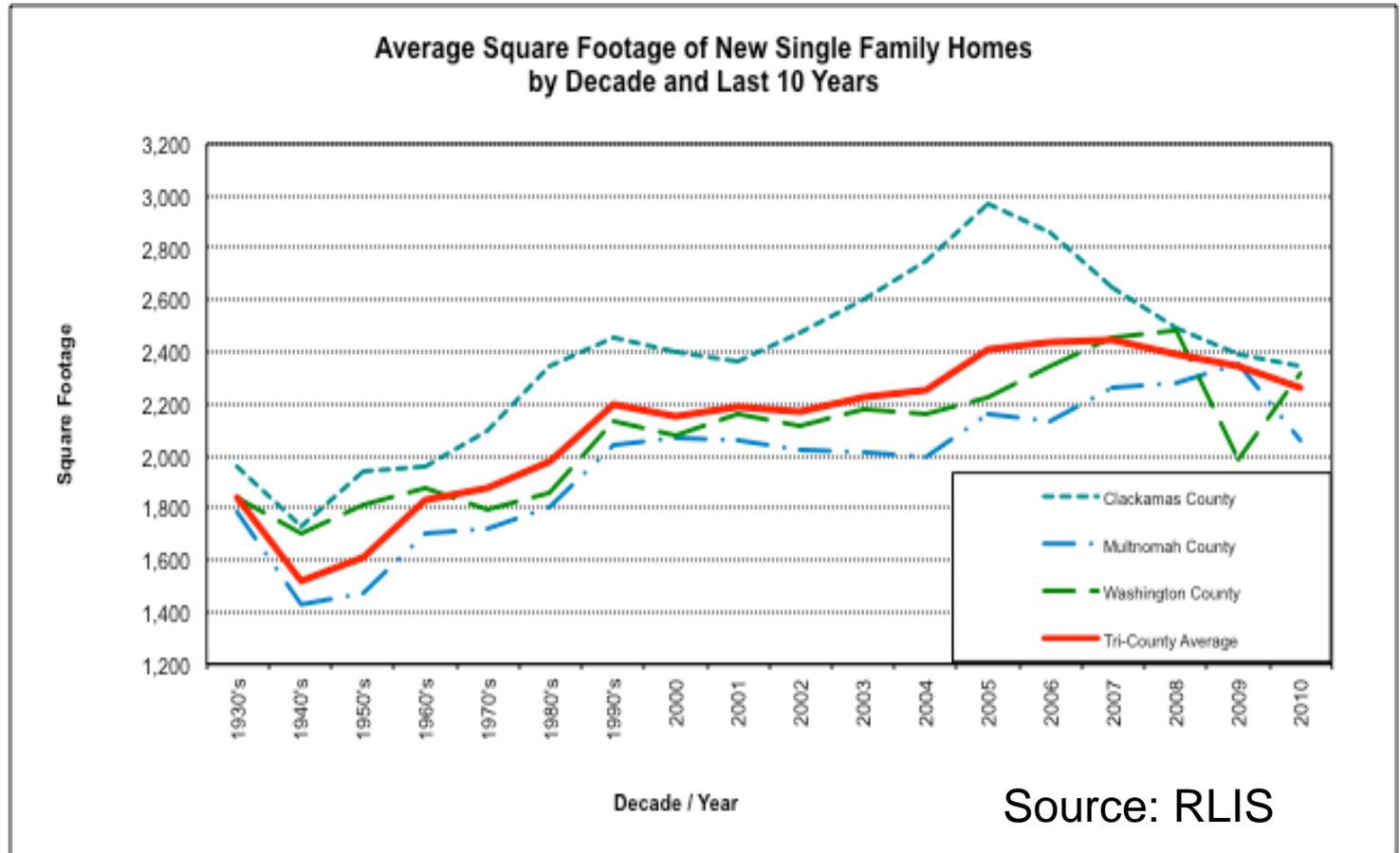
**Housing Type Split
Detached and Attached Housing**



Source: DP04,
2011 ACS 5 year

Housing Size

Emerging trend...smaller homes



Questions?



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Freight and Performance Measurement



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Tom Kloster, Regional Transportation Planning
Manager



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Freight Routes

- MAP-21 & National Highway System Expansion
 - Federally classified Principal Arterials are now part of the NHS
 - ODOT updated process for design standards and exceptions
- Federal Urban Aid Boundary and Functional Classification Review
 - Opportunity to refine federal roadway classifications including the Principal Arterial
- East Metro Connections Plan
 - Refine RTP freight routes in east Multnomah Co

Over-dimensional Freight

- ORS 366.215 No Reduction in Vehicle Carrying Capacity
 - *may not permanently reduce the vehicle-carrying capacity of an identified freight route when altering, relocating, changing or realigning a state highway unless safety or access considerations require the reduction.*
- Regional Over-dimensional Truck Route Plan
 - Address needs related to managing over-dimensional vehicles on non-state routes
 - Develop a coordinated approach for routing over-dimensional vehicles

RTP Performance Management System

Performance Targets

- Measure progress toward RTP goals

- Refine *Basic Infrastructure & Access to Daily Needs* targets
- Update base & future year data

Performance Evaluation

- Compare investment packages

- Update base & future year data

Performance Monitoring

- Track current conditions

- Refine performance measures to be tracked

MAP-21

- Establishes national performance goals for
 - Safety
 - Infrastructure conditions
 - Congestion reduction
 - System reliability
 - Freight movement | Economic vitality
 - Environmental sustainability
 - Project delivery
- States and MPOs are required to set performance targets and report to USDOT biennially
- Will be incorporated into the 2018 RTP

Questions?



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RTP Safety Refinements



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Anthony Buczek, PE, Metro Transportation
Engineer



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RTP Performance Measure

Target	Performance	Finding
Safety – By 2035, reduce the number of fatal and severe injury crashes for pedestrians, bicyclists, and motor vehicle occupants each by 50% compared to 2007 – 2011 average.	Between –2007 - 2011: There were an annual average of: 63 fatal or severe injury pedestrian crashes 35 fatal or severe injury bike crashes 398 fatal or severe injury motor vehicle only crashes	Reducing the number of fatal and severe injury crashes by half would result in at least 248 fewer people killed or severely injured, on average, in crashes in the Metro region each year. The corresponding reduced societal cost of crashes would be approximately \$480 Million (2012 dollars) annually in the Metro region.

RTSP Recommendations (2012)

Continue **data collection** and analysis of ODOT crash data.

Develop **performance measures** for identifying **high crash mobility corridors** and **high crash arterials** across the region.

Continued support of regional and state policies that seek to reduce VMT, including **multimodal facilities, transit, RTO, and TDM**.

Elevate safety to **equal importance as mobility** in regional policy.

Use strategies including Highway Safety Manual strategies to address safety on multi-lane roadways, such as **medians, speed management, access management, improved pedestrian crossings, roundabouts, and road diets**.

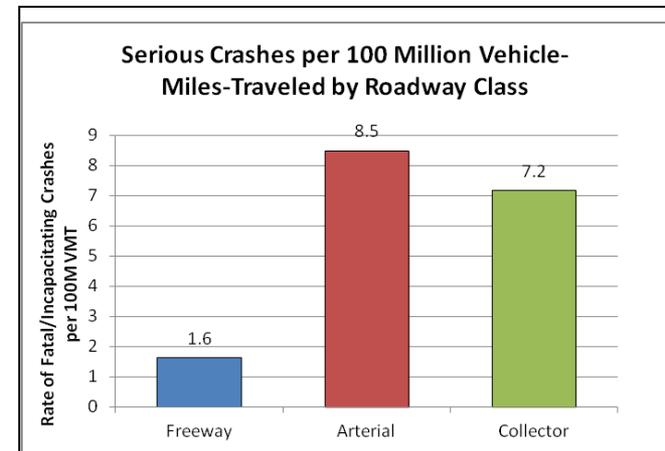
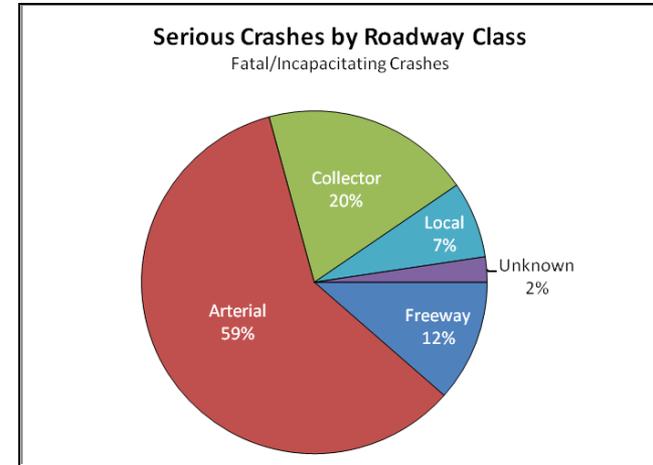
Develop **safe crosswalks** on arterials and multi-lane roads, generally adhering to the region's maximum spacing standard of 530 feet and at all transit stops.

Ensure bike routes and crosswalks – marked and unmarked – are **adequately lit**.

Along high-volume and/or high-speed roadways, where feasible, provide **protected bicycle facilities** such as buffered bike lanes, cycle tracks, multi-use paths, or low-traffic alternative routes

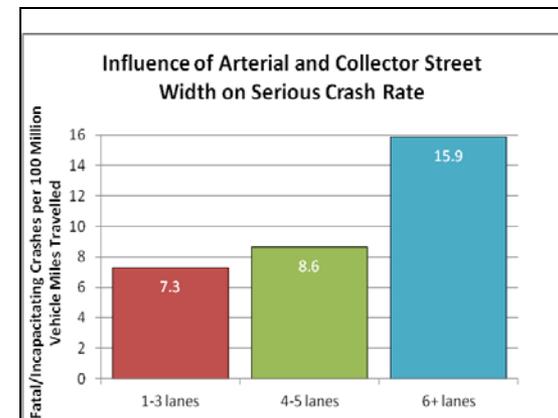
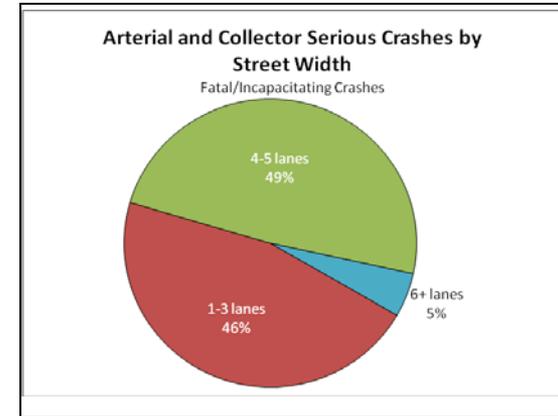
Metro Regional Safety Data

- Arterials are the main problem
- 59% of all fatal/severe injury crashes
- Arterials include E 82nd, Foster, E 181st, W 185th, TV Hwy., etc.



Metro Regional Safety Data

- Streets with more lanes have higher fatal/ severe injury crash rates
- Rate increases for 6+ lanes
- Consistent with AASHTO Highway Safety Manual



Metro Regional Safety Data

Data indicates where we should focus effort for maximum effectiveness:

- Arterial roadways
- Multilane roadways

1. Performance Targets

Updated the performance measure based on the recommendations of the Regional Safety Workgroup:

- Reduce fatal and severe injury crashes by 50% for all modes (pedestrian, bicycle, motor vehicle) by 2035
- Set the baseline as the average between 2007 and 2011 (the first 5 years of Metro data available)

About 248 fewer people killed or severely injured in Metro region each year.

Reduced societal cost of approximately \$480M in the Metro region each year.

Arterial Safety

FHWA: 9 Proven Safety Countermeasures (2012)

	Crash reduction
Safety Edge (non-curbed roads)	Rural treatment
Roundabouts	78% Fatal/Inj
Corridor Access Management	25-31% Fatal/Inj
Backplates with Retroreflective Borders	15% overall
Longitudinal Rumble Strips on 2-Lane Roads	Rural treatment
Enhanced Delineation/Friction for Curves F/I	16 – 43% overall
Medians & Pedestrian Crossing Islands	20-40% Fatal/Inj 46% pedestrians
Pedestrian Hybrid Beacon (HAWK signal)	29% overall 69% pedestrians
Road Diets (Roadway Reconfiguration)	29% overall

Arterial Safety



FHWA: 9 Proven Safety Countermeasures (2012)

Crash reduction

Safety Edge (non-curbed roads)	Rural treatment
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Urban/suburban measures

Arterial Safety

FHWA: 9 Proven Safety Countermeasures (2012)

Crash reduction

Safety Edge (non-curbed roads)	Rural treatment
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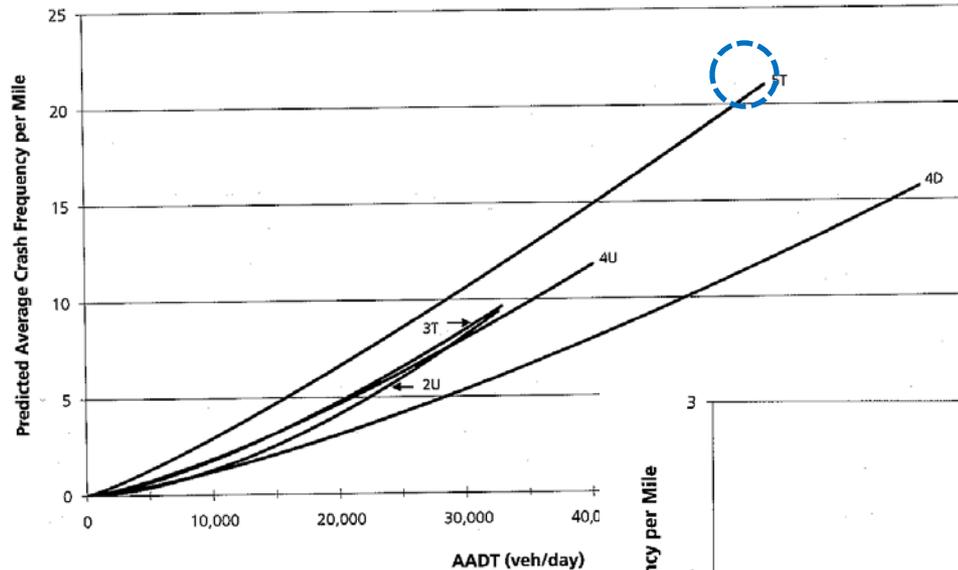
Urban/suburban measures relevant to RTP

2. Build a well-connected Network

Added text that medians and access management should be used on streets with 4 lanes or more where feasible. Medians would include openings for turn lanes and access points, as appropriate.

- Most of the region's fatal or severe injury crashes occur on roads with 4 or more lanes.
- Multilane roads have a higher rate of fatal and severe injury crashes, but medians and access management are some of the most effective safety countermeasures.
- 5-lane roads (with center turn lane) are the most hazardous road design we build.

2. Build a well-connected Network



5-lane roads with center turn lane have the highest crash rate across crash types

Figure 12-3. Graphical Form of the SPF for Multiple Vehicle Nondriven

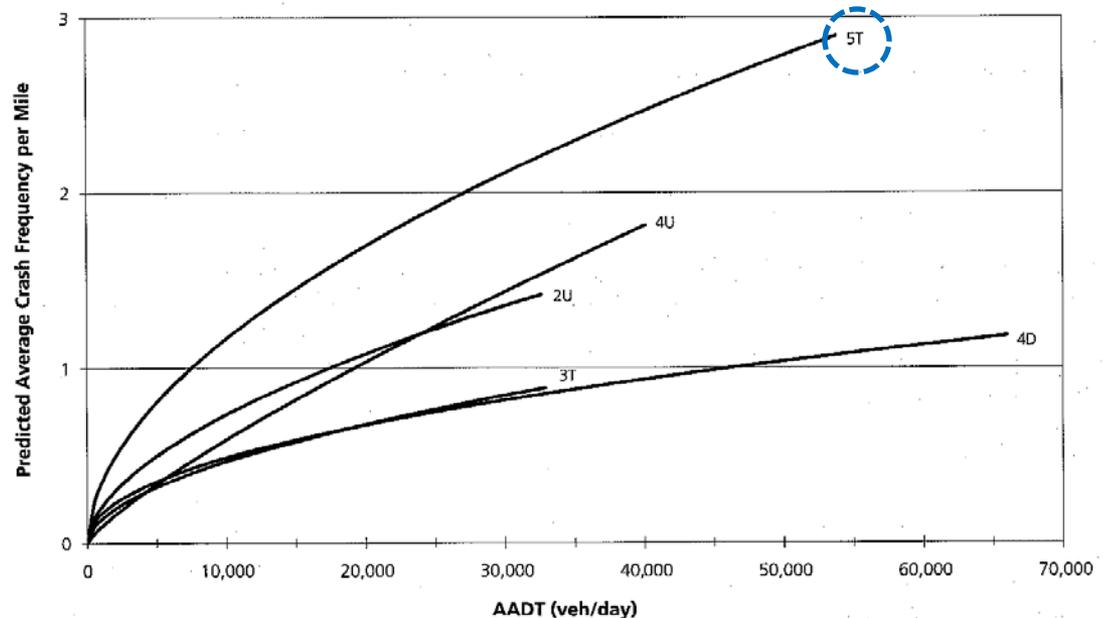


Figure 12-4. Graphical Form of the SPF for Single-Vehicle Crashes (from Equation 12-13 and Table 12-5)

Source:
AASHTO Highway
Safety Manual (2011)

2. Build a well-connected Network

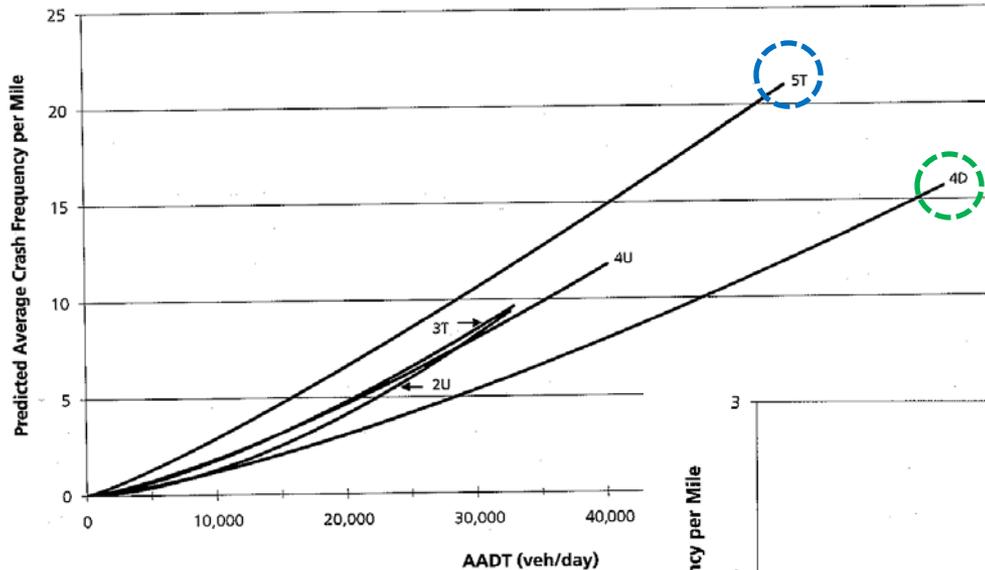


Figure 12-3. Graphical Form of the SPF for Multiple Vehicle Nondrivable

5-lane roads with center turn lane have the highest crash rate across crash types

4-lane divided roads are substantially more safe

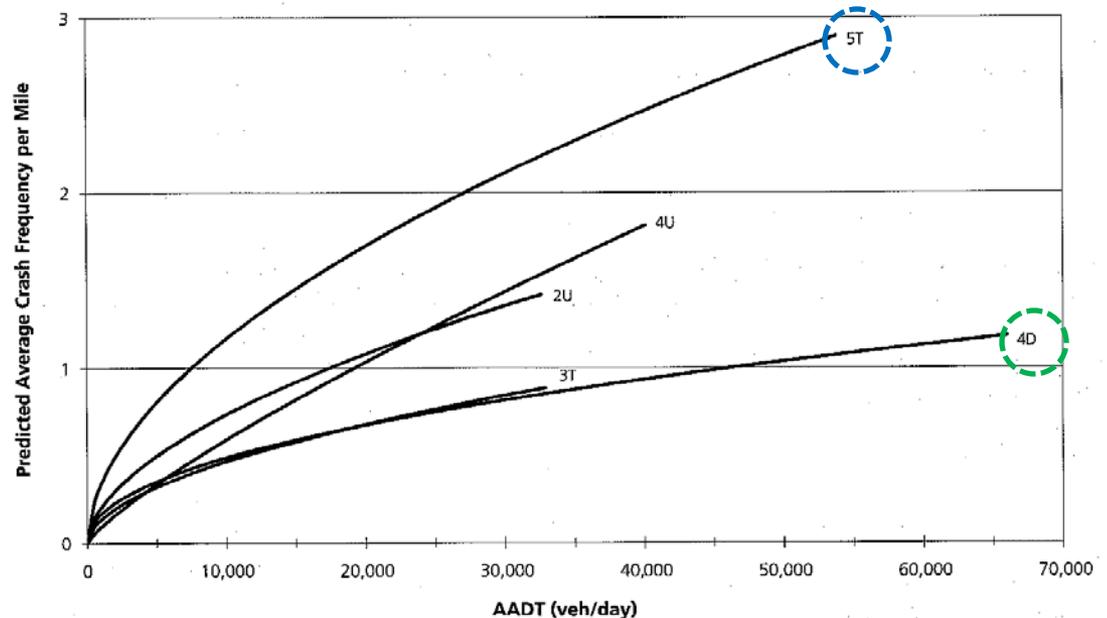


Figure 12-4. Graphical Form of the SPF for Single-Vehicle Crashes (from Equation 12-13 and Table 12-5)

Source:
AASHTO Highway
Safety Manual (2011)

3. Arterial Streets section

Added text stressing the need for attention to safety on these facilities, and suggested proven countermeasures including engineering, enforcement, and education.

Also indicated need to develop objective performance measures for region's arterials.

4. Regional Ped Network vision

- Added text clarifying that a well-connected network of pedestrian facilities includes safe street crossings.
- Added a paragraph noting the importance of frequent well-designed pedestrian crossings, particularly on multi-lane arterials.



5. Ped access to transit section

- Added text noting importance of safe crossings at transit stops.

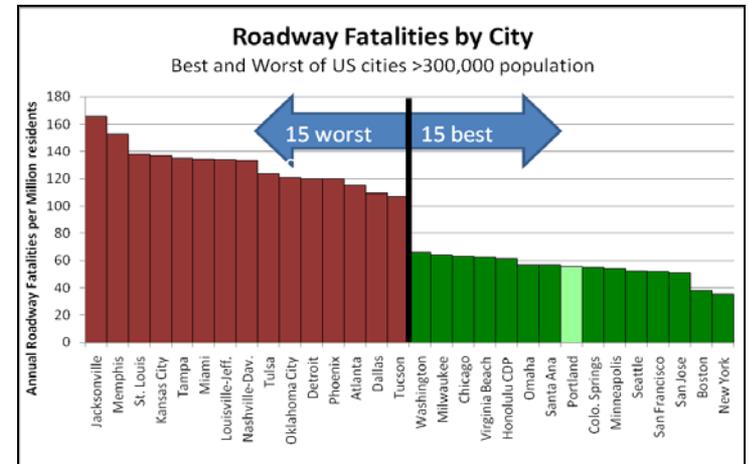
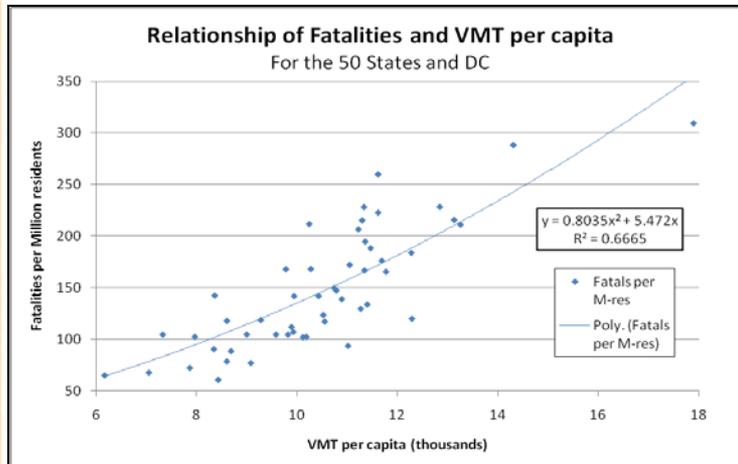


6. Travel options/TDM

Added text acknowledging improved roadway safety as a benefit of travel behavior changes.

Based on known direct correlation between VMT and roadway fatalities

- Reduced exposure = reduced risk
- Reduced vehicle mode share = reduced risk



Questions?



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2014 RTP Bicycle and Pedestrian Policy and Map Updates



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Lake McTighe, Senior Transportation Planner



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Policy changes - Regional Active Transportation Plan

- Guiding Principles
- Updated regional bike and pedestrian networks
- New and updated functional classifications
- Design guidelines
- Policies and implementing actions
- Modal targets and performance measures

Policy changes reflected in RTP- Chapter 2

1. Section 2.3.1 Performance Targets
2. Section 2.5 Regional Concepts and Policies
3. Section 2.5.1 Regional System Design and Placemaking Concept
4. Section 2.5.2 Arterial and Throughway Network Vision
5. Section 2.5.2 Arterial and Throughway Network Vision, arterial streets

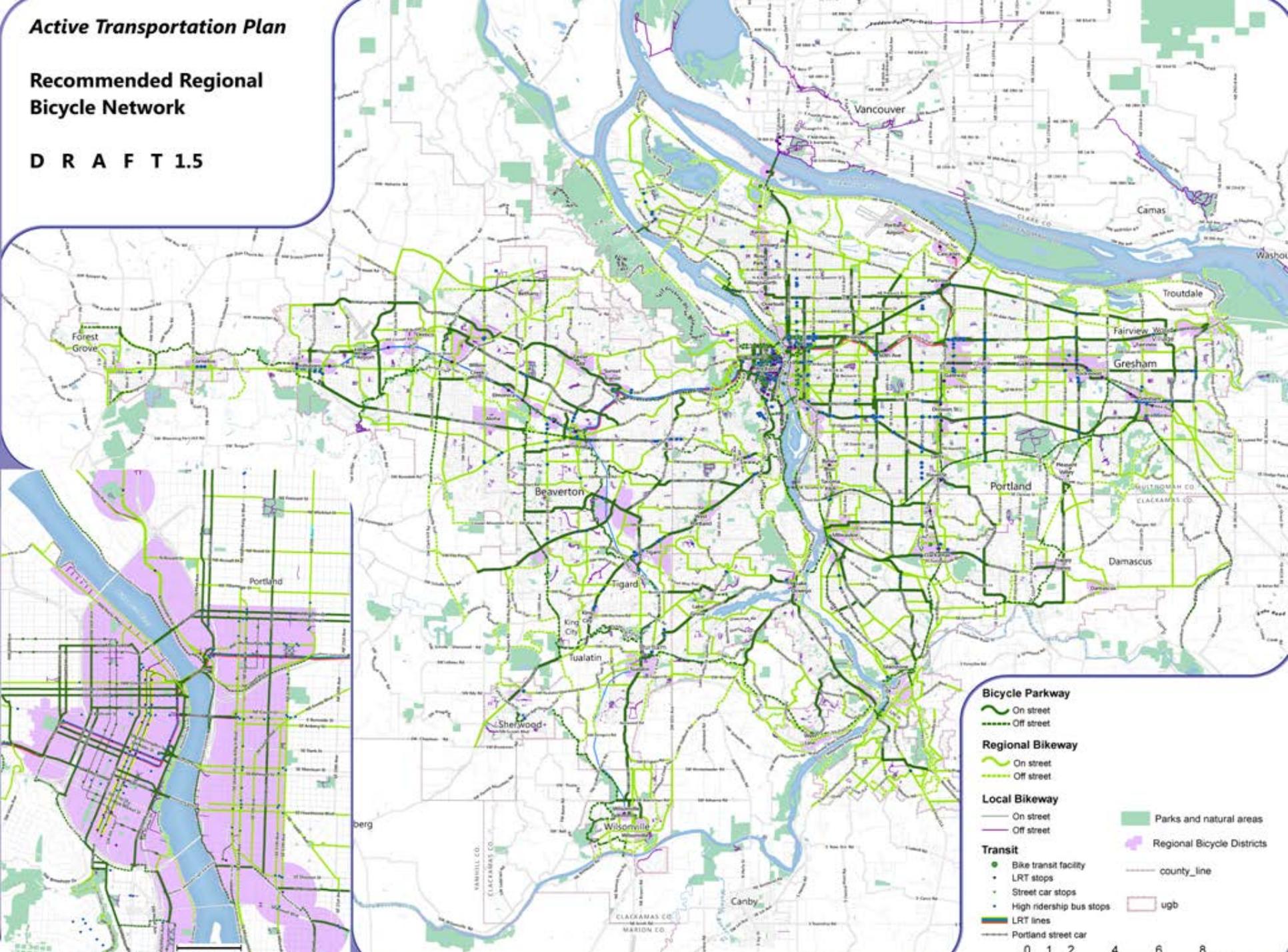
Policy changes reflected in RTP- Chapter 2

6. Section 2.5.3 Regional Transit Network Vision
7. Section 2.5.5[new section] Regional Active Transportation Network Vision
8. Section 2.5.5 (now 2.5.5.1, a sub-section of 2.5.5) Regional Bicycle Network Vision

Active Transportation Plan

Recommended Regional Bicycle Network

DRAFT 1.5





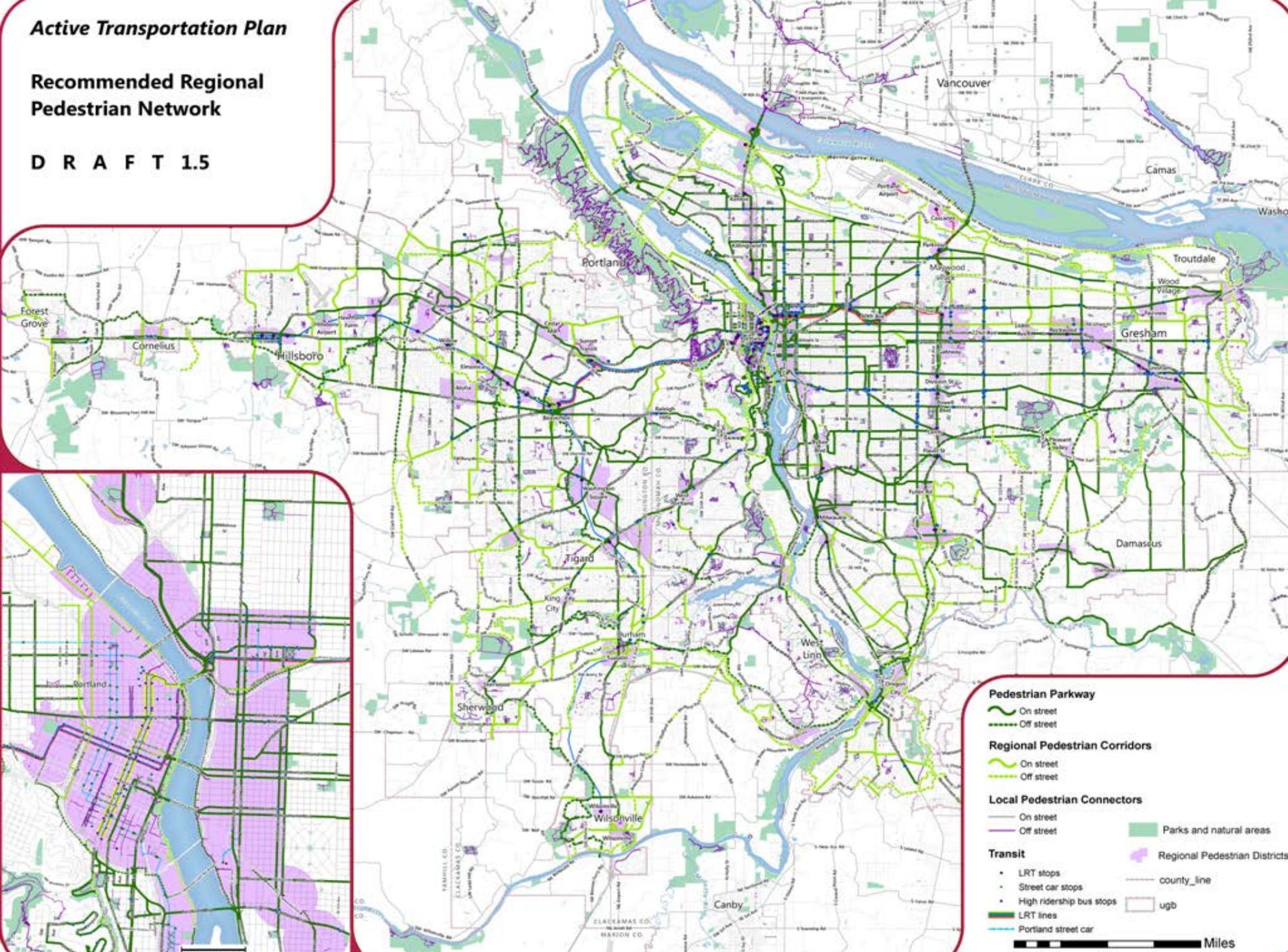
Policy changes reflected in RTP – Chapter 2

9. Section 2.5.6 (now 2.5.5.2, a sub-section of 2.5.5) Regional Pedestrian Network Vision
10. Through out chapter 2

Active Transportation Plan

Recommended Regional Pedestrian Network

DRAFT 1.5



Pedestrian Parkway

- On street
- Off street

Regional Pedestrian Corridors

- On street
- Off street

Local Pedestrian Connectors

- On street
- Off street

Transit

- LRT stops
- Street car stops
- High ridership bus stops
- LRT lines
- Portland street car

Parks and natural areas

Regional Pedestrian Districts

county_line

ugb

Miles



Policy changes reflected in RTP- Chapter 6

1. 6.7.8 Regional Transportation Model Enhancements
2. Section 6.7.14 Active Transportation Action Plan

Questions?



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**2014
RTP
UPDATE**



Travel Analysis Data & Tools - Implications for the 2014 RTP



**2014 RTP Overview Workshop
September 11, 2013**



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Research & Modeling Services Research Center



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Travel Analysis Data & Tools – Implications for the 2014 RTP

Agenda

- Travel demand model enhancements
- Vehicle assignment refinement
- 2011 Travel Behavior Survey
- Model validation
- RTP forecast implications

Model Enhancements

New components integrated into the travel demand model

- Bicyclist route experience
- Transit time perception for bus stop and transit vehicle types

Important because.....

- More explanatory power and sensitivity within the model



Model Enhancements

Freight movement and truck trip table updates

PDX passenger model

Important because

- Specialized markets are updated. Freight totals updated to reflect gamma forecasts. PDX model reflects choice sensitivities of passengers.



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- **Vehicle assignment refinement**
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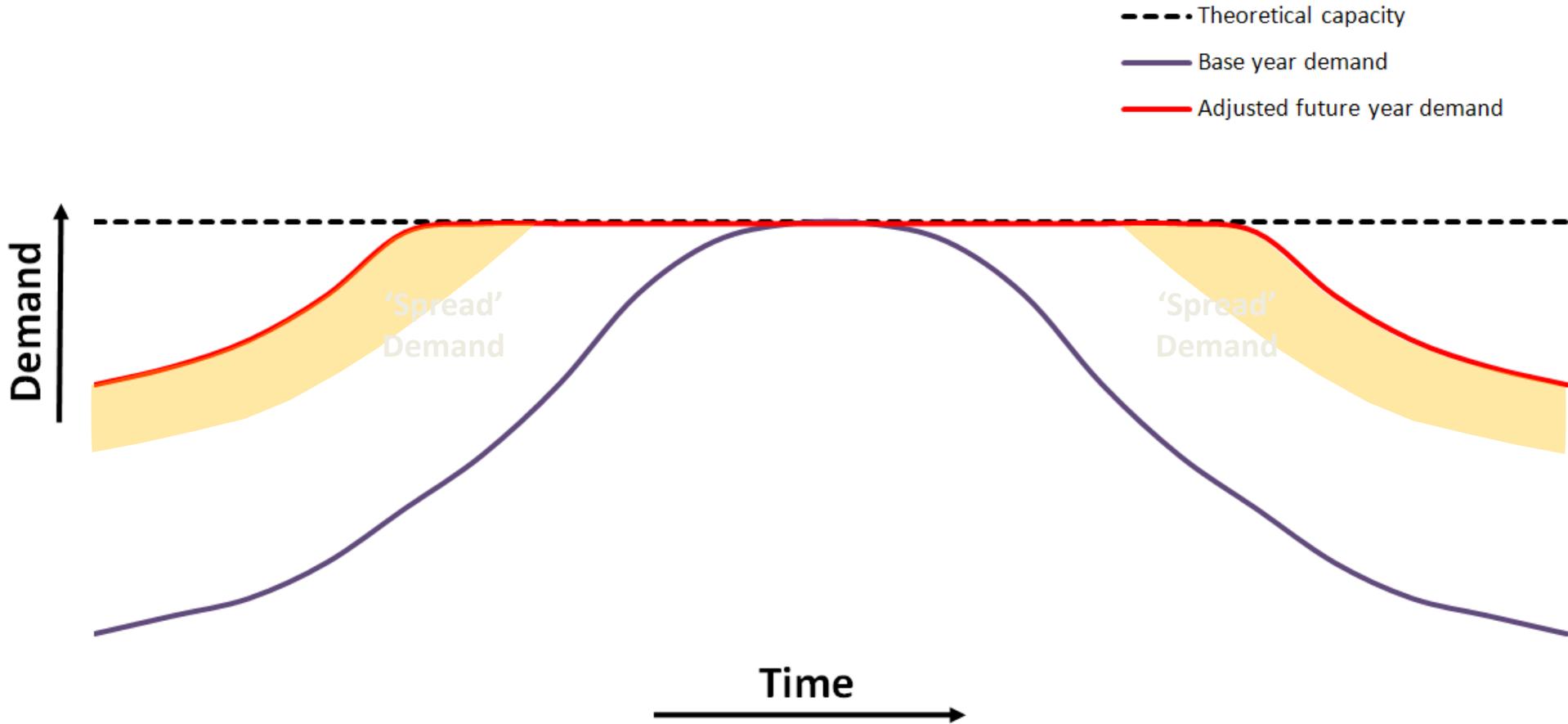
Vehicle Assignment Refinement

Vehicle peak spreading model

Important because.....

- A step in providing more operationally “pure” vehicle assignments. Instead of “super-saturation”, excess demand is apportioned to shoulder hours

Vehicle Peak Spreading Concept



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2011 Travel Behavior Survey

Important because.....

- Provides snapshot of current conditions
- Update current models to 2010/2011— provides clues to trip rates, distribution patterns, trip lengths, mode shares, time-of-day patterns



2011 Travel Behavior Survey

Mode Share Trends

Region - AWD

	1994	2011	
Persons in SOVs	43.4%	42.5%	
Persons in HOVs	43.9%	41.3%	
Persons on transit	2.9%	4.2%	
Persons walking	8.7%	9.2%	
Persons biking	1.1%	2.8%	



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Model Validation

The challenge

No one source is “the truth”. Analyst must find a validation solution that reflects a “best fit” with all the data sources.

Travel Behavior Survey

Trip making indicators - AWD

	2011 Survey	2010 Model
Person trips per hh	9.4	9.5
Average trip length	5.2	5.9
VMT/hh	34.5	38.9
VMT/cap	14.7	15.2

Travel Behavior Survey

Mode share indicators - AWD

	2011 Survey	2010 Model
Persons in SOVs	42.5%	45.1%
Persons in HOVs	41.3%	36.3%
Persons on transit	4.2%	3.6%
Persons walking	9.2%	8.9%
Persons biking	2.8%	2.8%
School bus		3.3%

Model Validation

Vehicle travel indicators

	2010 Model
Volume – counts v. model	7% high
Regional VMT – HPMS v. model	2.6% high

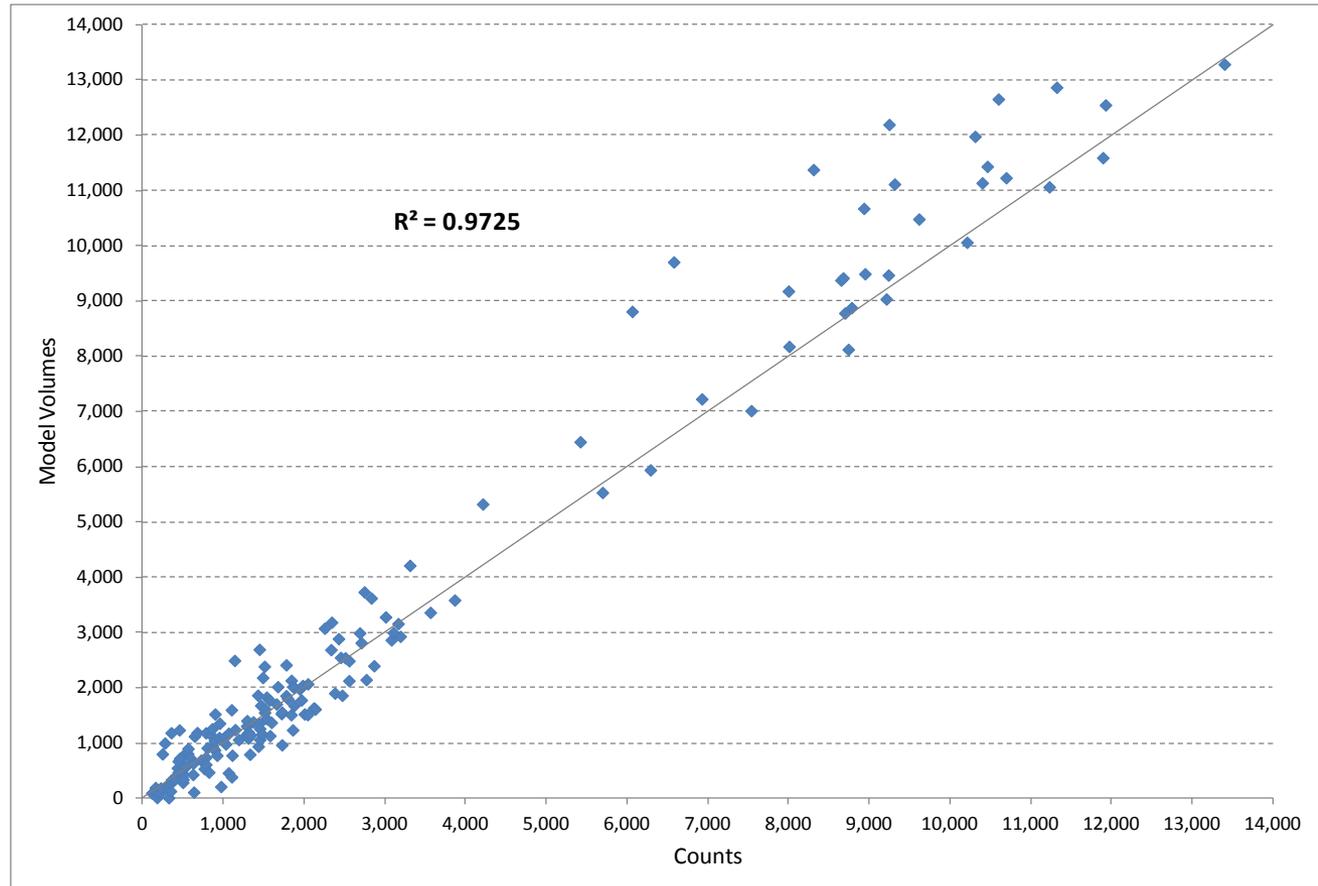
2010 Model Validation PM 2-hour Assignment

Region-wide by Volume Group

Link Volume Group	Count	Model Volume	Absolute Difference	Relative Difference	% RMSE	Acceptance Threshold*
Low (< 1,500)	66,568	71,264	4,696	7%	47%	45%
Med (1,500 - 4,000)	120,789	121,396	607	1%	19%	30%
High (> 4,000)	317,187	347,237	30,050	9%	16%	20%
Total	504,544	539,897	35,353	7%	25%	

* estimated from TMIP "Travel Model Validation and Reasonableness Checking Manual" (Second Edition, 2010)

2010 Model Validation PM 2-hour Assignment



Model Validation

Transit indicator – AWD originating rides

- Regional estimate – 290,000
- 2010 model – 281,000

Note: Originating rides value includes C-TRAN, SMART, etc.



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Forecast Implications for RTP

Model reflects current indicators

- Auto-person mode share reduced from last survey
- Non-auto travel up – especially transit and bike

Model has improved sensitivity to non-vehicle use

- Transit time perceptions are dealt with more explicitly
- Route experience is an integral part of the traveler's decision to bike

Forecast Implications for RTP

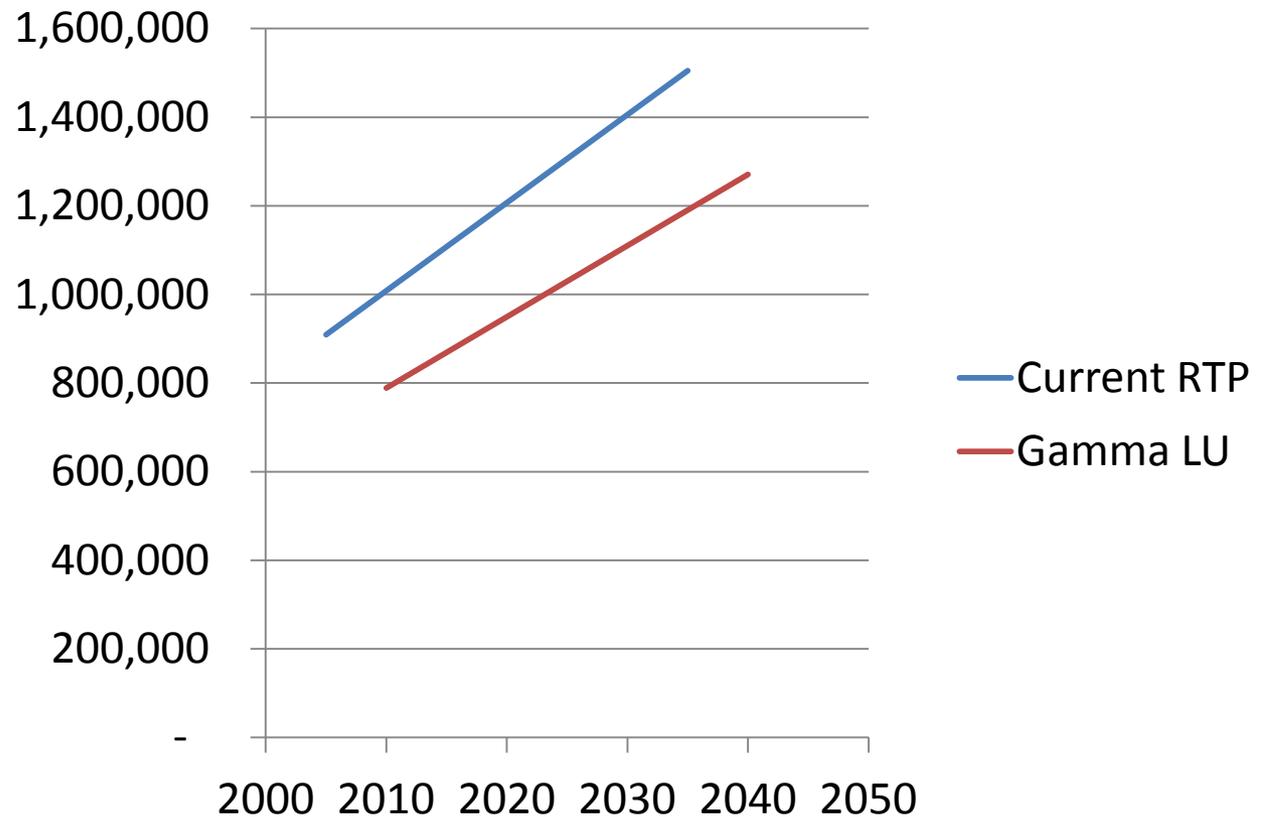
Current RTP (2035 forecast year – 3 county)

- Households: 946,600
- Employment: 1,505,000

2014 RTP (2040 forecast year – 3 county)

- Households: 992,200
 - Moderately smaller, older
- Employment: 1,271,000
 - 15.5% less than current RTP (2035)

2014 RTP Employment – A Closer Look



Travel Implications

...Less person travel

.....Less vehicle travel

.....Less VMT

.....Less congestion

Questions?



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