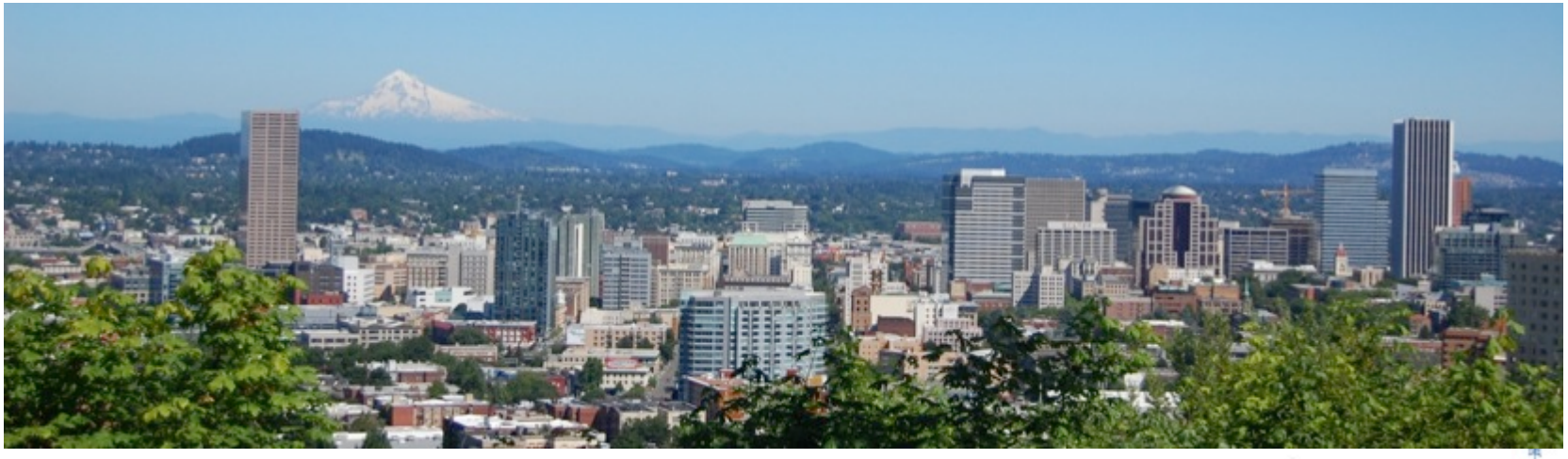
Performance-based Planning in the Portland Metropolitan Region



Tom Kloster | Portland Metro MPO | July 31, 2013

Metro | *Making a great place*

About the Portland Metro MPO





1.7 million people

25 cities

3 counties

Metro

52 miles light rail

17 miles commuter rail

86 bus lines

7 directly elected Councilors

17 member MPO Board

33,229 acres

parks and natural areas

400 square miles

urban growth boundary

2040 Growth Concept
Regional growth strategy

2040 Growth Concept Map

March 2012

UGB and reserve boundaries pending LCDC acknowledgement

0 1 2 4 miles

Overview: the Metro 2040 Growth Concept defines the form of regional growth and development for the Portland metropolitan region. The Growth Concept was adopted in December 1995 through the Region 2040 planning and public involvement process. This concept is intended to provide long-term growth management of the region.

The map highlights elements of parallel planning efforts including: the 2035 Regional Transportation Plan that outlines investments in multiple modes of transportation, and a commitment to local policies and investments that will help the region better accommodate growth within its centers, corridors and employment areas.

For more information on these initiatives, visit http://www.oregonmetro.gov/2040

- Central city
- Regional center
- Town center
- Station communities
- Main streets
- Corridors
- Employment land
- Parks and natural areas
- Neighborhood
- Rural reserve
- Urban reserve
- Urban growth boundaries
- Existing high capacity transit
- Planned high capacity transit
- Proposed high capacity transit tier 1
- Mainline freight
- High speed rail
- County boundaries
- Neighboring cities
- Airports
- Intercity rail terminal

Metro

Making a great place

Building toward six regional outcomes

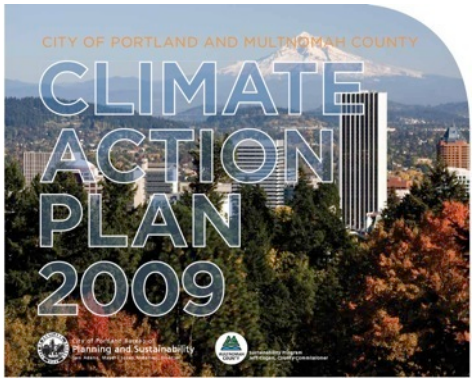
Vibrant communities

Equity

Economic prosperity

Transportation choices

Clean air & water



Climate leadership

Builds on local plans and visions

Beaverton Civic Plan
growing together

THE PORTLAND PLAN

envision
Tualatin Tomorrow

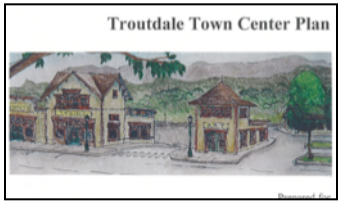
LINKING Tualatin

AmberGlen
Community Plan

DOWNTOWN TIGARD

IMAGINE
WEST LINN

Hillsboro 2020



SPRINGWATER
COMMUNITY

Complete Communities
FOR CLACKAMAS COUNTY

WE LO
Planning for People, Places and Prosperity







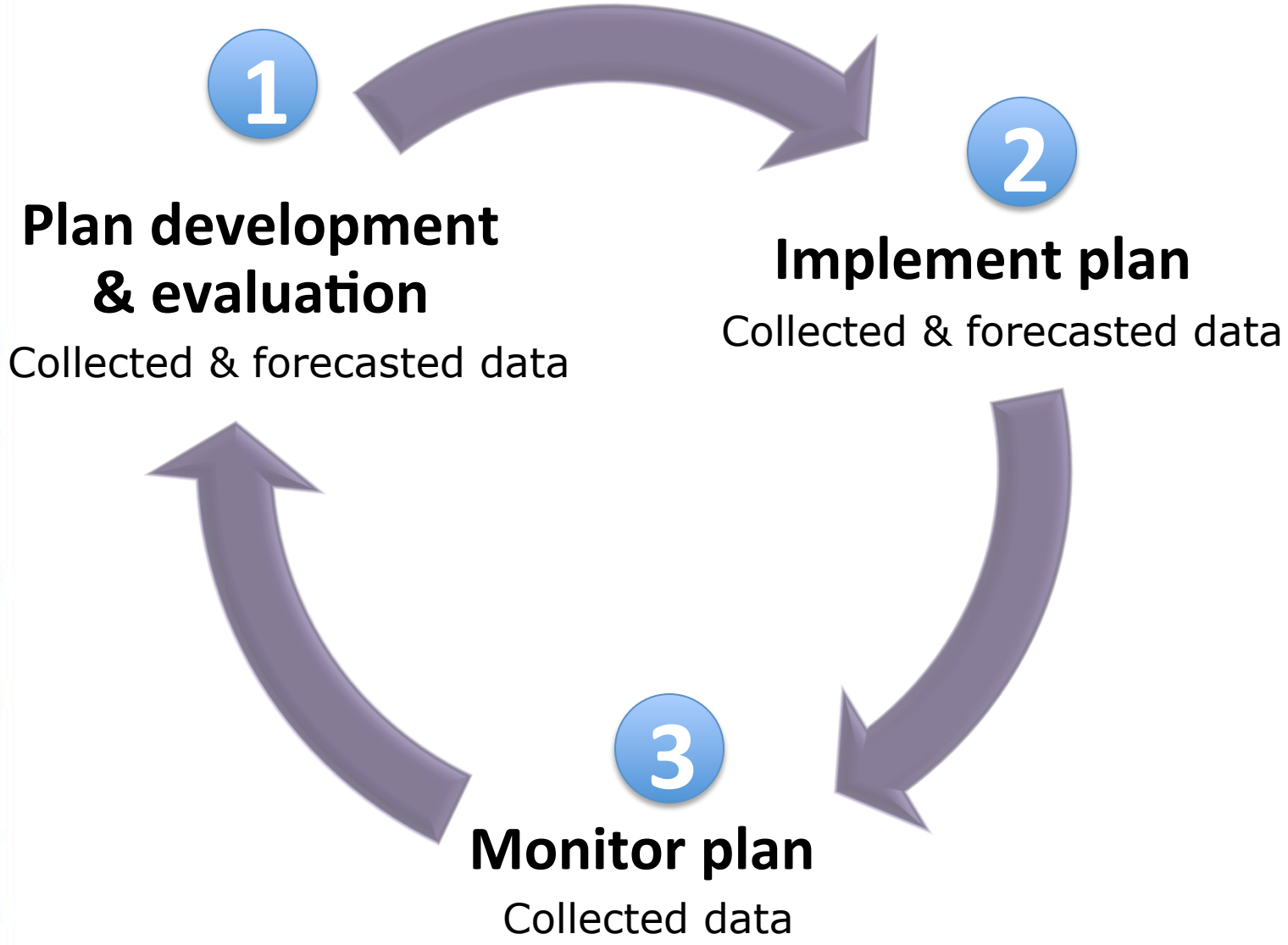




Adopted June 2010
http://www.oregonmetro.gov/rtp

2035 REGIONAL TRANSPORTATION PLAN

The four-year RTP cycle



Plan development

What are we trying to achieve?

- Vibrant Communities
- Economic prosperity
- Safe and reliable transportation
- Leadership on climate change
- Clean air and water
- Equity

How do we track progress?

- Measurable performance targets

RTP performance targets…

SAFETY Reduce pedestrian, bicyclist, & motor vehicle fatalities & serious injuries by 50% compared to 2005

CONGESTION Reduce vehicle hours of delay per person by 10% compared to 2005

FREIGHT RELIABILITY Reduce vehicle hours of delay per truck trip by 10% compared to 2005

TRAVEL Reduce vehicle miles traveled per person by 10% compared to 2005

…RTP performance targets

TRAVEL OPTIONS Triple walking, biking and transit mode share compared to 2005

AFFORDABILITY Reduce the housing and transportation costs as a share of household budgets by 20% below 2000 levels

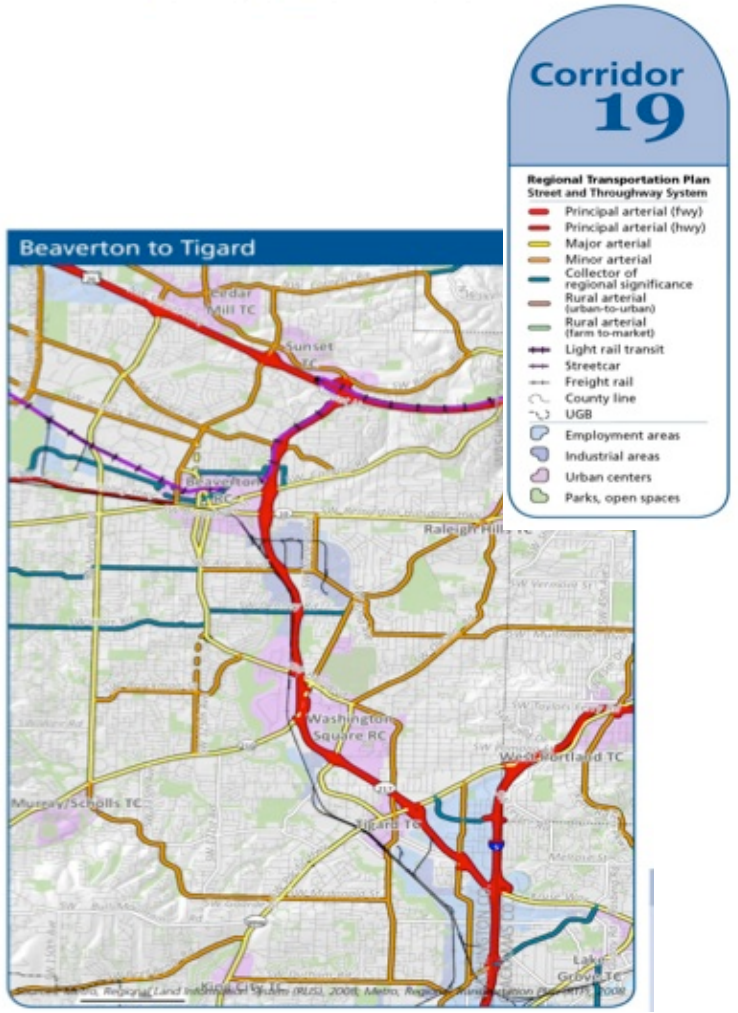
CLEAN AIR Ensure zero percent exposure to at-risk levels of air pollution

CLIMATE CHANGE Reduce transportation-related CO2 emissions by 40% below 1990 levels

Regional Mobility Atlas sets baseline

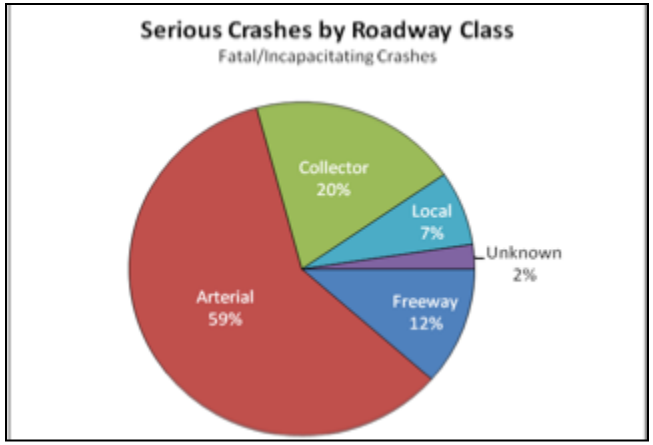
Atlas of 24 mobility corridors displays existing conditions

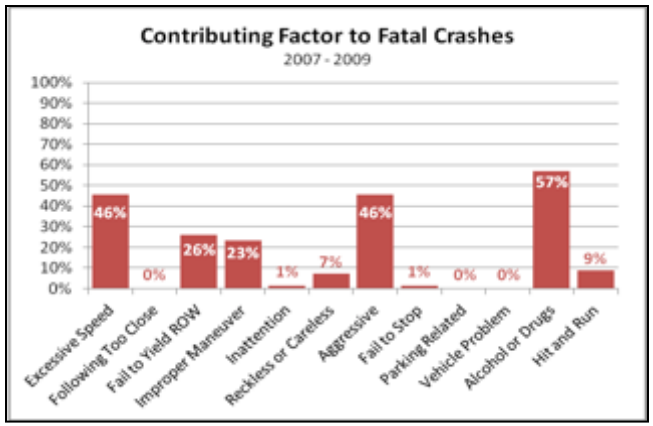
- Transportation facilities
- Planned land uses
- Roadway level-of-service
- Transit coverage and level of service
- Truck volumes
- Bikeway and sidewalk gaps



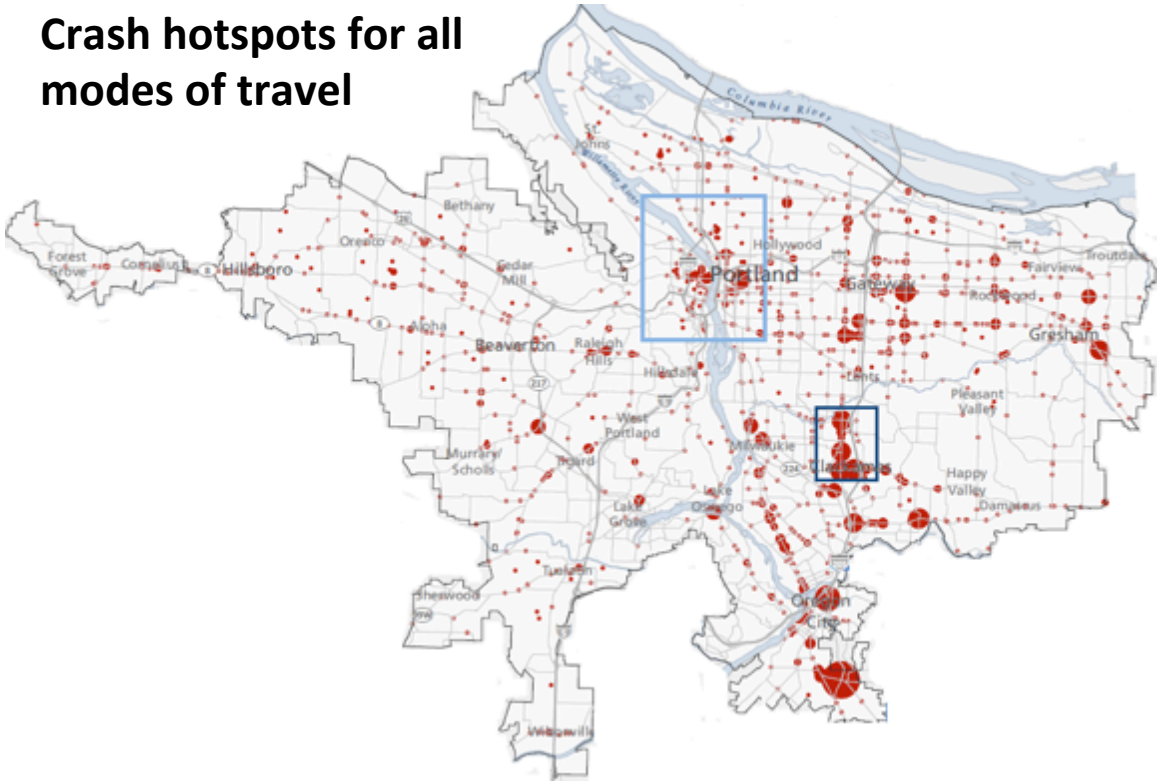
http://www.oregonmetro.gov/mobilityatlas

State of Safety Report is a baseline focus for action





Crash hotspots for all modes of travel



Source: Metro State of Safety Report (April 2012)
Report available at www.oregonmetro.gov/regionalmobility

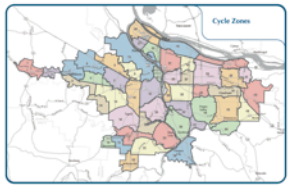
New data for multi-modal needs

Regional Cycle Zone Analysis

An integrated approach to analyzing regional cycling infrastructure, safety and potential.

7 Steps to analyze your region's cycling infrastructure

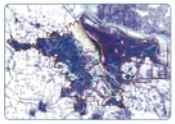
Follow these processes to gain an understanding where cycling investments in your region make the most sense.

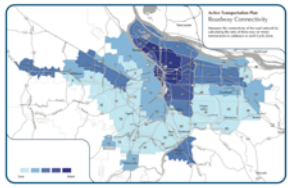


Define cycle zones

1

Defining the area of analysis is facilitated by analyzing areas based on household density, intersection density, employment density, sidewalk density, elevation (slope > 10%), existing bicycle infrastructure, highways, freeways, major arterials, rivers, and railroads. Transportation analysis zones are aggregated into Cycle analysis zones based on the homogeneity of the above datasets. Significant barriers to cycling define initial boundaries.

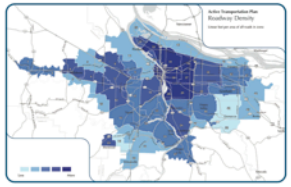




Road connectivity

2

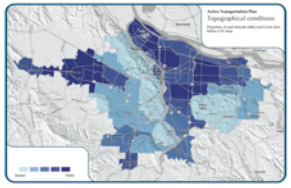
The road connectivity metric is achieved by spatially joining the roads with the nodes of each roadway link, resulting in a value that represents the number of connections per node. The zonal connected-node-ratio is calculated by dividing the number of 3 or more connected nodes by the number of cul-de-sacs per zone. This number is classified using natural breaks and assigned an integer value 1-5.



Road density

3

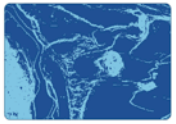
Measuring the density of the road network consists of calculating the linear feet of road centerlines in each zone and dividing it by the area of the zone. The resulting grid displays the overall network density per cycle analysis zone.

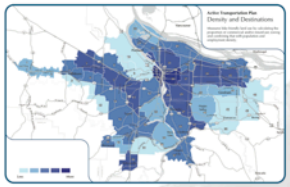


Topography

4

Defining the topographic index required the use of a 10m digital elevation model. Slopes greater than 5% are intersected with the road layer and the resulting percentage of streets within a zone are calculated. The zonal distribution of steeper slopes (> 5%) is classified using natural breaks and assigned to integer values 1-5.

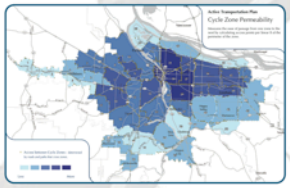




Land use/household/employment density

5

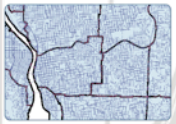
This metric is used to indicate the number of cycling friendly destinations. The zonal percentage of commercial and mixed-use areas is composited with household and employment density grids (classified 1-100). The resulting grid illuminates areas that have a high concentration of cycling generating cells.

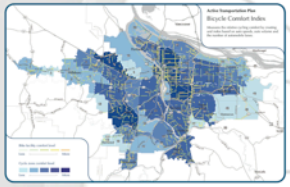


Permeability

6

The permeability component is calculated by the ratio of the roadway nodes that intersect CAZ boundaries by the perimeter of the zone. This calculation defines the ease of inter-zone travel and provides a measurement of the ease of passage from one zone to the next.

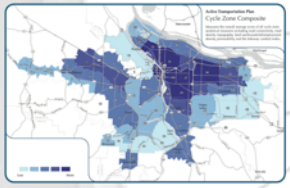




Bikeway comfort index

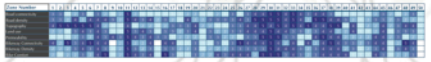
7

The bikeway comfort index (BCI) is determined by a combination of auto speed, volume and number of auto lanes. Auto speeds and volume are classified by natural breaks into 5 classes and attributed to a road network. Since the number of lanes is found to be less significant it is classified 1-3. These three fields are added and averaged per zone resulting in a comfort score.



Composite cycle zone score

Averaging all of the cycle zone metrics into a single value creates the composite cycle zone score. It provides a unique approach to analyzing, planning and investing in cycling networks and can be used in context with others to explore different opportunities and constraints.



Designed and produced at Metro in Portland, Oregon

http://www.oregonmetro.gov/activetransport

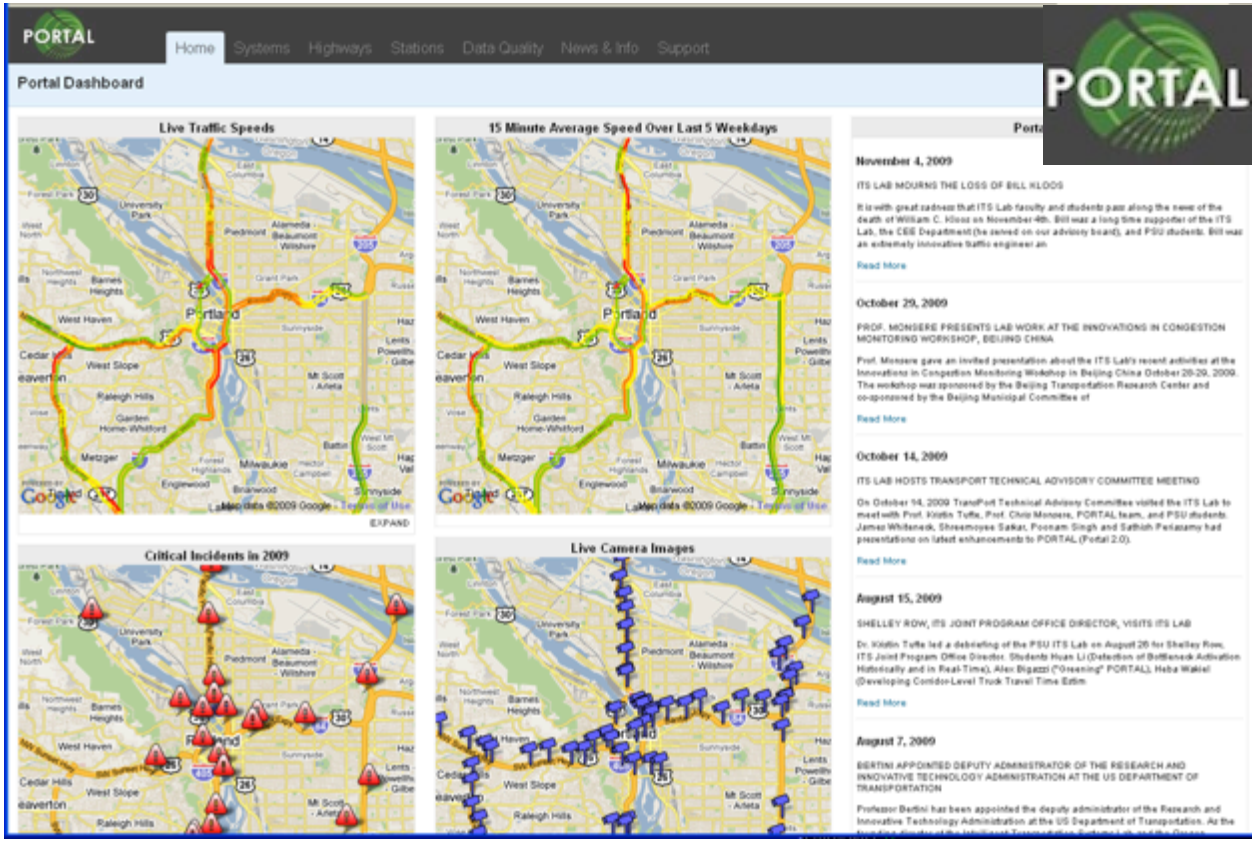
The region's PORTAL data archive supports ongoing monitoring

EXTENSIVE

- Freeway activity data
- Incident data
- Safety data
- Weigh in motion data

LIMITED BUT GROWING

- Transit data
- Arterial data
- Bike count data
- Pedestrian count data

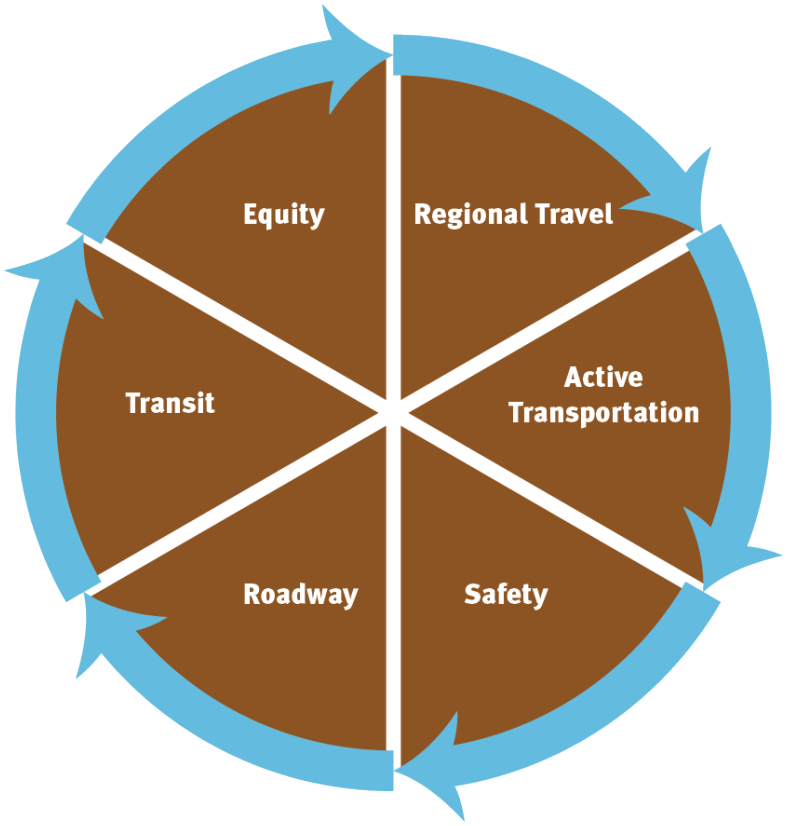


Housed and managed at Portland State University in Portland, OR

http://portal.its.pdx.edu

Next MTIP sets stage for project assessment

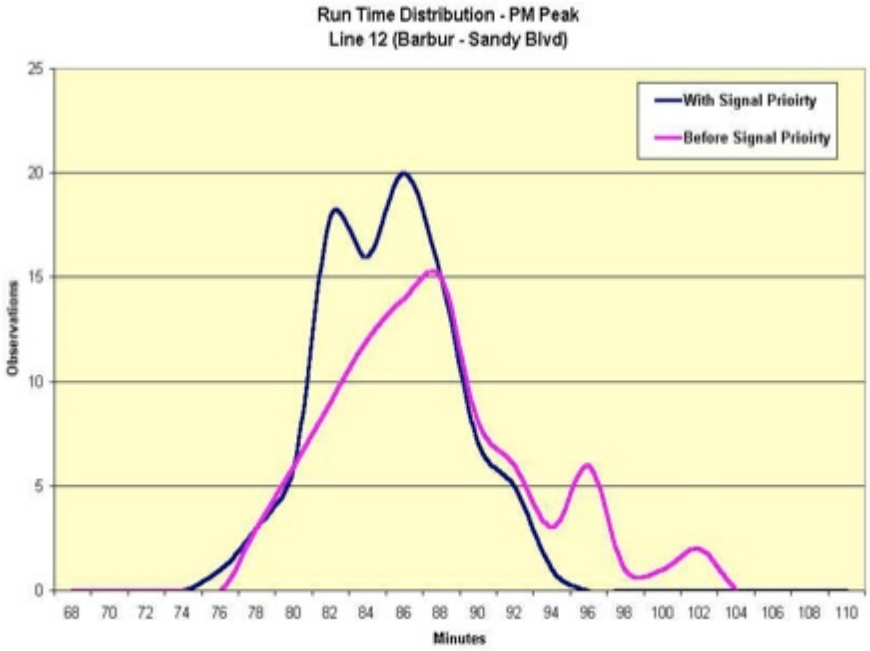
- RTP policies and performance targets inform MTIP project selection criteria
- Congestion Management Process data used to inform MTIP project applications
- Challenge to measure performance of projects toward RTP targets



Data Resource Guide available at www.oregonmetro.gov/MTIP

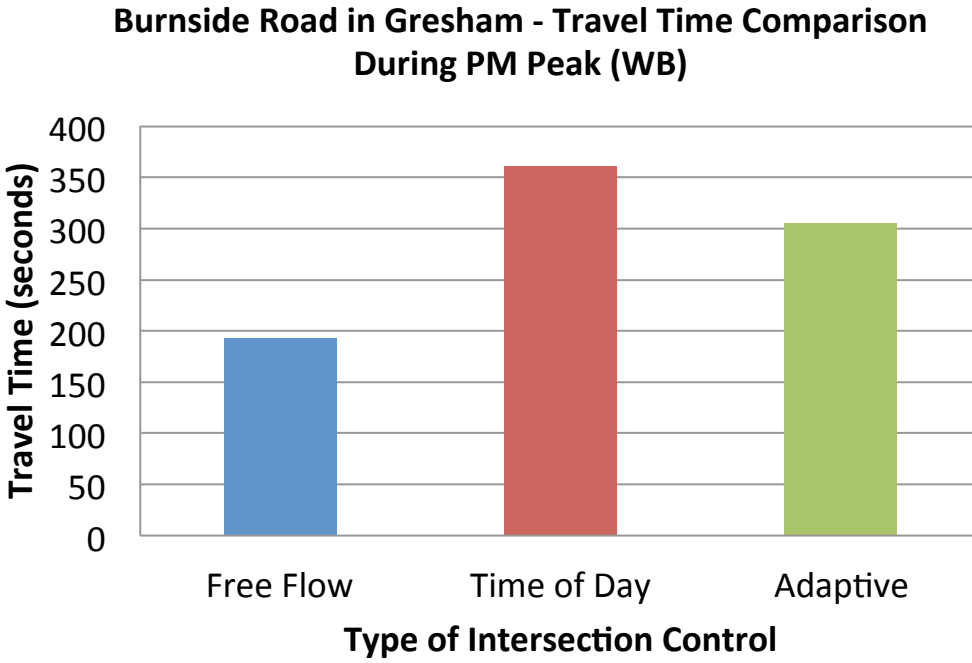
Sharing success stories builds support

Transit signal priority improves on-time transit performance



Average minutes late fell from 5.7 to 3.5 minutes (14% improvement)

Traffic responsive systems reduce delays and travel times



Adaptive system reduced travel time in the corridor during the pm peak hour by 15%

Getting started

1. Be clear about desired regional outcomes
2. Develop outcomes as an extension of local plans
3. Use broad measures to track multiple goals
4. Don't let perfect be the enemy of good – "just do it"
5. Don't limit yourself to existing tools and measures

Key challenges

- Easier to measure output than outcomes
- Resources needed to build and maintain data, methods and tools
- Keeping it simple, realistic and relevant
- Integrating across projects and program areas

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www.oregonmetro.gov/rtp