

Building Portland's Low-Stress Bikeway Network

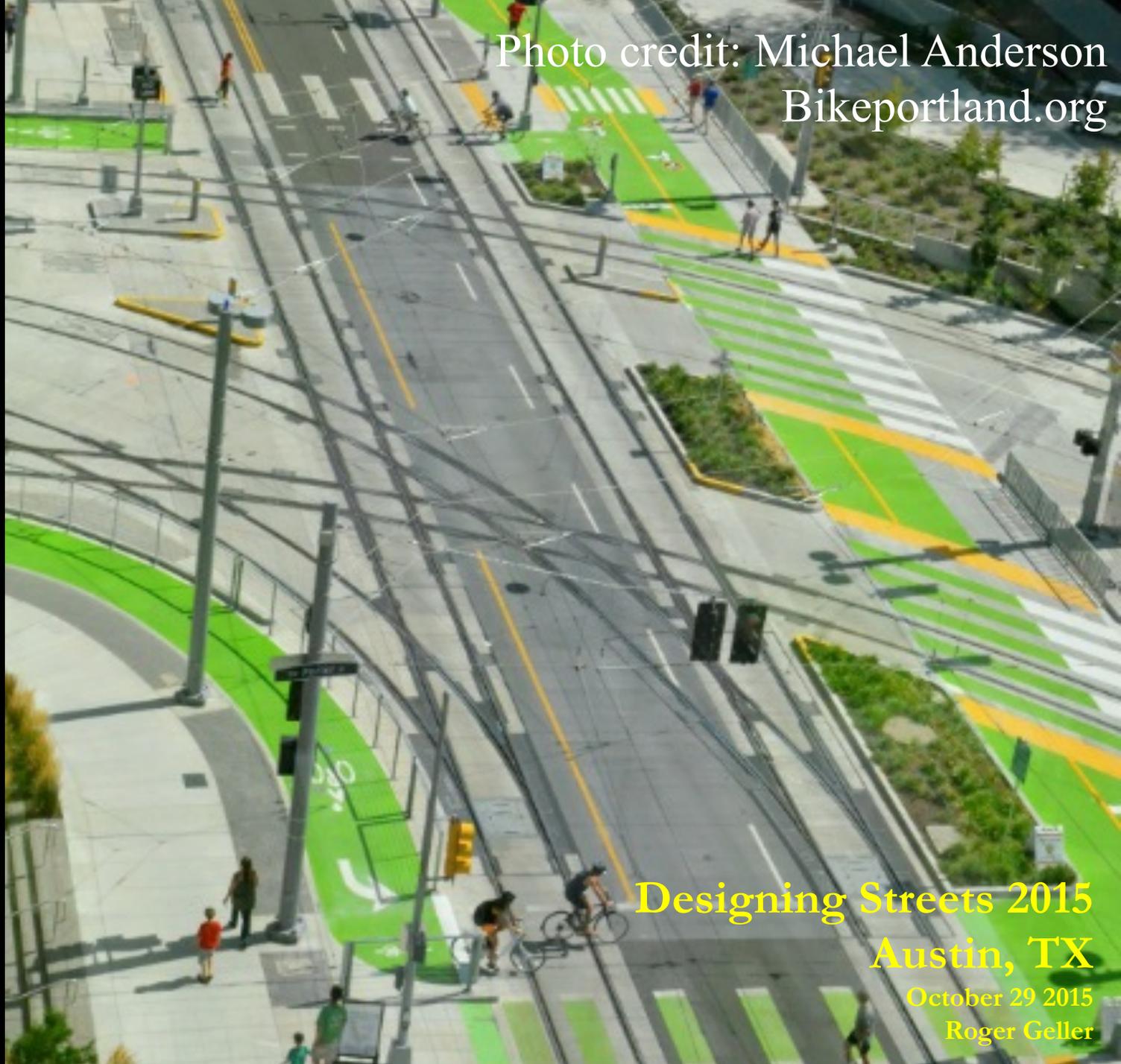


Photo credit: Michael Anderson
Bikeportland.org

Designing Streets 2015
Austin, TX
October 29 2015
Roger Geller

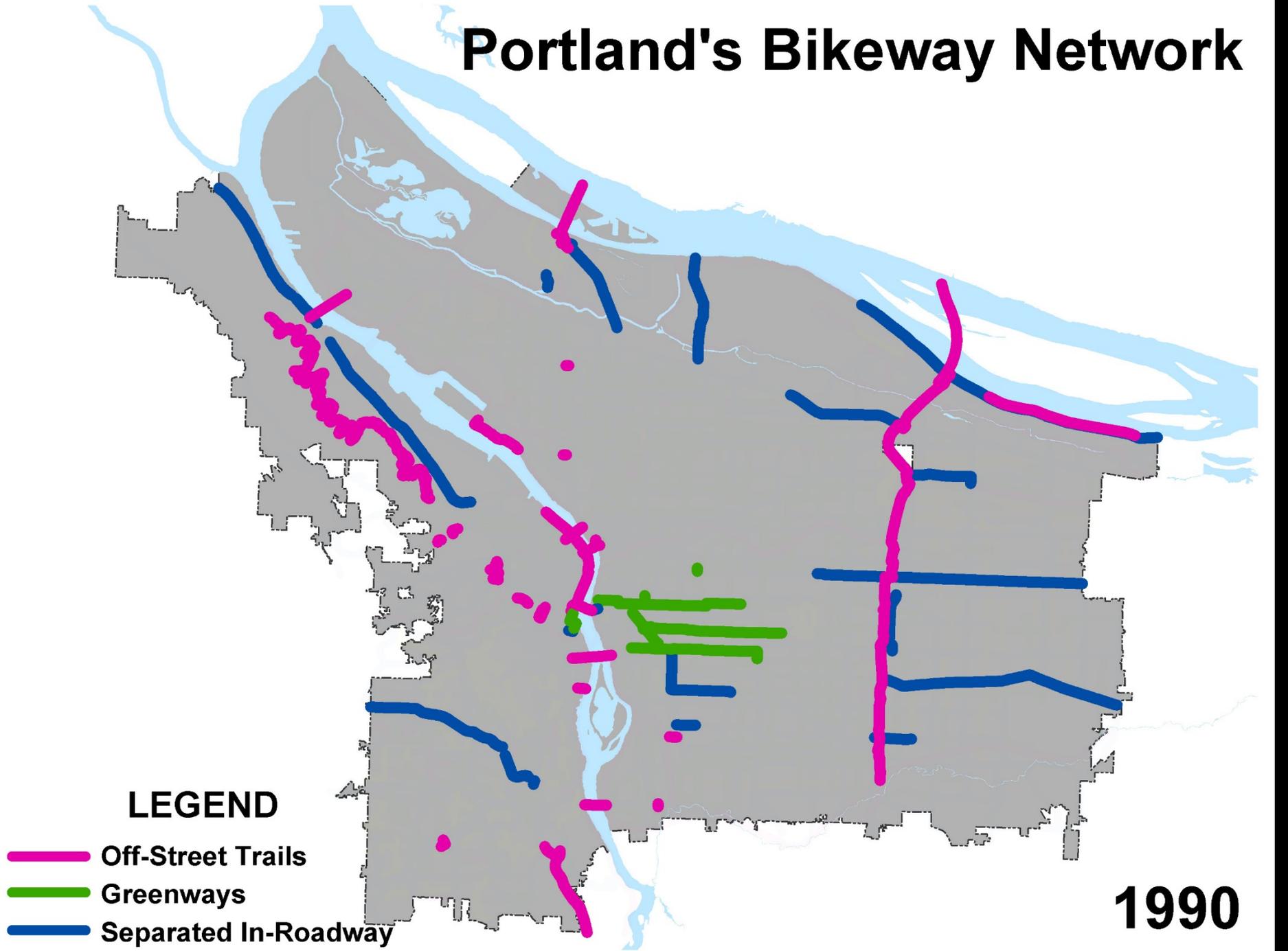
Portland

- **Background**
 - Existing low- and lower-stress network
- **Aspirations**
 - 25% mode split
- **Challenges**
 - Increasing driving
 - Skepticism
 - Interested but concerned?
 - Effectiveness of PBL?
 - Design
- **Solutions**
 - Stronger guidance
 - Stronger policies
 - Persuasion
 - Hammer

Background

Existing low- and lower-stress network

Portland's Bikeway Network

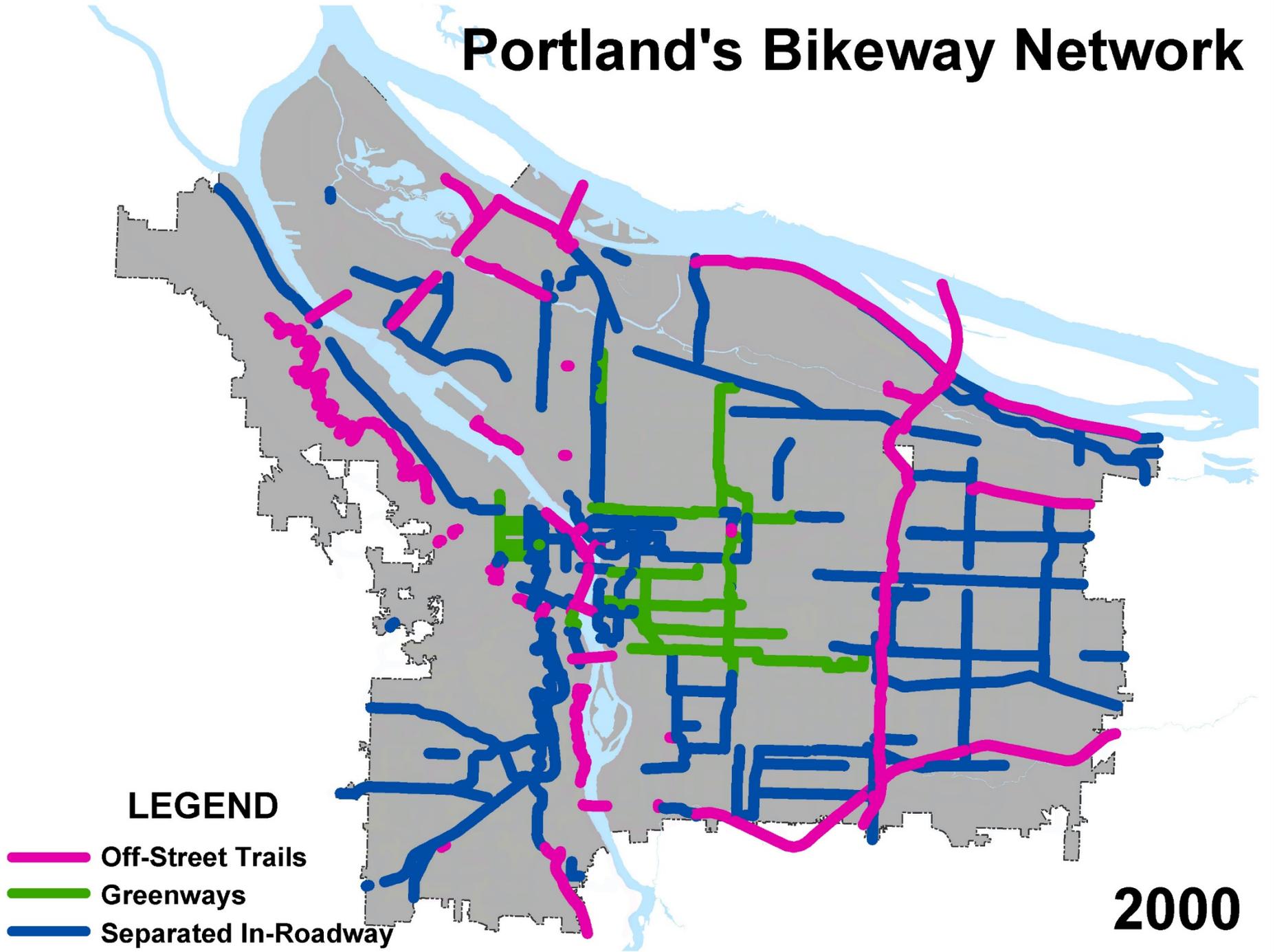


LEGEND

- Off-Street Trails
- Greenways
- Separated In-Roadway

1990

Portland's Bikeway Network

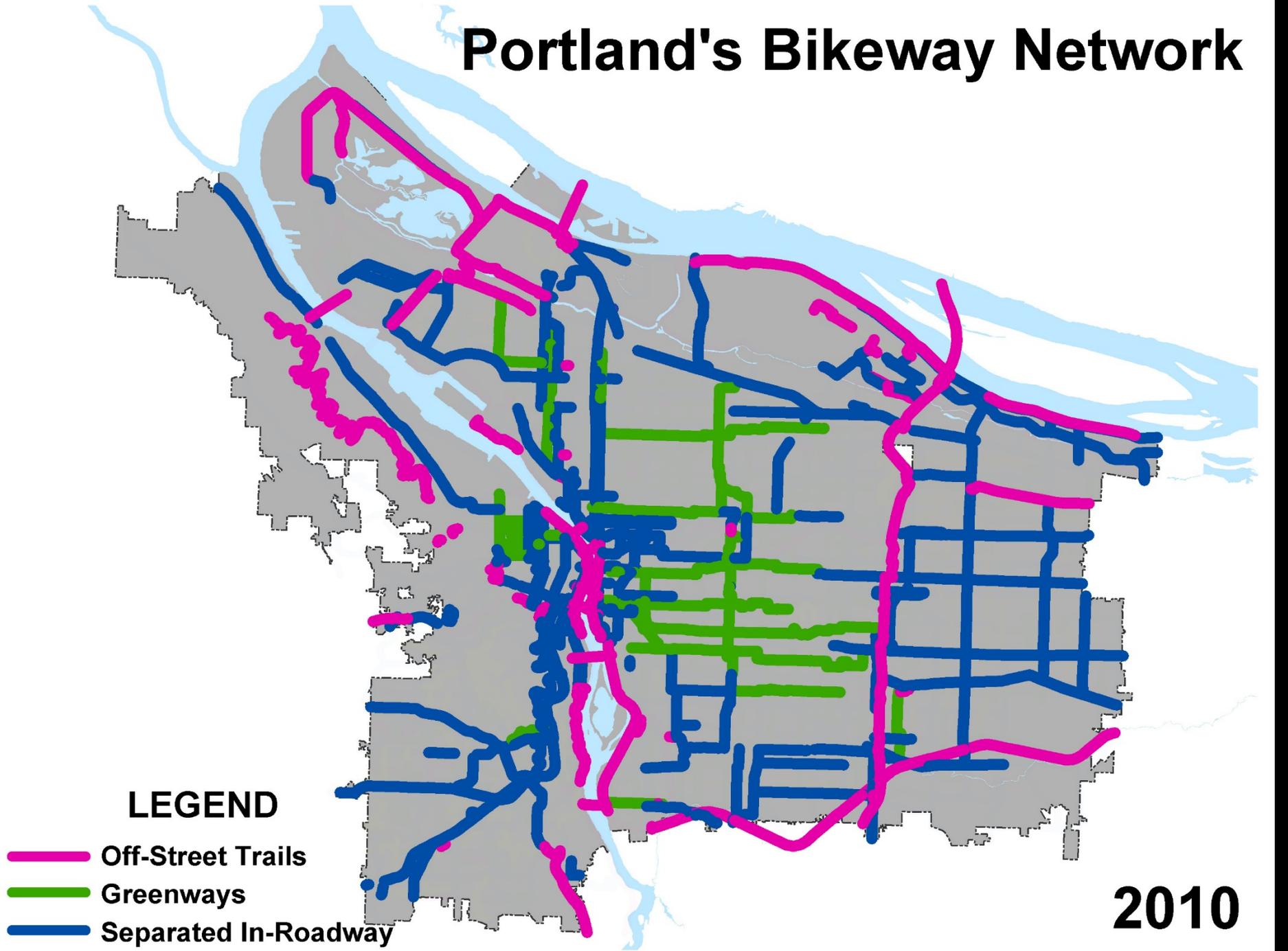


LEGEND

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2000

Portland's Bikeway Network

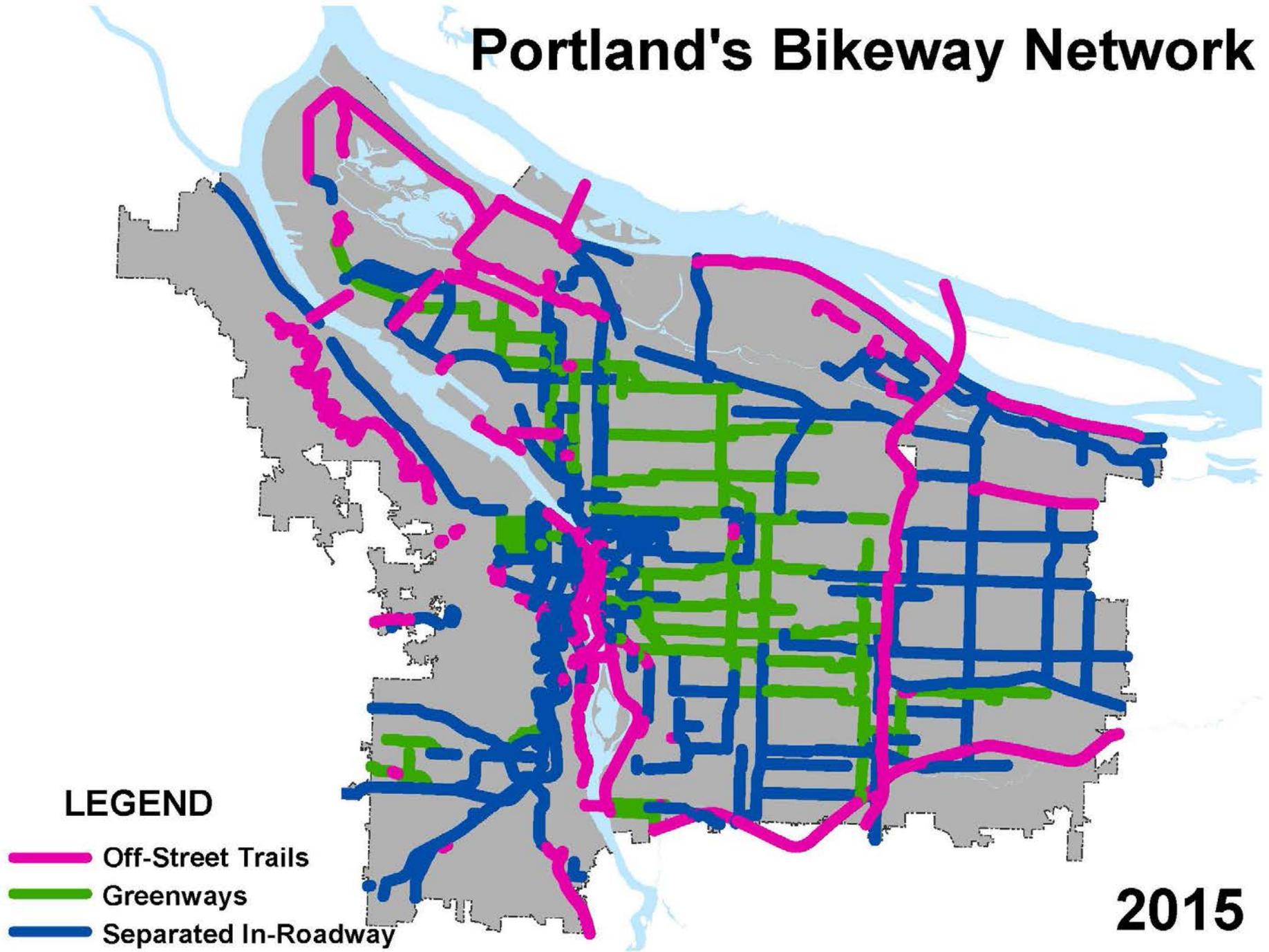


LEGEND

- Off-Street Trails
- Greenways
- Separated In-Roadway

2010

Portland's Bikeway Network

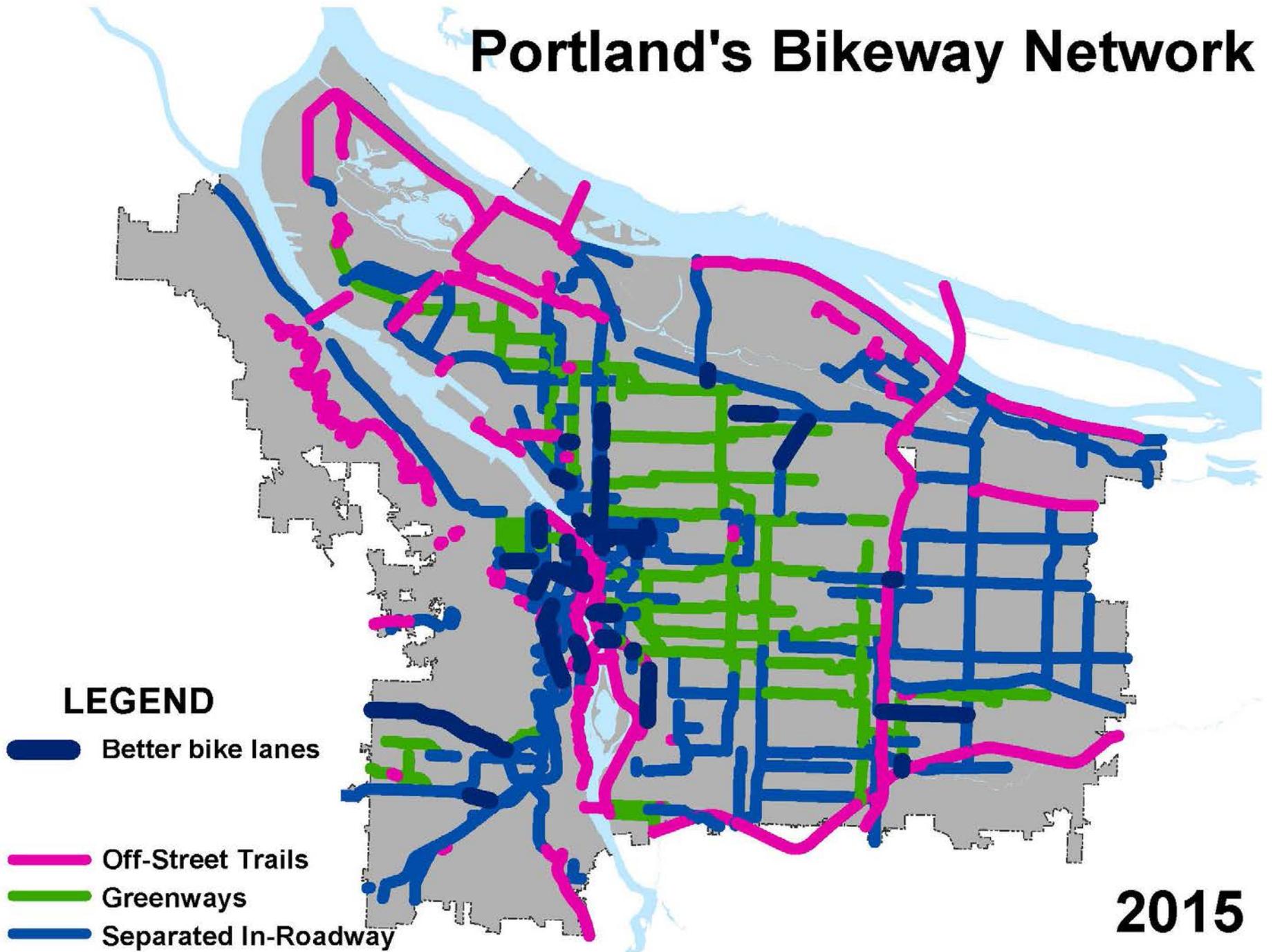


LEGEND

- Off-Street Trails
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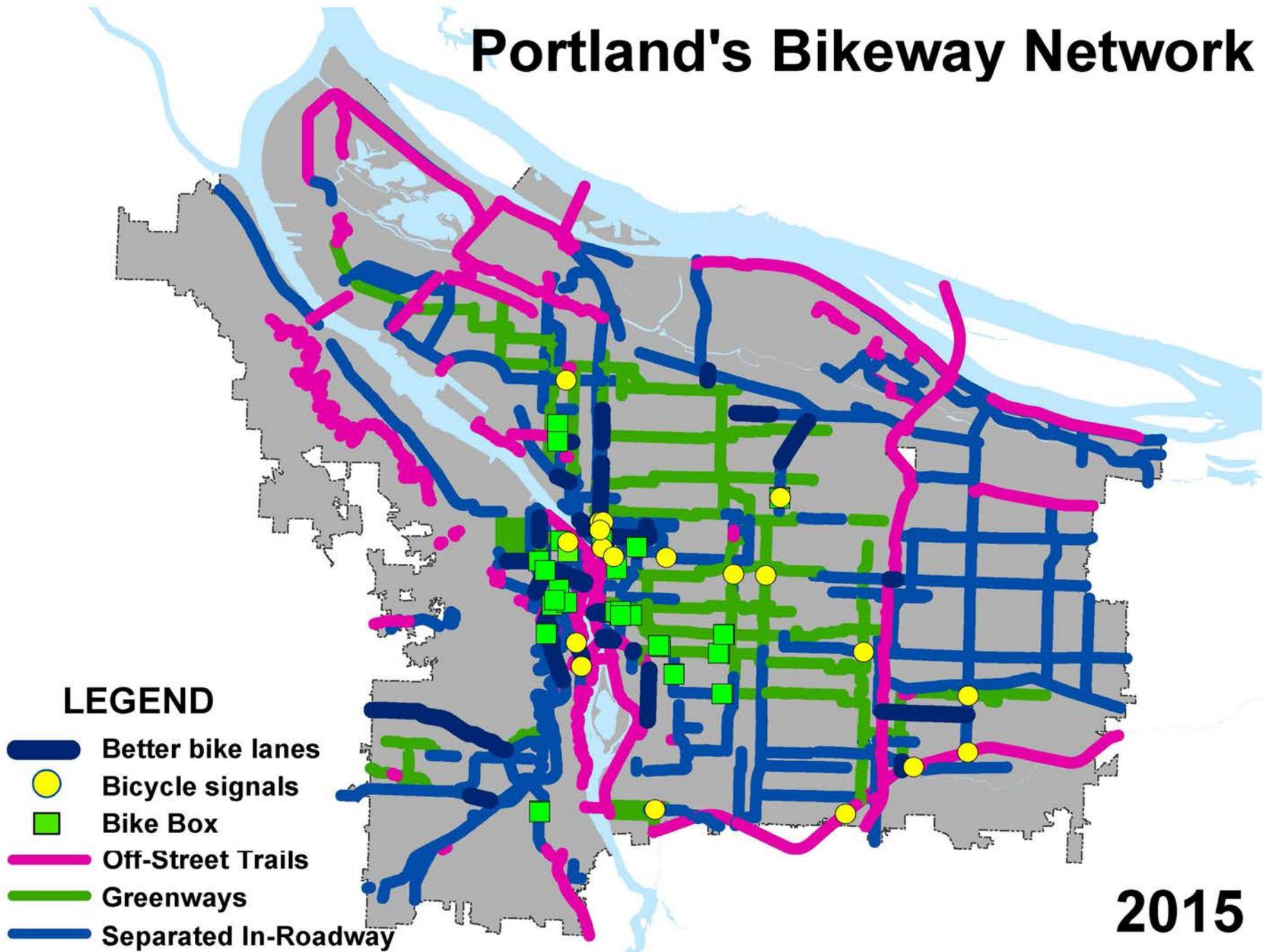
2015

Portland's Bikeway Network



2015

Portland's Bikeway Network

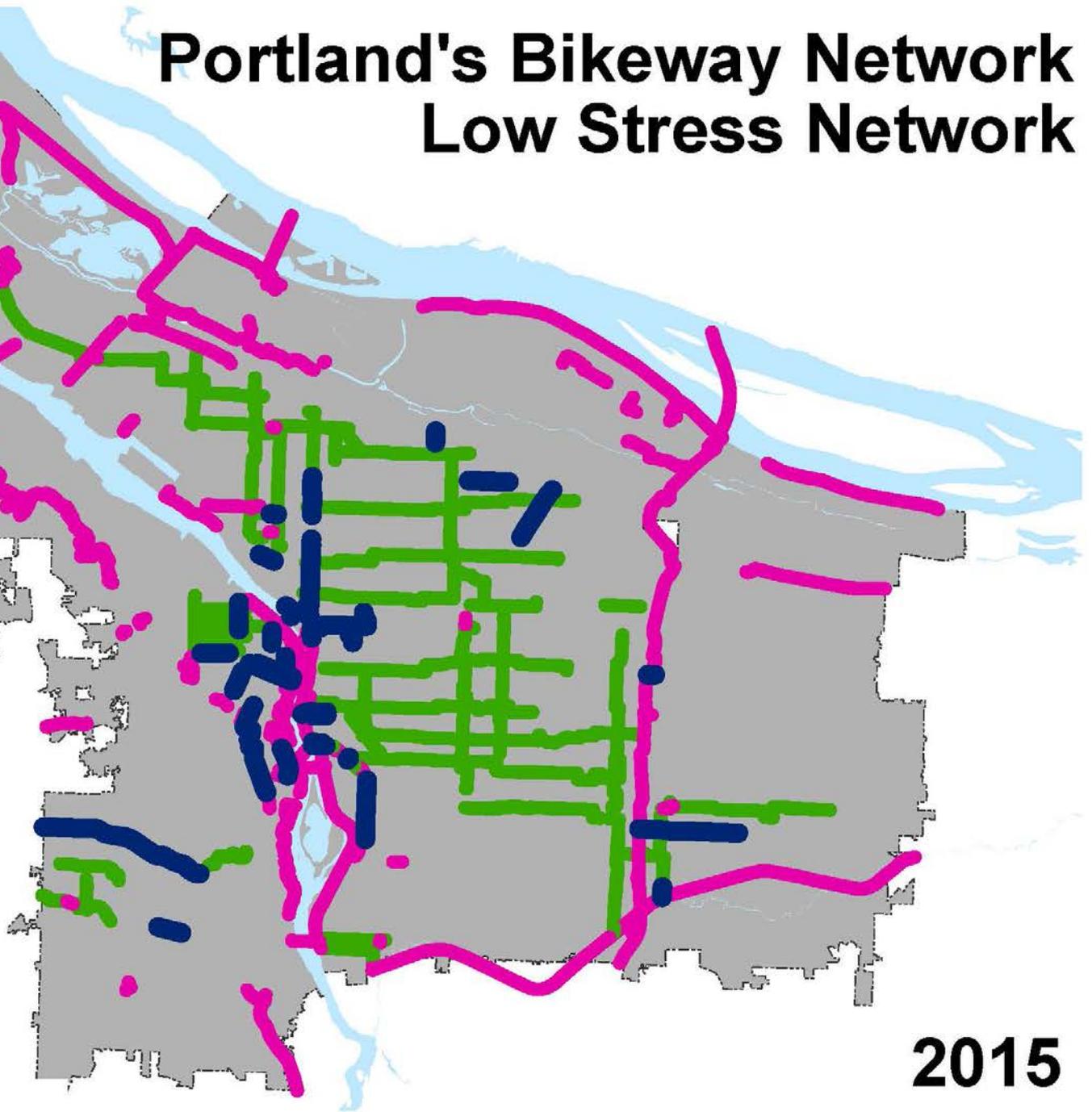


2015

Portland's Bikeway Network

Low Stress Network

- LEGEND**
-  Better bike lanes
 -  Off-Street Trails
 -  Greenways



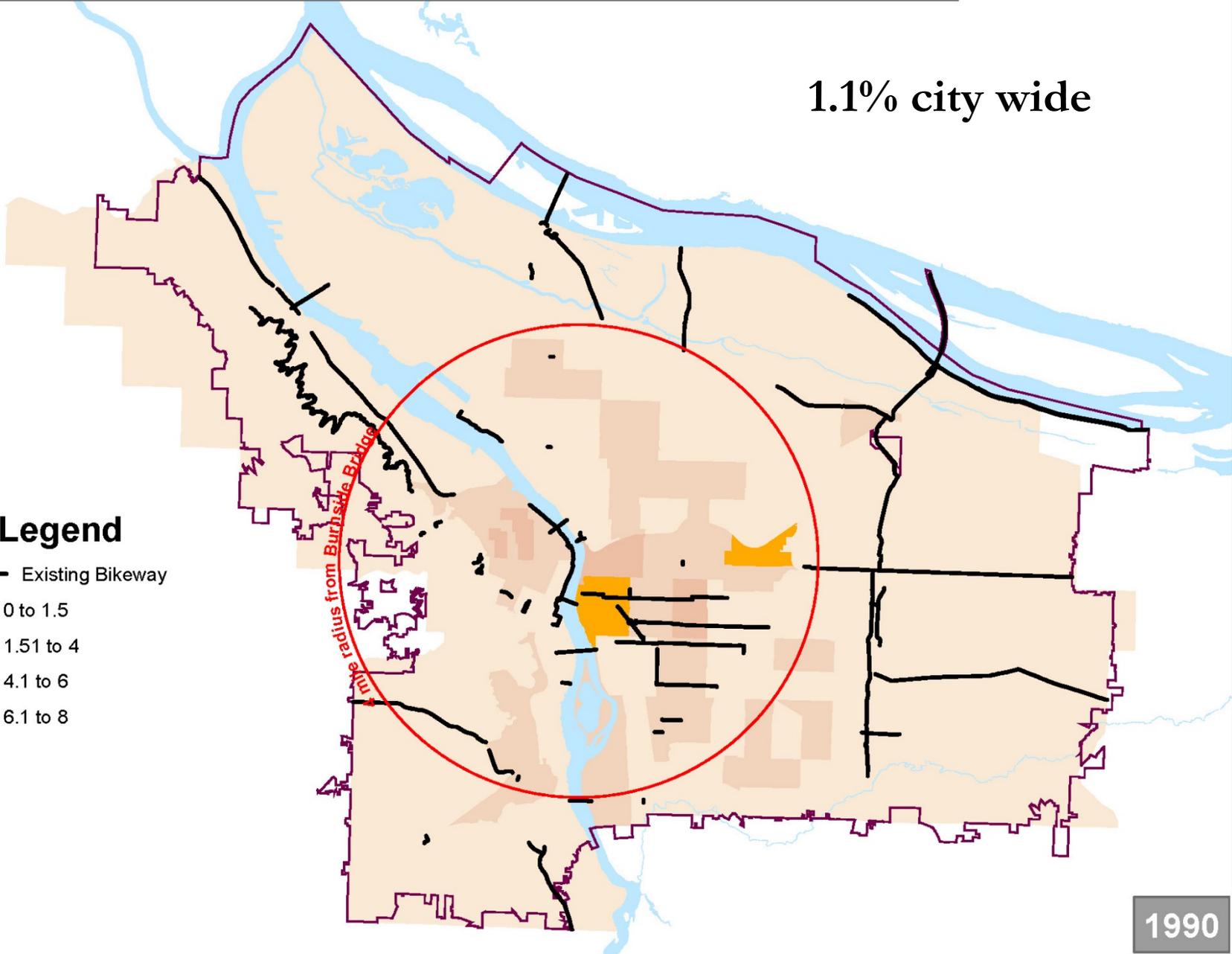
2015

Aspirations

25% bicycle mode split

Portland Oregon Bicycle Commute Mode Split by Census Tract

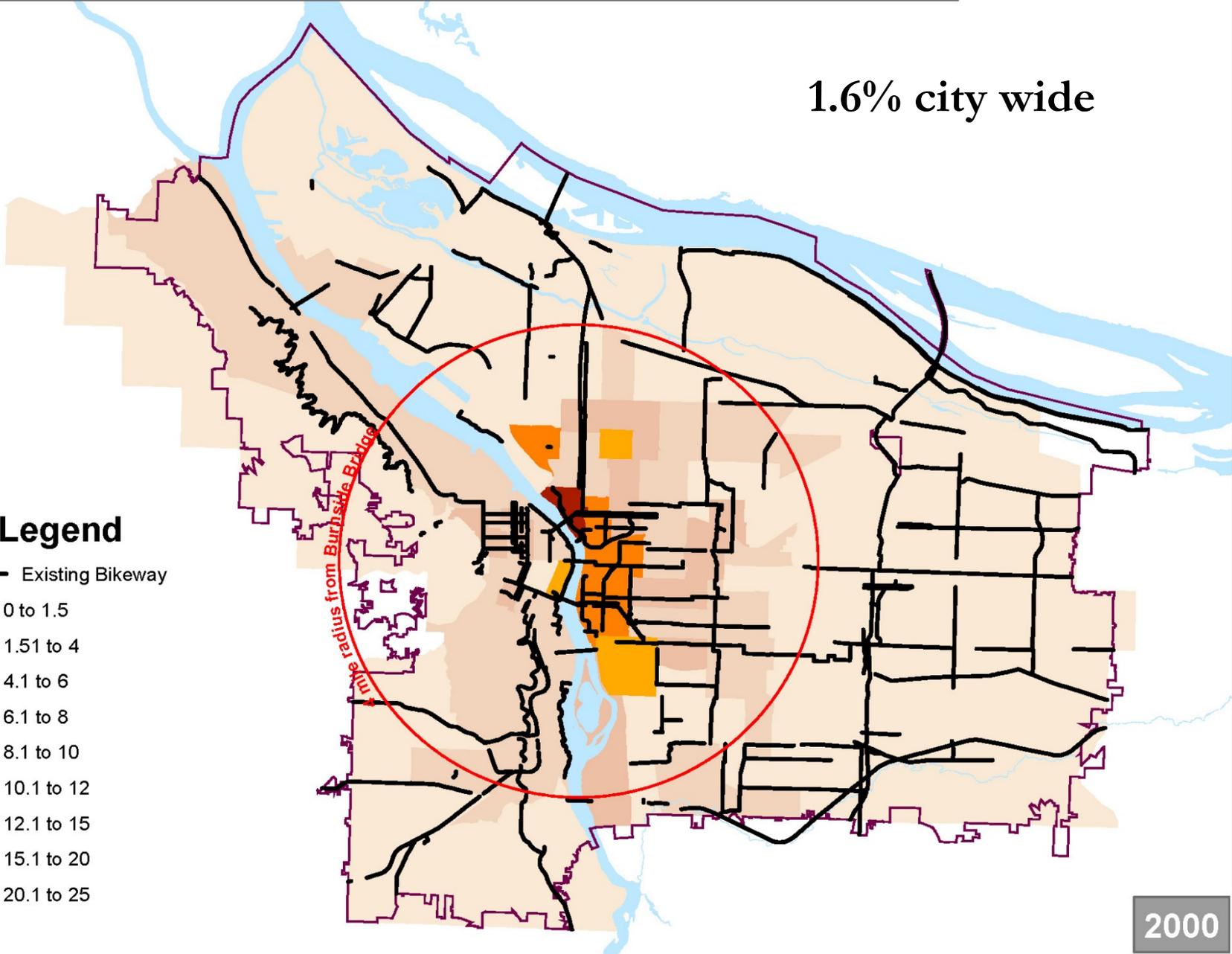
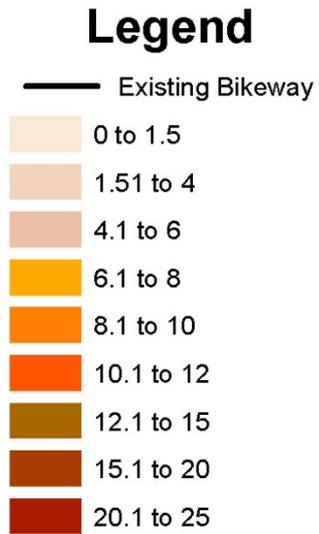
1.1% city wide



1990

Portland Oregon Bicycle Commute Mode Split by Census Tract

1.6% city wide

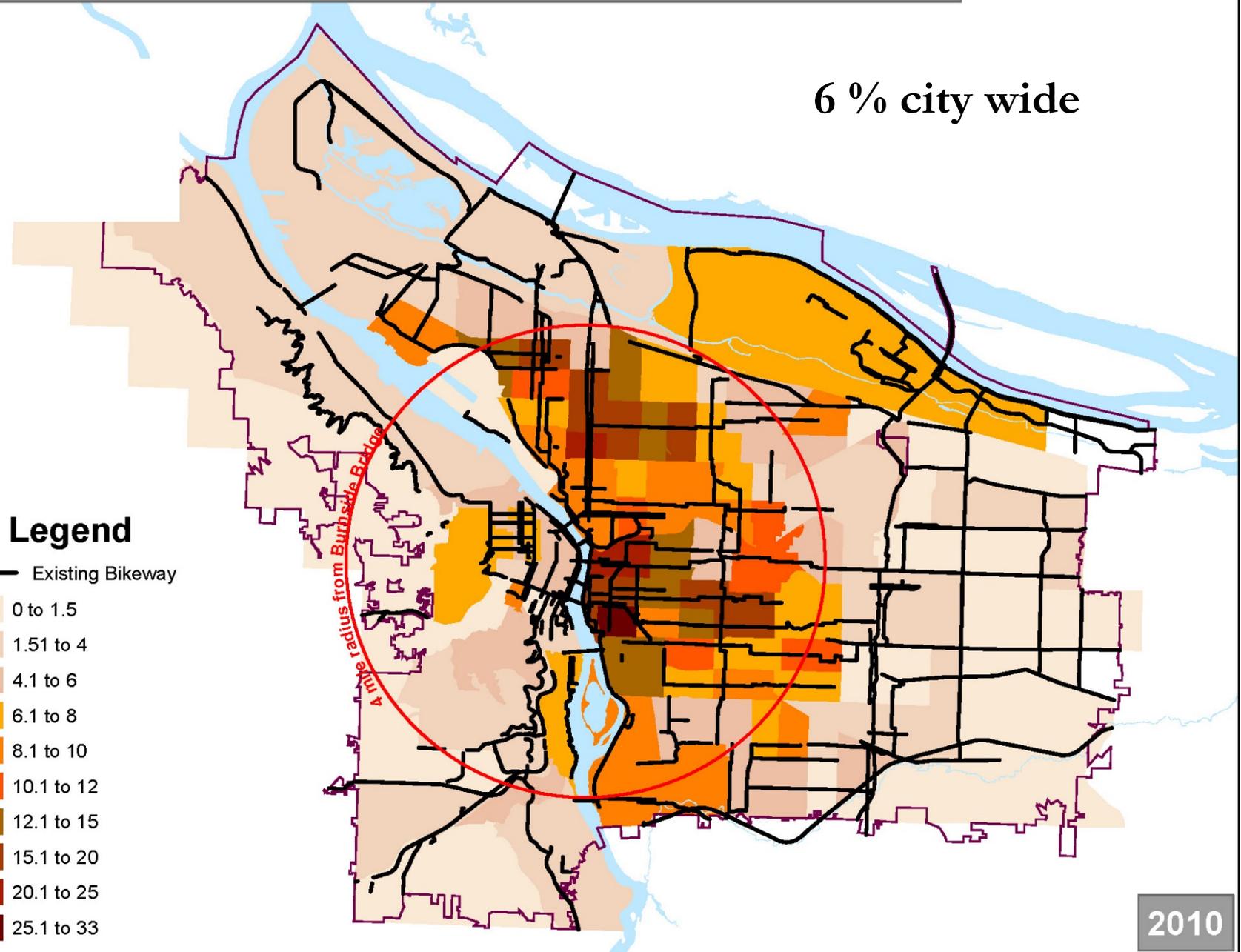
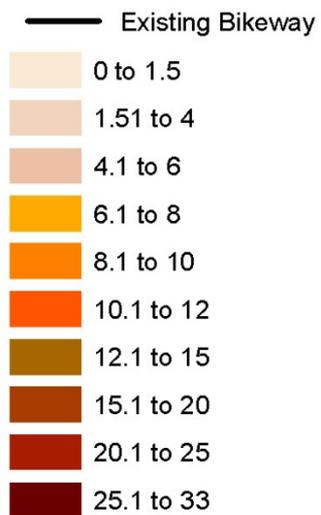


2000

Portland Oregon Bicycle Commute Mode Split by Census Tract

6 % city wide

Legend

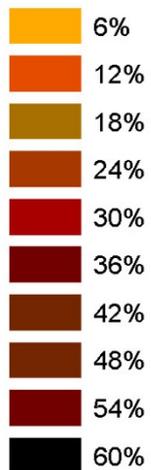


Portland Oregon Bicycle Commute Mode Split by Census Tract

25% city wide

Legend

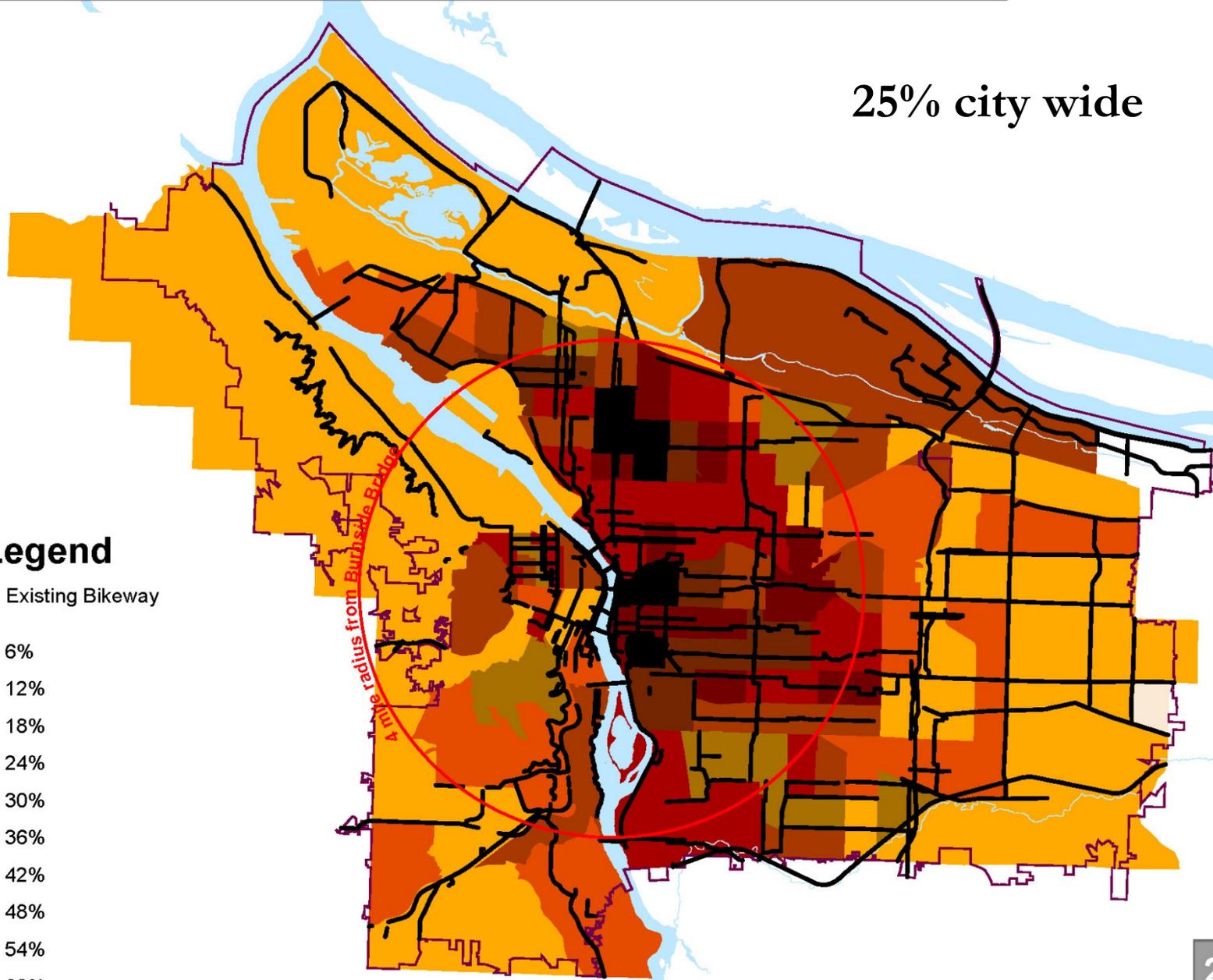
— Existing Bikeway



6%
12%
18%
24%
30%
36%
42%
48%
54%
60%

A 10 mile radius from Burhside Bridge

2030



Challenge to bicycle boulevards

Population growth/more cars are resulting in increasing peak hour car volumes and speeds on some key bicycle boulevards

Solution

Neighborhood Greenway (bicycle boulevard) Assessment Report:

1. Quantified problem
2. Provided stronger guidance on speeds/volumes
3. Stronger policy tools for diversion
4. Accepted by City Council at public hearing

Automobile volumes on neighborhood greenways

Legend

Neighborhood Greenways

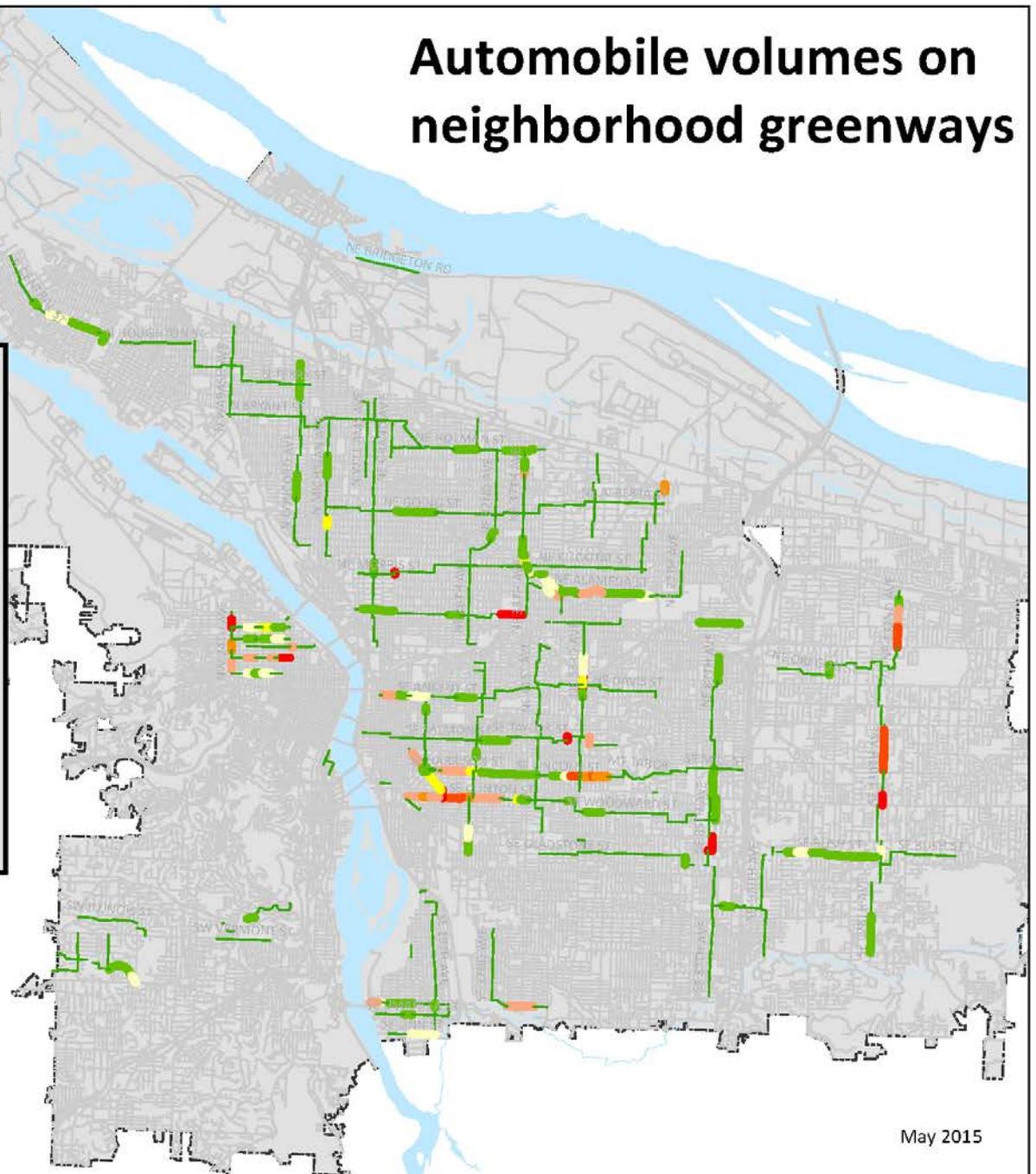
Auto volumes

- 1000 and fewer or no data
- 1001-1500
- 1501-1800
- 1801-2000
- 2001-2500
- 2501-3000
- 3001-3500
- 3501-6000

Thin green lines reflect either a lack of data for the segment or automobile volumes less than 1000 per day.

Segments with no data generally indicate no identified concern for higher automotive volumes.

In most cases automobile counts at spot locations were extended along the segment to the nearest minor collector street.



Automobile speeds on neighborhood greenways

Legend

Neighborhood Greenways

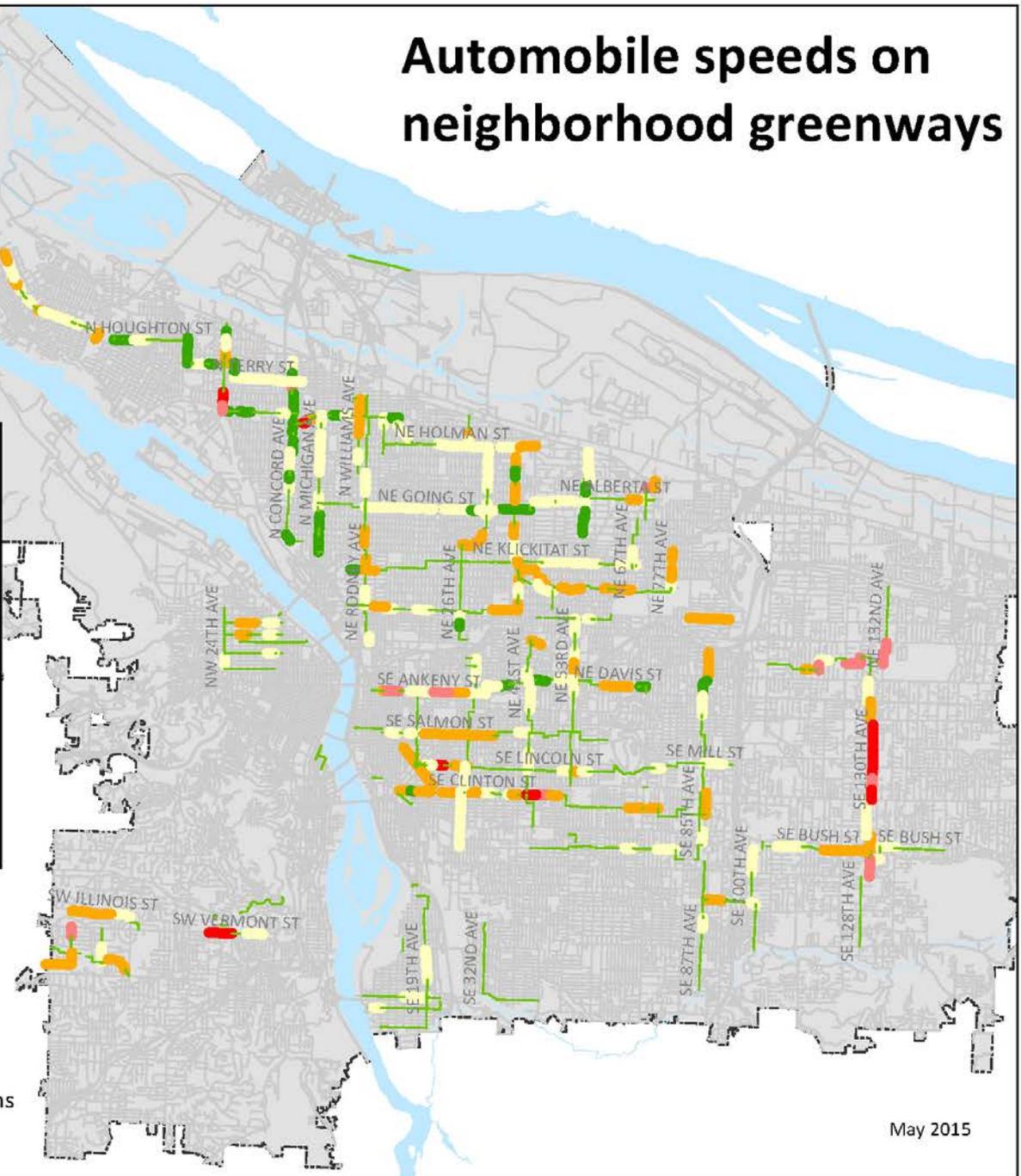
Auto speeds

- 20 mph or slower (or no data)
- 21 - 22 mph
- 23 - 25 mph
- 26 - 28 mph
- 29 - 30 mph
- Faster than 30 mph

Thin green lines reflect either a lack of data for the segment or 85th percentile automobile speeds of 20 mph or less.

Segments with not data generally indicate no identified concern for higher automotive speeds.

In most cases automobile speed data at spot locations were extended along the segment to the nearest minor collector street.



More stringent performance guidance

Vehicle speeds

20 mph measured as 85th % speed

Automobile volumes

1,000 (Avg. Daily Traffic)	50/hr
1,500 acceptable	75/hr
2,000 maximum	100/hr
Over 2,000 triggers changes	

Crossing opportunities

Minimum 50 gaps per peak hour

Preferred 100 gaps per peak hour

Policies directly addressing issue

Street classifications that explicitly include **appropriate engineering tools** for use on neighborhood greenways.

Evaluate and **replace conflicting policies** regarding traffic diversion and specifically provide an exception for neighborhood greenways and other priority pedestrian and bicycle routes.

Adopt TSP Policy 6.13 Objective G, which was accepted by City Council as part of the Portland Bicycle Plan for 2030, and calls for employing traffic calming tools and methods to **create and maintain sufficiently low automobile volumes and speeds on neighborhood greenways.**

Challenges to protected bicycle lanes

Unwillingness to implement protected bicycle lanes because of skepticism about:

- the existence of the “interested but concerned”
- the ability of protected lanes to increase bicycle traffic

Lack of design clarity:

- obtaining width
- stormwater
- intersections

Addressing skepticism

- Winning hearts and minds (PERSUASION)
- Adopting strong policies (THE HAMMER)



peopleforbikes™

PERSUASION

Green Lane Project

About the Project

Green Lane Blog

Focus Cities

Resources

Events

FOLLOW US:



GREEN LANE PROJECT

ABOUT THE PROJECT



The Green Lane Project is a PeopleForBikes program helping cities build better bike lanes to create low-stress streets. We focus on protected bike lanes, which are on-street lanes separated from traffic by curbs, planters, parked cars, or posts.

We work closely with leading U.S. cities to speed the installation of these lanes around the country. In the first two years of the project (2012 and 2013), we worked with Austin, TX, Chicago, IL, Memphis, IL, Portland, OR, San Francisco, CA and Washington, DC. In March of 2014, we [selected six new cities](#): Atlanta, GA, Boston, MA, Denver, CO, Indianapolis, IN, Pittsburgh, PA and Seattle, WA. The Project kicked off the collaboration with these six new cities with a [gathering and press conference](#) in Indianapolis.

PERSUASION

Lessons from the Green Lanes



NATIONAL
INSTITUTE FOR
TRANSPORTATION AND
COMMUNITIES



FINAL REPORT

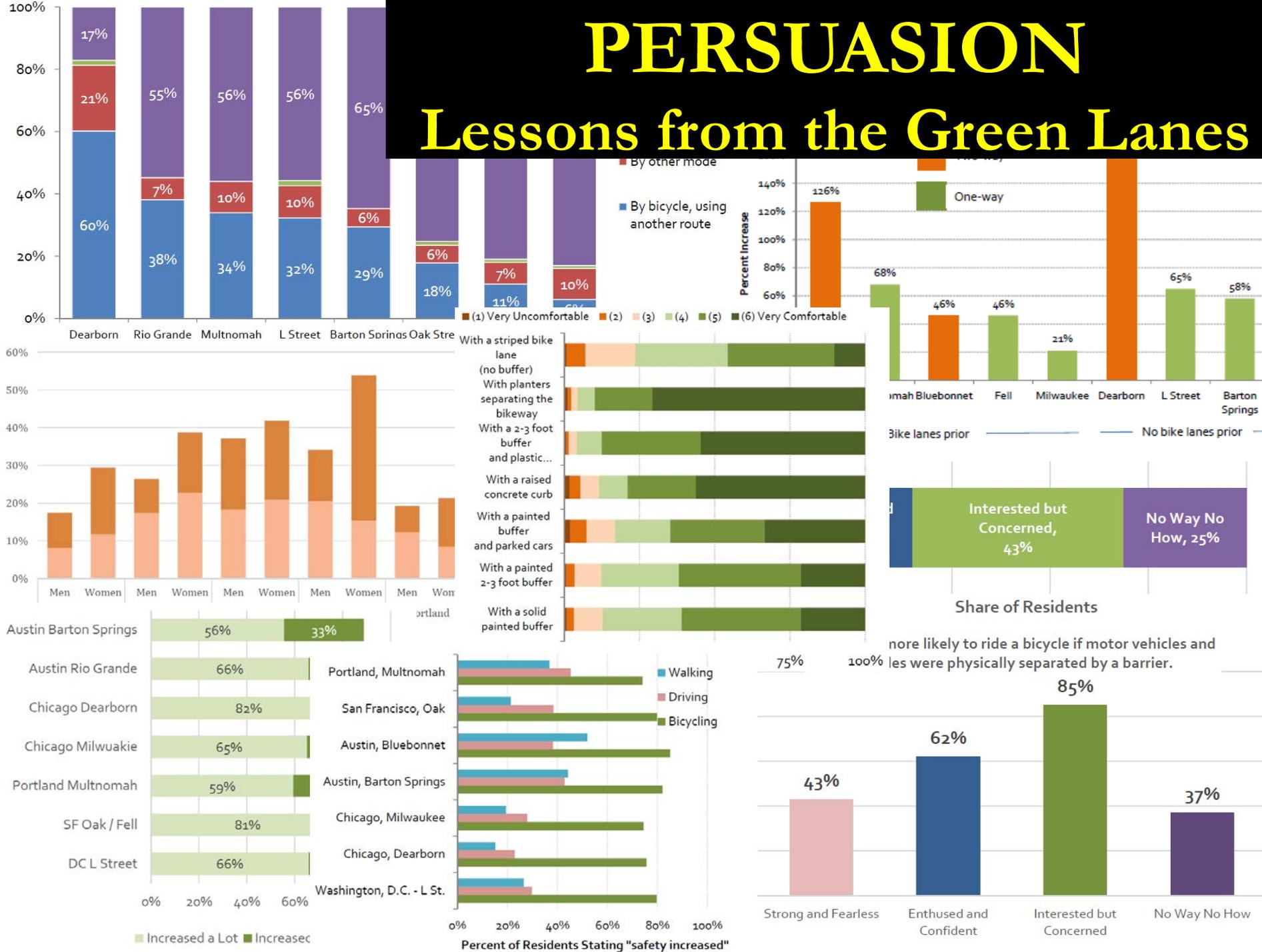
Lessons from the Green Lanes: Evaluating Protected Bike Lanes in the U.S.

NITC-RR-583

June 2014

PERSUASION

Lessons from the Green Lanes

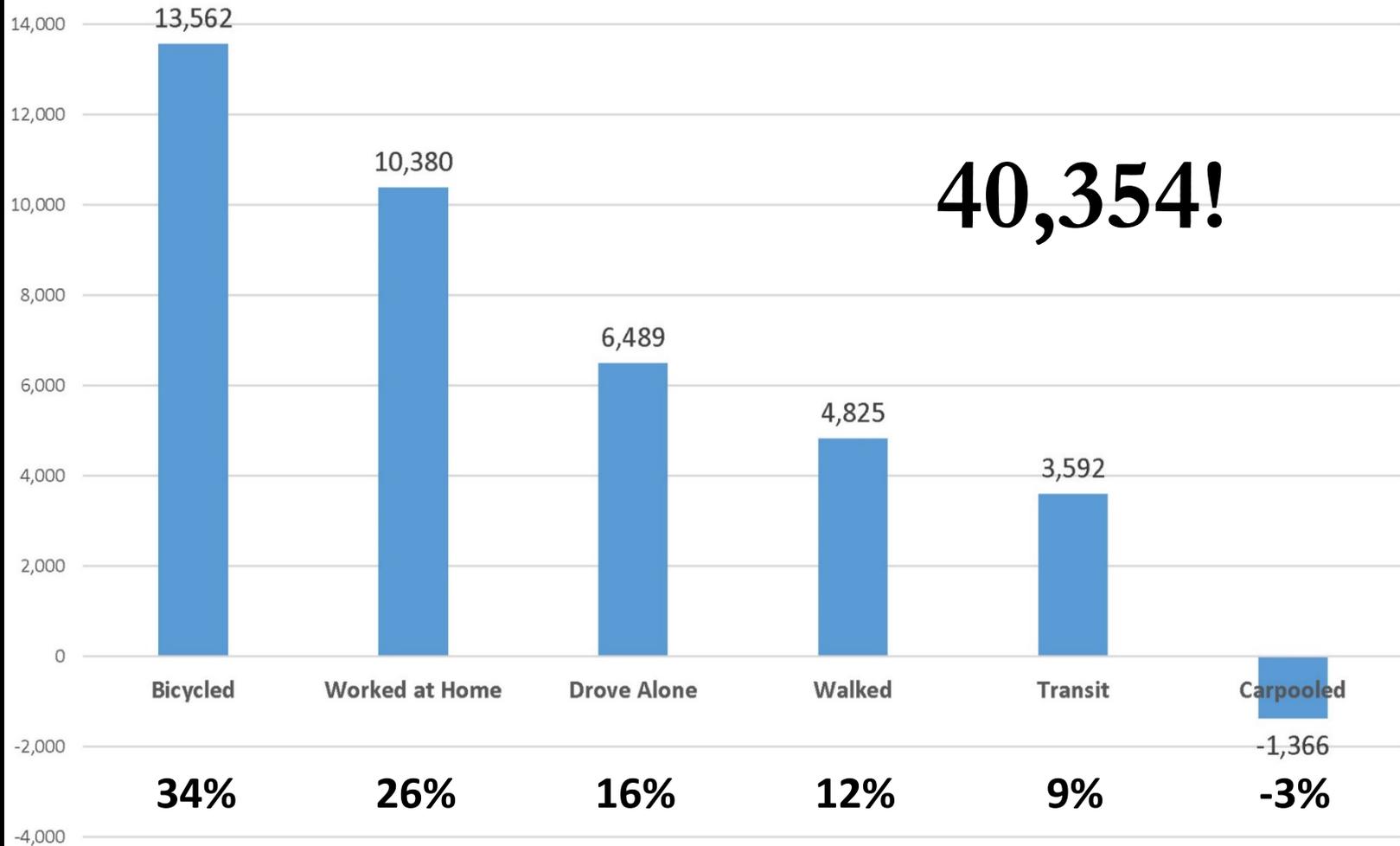


PERSUASION

Data

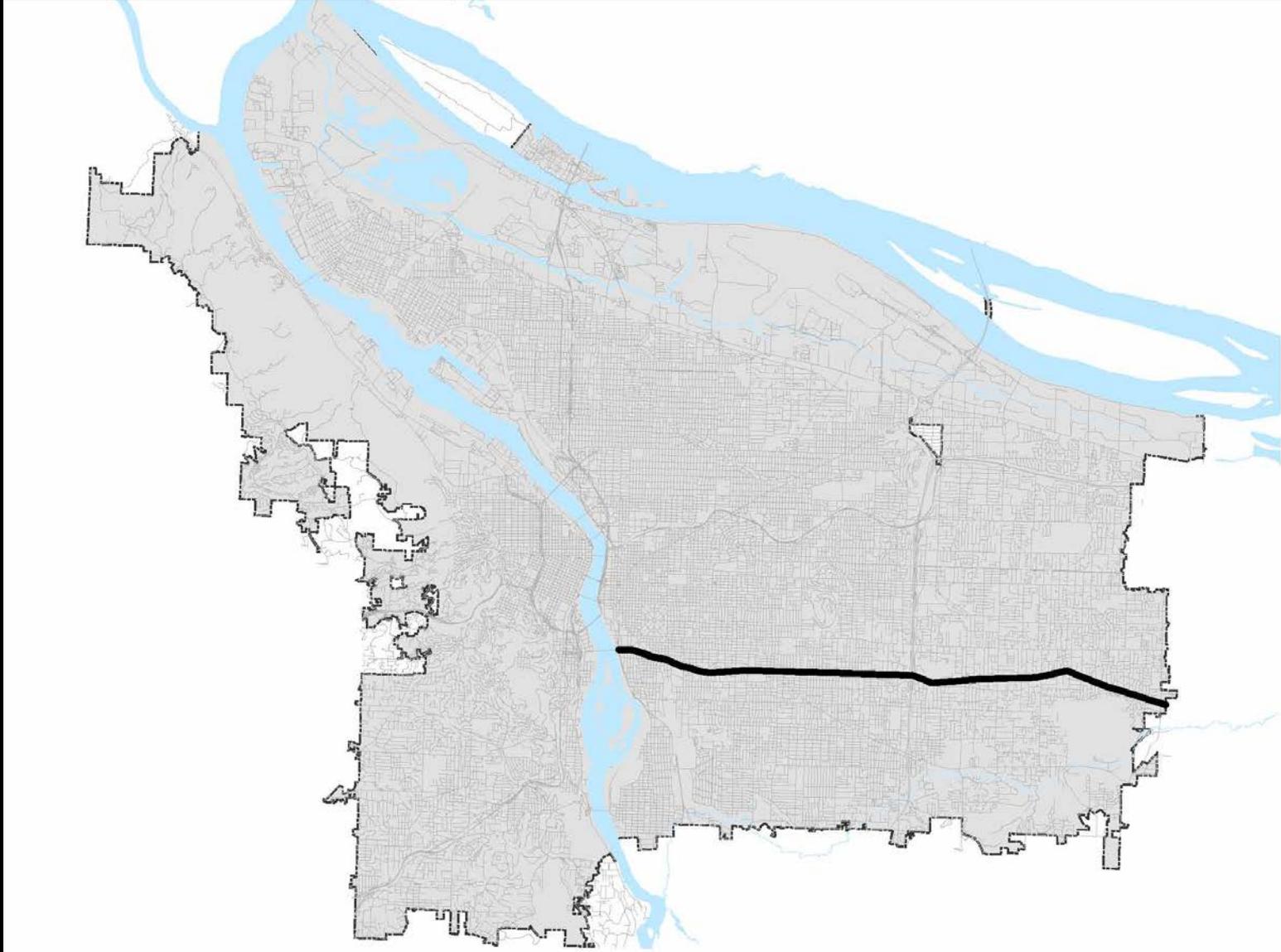
Portland commuters: change in mode 2000-2013

The distribution by primary means of transportation to work for the 40,354 new Portland commuters since 2000



PERSUASION

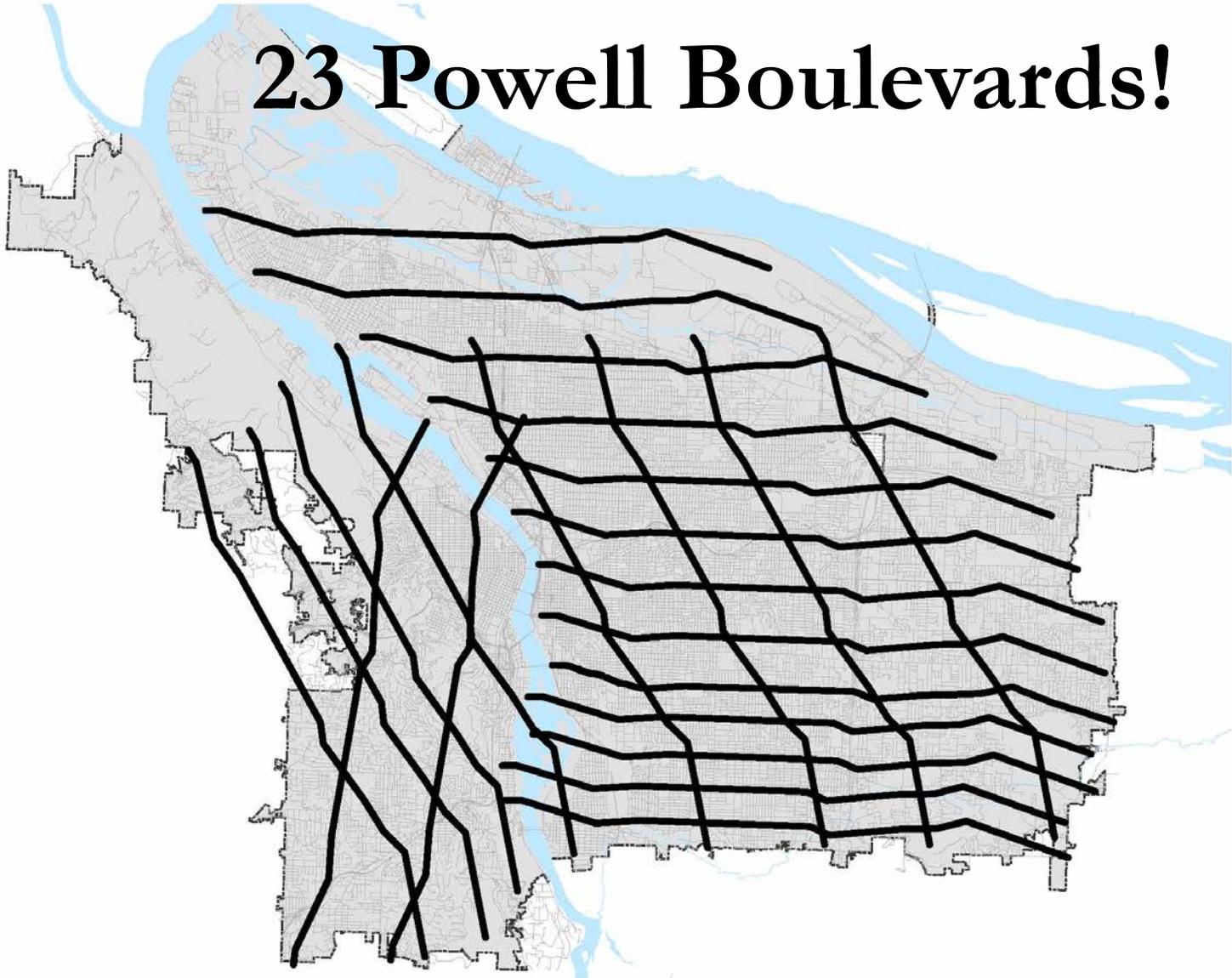
Modeling



PERSUASION

Modeling

23 Powell Boulevards!



PERSUASION

Modeling

Of all the recommendations in the Climate Action Plan, bicycle transportation is the one that currently offers the most significant measurable and modeled reductions in greenhouse gas emissions from this point in time forward.

PERSUASION

Better Blocks



THE HAMMER

Policies

Achieving 25 percent bicycle mode split (in service to a 30 percent SOV mode split) is a major policy goal for Portland.

We have adopted a four key policies in service to that goal:

- 1. Transportation strategy for people movement**
- 2. Bicycle transportation policy**
- 3. Accessible bicycle system policy**
- 4. Bicycle classification policies**

Transportation strategy for people movement

Implement a prioritization of modes for people movement by making transportation system decisions according to the following ordered list:

1. Walking
2. Bicycling
3. Transit
4. Taxi / commercial transit / shared vehicles
5. Zero emission vehicles
6. Other single-occupancy vehicles

Bicycle transportation

Create conditions that make bicycling more attractive than driving **for most trips of approximately three miles or less.**

Accessible bicycle system

Create a bicycle transportation system that is safe, comfortable, and accessible to people of all ages and abilities.

Design “vehicle”



Design “vehicle”



BUILD IT FOR ISABELLA

ISABELLA: 12 YEARS OLD AND READY TO RIDE

Meet Isabella. Like most girls her age, she is exploring her independence.

She just started 7th grade and loves doing cartwheels in the grass with her friends and sharing her life through Instagram. She is ready to travel her world by bike, but is the network ready for her? Isabella wants to bike to school, the library and the ice cream shop, but her mom worries about her getting across or along busy streets. Isabella likes to ride, but she's still small and her skills aren't fully developed. She's sometimes a little wobbly and it's hard for her to see over parked cars near intersections.

What does Isabella need to ride safely around her world?

- ◉ Are we planning low-stress, connected networks that work for Isabella?
- ◉ What if every project was designed with Isabella in mind?

If we build it for Isabella, wouldn't it work beautifully for the rest of us too?



Major City Bikeways should be designed to accommodate large volumes of bicyclists, to maximize their comfort and to minimize delays by emphasizing the movement of bicycles. Motor vehicle lanes and on-street parking may be removed on Major City Bikeways to provide needed width for separated-in roadway facilities where compatible with adjacent land uses and only after performing careful analysis to determine potential impacts to the essential movement of all modes. Where improvements to the bicycling environment are needed but the ability to reallocate road space is limited, consider alternative approaches that include property acquisition, parallel routes and/or less desirable facilities. On Major City Bikeways developed as shared roadways, use all appropriate tools to achieve recommended performance guidelines. Where conditions warrant and where practical, Major City Bikeways should have separated facilities for bicycles and pedestrians.

City Bikeways emphasize the movement of bicycles.

Motor vehicle lanes and on-street parking may be removed on City Bikeways to provide needed width for separated-in-roadway facilities where compatible with adjacent land uses and only after taking into consideration the essential movement of all modes. Where improvements to the bicycling environment are needed but the ability to reallocate road space is limited, consider alternative approaches that include property acquisition, parallel routes and/or less desirable facilities. On City Bikeways developed as shared roadways, use all appropriate tools to achieve recommended performance guidelines.

Bicycle Districts

Bicycle Districts are areas with a dense concentration of commercial, cultural, institutional and/or recreational destinations where the City intends to make bicycle travel more attractive than driving.

• • •

Improvements

All streets within a **Bicycle District** are important in serving bicycle trips. Appropriate bicycle facilities should be determined for each street based on the desired bicycling conditions and operations.

THE HAMMER: Agency leadership

“I am asking our engineers, project managers and planners to make protected bicycle lanes the preferred design on roadways where separation is called for. I am asking for this design standard for retrofits of existing roadways as well as to new construction”.

“I want protected bikeways to be considered on every project where some type of separation is desired”.

Design challenges that can be difficult to tackle in the throes of a fast-moving project.

- Acquiring sufficient width
- Stormwater
- Intersections
- Interactions with pedestrians at intersections

Addressing design

- 10-foot travel lane standard
- Internal “super” TAC that engages more agency staff more regularly
- Training

Resources

Neighborhood Greenway Assessment Report; download from here:

<https://www.portlandoregon.gov/transportation/50518>

What the Oregon Household Activity Survey Tells Us About the Path Ahead for Active Transportation in the City of Portland (23 Powell Blvds):

<https://www.portlandoregon.gov/transportation/article/452524>

Portland Bicycle Count Report (40,354):

<https://www.portlandoregon.gov/transportation/article/545858>

Policy Maker's Ride Index (shorthand for discussing benefits of bicycling):

<http://storage.freggo.com/policyride/PMR2015/whybikes.pdf>

<http://cycleoregon.com/policymaker-ride-2015/>

Growth Scenarios Report (climate change):

<http://www.portlandoregon.gov/bps/article/531170>

Portland's efforts since 2013 in re bicycling (defending our Platinum status):

<http://www.portlandoregon.gov/transportation/article/526493>