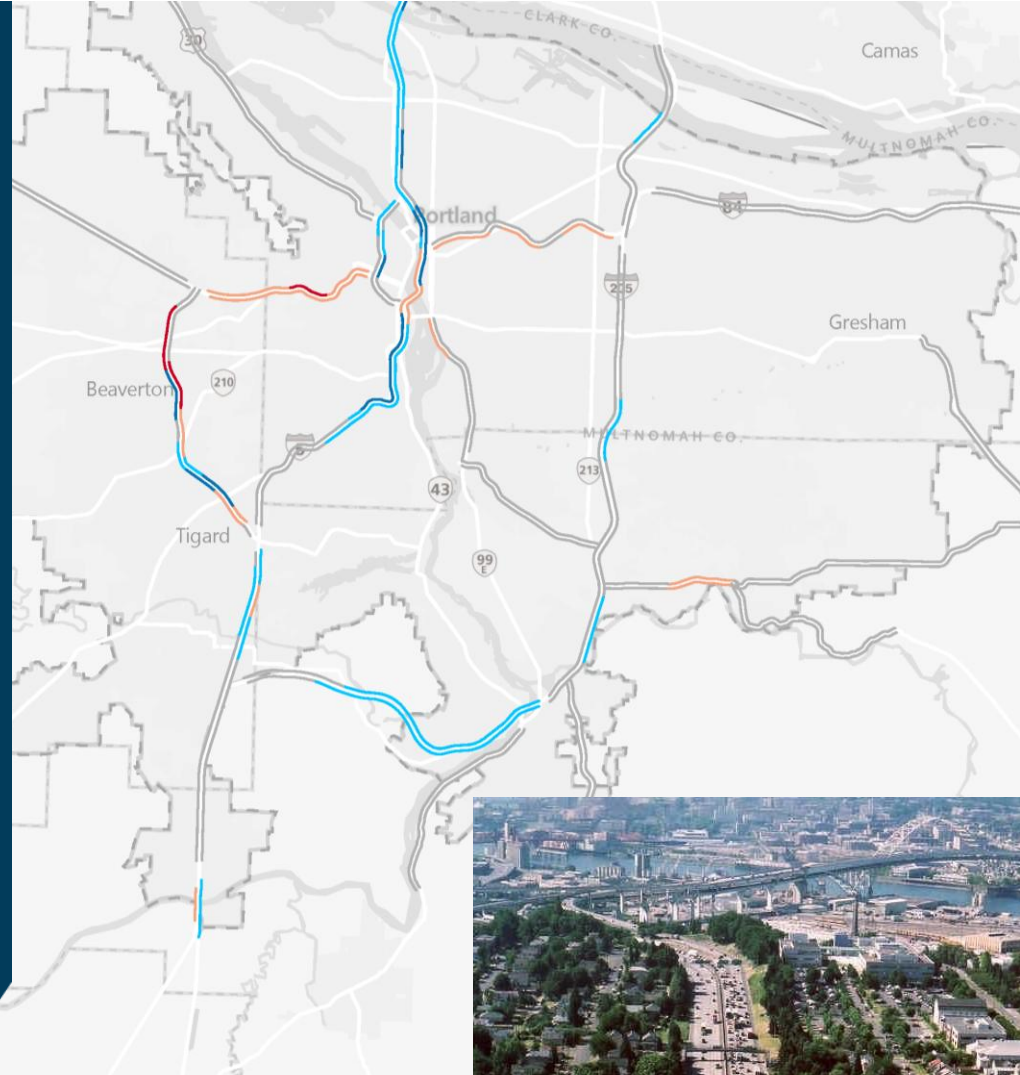


# New Methods for Measuring Regional Mobility

## Augmenting a Regional Travel Model with Big Data

Taste of Momo  
September 17, 2025

*Joe Broach, Oregon Metro  
Senior Researcher / Modeler*



# Overview

- In 2023, new speed-based measure replaced volume/capacity ratios in Regional Mobility Policy
- Fused "big" speed data with travel model outputs for base and future scenario measurement

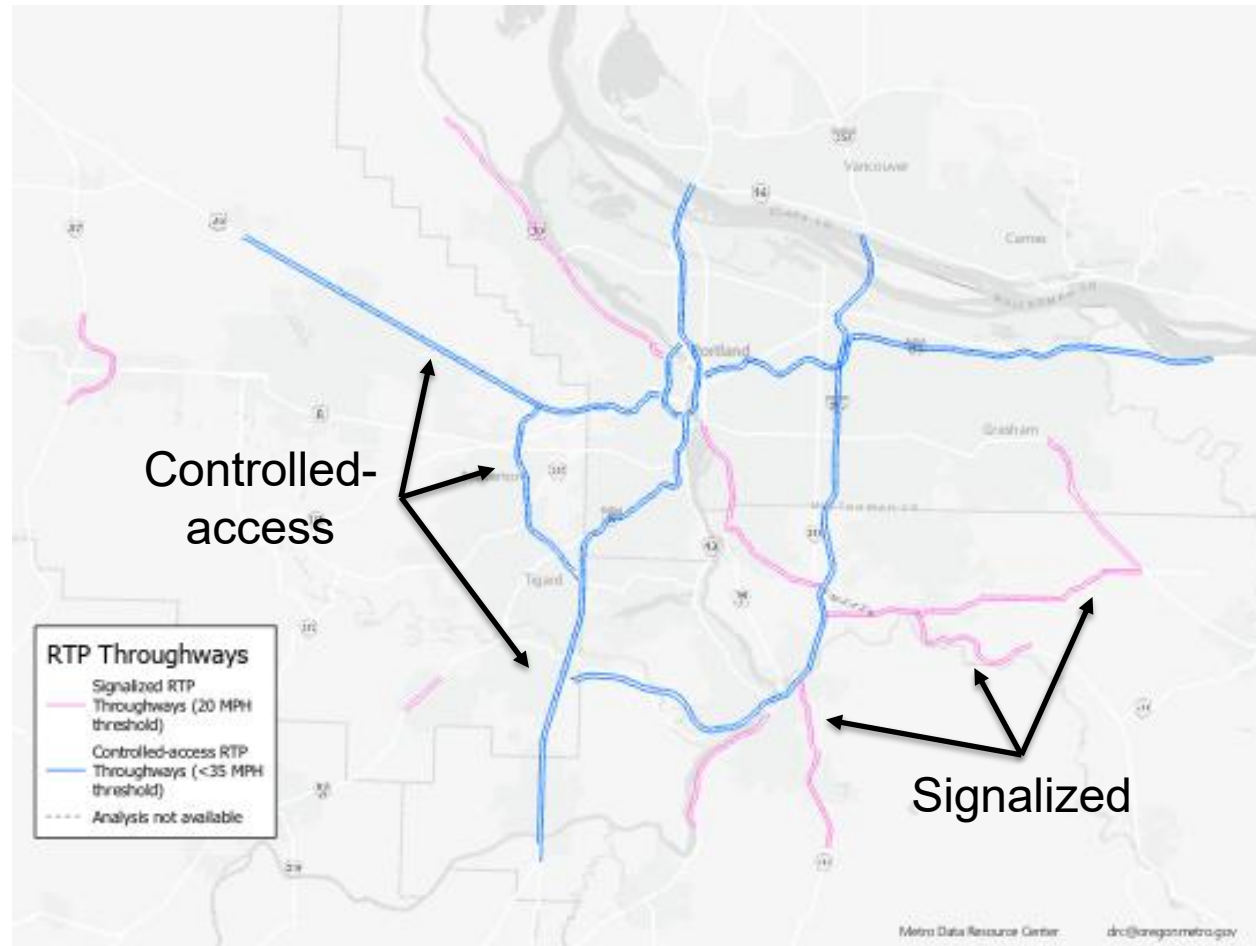
images:  
tripcheck.com



# Regional Throughways

Prioritize  
reliable, higher  
speed movement  
of people and  
goods

Threshold set to **at  
most 4 hrs/day  
under 35 mph.**



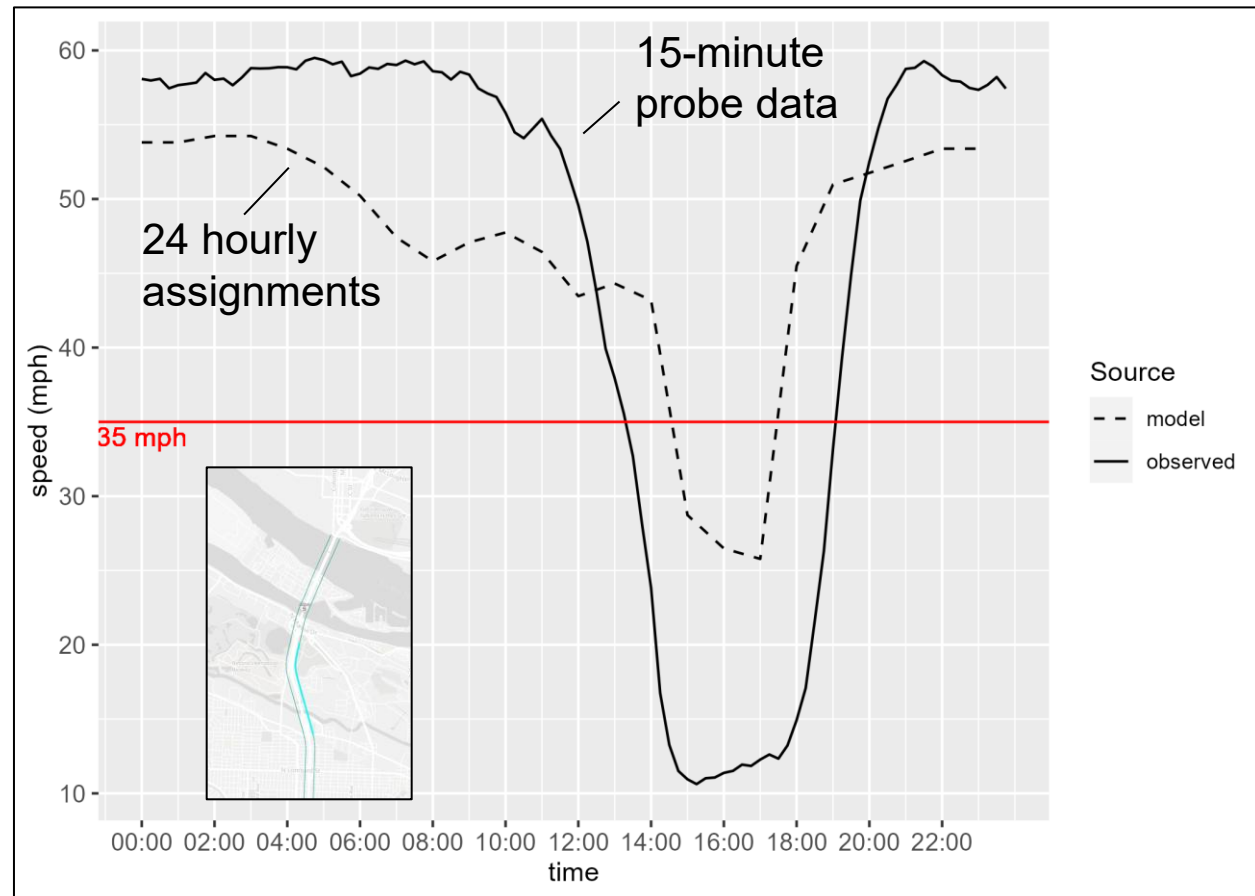
# Data Sources

Probe speed data  
from NPMRDS<sup>1</sup> on  
TMC<sup>2</sup> network  
(base year)

Trip-based model  
hourly assignments  
(base year + future)

<sup>1</sup> National Performance  
Management Research  
Data Set

<sup>2</sup> Traffic Message Channel



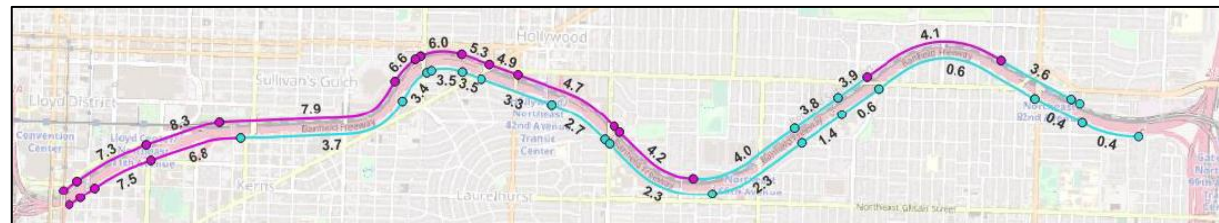
Segment of I-5 Northbound Near Columbia River Crossing (2019)

# Defining Analysis Segments

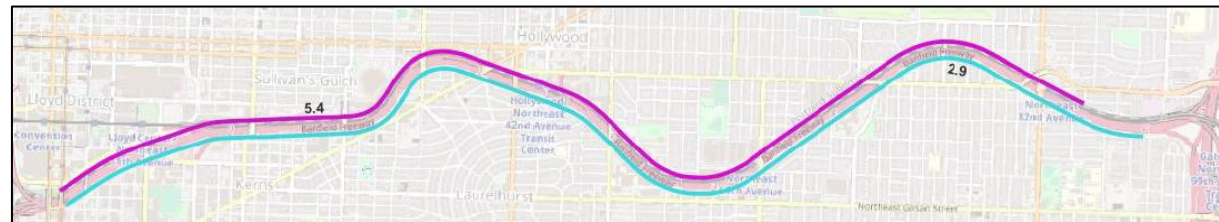
Tested multiple  
segmentation  
options with probe  
data

Selected segments  
conflated to model  
network

Individual TMC segments—too fine



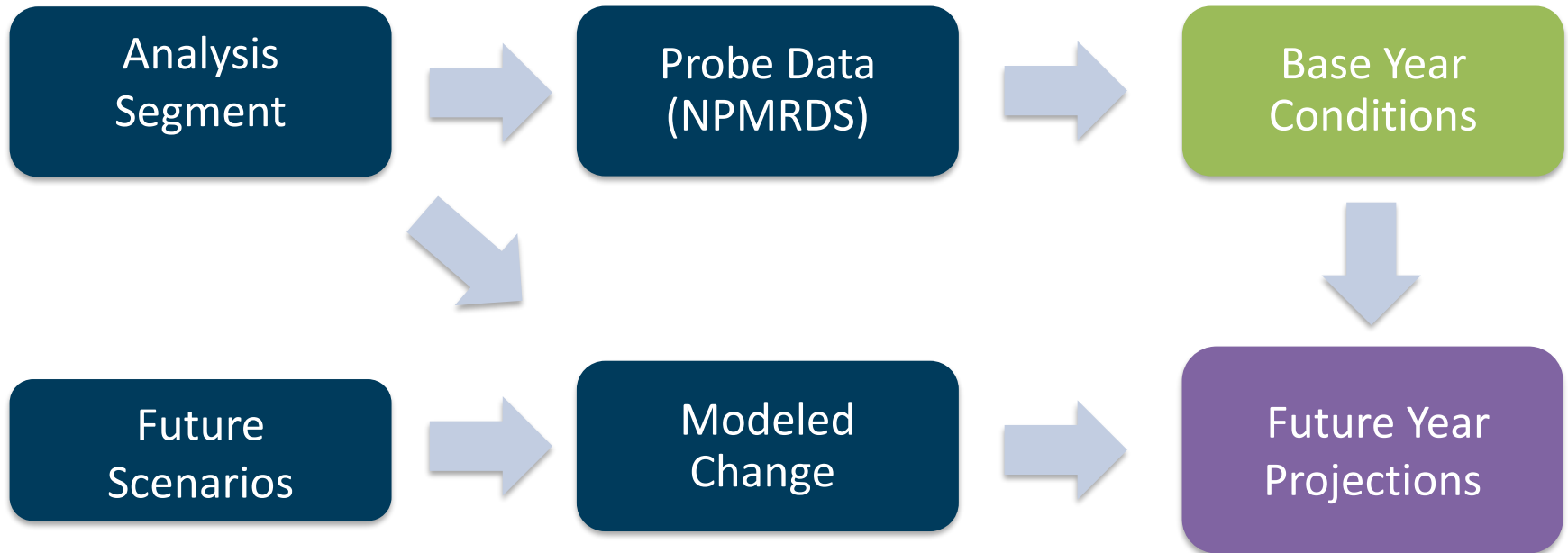
Full regional throughway segments—too coarse



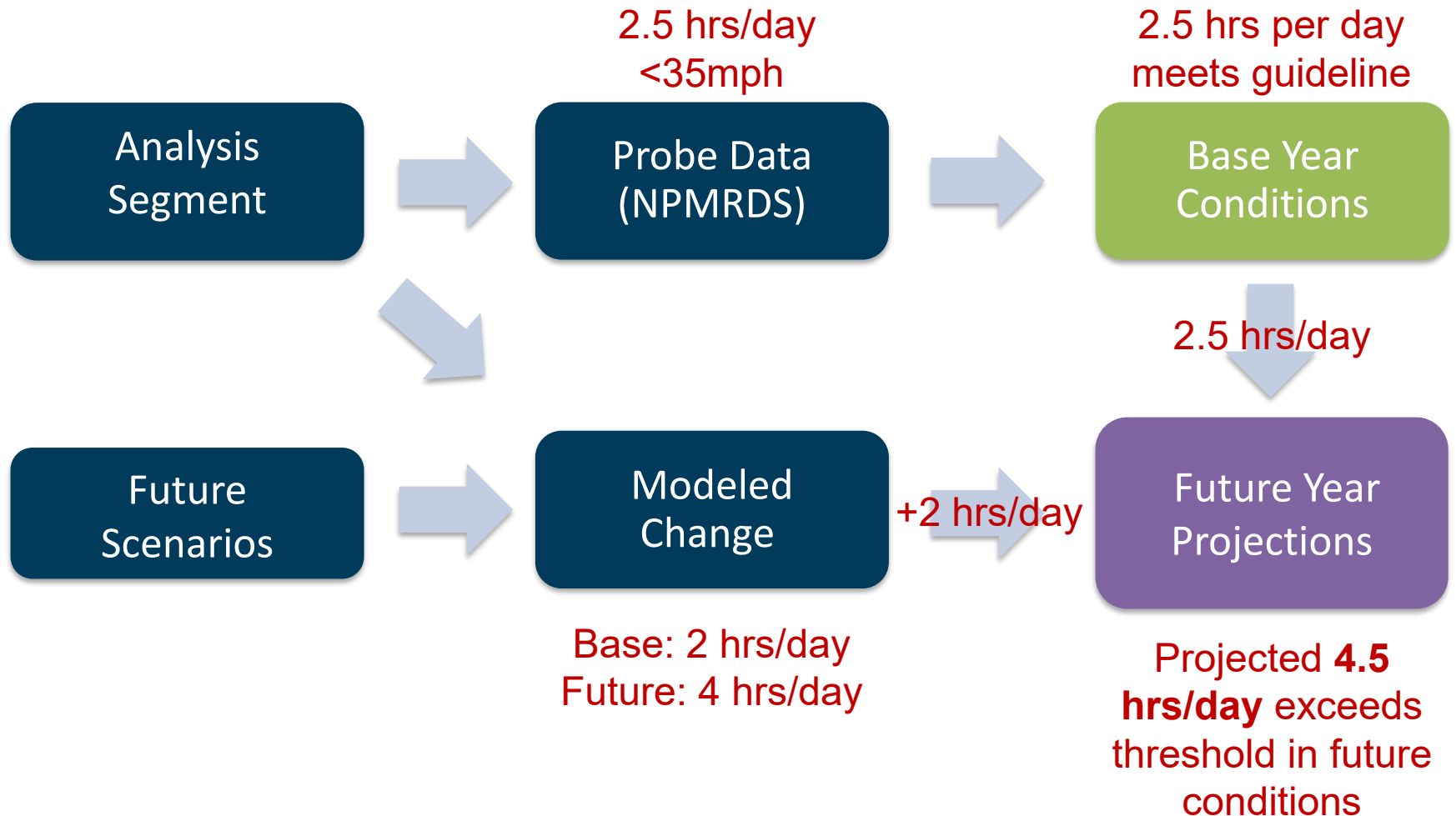
Off ramp to off ramp—just right?



# Analysis framework



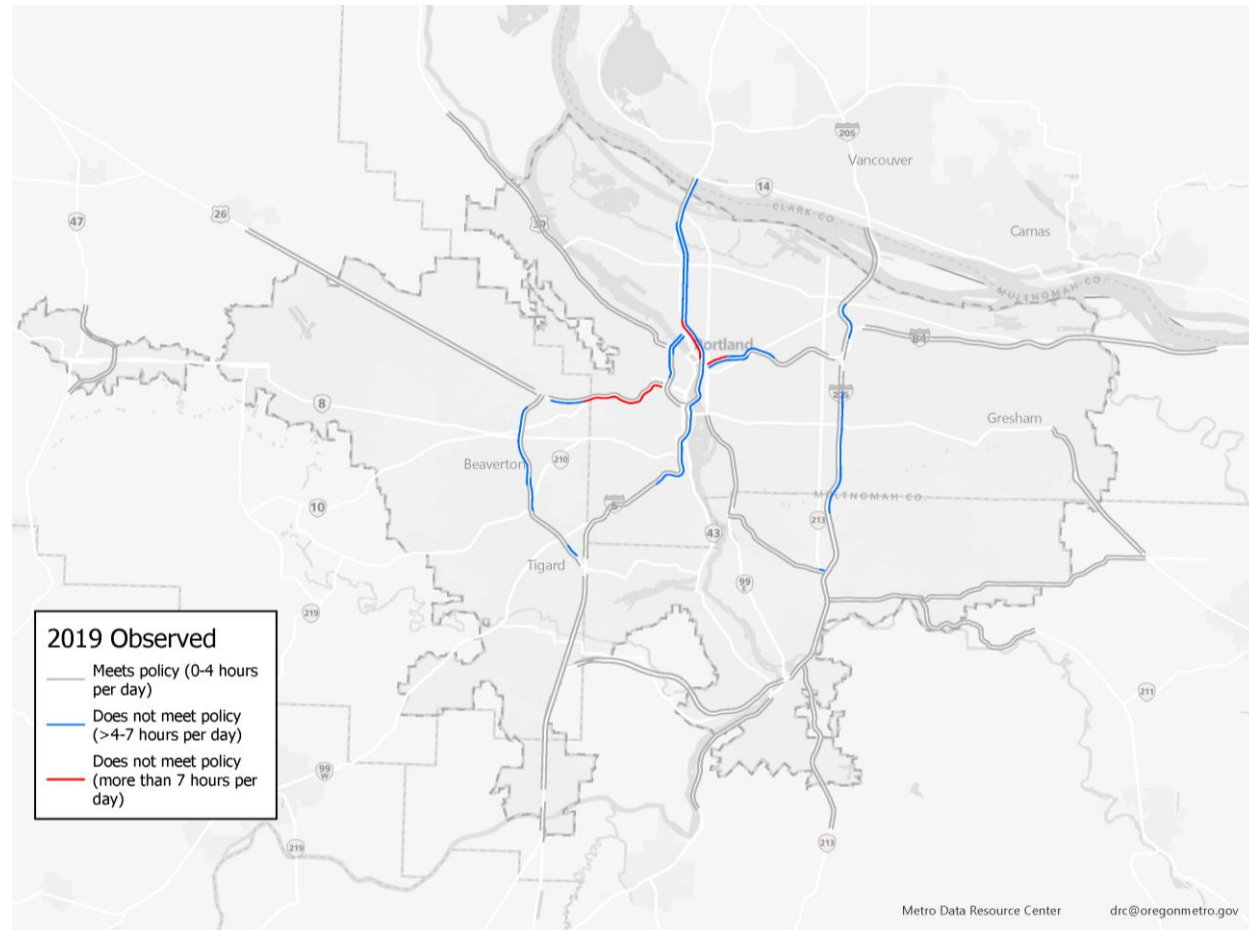
# Analysis framework (Example Segment)



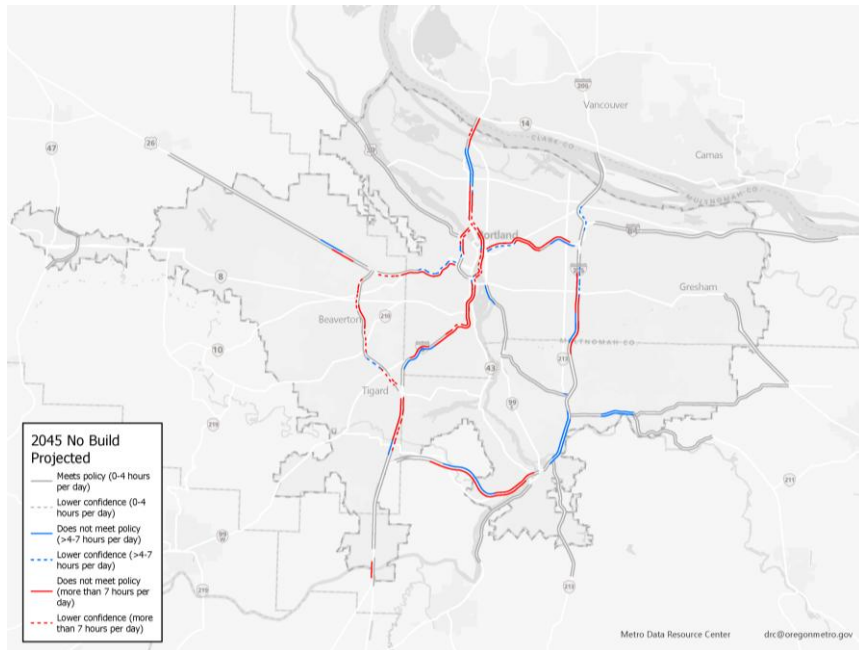
# Results: Establishing Base Conditions

Base Year conditions established fully from observed probe data.

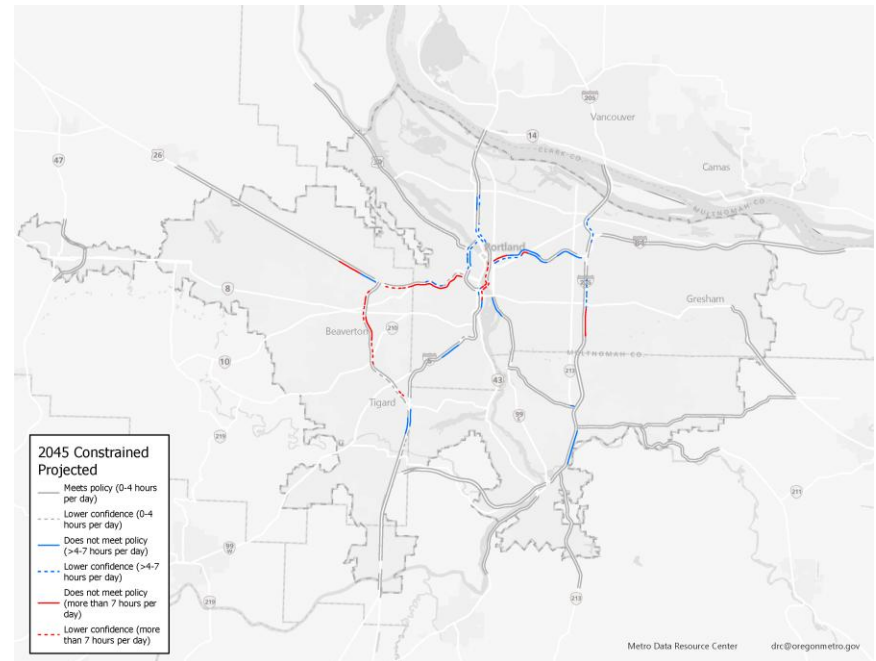
Added additional category to display segments well over threshold (7+ hrs/day <35mph)



# Results: Comparing Future Scenarios

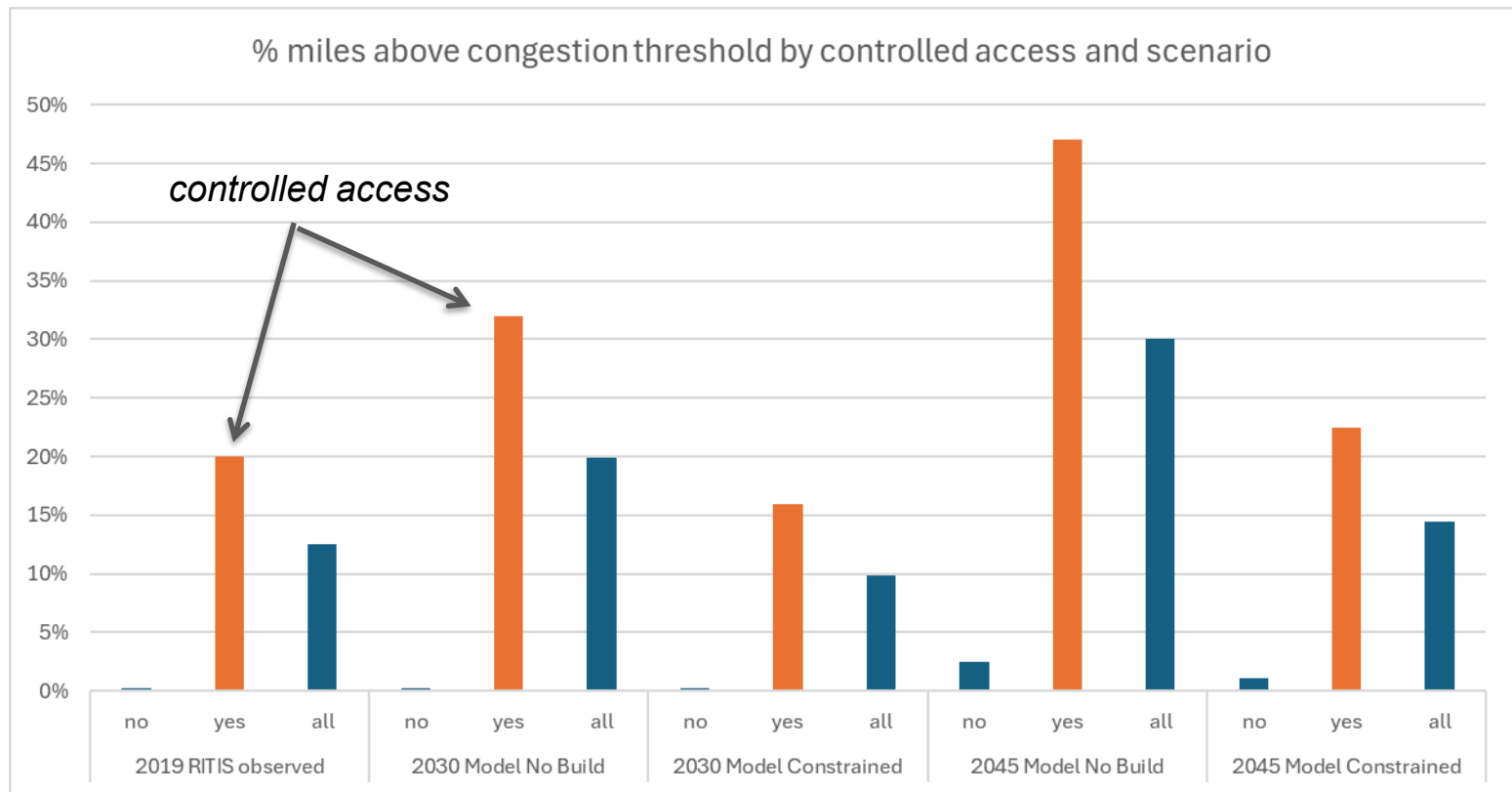


2045 No Build



2045 Financially Constrained

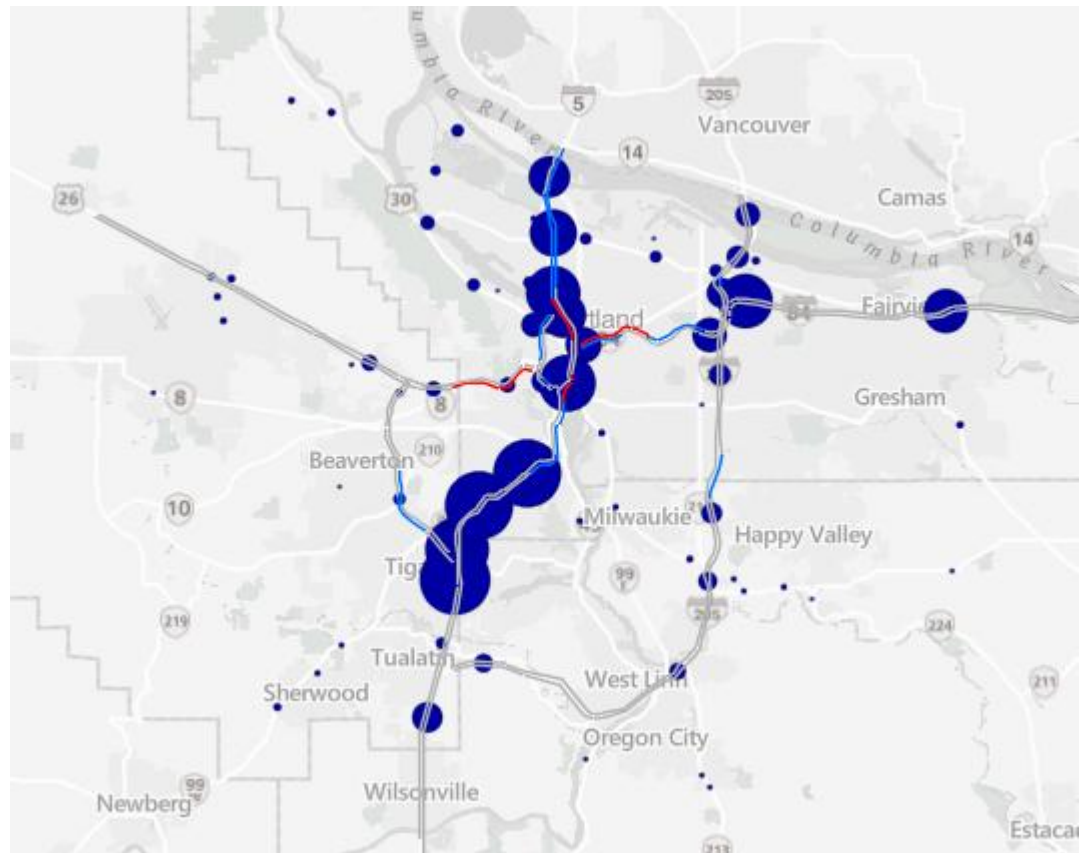
# Systemwide Summaries



# Updates and Overlays

Currently updating  
for new 2025 base  
year

Planners  
considering  
additional overlays,  
including freight  
volume and  
modeled values  
(right).



2025 Base Year (probe data) and 2020 Freight Value Estimates

# Thank you!

**Joe Broach, Metro**

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## Special thanks also to:

Peter Bosa, Kim Ellis, and Bill Stein - Metro

Glen Bolen – ODOT

Garth Appanaitis – DKS Associates

**Learn more at:**

[oregonmetro.gov/projects/  
regional-mobility-policy](https://oregonmetro.gov/projects/regional-mobility-policy)



**Metro**