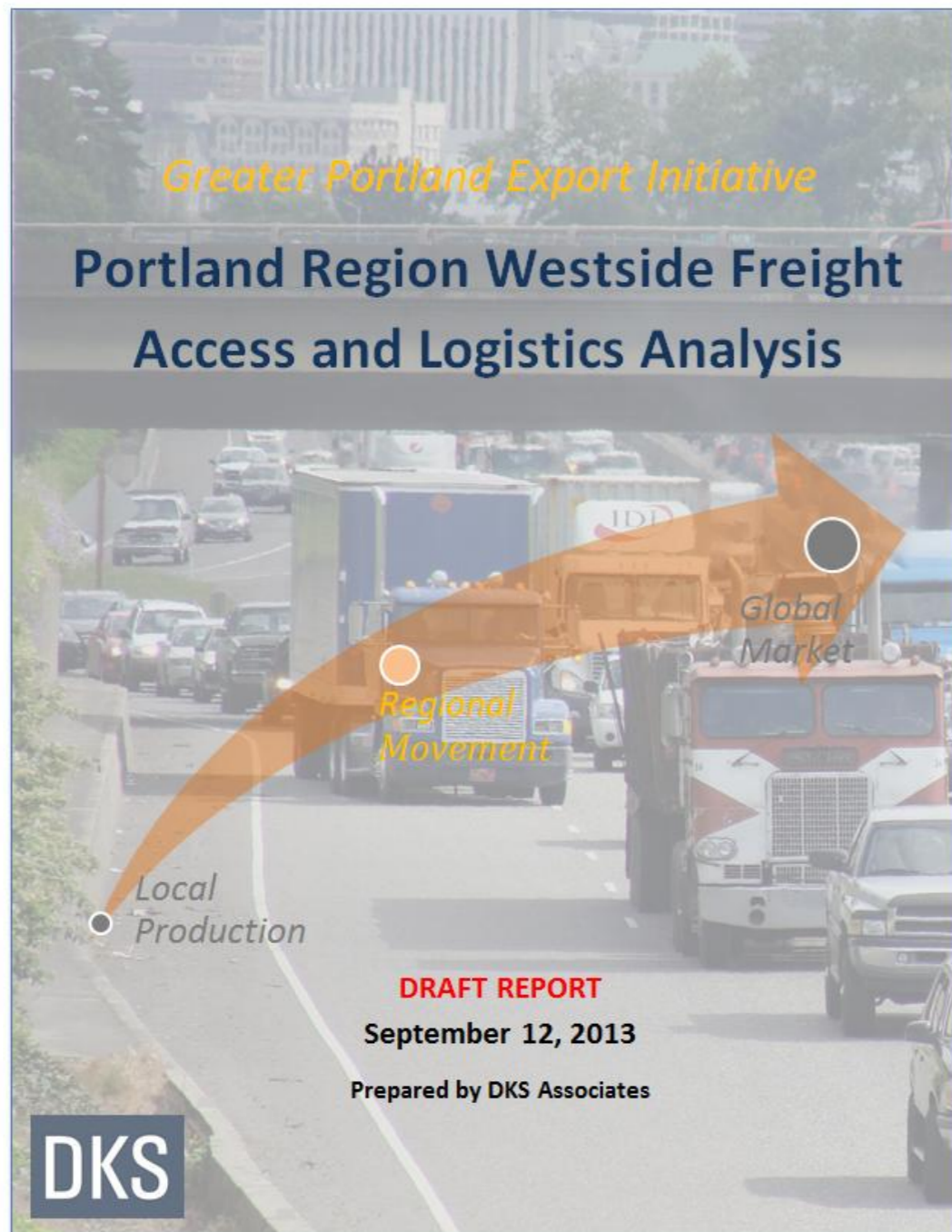


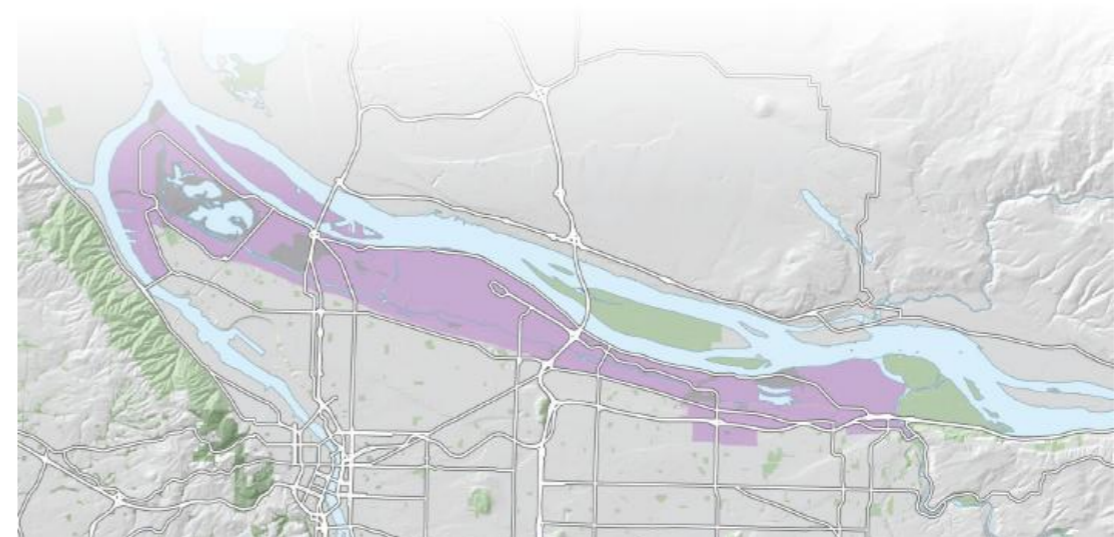
# All Modes Considered: Moving Freight in the Portland Metro Region<sup>3</sup>





## Columbia Multimodal Corridor Study

Final Report  
December 2012



# Regional/State Freight Collaboration

- Regional Freight and Goods Movement Task Force (inactive)
- Oregon Freight Advisory Committee
- Portland Freight Committee
- Oregon Rail Users League
- Portland Air Cargo Association
- Pacific Northwest Waterways Association
- Oregon Transportation Forum
- Joint Policy Advisory Council on Transportation (JPACT)
- Transportation Policy Advisory committee (TPAC)



# Regional Freight Activities

- Regional Freight Action Plan (2010)
- Commodity Flow Forecast (update underway)
- Cost of Congestion (2006)
- Portland Vancouver Trade Capacity Analysis (2006)
- Over dimensional Routes Study (to begin in 2014)



# Brookings Metropolitan Export Initiative (MEI)

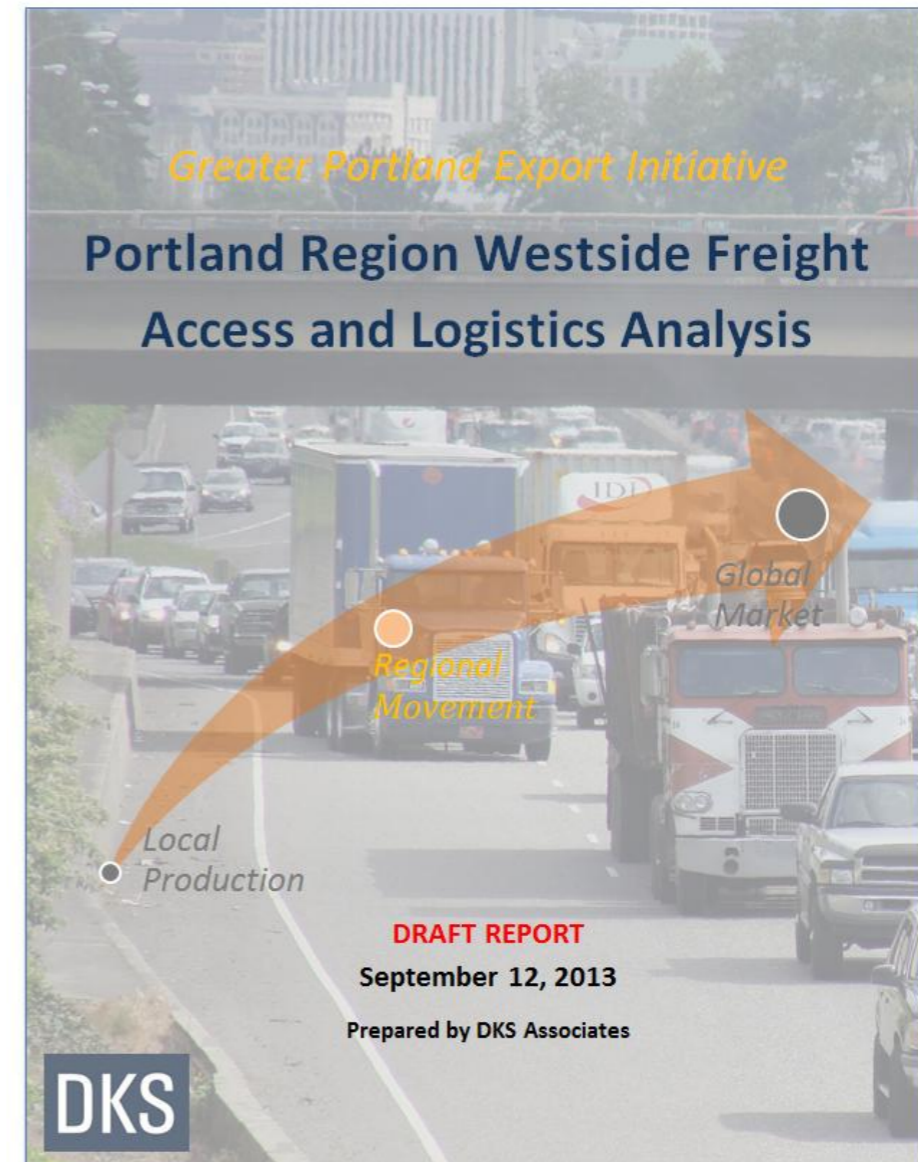
- Portland region- 1 of 4 US regions for strategy “deep-dive”
  - Doubled exports between 2003-2008
  - One of largest and fastest growing export economies (2<sup>nd</sup> in intensity and 2<sup>nd</sup> in growth)
    - Over 1/5 of economy comes from exports
    - Ranks 12<sup>th</sup> in exports annually (\$22 B)
    - Ranks 15<sup>th</sup> in export dependent jobs (126,000)
    - Goods are the most common export from the region (79%)
  - Computer and electronics industry dominates local exports



# Portland Region: Westside Freight Access and Logistics Analysis

- One of the actions to accomplish the strategy:

“Leverage primary and computer and Electronics Exporters” in the region’s Metropolitan Export Initiative Business Plan



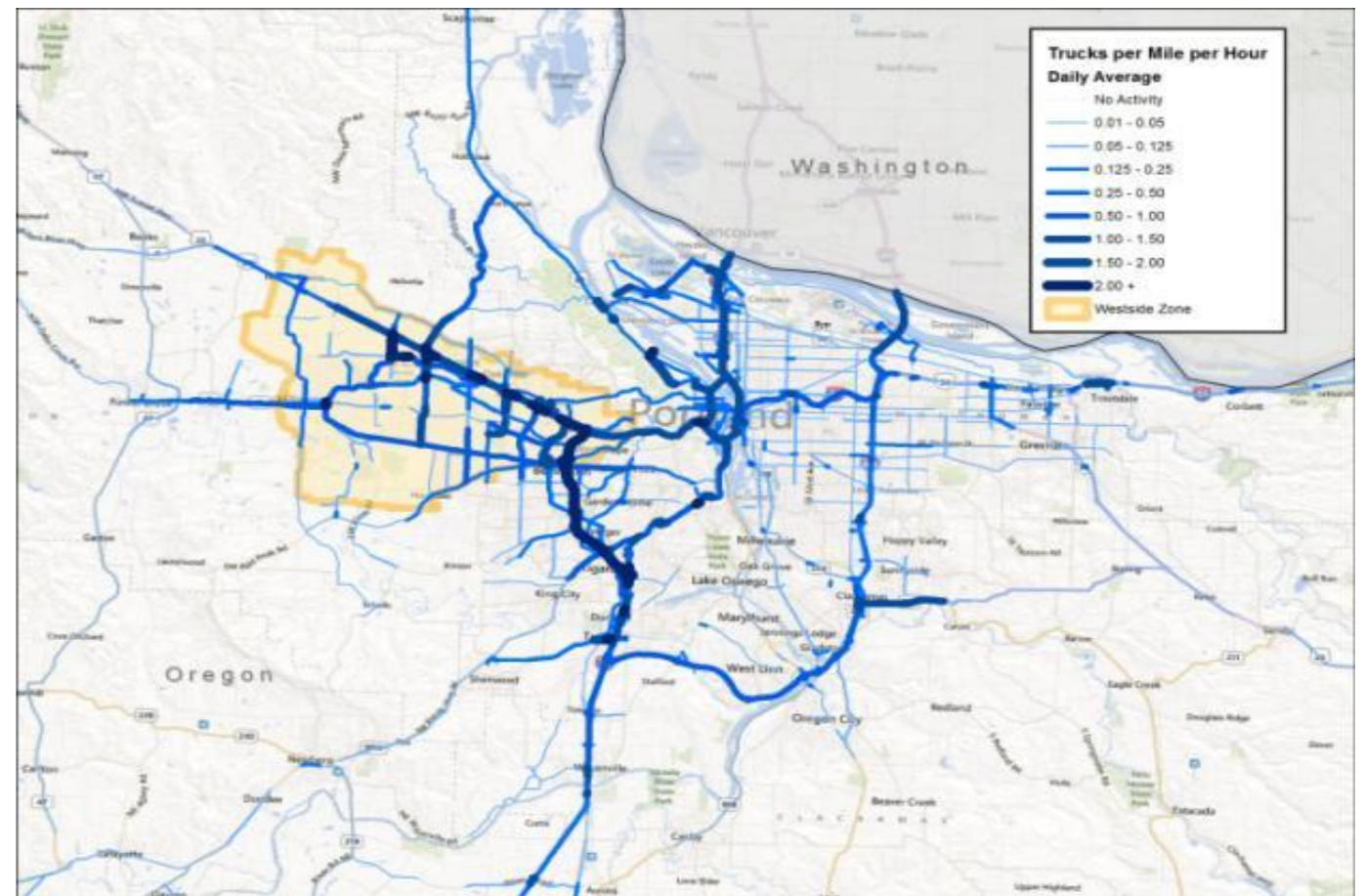
# Westside Freight Access & Logistics Analysis

- Stakeholder Interviews
  - Of most interest was:
    - Fastest routing
    - Carrier equipment type and availability
    - Carrier qualification
    - Cost
  - Forwarders and 3<sup>rd</sup> party logistics make the gateway decisions
  - PDX while not always the point of departure for air, it is largely the point of consolidation for other gateways



# Westside Freight Access & Logistics Analysis

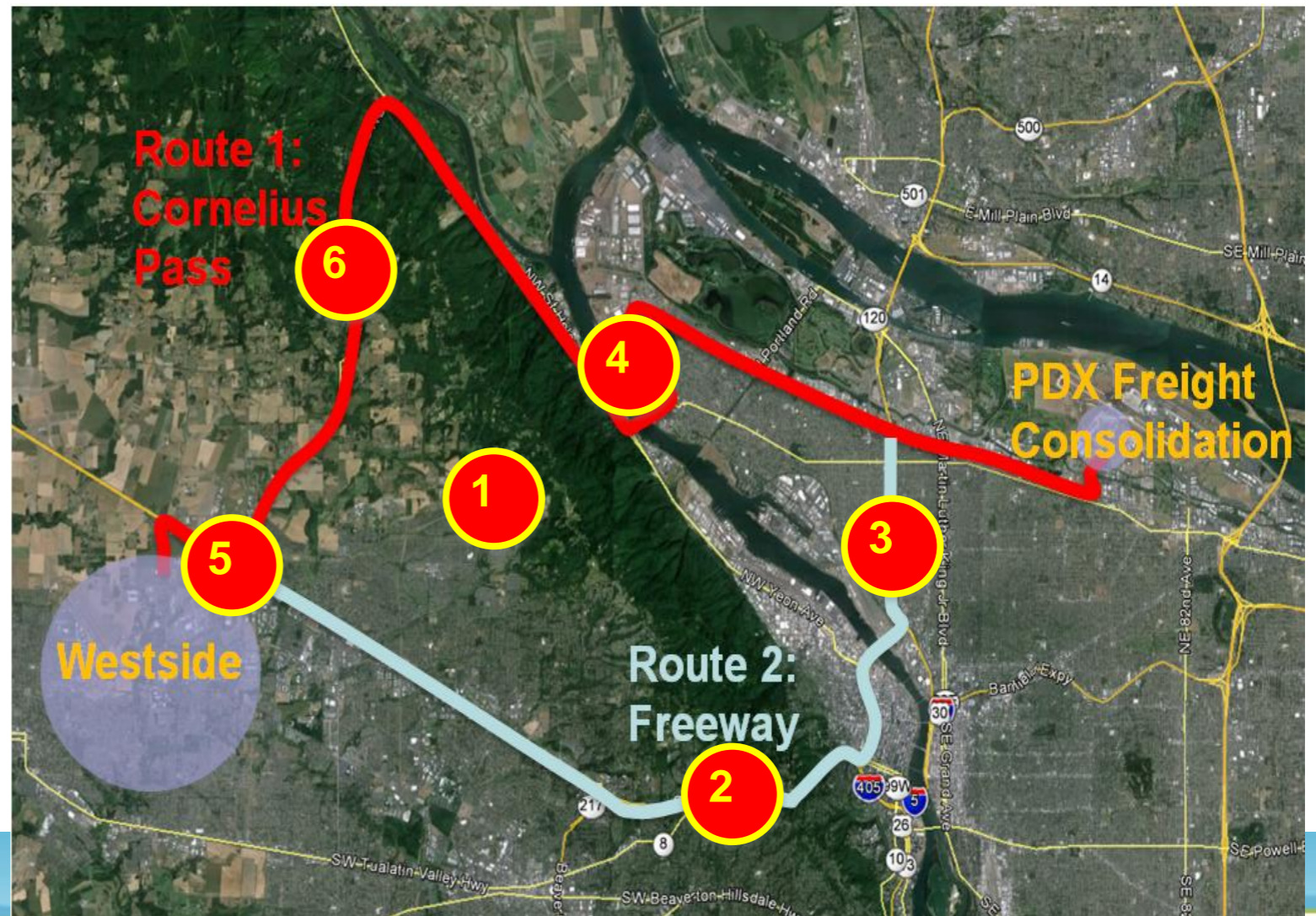
- Transportation system analysis
  - Stakeholder interviews resulted in need for
    - Understanding Average travel time
    - Distance and # segments to get to connections
    - Reliability of the segments
    - Need for new connections



# Westside Freight Access & Logistics Analysis

# System Issues

- Limited route choice
- US 26, I-5 travel time reliability
- US 30 /Columbia connection
- Freeway Access and ramp meters
- Conditions on Cornelius Pass

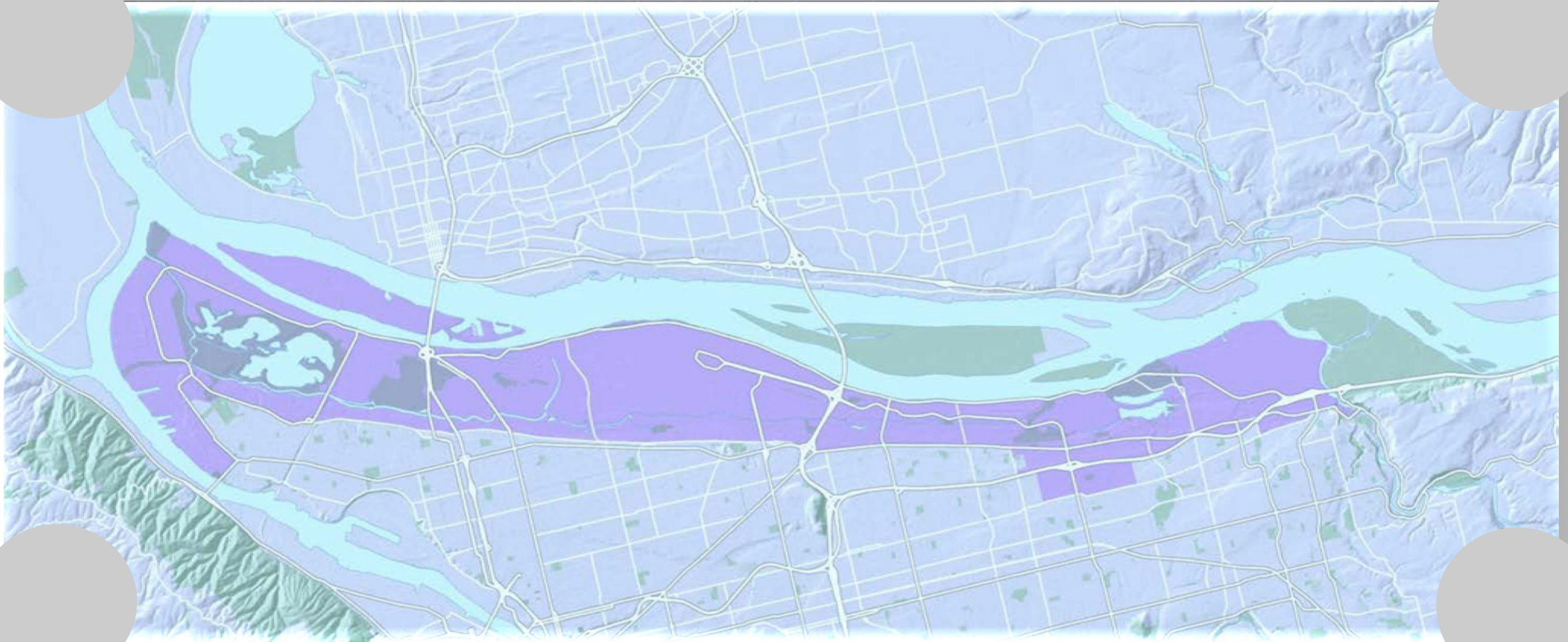


# Westside Freight Access & Logistics Analysis

- Findings- Most short-term help from ITS and System Operation Improvements
  - Traveler information-predictive, data technology and capital improvements
  - Ramp Meter Bypass for Trucks-signage, design metering impacts, eligibility, enforcement
  - Enhanced Incident response-State run vs. contracted
  - Project improvements along key corridors- priority for improvements in these corridors vs. general system upgrades



# Columbia Multimodal Corridor Study



# Significant Economic Activity

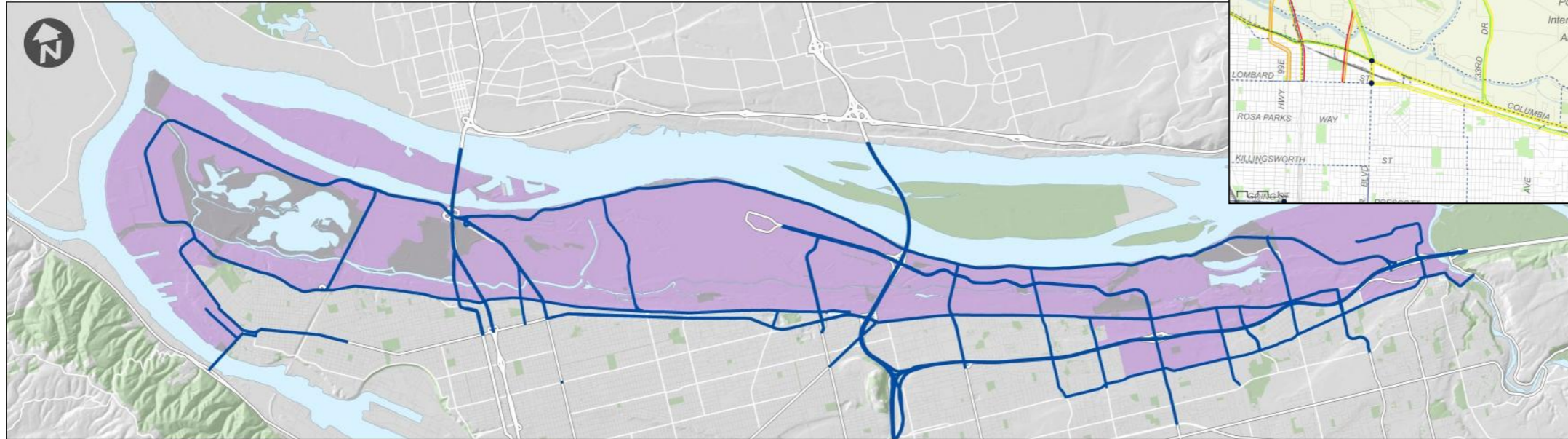


# Corridor Transportation Assets

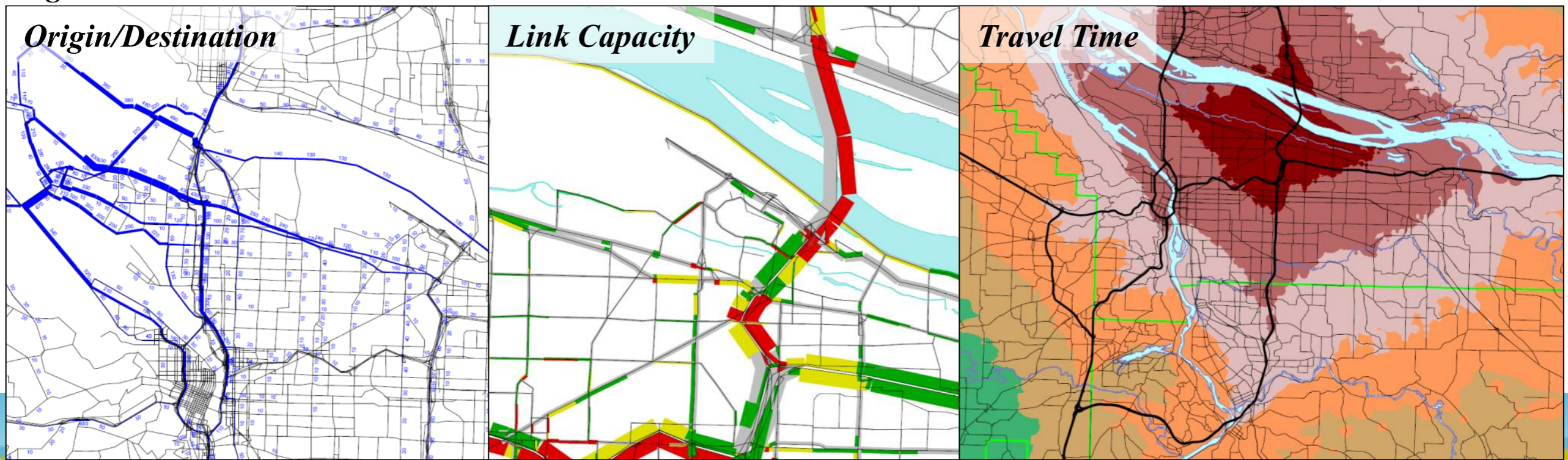


# Data Used

**INRIX**

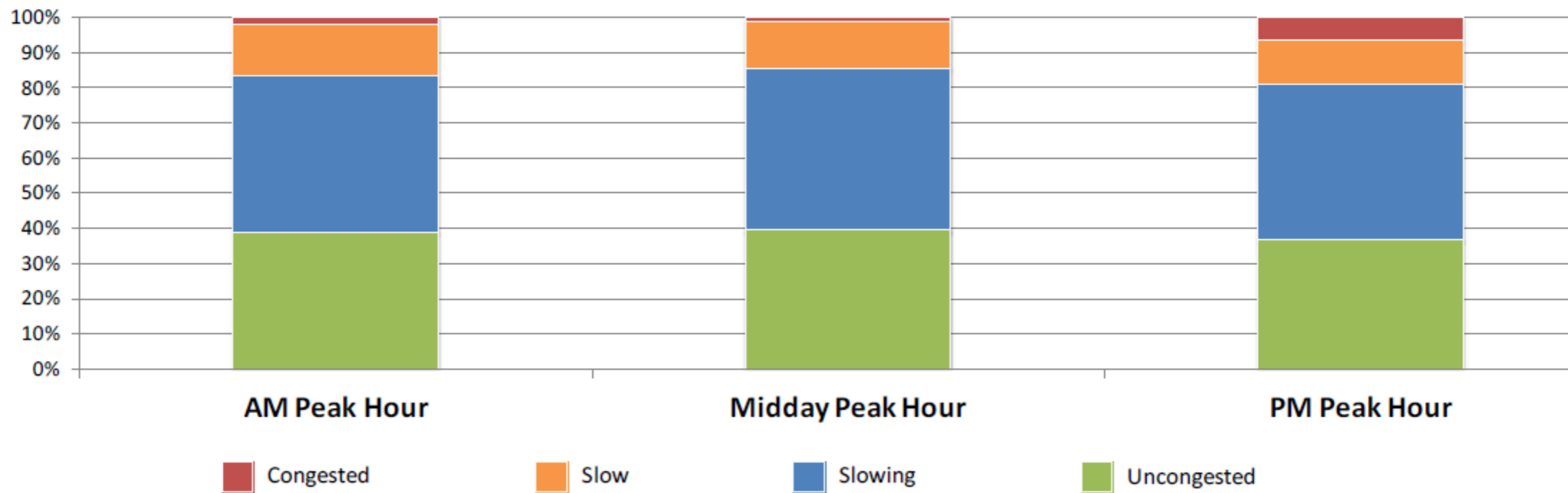


**Regional Travel Demand Model**



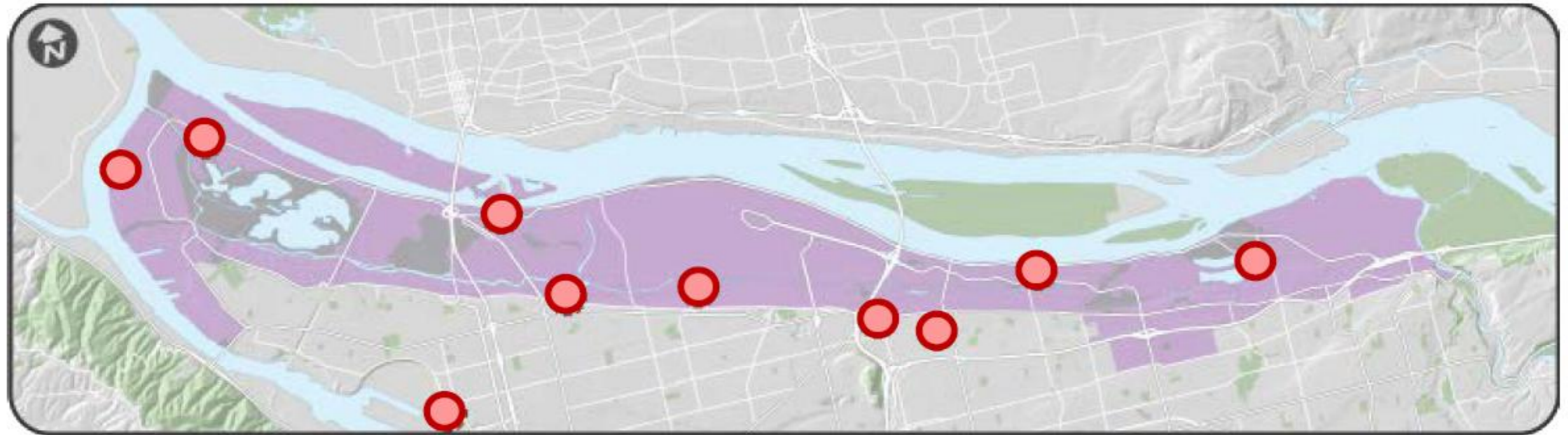
# Current Conditions

**Congestion on Major Roadways in the Corridor by Time of Day**



SOURCE: INRIX Data from 2008 to 2010 (Tuesday through Thursday)

# Business Survey Locations



 - The Corridor Boundary Area

 - Business Survey Location

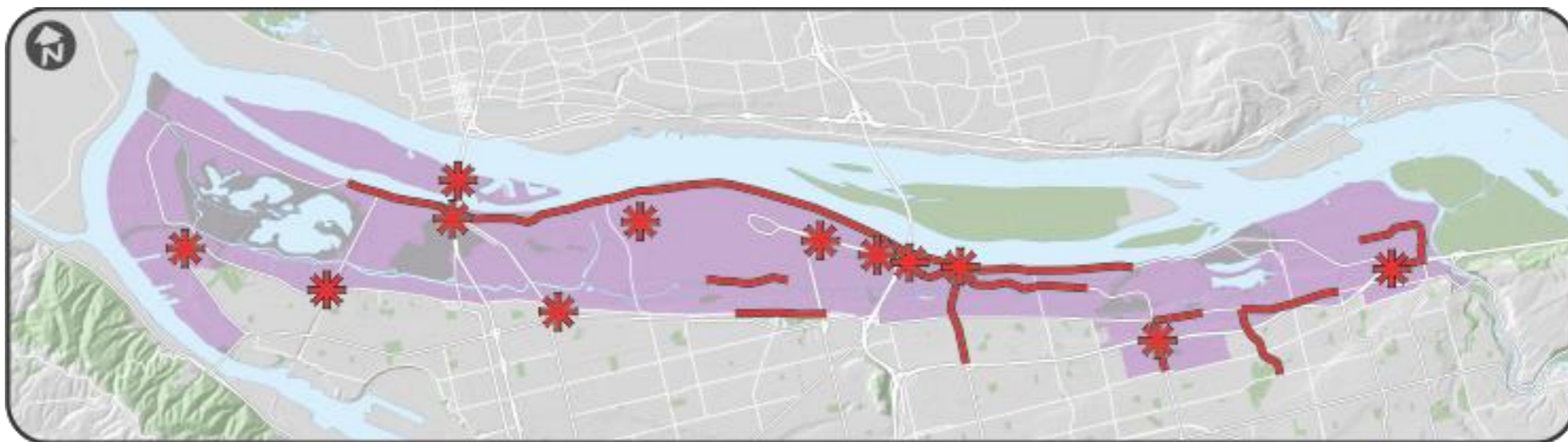
# Survey Results

- Congestion affects firm performance and generates compensating practices and behaviors, and that there is a large cost associated with this.
- Regardless of the predominant transportation mode a firm employs, there are strong linkages to the freeway and roadway systems, as these are typically the “last mile” connections for freight to connect to other modes and the principal conveyance for the labor force to access their worksite.
- Prioritize and investment strategically within the corridor to keep area businesses competitive



# Prioritizing Investment in the Corridor

- Identified 35 projects to benefit freight movement, or mobility and/or access, estimated cost \$290 million dollars.
- Selected based on current (and future) congestion plots and received additional analysis and focus with individual project sheets.
- Projects range from localized intersection improvements, ITS improvements, grade separated rail crossings, to longer corridor improvements.



1

2

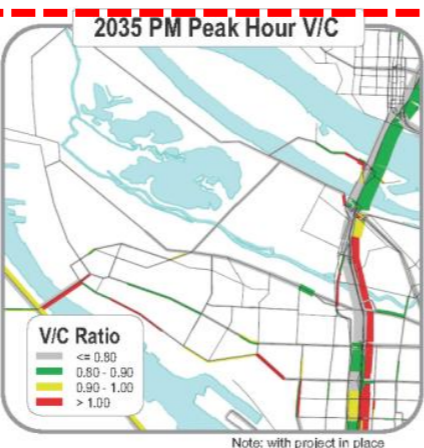
# BURGARD-LOMBARD NORTH STREET IMPROVEMENTS

4

1

## PROBLEM STATEMENT

The current N Burgard Road has two northbound travel lanes, and one southbound travel lane with no sidewalks or bike lanes on the roadway. The absence of a center turn lane can create delay on the main roadway as vehicles wait for left turns. While congestion does not appear to be an issue in the future (see V/C plot to the right) access and mobility for users along the roadway, as well as no options for non-motorized travelers is concerning.

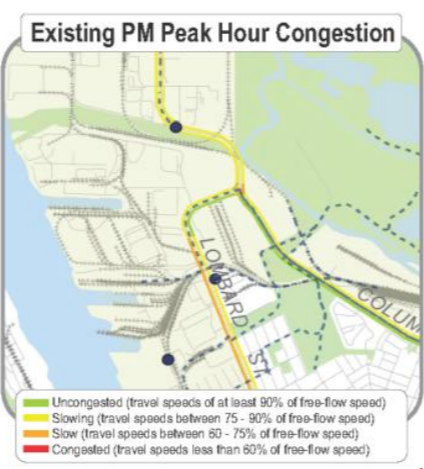


3

## BACKGROUND DATA

Various traffic data is available along N Burgard Road from the past few years.

- Functional classification of the roadway by the City of Portland is a "Major City Traffic Street", with a freight classification of "Regional Truckway". North of N Burgard Road is designated a "Freight District".
- Average daily traffic ranges from 3,000 to 5,000 vehicles a day (based on data collected from 2004-2008).
- Approximately 60 percent of vehicles east of Time Oil Road are motor vehicles, while the remaining 40 percent of vehicles are trucks.
- Posted speed north of Time Oil road is 40 miles per hour, and 85% of vehicles roughly travel this speed, or lower, with the 85th percentile speed ranging from 40-43 miles per hour. Less than 2 percent of vehicle travel 10% or higher over the posted speed.
- Posted speed south of Time Oil Road is 35 miles per hour, with many vehicles traveling faster than this. The 85th percentile speed is approximately 40-45 miles per hour.
- Recent speed and travel time data (2008-2010 data) indicates that vehicles on this road experience minimal congestion with speeds of 75% or greater than free flow speed.



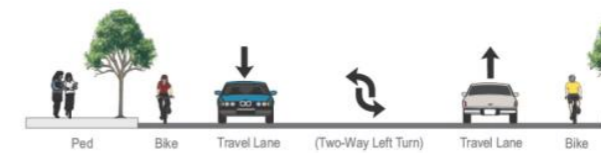
## MAP/STUDY AREA



## PROJECT DESCRIPTION/PURPOSE

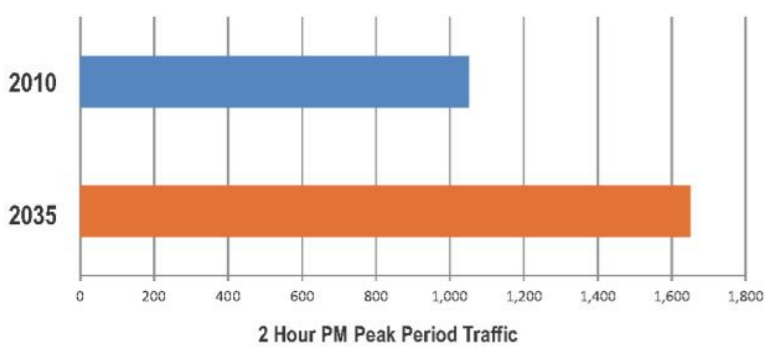
The project has been identified in the Metro Regional Transportation Plan (#10218) as the "Burgard-Lombard, N: Street Improvements". The extent of the project is from the intersection of N Burgard Street/Columbia Boulevard to the UPRR Bridge on N. Lombard Street

The purpose of the project is to improve freight mobility, safety and industrial site access. The project currently consists of widening the facility to a three lane cross section with 12 foot travel lanes, including a two way center turn lane. In addition, sidewalks and bike lanes have been included on this project. A prototypical cross section of this type of roadway has been included.



5

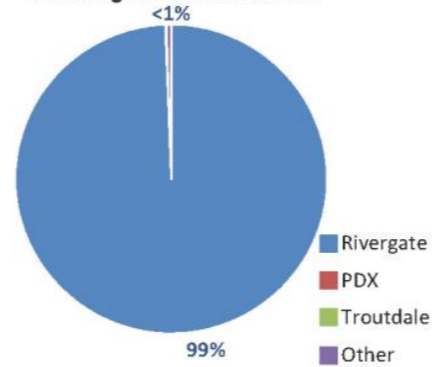
## FORECASTED GROWTH AND USER DATA



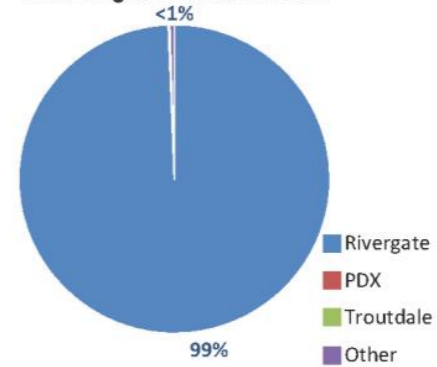
Growth of approximately **600 vehicles** is expected on this roadway during the 2 hour PM peak period.

This represents a growth of approximately **57%** from 2010 to 2035

## 2010 Origin/Destination Data



## 2035 Origin/Destination Data



6

## ESTIMATED COST (IN 2007 DOLLARS)

**\$17.0M**

## ESTIMATED COST (YEAR OF EXPENDITURE)

**\$25.2M**

PROJECTED YEAR OF NEED **2017**

# NE COLUMBIA BOULEVARD IMPROVEMENTS, NE 60TH AVENUE TO NE 82ND AVENUE

7

## PROBLEM STATEMENT

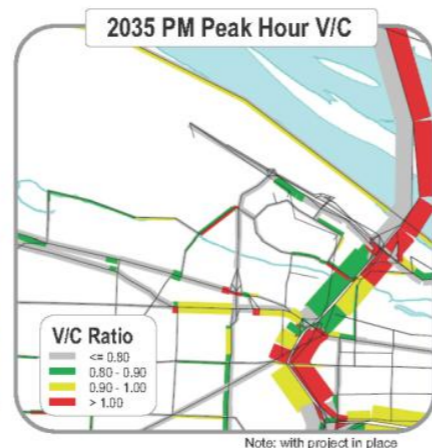
Currently, NE Columbia Boulevard is a three lane roadway with no bike lanes. In 2035, it is predicted that this facility will be over capacity near NE 82nd Avenue (see V/C plot to the right). Aside from congestion issues, with expanding air cargo facilities south of Portland, freight mobility and accessibility pose a concern. Truck movements at the intersections of NE Columbia Boulevard with NE Cully Boulevard and NE Alderwood Road can cause significant delay with the existing intersection and segment configurations.



NE Columbia Blvd looking East at NE Cully Blvd



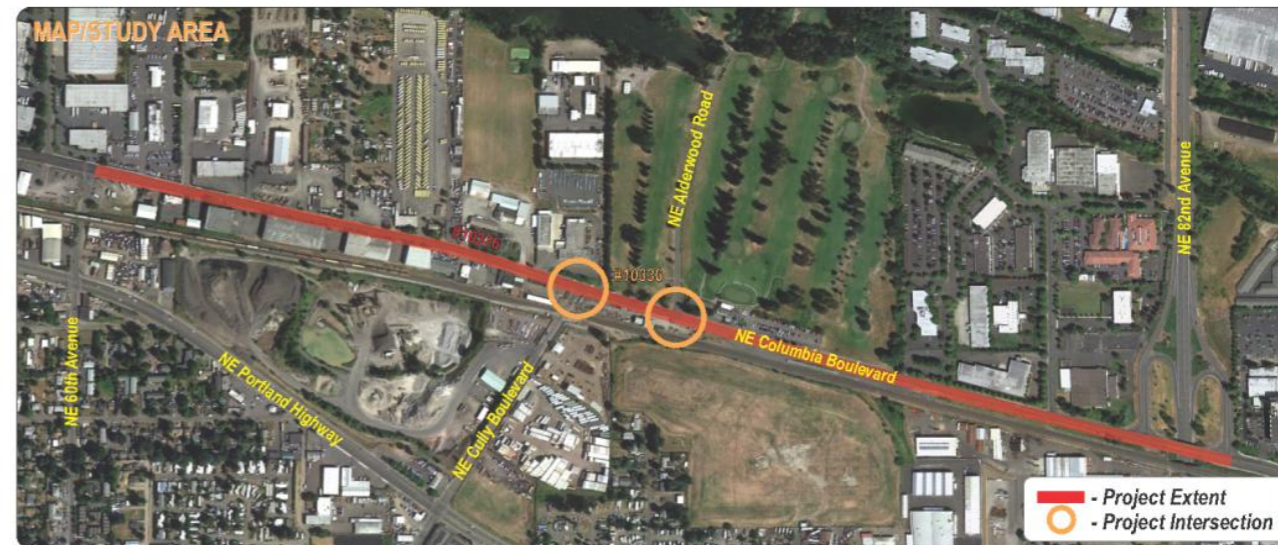
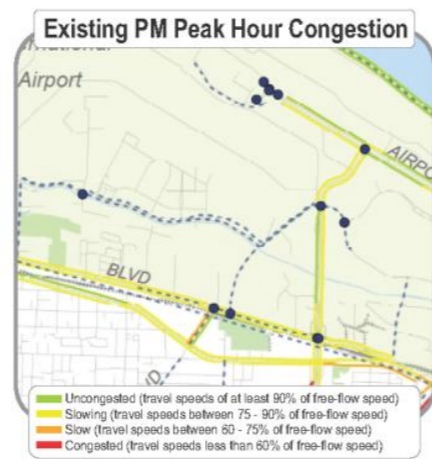
NE Columbia Blvd looking West at NE Alderwood Rd



## BACKGROUND DATA

Various traffic data is available along NE Columbia Blvd from the past few years.

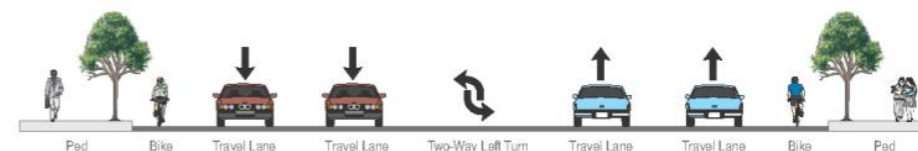
- By the City of Portland, the functional classification of NE Columbia Blvd is a "Major City Traffic Street". This roadway is classified as a "Priority Truck Streets" and borders the "Freight District".
- Average daily traffic ranges from 20,000 to 21,000 vehicles a day on NE Columbia Blvd (based on data collected from 2005).
- Approximately 82 percent of vehicles on NE Columbia Blvd are motor vehicles, while the remaining 18 percent of vehicles are trucks.
- The posted speed of NE Columbia Blvd is 40 miles per hour, and 85% of vehicles roughly travel this speed, or lower, with the 85% percentile speed ranging from 43-45 miles per hour. Less than 1.5 percent of vehicle travel 10% or higher over the posted speed.
- Recent speed and travel time data (2008-2010) indicates that vehicles on these roads experience minimal congestion with speeds of 75% or greater than free flow speed.



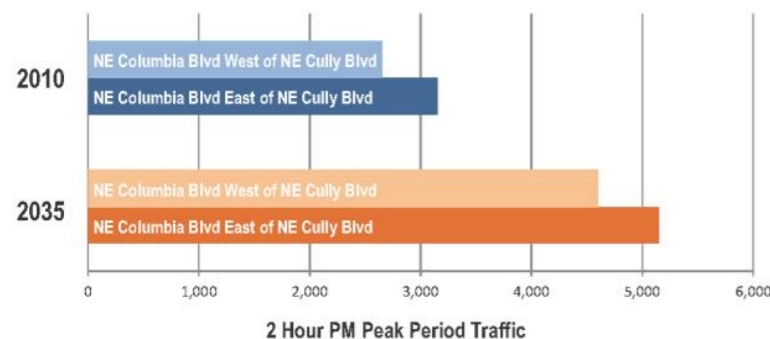
## PROJECT DESCRIPTION/PURPOSE

Two Metro Regional Transportation Plan projects lie within the project corridor: (#10336) "Alderwood/Columbia Blvd/Cully, NE: Intersection Improvements" and (#10376) "Columbia Blvd. Widening". The widening project extends from NE 60th Avenue to NE 82nd Avenue.

The purpose of project #10336 is to provide signalization, left turn pockets, enhance turning radii, and to improve circulation for trucks. The purpose of project # 10376 is to increase mobility and safety throughout this corridor for motorized and non-motorized modes by increasing the roadway to five lanes, which will include full bike lanes and sidewalks. A prototypical cross section of this type of roadway has been included.



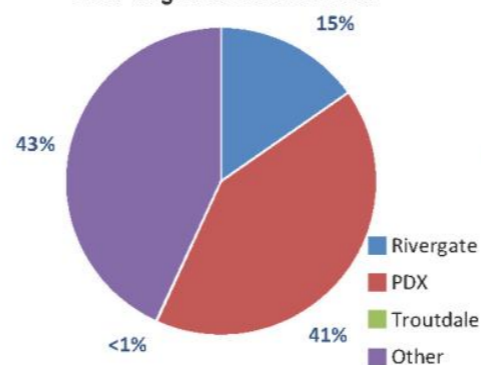
## FORECASTED GROWTH AND USER DATA



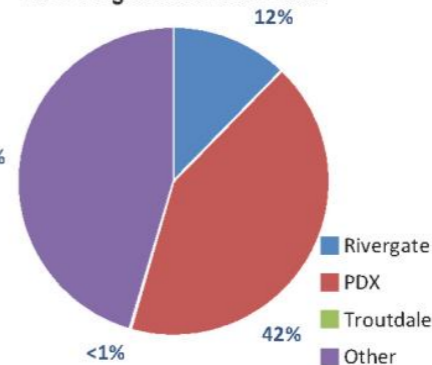
Growth of approximately **2,000 vehicles** is expected on this roadway during the 2 hour PM peak period.

This represents a growth of approximately **68%** from 2010 to 2035

## 2010 Origin/Destination Data



## 2035 Origin/Destination Data



Metro Regional Transportation Plan #	10336	10376
ESTIMATED COST (IN 2007 DOLLARS)	\$1.5M	\$14.9M
ESTIMATED COST (YEAR OF EXPENDITURE)	\$2.2M	\$22.0M
PROJECTED YEAR OF NEED	2017	2017

## NE 181ST AVENUE IMPROVEMENTS

11

### PROBLEM STATEMENT

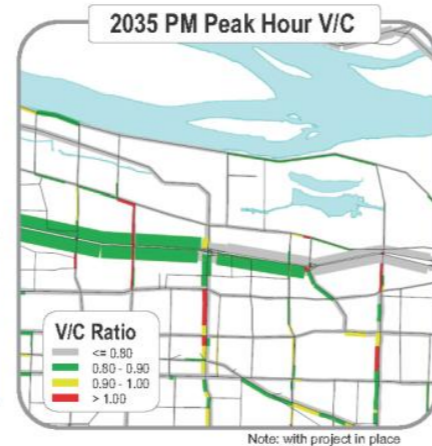
NE 181st Avenue serves as a major entry/egress route for freeway traffic in the region. This corridor from NE Sandy Boulevard to south of NE Hasley Street is projected to experience significant congestion in the future, especially south of NE Hasley Street where demand is forecasted to exceed capacity (see V/C plot to the right).



NE 181st Ave looking North at I-84 eastbound ramps



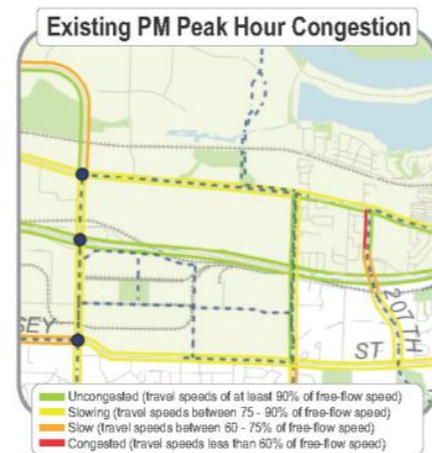
NE 181st Ave looking North at NE Sandy Blvd



### BACKGROUND DATA

Various traffic data is available along NE 181st Ave from the past few years.

- Functional classification of the roadway by Multnomah County is a "Minor Arterial" from NE Airport Way to NE Sandy Blvd, a "Major Arterial" from NE Sandy Blvd to the westbound I-84 ramps and a "Primary Arterial" south of the westbound I-84 ramps. NE 181st Ave, a National Highway System route, is used as a truck corridor.
- Posted speed along NE 181st Ave is 40 miles per hour.
- Recent speed and travel time data (2008-2010 data) indicates that vehicles on this road experience minimal congestion with speeds of 75% or greater than free flow speed.



### MAP/STUDY AREA

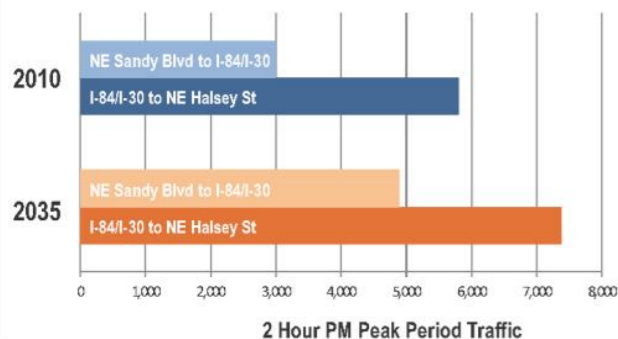


### PROJECT DESCRIPTION/PURPOSE

Six projects have been identified in the Metro Regional Transportation Plan:

- (#10444) "181st Ave. Widening". This project widens southbound NE 181st Avenue to three lanes from NE Hasley Street to the I-84 eastbound ramps.
- (#10493) "181st Ave. Sandy to I-84". This project adds a southbound auxiliary lane and widens the railroad overcrossing.
- (#10495) "181st Ave. at Halsey". This project adds several turn lanes to the intersection.
- (#10496) "181st at I-84". This project involves freight mobility improvements.
- (#10497) "181st at Sandy, at Stark". This project adds a northbound right turn lane, a westbound left turn lane, and an eastbound right turn overlap. The project also involves adding second left turn lanes in the eastbound and westbound directions for the intersection of NE 181st Avenue and SE Stark Street; however, this intersection is outside of the study area.
- (#11262) "NE 181st Ave: ACM with Adaptive Signal Timing and Transit Priority Treatment". This project would provide real time and forecasted traveler information.

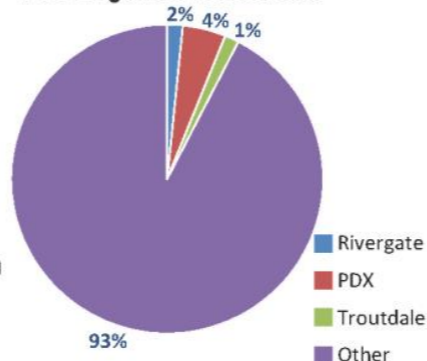
### FORECASTED GROWTH AND USER DATA



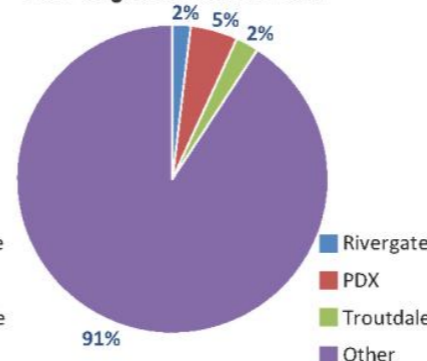
Growth of approximately **1500-1900 vehicles** is expected on this roadway during the 2 hour PM peak period.

This represents a growth of approximately **39%** from 2010 to 2035

### 2010 Origin/Destination Data



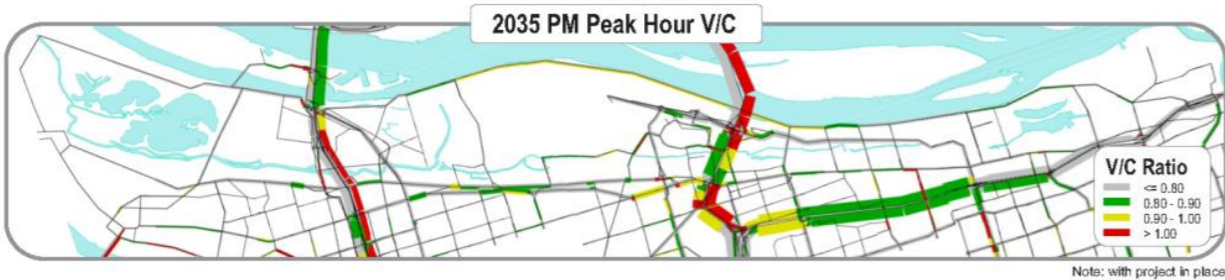
### 2035 Origin/Destination Data



Metro Regional Transportation Plan #	10444	10493	10495	10496	10497	11262
ESTIMATED COST (IN 2007 DOLLARS)	\$1.8M	\$0.8M	\$1.0M	\$0.3M	\$1.9M	\$1.7M
ESTIMATED COST (YEAR OF EXPENDITURE)	\$2.7M	\$1.7M	\$1.5M	\$0.5M	\$2.8M	\$2.7M
PROJECTED YEAR OF NEED	2017	2025	2017	2025	2025	2017

## PROBLEM STATEMENT

Various areas that serve the primary Port of Portland facilities are forecasted to have congestion in the future, as well as major regional facilities that serve as gateways to these areas. Three of these areas and/or corridors are the Port of Portland International Airport area, the Rivergate Terminal area, and Columbia Boulevard. This congestion delays freight movement and the economic vitality for growth in the Columbia Corridor area.



## BACKGROUND DATA

The Rivergate area, PDX terminal area, and Columbia Boulevard all have some level of slowing and congestion experienced today during the PM peak hour(s). Congestion in (and on) many of these areas increases as proximity to regional facilities such as Interstate 5 and Interstate 205 gets closer. As the figure indicates, congestion levels along Columbia Boulevard generally increase further to the east, while access to PDX terminal is congested around Interstate 205. The Rivergate area has the highest levels of congestion near Interstate 5.



## MAP/STUDY AREA



## PROJECT DESCRIPTION/PURPOSE

- A** The project has been identified in the Metro Regional Transportation Plan (#10373) as the "Rivergate ITS". The purpose of the project is to improve traffic efficiency in Rivergate by connecting information about the roadway system to ODOT's Highway ITS systems.
- B** The project has been identified in the Metro Regional Transportation Plan (#10302) as the "MLK Jr, N (Columbia Blvd. - CEID): ITS". The purpose of the project is to implement/install CCTV cameras at various locations and traffic monitoring stations at Clay and Burnside intersections. The project is actually along MLK Jr Boulevard and starts at Columbia Boulevard ending in the Central Eastside Industrial District (CEID).
- C** The project has been identified in the Metro Regional Transportation Plan (#10370) as the "PDX ITS". The purpose of the project is to improve traveler information and traffic/parking efficiency at PDX. Some of this type of ITS project work is already in place along Airport Way through the use of variable message signs, as well as the parking management system for the short term parking lot.

## EXAMPLES OF ITS



Variable message sign for parking information westbound on Airport Way



Variable message sign on Barbur Boulevard



Variable message sign on Interstate 5 indicating travel times to other facilities



Closed Circuit Television (CCTV) camera relaying real time information

PROJECT TITLE	PDX ITS	Rivergate ITS	Columbia Blvd ITS
ESTIMATED COST (IN 2007 DOLLARS)	\$3M	\$0.48M	\$0.99M
ESTIMATED COST (YEAR OF EXPENDITURE)	\$4.4M	\$0.71M	\$2.0M
PROJECTED YEAR OF NEED	2017	2025	2025

# Next Steps

- Use the CMC study to support:
  - Advocacy and education
  - Increased Funding
  - Freight Transportation Policy



# Questions?

