



# Regional Freight Delay and Commodities Movement Study

2020 and 2045 freight modeling results

EMCTC TAC, March 1st, 2023

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# Main Study Objectives

- Identify which mobility corridors are carrying the highest volumes and highest values of commodities
- Explore how increases in e-commerce are impacting the transportation system and regional economy
- Examine how congestion and unreliability on the regional transportation system impacts commodity movement
- Make recommendations for future regional policy and planning efforts to improve commodity movement; while addressing equity, safety and climate when applicable

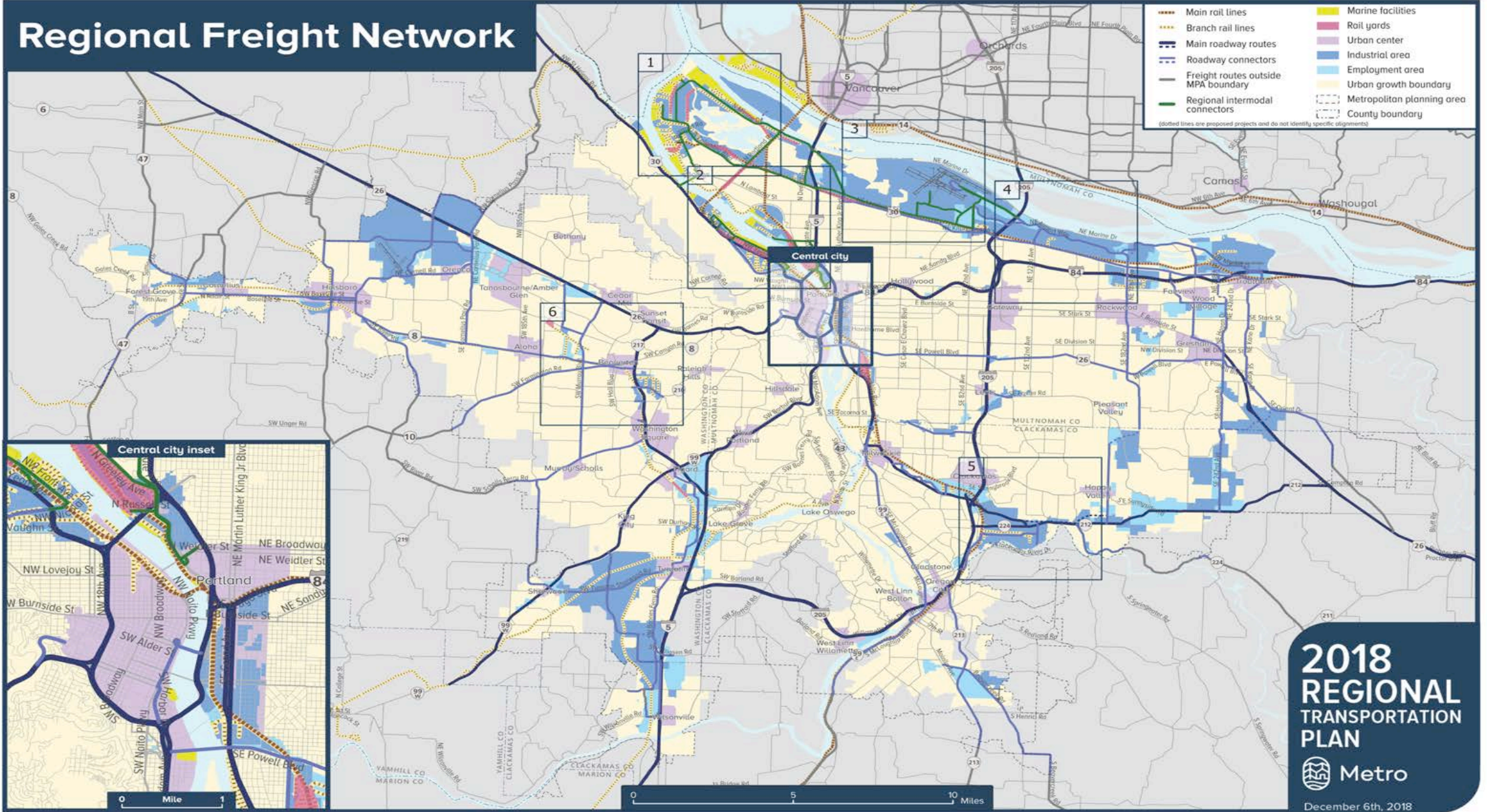
# Let's talk freight movement





# Freight Network from Regional Freight Strategy

## Regional Freight Network



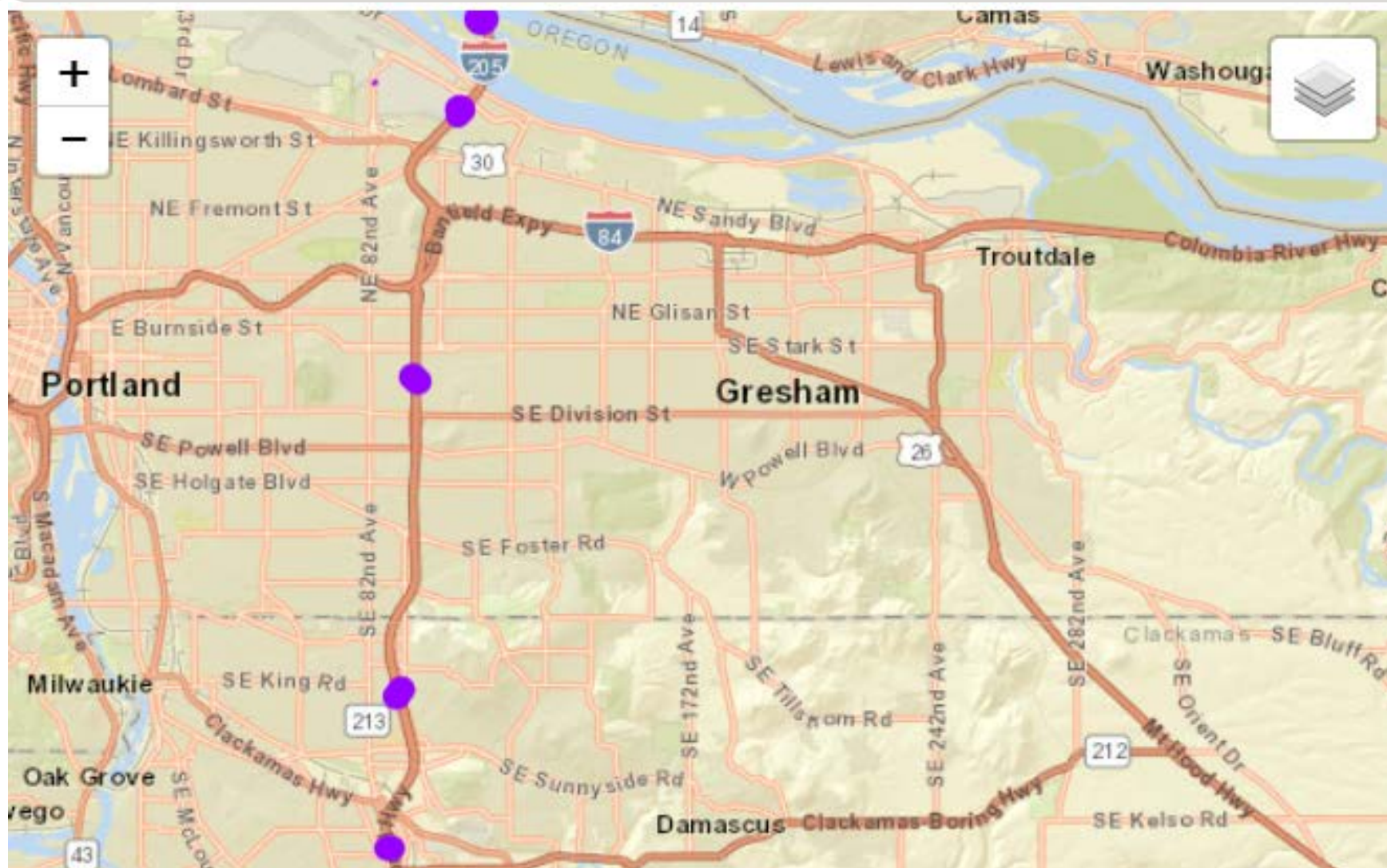
# Commodities traveling in the freight corridors (modeled)

The commodities are grouped into 10 categories that include:

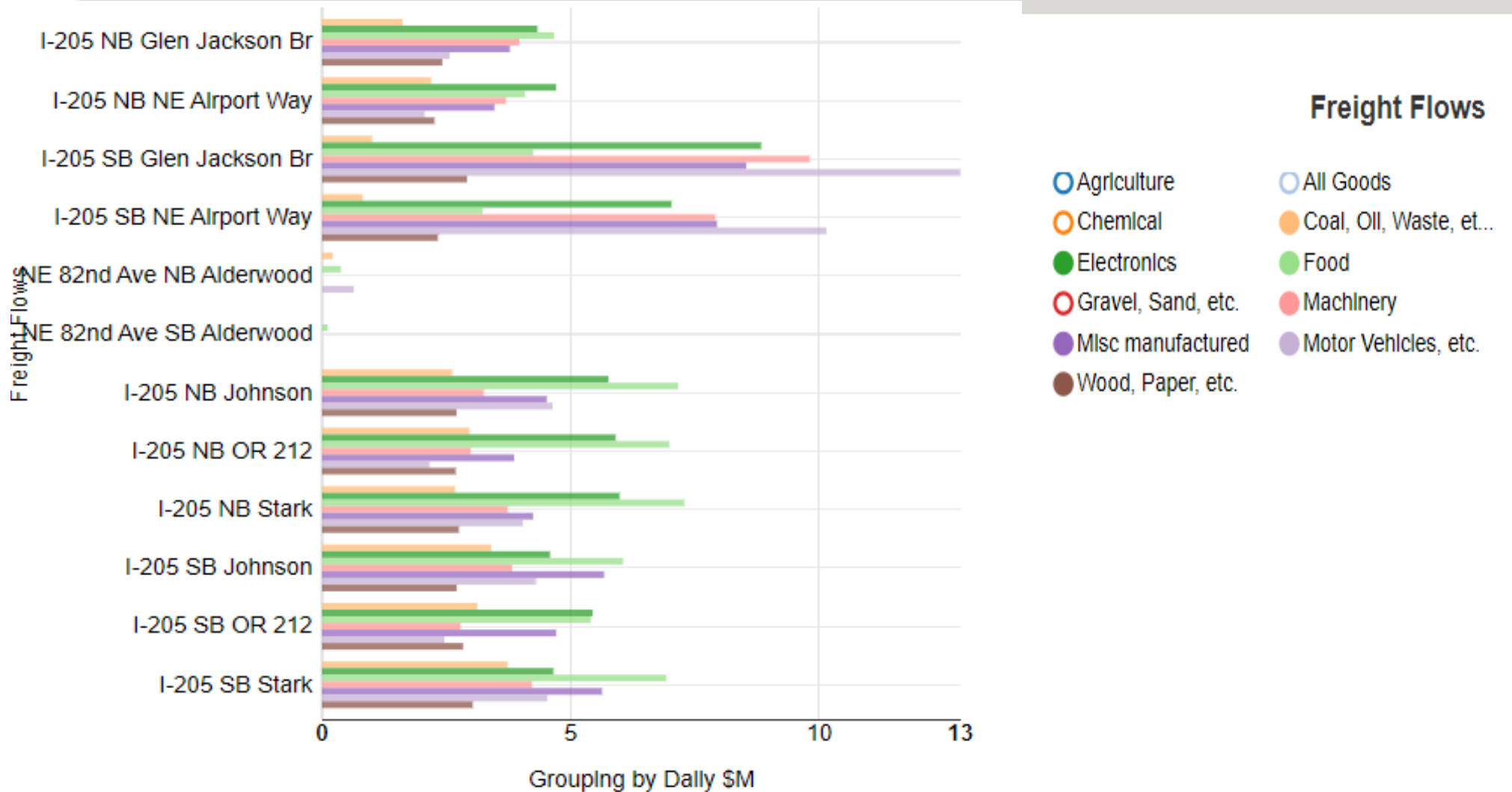
- 1) Agriculture; 2) Chemicals and Fertilizers;
- 3) Coal, Oil, Waste, (energy sector commodities);
- 4) Electronics (including computer microchips);
- 5) Food; 6) Gravel, Sand, (rock products); 7) Machinery;
- 8) Misc. manufactured goods;
- 9) Motor Vehicles, other commercial vehicles; and
- 10) Wood, Paper, etc.



# Commodities traveling in the I-205 freight corridor from Vancouver to Oregon City (Year 2020 modeled)



# Commodities traveling in the I-205 freight corridor from Gateway to Oregon City (2020 daily \$ in millions)



# Key Findings for 2020 – Vancouver to Oregon City

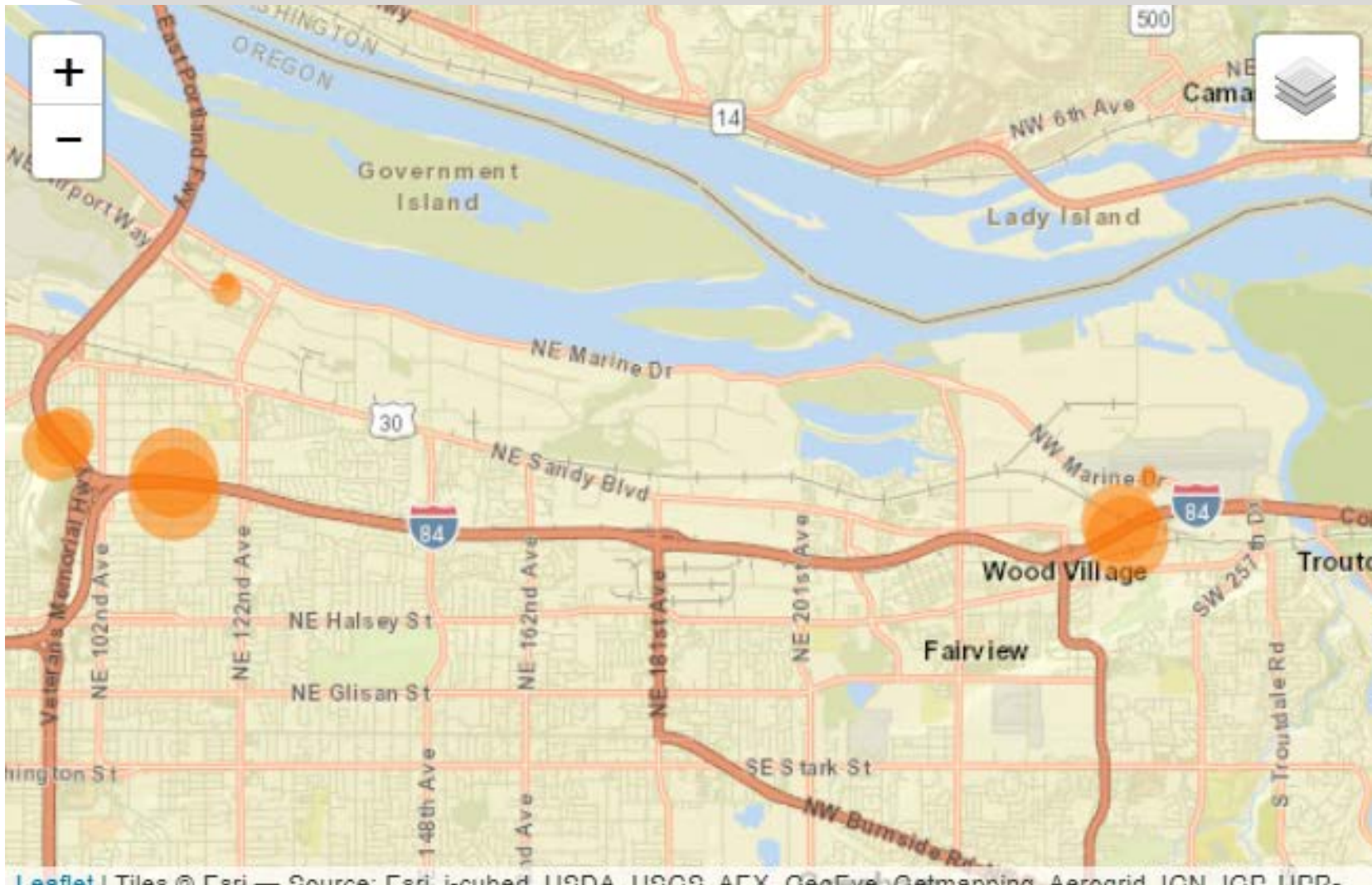
- I-205 south of the Columbia River to Oregon City carries a diverse array of commodity types.
- South of I-84, Food and Electronics are the top two commodity types (by daily value) on I-205 NB; and Food, Misc. Manufacturing and Electronics are the top three on I-205 SB
- North of I-84, Motor Vehicles, Machinery, Misc. Manufacturing, and Electronics are the top four commodities on I-205 SB.
- On I-205 SB, about **\$3 M** daily of motor vehicles, and about **\$2 M each** of Machinery and Electronics exit I-205 at Airport Way.



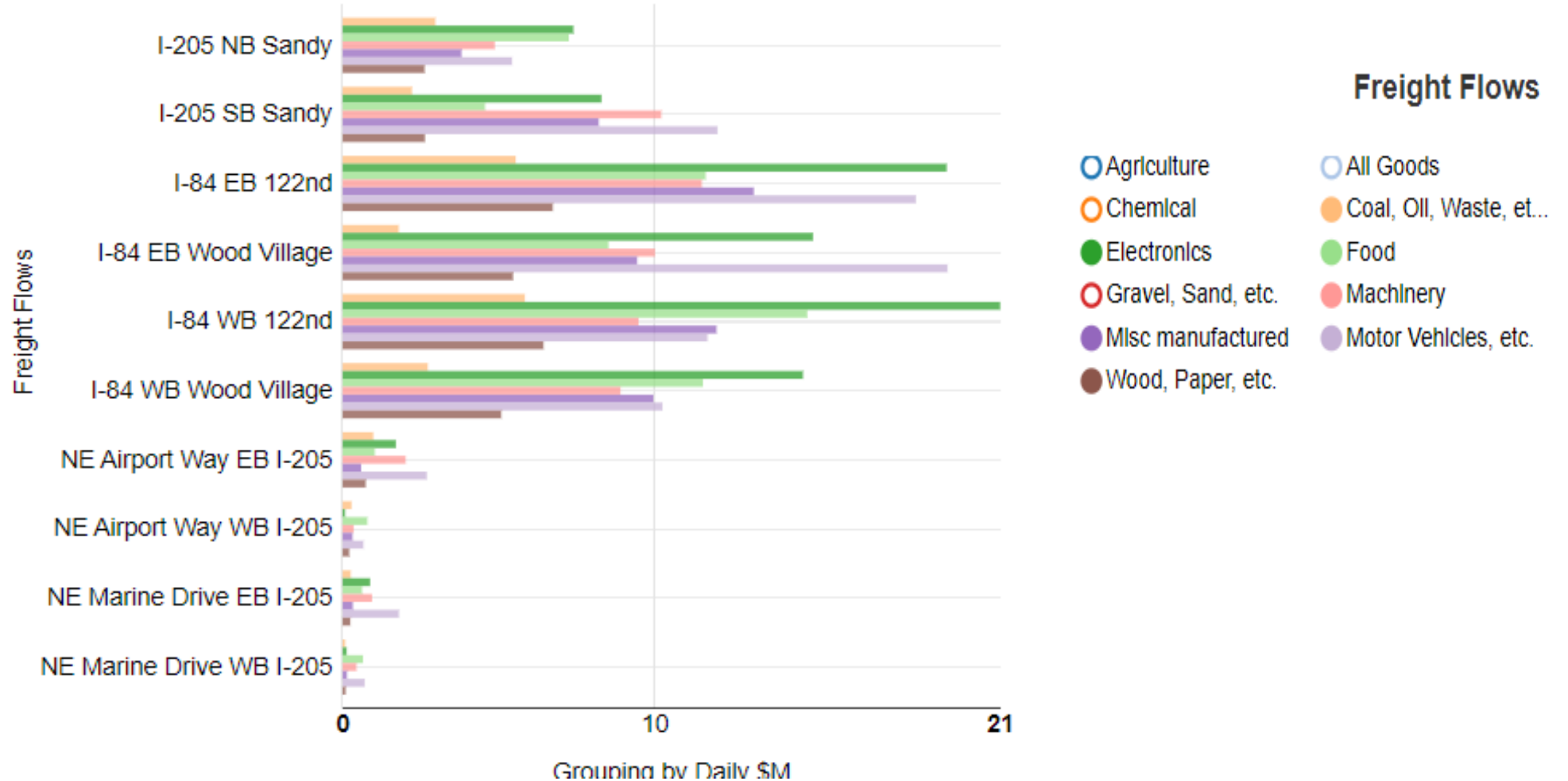
# Key Findings for 2020 – Vancouver to Oregon City

- On I-205 SB, the daily value of All Goods is \$49.2 M at the Glen Jackson Br., drop to \$40.2 M south of Airport Way, and drops to \$34 M at Stark St. (south of I-84).
- On I-205 NB, the daily value of All Goods is \$ 33.3 M at Stark St., drops to \$23.7 M south of Airport Way, and increases to \$24.7 M at the Glen Jackson Br.
- On I-205 SB, the daily value of All Goods is \$31.8 M south of Sunnyside Rd.; and drops to \$29.9 M south of OR 224.
- On I-205 NB, the daily value of All Goods is \$29.9 M south of OR 224; and increases to \$33.1 M south of Sunnyside.

# Commodities traveling in the I-84 freight corridor from Gateway to Troutdale/Wood Village (Year 2020 modeled)



# Commodities traveling in the I-84 freight corridor from Gateway to Troutdale/Wood Village (2020 daily \$ in millions)





# Key Findings for 2020 – Gateway to Wood Village/Troutdale

- I-84 east of I-205 carries a diverse array of commodity types.
- I-84 east of I-205 carries the second largest dollar value and third largest tonnage for 'All Goods' in the corridors.
- East of I-205, Motor Vehicles and Electronics are the top two commodity types (by daily value) on I-84 eastbound.
- East of I-205, Electronics and Food are the top two commodity types (by daily value) on I-84 westbound.



# Regional Level Key Findings for 2020 (modeled)

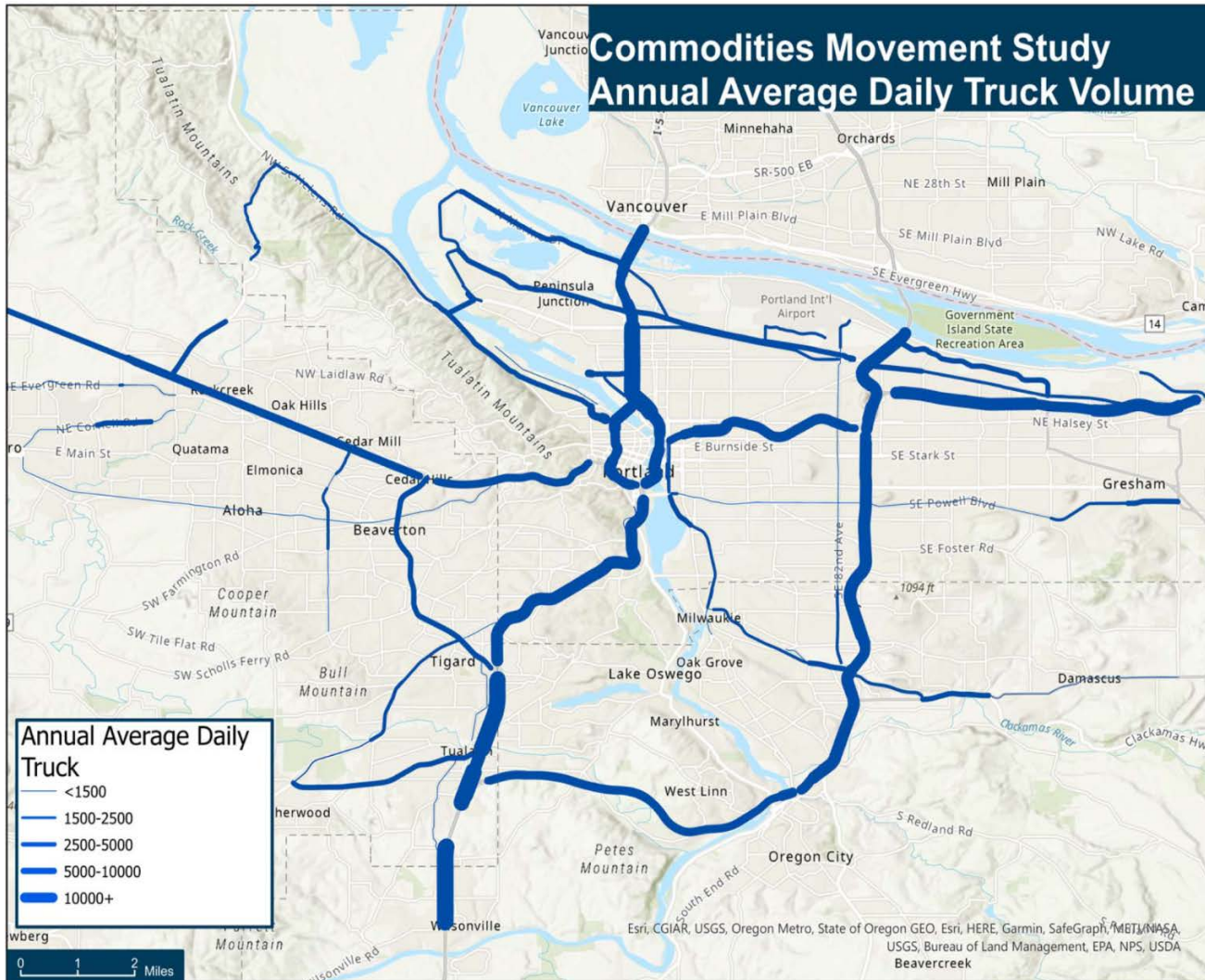
- For All Goods, major interstate highways in the region are carrying both the largest daily tons of commodities, and the largest daily dollar value of goods.
- Electronics, Food, Misc. Manufacturing, and Motor Vehicles are the most common commodity types, by percentage of daily dollar value, on all the interstate and state highways.
- Of All Goods crossing the Columbia River northbound, 73% of the daily dollar value; and 71% of the daily tonnage is on I-5.
- Of All Goods crossing the Columbia River southbound, 57% of the daily dollar value; and 63% of the daily tonnage is on I-5.

# Growth rates by percent increases (from 2020 to 2045)

- **I-205** south of Sandy Blvd. has over a 100% increase in the daily dollar value of All Goods in **both directions**.
- **I-205** north of Sunnyside Road has about a 90% increase in the daily dollar value of All Goods in **both directions**.
- **I-84 eastbound** at both the NE 122<sup>nd</sup> and at Troutdale/Wood Village locations, has about a 59% increase in the daily dollar value of All Goods.
- **I-84 westbound** at both the NE 122<sup>nd</sup> and at Troutdale/Wood Village locations, has about a 47% increase in the daily dollar value of All Goods.



# Mobility Corridor Volumes



- Which mobility corridors are carrying the highest volumes?
  - Freeways generally carrying highest volumes: 6k+ trucks daily by direction
  - Other corridors also play important roles for freight movement and connect industrial sites to freeways and destinations

# Mobility Corridor Freight Mobility

- Future analysis to come
  - Consider average travel speed during all hours of day
  - Use INRIX data (15-minute intervals) to compile annual average speeds
  - Metro's draft mobility policy – 4 hours or less of congestion
    - Expressway Speeds < 35 mph
    - Other throughways (with signals) Speeds < 20 mph
  - Report the duration that congestion occurs

# Comments and feedback

Questions?

