

# Oregon Freight Plan Update

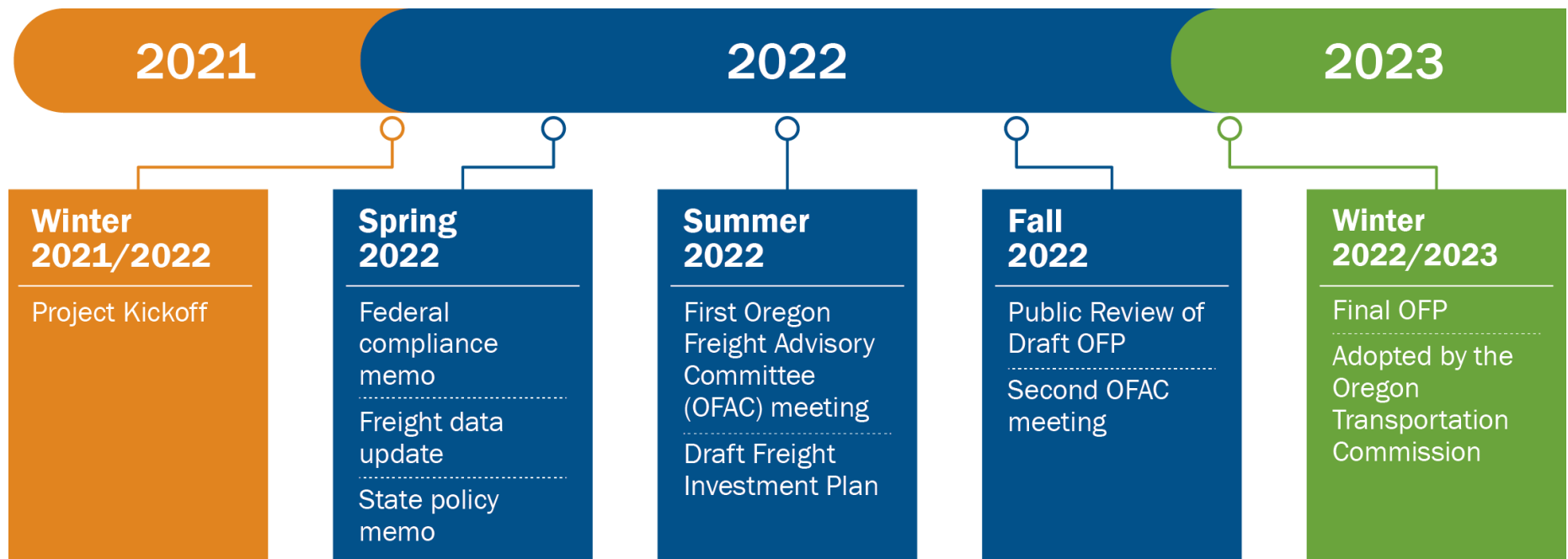
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## Background and Purpose of OFP Update

- FHWA required state freight plan due December 2022
- Limited update focused on data because state Oregon Transportation Plan (OTP) and Oregon Highway Plan (OHP) updates are on-going
- 2017 Freight Plan amendment was limited to FAST Act requirements
  - Demonstrated alignment with federal program goals
  - Identified multimodal bottlenecks and needs
  - Included 5-year constrained freight projects
  - Designated critical rural and critical urban freight corridors
- Commodity flow and industry trend information is dated (2011 plan based upon older data)

# Timeline for Key Deliverables and Events



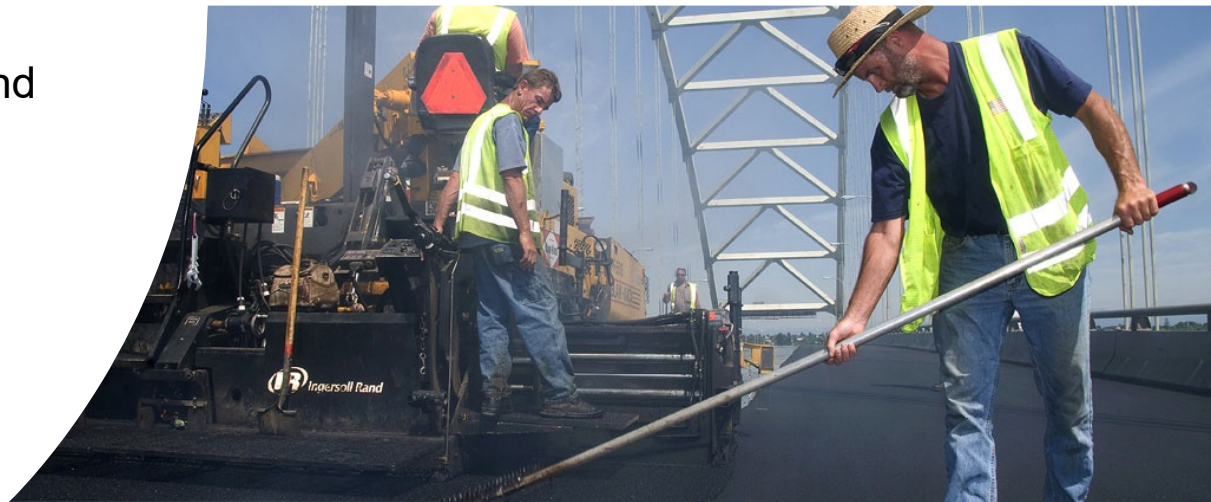
# National Freight Program Goals

Invest in infrastructure and operational improvements that strengthen economic competitiveness, reduce congestion, reduce the costs of freight transportation, improve reliability, and increase productivity



# National Freight Program Goals

- Improve safety, security, efficiency, and resilience – urban and rural
- Improve network state of good repair



# National Freight Program Goals

- Use innovation and advanced technology to improve safety, efficiency, and reliability
- Improve economic efficiency and productivity of networks
- Improve state flexibility to support multi-state planning and address highway freight connectivity
- Reduce environmental impacts





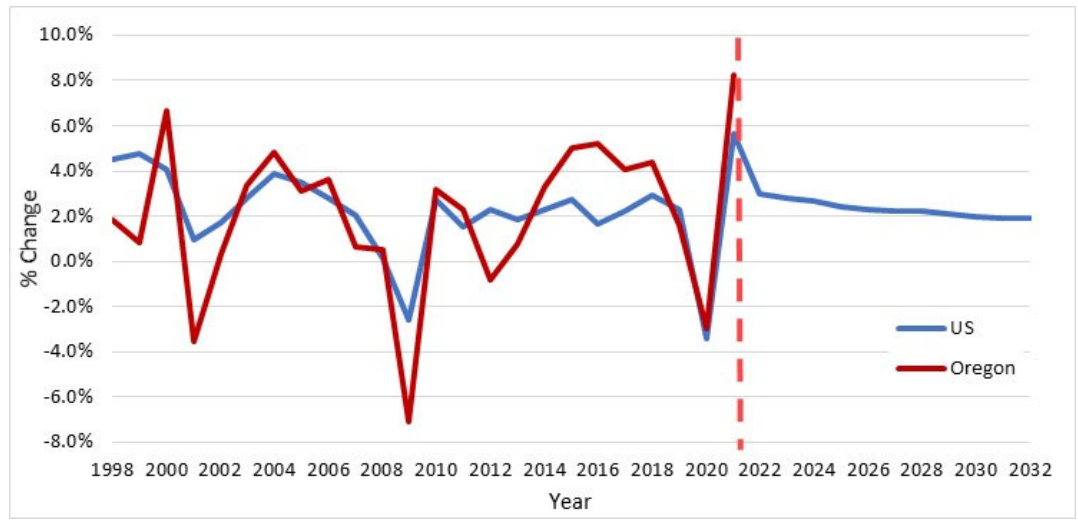
## IIJA Freight Planning Requirements

- Truck parking assessment (can come from existing study)
- Supply chain cargo flows by mode
- Commercial ports inventory
- Findings/recommendations from any multi-state freight compact
- E-commerce impacts on freight infrastructure
- Resiliency planning
  - Overcoming disruptions
  - Hazards, climate change

# OFP Updates – Economic Context

- Oregon’s Gross State Product (GSP) has grown at an annual rate of 4.1% since 1997, nearly double that of US Gross Domestic Product (GDP).
- Oregon’s GSP fell by 3.0% between 2019 and 2020, while GDP fell 3.4%.
- Oregon’s GSP saw a near 8.5% rebound occurring in 2021, while US GDP recovered by 5.7%
- US GDP through 2032 is expected to grow at an average annual rate of 2.3%

US vs Oregon Real GDP Percentage Change

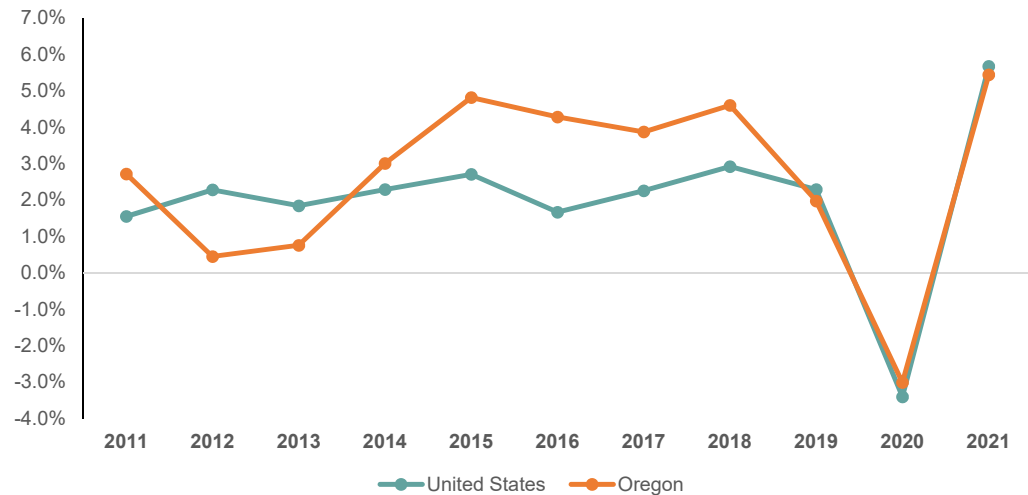


Oregon Office of Economic Analysis, 2022  
Bureau of Economic Analysis, 2022

# Economic Context – Recent Fluctuations

- The COVID-19 pandemic led to similar declines and recovery in real GSP in both Oregon and the United States.
- Post-pandemic population increases in Oregon indicate a likely increase in consumption, fueling continued economic growth.
- Oregon’s economic growth rates fluctuate due to concentration of value in a few industries and the state’s high dependence on trade.

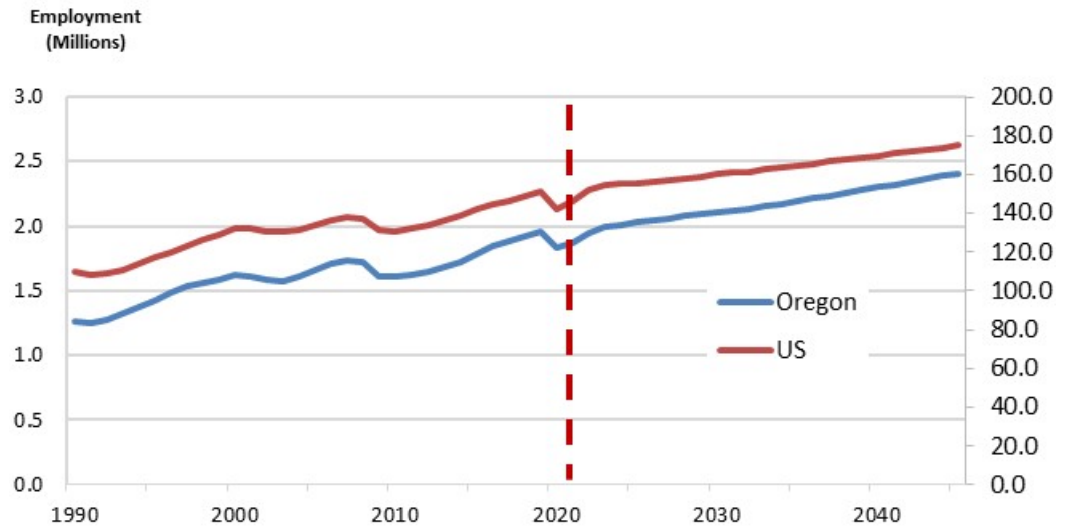
U.S. and Oregon Annual Real GSP Growth Rates, 2011 to 2021



Oregon Office of Economic Analysis, 2022

# Economic Context – Employment

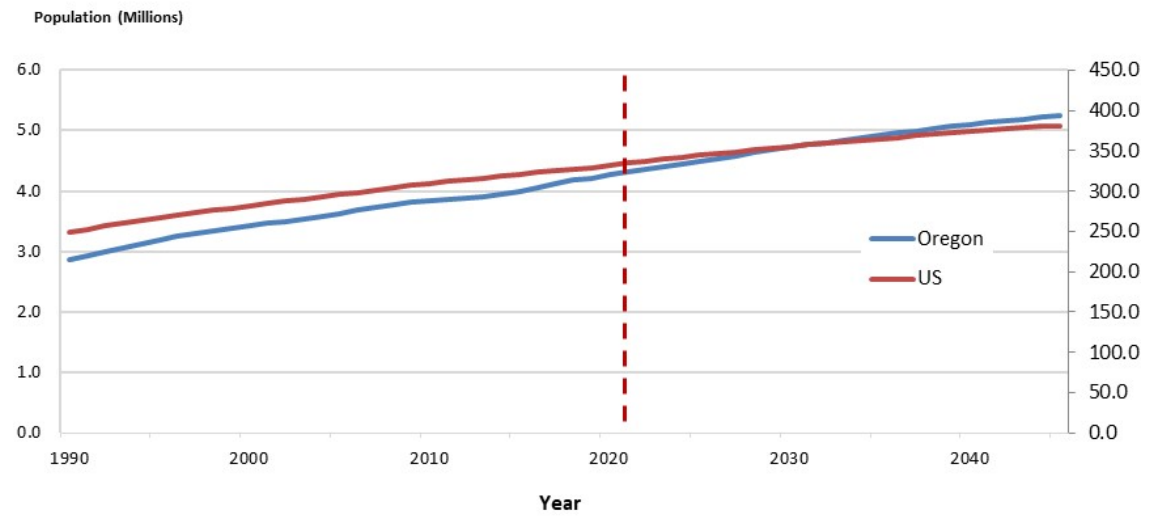
- Oregon’s total nonfarm employment was 1.9 million in 2021 and is forecast to fully recover by 2023.
- Oregon’s nonfarm employment is projected to increase 24% between 2022 and 2045, growing at an average annual rate of nearly 1%.
- Oregon’s employment growth rate is nearly double that of the US during this period.



Oregon Office of Economic Analysis (with trendline from 2032 by WSP), 2022

# Economic Context – Population Growth

- Population of Oregon is projected to grow to nearly 5.3 million statewide by 2045
- Population decline expected in rural areas.
- Growth between 2022 and 2045 is expected to total nearly 21%, compared to 13% for the total US.



Sources:  
Oregon Office of Economic Analysis (historic numbers), June 2022  
PSU Population Research Center 2022 Population Forecast  
U.S. Census Bureau – US Population Forecast, 2022

# GSP by Oregon Industry Sector

- Oregon’s economy has continued to change from a resource-based economy to a high-value-added economy.
- Top private sector industries include real estate, durables manufacturing, and wholesale trade.
- Oregon saw strong growth in manufacturing due to high-value products from the computer and electronics industry.
- Transportation equipment manufacturing saw 136% growth in last decade.

Real GSP by Oregon Industry Sector, 2009 and 2019



Sources:  
Oregon Office of Economic Analysis, 2022  
Freight Analysis Framework v5.2

## Commodity Flows by Direction

- Movements in all direction are expected to grow at moderate rate through 2050.
- Intra-state tonnage flows continue to account for the majority of total commodity flows for Oregon.
- Directional imbalances in freight flows could impact service levels and need to be monitored.
- Given the high level of internal freight movement, examine shorter haul freight rail movements to reduce highway congestion, investment, and maintenance needs.

Direction	Tonnage by Year			CAGR 2017-2050
	2017	2025	2050	
Inbound	82,041	88,790	128,179	1.36%
Internal	167,684	181,689	268,782	1.44%
Outbound	64,655	70,965	118,536	1.85%

Source: Freight Analysis Framework v5.2

# Commodity Flows by Mode

Trucking will continue to be the dominant mode for freight transport, though tonnage/value movements by other modes including air and rail are expected to increase substantially on a percentage basis between 2017 and 2050.

Mode	Weight (Millions of Tons)					Value (Billions of Dollars)				
	2017	2023	2050	2017-2050 Growth %	2017-2050 CAGR %	2017	2023	2050	2017-2050 Growth %	2017-2050 CAGR %
Air	0.1	0.1	0.2	109%	2.26%	10	11	20	97%	2.08%
Pipeline	52	55	84	62%	1.46%	10	11	15	42%	1.06%
Rail	19	19	34	83%	1.84%	7	7	13	80%	1.79%
Truck	218	229	356	64%	1.50%	215	229	406	89%	1.95%
Water	8	8	12	48%	1.19%	6	7	11	84%	1.86%
Multiple/Other	18	18	29	64%	1.93%	54	58	115	115%	3.46%
<b>Total</b>	<b>314</b>	<b>329</b>	<b>516</b>	<b>64%</b>	<b>1.51%</b>	<b>302</b>	<b>322</b>	<b>581</b>	<b>92%</b>	<b>2.00%</b>

Source: Freight Analysis Framework v5.2

# Employment by Industry – Freight Dependent

Industry Title (NAICS code)	2021 Employment*	2021 Share of Total Employment
Agriculture, Forestry, Fishing, (111)	52,758**	2.8%
Computer and Electronics Manufacturing (334)	37,900	2.0%
Food Manufacturing (311)	28,500	1.5%
Metals and Machinery Manufacturing (331, 332, 333), Transportation Equipment Manufacturing (336)	36,300	1.9%
Wood and Paper Manufacturing (321)	10,700	0.6%
<b>Wholesale Trade (42)</b>	<b>75,400</b>	<b>4.0%</b>
<b>Retail Trade (44)</b>	<b>209,400</b>	<b>11.2%</b>
<b>Construction</b>	<b>110,900</b>	<b>5.9%</b>
<b>Transportation and Warehousing, and Utilities</b>	<b>77,200</b>	<b>4.1%</b>
Services and All Others (5)***	1,211,842	64.7%
<b>Total Non-Farm Employment</b>	<b>1,873,600</b>	<b>100.0%</b>

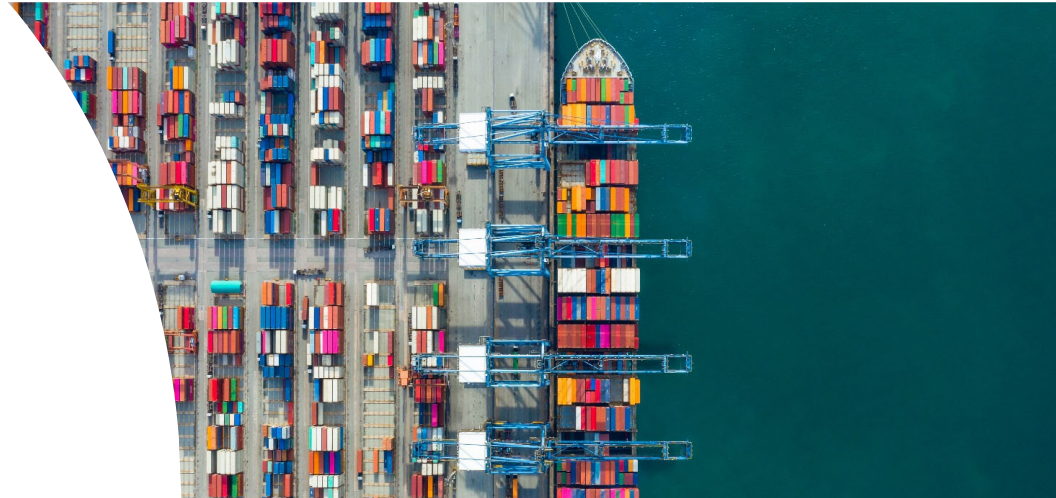
\*Oregon Office of Economic Analysis, Annual Employment Data, June 2022 <https://www.oregon.gov/das/OEA/Pages/forecastecorev.aspx>

\*\* Oregon Employment Department "Employment and Wages by Industry, Oregon Annual 2021." This number also represents employment for Hunting, Mining and Logging.

\*\*\*The 'Services and All Others' category includes a wide range of industries, but primarily includes service-sector industries, such as financial activities, government, real estate and educational and health services, which generate limited freight transportation demand and are thus less dependent on freight services.

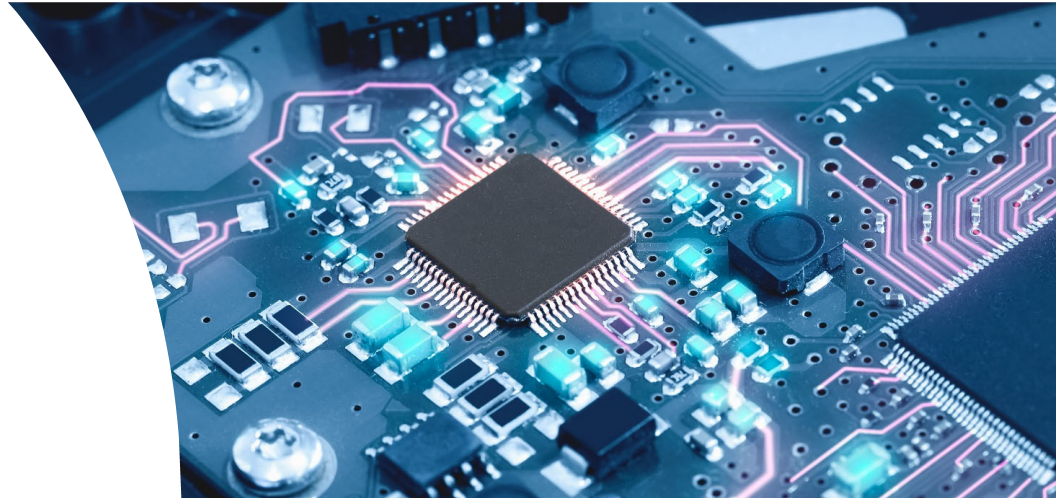
## Implications of Industry Growth for the Freight System

- Growth in volume by truck impacts key sectors with implications for road maintenance and congestion.
- Monitor clusters of industries that require permitted loads to reduce disruptions to movement of heavy freight.
- Growth in exports of heavy goods requires adequate supply of rail infrastructure.
- Growth of the professional services industry and population in urban areas, exacerbates congestion and impacts freight sector, impacting export strategies.



# Industry Transportation Requirements and Issues

- Growth in volume of high-value goods makes it critical to ensure reliable access between production facilities and airports as well as enhance freight mobility for truck and air to improve connections between modes.
- In 2020, 46.5% of state manufacturing GSP came from computer and electronics manufacturing.
- Chemicals and plastics manufacturing have seen a 58% and 68% increase in growth over the last decade.
- Agriculture, forestry and fishing, and wood and paper manufacturing rely on multimodal transportation access in remote and rural areas



# Stakeholder Interviews - Overall Industry Concerns and Issues

- Materials shortages and supply chain disruption as a result of the COVID-19 pandemic.
- Continued truck driver shortages and labor issues further worsened by pandemic.
- Inflationary pressures due to a variety of economic factors impacting materials costs, fuel costs, and transportation costs.
- Geopolitical tensions and economic sanctions resulting from the Ukraine-Russia conflict impacting global supply chains and availability of goods/materials.

## Manufacturing Supply Chain Challenges in 2022

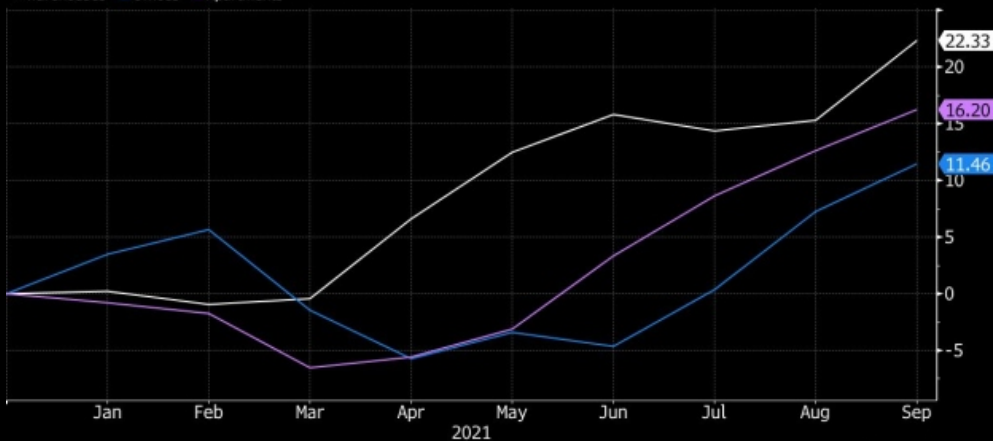


Source: <https://www.toolsgroup.com/blog/business-innovation-supply-chain-crisis/>

## Warehouses Winning

Industrial space prices outgained office and apartments this year

■ Warehouses ■ Offices ■ Apartments



Source: Real Capital Analytics

Bloomberg

## Stakeholder Interviews - Wholesale/Retail Trade and Congestion

- Significant increases in e-commerce delivery volume across the state has led to increased truck traffic and congestion in urban centers.
- Warehousing is in short supply in urban centers as companies look to restructure their supply chains.
- Congestion in the Portland Metro region has led to a shift towards local shuttles for some industries.

Source: <https://www.bnnbloomberg.ca/smarted-supply-chain-is-making-u-s-warehouse-shortage-worse-1.1679309>

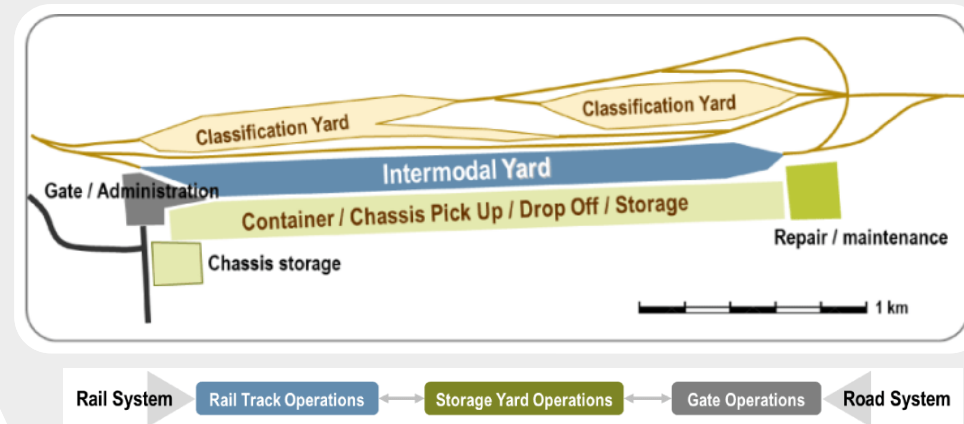
## Stakeholder Interviews - Air Cargo Growth

- For the Electronics and Computer Manufacturing sector, ocean freight congestion from Asia to the US has been a severe challenge, resulting in bringing in capital equipment by air.
- Increasing speed-to-market requirements due to consumer expectations poses difficulty for companies in rural areas with limited next-day Fed Ex options.
  - Lack of flight options and availability at PDX can negatively impact time-to-market.
- Limitations in flight schedules cause companies to use alternate gateways.



## Stakeholder Interviews - Other Modal Concerns

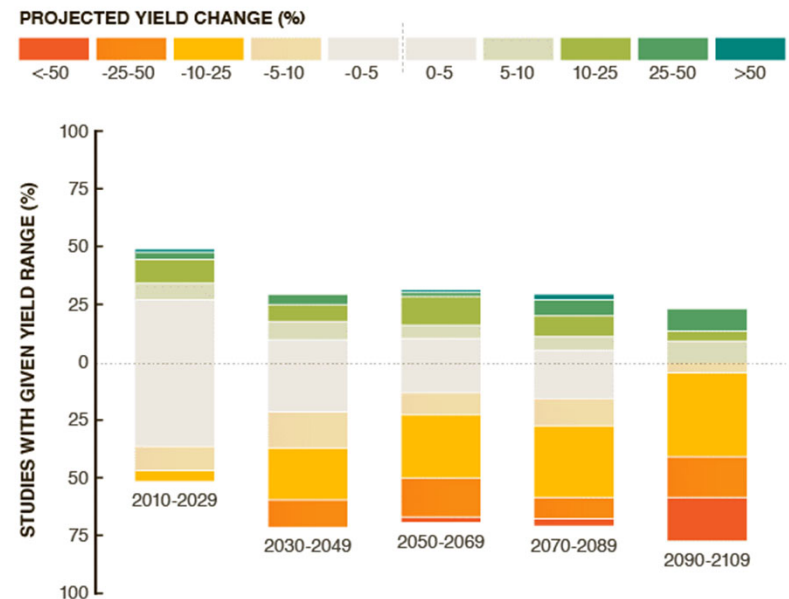
- Concern regarding permitted load truck standards/regulations with truck shortages and additional weight of EV trucks.
- Short-haul moves or smaller volume shippers often priced out of the rail market.
- Desire for more intermodal rail hubs across the state, including southern Oregon.
- Interest in the use of Port of Portland as alternative, though limited container service options prevents regular use.



# Stakeholder Interviews - Agriculture Challenges

- Environmental impacts, including weather patterns, have impacted Agricultural and Food Production industries.
  - Persistent drought conditions and fires in southern Oregon
  - Other challenges include access to water for some areas, along with the risk of losing crops due to rising temperatures.
- Most interviewees, including Agriculture and Forestry, expect an increase in business.
  - Limited rail access, shortage of trucks during peak, and higher fuel charges threaten growth plans.

The majority of modeling studies agree that climate change impacts on crop yields will be negative from the 2030s onwards. Nearly half of projections beyond 2050 indicate yield **DECREASES GREATER THAN 10%**.



Source: <https://ccafs.cgjar.org/bigfacts/#theme=climate-impacts-production>

# ACT Input

Are there any questions or comments about implications of growth on freight system?

What are the biggest freight issues or concerns within your ACT?

What would you most like to see ODOT address in the freight plan or implementation?



# Wrap Up and Next Steps

- Plan must be consistent with federal and state policy
- Identifying limited updates to policies and strategies necessary to meet federal and state requirements
- Plan being drafted now
- Public review to take place during the fall
- Adoption by OTC in January



# For more information:

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### Website

<https://www.oregon.gov/odot/Planning/Pages/Oregon-Freight-Plan-Update.aspx>

