600 NE Grand Ave.
Portland, OR 97232-2736
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Metro | *Agenda*

**2018 REGIONAL TRANSPORTATION PLAN UPDATE**

## Regional Freight Work Group - Meeting # 8

Date: November 20, 2017
Time: 3 p.m. – 5 p.m.
Place: Metro Regional Center, Council Chamber
600 NE Grand Avenue, Portland, OR 97232

**Agenda items**

| | | |
|---|---|---|
| **3:00** | **Welcome, and introductions**<br>• Overview of meeting expectations | Tom Kloster/All |
| **3:10** | **2018 Regional Freight Strategy – Draft Table of Contents**<br>Metro staff will provide overview of changes/new sections from last draft<br>• 1.8 Land Supply moved up from section 1.10<br>• Regional Industrial Site Readiness (2017 Inventory) under 1.8 & 7.2<br>• 5.7 Goods Movement and Land Use was Chapter 6<br>• Economic Value Atlas under section 6.3<br>• Under section 7.7 - 2016 Federal Transportation Bill was called "Uncertainty at the federal level" | Tim Collins |
| **3:25** | **Plans and Policies on Technology in Freight Transportation**<br>• *Definitions of different applications for connected vehicle technology that are applicable to freight*<br>• *General discussion on new freight technologies* | Tim Collins and Eliot Rose/All |
| **3:40** | **Regional Freight Strategy Needs and Findings**<br>• *Industrial land supply (focus of group discussion)*<br>• *Freight rail*<br>• *Trucking*<br>• *Air Cargo*<br>• *Marine Cargo*<br>• *General information on transportation funding for freight* | Tim Collins/All |
| **4:00** | **The Freight Action Plan**<br>(Discussion on some of the actions highlighted in Chapter 9) | Tim Collins/All |
| **4:20** | **Freight System Evaluation Measures and Results**<br>(Freight Work Group discussion on measures and results; and RTP Freight Projects - round 1 2018 RTP project solicitation)<br>• *Freight System Evaluation Measures*<br>• *Freight System Evaluation Results*<br>• *Draft Freight Project List* | Tim Collins/All |

**Irving Street Garage visitor parking policy**
Visit our website for a list of parking options for visitors conducting business at the Metro Regional Center: http://www.oregonmetro.gov/metro-regional-center

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|---|---|---|
| **4:50** | **Next steps**<br>• Review and comments on draft of Chapters 5, 6, 7, 9 and 10 of Regional Freight Strategy<br>• Review/update RTP freight projects for Regional Freight Strategy<br>• Technical draft of the Regional Freight Strategy<br>• Briefings to MTAC and TPAC in December on the technical draft<br>• Last meeting of Regional Freight Work Group in February or March of 2018 | Tom Kloster/Tim Collins |
| **5:00** | **Adjourn** | |

**Meeting packet:**

- Agenda
- Meeting minutes from Regional Freight Work Group meeting on October 18, 2017
- Regional Freight Strategy - update on Chapters 5 through 11 (PowerPoint presentation available at the meeting)
- Regional Freight Strategy – Updated Draft Table of Contents
- Innovation and technology in freight transportation
- Regional Industrial Site Readiness - 2017 Inventory Update
- Regional Freight Strategy Findings (available at the meeting)
- Chapter 9 – The Freight Action Plan
- 2018 RTP Draft Freight Project List - Freight Work Group Technical Review
- Freight System Evaluation Measure Results (available at the meeting)

**Other informational items:**

- New Regional Truck Model Summary (available at the meeting)
- Summary of HB 2017 and funding for regional freight projects (available at the meeting)
- Link to Chapters 5, 6, 7, 8, 9 and 10 of Regional Freight Strategy (available **after** the meeting):
  For review of 6.3 Freight and economic data collection and analysis; 6.4 New Regional Truck Model; and 7.7 the transportation funding challenge.

# Meeting minutes

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

| | |
|---|---|
| Meeting: | **2018 RTP Freight work group meeting** |
| Date/time: | Wednesday, October 18, 2017 \| 1-3 p.m. |
| Place: | Metro Regional Center, Council chamber |
| Purpose: | Regional Freight Strategy Plan review, Table of Contents and Chapters 1-4 |

| **Work Group Attendees** | **Affiliate** |
|---|---|
| Tim Collins, Work Group Lead | Metro |
| Kate Dreyfus | City of Gresham |
| Brendon Haggerty | Multnomah County, Public Health |
| Phil Healy | Port of Portland |
| Robert Hillier | City of Portland |
| Steve Kelley | Washington County |
| Steve Kountz | City of Portland |
| Jon Makler | Oregon Department of Transportation |
| Kate McQuillan | Multnomah County |
| Zoe Monahan | City of Tualatin |
| Don Odermott | City of Hillsboro |
| Steve Williams | Clackamas County |

| **Interested Parties** | **Affiliate** |
|---|---|
| Jordan Vance | City of Wilsonville |

**Staff Attendees**
Kim Ellis, Metro
Lake McTighe, Metro
Marie Miller, Metro
Jeffrey Raker, Metro
Andre Lightsey Walker, Metro Intern
Ben Kahn, Metro Intern
Julie Stringham, Metro Intern

**Welcome & introductions**

The meeting was called to order by Tim Collins at 1 p.m. A round of introductions was made. An overview of the agenda was given by Kim Ellis. The draft 2018 Regional Freight Strategy Plan was to be reviewed by the committee; in particular the draft Table of Contents and Chapters 1-4. This draft of the plan by the technical work group was expected to be completed by the end of the year.

Tim Collins acknowledged the work of Julie Stringham for her efforts on the updated Regional Freight Network map. Collins reported that this 2018 Regional Freight Strategy with updates replaces the 2010 Regional Freight Plan.

**Draft Table of Contents**

Tim Collins pointed out that yellow highlights of the document being reviewed were areas of new information or significant revision from the 2010 Freight Plan. Sections 1.1 to 1.4 are common to all

the new RTP modal plans and will be added later. Chapters 5 through 10 will be covered at the November 20 Freight Work Group meeting.

Steve Kelley commented that it would be good to have more time to review the material. Collins reported that a link to all materials discussed would be sent out, asking for further comments, with the deadline to reply October 27. Steve Williams commented on the intermodal terminals in the region possibly being acknowledged outside I-5 corridors, among others. It was mentioned that significant rail facilities in the Willamette Valley and Columbia River corridor should be part of the freight strategy.

A suggestion was made to move the Portland Region – 2016 Traffic Performance Report (ODOT Region 1) currently listed 1.9, to 3.3 Key freight studies and projects that identify freight issues. The future freight studies listed 7.6 would be part of the link for review.

A comment was raised about having a higher consistency across the freight system when addressing 9.2 Design Elements and Considerations for Freight, from chapter 4 of Designing Livable Streets and Trail Guide. This was acknowledged as being included in the Regional Freight Strategy.

Steve Kelley initially asked where the Over-Dimensional vehicles were being addressed. Over-Dimensional Vehicle routes were discussed as being important to clearly show on the map and in the Freight Plan. The wording in the plan should highlight the economic impact of these vehicles on roads, not simply obstacles facing street size and traffic issues. Bob Hillier commented on the Regional Over-Dimensional Truck Route Study recently completed with Washington County, with routes applied to the entire region. It might be advantageous to look at this as part of a policy consideration, with local jurisdictions helping to decide designations.

Don Odermott commented on corridor studies listed in 3.3 being identified with 7.6 Future Freight Studies. Washington County has areas of congestion that require future studies to address these issues and suggested a placeholder for this under 7.6 Future Freight Studies. It was suggested that more placeholders addressing freight transportation studies and related issues be named in this chapter also.

**History of the Regional Freight Plan and Regional Freight Network Concept and Regional Policy**
Tim Collins explained the new section of the "History of the Regional Freight Plan" with the task force members named, what their tasks and the timeline for completing them for the Freight Plan.

Discussion was held on section 2.3 Regional Freight Network Concept and Policy. Noting that with Metro Council's recommendation of a sixth freight policy added regarding safety issues, this is listed with the other five policies listed as one full list of policies in this section. Jon Makler suggested the narrative be eliminated as the policies present the plan itself for the section. Phil Healy added safety issues with intermodal facilities for freight may need further discussion in the plan.

It was mentioned that a parallel between the Regional Freight Concept and Freight map be shown more clearly. While not all roads have a freight function, showing some of the network details on the map could be advantageous. Steve Williams commented on the different freight movements on roads not showing quantitative measures, but is needed both in the plan and on the map. Major freight facilities need to be better identified on the map.

Don Odermott mentioned that there is a lack of roadway connectors on the map for some parts of the region. These roadway connectors could better identify best routes and be a layered hierarchy that could be refreshed with new data as changes occurred. This could become a policy map with amendments made, as needed. Phil Healy added that alternative freight routes to the regional freight routes with this capability, could be proposed as well.

Healy added that under chapter 5 Regional Goods Movement, with Aviation and Pipelines, the public airports in Washington County were not listed. Defining airport facilities for freight movement should be included. Freight pipelines with truck movements should be more clearly defined, including regular truck routes vs. heavy truck routes. There was interest in better defining the alternative parallel routes and making this a regional policy discussion. ODOT, cities and the Port wanted to discuss creating this as regional strategy. A subcommittee could be formed and tasked with designing this policy draft, with initial members interested to serve on the subcommittee: Bob Hillier, Don Odermott, Phil Healy, Steve Kelley, Jon Makler, Kate McQuillan, Steve Williams and Tim Collins.

**New Draft Regional Freight Network Map and Intermodal Connectors**

Tim Collins reported on the major updates to the 2014 RTP Reginal Freight Network map: Main roadway routes and road connectors are more visible, the larger map size enhances readability, six new inset maps are featured, and a new freight roadway designation for regional intermodal connectors are shown.

Bob Hillier pointed out that intermodal connectors were not shown close to area 2 on the map (with green line identification). Steve Williams agreed that the map is now more readable. It was noted that roadway connectors, such as Beavercreek Road, extended beyond the Urban Growth Boundary, with discussion following on the need to map beyond Metro planning areas showing freight roadway connectors and intermodal connectors.

It was noted that the Highway 26 on the eastside of Portland had been misidentified, with the location of US26 on Orient Drive. Steve Kountz commented on Barber Blvd. looking like a main roadway on this map. He recommended identifying I-5 more clearly as a major freight roadway on the map. It was agreed that showing the extension of Highway 10 and Highway 210 to the MPA boundary should be provided on the map. For consistency, Cornelius Pass should be shown as a Regional Roadway connector. Steve Williams noted that SE 242nd Avenue was shown as a road connector; but more likely 222nd would have this designation. He suggested a study and recommendation to get this designation completed.

Phil Healy confirmed that Regional Intermodal Connectors are carrying many more trucks than the typical road connectors on the Regional Freight Network Map. As they are of critical importance for carrying commodities being exported from and imported into the state and across the county, these need to be identified correctly on the map. Tim Collins asked the committee to send him any corrections are additions to these roads that might be missing from the insert maps.

Don Odermott requested more details shown on the insert maps that identify rail pipelines with connections to rail facilities and rail lines. Hillsboro to Banks was not clearly identified as a freight routes on the map and should be more highlighted. Don Odermott and Steve Kountz asked to have more detail on the map that marked heavy freight travel and usage.

Jon Makler commented on the improvements in the region identified from the OFICS Study that helped define freight intermodal terminals and intermodal connectors for the whole state. The study developed three tiers of new intermodal connectors by levels of importance. Only NHS intermodal connectors and Tier 1 OFICS roadways are considered Regional Intermodal Connectors. Makler recommended incorporating these roadways and their importance to freight, into regional strategies.

Discussion was held on having freight strategies linked to projects. Tim Collins suggested the subcommittee be tasked with review of the OCIFS Study for comments toward forming priorities and RTP linkage with freight projects. More discussion is needed on future work studies in the RTP process that identifies freight priorities.

**Top General and Specific Freight-Related Issues**

Tim Collins reminded the committee of the targeted six top freight issues:

- Congestion and hotspots – roadway and rail bottlenecks
- Reliability – unpredictable travel time due to crashes, construction, special events and weather
- Capacity constraints due to physical and operational issues
- Network barriers – safety concerns and out of direction travel due to weight-limited bridges, low bridge clearance, and other barriers
- Land use – capacity and industrial and being lost to other activities
- Environmental impacts – manage diesel and greenhouse gas emissions, water quality, noise and land use conflicts

Were these still the top issues?

Steve Williams suggested identifying more mega projects that address these issues. The Columbia River Crossing, and the three JPACT bottleneck projects could also be included. It was important to have projects tied to the issues. The sixth freight policy recommended by Metro Council to "prioritize roadway and freight operational safety to eliminate fatalities and serious injuries caused by freight vehicle collisions with autos, bicycles and pedestrians" should be included as separate bullet. Specific project time relating to 3.1 freight related issues could be added.

Brendon Haggerty commented on the inclusion of environmental impacts and public health impacts that could be added to the capacity constraints on the list of top freight issues. Jon Makler asked if these top issues were consistent with our top priorities. Defining policies may be falling short on defining outcomes. It was suggested to frame the issues as deficiencies of performance that we are addressing consistent with Metro policies.

Kate McQuillan commented on the scale of the map and suggested the Central City insert map be made larger. McQuillan commented on the narrative of 3.1 not keeping parallel with the Regional Freight Plan, which was agreed by the committee.

Discussion was held on section 3.2 Specific Issue Identification. These issues identified challenges, constraints and opportunities by freight modes, and identified key freight issues and needs by categories. Tim Collins asked for comment on these issues.

Don Odermott asked to see a full corridor from I-5 to I-405 Boones Bridge identified under constraints and challenges on roadways and highways. I-205 from Stafford Road to Highway 99E provides another

example. Including a freight study under priority issues (investment strategies, coordination, research and data) was suggested. Under constraints, calling out congestion pricing was suggested.

Other bullets to add under constraints include:

- Reliability and safety issues
- Congestion a top issue with specific roadways identified
- Add hazardous waste as an issue
- Fatalities issues not shown clearly as a top priority, integrate with 3.1

Phil Healy suggested adding seismic resiliency into the plan. Kim Ellis and Tim Collins stated this issue would be addressed next year and will be included later. Related to the seismic resiliency issue, Don Odermott commented on the need to show locations of pipelines on the map.

**Need for Future Regional Freight Studies**

Tim Collins provided an overview of future regional freight studies. These could include a Regional Freight Rail Study to identify potential increases in rail capacity, safety, land use compatibility, and operational efficiencies; and Regional Freight Delay and Commodities Movement Study to elevate the level of commodity movement on the regional freight network, and other potential studies such as the Kenton Rail Line Study and Willamette River Channel Deepening Study.

Kim Ellis asked if there were other studies that should be included. Steve Williams suggested an eastside freight movement study be added. Steve Kountz suggested a study on double tracking that addressed rail congestion. Land uses along rail yards are also becoming a bigger issue so possibly combining these studies might be advantageous. Further suggestions with rail studies included having a broad rail study, or keeping the Kenton Rail Line called out. The Kenton Rail Line could be shown beyond the Metro region, or should it be separated out. It was suggested to have the Port of Portland Rail Plan sent to Tim Collins for further study.

Further discussion on future rail studies included whether there was enough volume to connect Oregon via rail as a justification for the study. Planned study of past-used rail lines that are considered for new rail systems, and addressing technology in rail studies that reduce emissions could be studied.

Comments on future Regional Freight Delay and Commodities Movement Studies included building on the Economic Value Atlas, draft performances with targeted industries in studies, commodity flow studies, broader identifications with Title 4, land use and development investments that are tied to freight movement and economic development studies. Emerging trends with labor force and technology were supported to be included in future studies.

**Next Steps**

Tim Collins reviewed the next steps with the committee. The work group will receive links to Chapters 1 to 4, and review 1.6 Jobs and Infrastructure and 3.3 Key Freight Studies, with comments by Oct. 27, 2017. More review of RTP freight projects for Regional Freight Strategy, and the review draft of Chapters 5 through 10 will be presented at the Nov. 20, 2017 Freight work group meeting. MTAC and TPAC will review the draft Regional Freight Strategy in December, 2017.

**Adjourn**

There being no further business, the meeting was adjourned at 2:50 p.m.
Respectfully submitted by Marie Miller

# Regional Freight Strategy – Update on Chapters 5-11

Presentation to Regional Freight Work Group, November 20, 2017

Tim Collins, Senior Transportation Planner

# Meeting Purpose

- Update Regional Freight Work Group on draft of Chapters 5-11 of Regional Freight Strategy
- Discuss new freight technologies and updated industrial land supply
- Review and get input on new Freight Action Plan and RTP Freight Project list

# Background

- 2018 Regional Freight Strategy updates and replaces 2010 Regional Freight Plan
- Regional Freight Strategy defines a vision for enhancing freight and goods movement

# Draft Table of Contents

- Yellow highlights indicate areas of new information or significant revision from 2010 freight plan
- Old Chapter 6 has been combined with Chapter 5
- Added Economic Value Atlas to section 6.3
- Included Regional Industrial Site Readiness in section 7.2
- Today's meeting will focus on Chapters 9, 10 and 11

# Innovation and technology in freight transportation

- V2I technologies informs the driver of safety, mobility, or environmental road conditions they are about to encounter
- Deploying V2I in freight trucks and the region's infrastructure will be important for freight mobility, reliability and safety
- Long term: Plan for impacts of driverless vehicles and decline in retail stores

# Regional Freight Strategy Findings

**Regional Industrial Site Readiness Project**:

- Examines the supply of 25+ acre industrial sites in the region available to accommodate existing and future employers
- Tier 1: Development ready within 180 days (considered recruitment ready)
- Tier 2: Requires 7-30 months to be development ready
- Tier 3: Requires over 30 months to be development ready
- From 2014 to 2017 the inventory of sites has decreased from 54 to 47

# Regional Industrial Site Readiness Project

| | 2011 Inventory | 2014 Inventory | 2017 Inventory |
|---|---|---|---|
| Tier 1 | 9 | 14 | 10 |
| Tier 2 | 16 | 17 | 11 |
| Tier 3 | 31 | 23 | 26 |
| Total | 56 sites | 54 sites | 47 sites |

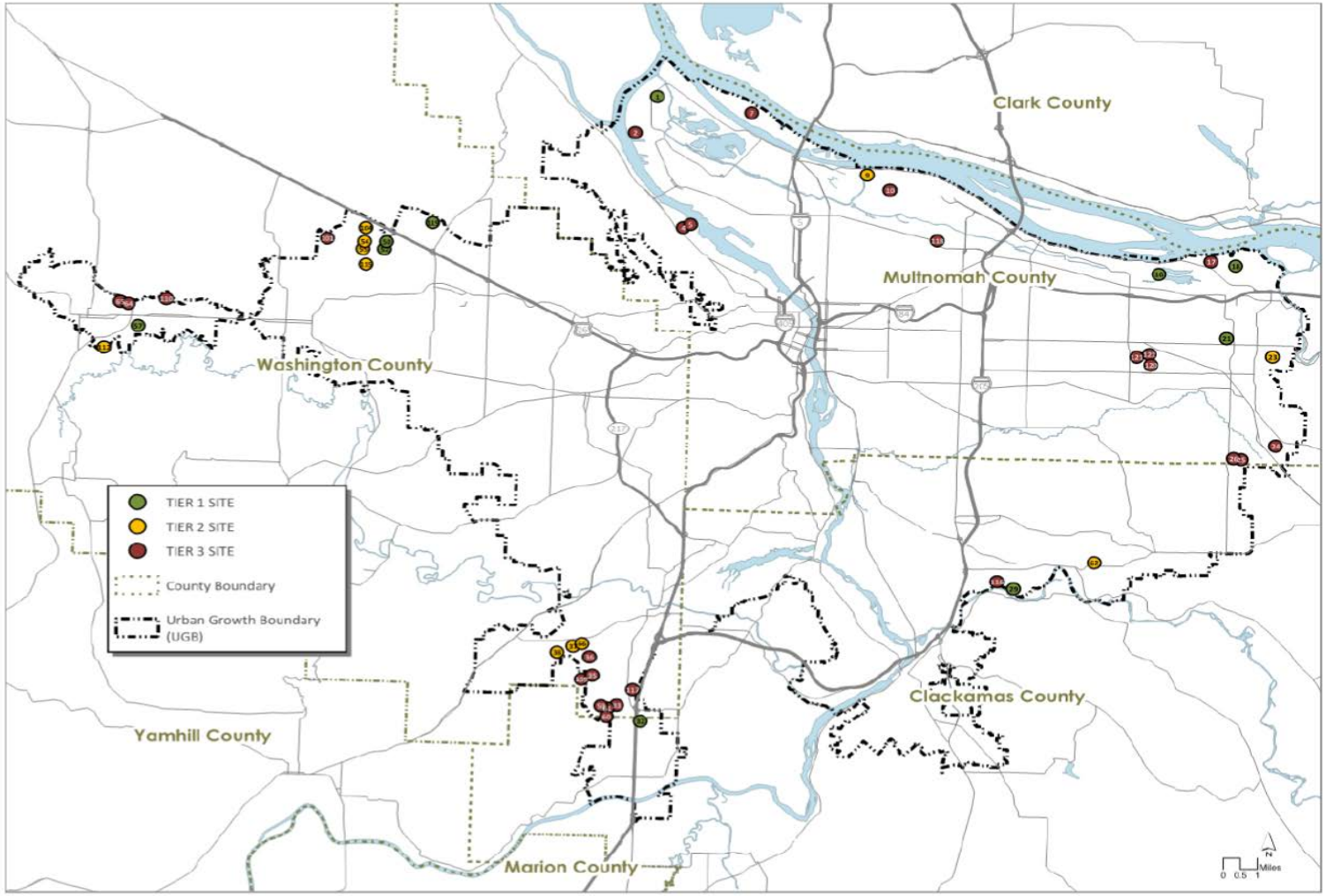
| | 2011 Inventory | 2014 Inventory | 2017 Inventory |
|---|---|---|---|
| 25-49 acres | 40 | 39 | 33 |
| 50-99 acres | 9 | 10 | 10 |
| 100+ acres | 7 | 5 | 4 |
| Total | 56 sites | 54 sites | 47 sites |

- Between 2014 and 2017, there has been significant development of large industrial sites in the region; with only 10 Tier 1 sites remaining and no Tier 1 sites of 50 acres or greater

**Industrial Land Supply finding:**

- Maintaining and improving freight access to industrial areas and intermodal facilities is critically important for long-term viability of industry in the region

# Regional Industrial Site Readiness Project




Map 1: Regional Map of Tier 1, 2, and 3 Sites

# Regional Freight Strategy Findings

**Freight rail:**

- Increases in rail volumes on Class 1 rail lines will mean heavier per car loads and longer trains. This will require upgrading tracks and increase the need to grade separate more intersections with roadways.

**Trucking:**

- Truck access between port facilities, industrial sanctuaries and the National Highway System is critically important to shippers, carriers and distributors of freight.

# Regional Freight Strategy Findings

**Air Cargo:**

- Air cargo requires efficient access for perishable and high value goods. However, area industries shipping via air freight have adjusted production schedules due to roadway congestion to meet air freight departure deadlines.

**Marine Cargo:**

- Marine ports ship large quantities of bulk agricultural commodities from Oregon, Idaho and Washington to the rest of the world. The ports will grow by moving a wide range of marine cargoes, such as energy and transportation project related materials, manufactured goods, automobiles, agricultural and mining related products and fuel.

# Updated Freight Action Plan

- 2010 action plan was reviewed by the Regional Freight and Goods Movement Task Force
- 2010 plan had a longer list of freight action items that has been winnowed down into achievable near-term actions, and a few long-term actions.
- Near-term action items should be achievable within the next five years and the long-term actions would take longer.

# Updated Freight Action Plan

**Goal A: Multimodal system planning for efficient freight mobility and access**

1. Maintain private sector cooperation with Metro staff with goods movement policy and technical coordination
2. Freight goods movement data collection and reporting
3. Coordinate research, modeling and planning with ODOT

# Updated Freight Action Plan

**Goal B. System management to increase network efficiency**

1. Better define, preserve and enhance freight function in mobility corridors
2. Assess need to develop and fund better incident management and traveler information
3. Continue support for use and expansion of ITS system management tools
4. Support workforce access to the region's industrial jobs through Metro RTO/TDM programs

# Updated Freight Action Plan

**Goal C. Public understanding of freight and goods movement issues**

1. Establish stakeholder outreach program
2. Provide support for topical fact sheets, and other published media that expands awareness of freight issues
3. Coordinate with Economic Value Atlas work which includes the economic development community

# Updated Freight Action Plan

**Goal D. Sustainable freight transportation system**

1. Provide useful “green freight” links from Metro’s freight program webpage
2. Pursue greenhouse gas and other pollutant reduction policies and strategies for freight (DEQ could take on this action item as part of their work program)

# Updated Freight Action Plan

**Goal E. Freight--sensitive land use planning**

1. Develop strategies to protect the existing supply of industrial land
2. Examine the need for additional industrial land
3. Provide freight perspective to revision of Metro's livable street design guide

# Updated Freight Action Plan

**Goal F. Strategic transportation investments**

1. Work toward implementation of the RTP freight priority projects
2. Strengthen the tie between project prioritization and the framework for freight performance
3. When appropriate, focus regional funds on large capital projects
4. Make strategic incremental improvements when large capital projects are unfunded
5. Ensure that unfunded freight projects are on an aspirational or illustrative RTP project list
6. Develop regional freight rail strategy

# Freight System Evaluation Measures

These are the system evaluation measures we will review:

- Measure 12d is Freight Truck Travel Times
- Measure 13c is Freight Truck Delay

Other freight systems evaluation measures are available but due to time constraints we won’t covered them today

# Freight System Evaluation Results

- Freight Evaluation Results are available on the handouts

- General group comments on the results

# Draft RTP Freight Project List

- **RTP Freight Project Lists are available on the handouts**

- General group comments on the investment category freight projects under “Roads and Bridges” that may not have a primary freight function.
- Primary objective is to winnow down the freight project list or identify RTP freight projects that may be missing.

# Next Steps

- Work group to provide comments on
- Review RTP freight projects for Regional Freight Strategy
- Review draft of Chapters 5 thru 11 of the Regional Freight Strategy (available by December 4, 2017)
- MTAC  and TPAC review of technical draft of Regional Freight Strategy (December 2017)

# Questions / Comments?

- Does Regional Freight Work Group have any comments related to freight and goods movement to address as part of chapters 5 to 11 of the Regional Freight Strategy?
- Email tim.collins@oregonmetro.gov with any feedback

# 2018 Regional Freight Strategy

November 03, 2017

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## 6.5 Innovation and technology in freight transportation

Vehicle-to Infrastructure (V2I) is the next generation of Intelligent Transportation Systems (ITS). V2I technologies capture vehicle-generated traffic data, wirelessly providing information such as advisories from the infrastructure to the vehicles that inform the driver of safety, mobility, or environmental-related conditions. The State of Oregon and local agencies are likely to install V2I infrastructure alongside or integrated with existing ITS equipment. The majority of V2I deployments may qualify for similar federal aid programs as ITS deployments, if the deploying agency meets certain eligibility requirements. Deploying V2I technologies in freight trucks and the region's roadway infrastructure will be of key importance for improving freight mobility, reliability and safety. (Source: USDOT – Intelligent Transportation Systems- Vehicle to Infrastructure (V2I) Deployment Guidance)

The following definitions of V2I communications deployment help the region better understand how useful different application of connected vehicle (CV) technology will be in improving commodity movement within the next five years (short term):

- **V2I Safety (V2I):** Safety applications that help truck drivers anticipate and respond to potentially unsafe conditions to help avoid incidents and delays.
    - **Curve Speed Warning (CSW):** Alerts drivers who are approaching curves at speeds higher than the posted advisory speed.
    - **Spot Weather Impact Warning (SWIW):** Warns drivers of local hazardous weather conditions by relaying management center and other weather data to roadside equipment, which then re-broadcasts to nearby vehicles.
    - **Reduced Speed/Work Zone Warning (RSWZ):** Utilizes roadside equipment to broadcast alerts to drivers warning them to reduce speed, change lanes, or come to a stop within work zones.

- **Agency Data:** Applications that focus on communicating agency data to connected vehicles (CVs) or using CVs to collect data that agencies can use to plan and manage the transportation system.
    - **Freight Networks:** Transmits freight network routes and information (speed limit, capacity, etc.) to truck drivers.
    - **Work Zone Traveler Information:** Monitors and aggregates work zone traffic data for transmission back to truck drivers.
    - **Probe-enabled Traffic (Freight) Monitoring:** Utilizes communication technology to transmit real-time traffic data between vehicles and to agencies via roadside equipment.

- **Road Weather:** Applications that help truck drivers anticipate and respond to severe weather conditions and events.
    - **Motorist Advisories and Warnings (MAW):** Uses road-weather data from connected vehicles to provide information to travelers on deteriorating road and weather conditions on specific roadway segments.
    - **Weather Response Traffic Information (WxTINFO):** Uses connected vehicle data and communications systems to enhance the operation of variable speed limit systems and improve work zone safety during severe weather events.

- **Mobility:** Applications that enhance mobility, increase efficiency, and reduce delay of freight vehicle travel.

    - **Freight Signal Priority (FSP):** Provides signal priority to freight vehicles along designated freight corridors.
    - **Dynamic Freight Routing –** Determines the most efficient route, in terms of avoiding congestion or minimizing travel time or emissions, for freight vehicles, and transmits this information to truck drivers.

- **Smart Roadside:** A set of applications to be deployed at strategic points along commercial vehicle routes to improve safety, mobility, and efficiency of truck movement and operations on the roadway.
    - **Wireless Inspection:** Utilizes roadside sensors to transmit identification, hours of service, and sensor data directly from trucks to carriers and government agencies.
    - **Smart Truck Parking:** Provides information such as hours of service constraints, location and supply of parking, travel conditions, and loading/unloading scheduling to allow commercial drivers to make advanced route planning decisions.

(Source: FHWA ITS Joint Program Office website)

In the long term (more than five years), the region, state and local agencies will need to acknowledge, monitor, study and plan for the impacts of driverless vehicles, changes in the demand for distribution centers, and the decline in retail stores due to on-line ordering of goods and services.

**Regional Industrial Site Readiness – 2017 Inventory Update Summary**

The Portland metropolitan region competes on a global scale to attract traded-sector jobs. A key factor in determining a business's likelihood of settlement is adequate land to do so. Having a site inventory of varying sizes and locations within Portland's Urban Growth Boundary plays a key role in facilitating potential economic opportunities that support a thriving region, new jobs, and increased wages.

The Regional Industrial Site Readiness Project is a report that examines the supply of large (25+ acre) industrial sites available to accommodate existing and future employers. The inventory considers industrial sites within the Portland metropolitan area Urban Growth Boundary (UGB) and select urban reserves. The objectives of the 2017 report include the following:

- Track the changes in inventory since the 2014 update
- Analyze the readiness for each site inventoried
- Inform policy makers about policy changes and investments that have influenced the development-readiness;
- Summarize investments, tax base, and jobs created from development of inventory sites; and
- Identify policy and investment actions that can ensure a consistent inventory of these vital sites into the future.

The report also introduces a tier system that assists in better prioritization of various development sites. Tier 1 sites are considered recruitment-ready for businesses expanding or locating in the region. Tier 2 sites will take longer to become development ready, but could be feasible for expansions of existing businesses and for speculative development for investors. Tier 3 sites meet the size and location requirements of the study but require complex fixed to become development-ready.

**Tier 1:** Development-ready within 180 days. It is anticipated that a site can receive all necessary permits; sites can be served with infrastructure and zoned and annexed into the city within this timeframe. No or minimal infrastructure or brown-field remediation is necessary and that due diligence and entitlements could be provided and/or obtained within this time period.

**Tier 2:** Likely to require 7-30 months to become development-ready.

**Tier 3:** Likely to require over 30 months to become development-ready

**2014 – 2017 Inventory Changes**

Since the last update to the report in 2014 the inventory of sites has decreased from 54 to 47. This change was primarily driven by a strong economic cycle, which we continue to see today. Additionally, 6 new sites were **added** to the inventory since 2014 (1 Tier 1, and 5 Tier 3) and 13 sites were **removed** mostly as a result of site readiness investment and development.

The charts below compare the changes in inventory by tiers and acreage for 2011, 2014, and 2017.

| | 2011 Inventory | 2014 Inventory | 2017 Inventory |
|---|---|---|---|
| Tier 1 | 9 | 14 | 10 |
| Tier 2 | 16 | 17 | 11 |
| Tier 3 | 31 | 23 | 26 |
| Total | 56 sites | 54 sites | 47 sites |

| | 2011 Inventory | 2014 Inventory | 2017 Inventory |
|---|---|---|---|
| 25-49 acres | 40 | 39 | 33 |
| 50-99 acres | 9 | 10 | 10 |
| 100+ acres | 7 | 5 | 4 |
| Total | 56 sites | 54 sites | 47 sites |

**Findings**

1. Between 2014 and 2017, there has been significant development of large industrial sites in the region. There are relatively few unencumbered Tier 1 industrial sites remaining in the inventory and no 50+ or 100+ acre Tier 1 sites.

2. There has been slower movement between tiers than in the previous inventory update (4 sites between 2014 and 2017, versus 7 sites between 2011 and 2014). This is in part due to the market absorption of sites, but underscores the continued need to make these site readiness investments.

3. Significant challenges remain to move sites to market. This is particularly true for sites that require aggregation and High-Need Tier 3 sites.

4. Site readiness investments and development since 2011 have resulted in significant investment and job creation.

**Recommendations**

The Portland metropolitan region continues to see a demand for larger industrial sites ranging from 50 to 100+ acres. The 2017 inventory shows that there is a deficiency of Tier 1 sites of this size, and the challenges of moving Tier 2 and Tier 3 to market readiness. An inability to meet this need will lead to lost opportunities for the region.

The report recommends policymakers consider policy action and investments to address industrial site readiness challenges and development hurdles. The report divides recommendations into Regional, Local, and State actions.

**Local and Regional Site Readiness Actions**

1. Engage the Oregon Economic Development Department, Oregon Economic Development Association, local jurisdictions, private property owners, and developers in efforts to make investments in industrial sites needed to move these sites to market.

2. Actively work to find ways to aggregate 13 industrial sites with multiple property owners to realize the market potential of these sites. This is critical to realizing the potential of Coffee Creek, Meek Subarea and other industrial sites in the region.

3. Support local jurisdictions in evaluating the sites that require state and local legislative actions (e.g., annexation, zoning, and concept planning) and identify the timeline for and feasibility of completing this work. Metro has invested Community Planning and Development funds in the past to support such efforts.

4. Evaluate Tier 3 High-Need sites to determine if there is a path for development. If not, consider removing them from the inventory or creating a Tier 4.

5. Proactively work on solutions to the Lower Willamette cleanup to remove the cloud over the properties in the Portland Harbor.

6. Apply brown-field tools approved by the legislature to brown-field redevelopment of industrial lands (Brownfield Tax Abatement Program and Land Banking Authority).

7. Actively work on regional and local infrastructure financing solutions that impact 60% of the industrial sites in the inventory. Metro's Economic Atlas may help identify strategic infrastructure investments benefitting the region's industrial and employment lands. Local infrastructure needs could potentially be packaged with State infrastructure financing to fund local/regional projects through the West Coast Infrastructure Exchange.

8. Support regular updates of the inventory and track investments from sites that have been developed. Consider expanding the inventory to sites of 15 acres or more to reflect shifting market demand.

**State Legislative Actions**

9. Advocate for new tools and funding to support brown-field cleanup and redevelopment. This includes but is not limited to re-capitalization of the Oregon Economic Development Department's Brownfield Revolving Loan Fund and passage of Brownfield Tax Credit.

10. Support state loan funding for the Industrial Site Readiness Program and Special Public Works Fund. The Industrial Site Readiness Program was enacted in 2013 without authorization for loan funding. The Special Public Work Program is oversubscribed and underfunded.

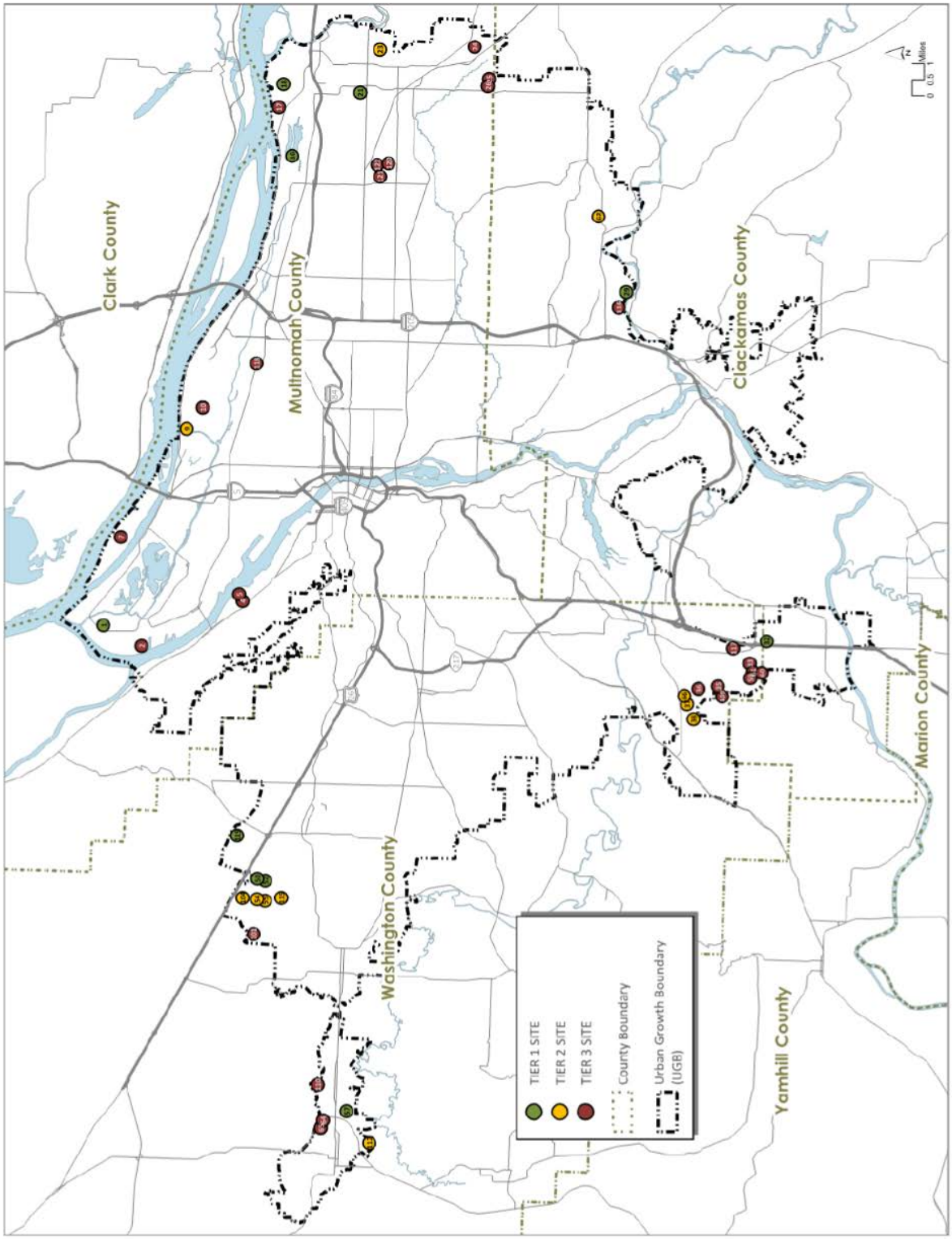
11. Continue to support the Regional Solutions Teams that provide coordinated state attention to facilitate solutions for sites with complex issues involving multiple agencies. The Metro Regional Solutions Team played a key role in addressing site readiness issues in Troutdale, Gresham, Clackamas, and Hillsboro in the 2014-17 inventory cycle.

**Local Development Actions**

12. Evaluate the potential for new or expanded enterprise zones or other local or state incentives to help secure targeted development.

13. Encourage local communities to explore an expedited permitting process to address market expectations of issuing construction permits. Several communities with development wins in the 2014-2017 inventory cycle have expedited permitting programs in place (e.g., Hillsboro, Gresham).

**Map 1: Regional Map of Tier 1, 2, and 3 Sites**



# Draft Regional Freight Strategy Needs and Findings

## Freight rail

- Rail service characteristics are changing. Class 1 railroads, and even certain short line railroads, are moving towards a "hook (up) and haul" business model, where the railroad focuses on pulling assembled trains long distances between cities.
- Class 1 railroads are currently struggling to meet existing freight demand. They are facing shortages in rolling stock and siding, yard and track capacity. They are attempting to address these deficiencies in a timely manner but are struggling to do so.
- In response to projected increases in rail freight volumes, Class 1 railroads intend to haul heavier per car loads and employ longer trains. The former will require upgrading tracks throughout their systems, and the later will likely increase the need to grade separate more intersections over time.
- The current Class 1 railroad business model focuses on delivering service to railheads with intermodal yards or directly to port facilities. The Class 1 railroad intermodal yards in the region are operating near capacity now, and they will need to be expanded. These intermodal yards are predominantly dependent on trucks to move freight to and from their facilities. This may require use of scarce lands within certain Industrial Sanctuaries.
- Short line railroads have generally taken over the role of distributing rail cars throughout the region on their rail networks to end users requiring direct local rail service. Lack of space in Class 1 rail yards means short line railroads need additional marshalling yards on their own properties to make up trains. Identifying locations for these yards is challenging, as it often requires the acquisition of scarce lands within certain industrial sanctuaries.
- Short line railroads and certain private operators are also operating intermodal facilities, frequently offering additional logistics services to shippers. Maintaining and improving both truck and rail access to these satellite intermodal locations is critical.

## Trucking

- Trucks will continue to be the dominant mode of transport in the freight transportation system, with West Coast truck volumes expected to increase over 250 percent by 2035. Even though the use of other modes will expand, trucks will maintain their preeminent status as the first and last links in delivering goods to the end user due to their flexibility.

- A trend toward lighter weight, higher value, increasingly time sensitive, and producer to retailer shipments, are expected to continue, again reinforcing the role of the freight transportation system hierarchy.

- Truck access between port facilities, industrial sanctuaries and the National Highway System is critically important to shippers, carriers and distributors of freight. These connections are commonly referred to as "first mile/last mile" connections.
- Motor carriers identified correcting regional bottlenecks on the principal NHS roads as their first priority. Motor carriers are also supportive of active Transportation System Management, to include incident management.
- Transportation service providers identified the Columbia River Crossing, I-5 through Delta Park, the I-84/I-5 interchange area, I-205 from OR 224 to I-5 and the Sunrise Corridor projects as well as improved access to the North Wilsonville-Tualatin-Sherwood and Clackamas industrial areas as their highest regional road improvement priorities.

## Air cargo

- Air cargo continues to require efficient access for perishable and high-value goods and production-critical components. However, area industries producing goods shipped via air freight have had to adjust their production schedules repeatedly due to roadway congestion in order to meet air freight departure deadlines. This has led, in turn, to higher production costs and reduced productivity.

- Adjustments to production schedules are particularly true of the computer and electronics industry in the Hillsboro area that uses trucks to get high value commodities to the Portland air freight facility at PDX.

## Marine Cargo

- Marine ports ship large quantities of bulk agricultural commodities from Oregon, Idaho and Washington to the rest of the world. The ports will grow by moving a wide range of marine cargoes, such as energy and transportation project related materials, manufactured goods, automobiles, agricultural and mining related products and fuel.

## General concerns and observations

- The rail, truck, marine, pipeline and air cargo carriers all invest in their own equipment and infrastructure and are privately owned for-profit businesses. This complicates public sector investment in safety, access, reliability or capacity improvements for these modes.
- Every privately owned carrier, of whatever mode, relies on publicly owned infrastructure for at least a portion of their activities.
- Firms relying on the goods movement system monitor the efficiency, reliability and speed of the existing transportation system and use these measures to evaluate system

performance. The vast majority of this information is considered proprietary and is used by shippers to gain an advantage over competitors. Much of this data is also derived from proprietary systems that generate unique data outputs focused on parameters specific to that firm. This can make even anonymous data sharing very difficult.

- The goods movement industry provides over 46,000 family wage jobs within the region.
- Maintaining the Portland metro region's historic preeminence as a goods movement and industrial hub should remain a regional priority.
- Long-term under investment in transportation infrastructure within the region, for both maintenance and capacity improvements, has led to congestion, weight limits and frequent system breakdown.
- Transportation revenues to fund maintenance and capacity enhancements are at an historical low on the federal, state and local levels.
- An ongoing regional freight data collection effort needs to be undertaken and sustained over time. One of the better efforts to date is PORTAL, operated by PSU, but several other efforts under development also show promise.
- A component of regional freight data collection efforts needs to include interviewing shippers directly on ongoing basis, to capture current supply chain dynamics.
- The importance of freight transportation to the regional economy needs to be reinforced through an ongoing public education effort.

## The transportation funding challenge

### Funding background

Funding for transportation projects has historically come from several federal, state, regional and local funding sources. The current federal transportation act specifically addressed freight movement and provided federal money to the states along with federal grant opportunities to fund freight and goods movement projects. The State of Oregon's House Bill 2017 has dedicated funding to specific projects in the Portland metro region that address congestion and travel reliability for both cars and freight trucks. (See the "Summary of HB 2017 and funding for regional freight projects" for more details)

Nationally, funding for transportation projects has become scarce. The need to replace aging transportation infrastructure and expand facilities in areas of the country experiencing growth has exploded. The private sector portion of the goods movement community has been making great strides in adopting sustainable technologies and wringing efficiencies out of their respective portions of the goods movement system. The public sector must also effectively weigh policies, programs and investments to achieve the maximum benefit for the goods movement system.

**Summary of HB 2017 and funding for regional freight projects**

HB 2017-10, known as *Keep Oregon Moving*, is the largest transportation investment in Oregon's history. It will generate $5.3 billion in total revenue over ten years that will fund various types of transportation projects around the state. About half of the funds will be distributed to local governments to fund local road and street maintenance and improvements, while the rest will be provided to the State Highway Fund to fund different types of projects around the state, including:

- **Bridges and highways –** The majority of the State Highway Funds will go towards repairs and upgrades to bridges and highways to make them safer and more resilient to a major earthquake.
- **Public transportation –** Over $100 million per year will be distributed to transit districts, counties, and Native American tribal governments to improve public transportation services across the state in and between cities and communities.
- **Safe Routes to School -** $10 million per year initially will be allocated to develop a new Safe Routes to School Program. The amount will eventually increase to $15 million per year. The program seeks to provide children with safer and better bicycling and walking connections to schools.
- **Connect Oregon program –** Connect Oregon will receive funding for multimodal projects, including rail, marine, aviation, and bicycle/pedestrian projects. Two specific projects are included in *Keep Oregon Moving* to help move freight from trucks to trains, which will decrease freight congestion on highways. However, neither project is located in the Portland region.

**Portland Region Projects**

A portion of ODOT's funding is dedicated to specific projects around the state, with several in the Portland metro region. These projects will primarily address congestion and travel reliability of both passenger and freight vehicles. A description of the projects and their cost estimates are listed below:

- **I-5 Rose Quarter ($30 million per year) –** I-5 through the Rose Quarter has been identified as one of the most congested bottlenecks in the country. $30 million per year will be taken off the top of the State Highway Fund to add an auxiliary lane in each direction between I-84 and I-405, as well as build new bicycle and pedestrian connections across I-5 and I-84. The project aims to address growing congestion, increase travel reliability for passenger and freight vehicles, and enhance neighborhood connectivity.
- **Oregon 217 ($98 million) –** ODOT will build new auxiliary lanes south from Beaverton-Hillsdale Highway to Oregon 99W, and north from OR 99W to Scholls Ferry Road. The goal of this project is to address congestion and increase travel reliability.
- **I-205 corridor bottleneck project ($15.5 million) –** An auxiliary lane will be added on the northbound stretch of I-205 from Powell Boulevard to the I-84 west interchange. It is estimated that this project will reduce the frequency of crashes by nearly 30%, in addition to providing more reliable travel times.
- **I-205 active traffic management project ($15.2 million) –** This project will use technology to provide travelers with real-time information on travel times, congestion, crashes, and other

hazards. A similar system was implemented on OR 217, which resulted in a 21% decrease in crashes in the first year of use.

**Jurisdictional Transfers**

*Keep Oregon Moving* also includes several jurisdictional transfers of highways, with two in the Portland region. These transfers seek to place highways under the jurisdiction which can best control and manage the facilities. The transfers for the Portland region are:

- **Cornelius Pass Road** between US 30 and US 26 will be transferred from Washington and Multnomah counties to ODOT.
- **Powell Boulevard** between I-205 and the Portland city limits will be transferred from ODOT to the City of Portland. *Keep Oregon Moving* also allocated $110 million to upgrade this section of Powell Blvd.

# 9 THE FREIGHT ACTION PLAN – FROM GOALS TO IMPLEMENTATION

Chapter 8 of this Regional Freight Strategy includes a "tool kit" of freight strategies that respond to a broad range of needs and issues clustered around the six goals articulated by the RFGM Task Force. Chapter 9 constitutes the regional freight action plan. Its elements have primarily been pulled from the tool kit and elaborated.

The action items described below are the result of a review in 2009, by the Regional Freight and Goods Movement Task Force and the Regional Freight Technical Advisory Committee; and a recent review by the Regional Freight Work Group. Many of the actions described are foundational activities that constitute the glue holding the regional freight action plan together – planning, coordinating, research and policy making that take place on both an ongoing and cyclic basis. The current list of efforts will need to find staff, time and funding resources, whether that includes Metro, members of the freight, goods movement and economic development community, or other agencies or organizations. The 2010 Regional Freight Plan had a longer list of freight action items that has been winnowed down into a smaller selection of important, achievable near-term actions, and a few long term actions that will require additional scoping and determining the availability of staff time. The near-term action items should be achievable within the next 5 years and the long-term actions would take longer than 5 years.

Achievable near-term action and long-term action items are included and recommended for implementation to support the approved regional freight and goods movement goals. Each of the freight action items is associated with one of the six regional freight and goods movement goals (Goals A to F).

The 2018 RTP Freight Projects and Programs are included in an appendix to this freight strategy and are also included by reference as part of Action F1.

## Goal A. Multimodal system planning for efficient freight mobility and access

This goal, as well as its related actions, speaks to Metro's mission as the metropolitan planning organization for the Portland metro area. Actions described below will give us better freight and goods movement data and will guide planning efforts to ensure that freight considerations in mind and to implement a multimodal plan that facilitates freight movements required for a vibrant regional and state economy.

*Near-term Actions:*

### A1: Maintain private sector cooperation with Metro planning staff, and with goods movement policy and technical coordination

Areas where the private sector and government agencies could provide value to Metro include:

**Implementation of the Regional Freight Strategy**

- Review, assist, comment, contribute and/or lead various elements of the action plan
- Contribute to future freight plan refinements and updates

**Regional planning efforts**

- System planning, modeling and analysis
- Freight access/industrial land aspects of land use planning
- Input into selecting and carrying out regional corridor refinement plans
- Metropolitan Transportation Improvement Program (MTIP) funding and project selection processes
- Provide input into ConnectOregon criteria and selection
- Development of analytical tools, data bases, performance measures and policies
- Prioritization of investments and projects with a freight and economic development perspective
- Metro's freight program staff will participate on effective local, state and national freight-relevant organizations, such as the Portland Freight Committee, the Columbia Corridor Association, ODOT's statewide freight planning group, and the Oregon Freight Advisory Committee,.
- Assisting localities with transportation system plan (TSP) freight components

**Freight and goods movement, jobs and economic development**

- Develop policy and business support for transportation funding initiatives, including possible fees or pricing strategies

- Define economic development context and goals for freight and goods movement policies and investments
- Support for broad regional prosperity and environmental justice with an economic development strategy

**Sustainability**

- Greening freight and industry while promoting sustainable jobs and economic growth
- Greenhouse gas and other environmental impact reduction strategy development

**Public education and stakeholder engagement**

- Feature freight issues in periodic Regional Snapshots and the Snapshot speakers series (as defined in C2)

### A2: Continue baseline freight and goods movement data collection and reporting activities

Keeping current in an environment that is volatile, in an era which is increasingly unpredictable, is as challenging as it is essential. This recommended action ensures needed support for ongoing data collection and necessary or desired expansions to existing efforts, such as PORTAL, ensuring updates to the commodity flow forecast, continuing to seek more detailed freight and goods movement flow data at the regional level, etc. Freight and business stakeholder interviews should be held periodically to provide early detection of problems and opportunities affecting the flow of goods and our regional economy. Collecting data sufficient to support other tasks, enabling the region to assess a wide variety of outcomes, including jobs creation, value/tons moved, economic impacts, cost of delays, emissions, energy use ,neighborhood impacts and others associated with freight movement. In addition, new goals and programs for greenhouse gas reduction, and possibly a regional congestion pricing pilot program, may add to or change regional data needs.

### A3: Coordinate research, modeling and planning with Oregon Department of Transportation (ODOT)

Coordination with ODOT is sufficiently important to be called out specifically. All efforts in recommendation A4 should include ODOT as a partner. Metro staff will work with ODOT's freight planners to consult and coordinate with respect to the statewide freight plan as well as periodic updates to the National Highway System/National Network freight designations.

*Long-term Actions:*

### A4: Develop and conduct freight and goods movement research program

In general, freight is a less well understood component of the regional transportation system; many regions are struggling to improve and integrate such tools as basic freight data, performance measures and analytic and modeling tools. The Regional Freight Strategy distinguishes between the specialized needs for moving industrial/agricultural commodities through and beyond the region and the day-to-day needs of urban goods movement within the region's mobility corridors and 2040 centers. Yet this distinction requires the use of analytical tools which can shed light on those two categories of goods movement within our region. It also requires close coordination between Metro and ODOT.

In order to develop and/or refine freight-relevant analytical tools that can help Metro and its partners better predict, manage and invest for freight and goods movement. Possible elements of a research program could include:

- continuing to develop the regional truck model
- developing explicit linkages between improvements to freight components of Metro's regional model and the Oregon statewide model, focusing on taking intercity flows to enhance the regional distribution component
- more fully incorporating freight trip time reliability performance measures into Metro's

transportation and land use planning and project prioritization criteria.

- finding and evaluating solutions for reliability and economic impacts for next RTP
- seeking funding for desired elements of a research program through existing and new programs, as appropriate

## Goal B. System management to increase network efficiency

This category comprises the first step to improved freight and goods movement operations on the existing system and includes preservation, maintenance and operations-focused projects and associated planning and coordinating activities. It focuses on using the system we have more effectively.

*Near-term Actions:*

### B1: Better define, preserve and enhance freight function in mobility corridors

In general, the freight mobility function is addressed as part of the regional mobility corridors. Define, preserve and enhance the freight function of the freight network within individual mobility corridors by evaluating deficiencies.

### B2: Assess need to develop and fund better incident management and traveler information

Real-time travel information (focused on truckers) to avoid incidents and find detours is increasingly important, particularly to improving reliability performance. Incident clearing resources and regionally coordinated efforts to manage incidents must be sufficiently funded. This action item would direct attention on deficiencies to be addressed, if they exist.

### B3: Continue support for use and expansion of ITS system management tools

Begin to address need for 24/7 congestion mapping for the multimodal freight system, among other needs. Support PORTAL's program of real-time traffic delay; provide GPS active (in cab) truck route management, electronic routing and signage.

### B4: Support workforce access to the region's industrial jobs through Metro RTO/TDM programs

The regional freight work group recognizes the need for Metro's transportation demand management programs and supports non-auto mobility choices for workers to get to their jobs. If options are limited in certain industrial areas, deficiencies will be highlighted for the region to address. Efforts to improve alternative transportation options for workers will include partnering with TriMet and other service providers to ensure good access to high employment areas.

## Goal C. Public understanding of freight and goods movement issues

To gain public support for projects and funding of freight initiatives, and to help the public and elected officials make wiser land use decisions, a program of public education is required.

*Near-term Actions:*

### C1: Establish stakeholder outreach program

Make use of an ongoing relationship with the freight community to provide topical and informative briefings to Metro's various audiences. The Portland Freight Committee and the Oregon Freight Advisory Committee (in which Metro staff participates).are the current groups to provide outreach to.

### C2: Provide support for topical fact sheets, and other published media that expands awareness of freight issues

*Insert a description of the Regional Snapshot web topics and speaker's series.* The Regional Snapshot program will be used to provide a spotlight on freight issues with periodic web topics and speakers. A key topic to articulate better is the link between freight and goods movement investments and environmental justice (reducing hot spot congestion and pollutants) and economic equity (good, family wage jobs in one of the few sectors that do not always require higher education).

### C3: Coordinate with Economic Value Atlas work which includes the economic development community

Metro will reach out to the economic development community, including the Portland Business Alliance, the Columbia Corridor Association, West Side Economic Alliance and others. Metro staff will work with these partners, and the Economic Value Atlas program, to support an economic development strategy for the region that is coordinated with infrastructure investment.

Note: Metro staff will coordinate with ODOT Rail Division to place the action item of "Host Operation Lifesaver training" under their responsibility for a statewide program.

## Goal D. Sustainable freight transportation system

This category of issues and solutions deals with traditional nuisance and hot spot issues associated with "smokestack and tailpipe" problems, but it also recognizes the many current contributions and new opportunities for the evolving green freight community to be part of the larger environmental and economic solution set required in these times, including greenhouse gas curtailments.

*Near-term Actions:*

### D1: Provide useful "green freight" links from Metro's freight program webpage

This would be a simple web resource that could direct our regional stakeholders to useful local, state and national programs and resources. This web resource would help identify what emission and greenhouse gas reductions can be expected from regional freight and goods movement activities. This action would be covered under Metro's Regional Snapshot program web page.

### D2: Pursue greenhouse gas and other pollutant reduction policies and strategies for freight

Metro staff will explore and define potential environmental benefits in the following areas:

- Procedures for identifying greenhouse gas impacts of freight and evaluating the net greenhouse gas impact of freight projects
- Programs, policies and projects for cost-effective net reduction of greenhouse gas and other pollutants, such as industrial symbiosis (businesses sharing resources and possibly using neighbors' waste products in their processes); and
- Leveraging and possibly expanding diesel retrofit programs, promote idle reduction regulations, etc.

Note: Metro staff will be asking the Oregon Department of Environmental Quality (DEQ) to take this action as part of their work program.

## Goal E. Freight-sensitive land use planning

Quality of life begins with a job. With that fact in mind, this category targets land use planning and design issues that can affect the ability of freight, goods movement and industrial uses to live harmoniously with their neighbors. Freight-sensitive land use planning includes everything from long-range aspirations for freight and industrial lands to short-term and smaller scale design and access issues.

*Near-term Actions:*

### E1: Develop strategies to protect existing supply of industrial land

Staff will identify lessons learned from previous efforts in the region and look at the most effective ways to protect high-value industrial land and prioritize and protect the value of freight investments to serve such areas. Protecting existing industrial land is part of the Urban Growth Management Functional Plan. This action will also focus on the economic impacts of failing to preserve and serve industrial lands. This would be tied in with action C3, above.

### E2: Examine need for additional industrial land

The region must ensure a continued adequate supply of appropriate industrial land. In addition to internal coordination between Metro planning and land use staff, and coordination with local jurisdictions and industry sectors, an understanding of how the City of Portland succeeded in this area could aid the larger regional effort to meet future industrial land needs. Metro currently tracks the availability and readiness of industrial tracks in the region that are 25 acres or larger, through the Regional Industrial Inventory Project.

### E3: Provide freight perspective to revision of Metro's livable street design guide

The devil is truly in the details of neighborhood provisioning (delivering to retailers and restaurants), designing for utility and street access for oversize construction equipment and providing needed arterial redundancy for freight and goods movement, all of which can impact local streets and communities. However, all these things are also critical for the very vitality we value in our region. As Metro updates its latest edition of Creating livable streets: Street design guidelines for 2040, Metro's freight program staff will coordinate with regional stakeholders to ensure that previously recommended freight considerations are kept in mind and incorporated into any revisions.

Metro freight staff will provide direction on appropriate freight and goods movement representation on the technical advisory committee that will oversee the revision of the guidelines and will develop "lessons learned" based on recent regional case studies.

## Goal F. Strategic transportation investments

This category of solutions focuses on planning and building capital projects and developing the funding sources, partnerships and coordination to implement them. It includes the list of regional freight project priorities attached as Appendix B to this report, identifying a wide range of projects from preservation and maintenance to major facility construction.

*Near-term Actions:*

### F1: Work toward implementation of the RTP freight priority projects

Advocacy for the prioritized list of regional freight projects within the approved RTP project list will be needed. This will include supporting funding needs and initiatives to build desired projects. In general, consistent with the message presented throughout this action plan, major investments for freight-oriented preservation, management and "build" projects should focus on:

- more carefully evaluating what, where and when the freight problems occur (noting, e.g., that they do not always coincide with the commute peaks)
- addressing core throughway system bottlenecks with substantial freight impacts, to improve truck mobility in and through the region. Examples include the Columbia River Crossing, the I-5 Rose Quarter, I-205 South and Highway 217.
- improving and protecting the throughway interchanges that provide access to major industrial areas, particularly: I-5/Marine Drive and I-5/Columbia Blvd serving the Columbia Corridor and Rivergate industrial areas, I-205/OR 212 serving the Clackamas and Milwaukie industrial areas, and I-205/Airport Way serving Portland International Airport and east Columbia Corridor industrial areas
- improving arterial connections to current and emerging industrial areas.
- ensuring safe transport of hazardous loads with a regional routing strategy

- looking beyond the roadway network to address critical marine and freight rail transportation needs such as completing the Columbia River channel deepening and upgrading main line and rail yard infrastructure

### F2: Strengthen the tie between project prioritization and the framework for freight performance

Metro recognizes that, while autos and trucks must share the same network, auto trips can more easily be diverted off the highway system via a number of satisfactory existing or planned alternatives, including high capacity transit, a supporting bus network, and regional and corridor bicycle and pedestrian systems in various stages of completeness. Thus, the dependence of trucks and truck-related commerce on the regional freight network system should be recognized as a factor in roadway project prioritization. This action item relies in part on improving the understanding and rigor of freight-related performance measures within Metro's modeling protocols: are we measuring what is relevant to know about freight? In addition, this action depends on technical staff and the freight/jobs/economic development community's ability to articulate fact-based net benefits of strategic goods movement and business-friendly investments and to compete effectively for regional dollars and attention within the decision-making structure of their respective local jurisdictions.

### F3: When appropriate, focus regional funds on large capital projects

Based on solid performance measures and other indicators of need and effectiveness fully vetted through regional planning processes, it makes sense in some cases for the region to focus its funding on one large project. Examples are the throughway system bottleneck projects listed in F1. .

### F4: Make strategic incremental improvements when large capital projects are unfunded

When funds are not available for major system improvements, make incremental improvements to those facilities through less costly strategies using tools such as intelligent transportation systems, transportation system management and transportation demand management. Also, phase larger improvements, or ensure that projects move along through completing preliminary engineering, right-of-way acquisition or other steps toward construction.

### F5: Ensure that unfunded freight projects are on an aspirational or illustrative RTP project list

The region should be prepared to ensure that unfunded projects could at least be considered if unusual, one-time, or new funding sources become available.

### F6: Develop regional freight rail strategy

Many hopes are pinned on the potential for regional freight rail to accommodate a greater share of the future demand for goods movement capacity. However, there is a lack of depth in understanding from an operational or investment perspective how that potential could be realized. For example, the I-5 Trade and Capacity studies indicated that there was adequate capacity for the existing level of passenger train frequency along the north/south corridor. However, that capacity would be at the expense of freight train operations for both UP and BNSF region-wide, create hot spot congestion, minimize the possibility of growing freight rail commerce and degrade freight rail service throughout the Pacific Northwest, resulting in more trucks on the region's highways. The Portland metro region is committed to a variety of passenger rail modes and must reckon with the interactions with the freight rail system.

In addition, regional demand and support for pedestrian and bicycle trails frequently puts pressure on existing freight rail capacity and operations. Issues of freight rail capacity, liability, safety, cost and efficiency must be balanced with other regional goals, based on common factual understanding of the underlying issues.

This recommendation contemplates a consultant-assisted technical regional rail study that would provide a foundation for developing the policy framework described in F6, above, and could incorporate that work as part of the study. Development of the strategy could include evaluation of public ownership and control of current or potential future passenger rail routes within the region or state, as part of a regional freight management strategy.

In addition to Metro's local jurisdictional partners, both Class 1 railroads, the regional short line operator, TriMet, ODOT Region 1, ODOT Rail Division, the Ports and major shippers/customers would be critical stakeholders.

*Long-term Actions:*

### F7: Develop policy and evaluation tools to guide public investment in private freight infrastructure (notably rail projects)

When staff capacity allows, more clearly define private and public sector roles, including incorporation of the identified state role in freight infrastructure planning and investment that is emerging from the statewide freight planning effort. This planning and analytical effort would answer the question "what are we trying to do with our investments?" And it would yield practical and usable performance measures and investment guidelines for public development of freight assets or services, when they are wholly or partially private. It would also help to correctly phase developments, based on public benefits, and identify equitable funding strategies. Rail/roadway grade separation projects and a short line investment strategy could be key focus areas for such policy development.

Public investment could be appropriate, for example, when it:

- leverages private investment
- allows progression of a needed project that would otherwise not occur for a relatively modest investment
- involves a facility's yard or terminal but has regional impacts
- pays for intermodal links
- creates new passenger capacity by solving freight bottlenecks
- preserves or creates jobs, generates wealth and taxes
- allows for more competition, modes or choices to shippers, businesses or consumers
- increases overall benefits more than it improves any single mode or facility

Note that private investment in public infrastructure—apart from development fees—should also be part of this policy discussion.

## DRAFT 2018 RTP System Evaluation Results

## Measure 13c. Freight Truck Vehicle Hours of Delay

view draft 11/17/17

**Truck Vehicle Hours of Delay (VHD) on the Regional Freight Network**

*(delay accrued where v/c exceeds 0.9)*

***MPA***

| Time Period | 2015 Base | 2040 No Build | 2027 Constrained | 2040 Constrained | 2040 Strategic |
|---|---|---|---|---|---|
| **7am - 9am** | 218 | 717 | 429 | 507 | 494 |
| Percent change from 2015 | | 229% | 97% | 133% | 127% |
| Percent change from 2040 No Build | | | | -29% | -31% |
| **1pm - 3pm** | 53 | 789 | 184 | 275 | 241 |
| Percent change from 2015 | | 1393% | 248% | 420% | 356% |
| Percent change from 2040 No Build | | | | -65% | -69% |
| **4pm - 6pm** | 150 | 568 | 336 | 417 | 401 |
| Percent change from 2015 | | 278% | 124% | 178% | 167% |
| Percent change from 2040 No Build | | | | -27% | -29% |

**Cost of Truck Vehicle Hours of Delay (VHD) on the Regional Freight Network**

*(delay accrued where v/c exceeds 0.9)*

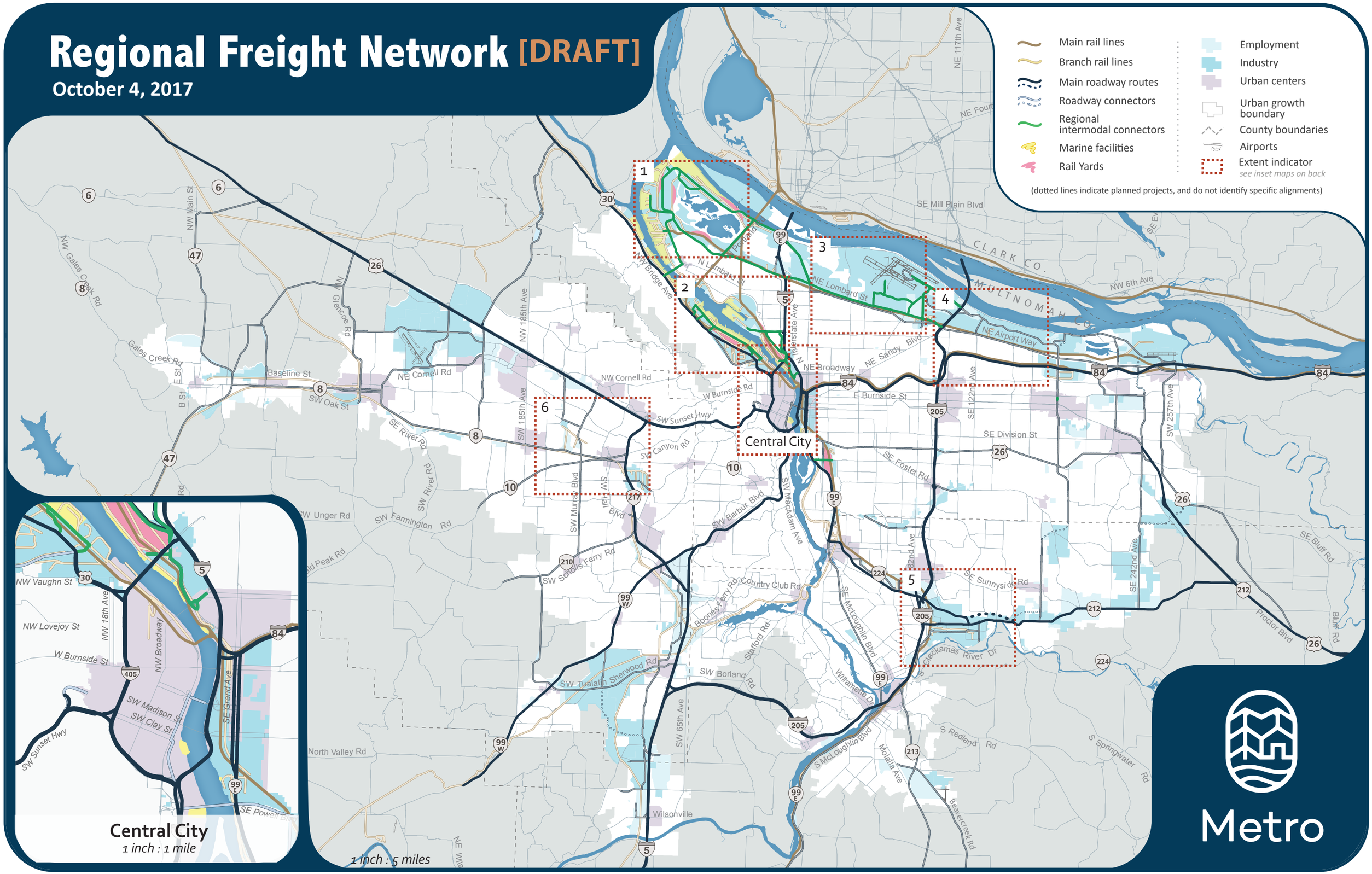
***MPA***

| Time Period | 2015 Base | 2040 No Build | 2027 Constrained | 2040 Constrained | 2040 Strategic |
|---|---|---|---|---|---|
| **7am - 9am** | $6,492 | $21,384 | $12,808 | $15,136 | $14,752 |
| Percent change from 2015 | | 229% | 97% | 133% | 127% |
| **1pm - 3pm** | $1,578 | $23,547 | $5,487 | $8,198 | $7,201 |
| Percent change from 2015 | | 1393% | 248% | 420% | 356% |
| **4pm - 6pm** | $4,480 | $16,936 | $10,027 | $12,438 | $11,973 |
| Percent change from 2015 | | 278% | 124% | 178% | 167% |

| **Freight Truck Travel Times Along Selected Routes (minutes)** | | **2015 Base** | | | **2040 No Build** | | | **2027 Constrained** | | | **2040 Constrained** | | | **2040 Strategic** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mobility Corridor 1** | **length (mi)** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** |
| CEID to Vancouver CBD | 8.5 | 11.9 | 12.8 | 17.3 | 15.0 | 15.2 | 18.9 | 13.2 | 14.4 | 17.9 | 11.9 | 12.5 | 14.8 | 11.9 | 12.4 | 14.6 |
| Percent change from 2015 | | | | | 26.4% | 18.6% | 8.9% | 10.5% | 12.8% | 3.3% | 0.1% | -2.6% | -14.8% | -0.3% | -3.1% | -15.7% |
| Vancouver CBD to CEID | 8.4 | 11.3 | 11.0 | 11.0 | 14.1 | 13.4 | 13.2 | 12.2 | 11.6 | 11.6 | 10.7 | 10.6 | 10.8 | 10.6 | 10.5 | 10.7 |
| Percent change from 2015 | | | | | 24.4% | 21.9% | 20.1% | 8.1% | 5.5% | 5.6% | -5.7% | -3.7% | -1.9% | -6.0% | -4.1% | -2.2% |
| Vista Ridge Tunnel to Vancouver CBD | 8.7 | 11.9 | 12.8 | 17.7 | 15.4 | 15.6 | 19.3 | 13.8 | 14.9 | 18.5 | 12.6 | 13.0 | 15.5 | 12.6 | 12.9 | 15.3 |
| Percent change from 2015 | | | | | 29.3% | 22.3% | 8.6% | 15.4% | 16.9% | 4.6% | 5.8% | 1.6% | -12.8% | 5.4% | 1.3% | -13.5% |
| Vancouver CBD to Vista Ridge Tunnel | 8.4 | 10.9 | 10.6 | 11.2 | 14.0 | 13.8 | 14.2 | 12.4 | 12.0 | 12.8 | 11.0 | 11.5 | 12.2 | 10.9 | 11.5 | 12.1 |
| Percent change from 2015 | | | | | 28.7% | 30.7% | 26.5% | 13.3% | 13.5% | 14.4% | 0.5% | 8.7% | 8.5% | 0.2% | 8.3% | 8.3% |
| **Mobility Corridor 2** | **length (mi)** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** |
| Tualatin Industrial to I-5 @ Morrison Br | 14.74 | 17.9 | 18.93 | 21.2 | 21.26 | 22.88 | 24.94 | 19.34 | 21.01 | 23.6 | 20.19 | 22.57 | 25.03 | 19.86 | 22.02 | 24.59 |
| Percent change from 2015 | | | | | 18.8% | 20.9% | 17.6% | 8.0% | 11.0% | 11.3% | 12.8% | 19.2% | 18.1% | 10.9% | 16.3% | 16.0% |
| I-5 @ Morrison Br to Tualatin Industrial | 15.31 | 18.89 | 19.64 | 22.39 | 22.74 | 24.27 | 27.39 | 20.52 | 22.17 | 26.28 | 21.46 | 23.84 | 27.17 | 21.21 | 23.74 | 27.1 |
| Percent change from 2015 | | | | | 20.4% | 23.6% | 22.3% | 8.6% | 12.9% | 17.4% | 13.6% | 21.4% | 21.3% | 12.3% | 20.9% | 21.0% |
| **Mobility Corridor 5** | **length (mi)** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** |
| I-5 @ Morrison to I-84/1-205 | 7.65 | 9.57 | 10.1 | 13.04 | 10.99 | 11.34 | 13.24 | 10.07 | 10.94 | 12.98 | 10.9 | 11.56 | 13.05 | 10.84 | 11.5 | 12.96 |
| Percent change from 2015 | | | | | 14.8% | 12.3% | 1.5% | 5.2% | 8.3% | -0.5% | 13.9% | 14.5% | 0.1% | 13.3% | 13.9% | -0.6% |
| I-84/1-205 to I-5 @ Morrison | 6.98 | 8.15 | 8.22 | 8.72 | 9.23 | 9.36 | 10.2 | 8.51 | 8.67 | 9.34 | 9.33 | 9.69 | 10.39 | 9.23 | 9.61 | 10.34 |
| Percent change from 2015 | | | | | 13.3% | 13.9% | 17.0% | 4.4% | 5.5% | 7.1% | 14.5% | 17.9% | 19.2% | 13.3% | 16.9% | 18.6% |
| **Mobility Corridor 8** | **length (mi)** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** |
| Clackamas Industrial Area to I-84/I-205 | 11.75 | 12.32 | 12.52 | 13.54 | 13.65 | 14.11 | 15.64 | 12.87 | 13.21 | 14.35 | 13.82 | 14.38 | 15.75 | 13.8 | 14.35 | 15.7 |
| Percent change from 2015 | | | | | 10.8% | 12.7% | 15.5% | 4.5% | 5.5% | 6.0% | 12.2% | 14.9% | 16.3% | 12.0% | 14.6% | 16.0% |
| I-84/I-205 to Clackamas Industrial Area | 11.88 | 12.54 | 12.67 | 13.64 | 13.76 | 14.12 | 15.5 | 13.05 | 13.31 | 14.55 | 14.26 | 14.88 | 16.52 | 14.24 | 14.89 | 16.51 |
| Percent change from 2015 | | | | | 9.7% | 11.4% | 13.6% | 4.1% | 5.1% | 6.7% | 13.7% | 17.4% | 21.1% | 13.6% | 17.5% | 21.0% |
| **Mobility Corridor 9** | **length (mi)** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** | **12-1pm** | **2-3pm** | **5-6pm** |
| Beavercreek Industrial Area to Clackamas Industrial Area | 7.67 | 9.23 | 9.77 | 9.68 | 10.61 | 11.16 | 11.92 | 9.96 | 10.85 | 11.04 | 11.19 | 12.5 | 13.67 | 11.25 | 12.53 | 13.62 |
| Percent change from 2015 | | | | | 15.0% | 14.2% | 23.1% | 7.9% | 11.1% | 14.0% | 21.2% | 27.9% | 41.2% | 21.9% | 28.2% | 40.7% |
| Clackamas Industrial Area to Beavercreek Industrial Area | 8 | 9.86 | 9.94 | 13.41 | 11.49 | 11.9 | 15.11 | 10.63 | 10.96 | 14.63 | 11.79 | 13.06 | 16.39 | 11.83 | 13.24 | 16.38 |
| Percent change from 2015 | | | | | 16.5% | 19.7% | 12.7% | 7.8% | 10.3% | 9.1% | 19.6% | 31.4% | 22.2% | 20.0% | 33.2% | 22.1% |

# Regional Freight Network [DRAFT]

October 4, 2017



| RTP Investment Category | County | Nominating Agency | 2018 RTP ID | Project Name | Start Location | End Location | Primary Purpose | Description | Estimated Cost (2016 dollars) | Time Period | Financially Constrained? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Freight | Clackamas County | Milwaukie | 11624 | Local Street Improvements in Tacoma Station Area | Location-specific | Location-specific | Increase freight access to indust & intermodal fac | Construct street improvements on Stubb St, Beta St, Ochoco St, Hanna Harvester Dr, and Mailwell Dr. (TSAP) | $ 5,600,000 | 2028-2040 | No |
| Freight | Clackamas County | Wilsonville | 11764 | Boones Ferry Road Extension | Commerce Circle | Ridder Road | Increase freight access to indust & intermodal fac | Construct 3-lane section with bike lanes and sidewalk | $ 2,100,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Gresham | 10496 | 181st: at I-84 | 181st/I-84 | 181st/I-84 | Increase freight access to indust & intermodal fac | Freight mobility improvements subject to refinement study. Transit/Enhanced Transit Corridor supportive project. | $ 1,000,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Gresham | 10446 | 181st: at Burnside | 181st/Burnside | 181st/Burnside | Increase system efficiency | Optimize intersection operation. Transit/Enhanced Transit Corridor supportive project. | $ 1,000,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Gresham | 10495 | 181st: at Halsey | Halsey St. | Halsey St. | Relieve current congestion | add 2nd LT lane to N & S legs, add RT lane to EB WB SB. | $ 1,089,615 | 2028-2040 | Yes |
| Freight | Multnomah County | Multnomah County | 11600 | Marine Drive at 223rd | Marine Drive at 223rd | Marine Drive at 223rd | Increase freight access to indust & intermodal fac | Widen to accommodate freight traffic and provide bike/ped facilities | $ 10,630,000 | 2028-2040 | No |
| Freight | Multnomah County | Port of Portland | 10363 | SW Quad Access | NE 33rd Ave. | SW Quad | Increase freight access to indust & intermodal fac | Provide street access from 33rd Ave. into SW Quad. | $ 6,290,303 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 10379 | Marine Dr. Improvement Phase 2 | BNSF grade crossing on Marine Drive | BNSF grade crossing on Marine Drive | Increase freight access to indust & intermodal fac | Construct rail overcrossing on Marine Dr. | $ 14,503,785 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11208 | T4 Modernization | Terminal 4 | | Increase freight access to indust & intermodal fac | Renovate operation areas at T4 to create intermodal processing areas. Rail spur relocation and expansion, grain elevator demolition, wharf removal | $ 15,845,078 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11355 | Barnes to Terminal 4 Rail | Terminal 4 | Barnes Yard | Increase freight access to indust & intermodal fac | Improve Rail Access to Terminal 4. | $ 4,543,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11357 | Terminal 6 Rail Support Yard Improvements | Terminal 6 | Terminal 6 | Increase freight access to indust & intermodal fac | Increase Terminal 6 rail capacity. | $ 10,630,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11649 | T2 Redevelopment | Terminal 2 | Terminal 2 | Increase freight access to indust & intermodal fac | Construct rail, rail scale, and crane modernization. | $ 4,783,500 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11651 | T2 Track Reconfiguration and Siding | Terminal 2 | Terminal 2 | Increase freight access to indust & intermodal fac | Construct rail loops and support siding. | $ 9,460,700 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11652 | Bonneville Rail Yard Build Out | Bonneville Rail Yard | Bonneville Rail Yard | Increase freight access to indust & intermodal fac | Construct two interior yard tracks at Bonneville Yard and complete the double track lead from the wye at the east end of the yard to UP Barnes Yard. | $ 3,826,800 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11653 | Ramsey Yard Utilization | Columbia Slough | Bonneville Yard | Increase freight access to indust & intermodal fac | Connect the existing set out track along the west side of the main lead with the industrial lead near the south end to provide a location to store a unit train. | $ 1,807,100 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11743 | Troutdale Airport Master Plan Transportation Improvements | Sundial Road | Swigert Way/Graham Road | Increase freight access to indust & intermodal fac | Implement transporation improvements developed as part of the Troutdale Airport Master Plan | $ 5,000,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11207 | T6 Modernization | Terminal 6 | Terminal 6 | Increase freight access to indust & intermodal fac | Provide improvements to container terminal including crane electronics and stormwater improvements. | $ 8,504,000 | 2028-2040 | Yes |

| RTP Investment Category | County | Nominating Agency | 2018 RTP ID | Project Name | Start Location | End Location | Primary Purpose | Description | Estimated Cost (2016 dollars) | Time Period | Financially Constrained? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Freight | Multnomah County | Port of Portland | 11306 | T6 Second Entrance from Marine Drive | N. Bybee Lake Rd. | N. Pacific Gateway | Increase freight access to indust & intermodal fac | Construct 2nd entrance from Marine Drive and internal rail overcrossing to Terminal 6. i. | $ 12,756,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Port of Portland | 11307 | T6 Suttle Road entrance | Terminus of N. Suttle Road | Terminal 6 | Increase freight access to indust & intermodal fac | Access to the east end of Terminal 6 off the terminus of Suttle Road. | $ 3,189,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Port of Portland | 11353 | West Hayden Island Rail Access | BNSF Rail Bridge | West Hayden Island | Increase freight access to indust & intermodal fac | Advance rail-dependent development. | $ 3,189,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Port of Portland | 11354 | West Hayden Island Rail Yard | West Hayden Island | West Hayden Island | Increase freight access to indust & intermodal fac | Advance rail development on West Hayden Island. | $ 10,098,500 | 2028-2040 | Yes |
| Freight | Multnomah County | Port of Portland | 11654 | Time Oil Road Reconstruction | Lombard | Rivergate Boulevard | Increase freight access to indust & intermodal fac | Reconstruct Time Oil Road | $ 9,567,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Port of Portland | 11949 | North Portland Junction: Undoing the "X" | UPRR Peninsula Junction | North Portland Junction | Increase freight access to indust & intermodal fac | Eliminate the at-grade crossing of UPRR and BNSF tracks at North Portland Junction. | $ 33,598,000 | 2028-2040 | No |
| Freight | Multnomah County | Port of Portland | 11956 | Rivergate Columbia Slough Rail Bridge | Terminal 6 | Terminal 5 | Increase freight access to indust & intermodal fac | Construct a rail bridge across Columbia Slough to provide rail connection to South Rivergate from Terminal 6. | $ 10,840,000 | 2028-2040 | No |
| Freight | Multnomah County | Port of Portland | 11659 | Rivergate Blvd. Overcrossing | N. Lombard | Time Oil Road | Relieve current congestion | Relieve a congestion point in Rivergate Industrial Area, improve rail access to Terminal 5. | $ 22,263,790 | 2018-2027 | Yes |
| Freight | Multnomah County | Port of Portland | 11309 | Cully Blvd. Grade separation | Columbia | Lombard | Increase system efficiency | Construct roadway overcrossing at NE Cully Blvd. over Kenton line. | $ 37,205,000 | 2028-2040 | No |
| Freight | Multnomah County | Port of Portland | 11953 | Six mph Curves Railroad Improvements | Steel Bridge | Just north of Steel Bridge | Increase system efficiency | Realign the curves just north of the Steel Bridge to improve rail speed and capacity. | $ 23,600,000 | 2028-2040 | No |
| Freight | Multnomah County | Port of Portland | 11955 | Railroad Bridge and Track Improvements | Columbia Slough Rail Bridge | Columbia River Rail Bridge | Increase system efficiency | Improve rail track conditions on approaches to Willamette River and Columbia Rive bridges to increase railroad speed and capacity. | $ 10,751,000 | 2028-2040 | No |
| Freight | Multnomah County | Portland | 10337 | Marine Dr & 33rd Intersection Improvements | Marine Dr & 33rd Ave, NE | Marine Dr & 33rd Ave, NE | Increase freight access to indust & intermodal fac | Signalize intersection to improve freight operations. | $ 1,000,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 10340 | Cornfoot Rd Corridor Improvements | NE 47th Ave | NE Alderwood Rd | Increase freight access to indust & intermodal fac | Improve roadway and intersections to improve freight operations. Construct a multi-use path on the north side of Cornfoot Rd to separate pedestrians and bicyclists from motor vehicle traffic. Install guardrails where needed. | $ 7,000,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 11800 | Columbia Blvd Pedestrian Overpass Replacement | N Columbia Blvd west of N Midway Ave | N Columbia Blvd west of N Midway Ave | Increase freight access to indust & intermodal fac | Replace the pedestrian overpass near George Middle School with either an at-grade crossing or a higher overpass to enable the use of Columbia Blvd as an over-dimensional freight route. | $ 3,000,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 12004 | Columbia Blvd Freight Improvements: Project Development | NE 60th Ave | NE 82nd Ave | Increase freight access to indust & intermodal fac | Alternatives analysis and project development to identify preferred street and intersection modifications to improve freight reliability and access to industrial properties. | $ 1,000,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 11799 | Suttle Rd Freight Street Improvements | N Portland Rd | T6 | Increase freight access to indust & intermodal fac | Improve Suttle Rd to meet Freight District Street standards, separate rail and truck movements, provide pedestrian access to nearby bus line, and enable future T6 entrance Port project. | $ 9,000,000 | 2028-2040 | Yes |

| RTP Investment Category | County | Nominating Agency | 2018 RTP ID | Project Name | Start Location | End Location | Primary Purpose | Description | Estimated Cost (2016 dollars) | Time Period | Financially Constrained? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Freight | Multnomah County | Portland | 11801 | Columbia Blvd Railroad Undercrossing Improvement | N Columbia Blvd at railroad bridge near I-5 | N Columbia Blvd at railroad bridge near I-5 | Increase freight access to indust & intermodal fac | Lower the Columbia Blvd undercrossing at the UP Railroad Bridge just west of I 5 to enable the use of Columbia Blvd as an over-dimensional freight route. | $ 3,000,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Portland | 11802 | N Portland Rd over Columbia Slough Bridge Replacement | N. Portland Rd at Columbia Slough | N. Portland Rd at Columbia Slough | Increase freight access to indust & intermodal fac | Replace the weight-restricted N. Portland Road bridge over the Columbia Slough to enable the use of N. Portland Road as an over-dimensional freight route and include a connection for the Columbia Slough Trail. | $ 7,500,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Portland | 10376 | Columbia Blvd Freight Improvements: Design/Construction | NE 60th Ave. | NE 82nd Ave. | Increase system efficiency | Construct street and intersection modifications to improve freight reliability and access to industrial properties. | $ 14,000,000 | 2028-2040 | No |
| Freight | Multnomah County | Portland | 10218 | Burgard-Lombard Street Improvements | N Burgard St & Columbia Blvd | Burgard Viaduct | Increase freight access to indust & intermodal fac | Construct roadway improvements, including pedestrian and bicycle facilities. | $ 2,635,000 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 11841 | Central Eastside Access and Circulation Improvements | Central Eastside | Central Eastside | Increase freight access to indust & intermodal fac | Improve access and circulation in the Central Eastside by adding new signals and crossings at Hawthorne & Clay ramp, Salmon & Grand, Salmon & MLK, Washington & Grand, Washington & MLK, Ankeny & MLK, Ankeny & Sandy, 16th & Irving, and modifying signals at Stark & Grand, Clay & Grand, and Mill & MLK. Improve Clay Street from Water to Grand and add multimodal safety improvements. | $ 5,205,879 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 11871 | Going/Greeley Interchange Improvements | N Going/Greeley | N Going/Greeley | Increase freight access to indust & intermodal fac | Redesign Going/Greeley interchange including climbing lane on Going to improve truck movement between Swan Island, Lower Albina, and I-5. | $ 16,750,000 | 2028-2040 | No |
| Freight | Multnomah County | Portland | 11880 | Cully Blvd Rail Overcrossing | NE Cully Blvd (over Kenton line) | NE Cully Blvd (over Kenton line) | Increase freight access to indust & intermodal fac | Construct roadway overcrossing at NE Cully Blvd. over Kenton line. | $ 35,000,000 | 2028-2040 | No |
| Freight | Multnomah County | Portland | 10331 | Columbia Blvd / Railroad Bridge Replacement | N Columbia Blvd over BNSF railroad | N Columbia Blvd over BNSF railroad | Keep system in good repair | Replace the existing fracture critical Columbia Blvd bridge (#078) over railroad tracks with a new structure, and perform seismic upgrades on parallel bridge (#078A). | $ 4,000,000 | 2028-2040 | Yes |
| Freight | Multnomah County | Portland | 11570 | Columbia/Alderwood Intersection Improvements | NE Columbia Blvd & Alderwood Rd | Columbia/Alderwood | Increase system efficiency | Improve intersection and install traffic signal at Columbia & Alderwood. | $ 5,050,654 | 2018-2027 | Yes |
| Freight | Multnomah County | Portland | 11796 | Going St Connected/Automated Vehicle Connection | Swan Island Industrial Area | I-5 | Increase system efficiency | Design and construct a Connected/Automated Vehicle connection between Swan Island and I-5. | $ 5,000,000 | 2028-2040 | Yes |
| Freight | Washington County | Wilsonville | 10588 | Grahams Ferry Road Improvements | Day Road | Washington/ Clackamas County line | Increase freight access to indust & intermodal fac | Widen Grahams Ferry Road to 3 lanes, add bike/pedestrian connections to regional trail system and fix (project development only) undersized railroad overcrossing. | $ 13,200,000 | 2028-2040 | Yes |
| Roads and Bridges | Clackamas County | Clackamas County | 10002 | Johnson Creek Blvd. Improvements | 55th Ave | 82nd Ave. | Increase freight access to indust & intermodal fac | Widen to 3 lanes with bikeways and pedestrian facilities from 55th Ave to 82nd Ave improving freight access to industrial area and increasing accessibility for historically marginalized communities. | $ 14,237,510 | 2028-2040 | Yes |

| RTP Investment Category | County | Nominating Agency | 2018 RTP ID | Project Name | Start Location | End Location | Primary Purpose | Description | Estimated Cost (2016 dollars) | Time Period | Financially Constrained? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Bridges | Clackamas County | Clackamas County | 11514 | 82nd Drive/Strawberry Lane Intersection | 82nd Dr/Strawberry Lane intersection | N/A | Relieve current congestion | Install traffic signal and turn lanes on eastbound and northbound approaches, improve ADA accessibility as necessary. | $ 1,520,870 | 2028-2040 | Yes |
| Roads and Bridges | Clackamas County | Clackamas County | 10023 | 82nd Dr. Improvements | Hwy 212 | Strawberry Lane Intersection | Relieve current congestion | Widen to a consistent 4 lane cross section and include bike/ped improvement and ADA accessibility improvements as necessary. Not including intersection improvements at Strawberry Lane. | $ 18,521,712 | 2028-2040 | No |
| Roads and Bridges | Clackamas County | Happy Valley | 10033 | 172nd Ave & 190th Connector | Clatsop | Sunnyside Rd. | Relieve current congestion | Widen 172nd to 5 lanes; construct connector between 172nd and 190th Ave using adopted alignment; project includes bike lanes, sidewalks and continuous left turn lane; last connector in n/s freight route alternative to I-205 between I-84 and Hwy-212. | $ 39,841,240 | 2028-2040 | Yes |
| Roads and Bridges | Clackamas County | Happy Valley | 11135 | Rock Creek Blvd. improvements | Hwy. 212/224 (planned Sunrise Corridor Rock Creek Interchange) | 177th Ave. | Increase freight access to indust & intermodal fac | Construct new 5 lane road from Sunrise Corridor Rock Creek interchange to 162nd Ave; Widen existing alignment of Rock Creek Blvd to five lanes from 162nd to 177th Ave. Facility improvements include continuous left turn lane, sidewalks, bike lanes and traffic signals. | $ 23,673,010 | 2018-2027 | Yes |
| Roads and Bridges | Clackamas County | Happy Valley | 10041 | 162nd Ave. Extension South Phase 1 | Rock Creek Blvd. | Hwy. 212 | Relieve current congestion | Extend 162nd Ave from Rock Creek Blvd to Hwy-212; construct new, 3 lane roadway with continuous left turn lane, sidewalks, bike lanes, intersection improvements at Hwy. 212/162nd on all four approaches. Project terminates at industrial employment sector. | $ 5,315,000 | 2018-2027 | Yes |
| Roads and Bridges | Clackamas County | Lake Oswego | 11935 | Lakeview Boulevard Improvements | Jean Road | SW McEwan Road | Link land use with transportation investments | 3,500' long widening for two 14' shared use lanes with an 8' sidewalk on one side separated by stormwater planter and curb. | $ 2,915,000 | 2018-2027 | Yes |
| Roads and Bridges | Clackamas County | Milwaukie | 11623 | Group 11--Intersection Improvements in North Industrial Area | Ochoco St | Harrison St | Relieve current congestion | Signage and Intersection Improvements at McLoughlin Blvd and Ochoco St = Establish signage for trucks and improve intersection. (TSAP)<br>Intersection Improvements at McLoughlin Blvd and 17th Ave = Prohibit left-turn movement from 17th Ave to northbound McLoughlin Blvd and include in Hwy 224 & Hwy 99E Refinement Plan.<br>Intersection Improvements at Main St and Mailwell Dr = Upgrade intersection turning radii to better accommodate freight movements. | $ 2,300,000 | 2028-2040 | No |
| Roads and Bridges | Clackamas County | Milwaukie | 10000 | Linwood/Harmony Rd./ Lake Rd. Intersection | Railroad Ave / Linwood Ave / Harmony Rd Intersection | Railroad Ave / Linwood Ave / Harmony Rd Intersection | Relieve current congestion | Railroad crossing and intersection improvements based on further study of intersection operations including bikeways and pedestrian facilities to be undertake jointly by the City of Milwaukie and the County | $ 21,300,000 | 2028-2040 | Yes |

| RTP Investment Category | County | Nominating Agency | 2018 RTP ID | Project Name | Start Location | End Location | Primary Purpose | Description | Estimated Cost (2016 dollars) | Time Period | Financially Constrained? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Bridges | Clackamas County | Milwaukie | 11537 | Group 4--Pedestrian Improvements at Hwy 224 | Harrison St | Freeman Way | Relieve current congestion | Intersection Improvements at Hwy 224 and 37th Ave = Consolidate the two northern legs of 37th Ave and International Way into one leg at Hwy 224.<br>Intersection Improvements at Hwy 224 and Oak St = Add left-turn lanes and protected signal phasing on Oak St approaches.<br>Study of Pedestrian Crossings on Hwy 224 = Examine alternatives for improving pedestrian crossings at five intersections along Hwy 224 (Harrison St, Monroe St, Oak St, 37th Ave, Freeman Way).<br>Intersection Improvements at Hwy 224 and Oak St = Improve pedestrian crossing.<br>Intersection Improvements at Hwy 224 and 37th Ave = Improve pedestrian crossing.<br>Hwy 224 Crossing Improvements at Oak and Washington St = Improve intersection crossing safety for bicyclists at Washington St and Oak St.<br>Intersection Improvements at Hwy 224 and Freeman Way = Improve pedestrian crossing.<br>Intersection Improvements at Hwy 224 and Harrison St = Improve pedestrian crossing.<br>Intersection Improvements at Hwy 224 and Monroe St = Improve pedestrian crossing.<br>Intersection Improvements at Harrison St and Hwy 224 = Add left-turn lanes and protected signal phasing on Harrison St approaches. | $ 3,100,000 | 2028-2040 | Yes |
| Roads and Bridges | Clackamas County | Oregon City | 11544 | Meyers Road Extension (West) | OR 213 | High School Avenue | Relieve current congestion | Construct new 3 lane roadway, sidewalks, buffered bike lanes, WB right turn lane and center turn lanes to serve adjacent Clackamas Community College & underdeveloped industrial properties. (TSP D46) | $ 4,500,000 | 2018-2027 | Yes |
| Roads and Bridges | Clackamas County | Oregon City | 10119 | OR 213 & Redland, Phase 2 | Redland Road | Redland Road Undercrossing | Relieve current congestion | Add third through lane in both northbound & southbound directions. This is Phase 2 of the completed Jughandle Project. (TSP D79) | $ 9,800,000 | 2028-2040 | Yes |
| Roads and Bridges | Clackamas County | Oregon City | 10140 | OR 213 Widening | Clackamas Community College | Conway Drive | Relieve current congestion | Add one Southbound through lane and one Northbound through lane, bike lanes, and sidewalks. (TSP D77, W31) | $ 5,200,000 | 2028-2040 | Yes |
| Roads and Bridges | Clackamas County | Oregon City | 10144 | Hwy 99E & I-205 SB Interchange Access | Dunes Drive | I-205 SB Ramp Terminus | Relieve current congestion | Dual left turn lanes on 99E approach to SB I-205 ramp, ramp widening to accommodate approach. (Closely related to TSP D75, D76 but not actually these projects) | $ 3,000,000 | 2028-2040 | No |
| Roads and Bridges | Clackamas County | Oregon City | 11547 | Clairmont Drive Extension | Beavercreek Road | Holly Lane | Serve new urban area | Construct new 3 lane roadway, sidewalks, bike lanes, turn lanes to serve UGB expansion area. (TSP D54) | $ 2,000,000 | 2028-2040 | No |
| Roads and Bridges | Clackamas County | Wilsonville | 10156 | Boeckman Rd. at Boeckman Creek | Canyon Creek Rd. N | Stafford Rd. | Build complete street | Widen Boeckman Road to 3 lanes with bike lanes, sidewalks and connections to regional trail system and install bridge. | $ 12,220,000 | 2018-2027 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10421 | Burnside: 181st to 197th Boulevard Improvements | 181st | 197th | Build complete street | Complete boulevard improvements. | $ 8,370,051 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10431 | 190th/Highland: 11th to 30th Widening | 200' south of SW 11th | 30th | Build complete street | Reconstruct and widen street to five lanes with sidewalks and bike lanes. Widen and determine the appropriate cross-section for Highland Drive and Pleasant View Drive from Powell Boulevard to 190th Ave. | $ 20,884,252 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10463 | Foster: Jenne to 172nd Extension | Jenne | 172nd | Serve new urban area | New north extension of Foster. | $ 16,388,938 | 2028-2040 | Yes |

| RTP Investment Category | County | Nominating Agency | 2018 RTP ID | Project Name | Start Location | End Location | Primary Purpose | Description | Estimated Cost (2016 dollars) | Time Period | Financially Constrained? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Bridges | Multnomah County | Gresham | 10464 | Giese: 182nd to 172nd Extension | 182nd | 172nd | Relieve future congestion | New ext. of Giese Rd. to Foster Road. | $ 19,120,428 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10466 | 172nd: Cheldelin to Foster | Foster | Cheldelin Rd. | Build complete street | Upgrade street to urban standards w. sidewalks, bikelanes, and add roundabout or traffic signal at 172nd/Foster. | $ 7,561,096 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10494 | 162nd: Stark EB + SB Right Turns | Stark St. | Stark St. | Relieve current congestion | Exclusive southbound and eastbound right turns at Stark. | $ 1,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10498 | 182nd: Powell and Division Intersections | 181st at Division | 181st at Powell | Relieve current congestion | At Division: add second westbound left turn lane (TIF P1). At Powell, add northbound and southbound double left turn lanes (TIF P2 and TSP8).At Powell add SB and NB lanes. Transit/Enhanced Transit Corridor supportive project. | $ 1,788,678 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10473 | 223rd at Stark: Lane Additions | 223rd at Stark | 223rd at Stark | Increase system efficiency | Add EB and NB RT lanes and 2nd NB and SB LT lanes. | $ 5,500,000 | 2018-2027 | Yes |
| Roads and Bridges | Multnomah County | Gresham | 10454 | 181st: Glisan to Yamhill Boulevard Improvements | Glisan | Yamhill | Build complete street | Complete boulevard design improvements. | $ 12,160,785 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Multnomah County | 11373 | NE 238th Drive Freight and Multimodal Improvements | Halsey St. | Glisan St | Increase freight access to indust & intermodal fac | Construct southbound travel lanes with passing lane and northbound travel lane. Add bike and pedestrian facilities on both northbound and southbound sides. | $ 9,567,000 | 2018-2027 | Yes |
| Roads and Bridges | Multnomah County | Port of Portland | 11951 | Columbia Boulevard Rail Overcrossing | Columbia Boulevard at Penn Junction | Columbia Boulevard at Penn Junction | Relieve future congestion | Grade separate Columbia Blvd. at Penn Junction to eliminate three at-grade crossings. | $ 28,935,000 | 2028-2040 | No |
| Roads and Bridges | Multnomah County | Portland | 10335 | NE 42nd/47th Ave Bridge & Corridor Improvements | NE Killingsworth St | NE Columbia Blvd | Keep system in good repair | Replace the weight-restricted NE 42nd Ave Bridge (#075) over NE Portland Hwy and the adjacent railway, and add pedestrian and bicycle facilities to the bridge and the roadway from Killingsworth to Columbia. This project will remove the weight restriction, improve vertical clearance for over-dimensional freight, and provide pedestrian and bicycle facilities. | $ 12,000,000 | 2018-2027 | Yes |
| Roads and Bridges | Multnomah County | Portland | 11807 | NE 33rd Ave Bridge Replacement | 33rd Ave, NE (over railroad tracks and Columbia Blvd) | 33rd Ave, NE (over railroad tracks and Columbia Blvd) | Keep system in good repair | Replace the existing seismically vulnerable 33rd Ave bridge (#009) over railroad tracks and provide pedestrian and bicycle facilities on the new structure. Improve and signalize the intersection of 33rd & Columbia, and remove the seismically vulnerable, fracture critical ramp over Columbia (#009A). Project design will consider freight movement needs, consistent with policies, street classification(s) and uses. | $ 9,200,433 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Portland | 10336 | Columbia & Cully Intersection Improvements | NE Cully Blvd & Columbia Blvd | NE Cully Blvd & Columbia Blvd | Increase freight access to indust & intermodal fac | Reconstruct intersection to provide signalization, left turn pockets, enhancing turning radii and improving circulation for trucks serving expanding air cargo facilities south of Portland. | $ 5,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Portland | 10237 | Southern Triangle Access Improvements | Powell (12th/Ross Island Bridge) | Hawthorne Bridge (railroad mainline) | Increase access to jobs | Improve vehicle access to the Southern Triangle district from eastbound Powell Blvd, and improve vehicle access from CEID to westbound Powell and southbound I-5. | $ 4,000,000 | 2028-2040 | Yes |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Bridges | Multnomah County | Portland | 10242 | Interstate-Larrabee Overpass | N Interstate/Larrabee Bridge | N Interstate/Larrabee Bridge | Keep system in good repair | Remove the existing weight-restricted, low-clearance, poor-condition Interstate to Larrabee southbound flyover ramp (Bridge #153) and replace with a new overpass including a multi-use path to connect the future N Portland Greenway Trail to the Broadway Bridge. Assess the costs and benefits of providing vehicle access on the new structure as part of project development. | $ 5,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Portland | 11793 | SE Yamhill /Taylor Couplet | SE Water | SE Grand | Increase system efficiency | Improve traffic safety and capacity by converting Yamhill and Taylor to couplet operation between Water and Grand Ave, including new traffic signals at Yamhill / MLK, Yamhill / Grand, and Taylor / Water. As part of the project, reconfigure the ramp from Belmont viaduct to MLK. | $ 3,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Multnomah County | Portland | 10334 | 11th/13th Ave Rail Overcrossing | NE 11th Ave & NE Lombard Pl | NE 11th Ave & NE Lombard Pl | Increase system efficiency | Construct roadway overcrossing at NE 11th/13th over Kenton line. | $ 35,000,000 | 2028-2040 | No |
| Roads and Bridges | Multnomah County | Portland | 11117 | Willbridge Industrial Area Rail Overcrossing | NW Balboa | NW St Helens Rd | Increase system efficiency | Provide an alternative crossing of the BNSF Railroad to improve connectivity and safety between US 30 and the industrial properties served by NW Front Avenue in the Willbridge area of the NW Industrial District. | $ 23,113,022 | 2028-2040 | No |
| Roads and Bridges | Washington County | Cornelius | 10795 | Holladay Street Extension - West | 4th Ave | Yew St. | Increase freight access to indust & intermodal fac | Construct new collector. | $ 2,657,500 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Cornelius | 10802 | 29th Avenue Traffic Signals and Crossing Gates | TV Hwy (OR 8) | S. Alpine St. | Relieve future congestion | Install traffic signals at intersection of Hwy 8 and 29th Avenue and install crossing gates and signals at S. 29th railroad crossing between Baseline and Alpine Streets. | $ 2,000,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Forest Grove | 10780 | OR 47/ Pacific Avenue Intersection Improvements | OR 47 | OR 8 | Relieve future congestion | Construct intersection improvement to add a west-bound left turn lane. | $ 4,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11910 | Meek Rd Improvements, Phase 2 | Jackson School Rd | Sewell Rd | Increase freight access to indust & intermodal fac | Improve Meek Rd to address safety for industrial access to/from Jackson School Rd | $ 3,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11150 | Jacobson Rd Turn Lanes and Bike/Ped Improvements | Helvetia Rd | Century Blvd | Increase freight access to indust & intermodal fac | Widen roadway from two to three lanes (add center turn lane); complete bike/ped facilities; reconfigure intersection with Helvetia Rd to right-in, right-out only | $ 2,657,500 | 2028-2040 | No |
| Roads and Bridges | Washington County | Hillsboro | 10821 | Huffman St Extension, Phase 1 | Brookwood Pkwy | Sewell Rd | Serve new urban area | Construct five-lane road with bike/ped facilites | $ 8,387,070 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 10822 | Starr Blvd Reconstruction and Improvements, Phase 1 | Evergreen Rd | Huffman St (future extension) | Serve new urban area | Construct three-lane road with bike/ped facilities | $ 5,315,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11147 | Schaaf Rd Reconstruction | Helvetia Rd | New north-south collector | Serve new urban area | Reconstruct rural gravel road to three-lane roadway with bike/ped facilities | $ 4,252,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11364 | Starr Blvd Reconstruction and Improvements, Phase 2 | Huffman St (future extension) | Meek Rd | Serve new urban area | Construct three-lane road with bike/ped facilities | $ 4,252,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11383 | New North-South Collector (North Hillsboro) | Jacobsen Rd | Schaaf Rd | Serve new urban area | Construct three-lane roadway with bike/ped facilities | $ 2,657,500 | 2018-2027 | Yes |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Bridges | Washington County | Hillsboro | 11890 | Huffman St Extension, Phase 2 | Sewell Rd | Jackson School Rd | Serve new urban area | Construct five-lane road with bike/ped facilites | $ 6,500,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 10836 | Evergreen Rd Widening and Bike/Ped Improvements | Glencoe Rd | 15th Ave | Serve new urban area | Widen roadway from three to five lanes, complete missing sidewalks, and upgrade to buffered bike lanes | $ 5,782,720 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11387 | Meek Rd Improvements, Phase 1 | Sewell Rd | Starr Blvd | Serve new urban area | Widen and improve roadway to three lanes with bike/ped facilities | $ 6,909,500 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11388 | 30th Ave Construction | Evergreen Rd | Meek Rd | Serve new urban area | Construct three-lane industrial collector with bike/ped facilities | $ 10,500,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11906 | 25th Ave Extension | Evergreen Rd | Huffman St | Serve new urban area | Construct three-lane roadway with bike/ped facilities; realign intersection at Evergreen to avoid airport clear zone | $ 4,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11907 | Jackson School Rd Improvements | Evergreen Rd | Storey Creek (UGB) | Serve new urban area | Improve roadway from rural to urban standard and widen to three lanes with bike/ped facilities | $ 11,400,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Hillsboro | 11149 | Helvetia Rd Turn Lanes and Bike/Ped Improvements | Schaaf Rd | West Union Rd | Serve new urban area | Widen roadway to three lanes (one through lane in each direction and center turn lane) with bike/ped facilities | $ 4,252,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Hillsboro | 11341 | West Union Rd Widening and Improvements | Helvetia Rd | Cornelius Pass Rd | Serve new urban area | Widen to three lanes from Helvetia to Century, and five lanes from Century to Cornelius Pass, including bike/ped facilities along entire length | $ 12,000,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Hillsboro | 10553 | 209th Ave Widening and Improvements, Phase 1 | TV Hwy | Kinnaman Rd | Serve new urban area | Widen roadway from two/three lanes to five lanes; improve from rural to urban standard with bike facilities and sidewalks; improve intersections and railroad crossing; new signals at Blanton and Kinnaman; project to serve South Hillsboro UGB area | $ 22,327,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Tigard | 11995 | Hunziker Core Industrial Street | Hunziker Road | Tech Center Drive | Increase freight access to indust & intermodal fac | Construct new street with sidewalks and bike lanes from Hunziker Road (along Wall Street) to Tech Center Drive to improve freight access and connectivity to Tigard Triangle | $ 8,000,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Tualatin | 10716 | Myslony | 112th | 124th Ave | Increase access to jobs | Reconstruct/widen from 112th to 124th to fill system, includes bridge. Improve the intersection of 124th and Myslony. | $ 10,000,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Tualatin | 10718 | Herman | Cipole | 124th Ave | Increase access to jobs | Reconstruction/ widen to 3-lanes from Cipole to 124th. | $ 2,736,162 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Tualatin | 10717 | Cipole Street Reconstruction | OR 99W | Tualatin-Sherwood | Increase access to jobs | Reconstruct/widen to 3 lanes from 99W to Tualatin-Sherwood Road and include shared-use path for the Ice Age Tonquin Trail, includes signal at Cipole and Herman. The project or a portion of the project is outside the designated urban growth boundary as of March 2014. | $ 21,291,890 | 2028-2040 | No |
| Roads and Bridges | Washington County | Washington County | 10568 | Tualatin-Sherwood Rd. Improvements | Langer Farms Pkwy. | Teton Ave. | Relieve current congestion | Widen from three to five lanes with bike lanes and sidewalks. | $ 35,000,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Washington County | 10559 | Cornell Improvements | Hwy. 26 | Murray Blvd. | Relieve current congestion | Widen Cornell from three to five lanes with bike lanes and sidewalks. | $ 25,000,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Washington County | 11470 | Basalt Creek Parkway | Grahams Ferry Rd. | Boones Ferry Rd | Increase access to jobs | Extend new 5 lane Arterial with bike lanes, sidewalks and street lighting. | $ 31,700,000 | 2028-2040 | Yes |
| Roads and Bridges | Washington County | Washington County | 11436 | East-West Arterial Overcrossing | Boones Ferry Rd | East of I-5 | Relieve future congestion | Extend new 4-lane overcrossing over I-5 from Boones Ferry Rd to 65th and Stafford Rd. | $ 40,400,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Washington County | 11469 | 124th Ave Improvements | Tualatin-Sherwood Rd. | Grahams Ferry Rd | Relieve future congestion | Widen 124th from 2 lanes to 5 lanes with bike lanes and sidewalks | $ 14,900,000 | 2028-2040 | No |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads and Bridges | Washington County | Washington County | 11737 | Cornell @ 185th Intersection Improvements | 185th Ave. | Cornell Rd | Relieve future congestion | Prioritize near-term improvements such as signal timing, transit prioritization, traffic operations, monitoring, and specific turn lane configurations. Intersection improvements (and/or other reasonable replacement improvements) are to be implemented and prioritized as funding allows. If, after such improvements have been considered and motor vehicle traffic congestion becomes unacceptable, then these intersections could be considered as candidates for grade separation and/or other improvements to meet travel needs. | $ 22,300,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Washington County | 11923 | Grahams Ferry Road (Helenius to Tonquin) | Helenius St | Tonquin Rd | Build complete street | Widen roadway to 3 lanes, includes sidewalks and bike lanes | $ 4,000,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Washington County | 11903 | Roy Rogers Rd. | Chicken Creek Bridge | Borchers Rd | Relieve current congestion | Widen roadway to 5 lanes, includes sidewalks and bike lanes | $ 11,000,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Washington County | 10557 | Murray/TV Hwy. Intersection | Farmington Rd. | TV Hwy. | Relieve current congestion | Intersection improvement at TV Hwy. and Farmington with Murray Blvd. | $ 26,600,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Washington County | 10596 | Scholls Ferry Rd. Improvements | Hwy. 217 | 121st Ave. | Relieve current congestion | Widen to seven lanes with bike lanes and sidewalks. | $ 21,000,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Washington County | 10598 | Southern Arterial | Hwy. 99W | I-5 | Relieve future congestion | Purchase ROW. Construct 2/3 lane arterial with bike lanes and sidewalks. | $ 116,000,000 | 2028-2040 | No |
| Roads and Bridges | Washington County | Wilsonville | 11243 | Day Road Improvements | Grahams Ferry Rd. | Boones Ferry Rd. | Relieve future congestion | Widen street from 3 to 5 lanes with bike lanes, sidewalks and street lighting. Improve structural integrity for increased freight traffic and provide congestion relief. | $ 10,560,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Wilsonville | 10853 | Garden Acres Road Extension | Day Road | Ridder Road | Increase freight access to indust & intermodal fac | Construct three lane road extension with sidewalks and bike lanes and reconstruct/reorient Day Road/Grahams Ferry Road/Garden Acres Road intersection. | $ 14,260,000 | 2018-2027 | Yes |
| Roads and Bridges | Washington County | Wilsonville | 11809 | Java Road Connection and Signal | Grahams Ferry Road | Garden Acres Road | Increase access to jobs | Construct new Java Road with buffered bike lanes and sidewalks, disconnect Clutter Street from Grahams Ferry Road, and install traffic signal at Grahams Ferry Road. | $ 1,500,000 | 2028-2040 | No |
| Throughways | Clackamas County | ODOT | 10890 | OR 212/224 Sunrise Hwy Phase 2: I-205 to SE 172nd (PE, ROW) | I-205 | 172nd Ave. | Relieve current congestion | Conduct preliminary engineering (PE) and acquire right-of-way (ROW) on the OR 212/224 Sunrise Corridor from I-205 to SE 172nd Ave consistent with the Final Environmental Impact Statement (FEIS)/Record of Decision (ROD). | $ 70,000,000 | 2018-2027 | Yes |
| Throughways | Clackamas County | ODOT | 11350 | OR 224 Milwaukie Expressway improvements | I-205 | Rusk Rd | Increase system efficiency | Construct a third westbound lane on Milwaukie Expressway (Hwy-224) from I-205 to Rusk Rd | $ 12,000,000 | 2018-2027 | Yes |
| Throughways | Clackamas County | ODOT | 11585 | I-205 Abernethy Bridge (PE and ROW) | OR99E Interchange | Oswego Hwy (OR 43) Interchange | Relieve current congestion | Widen bridge to address recurring bottlenecks on the bridge. | $ 8,000,000 | 2018-2027 | Yes |
| Throughways | Clackamas County | ODOT | 11981 | I-205 Northbound Auxiliary Lane, Sunrise Expressway Entrance to Sunnybrook | Sunrise Expressway Entrance | Sunnyside/ Sunnybrook Exit | Increase system efficiency | Provide I-205 NB auxiliary lane between Sunrise Expressway entrance ramp and the Sunnyside Road/Sunnybrook Blvd interchange exit ramp. | $ 7,000,000 | 2018-2027 | Yes |
| Throughways | Clackamas County | ODOT | 11301 | OR 212/224 Sunrise Hwy Phase 2: I-205 to SE 172nd (CON) | I-205 | 172nd Ave. | Relieve current congestion | Construction (CON) improvements on the OR 212/224 Sunrise corridor from I-205 to SE 172nd Ave consistent with the FEIS/ROD. | $ 100,000,000 | 2028-2040 | Yes |
| Throughways | Clackamas County | ODOT | 11969 | I-205 Abernethy Bridge (CON) | OR99E Interchange | Oswego Hwy (OR 43) Interchange | Relieve current congestion | Widen both directions of the I-205 Abernethy Bridge and approaches to address recurring bottlenecks on the bridge. Install Active Traffic Management (ATM) on northbound and southbound I-205. Preliminary Engineering (PE) and Right-of-Way (ROW) phase. | $ 200,000,000 | 2028-2040 | Yes |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Throughways | Clackamas County | ODOT | 11990 | I-5 Southbound: Wilsonville Rd to Wilsonville-Hubbard Hwy | Wilsonville Rd | Wilsonville-Hubbard Hwy | Increase system efficiency | Add an auxiliary lane on I-5 from Wilsonville Road to the Wislonville-Hubbard Highway, including improvements to the Boone Bridge. PE, ROW and Construction Phases. | $ 80,000,000 | 2028-2040 | Yes |
| Throughways | Clackamas County | ODOT | 11992 | I-205 Operational Improvements | Columbia River | I-5 | Increase system efficiency | Construct improvements to address bottlenecks and improve safety on I-205. Specific improvements as identified in operational analysis, mobility corridor analysis and refinement planning. | $ 20,000,000 | 2028-2040 | No |
| Throughways | Clackamas County, Multnomah County | ODOT | 11305 | I-205 Active Traffic Management | Columbia River | I-5 | Increase system efficiency | Construct improvements to address recurring bottlenecks on I-205. Specific improvements as identified in operational analysis, Mobility Corridor analysis, refinement planning and Active Traffic Management Atlas. | $ 15,000,000 | 2018-2027 | Yes |
| Throughways | Multnomah County | ODOT | 11304 | I-5 South Operational Improvements | Marquam Bridge | Region Boundary | Increase system efficiency | Construct improvements to address recurring bottlenecks on I-5 south of the central city. Specific improvements as identified in operational analysis, Mobility Corridor analysis and refinement planning. | $ 15,000,000 | 2018-2027 | Yes |
| Throughways | Multnomah County | ODOT | 11370 | I-205 Northbound Auxiliary Lane Powell to I-84 | Powell Entrance Ramp | I-84 | Increase system efficiency | Design and construct an auxiliary lane on northbound I-205 from Powell Blvd to the I-84 interchange. | $ 15,000,000 | 2018-2027 | Yes |
| Throughways | Multnomah County | ODOT | 10893 | I-5 Columbia River Bridge | Victory Blvd. | Washington state line | Relieve current congestion | Replace I-5/Columbia River bridges and improve interchanges on I-5. Project adds protected/buffered bikeways, cycletracks and a new trail/multiuse path or extension. | $ 3,169,866,000 | 2028-2040 | Yes |
| Throughways | Multnomah County | ODOT | 11583 | I-5 Northbound: Lower Boones Ferry to Carman Auxiliary Lane Extension | Lower Boones Ferry Rd. Interchange | Carman Dr. Interchange | Increase system efficiency | Extend existing auxiliary lane between the Lower Boones Ferry Road interchange and the Carman Drive interchange. | $ 22,500,000 | 2028-2040 | No |
| Throughways | Multnomah County | ODOT | 11974 | I-405 Operational Improvements | Fremont Bridge | I-5 | Increase system efficiency | Construct operational improvements to address bottlenecks and improve safety on I-405. Specific improvements as identified in operational analysis, mobility corridor analysis, and refinement planning | $ 50,000,000 | 2028-2040 | No |
| Throughways | Multnomah County | ODOT | 11993 | I-84 Operational Improvements | I-5 | Troutdale | Increase system efficiency | Construct improvements to address bottlenecks and improve safety on I-84. Specific improvements as identified in operational analysis, mobility corridor analysis and refinement planning | $ 20,000,000 | 2028-2040 | No |
| Throughways | Multnomah County, Washington County | ODOT | 11971 | US 26 (Sunset Highway) Operational Improvements | I-405 | West MPO Boundary | Increase system efficiency | Construct Improvements to address bottlenecks and improve safety on US 26 (Sunset Highway) Specific improvements as identified in operational analysis, mobility corridor analysis, and refinement planning | $ 50,000,000 | 2028-2040 | No |
| Throughways | Region-wide | ODOT | 11991 | I-5 Freight Operational Improvements | Columbia River | South MPO Boundary | Increase system efficiency | Construct improvements to address bottlenecks and improve safety on I-5. Specific improvements as identified in operational analysis, mobility corridor analysis and refinement planning. | $ 200,000,000 | 2028-2040 | No |
| Throughways | Washington County | Hillsboro | 11393 | US 26 Widening - Brookwood to Cornelius Pass | Brookwood Pkwy/Helveti a Rd | Cornelius Pass Rd | Relieve future congestion | Widen US 26 from four to six lanes | $ 26,575,000 | 2028-2040 | Yes |
| Throughways | Washington County | ODOT | 11986 | OR 217 Northbound Auxiliary Lane 99W to Scholls Ferry (CON) | 99W | Scholls Ferry | Increase system efficiency | Extend OR 217 Northbound (NB) auxiliary lane from OR 99W to Scholls Ferry. Construction (CON) phase | $ 50,000,000 | 2018-2027 | Yes |
| Throughways | Washington County | ODOT | 11987 | OR 217 Southbound Auxiliary Lane Beaverton Hillsdale Hwy to 99W (CON) | Beaverton-Hillsdale Hwy | OR99W | Increase system efficiency | Extend Southbound (SB) auxiliary lane from Beaverton-Hillsdale Hwy to OR 99W. Build collector/distributor road from Allen Blvd to Denny Rd. Construction Phase | $ 45,000,000 | 2018-2027 | Yes |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Throughways | Washington County | ODOT | 12019 | OR 217 Northbound Auxiliary Lane 99W to Scholls Ferry (PE, ROW) | OR99W | Scholls Ferry Interchange | Increase system efficiency | Extend OR 217 Northbound (NB) auxiliary lane from OR 99W to Scholls Ferry. ROW and PE phase | $ 7,500,000 | 2018-2027 | Yes |
| Throughways | Washington County | ODOT | 11402 | I-5 Northbound: Auxiliary Lane Extension Nyberg to Lower Boones Ferry | Nyberg Rd. Interchange | Lower Boones Ferry Rd. Interchange | Increase system efficiency | Extend existing auxiliary lane. | $ 13,500,000 | 2028-2040 | Yes |
| Throughways | Washington County | ODOT | 11988 | OR 217 Southbound Braided Ramps Beaverton-Hillsdale Hwy to Allen Blvd | Beaverton-Hillsdale Hwy | Allen Blvd | Increase system efficiency | Design and construct braided ramps on southbound OR 217 at Canyon Rd and Beaverton Hillsdale Hwy. | $ 50,000,000 | 2028-2040 | Yes |
| Throughways | Washington County | ODOT | 11302 | I-5/OR 217 Interchange Phase 2 | I-5/OR 217 Interchange | N/A | Relieve current congestion | I-5/OR 217 Interchange Phase 2 - southbound OR 217 to southbound I-5 entrance ramp; southbound I-5 exit to Kruse Way loop ramp. | $ 53,000,000 | 2028-2040 | No |
| Throughways | Washington County | ODOT | 11582 | OR 217 Capacity Improvements | US 26 (Sunset Hwy) | I-5 | Relieve current congestion | Construct as a 6-lane freeway, adding 3rd through lane in each direction, and complete interchange reconstruction with ramp and overcrossing improvements | $ 398,500,000 | 2028-2040 | No |
| Throughways | Washington County | ODOT | 11976 | OR 217 Northbound Auxiliary Lane Extension Scholls Ferry to Allen/Denney | Scholls Ferry Road | Allen/Denney Interchange | Increase system efficiency | Extend OR 217 auxiliary lane from Scholls Ferry to Allen/Denney interchange by filling in the existing auxiliary lane and modifying related ramp connections | $ 50,000,000 | 2028-2040 | No |
| Throughways | Washington County | ODOT | 11978 | OR 217 Interchange, Safety, and Operational Improvements | US 26 (Sunset Highway) | I-5 | Increase system efficiency | Design and construct improvements to OR 217 between US 26 and Allen/Denney interchange to improve safety, reliability and mobility | $ 75,000,000 | 2028-2040 | No |