Agenda

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

Meeting:	**2018 RTP Freight work group meeting #5**
Date:	Monday, February 6, 2017
Time:	3-5 p.m.
Place:	Metro Regional Center, Council chamber
Purpose:	Discussion and review of RTP Regional Freight plan and evaluation measures
Outcome(s):	Preparations for RTP Freight projects for updated Regional Freight plan

3 p.m.	**Welcome, and introductions**	Tom Kloster/All
3:10	**Call for Freight Projects for the 2018 Regional Transportation Plan**	Tom Kloster/All
3:25	**Update on Oregon Freight Intermodal Connector System (OFICS) Study**	Tim Collins
3:35	**Update on ODOT Freight Highway Bottleneck List Project**	Tim Collins
4 p.m.	**Changes to RTP Freight System Evaluation Measures from Subcommittee** • *Freight access to industrial land and intermodal facilities* • *Freight truck delay and cost of delay on the freight network* • *Truck travel times for routes in Mobility Corridors*	Tim Collins/All
4:30	**Outline for updating Regional Freight Plan and Freight Work Group tasks** • *National Multimodal Freight Network (Urban areas) – Subcommittee on regional allocation*	Tim Collins/All
4:50	**Next steps** *Review RTP freight projects for updated Regional Freight Plan; and begin updating the Regional Freight Network map.*	Tim Collins
5 p.m.	**Adjourn**	

Meeting Packet	Next Meeting
• Agenda • Minutes summary from November 8, 2016 • Oregon Freight Intermodal Connector System Study presentation (additional handouts at meeting) • ODOT Freight Highway Bottleneck List (Project description, table and maps) • RTP Freight System Evaluation Measures (additional handouts at meeting • Draft Regional Freight Strategy updates/additions • Freight work group tasks	**TBD**

Directions, travel options and parking information
Covered bike racks are located on the north plaza and inside the Irving Street visitor garage. Metro Regional Center is on TriMet bus line 6 and the streetcar, and just a few blocks from the Rose Quarter Transit Center, two MAX stations and several other bus lines. Visit our website for more information: http://www.oregonmetro.gov/metro-regional-center

Meeting minutes

Metro
600 NE Grand Ave.
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Meeting: RTP Freight Work Group Meeting #4

Date/time: Tuesday, November 8, 2016 | 8-10 a.m.

Place: Metro Regional Center, Council Chamber

Purpose: **Phase 3: Regional freight vision, policies and needs – April 2016 to February 2017.** Update freight vision and supporting policies and tools, update freight needs, update evaluation framework.

Committee Attendees	Affiliation
William Burgel	Burgel Rail Group
Gary Cardwell	Northwest Containers Services, Inc.
Tony Coleman	Oregon Department of Transportation
Lynda David	RTC, Southwest Washington
Kate Dreyfus	City of Gresham
Brendon Haggerty	Multnomah County
Phil Healy	Port of Portland
Robert Hillier	City of Portland
Todd Juhasz	City of Beaverton
Steve Kountz	City of Portland
Kate McQuillan	Multnomah County
Joel Much	Sunlight Supply, Inc.
Gregg Snyder	City of Hillsboro
Patrick Sweeney	City of Vancouver, WA
Pia Welch	FedEx
Steve Williams	Clackamas County

Interested Party Attendees	
Corky Collier	Columbia Corridor Association
Jordan Vance	City of Wilsonville

Metro Staff	
Tim Collins, Chair	Senior Transportation Planner
Cindy Pederson	Principal Researcher & Modeler
Lake McTighe	Senior Transportation Planner
Jamie Snook	Principal Transportation Planner
Marie Miller	Administrative Specialist

Welcome and Introductions

Tim Collins welcomed committee members to the meeting, beginning at 8:05 a.m. Minutes from September 27, 2016 were presented for review. No additional comments or additions were noted.

Regional Freight Challenges and Opportunities

Discussion was held on the memo: *2018 RTP Regional Freight Challenges and Opportunities*, dated Nov. 7, 2016. The work group was reminded of their task in providing technical input and recommendations to Metro staff on updating the Regional Freight Plan. The work group roster was reviewed for accuracy.

Tim Collins asked if the plan could be framed as challenges with strategies, as opposed to a laundry list of projects. Could long-term and short-term investments be identified? Constraints and challenges on

- Roadways and highways
- On and around Rail Lines
- Around Air Freight
- Around Energy Pipelines
- Marine/River Traffic

A correction was made on page 4 of the memo, first line to read "The US Post Office is in the process of moving onto Air Trans Way near PDX."

Recommended changes to 2018 RTP Freight System Evaluation Measures

Discussion was held on *Attachment 1: Summary of Recommended changes to RTP System Evaluation Measures,* dated Nov. 4, 2016. The focus on the discussion was highlighted in section 11: Access to industry and Freight Intermodal Facilities, section 12: Multi-modal Travel Times, and section 13: Congestion.

The work group agreed that measurement of freight delay in the transportation system was important, with desired outcomes showing cost of delays, tracking bottlenecks and congestion to form improvements to the system, and optional systems for freight travel.

Members agreed that measuring the quantity of freight with cost of delays was an important element for tracking. National and international freight moves daily through the Metro area, with delays on all modes of transportation through the region costing companies dollars. A tracking system of this data helps evaluate improved freight movement for better cost savings and faster travel through the region.

Possible improvements for measuring freight travel for better efficiency and cost savings to recommend to RTP System Evaluation Measures:

- GPS Tracking Systems
- Incorporation of measurement tool NCA 089, mentioned by Todd Juhasz , Mitigating Freight Bottlenecks
- Quantify early and overnight freight activity; deliveries are not always available in expended hours of operations
- Targeting a realistic goal for reducing truck delays in the RTP

It was said we could not build our way out of bottlenecks or delays, but we can address the reliable measurements to address the issue. We need some type of economic measure that links investment to jobs. In discussion of congestion, the current system evaluation measure of travel times is the standard way of looking at the system. Members felt this may not be the most efficient and correct way of monitoring the system.

Members want RTP Freight plan to make the connection to having efficient, productive transportation system for moving goods because it costs consumers. This creates a message that will result in legislation at the State level for improved goods movement, reducing bottlenecks through the region, and lower emissions for better air quality. Funding requests can be tied to cost and levels of emissions that aim to be lower and produce better environment and address safety issues as well.

Discussion was held on standard way of looking at the system, which may not be the easiest to monitor, with no money for reducing delays, even with identifying them. It was asked if we are measuring delays to other users besides trucks. Are we using the right time periods to measure congestion, with all freight movements? Congestion is persistent in many areas outside the peak hours. Vehicle delay per truck and the cost of freight delay needs to be evaluated throughout the day, not just during peak periods.

Do our current freight traffic maps reflect corridors that include industrial lands, truck interchanges, rail crossings, technology that measures real-time data (where Bluetooth readers in WA State have proven effective), automated systems to collect data, shift in business hours with freight pick up and deliveries, the persistence of key routes with little options for other routes to travel.

It was noted that the State Task Force on this issue identified the Portland area with heavy freight delay challenges that translated into jobs and benefits statewide. The state of Oregon needs to know that investment in freight bottlenecks means jobs. Metro can increase emphasis with research on this, with political leverage across the state to make a likely passage for change.

To address System Evaluation Measure #11 (Access to industry and freight intermodal facilities), there should be a way to assess acres of industrial land that are transportation constrained.

Patrick Sweeney suggested creating a hierarchy for freight corridors, where physical delivery works better when identified at each level. This would include (a) Freight movement on the interstate system, (b) Freight distribution between intermodal facilities, and (c) Deliveries and distribution of goods to retailers and other local facilities.

Further comments on measure #12 (Multi-modal Travel Times) included measuring volumes of freight (tonnage or value) could be a better way of linking the growth rate, and travel time. Infrastructure improvements at terminal sites, lane widths, weight and height restrictions, linking forecasts to volumes, and the cost of investment at facilities with freight are all elements to consider.

These new questions and discussion points lead to the need for a subcommittee to meet, in mid-December. Members are:

Patrick Sweeney, City of Vancouver
Todd Juhasz, City of Beaverton
Steve Kountz, City of Portland
Robert Hillier, City of Portland
Phil Healy, Port of Portland
Steve Williams, Clackamas County
Erin Wardell, Washington County
Steve Kelley, Washington County
Gary Cardwell, Northwest Container Service
Corky Collier, Columbia Corridor Association
Tim Collins, Metro

Development of potential freight measures to inform near- and long-term investment priorities
Discussion was held on three potential freight measures that could be used to inform near and long-term investment priorities on the Regional Freight Network.

- Congestion Measure
- Reliability Measure
- Travel Time Measure on Key Intermodal Facilities

Rail travel has a more reliable tracking system for measuring congestion and travel time, but truck travel does not. The members felt the goals listed for minimum performance levels desired could not be reached and were unrealistic, and did not communicate how severe the problems are. Why set unachievable goals?

It was agreed that we first need to identify the problems with mapping and analysis, put this information in front of policy makers that show the impact to traffic, air quality, increasing jobs, safety and economy. Realistic measures need to be given with a good presentation for funding.

The New Reliability Index equation was discussed. Congestion and incident traffic was considered with the equation. General consensus was gained that travel time is hard to forecast; there was agreement to use ODOT's methodology in the Freight Highway Bottlenecks List Project to measure freight reliability.

Travel time measure on key intermodal facilities will be further discussed at the January 2017 meeting, with materials set to members prior to the meeting.

Next steps

1. Doodle Poll will be sent to subcommittee members identified in this meeting. Selection of subcommittee meeting date and time identified, meeting notice sent to those members. Meeting expected mid-December.
2. Review RTP freight projects for updated Regional Freight Plan; begin updating the Regional Freight Network map.
3. Next RTP Freight work group meeting in mid-January, 2017. Meeting notice will be sent to members in December.

Adjourn

There being no further business, Chair Tim Collins adjourned the meeting at 10 a.m.

Respectfully submitted,
Marie Miller

Attachments to the minutes:

1. Agenda
2. Meeting minutes from Sept. 27, 2016 Regional Freight work group meeting
3. Regional Freight Challenges and Opportunities memo
4. Summary of Recommended changes to RTP System Evaluation Measures table
5. Potential freight measures to inform investment priorities memo
6. Interim Regional Mobility Policy Table 2.4
7. Regional Freight Network Map

OREGON FREIGHT INTERMODAL CONNECTOR SYSTEM (OFICS) STUDY

Project Update

January 18, 2017

- Purpose of project is to develop a list of additional freight intermodal connectors (beyond NHS connectors) , assess condition, identify needs and create a tiered list.
- The last time I gave an update of this project to OFAC was September 20
- We had our last TAC meeting on December 13
- We are about 75% done with the project

What we have done so far:

AERC Reload Facility in Lebanon

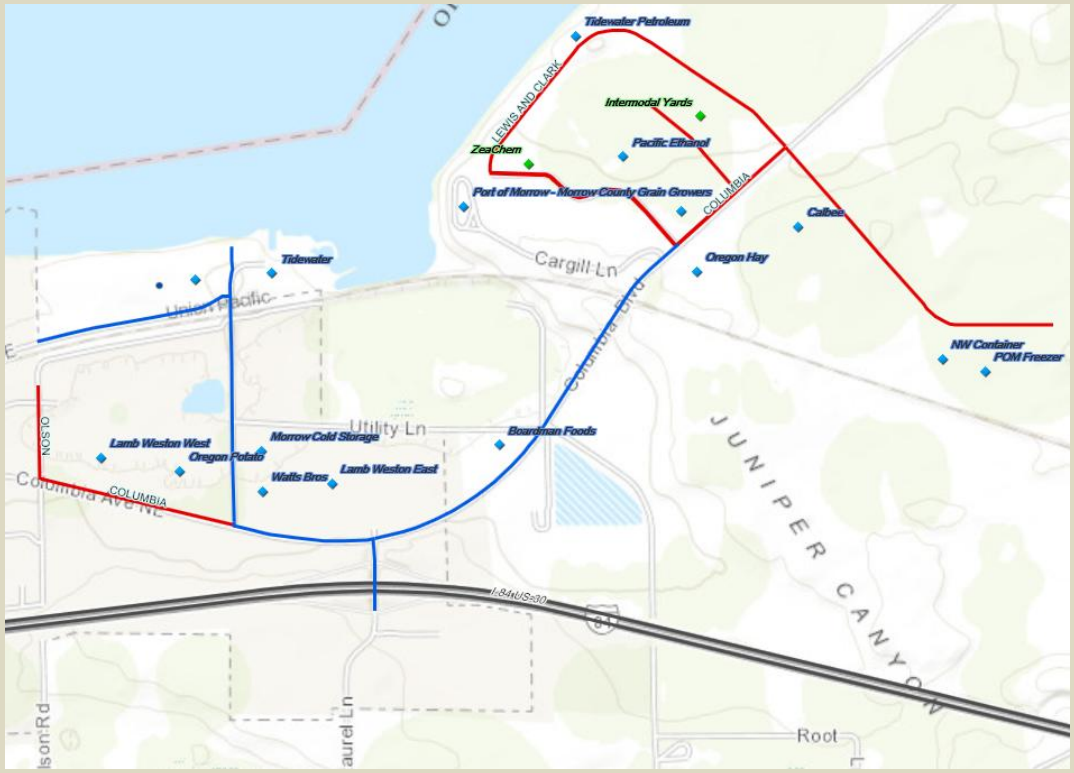
- Completed the search for intermodal terminals
- Identified the roads that connect them to the highway (intermodal connectors)
- Completed a survey sent to stakeholders to collect info on road used, conditions, issues and needs
- Updated our OFICS GIS tool
- Revised criteria for tiering the intermodal connectors (3 tiers now)

Draft Tier Criteria for OFICS Intermodal Connectors

	Tier 1 NHS Freight IC	Tier 2 Significant Freight IC	Tier 3 Other Freight IC
Criteria	1. 50,000 TEUs/year or 100 trucks/day each direction 2. Secondary Criteria: Connecting routes targeted by state or MPO to address existing deficiency caused by increased traffic *Note: The NHS criteria above are generalized in order to fit in this table. See appendix for the unabridged NHS criteria*	1) Must be public road 2) Must serve as the primary access between intermodal terminal & highway or an existing NHS connector 3) Maximum length 5 miles… longer if justified 4) The principal-connecting street of the connector should have > 50 trucks/day, in each direction **OR** one of the following must apply to the connector: a) Must serve a critical industry from an economic competitiveness perspective b) Serves two or more intermodal terminals *c)* Is designated as a Category I airport in the Oregon Aviation Plan. *These airports support some level of scheduled commercial airline service and air cargo service. (PDX is served by Tier 1 intermodal connector)*	1. Principal-connecting street of the connector must have < 50 trucks/day, in each direction 2. Generally serves only one intermodal terminal 3. Connectors with only intermodal terminals that have seasonal variances in truck traffic volumes 4. Connector serves intermodal terminals that are currently using only trucks to move freight (An example is a business that has a rail spur but is currently only using trucks to move freight)

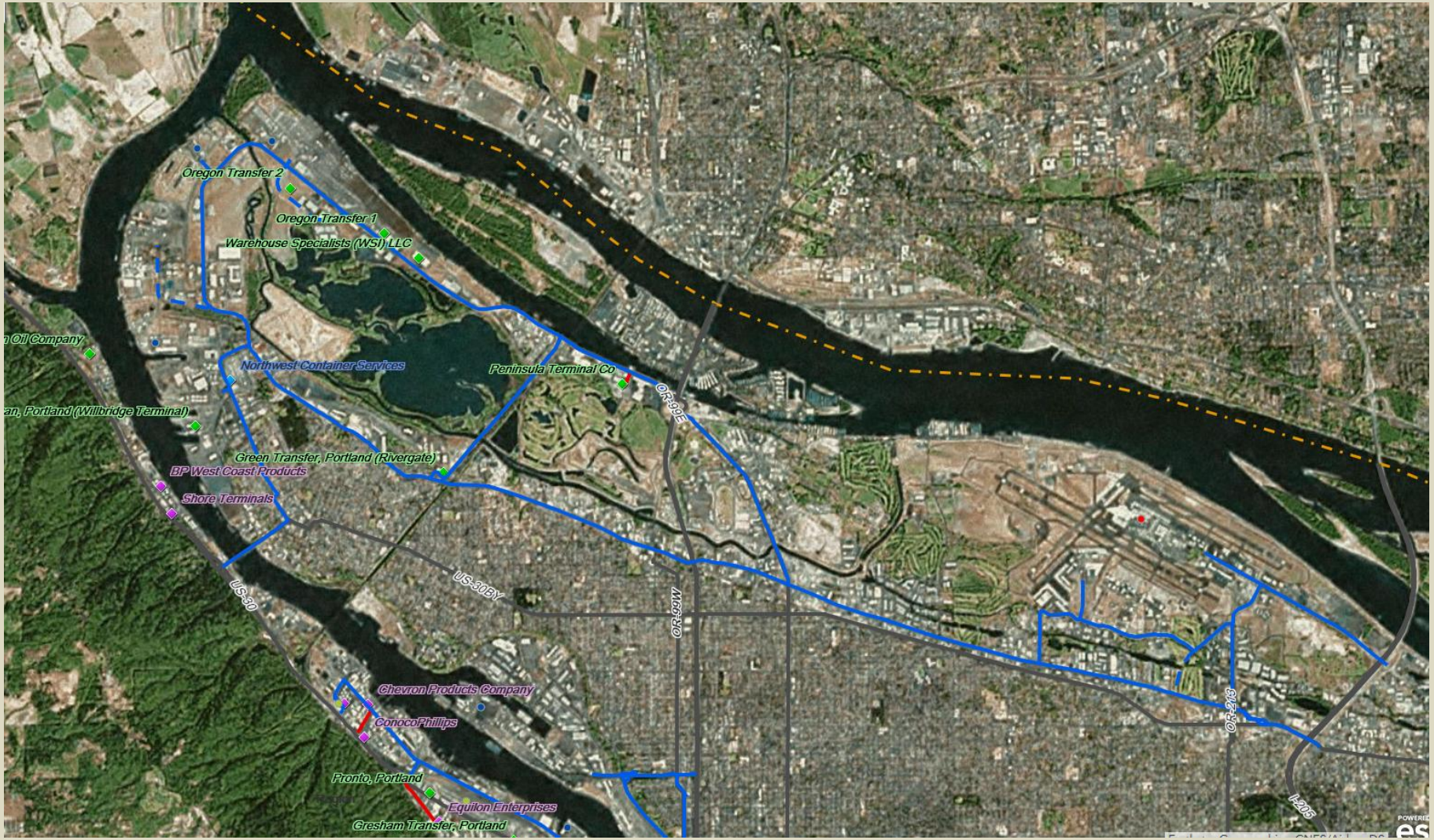
What we now have in the OFICS database

- 127 additional intermodal terminals:
  - 68 Rail Terminals
  - 46 Port Terminals
  - 8 Pipeline Terminals
  - 5 Airport Terminals
- 73 additional intermodal connectors:
  - 42 Rail
  - 22 Port
  - 5 Airport
  - 4 Pipeline



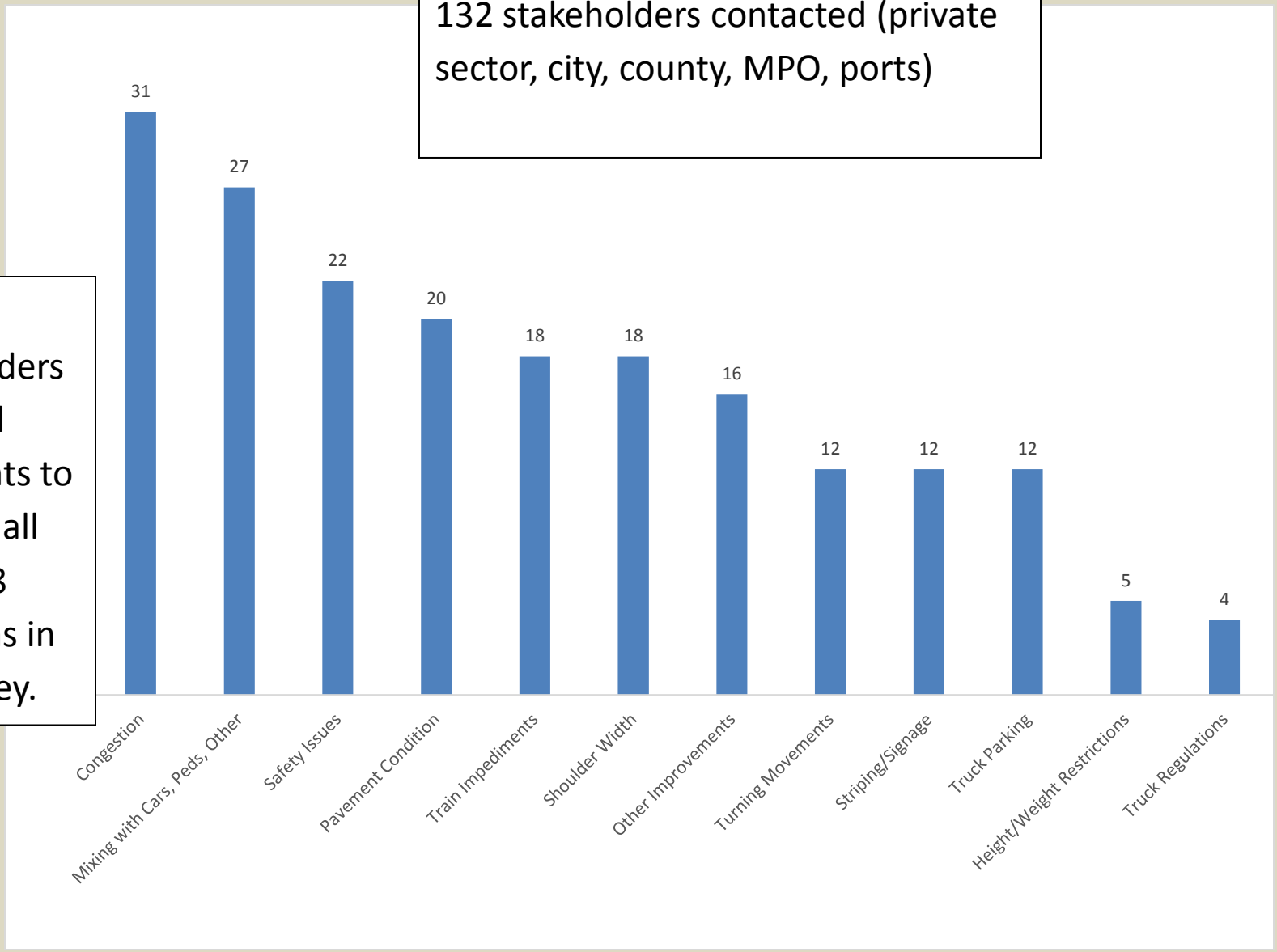
Port of Morrow in Boardman

- Approximately 6 revisions/extensions to the 19 NHS intermodal connectors


Oregon Transfer 2
Oregon Transfer 1
Warehouse Specialists (WSI) LLC
Northwest Container Services
Peninsula Terminal Co
OR-99E
Green Transfer, Portland (Rivergate)
BP West Coast Products
Shore Terminals
US-30
US-30BY
OR-99W
Chevron Products Company
ConocoPhillips
Pronto, Portland
Equilon Enterprises
Gresham Transfer, Portland
OR-213
I-205

132 stakeholders contacted (private sector, city, county, MPO, ports)

86 stakeholders provided comments to some or all of the 18 questions in the survey.



What's Going on Now and Next Steps

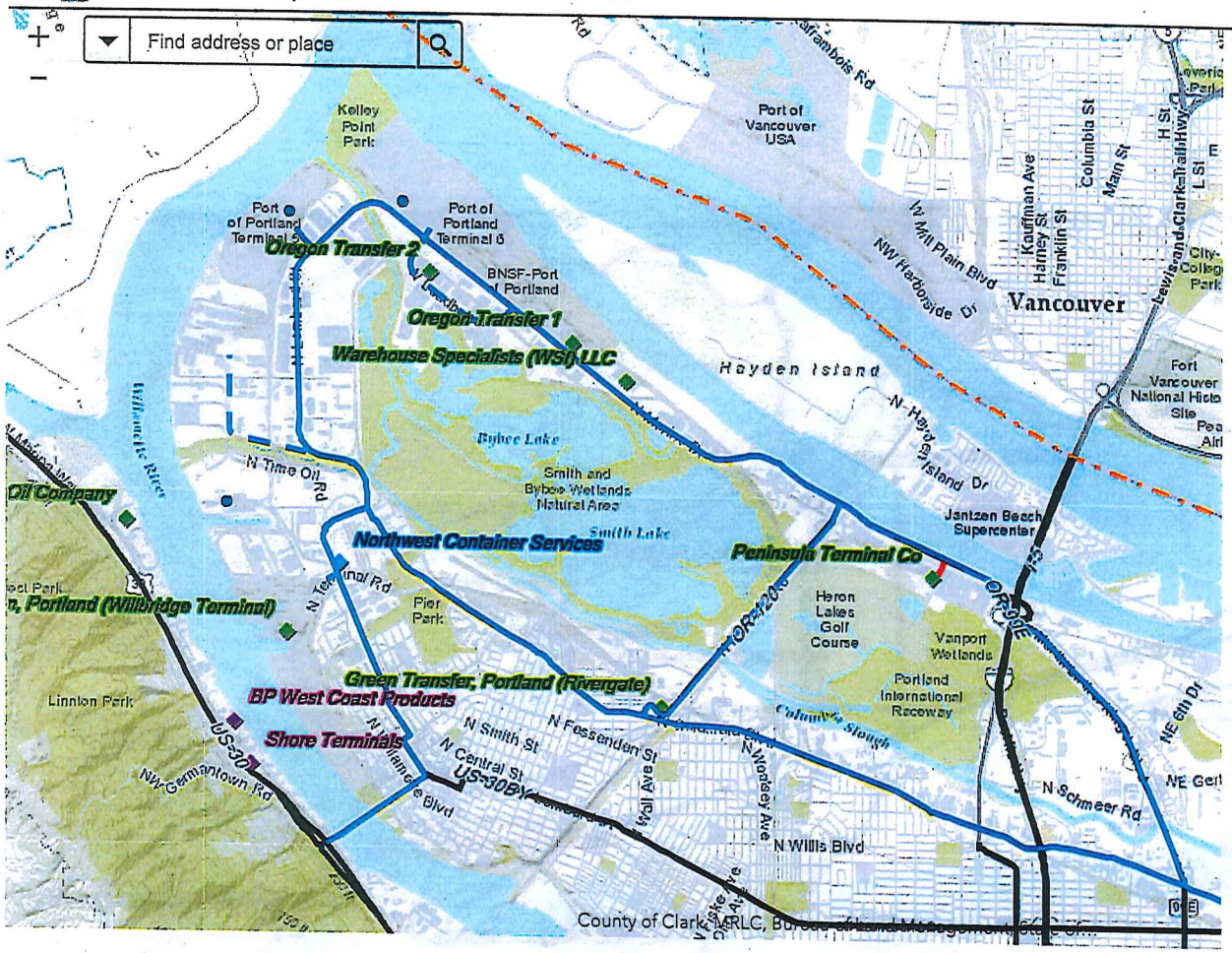
- Now in the process of tiering and filling in some gaps related to existing conditions and needs
- Now in the process of refining the table of intermodal terminals and connectors
- During the next few months we will complete the final tasks related to performance indicators, investment strategy and implementation
- Our next TAC meeting is February 14

Please see the OFAC website for a link to the OFICS study or Google "*intermodal connector study ODOT*"

THANK YOU

OFICS GIS Map

Enter Connector ID in Search Box below



Legend

Existing NHS_Intermodal_Freight Terminal
- Port Terminal
- Airport
- Truck/Rail Facility
- Truck/Pipeline Terminal

Designated_NHS_Connectors
- Designated
- Proposed

Airport_Facilities

Airport_Connectors

Port_Marine_Terminals

Port_Connectors

Pipeline_Terminals

Pipeline Terminal Connectors

Rail Transload Terminals

Rail_Connectors

OFICS GIS Map

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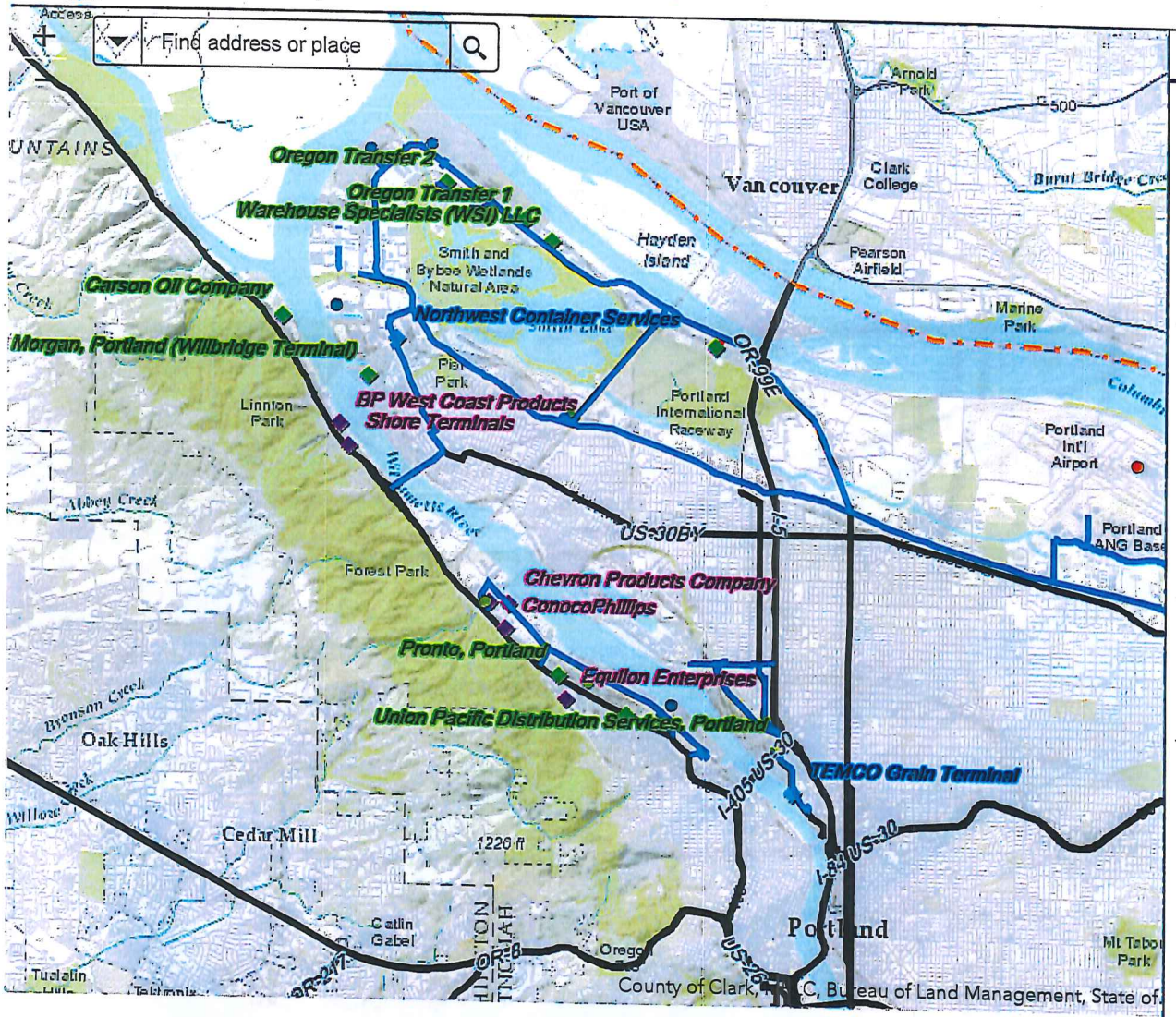

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- Designated
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Airport_Facilities

Port_Marine_Terminals

Pipeline_Terminals

Rail Transload Terminals

Rail_Connectors

State Routes

Oregon DOT Regions

https://camsys.maps.arcgis.com/apps/webappviewer/index.html?id=0eb36e8345a04560bc4a4e6ef6dcc161

1/26/2017

CAMBRIDGE SYSTEMATICS

OFICS GIS Map

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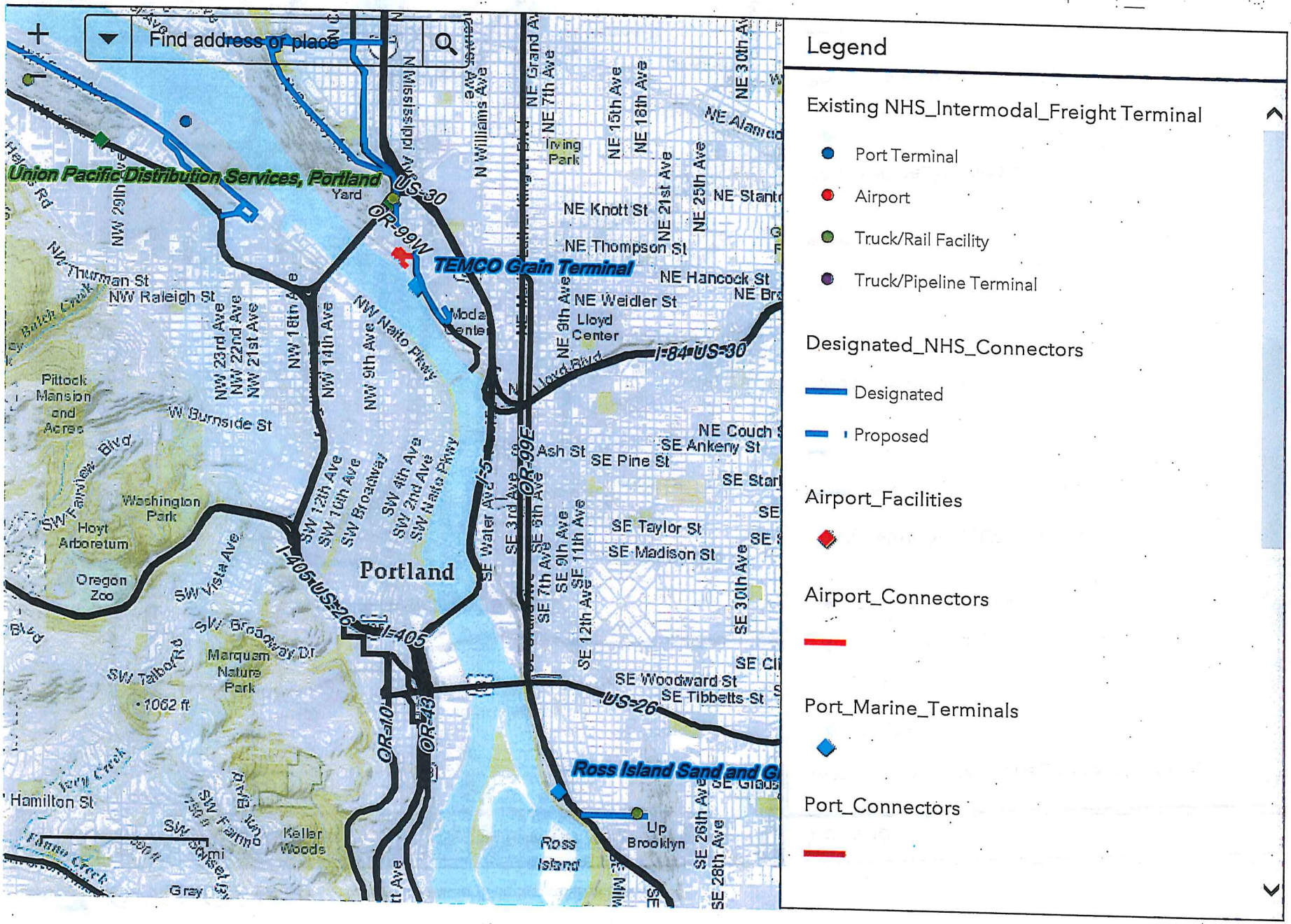

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2/3/2017

OFICS GIS Map

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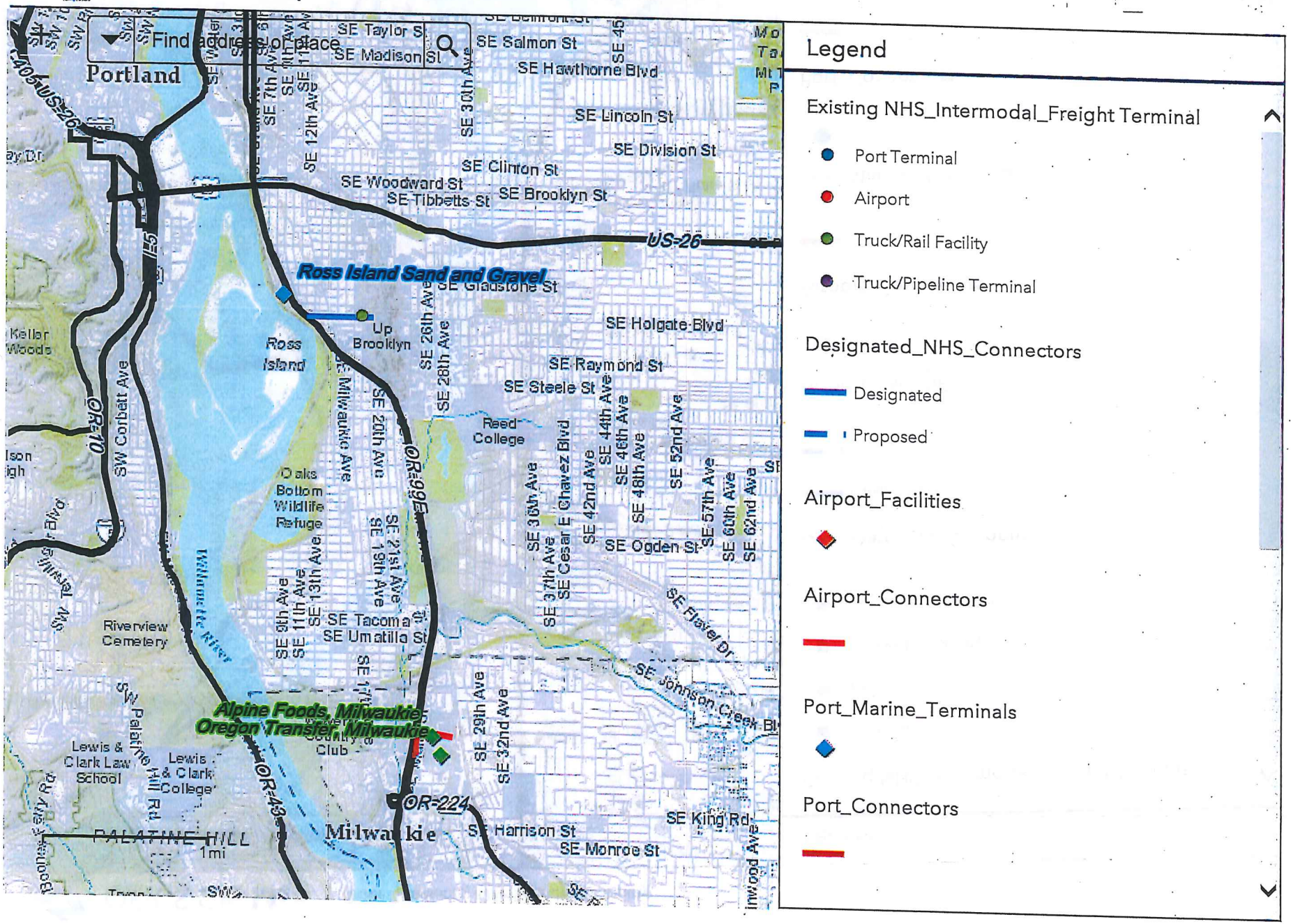

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OFICS GIS Map

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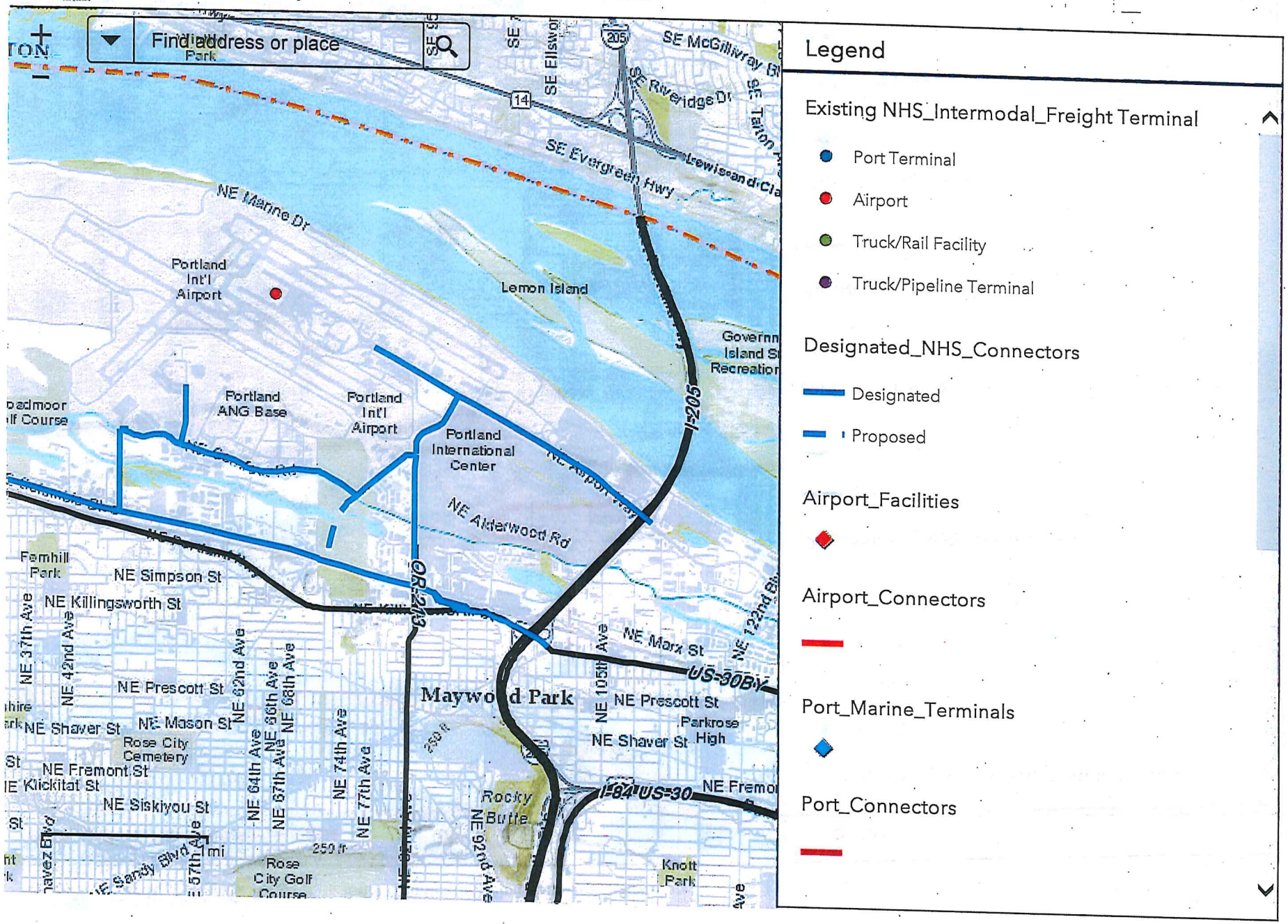

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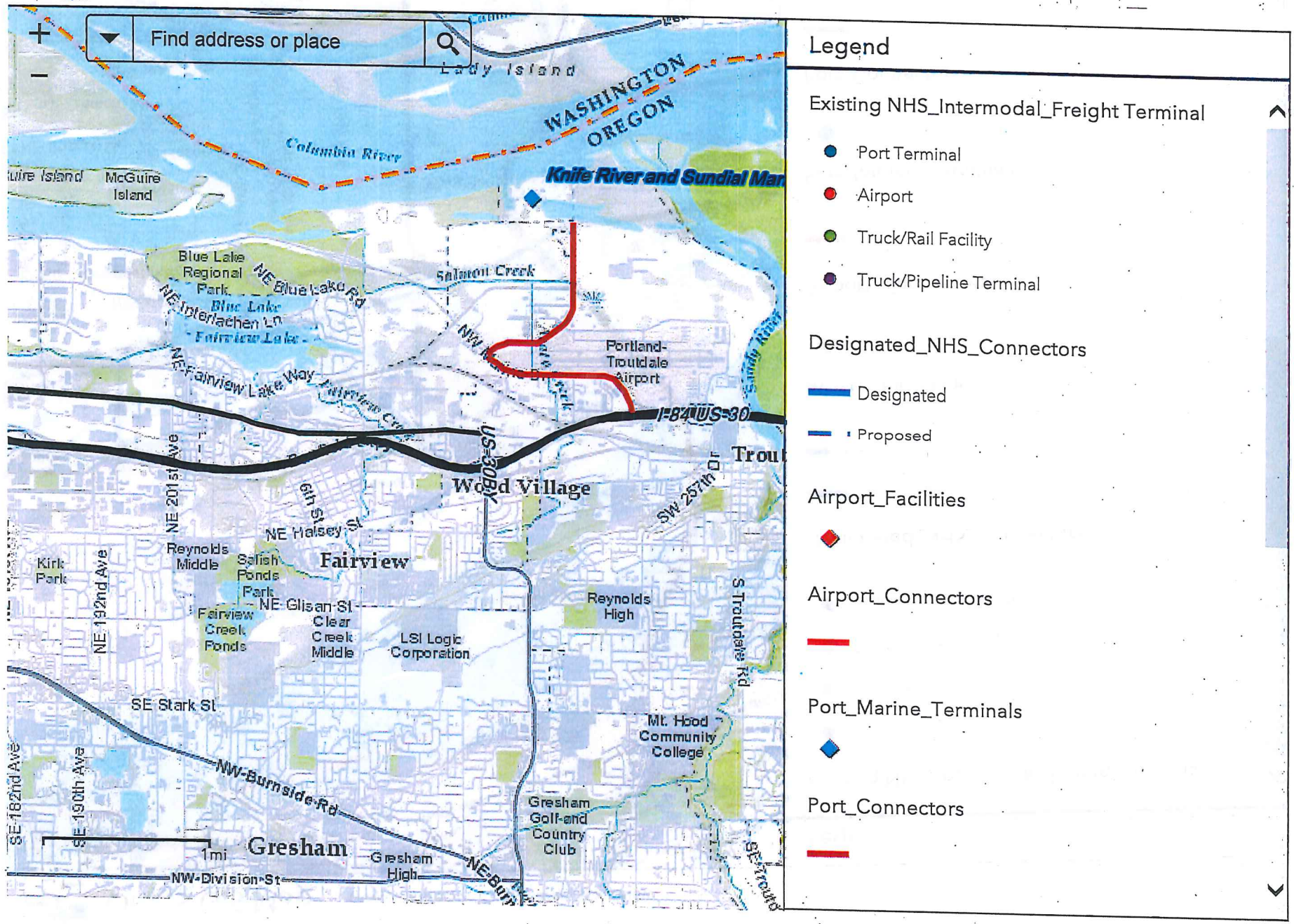

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Existing NHS_Intermodal_Freight Terminal

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Port_Marine_Terminals

Port_Connectors

https://camsys.maps.arcgis.com/apps/webappviewer/index.html?id=0eb36e8345a04560bc4a4e6ef6dcc161

2/3/2017

FREIGHT HIGHWAY BOTTLENECKS LIST

Oregon Department of Transportation

PROJECT DESCRIPTION

The Project is directed by the Agency's Freight Planning Unit, as an implementation initiative from the *Oregon Freight Plan* (2011) ("OFP"), and is important for ODOT to direct funding to projects that alleviate critical freight bottlenecks. The primary outcome of this effort is a "Freight Highway Bottlenecks List" (FHBL) that encompasses analysis and background research with locations presented in tiered order, with an accompanying location map of all listed bottleneck delay areas. The final list was endorsed by the Oregon Freight Advisory Committee in January 2017. The FHBL will play a major role in freight project selection for FAST monies as well as state level project selection processes.

General Background Information

A freight bottleneck is a part of the transportation system that causes disproportionally high costs to the freight industry in terms of delay and reliability. Identifying locations on the highway where truck delay is significant is critical for planning and prioritizing projects that impact freight movement. This project originated from thee OFP strategy 2.3 which directs ODOT to identify and rank bottlenecks on the state strategic freight system.

A consultant team was selected to collect and analyze data, apply stakeholder input and set thresholds to reveal a list of data driven locations that experience high amounts of truck delay. This approach relied on compiling and analyzing a wide variety of data about the operations and characteristics of different segments on the designed network. Indicators confirmed delay areas and provided details about the nature of freight delay and reliability.

Objectives

The project scope outlined three key objectives:

- Identify Oregon data and analytical tools available to provide information relevant to freight movement;
- Develop data-driven freight metrics designed to reveal bottleneck locations on state highway system;
- Develop an approach to prioritize freight bottleneck locations using an identified set of criteria.

Methodology

Data from several sources was assembled and converted to a uniform coordinate system. Key thresholds were then applied to reveal areas of delay and unreliability. Additional thresholds regarding incidents, geometry and grade were applied to confirm areas experiencing significant delay. A series of tiering criteria such as transportation cost, highway designation and bidirectionality were then applied to delay areas.

Stakeholder Engagement

Feedback and responses/contributions from freight stakeholders were essential for the successful identification and tiering of freight highway bottlenecks. A technical advisory committee (TAC), made up of local and regional freight practitioners, an OFAC representative, ODOT Motor Carrier Division representative, Oregon Trucking Associations and other stakeholders was convened to review data, assess indicators and review bottlenecks list.

After a series of workshops, OFAC endorsed the tiered list of delay areas, underscoring the important role of stakeholder engagement. Professional facilitation was utilized throughout stakeholder involvement process.

Freight Highway Bottlenecks List

Key Definitions & Acronyms

Bottleneck	*For Discussion*
Pinchpoint	Physical features on the state highway system that restrict the movement of an over-dimension load because of height, width, weight or length constraints (e.g. low overpasses, narrow roadways, sharp curves, weight-restricted bridges, bridges with low overhead clearance, etc.).
Indicator	A data point calculated for each corridor segment that provides information about its performance.
Threshold	The levels of indicators that point to a corridor segment representing a bottleneck in the network.
FHBL	Freight Highway Bottleneck List http://www.oregon.gov/ODOT/TD/TP/Pages/FreightHighwayBottlenecks.aspx
OFAC	Oregon Freight Advisory Committee – statewide external stakeholder committee appointed by the ODOT Director that covers all modes and meets at least 4 times annually. http://www.oregon.gov/ODOT/TD/TP/pages/ofac.aspx
TAC	Technical Advisory Committee – the group of external practitioners charged with providing input and advice to ODOT on the development of a prioritized statewide freight highway bottlenecks list
OTC	Oregon Transportation Commission
TDD	ODOT Transportation Development Division
FHWA	Federal Highway Administration
MC	ODOT Motor Carrier Division
OFP	Oregon Freight Plan, adopted in June 2011 https://www.oregon.gov/ODOT/TD/TP/pages/ofp.aspx
STIP	State Transportation Improvement Program: Oregon's four-year transportation capital improvement program. It is the document that identifies the funding for, and scheduling of, transportation projects and programs. It includes projects on the federal, state, city, and county transportation systems, multimodal projects (highway, passenger rail, freight, public transit, bicycle and pedestrian), and projects in the National Parks, National Forests, and Indian tribal lands. https://www.oregon.gov/ODOT/TD/STIP/Pages/STIPDocs.aspx
CO	*Connect*Oregon: a lottery-backed bond initiative to invest in air, rail, marine, transit, and bicycle/pedestrian infrastructure to ensure Oregon's transportation system is strong, diverse, and efficient. http://www.oregon.gov/ODOT/TD/TP/pages/connector.aspx

HOLPP	Highway Over-Dimension Load Pinchpoints Study – ODOT study of structures and geometric constraints on state freight routes which severely or completely limit movement of over-dimensional trucks. Completed in Spring 2016.
IC	Intermodal Connector - Roads that provide access between major intermodal facilities and the other four subsystems making up the National Highway System. An IC assessment is currently underway by ODOT TDD. http://www.fhwa.dot.gov/planning/national_highway_system/intermodal_connectors/
TRB	Transportation Research Board - TRB is one of seven program units of the National Academies of Sciences, Engineering, and Medicine, which provides independent, objective analysis and advice to the nation and conducts other activities to solve complex problems and inform public policy decisions.

Freight Highway Bottleneck List Project
Endorsed by OFAC, Jan 2017

Delay Area ID #	Road	Location	ODOT Region	Annual Truck Trans. Cost/Mile	Corridor	Corridor Truck Cost	Lane Miles of Delay Areas in Corridor	Bi-Directional Delay Area	On Primary NHFN	On the OFP Strat Frt Net	Tier	Length (centerline miles)	Length (lane miles)
19	I-5	Interstate Bridge	1	1,971	A	85,782	169.21	Yes	Yes	Yes	1	1.1	6.1
22	I-5	Between OR-99E to US-30B	1	2,564	A	85,782	169.21	Yes	Yes	Yes	1	1.9	11.3
23	I-5	Between OR-99E to US-30B	1	2,887	A	85,782	169.21	Yes	Yes	Yes	1	2.0	12.2
28	I-5	Boise (Between US-30B to I-405)	1	2,450	A	85,782	169.21	Yes	Yes	Yes	1	1.5	9.1
29	I-5	Boise (Between US-30B to I-405)	1	3,200	A	85,782	169.21	Yes	Yes	Yes	1	4.4	23.1
30	I-5	Eliot (Between I-405 to I-84)	1	2,869	A	85,782	169.21	Yes	Yes	Yes	1	2.2	11.0
31	I-5	Eliot (Between I-405 to I-84)	1	3,219	A	85,782	169.21	No	Yes	Yes	1	1.2	6.0
32	I-5	Marquam Bridge	1	2,131	A	85,782	169.21	Yes	Yes	Yes	1	3.1	19.5
45	I-5	I-405 Interchange	1	2,648	A	85,782	169.21	No	Yes	Yes	1	2.8	16.1
46	I-5	I-405 Interchange	1	4,532	A	85,782	169.21	No	Yes	Yes	1	0.3	1.8
47	I-5	SW Multnomah Blvd	1	1,985	A	85,782	169.21	No	Yes	Yes	1	3.4	21.2
49	I-5	OR-217	1	1,753	A	85,782	169.21	No	Yes	Yes	1	2.6	18.6
50	OR-217	I-5 Interchange	1	4,571	A	85,782	169.21	Yes	No	No	1	2.2	14.3
20	OR-99E	I-5 Interchange	1	5,106	A	85,782	169.21	No	No	No	1	0.3	1.3
48	SW Kelly Ave	I-5 Access	1	2,842	A	85,782	169.21	No	No	No	1	0.2	0.6
44	I-405	I-5 Interchange	1	2,002	A	85,782	169.21	No	Yes	Yes	1	1.2	7.0
11	I-205	North of I-84	1	1,048	B	21,346	93.92	Yes	Yes	No	2	5.6	37.0
12	I-205	South of I-84	1	901	B	21,346	93.92	Yes	Yes	No	2	4.3	25.0
14	I-205	Sunnyside	1	772	B	21,346	93.92	Yes	Yes	No	2	4.2	25.0
17	I-205	OR-213	1	1,151	B	21,346	93.92	No	Yes	No	2	0.8	4.8
51	I-205	I-5 Interchange	1	2,156	G	9,104	51.83	No	Yes	No	2	0.6	3.2
33	I-405	Fremont Bridge	1	3,920	F	16,253	23.50	Yes	Yes	Yes	2	1.4	8.3
38	I-405	Downtown PDX	1	3,169	F	16,253	23.50	No	Yes	Yes	2	1.2	5.8
39	I-405	Downtown PDX	1	1,821	F	16,253	23.50	No	Yes	Yes	2	0.3	1.3
43	I-405	SW Broadway	1	5,616	F	16,253	23.50	No	Yes	Yes	2	0.1	0.8
52	I-5	South I-205	1	746	G	9,104	51.83	Yes	Yes	Yes	2	9.1	53.3
58	I-5	South of Salem	2	148	H	4,238	39.40	Yes	Yes	Yes	2	7.4	28.0
59	I-5	South of Salem	2	817	H	4,238	39.40	Yes	Yes	Yes	2	1.7	6.5
64	I-5	South of Salem	2	191	H	4,238	39.40	No	Yes	Yes	2	1.2	4.9
16	OR-212	I-205 Interchange	1	3,753	B	21,346	93.92	No	No	No	2	0.1	0.3
15	OR-224	OR-213 Interchange	1	1,335	B	21,346	93.92	No	No	No	2	0.5	1.8
7	US20/US97 Business Route	Bend	4	1,632	I	12,051	31.699	Yes	No	Yes	2	6.9	27.0

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Delay Area ID #	Road	Location	ODOT Region	Annual Truck Trans. Cost/Mile	Corridor	Corridor Truck Cost	Lane Miles of Delay Areas in Corridor	Bi-Directional Delay Area	On Primary NHFN	On the OFP Strat Frt Net	Tier	Length (centerline miles)	Length (lane miles)
34	US-30	I-405 Interchange	1	**2,271**	**D**	14,508	17.14	No	**Yes**	No	2	0.5	3.8
35	US-30	I-405 Interchange	1	**3,651**	**D**	14,508	17.14	**Yes**	**Yes**	No	2	1.3	9.5
36	US-30	NW Industrial	1	**5,675**	**D**	14,508	17.14	No	Yes	No	2	0.4	1.9
37	US-30	BNSF Lake Yard	1	1,316	**D**	14,508	17.14	No	Yes	No	2	2.0	8.0
62	Ferry St. SE	Salem	2	1,485				**Yes**	No	No	3	0.4	0.9
8	I-5	Goshen (Eugene)/OR-58	2	111				**Yes**	**Yes**	**Yes**	3	10.8	43.7
53	I-5	South of Wilsonville	2	111				**Yes**	**Yes**	**Yes**	3	37.6	226.4
61	I-5	Border with California	3	361				No	**Yes**	**Yes**	3	0.9	3.8
63	I-5	Saginaw	2	207				No	**Yes**	**Yes**	3	1.2	4.8
13	I-84	West of I-205	1	**3,040**				No	**Yes**	**Yes**	3	2.9	15.2
18	I-84	NE 33rd Avenue	1	**2,617**				No	**Yes**	**Yes**	3	2.1	13.5
9	OR-207	Hermiston	5	446				No	No	No	3	9.1	22.9
55	OR-214	Silverton	2	1,158				No	No	No	3	1.3	2.7
65	OR-217	Beaverton	1	1,246				No	No	No	3	0.7	3.4
66	OR-217	SW Canyon Rd Interchange (Beaverton)	1	1,240				No	No	No	3	0.5	2.3
57	OR-22	West of I-5	2	1,038				No	No	No	3	0.6	4.1
60	OR-34	Corvallis	2	438				**Yes**	No	No	**3**	1.9	6.2
3	OR-42	Dillard/Winston/I-5	3	983				**Yes**	No	No	3	3.0	12.2
42	OR-8	OR-217	1	1,007				No	No	No	3	0.7	3.0
21	OR-99E	East of I-5	1	598				**Yes**	No	No	3	1.2	4.3
56	OR-99E	Salem	2	1,507				No	No	No	3	0.2	0.6
54	OR-99W	McMinnville	2	1,538				**Yes**	No	No	3	3.7	14.9
1	US-101	Bandon	3	273				No	No	No	3	3.7	7.7
2	US-101	Bunker Hill	3	1,623				No	No	No	3	0.4	1.7
4	US-20	Hines/Burns	5	406				**Yes**	No	**Yes**	3	6.9	18.5
5	US-26	John Day/Mt Vernon	5	347				**Yes**	No	No	3	33.0	66.0
6	US-26	Prineville/OR-126	4	**2,401**				No	No	No	3	0.4	0.9
40	US-26	Washington Park	1	1,518	**E**	10,834	32.41	**Yes**	No	No	3	2.7	16.1
41	US-26	OR-217	1	1,707	**E**	10,834	32.41	No	No	No	3	2.8	18.1
26	US-30	US-30B (St. Johns Bridge)	1	**2,417**				**Yes**	No	No	3	0.8	3.2
27	US-30	US-30B (St. Johns Bridge)	1	-				No	No	No	3	0.5	2.3
24	US-30B	Arbor Lodge	1	1,017	**C**	6,430	10.45	No	No	No	3	2.1	6.8
25	US-30B	University Park	1	987	**C**	6,430	10.45	No	No	No	3	1.7	3.6
10	US-97	Biggs Junction/I-84	4	375				No	No	**Yes**	3	7.5	19.6

Thresholds				
		High	**Medium**	**Low**
Annual Trans. Cost/mi.		2,201.1+	1,100.6-2,201.1	0-1,100.6
Corridor Trans Costs		42,890-85,781	1-42,890	0
Lane Miles		84.7-169.2	0-84.6	0

Freight Highway Delay Areas

Endorsed by OFAC, January 2017

Statewide Tiered Freight Delay Areas

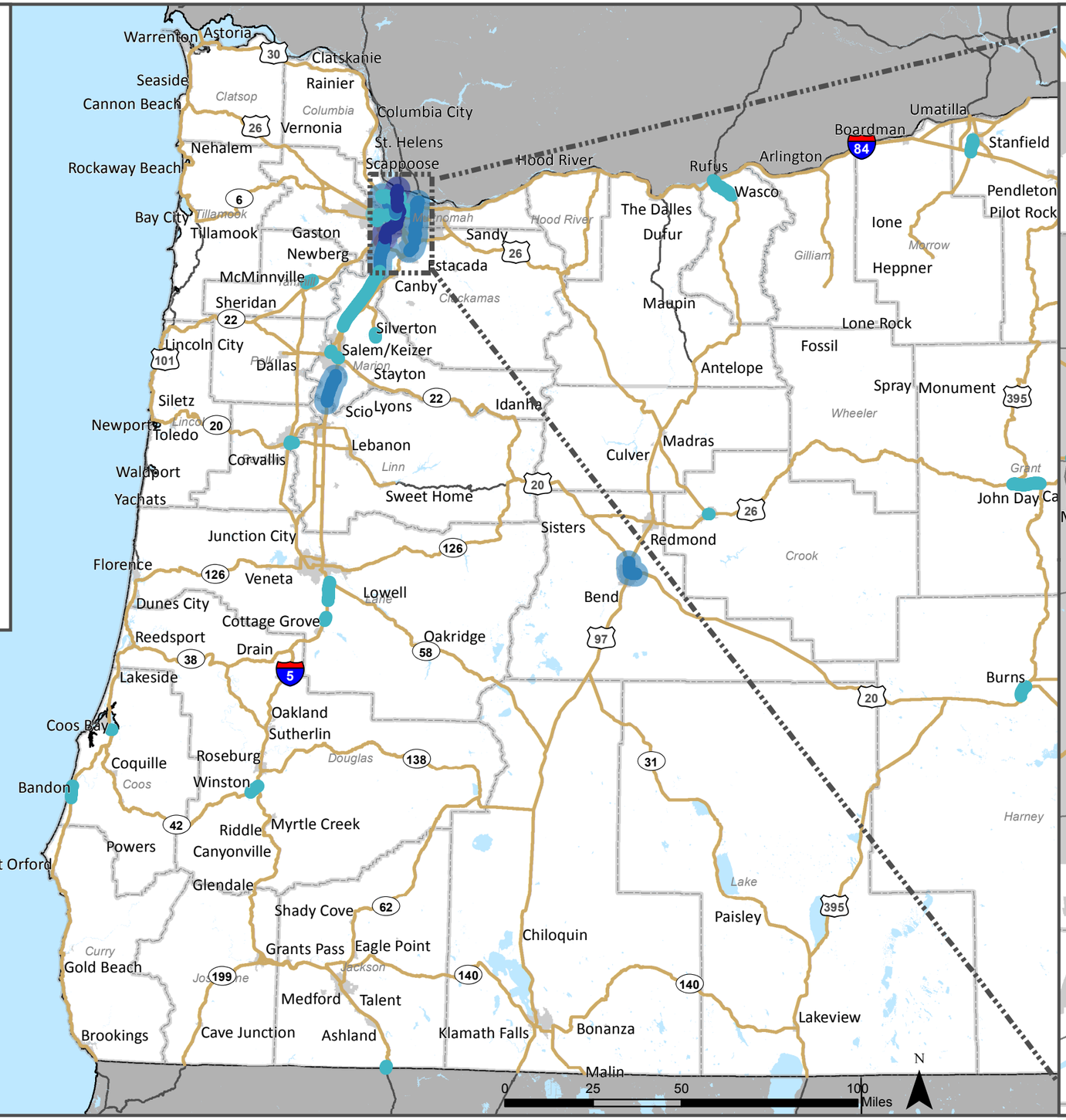
Freight Delay Areas

- Tier 1
- Tier 2
- Tier 3

Freight Delay Corridors

- Tier 1
- Tier 2
- Tier 3
- Study Network
- Other Highways and Major Roadways
- Oregon Counties
- Waterbody
- Urban Areas

Oregon Department of Transportation



Freight Highway Delay Areas

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Statewide Tiered Freight Delay Areas

Freight Delay Areas

- Tier 1
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Oregon Department of Transportation

0 25 50 100 Miles

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Evaluation Measure Title: **Freight – Access to industrial land and intermodal facilities**

Purpose and Goals

Overall Purpose: To identify whether the package of future transportation investments will change the accessibility to designated industrial land and freight intermodal facilities. This will be measured by determining the number of forecasted truck trips that are coming from or going to areas of industrial land and freight intermodal facilities; and evaluating any improvements in congested locations or freight bottlenecks that these truck trips encounter. Maps will display the locations for industrial land and intermodal facilities and the corresponding number of truck trips along with locations where major truck delay occurs.

2014 RTP Goals

	Foster vibrant communities and compact urban form	●	Promote environmental stewardship
●	Sustain economic competitiveness and prosperity	●	Enhance human health
	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
●	Effective and efficient management of system		Ensure equity
	Enhance safety and security		Ensure fiscal stewardship
	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation	●	Project Evaluation		System Monitoring		Performance Target

Methodology Description:
This analysis uses truck volumes from the regional travel demand model at various times of the day. The hours during the day for calculating truck volumes from the model would be from 7:00 – 9:00 AM (AM peak), 1:00 – 3:00 PM (off-peak) and from 5:00 - 7:00 PM (PM peak). The congested locations or freight bottlenecks will be determined by evaluating regional freight network facilities with the highest levels of truck hours of delay. General truck trip routing will be determined by the regional travel demand model (select zone).

Freight – Access to industrial land and intermodal facilities system evaluation performance measure is calculated by:

1. Determine the locations of industrial land and freight intermodal facilities (based on groups of TAZs), and determine the number of truck trips from the travel demand model for each of the time periods (AM peak, off-peak and PM peak).

2. Determine the locations for major truck delay from maps of the freight truck delay and the magnitude of that truck delay (see measure: Congestion – Freight truck delay and Cost of delay on the freight network).

3. Evaluate the general truck trip routes used (using select zone results) for each of the industrial land and freight intermodal facilities locations truck trips.

4. Evaluate all of the industrial land and freight intermodal facilities locations region-wide for improvements to accessibility (more access points and reductions in truck delay at major truck delay locations), by comparing the 2015 base year, the 2040 financially constrained, and 2040 strategic. Also evaluate each of the industrial land and freight intermodal facilities locations separately to help determine which facilities, with high levels of truck delay, are impacting truck access and could provide better accessibility with an improvement project.

Output Units:

Potential Output of Assessment:

	Base Year	**Interim Year**	**Future Year – Financially Constrained**	**Future Year – Strategic**
Region-wide	Truck volumes and delay locations		Truck volumes and delay locations	Truck volumes and delay locations
Separate clusters of TAZs for intermodal facilities	Truck volumes and delay locations		Truck volumes and delay locations	Truck volumes and delay locations
Separate clusters of TAZs for industrial land	Truck volumes and delay locations		Truck volumes and delay locations	Truck volumes and delay locations

Key Assumptions to Method

Dataset Used:

Dataset	**Type of Data**
Truck volumes from Travel Demand Model	Forecasted
Truck Vehicle hours of delay at major truck delay locations	Forecasted

Tools Used for Analysis:

Metro Travel Demand Model

Evaluation Measure Title: **Congestion – Freight truck delay and Cost of delay on freight network**

Purpose and Goals

Overall Purpose: To identify whether the package of future transportation investments will change the overall truck delay on the region-wide system and the regional freight network. This will be measured by truck vehicle hours of delay on these networks. Maps of the regional freight network will display locations where truck delay occurs and the magnitude of that truck delay. The cost of delay will be determined by multiplying the hours of truck delay on the regional freight network by the hourly value of time for truck trips.

2014 RTP Goals

	Foster vibrant communities and compact urban form	●	Promote environmental stewardship
●	Sustain economic competitiveness and prosperity	●	Enhance human health
	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
●	Effective and efficient management of system		Ensure equity
	Enhance safety and security		Ensure fiscal stewardship
	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation	●	Project Evaluation		System Monitoring		Performance Target

Methodology Description:
This analysis uses truck vehicle hours of delay (VHD) from the regional travel demand model (see Definitions). The selected hours during the day for calculated truck delay from the model would be from 7:00 AM to 7:00 PM. After looking at the results of these hours, the reported hours for the RTP would be determined for a morning peak hour, multiple mid-day hours and an evening peak hour. The hourly value of freight truck travel will be determined by using the value assumed in ODOT's truck model or the value in USDOT's 2015 update of "The Value of Travel Time Savings" (departmental guidance).

Congestion – Truck Vehicle Hours of Delay (VHD) system evaluation performance measure is calculated by:

1. Determining the number of hours of truck delay during each of the selected hours (both peak period and off-peak hours) on the regional freight network.

2. Comparing the regional freight network hours of truck delay for each of the selected hours between the 2015 base year, the 2040 (future year) financially constrained, and the 2040 (future year) strategic.

3. Determining the hourly value of freight truck travel to use for the cost of truck delay on the regional freight network.

4. Comparing the regional freight network cost of truck delay for each hour between the 2015 base year, the 2040 (future year) financially constrained, and the 2040 (future year) strategic.

Output Units:

Potential Output of Assessment:

	Base Year	Interim Year	Future Year – Financially Constrained	Future Year – Strategic
Region-wide	Truck VHD		Truck VHD	Truck VHD
Regional Freight Network	Truck VHD and cost of truck VHD		Truck VHD and cost of truck VHD	Truck VHD and cost of truck VHD
Highway and roadway segments within the Regional Freight Network	Truck VHD and cost of truck VHD		Truck VHD and cost of truck VHD	Truck VHD and cost of truck VHD

Key Assumptions to Method

Dataset Used:

Dataset	Type of Data
Value of time for truck trips	Sourced data
Truck Vehicle hours of delay on Regional Freight Network	Forecasted

Tools Used for Analysis:

Metro Travel Demand Model

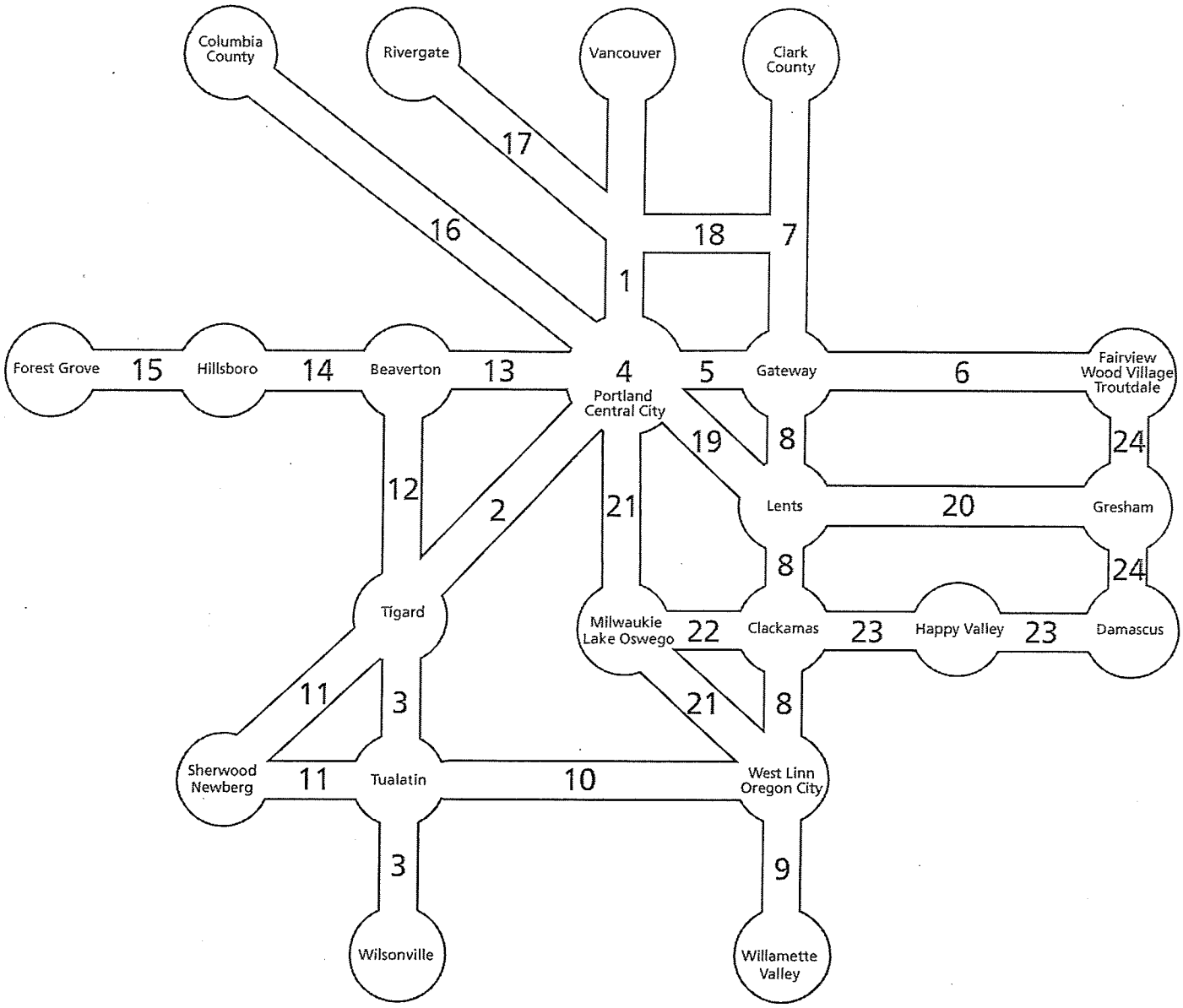
Definitions

Truck Vehicle Hours of Delay is the total truck travel time on each of the roadway segments in the travel demand model that exceed the threshold for congestion.

Oregon Metro

Regional Mobility Corridors

Atlas for the discovery of integrated transportation mobility



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Travel Time Routes for Freight Origins/Destinations

Mobility Corridor	From/To	Selected Route
1	Central Eastside Industrial Disrict (CEID) to Vancouver CBD	Downtown Vancouver to I-5, to I-5 @ Morrison Bridge (via non-HOV lanes)
2	Tualatin Industrial to I-5 @ Morrison Br.	124th @ Herman Road to Tual-Shwd Rd to 1-5, north to I-5 @ Morrison
3	Tualatin Industrial to Tigard Industrial	124th @ Herman Road to Tual-Shwd Rd., to Martinazzi, to Lower Boones Ferry Rd., to Carman Dr., to 72nd Ave. @ Bonita
3	Tigard Industrial to Wilsonville Industrial	72nd Ave @ Bonita, to Haines Road, to I-5, to Elligsen, to 95th @ Riddler Road
4	Freemont Bridge to Marquam Bridge via I-405	Freemont Bridge at I-5 to west end of Marquam Bridge (I-5 south)
5	CEID to I-84/1-205	MLK @ Taylor to Grand Ave, north to 1-84, east to I-84/I-205
6	FedEx Ground to I-84/I-205	Sundial Road @ Swigert Way, to Marine Dr. to I-84, to I-84/I-205
6	FedEx Ground to Air Trans Way	Sundial Road @ Swigert, to Marine Dr., west to 122nd, south to Airport Way, west to 82nd, south to Alderwood and Cornfoot, west to Air Trans Way
7	1-84/1-205 to Air Trans Way	I-205, north to Columbia Blvd, west to Alderwood, north to Cornfoot and Air Trans
8	1-84/1-205 to Clackamas Industrial Area	I-205 to Hwy 212, to Highway 212 at Fred Meyer Distribution Center
9	Clackamas Industrial Area to Beavercreek Industrial Area	Hwy 212 at Fred Meyer Dist. Center,to I-205, south to Hwy 213 to Beavercreek Rd.
none	Tualatin Industrial to N Hillsboro Industrial	124th @ Herman Road to Tual-Shwd Rd to I-5, to Roy Rogers Rd to Scholls Ferry Rd to Murray Blvd to Hwy 8 to Cornelius Pass Rd to Evergreen Parkway at Brookwood
10	Tualatin Industrial to Clackamas Industrial Area	124th @ Herman, to Tual-Shwd Rd, to I-5, south to I-205, east to Hwy 212 at Fred Meyer Dist. Center
11	Tigard to Tualatin Industrial	Highway 99W @ Dartmouth, south on Hwy 99W to Cipole Road to Herman @ 124th
12	Hwy 217 Corridor	US 26 to I-5 via Highway 217 (end to end)
13	N Hillsboro Industrial to CEID/I-5 @ Morrison	Brookwood @ Evergreen to US 26, to I-405 ,to I-5 @ Morrison
14	Tigard Industrial to N. Hillsboro Industrial	72nd/Bonita Rd to Bangy Road to Hwy 217 at Kruse Way, to US 26, west to Brookwood Parkway, south to Evergreen Parkway
15	N Hillsboro Industrial to Forest Grove	Brookwood @ Evergreen to Cornell to Hwy 8 to Hwy 47 @ Hwy 8
16	CEID to Swan Island	MLK @ Taylor, to Morrison Br.,to I-5 north, to Going St., to Swan Island
16	T4 to I-405 at US30	Lombard St., to St Johns Bridge, to US 30, to Kittridge, Front Ave. to NW 26th Drive, to NW Yeon/ US 30 (mid-point at St. Johns Bridge and US 30)
17	T6 to I-5 at Marine Dr.	via Marine Dr
17	T4 to 1-5 SB ramp at Columbia Blvd.	via Columbia Blvd.
18	I-5 at Marine Drive to Air Trans	Marine Dr. @ I-5, Hwy 99E to Columbia Blvd., east to 47th, to Cornfoot @ Air Trans
18	Columbia Blvd. at I-5 to I-205 SB at 1-84	Columbia Blvd., Hwy 99E, Lombard, Killingsworth to 1-205
19	CEID to Brooklyn Yard	MLK @ Taylor, to Hwy 99E, south to Holgate
20	East End of Ross Island Bridge to 1-205	via Powell Blvd.
21	Brooklyn Yard to 1-205 SB	via Hwy 99E
22	Brooklyn Yard to Clackamas Industrial	via Hwy 99E,Hwy 224, Sunrise to Hwy 212
23	Clackamas Industrial Area to Hwy 26 (in Boring)	via Hwy 212
24	Hwy 26 to 1-84	via Hwy 26,Hogan,238th
none	N Hillsboro Industrial to US 30 at St. Johns Bridge	Brookwood Pkwy , to US 26, north on Cornelius Pass Road to US 30, to St. Johns Br.

Draft Regional Freight Strategy updates/additions

Why is the Regional Freight Strategy (Plan) important?

A regional freight strategy is important because the movement of freight and goods transcends local jurisdictional boundaries, and includes multiple modes, employment and industrial centers, economic clusters and important regional and local freight access and delivery points. The region also functions as a trade and transportation gateway for Oregon and provides market access for many southwest Washington businesses.

The regional freight strategy will provide a coordinated vision and approach for enhancing freight and goods movement and prioritizing freight investments based on clear priorities.

What will be added and updated as part of the Regional Freight Strategy?

Metro is working with the Port of Portland, ODOT, and other local and regional partners to develop a regional freight strategy that updates the June 2010 Regional Freight Plan. Development of the Regional Freight Strategy will be part of the 2018 Regional Transportation Plan (RTP) update. The following are key freight work items and information that will be added and/or updated in the 2018 Regional Freight Strategy:

- Updated priority needs and issues for freight (completed)
- Updated economic figures, commodity flow data and other key freight data will be compiled and included (New draft Key Freight Trends and Logistics Issues Report – Spring 2017)
- Include new freight measures that inform near- and long-term investment priorities:
    1. Reliability measure (Monitoring measure - Summer 2017)
    2. Travel times to/from key intermodal facilities and industrial areas (draft measure completed for testing in Spring 2017)
    3. Freight access to industry and freight intermodal facilities measure (draft measure completed for testing in Spring 2017)
- Updated Regional Freight Network map that includes new National Multimodal Freight Network and Freight Intermodal Connector system designations (Spring-Summer 2017)
- New section on regional freight funding, and the federal Fast Act and FASTLANE grants. (Summer 2017)
- Update the Freight Action Plan to include strategies and freight projects that are informed by new freight measures, regional design guidelines, and 2018 RTP priority investments that are both near-term and long term (Summer-Fall 2017)

These work items will lead to a technical review draft of the Regional Freight Strategy around October of 2017.*

*More information on the Regional Freight Strategy update on the RTP website at http://www.oregonmetro.gov/public-projects/2018-regional-transportation-plan/freight