Tesoro Savage CBR
Scoping Comment
#30901

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Carolyn McDade

Address: 1209 SW Sixth Ave #501

(Please include your Zip!)

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EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

Not only is the health of humans at stake, but the wellbeing of life in this region upon which and with which our lives are woven. This also diverts us from our primary work which must be devote ourselves to renewable energy.

CMD

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30902

Docket EF-131580

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Susan Randolph

Address: ~~5814~~ 5814 N Bawdoin St. Portland, OR
(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ 18, 2013.
December 18, 2013

Please stop funding new infrastructure that perpetuates an oil + fossil fuel-based economy. It's time to start investing in a long-term solution to environmental problems that will ensure continued prosperity for future generations! We can do better.
Thank you for reading.
– Sue

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30903

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Lesia Carlock

Address: 317 NW 41st Vancouver 98660

(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

This will possibly cause many opportunities for pollution accidents very hard to amend. Please stop this environmental and health hazard.

Lesia Carlock

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30904

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Linus Rochelle

Address: 3705 N.E. Hassalo street, - Portland, Oregon

(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

My name is Linus and I am in 6th grade. I'm worried about the trains crashing. If oil crashes then the oil would leak into the river, killing the fish and poisoning the water. If oil crashes in a town then the people would get sick and have die.

Each day 360,000 barrels

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30905

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Lilah-Rose Rochelle

Address: 3705 NE Hassalo St. - Portland, Oregon 97213

(Please include your Zip!)

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EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

People could be in danger from fire and train pollution.

I am 8 years old and worried about climate change and fossil fuels.

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30906

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Katie Jacobsen

Address: 8025 SE 60th, Portland, OR 97206
(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

We are very concerned that there is too little information regarding the potential environmental impact and human health impact of the proposed Tesoro Savage Terminal. There is little debate that trains can crash. If one of these crude oil transporting trains were to crash, then what? With 1000s of barrels of oil flowing into one of the largest estuarine systems in the PNW, how will we protect our already endangered and threatened species of the Columbia River? The cost of such an accident to both human health and environmental health is too high for the benefit of the terminal!

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30907

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Erica Semeyn

Address: 8075 SE 60th Ave Portland OR 97206

(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

I am OPPOSED to ~~the~~ this PROJECT
A thorough EIS will show that this is
Unsafe, unwanted and unwarranted

Consider risk of oil spills, air pollution
Impacts on Human / Habitat Health
and the extent of Traffic / hazards /
Exposure of Oil Rigs / Trains - it is
Just a matter of TIME before a
disaster Happens. I say NO!

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30908

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Willene Bautista

Address: 2454 NE Halsey St
(Please include your Zip!)

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EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

Enabling the infrastructure for this shipping oil project is a boon for fracking, taking oil out of Canada's Tarsands. All of this is such an endangerment to our planet and our people. (Please, we can stimulate our economy with alternative energy sources.)

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30909

Docket EF-131590

I urge you, the Energy Facility Siting Evaluation Council (EFSEC), to include rail oil car safety in your scoping overview.

Also, I thank you for your Determination of Significance (DS) regarding the "adverse impact on the environment" of the Vancouver Oil Terminal.

Transporting oil by railcar has resulted in several accidents. In July, 2013, in Lac Megantic, Quebec, 72 tank cars derailed, crashed, and killed over 42 people. (L A Times, November 14, 2013, "Railroad Industry Urges Upgrade in Oil Tank Car Safety.) Other crashes have occurred, one in Alabama on November 8, 2013.

This article continues, "the crashes led the Federal Pipeline and Hazardous Materials Safety Administration to take the initial step to tighten safety standards on tank cars, calling on the public to file comments".

Also, the article states, "the Association of American Railroads filed comments", and "called for a number of tank car improvements". Many tank cars would need major improvements. 92,000 cars haul flammable liquids and 78,000 of these cars would have to be upgraded or phased out, "under the Association's proposal".

"Railroads hauled 25 times more tank cars in 2012 than they did in 2008, and the volume is continuing to rise this year".

We don't want unsafe oil tank cars transporting crude oil along the Columbia River, endangering both people and salmon.

Thomas N. Gordon
642 I Street
Washougal, WA 98671
tndgardens@comcast.net

December 15, 2013
360-835-7748

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Tesoro Savage CBR
Scoping Comment
#30910

Docket EF-131590

In 1992, the U.S. Geological Survey confirmed the suspected fault under the east bank of the Willamette River. This fault runs at least 30 miles southeast of Portland-Vancouver and is part of the Portland Hills Fault Zone. The Portland Hills fault itself has been known for a long time. The length of this fault makes geologists feel this area could produce earthquakes of more than 6 on the Richter Scale. To confirm this, at a recent Geological Society of the Oregon Country meeting, a geologist from the Oregon Department of Geology, when asked what is the most dangerous place in Oregon to be if a large quake occurred, responded that that would be the large tank farms along the Willamette River.

These earthquakes would also produce strong vibrations in the alluvial soils that the proposed Vancouver Oil Terminal would sit on. These soils would liquify, knocking oil cars over and rupturing holding tanks. The support system in the Vancouver area would have many other problems to contend with. They would not need a destroyed oil terminal, with possible fires, to complicate their monumental task.

Thomas N.
Gordon

December 16, 2013

642 I Street
Washougal, Wa. 98671
(360) 835-7748
tndgardens@comcast.net

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EVALUATION COUNCIL

Tesoro Savage CBR
Scoping Comment
#30911

December 15, 2013

Docket EF-131590

NALCO

Stephen Posner, EFSEC Interim Manager
Energy Facility Site Evaluation Council
1300 S Evergreen Park Dr. SW
PO Box 43172
Olympia, WA 98504-3172

NalcoChampion - A division of Ecolab
Jill Langley – Area Manager
25721 38th Avenue NW
Stanwood, WA 98292
jlangley@nalco.com
360-631-9117

Dear Mr. Posner:

I am a resident of Washington and am writing in support of the Tesoro Savage Vancouver Energy Distribution Terminal. The proposed project will receive and ship North American crude oil to US refineries to offset or replace foreign imports and declining production in Alaska and California. This crude oil will be refined in US refineries to help meet the everyday needs of residents and businesses along the US West Coast – including those of the state of Washington. In short, it helps with America's energy security and will bring economic benefits and valuable jobs to our local communities.

As a resident, I believe the safety and environmental reviews are extremely important and will help ensure that this is done safely and responsibly. As such, I would request that the scope of the SEPA environmental analysis be purposefully focused on potential impacts from the proposed facility. The scope of the EIS must be limited to those potential impacts directly related to the facility design and operation. I ask that EFSEC consider the following site-specific impacts in preparation of the SEPA Environmental Impact Statement:

- Risks caused by earthquakes
- Spill prevention and spill response requirements that protect the environment
- Ability to comply with state and federal air quality emission standards
- Protection of Columbia River water quality and fish and wildlife resources
- Impact of the facility on local transportation infrastructure and public services
- Facility design that meets all relevant safety standards

I am concerned that conducting a SEPA EIS that looks beyond site-based facility impacts is an overreach that could dilute the core focus on this facility and have a dampening effect on transportation of other commodities, such as agricultural products, which are vital to the economies of Vancouver, Clark County and the state of Washington.

This balanced approach is consistent with SEPA statutes and regulations and will protect the environment while also ensuring the state's ability to grow its economy. Thank you for considering my comments.

Most Sincerely,

Jill Langley
Area Manager
NalcoChampion

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Docket EF-131590
Tesoro Savage CBR
Scoping Comment
#30912

ORIGINAL

PUBLIC COMMENT ON TESORO SAVAGE PROPOSED OIL TERMINAL IN VANCOUVER, WA

Dear Governor Inslee, Mr. Posner, and Washington EFSEC,

I urge you to assess the full impact of Tesoro Savage's proposal to ship 360,000 barrels of oil each day through Spokane, the Columbia River Gorge National Scenic Area, Vancouver and other Northwest communities. Oil-by-rail is a bad deal for Washington State. The project comes at a steep price for rail communities and the Columbia River, yet offers few jobs in return. Based on the far reaching impacts of this project, I urge you to deny Tesoro Savage's unprecedented proposal.

The public safety and environmental impacts of the state's largest pipeline-on-wheels proposal deserve close scrutiny. For example, EFSEC must assess:

- The potential impacts of a large train-related oil spill along the rail route in Washington and beyond.
- The transportation and public health impacts of additional unit train traffic through communities along the proposed oil-by-rail route. This includes evaluating emergency response capabilities in Vancouver, where oil trains would deliver and store oil, and other communities along the rail and shipping route.
- The increased risk of an oil tanker spill on Washington State waters and along the shipping route.
- The project's impact on climate change. This analysis should include climate change impacts from crude oil as well as tar sands oil from cradle to grave.

After carefully considering the safety, environmental, and climate risks associated with the project, I respectfully ask you to deny Tesoro Savage's application.

Name Peter Bergel
Address 104 Commercial NE
Salem, OR 97301
Phone # 503-371-8002
Email pbergel@ipc.org

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Docket EF-131590
Tesoro Savage CBR
Scoping Comment
#30913

ORIGINAL

PUBLIC COMMENT ON TESORO SAVAGE PROPOSED OIL TERMINAL IN VANCOUVER, WA

Dear Governor Inslee, Mr. Posner, and Washington EFSEC,

I urge you to assess the full impact of Tesoro Savage's proposal to ship 360,000 barrels of oil each day through Spokane, the Columbia River Gorge National Scenic Area, Vancouver and other Northwest communities. Oil-by-rail is a bad deal for Washington State. The project comes at a steep price for rail communities and the Columbia River, yet offers few jobs in return. Based on the far reaching impacts of this project, I urge you to deny Tesoro Savage's unprecedented proposal.

The public safety and environmental impacts of the state's largest pipeline-on-wheels proposal deserve close scrutiny. For example, EFSEC must assess:

- The potential impacts of a large train-related oil spill along the rail route in Washington and beyond.
- The transportation and public health impacts of additional unit train traffic through communities along the proposed oil-by-rail route. This includes evaluating emergency response capabilities in Vancouver, where oil trains would deliver and store oil, and other communities along the rail and shipping route.
- The increased risk of an oil tanker spill on Washington State waters and along the shipping route.
- The project's impact on climate change. This analysis should include climate change impacts from crude oil as well as tar sands oil from cradle to grave.

After carefully considering the safety, environmental, and climate risks associated with the project, I respectfully ask you to deny Tesoro Savage's application.

Name STEVE & TOBY RHINE
Address 2766 WEATHERFORD CT
SALEM OR 97304
Phone # 503 375 5348
Email Steverhine@YAHOO.com

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Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30914

ORIGINAL

PUBLIC COMMENT ON TESORO SAVAGE PROPOSED OIL TERMINAL IN VANCOUVER, WA

Dear Governor Inslee, Mr. Posner, and Washington EFSEC,

I urge you to assess the full impact of Tesoro Savage's proposal to ship 360,000 barrels of oil each day through Spokane, the Columbia River Gorge National Scenic Area, Vancouver and other Northwest communities. Oil-by-rail is a bad deal for Washington State. The project comes at a steep price for rail communities and the Columbia River, yet offers few jobs in return. Based on the far reaching impacts of this project, I urge you to deny Tesoro Savage's unprecedented proposal.

The public safety and environmental impacts of the state's largest pipeline-on-wheels proposal deserve close scrutiny. For example, EFSEC must assess:

- The potential impacts of a large train-related oil spill along the rail route in Washington and beyond.
- The transportation and public health impacts of additional unit train traffic through communities along the proposed oil-by-rail route. This includes evaluating emergency response capabilities in Vancouver, where oil trains would deliver and store oil, and other communities along the rail and shipping route.
- The increased risk of an oil tanker spill on Washington State waters and along the shipping route.
- The project's impact on climate change. This analysis should include climate change impacts from crude oil as well as tar sands oil from cradle to grave.

After carefully considering the safety, environmental, and climate risks associated with the project, I respectfully ask you to deny Tesoro Savage's application.

LAURIE DOUGHERTY

Name Laurie Dougherty

Phone # 617-504-0016

Address 462 20th St. SE
Salem, OR 97301

Email lauriedougherty@gmail.com

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Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30915

ORIGINAL

DENY the Pipeline-on-Wheels

SPOKANE WA 990
16 DEC 2013 PM 3 L

Dear Governor Inslee and Washington EFSEC,

Tesoro's proposal to ship 360,000 barrels of oil each day means an additional 12 trains will slice through our communities in Eastern Washington, Idaho, and Montana. Shipping crude oil by rail threatens our health and environment. Please carefully consider:

- risk of spills in WA and beyond
- impacts to health of those who live along the rail corridors
- impacts on climate change

I respectfully ask you to deny Tesoro's application.

Sincerely,

Kathleen Parker

Stephen Posner
Energy Facility Siting
Evaluation Council
PO Box 43172
1300 S Evergreen Pk Dr SW
Olympia, WA 98504-3172

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Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30916

ORIGINAL

12/26/13

DENY the Pipeline-on-Wheels

SPOKANE WA 990

Dear Governor Inslee and Washington
EFSEC,

16 DEC 2013 PM 3 L

USA 33

Tesoro's proposal to ship 360,000 barrels of oil each day means an additional 12 trains will slice through our communities in Eastern Washington, Idaho, and Montana. Shipping crude oil by rail threat[illegible] our health and [illegible]ease carefully consider:

- [illegible] in WA and beyond
- impacts to health of those who live along the rail corridors
- impacts on climate change

I respectfully ask you to deny Tesoro's application.

Sincerely,

Arthur E. Mastroianni

Stephen Posner
Energy Facility Siting
Evaluation Council
PO Box 43172
1300 S Evergreen Pk Dr SW
Olympia, WA 98504-3172

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Tesoro Savage CBR
Scoping Comment
#30917

Docket EF-131590

2524 E 17th Ave
Spokane WA 99223
Dec. 15, 2013

Stephen Posner and
EFSEC Council members

Health effects to people and ecology, I hope, will be paramount in your study.

Because there are jobs to be had and made in sustainable, renewable, non-carbon areas like WAVE energy. Choose WISDOM.

Plus, with excellent foresight you could help reduce our health care costs.

Diesel causes cancer, too.
Finally, it is in print.

Even if I were not chemically sensitive, which I am, I would not wish all this current pollution on anyone or anything anywhere. How can you make more???

Please use your position to make a difference.

Sincerely,
Thankyou,

Cathy Conrad-Lee
509-535-3259

What goes up, comes down in the rain and/or blows in the wind.

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Tesoro Savage CBR
Scoping Comment
#30918

Docket EF-131590

4511 Glen Meadows Place
Bellingham, WA 98226

December 14, 2013

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Stephen Posner, EFSEC Interim Manager
Energy Facility Site Evaluation Council
1300 S. Evergreen Park Dr. SW
PO Box 43172
Olympia, WA 98504-3172

RE: Proposed Energy Distribution Terminal; Port of Vancouver, Washington

Dear Mr. Posner,

I support this terminal development to off load crude oil from rail cars into ships and/or barges for marine transport to west coast refineries. The need for our nation to be energy independent of sources from marginally stable countries is important. This facility would contribute to the safe transportation and use of our domestic oil resources.

As a driver of a minivan I'm very appreciative of the ready availability of fuel for that vehicle. In addition I find that I use plastic products that are derived from petroleum all of the time. As I type this I'm warmed by my fleece shirt, which I appreciate so much. Most of us are unaware of all of the products derived from petroleum that we rely on to make life bearable. So anything that can make the transportation of domestic oil and its derived products safe and affordable is important to my family and to me.

I am aware that the Tesoro Corporation is very sensitive to safety and environmental considerations and regulations. The operation of their Anacortes refinery is done with the utmost vigilance with respect to both the federal and state rules and regulations in these areas. With that record, I ask you to approve the permit for the development of the Vancouver terminal.

Sincerely,

Ray Baribeau

Ray Baribeau
Phone: 360-752-1712

Tesoro Savage CBR
Scoping Comment
#30919

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: Jeremy Street

Address: 527 Clover St Cheney WA 99004
(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

The increase in train traffic through Cheney will cause a decrease in property values near the tracks and an increase in insurance costs for people living on the side of town blocked from fire service access when trains are passing. Please include verification of these assertions as part of the scope for the Tesoro ~~Sabaya~~ Savage Vancouver Energy Distribution terminal

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30920

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

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ENERGY FACILITY SITE EVALUATION COUNCIL

Name: Dr NANCY STREET

Address: 527 Clover ST Cheney, WA 99004
(Please include your Zip!)

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

Trains start many fires. Ask our BNSF neighbors
Too much noise in Cheney – train whistles
blow 4 times at each intersection.
+ noise leads to stress, no sleep, anxiety
Trains stop traffic & emergency vehicles
Trains emit diesel particulants
Train's carrying oil or coal promotes global warm.
Trains can derail and cause huge fires and
devestation for the communities
Trains will pollute our gardens & food.

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Housing values will decline
Economic activity will be affected - poor fishing, tourism.
Enjoyment of outdoors will diminish.
Jobs will be lost.
Cheney has everything to lose and nothing to gain!

Tesoro Savage CBR
Scoping Comment
#30921

Docket EF-131690

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

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ENERGY FACILITY SITE EVALUATION COUNCIL

Name: BILL BURGEL

Address: 2125 SE GRANT PORTLAND, OR 97214
(Please include your Zip!)

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

CRUDE-BY-RAIL SHIPMENTS SHOULD NOT BE ALLOWED TO BE EXPORTED FROM THE PORT OF VANCOUVER, WA for SEVERAL REASONS

1) THE UNITED STATES HAS NO COMPREHENSIVE POLICY IN REGARDS TO ENERGY AND/OR TRANSPORTATION.

2) IF THE UNITED STATES WERE TO ADOPT AN ENERGY POLICY, IT IS HIGHLY DOUBTFUL THAT THE TESORO SAVAGE VANCOUVER ENERGY DISTRIBUTION TERMINAL WOULD BE BUILT.

3) EXPORTING OUR VITAL NATURAL RESOURCES IS A VERY SHORT-SIGHTED ACTION – AND IMPLIED IN THIS STATEMENT CONSTRUCTING THIS TERMINAL IS AS WELL.

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact:
Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Thank you for considering this comment

Tesoro Savage CBR
Scoping Comment
#30922

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: Kyle R. Moss

Address: 12964 S. Scribner RD. 99004

(Please include your Zip!)

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

I Am a concerned citizen of Cheney. In regards to blocking the rail crossing. It would make it hard for Any emergency Vehicle to make it in or out. Also, Concerns about fire in the area caused by rail road. Thank You.

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EVALUATION COUNCIL

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30923

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: Trevor W Smith

Address: 53166 W. Jensen Rd. Cheney WA 99004
(Please include your Zip!)

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Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

I am concerned about many aspects of the situation at hand. So many times, crossings in our area are blocked by stationary rail cars, As a resident the first thing that comes to mind is emergancy vehicle access. When one minute can be the difference between life and death, is it prudenet to clog our crossings. Also as a land owner that has a rail way adjacent to my home, that often has cars sided on it, how safe are the contents in these containers?

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Tesoro Savage CBR
Scoping Comment
#30924

Docket EF-131590

ORIGINAL

DENY the Pipeline-on-Wheels

Dear Governor Inslee and Washington EFSEC,

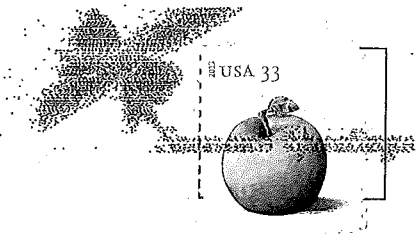
Tesoro's proposal to ship 360,000 barrels of oil each day means an additional 12 trains will slice through our communities in Eastern Washington, Idaho, and Montana. Shipping crude oil by rail threatens our health and environment. Please carefully consider:

- risk of spills in WA and beyond
- impacts to health of those who live along the rail corridors
- impacts on climate change

I respectfully ask you to deny Tesoro's application.

Sincerely,

Terra K. Holbrooke



Stephen Posner
Energy Facility Siting
Evaluation Council
PO Box 43172
1300 S Evergreen Pk Dr SW
Olympia, WA 98504-3172

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Tesoro Savage CBR
Scoping Comment
#30925

Docket FR.131490

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Charlotte Finn

Address: 2125 SE Grant St. Portland OR 97214
(Please include your Zip!)

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

Crude oil shipments in the Pacific NW:

Increased rail traffic would impact the lifestyles of residents in our area — health, noise, safety issues, congestion.

This is an example of putting profit + greed before the real needs of people.

As a global community, we need to be investing in clean power and most importantly using less resources and consuming less.

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Charlotte Finn

Tesoro Savage CBR
Scoping Comment
#30926

Docket EF-131590

Dec. 4,2013

Stephen Posner,
EFSEC Interim Manager,
Energy Evaluation Site Evaluation Council
Re: Tesoro-Savage Vancouver Distribution Terminal Application #2013-01

Dear Mr. Posner,
I am pleased to hear of EFSEC's extention of the deadline for public comment on this proposal. I am also very eager to contribute my opinions as a private citizen and a local resident of Clark County.

I was present at the second public comment hearing held at the Port of Vancouver earlier this Fall, and heard comments that were 3 to 1 opposed to this proposal. I was not impressed with the Port Commisioners' openness to the majority's concerns. I would like to express my concerns now to you and the Council.

I will list these concerns in order of importance:
ADVERSE EFFECT ON THE EARTH'S GREENHOUSE GASES
EFFECT OF ABOVE ON OCEAN ACIDIFICATION
RISK OF DESPOILATION OF THE COLUMBIA RIVER SYSTEM BY A MAJOR SPILL
ENVIRONMENTAL DAMAGE BY HYDRAULIC FRACKING IN BAKKEN FIELD
AESTHETIC DEGRADATION OF VANCOUVER'S RIVERFRONT FROM FREQUENT, LONG UNIT TRAINS
DEGRADATION OF WEST VANCOUVER AIR QUALITY
POTENTIAL MAJOR SPILL AT PORT OF VANCOUVER DUE TO EARTHQUAKE
QUESTIONABLE HISTORY OF APPLICANT REGARDING PAST ACCIDENTS

I do not believe that this proposal can adequately address these concerns. In addition, I suspect that this proposed terminal might serve as a means of exporting crude oil overseas, as I note in some indications from Congress.

Please consider the large perspective when you make your recommendations to the Govenor. Thank you for listening to me.

Sincerely,
George F. Vaughan
6916 NE 27th Ave.
Vancouver, WA 98665

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Tesoro Savage CBR
Scoping Comment
#30927

Docket EF-131590

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DEC 24 2013

ENERGY FACILITY SITE
EVALUATION COUNCIL

ORIGINAL

DENY the Pipeline-on-Wheels

12-05-2013

Dear Governor Inslee and Washington EFSEC,

Please don't IMPAIR Amtrak IN EASTERN WASHINGTON

Tesoro's proposal to ship 360,000 barrels of oil each day means an additional 12 trains will slice through our communities in Eastern Washington, Idaho, and Montana. Shipping crude oil by rail threatens our health and environment. Please carefully consider:

- risk of spills in WA and beyond
- impacts to health of those who live along the rail corridors
- impacts on climate change

EIS MUST DETERMINE IMPACT ON PEOPLE TRAVEL!

I respectfully ask you to deny Tesoro's application.

Christine E Clark

Sincerely, Christine E Clark
2002 W Hamilton Rd
Deer Park WA 99006

Stephen Posner
Energy Facility Siting
Evaluation Council
PO Box 43172
1300 S Evergreen Pk Dr SW
Olympia, WA 98504-3172

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30928

35417 N. Dalton Road
Deer Park, WA 99006
December 18, 2013

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Mr. Stephen Posner
Interim EFSEC Manager
Energy Facility Site Evaluation Council
PO Box 43172
1300 S Evergreen Park Dr. SW
Olympia, WA 98504-3172

Re: Tesoro-Savage Vancouver Energy Distribution Terminal
Application No. 2013-01
Docket No. EF 131590

Dear Mr. Posner:

Please note the following comments for inclusion in this application:

EFSEC should review a scope of impacts similar to Whatcom County's requirements:

Increases in rail traffic across the region, particularly within Spokane and adjacent to the Columbia River;
Increases in vessel traffic in and out of the Columbia River;
Increased crude oil spill risk from rail transport over aged tracks in aged containers, and from terminal storage and river/marine transport;
Additional crude oil extraction in North Dakota and Alberta tar sands;
Additional particulate pollution from increased diesel rail transport through residential and urban areas;
Greenhouse gas emissions and life cycle impacts resulting from transport of crude oil.

We urge the Council to reject this Application.

Very truly yours,

Mary S. Jokela

Brian A. Jokela

Docket EF-131590

Tesoro Savage CBR Scoping Comment #30929

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

To the signer: Your contact information allows the local environmental coalition to notify you when hearings are scheduled. If you'd like to volunteer on the campaign, check the box on the right.

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Gala Miller	millergala@gmail.com	360 6086030	Vanc. 98662	
Corinne Stefanick	cstefanick@hotmail.com			
David A. Lambert	DAVELAMBERT_638@MSN.COM	360 574 2836	VANC, 98665	
Janalee Roland	RolandK@hotmail.com	360-254-3064	Vane WA 98683	
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ENERGY FACILITY SITE EVALUATION COUNCIL

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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~~Don Slemke~~	~~cfVancouverUSA@gmail.com~~	360 ~~8921589~~	Vanc, WA 98682	✓
Lorie Gordon	loriegordon@hotmail.com	503 4651898	Troutdale OR	✓
Chris Newberry	christinewberry@gmail.com	503 729-6843	Beaverton OR	
DALE A. McCULLOUGH	DALE.A.McCULLOUGH@GMAIL.COM	503-703-6104	BEAVERTON OR	
KEVIN STEWART	KEVIN@TALESOFTHEEMERALDTRIANGLE.com	503-351-1442	PORTLAND 97202	
Betty Rico	~~betty@~~ bettyr7@gmail.com	503.351.1700	Portland 97202	
Roger Crawford	Crawfor@comcast.com	360- 892-2125	Vancouver WA.	
Lisa Nelsk	pinski75@hotmail.com	360.449.9847	Vancouver, WA	
Toni ~~Montgomery~~	TJMstopCOALNOW@yahoo.com	360- 891-6136	VANC. WA	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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[illegible]	WILLIAM.MONTGOMERY@CEMEX.COM	360-772-2511	VANC. 98683	
Melissa Nelski	none	360.449.9897	Vancouver 98684	
Felicia Nelski	none	"	"	
Bradley Brannan	bradley.brannan@gmail.com		Vanc 98664	
William Cole	willcole2002@gmail.com	503-502-2311	Portland 97202	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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JALEZO	[illegible] PARENT	"	"	
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Pamela Rio	pamelaprunetree@hotmail.com	907-750-1868	Van 98661	
Teresa Kubo	teresa.kubo@gmail.com	503 490 8990	97267	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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Ed Martin	bemcrm@gmail.com			

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Marjonie English	JACKeyo@MSN.com	360 2560668	VAN, WA 98662	
Aron Steinke	aron@trilliumcharterschool.org	360.903.4618	Portland, OR 97215	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all proposed oil terminals, in particular consider the economic harm of Climate Change and Ocean Acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

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~~Don Steinke~~	~~DonSteinke@g.com~~	360 903 3052	Van WA	✓
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Laura Rivendell	laura.rivendell@yahoo.com	206-524-6531	Renton, WA	
Martha Baskin	mobaskin@earthlink.net	206-628-9635	Seattle	
Ann Eachus	ann@eachus.org		Lynnwood	
Jim Eachus	jim@eachus.org	206-790-5536	Lynnwood	

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Peter Marshall	psmarshall@comcast.net	425-453-9287	Bellevue	
Ethan Buckner	ethan@forestethics.org	612-718-3817	Berkeley, CA	
Jennifer Keller	jankeller3@gmail.com	425 614-0652	Bellevue WA	
E. Johnston	ENJOHNSTON@350SEATTLE.ORG	—	Seattle	
Elizabeth Zultoski	elizabeth.zultoski@gmail.com	—	Seattle	

Kris Boyles Earth Justice fish $38 billion 60 K jobs
Bruce Wishart WEC

To EFSEC and Governor Inslee: We urge you to study all the impacts of all proposed oil terminals, in particular consider the economic harm of Climate Change and Ocean Acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks. How much is our back yard worth

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Name	Legible Email	Phone	City	Vol
~~Don Steinke~~	~~DonSteinke@q.com~~	360 903 3052	Van WA	✓
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STUART MORK	MORKABU@A.M.COM		SEATTLE	
Ron Snell	rsnell2@comcast.net	425-814-5698	Kirkland	
Fred Felleman	felleman@comcast.net	206.595.3825	Sea	

937

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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Name	Legible Email	Phone	City&Zip	Vol
~~Don Steinke~~	~~Don Steinke@q.com~~	360-892-1589	Vanc 98682	
Rich Rogers	igi@comcast.net	360-844-5534	Camas 98607	✓
Candy Bonneville	candy.bonneville@gmail.com	503 317-4329	Battle Ground WA 98604	✓

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Name	Legible Email	Phone	City	Vol
~~Don Steinke~~	~~DonSteinke@q.com~~	~~360 903 3052~~	Van WA	✓
Andrea Larsen	alarson08@gmail.com	208-484-8123	ID	

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Cassi Marshall	cassi.r.marshall@gmail.com	(360)213-9010	Camas, WA	✓
Riley Cooper		(360)609-0298	Camas, WA	
Teylen Sheesley		(360)624-7590	Camas, WA	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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Kevin Melton		360-210-4221	Camas 98607	
~~Rich Marshall~~		~~360-210-4305~~	Camas 98607	
Beth Marshall	camasbeth@gmail.com	360-210-4305	Camas 98607	
Hannah Amundson	hannyamundson@gmail.com	(360) 601-0512	Bellingham 98225	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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Wyatt MacAdam	macadamwyatt@gmail.com		98604	
Joi Flanagan	love2fish4life@yahoo.com	360-931-9639	VANC. 98684	
JOE FLANAGAN	jflan5460@hotmail.com	503-970-9954	98684	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all proposed oil terminals, in particular consider the economic harm of Climate Change and Ocean Acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

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Barbara Kelson	barbara@appleafarmvillage.com	206 335-6727	Woodinville	
Susan Mellu	milkomecha@earthlink.net		Woodinville	
Meighan Pritchard	meighan-pritchard@gmail.com			

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Name	Legible Email	Phone	City	Vol
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Bea Wilson	be a beachwatcher@gmail.com.	425 377 6624	"	
Dina Roberts	robertsdina@gmail.com		Vancouver, WA	
Sarah Brace	Sarahbrace@seanet.com	206-322-6056	Seattle WA	
Rein Attemann	reinattemann@yahoo.com	206-631-2625	Seattle	WA
Tom Putnam	tomput3@comcast.net		Seattle WA	
Wanda Booth	sanL88@juno.com	206-362-3540	Seattle	WA

To EFSEC and Governor Inslee: We urge you to study all the impacts of all proposed oil terminals, in particular consider the economic harm of Climate Change and Ocean Acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

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Laura Cooper	laurakcooper@gmail.com		Seattle	
Worry Browne	browmad@gmail.com	206-782-2208	Seattle	
RAELENE GOLD	RAELENE2@SEANET.COM	206 363-~~4110~~ 4107	Lake Forest Pk, WA	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all proposed oil terminals, in particular consider the economic harm of Climate Change and Ocean Acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

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Name	Legible Email	Phone	City	Vol
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Morgan Shimabuku	morganshimabuku@gmail.com	503-975-1623	Seattle	
Ron Snell	rsnell2@comcast.net	425-814-5646	Kirkland	
James Pasch	james.pasch.46@gmail.com	414 807 9315	Seattle	
Joey Gray	joey@tarsandsactionseattle.org		Seattle	

To EFSEC and Governor Inslee: We urge you to study all the impacts of all proposed oil terminals, in particular consider the economic harm of Climate Change and Ocean Acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

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Name	Legible Email	Phone	City	Vol
~~Don Steinke~~	~~DonSteinke@g.com~~	360 903 3052	Van WA	✓
Wanda Browne	wandabrn@yahoo.com		Seattle	
Toni Potter	antonispotter7@comcast.net	206 365 8949	Lake Forest Park	
Jean Ohso	orcajean@hotmail.com	360-220-5735	Seattle	
Chris Wilke	chris@pugetsoundkeeper.org	206 297-7002	Seattle	

To Governor Inslee and EFSEC: We urge you to study all the impacts of all proposed oil and coal terminals, in particular consider the economic harm of Climate Change and ocean acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

To the signer: Your contact information allows the local environmental coalition to notify you when hearings are scheduled. If you'd like to volunteer on the campaign, check the box on the right.

Name	Legible Email	Phone	City	Vol
[illegible]	[illegible]	360-892-1589	Vanc	✓
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Send in in Seattle Oil Transport Forum @ Nov 19

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To Governor Inslee and EFSEC: We urge you to study all the impacts of all proposed oil and coal terminals, in particular consider the economic harm of Climate Change and ocean acidification associated with these proposals. Deny the permits unless the benefits clearly outweigh the risks.

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Send IN at Vanc Gaiser Oil

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Dan ~~Dave Goldberg~~ Tost
his grey ~~blue fleece~~

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To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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To the signer: Your contact information allows the local ~~environmental~~ Power Postcard coalition to notify you when hearings are scheduled. If you'd like to volunteer on the campaign, check the box on the right.

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To EFSEC and Governor Inslee: We urge you to study all the impacts of all the proposed oil terminals . . . economic, safety, salmon, property values, health, and Willapa Bay acidification. Deny the permits unless the benefits to the State of Washington clearly outweigh the risks.

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See over

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Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30930

THE
WATERFRONT

December 18, 2013

Via email to efsec@utc.wa.gov and U.S. Mail

Stephen Posner
Interim EFSEC Manager
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RECEIVED
DEC 19 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

RE: Tesoro-Savage Energy Distribution Terminal, Docket EF-131590
SEPA Scoping Comments

Dear Mr. Posner,

The following comments are submitted on behalf of Columbia Waterfront LLC on the scope of the State Environmental Policy Act ("SEPA") review required for the proposed Tesoro-Savage Energy Distribution Terminal, a proposed crude-by-rail oil handling, storage, and shipping facility ("Tesoro-Savage Facility"). We thank you for extending the deadline for submitting comments.

Columbia Waterfront LLC is the developer of a new waterfront community, The Waterfront, scheduled to break ground in Vancouver, Washington in early 2014. The Waterfront is located a less than 2 miles east of the proposed distribution terminal and immediately adjacent to the Port of Vancouver's spur rail line, which Tesoro intends to use to deliver some 360,000 barrels of oil per day to the proposed oil handling facility. See Exhibit A (General Vicinity Map).

We are deeply concerned about the Tesoro proposal to construct a new facility to receive crude oil by rail, store it on site, and load it on marine vessels for shipment to West Coast refineries and possibly overseas. The proposed facility would allow for 2.16 million barrels of oil to be stored on the banks of the Columbia River, posing significant risks to the health, welfare and economic future of Vancouver and its residents. A project of this magnitude and importance deserves careful review and consideration of the wide range of potential impacts it may have on the natural and built environment. This comment letter focuses primarily on potential impacts from the proposal on the built environment. A list of additional impacts that should also be analyzed in the EIS, including impacts to the natural environment, is also included as Exhibit F. The EIS should assess available means to mitigate these impacts, and the Council should condition any recommendation for approval on the effective mitigation of all significant environmental impacts. WAC 197-11-660. To the extent that mitigation measures are ineffective

in addressing the impacts of the proposal, the Council should recommend denial of Tesoro's application. *Id.*

I. Background

A. The Waterfront Project

The Waterfront project, and along with it the public goals for a sustainable future for downtown Vancouver, are directly threatened by the Tesoro proposal. The Waterfront will transform a Brownfields area --- the former Boise Cascade mill site --- into a vibrant urban community.[1] Envisioned as a live-work-play community, The Waterfront will reclaim a significant piece of the city landscape and reconnect Vancouver to its roots along the banks of the Columbia River. The Waterfront will include a new 7 acre Waterfront Park on land to be dedicated to the City by Columbia Waterfront LLC, which has also committed to providing initial park improvements including a waterfront trail linking to and extending the existing Columbia River Renaissance Trail. See Exhibit B (The Waterfront site location map). The project consists of up to 3,300 residential units of several types to create a socially and economically diverse community; more than 800,000 square feet of office space; 250,000 square feet of retail space including restaurants, specialty shops and services to support residents and visitors; and a 200 unit hotel. Exhibit B. The community is designed to be friendly for pedestrians and bicycles and will provide convenient access to downtown Vancouver and mass transit.

Situated between downtown Vancouver and the Columbia River, the project site comprises more than 32 acres, including 28 acres owned by Columbia Waterfront LLC and 4 acres leased from the Port of Vancouver.

Columbia Waterfront LLC acquired the property in 2008 and worked closely with the City and Port to create the master plan for development.

The Waterfront will reshape Vancouver's identity and aid in the ongoing revitalization of downtown, while the property, long closed to the public, will be reopened for all to explore. See Exhibit C. In considering approval for The Waterfront master plan in 2009, City staff found the development to be in compliance with the City's Comprehensive Plan and "that the public interest, health, safety, and general welfare will be served" by development of The Waterfront project.[2] The City Council approved the master plan for The Waterfront in December 2009.[3]

1. Economic impact from waterfront redevelopment

[1] More information regarding The Waterfront is available at: http://thewaterfrontvancouverusa.com/.
[2] City of Vancouver, Staff Report and Recommendation to the Planning Commission, Vancouver Waterfront Development, PRJ 2008-02040 (Oct. 27, 2009).
[3] Ordinance No. M-3936.

The Waterfront will be an economic engine for the City and Clark County. The construction of The Waterfront project is estimated to generate over 4,580 direct full time equivalent (FTE) jobs over the construction period, paying an estimated $244 million in labor income ($53,400 per employee), and contributing $318 million in value-added output. Johnson Economics, Estimated Economic and Fiscal Impacts of the Tesoro-Savage Facility on The Waterfront Vancouver Development and Downtown Vancouver 6 (Dec. 2013) (Exhibit D). Indirect and induced impacts from construction activities will create an additional 2,600 FTE jobs, $108 million in labor income, and $187 million in value-added output, with the total impact on Clark County from construction activities totaling over $927 million. Exhibit D.

Once completed, ongoing business activity at The Waterfront will generate an estimated 1,364 direct jobs, contributing $64.8 million in annual labor income and $59.6 million in value-added output to the Clark County economy. Indirect and induced impacts are expected to create an additional 679 permanent jobs paying $25.9 million in labor income. The total annual output associated with the ongoing operations at The Waterfront is estimated to be in excess of $185.5 million per year and be sustained into the foreseeable future. Exhibit D.

Economists have also estimated that The Waterfront will generate over $31 million in tax revenues during the construction period, while recurring tax revenues are estimated at $6.5 million per year including property taxes, lodging related taxes, sales taxes and employee-based business taxes. The net present value of these recurring tax revenues is estimated to be approximately $96 million. Exhibit D.

2. *Timing of waterfront redevelopment*

The development of The Waterfront is not speculative or remote. The EIS must therefore consider the likely impacts of the Tesoro proposal on The Waterfront development. The Waterfront master plan was approved in 2009, and the project is proceeding with permitting, having obtained preliminary subdivision approval as well as City approval of the shoreline management permits for the park. The City is currently finishing the Waterfront Access Project, a $45 million public-private investment that will provide ready street and sidewalk access to The Waterfront from the City's existing downtown core along Esther and Jefferson Streets. With the Waterfront Access Project and associated infrastructure improvements scheduled for completion by the end of 2013, on-site road-building at The Waterfront is scheduled to begin in the summer of 2014, funded by a combination of state Transportation Improvement Board grant funds, City investments, and developer contributions. Building construction will begin in 2015.

B. The Tesoro Proposal

Tesoro Savage Petroleum Terminal LLC ("Tesoro") has proposed to construct and operate a facility at the Port of Vancouver to receive crude oil by rail, store the oil on site, and load up to

an average of 360,000 barrels per day onto marine vessels for delivery primarily to West Coast refineries. Tesoro Application for a Site Certificate ("ASC") at 2-86. At build-out, as many as six loaded unit trains per day, each approximately 7,800 feet in average length (1.47 miles) and containing approximately 100 to 120 tank cars of crude oil, would be delivered to the facility by rail. ASC at 2-91, 4-431. Thus, as many as 12 trains per day would travel through downtown Vancouver and along tracks immediately adjacent to the Columbia River and The Waterfront. See Exhibit B. Up to 2.16 million barrels of oil, or 90.72 million gallons of oil would be stored at the facility at any one time, and 131.4 million barrels or 5.5 *billion* gallons of oil would move through the facility on an average annual basis. ASC at 2-104. For context, the proposed Tesoro oil terminal apparently would have the capacity to handle nearly 5% of the entire United States oil production,[4] or over 43% of the proposed capacity of the controversial Keystone XL pipeline.[5] Tesoro proposes to handle all this oil in a facility located on the banks of the Columbia River in a metropolitan area of over 2 million people.[6]

1. Information gaps

Tesoro's application lacks critical pieces of information necessary to complete a full assessment of the environmental impacts from the proposal. These information gaps must be filled as part of an adequate "detailed statement" of the proposal's environmental impacts, RCW 43.21C.030(c), and "to ensure that SEPA's policies are an integral part" of the Council's decision-making process. WAC 197-11-400(1).

Tesoro's application indicates oil will initially come by train from "Midwest oil fields,"[7] most likely from the Bakken formation of North Dakota. Tesoro, however, does not identify the source of the heavier crude oils proposed for transport and storage in Phase 2 of the project. Tesoro indicates that crude oil will be shipped "primarily," but not exclusively, to West Coast refineries. ASC at 2-206. Since U.S.-sourced crude oil generally cannot be legally shipped overseas, the implication is that some of the oil shipped from the Tesoro facility would likely be of Canadian origin and destined for foreign markets. Tesoro may, in fact, be planning to use the terminal to receive, store and ship heavy crude from the Canadian tar sands. This suspicion is heightened by statements in the ASC indicating that some of the oil handled at the facility will

[4] U.S. Energy Information Agency, Crude Oil Production Statistics, *available at*: http://www.eia.gov/todayinenergy/detail.cfm?id=10171 (indicating 7.505 million barrels of total U.S. production per day in August 2013).
[5] U.S. Dep't of State, Keystone XL Pipeline Evaluation Process Fact Sheet 2012, available at: http://keystonepipeline-xl.state.gov/draftEIS/205549.htm
[6] U.S. Census Bureau, Annual Estimates of the Population of Metropolitan and Metropolitan Statistical Areas: April 1, 2010 to July 1, 2012, *available at*: http://www.census.gov/popest/data/metro/totals/2012/.
[7] ASC at 2-206.

not be "pipeline-quality" and will need to be heated to allow for the oil to flow properly from the rail tank cars to the storage tanks and then to the tanker ships.[8]

The EIS must identify the source of the non-pipeline quality crude that will be delivered to the facility to ensure that the full range of the proposal's impacts can be understood. If Tesoro intends to allow crude oil or diluted bitumen from the Canadian tar sands to be handled at the facility, the EIS must take this into account and analyze the full range of environmental impacts, including climate change impacts, associated with tar sands extraction, transport, processing, and combustion.

In addition, Tesoro has not identified which West Coast refineries or other destinations to which the crude oil will be shipped. This omission makes it impossible for the Council to assess both impacts from the proposed shipping activities impossible and potential alternatives. For the EIS to be sufficient, the applicant must provide the destinations for oil shipped from the proposed Tesoro terminal.

Publicly available copies of Tesoro's lease agreement with the Port of Vancouver contain significant redacting that further inhibits a full assessment of the proposal's impacts.[9] For example, Paragraph 8.E has a number of redactions regarding the timing for handling certain numbers of barrels per day and also gives Tesoro the option of developing a second facility if certain redacted benchmarks are met. ASC at 2-81.23. Paragraph 2.D.2 allows the Port to terminate the lease if it is not satisfied that Tesoro is prepared to begin construction by a certain time – which is also redacted. ASC at 2-81.14. In Exhibit E, key dates that Tesoro has to meet for construction commencement and completion have been redacted. ASC at 2-81.106. The definition of "Rail Facility for Unit Trains" is defined as a facility "capable of unloading more than [redacted] bpd of crude oil from trains." ASC at 2-81.109. Additional exhibits are omitted entirely from the lease attached to the ASC, including the Tenant Environmental Questionnaire (Exhibit H), New Product Approval Process (Exhibit I), Rail Operations (Exhibit J), and Health and Safety (Exhibit L).

These redactions and omissions make it impossible to fully assess the Port's potential economic stake in the deal and the maximum amounts of oil permitted to be moved through the site. While Tesoro states that the facility is currently designed for 360,000 barrels per day, the redactions indicate that Tesoro may have undisclosed plans to expand the facility beyond this stated limit. The EIS needs to fully consider the full scope of Tesoro plans, and the Council should require Tesoro to provide an unredacted version of its lease and all of its exhibits to prevent Tesoro from impermissibly piecemealing the environmental review for its proposal.

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[8] ASC at 2-87, 2-96, 2-161.

[9] ASC § 2.2.2, at 2-81.

2. Impact of the terminal on the future of Vancouver

The Waterfront project, which will be approximately the size of Portland's Pearl District, is the realization of a dream to reconnect the City of Vancouver with the Columbia River, and provides an opportunity to revitalize the City's economy through the development of a mixed use, sustainable, urban, waterfront community. See Exhibits B, C. It will provide lasting benefits to the community, including parklands, trail development, housing, sustainable job creation, and a permanent source of tax revenue.

In contrast, the Tesoro proposal would provide only short-term profits, temporary jobs, and an ephemeral boost in tax revenues to the City and the Port. With an initial ten year lease term followed by two five year options, the oil terminal is "designed for an anticipated lifetime of 20 years."[10] Yet there is no guarantee that the facility will even operate for the full 20 year period. Numerous factors could shorten the facility's operating lifespan by reducing its profitability, including volatility in international oil markets, the potential for pipeline construction to undercut oil-by-rail as an economically viable means of transporting crude oil, the potential for climate change regulations to further reduce the viability of such rail transport, and the inevitable decline in oil production from the Bakken formation. According to statements from the Port of Vancouver's Executive Director, "[t]he Port of Vancouver believes the market is solid for ten [10] years."[11] This type of short-lived project is not worth either the long-term impacts to the City's prospects for sustainable economic development or the risks of environmental catastrophe that the oil terminal would bring.

II. General Scope of the Proposal to be Evaluated in the EIS

In adopting SEPA, the Washington legislature declared the protection of the environment to be a core state priority. RCW 43.21C.010. SEPA states that "[t]he legislature recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment." RCW 43.21C.020(3). This policy statement "indicates in the strongest possible terms the basic importance of environmental concerns to the people of the state." *Leschi v. Highway Comm'n*, 84 Wn.2d 271, 279-80 (1974).

The core of SEPA is a requirement to fully analyze projects with a significant impact on the environment. RCW 43.21C.031(1). An EIS is required for any action that has a significant effect on the quality of the environment. WAC 197-11-330. The Council has already made a determination that the proposal is likely to result in significant environmental impacts, and that an EIS is required. Washington State Energy Facility Siting Evaluation Council, Determination

[10] ASC at 2-109.

[11] Minutes from Port of Vancouver Commission Meeting (Oct. 22, 2013).

of Significance Scoping Notice, Docket EF-131590 (Oct. 1, 2013). Areas identified for analysis in the EIS include "Geology and Soils; Vegetation, Fish, and Wildlife; Environmental Heath, Noise, Risk of Fire or Explosion, Releases or Potential Release of Toxic or Hazardous Materials; Land and Shoreline Use, Population, Housing and Employment; Historic and Cultural Preservation; Aesthetics; Transportation: Vehicular, Waterborne, and Rail Traffic; Public Services and Utilities." EFSEC, Determination of Significance Scoping Notice, Docket EF-131590. Columbia Waterfront LLC supports a thorough analysis and review of these significant potential impacts.

A. The "proposal" to be reviewed under SEPA includes the use of the Port of Vancouver's internal rail infrastructure for oil delivery.

However, the EIS must also properly define the scope of the "proposal" to be evaluated through the environmental review process. WAC 197-11-060(3)(a). A "proposal" includes all actions that are "related to each other closely enough to be, in effect, a single course of action," where they "(i) [c]annot or will not proceed unless the other proposals (or parts of proposals) are implemented simultaneously with them; or (ii) [a]re interdependent parts of a larger proposal and depend on the larger proposal as their justification or for their implementation." WAC 197-11-060(3)(b).

The use of the Port's rail infrastructure for oil by rail deliveries is an integral, interdependent part of the Tesoro proposal to be evaluated in the EIS. The Port's rail infrastructure begins on Parcel 48843000[12] at the juncture of the Port's spur line and the BNSF main line. The entire length of the Port internal rail infrastructure is used to connect the oil terminal to the BNSF railway energy distribution system, and the use of this infrastructure for oil-by-rail delivery must be treated as an integral part of the Tesoro-Savage "proposal" and analyzed in the EIS. See Exhibit A.

B. The "proposal" to be reviewed should also include integral oil-by-rail transportation actions.

The potential impacts from transportation of crude by rail and by vessels must be analyzed in the EIS, because they are both "related activities" and "indirect effects" under SEPA.

The proposed terminal will not and cannot go forward without the delivery by rail of crude to the facility. Tesoro should not be permitted to avoid environmental review for the transportation of more than 130 million barrels of crude oil annually by narrowly defining the scope of its proposal so as to exclude these transportation activities. WAC 197-11-060(3)(a) (requiring agencies to "make certain that the proposal that is the subject of environmental review is properly defined"). Since the operations of the oil terminal are dependent upon oil-by-rail

[12] West Vancouver #2 Public Levee, Amos Short DLC, 4.01A.

deliveries, the terminal operations and rail transportation actions are "related to each other closely enough to be, in effect, a single course of action," where neither action will proceed in the absence of the other. WAC 197-11-060(3)(b). Appropriate environmental review requires an analysis of the impacts of all the activities related to a proposal[13] The EIS must evaluate the environmental impacts from the full scope of the Tesoro "proposal," including the impacts from railroad transportation of crude oil to the Port of Vancouver site.

Similarly, the impacts of oil trains and marine vessels must be evaluated in the EIS as indirect impacts of the oil terminal itself. Under SEPA regulations, "[a] proposal's effects include direct and indirect impacts caused by a proposal." WAC 197-11-060(4)(d). The regulations explicitly direct that environmental impacts outside the jurisdiction of the deciding agency must be considered. WAC 197-11-060(4)(b). Thus, while the transportation of oil trains on the BNSF main line may be outside the scope of the Council's *regulatory* jurisdiction, the impacts of such transportation activities are fully within the scope of the *environmental review* required by SEPA.

"[I]mplicit in the statute is the requirement that the decision makers consider more than what might be the narrow, limited environmental impact of the immediate, pending action. The agency cannot close its eyes to the ultimate probable environmental consequences of its current action." *Short v. Clallam Cnty.*, 22 Wn. App. 825, 834 (1979). For example, when considering a government action, a SEPA document must also consider the effects of private growth that may be encouraged by this governmental action. *Id.* The agency's obligation to consider the indirect impacts of the Tesoro oil terminal compels consideration of both upstream and downstream impacts, including indirect impacts from the transportation of oil by rail to the terminal, as well as from the terminal to undisclosed destinations via marine vessels.

The EIS must consider all direct and indirect impacts of the proposal, including but not limited to the environmental impacts from (1) the estimated 3,426 annual oil train trips (including returns) necessary for the transportation of the oil from North American oil fields to the Tesoro facility, and (2) the estimated 730 marine vessel transits (including returns) used for the transportation of the oil from the facility down the Columbia River, through the Pacific Ocean, and to West Coast refineries. ASC at 4-431.

Furthermore, such an analysis would be consistent with the state's treatment of similar transport by rail facilities. In light of the obligation to consider both direct and indirect impacts under SEPA, the Department of Ecology has required evaluation of upstream and downstream environmental impacts from the proposed Gateway Pacific Terminal. For this coal export facility, the agency is requiring, among other things:

[13] Wash. Dep't of Ecology, State Environmental Policy Act Handbook, Pub. # 98-114 ("SEPA

- A detailed assessment of rail transportation impacts in Whatcom County near the project site, specifically including Bellingham and Ferndale.
- An assessment of how the project would affect human health, including impacts from related rail and vessel transportation in Whatcom County.
- An evaluation of greenhouse gas emissions from terminal operations, and rail and vessel traffic.
- An assessment of how the project would affect human health in Washington.[14]

To ensure consistent application of SEPA, the Council should follow Ecology's treatment of the Gateway Pacific Terminal project with respect to the Tesoro project's potential impacts on The Waterfront, the City of Vancouver and Clark County. Thus, the Council should require (1) a detailed assessment of rail transportation impacts on Vancouver; (2) a vessel traffic study for examination of impacts in U.S. territorial waters, including a detailed risk analysis to determine the risk of an oil spill, as well as other marine traffic-related issues; (3) a detailed human health assessment covering terminal operations, as well as impacts from related rail and vessel transportation in the City and Clark County; and (4) an evaluation of greenhouse gas emissions from terminal operations, and rail and vessel traffic.

III. Specific Factors Related to the Built and Human Environment

The EIS must "describe the existing environment that will be affected by the proposal, analyze significant impacts of alternatives including the proposed action, and discuss reasonable mitigation measures that would significantly mitigate these impacts." WAC 197-11-440(6)(a). The SEPA regulations provide a broad scope of the "elements of the environment" to be considered in the EIS. WAC 197-11-444. The following discusses some of the specific elements of the environment that must be evaluated in the EIS for the Tesoro proposal. While these comments focus on impacts to the City of Vancouver and The Waterfront project, the attached Exhibit F identifies additional factors that must also be evaluated in the EIS.

A. Land Use

The master plan for The Waterfront's mixed use urban community was developed through a public process and in close collaboration between the project developer, the City, and the Port of Vancouver. Recognizing the critical importance of The Waterfront to Vancouver's future, the

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Handbook"), 11–12 (2004).

[14] Press Release, Whatcom County, Washington State Department of Ecology, U.S. Army Corps of Engineers (Oct. 2, 2013), available at: http://www.eisgatewaypacificwa.gov/sites/default/files/content/files/EIS-PressRelease-73113.pdf#overlay-context=resources/press-room.

City, the developer, BNSF, and state and federal agencies have collectively invested $45 million in transportation improvements to facilitate the development of The Waterfront.

Increased oil train traffic immediately adjacent to The Waterfront site will cause various impacts that conflict with the development of The Waterfront in accordance with the approved master plan, including noise, vibration, aesthetics, and risk of spills. Further, the oil train traffic will conflict with the City of Vancouver's plans for development of a Waterfront Park, as user experience at the Waterfront Park will be detrimentally affected by the impacts described above. The EIS must fully assess the compatibility of the Tesoro proposal and its associated oil train traffic with the land use plans for The Waterfront and the Waterfront Park, not just the land use plans for the immediate area of the proposed terminal.

B. Recreation

The master plan for a new 7 acre Waterfront Park along the Columbia River shoreline was recently was approved by the Vancouver City Council.[15] The Waterfront Park will include a half-mile long extension of the existing Waterfront Renaissance Trail, multiple gathering areas, seating, open lawn, a pedestrian pier, a floating fishing pier, and areas for both informal and formal performances. The Grant Street Plaza and Pier would extend 100 feet beyond the shoreline, and the overwater portion would provide views of Mount Hood, the Portland West Hills, and potentially the proposed Tesoro oil terminal. A variety of funding sources have made the Waterfront Park possible. In addition to its commitment to dedicating the 7 acres of shorefront property for the Waterfront Park, Columbia Waterfront LLC has committed $3 million for park improvements. Over $2 million federal and state grant funds have also been secured.

The EIS must include consideration of the full range of impacts that the Tesoro proposal will have on recreational activities at the future Waterfront Park and along the full length of the existing Waterfront Renaissance Trail. The Tesoro facility, including the oil trains along the BNSF main line and the Port of Vancouver spur line, will likely have noise and odor impacts on the Waterfront Park that will negatively impact recreation activities at the Waterfront Park, and must be considered in the EIS. Train noise and odors[16] may also limit the appeal of festivals, farmers markets, and concerts planned for the Waterfront Park, negatively impacting user experience. Due to a slight bend in the Columbia River between the Waterfront Park and the Tesoro oil terminal, the oil terminal may also be visible from the Waterfront Park and its piers, and noise from the oil tanker loading facility will travel unmuffled across the water to the

[15] Minutes of Vancouver City Council Meeting (Nov. 4, 2013).

[16] High concentrations of hydrogen sulfide, with its "characteristic rotten egg odor with an odor threshold as low as 10 parts per billion or even less," in the crude oil proposed for delivery to the facility are a particular concern. ASC at G-28.

Waterfront Park. Noise, odor, and visual impacts analysis included within the EIS should specifically evaluate impacts from passing trains and the oil terminal activities on the Waterfront Park.

C. Transportation

The EIS must include an evaluation of the impacts of the Tesoro facility on railroad transportation. At a minimum, the proposal will result in a significant increase in train traffic through Vancouver and past The Waterfront. In 2012, the Port averaged about one unit train every two days.[17] At full build-out, "[c]ounting the return trips of empty trains, facility operations will result in up to 12 trains per day and 3,426 trains per year on the section of the BNSF rail lines that serve the Port." ASC at 4-431. This means that up to 17.7 miles of new oil train cars will travel through downtown Vancouver daily, with significant impacts on local transportation systems that must be considered in the EIS.

D. Aesthetics

The Tesoro proposal will have significant aesthetic impacts on the City of Vancouver and The Waterfront. The oil terminal loading and unloading operations may be visible from the Waterfront Park, including the Waterfront Renaissance Trail and the Grant Street pier. Oil trains passing through downtown Vancouver will be visible from numerous downtown locations, including the existing Vancouver City Hall. These mile and a half long oil trains will also be visible from The Waterfront property, including numerous residential structures planned for the site and the Waterfront Park. Hydrogen sulfide odors from the oil cars are also likely to cause aesthetic harms to The Waterfront.

The EIS must include visual and odor impact analyses that clearly document the aesthetic impact of the oil terminal facilities on the Waterfront Park and the Grant Street Pier planned for the Columbia Waterfront property. Visual and odor impacts on The Waterfront community and Vancouver City Hall from passing oil trains must also be assessed in the EIS.

E. Public Services

With up to 12 unit trains per day needed to meet the demand of the Tesoro-Savage facility, significant impacts on public services in Vancouver and communities throughout the state are likely to occur. In particular, there are 18 private and 8 public at-grade crossings within the City of Vancouver. Thus, emergency services, including ambulances, fire trucks and police vehicles, will face significant delays in access to parts of Vancouver and other communities bisected by

[17] A. Corvin, Port of Vancouver Jockeys for Oil Transfer Terminal, The Columbian (June 23, 2013), available at: http://www.columbian.com/news/2013/jun/23/oil-transfer-terminal-port-of-vancouver-jock/.

rail lines used for the oil trains. Emergency services to some residential areas along the Columbia River could be completely cut off for long periods of time by lengthy, slow-moving or stopped oil unit trains.

The SEIS must include a complete evaluation of the effects of the oil trains on emergency response time. Specifically, the SEIS must include estimates of total response time delays for ambulances, fire trucks, and police vehicles during the 10 to 20 year estimated life of the Tesoro-Savage Facility. Inevitably, delayed emergency response time will lead to medical complications, loss of life, and property damage. Quantitative analysis should be employed to estimate the economic cost of delays in emergency service response time, as well as the number of lives likely to be lost as a result of such emergency response delays.

F. Noise and Vibration

The oil trains travelling to the Tesoro-Savage facility will pass through numerous Washington communities, including the City of Vancouver. Noise analysis should be conducted as part of the SEPA environmental review to quantify the noise impacts of these trains on the affected communities. At The Waterfront, 10 of the 22 city blocks and numerous residential structures will be within 100 feet of both the BNSF main line and the Port of Vancouver spur line on which the oil trains are proposed to pass. See Exhibit B. An assessment of train noise including engine noise, vibrations, horn noise, and brake noise should be included as part of the EIS. This should include quantitative modeling of the noise generated by the trains at a location 100 feet south of the juncture between the BNSF main line and the Port of Vancouver spur line.

The noise assessment should not only document the maximum noise anticipated to be generated by the oil trains, but should assess the timing, duration and frequency of the noise. Particular attention should be paid to the frequency of trains that will be traveling through the City of Vancouver during night hours.

G. Health and Safety

1. Risk of explosion

The Tesoro proposal presents numerous health and safety risks to the people of Washington. Among the most concerning is the significant risk of an explosion occurring along the oil train route or at the facility itself. Again, 10 of the 22 city blocks comprising The Waterfront will be within 100 feet of both the BNSF main line and the Port of Vancouver spur line. See Exhibit B. The risks to The Waterfront and downtown Vancouver must be fully assessed in the EIS.

As the number of oil trains travelling on North American railroads has increased over the past few years, the number of catastrophic accidents has also increased. Several recent examples of

train accidents show that the safety of oil-by-rail is not assured and must be assessed in the EIS.[18] On July 6, 2013, the risk of oil-by-rail caught the world's attention when a train carrying crude oil derailed, causing multiple explosions and a large fire that killed 47 people and left the town of Lac-Megantic, Quebec in ruins. While the investigation into that disaster is ongoing, initial reports from the Canadian Transportation Safety Board indicate that at least some of the Bakken crude being transported was significantly more volatile than labeled, and that "t[t]he lower flash point of the crude oil explains in part why it ignited so quickly once the Class 111 tank cars were breached."[19] In response, U.S. regulators launched Operation Classification, known as "The Bakken Blitz," "an inspection operation to verify that crude oil is being properly classified in accordance with federal regulations."[20]

Prior to this explosion, the American Association of Railroads (AAR) had petitioned the Pipeline Hazardous Materials Safety Administration (PHMSA) to adopt more stringent requirements for Class 111 (DOT-111) rail cars used to transport more volatile crude oils.[21] When the railroad industry itself specifically requests stricter regulations regarding the design of tank cars used to transport volatile crude oil, it is clear that the current regulations are inadequate to ensure the safe transport of crude oil along American railways and through cities and towns, such as Vancouver. Industry subsequently voluntarily adopted stricter standards than required by federal rules for new tank cars carrying more volatile classes of crude oil, the CPC-1232 standard.[22] AAR has estimated that while there are approximately 19,000 DOT-111 cars in service that meet the CPC-1232 standard, approximately 78,000 DOT-111 cars in service do not meet that standard.[23]

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[18] In one recent example, eleven tank cars carrying crude oil burst into flames after derailing in rural Alabama on November 8, 2013. E. McCallister, Train Carrying Crude Oil Derails, Cars Ablaze in Alabama, REUTERS (Nov. 8, 2013), available at: http://www.reuters.com/article/2013/11/08/us-crude-train-explosion-idUSBRE9A70Q920131108.

[19] Transportation Safety Board of Canada, Rail Safety Advisory Letter 13-13 (Sept. 11, 2013), available at: http://www.tsb.gc.ca/eng/medias-media/sur-safe/letter/rail/2013/r13d0054/r13d0054-617-13-13.asp.

[20] C. Quarterman, PHMSA Administrator, U.S. Dep't of Trans., Rail Safety is a National Priority (Sept. 4, 2013), available at: http://www.dot.gov/fastlane/rail-hazmat-safety-national-priority.

[21] Petition P-1577 (discussed in Comments of the American Association of Railroads and the American Short Line and Regional Railroad Association, Docket No. PHMSA—2012—0082: Hazardous Materials: Rail Petitions And Recommendations to Improve the Safety of Railroad Tank Car Transportation (RRR) ("AAR Comments"), available at: http://www.scribd.com/doc/186006741/PHMSA-ANPRM.

[22] AAR Comments at 3.

[23] *Id.* at 10–11.

In light of the Lac-Megantic disaster, the AAR has requested that federal standards be tightened beyond the existing voluntary CPC-1232 standards.[24] In written testimony provided to the PHMSA, AAR stated that the proposed revisions to the tank car standards "would significantly decrease the probability of a release in an accident."[25] Specifically, the improvements would reduce the probability of releases by increasing puncture resistance, reduce releases from top fittings and bottom outlets, and require thermal protection to reduce the probability of a tank car rupture resulting from fire. The industry has further expressed support for "retrofitting existing cars and an aggressive phase-out schedule for cars that cannot meet retrofit requirements."[26]

In September 2013, the PHMSA issued an Advance Notice of Proposed Rulemaking, a first step towards tightening the DOT-111 regulations for tank cars carrying hazardous liquids, such as crude oil.[27] However, the outcome of such regulatory efforts, including the critical issue of whether existing cars will be rapidly retrofitted or phased out of service, remains uncertain.

While Tesoro has not identified the exact source of the oil proposed for delivery to the Port of Vancouver facility, much of the oil will likely be sourced from the Bakken formation, the source of the oil which exploded in devastating fashion in Lac-Megantic.[28] Given industry and regulatory recognition that current safety standards are insufficient, the EIS must take a hard look at the risk of an explosion from a 120-car oil train carrying highly volatile (Packaging Group I) crude oil in pre-2011 Class 111 cars in the event of a train derailment or collision. This analysis should take into account the densely populated areas traversed by the proposed oil trains, including The Waterfront. See Exhibit B. Potential impacts from such a derailment and explosion that must be assessed include air quality impacts, water quality impacts, human health impacts, and transportation impacts.

There is also a risk of explosion during transfer and storage activities on the Port site. The EIS must assess the impact of an uncontrolled fire in one or more of the large ASTs. In particular, human health impacts on Port of Vancouver workers, residents of the Fruit Valley neighborhood, and residents in The Waterfront and downtown Vancouver areas must be assessed under different environmental conditions, including various wind directions and speeds.

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[24] After the Lac-Megantic explosion, Canadian regulators have also called into question "the adequacy of Class 111 tanks cars for use in transporting large quantities of low flash flammable liquids." Transportation Safety Board of Canada, Rail Safety Advisory Letter 13-13 (Sept. 11, 2013).
[25] *Id.* at 8.
[26] *Id.* at 11.
[27] U.S. Dep't of Transp., Pipeline Hazardous Materials Safety Administration, Hazardous Materials: Rail Petitions and Recommendations To Improve the Safety of Railroad Tank Car Transportation (RRR), 78 Fed. Reg. 54849 (Sept. 6, 2013).
[28] Transportation Safety Board of Canada, Rail Safety Advisory Letter 13-13 (Sept. 11, 2013).

In addition to the inherent risks of explosion associated with handling large volumes of flammable, volatile liquid crude oil, the Port of Vancouver site is located in a seismically active region "capable of producing earthquakes of magnitude (M) 9 or greater." ASC at 2-192, 3-228. Further, the proposed site is "located in a high liquefaction-susceptible soil area." ASC at 3-233. The EIS must fully assess the risks of a large-magnitude earthquake on the Tesoro project site, and the potential for fire, explosion, or oil spill as a result of an earthquake. Particular attention must be paid to the risk of soil liquefaction, and the potential for resulting structural damage to both on-site oil trains and oil storage tanks.

2. *Toxic air emissions*

The Tesoro proposal involves the daily handling of 360,000 barrels of oil, requiring the transfer of oil from approximately 400 to 480 train cars to the onsite oil storage tanks. Tesoro accepts that handling such large quantities of oil will inevitably lead to emissions of toxic air pollutants. In the aggregate, two and a half *tons* of Hazardous Air Pollutants will be discharged annually by the facility's normal operations, including Acetaldehyde, Benzene, Carbon Monoxide, Cyclohexane, Naphthalene, and many others. ASC at 5-476 to 5-477 & Fig. 5.1-14.

Mitigation measures should be considered in the EIS to reduce the potential for such emissions, including confining oil transfer activities to indoor facilities with emissions capture and control technologies. While mitigation measures could potentially reduce the emissions from the proposed facility, the Council must recognize that toxic air emissions cannot be completely mitigated, and that some emissions will be inevitable.

The EIS must also take a hard look at the potential impacts of increased emissions of air pollutants from the Tesoro facility on Port workers, as well as Vancouver residents. Particular attention must be paid to impacts on the nearby Fruit Valley neighborhood, as well as on the thousands of workers and residents planned for The Waterfront community.

The oil trains used to deliver oil to the Port of Vancouver will also generate emissions due to the combustion of diesel fuel. A full assessment of the emissions from these trains must be included within the scope of the EIS. This assessment should include a detailed assessment of the potential impact of emissions from the trains on the health and welfare of the residents of the City of Vancouver and The Waterfront community.

H. Human environment

The EIS must include a detailed examination of the impacts of the Tesoro proposal on the local economy. While Tesoro's proposal suggests that up to 110 jobs may be created for a period of 10

to 20 years,[29] the negative economic impacts of the project will persist in perpetuity. Specifically, the EIS must assess the potential negative impacts of the Tesoro oil terminal and associated oil train activities on The Waterfront project and downtown Vancouver.

The economic impact of The Waterfront project on the local economy dwarfs that of the Tesoro proposal. Construction activities at The Waterfront will generate over 4,580 direct jobs, paying an estimated $244 million in labor income, and contributing $318 million in value-added output. With an additional 2,600 indirect jobs generated by the construction activities, the total economic impact on Clark County from construction activities would be over $927 million. Even more importantly, ongoing business activity at the completed Waterfront is estimated to generate 1,364 direct jobs, contributing $64.8 million in annual labor income, and $59.6 million in value-added output to the Clark County economy. Including indirect and induced impacts, a total of 2,043 permanent jobs will result from The Waterfront, with total annual output estimated to be in excess of $185.5 million per year. Exhibit D.

In contrast to the 20-year maximum lifespan of the "permanent" jobs generated by the Tesoro project, the economic development at The Waterfront will be permanent. The Waterfront Park and the site's immediate connection to downtown Vancouver will help ensure the long-term desirability and economic vitality of The Waterfront. The EIS must consider the significant economic development and employment benefits from The Waterfront, as a direct comparison to the minimal economic benefits generated within Clark County by the Tesoro proposal.

The EIS must also consider the potential negative impacts that the Tesoro proposal will have on The Waterfront development, particularly the 17.7 miles of oil tanker cars expected to travel past The Waterfront each day, within 100 feet of 11 of the development's 22 city blocks. See Exhibit B. The noise, vibration, emissions, risk of explosions, and aesthetic impacts from the oil trains will negatively impact the development potential of The Waterfront. Any impact the oil trains have on actual or projected property values at The Waterfront site will consequently negatively impact the ability of the project developers to secure additional investors needed to fully develop to its maximum potential as a world-class waterfront community. Faced with the prospect of up to 17.7 miles of oil trains per day passing along the edge of the property,[30] investors may reduce initial investments, leading to a lower quality of developed physical environment. Reduced initial investments in the physical development will permanently impair the ultimate economic value generated by The Waterfront project. This impact will extend well beyond the boundaries of The Waterfront, and have significant impacts on the ongoing redevelopment efforts in downtown Vancouver.

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[29] ASC at 6-373

[30] (12 trains per day) * (7,800 feet per train) / (5,280 feet per mile) = 17.7 miles per day

The EIS must include an assessment of the economic impacts of the Tesoro proposal, including on The Waterfront development and downtown Vancouver. This analysis should utilize the IMPLAN model or equivalent Multiplier Model able to accurately project impacts across various industries and economic sectors. See Exhibit D.

A report by Johnson Economics assessed the likely impacts of the Tesoro-Savage Facility on The Waterfront development, finding that the operation of the oil terminal "would be expected to negatively impact achievable pricing, the pace of absorption and acceptable developer returns," and that "[a]s a direct result, the resulting pattern and pace of development at The Waterfront . . . would be expected to be substantially impacted. Based on previous analyses of a similar range of expected impacts, a reduction in the overall development program of approximately 30% would be a reasonable expectation of impact." Exhibit D.

Modeling the effects of the Tesoro operations on The Waterfront development, Johnson Economics found that the Tesoro project would result in over 2,100 less jobs associated with The Waterfront construction, and 613 less permanent jobs. The net negative impact on overall output would be expected to be close to $280 million for construction, with an additional negative impact of $55.7 million per year associated with ongoing operations.

Additional negative impacts on downtown Vancouver may also be expected. Based on its "expert opinion that the proposed facility will substantively impact development activity in downtown Vancouver, reducing achievable pricing as well as increasing perceived development risk," Johnson Economics utilized a predictive development/redevelopment model to quantify these predicted impacts on downtown Vancouver. Exhibit E. The model results show that the Tesoro facility will result in a $98.3 million reduction in new construction investment, a 341,000 square feet reduction in commercial space, and a net change of $138.1 million reduction in Real Market Value. Exhibit E. Thus, the negative economic impacts of the Tesoro proposal greatly exceed any projected economic gains from the project. See Exhibits D, E. The EIS should use the same or equivalent methodology when examining the impacts of the Tesoro project on downtown Vancouver.

The Tesoro ASC touts the proposal's predicted tax benefits, but fails to discuss the negative impacts that the proposal will also have. The Applicant projects less than $10 million in initial tax revenue, with the vast majority going to the State of Washington, not local governments in the areas most impacted by the proposal. ASC at 4-462 to 463. Ongoing tax revenues of less than $1.6 million are expected to be generated by the proposal. *Id.* The EIS must also consider the negative impacts of the proposal on tax revenues. As discussed above, the noise, vibrations, emissions, risk of explosion and aesthetic impacts of the approximately 12 miles of oil trains running through downtown Vancouver and adjacent to The Waterfront project will negatively impact property values on both sides of the railroad tracks. These property tax impacts will

negatively impact tax revenues generated. In the absence of the Tesoro proposal, The Waterfront development is expected to generate more than $31 million in initial tax revenues associated with construction activities, and ongoing tax revenues of $6.5 million annually. If the Tesoro project is constructed, these construction-related revenues are projected to be reduced by over $9 million, while ongoing revenues would be reduced by nearly $2 million annually, quickly negating any tax gains from the Tesoro proposal. Exhibit D.

The Council should carefully scrutinize the job estimates provided by Tesoro. In particular, the Council should assess the likelihood of the facility operating for the projected full twenty year life span, or whether the oil terminal is likely to cease operating sooner. For example, given the economic efficiency of transporting oil by pipeline, as opposed to train, a pipeline to the West Coast could potentially out-compete the Tesoro rail-by-oil project based on price, and the Tesoro project could be shuttered as unprofitable. In addition, heightened regulations regarding the design and structural integrity of oil train cars could raise the cost of transporting oil by rail and further reduce the Tesoro proposal's competitiveness on the market. Further, the Bakken formation contains the first oil shale deposit heavily developed through hydraulic fracturing technologies, and the long-term productivity of the formation is unknown. Declining yields and increased drilling costs could lead to a rapid decline in economically-viable production from the Bakken formation,[31] reducing the supply of domestically-produced oil available for transport to the Tesoro oil terminal. The EIS must consider this significant risk that the full economic benefits estimated by the project applicant will never be realized.

In addition to negatively impacting other developments planned for Vancouver, the construction of the 360,000 barrel per day oil terminal at the Port of Vancouver will preclude the Port from using this site for any other economically productive uses. There are likely no viable alternative uses for the Tesoro facilities to be constructed on the site, limiting the ability of the Port to redevelop the property for alternative uses in the future after the Tesoro facility is shuttered. The site was previously used for the outdoor storage of wind turbines, and could continue to be used for other similar activities. The EIS should fully assess the opportunity costs to both the Port and City of Vancouver of tying up the Port property for the Tesoro proposal.

[31] In discussing data regarding the impact of declines in productivity from existing wells on overall Bakken production, the Director of Energy Markets for the U.S. Energy Information Institute, Lynn Westfall, stated that "One of the things that surprised us as we got into it was how many new wells you have to have just to stay even with the decline. If you looked at our data from Bakken for instance and do the math, it shows that for every 100 barrels you produce from new Bakken wells, 70 barrels of that go just to replace the decline from old wells." L. Geiver, EIA Director Explains New Drilling Production Model, Bakken Shale, THE BAKKEN MAGAZINE (Oct. 23, 2013), available at: http://www.thebakken.com/articles/386/eia-director-explains-new-drilling-production-model-bakken-shale.

IV. Cumulative Impacts

The EIS must include an assessment of the cumulative impacts of the proposed BHP Billiton potash export facility also planned for the Port of Vancouver's Terminal Five area. The Port has entered into several agreements with BHP Billiton regarding the development of the potash export facility, including an Agreement for Lease, Entry Agreement, and Site Improvement Agreement.[32] BHP Billiton plans to use Washington rail lines to deliver up to an estimated 32 million tons of potash each year to the Port of Vancouver.[33] The rail infrastructure improvements used for the Tesoro facility would also be used to facilitate the proposed potash export activities. The plans for potash export are sufficiently well-developed that the cumulative impacts of the potash export facility are not speculative. At least with respect to the cumulative impacts of additional rail traffic, these impacts can be reasonably projected and should be included within the EIS.

The world's largest potash exporter, Canpotex, indicates that its unit trains are up to 170 cars long and can transport an estimated 17,500 tons of potash each.[34] Assuming BHP Billiton would utilize a similar scale of unit train to deliver potash to the Port of Vancouver, this would mean approximately 1,828 additional unit trains and over 310,000 train cars each year would move along Washington's rail system, through the Columbia Gorge and the City of Vancouver.

The EIS must consider the cumulative impacts from the additional train traffic planned for the BHP Billiton facility located at Terminal 5, including air emissions, transportation impacts, including delays on emergency services, noise, vibration, aesthetics, and associated negative impacts on property values. These cumulative impacts should be assessed along the full length of the affected rail lines within the state of Washington, including the City of Vancouver as well as affected communities in the Columbia Gorge and eastern Washington.

V. Alternatives to be Evaluated in the EIS

SEPA requires the consideration of reasonable alternatives that meet the proposal's objectives at a lower environmental cost. WAC 197-11-440(5)(b). Tesoro states that "[t]he Facility's principal

[32] See Minutes of Feb. 12, 2013 Port of Vancouver Commission Meeting. Under these agreements, BHP Billiton is contributing funds for the construction of the Terminal 5 rail improvements that will also be used for the Tesoro-Savage oil terminal. *Id. See also* Port of Vancouver USA, Terminal Five Loop Expansion Reaches Substantial Completion! (April 23, 2013), available at: http://www.portvanusa.com/industrial/terminal-5-loop-track-expansion-reaches-substantial-completion/; A. Corvin, BHP Signals Commitment to Port of Vancouver Project, THE COLUMBIAN (Aug. 22, 2013), available at: http://www.columbian.com/news/2013/aug/22/bhp-port-vancouver-project-potash-export-facility/.

[33] Minutes of Feb. 12, 2013 Port of Vancouver Commission Meeting.

[34] http://www.canpotex.com/what-we-do/logistics

purpose is to provide North American crude oil to U.S. refineries to offset or replace declining Alaska North Slope crude reserves, California crude production, and more expensive foreign crude-oil imports." Cover Letter to ASC at 1. The alternatives described below are reasonable and should be considered in the EIS.[35]

A. The "No-Action" Alternative

An EIS is required to considered a "'no-action' alternative." WAC 197-11-440(5)(b)(ii). The "no-action" alternative should assess the future of downtown Vancouver *with* The Waterfront redevelopment and *without* the Tesoro project. As detailed above in Section III(G), the total economic development benefits of The Waterfront may be significantly reduced by the construction and operation of the Tesoro-Savage Facility. The EIS should thoroughly examine the potential impacts to Vancouver if real or perceived impacts from the Tesoro proposal result in delays in construction, or reduced development of The Waterfront. Such delayed, reduced level or lower quality development would have long-term impacts on the economy of Vancouver and the region.

B. The Pipeline Alternative

The use of trains to carry crude oil in large quantities is a very recent phenomenon in the United States. According to the American Association of Railroads (AAR), U.S. Class I railroads originated just 9,500 carloads of crude oil in 2008.[36] By 2012, nearly 234,000 carloads were originated, and the number has continued to increase.[37] Nonetheless, the Tesoro proposal represents an enormous further increase in the use of railroads for oil transportation. The AAR estimates that 762,000 barrels per day of crude oil were transported on all Class I railroads in the country in the first quarter of 2013.[38] With an estimated delivery capacity of 360,000 barrels per day, the Tesoro-Savage oil terminal would require nearly a 50% increase in the total number of oil trains moving in the entire country.

While the use of oil trains has dramatically increased in recent years, oil pipelines remain the dominant means of transporting crude oil. According to the American Petroleum Institute, "pipelines are widely acknowledged to be the safest and most efficient way to move energy products overland for long distances; crude oil and natural gas from production areas to

[35] An alternative may be taken into account in an EIS for comparative purposes, even if the alternative's legal status is contested or uncertain. An alternative need only be reasonable. *See King County v. Central Puget Sound Growth Management Hearings Bd.,* 138 Wn.2d 161 (1999).
[36] American Association of Railroads, Moving Crude Oil by Rail (May 2013), available at: https://www.aar.org/keyissues/Documents/Background-Papers/Crude-oil-by-rail.pdf
[37] *Id.*
[38] *Id.*

processing plants and refineries, and consumer-ready products to markets."[39]

A new pipeline from the Midwest to the Port of Vancouver or directly to U.S. refineries would potentially allow Tesoro to meet the primary project objective at a lower environmental cost. The EIS must consider the construction and operation of an oil pipeline to the Port of Vancouver or the destination West Coast refineries as an alternative to the crude-by-rail proposal.

While proposals for private actions on specific sites are not required to analyze off-site alternatives, WAC 197-11-440(5)(d), environmental review for public projects must include a consideration of off-site alternatives. *See Weyerhaeuser v. Pierce Cnty.,* 124 Wn. 2d 26, 42 (1994). This is not a "private project" because it was not "primarily initiated or sponsored by an individual or entity other than an agency." WAC 197-11-780. Instead, off-site alternatives must be considered because the Port of Vancouver has been so closely involved in the initiation and development of the proposal that the oil terminal is, in effect, a joint venture between the Port of Vancouver and Tesoro:

> The Port issued a "statement of interest" seeking proposals to develop a petroleum by rail facility at the Port. Tesoro, a long term Port tenant, teamed with Savage Services Corporation to jointly submit a proposal to the Port for the formation of the Application and development of the Facility. The Port received four proposals and after consideration of a variety of criteria, including safety, environmental, community, financial, market and operations, selected the Applicant to enter into negotiations for the site.

ASC at 2-206. *See Weyerhaeuser v. Pierce Cnty.,* 124 Wn. 2d 26, 42 (1994) (holding landfill proposal to be a "public project" based on a contract between Pierce County and the private landfill developer, County involvement in the "initiation of the landfill project, regardless that it has done so through contracting out aspects of waste collection and disposal," and the characterization of waste disposal as a "governmental function"). Since the Tesoro proposal is a public project, the EIS must include a consideration of off-site pipeline alternatives.

C. Exclusive Rail Transport Alternative

Tesoro has indicated that the purpose of the proposal is to deliver crude oil primarily to West Coast refineries. The EIS must also consider delivering oil directly to these facilities exclusively by rail. Such an alternative would completely negate the stated need for the Tesoro proposal, potentially meeting the stated project's needs at a lower environmental cost. Oil by rail handling

[39] American Petroleum Institute, Facts About Pipeline Safety and Canadian Crude (April 1, 2013), available at: http://www.api.org/~/media/Files/Oil-and-Natural-Gas/Oil_Sands/Pipeline-Fact-Sheet-Canadian-Crude-4-1-2013.pdf.

facilities are in existence or in the permitting process at multiple West Coast refineries,[40] and Tesoro already delivers oil by rail directly to its Anacortes refinery.[41] Thus, it is logistically feasible to deliver oil by rail directly to West Coast refineries.[42] A full discussion of this alternative is currently precluded by Tesoro's lack of transparency regarding which West Coast refineries to which it intends to deliver oil; however, the EIS should consider the direct delivery of oil by rail to West Coast refineries as an alternative to the current proposal.

D. Existing Rail Spur Alternative

Tesoro proposes to use the new Port of Vancouver rail spur developed as part of the West Vancouver Freight Access Project for oil train access to the terminal. This route follows the northern edge of The Waterfront property to its western terminus. A reasonable alternative for the proposal would be to require the oil trains to utilize the existing Port of Vancouver rail access located at Industrial Way, several blocks north of the proposed access. See Exhibit A. This alternative would reduce the impacts of the oil trains on the western half of The Waterfront property, and promote higher quality residential development in this area. Given the critical importance of The Waterfront project to the economic future of the City of Vancouver, even a marginal reduction in the oil train impacts could have substantial benefits for the wider region. As an alternative to the Tesoro- proposal, the EIS must consider utilizing the existing Industrial Way rail access to the Port of Vancouver for the oil trains instead of the new rail spur.

VI. Mitigation and Substantive Authority

SEPA provides state agencies with substantive authority to condition or deny proposals under SEPA to mitigate environmental impacts of proposed actions. WAC 197-11-660. By rule, EFSEC has formally adopted the authority to recommend rejection of an application "if reasonable mitigation measures are insufficient to mitigate significant adverse environmental impacts" and the proposal is inconsistent with "the overriding policy of the council . . . to avoid or mitigate adverse environmental impacts which may result from the council's decisions." WAC 463-47-110.

The EIS must consider all reasonable means of mitigating the significant environmental effects of the Tesoro proposal; however, there may be no reasonable mitigation measures available to effectively address all impacts. If the proposal's impacts cannot be adequately mitigated, then the Council should recommend that the Governor deny Tesoro's application. WAC 197-11-660.

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[40] See E. De Place, The Northwest's Pipeline on Rails, The Sightline Institute (Oct. 2013), available at: http://www.sightline.org/wp-content/uploads/downloads/2013/07/crude-oil-by-rail_August-Update.pdf.
[41] K. Hays, Tesoro Says Rail-to-Barge Oil Port for Entire West Coast, REUTERS (Aug. 2, 2013), available at: http://www.reuters.com/article/2013/08/02/tesoro-rail-crude-idUSL1N0G313N20130802
[42] A. Sider, Moving Crude by Railcar Stalls on Tracks, WALL STREET JOURNAL (Dec. 5, 2013), available at: http://online.wsj.com/news/articles/SB10001424052702303332904579224000594400852.

This substantive authority underscores that a thorough analysis of all potential significant impacts from the Tesoro-Savage Facility is a crucial step in the Council's review of the application. Without a comprehensive environmental review, neither the Council or the public will be able to ascertain whether the significant adverse environmental impacts of this proposal are capable of mitigation.

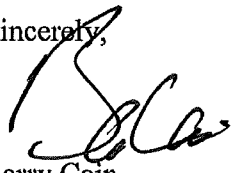
VII. Compliance with NEPA

The ASC indicates that the applicant has prepared and will submit a federal Joint Aquatic Resource Permit Application to the U.S. Army Corps of Engineers. The applicant must therefore also comply with the requirements of the federal National Environmental Policy Act. 42 U.S.C. 4321 et. seq. The Council should clarify for the public how the NEPA and SEPA processes will be managed, as well as how public participation in the NEPA process will be handled.

VIII. Conclusion

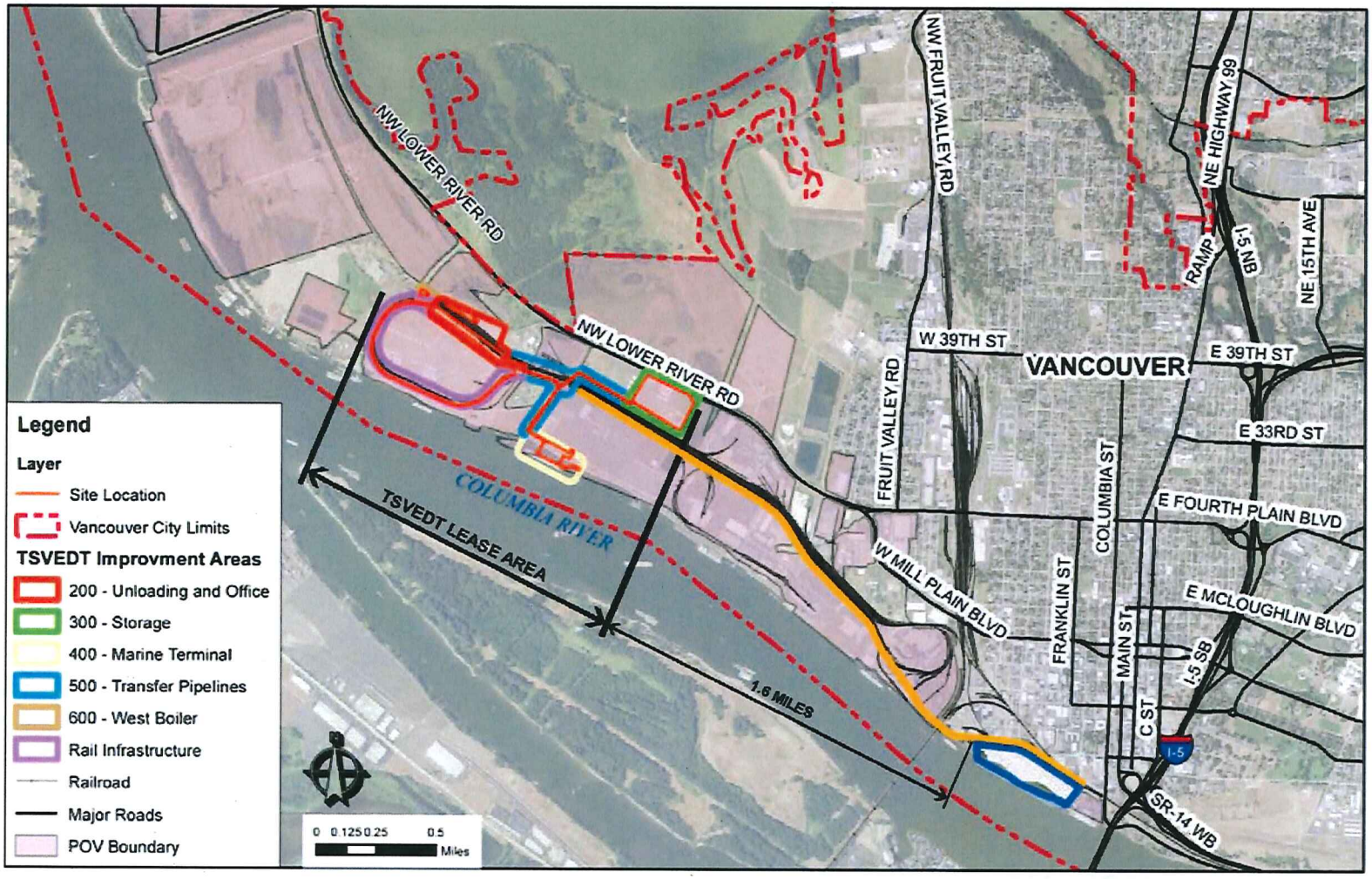
Thank you for the opportunity to comment on the scope of the SEPA review required for the proposed Tesoro oil terminal. The myriad environmental risks posed by this proposal are difficult to overstate and must be considered thoroughly in the EIS. It is not hyperbole to state that the future of Vancouver is at stake. A thorough environmental review is needed to ensure that the long-term benefits of an urban, sustainable waterfront community connecting downtown Vancouver to the Columbia River are not sacrificed for short-term profits, temporary jobs, and a short-term and potentially illusory boost in tax revenues.

Sincerely,



Barry Cain
Columbia Waterfront LLC

Exhibits enclosed:
Exhibit A: Vicinity Map
Exhibit B: Site Location
Exhibit C: Visual Representation of The Waterfront
Exhibit D: Johnson Economics, Estimated Economic and Fiscal Impacts of the Tesoro Savage Facility on the Waterfront Vancouver Development and Downtown Vancouver
Exhibit E: Johnson Economics, Predicted Impacts of the Tesoro Savage Facility on Development and Redevelopment in Downtown Vancouver, Washington
Exhibit F: Additional Environmental Factors



Port of Vancouver Railroad

Vancouver Waterfront Development

BergerABAM

Figure 2.1-1. General Vicinity Map

EXHIBIT A

Image from Tesoro Savage Energy Distribution Terminal Application No. 2013-01

EXHIBIT B

NOT TO SCALE

EXHIBIT C

Visual Representation of The Waterfront

JOHNSON ECONOMICS

Exhibit D

ESTIMATED ECONOMIC AND FISCAL IMPACTS OF THE TESORO SAVAGE FACILITY ON THE WATERFRONT VANCOUVER DEVELOPMENT AND DOWNTOWN VANCOUVER

DECEMBER 9, 2013

621 SW ALDER AVENUE, SUITE 605, PORTLAND, OR 97205 503/295-7832 503/295-1107 (FAX)

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I. EXECUTIVE SUMMARY

- The proposed Tesoro Savage Vancouver Energy Distribution Terminal be expected to have a substantial impact on the magnitude, character and pace of development in downtown Vancouver. The primary impact would be related to rail access to the facility that would be routed along the northern edge of The Waterfront Vancouver, a major mixed use redevelopment site immediately southeast of the Port properties. When fully operational, the facility will generate a significant level of train traffic along the rail line spur immediately north of The Waterfront, which will generate noise, visual impacts as well as an increased level of risk associated with the explosive nature of the cargo being transported.

- The current development program for the Waterfront Vancouver development is projected to yield just under 3,000 residential units, 800,000 square feet of office space, 166,400 square feet of retail space, a 318 room hotel and associated parking for the development. The estimated construction costs for the anticipated program are over $800 million in current dollars. In addition, the master plan includes a number of public spaces, including plazas and parks, which would entail significant construction costs.

- The expected economic impact of the development on Clark County would be realized initially through construction, but on an ongoing basis beyond that from the operation of businesses and expenditures of residents in the development. To evaluate the construction impacts of each scenario, we modeled the estimated impacts of the current master plan, and reconciled those impacts with a second scenario that assumed a 30% reduction in development yield on the site. The economic impacts of on-going activity was also evaluated. These impacts reflect the permanent annual impacts resulting from the completed construction of the development and resulting "business activities".

- The resulting net indicated impact would be over 2,100 FTE jobs associated with construction, with an additional 613 jobs on an ongoing annual basis. The net impact on overall output would be expected to be close to $280 million for construction, with an additional impact of $55.7 million per year associate with ongoing operations (expressed in current dollars).

Impact Summary Waterfront Vancouver Net Construction Impact

ImpactType	Employment	LaborIncome	TotalValueAdded	Output
Direct Effect	(1,374)	($73,470,501)	($95,469,450)	($182,559,901)
Indirect Effect	(373)	($15,537,859)	($24,672,986)	($44,191,043)
Induced Effect	(407)	($16,923,287)	($31,434,987)	($51,493,613)
Total Effect	(2,154)	($105,931,647)	($151,577,423)	($278,244,556)

Impact Summary Waterfront Vancouver Net Annual Operations Impact

ImpactType	Employment	LaborIncome	TotalValueAdded	Output
Direct Effect	(409)	($19,428,528)	($17,884,670)	($32,685,806)
Indirect Effect	(100)	($3,436,292)	($5,709,186)	($9,783,565)
Induced Effect	(104)	($4,337,622)	($8,045,412)	($13,186,021)
Total Effect	(613)	($27,202,442)	($31,639,268)	($55,655,392)

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- In addition to economic impacts, the impact would be expected to also have fiscal implications for the City of Vancouver, Clark County and the State of Washington. Gramor Development commissioned a study in

2008 that estimated the expected tax generation from the development to the City of Vancouver.[1] The analysis estimated as much as $38.3 million in one-time revenues through the real estate excise tax (REET), with an additional $7.7 million in sales tax on construction. Annual recurring tax revenues were estimated at $4.5 million (2008 dollars), which included property taxes, lodging related taxes, sales taxes and employee-based business taxes. The net present value of these estimated tax revenues was estimated at approximately $80 million, discounted at 5.5%.

- We prepared a separate estimate of tax contributions by the project's construction and. Assuming a 2.5% annual rate of inflation, as well as a 5.5% discount factor, the net present value of the tax contributions from the development over a twenty year period would be over $96 million dollars for the State of Washington as well as local jurisdictions. Sales and property tax revenues would be expected to provide the largest contributions.

- The impacted program would reduce projected revenues by over $9.3 million from construction, most notably through a reduction in sales and property taxes.

State and Local Tax Impact by Total: Construction Period Impact

Description	Total
Dividends	($12,198)
Social Ins Tax- Employee Contribution	($26,594)
Social Ins Tax- Employer Contribution	($47,144)
Tax on Production and Imports: Sales Tax	($5,268,238)
Tax on Production and Imports: Property Tax	($2,388,010)
Tax on Production and Imports: Motor Vehicle Lic	($68,006)
Tax on Production and Imports: Severance Tax	($14,436)
Tax on Production and Imports: Other Taxes	($617,335)
Tax on Production and Imports: S/L NonTaxes	($295,689)
Personal Tax: NonTaxes (Fines- Fees	($380,142)
Personal Tax: Motor Vehicle License	($119,034)
Personal Tax: Property Taxes	($40,162)
Personal Tax: Other Tax (Fish/Hunt)	($45,141)
Total State and Local Tax	($9,322,129)

- On a sustained basis, this impact would be expected to be close to $2.0 million per year in reduced tax generation.

1 Updated Columbia Waterfront Tax Generation Analysis, E.D. Hovee & Company, August 1, 2008

State and Local Tax Impact by Total: Ongoing Net Impact

Description	Total
Dividends	($850)
Social Ins Tax- Employee Contribution	($7,960)
Social Ins Tax- Employer Contribution	($14,111)
Tax on Production and Imports: Sales Tax	($1,081,375)
Tax on Production and Imports: Property Tax	($490,171)
Tax on Production and Imports: Motor Vehicle Lic	($13,959)
Tax on Production and Imports: Severance Tax	($2,963)
Tax on Production and Imports: Other Taxes	($126,716)
Tax on Production and Imports: S/L NonTaxes	($60,694)
Personal Tax: NonTaxes (Fines- Fees	($96,380)
Personal Tax: Motor Vehicle License	($30,180)
Personal Tax: Property Taxes	($10,183)
Personal Tax: Other Tax (Fish/Hunt)	($11,445)
Total State and Local Tax	($1,946,987)

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- The overall net present value of the revenue loss over the next twenty years would be $28.9 million, assuming a 30% impact on investment, a 2.5% annual inflation rate and discount rate of 5.5%.

- While this analysis is largely limited to the Waterfront Vancouver project, it recognizes that impacts would be realized within the broader downtown area as well. The Waterfront Vancouver project is intended as a catalytic development, and is designed to enhance the development prospects for the remainder of downtown Vancouver. We would expect that the rate of development activity, investment in real property and property valuations would be negatively impacted. This impact would be in addition to that estimated by our analysis, and should be evaluated to truly gauge the economic impacts of the proposed Tesoro Savage facility.

- The Tesoro Savage EFSEC application estimates an economic impact of construction of 677 jobs, with labor income of $43.6 million, well below the estimated construction impact of 2,154 jobs and $105.9 million in labor income associated with just the Waterfront Vancouver development.[2] Operational employment estimates of 890 jobs and $64.1 million in labor income from the Tesoro Savage facility compare more favorably to the Waterfront Vancouver impacts of 613 jobs and $27.2 million in labor income, but it is important to remember that the Vancouver Waterfront development represents only a portion of the impact area that should be evaluated.

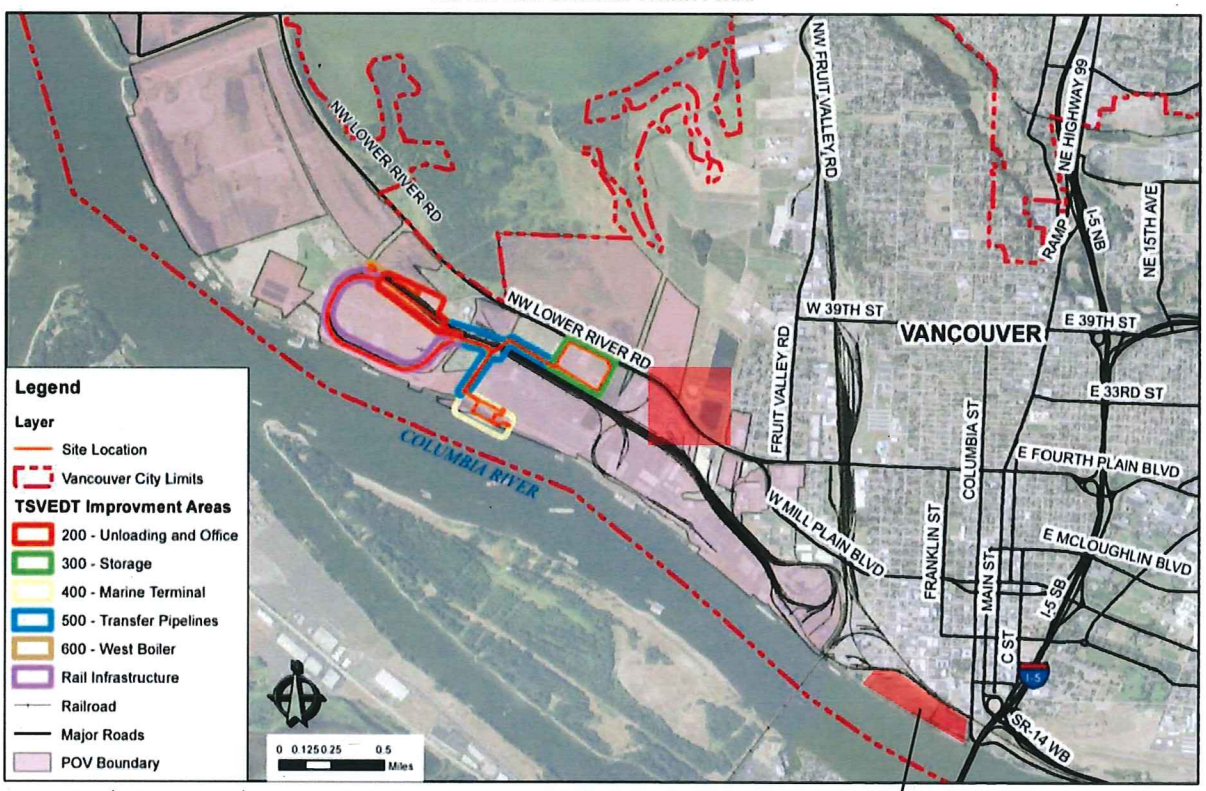
- Another consideration is the duration of activity. While the application addresses the operation of the oil depot as an ongoing entity, shipping crude oil by rail is intended to only be a temporary solution. The economics advantages of utilizing pipelines will likely limit the effective operational lifespan of this facility. As a result, the analysis should address the short term nature of the operation.

[2] EFSEC Application No. 2013-01, Socio-Economic Analysis, BST Associates

II. PROJECT DESCRIPTION

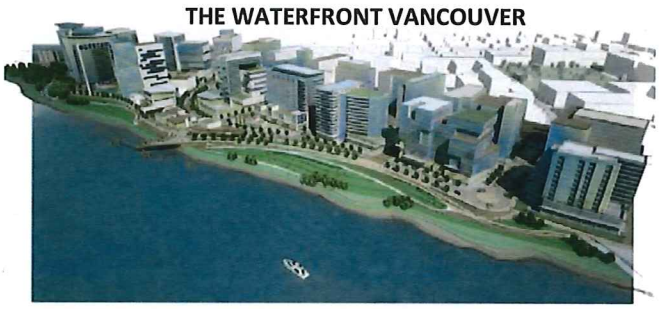
The proposed Tesoro Savage Vancouver Energy Distribution Terminal would be located on Port of Vancouver property within the City of Vancouver. While the application describes expected operational functions within the Port property, rail access to the facility would be routed along the northern edge of The Waterfront Vancouver, a major mixed use redevelopment site immediately southeast of the Port properties.

FIGURE 1.1: GENERAL VICINITY MAP



Source: Applicant Materials

THE WATERFRONT VANCOUVER



The construction and ongoing operation of the proposed Tesoro facility would be expected to have a substantial impact on the achievable pricing and subsequent character of development in The Waterfront development, as well as in the broader City of Vancouver Central Business District (CBD). When fully operational, the facility will generate a significant level of train traffic along the rail line spur immediately north of The Waterfront, which will generate noise, visual impacts as well as an increased level of risk associated with the explosive nature of the cargo being transported.

III. Areas of Impact

A. Economic Impacts

While the application presents a cursory analysis of the economic impacts of construction and operation of the Tesoro Savage facility, the analysis is substantially incomplete as it does not reflect the impact of associated rail traffic heavily impacted properties located along the Port's rail spur, most notably The Waterfront development. The traffic volume on the spur associated with operation of the facility is expected to have a significant detrimental impact on Waterfront Vancouver site, generating significant noise, visual impact and real and perceived risk associated with the explosive nature of the cargo. These negative impacts would be expected to have a significantly negative impact on both achievable pricing for residential and commercial tenants, reduce the pace of absorption and reduce the attractiveness of the location from an investment perspective, increasing the yields necessary to induce investment (reflected in higher capitalization rates). This is expected to substantially impact the magnitude and character of development in the area.

Table 3.1: Economic Impacts Associated with the Tesoro-Savage Oil Terminal Rail Traffic

▪ Reduced Pricing ▪ Higher Cap Rates ▪ Reduced Absorption	▪ Reduced level and pace of construction in The Waterfront ▪ Reduced level and pace of construction in Vancouver CBD ▪ Less efficient utilization of infrastructure investments
▪ Loss of Catalytic Effect	▪ Reduced overall level and pace of construction and redevelopment in the Vancouver CBD
▪ "Green" Development	▪ Impacts associated with "smart develoment" and achieving a more compact urban form.

The economic impacts outlined above were estimated by comparing predicted development outcomes in the area under a "no action" scenario with predicted outcomes assuming operation of the Tesoro Savage facility. While impacts were estimated for the Waterfront Vancouver development, this development is designed and expected to have a catalytic effect on the broader Vancouver CBD, and to the extent that the development is reduced in scope, negative economic impacts would also be expected within the broader context.

To model the economic impacts of various activities, Johnson Economics utilized IMPLAN (IMPact for PLANning)[3] input/output multiplier model methodology. Developed by the Forest Service to assist in land and resource management planning, IMPLAN is an economic impact model designed for analyzing the effects of industry activity (employment, income or business revenues) upon all other industries in an economic area.

IMPLAN Modeling System Dynamics[4]

Social Accounting Matrices

Regional Social Accounting Matrices, or SAMs, represent an IMPLAN extension for regional economic modeling. SAMs provide information on non-market financial flows. IMPLAN type inter-industry models provide information on market transactions between firms and consumers, and they capture payments of taxes by individuals and

[3] Minnesota IMPLAN Group (MIG), Stillwater, Minnesota

[4] Derived from materials provided by MIG Inc.

businesses, transfers of government funds to people and businesses, and transfer of funds from people to people.

IMPLAN Multipliers

Social Accounting Matrices can be constructed to show the effects of a given change on the economy of interest. These are called Multiplier Models. Multiplier Models study the impacts of a user—specified change in the chosen economy for 440 different industries. Because the Multiplier Models are built directly from the region specific Social Accounting Matrices, they will reflect the region's unique structure and trade situation.

Multiplier Models are the framework for building impact analysis questions. Derived mathematically, these models estimate the magnitude and distribution of economic impacts, and measure three types of effects that are displayed in the final report. These are the direct, indirect, and induced changes within the economy.

Impacts Defined

Direct Impacts: The actual change in activity affecting a local economy. For example, if a new institutional building is constructed, direct economic impacts comprise the value added output for that firm/user, as well as the jobs required by that business and the labor income paid.

Indirect Impacts: The response of all other local businesses within the geographic area to the direct impact. Continuing the previous example, indirect impacts of a new institutional user would comprise revenues for related venders, i.e. real estate services, vendors, etc., and the jobs and labor income thereby generated.

Induced Impacts: The response of households within the geographic area affected by direct and indirect impacts. In the given example, induced impacts would be the increase in all categories of spending by households in the geography directly or indirectly employed by the businesses' activities.

Each of these steps recognizes an important leakage from the economic study region spent on purchases outside of the defined area. Eventually these leakages will stop the cycle. Our analysis will evaluate the Jobs, Labor Income, and Value-Added Output of our estimated direct industry change and commodity change activities.

Glossary of Terms[5]

Value Added Output: The difference between an industry's or an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value added consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect business taxes and nontax payments), and gross operating surplus (formerly "other value added").

Labor Income: All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.

Industry: A group of establishments engaged in the same or similar types of economic activity.

Commodity: A commodity is a product or service. It may be produced by one or by many industries. Commodity output represents the total output of the product or service, regardless of the industry that produced it. If an industry and the commodity produced by the industry have the same name, the commodity is considered to be the primary product of that industry. Any other commodity produced by that industry is a secondary product

[5] From the United States Bureau of Economic Analysis (BEA)

of that industry.

Geographic Level

Impact analysis has varying degrees of geographic breadth. Specifically, vendors who provide goods and services in response to varying impacts are located in varying locales. For this analysis, we focused only on impacts retained in Clark County, Washington. That is, indirect and induced impacts which leak outside of the county are not included. We anticipate the rate of leakage to be low, as on an on-going basis industries impacted by the expected development are more service oriented with a higher likelihood of local retention.

ECONOMIC IMPACTS OF CONSTRUCTION ACTIVITY

As noted previously, our approach to this analysis is to model the economic impacts of the development program as currently planned, model an alternative development program reflecting what is viable under an impacted scenario assuming the Tesoro Savage facility, and reconcile these two outcomes to arrive at the estimated marginal impact of the facility. It is important to note that the impact on development within the Waterfront Vancouver project represents only a portion of the impact, as this project is expected to significantly alter the development trajectory of the broader downtown Vancouver area.

The current development program for the Waterfront Vancouver is summarized as follows:

			Cost/ Unit	Construction Costs
Residential Units				
Rental Apartments	1,500	Units	$135,000	$202,500,000
Condominiums	1,421	Units	$160,000	$227,360,000
Office Space	800,000	SF	$175	$140,000,000
Retail Space	166,400	SF	$175	$29,120,000
Hotel	318	Keys	$125,000	$39,750,000
Parking	5,172	Spaces	$30,000	$155,154,000
Infrastructure				$25,000,000
Total				$818,884,000

In addition, the master plan includes a number of public spaces, including plazas and parks, which would entail significant construction costs.

To evaluate the temporary construction impacts of each scenario, we calculated the ***total*** construction spending of the project measured as a direct industry change in construction of new residential and nonresidential commercial structures. The baseline scenario reflected the program in the current master plan, while the second scenario assumed a 30% reduction in development yield on the site.

The baseline scenario reflects assumptions consistent with the current program for the site. Estimated construction expenditures and associated real estate commissions and fees were converted into estimated contributions to employment income and output at the Clark County level.

- Construction spending would translate into over 4,580 direct full time equivalent (FTE) jobs over the construction period, these jobs would pay an estimated $244 million in labor income ($53,400 per employee), and contribute $318 million in value-added output.
- The associated indirect and induced impacts would create an additional 2,600 FTE jobs, $108 million in labor income, and $187 million in value-added output.
- The total impact on output for the Clark County economy would be over $927 million.
- The top industries affected by construction activity include construction, architectural and engineering firms, food service and drinking places, and real estate establishments.

Impact Summary Waterfront Vancouver Construction

ImpactType	Employment	LaborIncome	TotalValueAdded	Output
Direct Effect	4,580.5	$244,901,670	$318,231,501	$608,533,003
Indirect Effect	1,244.5	$51,792,862	$82,243,288	$147,303,477
Induced Effect	1,356.6	$56,410,957	$104,783,289	$171,645,375
Total Effect	7,181.6	$353,105,489	$505,258,078	$927,481,855

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Economic Impacts of On-going Activity

The economic impacts of on-going activity are the permanent annual impacts resulting from the completed construction of the development and resulting "business activities". Upon completion, employment at businesses located at Waterfront Vancouver would be expected to total over 1,360 employees, while almost 700 employees would be supported by the direct employment at the development.

- Direct employment of 1,364 jobs is expected to contribute $64.8 million in labor income and $59.6 million in value-added output to the Clark County economy.
- Associated indirect and induced impacts are expected to create an additional 679 permanent jobs paying $25.9 million in labor income.
- The total annual output associated with the ongoing operations at Waterfront Vancouver would be expected to be in excess of $185.5 million per year.
- While the construction impacts represent temporary impacts, these impacts would be expected to accrue annually and be sustained into the foreseeable future.

Impact Summary Waterfront Vancouver Annual Operations

ImpactType	Employment	LaborIncome	TotalValueAdded	Output
Direct Effect	1,364.4	$64,761,761	$59,615,566	$108,952,688
Indirect Effect	332.2	$11,454,305	$19,030,619	$32,611,882
Induced Effect	347.2	$14,458,740	$26,818,041	$43,953,404
Total Effect	2,043.8	$90,674,806	$105,464,226	$185,517,973

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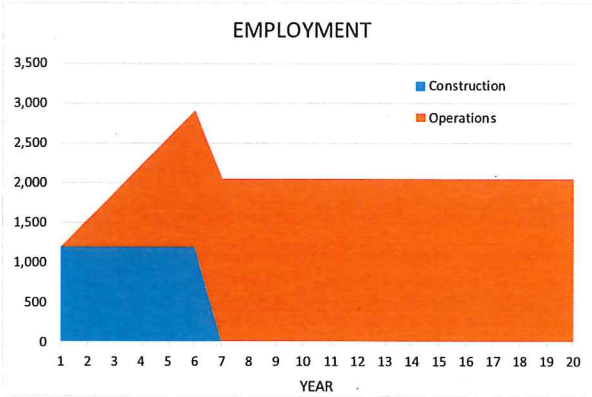
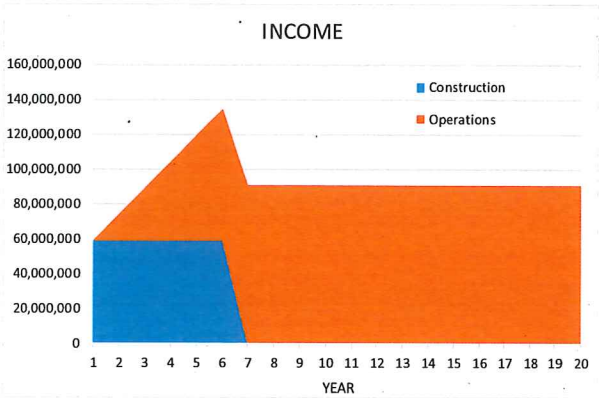
The expected economic impact of the development on Clark County would be expected to be realized initially through construction, but on an ongoing basis beyond that from the operation of businesses and expenditures of residents in the development.





Impacts Assuming Reduced Development Program

The operation of the proposed Tesoro Savage facility would be expected to negatively impact achievable pricing, the pace of absorption and acceptable developer returns. As a direct result, the resulting pattern and pace of development at the Waterfront Vancouver would be expected to be substantially impacted. Based on previous analyses of a similar range of expected impacts, a reduction in the overall development program of approximately 30% would be a reasonable expectation of impact.

We evaluated a reduction in the overall program based on this assumption, to assess the net impact associated with the Tesoro Savage development. As before, this evaluates only the impact of the Waterfront Vancouver development, and subsequently does not account for the broader expected impact on the greater downtown Vancouver area.

The reduced program assumptions were run through the IMPlan model, yielding the following impacts for construction and ongoing operations.

Impact Summary Waterfront Vancouver Impacted Construction

ImpactType	Employment	LaborIncome	TotalValueAdded	Output
Direct Effect	3,206.3	$171,431,169	$222,762,050	$425,973,102
Indirect Effect	871.2	$36,255,003	$57,570,302	$103,112,434
Induced Effect	949.6	$39,487,670	$73,348,303	$120,151,763
Total Effect	5,027.1	$247,173,842	$353,680,655	$649,237,298

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Impact Summary Waterfront Vancouver Impacted Annual Operations

ImpactType	Employment	LaborIncome	TotalValueAdded	Output
Direct Effect	955.1	$45,333,232	$41,730,896	$76,266,881
Indirect Effect	232.5	$8,018,014	$13,321,434	$22,828,317
Induced Effect	243.0	$10,121,118	$18,772,629	$30,767,383
Total Effect	1,430.6	$63,472,364	$73,824,958	$129,862,581

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The net differential would be over 2,100 FTE jobs associated with construction, with an additional 613 jobs on an ongoing annual basis. The net impact on overall output would be expected to be close to $280 million for construction, with an additional impact of $55.7 million per year associate with ongoing operations.

B. Fiscal Impacts

In addition to economic impacts, the impact would be expected to also have fiscal implications for the City of Vancouver, Clark County and the State of Washington. Gramor Development commissioned a study in 2008 that estimated the expected tax generation from the development to the City of Vancouver.[6] The analysis estimated as much as $38.3 million in one-time revenues through the real estate excise tax (REET), with an additional $7.7 million in sales tax on construction. Annual recurring tax revenues were estimated at $4.5 million (2008 dollars), which

[6] Updated Columbia Waterfront Tax Generation Analysis, E.D. Hovee & Company, August 1, 2008

included property taxes, lodging related taxes, sales taxes and employee-based business taxes. The net present value of these estimated tax revenues was estimated at approximately $80 million, discounted at 5.5%.

As part of our analysis, we prepared a separate estimate of tax contributions by the project's construction and operation based on the modeling assumptions in the IMPlan scenarios. The following tables summarize the estimated tax contributions during the construction period, as well as ongoing operations.

State and Local Tax Impact by Total: Construction Period

Description	Total
Dividends	$40,661.00
Social Ins Tax- Employee Contribution	$88,647.00
Social Ins Tax- Employer Contribution	$157,147.00
Tax on Production and Imports: Sales Tax	$17,560,792.00
Tax on Production and Imports: Property Tax	$7,960,034.00
Tax on Production and Imports: Motor Vehicle Lic	$226,687.00
Tax on Production and Imports: Severance Tax	$48,119.00
Tax on Production and Imports: Other Taxes	$2,057,784.00
Tax on Production and Imports: S/L NonTaxes	$985,631.00
Personal Tax: NonTaxes (Fines- Fees	$1,267,140.00
Personal Tax: Motor Vehicle License	$396,780.00
Personal Tax: Property Taxes	$133,873.00
Personal Tax: Other Tax (Fish/Hunt)	$150,471.00
Total State and Local Tax	$31,073,764.00

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State and Local Tax Impact by Total: Ongoing

Description	Total
Dividends	$2,833.00
Social Ins Tax- Employee Contribution	$26,533.00
Social Ins Tax- Employer Contribution	$47,036.00
Tax on Production and Imports: Sales Tax	$3,604,583.00
Tax on Production and Imports: Property Tax	$1,633,902.00
Tax on Production and Imports: Motor Vehicle Lic	$46,530.00
Tax on Production and Imports: Severance Tax	$9,877.00
Tax on Production and Imports: Other Taxes	$422,387.00
Tax on Production and Imports: S/L NonTaxes	$202,314.00
Personal Tax: NonTaxes (Fines- Fees	$321,268.00
Personal Tax: Motor Vehicle License	$100,599.00
Personal Tax: Property Taxes	$33,942.00
Personal Tax: Other Tax (Fish/Hunt)	$38,150.00
Total State and Local Tax	$6,489,955.00

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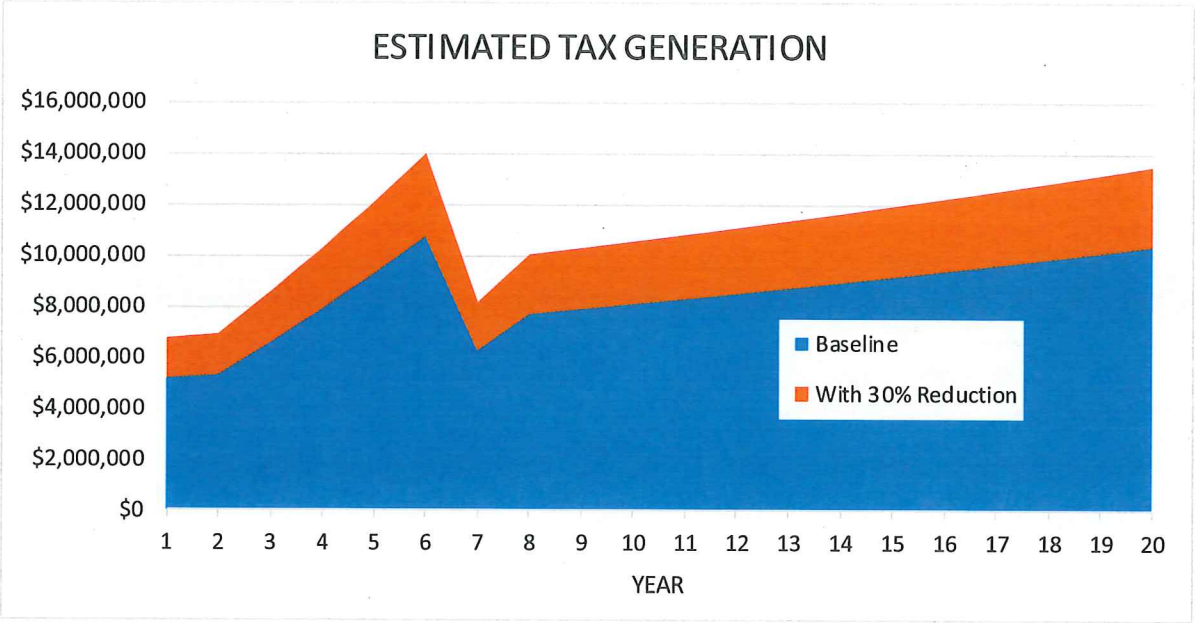
Assuming a 2.5% annual rate of inflation, as well as a 5.5% discount factor, the net present value of the tax contributions from the development over a twenty year period would be over $96 million dollars for the State of Washington as well as local jurisdictions. Sales and property tax revenues would be expected to provide the largest contributions.

Assuming a reduced product program outcome at the site, the direct tax impacts would be expected to be impacted proportionately. As a result, the net present value of the revenue loss would be $28.9 million assuming a 30% impact on investment.



In addition, the impact on the broader downtown area would magnify this negative impact, as development activity, investment in real property and property valuations would be negatively impacted.

JOHNSON
ECONOMICS

Exhibit E

PREDICTED IMPACTS OF THE TESORO SAVAGE FACILITY ON DEVELOPMENT AND REDEVELOPMENT IN DOWNTOWN VANCOUVER, WASHINGTON

DECEMBER 18, 2013

621 SW ALDER AVENUE, SUITE 605, PORTLAND, OR 97205 503/295-7832 503/295-1107 (FAX)

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I. EXECUTIVE SUMMARY

- The proposed Tesoro Savage Vancouver Energy Distribution Terminal is predicted to have a substantive impact on development pattern in downtown Vancouver. This is attributable to an expected negative impact on development patterns in the Waterfront Vancouver project, which would be expected to impact achievable pricing and capitalization rates in the broader downtown market.

- In order to estimate the predicted impact of the new facility on the broader area, Johnson Economics utilized a predictive development/redevelopment model. This model translates assumption with respect to current and anticipated market conditions into predicted development outcomes. The impact of the Tesoro facility was calculated based on a reconciliation of predicted outcomes with and without the facility.

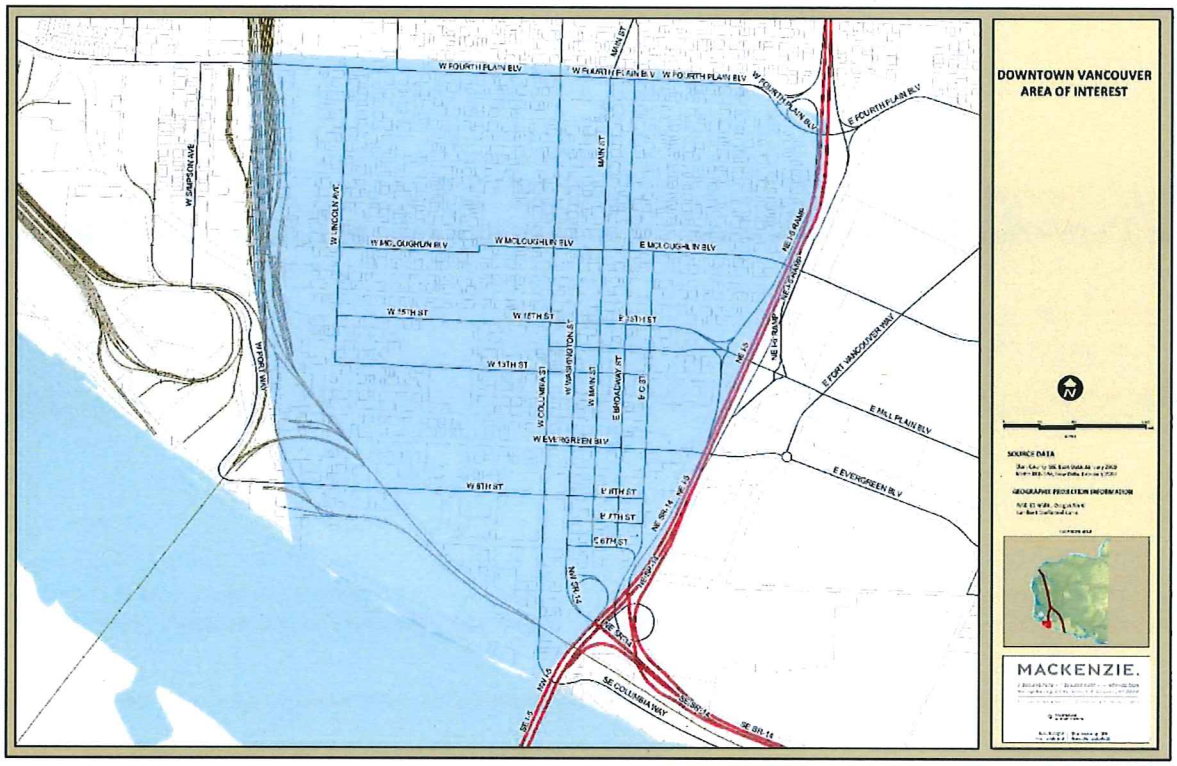
- The predicted impact of the facility on the downtown Vancouver study area would be as follows:

    - $98.3 million reduction in new construction investment
    - 341,000 square feet reduction in commercial space
    - A net change of $138.1 million reduction in Real Market Value

- The implications of this loss would include significant losses in employment, tax revenues and less efficient utilization of infrastructure investments

II. PROJECT DESCRIPTION

This report evaluates the anticipated impacts on development and redevelopment activity within downtown Vancouver, in a study bounded by Fourth Plain to the north, I-5 to the east. The main objective of this project is the development of a predictive computer-based model (Model) which projects the potential development and redevelopment activity within the study area.



This memorandum describes the process undertaken to inform and build the Model, provides an overview of the Model's methodology, and discusses the results of test runs of the Model on the study area.

III. MODEL RUN

A. MODEL DESCRIPTION

The Model designed during this process is an Excel-based model which aims to translate user inputs on existing conditions in the study area into an estimate of the magnitude of new development to be expected over the planning period. The Model uses pro forma analysis to project the "highest and best" *economic* uses which are feasible and permissible by zone, and determine if the value of that type of development would justify the redevelopment of individual parcels based on their current value. There are additional considerations in determining the *overall* highest and best use of land from a community and planning perspective, but this Model focuses on the economic component which is most relevant to private developers.

The Model provides a "baseline" projection of development assuming current conditions and trends, and a projection assuming the Tesoro facility is built and operated as described in their submittal materials. The results of the two scenarios are then compared to get an estimate of how much the facility may impact economic development activity over normal baseline predictions.

Precisely quantifying future activity in a broad real estate marketplace with thousands of different property owners, businesses, and other interests, and differing levels of public involvement, is of course impossible. Therefore, while this Model does provide specific quantified estimates, *it is best to think of the results as a broader estimate of the relative magnitude of economic development* under the two scenarios.

More detail on the methodology used in the Model is included in Section VI of this report.

B. General Implications and Assumptions

- The Model reflects our expert opinion that the proposed facility will substantively impact development activity in downtown Vancouver, reducing achievable pricing as well as increasing perceived development risk.

- The Model produces quantified outputs of multiple measures of development activity: construction investment, new housing units, new commercial space, and new real market value. It is inherent to the design of the Model to produce precise numerical results of these measure. However, it is impossible to accurately predict development activity with such precision over any period of time.

- **Therefore, it is important to remember that the results of this Model are best considered as an indicator of the estimated magnitude of impact from proposed facility.** In other words, the more useful conclusion would be "the new facility may reduce housing production by around 15%", rather than "the facility will lead to an additional 437 units." The first provides useful reference for discussion, while the second is almost certain to prove untrue because it is overly precise.

- In a related point, the results from this Model can be presented in the form of a range. Because the Model allows calibration, it can be used to adjust assumptions and test results under different scenarios.

- The Model uses specific parcel-level data to generate quantified measures of predicted development activity, but it is important to remember that this Model is actually generating a broad study-area-wide estimate of development activity. In no cases should this Model be used to reach definitive conclusions about what will happen on any given parcel. Any data provided that identifies parcels, be it in map or data base form, must specify that *it is making no firm predictions or guarantees on the eventual development or lack of development on specific properties.*

- Because the Model is an indicator of broader "bulk" trends in the study area, it may actually provide a better approximation over a longer period of time. While a five or even ten year period will be highly dependent on the current and near-term trends in the real estate development environment, a longer period of fifteen to twenty years will include more swings in the market cycle, and thus average out these ups and downs.

C. General Approach

The Model is structured to measure predicted changes in investment pattern associated with impacts to key variables in the development equation. Key inputs in the "production" model are those that impact revenues, costs, return parameters and site entitlements.

The Model is predicated on an assumption that the operation of the proposed Tesoro facility will substantively impact a number of variables that influence the perceived development environment, triggering a predictable response in the market. The production model will convert marginal shifts in assumptions with respect to these variables into changes in supportable residual land values and in some instances development forms.

The production component of the model can be broken up into three primary categories that help determine final development form: achievable pricing, cost to develop, and threshold returns. Shifts in these inputs can alter associated patterns of investment. In this model, the proposed facility is assumed to impact some of these inputs, and therefore alter investment and development patterns.

A key objective of the Model is to develop a theoretical construct within which to evaluate the impact of the shift in assumptions on the anticipated development and investment patterns within impacted areas. The Model generates a profile of predicted development activity representing a "baseline" scenario, and a scenario assuming the proposed new facility, in order to measure the net impact.

D. Local Variables

This component of the model incorporates the characteristics of specific study areas. The variables include information on pricing, amenities and physical property characteristics at the parcel level.

<u>Pricing</u>

Assumptions with respect to current pricing in the area, reflecting the estimated anticipated pricing for new product by category, would need to be generated as an input. This would include per square foot rental rates for rental apartments, sales prices per square foot for ownership residential units, and net lease rates per square foot for office and retail space. In addition, assumptions with respect to achievable pricing for parking spaces would be developed. These variables should be set to reflect the achievable pricing that a developer would assume for a new construction project in the area being studied.

The current achievable pricing structure is an important variable to consider in predicting the marginal impact of any changes in the development environment, as it is a significant factor in determining the form of development as well as developing supportable residual property values in the district. While the pricing experience of new comparable projects can be a strong predictor of achievable pricing, in many markets there may be limited or no new product to establish a reliable price. Nonetheless, an assumption of current achievable pricing in a study area will be necessary to run the model.

Physical Characteristics

As with pricing, the physical characteristics of prospective corridors will be a major factor in the predicted magnitude and character of redevelopment. The model incorporates an assessment of existing properties at the parcel level, for both improved as well as vacant sites. Inputs to the model include the following:

- The estimated Real Market Value (RMV) of Improved sites at the parcel level (This variable is used as a proxy for the market value of the site in and found in assessor records);
- Parcel size/square feet; and
- Current entitlements (zoning) by parcel.

Within the model, the attributes of individual parcels are used to predict the likelihood of redevelopment, with properties that have a high current value of improvements being more challenging to redevelop. The zoning entitlements by parcel is used as a screen, which limits potential redevelopment scenarios to those allowed under the zoning.

Amenity Mix

The existing amenity mix reflects the current and anticipated level of amenity in the district, and should help to define the marginal impact of the proposed facility on the local amenity base. It is assumed by the Model that the new facility would decrease the local amenity base and reduce marketability, primarily through a more direct negative impact on the development patterns in Waterfront Vancouver.

E. Development/Redevelopment Module

The development/redevelopment module is intended to simulate the development decision tree, factoring the impact of the key inputs on decisions to undertake development activity. The model is based on a series of simplified pro formas for 27 theoretical development programs that characterize the relationship between key variables, predicted development form and associated residual property values. The module generates a generalized determination of the highest and best economic use based on the theoretical development programs, as well as an associated residual property value associated with each program. This information is reconciled with information on the existing inventory information and zoning, resulting in a predicted pattern of investment.

Highest and Best Use

The module initially solves for a development solution that represents the highest and best use of the property under the assumptions used, as well as outputting an associated residual property value. The highest and best *economic* use of the site is defined as the *allowable* land use program that yields the greatest return to the existing property, and the residual property value reflects the maximum acquisition value supported by that program under the assumptions used. (There may be additional considerations in determining the *overall* highest and best use of land from a community and planning perspective, but this Model focuses on the economic component which is most relevant to private developers.)

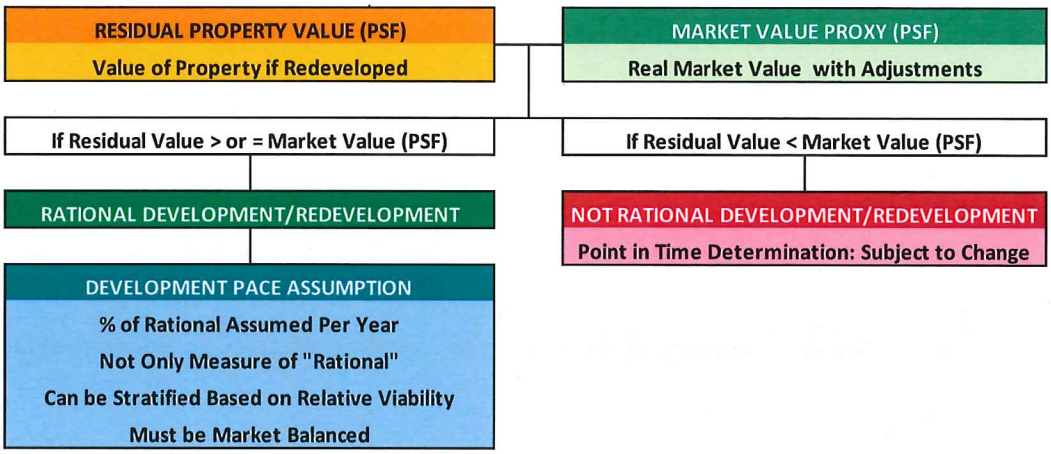
The highest and best use determination is based on the allowable use that has the highest indicated residual property value. The model currently incorporates a total of 27 theoretical development programs, but the number and nature of program options can be varied. An entitlement screen is necessary, as use types identified as having the greatest residual values may not be allowed under existing zoning. In the model, this is done using a matrix that evaluates whether or not the theoretical programs are allowable under the range of zoning codes in the study area. If the use is not allowed, the highest and best *allowed* use is determined.

Threshold for Development

Development/redevelopment activity is predicted by the model when the residual property value exceeds the property value under the existing use. If the residual value is greater than or equal to the market value of the property, it is assumed to represent a rational development or redevelopment opportunity. I.e. a developer can

purchase the property at current market value, for its new intended purpose which places a greater value on the site.

REDEVELOPMENT MODEL SCHEMATIC



While development and/or redevelopment is considered viable in these instances, it does not necessarily mean that it will be developed within the study time frame. There are a number of additional factors that impact redevelopment, and we assume that only a portion of opportunities identified as viable will be realized within the study horizon. The assumed rate of redevelopment should be based on historic trends in the study area, and is an input on the Initial Input Screen.

F. Measures of Development Impacts (Outputs)

The development/redevelopment module is run under baseline assumptions as well as assumptions reflecting the proposed Tesoro facility, and the comparison of the two scenarios provides the basis for estimating the net impact of the facility.

The net impacts associated with the facility are broken down in multiple categories. This includes predicted levels of new development, redevelopment as well as investment in existing structures. To determine the net impacts, the model solves for the differential between the two scenarios. The unit of measure include:

- The dollar value of construction and investment activity in physical improvements.
- Projected net change in real market value in the study area associated with new construction
- Net change in square footage of commercial space, as well as residential units in the study area.

The model does not address the direct, indirect and induced impact of the construction activity funded.

G. Baseline Scenario

The following page shows the estimate of development activity resulting from the assumed baseline scenario. This is the Model's output, resulting from the baseline assumptions of market conditions. The tables summarize the predicted development output for the "Baseline Scenario" of the study area.

- The table in the upper left shows the square footage of land area in each RMV/Residual ratio category.
- This total area is multiplied by the Development Probability.
- This produces the table just below, which is the bulk estimate of developable lands in the study area. In this example, the "< 0.75" category is multiplied by 20%. The categories where RMV/Residual is greater than 2.0 are determined to have low likelihood of redevelopment, so 0% of the land area in those categories pass through this screen.
- The determination of predicted development land area by zone is then compared to the highest and best economic use in those zones to estimate the amount of **construction investment**, **housing units** and **commercial space** resulting from that development.
- Finally, the change in **Real Market Value** is calculated both from new development, and renovation/reinvestment in existing properties.

As modeled, the Baseline Scenario forecast produced an estimate of:

- $194.1 million in new construction investment
- 915 new housing units
- 387,000 square feet of commercial space
- $224.7 million in new Real Market Value
- A net change of $381.5 million in Real Market Value

This is an example of the Baseline Scenario outputs. The next steps in the model are to produce similar outputs for the Tesoro facility Scenario, then compare the two sets of results to judge what additional impact the Tesoro facility is predicted to have.

PREDICTED DEVELOPMENT ACTIVITY – BASELINE SCENARIO

PREDICTIVE ECONOMIC DEVELOPMENT MODEL

	SQUARE FEET OF LAND (Scale Adjusted)					
	RMV/Residual Category					
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total
R-9	0	0	0	0	4,841,969	4,841,969
R-18	56,716	3,593	0	0	0	60,310
R-22	143,728	3,593	0	10,000	0	157,321
R-30	13,503	0	0	0	0	0
R-35	0	0	0	0	0	0
CN	7,500	0	0	0	0	7,500
IH	0	0	0	0	2,059,828	2,059,828
IL	179,026	39,203	44,866	0	0	263,094
OCI	337,661	119,788	53,615	0	0	511,063
CX	6,299,551	899,242	900,282	789,993	329,688	9,218,755
CC	575,510	427,353	298,614	69,302	1,301	1,372,080
Park	0	0	0	0	367,527	367,527
TOTAL	7,613,195	1,492,772	1,297,376	869,295	7,600,312	18,859,446

Dev Probability	20%	15%	10%	0%	0%	10%

	LAND DEVELOPED/REDEVELOPED (SF)												
	RMV/Residual Category							Predicted Development Yield			RMV/		Net
ZONING	<.75	.75-1.25	1.25-2.0	2.0-4.0	>4.0	Total	Predicted Predominant Development Form	Construction Investment	Residential Units	Commercial Space	Dev. or Redev.	Current RMV	Change in RMV
R-9	0	0	0	0	0	0	N/A	$0	0	0	$0	$0	$0
R-18	11,343	539	0	0	0	11,882	3-story wood townhome	$926,815	7	0	$1,453,563	$522,979	$930,585
R-22	28,746	539	0	0	0	29,284	3-story wood townhome	$2,284,190	17	0	$3,582,394	$1,065,354	$2,517,040
R-30	2,701	0	0	0	0	2,701	3-story wood townhome	$210,647	1	0	$330,366	$16,680	$313,686
R-35	0	0	0	0	0	0	3-story wood townhome	$0	0	0	$0	$0	$0
CN	1,500	0	0	0	0	1,500	3-story wood townhome	$117,000	0	0	$183,496	$65,180	$118,316
IH	0	0	0	0	0	0	N/A	$0	0	0	$0	$0	$0
IL	35,805	5,880	4,487	0	0	46,172	office low rise	$2,400,951	0	16,622	$4,037,144	$480,865	$3,556,279
OCI	67,532	17,968	5,361	0	0	90,862	office low rise	$4,724,812	0	32,710	$7,944,663	$1,093,720	$6,850,943
CX	1,259,910	134,886	90,028	0	0	1,484,825	3-story wood townhome	$115,816,326	890	0	$181,639,746	$51,740,135	$129,899,611
CC	115,102	64,103	29,861	0	0	209,066	office mid/podium	$67,653,871	0	337,642	$87,767,526	$7,300,345	$80,467,180
Park	0	0	0	0	0	0	N/A	$0	0	0	$0	$0	$0
TOTAL	1,522,639	223,916	129,738	0	0	1,876,292	**TOTAL**	**$194,134,611**	**915**	**386,974**	**$286,938,898**	**$62,285,258**	**$224,653,641**
							TOTAL/REHAB/RENOVATION						**$156,865,095**
							OVERALL TOTAL						**$381,518,735**

Source: Johnson Reid LLC

H. Reconciliation Baseline and Tesoro Facility Scenarios

The Scenario with the Tesoro facility utilized the same model, but with an assumption of a 15% reduction in achievable rent levels and a 10% increase in capitalization rates. The Model produces a Development Activity Output screen for the Tesoro Facility Scenario that matches that of the Baseline Scenario. The two scenarios are then compared to determine the net impact of the proposed facility.

The following table presents the comparison of results from the reconciliation. In this case, the new facilities construction and operation are expected to have a negative impact on all indicators, decreasing investment, production of housing and commercial space, and resulting change in Real Market Value.

Reconciliation of Baseline and Tesoro Facility Scenarios

BASELINE						
	Predicted Development Yield					
Predicted Predominant Development Form	Construction Investment	Residential Units	Commercial Space	RMV/ Dev. or Redev.	Current RMV	Net Change in RMV
N/A	$0	0	0	$0	$0	$0
3-story wood townhome	$926,815	7	0	$1,453,563	$522,979	$930,585
3-story wood townhome	$2,284,190	17	0	$3,582,394	$1,065,354	$2,517,040
3-story wood townhome	$210,647	1	0	$330,366	$16,680	$313,686
3-story wood townhome	$0	0	0	$0	$0	$0
type v/podium	$0	0	0	$0	$0	$0
3-story wood townhome	$0	0	0	$0	$0	$0
3-story wood townhome	$117,000	0	0	$183,496	$65,180	$118,316
3-story wood townhome	$0	0	0	$0	$0	$0
N/A	$0	0	0	$0	$0	$0
office low rise	$2,400,951	0	16,622	$4,037,144	$480,865	$3,556,279
office low rise	$4,724,812	0	32,710	$7,944,663	$1,093,720	$6,850,943
3-story wood townhome	$115,816,326	890	0	$181,639,746	$51,740,135	$129,899,611
MU res/ret 3-story wood w/surf LG	$67,653,871	0	337,642	$87,767,526	$7,300,345	$80,467,180
N/A	$0	0	0	$0	$0	$0
3-story wood townhome	$0	0	0	$0	$0	$0
3-story wood townhome	$0	0	0	$0	$0	$0
TOTAL/NEW CONSTRUCTION	**$194,134,611**	**915**	**386,974**	**$286,938,898**	**$62,285,258**	**$224,653,641**
TOTAL/REHAB/RENOVATION	**$156,865,095**					**$156,865,095**
OVERALL TOTAL	**$350,999,706**					**$381,518,735**

WITH OIL DEPOT OPERATIONS						
	Predicted Development Yield					
Predicted Predominant Development Form	Construction Investment	Residential Units	Commercial Space	RMV/ Dev. or Redev.	Current RMV	Net Change in RMV
N/A	$0	0	0	$0	$0	$0
3-story wood townhome	$809,637	6	0	$988,127	$441,617	$546,510
3-story wood townhome	$2,146,605	16	0	$2,619,837	$967,427	$1,652,410
3-story wood townhome	$210,647	1	0	$257,085	$16,680	$240,405
3-story wood townhome	$0	0	0	$0	$0	$0
type v/podium	$0	0	0	$0	$0	$0
3-story wood townhome	$0	0	0	$0	$0	$0
3-story wood townhome	$102,375	0	0	$124,944	$51,885	$73,059
3-story wood townhome	$0	0	0	$0	$0	$0
N/A	$0	0	0	$0	$0	$0
office low rise	$2,065,722	0	14,301	$2,952,444	$281,250	$2,671,194
office low rise	$3,802,737	0	26,327	$5,435,082	$654,105	$4,780,977
3-story wood townhome	$100,831,471	775	0	$123,060,389	$33,745,585	$89,314,804
MU res/ret 3-story wood w/surf LG	$5,999,861	58	5,454	$8,396,560	$1,021,551	$7,375,009
N/A	$0	0	0	$0	$0	$0
3-story wood townhome	$0	0	0	$0	$0	$0
3-story wood townhome	$0	0	0	$0	$0	$0
TOTAL/NEW CONSTRUCTION	**$115,969,054**	**856**	**46,082**	**$143,834,468**	**$37,180,100**	**$106,654,368**
TOTAL/REHAB/RENOVATION	**$136,761,173**					**$136,761,173**
OVERALL TOTAL	**$252,730,227**					**$243,415,541**

NET DIFFERENTIAL	($98,269,479)	-59	-340,892	($143,104,430)	($25,105,158)	($138,103,194)

Source: Johnson Reid LLC

The following is a summary of predicted impacts in graphical form:

SUMMARY OF MODEL OUTPUT
MAGNITUDE OF INVESTMENT AND RESIDUAL PROPERTY VALUES

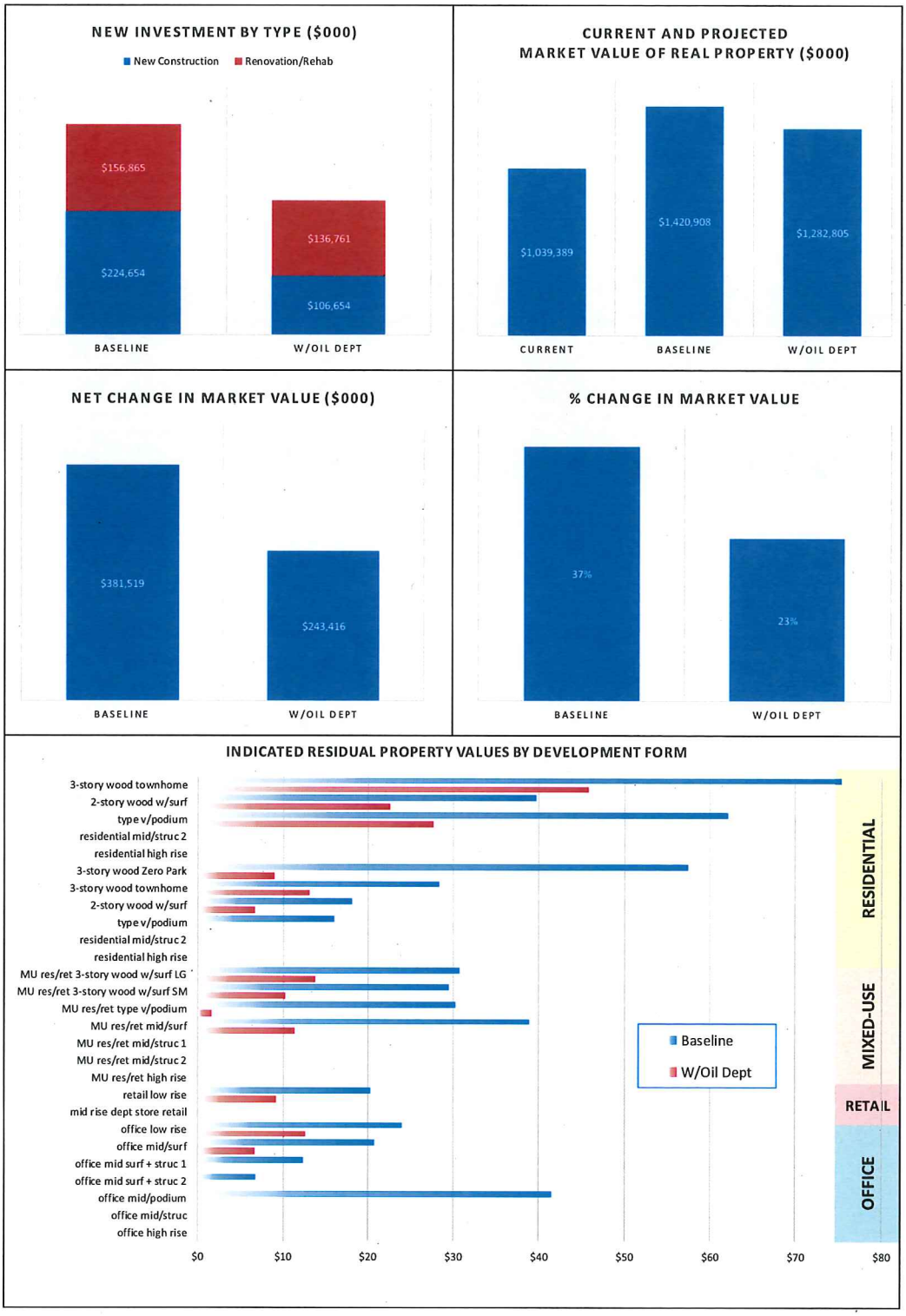


Exhibit F: Additional Environmental Factors

The following factors must also be fully assessed in the EIS for the Tesoro-Savage oil terminal:

- **Climate Change**
  - *Scope 1*: Emissions from on-site natural gas-fired boilers, fugitive emissions from the oil storage tanks, emissions from the Marine Vapor Combustion Unit, emissions from the emergency diesel fire water pump engines, and fugitive leaks throughout the facility.
  - *Scope 2*: emissions generated by the production of electricity purchased by the facility.
  - *Scope 3*: At a minimum, all emissions generated with Washington State by the oil trains travelling to and from the Tesoro-Savage Facility, as well as emissions from the oil tanker ships travelling within the state's three mile nautical boundary.
- **Earth**
  - *Erosion*: From storage tank construction and operations into the adjacent Parcel 1A wetlands mitigation site, a 7.9 acre "depressional, palustrine forested wetland (PFO)." ASC at 3-313.
- **Habitat**
  - *Shoreline and fish habitat*: Impacts to the shoreline from improvements to shipping terminal, and associated impacts on fish habitat and other near-shore riparian habitat.
  - *Parcel 1A Wetlands Mitigation Area*: Erosion, stormwater runoff, emissions and noise impacts on the Parcel 1A wetlands mitigation site, located immediately east of Parcel 1A where the oil storage tank farm will be located, including surveys for waterfowl (including mallard ducks, pintail, wigeon, merganser, gadwalls, green-winged teal, Canada goose, and snow goose), bald eagles, sandhill cranes, great blue herons, as well as reptiles and amphibians that may be present in the wetlands area.
- **Water**
  - *On-Site Stormwater Runoff*: From the Port of Vancouver site into the Parcel 1A wetlands area, as well as into the Columbia River.

- *Railroad Stormwater Runoff*: From the railroad line to the Columbia River, and the directly into waterways crossed by the rail line through drips and leaks from oil trains.

- *Oil Spill Impacts*: Risk of catastrophic oil spill along the entire length of the train route, from the oil terminal facility, or during shipping in the Columbia River of the Pacific Ocean, including impacts on aquatic ecology, bird populations, and the economy, including commercial and recreational fishing, the shipping industry, tourism, agriculture, and municipal water supplies.

- **Recreation**

  - *Waterborne Recreation*: Impact of additional large vessel traffic in the Columbia River on waterborne recreation, including recreational fishing.

- **Transportation**

  - *Rail Congestion*: Impacts on other users of Pacific Northwest railroads, including grain and fruit shippers, intermodal users, ports, industries, aircraft manufacturers and passenger rail, given reports indicating that the railroad prioritizes unit trains, such as oil trains, over other shippers.

  - *Vessel Traffic*: Impacts on navigation from additional oil tanker traffic, particularly at the Columbia Bar Crossing and other restrictions to vessel movement.

Docket EF-131590 Tesoro Savage CBR
Scoping Comment
#30931

507 NE 99th St., #74
Vancouver, WA 98665
December 16, 2013

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Jay Inslee, Governor
Washington State
Olympia WA 98360

Dear Governor Inslee:

I am writing you concerning the oil terminal issue at the Port of Vancouver.

Most reasonable people now agree that the effects of air pollution on climate change is an established fact, and that the dangers are real. So, efforts of environmentalists to reduce pollution shoud be supported when reasonable and practical. However, the admitted strategy of the Environmental Coalition in Clark County is to reduce the supply of oil sufficiently to cause gas prices to rise dramatically and motivate people to switch to electric cars. They maintain that these cars and services to support them will shortly be in supply to meet this supposed demand. While this is a worthwhile objective, it is difficult to believe that it is practical. First, the price of gas is determined by the worldwide supply and demand, not by just that in this country. And, the absence of an oil supply from the Bakken area would hardly affect prices that much. Furthermore, I believe that some oil is already moving in tank cars directly to refineries in this State. Therefore, it seems unreasonable to believe that most people would invest in a high-priced electric car very soon.

The Coalition makes a point that energy independence is not the true objective of our country because Exxon is lobbying Congress to permit us to export oil. But, energy independence is, and should, be a prime objective because a shortage of oil and resulting high prices would be reflected in the costs of transportation (auto, rail, bus, air and shipping), thus retarding consumption and international trade. There have been a number of instances during the past 50 years where the rapid rise of oil prices has brought on recessions (1973-74, for example). Equally important, our dependence on oil from other countries, especially the Middle East, has adversely affected our relations with those countries, evidenced by the Iraq war.

Another fear tactic that raises questions is that the Coalition points out the lack of regulation and responsibility of railroads and barge lines in the transportation of oil. The deregulation of the railroads in 1980 (Staggers act) affected the making of rail rates, not safety regulations. Considering the billions of ton-miles hauled by the rail lines annually, their safety records are outstanding. Tidewater Barge Lines, the principal hauler on the Columbia River (which could be involved) has a record of no spills affecting fish or wildlife. Since the Exxon Valdez spill, barge lines carrying oil are required to have double steel hulls and the means on barges to corral spills. In this connection, the media consistently cites the disastrous derailment of an oil tank car train from the Bakken area in a Quebec town. However, that train rolled down a steep grade and was going 82 mph when it derailed in the town. In Vancouver there is no grade problem and a 10 mph limit.

On the other hand, the Coalition does raise a valid question about rail tank car safety. The ends of most oil tank cars in service are not sufficiently reinforced to withstand a major derailment. The tank car fleet in this country is largely owned by private car companies. They should be required to upgrade these cars with a time limit. And, since the BNSF will greatly benefit from oil terminals in Washington, perhaps the mileage allowance paid by them to tank car companies should be increase temporarily to help compensate the cost of upgrading.

The railroads were lrgely responsible for the development of western states. In the years following WWII, because of the building of the national highway system, the trucking industry took over the hauling of most highly-rated products and the rail lines now carry mostly bulk commodities, with the exception of container and piggy-back traffic. If we deprive the rail lines from hauling oil and coal, what next?

I submit these points for your consideration in deciding whether or not to issue a permit for the Vancouver oil terminal. Those opposing it are very passionate and sometimes overlook the whole picture. It reminds me of the spotted owl issue years ago. Thousands of jobs were lost, lumber and plywood mills closed and towns in Washington, Oregon, Idaho, Montana and California badly affected. Recently it was in the media that the bar owl is now praying on and killing spotted owls, and some environmentalists now want to protect the bar owl. Apparently the spotted owl was not so important after all! And, belatedly it was discovered that the spotted owl lived quite well in second growth timber and is not dependent upon old growth, which was the original issue.

I consider myself a moderate environmentalist, believe in climate change and the dangers of modern-day pollution, but when everything is considered, in this case I believe that, with precautions mentioned above, the oil terminal should be allowed.

Respectfully yours,

Ed Frank

Edward Frank
(360) 573-3848

cc: Kaiser Phoenix, LLC.
Port of Vancouver

cc: Energy Facilities Site Evaluation Council
Olympia, WA.

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30932

South West County Coalition
P.O. Box 127
Marshall, WA 99020
(509) 999-8513
patience5907@hotmail.com
December 16, 2013

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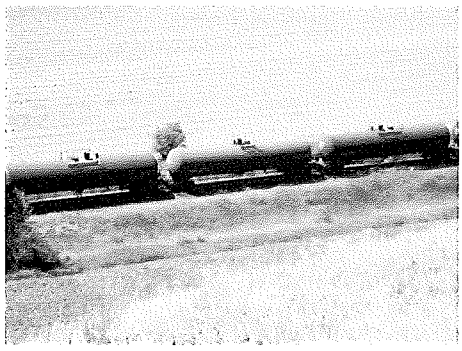
EVALUATION COUNCIL

EFSEC
P.O. Box 43172
Olympia, WA 98504-3172

RE: Tesoro Savage Vancouver Energy Distribution Terminal Information & Scoping Comments

To Whom It May Concern:

The South West County Coalition (SWCC) is a diverse alliance of Spokane County families and individuals organized to address public concern. SWCC is committed to bringing to light the concerns of our South West Spokane County neighbors, family, and friends when the actions, or inaction, of public or private individuals adversely affect county residences. Please accept these additional comments concerning additional oil trains passing through our neighborhoods, farms, and cities.



Oil Tank Cars "sided" near a family farm near Marshall, Washington. Oil cars are unsecured and vulnerable to wild fire and vandalizm. (Summer 2013)

Local residents are "already" experiencing the adverse effects of increased rail road traffic primarily the result of coal and oil trains. This proposal alone would add upwards of three "dangerous" oil trains daily. Adverse effects of oil trains include siding of oil tank cars in our neighborhoods and adjacent local farm houses. Local residents feel threatened and endangered by this proposal as they are "forced" to accept the dangers. Local officials have shown little concern other than comments that appear condescending and patronizing at best

The SWCC believes local official's, particularly small rural fire districts and county sheriffs, are incapable of detecting and addressing the escalating dangers of increased oil train traffic. Particularly when

considered cumulatively with proposed coal trains. "I don't care," was the jest of the comments by one fire official during the scoping process. Local fire and police proffered specious answers to complex questions when queried about their personnel's response to the inevitable disaster. Despite the fact that every emergency responder interviewed agreed that a delay of but one minute by an oil train, could result in the loss of life and or property.

The South West County Coalition believes that to truly address the safety and health effects of having crude oil tank trains pass through our cities and neighborhoods hazards must be independently evaluated by experts that cannot be influenced by local politics and personal or business interests.[1] The fire and life safety aspects alone of this proposal on effected communities in Eastern Washington, need the expert oversight and investigative capabilities of the Washington State Fire Marshal or the National Fire Protection Agency. The health and safety of local residents demands no less concern from state and local officials.

Sincerely,

South West County Coalition

[1] SWCC believes local officials in rural areas could be influenced by personal relationships with private sector officials of the railroads. Do not many of the fire districts receive compensation in the form training or monetary consideration to "mitigate" the adverse effects of the railroads for example?

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30933

12/13/13

BATTLE GROUND

Comment deadline approaching

The Washington Energy Facility Site Evaluation Council is reviewing the oil terminal project, which proposes to store and transfer 380,000 barrels of Bakken crude oil from rail cars to ships. The deadline for submitting public comments is Dec. 18. Submit your concerns to EFSEC via email: efsec@utc.wa.gov or by U.S. mail: EFSEC c/o Stephen Posner, 1300 S. Evergreen Park Dr. S.W., Olympia, WA 98504-3172.

The rejection of this dangerous project is crucial to the future of Vancouver, the Columbia Gorge, and the entire region. If approved, it will bring pollution and the real danger of derailments, oil spills and explosions of this volatile crude oil. This is the same type of oil that exploded in Lac-Megantic, Quebec, killing 47 people and destroying much of the city. This same type of oil was also involved in a derailment and explosion in Alabama.

Stephen J. Hulick
HOCKINSON

ORIGINAL

L

Mr. Edward D. Ludwig
7005 N.E. 147th Ave.
Vancouver, WA 98682

Mr. Posner,

I am writing to oppose the proposed Oil Terminal in Vancouver.

There is only one Columbia River Gorge on this planet and I don't want to see it ruined by oil spills. They will occur and the railroad tracks are right next to the Columbia River.

The value of the Columbia River and its Salmon and other values exceeds beyond any measure than the value of the oil Terminal etc.

Don't let them do it.

Sincerely,

Edward D. Ludwig

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Concerns grow about safety of oil tank cars

Federal officials say they do not meet latest standards

By RICHARD WRONSKI
Chicago Tribune

CHICAGO — As the current oil boom in North Dakota, Montana and Canada continues, long freight trains hauling dozens of black tank cars are rolling across the country and through the Chicago area with increasing regularity.

With tank cars brimming with tens of thousands of gallons of crude oil, these trains have been described as "virtual pipelines" passing through heavily populated residential areas.

But despite the hazardous nature of the cargoes on board, the vast majority of these tank cars do not meet the latest safety standards and should be retrofitted, according to federal officials and the railroad industry.

Older models of the type of tank car known as the DOT-111, which carry flammables such as crude oil and ethanol, have an "inadequate design" and are more vulnerable to being breached in a derailment than newer versions, the National Transportation Safety Board has determined.

Critics charge that the tank car owners, who are generally oil and chemical companies, are balking at proposed requirements to fix flaws in the cars or gradually take them out of service, citing the costs involved and the demand for cars to haul oil.

And federal regulators have been slow to act even though the NTSB's investigators have been sounding the alarm about the cars' shortcomings for more than 20 years, critics say.

"Since 1991, these tank cars have been identified as unsafe. So anybody aware of that has to question why nothing has been done over the years," said Tom Weisner, the mayor of Aurora, where tank car trains pass through regularly on the BNSF Railway and Canadian National tracks.

With the surge in oil production in Western states and Canada and insufficient pipeline capacity, freight trains are carrying increasing amounts of crude oil. The biggest U.S. railroads moved 234,000 carloads of crude oil last year, up from 9,500 carloads in 2008, and they are likely to haul 400,000 carloads in 2013, according to the Association of American Railroads.

There are about 92,000 DOT-111 tank cars currently used to move crude oil and ethanol across the U.S. Of these, about 78,000 cars should be retrofitted to be made safer or phased out, the association said.

Tank cars built since Oct. 1, 2011, are required to comply with tougher standards, including shells with thicker steel, but there are only about 14,000 of these.

After a fiery derailment on June 19, 2009, in Cherry Valley, Ill., near Rockford, Ill., the NTSB concluded that the design of the older DOT-111 cars made them "susceptible to damage and catastrophic loss of hazardous material during the derailment."

In that accident, 15 DOT-111s carrying ethanol derailed. The leaking fuel ignited, causing a massive fireball. One woman was fatally burned and 600 homes within a half-mile radius were evacuated.

More recently, 11 tank cars carrying crude oil burst into flames after derailing in rural Alabama on Nov. 8.

But the accident that caught the world's attention occurred July 6 in Lac-Megantic, Quebec, where a runaway freight train with DOT-111s carrying crude oil derailed. A fire and explosion devastated the center of town and killed three dozen people.

After that accident, Sen. Charles Schumer, D-N.Y., complained that the NTSB's warnings had fallen on deaf ears.

"The DOT-111 tank car has proven particularly prone to spills, tears and fires in the event of a derailment, and it's simply unacceptable for communities along the rail lines to face that risk when we know thicker, tougher cars could keep us safer," Schumer said.

The older DOT-111 cars have a steel shell that is too thin to resist punctures in accidents, and the ends of the car are vulnerable to ruptures. Valves used for unloading and other exposed fittings on the tops of the tankers can also break during rollovers, the NTSB said.

The American Association of Railroads on Nov. 14 joined those calling on the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration, or PHMSA, to impose new safety rules requiring the cars be upgraded or phased out.

"We believe it's time for a thorough review of the U.S. tank car fleet that moves flammable liquids, particularly considering the recent increase in crude oil traffic," said Edward Hamberger, the association's president and CEO.

The railroads say that by law they cannot turn away the shipments.

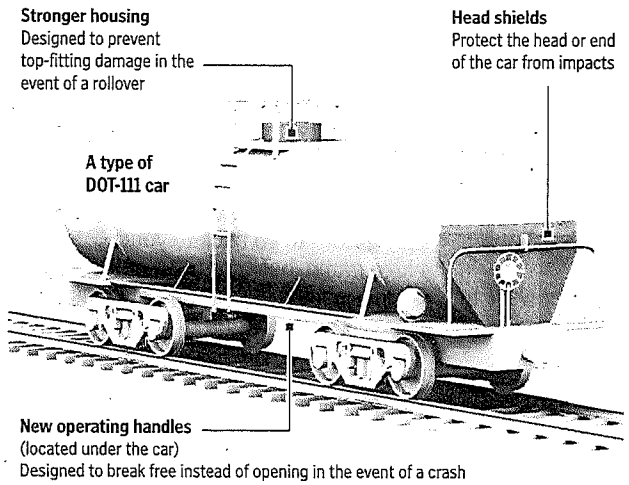
Meanwhile, Aurora's Weisner and Karen Darch, village president of Barrington, have been mobilizing a coalition of suburbs to press regulators for the tighter safety standards.

Retrofitting DOT-111 rail cars

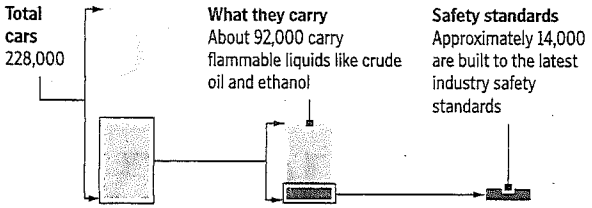
Federal officials and the railroad industry think older DOT-111 tank cars, which carry flammables like crude oil and ethanol, do not meet the latest safety standards and should be retrofitted to make them safer in the event of a derailment.

Upgrades for older DOT-111 cars

Upgrades for tankers carrying ethanol and crude oil



DOT-111 cars by the numbers



Source: Association of American Railroads, National Transportation Safety Board and Transportation Research Board

These are my comments about the proposed oil terminal in Vancouver, WA — Tedine Roos 06 NW 129th circle Vancouver

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30934

My name is Tedine Roos and I live in Vancouver. There has been a lot of hype about the Bakken oil. Industry shills say that horizontal drilling and it attendant fracturing is a game changer of U.S. energy. There are numbers, though, that refute this claim and that is what I want to present. . Drilling horizontal wells are much more expensive than vertical wells. Two to three times more. And profit depends on adequate production and a price per barrel in the neighborhood of $100.

My great grandparents homesteaded in eastern Montana, the western edge of the Bakken formation, and I have been paying attention to oil activity for several years. These wells begin producing about 250 to 300 barrels per day. This level of production drops off quickly in about 24 months and in another couple years becomes a stripper well. A stripper well produces less than 15 barrels per day and still must be maintained even though it is not profitable. What to do when production falls? Drill another well. The state of Montana Oil and Gas Board maintains a searchable database with each well's production history. The first well on the land my relatives homesteaded was drilled in 2006. Now there are 5 wells. Three of them produce less than 50 barrels a day and the two wells drilled in 2013 produce less than 175 barrels a day. All the wells in this township some 85 wells show the same pattern.

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DEC 17 2013

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EVALUATION COUNCIL

I decided to see if North Dakota also sees this quick production decline. Their database, maintained by the N.D. Oil and Gas Division has lots of statistics but I could not find a site which gave a production history for each well. It may be there. But I did find a significant statistic. In Sept. 2013 there were 9,373 wells and the average production was 99 barrels. This says to me that even though total production is going up, there are many stripper wells included in the N.D. production. And there is same production decline pattern. Drilling new wells increases production for now.

Just drilling new wells to get those few months of production does come to an end because there are no more locations. All have been taken by 2017. Even the ND database makes no predictions past 2017. It is expected that number of Bakken wells will top out at around 12,000 .

What does this mean for the Port of Vancouver? Figure a year or two of hearings, permitting and such. Then a year to get construction completed. That brings us up to about 2017. Just in time for the last wells to be drilled. Production will be level for a couple years then the quick, precipitous drop. And what do you do with an oil terminal when there is no product to ship?

These numbers right there for all to examine. I encourage anyone concerned with this project to spend time with these databases. It doesn't look like the port commissioners did.

Tesoro Savage CBR
Scoping Comment
#30935
Docket EF-131590

1414 Kauffman Ave #201
Vancouver, WA 98660
December 18, 2013

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Washington State Energy Facility Site Evaluation Council
1300 S. Evergreen Park Dr. SW
Olympia, WA 98504

Re: Opposing permit for Vancouver oil terminal on multiple grounds, enumerated below

(To the individual(s) reading these comments: THANK YOU!)

Esteemed EFSEC Members:

I am writing to express my profound objection to the permitting of any oil terminal at the Port of Vancouver. The proposed terminal would endanger the health, safety, political security, environmental integrity, beauty, and economy of the whole region affected by the terminal itself and the entire transport route associated with it. The problems, including vulnerability to terrorist attack, are so severe and obvious as to warrant an outright rejection at the outset. Failing such an outright rejection, all the risks inherent with the proposed terminal, the oil, and its transport should be studied in painstaking and thorough detail.

First off, dealing with oil is inherently damaging, as I have observed from personal experience. I moved to Vancouver a year ago from Dallas, Texas; I grew up 130 miles northwest of Dallas in Wichita Falls. There I saw the ravages of landscape barrenness and scarring left by oil drilling and extraction. Oil transport, transfer, and storage threaten Vancouver and the entire transport route with similar ravages. The beauty of this region is a sacred trust for which we are accountable. As another ex-Texan here put it, living in Vancouver is like living in a national park. One oil car alone, spilling into the breathtaking Columbia River, would destroy the plentiful salmon carefully restored in the last 75 years. The danger is not just from the trains coming through here, the Columbia Gorge, and the rest of the route , but from the barges onto which the oil is to be off-loaded, and from there down the rest of the Columbia on out to sea.

Further, the safety liabilities of the terminal would kill the planned riverfront development and strangle established downtown businesses. The toxic stench of the high-sulfur oil would also impact business and health, since the fumes contribute to cancer, heart and lung diseases, and other ills. Any purported economic advantages of this inherently unsafe facility and its associated transportation hazards would be massively outweighed by its economic drawbacks.

Even more sobering are the immediate risks of catastrophic accidents. My father, a pipeline welder, did his last pipeline job in Alaska in the late 1970s. He told me that on a particular stretch of the North Slope, Alyeska expected a man a mile to die. The Alaska

crude was nowhere near as explosive as the Bakken Shale oil slated for transport to, through, and from the Port of Vancouver. The clear and present threat of a high-magnitude earthquake here alone is reason enough to find the oil port unsuitable, though earthquakes only magnify the inherent safety threat. The most spectacular of the transport accidents to date are the two Bakken oil train derailments in the last six months. Alice, Alabama was spared horrific casualties last month since the train derailed outside of town, unlikeQuebec's Lac Megantic, suffering 47 deaths last July. Despite the supposedly safer new rail cars in the Alice derailment, the oil cars exploded in a fire that burned for 24 hours. Suffice it to say that the same rails that are presently carrying coal, which degrades rail beds and increases the likelihood of derailments, would also be carrying Bakken Shale oil, which is at least as explosive as gasoline. I live in the blast zone here, less than a mile away from the rail yard.

We should also face the real potential of terrorism if we bring in such volatile cargo. In 1973, while traveling in Europe near the Italian port of Trieste, I witnessed a massive oil fire caused by Black September's terrorist attack at an oil terminal on the border of Italy and Yugoslavia. Half of a clear sky was blotted out by the impenetrable black smoke of that massive oil fire.

I have also experienced climate change first hand, and I consider it more dangerous than any terrorist attack. When I was growing up in the 1950s and 60s in Wichita Falls, an overnight low of 80 was unusually high. In 2011, Wichita Falls set a new overnight high minimum temperature of 88. That was the year that set a new national record of summer heat, surpassing the 1934 dust bowl mark. Although Oklahoma edged out Texas for the worst summer ever, Texas also suffered a killer drought that year in all but 4 of its 254 counties. So far, Washington and Oregon are the two states least impacted by climate disasters like droughts, floods, and super storms. Let's keep it that way By rejecting the proposed oil terminal and taking a stand here for our climate.

As a retired citizen directly threatened by multiple aspects of the proposed oil terminal, I can only sketch the most catastrophic of the foreseeable consequences it poses. Were I a trained scientist, I could, no doubt, delineate further horrors. Still more unsettling are surely the unforeseen and unintended consequences that not even the most far-seeing experts can predict. Any responsible examination of the environmental scope of the proposed oil terminal must of necessity require EFSEC to reject the proposal irrevocably.

Sincerely,

Anita J. Thomas

Anita J. Thomas,
Citizenof Vancouver, Washington

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30936

HERITAGE SOCCER CLUB, INC.
P.O. Box 23772
Pleasant Hill, CA
94523-0772

Talk With Your Feet... Play With Your Heart

December 18, 2013

RECEIVED
DEC 30 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

Stephen Posner, EFSEC Interim Manager
Energy Facility Site Evaluation Council
1300 S Evergreen Park Drive SW
PO Box 43172
Olympia, WA 98504-3172

Re: Tesoro Savage Vancouver Energy Distribution Terminal

Dear Mr. Posner,

On behalf of the 500+ children and their families that are members of the Heritage Soccer Club I am writing in support of the Tesoro Savage Vancouver Energy Distribution Terminal.

It is my understanding that the proposed project will receive and ship North American crude oil to US refineries to offset or replace foreign imports and declining production in Alaska and California. This crude oil will be refined in US refineries to help meet the everyday needs of residents and businesses along the US West Coast – including those of the state of Washington. In short, it helps with America's energy security and will bring economic benefits and valuable jobs to our local communities.

The Tesoro facility in Martinez, California has been a very generous socially conscious strategic partner of the Heritage Soccer Club for many years. The Tesoro Martinez facility gives back to our community at large by providing access to well-maintained soccer fields and also provides direct financial aid for player scholarships. As a Martinez resident, I believe the safety and environmental reviews are extremely important both for Tesoro and the Heritage Soccer Club. I know from our club affiliation with Tesoro over the years that every effort is made to ensure safety.

Given the above endorsement of Tesoro's competence, character and community reputation, I am respectfully requesting that the scope of the SEPA environmental analysis be purposefully focused on potential impacts from the proposed facility. The scope of the EIS must be limited to those potential impacts directly related to the facility design and operation. I ask that EFSEC consider the following site-specific impacts in preparation of the SEPA Environmental Impact Statement:

- Risks caused by earthquakes
- Spill prevention and spill response requirements that protect the environment

- Ability to comply with state and federal air quality emission standards
- Protection of Columbia River water quality and fish and wildlife resources
- Impact of the facility on local transportation infrastructure and public services
- Facility design that meets all relevant safety standards

This balanced approach is consistent with SEPA statutes and regulations and will protect the environment while also ensuring Washington state's ability to grow its economy.

Your web site states, *"Tesoro and Savage, we value the safety of our employees, our customers and our neighbors in the communities we call home."* This is not an overstatement for us here in Martinez but rather an absolute statement of truth and trust. It is based on our club's direct experience practicing and playing our games and tournaments at the Tesoro Soccer Fields in Martinez, California which we are proud to call our home fields. Tesoro has earned and maintained our trust to provide a safe environment and jobs for our local community. We are grateful that you care.

Thank you for considering my comments as favorable.

Respectfully,

Ellen Lawrence
President
Heritage Soccer Club

Tesoro Savage CBR
Scoping Comment
#30937

Docket EF-131590

UNIVERSITY LEGAL ASSISTANCE

721 North Cincinnati Street
P.O. Box 3528
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GAIL HAMMER
JUDGE RICHARD WHITE (ret.)

JAMES P. CONNELLY
MARK E. WILSON
Of Counsel

December 18, 2013

VIA U.S. Mail

RECEIVED
DEC 24 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

Mr. Stephen Posner
EFSEC Interim Manager
Energy Facility Site Evaluation Council
1300 S. Evergreen Park Dr. SW
P.O. Box 43172
Olympia, WA 98504

Re: Tesoro Savage Crude Oil Terminal Scope & Beyond

Dear Mr. Posner:

I am writing on behalf of the Gonzaga University Environmental Law Clinic and the Spokane Riverkeeper.

The Gonzaga Environmental Law Clinic provides legal representation to not-for-profit environmental programs in the Inland Northwest, and strives to protect and restore the quality and integrity of the region's waters through advocacy and public interest litigation.

The Spokane Riverkeeper ("Riverkeeper") is a program of the Center for Justice ("CFJ"). CFJ is a not-for-profit legal organization which provides legal services to individuals and public interest organizations in the Inland Northwest. CFJ works to ensure that all individuals and public interest organizations of limited means have access to justice, including a clean and healthy environment. Riverkeeper conducts surveillance of the Spokane River and its tributaries and reaches out to river users who share its commitment to a river that is swimmable, fishable, and properly regulated. To further these goals, Riverkeeper actively seeks Federal and State agency implementation of the Clean Water Act and, when necessary, directly initiates enforcement actions on behalf of itself and the public. The Riverkeeper may be contacted at:

Bart Mihailovich, Spokane Riverkeeper
Center for Justice
35 West Main, Suite 300
Spokane, Washington 99201
Phone: (509) 835-5211

As environmental advocates in the Inland Northwest, we are very concerned with the Council's decision-making process regarding the scope of the Environmental Impact Statement (EIS). The scope ought to include not just Vancouver, WA, and the surrounding area, but also anywhere in the state that is located along the rail line, as well as the entire state of Washington, in general, for the following reasons:

At the Spokane hearing regarding this specific issue, I offered up an appeal to basic logic in my public testimony that I would like to reiterate. Please consider the following conditional:

If A, then B. The philosophical discipline of symbolic logic represents this conditional using an arrow, like this: A→B. It is to say that if A happens, then so will B. It speaks to the certainty of causation. We can deduce the existence of B if A holds first as its cause—it is one of the four basic tenants of logic.

If one can understand this conditional, it is no doubt that they can understand the current scoping situation:

If A (an additional eight trains per day carrying crude oil physically pass through Spokane and then through the State of Washington) then B (impacts along the entire railway and throughout the entire state will be felt by that physical presence). This simple logic speaks to physical presence, or "physical causation." It is the most simple form of causation we have known to man in reality—the physical presence of something in a space will inevitably change and impact that space due solely to its presence in that space or area. If one accepts this basic logical deduction, then one will begin to **really think** about the impacts involved by the physical presence of crude oil (as well as coal) trains in the state. I can assure you Mr. Posner, the physical presence of crude oil by rail throughout the state of Washington can only bring negative impacts due to its physical presence—environmental impacts, safety impacts due to inaccessibility to communities and derailments, human health impacts due to increased train traffic, fueled by diesel particulates, etc.

Please do not deny our community and state a fair assessment which appeals to basic logic that we deserve.

Mr. Poser, this is about a bigger picture as well. This is about moving Washington beyond. We can no longer deny clear science and logic and continue to prioritize economic interests and values over all others. What about community, health, the public good, sustainable businesses, **A FUTURE.** Nothing can happen in an environment that is unsuitable for human health—no businesses can flourish, no students can study, no communities can thrive, no infrastructure can be built. Without an environment, a physical space to account for the massive realm of human activity, we are nothing. Just like the basic logical deduction I outlined in previous paragraphs, we will see another, in identical form: **If A then B—namely, if A (the environment becomes unlivable), then B (human activity on this planet will end, and we will cease to exist).**

Proposals like this Tesoro Savage proposal, along with all the other coal and oil proposals throughout the state, is Washington's chance to adhere to the progressive character with which it is so famous for throughout the nation—we need to make a statement that the short-run economic benefits no longer justify (and probably haven't for a while now) the extreme environmental and human health consequences that we now know exist as a result because of **clear science and logic.** We are on the brink of a climate revolution, Mr. Posner—and the leader? Why not Washington state?

I urge you to include all impacts throughout the state in all your EIS work, and I urge you to deny them all permits. I urge you to take a stand, as the trustee of my environment, as a regulatory leader in the state. I urge you to move us forward and to think outside yourselves. We want to be considered, and once we are, you'll realize that we do not desire this move to dirty fuel industry in our state.

Thank you for your time and consideration.

Sincerely,

UNIVERSITY LEGAL ASSISTANCE

Andrew D. Woods
Law Clerk

ADW/rke/vly

Tesoro Savage CBR
Scoping Comment
#30938

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

RECEIVED
DEC 24 2013
ENERGY FACILITY SITE EVALUATION COUNCIL

Name: Pauline Druffel

Address: 930 S Cannon St. #13 Spokane WA 99204-4372
(Please include your Zip!)

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

Thank you for considering our viewpoints in this matter. I am opposed to the terminal because the oil tankers would have to travel through our state by rail over water ways and through farm land. A derailment would cause longterm serious damage to both water and land.

But I oppose the project because it ~~just~~ primarily perpetuates an industry that we know is adding to greenhouse gases and global climate change. It is a waste of resources to keep on taking this oil out of the ground. Our money should go instead to renewable, clean energy production. No

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

matter how much money is spent on the oil transit terminal, it is only a matter of time before the oil is all taken out of the ground & we have to switch to the new technology and infrastructure of renewable energy. Let's stop spending time, money, & energy now for dirty tar sands oil.

Tesoro Savage CBR
Scoping Comment
#30939

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: Steven A. Hart

Address: 21200 E. Country Vista Dr. Apt C-204 Liberty Lake, WA 99019
(Please include your Zip!)

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

I am a Locomotive Engineer for the BNSF Railway Company at Hauser Yard in Rathdrum, ID. I handle Oil Trains; Coal Trains; Grain Trains; etc. from Hauser Yard, ID to Pasco over our Spokane & Lakeside Subdivisions. Say "yes" to Tesoro Savage-Vancouver, WA Energy Distribution Terminal because we need Oil and Coal Terminals on the West Coast of the U.S.A! The "No" People at the 12/11/13 meeting sighted Climate Change as one of the reasons to not allow the Tesoro Savage Terminal: However - let me throw out a couple of facts (1) The U.S. National Snow & Ice Data Center stated that it recorded a temperature of

Use the back of this form if you need more room for your comments.

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Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172,
call (360) 664-1363, or e-mail efsec@utc.wa.gov.

minus 135.8 degrees F on Aug. 10, 2010 in Antarctica, which was colder than the official planetary record low of minus 128.6 degrees F, which was also recorded in Antarctica by the Russia's Vostok research base in July 21 1983. (Earthweek — week Ending December 13, 2013; (2) On Wednesday — 12/11/13: A snowstorm dumped almost 2 feet of snow over Israel and the West Bank including Jerusalem, which was the worst snowstorm in the area for over 50 years! The same weather front also dropped snowflakes over the suburbs of Cario, Egypt, which had not seen snow for almost 100 years. Please allow the Tesoro Savage Vancouver Energy Distribution Terminal because we need these terminals to distribute our growing Oil & Natural Gas Production in the U.S.A. Railroads like my employer: BNSF Railway have the ability to distribute 5400 barrells of oil per every oil train. We [redacted] are safe with our trains and that protects the enviroment of the Northwest and the United States of America. Say Yes! to America...

Sincerely Yours

Steven A. Hall

Locomotive Engr — BNSF Railway

Tesoro Savage CBR
Scoping Comment
#30940

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Janice R. Clark

Address: 1232 NW Barnes Rd. Apt. 78 Portland, OR 97229
(Please include your Zip!)

RECEIVED
DEC 17 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

I am extremely concerned about the huge new oil terminal planned for Vancouver. It would have disastrous environmental effects. Oil spills would harm our neighborhoods and businesses along the route. I am especially concerned about water contamination which in the near future is going to be in more of short supply than fuel. In the summer of 2013, over 50 people lost their lives when a crude oil train derailed in Le Megantic Quebec. It could happen here.

rev

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

The terminal would ship oil that would be obtained by fracking which is a very dirty way to produce a fossil fuel. It pollutes aquifiers and damages agricultural lands. Spills of wastewater, drilling fluids and other materials are not uncommon. Also, it would place a heavy toll on rail traffic which would exacerbate traffic delays in the communities along the rail route in Washington such as Vancouver, Camas, Spokane and beyond.

I understand that a real estate investor has attracted millions of dollars in a former industrial site that would be jeopardized by the terminal.

There are many questions that have not been answered concerning safety along the rail lines and how traffic delays will be managed. Are there enough first responders to handle an emergency? This is the wrong project for our times. We need to be concerned about what fossil fuels are doing to the environment as they will harm our future. Please do not let this plan go forward.

Tesoro Savage CBR
Scoping Comment
#30941

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

Public Informational & Scoping Meeting – Vancouver, Washington, October 28 & 29, 2013

Name: Stephen Farris Rochelle

Address: 3705 NE Hassalo St. Portland, OR 97232
(Please include your Zip!)

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, ~~November~~ December 18, 2013.

I am concerned about the Tesoro Savage Terminal for many reasons. This is a major project that goes against everything we are trying to create for our communities liveability. Such a large industrial project will discourage the type of nearby developments that create jobs and a neighborhood that people will want to work and live in, in essence creating an industrial wasteland.

The transport of oil can have catastrophic consequences. There have been incidents recently,

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

both high visibility and not very well publisized, where these trains have crashed and exploded. The damage to communities and the environment are irrepairable.

In analyzing this type of project, it is important to consider the big picture. What kind of community and world do we want to live in? The type of oil that results from hydraulic fracturing is the worst form of energy we could choose. From the extraction process, to transportation, to the final energy production plants, this type of oil is dangerous, volatile, and polluting. By approving the Tesoro Terminal project, we endorse the worst form of energy.

The trains impact people all along their routes. Communities must deal with major traffic disruption, added pollution, and the risk of catastrophic damage from potential derailments.

It's time to look forward and develop a positive energy future. The Tesoro Terminal is a major step backwards.

Tesoro Savage CBR
Scoping Comment
#30942

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: Ruth V. Smith

Address: 13000 S Scribner Rd Cheney Wa 99004
(Please include your Zip!)

RECEIVED
DEC 20 2013
ENERGY FACILITY SITE EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

One of our biggest concerns is the building of Gideing Trains pollution of air and water while they idle. Diesel leaking in to our aquifer lakes and Crek. Sometime with 4 to 5 engines pulling who knows what. More tracks more congestion. Definitly more danger to the public over

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Volentier fire department in the area do not have the know how to handle all of the things that could go wrong. Fire leakage and explotion etc. The public interest not private concerns should come first.
Bad judgement now is going to effect generations to come.

Definilly more danger to the public now.

Tesoro Savage CBR
Scoping Comment
#30943

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: KAREN SMITH

Address: P.O. BOX 128 MARSHALL WA 99020
(Please include your Zip!)

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ENERGY FACILITY SITE
EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

I have many concerns regarding the coal and oil tanker rail cars moving through the Marshall area where my family resides.
Derailments happen....it's a fact. Not only would it affect the water quality of Queen Lucas Lake, Marshall Creek, and Minnie Creek it could also have devastating results during hot, dry summers when wildfire season is upon us.
The railroad has in the past, been responsible for starting many, many fires in our area

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact:
Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172,
call (360) 664-1363, or e-mail efsec@utc.wa.gov.

over the past years. Because of inexessability to firefighters in this draw, the dry timber and grasses fueled by spilled oil or coal would wipe out hundreds of homes.

Tesoro Savage CBR
Scoping Comment
#30944

Docket EF-131590

Washington State Energy Facility Site Evaluation Council

COMMENT FORM

Tesoro Savage Vancouver Energy Distribution Terminal

SEPA Public Scoping Meeting – Spokane, Washington, December 11, 2013

Name: Bernadine Van Thil

Address: 3704 W. Lincoln Rd. Spokane, WA 99208
(Please include your Zip!)

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DEC 20 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

Please write any comments you have with respect to the Tesoro Savage Vancouver Energy Distribution Terminal Informational & Scoping Comments

Leave this sheet in the Comment Box today, or mail it to: EFSEC, PO Box 43172, Olympia, WA 98504-3172. Comment letters must be postmarked by Wednesday, December 18, 2013.

Do not approve the Tesoro terminal which would result in 360,000 barrels of oil to be trained through our city of Spokane EVERY DAY!

Oil is non-renewable and will be gone from our planet eventually, leaving a raped Earth and zillions of worthless ~~cars~~ vehicles!

Alternatives are already invented! It's my first time to change, and stop allowing control by Big Oil!

DO NOT APPROVE THE TESORO TERMINAL!!!

P.S. Over

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact: Sonia Bumpus, EFSEC Siting Specialist, PO Box 43172, Olympia, WA 98504-3172, call (360) 664-1363, or e-mail efsec@utc.wa.gov.

P.S. The picture of Earth from space proves that our planet has limited resources, that will be no more at the rate we are using them up.

DO NOT ALLOW THIS TO CONTINUE!

WASHINGTON PORTS

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30945

RECEIVED

DEC 19 2013

ENERGY FACILITY SITE
EVALUATION COUNCIL

December 16, 2013

Stephen Posner, EFSEC Interim Manager
Energy Terminal Site Evaluation Council
P.O. Box 43172
1300 Evergreen Park Drive SW
Olympia, WA 98504

RE: Scoping for Tesoro Savage Vancouver Energy Distribution Terminal, Application 2013-01, Docket No. EF-131590

The Washington Public Ports Association (WPPA) offers the following comments regarding scoping of the Tesoro Savage Vancouver Energy Distribution Terminal. The WPPA was authorized by the state legislature in 1961 as the coordinating organization for all public port districts in the state. Ports seek to balance economic development and job creation with responsible environmental stewardship. In our efforts to achieve this balance, ports around the state invest millions of dollars each year in initiatives that improve air and water quality, enhance habitat, and rehabilitate abandoned sites from the state's industrial past. Ports absolutely understand the synergistic relationship between economic development and environmental stewardship because the balance point between these mutual interests exists at the core of our operations. Our state's unique resources attract new businesses, and our vibrant trade sector provides the capital necessary to ensure new and more innovative environmental investment.

Washington is one of the most trade-dependent states in the nation. In order to continue to foster this trade, it is absolutely essential that governments not impose extraordinary burdens on trade development that are neither required, nor authorized, by state and federal law.

Port districts around the state remain concerned that strong public sentiments surrounding specific types of cargo not drive an expansion of the scope of appropriate environmental

review beyond that authorized by relevant environmental laws. While there may be appropriate policy forums to discuss fossil fuel use generally, we ask the lead agencies to resist demands to use environmental review as the venue for conducting such policy debates. We are especially concerned about requests to substantially expand the scope of transportation impact analysis beyond what typically occurs under SEPA simply because of the unpopularity of the cargo being shipped. The scope of a SEPA analysis should not be determined in this way.

Keeping in mind the various site-specific elements of the environment that would be appropriate for review in the project EIS, we offer specific comments on the following areas:

- Transportation
- Greenhouse gas emissions
- Fiscal Impact and Economic development

TRANSPORTATION

Any evaluation of transportation impacts from the proposed project should recognize two important points. First, the regulation of railroads in this state and across the country is the jurisdiction of the federal government, through the Surface Transportation Board (an independent regulatory agency) and the Federal Railroad Administration (a part of the U.S. Department of Transportation). No government action would be required to increase rail traffic volumes on existing rail lines in the state. While the state and local governments who do have some authority to impose environmental regulations on railroad operations and the safety of those operations, this authority is limited.

Second, the existing, historic ebb and flow of rail traffic in the state, including those times in the recent past when the rail lines were operating at a substantially greater volume of traffic than they may be today, should be considered as the existing, baseline condition, and not attributed to any individual port terminal project. The "direct, indirect and cumulative" impacts of a port terminal project should not include the operation of the entire transportation network used to move cargo to and from that shipping terminal, any more than the impacts of a proposed shopping center project should include the entire

transportation network used to produce and move all of the goods to be sold at that center.

Further, that transportation system (be it highways, rail lines or barge and shipping channels) invariably experiences wide fluctuations in traffic, based on changes in economic activity. Currently, the state's rail system is operating below the levels seen prior to the current recession. Normal fluctuations in rail system operation are part of the baseline condition for all projects, not the result of any one project, or even a set of similar projects. When expansions of the transportation system become necessary, those expansions go through environmental reviews of their own. Unless the lead agencies can clearly demonstrate a need to expand existing transportation infrastructure that is directly related to the proposed terminal project and is not simply an example of the historic ebb and flow of trade volume, the environmental review for the proposed terminal should not be expanded to evaluate the entire transportation infrastructure network.

A recent study commissioned by WPPA (copy attached to these scoping comments), supports this point, demonstrating that the volume of existing or background traffic using the rail lines in Washington has varied substantially, depending on various trade and market conditions, not the least of which is the recent global recession. In fact, based on historic volumes documented in the attached study, it is reasonable to assume that even a no-action alternative for the proposed Tesoro Savage project EIS would have to assume increased background traffic volumes due to other commodity demands as global markets improve. SEPA limit attribution of project impacts to those that are directly or indirectly related to the project, and require the lead agencies to recognize background and existing conditions, including demonstrated fluctuations in those conditions, before identifying impacts from the proposed project.

The direct, indirect and cumulative impacts of a cargo terminal project do not include operation of the freight transportation system that brings products to that terminal. Those impacts are present as part of the baseline condition of having a comprehensive freight transportation system in the first place. Analysis of any expansion of that system is properly a component of the permitting process for those expansions, not the permitting process for individual terminal projects for the movement of freight within that transportation system.

Should the lead agencies expand the scope of transportation impact analysis

substantially beyond that typical for other new construction or expansion projects, WPPA is concerned that this determination could become an unwelcome precedent for other terminal expansion projects involving less controversial products, such as grain, fruit, airplanes, wine, hay , etc. Our port terminal facilities are critical to improving our state's economy, and as trade volumes increase some of these terminals will need to expand. It is bad public policy to turn a straight-forward, site-specific and direct environmental analysis into an expansive review of transportation networks spanning an unprecedented scale and scope that may include transportation of a commodity across the state, or even around the world. The impacts on the working waterfront in our state – not to mention the on farmers and manufacturers who depend on this trade infrastructure – could be significant. SEPA and NEPA do not require this and the agencies should not expand scoping to do so.

GREENHOUSE GAS EMISSIONS

WPPA and its members acknowledge that greenhouse gas emissions are now recognized as appropriately within the purview of project environmental review. In fact, several port members are leaders in sophisticated consideration of emissions related to port operations and expansion. The Ports of Vancouver and Tacoma, for example, have recently included greenhouse gas emission analysis under SEPA as part of recent developments in those communities.

However, expanding environmental review to include potential greenhouse gas emission impacts of a shipped product's harvest and use is beyond the scope of SEPA requirements. While it is acknowledged that the burning of fossil fuels results in greenhouse gas emissions, the movement and ultimate use of any product results in greenhouse gas emissions and other forms of pollution. Assigning SEPA to evaluate a more global consideration that includes impacts spanning the entire life of a product – from extraction, harvest of construction all the way through a use or consumption – is a significant leap from current consideration of terminal construction and operation. Such an expansion is far beyond the intent of SEPA and would turn nearly any project review into a virtually impossible task.

Attempting to analyze the future effects of international shipments of a product that is available from other world market sources -- especially if the impact of greenhouse gas is not eliminated or even reduced by switching from one source to another -- would require

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guesswork concerning the future actions of foreign governments and economies and would amount to pure speculation. SEPA does not support the analysis of impacts that are speculative in nature.

FISCAL IMPACT AND ECONOMIC DEVELOPMENT

Finally, while not required by SEPA, WPPA encourages the lead agencies to evaluate the fiscal and economic development impacts from the proposed project, as authorized by WAC 197-11-440(8) and 40 CFR 1508.14. This is especially important since the economic impacts of the proposal and alternatives are so central to the public debate and the agency's ultimate evaluation of the proposed project. It is estimated that the project under consideration will generate 370 jobs for the local area when the terminal is at full capacity. The project will also help provide viable, domestic, low cost energy for the West Coast. It will be helpful to understand the potential economic costs and benefits of terminal expansion, so the agencies will have objective information from which to evaluate the debate that is and will continue to occur during project review.

Thank you for your consideration of WPPA's comments. Given our and our members' expertise on these important rail infrastructure and trade-related issues, we would welcome additional opportunity to discuss these issues and provide assistance to the agencies as your prepare the environmental documents.

Sincerely,

Eric D. Johnson, Executive Director
Washington Public Ports Association

enclosure

Washington Public Ports Association

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Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment

Final Report

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Chapter 1
Executive Summary

The Pacific Northwest economy is inextricably tied to domestic and international markets. Efficient performance of the inland transportation system, especially in its linkage to the public and private port system, is critical to the economic health of the region.

Approximately every five years the Washington Public Ports Association (WPPA) and Washington State Department of Transportation (WSDOT) sponsor an update to the Washington State Marine Cargo Forecast. The most recent forecast was completed in March 2009, and provided unconstrained forecasts of cargo projected to move through public and private marine terminals on Puget Sound, the Washington Coast, and the Lower Columbia River in Washington and Oregon.

In the past two decades an increasing percentage of the commerce moving through Pacific Northwest ports has been carried by rail. The most recent two Marine Cargo Forecast studies have also included analyses of rail capacity. These rail capacity analyses modeled the various mainline rail segments in Washington, taking into account the projected marine cargo volumes as well as growth in domestic train traffic and passenger train traffic. Key outputs of these analyses were prioritized lists of rail system projects that would help to solve existing and anticipated capacity constraints.

The most recent marine cargo forecast was completed in the middle of the 2009 economic recession, a time of unusually sharp declines in marine cargo and rail traffic. However, since that report was completed rail traffic has rebounded to pre-recession levels. In addition, many of the ports in the region are anticipating major increases in cargo, especially exports of dry bulk such as grain, minerals, ores, and other bulk commodities. The anticipated volumes of these new cargos could significantly impact the mainline rail system in the northwest, impacting the marine cargos as well as passenger traffic and domestic cargo.

BST Associates (BST) and MainLine Management (MLM) were retained to prepare the following 2011 update to the 2009 report. The purpose of this analysis is to update the marine cargo forecasts, to compare the projected level of rail traffic with the capacity of the various mainline segments in the region, and to produce a prioritized list of projects to alleviate anticipated capacity constraints. An important addition to the 2011 analysis is the inclusion of the mainline rail system in Oregon.

The report was prepared at the request of the Ports of Everett, Seattle, Tacoma, Grays Harbor, Longview, Kalama, Vancouver and Portland. Additional entities participated in the preparation, including the Washington State Department of Transportation, Oregon Department of Transportation, and Washington Public Ports Association. The Class I railroads also participated in a review of the analysis, but this is not a Class I railroad product.

Marine Cargo Forecasts

The marine cargo forecasts produced for this analysis are unconstrained, which assumes that the necessary marine terminals and rail capacity will be in place to meet market demand. The method for updating the 2009 forecast involved several steps.

- First, cargo volumes were updated by commodity and region using the most recent data available.
- Second, the forecasts provided in the 2009 Marine Cargo Forecast were then updated based upon adjusted trends and forecast growth rates. A key part of this step was the inclusion of potential market opportunities that are being evaluated by individual ports.
- Finally, the mode of inland transportation was estimated for each scenario by commodity, sub-region and growth scenario.

Potential new market opportunities included: ores, minerals, grain, containers and liquid bulks. For each of the commodity types two growth scenarios were projected: the high-growth forecast included all of the market opportunities currently under consideration, while the moderate growth forecast included a portion of the market opportunities (approximately one half).

A summary of cargo projections through the year 2030 is presented below

Commodity Forecasts

Containers

In the 2009 marine cargo forecast, container traffic was projected to reach 10.4 million TEUs in 2030, with an average annual growth rate of 5.2 percent between 2010 and 2030.

Under the revised moderate growth forecast, containers are projected to reach 8.3 million TEUs by 2030 (4.1 percent annual growth). Under the revised high growth forecast, containers are projected to reach 12.3 million TEUs by 2030 (6.1 percent annual growth).

Breakbulk/Neobulk

In the 2009 marine cargo forecast, these commodities were projected to increase by an average annual 1.5 percent, reaching 11.1 million tons in 2030.

Under the moderate-growth scenario, breakbulk/neobulk cargoes are expected to grow by an average annual rate of 1.2 percent from 2010 to 2030, reaching 10.5 million tons in 2030. Under the high growth forecast, breakbulk/neobulk cargoes grow by an average annual rate of 2.2 percent from 2010 to 2030, reaching 12.7 million tons 2030.

A key difference between the 2009 study and the current one is that log exports grew rapidly over the past year and are expected to remain strong through the mid-term (approximately five years).

Grain and Related Products

Pacific Northwest grain and oilseed exports have shown impressive growth over the past decade, growing from approximately 20 million metric tons in 2000 to 34 million metric tons in 2010. Wheat, corn and soybeans are the most important commodities, but other products such as soybean meal and dried distiller's grains (DDGS) have become increasingly important.

BST Associates forecasts that Pacific Northwest grain and oilseed exports will increase from 34.1 million metric tons in 2010 to 39.1 million tons (moderate growth scenario) and 53.3 million metric tons in 2030 (high growth scenario).

Dry Bulk Cargoes

The 2009 forecast projected relatively modest gains in bulk traffic, with volumes expected to reach 31.8 million tons in 2030, or at an average annual growth rate of approximately 1.0 percent between 2010 and 2030. However, the dry bulk forecast was based upon the existing commodity base and did not anticipate the strong interest in additional export cargo opportunities.

Under the revised moderate growth forecast, dry bulk cargoes are expected to reach 97.1 million tons in 2030 (average annual growth of 6.8 percent per year between 2010 and 2030). Under the revised high growth forecast, dry bulk cargoes could reach 155.3 million tons in 2030 (average annual growth of 9.3 percent per year between 2010 and 2030). Growth is driven by increasing mineral and ore exports, among other commodities.

Liquid Bulks

The liquid bulk trades in the Pacific Northwest, which is dominated by crude oil, is expected to gradually change as regional refineries shift their source from Alaska to other domestic and foreign suppliers. The 2009 forecast projected modest growth for liquid bulk traffic, expecting volumes to reach 48.4 million tons in 2030 (0.8 percent annual growth).

Under the revised moderate growth forecast, liquid bulk cargoes are expected to reach 42.4 million tons in 2030 (0.2 percent per year), reflecting the changed sourcing patterns. Under the high growth forecast, liquid bulks are expected to reach 51.6 million tons in 2030 (1.2 percent per year). The high growth forecast incorporates new LNG imports/exports.

Sub-Region Forecasts

Lower Columbia Oregon and Oregon Coast

The Lower Columbia Oregon and Oregon Coast sub-region is projected to reach 44.6 million tons in 2030 under the moderate growth forecast (2.6 percent annual growth from 2010 to 2030) and 70.5 million tons in 2030 under the high growth forecast (5.0 percent annual growth).

Rail traffic is projected to reach 26.3 million tons in 2030 under the moderate growth forecast, and 47.5 million tons in 2030 under the high growth forecast.

Lower Columbia Washington

The Lower Columbia Washington sub-region is projected to reach 49.4 million tons in 2030 under the moderate growth forecast (4.3 percent annual growth) and 82.5 million tons in 2030 under the high growth forecast (7.0 percent annual growth).

Rail traffic is projected to reach 43.0 million tons in 2030 under the moderate growth forecast, and 74.9 million tons in 2030 under the high growth forecast.

Puget Sound and Washington Coast

The Puget Sound and Washington Coast sub-region is projected to reach 141.0 million tons in 2030 under the moderate growth forecast (2.6 percent annual growth) and 192.3 million tons in 2030 under the high growth forecast (4.2 percent annual growth).

Rail traffic is projected to reach 84.8 million tons in 2030 under the moderate growth forecast, and 131.6 million tons in 2030 under the high growth forecast.

Rail Capacity Assessment

This section summarizes the rail capacity analysis. As noted above, rail volumes fell markedly during the recent recession, but they recovered strongly in 2010, reaching pre-recession levels. Coupled with this rapid pace of recovery, there are significant opportunities for growth in rail traffic, particularly in bulk train exports of minerals, ores and grain.

The rail forecasts include a projection of the number of trains under moderate and high growth scenarios, under both average and peak operating conditions. The rail forecasts are driven by the marine cargo forecast, but also include domestic freight traffic and passenger train volumes. Domestic traffic and passenger traffic was based on studies prepared for WSDOT and ODOT as well as on discussions with rail service providers.

The analysis assumes that existing trains absorb most of the growth in rail traffic before new trains are added. However, operational requirements sometimes necessitate new train starts, and this is included in the forecast. The capacity of the various main line segments was estimated based upon discussions with rail service providers, recent studies and consultant judgment.

Table 1-1 summarizes study results. Under the moderate growth scenario, the only segments that experience sustained capacity constraints are the Vancouver to Pasco and the Everett to Blaine lines. Under the high growth scenario, the constraints on the Vancouver to Pasco and the Everett to Blaine segments occur earlier. In addition, constraints are expected in the Pasco to Spokane, Vancouver to Kalama/Longview, and King Street Station to Everett lines. These results assume that a series of physical improvements are completed, and that certain operational protocols are changed.

Table 1-1: Anticipated Year of Capacity Constraint, by Line Segment

Line Segment	Moderate Growth Scenario		High Growth Scenario	
	Avg. Day	Peak Day	Avg. Day	Peak Day
Pasco, WA to Vancouver, WA (BNSF)				
Pasco, WA to Wishram, WA	2030	2025	2025	2020
Wishram, WA to Vancouver, WA	---	2030	2025	2024
Hinkle, OR to Portland, OR (UP)	---	---	---	---
Pasco, WA to Spokane, WA (BNSF)	---	---	2030	2025
Spokane, WA to Sand Point, ID (BNSF)	---	---	---	---
Hinkle, OR to Eastgate, ID (UP)	---	---	---	---
Vancouver, WA to Tacoma, WA (Joint Line)				
Vancouver, WA to Kalama/Longview, WA	---	---	---	2030
Kalama/Longview, WA to Tacoma, WA	---	---	---	---
Tacoma, WA to Seattle, WA (Joint line)				
Tacoma, WA to Auburn, WA	---	---	---	---
Auburn, WA to Seattle, WA	---	---	---	---
Seattle, WA to Everett, WA (BNSF)	---	---	2023	2020
Everett, WA to Vancouver, BC (BNSF)	---	2030	2025	2020
Everett, WA to Spokane, WA via Stevens Pass (BNSF)	---	---	---	---
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)	---	---	---	---

Source: MainLine Management

In order for rail capacity to meet the of projected freight volumes, the authors of this report recommend a series rail system improvements. These projects generally fall into two categories, mainline improvements and port access improvements. However, the projects labeled as port access improvements also provide benefits to the mainline system. Reducing the amount of time that it takes for trains to move between the port terminals and the mainline reduces delays on the mainline system, and thereby increases mainline capacity.

The recommended mainline projects include:

- **Peninsula Junction to North Portland Junction, Portland**. (Funding is in place to complete preliminary engineering and the NEPA analysis, but not construction.)
- **Vancouver, WA Freight Rail Bypass**. (Construction is under way, and is anticipated to be complete in 2013.)
- **Point Defiance Bypass, Tacoma to Nisqually**. (Construction of Phase 1 is under way; Phase 2 is anticipated to be complete 2016.)
- **Blakeslee Junction Improvements, Centralia.** (Phase 1A & 1B are partially funded, and the funds have all been moved to a future biennium. Phases 2-5 are not funded.)

- **Third main line Kalama to Kelso –WSDOT Passenger Plan Option 3.** (North portion is funded, engineering is under way).
- **Vancouver to Kelso - WSDOT Passenger Plan Option 4.** (funding is in place for several of these projects, engineering is under way)

The recommended port access projects include:

- **Port of Vancouver, WA Freight Access Project.** (First phases are finished, entire project is scheduled to be complete in 2017)
- **Unit Train Staging/Storage Yard near Woodland.** (No action currently under way.)
- **Cowlitz River Bridge – Longview.** (Partial funding is in place to begin preliminary engineering and the NEPA analysis, with remaining funding expected in January 2010. Construction not funded.)
- **Bullfrog Junction Realignment, Tacoma.** (Preliminary planning is complete, project proponents are seeking funding.)

Growth in the volume of export bulk trains is expected to increase the demands on existing rail capacity in the region, and even moderate growth will require BNSF and UP to assess the capacity requirements necessary to meet the growing demand. Both railroads have the ability to increase capacity through a combination of physical and operational improvements, and should be able to meet growing demand well into the future.

Chapter 2
Marine Cargo Forecasts

This section provides summary of the marine cargo forecast. These summaries are presented by commodity group and by sub-region in the Pacific Northwest. The marine cargo forecasts are unconstrained, which assumes that the necessary marine terminals and rail capacity will be in place to meet market demand.

The method for updating the 2009 forecast involved several steps. First, current cargo volumes were updated by commodity and region using the most recent data (2010 for commodities moving on international routes and 2009 for commodities moving on domestic routes). Volumes for 2011 were estimated based upon data from individual ports, the Pacific Maritime Association, U.S. Department of Agriculture, and other industry and government sources.

Commodity handling groups were defined to include:

- Containers,
- Neobulk/breakbulk cargoes – breakbulk, autos and logs,
- Grain and related products – wheat, barley, corn, soybeans, soy meal, beet pulp pellets and like products,
- Dry bulk cargoes – minerals, ores, chemicals, fertilizers, wood chips, manufactured products and like products,
- Liquid bulk cargoes – crude oil, petroleum products, chemicals and like products.

The forecasts include all public and private terminals, which were divided into the following sub-regions:

- Lower Columbia River Oregon and Oregon Coast,
- Lower Columbia River Washington,
- Puget Sound and Washington Coast.

Second, the forecasts provided in the 2009 Marine Cargo Forecast were updated based upon adjusted trends and forecast growth rates. In addition, a key effort in this update was to consider the potential market opportunities that are being evaluated by individual ports. This process included a discussion with participating ports and the Class I railroads and literature review of industry resources.

Potential new market opportunities included: ores, minerals, grain, containers and liquid bulks.

For each commodity group two growth scenarios were projected. The high-growth forecast included all of the market opportunities currently under consideration. The moderate growth forecast included a portion of the market opportunities (approximately one half).

Third, the inland mode of transportation was estimated for each growth scenario, commodity, and sub-region.

The results of the forecast are presented below.

Containers

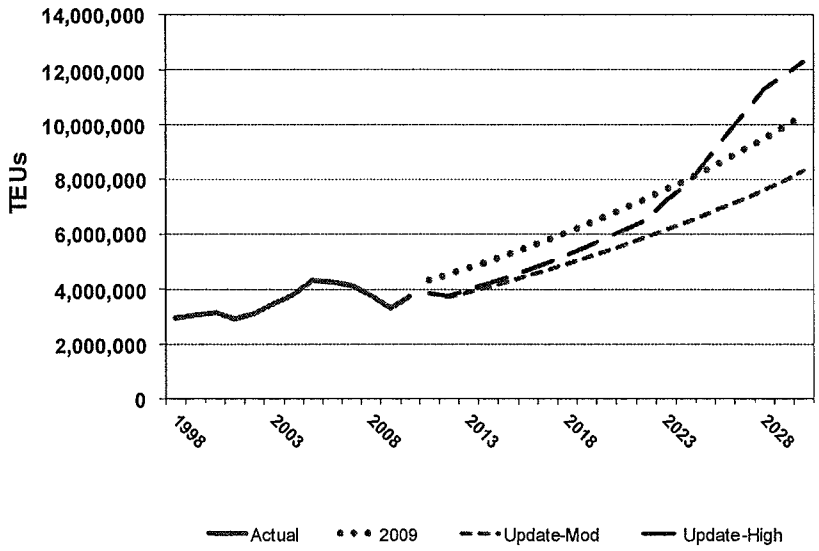
The revised Pacific Northwest container forecast is presented in Figure 2-1. The moderate-growth forecast is lower than the forecast presented in 2009 due to revised expectations about near-term growth and intensified competition from ports in Canada and on all-water routes (after completion of the Panama Canal improvements).

In the 2009 marine cargo forecast, containers were projected to reach 10.4 million TEUs in 2030, with average annual growth rate of 5.2 percent between 2010 and 2030. The revised forecast projects that container volumes will increase by:

- 4.1 percent under the moderate growth forecast, reaching 8.3 million TEUs, and,
- 6.1 percent under the high growth forecast, reaching 12.3 million TEUs,

Under the high growth forecast, container volumes are expected to increase at a slower rate than anticipated in the 2009 marine cargo forecast through 2020. However, the volumes expected for Puget Sound and Lower Columbia Oregon ports are comparable to the volumes expected in the prior forecast in 2030 (approximately 10 million TEUs). In the high growth scenario, container traffic is assumed to commence in Coos Bay in 2023 and increase to 2030.

Figure 2-1: Pacific Northwest Container Cargo Trends and Forecast



Source: Individual ports, BST Associates

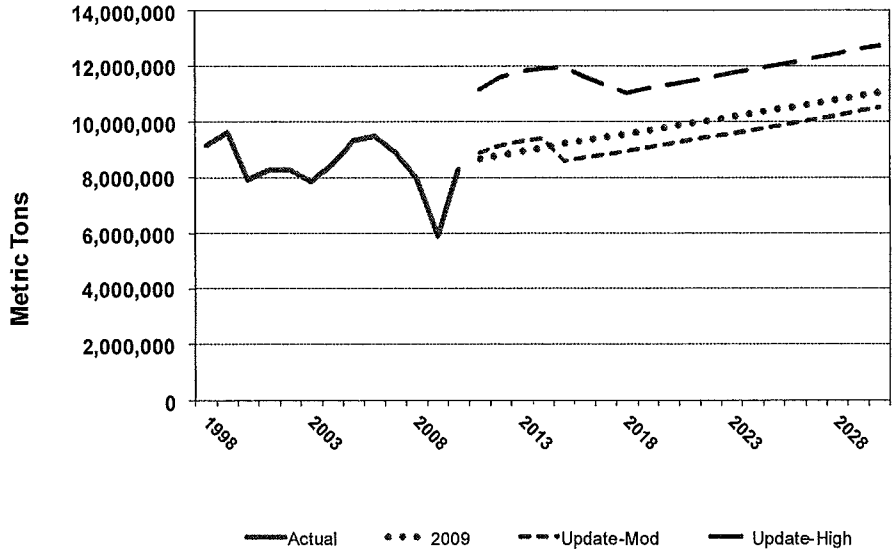
Break and Neobulk Cargoes

The revised forecast for Pacific Northwest breakbulk and neobulk cargoes is presented in Figure 2-2. In the 2009 marine cargo forecast, these commodities were projected to increase by an average annual 1.5 percent, reaching 11.1 million tons in 2030.

Under the moderate-growth scenario, the forecast is slightly higher in the near-term than in the 2009 forecast, mainly due to increased log exports, which are expected to be relatively robust and then decline as the domestic housing industry begins to recover. Under the moderate growth forecast, breakbulk/neobulk cargoes are expected to grow by an average annual rate of 1.2 percent from 2010 to 2030, reaching 10.5 million tons in 2030.

Under the high growth forecast, breakbulk and neobulk volumes are expected to remain at higher levels. Log exports are projected to continue at a more rapid rate through approximately 2018 and then level out. Under the high growth forecast, breakbulk/neobulk cargoes grow by an average annual rate of 2.2 percent from 2010 to 2030, reaching 12.7 million tons 2030.

Figure 2-2: Pacific Northwest Breakbulk and Neobulk Cargo Trends and Forecast



Source: BST Associates

Grain and Related Products

Pacific Northwest grain and oilseed exports have shown impressive growth over the past decade, increasing from approximately 20.1 million metric tons in 2000 to 34.1 million metric tons in 2010, or at an average annual growth rate of 5.4 percent per year.

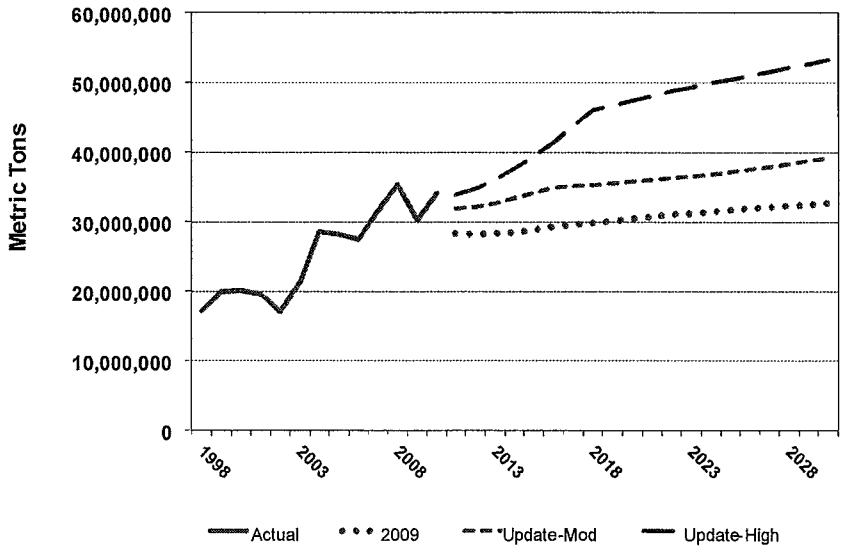
The 2009 forecast projected relatively modest gains in grain traffic, with volumes expected to reach 32.7 million tons in 2030. However, the forecast was based upon the reduced volumes in 2009 and did not anticipate the rapid increase in export volumes that occurred in 2010 (an increase of 4 million tons).

The revised Pacific Northwest forecast for grain and related products is presented in Figure 2-3. The new EGT elevator in Longview and expansion projects planned or under way in Portland, Vancouver, and Kalama will provide most of the capacity needed to absorb the forecast growth. The elevators in Seattle and Tacoma are operating at or near capacity and do not have expansion plans. Increased capacity is also being added at the AGP facility at the Port of Grays Harbor, and the proposed bulk port at Cherry Point north of Bellingham may include a grain facility.

Under the revised forecast, grain and related products are expected to reach:

- 39.1 million tons in 2030 under the moderate growth forecast, with average annual growth of 0.7 percent per year between 2010 and 2030,
- 53.3 million tons in 2030 under the high growth forecast, with average annual growth of 2.2 percent per year between 2010 and 2030.

Figure 2-3: Pacific Northwest Grain & Oilseed Trend and Forecast



Source: BST Associates, US Department of Commerce and WISERTrade data

Dry Bulk Cargoes

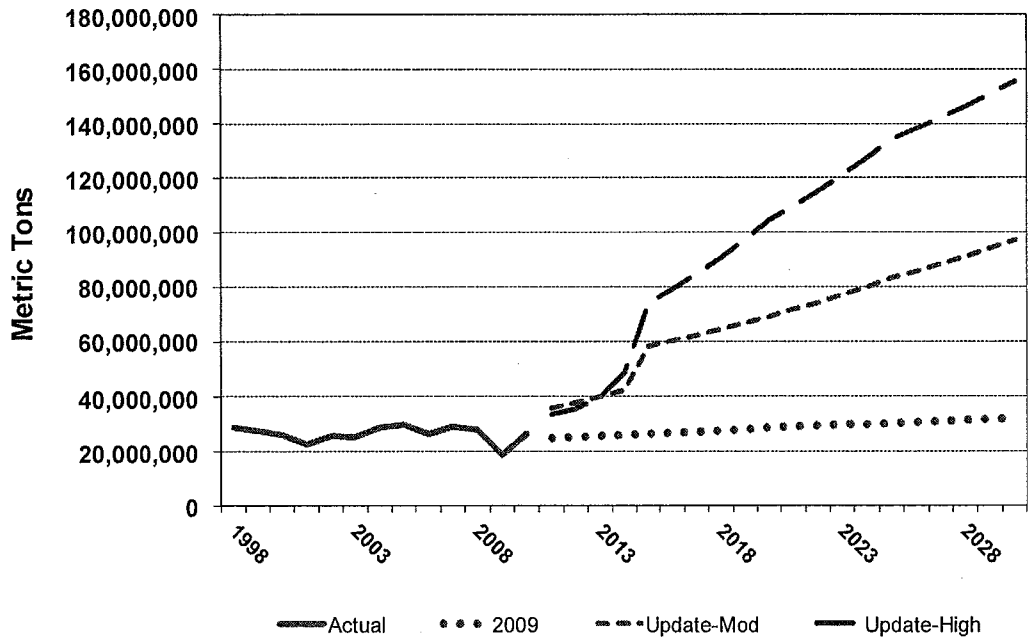
Dry bulk cargoes include a wide variety of products, such as woodchips, petroleum coke, potash, soda ash, gypsum, limestone, metal ores, and others. In addition, there is strong interest in coal, potash and ore exports. The revised Pacific Northwest forecast for dry bulk cargoes is presented in Figure 2-4.

The 2009 forecast projected 1.0 percent annual growth in bulk traffic, with volumes expected to reach 31.8 million tons in 2030. That forecast did not anticipate the rapid increase in dry bulk exports that actually occurred, where volumes jumped from 18.8 million tons in 2009 to 26.2 million tons in 2010.

Under the revised forecast, dry bulk cargoes are expected to reach:

- 97.1 million tons in 2030 under the moderate growth forecast, with average annual growth of 6.8 percent per year between 2010 and 2030,
- 155.3 million tons in 2030 under the high growth forecast, with average annual growth of 9.3 percent per year between 2010 and 2030.

Figure 2-4: Pacific Northwest Dry Bulk Cargo Trends and Forecast



Source: BST Associates

The expected growth in dry bulks is due to exports of potash, ores, coal and other commodities. Although there is uncertainty regarding volumes and export locations, the underlying basis of the export opportunity is sound for several reasons:

- there is strong international demand for these commodities,
- the regional transportation system is in place to move these commodities,
- the U.S. and Canada have substantial supplies of key commodities, and
- U.S. and Canadian exports can be delivered via Pacific Northwest ports at prices below the required delivered price.

Liquid Bulks

The liquid bulk trades in the Pacific Northwest are dominated by petroleum, including crude oil and refined petroleum products. Other important commodities include chemicals, fertilizers and other products.

The revised forecast for Pacific Northwest liquid bulk cargoes is presented in Figure 2-5. Under the revised forecast, liquid bulk cargoes are expected to reach:

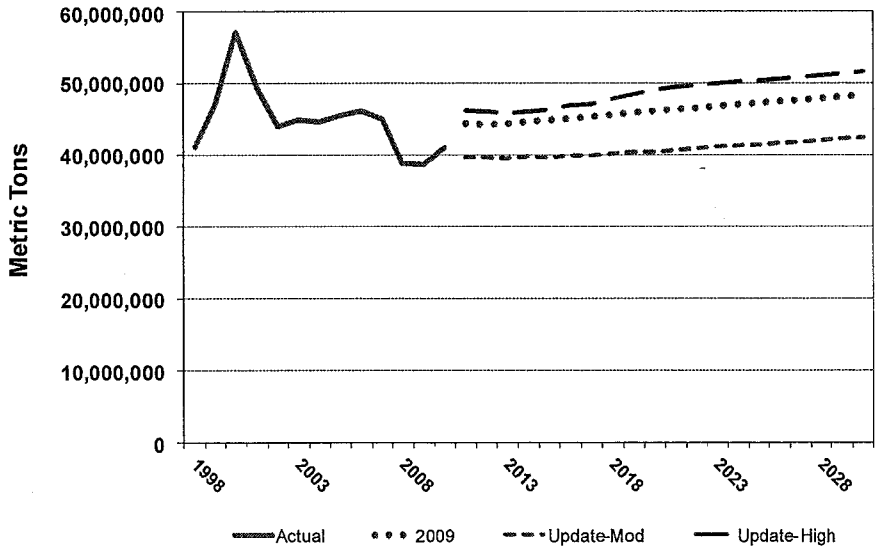
- 42.4 million tons in 2030 under the moderate growth forecast, with average annual growth of 0.2 percent per year between 2010 and 2030,
- 51.6 million tons in 2030 under the high growth forecast, with average annual growth of 1.2 percent per year between 2010 and 2030.

The 2009 forecast projected that liquid bulk traffic would reach 48.4 million tons in 2030, with average annual growth of approximately 0.8 percent between 2010 and 2030.

One significant change that is expected to impact liquid bulks is a shift in the source of crude oil for regional refineries. Under both the 2009 forecast and the current forecast the volume of crude oil from Alaska is expected to decline. The 2009 forecast assumed that the decline in domestic waterborne volumes from Alaska would be made up through a combination of waterborne foreign receipts and imports by pipeline. Under the current forecast the refineries in the region are also expected to begin receiving crude oil by rail from North Dakota, which may impact waterborne volumes. Under the moderate growth scenario, liquid bulk projections are lower to account for this shift.

New opportunities for liquid bulk cargo are also under consideration; most notably LNG imports (or perhaps exports) are being considered in Coos Bay and Astoria. The high growth scenario reflects these opportunities.

Figure 2-5: Pacific Northwest Liquid Bulk Forecast



Source: BST Associates

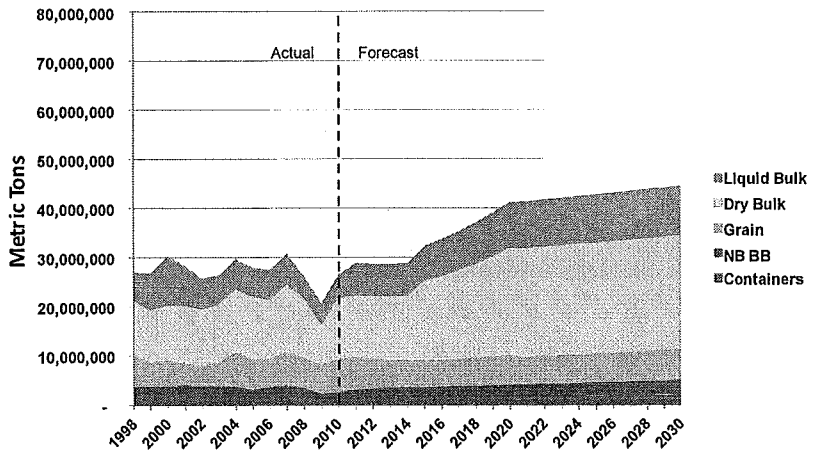
Regional Forecasts by Commodity

This section summarizes expected growth for each sub-region and commodity group.

Lower Columbia Oregon and Oregon Coast

Under the moderate growth forecast, the volume for the Lower Columbia Oregon region is projected to reach 44.6 million tons in 2030, with an average annual growth rate of 2.6 percent between 2010 and 2030. See Figure 2-6.

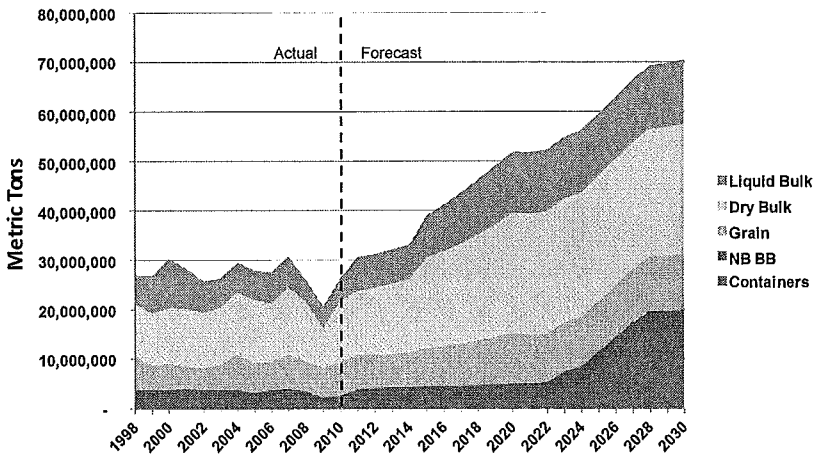
Figure 2-6: Lower Columbia Oregon and Oregon Coast Forecast Moderate Growth Scenario



Source: BST Associates

Under the high growth forecast, the volume for the Lower Columbia Oregon region is projected to reach 70.5 million tons in 2030, with an average annual growth rate of 5.0 percent between 2010 and 2030. See Figure 2-7.

Figure 2-7: Lower Columbia Oregon and Oregon Coast Forecast High Growth Scenario

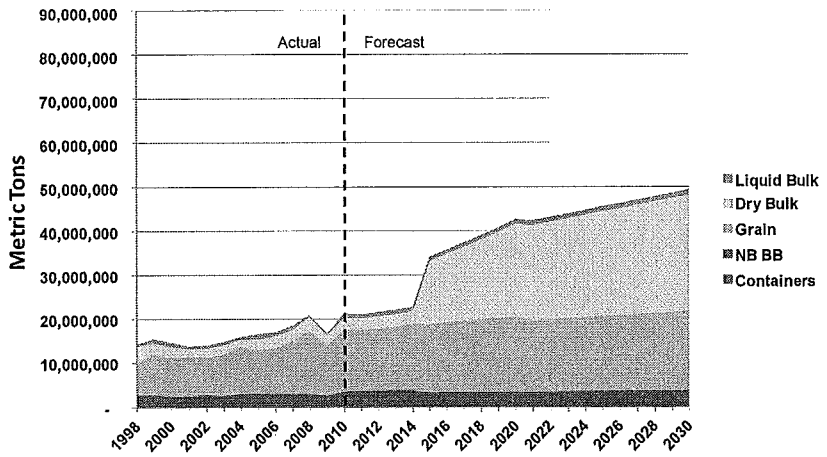


Source: BST Associates

Lower Columbia Washington

Under the moderate growth forecast, the volume for the Lower Columbia Washington region is projected to reach 49.4 million tons in 2030, with an average annual growth rate of 4.3 percent between 2010 and 2030. See Figure 2-8.

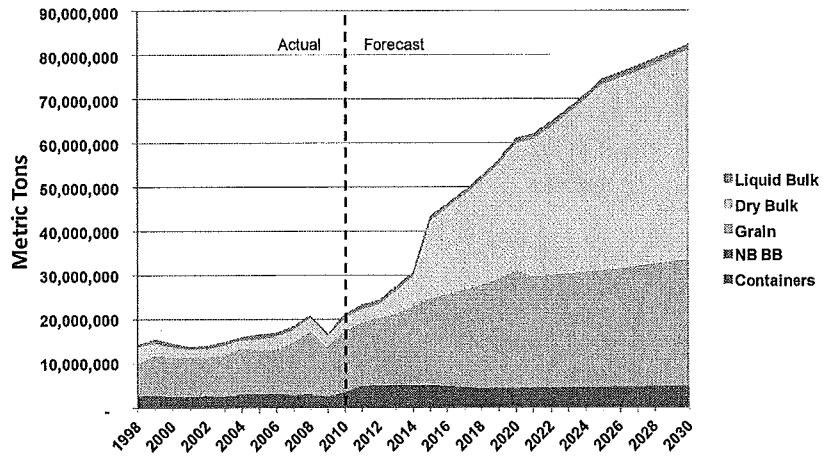
Figure 2-8: Lower Columbia Washington Forecast Moderate Growth Scenario



Source: BST Associates

Under the high growth forecast, the volume for the Lower Columbia Washington region is projected to reach 82.5 million tons in 2030, with an average annual growth rate of 7.0 percent between 2010 and 2030. See Figure 2-9.

Figure 2-9: Lower Columbia Washington Forecast High Growth Scenario

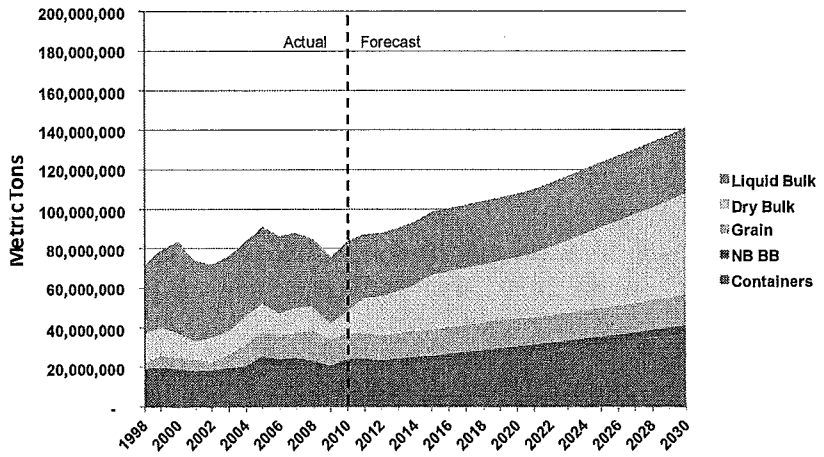


Source: BST Associates

Puget Sound and Washington Coast

Under the moderate growth forecast, the volume for the Puget Sound and Washington Coast region is projected to reach 141.0 million tons in 2030, with an average annual growth rate of 2.6 percent between 2010 and 2030. See Figure 2-10.

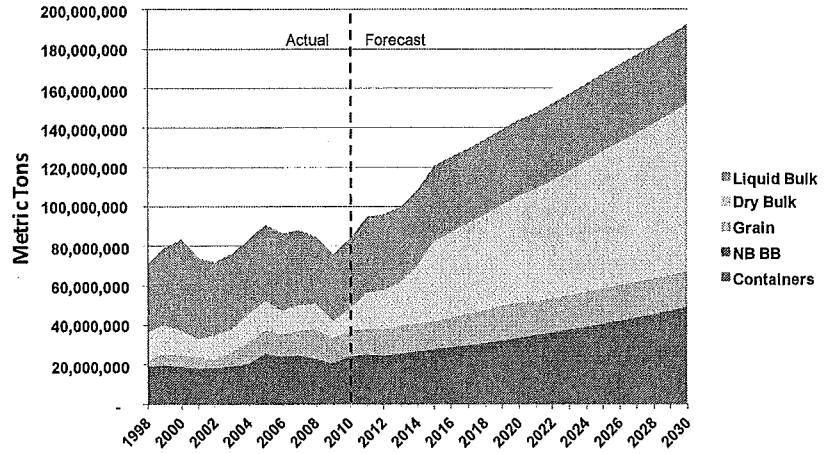
Figure 2-10: Puget Sound and Washington Coast Forecast Moderate Growth Scenario



Source: BST Associates

Under the high growth forecast, the volume for the Puget Sound and Washington Coast region is projected to reach 192.3 million tons in 2030, with an average annual growth rate of 4.2 percent between 2010 and 2030. See Figure 2-11.

Figure 2-11: Puget Sound and Washington Coast Forecast High Growth Scenario



Source: BST Associates

Rail Forecasts by Region

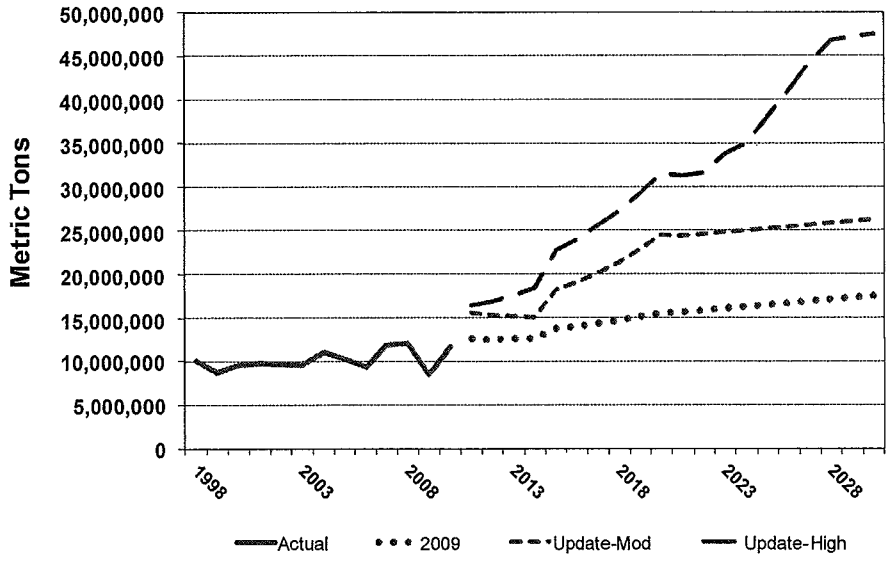
This section summarizes expected growth in rail traffic by sub-region.

Lower Columbia Oregon and Oregon Coast

Rail traffic in the Lower Columbia Oregon and Oregon Coast sub-region is projected to grow as follows:

- A rail traffic projection for Oregon ports was not undertaken in 2009. However, using a similar process as that undertaken for Washington state ports, marine-related rail volumes would have been expected to increase from 11.7 million tons in 2010 to 17.5 million tons in 2030, or at an average annual growth rate of 2.0 percent.
- Under the current moderate growth forecast, marine-related rail traffic in this region is projected to reach 26.3 million tons in 2030, with an average annual growth rate of 4.1 between from 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 47.5 million tons in 2030, with an average annual growth rate of 7.3 percent between 2010 and 2030. (See Figure 2-12)

Figure 2-12: Lower Columbia Oregon and Oregon Coast Rail Traffic Forecast



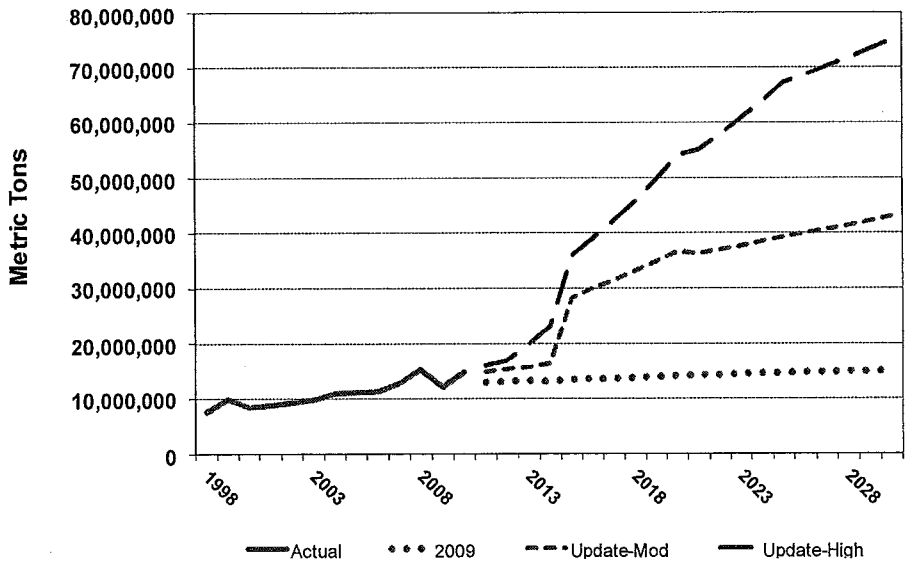
Source: BST Associates

Lower Columbia Washington

Rail traffic in the Lower Columbia Washington sub-region is projected to grow as follows:

- In the 2009 Marine Cargo Forecast, rail volumes were expected to increase modestly from 14.8 million tons in 2010 to 15.1 million tons in 2030, or at an average annual growth rate of less than 0.2 percent.
- Under the moderate growth forecast, marine-related rail traffic in this region is projected to reach 43.0 million tons in 2030, with an average annual growth rate of 5.5 percent between 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 74.9 million tons in 2030, with an average annual growth rate of 8.4 percent between 2010 and 2030. (See Figure 2-13)

Figure 2-13: Lower Columbia Washington Rail Traffic Forecast



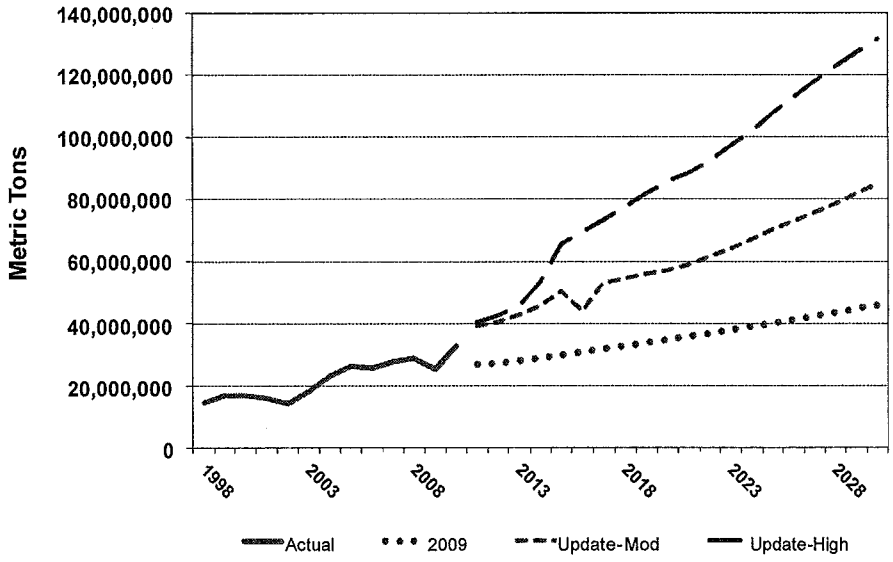
Source: BST Associates

Puget Sound and Washington Coast

Rail traffic in the Puget Sound and Washington Coast sub-region is projected to grow as follows:

- In the 2009 Marine Cargo Forecast, rail volumes were expected to increase from 32.6 million tons in 2010 to 45.9 million tons in 2030, or at an average annual growth rate of 1.7 percent.
- Under the moderate growth forecast, marine-related rail traffic in this region is projected to reach 84.8 million tons in 2030, with an average annual growth rate of 4.9 percent between 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 131.6 million tons in 2030, with an average annual growth rate of 7.2 percent between 2010 and 2030. (See Figure 2-14)

Figure 2-14: Puget Sound and Washington Coast Rail Traffic Forecast



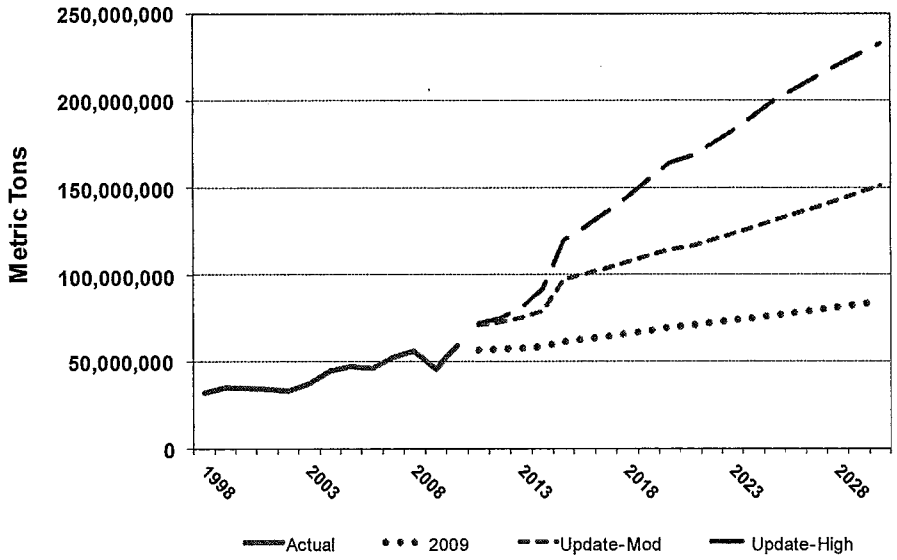
Source: BST Associates

Pacific Northwest Region

Rail traffic in the Pacific Northwest region is projected to grow as follows:

- In the 2009 Marine Cargo Forecast, rail volumes were expected to increase from 59.2 million tons in 2010 to 78.5 million tons in 2030, or at an average annual growth rate of 1.4 percent.
- Under the moderate growth forecast, marine-related rail traffic in this region is projected to reach 151.1 million tons in 2030, with an average annual growth rate of 4.8 percent between 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 232.8 million tons in 2030, with an average annual growth rate of 7.1 percent between 2010 and 2030. (See Figure 2-15)

Figure 2-15: Pacific Northwest Rail Traffic Forecast



Source: BST Associates

Chapter 3
Assessment of Rail Capacity

The following chapter provides an assessment of rail capacity. A primary objective of the rail capacity update is to identify and prioritize capacity improvements that would help mitigate main line capacity conflicts as rail traffic grows. This chapter was prepared by MainLine Management (MLM).

Assumptions

Key assumptions about baseline conditions, train sizes and forecasts for domestic cargoes are summarized in the following section.

Baseline Conditions

Based on discussions with rail service providers, the rail traffic volumes in 2008 were considered representative of volumes occurring in 2010. More importantly, data was available for rail traffic operations for major rail line segments for 2008. As a result, 2008 was used as the baseline condition for 2010.

Train Sizes

Assumptions on train sizes are based upon discussions with rail providers, terminal operators and consultant experience:

- Unit grain sizes are expected to remain at approximately 110 cars.
- Unit coal trains are expected to remain at 115 to 120 cars.
- Export potash trains operate with 170 cars, approximately 8,500 feet in length.
- Container trains of 8,000 to 8,500 feet from the Puget Sound ports will continue to be operated as long as volumes are available and service requirements can be maintained. Otherwise, international container trains are sized to meet import demand and service requirements.
- Manifest trains will continue to operate at a maximum train size of approximately 7,000 feet.

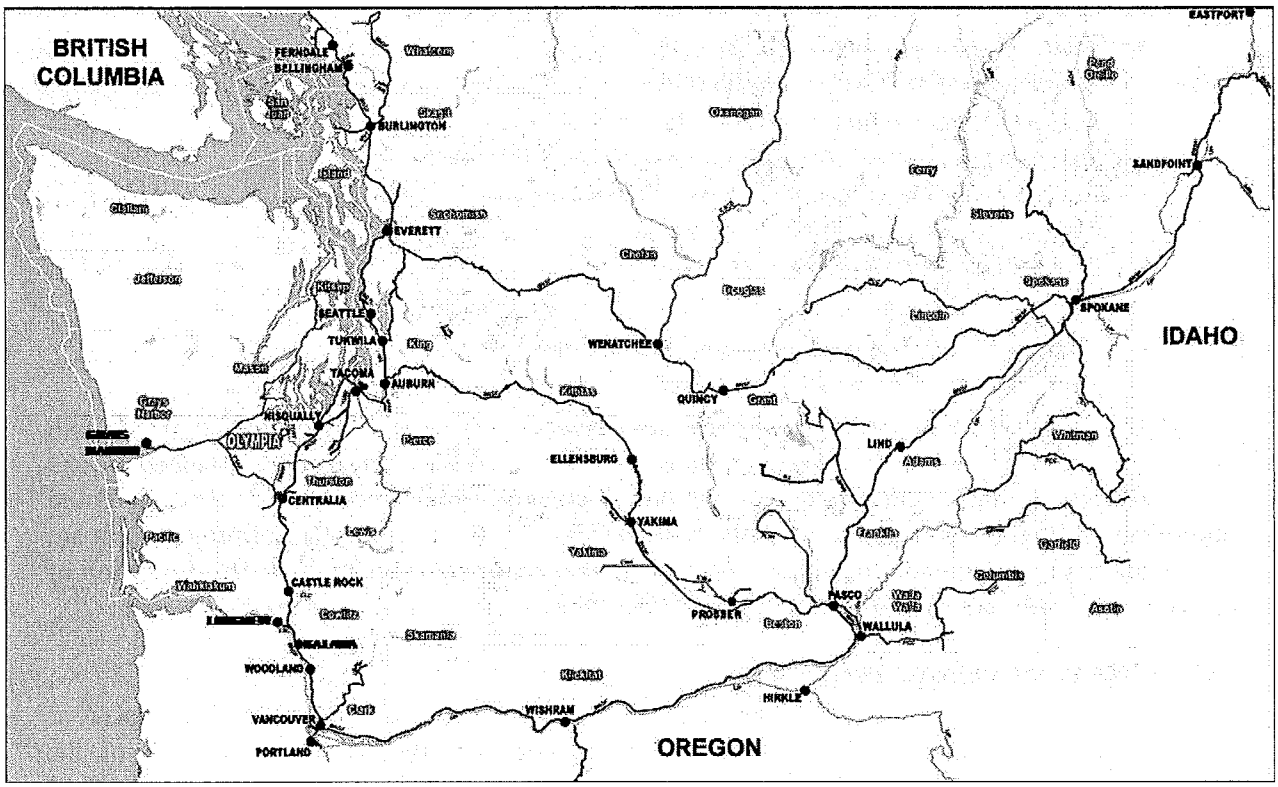
Forecasts

The rail forecasts include a projection of the number of trains under moderate and high growth scenarios under both average and peak operating conditions.

The forecasts are driven by the marine cargo forecast, which is documented in Chapter Two. For other rail cargo (domestic traffic and passengers), the following assumptions were used:

- Forecasts for passenger trains were taken from studies prepared for WSDOT and ODOT.
- Merchandise trains are projected to grow at 2 percent annually.
- Domestic intermodal trains are projected to grow at 3.5 percent annually.

Figure 3-1: Map of Rail System



Absorption

Currently, many of the existing trains in the region do not run at their maximum potential length. It is assumed that traffic growth will usually be absorbed by existing trains before new trains are deployed. However, this assumption recognizes that service requirements sometimes necessitate new train starts even though existing trains are not running at maximum length.

Capacity by Mainline Segment

This section presents an assessment of the projected demand-capacity relationships at the key line segments over the study forecast period (through 2030). The line segments include:

- Pasco, WA to Vancouver, WA (BNSF)
- Hinkle OR to Portland, OR (UP)
- Pasco, WA to Spokane, WA (BNSF)
- Spokane, WA to Sand Point, ID (BNSF)
- Hinkle, OR to Eastgate, ID (UP)
- Vancouver, WA to Kalama/Longview, WA (Joint line)
- Kalama/Longview, WA to Tacoma, WA (Joint line)
- Tacoma, WA to Seattle, WA (Joint line)
- Seattle, WA to Everett, WA (BNSF)
- Everett, WA to Vancouver, BC (BNSF)
- Everett, WA to Spokane, WA via Stevens Pass (BNSF)
- Auburn, WA to Pasco, WA via Stampede Pass (BNSF)

In each of the following rail segment analyses, graphics are presented to illustrate the growth in rail traffic and growth in rail segment capacity. The increases in capacity indicated by the graphs reflect: 1) improvements that are currently planned or under way, and 2) other potential improvements that the consultants consider to be feasible. With the exception of projects that are contractually obligated under passenger rail plans, other improvements are up to the discretion of the individual railroads, and would likely be added only as needed to meet market demand.

Pasco, WA to Vancouver, WA (BNSF)

BNSF has undertaken several improvements along the section of mainline from Pasco to Vancouver. All meet/pass sidings between Pasco and Wishram (near the middle of the Columbia Gorge) are at least 8,000 feet in length. Between Wishram and Vancouver, six of 11 existing sidings are 8,000 feet in length or longer. BNSF has a priority plan to extend sidings that are not currently 8,000 feet in length, as demand requires.

Figures 3-2 and 3-3 illustrate the consultants' opinion of the capacity of this line segment as well as the projected train volumes under the moderate and high growth scenarios. The analysis implies that:

- Pasco to Wishram
  - Under the high growth scenario, capacity will be reached by 2020 (peak daily traffic) and 2025 (average daily traffic).
  - Under the moderate growth scenario, capacity will be reached by 2025 (peak daily traffic) and 2030 (average daily traffic).

- Wishram to Vancouver:
  - Under the high growth scenario, capacity will be reached by 2024 (peak daily traffic) and 2025 (average daily traffic).
  - Under the moderate growth scenario, capacity will be reached by 2030 (peak daily traffic).

However, the capacity on this route can be enhanced beyond previous study assumptions through a combination of siding extensions and revised operating protocols, as discussed below.

The Pasco to Vancouver route hosts Amtrak trains, and is subject to implementation of Positive Train Control (PTC), as mandated by Congress. Industry analysis of the implementation of PTC indicates that it may negatively impact capacity, especially on line segments in which "fleeting"[1] is used. This is because PTC requires a larger safety zone for following trains than is required under the existing Centralized Traffic Control (CTC).

BNSF is evaluating a plan that would change the traffic flows and volumes on this segment over time. Under this plan, full export bulk trains would move westbound through the Columbia River Gorge. Empty bulk trains from Portland and Vancouver would move eastbound through the Gorge, but empty export bulk trains from Kalama north (i.e., Longview, Grays Harbor, Tacoma, Seattle, etc.) would be routed to Auburn and then over Stampede Pass. Most of the other train types that currently use the Gorge would continue to do so.

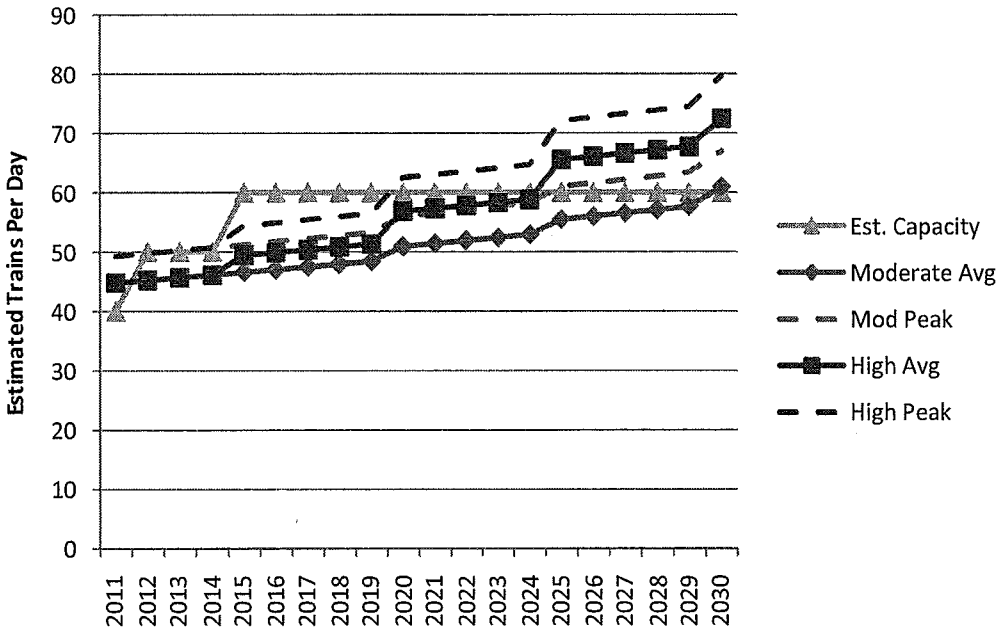
If implemented, this plan would create the opportunity for significant fleeting of westbound trains through the Columbia River Gorge.

One area of concern is the single track BNSF rail bridge over the Columbia River at Pasco. The estimated capacity in the segment analysis assumes that BNSF will be able to operate a sufficient number of trains over the bridge to meet the projected long-term demand. Congestion, however, could be expected to be a problem in near the end of the forecast period.

Two potential increases in capacity are illustrated in Figures 3-2 and 3-3. These include adoption of the new operating plan, connecting individual sidings into sections of double-track main line, and the addition of siding extensions.

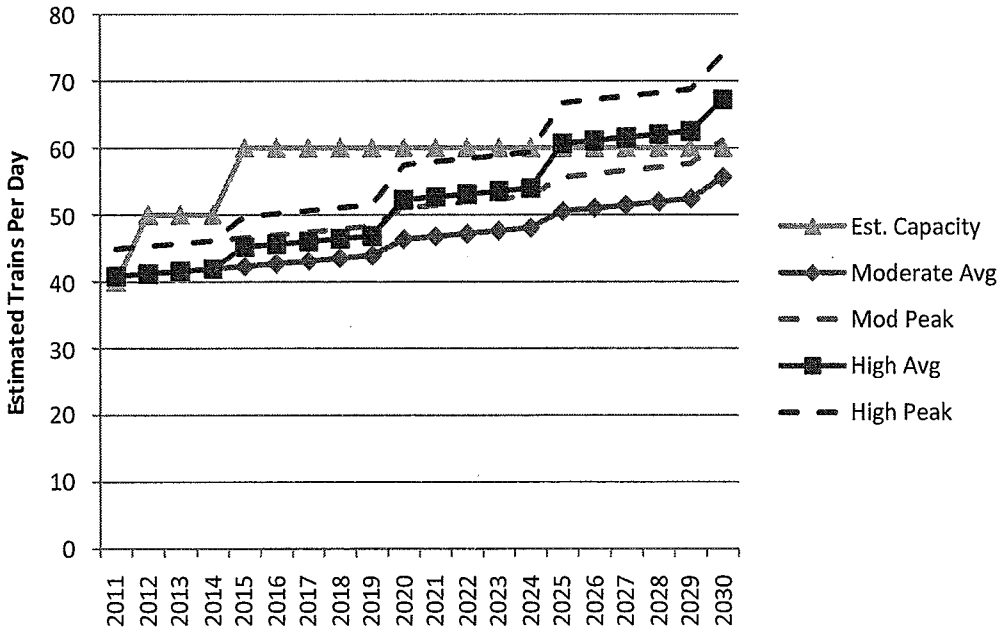
[1] "Fleeting" is a term used to describe train movements in which a series of trains are operated in one direction, and then in the other direction. This minimizes meet/pass requirements and can increase the practical capacity of a line segment.

Figure 3-2: Rail Corridor Capacity – Pasco to Wishram (BNSF)



Source: MainLine Management

Figure 3-3: Rail Corridor Capacity – Wishram to Vancouver BNSF



Source: MainLine Management

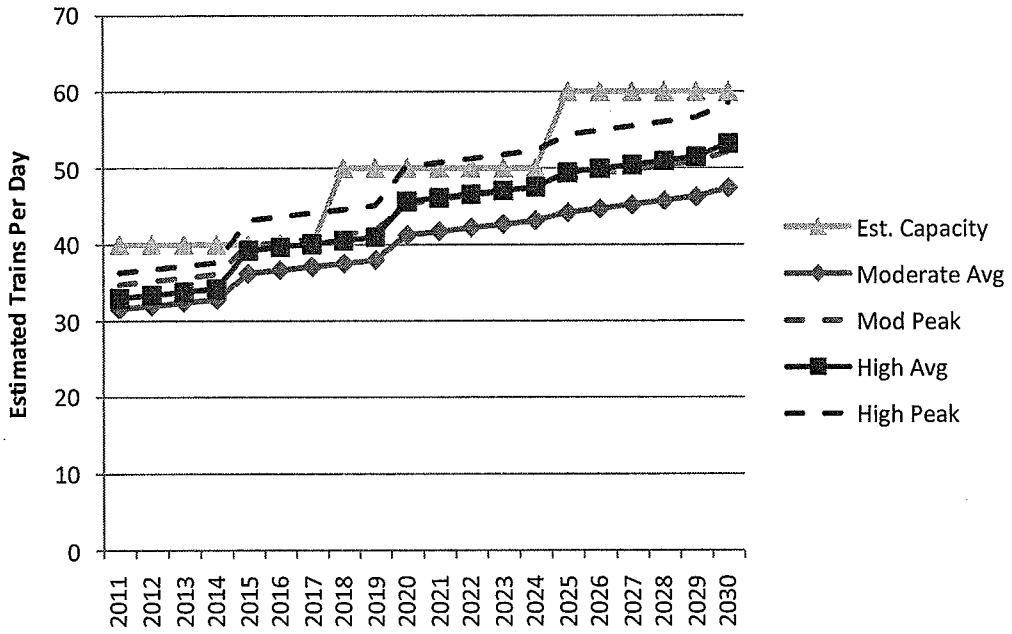
Hinkle, OR to Portland, OR (UP)

The UP main line runs along the Oregon side of the Columbia River between Hinkle and Portland, and is similar to the BNSF line on the Washington side of the Columbia River between Vancouver and Pasco.

Options for increasing capacity on this segment are similar to those for the BNSF. These include fleeting of trains, along with siding expansion where constructable.

As Figure 3-4 demonstrates, no capacity constraints are expected under either the moderate or high growth scenarios. The capacity improvements illustated in the graph are based on connecting individual sidings into sections of double-track main line, and the addition of siding extensions, and possible fleeting of trains.

Figure 3-4: Rail Corridor Capacity, Hinkle to Portland (UP)



Source: MainLine Management

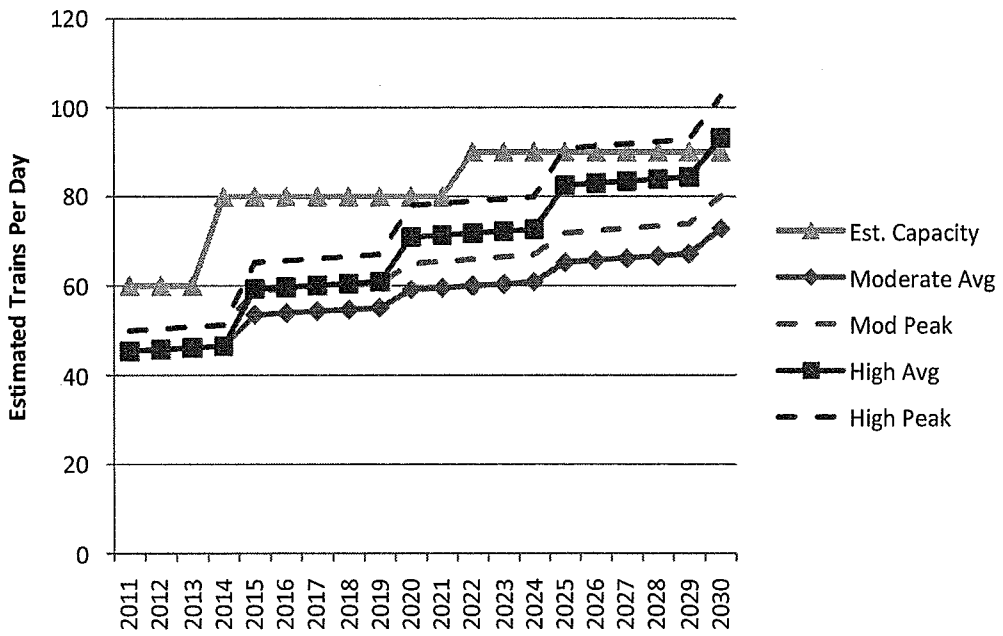
Pasco, WA to Spokane, WA (BNSF)

Between Pasco and Spokane all sidings are 8,000 feet in length or longer and capacity exists to operate several more trains in each direction on the segment. As a result of the projected growth in export traffic, BNSF is planning for capacity expansion on this segment. In the consultant's opinion, such an expansion would likely involve combining key sidings into long sections of double-track and adding high-speed crossovers to increase operational flexibility.

As shown in Figure 3-5, the analysis implies that the Pasco to Spokane segment will reach capacity by 2025 (peak) and 2030 (average) under the high growth scenario, but there are no capacity constraints under the moderate growth scenario.

Capacity increases illustrated in the graph result from connecting individual sidings into sections of double-track main line.

Figure 3-5: Rail Corridor Capacity – Pasco to Spokane (BNSF)



Source: MainLine Management

Spokane, WA to Sand Point, ID (BNSF)

There are two main line segments between Spokane, Washington and Sand Point, Idaho, one operated by the BNSF and one by the UP.

Most of the BNSF corridor features multiple main tracks, but there are short stretches of single track between Irvin and Otis Orchard, WA (3.1 miles), Rathdrum and Athol, ID (11.1 miles with a siding at Ramsey) and between Algoma and Cocolalla, ID (2 miles). It is likely that BNSF can increase the capacity of this segment to meet demand, primarily by double-tracking the remaining single track segments between Spokane and Sandpoint, although some of those sections present certain difficulties and enhanced costs.

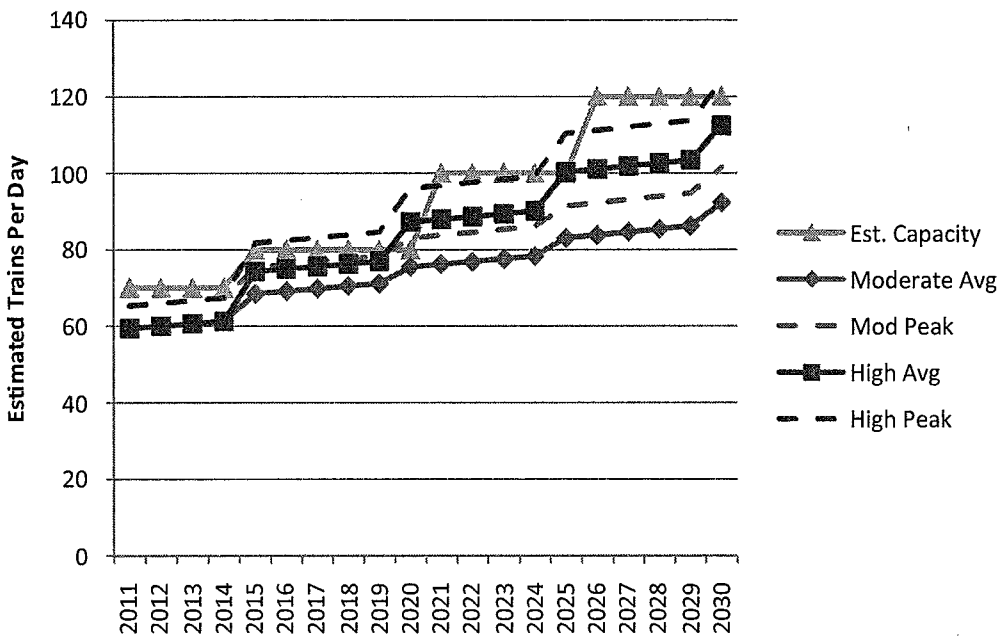
A capacity concern that may materialize over the long-term for BNSF is the single track bridge across Lake Pend Oreille. The train volumes indicated in the 2030 projections may require fleeting of traffic across the bridge. In addition, fleeting of trains may create the need for additional storage track on either side of the bridge to stage trains before crossing.

As shown in Figure 3-6, the analysis implies that the Sandpoint to Spokane segment has sufficient capacity under average conditions, but may be constrained under peak conditions. Under the moderate growth scenario, there are no sustained capacity constraints.

Capacity increases illustrated in the graph result from double-tracking three single-track segments, adding a third main line in key locations, and potentially adding staging tracks at either end of the Lake Pend Oreille Bridge.

The UP segment between Spokane and Sand Point is included in the next section of this chapter, Hinkle, OR to Eastgate, ID.

Figure 3-6: Rail Corridor Capacity – Spokane to Sand Point (BNSF)



Source: MainLine Management

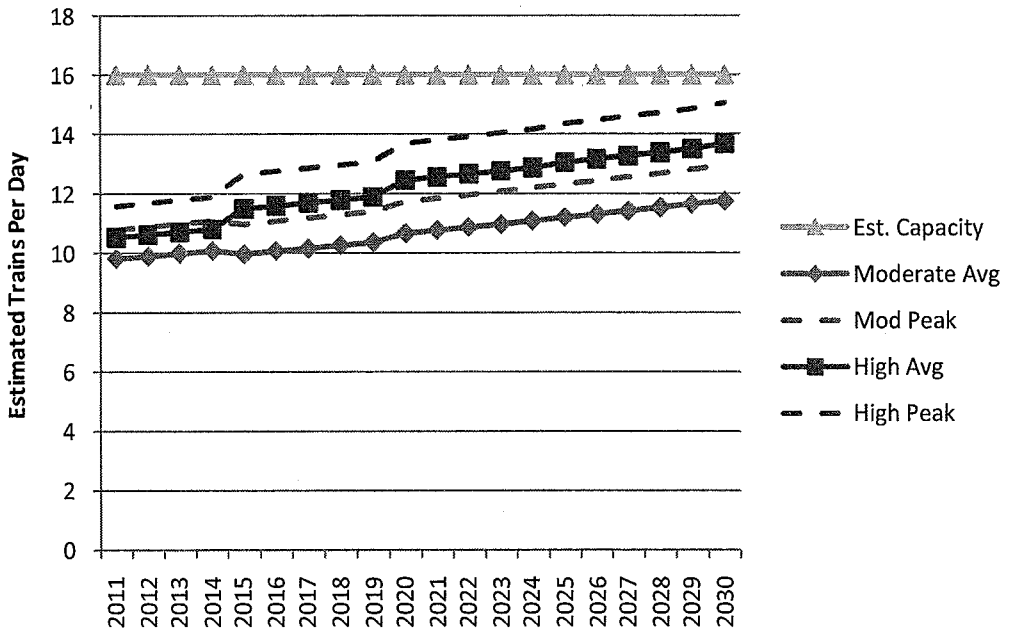
Hinkle, OR to Eastgate, ID (UP)

This segment of mainline is a key route for Canadian cargo exported through Pacific Northwest ports, such as potash, which originate on the Canadian Pacific Railway and are interchanged with the Union Pacific at Eastport, Idaho.

Much of this segment consists of a single track operation operated by Track Warrant Control, which is non-signalized. The distance between meet/pass sidings limits capacity, but current available capacity is sufficient to meet projected traffic volumes under both growth scenarios, as shown in Figure 3-7.

The UP may be able to increase capacity by constructing additional meet/pass sidings if warranted by growth in cargo traffic. However, these potential increases in capacity are not included in Figure 3-7.

Figure 3-7: Rail Corridor Capacity, Hinkle to Eastgate



Source: MainLine Management

Vancouver, WA to Tacoma, WA

Plans to increase volumes of intercity passenger rail have driven the infrastructure expansion proposals for this segment. The analysis of this segment is divided into two sections:

- Vancouver to Longview/Kelso, and
- Longview/Kelso to Tacoma.

The most significant capacity usage on this segment occurs in the Kalama/Longview area due to grain trains leaving/entering the main lines at Kalama and to yard operations at Longview Junction. In both cases, considerable main line capacity is consumed by trains slowly entering/departing the main lines to/from export grain facilities or while they are stopped to work in yard areas.

With the projected increase in loaded and empty bulk trains over this segment, it is possible that BNSF will consider fleeting loaded bulk export trains through the Gorge and running empty bulk trains eastbound over Stampede pass, as discussed above in the Vancouver to Pasco section. Empty and full export bulk trains on the UP system would continue to operate through the Gorge in both directions.

One potential capacity expansion project that may be revisited is the construction of a unit train staging/storage yard near Woodland. At one time this improvement was on the list of passenger-related improvements under consideration by WSDOT, but was cut when that plan was downsized. With the number of export bulk trains projected for this segment, an area for staging loaded bulk trains near Kalama may prove beneficial from a rail operating and service perspective.

Another potential project is to add a second single-track rail bridge to span the Cowlitz River or to replace the existing single-track Cowlitz River Bridge with a new double-track bridge. This bridge is located on the branch line that connects marine terminals at the Port of Longview as well as other industrial customers to the I-5 Corridor main line. The recent Port of Longview Master Plan demonstrated the need to for this project, and it was also identified in the SR432 Highway and Rail Improvement Project.

Passenger-related capacity improvements in the updated WSDOT *Amtrak Cascades Mid-Range Plan* focus on the Kalama/Longview area, and include adding a third main track that bypasses existing congestion points.

The following sections discuss the Vancouver to Tacoma segment in two parts, Vancouver WA to Kalama/Longview and Kalama/Longview to Tacoma.

Vancouver, WA to Kalama/Longview, WA (Joint Line)

Much of the congestion on this segment occurs at Vancouver, and between Vancouver and Kalama/Longview. At Vancouver, through traffic on intersecting main line routes compete for line capacity with operations at the Vancouver Yard, and with trains entering and leaving the Port of Vancouver. Additional passenger train operations are likely to aggravate these conflicts unless sufficient mitigation is constructed to improve efficiency for all train operations in the Vancouver Terminal area.

Between Vancouver and Longview numerous trains arrive and depart the main line to access marine terminals and other customers in the Kalama/Longview area. These trains arriving and departing the mainline move at slow speeds, aggravating congestion issues on this segment.

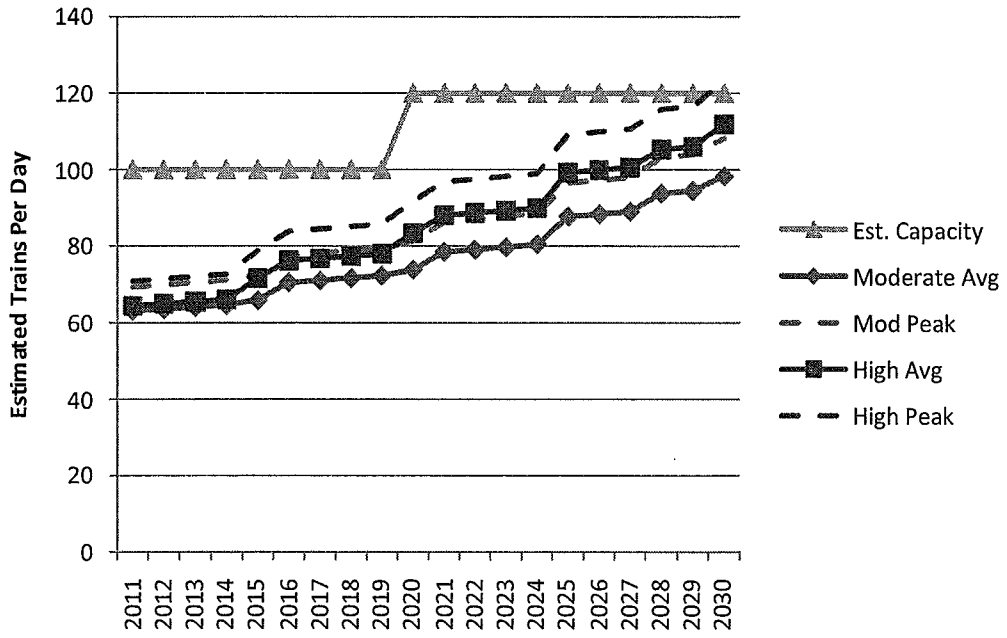
WSDOT's *Amtrak Cascades Mid Range Plan* (Options 3 and 4)[2] will continue to provide the rail capacity needed over time to ensure that intercity passenger growth can occur in conjunction with projected freight growth. The directional operation of loaded and empty bulk trains by BNSF, coupled with the planned passenger rail improvements, should reduce the impact of growing freight and passenger traffic.

In the consultants' opinion, the construction of a third main track through the Kalama/Longview area will be needed in the long-term, as well as construction of a bulk train staging and storage facility near Woodland.

As shown in Figure 3-8, the analysis implies that there is no capacity problem for the section of mainline from Vancouver to Longview under the moderate growth scenario. Under the high growth scenario, capacity is reached by 2030 during peak operations.

Capacity improvements reflected in this graph include completion of the Vancouver Bypass, the new Port of Vancouver Access Route, and the Option 3 passenger improvements (including construction of the third main track between Kalama and Kelso). Other improvements may include completion of third main track between Martin's Bluff and Rocky Point, and expansion of the Cowlitz River Bridge at Longview. In addition, construction of improvements at North Portland Junction will compliment these improvements, even though the junction is not located within this segment.

Figure 3-8: Rail Corridor Capacity – Vancouver (WA) to Kalama/Longview With Passenger Improvements



Source: MainLine Management

[2] For a full list of projects, please access the Amtrak *Cascades* Mid-Range Plan at http://www.wsdot.wa.gov/NR/rdonlyres/83B17378-CDC8-4D57-AA60-4CD64BAF6D94/0/AmtrakCascadesMidRangePlan.pdf

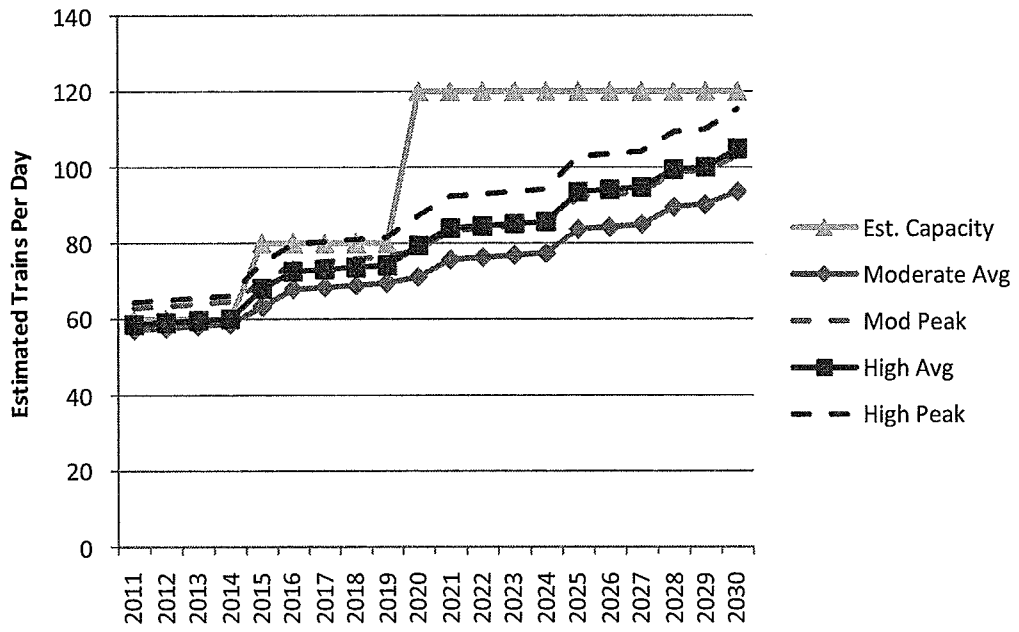
Kalama/Longview, WA to Tacoma, WA (Joint Line)

Two single track tunnels near Tacoma (Nelson-Bennett Tunnel and Ruston Tunnel) are the primary capacity constraints between Longview/Kalama and Tacoma. However, the Point Defiance Bypass, which is planned to be completed by 2017, will alleviate mainline capacity constraints by shifting passenger trains from the existing main line to an alternate route between Nisqually and Reservation Interlocking in Tacoma. In addition, planned CTC high-speed crossovers will provide additional flexibility for train operations across this segment.

Capacity improvements illustrated in Figure 3-9 include completion of the Point Defiance Bypass and the addition of high-speed crossovers. These two projects will allow the Longview/Kalama to Tacoma segment to operate at or below capacity over the 20-year forecast period under both the moderate and high growth scenarios.

In addition, the Blakeslee Junction rail project would allow faster access and egress between the mainline and the Puget Sound and Pacific Railroad branch at Centralia. This project was originally considered for WSDOT's Amtrak *Cascades* list of passenger-related capacity improvements. Completion of this project would also accommodate additional cargo opportunities at the Port of Grays Harbor.

Figure 3-9: Rail Corridor Capacity –Kalama/Longview to Tacoma With Point Defiance Bypass



Source: Mainline Management

Tacoma, WA to Seattle, WA (Joint Line)

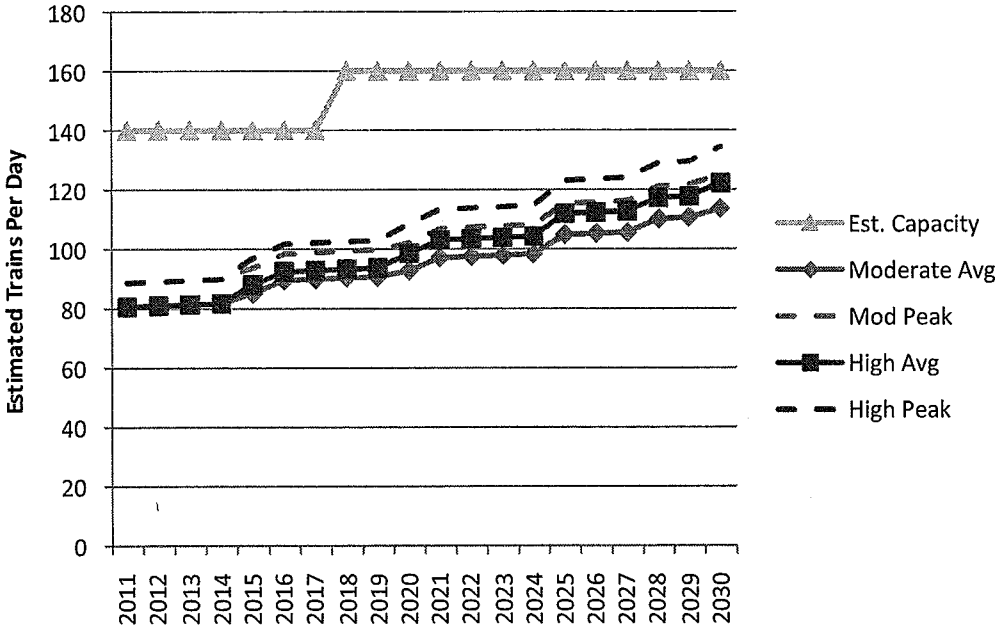
According to Sound Transit there are no conflicts between passenger and freight operations between Tacoma and Seattle, and the level of service provided by BNSF is very good. The Point Defiance Bypass project will further improve freight and traffic flows through Tacoma, and between Tacoma and Seattle.

Improvements at King Street Station in Seattle have improved the efficiency of freight and passenger operations in the Seattle area. BNSF is constructing a third main track approximately five miles long between Kent and Auburn. Approximately half of this track is on either side of the wye that accesses the Stampede Pass line. Presumably the purpose of this additional main line is to facilitate efficient freight operations between the existing main lines, Auburn Yard, and Stampede Pass. Given the potential to route empty bulk trains over Stampede pass, this additional track is needed to minimize the impact to current and projected commuter and intercity passenger trains.

The capacity of this segment was analyzed in two parts - Tacoma to Auburn and Auburn to King Street Station. The primary reason for splitting the analysis this way is that the traffic mix is likely to be different on each part if the BNSF routes empty bulk trains over Stampede Pass; the mix of loaded and empty bulk trains between Tacoma and Auburn would be slightly different than the mix north of Auburn.

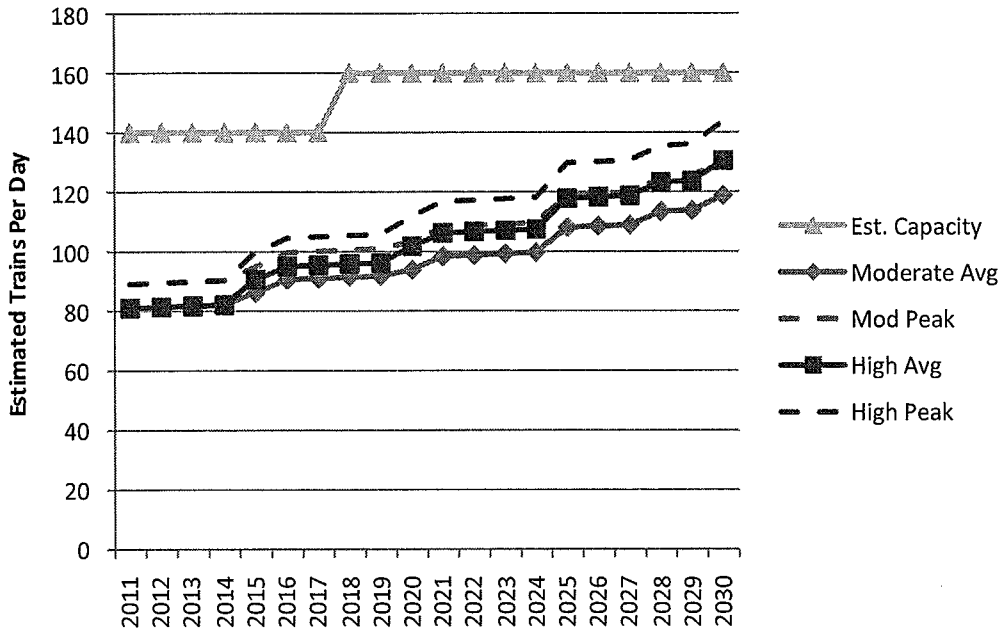
As shown in Figures 3-10 and 3-11, there are no capacity constraints under high-growth or moderate-growth scenarios.

Figure 3-10: Rail Corridor Capacity – Tacoma to Seattle Joint Line Tacoma to Auburn



Source: MainLine Management

Figure 3-11: Rail Corridor Capacity – Tacoma to Seattle Joint Line Auburn to Seattle



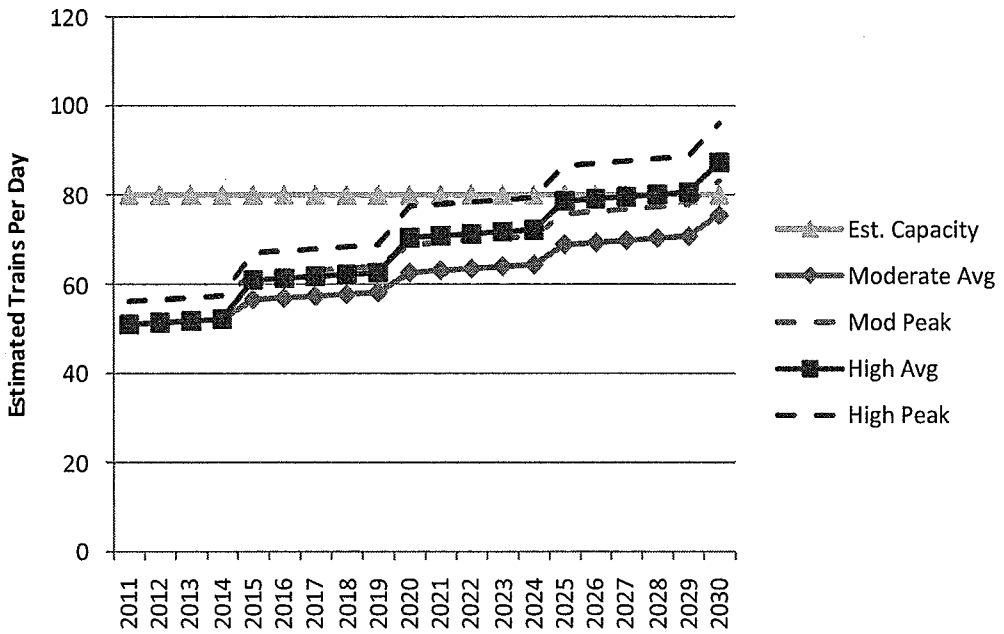
Source: MainLine Management

Seattle, WA to Everett, WA (BNSF)

Capacity expansion on this line segment is driven by passenger rail service requirements, with no freight-related improvements currently planned. Under the agreement between Sound Transit and BNSF for commuter train operations over this segment, Sound Transit purchased "slots", which guaranteed specific passenger volumes and service levels. Under this agreement BNSF must ensure that these passenger service requirements are met, regardless of freight demand.

As shown in Figure 3-12, however, growth in export bulk trains destined north of Everett could result in capacity constraints, starting between 2020 and 2023 under the high growth scenario. That may result in BNSF proactively constructing additional capacity improvements to meet the requirements of the slot purchase arrangement with Sound Transit. Under the moderate growth scenario, there are no capacity constraints until 2030 (under peak operations).

Figure 3-12: Rail Corridor Capacity – King Street Station to Everett



Source: MainLine Management

Everett, WA to Vancouver, BC (BNSF)

Capacity improvements currently planned for the Everett to Vancouver mainline segment are driven largely by passenger service. Three of the projects that are currently being designed or constructed include:

- Siding upgrade and extension at Stanwood,
- Siding upgrade and extension at Mount Vernon,
- Construction of a new siding at the Swift Customs Facility.

The siding extensions and upgrades at Stanwood and Mount Vernon would allow more efficient meet/pass operations involving freight and passenger operations. The new siding at Swift (Blaine) would allow additional capacity for freight train customs inspections while keeping the main line open for other train operations, including passenger.

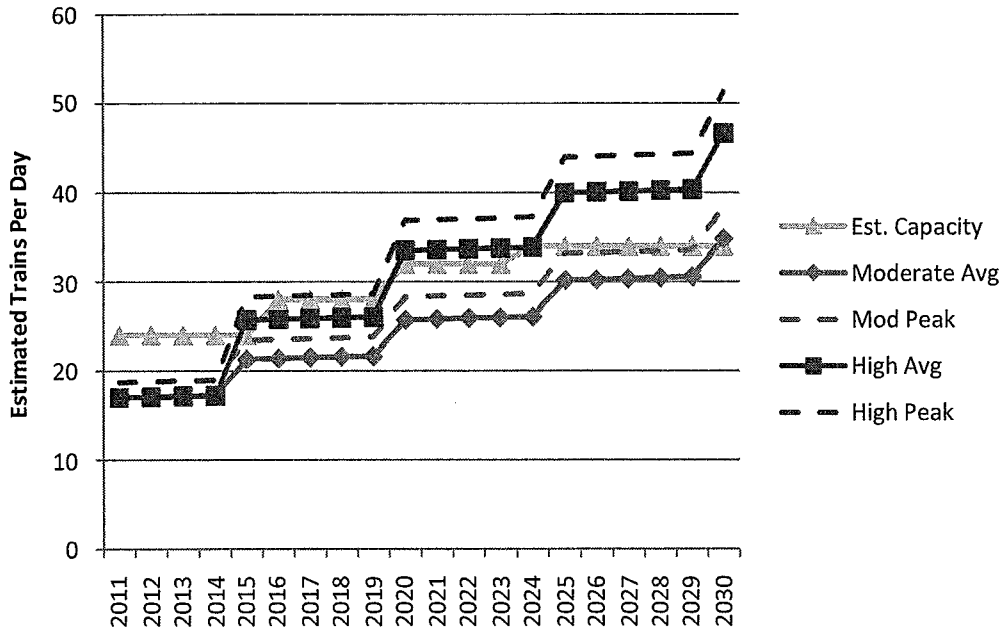
In addition to these improvements, BNSF recently constructed a 10,000 foot siding north of the border at Colebrook, BC. Colebrook is the location where the BNSF ties into the rail line that accesses the Deltaport and Westshore port facilities. Prior to construction of this siding BNSF had no meet/pass locations between the border and Brownsville, BC.

As shown in Figure 3-13, growth in export bulk commodities may lead to sustained capacity constraints along this segment. These constraints are projected to start between 2020 and 2025 under the high growth scenario, and between 2029 and 2030 under the moderate growth scenario.

The increases in sustainable capacity illustrated in Figure 3-13 reflect the consultants' view of potential improvements. Given the track profile of this segment, these potential improvements include the addition of new sidings and the extension of existing sidings.

In addition to the physical improvements, additional capacity improvements on this segment may be possible through the use of fleeting. Although this analysis does not assume a change in operating protocols, growth in the number of bulk trains may necessitate the use of fleeting operations. At lower traffic growth levels, targeted siding expansions would likely be able to accommodate traffic growth over the 20-year horizon.

Figure 3-13: Rail Corridor Capacity – Everett to Vancouver (BC)



Source: MainLine Management

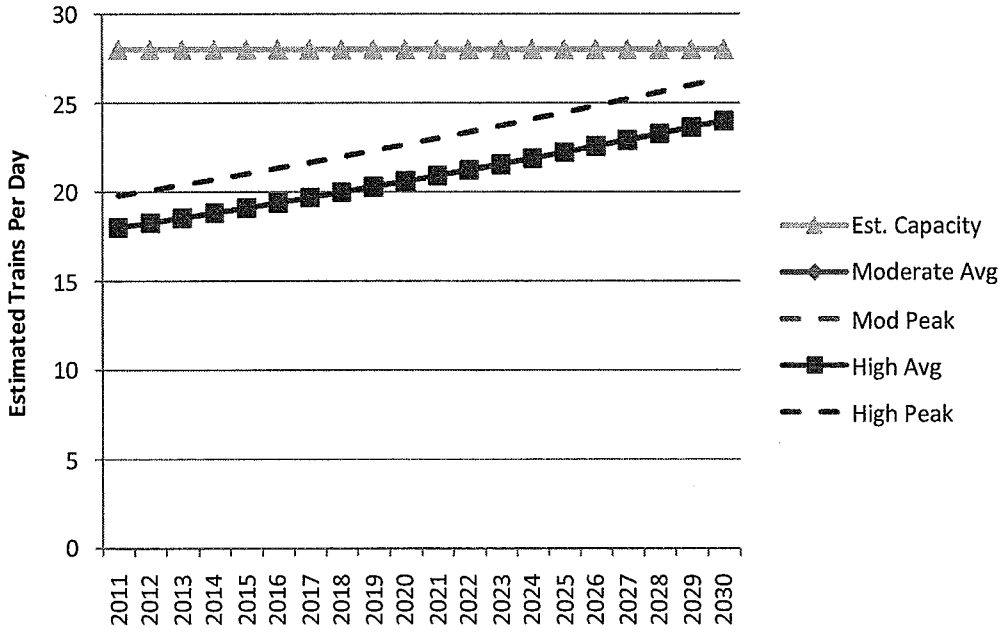
Everett, WA to Spokane, WA via Stevens Pass (BNSF)

The primary capacity constraints on this segment are the approaches to the Cascade Tunnel under Stevens Pass and the throughput of the tunnel. The approaches include heavy curvature and steep grades (i.e. 2.2 percent), which require slow operation. Additionally, the tunnel restricts capacity because the air in the tunnel must be flushed between trains. Flushing takes approximately 40 minutes following eastbound trains and 20 minutes following westbound trains. The maximum sustained capacity through the tunnel is estimated at approximately 28 trains per day, with surge capacity of 30 to 32 trains per day.

BNSF currently operates trains of up to 8,000 feet in length via Stevens Pass so long as they do not exceed 5,500 tons without Distributive Power (DPU)[3]. With DPU, trains via Stevens Pass can be increased to 7,000 tons, resulting in fewer trains. BNSF has indicated that Stevens Pass capacity will be reserved for intermodal traffic and Amtrak.

As shown in Figure 3-14, capacity of this line segment will likely not be exceeded over a 20-year horizon under the high growth scenario.

Figure 3-14: Rail Corridor Capacity – Everett to Spokane via Steven Pass (BNSF)



Source: MainLine Management

[3] With distributive power (DPU), remotely controlled helper engines are placed in the middle or at the end of trains.

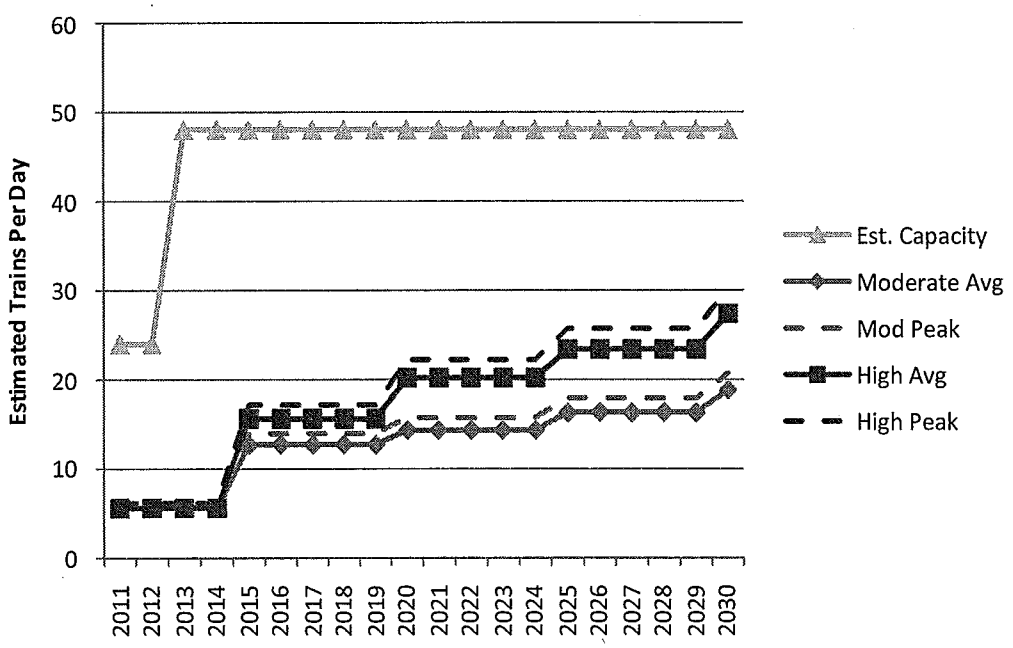
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)

As discussed in the Pasco to Vancouver segment analysis section, BNSF has indicated the potential for Stampede Pass being utilized as a "directional" route for empty bulk trains. The trains using the pass would be those generated on the BNSF system from Kalama north, thereby relieving the BNSF Columbia Gorge route of eastbound empty bulk trains, except for those originating in Portland and Vancouver. It is unclear when this routing protocol would occur, but it will likely be driven by route congestion on the Columbia Gorge segment. If the route does become an eastbound routing for empty BNSF bulk trains, it is also possible that BNSF would utilize the route for eastbound merchandise trains that originate from Everett, Seattle and Tacoma and are destined for the Pasco processing yard.

At some point, increased train operations will likely require upgrading the signal system on the Stampede Pass line to full CTC. The route currently has limited CTC but is predominantly dispatched utilizing Track Warrant Control (TWC). However, if the preponderance of traffic utilizing the route is eastbound only, TWC would likely be sufficient for some time into the future.

As Figure 3-15 demonstrates, use of Stampede Pass as described creates significant additional capacity. The increase in capacity reflects that, under the new operating protocol, the majority of trains using Stampede Pass will move eastbound.

Figure 3-15: Rail Corridor Capacity – Auburn to Spokane Current Operations



Source: MainLine Management

Project Priorities

A key element of this analysis was the development of a prioritized list of system improvements that would allow the capacity of the regional rail system to match increasing demand.

These projects generally fall into two categories, mainline improvements and port access improvements. However, the projects labeled as port access improvements also provide benefits to the mainline system. Reducing the amount of time that it takes for trains to move between the port terminals and the mainline reduces delays on the mainline system, and thereby increases capacity.

Four projects recommended in the previous report are currently in the construction or detailed planning phase, with completion for each ranging from 2012 through the 2017/2018 timeframe. Completion of these four projects will provide a solid foundation for passenger and freight capacity in the Pacific Northwest. Three of these projects are primarily mainline improvements:

- Vancouver WA Freight Rail Bypass.
- Point Defiance Bypass, Tacoma to Nisqually.
- Third main line Kalama to Kelso (WSDOT Mid-Term Passenger Plan Option 3).

The fourth project is primarily a port access improvement:

- Port of Vancouver USA Freight Access Project.

In addition to these projects, certain main line segments will likely require additional capacity enhancements due to projected growth in rail traffic. Both the BNSF and UP likely have the ability to add the capacity needed through a combination of infrastructure expansion and changes to operations.

Six additional capacity improvement projects that would enhance overall rail operations under the moderate and high growth forecasts are listed below. Three of these projects are listed as mainline projects and three are port access. As described above, however, port access improvements also benefit mainline capacity. Descriptions of each of the projects are provided below the lists

The mainline projects include:

- Portland - Peninsula Junction to North Portland Junction,
- Vancouver to Kelso - WSDOT Passenger Plan Option 3 and 4,
- Centralia - Blakeslee Junction.

The **Peninsula Junction to North Portland Junction** project is a key series of improvements that are needed to improve both passenger and freight train capacity in the Portland area. Among other things, these projects would include reconfiguring the connection between the UP and BNSF at North Portland Junction and easing the curvature at Peninsula Junction. This would reduce congestion on the Columbia Gorge routes of both the BNSF and UP, as well as on the I-5 Corridor, and would allow for faster passenger train speeds. These improvements near the south end of the Columbia River Bridge would complement current projects at the north end of the bridge, including the Vancouver Bypass project, the West Vancouver Access project and upgrades of the main line in Vancouver. Funding is currently in place to complete preliminary engineering and the NEPA analysis, but not construction.

The improvements included in the **WSDOT Passenger Plan Options 3 and 4**[4] between Vancouver and Kelso include the completion of a third main line between Martin's Bluff and Rocky Point and a new siding near Kalama, which will be necessary to reach projected passenger train volumes.

The **Blakeslee Junction** project would improve access/egress efficiency between the I-5 Corridor main lines, and both the Puget Sound and Pacific Railway (PSAP) and Tacoma Rail lines at Centralia. Growth in the number of unit trains moving to and from the Port of Grays Harbor via the Puget Sound and Pacific has increased congestion at the interchange. This project includes a number of elements designed to increase the speed of trains through the interchange, and to increase the capacity of the Grays Harbor branch line. This will benefit both freight and passenger trains. The project is divided into five phases. Early planning has been completed on the project, but only partial funding for Phase 1A and 1B are available. Construction will require additional funding.

In addition, the Puget Sound and Pacific has recently obtained the necessary permits to construct a meet/pass siding on the Grays Harbor branch line. This siding should also improve capacity on the I-5 Corridor mainline through Centralia by providing a place off of the mainline for Grays Harbor trains to wait.

The additional port access projects that are recommended include:

- Unit Train Staging/Storage Yard near Woodland.
- Cowlitz River Bridge – Longview.
- Bullfrog Junction Realignment – Tacoma.

A **Unit Train Staging/Storage Yard near Woodland** would also increase the efficiency of both the BNSF and UP routes through the Columbia River Gorge routes and the I-5 Corridor. The BNSF currently stages unit grain trains in Pasco for movement to export terminals on the Lower Columbia River, Puget Sound, and Grays Harbor. The distance between the Pasco staging yard and the export terminals increases the potential for train delays. A storage yard in Woodland would reduce the distance to the export terminals. This project would also benefit passenger trains by reducing conflicts with slower-moving freight trains. This project is not currently in the planning phase.

The **Cowlitz River Bridge** provides access from the I-5 Corridor mainline at Longview Junction to most of the marine terminals and industrial customers in Longview. This single-track bridge is nearly 90 years old, and projected growth in traffic along the Longview branch line may require the addition of a second line. Options include adding a second single-track bridge or replacing the existing bridge with a new double-track bridge. This project would reduce congestion on the I-5 Corridor mainline (benefitting both passenger and freight trains) and increase the capacity of the Longview branch line. It was also identified in the recent Port of Longview Master Plan as a critical link. The project is estimated to cost $36 million; partial funding is in place for preliminary engineering and NEPA analysis, with the remaining funding expected in January 2012. Construction is not funded.

The **Bullfrog Junction Realignment** project would increase the efficiency of access/egress between the I-5 Corridor mainline and the Port of Tacoma. All of the rail lines serving industries and port facilities on the Tacoma Tideflats currently funnel through the Bullfrog Junction area,

[4] See footnote 2 on Page 30

seriously limiting the number of trains that can enter or leave the port area. In addition, yard activities in the area often use the mainline, reducing mainline capacity on the I-5 Corridor. The Bullfrog Junction area includes a number of chokepoints, including the junction itself, a single single-track bridge over the Puyallup River, and others. A preliminary plan for realignment was developed in 2006, and project proponents are now seeking funding for design and construction.

Conclusion

Growth in the volume of export bulk trains is expected to increase the demand on existing rail capacity in the region. Even moderate growth will require BNSF and UP to assess the capacity requirements necessary to meet the growing demand. Both railroads have the ability to increase capacity through a combination of physical and operational improvements, and should be able to meet growing demand well into the future.

Table 5-1: Current and Projected Number of Trains, by Line Segment

		Moderate Growth				High Growth			
	2011	2020		2030		2020		2030	
Line Segment	Average	Average	Peak	Average	Peak	Average	Peak	Average	Peak
Pasco, WA to Vancouver, WA (BNSF)									
Pasco, WA to Wishram, WA	45	51	56	61	67	57	62	72	80
Wishram, WA to Vancouver, WA	41	46	51	56	61	52	57	67	74
Hinkle, OR to Portland, OR (UP)	32	41	45	47	52	46	50	53	59
Pasco, WA to Spokane, WA (BNSF)	45	59	65	73	80	71	78	93	102
Spokane, WA to Sand Point, ID (BNSF)	59	75	83	92	101	87	96	112	124
Hinkle OR to Eastgate, ID (UP)	10	11	12	12	13	12	14	14	15
Vancouver, WA to Tacoma, WA (Joint line)									
Vancouver, WA to Kalama/Longview, WA	63	74	81	98	108	83	92	112	123
Kalama/Longview, WA to Tacoma, WA	57	71	78	94	103	79	87	105	115
Tacoma, WA to Auburn, WA (Joint line)	81	93	102	114	125	99	108	122	134
Auburn, WA to Seattle, WA (Joint line)	81	94	103	119	131	102	112	131	144
Seattle, WA to Everett, WA (BNSF)	51	63	69	75	83	70	77	87	96
Everett, WA to Blaine, WA (BNSF)	17	26	28	35	38	34	37	47	51
Everett, WA to Spokane, WA via Stevens Pass (BNSF)	18	21	23	24	26	21	23	24	26
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)	6	14	16	19	21	20	22	27	30

Note: Train numbers represent average daily volume. Short term peak volumes may exceed daily average by 10%. For all non-unit trains, growth is absorbed by existing trains before adding additional trains. Train volumes include locals, switchers and non-revenue movements.
Source: MainLine Management, BST Associates

Table 5-2: Summary of Capacity Improvements, by Line Segment

Line Segment
Pasco, WA to Vancouver, WA (BNSF)
Pasco, WA to Wishram, WA
- Siding extensions
- Connecting sidings into double track segments
- Westbound fleeting
Wishram, WA to Vancouver, WA
- Siding extensions
- Fleeting of trains westbound
Hinkle, OR to Portland, OR (UP)
- Siding extensions
- Connecting sidings into double track segments
Pasco, WA to Spokane, WA (BNSF)
- Connecting existing sidings into double track segments
Spokane, WA to Sand Point, ID (BNSF)
- Double tracking the existing single track segments
- Addition of third main track in key locations where available
- Staging tracks on both sides of the Lake Pend Oreille bridge
Hinkle, OR to Eastgate, ID (UP)
None
Vancouver, WA to Tacoma, WA (Joint line)
Vancouver, WA to Kalama/Longview, WA
- Completion of the Vancouver Bypass
- Completion of the new Port of Vancouver Access route
- Completion of WSDOT improvements for passenger plan Option 3, including construction of the 3rd main track between South Kalama and Kelso
- Additional improvements may include completion of 3rd main track between Martin's Bluff and Rock Point, expansion of the Skagit River Bridge at Longview
Kalama/Longview, WA to Tacoma, WA
- Completion of the WSDOT Option 3 and 4 improvements
- Addition of High-Speed crossovers
- Completion of Blakeslee Junction Project
- Completion of Point Defiance Bypass Project
Portland, OR to Vancouver, WA
- North Portland Junction and Peninsula Junction
Tacoma, WA to Seattle, WA (BNSF and UP)
- No projects specified. BNSF will meet passenger service agreements
Seattle, WA to Everett, WA (BNSF)
- No projects specified. BNSF will meet passenger service agreements
Everett, WA to Vancouver, BC (BNSF)
Siding extensions
Additional sidings
Everett, WA to Spokane, WA via Stevens Pass (BNSF)
None
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)
New operating protocol with empty eastbound grain trains using Stampede Pass

Source: MainLine Management, BST Associates

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, DC INTERNATIONAL

Tesoro Savage CBR
Scoping Comment
#30946

Docket EF-131590

December 17, 2013

Via U.S. Mail and Email

RECEIVED
DEC 20 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

Stephen Posner, Interim EFSEC Manager
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Re: Scoping Comments on Proposed Tesoro-Savage Vancouver Energy Distribution Terminal: Application No. 2013-01; Docket No. EF-131590

Dear Mr. Posner:

On October 1, 2013, the Energy Facility Site Evaluation Council ("EFSEC") issued a Determination of Significance Scoping Notice for the environmental impact statement to be prepared under the State Environmental Policy Act ("SEPA") for the proposed Tesoro-Savage Vancouver Energy Distribution Terminal. The following scoping comments are submitted on behalf of Columbia Riverkeeper, Friends of Columbia Gorge, Forest Ethics, Spokane Riverkeeper, Sierra Club, Washington Environmental Council, and Climate Solutions to help EFSEC identify issues that must be addressed during the environmental review process.

The commenters are all non-profit organizations dedicated to (1) protecting the environment and natural resources of Washington State and the Pacific Northwest region; (2) ensuring that all citizens of Washington and the Pacific Northwest have clean and healthy air, water, and communities; (3) seeking positive solutions to the challenge of global climate change caused by combustion of fossil fuels; and (4) working across the region to stop the increase in shipments of crude oil through the Pacific Northwest, as well as ensuring that regulations concerning oil transport, oil spill prevention, and oil spill clean-up are as strong as possible. These joint scoping comments supplement any individual comment letters submitted by each signatory group. We appreciate the opportunity to provide these comments and supporting materials, included on CD submitted with this letter.

EFSEC itself has not previously reviewed a proposed crude-by-rail project, but the environmental review path for similar projects is not completely new to Washington. As you no doubt are aware, the U.S. Army Corps of Engineers, Washington State Department of Ecology, and two Washington State counties have initiated environmental reviews for two coal export

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terminals proposals in Whatcom and Cowlitz Counties. The Ecology scoping decision for the Whatcom County proposal (Gateway Pacific Terminal at Cherry Point) sets the appropriate requirements for review of environmental impacts, including indirect effects of projects that are of major concern to the public like increase in rail traffic, vessel traffic, additional mining, and greenhouse gas emissions of downstream combustion of exported coal. EFSEC should review a similar scope of impacts for this crude oil shipping terminal, including the same or similar indirect effects of (1) increases in rail traffic across the region, (2) increases in vessel traffic in and out of the Columbia River, (3) increased crude oil spill risk from rail transport, terminal storage, and river/marine transport, (4) additional crude oil extraction in North Dakota and the Alberta tar sands, and (5) greenhouse gas emissions of the transport of the crude oil, as well as the life-cycle impacts on the refining and ultimate combustion of the oil.

Like many citizens in the Northwest and nationally, we are deeply concerned about a decision that will authorize the construction of a huge crude oil shipping terminal on the banks of the Columbia River, one which would allow shipment of an estimated 360,000 barrels of crude oil per day. Either alone or combined with other announced or pending proposals to build additional major crude oil and coal export facilities in Washington and Oregon, the decision to authorize construction at Vancouver will undercut Washington State's considerable efforts to combat climate change and promote sustainable alternatives.

On October 28, 2013, Washington Governor Jay Inslee joined with Oregon Governor John Kitzhaber, California Governor Jerry Brown, and British Columbia Premier Cristy Clark in signing the Pacific Coast Action Plan on Climate and Energy. That accord commits Washington to lead national and international policy on climate change, account for the costs of carbon pollution, and invest in infrastructure that is climate smart. The Tesoro-Savage project will hurt Washington's ability to meet all these goals.

In these scoping comments, we raise specific issues and impacts that we feel EFSEC must consider. EFSEC may be titled as a "facility site" agency, but its duties under SEPA (and RCW 80.50) are much broader than the on-the-ground footprint of this proposed facility. We stress our concern about the geographic scope of the environmental review, and EFSEC's addition of a public scoping hearing in Spokane, Washington speaks well for the agency's understanding of the true scope of impacts here. While this project's shipping facility might be physically located at the Port of Vancouver, the area of impact is much greater. On the terrestrial side, the rail impacts, including rail traffic and diesel emissions, stem from drill sites in North Dakota or Alberta, Canada through communities in Montana, Idaho, and Washington. On the marine side, impacts from crude oil shipping, including ocean-going vessel traffic and emissions, risks of collisions, and impacts to near-shore environments, extend from the dock at Vancouver 106 miles to the mouth of the Columbia River and then to the final, undisclosed destinations across open ocean.

Within that geographic scope, particular issues should be addressed, including crude oil spill risks and impacts along the rail route, at the facility, in the Columbia River, and in the Pacific Ocean; increased rail and vessel traffic and necessary coordination; impacts to streams, wetlands, salmon, and fishing areas; air quality and respiratory impacts; rail tank car safety; impacts of the terminal on local businesses and proposed developments; types of crude oil shipped and their unique properties for health risks, spill clean-up, and climate impacts; impacts on historic and cultural resources; particular impacts to the Columbia River Gorge National Scenic Area; and global warming impacts from transportation, refining, and combustion of the oil.

This project, by itself or in combination with other proposed crude oil and coal shipping facilities, will cause significant, harmful impacts to the air, water, marine environment, fish and wildlife, economics, public health, culture, and communities across our region. It will further harm global climate change and Washington State's leadership role in addressing causes of climate change. In our view, full evaluation of all direct, indirect, and cumulative impacts of Tesoro-Savage is the first step toward a reasoned decision to ultimately reject this project proposal.

I. BACKGROUND ON THE TESORO-SAVAGE VANCOUVER PROPOSAL.

Extensive crude-by-rail oil transport systems are a recent phenomenon. Instead of pipelines, which are both expensive to build and subject to greater environmental review and regulation, crude oil is loaded onto rail tank cars for deliveries to refineries. In 2012, major U.S. railroads transported at least 20 times as many carloads of crude oil as they did in 2008. In Washington State, several proposals—including Tesoro-Savage—would add marine vessels to this patchwork system: the crude oil would arrive by rail, be pumped into large storage tanks on fragile shorelines, and then pumped into ocean-going barges or tankers to be taken to U.S. refineries or, in certain circumstances, exported. The crude oil can come from domestic or Canadian oil fields, leading to concern that more Alberta tar sands crude will be traveling by rail and tanker.

Tesoro-Savage Vancouver is the third officially proposed crude-by-rail terminal in Washington State. The Tesoro-Savage proposal would accept crude oil shipped by rail to the Port of Vancouver, Washington, where it would be stored, then loaded onto ships or barges. The oil will come by train from North Dakota and Alberta, Canada. Tesoro-Savage proposes six new storage tanks, each with the capacity to store 380,000 barrels of crude oil. Tesoro-Savage will add two rail lines to the Port's existing loops in order to be able to unload an average of four unit trains of crude per day. The project plans to receive up to 360,000 barrels per day (11,340,000 gallons) at its facility. The project would add 730 ship transits in and out of the Columbia River annually.

Because the current dock at the Port of Vancouver site requires seismic retrofitting, a U.S. Army Corps of Engineers permit for that work will be required. The federal permit will trigger consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service under the Endangered Species Act. The Army Corps must also review environmental impacts and project alternatives under the National Environmental Policy Act; the Army Corps must also consult with affected Native American Tribes pursuant to the National Historic Preservation Act. EFSEC should coordinate its SEPA analysis with these federal environmental and endangered species reviews to ensure the use of the best available science.

II. STATE LAW REQUIRES AGENCIES TO FULLY DISCLOSE AND CONSIDER ALL ENVIRONMENTAL IMPACTS FROM PROPOSED PROJECTS.

A. Washington's State Environmental Policy Act

In adopting the State Environmental Policy Act, the Washington legislature declared the protection of the environment to be a core state priority. RCW 43.21C.010. SEPA declares that "[t]he legislature recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment." RCW 43.21C.020(3). This policy statement, which is stronger than a similar statement in the federal counterpart of NEPA, "indicates in the strongest possible terms the basic importance of environmental concerns to the people of the state." *Leschi v. Highway Comm'n,* 84 Wn.2d 271, 279-80 (1974).

At the heart of SEPA is a requirement to fully analyze the environmental impact of projects that have a significant impact on the environment. RCW 43.21C.031(1). An EIS is required for any action that has a significant effect on the quality of the environment. WAC 197-11-330. Significance means a "reasonable likelihood of more than a moderate adverse impact on environmental quality." WAC 197-11-794. The purpose of this analysis is not to generate paperwork. Rather, the EIS allows decision-makers to make judgments based on a fully informed appreciation for the environmental impacts of decisions, the available alternatives, and any mitigation that may be appropriate.

SEPA regulations also explicitly direct that environmental impacts outside the jurisdiction of the deciding agency should be considered. WAC 197-11-060(c). Crucially, agencies are required to assess both the direct impacts of the proposal as well as the indirect impacts. WAC 197-11-060(4)(d). For example, when considering a government action, a SEPA document must also consider the effects of private growth that may be encouraged by this government action. *Id.*; *Cheney v. City of Mountlake Terrace,* 87 Wn.2d 338, 344 (1976) (SEPA requires that decision makers consider more than the "narrow, limited environmental impact" of the current proposal...agency "cannot close its eyes to the ultimate probable environmental consequences" of its current action).

B. Under SEPA, EFSEC Must Evaluate Direct, Indirect, and Cumulative Impacts.

The primary purpose of an environmental impact statement "is to ensure that SEPA's policies are an integral part of the ongoing programs and actions of state and local government." WAC 197-11-400. "A proposal's effects include direct and indirect impacts caused by the proposal. Impacts include those effects resulting from growth caused by a proposal, as well as the likelihood that the present proposal will serve as precedent for future actions." WAC 197-11-060(4)(d). The scope of impacts includes direct, indirect, and cumulative impacts. WAC 197-11-792. "The range of impacts to be analyzed in an EIS (direct, indirect, and cumulative impacts, WAC 197-11-792) may be wider than the impacts for which mitigation measures are required of applicants." WAC 197-11-060(4)(e). The environmental impact statement must address "reasonable alternatives" to the proposed action, including a "no-action" alternative, WAC 197-11-440(5). It is implicit in SEPA that an "agency cannot close its eyes to the ultimate probable environmental consequences of its current action." *Cheney v. City of Mountlake Terrace,* 87 Wn.2d 338, 344, 552 P.2d 184 (1976).

For cumulative impacts, the federal National Environmental Policy Act's ("NEPA") [1] definition stresses that they must be "reasonably foreseeable":

> Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency ... or person undertakes such other actions.

40 C.F.R. § 1508.7.

Courts applying the "reasonably foreseeable" standard routinely require governmental entities to consider impacts from future actions that are still in the planning stages, provided that enough is known about those future projects for meaningful consideration to be given to their effects. In *W. North Carolina Alliance v. North Carolina Dep't of Transp.,* the district court held that the state agency erred in not taking into account the cumulative impacts of certain future freeway expansion projects when making a finding of no significant impact ("FONSI") under NEPA on a freeway expansion project. *W. N.C. Alliance v. N.C. Dep't of Transp.,* 312 F. Supp. 2d 765, 771-73 (E.D.N.C. 2003). At the time the FONSI was issued, one of the future projects still required the state to acquire rights of way, *id.* at 771, and another of the projects had not yet undergone a feasibility study, *id.* at 771-72. The court concluded that "NEPA's language and

[1] NEPA provisions and case law interpreting NEPA are used in Washington to discern the meaning of SEPA and its implementing regulations. *See, e.g., ASARCO v. Air Quality Coal.,* 92 Wn.2d 685, 709 (1979); *Kucera v. State Dep't of Transp.,* 140 Wn.2d 200, 215-16 (2000).

focus on considering environmental impacts before acting ... undermine [the agency's] position that [it was] not required to consider the cumulative impacts from the other connected projects because they were not fully funded or planned." *Id.* at 773.

C. SEPA Requires Review of Climate Change Impacts.

SEPA and its implementing regulations explicitly require consideration of direct and indirect climate impacts. *See* RCW 43.21C.030(f) (directing agencies to "recognize the world-wide and long-range character of environmental problem); WAC 197-11-444 (listing "climate" among elements of the environment that must be considered in SEPA review); *Rech v. San Juan Cnty.,* 2008 WL 5510438 (Wash. Shorelines Hearings Bd. June 12, 2008) at *12 n.8 ("We further note an emerging trend in the case law under the National Environmental Policy Act ("NEPA") and state NEPA analogues in which courts are increasingly requiring agencies to analyze climate change impacts during environmental assessments."). The Washington Supreme Court has ruled that the state should look to NEPA for guidance. "Since much of the language from SEPA is taken verbatim from NEPA (signed into law January 1, 1970), we look when necessary to the federal cases construing and applying provisions of NEPA for guidance." *Eastlake Cmty. Council v. Roanoke Assocs., Inc.*, 82 Wn.2d 475, 488 n.5 (Wash. 1973).

In recent years, state and federal agencies have made efforts to better define how climate analysis should be performed, and to provide tools to enable agencies to meaningfully assess and mitigate the greenhouse gas contribution of proposed projects. For example, in late 2008, Ecology and the State's Department of Community, Trade and Economic Development ("CTED") issued a "comprehensive plan to address the challenges and opportunities of climate change." ("2008 Climate Plan").[2] That plan recognized the increasing pressure on local governments to better identify climate impacts in their SEPA analyses, and noted that SEPA analysis provided an opportunity to evaluate climate impacts of government decisions and to identify changes to proposals to reduce or mitigate those impacts. *Id.* at 50.

Also in 2008, a governor-appointed working group provided a list of recommendations on how to ensure that climate change is considered in meeting SEPA's directives.[3] Notably, those recommendations identified the following categories of greenhouse gas emissions to be considered pursuant to SEPA: a) off-site mining of materials purchased for the project; b) transportation of raw materials to the project, and transport of the final product offsite; c) use of products sold by proponent to consumers or industry, including "emissions generated from combustion of fuels manufactured or distributed by the facility." *Id.* at App. D.

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[2] *Available at* http://www.ecy.wa.gov/pubs/0801025.pdf.

[3] *Available at* http://www.ecy.wa.gov/climatechange/2008CATdocs/IWG/sepa/103008_sepa_iwg_report.pdf.

Ecology first issued draft SEPA guidance for considering greenhouse gas emissions.[4] That Draft Guidance confirms that SEPA is a crucial tool in helping the state and political subdivisions "address the threats that greenhouse gas emissions and climate changes pose to our health, our economy, and our environment." *Id.* at 2. In fact, the Draft Guidance specifically observes that the failure to evaluate the climate impacts of a proposal "could result in a successful legal challenge regarding the adequacy of an agency's review." *Id.*

Accordingly, the Draft Guidance makes clear that SEPA requires climate to be considered in its environmental analysis. Specifically, agencies should consider "if and how" greenhouse gases will contribute to environmental impacts and "how those impacts could be mitigated." *Id.* at 7-8. The Draft Guidance notes that SEPA's substantive authority "may be used to deny a proposal if the proposal will result in significant environmental impacts identified in a final or supplemental EIS and reasonable mitigation measures are insufficient to mitigate the identified impacts." *Id.* at 10.

Ecology's Draft Guidance makes clear that climate impacts cannot be ignored simply because they are a step removed from the decision under review. It defines "Scope Three" emissions as those that are produced as a consequence of the activities in the proposal, albeit from sources not owned by the proponent or that are not part of the proposal itself. *Id.* at 12. While noting that "Scope Three" emissions may be harder to calculate, the Draft Guidance acknowledged that these emissions "can be critically important to consider when reviewing the overall long-term greenhouse gas emissions associated" with a proposal. *Id.*

The Draft Guidance proposes that the documents consider whether the proposal will "significantly contribute" to greenhouse gas concentrations, "either directly, indirectly, or cumulatively." While it does not propose a particular numerical threshold at which greenhouse gas emissions become "significant," it references the federal NEPA climate guidance, which proposes a significance threshold of 25,000 tons/year of CO_2 equivalent. Projects with emissions above this threshold should be considered in a full EIS if not mitigated. It should be noted that states like California have proposed far lower thresholds under their own state NEPA provisions, and that many national and regional conservation organizations have opposed the proposed CEQ threshold as too high.

Most recently, Ecology re-issued the Draft Guidance in the form of a "working paper."[5] That working paper provides a "table of tools" that can be used to calculate emissions from projects. That table, in turn, lists various sources of emissions from projects, methods to

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[4] *Available at* http://www.ecy.wa.gov/climatechange/sepa.htm.

[5] *Available at* http://www.ecy.wa.gov/climatechange/sepa.htm.

calculate those emissions, and options to mitigate them. Included on that list is the "extraction, processing and transportation" of raw materials and feedstocks, and "emissions from the future combustion of fossil fuels," which is defined to include "emissions that will result from the combustion of fossil fuels transported, distributed or imported as a result of the project (*e.g.*, natural gas pipeline)." *Id.* at 2; *see also id.* at 3 (including emissions from "combustion of fuels distributed by a proposed facility" as an emission that should be quantified and mitigated in SEPA documents).

While the Washington Courts have not yet had an opportunity to evaluate the obligation to consider indirect climate impacts under SEPA, such questions arise regularly under NEPA and parallel laws in other states. Washington courts regularly turn to federal National Environmental Policy Act ("NEPA") interpretations for guidance on interpreting SEPA. *See, e.g., Gebbers v. Okanogan PUD No. 1,* 144 Wn. App. 371 (2008).

In a landmark 2008 case, the Ninth Circuit Court of Appeals—which has jurisdiction over Washington State—found that a federal agency violated NEPA when it failed to prepare a full EIS on proposed corporate average fuel economy ("CAFÉ") standards for light trucks. *Ctr. for Biological Diversity,* 538 F.3d 1172. There, the Ninth Circuit rejected the argument that individual actions represent too minor of a contribution to the global problem to merit consideration. Even more recently, the Ninth Circuit again emphasized that '"reasonably foreseeable future actions need to be considered [under NEPA] even if they are not specific proposals.'" *N. Plains Res. Council v. Surface Transp. Bd.,* 668 F.3d 1067, 1079 (9th Cir. 2011) (quoting EPA guidance document).

Several cases confirm that NEPA requires evaluation of indirect impacts of projects that facilitate movement of fossil fuels, including GHG emissions. For example, in *Mid-States Coal. for Progress v. Surface Transp. Bd.,* 345 F.3d 520 (8th Cir. 2003), the Eighth Circuit Court of Appeals invalidated an EIS for a rail construction project intended to supply coal from the Powder River basin to power plants because it failed to analyze the emissions of burning the coal that would be transported by the rail project. The Court found that the project was likely to affect the country's long-term demand for coal and hence the impacts of coal burning should have been considered in the EIS. Similarly, in *Border Plant Working Grp. v. Dep't of Energy,* 260 F. Supp. 2d 997 (S.D. Cal. 2003), a federal district court invalidated a decision to approve transmission lines that would connect proposed power plants in Mexico to the U.S. power grid because indirect effects were not considered. The Court found that the decision violated NEPA because decision-makers failed to consider the impacts of the operation of the Mexican power plants—including impacts on air quality and climate—that were closely linked to the transmission lines. The Court found that the operation of the power plants were an "indirect effect" of the transmission line project because the two were causally linked. The Court specifically struck down the agency's decision that the project's impacts were too minimal to require preparation of an EIS. *Id.*

A valid SEPA analysis must also consider the climate and other air emissions of transporting these huge volumes of oil. Fully loaded tankers use tons of fuel per trip, generating both significant CO_2 emissions as well as a variety of toxic and harmful air emissions, including diesel particulates that are highly damaging to human health. Transportation of oil over long distances via rail also has significant environmental impacts, including the fossil fuel consumption of moving large volumes of material hundreds or thousands of miles. Moreover, as with the greenhouse gas impacts, this analysis must be viewed in the context of all existing and reasonably foreseeable similar impacts, including pending proposals to build other oil shipping terminals in Washington. These kinds of impacts are "indirect effects" of the decision to authorize the oil shipping facility and should be evaluated in the environmental impact statement.

III. ALL ISSUES AND IMPACTS CAUSED BY CONSTRUCTION AND OPERATION OF THE TESORO-SAVAGE PROJECT MUST BE CONSIDERED IN THE ENVIRONMENTAL IMPACT STATEMENT.

Crude-by-rail shipping at the proposed Tesoro-Savage project will affect people and places far beyond the immediate construction zone. Every community located along the rail line between the drill sites and the Port of Vancouver will be harmed, and communities and places along the Columbia River will be exposed to greater vessel traffic and risk of endemic or catastrophic crude oil spills. People outside Washington will be affected by the climate impacts of drilling, transporting, refining, and ultimately burning this crude oil. The EIS must, of course, analyze the impacts of construction and operations at and near the terminal, but it also must analyze the impacts of crude oil trains, crude oil vessels, and oil use on a much broader scale. This includes the direct, indirect, and cumulative impacts of crude oil shipping on public health, public safety, economics, marine health, public investment, and climate change.

To be clear, we believe the EIS must examine the full direct, indirect, and cumulative impacts of the proposed Tesoro-Savage project from the drilling of the oil in North Dakota and Alberta, Canada, the transport of crude by rail, with associated train derailment and oil spill risks, through several states, hundreds of communities, and hundreds of river crossings and banks, the loading and shipping of crude via large ocean-going vessels, including the vessel traffic, accident, and oil spill risk, to the refining and burning of the oil.

Below we briefly describe the impacts in each category and reference specific documents, reports, and studies that EFSEC should consider as it conducts its analysis. A non-exhaustive collection of documents and reports are included in a CD of materials accompanying this scoping letter for inclusion in the administrative record.

A. Transportation and Oil Spill Risks (Inland and Aquatic).

1. Rail transport of crude oil is inherently risky.

Crude oil is a hazardous material as defined by the U.S. Department of Transportation,[6] and crude has certain properties that make it uniquely dangerous. First, it is a liquid, meaning that it can migrate away from the site of an accident or other release and travel into communities, down waterways, or into groundwater. Crude oil is also generally less flammable than other hazardous liquids (like ethanol and gasoline), meaning that it is more likely to migrate some distance before reaching an ignition source and catching fire.[7]

Second, unlike other liquids transported by rail, unrefined crude oil contains a wide range of contaminants, including sulfur and arsenic; toxic metals like mercury, nickel, and vanadium; and organic compounds like phenols, ketones, and carboxylic acids.[8] Hydraulic fracturing, or "fracking" contributes an additional suite of contaminants, including hydrochloric acid and in some cases hydrogen sulfide.[9] Indeed, the Federal Railroad Administration has observed "an increasing number of incidents involving damage to tank cars in crude oil service in the form of severe corrosion of the internal surface of the tank, manway covers, and valves and fittings," and suggested that this involves contaminated oil.[10]

Domestic crude oil production is undergoing a major boom, chiefly because of the increase in fracking. U.S. Energy Information Administration ("EIA") Administrator Adam Sieminski recently testified that:

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[6] 49 C.F.R. § 172.101. Hazardous materials are materials that have been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. *See* 49 **Error! Main Document Only.**C.F.R. § 171.8.

[7] *See* Exh. 1, BP West Coast Products LLC, "Material Safety Data Sheet – Crude Oil," May 13, 2002. (flash point of **Error! Main Document Only.**20° - 90° F).

[8] *See* Exh. 2, EPA, "Screening-Level Hazard Characterization, Crude Oil Category," Mar. 2011.

[9] ***Error! Main Document Only.****Enbridge Pipelines (North Dakota), LLC,* FERC Docket No. IS13-273-000, 2013. (FERC order granting pipeline operation authority to reject certain Bakken crude oil supplies, due to evidence that hydrogen sulfide levels can rise to dangerous or even lethal levels.). *See also* **Error! Main Document Only.** Exh. 3, Abrams, L., "*Fracking chemicals may be making oil more dangerous,*" Aug. 13, 2013.

[10] ***Error! Main Document Only.****See* Exh. 4, Herrmann, T., FRA, Letter to Jack Gerard, American Petroleum Institute, July 29, 2013 at 4.

> Domestic oil production in the United States has increased significantly, and at 7.4 million barrels per day as of April 2013 is now at the highest level since October 1992. Over the five year period through calendar year 2012, domestic oil production increased by 1.5 million barrels per day, or 30%. Most of that growth occurred over the past 3 years. Lower 48 onshore production (total U.S. Lower 48 production minus production from the federal Gulf of Mexico and federal Pacific) rose more than 2 million barrels per day (bbl/d), or 64%, between February 2010 and February 2013, primarily because of a rise in productivity from oil-bearing, low-permeability rocks.[11]

This dramatic increase in production has caused a corresponding boom in crude-by-rail. In May 2013, AAR profiled how crude production and crude-by-rail are undergoing twin booms:

> Historically, most crude oil has been transported via pipelines. However, in places like North Dakota that have seen huge recent increases in crude oil production, the existing crude oil pipeline network lacks the capacity to handle the higher volumes being produced. Pipelines also lack the operational flexibility and geographic reach to serve many potential markets. Railroads, though, have capacity, flexibility, and reach to fill the gap.
>
> Small amounts of crude oil have long been transported by rail, but since 2009 the increase in rail crude oil movements has been enormous. As recently as 2008, U.S. Class I railroads (including the U.S. Class I subsidiaries of Canadian railroads) originated just 9,500 carloads of crude oil. By 2011, carloads originated were up to nearly 66,000, and in 2012 they surged to nearly 234,000. Continued large increases are expected in 2013. In the first quarter of 2013, Class I railroads originated a record 97,135 carloads of crude oil, 20 percent higher than the 81,122 carloads originated in the fourth quarter of 2012 and 166 percent higher than the 36,544 carloads originated in the first quarter of 2012.
>
> Crude oil accounted for 0.8 percent of total Class I carload originations for all of 2012, 1.1 percent in the fourth quarter of 2012, and 1.4 percent in the first quarter of 2013. It was just 0.03 percent in 2008.
>
> Assuming for simplicity, that each rail tank car holds about 30,000 gallons (714 barrels) of crude oil, the 97,135 carloads originated in the first quarter of 2013 equal approximately 762,000 barrels per day moving by rail. As a point of reference, according to EIA data, total U.S. domestic crude oil production was

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[11] Exh. 5, **Error! Main Document Only.***Hearings Before the Committee on Energy and Natural Resources, U. S. Senate*, July 16, 2013 (Statement of EIA Administrator Sieminski at 2).

> approximately 7.1 million barrels per day, so the rail share is around 11 percent—up from a negligible percentage a few years ago.[12]

As also noted by AAR, "North Dakota, and the Bakken region more generally, have accounted for the vast majority of new crude oil originations." During 2013, crude-by-rail out of North Dakota has fluctuated between 600,000 to 700,000 barrels per day, transporting 61-75% of total Bakken production.[13]

As shown in the data from AAR,[14] crude-by-rail volumes increased rapidly from 2009 into the second quarter of 2013, then dipped for several months as a result of crude pricing that encouraged a shift to pipeline transport. Later in 2013, pricing was again favorable for rail and crude production continues to increase, such that crude-by-rail volumes have rebounded.[15]

Unit trains are long freight trains composed of at least 50 and sometimes 100 or more cars used to transport single bulk products between two points. Unit trains are unloaded on arrival and returned for another load. Unit trains cut costs (and save time) by eliminating the need for intermediate yarding and switching between origin and destination.

These cost savings, combined with the boom in mid-continent production of crude oil have driven a corresponding boom in the construction of rail terminals designed to handle unit trains. According to one recent industry analysis:

> The number of rail terminals in producing regions loading crude oil onto rail tank cars has increased from a handful at the end of 2011 to 88 and growing today. A

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[12] Exh. 6, American Association of Railroads, "Moving Crude Petroleum by Rail," May 2013, at 3-5.

[13] *See* North Dakota Pipeline Authority http://northdakotapipelines.com/directors-cut/Monthly Updates for April 2013-November 2013 (February 2013-September 2013 data); Exh. 8, "How oil is transported from North Dakota's Williston Basin," The Globe and Mail, Dec. 2, 2013.

[14] U.S. Class I railroads (including the U.S. Class I subsidiaries of Canadian railroads) originated 108,605 carloads of crude oil in the second quarter of 2013 (12 percent higher than the 97,135 carloads in the first quarter) and 93,312 carloads in the third quarter. *See* Exh. 9, American Association of Railroads, "AAR Reports Record Second Quarter Crude-by-Rail Data; Decreased Weekly Rail Traffic," Aug. 29, 2013; Exh. 10, "AAR Reports October and Weekly Rail Traffic Gains, 3Q Crude Oil Up Year Over Year," Nov. 7, 2013.

[15] Fielden, Sandy, RBN Energy, "On the Rails Again? – Bakken Crude Rail Shipments Return to April Highs," http://www.rbnenergy.com/on-the-rails-again-bakken-crude-rail-shipments-return-to-april-highs, Oct. 30, 2013.

further 66 crude oil unloading terminals have been built or are under construction.[16]

Various industry reports indicate that unit trains account for the vast majority of the recent boom in crude-by-rail transportation.

For the Tesoro-Savage project, the rail lines that will bring oil into the Port run through the city of Vancouver east to west along the Columbia River and north to south along the western boundary of the city. An accident at or near the terminal could result in vast environmental damage, horrifying personal damage, including loss of life, and millions of dollars of economic harm. In fact, the local International Longshoremen's Union voted to oppose the Tesoro-Savage project because it believes the project poses too great a threat to other commercial river traffic.

Predictably, the rise in crude transportation by rail has resulted in soaring numbers of crude oil releases to the environment in the form of both accidents and "non-accident" releases such as leaks. PHMSA incident records underscore these growing risks. The number of incidents" involving crude oil transportation by rail are as follows:

2009: 0
2010: 9
2011: 34
2012: 86
2013: 85 (partial)[17]

Unfortunately, the surge of incidents and releases has not been matched by an increase in the resources available to responders and regulators. The same has been true in Canada.

Lac-Megantic

On July 5, 2013, a train hauling 72 tanker cars loaded with 2.0 million gallons of crude from the Bakken shale oil field in North Dakota slammed into Lac-Mégantic, a town of 6,000 located in Quebec. Owned by an American company—Montreal, Maine and Atlantic Railway—the train had only a single staffer, who abandoned the train in order to sleep in a motel before a replacement crew arrived to complete the train's journey to an oil refinery on Canada's east

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[16] Fielden, Sandy, RBN Energy, "Crude Loves Rock'n Rail," http://www.rbnenergy.com/154-terminals-operating-bnsf-the-dominant-railroad, May 12, 2013.

[17] Data derived from PHMSA incident reports—**Error! Main Document Only.**http://www.phmsa.dot.gov/hazmat/library/data-stats/incidents.

coast. The brakes on the five-locomotive train malfunctioned, and it began a seven-mile roll toward the small town. Reaching a speed in excess of 60 mph, the train reached a bend in the tracks, derailing and dumping 1.6 million gallons of its contents, which caught fire and incinerated dozens of buildings. Forty-seven people were killed.[18]

Information regarding the Lac-Mégantic accident is provided in Exh. 14, "Analysis of the Potential Costs of Accidents/Spills Related to Crude by Rail."[19] This analysis demonstrates that the costs of crude-by-rail accidents/spills can be very large, and that a major unit train accident/spill could cost $1 billion or more for a single event.

As explained in Exh. 14, the Lac-Mégantic rail accident/spill will likely have costs on the order of $500 million to $1 billion excluding any civil or criminal damages. Costs/damages for a similar incident could have been substantially higher had it occurred in a more populated area. Lac-Mégantic is also relevant in that it shows how an accident involving highly flammable light crude (such as the Bakken crude) can have devastating consequences even in a small town in terms of loss of human life and widespread explosion and fire damage to surrounding property.

Exhibit 14 also analyzes the spill of tar sands dilbit from Enbridge's Line 6B in Marshall, Michigan: This rupture in 2010 had costs of about $1 billion for Enbridge. The spill volumes at Marshall (840,000 gallons) were within the range of the amount of spill possible (and, in fact, substantially less than the maximum spill) if a crude by rail unit train released much of its cargo. Costs/damages for similar incident could have also been substantially higher had it occurred in a more populated area. Marshall is also relevant in showing the high potential cost of dilbit spills into water (and rail lines are often highly proximate to water).

Alabama

On November 8, 2013, a 90-car unit train carrying 2.7 million gallons of crude oil derailed and exploded in a rural wetland in western Alabama, spilling crude oil into the surrounding wetlands and igniting a fire that burned for several days.[20] No injuries resulted from the accident, but a similar accident in a more populated location would certainly have caused serious risk to public safety.

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[18] Transportation Safety Board of Canada, "Railway Investigation R13D0054," http://www.bst-tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/R13D0054.asp#sal, Sept. 11, 2013.

[19] This analysis was prepared by The Goodman Group, Ltd, a consulting firm specializing in energy and regulatory economics, on behalf of Oil Change International.

[20] Exh. 15, Karlamangla, Soumya, "Train in Alabama oil spill was carrying 2.7 million gallons of crude." Los Angeles Times, Nov. 9, 2013.

Community Emergency Preparedness Response

When a crude oil spill occurs, local response assets are generally the first ones on scene. These assets will include those provided by police departments, fire fighters, and emergency managers. Many times however, these response individuals are unaware of the nature of, and the threat posed by the materials that are being transported through their communities.

Congress, recognizing a gap in communication, mandated in the "9/11 Act"[21] that rail companies transporting security sensitive materials, including toxic-by-inhalation materials, but not including crude oil, improve communication with local officials. Rail carriers are now required to identify a point of contact and to provide information to (1) state and/or regional "Fusion Centers" that have been established to coordinate with state, local and tribal officials on security issues and which are located within the area encompassed by the rail carrier's rail system; and (2) state, local, and tribal officials in jurisdictions that may be affected by a rail carrier's routing decisions and who directly contact the railroad to discuss routing decisions. This knowledge enables local communities to have a better understanding of what is being transported near their homes and schools.

According to the mandate of the 9/11 Act, rail carriers transporting security sensitive materials are required to select lower-risk routes, based on an analysis of the safety and security risks presented on various routes, railroad storage facilities and proximity of high-consequence targets along the route. The results of this analysis could dictate the rerouting of the security sensitive materials to other locations.

Crude oil is not currently defined as "security sensitive" so the additional reporting requirement does not apply to rail carriers transporting crude oil, despite its obvious hazards.

The lack of regulatory guidance on communication about the movement of crude oil via rail with local officials, neighbors and local businesses is inconsistent with the Administration's initiatives goal to improve preparedness. President Obama issued a proclamation on August 30, 2013 stating that September 2013 was National Preparedness Month. In this document, the President also stated that Americans should "refocus our efforts on readying ourselves, our families, our neighborhoods, and our Nation for any crisis we may face." Additionally he directed the Federal Emergency Management Agency to "launch a comprehensive campaign to build and sustain national preparedness with private sector, non-profit, and community leaders and all levels of government."[22] Private sector and community preparedness can't occur if the

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[21] Implementing Recommendations of the 9/11 Commission Act of 2007, Pub. L. 110-53; 121 Stat. 266.

[22] http://community.fema.gov/gf2.ti/f/280514/8233733.1/PDF/-/Presidential_Proclamation__National_Preparedness_Month_2013.pdf.

federal government fails to require the disclosure of information that could help communities become more prepared.

Safety Rules Out of Date

When the 9/11 Act was enacted in 2007, just 5,897 carloads of crude petroleum originated on U.S. Class I railroads. Last year, that number grew to 233,819 carloads—a growth of more than 3,865%. Exh. 6. In 2013, that number has grown again, totaling 299,052 through the first 3 quarters (averaging about 100,000 per quarter). Assuming volumes will be similar in the fourth quarter, there will be about 400,000 carloads for all of 2013—a growth of about 6,700% relative to carloads in 2007. Exhs. 9 and 10. This exponential growth in unit shipments of crude by rail and associated incidents, as well as the recent Lac-Mégantic disaster, compel the conclusion that unit shipments of crude oil demand enhanced safety standards, and should be subjected to the re-routing standards as "security sensitive" materials as set forth in the 9/11 Act.

Additionally, as has been acknowledged by the AAR, the existing fleet of DOT-111 tank cars is simply unsafe for transporting crude oil or other hazardous materials. This is evident from Petition P-1577, in which the AAR calls for higher construction standards for this class of rolling stock. Among many other deficiencies, the head and shells of DOT-111s are much too thin, and they lack many other vital safety features, such as head shields and protection for top fittings.

Rail tank cars should be able to withstand "rollover" accidents. But when DOT-111s are involved in accidents, even at low speeds, almost all of the tank cars rupture and release their contents. This was documented by the National Transportation Safety Board ("NTSB") in its "Cherry Valley accident report," cited in the ANPR. In that low-speed accident (36 mph), 13 of 15 tank cars ruptured. *Id.* at 76. The NTSB noted that similar disastrous failure rates had been observed in other accidents (New Brighton, PA – 12 of 23 cars were breached; Arcadia, OH – 28 of 32 were breached). *Id.*

These dangerous deficiencies, and the many lethal consequences thereof, have been the status quo for decades. More than 25 years ago, the NTSB wrote to the U.S. Department of Transportation's ("USDOT's") Research and Special Programs Administration, complaining that the then-existing standards for tank cars were inadequate for transporting hazardous materials. In a 1991 letter the NTSB noted that in a series of hazmat-by-rail accidents in 1988, 54 percent of DOT-111s were destroyed, twice the percentage of DOT-112s and other models. The NTSB again scolded: "The inadequacy of the protection provided by DOT-111A tank cars has been evident for many years in accidents investigated by the Safety Board."

2. Ships

The significant increase in barge traffic also increases the risk of barge groundings and spills in the Columbia River. These risks are not theoretical. For example, in 2009 a barge carrying a million gallons of gasoline ran aground in the Columbia River near the City of Hood River. An investigative report by the *Oregonian* uncovered U.S. Coast Guard documents describing a "great deal of confusion" over who was in charge, with agencies responsible for containing a fuel spill left out of the loop for hours after the accident.[23] The Corps must consider the potential adverse impacts of significantly increasing barge traffic on the dynamic Columbia River, and the increased potential for groundings and spills associated with the increased volume of barge traffic. *See generally* Exh. 13, Oil Spills in Washington State (1997).

Similarly, EFSEC must evaluate the increased risk of direct conflicts with existing barge traffic on the Columbia, including the increased risk of catastrophic accidents. On the Mississippi River, which experiences a higher volume of barge traffic than the Columbia, accidents involving barge collisions demonstrate the increased risk to human life and the environment posed by increasing barge traffic. For example, on May 20, 2010, three grain barges sank on the Mississippi River near Baton Rouge following a collision between a barge transporting food products and a barge transporting sulfuric acid.[24] The accident prompted the U.S. Coast Guard to close the shipping channel. In mid-2008, a barge split open in a collision with a tanker, resulting in an oil spill and prompting federal agencies to close 85 miles of the Mississippi River to traffic for almost a week. According to reports, the accident was the result of human error. On February 17, 2012 a tanker barge traveling downriver on the Mississippi rammed a crane barge being pushed upriver about 50 miles from New Orleans. The collision tore a 10-foot by 5-foot gash above the waterline of the double-hulled tanker barge and oil spewed less than 10,000 gallons of Louisiana sweet crude oil into the water.[25] These are just several examples of accidents involving barge traffic.

Notably, there has been no comprehensive vessel traffic risk analysis done for the Columbia River as has been undertaken for Puget Sound. *See* Exh. 80, Puget Sound Vessel Traffic Risk Assessment, Final Draft. Given the significant increase in river traffic from the Tesoro-Savage project, EFSEC must undertake a similar analysis for the Columbia <u>before</u> granting any permits. EFSEC must assess the increased risk of tankers and barge accidents and

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[23] Exh. 17, *New Dawn fuel barge ran aground in the Columbia River, response was confusion, report says,* Oregonian (June 20, 2010).

[24] Exh. 18, *River traffic resumes after barge accident but threats remain,* Louisiana Weekly (June 4, 2011).

[25] Exh. 19, *Barge collision in Mississippi River causes oil spill,* New York Daily News (Feb. 18, 2012).

potential threats associated with these accidents, including oil spills and vessels/barges sinking, as part of its analysis. This analysis should use the most recent vessel tracking data for the Columbia River system and include historic levels, existing levels, and any reasonably foreseeable projected increases in vessel traffic. The EIS should also analyze alternative berthing times and seasonal restrictions to ensure that vessel operations do not adversely affect the spawning and migration behavior of salmonids, eulachon, sturgeon, and other species that use the proposed project area. The EIS should also analyze where fueling of vessels will occur. *See* Exh. 89, Washington Department of Natural Resources Scoping Comments on Millennium Coal Terminal Proposal at 1-2, 7, 9.

3. Type of crude

Assessments of crude oil properties indicate the serious pernicious toxic properties of crude oil when released into air, water, and soil and its potential effects on fish, the aquatic environment, and wildlife.[26] Crude oil spills are more difficult to clean-up than refined oil products. Crude oil is heavier and thicker; it lasts longer in the environment, coating vegetation, debris, and wildlife. Crude oil can also get trapped in sediments, rocks, and other debris, which allows the oil to be remobilized into the environment days, weeks, and even months after a spill incident.[27] Once permitted, crude could come from the Bakken area of North Dakota or the tar sands region of Alberta, Canada. Alberta tar sands crude—diluted bitumen—is even more difficult to clean up, especially in an aquatic environment, as it is heavier and can sink to the bottom. A spill of crude oil or diluted bitumen would wreak devastating, lasting harm on the Columbia River, its fish populations, and the aquatic ecosystem.[28] EFSEC must review the environmental impacts of different types of crude oil that may be shipped through the Tesoro-Savage facility.

It would not be sufficient for EFSEC to simply recommend that after-the-fact spill plans address the issue of crude oil type. As the U.S. Environmental Protection Agency noted with respect to the 2010 Enbridge spill in Marshall, Michigan of Alberta tar sands crude:

> We have learned from the 2010 Enbridge spill of oil sands crude in Michigan that spills of diluted bitumen (dilbit) may require different response actions or

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[26] *See generally* Exh. 20, American Petroleum Institute, *High Production Volume (HPV) Chemical Challenge Program*, Jan. 14, 2011.

[27] *See* Exh. 21, U.S. Fish and Wildlife Service, *Effects of Oil Spills on Wildlife and Habitat*, Dec. 2004; Exh. 22, *Oil Spills: Severity and Consequences to Our* Ecosystem, Dartmouth Undergraduate Journal of Science, Mar. 11, 2012.

[28] *See generally* Exh. 23, The Pembina Institute, *Pipelines and Salmon in Northern British Columbia: Potential Impacts*, Oct. 2009.

> equipment from response actions for conventional oil spills. These spills can also have different impacts than spills of conventional oil. We recommend that these differences be more fully addressed in the Final EIS, especially as they relate to the fate and transport of the oil and the remediation that will be required.... We recommend that the Final EIS more clearly acknowledge that in the event of a spill to water, it is possible that large portions of dilbit will sink and that submerged oil significantly changes spill response and impacts.[29]

In fact, as of May 2013, there are 180,000 gallons of oil remaining in Kalamazoo River three years after the spill.[30] *See* Exh. 7, Emerging Risks Task Force Report (2013) at 15-23 (description and case studies of spills/clean-up of Bakken and tar sands crude); Exh. 11, Transporting Alberta's Oil Sands Products: Defining the Issues and Assessing the Risk (Mar. 17, 2013); Exh. 12, Tar Sands Pipeline Safety Risks (Feb. 2011) (cataloging diluted bitmen characteristics and particular risks).

B. <u>The Public Health Issues Raised by This Project Are Significant and Harmful.</u>

The public health issues raised by a project of this size and extent include diesel pollution over different operational lifetime projections for the terminal, soil contamination by crude oil, odor pollution, and increased noise. The EIS should include a specific focus on children, the elderly, and other vulnerable members of the community. It should also consider cumulative and disproportionate impacts on communities already exposed to high levels of air and water pollution, particularly low income communities and communities of color.

Further, a valid SEPA analysis must consider air pollution impacts that specifically accompany transporting oil. Each trip of a fully loaded tanker will use diesel fuel and generate both significant CO_2 emissions as a variety of toxic and harmful air emissions. Relatedly, the EIS must consider idling ship emissions of cargo vessels at the dock and in transit through the lower Columbia River; such emissions have been a significant source of toxic air pollution in other ports and, given the scale of this project, are of concern here.[31]

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[29] Exh. 24, EPA Letter of April 22, 2013 on Keystone XL DSEIS at 3-4.

[30] Exh. 25, US EPA, Volume Estimate for Submerged Line 6B Oil in the Kalamazoo River (May 1, 2013).

[31] Exh. 26, CRS Report for Congress, *Air Pollution and Greenhouse Gas Emissions from Ships* (Dec. 23, 2009); Exh. 27, *Air Pollution and Greenhouse Gas Emissions from Ocean-going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth;* Exh. 28, Protecting American Health from Global Shipping Pollution, Establishing an Emission Control Area in U.S. Waters (undated).

1. The Tesoro-Savage project will cause harmful air impacts.

Transportation of crude oil long distances creates harmful air emissions from diesel locomotives. These effects will have a significant impact on the ability of air quality control regions through which the trains will pass to meet the National Ambient Air Quality Standards, which are set to protect public health. No matter which route the trains take to reach the Port of Vancouver, they will pass through numerous non-attainment and maintenance areas for the criteria pollutants they will be emitting. For example, if the oil is transported via the Union Pacific rail line, it would pass through the Fort Hall PM-10 Nonattainment Area, the Portneuf Valley (Pocatello) PM-10 Maintenance Area, the N Ada County (Boise) PM-10 Maintenance Area, the Klamath Falls PM-10 Maintenance Area, the Tacoma PM2.5 Nonattainment area, the Lewis and Clark County and Yellowstone County, and the MT SO2 Nonattainment areas, to name just a few. If the oil is transported via the BNSF rail line, it would pass through at least the Sheridan County PM-10 Nonattainment Area, the Missoula County PM-10 Nonattainment Area, the Sanders County PM-10 Nonattainment Area, the Sandpoint PM-10 Maintenance Plan, and the Spokane PM-10 Maintenance Plan. Therefore, the NEPA analysis should analyze the effect the transportation of oil will have on the air quality of communities through which the trains will pass.

It is also critical in conducting air quality modeling analysis to use reasonably conservative but realistic inputs into the model. For example, it would be easy, but inaccurate, to assume an oil train travels at an average speed for its entire journey. However, the reality is that heavy oil trains travel very slowly at certain points of their journey because of elevation increases or safety restrictions. In addition, additional locomotive engines are needed at certain points of the journey to make it over hills and the engines have to work harder, and thus produce more emissions, at those points. In addition, trains idle along the way for various reasons like crew changes and train re-configurations. Similarly, it would be easy, but inaccurate to assume that by the time the oil terminal is operating, only ultra-low sulfur diesel will be used in the trains and ships. However, there are exceptions to the diesel regulations such as the provisions for using transmix diesel that has much higher sulfur content.[32] Realistic assumptions of these factors need to be included in the analysis. Modeling must take these inputs into account to be realistic.

2. The Tesoro-Savage project will harm water resources.

The EIS must consider effects to all surface and ground water resources within the project area. The EIS must consider all potential water quality impacts (*e.g.*, increased sediment loads, possible spills, changes to alluvial groundwater quality, degradation of drinking well water) and water quantity impacts (*e.g.*, drawdown of aquifers, diversions or diminutions of

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[32] *See, e.g.*, http://www.epa.gov/otaq/fuels/dieselfuels/documents/420f12081.pdf.

surface flow, hydrologic changes affecting seeps and springs, drinking water impacts) of the terminal's construction and operation. The agencies should ensure that the EIS describes, in detail, the possible sources of all water needed for the railroad and associated drilling activities, including water originating in any over-allocated water source.

The analysis must consider acid deposition into waterways from the trains' and ships' diesel engines. An analysis of the Port of Morrow proposed coal export terminal, which is much smaller, showed nitrogen deposition into the Columbia River many times above the ecological screening level of 5 kg/ha/yr. *See* Exh. 64 at 25. These impacts crossed state boundaries. These local impacts should be considered in the context of global acidification.

The analysis must assess not just the impacts of dredging in the Columbia River to construct the project, but also the cumulative effects of maintenance dredging every few years for the foreseeable future, as well as the cumulative effects of other dredging activities in the lower Columbia. *See* Exh. 67 (Longview Fibre comments).

In addition to water availability considerations, the EIS must examine the project's potential impacts to water quality. Contamination of river and drinking water supplies can occur with diesel emissions and diesel spills both during project construction and during the ongoing operation of the project, which relies on continuous activity of trains. Construction and operation of the railroad may also result in water quality impacts in the way of increased sedimentation and other changes. The EIS must assess these impacts and detail how federal, state, and local water quality standards will be met, monitored, and maintained.

C. Public Safety Will Be Jeopardized by Construction and Operation of the Tesoro-Savage Project.

The impacts to public safety run the gamut from increased train traffic and vehicle accidents, increased derailments and concomitant emergency response, travel time delays at specific intersections (including the economic impacts of those delays, and impacts to/delay of emergency services (fire, police, EMT). The City of Vancouver submitted scoping comments on the proposed Millennium coal export terminal, Exh. 68, that stressed public safety concerns including blocked road crossings, delay of emergency responders, and train horn noise.

Threats from frequent long trains at rail crossings all along the route from North Dakota or Alberta, Canada drill and near the project area will mean delayed emergency medical service response times; and increased accidents, traumatic injury and death. Each 120-car unit train is approximately a mile-and-a-half long, and this proposal would significantly increase the daily number of trains along the rail route. These trains will bisect multiple communities along the route, leading to significant traffic delays and potential safety issues at grade-crossings. The delay of only a few minutes for an emergency response vehicle can mean the difference between

life and death for citizens in these rural communities. In addition, increased rail traffic will lead to increased collisions between passenger vehicles, pedestrians, and trains. *See* Exh. 29, Daniel A. Lashof et al., Natural Resources Defense Council, Coal in a Changing Climate (Feb. 2007).

Preliminary traffic impact studies have been done for several communities along the proposed rail transportation route for the proposed coal export projects in Washington, including:

- Exhibit 30, Coal Train Traffic Impact Study, Parametrix (Nov. 2012).
- Exhibits 31-38, Gibson Traffic Consultants Reports for Bellingham, Burlington, Edmonds, Marysville, Mount Vernon, Seattle, and Stanwood.
- Exhibit 39, Heavy Traffic Ahead, Western Organization of Resource Councils (July 2012).

In addition to the threat of delay, the EIS must review the threats associated with oil train derailments. There is a serious risk to human health from a huge increase in oil train traffic along the route to and from North Dakota and Alberta drill sites. EFSEC should also evaluate how local agencies will respond to oil spills that involve dangerous chemicals. For example, according to the Washington Department of Ecology, spilled Bakken oil presents a significant risk to first responders as the oil and its diluent may contain elevated levels of benzene. High levels of benzene or other dangerous chemicals may require emergency responders to wear respirators, delaying and complicating initial response to an oil spill. Benzene exposure is a concern with diluted bitumen from the Alberta tar sands as well.

EFSEC must also review geologic hazards. Because of its setting within the Cascadia subduction zone, the coastal region of the Pacific Northwest has a high level of seismic activity. For example, the U.S. Geological Survey estimated that there is an approximate 14% chance that a Great Cascadia subduction earthquake (magnitude 8+) will strike the region in the next 50 years—the length of time regarded as typical design life of a structure or facility in the United States. This probability is characterized as "quite high."[33] The EIS should analyze the environmental impacts of the project in the event of an earthquake or cascading earthquake. This analysis should account for varying seismic events.[34] *See* Exh. 89 at 3-4.

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[33] Petersen, M.D., Cramer, C.H., and Frankel, A.D. 2002. Simulations of seismic hazard for the Pacific Northwest of the United States from earthquakes associated with the Cascadia subduction zone: Pure and Applied Geophysics, v. 159, p. 2147-68.

[34] *See* Cascade Subduction Zone Earthquakes (2013), http://www.dnr.wa.gov/publications/ger_ic116_csz_scenario_update.pdf; http://www.oregonlive.com/environment/index.ssf/2012/08/major_earthquake_in_oregon_cou.html.

Site liquefaction is another important area of review, as Tesoro-Savage concedes in its application at 2-192 to 2-194. Liquefaction is a major threat to all Columbia River ports. In 2012, the State of Oregon released a critical energy infrastructure report that highlights the serious problem the state will have in the event of an earthquake because so much of its infrastructure is located on riverfront properties subject to liquefaction. *See* Exh. 90, Earthquake Risk Study for Oregon's Critical Energy Infrastructure Hub; Exh. 91, Washington Department of Natural Resources, Clark County Liquefaction Map (2004).

D. The Overall Economic Impacts of the Tesoro-Savage Project Are Likely Negative.

The economic impacts of this project must also be reviewed. Issues here include the impact of dramatic increases in oil train traffic on real estate values and damage to property from diesel emissions, vibration, and noise. There are also serious concerns relating to the impact of such a massive increase in oil rail traffic on other non-oil shippers of freight by rail, including ports and shippers of agricultural products. These same issues may dramatically affect passenger rail interests. These significant rail traffic increases are likely to create major impacts on communities affected by vehicle traffic problems related to delays at non-grade separated railway crossings, which will affect non-rail freight mobility, access to ports, retailers, tourist centers, and employers. There will be impacts to other types of development in the Port of Vancouver itself, as well as the City of Vancouver. On the marine side, there are likely to be significant economic impacts on marine dependent industries such as commercial and tribal fisheries, tourism, and other businesses.

1. The project, individually and in combination with other proposed coal and oil shipping projects, will create massive increases in rail traffic, with major impacts on other rail users and affected communities.

The increased rail traffic associated with shipping 360,000 barrels of crude oil a day at full build out from the Tesoro-Savage project would represent a huge increase in freight rail usage and would likely present significant conflicts with other users of the rail line, including freight and passenger shippers. According to the Washington State Department of Transportation (WSDOT), inbound freight rail traffic totaled 58 million tons in 2010.[35] Based on WSDOT's figures, rail tonnage associated with just the Tesoro-Savage project at full build out would represent a substantial increase in the inbound rail tonnage on Washington rails. These impacts are even more significant if you take into account the cumulative impacts on a regional perspective. The authors of the *Heavy Traffic Ahead* study, Exh. 39, have estimated that combined rail traffic from the Powder River basin to the proposed northwest coal terminals (including projected growth in British Columbia, Canada) would equal as much as 157 million

[35] WSDOT, Washington State Rail Plan Public Workshop Presentation (Slide 21), Nov. 2012.

metric tons per year. This would result in a nearly 200% increase of inbound regional freight rail traffic for just this one commodity. It is critical that the EIS include a full analysis of the cumulative impacts from these proposals, including the capacity of the rail system to handle these increases without significant adverse impacts on other shippers, passenger rail users, and communities.

The most recent analysis of Washington's freight capacity, conducted in 2009 (Exh. 40, Washington State Department of Transportation Freight Rail Plan 2010-2030), indicated that a number of critical sections of track, including the Columbia Gorge, were at or near capacity in 2008 and predicted further congestion by 2028. Other key chokepoints are identified in the Plan, the Washington State Transportation Commission's Statewide Rail Capacity and System Needs Study, December 2006 (Exh. 41), and the *Heavy Traffic Ahead* study (Exh. 39). Additional critical bottlenecks include the Columbia Gorge and the Spokane-Sandpoint Corridor (known in railroad parlance as "the Funnel," due to the fact that most major east-west rail corridors converge there).

Unless mitigated with significant capacity additions, the addition of the massive increases of oil train traffic is likely to present significant adverse impacts on other users of the rail line, including grain and fruit shippers, intermodal users, ports, industries, aircraft manufacturers and passenger rail—all of who are critically dependent on timely and affordable access to the rail system. *Heavy Traffic Ahead*, Exh. 39. Existing state studies indicate that coal rail traffic is already having a significant negative impact on the ability of Washington shippers to access markets where coal traffic from the Powder River basin is dominating the rail lines; experts working for the state have concluded that "the high volume of coal trains moving east out of the Powder River basin has made it virtually impossible to route time-sensitive intermodal trains moving from PNW ports to central and southeast gateways such as Kansas City and Memphis through the near continuous flow of slow-moving coal trains. Adjusting to this, BNSF has shifted most intermodal traffic destined to locations south of Chicago to the Ports of Los Angeles and Long Beach." These reports also confirm that the railroad prioritizes unit trains, such as coal or oil trains, over other shippers. The EIS should fully analyze the impacts on northwest shippers if inbound and outbound freight traffic is diverted or eliminated due to the competition with crude oil trains.

The EIS must also analyze impacts, mitigation measures and potential funding relating to the use of passenger rail on these same lines. As Exh. 42 discusses, the Amtrak Cascades Mid-Range Plan (2008), Washington and passenger rail advocates have significant plans for increases of passenger rail capacity, including adding additional high-speed passenger trains on the I-5 corridor. The EIS must analyze how existing and expanded passenger rail uses will be impacted

if freight traffic increases.[36] The EIS should also consider existing and prospective public funding for rail capacity to purchase passenger rail service. The public has spent billions of dollars in rail improvements to ensure that passenger rail fits with existing capacity, and it is imperative that the EIS fully analyze the past and prospective investments to ensure that public funds are not spent for private purposes.

It will also be necessary to review the need for public investment spurred by this project. Rail infrastructure improvements are anticipated, although it is far from clear how those improvements will be funded. Rail lines and infrastructure will also need to be regularly maintained, and there will be mitigation costs for structures such as overpasses, tunnels, and railroad crossings. The EIS must also address whether the public will be expected to bear any costs for infrastructure constructed for private benefits. Federal and State Governments commonly bear a significant share of the costs of freight rail capacity improvement projects.[37] The EIS should include all needed capacity improvements that will be required to address at least those areas where the planned oil train traffic will exceed the capacity of the existing system.

2. *The project is likely to create very significant impacts relating to rail traffic in dozens of impacted communities.*

Numerous studies have confirmed that the massive increases in freight rail traffic for coal export will result in significant adverse impacts on other traffic and freight mobility within affected communities. *See* Exhs. 30, 31-38, 39. Each of these studies concludes that the level and type of coal train traffic associated with this project is likely to cause a number of affected intersections to reach unacceptable levels of service, including many intersections that are projected to reach level of service "D" or "F." These traffic impacts will cause direct economic losses to affected communities and businesses through interruptions of freight mobility, challenges for customers reaching businesses, and lost employee time. Air pollution impacts related to increased idling and congestion may also directly impact growth in affected communities. These studies apply to crude oil trains as well.

Although these studies show the likelihood of significant adverse impacts in a number of communities, it is imperative that the EIS fully analyze these issues in these and all other

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[36] Passenger service that may be affected would include, among others, Sound Transit Sounder Commuter services as well as Amtrak intercity service and Empire Builder service between Seattle and Chicago. The Empire Builder service also utilizes "The Funnel" in Spokane, which is expected to see the greatest increase in freight rail traffic because of the coal shipments.

[37] *See* Sightline, January 2013, *Who Pays for Freight Rail Upgrades? available at* http://daily.sightline.org/2013/01/18/who-pays-for-freight-railway-upgrades/.

communities that are likely to be similarly affected along the entire corridor from drill sites in North Dakota, Montana, or Alberta, Canada to the proposed Tesoro-Savage terminal.

The EIS must also look at necessary mitigation for these traffic and mobility concerns and the question of who will bear the costs of this mitigation. Under federal law, railroads are generally limited to paying no more than 5% of the costs of grade separated crossings where at grade crossings are being eliminated. Typically, the railroad pays far less than that amount. Given that the costs of grade separated crossings to address these traffic issues are in the $10s and $100s of millions, the EIS must analyze any mitigation that is needed to reflect the huge increases in oil train traffic associated with this project to ensure that the public does not pay for private benefits.

Finally, it is particularly critical that the evaluation of rail impacts be placed with the context of cumulative effects from multiple projects, currently under consideration, that will dramatically raise the amount of train traffic in Washington State. There are numerous proposals to ship crude oil and coal that will in part use the same rail lines. The EIS should evaluate the direct, indirect, and cumulative impacts of reasonably foreseeable projects, including crude oil, coal export, and liquefied natural gas terminals on the Columbia River. This includes the cumulative impacts associated with rail traffic, vessel traffic, and associated pollution and public health impacts.

3. *Other economic impacts and risks associated with the project will be significant.*

a. Property valuation

Although large increases in oil train traffic has not yet occurred, recent studies focused on proposed coal train traffic increases have indicated that the massive increases in train traffic may directly result in significant reductions in property values, affecting owners, other taxpayers and affected communities.[38] A study conducted by the Eastman Company (property valuation experts and consultants) relevant to the Gateway Pacific Terminal in Whatcom County concludes that property valuation losses are likely to be significant for properties located within 500 feet of the mainline tracks in Whatcom, Skagit, Snohomish, King, and Pierce Counties, due to the impacts related to traffic, safety, vibration, noise, pollution, and stigma and perception issues. For example, the study found that single family residential properties north of Everett could lose

[38] *See* Exh. 43, Increased Coal Train Traffic and Real Estate Values, The Eastman Company (Oct. 30, 2012); Exh. 44, The effect of freight railroad tracks and train activity on residential property values, Robert A. Simons R. & A. El Jaouhari (Summer 2004); Exh. 45, Examining the Spatial Distribution of Externalities: Freight Rail Traffic and Home Values in Los Angeles, Futch, M. (Nov. 11, 2011).

values in the range of 5-20%. Other estimates included multi-family properties (5-15%); commercial properties (5-10%); and industrial properties (5-8%). Using a database of assessed property values in the study area, the Eastman report concluded that even a 1% diminution in property value would result in a loss of approximately $265 million. While we are not yet aware of any comparable study for Vancouver, it is clear that a substantial increase in rail traffic has important impacts that need to be assessed. The EIS should look at these issues along the entire corridor, using specific estimates of rail traffic associated with the project, as well as the cumulative impacts of proposed coal export facilities and other proposed crude-by-rail projects.

b. Impacts on other Port of Vancouver business

Other business opportunities at the Port of Vancouver are likely to be harmed by the Tesoro-Savage project. For example, the Port of Vancouver recently approved three agreements with BHP Billiton to develop a potash export facility at the Port's Terminal 5.[39] At full build-out, BHP plans to move 8 million metric tons of potash through the port annually. According to the Port, construction is expected to begin in 2014, "with operations commencing as early as 2017."[40] The potash will be transported through the city by rail for delivery to the Port.

In October 2009, the City of Vancouver approved the master plan for the Columbia Waterfront Development project which calls for the development of 3,300 residential units and 1 million square feet of commercial space on 32 acres of riverfront property. This site is bordered by the BNSF railroad tracks that would be used to transport the oil to the terminal. On November 4, 2013 the Vancouver City Council approved the Waterfront Park Plan that calls for a 7.3 acre park and trail within the Waterfront Development project. The City of Vancouver has invested $45 million in transportation improvements to serve the Waterfront Development project. The EIS needs to identify the impacts of the Tesoro Savage project and other reasonably foreseeable projects on the Waterfront Development project.

c. Impacts on economies dependent on the marine environment

There are likely to be significant adverse impacts and major risks posed to the Columbia River and aquatic ecosystems from this project. In addition to the impacts on ecosystems, these issues must be evaluated for the impacts and risks that they pose for marine related businesses and economies, such as commercial, tribal and sports fisheries, tourism, and other related businesses. These businesses cumulatively provide billions of dollars in positive economic impacts to the state and region. Exh. 16, National Wildlife Federation, *The True Cost of Coal:*

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[39] *See* http://www.portvanusa.com/news-releases/port-commission-signals-confidence-in-bhp-billiton-project/.

[40] The Columbian, "BHP Signals Commitment to Port of Vancouver Project," Aug. 22, 2013.

The Coal Industry's Threat to Fish and Communities in the Pacific Northwest (2012) at 9 (recreational fishing accounts for $2.7 billion a year to the Washington and Oregon economies; commercial fishing in Washington contributed $3.9 billion to economy). Impacts to other forms of recreation, such as boating, fishing, hiking, and birding, should be closely analyzed.

Commercial and recreational fishing form a vital part of Washington State's economy. As Washington Department of Fish and Wildlife found in 2008 (Exh. 87):

> Ultimately, our findings indicate that commercial and recreational fisheries not only contribute employment and personal income, but also contribute in several other significant ways to Washington's economy, as well as to its residents' quality of life.
>
> In terms of economic impacts, commercial and recreational fishing conducted in Washington fisheries directly and indirectly supported an estimated 16,374 jobs and $540 million in personal income in 2006. When viewed in the context of the Washington state economy, these levels of employment and earnings account for about 0.4 percent of total statewide employment and about 0.2 percent of total statewide personal income in 2006.

See also Exh. 88, Washington State Maritime Cluster Economic Impact Study (Nov. 2013).

All of these economic impacts beg the question whether the overall economic impacts of the project are positive. As Exh. 46 shows, *The Impact of the Development of the Gateway Pacific Terminal on the Whatcom County Economy,* the answer to this question is very likely no. This study, by one of the nation's leading economic consulting firms, evaluated the positive economic impacts from a proposed coal export project in Whatcom County, and then compared them to a wide range of negative economic tradeoffs and impacts. It concluded that the overall economic impact would very likely be negative, *even in the county with most of the positive economic benefits.* A similar review should be prepared specific to the locally impacted area of Vancouver and Clark County as part of this EIS. Additionally, the EIS should look at the overall economic impacts of the Tesoro-Savage project on a region-wide basis, particularly in light of the cumulative effects with multiple overlapping impacts.

E. The Tesoro-Savage Project Will Increase Harm to Wildlife, Marine, and Aquatic Health.

The EIS must include an analysis of impacts to biological, marine, and aquatic resources on both public and private lands and waters in the affected area, that is, in the area from the drilling of the oil in the middle of the North American continent, through the rail corridor to the Tesoro-Savage project, through the loading and shipping of the oil through the Columbia estuary, to its final, and currently unknown, destination and burning. Such resources include

marine and terrestrial mammals, game and non-game resident and migratory bird species, raptors, songbirds, amphibians, reptiles, fisheries, aquatic invertebrates, wetlands, and vegetative communities. EFSEC must ensure that up-to-date information on all potentially impacted flora and fauna is made available, so that adequate impact analyses can be completed. Habitat degradation, fragmentation, and loss must all be assessed, along with any resulting impacts to wildlife and marine species.

1. Construction and operation of the Tesoro-Savage project will harm the ecology of the lower Columbia River.

Risks to aquatic health in the important Columbia estuary—including potential harm to important Columbia River salmon populations, threatened salmon species, and endangered killer whales—stem from oil spills from bulk carriers, impacts during construction (seafloor disturbance, increased turbidity, noise, lighting), impacts during operation (endemic oil spills, shading from pier and wharf, toxics from terminal's outfall pipes, night lighting, noise), chosen shipping routes and shipping traffic along those routes, and climate change itself.

Construction and existence of the dock and pier will impact salmon, lamprey, and other marine life. *See* Exh. 47, Minimizing Effects of Over-Water Docks on Federally Listed Fish Stocks in McNary Reservoir: A Literature Review for Criteria, prepared by the U.S. Geological Survey for the U.S. Army Corps of Engineers (2010) (prepared in support of criteria for siting new docks in the McNary Pool of the Columbia River, this report recommends, among other things: (1) pilings shall not exceed 5 inches in diameter, (2) each over-water structure shall utilize no more than 6 piles for the entire project, and (3) nothing shall be placed on the over-water structure that will reduce natural light penetration through the structure); Exh. 48, Overwater Structures and Non-structural Piling White Paper, prepared by Jones & Stokes Associates for the Washington Department of Fish and Wildlife (2006) (summarizes scientific literature documenting the direct, indirect, and cumulative impacts of overwater structures, including industrial docks, to ESA-listed salmonids and other aquatic life); Exh. 49, Over-water Structures: Freshwater Issues, prepared by Herrera Environmental Consultants for the Washington Departments of Fish and Wildlife, Ecology, and Transportation (2001) (comprehensive overview of scientific literature, current through late-2000, describing the impact of pilings and docks on aquatic life, including increased predation, decreased habitat quality, and degraded water quality).

The design, construction, and existence of the wharf and trestle will have shading impacts, which in turn affects estuary ecology. For example, juvenile salmon, which use the lower river for migration and rearing, will also be disrupted by the dock system. During terminal operations, noise and artificial light will harm all the fish that use the estuary environment, and vessel berthing will disrupt and harm salmon rearing and migration behavior. In a letter to the Army Corps, the National Marine Fisheries Service expressed significant concern about the

impacts of the much smaller Morrow coal project on ESA-listed species. Exh. 50. Notably, it rejected the Corps efforts to look narrowly at the environmental impacts of the project, demanding additional information before consultation could proceed.

Stormwater is another critical concern, given the toxicity of the material being shipped. The surrounding water bodies are already listed as impaired under the state's § 303(d) list, and under Ninth Circuit precedent, any additional discharge to such impaired streams is prohibited. As we have previously explained with respect to the Millennium coal export terminal proposal, the provisions in the construction and industrial stormwater general permit are not adequate to the task of controlling toxic runoff from facilities into sensitive and impaired water bodies. These discharges should be regulated under an individual permit if not prohibited outright. *See* Exh. 63 (Construction Stormwater Comment 11-30).

As noted above, an evaluation of the proposed Morrow coal export facility showed nitrogen deposition from the diesel engines for the trains and ships significantly above the ecological screening level. *See* Exh. 64 at 24-26. The EIS should include a similar analysis for Tesoro-Savage.

Increased wildlife mortality from railroad and drilling-related activity (including, but not limited to, increased human conflicts, habitat loss, and increased hunting pressure) must also be discussed. Impacts to wildlife migration corridors must be evaluated.

2. *Increased shipping traffic caused by the Tesoro-Savage project will harm the lower Columbia River and its already at-risk aquatic species.*

Granting the requested permit would dramatically increase the amount of large-vessel traffic in the Columbia estuary, a sensitive and critically important ecosystem. A study performed for a smaller proposed coal export proposal found it would itself cause an increase of around 7% in vessel traffic on the lower Columbia River. Exh. 51. The proposed action is an oil port many times that size. Each of these ships must navigate the Columbia bar, known to captains as "the graveyard of the Pacific" for its dangers.

The dramatically increased shipping traffic brings with it an increased risk of collisions, groundings, spills, discharges, and accidents during vessel fueling. Similarly, the potential for introduction of invasive species, including through ballast water, must be assessed, as tens of thousands of cubic meters of ballast water per visit will be discharged by the shipping vessels. Exh. 16, *The True Cost of Coal: The Coal Industry's Threat to Fish and Communities in the Pacific Northwest* at 10. Hull fouling presents a similar danger of invasive species introduction. All of these risks and impacts must be carefully scrutinized, particularly in light of cumulative effects like other proposed coal terminals on the Columbia River.

This increased quantity of shipping, and the operations of the terminal site, will have effects on threatened, endangered, and candidate species that must be analyzed in the EIS. This includes multiple ESA-listed salmon species, endangered southern resident killer whales (which rely on Columbia salmon as a food source), and other species. For species protected under the Endangered Species Act, federal agencies must consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service ("NMFS") under § 7 of the Endangered Species Act to determine whether the terminal, the proposed shipping activity and marine shipping routes, any of the proposed railroad routes, and the associated oil drilling and combustion activities will adversely affect these species or their designated critical habitat.

Federal and state agencies, along with Columbia River Treaty Tribes, have spent decades trying to protect and recover salmon in the Columbia River that are threatened with extinction due to hydropower operations and habitat loss. Indeed, the federal government's chief response to mortality to salmon caused by dams is to improve habitat, and especially in the Columbia River estuary. Agreements with the states call for spending tens of millions of dollars on estuary habitat restoration to mitigate for hydropower impacts. *See* Exh. 52, Estuary Habitat MOA. These efforts will be undermined by the extensive pollution, habitat loss, and risk of accident that are associated with this project.

It is particularly important for the agencies to evaluate increases in vessel traffic in the context of the cumulative impacts from multiple current and reasonably foreseeable projects—mostly related to other oil shipping proposals, LNG, and coal—in the lower Columbia River. For example, one recent project at Port Westward proposes to dramatically expand vessel traffic downstream in the Columbia for carrying crude oil. Exh. 65. Another project under review involves substantial increases in LNG vessel traffic. Exh. 66. EFSEC must also analyze the increased rates of juvenile salmonid wake stranding caused by Tesoro-Savage's increase in shipping traffic. As the Columbia River Inter-Tribal Fish Commission wrote with respect to the Millennium coal proposal:

> The ships of the Panamax category, proposed for this project, will be massive for the Columbia River. Ships of this size and draft are unique for this area. Studies have shown that large ships cause huge disturbances in the system, including causing wake stranding of outmigrating smolts, bank erosion and disturbance of nearshore habitats. Adding this project to the river will increase ship traffic dramatically and will have significant negative effects on listed salmonids.

Exh. 69 at 2.

3. *A crude oil spill would be devastating to fish and wildlife.*

Crude oil is extremely toxic to fish and wildlife. Past oil spills have caused documented harm to aquatic fish and shellfish. Oil spills release polycyclic aromatic hydrocarbons ("PAHs") into surrounding waters. PAHs include phenanthrene, anthracene, fluoranthene, pyrene, but, in general, low molecular weight PAHs can be directly toxic to aquatic organisms. The metabolites of higher molecular weight PAHs are known carcinogens in humans. Previous studies and reviews of oil spills have documented PAHs rapidly build-up in tissues of finfish and shellfish to levels dangerous for human consumption following spills of varying size. Seepage and small leaks over time may cause resident fish and shellfish to suffer chronic exposure to PAHs and allow these chemical compounds to accumulate in animal tissues.

An oil spill in the Columbia River would have devastating impacts to fish and wildlife. Exh. 86, Oiled Wildlife; Exh. 81, Altered growth and related physiological responses in juvenile chinook salmon from dietary exposure to polycyclic aromatic hydrocarbons; Exh. 82, Effects of Diesel on Survival, Growth, and Gene Expression in Rainbow Trout Fry; Exh. 83, Leyda Consulting, Ecological Impacts of Proposed Coal Shipping (Oct. 30, 2012) at 14-16 (explaining, with references, harm to salmonids from petroleum products). *See also* Exh. 70, NMFS Comments on Millennium coal (listing marine species at risk and requesting information for broad Endangered Species Act review).

Tesoro-Savage's location on the Columbia River makes any oil spill even more devastating. The Columbia River estuary is "a valuable functioning ecosystem that has been identified by scientists and resource managers as a vital link in the lifecycle of most anadromous fish in the Basin. All anadromous species, including those listed under the Endangered Species Act, pass through or rear in the estuary. The fact that habitat around the Port [of Longview] is already degraded makes it imperative that any new development cause as little injury as possible." Exh. 69, CRITFC comments on Millennium coal.

Any potential spill discussion must include the Washington State coastline. The bar at the mouth of the Columbia River is considered one of the most dangerous crossings out of harbor in the world. Transporting or towing oil out of this harbor will always face risk and more so during winter storms and large tidal exchanges. Should a spill incident occur in this area, crude oil and components could potentially impact both inside the river mouth and the Washington State coastline both north and south of the event dependent on wind, waves, and currents. Depending on the time of year, a spill event may be worsened by high-energy storms that could spread its impact widely both in the river, at sea, and on shorelands.

F. Columbia River Gorge National Scenic Area

Trains serving the Tesoro-Savage project will pass through the Columbia River Gorge National Scenic Area. The Gorge has long been considered a special area. The Gorge has been occupied by Native American tribes for more than 10,000 years, and the scenic, natural, and cultural resources of the Gorge remain critical to sovereign Native American governments. In 1915, the U.S. Forest Service established Eagle Creek as the first Forest Service Recreation Area in the nation. The following year, the Gorge was proposed as a National Park. In 1986, Congress recognized the national significance of the Columbia River Gorge and created the Columbia River Gorge National Scenic Area to protect and enhance the aesthetic, biological, ecological, historic, and recreational values in the Gorge. *See* Columbia River Gorge National Scenic Area Act ("Scenic Area Act"), 16 U.S.C. §§ 544–544p. The Gorge, under the protection of the Scenic Area Act, offers a stunning array of sensitive resources, including scenic and historic views along the Columbia River, site of the final portion of Lewis and Clark's journey across the West. Today the Gorge contains hundreds of miles of hiking and bike trails through locales as diverse as misty river canyons and arid grassland plateaus. The Gorge also contains dozens of lakes, parks, campgrounds, and other recreational areas. Some of the most heavily used recreation sites in Washington and Oregon are in the Gorge, often in close proximity to the Columbia River and the likely crude oil transportation route.

The National Scenic Area is also a working landscape, sustained economically by agricultural and forest lands and 13 designated urban areas. The urban areas in the National Scenic Area are generally located along the Columbia River and straddle the highway and railroad transportation corridors that run the length of the Gorge in both Washington and Oregon. Increased rail traffic would adversely affect these economic uses by increasing wait times and railroad crossings, increasing noise, generating demand for additional sidings, and worst of all, releasing plumes of coal debris in windy locations.

As discussed above, diesel emissions will harm air quality, and the Gorge in particular will suffer from increased air pollution. Indeed, at the present rate of rail traffic, the Gorge already has smog and visibility impairment up to 95% of the time. The additional train emissions, as well as Tesoro-Savage's other indirect and cumulative effects on the scenic, natural, cultural and recreation resources of the Columbia River Gorge National Scenic Area must be included in the scope of review.

The EIS should pay particular attention to harmful impacts to the Gorge. Rail lines in the Gorge are currently near capacity. This proposal and other coal export proposals would result in rail infrastructure expansion into sensitive areas in the Gorge, including wetlands, fish and wildlife habitat, rare plant habitat, and cultural resource sites. SEPA requires that the EIS address impacts to sensitive or special areas, such as the Columbia River Gorge, and the degree that the proposal would conflict with state, local, and federal protections for the environment,

such as the Columbia River Gorge National Scenic Area Act. WAC 197-11-330(3)(e)(i), (iii). State law also requires the Governor and all state agencies to carry out their respective functions in accordance with the Columbia River Gorge National Scenic Area Act. RCW 43.97.025. EFSEC and the Governor are required to review projects for their impacts on the Columbia River Gorge and to take actions to avoid those impacts.

IV. THE EIS MUST ANALYZE A REASONABLE RANGE OF ALTERNATIVES, INCLUDING A MEANINGFUL NO-ACTION ALTERNATIVE.

The range of alternatives "is the heart of the environmental impact statement." 40 C.F.R. § 1502.14. It is well understood that "NEPA requires that an agency 'rigorously explore and objectively evaluate all reasonable alternatives.'" *Utahns for Better Transp. v. Dep't of Transp.*, 305 F.3d 1152,1168 (10th Cir. 2002) *quoting* 40 C.F.R. § 1502.14(a), *modified on rehearing Utahns for Better Transp. v. Dep't of Transp.*, 319 F.3d 1207 (2003). The alternatives discussed should provide different choices from which decisionmakers and the public can make an informed choice after considering the environmental effects of the alternatives. *See Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853 (9th Cir. 2004). The range of alternatives should also "include reasonable alternatives not within the jurisdiction of the lead agency," and "include appropriate mitigation measures not already included in the proposed action or alternatives." 40 C.F.R. § 1502.14.

In addition to the need for thorough consideration of the impacts of constructing the Tesoro-Savage project, the EIS must consider the option of not constructing the oil shipping facility at all. Among the alternatives that must be considered in an EIS is the "no action" alternative. 40 C.F.R. § 1502.14(d). Indeed, "[i]nformed and meaningful consideration of alternatives—including the no action alternative—is ... an integral part of the statutory scheme." *Bob Marshall Alliance v. Hodel,* 852 F.2d 1223, 1228 (9th Cir. 1988). The evaluation of the no action alternative cannot be a meaningless exercise. To satisfy NEPA, the EIS must consider this alternative without prejudgment of the outcome of its analysis. "[F]ull and meaningful consideration of the no-action alternative can be achieved only if all alternatives available ... are developed and studied on a clean slate." *Bob Marshall Alliance v. Lujan,* 804 F. Supp. 1292, 1297-98 (D. Mont. 1992).

V. THE CUMULATIVE IMPACTS OF ALL PROPOSED FOSSIL FUEL EXPORT TERMINALS MUST BE CONSIDERED AND ANALYZED.

The Tesoro-Savage EIS must include review of the impacts of all other proposed fossil fuel export projects that use the same rail lines and/or use the same waterways. The courts have found that even where several actions were not "connected" or "similar" enough to warrant consideration in a single environmental impact statement, their impacts must still be addressed as cumulative impacts. *Earth Island Inst. v. U.S. Forest Serv.,* 351 F.3d 1291, 1306 (9th Cir. 2003)

("Even if a single, comprehensive EIS is not required, the agency must still adequately analyze the cumulative effects of the projects within each individual EIS.").

Under NEPA, an EIS must analyze and address the cumulative impacts of a proposed project. 40 C.F.R. § 1508.25(c)(3). A cumulative impact is defined as:

> [T]he incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7. In other words, cumulative impacts are the result of any past, present, or future actions that are reasonably certain to occur within the action area. Such effects "can result from individually minor but collectively significant actions taking place over a period of time." *Id.* In the coal context, the U.S. Supreme Court has held that, "when several proposals for coal-related actions that will have cumulative or synergistic environmental impacts upon a region are pending concurrently before an agency, their environmental consequences must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate different courses of action." *Kleppe v. Sierra Club*, 427 U.S. 390, 409-410 (1976).

Tesoro-Savage's proposal shares space with proposals for coal export, other oil shipping, and liquefied natural gas export facilities. Each of these proposals cannot be considered in a vacuum, for each will add impacts to an already stressed system. The Washington State Department of Ecology, commenting on the Port of Morrow proposal, highlighted the need to review cumulative impacts from all similar proposals, including, at a minimum:

- Increased vessel traffic on the Columbia River, including navigational and maritime safety concerns
- Protection of water quality, including increased risk of spills in the Columbia River
- Emissions of other air pollutants, including diesel particulate and greenhouse gases
- Increased rail traffic, including railroad capacity, increased noise, and delay times for emergency vehicles at rail crossings[41]

As the Environmental Protection Agency noted, "[a]ll of these projects—and others like them—would have several similar impacts. Consider, for example, the cumulative impacts to

[41] Ecology's Comments on Coyote Island Terminals (May 7, 2012) at 3, *available at* http://www.coaltrainfacts.org/ecology-requests-cumulative-eis.

human health and the environment from increases in greenhouse gas emissions, rail traffic, mining activity on public lands, and the transport of ozone, particulate matter, and mercury from Asia to the United States." EPA Comment on Port of Morrow project (Apr. 5, 2012) (recommending a "thorough and broadly-scoped" cumulative impacts analysis of all proposed coal export facilities).[42]

Further, the proposed fossil fuel terminals will be sited within the "usual and accustomed" fishing areas of Pacific Northwest Indian tribes, which have a sovereign government-to-government relationship with the U.S. federal government. Under federal court precedent, the tribes are "co-managers" of these resources along with the state and wield considerable influence over decisions that affect fishing resources.[43] The Affiliated Tribes of Northwest Indians called for full environmental review and government-to-government consultation with Indian tribes throughout the region.[44] Seven different tribal organizations—the Lummi Indian Business Council, the Swinomish Indian Tribal Community, the Confederated Tribes and Bands of the Yakama Nation, the Makah Tribal Council, the Tulalip Tribes, the Nisqually Indian Tribe, and the Samish Indian Nation—submitted comments on the Cherry Point Gateway Pacific Terminal calling for full environmental review, government-to-government coordination, and protection for fish, wildlife, air and water quality, human health, and tribal sacred areas.

Other federal agencies have also identified common elements that call for area-wide review. The U.S. Department of Housing and Urban Development, in its scoping comments for the Gateway Pacific Terminal, stated that "HUD suggests the Co-Lead Agencies either include the cumulative impacts from all three proposed ports in this EIS, or conduct an Areawide EIS that covers all three ports. The train traffic from all three ports could have a significant noise impact on communities on our region and in order to accurately and comprehensively address

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[42] EPA reiterated this call for a complete cumulative impacts review in its scoping comments for the Gateway Pacific Terminal, stating that "EPA also recommends that environmental impacts from increases in regional rail traffic and combustion of coal in receiving markets be examined in the context of other proposed export facilities in the Pacific Northwest region, so that reasonably foreseeable cumulative environmental impacts from additional facilities can be understood before a decision is made, as NEPA contemplates. … The cumulative effects analysis would appropriately include increases in regional train traffic and related air quality effects on human health, and the potential for effects to human health and the environment from increases in the long-range transportation of air pollution, including greenhouse gas emissions." *See* http://www.eisgatewaypacificwa.gov/resources/project-library.

[43] *U.S. v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974).

[44] *Available at* http://www.atnitribes.org/sites/default/files/res_12_53_with%20attachment.pdf.

this impact, it needs to be considered as a whole."[45] The National Park Service similarly called for a cumulative effects EIS.[46]

EFSEC must examine the cumulative effects of other actions and programs of the state and federal government, and fully disclose the combined impact of ongoing and reasonably foreseeable future actions. This includes the effect of Army Corps dredging projects, the Bonneville Power Administration's dam operations, water withdrawals authorized by the U.S. Bureau of Reclamation and logging and grazing approved and permitted by the U.S. Forest Service and Bureau of Land Management, and shipping traffic from existing Columbia River ports. EFSEC must also analyze cumulative impacts from actions carried out by local and private entities.

VI. TRIBAL GOVERNMENT SOVEREIGNTY MUST BE RESPECTED.

This proposed oil terminal will be sited within the "usual and accustomed" fishing areas of Pacific Northwest Indian tribes, which have a sovereign government-to-government relationship with the U.S. federal government. The Tesoro-Savage Project would be built within historic and treaty-protected fishing areas of the Yakama, Warm Springs, Umatilla, and Nez Perce tribes. Under federal court precedent, the tribes are "co-managers" of these resources along with the state. *See U.S. v. Washington,* 384 F. Supp. 312 (W.D. Wash. 1974).

These tribes have spoken out against permitting of coal terminals on the lower Columbia. *See* Exh. 53 through 59. In a comment letter to the Corps regarding the Morrow project in Boardman, the Yakama Nation characterized coal export proposals in the Columbia as a "new front … in the war on the Yakama way of life," describing in detail the risks to salmon, the safety of tribal fishermen, human health, water quality, and cultural resources. Exh. 55. The Nez Perce have also commented on the Morrow project, requesting that the Corps perform an EIS and assess cumulative impacts, citing concerns about "Tribal treaty rights, ESA-listed fish and lamprey and their habitat, Tribal traditional use areas along the coal transportation corridor, tribal cultural resources, and Tribal member health arising from coal dust and diesel pollution." Exh. 56. The Columbia River Inter-Tribal Fish Commission ("CRITFC"), which represents four Sovereign Tribal Nations (the Warm Springs, Confederated Tribes of Umatilla Indian Reservation, Yakama Nation, and Nez Perce) with treaty rights to salmon and other fish on the Columbia River, has also expressed opposition to the coal export proposals. In a comment letter on the Morrow Pacific Project, CRITFC stated that it has heard "significant concerns from our member tribes about the project's potential effects on tribal treaty fisheries." Exh. 57. CRITFC noted that "the proposed project area is currently used for fishing by tribal members exercising

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[45] *Available at* http://www.eisgatewaypacificwa.gov/resources/project-library.

[46] *Available at* http://www.eisgatewaypacificwa.gov/resources/project-library.

their treaty fishing rights" and the area "is also within lands designated as Traditional Cultural Property (TCP) and may contain significant cultural resources." The Affiliated Tribes of Northwest Indians have called for full environmental review and government-to-government consultation with Indian tribes throughout the region. Exh. 53. The concerns of these Indian nations and tribal members must be taken into account and apply with equal force to Tesoro-Savage and crude-by-rail.

Indeed, for the Gateway Pacific Terminal in Bellingham, Washington, the Corps wrote to the Washington Department of Archaeology and Historic Preservation seeking concurrence in its decision to define the Area of Potential Effect to include only the areas near the construction site itself. *See* Exh. 60. The Washington State Historic Preservation Officer Allyson Brooks disagreed, stating that the Area of Potential Effect was much greater, and that "the scope of this project, and the associated train traffic, poses unique issues when developing the necessary cultural resource studies." Exh. 61. The letter also notes the need to consider the effects of the "seaward boundary of the [Area of Potential Effect]. The increased vessel traffic, associated wakes, waves, and shoreline erosion of these vessels and the increased risk of accidents, oil spills, and damage all need to be considered." *Id.* at 2. For the Millennium Terminal, the Department repeated these concerns and added issues of Native American burial sites along the Columbia River, as well as concerns about the impacts of vessel traffic:

> Panamax and Cape-sized dry bulk carriers along the Washington Coast and entering the Columbia River are clearly a reasonable and foreseeable effect of the Project that should create a seaward boundary of the EIS. The increased vessel traffic, associated wakes, waves, and shoreline erosion of these vessels and the increased risk of accidents, oil spills and damage all need to be considered.

Exh. 71.

Similarly, many tribes have expressed their concern and opposition to the Millennium coal export terminal, which like Tesoro-Savage, is proposed along the banks of the Columbia River. *See* Exhs. 72-79, Comments of the Coeur d'Alene, Cowlitz, Nez Perce, Nisqually, Umatilla, Warm Springs, Yakama, and Upper Columbia River Tribes. For example, the Nez Perce Tribe outlined its concerns with the impact of the Millennium project on treaty-protected fishing:

> The lower Columbia provides crucial habitat for treaty-protected resources such as salmon, steelhead, lamprey and resident fish. There are several ESA-listed fish in the project corridor including Lower Columbia River Chinook Salmon ESU, Upper Willamette River Chinook Salmon ESU, Snake River Fall Chinook ESU, Columbia River chum salmon ESU, middle Columbia River steelhead DPS, and lower Columbia River steelhead DPS. These species are of critical importance to

> subsistence and culture of the Tribe. In addition, lamprey, although currently are not a listed species but are culturally significant to the Tribe, are also located in the project
>
> The application contemplates a significant increase in vessel and rail traffic. The analysis must include a thorough evaluation of the impacts of increased vessel traffic on anadromous and resident fish. This analysis should include impacts to aquatic resources caused by ballast intake and wake strandings, as well as threats posed by increased turbidity, noise, lighting, and impacts during operations like coal dust and other toxics. In addition, the increased rail traffic may affect Tribal member access to usual and accustomed fishing places and other traditional use areas as well as interfere with Tribal member use of those places through increased noise disturbances, coal dust, and diesel pollution. For all these reasons the Tribe believes that the increase in vessel and train has the potential to interfere with tribal treaty fisheries.

Exh. 74 at 4-5. These concerns about impacts to native fish populations, fishing access, and vessel and rail traffic apply with equal force to the proposed Tesoro-Savage project.

In 2006, the Corps denied a permit for a new dock and terminal site on the Columbia River because it would affect tribal treaty fishing rights. *See* Exh. 62. That project was of dramatically smaller scale than the Tesoro-Savage project. A similar outcome is warranted here. We ask that tribal sovereignty and treaties be fully respected.

VII. ENVIRONMENTAL JUSTICE CONCERNS

All federal agencies are encouraged to consider environmental justice in their NEPA analysis, evaluate disproportionate impacts, and identify alternative proposals that may mitigate these impacts. The fundamental policy of NEPA is to "encourage productive and enjoyable harmony between man and his environment." In considering how to evaluate progress in reaching these aspirational goals, the Council on Environmental Quality (CEQ) defined effects or impacts to include "ecological...aesthetic, historic, cultural, economic, social or health impacts, whether direct, indirect or cumulative."[47] Recognizing that these types of impacts might disproportionately affect different communities or groups of people, President Clinton issued Executive Order 12898 in 1994,[48] directing each federal agency to, among other things:

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[47] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, *available at* http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

[48] "Federal actions to address environmental justice in minority populations and low-income populations," 59 Fed. Reg. 7629 (Executive Order 12898; February 11, 1994).

- "Make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations,"
- "Identify differential patterns of consumption of natural resources among minority populations and low-income populations,"
- Evaluate differential consumption patterns by identifying "populations with differential patterns of subsistence consumption of fish and wildlife," and
- "Collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence."

CEQ's Guidance for Environmental Justice under NEPA[49] called for agencies to consider specific elements when considering environmental justice issues:

- Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.
- Agencies should consider the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards. Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.
- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.
- Agencies should be aware of the diverse constituencies within any particular community. Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

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[49] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, *available at* http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

The EIS must examine the environmental justice impacts, including increased noise, flowing from this project. Several low-income or minority communities, including the nearby Fruit Valley neighborhood, stand to be disproportionately impacted by the oil shipping terminal, the rail transportation of crude, and its drilling/extraction. As discussed above, traditional tribal lands will be affected by the Tesoro-Savage project. Columbia River tribes will be impacted in their treaty-protected fishing, Tribes along the rail route and in the area of increased drilling will be impacted by the proposed railroad and the increased drilling and extraction associated with this project.

The EIS must include demographic information for all communities at the terminal site and along the rail lines that would ship oil to the port, as well as at the drill sites. Communities closest to the port site, along the rail line, and near the wells—many of which are low income or have high minority populations—will bear a disproportionate impact of the air and water pollution caused by crude oil transportation and export, as described above.

VIII. THE THREAT OF CLIMATE CHANGE HAS SPURRED WASHINGTON'S COMMITMENT TO GREENHOUSE GAS REDUCTION.

Very recently, United Nations' Intergovernmental Panel on Climate Change ("IPCC") released the fifth version of its frequently cited report reflecting the scientific consensus that unrestrained greenhouse gas emissions cause global warming. The fifth IPCC report confirms yet again that climate change is being caused by unrestrained carbon pollution from industrial activities. As summarized by the IPCC in an accompanying press release:

> **Warming in the climate system is unequivocal** and since 1950 many changes have been observed throughout the climate system that are unprecedented over decades to millennia. Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850… Thomas Stocker, the other Co-Chair of Working Group I said: "Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system. Limiting climate change will require **substantial and sustained reductions** of greenhouse gas emissions."[50]

Numerous studies predict severe impact from climate change in Washington State, including dramatic reductions in snowpack, declining river flows, increased deaths from temperatures and air pollution, increased risk of wildfires, loss of salmon and shellfish habitat, lost hydropower generation, and flooding. In 2006, Washington commissioned a study "Impacts

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[50] *Available at* http://www.ipcc.ch/news_and_events/docs/ar5/press_release_ar5_wgi_en.pdf (emphasis in original). *See also* Exh. 84, Global Climate Change Impact in the United States (2009).

of Climate Change on Washington's Economy," which found that the cost of climate impacts would reach $3.8 billion annually by 2020.[51] The state Department of Ecology in 2009 summarized recent scientific studies specific to the Pacific Northwest as follows: "Each [of the studies] shows that without additional action to reduce carbon emissions, the severity and duration of the impacts due to climate change will be profound and will negatively affect nearly every part of Washington's economy."[52]

In February 2012, Washington Governor Christine Gregoire convened the Washington State Blue Ribbon Panel on Ocean Acidification to chart a course for addressing the causes and consequences of acidification. The Governor charged the Panel to:

- Review and summarize the current state of scientific knowledge of ocean acidification,
- Identify the research and monitoring needed to increase scientific understanding and improve resource management,
- Develop recommendations to respond to ocean acidification and reduce its harmful causes and effects, and
- Identify opportunities to improve coordination and partnerships and to enhance public awareness and understanding of ocean acidification and how to address it.

The Panel released its report and recommendations in the document Washington State Blue Ribbon Panel on Ocean Acidification (2012): Ocean Acidification: From Knowledge to Action, Washington State's Strategic Response, H. Adelsman and L. Whitely Binder (eds). Washington Department of Ecology, Olympia, Washington.[53]

In November 2012, Governor Christine Gregoire issued an Executive Order[54] acknowledging the particular harm that ocean acidification, caused by increased emissions of greenhouse gases into the atmosphere, inflicts on Washington. "[I]t is critical to our economic and environmental future that effective and immediate actions be implemented in a well-coordinated way and that we work collaboratively with federal, tribal, state, and local governments, universities, the shellfish industry, businesses, the agricultural sector, and the

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[51] *Available at* http://www.ecy.wa.gov/pubs/0701010.pdf.

[52] *Available at* http://www.ecy.wa.gov/pubs/0901006.pdf.

[53] *Available at* https://fortress.wa.gov/ecy/publications/SummaryPages/1201015.html. The technical summary (Feely, R.A., T. Klinger, J.A. Newton, and M. Chadsey (2012): Scientific Summary of Ocean Acidification in Washington State Marine Waters. NOAA OAR Special Report) is *available at* https://fortress.wa.gov/ecy/publications/SummaryPages/1201016.html.

[54] *Available at* http://www.governor.wa.gov/execorders/eo_12-07.pdf.

conservation/environmental community to address this emerging threat. The Executive Order specifically directs "[t]he Office of the Governor and the cabinet agencies that report to the Governor to advocate for reductions in emissions of carbon dioxide at a global, national, and regional level."

This warming threatens major environmental impacts in Washington, the Pacific Northwest, and worldwide.[55] According to the U.S. Global Change Research Program ("GCRP"), climate change could affect the Pacific Northwest, including western Washington, by causing "declining springtime snowpack lead[ing] to reduced summer streamflows, straining water supplies, [and] ... increased insect outbreaks, wildfires, and changing species composition in forests [that] will pose challenges for ecosystems and the forest products industry." Exh. 165, U.S. Global Change Research Program, Global Climate Change Impacts in the United States, at 135-38 (Thomas R. Karl et al., eds., 2009). In the northwestern United States, "salmon and other coldwater species will experience additional stresses as a result of rising water temperatures and declining summer streamflows." *Id.* at 136. Global warming also could profoundly affect the health of western fisheries, by "hamper[ing] efforts to restore depleted salmon populations," *id.* at 137.

Concentrations of CO_2 in the atmosphere "are projected to continue increasing unless the major emitters take action to reduce emissions." Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,539 (Dec. 15, 2009). The U.S. Environmental Protection Agency recognized the cumulative nature of both the climate change problem and the strategies needed to combat it:

> [N]o single greenhouse gas source category dominates on the global scale, and many (if not all) individual greenhouse gas source categories could appear small in comparison to the total, when, in fact, they could be very important contributors in terms of both absolute emissions or in comparison to other source categories, globally or within the United States. If the United States and the rest of the world are to combat the risks associated with global climate change, contributors must do their part even if their contributions to the global problem, measured in terms of percentage, are smaller than typically encountered when tackling solely regional or local environmental issues.

Id. at 66,543 (emphasis added). Consistent with this finding, the Ninth Circuit has rejected the argument that individual actions represent too minor of a contribution to the global problem to merit consideration under NEPA: "The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct. Any

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[55] And major economic impacts. *See* Exh. 85, *An Overview of Potential Economic Costs to Washington of a Business-As-Usual Approach to Climate Change,* Feb. 17, 2009.

given rule setting a [vehicle fuel-efficiency] standard might have an 'individually minor' effect on the environment, but these rules are 'collectively significant actions taking place over a period of time.'" *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.,* 538 F.3d 1172, 1217 (9th Cir. 2008) (internal citations omitted).

Both the United States and Washington have sought to meet the challenge of climate change with a variety of statutory and regulatory actions to reduce our reliance on fossil fuels and promote conservation and alternatives. At the federal level, EPA has responded with a formal finding that greenhouse gases endanger the public health and welfare, 74 Fed. Reg. 66496 (Dec. 15, 2009), the first step in comprehensively regulating greenhouse gases under the federal Clean Air Act. EPA has already issued some regulations relating to reducing emissions from both mobile and stationary sources, including the June 2010 "tailoring rule" governing federal Clean Air Act requirements for greenhouse gas emissions from stationary sources, 75 Fed. Reg. 31514 (June 3, 2010), passenger vehicle rules, *see, e.g.,* 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Full Economy Standards, 77 Fed. Reg. 62,624 (Oct. 15, 2012), and proposed rules for power plants, *see* Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources, 77 Fed. Reg. 22,392 (Apr. 13, 2012).

Washington adopted greenhouse gas reduction standards via legislation adopted in 2008. *See* RCW 70.235.070(1)(a). The statute establishes that by 2020, emissions shall be reduced to 1990 levels. By 2035, greenhouse gas emissions are to be 25 percent below 1990 levels and by 2050, they are to be 50 percent below 1990 levels. The state legislature has consistently reinforced its concern for greenhouse gas impacts on Washington's climate and economy, for example: a) by taking measures to triple the number of green jobs by 2020; b) adopting a clean car standard that will reduce greenhouse gas emissions from mobile sources; c) dramatically increasing efficiency requirements for buildings; d) helping communities reduce greenhouse gas emissions by saving energy; e) requiring all state agencies to inventory and reduce emissions; f) funding planning for climate change mitigation and adaptation; g) creating tax and other financial incentives to support low-carbon alternative energy sources; h) requiring new power plants to meet an "emissions performance standard" for greenhouse gases; and i) requiring new power plants mitigate 20 percent of life-time greenhouse gas emissions from the power plant. These legislative actions have been supplemented by a number of Executive Orders promoting reduction of greenhouse gas emissions and increasing the availability of energy alternatives.[56] In addition, the citizens of Washington passed I-937, mandating 15 percent of all electricity energy to come from renewable energy and energy efficient sources by 2020.

In short, both the United States and Washington have made firm and clear commitments to address the causes of climate change and have committed to promote alternatives to projects

[56] The laws and executive orders are *available at* www.ecy.wa.gov/climatechange/laws.htm.

that generate greenhouse gas emissions and mitigate those that cannot be avoided. The proposal to construct a crude oil shipping terminal with massive direct and indirect greenhouse gas emissions needs to be evaluated in light of those statutory and regulatory commitments.

IX. EFSEC SHOULD ENSURE THAT ITS EIS INFORMS ITS RECOMMENDATION.

Particularly because the Tesoro-Savage crude-by-rail terminal application is one of first impression for the agency, and because the impacts and risks, discussed above, are of grave concern to the health and environment of the people of Washington, EFSEC should ensure that its environmental review is completed prior to any adjudication. In that way, the analysis and alternatives in the EIS can properly guide EFSEC's ultimate recommendation.

Under WAC 463-47, EFSEC's SEPA rules must be applied when preparing an EIS. These rules establish "[p]olicies and procedures for conditioning or denying permits or other approval." WAC 463-47-110. These policies establish standards to justify a decision to "reject or recommend rejection of the application if reasonable mitigation measures are insufficient to mitigate significant adverse environmental impacts and the proposal is inconsistent with the policies" in WAC 463-47-110(1). WAC 463-47-110(2)(b)(ii). In part, the applicable policies state:

> (a) The overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions.
>
> (b) The council shall use all practicable means, consistent with other essential considerations of state policy, to improve and coordinate plans, functions, programs, and resources to the end that the state and its citizens may:
>
> > (i) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
> > (ii) Assure for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
> > (iii) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
> > (iv) Preserve important historic, cultural, and natural aspects of our national heritage;
> > (v) Maintain, wherever possible, an environment which supports diversity and variety of individual choice;
> > (vi) Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(vii) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(c) The council recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

(d) The council shall ensure that presently unquantified environmental amenities and values will be given appropriate consideration in decision making along with economic and technical considerations.

WAC 463-47-110(1). In addition, EFSEC's application standards establish numerous performance criteria, including disclosure of likely impacts to the human and natural environment. For example, the rules require that the application disclose impacts to air quality, odor, climate, climate change, and dust. WAC 463-60-312. The regulations specifically require that "[t]he application shall describe impacts caused by greenhouse gases emissions and the mitigation measures proposed." WAC 463-60-312(4). The application requirements also require disclosure of impacts from the "the sources of supply, locations of use, types, amounts, and availability of energy or resources to be used or consumed during construction and operation of the facility." WAC 463-60-342(2).

EFSEC must ensure that the EIS discloses the likely impacts of the proposed crude export facility that are sufficient to review whether the proposal would be consistent with each of EFSEC's policies, application requirements, and construction/operation standards. *See generally* RCW 80.50.010; WAC 463-14-020.

* * *

Thank you for your consideration of these scoping comments and the supporting materials in the enclosed CD. As you are no doubt aware, there is an extraordinary level of public interest in this process; the harmful impacts caused by the proposed crude oil shipping terminal will occur at the local, regional, and global scale; and the state and federal laws emphasize a thorough, up-front review of all the environmental effects of proposed actions. We reiterate our request for an environmental impact statement that fully addresses the direct, indirect, and cumulative impacts of all proposed fossil fuel export projects in the Pacific Northwest. For the Tesoro-Savage project in particular, we look forward to a Draft EIS that addresses the full direct, indirect, and cumulative impacts of the proposed project from the drilling of the oil, the transport of crude oil by rail through several states and hundreds of communities, the loading and shipping of oil via large ocean vessels, to the ultimate refining and burning of the crude oil.

Sincerely,

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On Behalf Of:
Columbia Riverkeeper
Friends of Columbia Gorge
Forest Ethics
Spokane Riverkeeper
Sierra Club
Washington Environmental Council
Climate Solutions

SCOPING COMMENTS FROM COLUMBIA RIVERKEEPER, FRIENDS OF COLUMBIA GORGE, FOREST ETHICS, SPOKANE RIVERKEEPER, SIERRA CLUB, WASHINGTON ENVIRONMENTAL COUNCIL, AND CLIMATE SOLUTIONS ON PROPOSED TESORO-SAVAGE CRUDE-BY-RAIL SHIPPING TERMINAL (December 17, 2013)

INDEX OF EXHIBITS

Exhibit No.	Title	Date
1	BP West Coast Products LLC, *Material Safety Data Sheet—Crude Oil*, (flash point of 20° - 90° F).	May 13, 2002
2	U.S. Environmental Protection Agency, *Screening-Level Hazard Characterization, Crude Oil Category*, Sponsored Chemical, Crude Oil (CASRN 8002-05-9).	March 2011
3	Abrams, L., *Fracking chemicals may be making oil more dangerous*, Salon.com.	August 13, 2013
4	Letter from Thomas J. Herrmann, Acting Director, Office of Safety Assurance and Compliance, to Jack Gerard, American Petroleum Institute, regarding review of potential safety issues related to the transportation of crude oil by rail, at 4.	July 29, 2013
5	Statement of Adam Sieminski, Administrator, Energy Information Administration, U.S. Department of Energy, before the Committee on Energy and Natural Resources, U.S. Senate, at 2.	July 16, 2013
6	American Association of Railroads, *Moving Crude Oil by Rail*, at 3-5.	December 2013
7	Region 10 Regional Response Team and Northwest Area Committee, *Emerging Risks Task Force Report—2013, Project Overview.*	2013
8	The Globe and Mail, *How oil is transported from North Dakota's Williston Basin.*	December 2, 2013
9	American Association of Railroads, *AAR Reports Record Second Quarter Crude-by-Rail Data; Decreased Weekly Rail Traffic.*	August 29, 2013

10	American Association of Railroads, *AAR Reports October and Weekly Rail Traffic Gains, 3Q Crude Oil Up Year Over Year.*	November 7, 2013
11	A Joint Report by Shanese Crosby, Robin Fay, Colin Groark, Ali Kani, and Jeffrey R. Smith, Terry Sullivan, *Transporting Alberta's Oil Sands Products: Defining the Issues and Assessing the Risks.*	March 17, 2013
12	A Joint Report by Natural Resources Defense Council, National Wildlife Federation, Pipeline Safety Trust, and Sierra Club, *Tar Sands Pipelines Safety Risks.*	February 2011
13	Washington State Department of Ecology, Publication No. 97-252, *Oil Spills in Washington State: A Historical Analysis.*	April 1997 Rev. March 2007
14	A Report, *Analysis of the Potential Costs of Accidents/Spills Related to Crude by Rail*, prepared by Ian Goodman and Brigid Rowan on behalf of Oil Change International, before the Pipeline and Hazardous Materials Safety Administration.	November 8, 2013
15	Article from Los Angeles Times, *Train in Alabama oil spill was carrying 2.7 million gallons of crude*, by Soumya Karlamangla.	November 9, 2013
16	National Wildlife Federation Report, *The True Cost of Coal: The Coal Industry's Threat to Fish and Communities in the Pacific Northwest.*	2012
17	Article from The Oregonian, *New Dawn fuel barge ran aground in the Columbia River, response was confusion, report says*, by Scott Learn.	June 20, 2010
18	Article from The Louisiana Weekly, *River traffic resumes after barge accident but threats remain*, by Susan Buchanan.	June 4, 2011
19	Article from the New York Daily News, *Barge collision in Mississippi River causes oil spill.*	February 18, 2012
20	The American Petroleum Institute, Petroleum HPV Testing Group, Category Assessment Document, *High Production Volume (HPV) Chemical Challenge Program*, submitted to the U.S. Environmental Protection Agency.	January 14, 2011
21	U.S. Fish and Wildlife Service, *Effects of Oil Spills on Wildlife and Habitat, Alaska Region.*	December 2004

22	Article from Dartmouth Undergraduate Journal of Science, *Oil Spills: Severity and Consequences to Our Ecosystem.*	March 11, 2012
23	*Pipelines and Salmon in Northern British Columbia: Potential Impacts*, prepared for the Pembina Institute by David A. Levy, Levy Research Services Ltd.	October 2009
24	Letter from Cynthia Giles, U.S. Environmental Protection Agency, to Jose W. Fernandez and Dr. Kerri-Ann Jones, U.S. Department of State, regarding the Keystone XL Project, at 3-4.	April 22, 2013
25	U.S. Environmental Protection Agency Report, *Volume Estimate for Submerged Line 6B Oil in the Kalamazoo River*, prepared by Thomas P. Graan, Ph.D., Weston Solutions, Inc., and Ronald B. Zelt, Professional Hydrologist, U.S. Geological Survey.	May 1, 2013
26	Congressional Research Service Report for Congress, *Air Pollution and Greenhouse Gas Emissions from Ships*, prepared by James E. McCarthy, Specialist in Environmental Policy.	December 23, 2009
27	*Air Pollution and Greenhouse Gas Emissions from Ocean-going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth*, prepared by Axel Friedrich, Falk Heinen, Fatumata Kamakate, and Drew Kodjak.	undated
28	*Protecting American Health from Global Shipping Pollution, Establishing an Emission Control Area in U.S. Waters*, by Janea Scott and Hilary Sinnamon.	undated
29	Daniel A. Lashof, et al., Natural Resources Defense Council, *Coal in a Changing Climate.*	February 2007
30	Parametrix PowerPoint, *Coal Train Traffic Impact Study.*	November 2012
31	Gibson Traffic Consultants, Inc. Memorandum re Cherry Point Coal Export Facility Rail Operations – City of Bellingham.	June 21, 2012
32	Gibson Traffic Consultants, Inc. Memorandum re Cherry Point Coal Export Facility Rail Operations – Burlington.	August 15, 2011
33	Gibson Traffic Consultants, Inc. Memorandum re Cherry Point Coal Export Facility Rail Operations – City of Edmonds.	May 22, 2012

56	Nez Perce Tribal Executive Committee comments on Permit Application NWP-2012-56.	May 3, 2012
57	Columbia River Inter-Tribal Fish Commission comments on Permit Application NWP-2012-56.	May 7, 2012
58	Region 10 Regional Tribal Operations Committee comments on Permit Application NWP-2012-56.	May 15, 2012
59	Confederated Tribes of the Umatilla Indian Reservation comments on Permit Application NWP-2012-56.	March 28, 2012
60	Letter from Chris Jenkins, Cultural Resources Program Manager, Department of the Army, to Allyson Brooks, Ph.D., State Historic Preservation Officer, Department of Archaeology and Historic Preservation, regarding NWS-2008-0260 Gateway Pacific Terminal Section 106 Initiation.	July 9, 2013
61	Letter from Allyson Brooks, Ph.D., State Historic Preservation Officer, Department of Archaeology and Historic Preservation, to Chris Jenkins, Cultural Resources Program Manager, Department of the Army, regarding Gateway Pacific Terminal Project.	July 17, 2013
62	Letter from Thomas E. O'Donovan, Department of the Army, Portland District Corps of Engineers, to Tim Wetherall, Port of Arlington, regarding Department of Army Permit Application, attaching Department of the Army Environmental Assessment and Statement of Findings.	Undated
63	Letter from Lauren Goldberg, Staff Attorney, on behalf of Climate Solutions, Columbia Riverkeeper, Sierra Club, and Washington Environmental Council, to Ted Sturdevant, Department of Ecology; Joyce Smith, Department of Ecology; and Sally Toteff, Department of Ecology, regarding Millennium Bulk Logistics Longview Coal Export Terminal; Public Comments on Notice of Intent for a Construction Stormwater General Permit and SEPA Compliance.	November 30, 2010
64	AMI Environmental, *AERMOD Modeling of Air Quality Impacts of the Proposed Morrow Pacific Project* – Final Report.	October 2012

65	Letter from Columbia Riverkeeper, Northwest Environmental Defense Center, and Sierra Club to U.S. Army Corps of Engineers regarding Comments on Cascade Kelly Holdings LLC's Rivers and Harbors Act Section 10 Permit Application (NWP-2007-998).	August 13, 2013
66	Scoping Comments of Columbia Riverkeeper, Sierra Club, Greenpeace, Columbia Pacific Commonsense, Landowners and Citizens for a Safe Community, Wahkiakum Friends of the River, Northwest Property Rights Coalition, Friends of Living Oregon Waters, Forest Grove Oregon Citizens Against the Pipeline, and Food and Water Watch to the Federal Energy Regulatory Commission on the Proposed Oregon LNG Export Project and Washington Expansion Project.	December 21, 2012
67	Letter from Columbia Riverkeeper to U.S. Army Corps of Engineers and Washington Department of Ecology, regarding Public Comment on Longview Fibre Paper and Packaging, Inc.'s Clean Water Act §§ 404 and 401 Permit Application, NWS-2011-00637.	July 29, 2011
68	Comments from Chad Eiken, AICP, Director, City of Vancouver, to MBTL Coal Export Terminal EIS, and Elaine Placido, SEPA Responsible Official, Cowlitz County Department of Building and Planning, regarding SEPA Scoping Comments on Millennium Bulk Terminals Longview LLC Coal Export Terminal.	September 30, 2013
69	Comments from Babtist Paul Lumley, Executive Director, Columbia River Inter-Tribal Fish Commission, to Millennium Bulk Terminals—Longview EIS, regarding Millennium Bulk Terminals LLC, Longview Shipping Facility Project—Scoping Comments.	November 18, 2013
70	Comments from Kim Kratz, Ph.D., Assistant Regional Administrator, NOAA Fisheries West Coast Region, to Millennium Bulk Terminals EIS, regarding Scoping Comments on the Millennium Bulk Terminals—Longview, LLC SEPA/NEPA EIS.	November 18, 2013
71	Comments from Gretchen Kaehler, Assistant State Archaeologist, Department of Archaeology & Historic Preservation, to MBTL Coal Export Terminal, regarding scoping comments for the proposed Millennium Bulk Export Terminal Project, Longview, Cowlitz County, Washington.	November 18, 2013

72	Comments from Chief J. Allan, Chairman, Coeur D'Alene Tribe, to Danette Guy, U.S. Army Corps of Engineers; Mike Wojtowicz, Cowlitz County Department of Building and Planning; and Diane Butorac, Department of Ecology, regarding Comments on Millennium Bulk Terminals, Longview, LLC's Coal Export Terminal at Longview, in Cowlitz County, Washington Proposal.	November 8, 2013
73	Comments from William Iyall, Chairman, Cowlitz Indian Tribe, to Col. Bruce A. Estok, Seattle District Commander, U.S. Army Corps of Engineers, regarding Scoping Comments for Millennium Bulk Terminals – Longview, LLC Project, NEPA/SEPA Environmental Impact Statement.	November 18, 2013
74	Comments from Silas C; Whitman Chairman, Nez Perce Tribal Executive Committee, to Millennium Bulk Terminals – Longview EIS, regarding Scoping Comments on the U.S. Army Corps of Engineers, Washington State Department of Ecology, and Cowlitz County Intent to Prepare an Environmental Impact Statement on the Proposed Millennium Bulk Terminals—Longview Shipping Facility Project.	November 18, 2013
75	Comments from David A. Troutt, Natural Resources Director, Nisqually Indian Tribe, to Millennium Bulk Terminals-Longview EIS, regarding Comments of Scoping Notice, Proposed Millennium Bulk Terminals Longview EIS.	November 18, 2013
76	Comments from Matt Wynne, Chairman, Upper Columbia United Tribes, to Millennium Bulk Terminals-Longview EIS, U.S. Army Corps of Engineers, Washington Department of Ecology, and Cowlitz County Building and Planning, regarding opposing the proposed Millennium Bulk Terminal Coal Transport Facility located in Longview, Washington.	November 14, 2013
77	Comments from Eric Quaempts, Director, Department of Natural Resources, Confederated Tribes of the Umatilla Indian Reservation, to Millennium Bulk Terminals-Longview EIS, regarding Scoping Comments on Proposed Millennium Bulk Terminals Longview Shipping Facility.	November 18, 2013

78	Comments from "Bobby" Bmnoe, General Manager, Branch of Natural Resources, The Confederated Tribes of the Warm Springs Reservation of Oregon, to Washington Department of Ecology, U.S. Army Corps of Engineers, and Cowlitz County Building and Planning, regarding Comments on Scope of EIS for Millennium Bulk Terminals, Longview LLC Coal Export Terminal.	November 18, 2013
79	Comments from Harry Smiskin, Chairman, Confederated Tribes and Bands of the Yakama Nation, to Lt. General Thomas P. Bostick, Brig. General John S. Kem, and Col. Bruce Estok, U.S. Army Corps of Engineers, and Maia Bellon, Washington State Department of Ecology, regarding Comments on the Scope of the NEPA & SEPA EISs for the Proposed Millennium Bulk Terminal at the Port of Longview.	November 18, 2013
80	Johan Rene van Dorp, Jason R.W. Merrick, *Vessel Traffic Risk Assessment (VTRA)*, Final Report prepared for Puget Sound Partnership.	September 18, 2013
81	Article in Canadian Journal of Fisheries and Aquatic Sciences, *Altered growth and related physiological responses in juvenile Chinook salmon (Oncorhynchus tshawytscha) from dietary exposure to polycyclic aromatic hydrocarbons (PAHs)*, by J.P. Meador et al.	October 2006
82	Article in Environ. Sci. Technol., *Effects of Diesel on Survival, Growth, and Gene Expression in Rainbow Trout (Oncorhynchus mykiss) Fry*, by Lizzy Mos, et al.	2008
83	Leyda Consulting, Inc., letter regarding Ecological Impacts of Proposed Coal Shipping on the Columbia River Port of Morrow and Port Westward, Oregon.	October 30, 2012
84	*Global Climate Change Impact in the United States*, a State of Knowledge Report from the U.S. Global Change Research Program.	2009
85	Report from The Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable Environment, and University of Oregon, *An Overview of Potential Economic Costs to Washington of a Business-As-Usual Approach to Climate Change*, prepared by Ernie Niemi, ECONorthwest.	February 17, 2009

86	Article on Oiled Wildlife Response, published by Northwest Area Committee/Regional Response Team.	January 2013
87	*Economic Analysis of the Non-Treaty Commercial and Recreational Fisheries in Washington State*, Final Report, prepared for Washington Department of Fish and Wildlife, by TCW Economics, with technical assistance from The Research Group.	December 2008
88	*Washington State Maritime Cluster*, Economic Impact Study, prepared for Economic Development Council of Seattle and King County and Workforce Development Council of Seattle and King County, by Community Attributes, Inc.	November 2013
89	Comments from Peter Goldmark, Commissioner of Public Lands, Washington State Department of Natural Resources, to Millennium Bulk Terminals EIS Co-Lead Agencies, regarding Scope of the EIS for Proposed Coal Export Terminal in Longview, Washington.	November 18, 2013
90	Oregon Department of Geology and Mineral Industries' *Earthquake Risk Study for Oregon's Critical Energy Infrastructure Hub*, Final Report to Oregon Department of Energy & Oregon Public Utility Commission, prepared by Yumei Wang, Steven F. Bartlett, and Scott B. Miles.	August 2012
91	Liquefaction Susceptibility Map of Clark County, Washington, prepared by Stephen P. Palmer, Sammantha L. Magsino, James L. Poelstra, and Rebecca A. Niggemann.	September 2004

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30947

TESORO SAVAGE
Vancouver Energy Distribution Terminal

Mr. Stephen Posner
Interim EFSEC Manager
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P.O. Box 43172
Olympia, WA 98504-3172

RECEIVED
DEC 20 2013
ENERGY FACILITY SITE
EVALUATION COUNCIL

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DEC 20 2013
WASH. UT. & TP. COMM

December 18, 2013

By E-mail and First Class Mail

Subject: Tesoro Savage Vancouver Energy Distribution Terminal
Application for Site Certification No. 2-13-01, UTC Docket No. EF131590
Tesoro Savage Petroleum Terminal LLC Comments on Scope of EIS

Dear Mr. Posner:

Tesoro Savage Petroleum Terminal LLC (the Applicant) submits the following comments for the Energy Facility Site Evaluation Council's (EFSEC) consideration in determining the scope of the Environmental Impact Statement (EIS) being prepared for the Tesoro Savage Vancouver Energy Distribution Terminal (Facility). Upon submittal of its Application for Site Certification No. 2013-01, the Applicant requested that EFSEC make a determination of significance and prepare an EIS to comprehensively assess the potential for probable significant adverse environmental impacts resulting from the implementation of the Facility.

In the Application, the Applicant provided detailed analyses regarding the potential impacts of the Facility to allow EFSEC to identify those elements of the environment potentially affected, and to assist EFSEC's SEPA official in determining the appropriate scope for the EIS.

The Applicant requests that EFSEC's SEPA official consider the following factors in the decision regarding the scope of the EIS:

1. The scope of the EIS should be focused on the impacts that are reasonably attributable to the implementation of the Facility;
2. the EIS should properly scope and provide meaningful evaluation of indirect impacts associated with transportation of crude oil to and from the facility; and
3. when disclosing the potential for impacts, EFSEC should consider the comprehensive regulatory framework that specifically mitigates such impacts to a degree of less than probable significant adverse impacts.

1. Focus on impacts that are reasonably attributable to the implementation of the Facility

EFSEC's previous SEPA analysis history has established a solid foundation regarding the analysis of the impacts of energy facilities in the context of existing regulations specifically

enacted to protect the environment and the public, including public safety and health. In the context of this regulatory framework, it is appropriate for the EIS to consider elements such as:

- How the facility will be designed to protect public safety in the context of industry standards and applicable regulatory requirements (e.g. the International Building Code).
- How existing air emission regulations protect the health of the public (including sensitive populations and populations located within the vicinity of the Facility) and how the Facility is mandated to comply with such regulations. SEPA does not require the EIS to evaluate the impacts of air emissions resulting from refining of the crude oil; refineries that will receive this oil are permitted to operate under their existing air emission permits.
- How the Applicant has avoided and minimized impacts to potentially present biological resources (including site selection in a heavy industrial public port), and if compensatory mitigation is required, how such mitigation meets established regulatory requirements and implements practices accepted by agencies.
- How the Facility does, or does not, contribute to the emissions of greenhouse gases (GHGs). In contrast to proposals for coal export terminals in Washington State currently under review by other agencies, the purpose of this Facility is to provide North American crude oil primarily to West Coast refineries, thereby displacing other sources of crude oil received by these same refiners from other U.S. or foreign sources. The Facility will not increase market demand for refinery feedstock or for the products produced at refineries. It is therefore not reasonable for the EIS to evaluate the emissions of GHGs at the source of crude oil extraction or resulting from the crude being refined, as well as the end use of refined products.
- Whether Facility noise emissions meet the thresholds of the Washington State Department of Ecology noise standards adopted by EFSEC. The EIS should also disclose the noise emissions of locomotive activities in Facility areas within the Applicant's control.
- Any probable significant adverse impacts to Facility employees and the public resulting from the risk of fire and explosion, and how the Applicant proposes to prevent such impacts from occurring by relying on the implementation of industry standards and designing to applicable fire safety regulations.
- How the Applicant will plan countermeasures for potential releases of hazardous materials to the environment from the Facility, in the unlikely event they occur, including how the Applicant will coordinate such actions in the context of existing agency response strategies.
- Given the fact that the City's comprehensive planning specifically targets the Port of Vancouver as the key location for heavy industrial uses, especially those requiring rail and vessel transportation, whether the Facility is consistent with and compatible with existing City zoning and other land use codes.
- As required by WAC 197-11-440 (5)(d), the EIS must evaluate only the no-action alternative plus other reasonable alternatives for achieving the proposal's objective on the same site; the proposed action is for a private project on a specific site and does not include a rezone. SEPA prohibits the consideration of any off-site alternatives.

2. *Properly scope and meaningfully evaluate indirect impacts*

Concerns have been raised in scoping letters received by EFSEC regarding the potential impacts of transporting crude oil to the Facility by rail and from the Facility by marine vessel. The Applicant agrees that the EIS should disclose those impacts that can be reasonably ascertained in the context of the movement of this specific commodity (crude oil) within the overall flow of all commodities within the state of Washington using the same transportation systems and corridors as the crude to be handled at the Facility. EFSEC should remain mindful that implementation of the Facility does not require any construction of new common carrier railroad. Furthermore, the regulation of private common carrier railroads is preempted by the federal government.

Existing interstate commodity transportation systems have been long established and are managed under numerous state and federal regulations to ensure public safety, including requirements for rail carriers and local emergency responders to plan and prepare for unintentional releases of hazardous materials, including, but not limited to, crude oil. The EIS should disclose the framework of all existing local, state, federal, tribal, and private industry established response activities currently planned for and deployed within Washington State for the transportation of this specific commodity, and the processes available to continuously reevaluate and update such measures. As an example, attached to this comment letter are several presentations made by BNSF Railway (BNSF) and the Federal Railroad Administration (FRA) regarding existing preparedness systems that would apply to the transportation of crude oil on the existing rail system, as presented to the Port of Vancouver Commissioners[1]. Members of the public have expressed concerns about the potential for spills of this specific product along its transportation route; decision-makers and the public should be made aware of the vast array of planning requirements already in place to prepare for response to an unanticipated release or other unpredictable event. The key value of such disclosure is to assist these various entities to identify gaps in their planning processes. The evaluation should not diverge into speculatively identifying every type of incident that could possibly occur at any specific location, but should rely on the existing body of preparedness activities that both public agencies and private organizations have invested in to ensure responsible management of known risks.

A significant number of the impacts cited by others (for example, delays at grade crossings, impacts of train noise and air emissions, and delays to passenger rail service, etc.) will occur regardless of the implementation of the Facility because of the ongoing growth of rail as a viable transportation mode necessary to the state economy. Regulatory agencies responsible for planning the role of rail transportation in Washington's future economic growth, and the rail transportation industry itself, have identified that transportation of freight by rail has been and will continue to be a preferred transportation mode that will increase over time due to various

[1] The Port of Vancouver conducted a public workshop on June 9, 2013 (http://www.portvanusa.com/environment/port-tracks-national-rail-safety-and-oil-spill-response/); the presentations from this workshop are attached, and the recorded workshop presentations available at http://old.cityofvancouver.us/cvtv/cvtvindex.asp?section=25437&folderID=3677 are hereby incorporated into this comment by reference.

economic conditions.[2, 3] The State of Washington is uniquely positioned as a gateway for interstate and international trade for many types of agricultural, industrial, and manufactured products, and the State's economy benefits from this position[4].

The Washington State Department of Transportation (WSDOT) Rail Division conducts ongoing planning for the State's rail system, and has forecasted the anticipated growth of rail transportation in its Washington State Rail Plan. This planning process is a collaborative effort of WSDOT, railroads, Amtrak, state and local agencies, citizen's groups, other rail stakeholders, Oregon Department of Transportation, British Columbia, and members of the public. This extensive analysis of the state's public and private rail system builds on previous analyses of the State's freight rail system.

The EIS should consider indirect impacts resulting from this Facility to the degree that the transportation of crude oil to the Facility has a measurable and discernable impact within the broad array of impacts anticipated from the reasonably foreseeable transportation of all other goods using the same transportation system and corridors. However, when transportation of crude oil to the Facility does not have measurable and discernible impacts distinct from those associated with generally increasing use of the rail system and corridors, the evaluation should not speculate about potential impacts attributable to the Facility. The EIS should rely on the extensive analyses of the State rail plans referenced above (and attached for your reference) to accurately evaluate the impact of the indirect impacts of rail transportation of crude to the Facility within the context of all freight rail transportation in the State, as well as the important interplay between the rail and marine transportation systems that support Washington State's economy[5].

The same applies to marine transportation along the Columbia River, where many organizations are already involved in ensuring safe vessel movements and response capabilities. Like the rail system, public and private entities have invested heavily in channel deepening and public port development along the Columbia River, anticipating significant growth in the use of the Columbia River for transportation of a widening range of goods. Public and private entities have also invested significantly in the planning for and response to the transportation of hazardous materials within this navigation channel[6].

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[2] Washington State Rail Plan, Public Review Draft, Washington State Department of Transportation, 2013; attached for reference and available for download at http://www.wsdot.wa.gov/Rail/staterailplan.htm.

[3] Comments in Response to Notice of Intent to Prepare a Joint Environmental Impact Statement (EIS): Gateway Pacific Terminal Project and Custer Spur Improvements Project (77 Fed. Reg. 58531, Sept. 21, 2012), from F.E. Kalb, Jr., BNSF, to Randel Perry, U.S. Army Corps of Engineers, January 22, 2013.

[4] Washington State, 2010-2030, Washington State Department of Transportation, December 2009, attached for reference and available for download at http://www.wsdot.wa.gov/Freight/Rail/Plan.htm.

[5] Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment, Final Report, Prepared for Pacific Northwest Rail Coalition, December 2011, attached for reference and available for download at http://www.wsdot.wa.gov/NR/rdonlyres/E1743FB8-9376-4A4C-8316-14283E42A5F7/0/PNW2011PortRailForecastFinalReport.pdf.

[6] The Port of Vancouver USA conducted a public workshop on May 14, 2013 (http://www.portvanusa.com/environment/port-taps-regional-expertise-in-marine-safety-and-oil-spill-response/); the presentation from this workshop is attached, and the recorded workshop presentation available at (http://old.cityofvancouver.us/cvtv/cvtvindex.asp?section=25437&folderID=3645) is hereby incorporated into this comment by reference.

3. *Consider the existing regulatory framework that has been established to evaluate and mitigate potential impacts*

The scope of the EIS should consider the comprehensive regulatory framework that is already in place for this type of proposal, and how project-specific actions that comply with these regulations minimize project impacts to a level of less than probable significant adverse environmental impacts, or to non-significance altogether. The Director of the Washington Department of Ecology recently reinforced SEPA's authority to rely on state and federal environmental regulations to demonstrate SEPA compliance, and the Washington Shoreline Hearings Board confirmed this premise on appeal.[7, 8] Environmental regulatory standards provide necessary "book ends" and regulatory certainty for heavily regulated industries, and should be used for that purpose to avoid unbounded SEPA review. Use of environmental regulations for this purpose is a bedrock principle of Washington environmental law.[9]

In conclusion, the SEPA official should determine that the scope of the evaluation:

- Be limited to those potential impacts that are reasonably attributable to the Facility and that would not occur if this Facility was not built and operated at this location.
- Be guided by a sound and reasonable interpretation and application of SEPA statutes and regulations, within the context of a host of state and federal statutes and regulations. Such consideration should include: (1) appropriate consideration of how specific environmental regulations quantify the probability, significance, and adversity of potential environmental impacts; (2) identification of those potential impacts that are unforeseeable, remote, and/or speculative; and (3) how compliance reduces potential impacts to levels of insignificance.
- Avoids the study of remote and speculative impacts that cannot be quantified, in particular when they are comingled in intrastate and interstate commerce.
- Avoids the analysis of impacts of legally permitted activities occurring in Washington State or elsewhere that are presently occurring, or are expected to continue to occur and even grow as a result of population and economic growth, regardless of the implementation of the Facility.
- Avoids including consideration of impacts of other projects or activities that are unrelated.

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[7] Authority and Rationale for Gateway Pacific Terminal Review from Maia D. Bellon, Director, Department of Ecology to the Honorable Doug Ericksen, August 22, 2013 ("The potential impacts . . . are addressed by 26 different permits, approvals licenses or plans required by local, state or federal agencies.").

[8] Shoreline Hearings Board No. 13-012c, Order on Summary Judgment, in the Matter of Quinault Indian nation, friends of Grays Harbor, Sierra Club, Surfrider Foundation, Grays Harbor Audubon, and Citizens for a Clean Harbor, Petitioners, v. City of Hoquiam, State of Washington , Department of Ecology, and Westway Terminal Company, LLC, Respondents, and Imperium Terminal Services, LLC, Respondent Intervenor, November 12, 2013, attached for your reference.

[9] *See, e.g.,* RCW 36.70B.030(4); RCW 43.21C.230(4) and (5); WAC 197-11-660(1)(e); and WAC 463-47-110(2)(a)(ii).

The Applicant appreciates this opportunity to comment on the scope of the EIS, and looks forward to working with EFSEC's SEPA official to continue coordinating preparation of the SEPA analysis.

Sincerely,

Kelly J. Flint

Attachments:

SHB No. 13-012c, Order on Summary Judgment (As Amended on Reconsideration)
Clean River Cooperative and Maritime Fire and Safety Association (Presentation)
BNSF Railway – Hazardous Material Transportation Preparedness and Response (Presentation)
Great Northern Corridor (Presentation)
Port of Vancouver Rail Safety Briefing (Presentation)
Washington State Rail Plan – Public Review Draft
Washington State 2010-20103 Freight Rail Plan
Washington State 2010-2030 Freight Rail Plan Appendices
Pacific Northwest Marine Cargo Forecast Update and Railway Capacity Assessment

SHORELINES HEARINGS BOARD
STATE OF WASHINGTON

QUINAULT INDIAN NATION, FRIENDS OF GRAYS HARBOR, SIERRA CLUB, SURFRIDER FOUNDATION, GRAYS HARBOR AUDUBON, AND CITIZENS FOR A CLEAN HARBOR Petitioners, v. CITY OF HOQUIAM, STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY and WESTWAY TERMINAL COMPANY, LLC, Respondents, And IMPERIUM TERMINAL SERVICES, LLC Respondent Intervenor.	SHB No. 13-012c ORDER ON SUMMARY JUDGMENT[1] (*AS AMENDED ON RECONSIDERATION)*

On May 16, 2013, Petitioner Quinault Indian Nation (QIN) filed a petition for review with the Shorelines Hearings Board (Board) for review of a shoreline substantial development permit (SSDP) issued to Westway Terminal Company, LLC (Westway) by the City of Hoquiam (City) for expansion of Westway's existing bulk liquid storage terminal at the Port of Grays Harbor. On May 17, 2013, the Friends of Grays Harbor, Sierra Club, Surfrider Foundation, Grays Harbor Audubon, and Citizens for a Clean Harbor (collectively the Environmental

[1] As amended by the Board's Order on Petitions for Reconsideration or Clarification issued on December 9, 2013.

Petitioners) appealed the same SSDP. On July 3, 2013, the Environmental Petitioners and QIN filed two new appeals at the Board, challenging an SSDP issued by the City to Imperium Terminal Services, LLC (Imperium) for a similar facility located adjacent to the Westway facility. All four appeals were consolidated, and now all parties to the appeal have moved for summary judgment on several of the issues listed in the pre-hearing order. [2]

The Board was comprised of Tom McDonald, Chair, Kathleen D. Mix, Joan M. Marchioro, Pamela Krueger, Grant Beck, and John Bolender. Administrative Appeals Judge Kay M. Brown presided for the Board.

Attorneys Kristen L. Boyles and Matthew R. Baca represented the QIN. Attorneys Knoll Lowney and Elizabeth H. Zultoski represented the Environmental Petitioners. Attorneys Svend A. Brandt-Erichsen, Jeff B. Kray, and Meline G. MacCurdy represented Westway. Attorney Steven R. Johnson represented the City. Assistant Attorneys General Thomas J. Young and Allyson C. Bazan represented the Washington State Department of Ecology (Ecology). Attorneys Jay P. Derr and Tadas Kisielius represented Respondent Intervenor Imperium Terminal Services, LLC (Imperium).

In rendering its decision, the Board considered the following submittals:

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[2] The parties and the presiding officer established the issues in the pre-hearing order pertaining to the appeals of the Westway SSDP prior to consolidation with the appeals pertaining to the Imperium SSDP. All parties agreed to consolidation of all four appeals, given their extensive overlap in legal issues. However, because the parties had already filed motions for summary judgment in the Westway appeals at the time of the consolidation, and the case schedule was very compressed due to the 180-day statutory deadline on the Westway appeals, no amendments to the existing legal issues or additional motions for summary judgment pertaining specifically to the Imperium project were allowed. The parties agreed, however, that the questions of law raised in the dispositive motions that were filed pertaining to Westway apply similarly to Imperium. This decision will include references to the Imperium project to the extent that information is available in the summary judgment record and relevant to the decision.

1. Quinault Indian Nation's Petition for Review for SHB No. 13-012 with attached Exhibit A (Hearings Examiner Decision, with attached Exhibits 1-5).

2. Quinault Indian Nation's Petitioner for Review for SHB No. 13-021 with attached Exhibit A (Hearings Examiner Decision with attachments).

3. Imperium Terminal Services, LLC's Motion to Intervene, Declaration of Tadas Kisielius with attached Exhibits A-D;

4. Quinault Indian Nation Motion for Partial Summary Judgment (SEPA Issue No. 1).
    a. Declaration of Kristen L. Boyles Re: Exhibits to Quinault Indian Nation Motion for Partial Summary Judgment (SEPA Issue No. 1) with Exhibits A-T.

5. Friends of Grays Harbor, et al.'s Motion for Partial Summary Judgment.
    a. First Declaration of Elizabeth H. Zultoski in Support of Friends of Grays Harbor, et al.'s Motion for Partial Summary Judgment with Exhibits 1-41.

6. Respondent City of Hoquiam's Motion for Partial Summary Judgment with Exhibit A.
    a. Declaration of Brian Shay

7. Respondents Department of Ecology and City of Hoquiam's Joint Motion for Partial Summary Judgment.
    a. Declaration of Diane Butorac in Support of Respondents Department of Ecology and City of Hoquiam's Joint Motion for Partial Summary Judgment with Exhibits A-G.

8. Westway Terminal Company LLC's Motion for Partial Summary Judgment.
    a. Declaration of Svend A. Brandt-Erichsen with Exhibits 1-2.
    b. Declaration of Ken Shoemake.

9. Respondent Intervenor Imperium's Motion for Partial Summary Judgment.

10. Joint Response of Westway Terminal Company, LLC and City of Hoquiam to Friends of Grays Harbor et al.'s Motion to Partial Summary Judgment.

11. Response of Westway Terminal Company, LLC to Quinault Indian Nation Motion for Partial Summary Judgment.
    a. Declaration of Dennis Kyle with Exhibits 1-2.

12. Quinault Indian Nation's Opposition to Respondents' Motions for Summary Judgment (SEPA Issues Nos. 1, 3, 6, 7, 8, 9; SMA Issues Nos. 3, 4, 10).
    a. Second Declaration of Kristen L. Boyles, Re: Exhibits to Quinault Indian Nation's Opposition to Respondents' Motions for Summary Judgment with Exhibits U-HH.

13. Friends of Grays Harbor et al.'s Response to Respondents' Motions for Partial Summary Judgment.
    a. Declaration of Arthur Grunbaum.
    b. First Declaration of Knoll Lowney in Support of Friends of Grays Harbor et al.'s Response to Motions for Partial Summary Judgment of Respondents with Exhibits A-H.

14. Respondent Intervenor Imperium's Response to Petitioners' Motions for Partial Summary Judgment.
    a. Declaration of Steve Drennan in Support of Respondent Intervenor Imperium's Response to Motions for Partial Summary Judgment with Exhibits A-F.

15. Respondents Department of Ecology and City of Hoquiam's Response in Opposition to Quinault Indian Nation's Motion for Partial Summary Judgment (SEPA Issue No. 1) with Exhibit A.
    a. Second Declaration of Diane Butorac in Support of Respondents Department of Ecology and City of Hoquiam's Response to the Quinault Indian Nation's Motion for Partial Summary Judgment (SEPA Issue No. 1) with Exhibits A-E.
    b. Declaration of Linda Pilkey-Jarvis in Support of Respondents Department of Ecology and City of Hoquiam's Response to the Quinault Indian Nation's Motion for Partial Summary Judgment (SEPA Issue No. 1) with Exhibits A-B.
    c. Declaration of David Byers in Support of Respondents Department of Ecology and City of Hoquiam's Response to the Quinault Indian Nation's Motion for Partial Summary Judgment (SEPA Issue No. 1).

16. Reply in Support of Westway Terminal Company LLC's Motion for Partial Summary Judgment.

17. Respondent Intervenor Imperium's Reply in Support of Motion for Partial Summary Judgment.

18. Reply in Support of Quinault Indian Nation's Motion for Partial Summary Judgment.

a. Third Declaration of Kristen L. Boyles Re: Exhibits to Reply in Support of Quinault Indian Nation's Motion for Partial Summary Judgment with Exhibits II-PP.

19. Friends of Grays Harbor et al.'s Reply in Support of Motion for Partial Summary Judgment.

20. Respondents Department of Ecology and City of Hoquiam's Reply in Support of Joint Motion for Partial Summary Judgment.
    a. Declaration of Sally Toteff in Support of Respondents Department of Ecology and City of Hoquiam's Reply in Support of Joint Motion for Partial Summary Judgment with Exhibits A, B.

The following issues, which were submitted by the parties and set out in the Pre-Hearing Order, are the subject of the motions filed by the parties.[3]

A. Violations of the State Environmental Policy Act ("SEPA"):

1. Is the Mitigated Determination of Non-Significance ("MDNS") issued by the City of Hoquiam and Washington Department of Ecology invalid because the responsible officials failed to adequately consider the direct, indirect, and cumulative impacts of three proposed crude-by-rail terminals in Grays Harbor (Westway, Imperium, and U.S. Development)?
3. Is the MDNS invalid because the responsible officials failed to consider alternatives, incorrectly relied on existing federal and state requirements as mitigation, and failed to adequately condition and/or mitigate the Project?
6. Is the MDNS invalid because the responsible officials failed to require a pre-approval analysis of critical environmental issues, including but not limited to seismic and tsunami hazards, archeological and cultural resources, shipping and train impacts, and oil spill hazards?
7. Is the MDNS invalid because the responsible officials and the Project failed to comply with the requirements of RCW 88.40.025 relating to guarantees of financial responsibility?
8. Is the MDNS invalid because the responsible officials failed to consider or comply with the requirements of RCW 43.143 applicable to ocean resources management?

[3] This list does not include all issues identified in the pre-hearing order. Instead, it includes only those issues that are the subject of the summary judgment motions. Because the Board's decision on issue A.1 results in invalidation of the SEPA Mitigated Determinations of Non-Significances (MDNS) upon which both the Westway and Imperium SSDPs rely, this decision is dispositive of the entire consolidated case.

9. Did the responsible officials' approvals of the MDNS suffer from procedural errors, including failure to give proper notice, failure to consider public comments, and failure to obtain required and/or sufficient information on which to base its decisions?

B. Violations of the Shorelines Management Act:

3. In issuing the Permit, did the responsible official fail to consider and comply with applicable laws and regulations relating to ocean management and ocean uses, including the requirements of Hoquiam Municipal Code 11.04.065, 11.04.180(6), RCW Chapter 43.143, and WAC 173-26-360?
4. In issuing the Permit, did the responsible official fail to consider and comply with the requirements of RCW 88.40.025 relating to guarantees of financial responsibility?
8. Are the Project, Permit, and MDNS invalid because they are inconsistent with all applicable local, state, and federal laws and regulations, including but not limited to Growth Management Act Critical Areas Ordinances (including but not limited to provisions relating to wetlands, seismic hazards, and mandatory buffers), and the Coastal Zone Management Act, 16 U.S.C. § 1451, et seq.?
9. Did the application and the Permit contain insufficient detail to determine its consistency with the Shorelines Management Act, its implementing regulations, the Shorelines Management Plan, SEPA, and the Critical Area Ordinances?
10. Did the responsible official's approval of the Permit suffer from procedural errors, including failure to give proper notice, failure to consider public comments, and failure to obtain required and/or sufficient information on which to base its decisions?

Based upon the records and files in the case, the evidence submitted, and the written legal arguments of counsel,[4] the Board enters the following decision.

[4] QIN requested oral argument on the motion. The Board's presiding officer denies the request based on the compressed schedule for this appeal and the Board's calendar. WAC 461-08-475(3).

BACKGROUND

1. The Projects

a. Westway

Westway currently operates a bulk methanol storage terminal in Hoquiam on the shoreline of Grays Harbor. The facility is located on property owned by the Port of Grays Harbor (Port) and leased by Westway. Westway built the facility in 2009, and began operations at the end of that calendar year. The facility currently includes four 3,340,000 gallon storage tanks, two rail spurs with loading/unloading facilities and a concrete lined containment structure, pipelines, pumps, vapor control equipment, two office buildings, one electrical room, and an old wood frame warehouse building. Butorac Decl., Ex. A.

On December 3, 2012, Westway submitted an application to the City for an SSDP to authorize the expansion of the facility in the shoreline. The purpose of the proposed expansion is to allow for the receipt of crude oil by train, the storage of crude oil from these trains, and the shipment of the crude oil by vessel and/or barge from Port Terminal #1. The proposed expansion includes the addition of four 8,400,000 gallon storage tanks providing a project total storage capacity of 33,600,000 gallons. Each tank will be 150 feet in diameter and 64 feet in height. The tanks will sit on a concrete slab, supported by a series of piles driven approximately 150 feet into the ground. The new tanks will be surrounded by a concrete containment wall, which will have the capacity to contain the total volume of a single tank plus an allowance for rainfall. Butorac Decl., Ex. A.

The existing rail facility will be expanded from two short spurs with a total of 18 loading/ unloading spots to four longer spurs with a total of 76 loading/unloading spots. Westway anticipates that the expanded terminal could result in two additional unit trains[5] every three days (one loaded with oil and one empty). The current volume of train traffic to the Westway Terminal is an average of two to three rail cars per day. A new pipeline will be added to connect the tanks via an existing pipe bridge to the Port Terminal #1. Westway anticipates the expanded terminal will result in 64 barge movements per year. Currently, the facility has three to four vessels per year. Boyles Decl., Exs. A, C; Butorac Decl., Exs. A, C.

b. Imperium

Imperium currently operates a facility for the production of biodiesel fuel and storage of bulk liquids on property owned by the Port. The Imperium facility is at the Port Terminal #1, and is immediately to the west of the Westway Terminal. 1st Zultoski Decl., Ex. 39; Kisielius Decl., Ex. A.

On February 12, 2013, Imperium submitted a permit application to expand its existing facility to allow for the receipt of biofuels, biofuel feedstocks, petroleum products, crude oil and renewable fuels; storage of these bulk liquids; and outbound shipment of the liquids. The proposal includes the addition of nine storage tanks, each with a capacity of 3,360,000 gallons for a project total storage capacity of up to 30,240,000 gallons. Each tank will be 95 feet in

[5] The record on summary judgment does not provide a fixed definition of "unit train." Apparently the number of railroad cars in a unit train can vary because the Westway material describes a unit train as having up to four locomotives and 120 cars, Boyles Decl., Ex. C, p. 2, Butorac Decl., Ex. C, §B.2; the Imperium material describes a unit train as approximately 105 railroad cars, Boyles Decl., Ex. Q, p. 4; and the U.S. Development Group (USD) material describes a unit train as approximately 60 to 120 rail cars, each with a capacity of 680 to 720 barrels. Boyles Decl., Ex. N, p. 9.

diameter and 64 feet in height. A berm designed to contain 100 percent of the total volume of one tank plus an additional six inches of precipitation will surround the tanks. The tank pads will be supported by pilings driven into the ground. 1st Zultoski Decl., Ex. 39; Petition for Review, SHB No. 13-021, Ex. A.

Imperium proposes to expand its existing rail facility by adding approximately 6,100 feet of track in multiple new rail spurs and expanding the existing rail yard. Imperium estimates that the terminal operations could result in an increase of two additional unit trains per day (one loaded and one unloaded) and up to 200 ships or barges per year (400 entry and departure transits). Pipelines will be installed connecting the Port Terminal #1 with the Imperium tank farm. 1st Zultoski Decl., Ex. 39; Petition for Review, SHB No. 13-021, Ex. A.

c. USD

USD is proposing a third project of a similar type bordering Grays Harbor. The project would be a $50 million bulk liquids rail logistics facility at the Port Terminal #3. Boyles Decl., Ex. P. Port Terminal #3 is in the City of Hoquiam between Highway 109 and Grays Harbor. Boyles Decl., Exs. K, N. USD, through its subsidiary Grays Harbor Rail Terminal (GHRT), entered into an Access Agreement with the Port on September 11, 2012, allowing it to complete a feasibility study by December 31, 2012. Boyles Decl., Ex. G. On March 12, 2013, in a briefing to the Port Commission, USD stated that it had performed "due diligence" to determine if the site is appropriate for a rail logistics facility. Boyles Decl., Ex. K. The record on summary judgment also includes supporting documentation for a feasibility study. This documentation includes a preliminary operations plan, which explains that the proposed facility "will include

delivery of various liquid bulk materials, specifically various types of crude oil and condensates." Boyles Decl., Ex. N., p. 9. The facility will be designed to "receive and off-load a maximum of one full unit train every two days on average, providing a maximum receiving capacity of less than 50,000 barrels per day. *Id.* The facility will have approximately six to eight above-ground storage tanks with a total capacity of 800,000 to 1,000,000 barrels. The facility will be developed to support the operation of approximately five vessel calls per month. *Id.* at pp. 9, 10. In April 2013, the Port approved a Grant of Option to Lease to GHRT. The lease provides GHRT 24 months for planning and permitting. Boyles, Ex. O. As the Port stated on its web-site in July of 2013, the lease will allow GHRT to perform "further analysis and obtaining of permits to bring the project to shovel-ready." Boyles Decl., Ex. L. To date, USD has not submitted an application for a shoreline permit for their project. 2nd Butorac Decl., ¶ 13.

2. <u>The State Environmental Policy Act (SEPA) process</u>

As part of their permit application process, Westway and Imperium were required to comply with SEPA. The first step in the SEPA process is the submission of an Environmental Checklist completed by the applicant. After two revisions, Westway submitted its completed checklist with attachments on February 20, 2013. Butorac Decl., ¶ 5, and Exs. A, C. Imperium submitted its completed checklist, with attachments, on February 22, 2013. QIN's Petition for Review (SHB No. 13-021) with attached Ex. A.

Ecology and the City worked together as SEPA Co-leads on both the Westway and Imperium proposals. The summary judgment record contains detailed information regarding the process the Co-leads went through to arrive at a final threshold determination for the Westway

project. The process occurred between December, 2012 and March, 2013, and included meetings between the Co-leads, contacts the Co-leads made with Westway, additional information requested and reviewed from Westway, consultation with other entities, open house meetings in Grays Harbor where the Co-leads provided information to the public, discussions regarding mitigation measures, and the consideration of other applicable laws. During their review of the checklist, the Co-leads also considered the aggregate impacts of the existing and proposed operations and the cumulative impacts of the Westway proposal and the Imperium crude oil proposal. The Co-leads did not consider potential impacts from USD because USD had not submitted an application or environmental checklist. Butorac Decl., ¶¶ 4-6, 10-20, 2nd Butorac Decl., ¶ 13.

After considering the information they had gained during the process described above, the Co-leads determined that the Westway proposal, as mitigated, was not likely to have probable adverse environmental impacts. The Co-leads issued a mitigated determination of non-significance (MDNS) on March 14, 2013, with a 15-day comment period, which they subsequently extended. The Co-leads issued a subsequent and final MDNS on the Westway project on April 4, 2013. Butorac Decl., ¶¶ 20-22, Ex. G.

The record does not contain a similar amount of detail pertaining to the SEPA process conducted on the Imperium project. However, the Co-leads published an MDNS for the Imperium project on May 2, 2013. The Co-leads did not consider potential impacts from USD. 2nd Butorac Decl., ¶ 13; Zultoski Decl., Ex. 39.

The City Shoreline Administrator (Administrator) issued the City's decision approving the Westway SSDP, with conditions, on April 26, 2013. The Administrator issued the City's decision approving the Imperium SSDP, with conditions, on June 14, 2013. QIN's PFR (SHB No. 13-012) with attached Ex. A; QIN's PFR (SHB No. 13-021) with attached Ex. A.

3. Environmental impacts

The SEPA checklists, submitted by Westway and Imperium, and reviewed by the Co-leads, contain many indications of potential environmental impacts, including oil spill risks, increase in rail and vessel traffic, and location of expanded facilities in areas of known natural resource and cultural sensitivity.

The Grays Harbor Estuary is an area rich in environmental resources. The Chehalis River, which borders the Westway and Imperium sites, drains into the Grays Harbor estuary, and is home to several fish species protected under the federal Endangered Species Act (ESA), including bull trout, green sturgeon, and Pacific eulachon. The Grays Harbor Estuary provides marine habitat that supports natural production for chinook, chum and coho salmon, and steelhead. Grays Harbor also supports white sturgeon and Dungeness crab, an economically vital fishery on the coast of Washington. Several ESA-listed and/or state listed bird species are found in the Grays Harbor area including marbled murrelets, brown pelicans, western snowy plovers, and the streaked horned lark. Grays Harbor National Wildlife Refuge is approximately three miles from the Westway and Imperium project sites, and the Pacific Flyway flight corridor for migrating waterfowl crosses both project sites. As many as 24 species of shorebirds use Grays Harbor Refuge. Several species of ESA-listed and state-listed marine mammals use

marine habitat in Grays Harbor, such as the southern resident killer whale, gray whale, humpback whale, sperm whale, and steller sea lion. An oil spill could potentially impact all of these resources. Boyles Decl., Ex. Q; Butorac Decl., Ex. C; 3rd Boyles Decl., Ex. KK, Brennan Decl., Ex. A.

The Westway project site is in an area with high potential for archaeological resources. It is located across from a large fish weir archaeological site and is adjacent to a historic archaeological sawmill site. Neither the Westway nor Imperium sites have any documented known archaeological or cultural resources. 2nd Boyles Decl., Exs DD, EE and FF; Boyles Decl., Ex. Q; Butorac Decl., Ex. C.

Both of these projects are proposed within a recognized tsunami and liquefaction hazard zone.[6] The critical areas report relied on by Westway states that the project is located on dredge soils, has a high liquefaction susceptibility factor, and is rated as a seismic site class D-E. The Imperium critical areas report confirms that the project site is in an area of high liquefaction susceptibility and estimates that during a moderate to severe earthquake, settlement at the ground surface would be around 12 inches. This report also indicates that the site is located within the tsunami inundation area. Butorac Decl., Ex. D; Brennan Decl., Ex. A, Geotechnical Report, pp. 10, 11.

The SEPA checklist for both Westway and Imperium identifies potential impacts from the projected increase in rail and vessel traffic from the projects. The Westway checklist

[6] "Liquefaction is a phenomenon where vibration or shaking of the ground, usually from earthquake forces, results in development of excess pore pressures in loose, saturated soils and subsequent loss of strength in the deposit of soil so affected." Drennan Decl., Ex. A, Geotechnical Report, p. 10.

identifies the increase in train and vessel traffic (from two to three rail cars every day currently, to two unit trains every three days; and from three to four vessels per year currently to 64 barge movements per year). The checklist goes on to recognize that the increase in rail traffic will increase the amount of greenhouse gasses in the state of Washington by approximately 11,329 tons per year, and the increase in vessel traffic will result in 1,595 metric tons of greenhouse gas emissions.[7] Butorac Decl., Ex. C. The Imperium checklist estimates that the project could result in an increase of up to two additional unit trains per day (one loaded and one empty) and up to 200 ships or barges per year (400 entry and departure transits). The checklist estimates that greenhouse gas emissions in Washington State from the additional rail and vessel volumes will be 19,098 metric tons per year. Boyle Decl., Ex. Q; Zultoski Decl., Ex. 39.

In the MDNS issued for each project, the Co-leads address the potential impacts from the increases in rail and vessel traffic, both from each project separately and the two projects combined, primarily through the requirement of the future submission of a Rail Transportation Impact Analysis (RTIA) and a Vessel Transportation Impact Analysis (VTIA). Both MDNSs state that the RTIA and VTIA will "determine the potential for impacts" caused by additional rail and vessel traffic, and shall identify any improvements or mitigation needed. The Co-leads indicate that they considered the cumulative impacts from the Westway and Imperium projects together, but that they did not consider the additional impacts from USD. Butorac Decl., ¶ 11, Boyles Decl., Ex. C; Zultoski Decl., Ex. 39.

[7] The vessel greenhouse gas figure is based on barge movements from the three nautical mile limit to the facility and back. Butorac Decl., Ex. C.

ANALYSIS

1. Summary judgment standard and review of SEPA threshold determination

Summary judgment is a procedure available to avoid unnecessary trials where formal issues cannot be factually supported and cannot lead to, or result in, a favorable outcome to the opposing party. *Jacobsen v. State*, 89 Wn.2d 104, 108, 569 P.2d 1152 (1977). The party moving for summary judgment must show there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. *Magula v. Benton Franklin Title Co., Inc.*, 131 Wn.2d 171, 182, 930 P.2d 307 (1997). A material fact in a summary judgment proceeding is one that will affect the outcome under the governing law. *Eriks v. Denver*, 118 Wn.2d 451, 456, 824 P.2d 1207 (1992).

If the moving party is a respondent and meets this initial showing, the inquiry shifts to the party with the burden of proof at trial. If, at this point, the non-moving party fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial, then the trial court should grant the motion. *Young v. Key Pharmaceuticals, Inc.*, 112 Wn.2d 216, 225, 770 P.2d 182, 187 (1989). In making its responsive showing, the nonmoving party cannot rely on mere allegations, unsubstantiated opinions, or conclusory statements, but must set forth specific facts showing that there is a genuine issue for trial. At that point, we consider the evidence and all reasonable inferences therefrom in the light most favorable to the non-moving party. *Id*. at 226.

The Board reviews the City and Ecology's SEPA threshold determination under a "clearly erroneous" legal standard. *Ass'n of Rural Residents v. Kitsap County*, 141 Wn.2d 185,

195-96, 4 P.3d 115 (2000); *Norway Hill Preservation and Protection Ass'n. v. King County Council*, 87 Wn.2d 267, 272-274, 552 P.2d 674 (1976). "A finding is 'clearly erroneous' when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed." *Murden Cove Preservation Ass'n v. Kitsap County*, 41 Wn. App. 515, 523, 704 P.2d 1242(1985). For the MDNS to survive judicial scrutiny, the record must demonstrate that "environmental facts were adequately considered in a manner sufficient to establish prima facie compliance with SEPA," and that the agency based its decision to issue an MDNS on information sufficient to evaluate the proposal's environmental impact. *Pease Hill Community Group v. County of Spokane*, 62 Wn. App. 800, 810, 816 P.2d 37 (citations deleted); WAC 197-11-100.

In this case, the material facts necessary to rule on Issue A.1 are not in dispute, and this issue is ripe for summary judgment. In addition, parts of Issues A.3 and A.6, all of Issues A.7, A.8, B.3, and B. 4 are also ripe for summary judgment.

2. <u>SEPA analysis and cumulative impacts from the USD project (Issue A.1)</u>.

QIN contends that the MDNS issued by the City and Ecology for the Westway[8] project is clearly erroneous because it failed to include consideration of cumulative impacts from the USD project, along with its consideration of the impacts from Westway and Imperium. Based on the analysis below, the Board concludes the MDNS is clearly erroneous for failing to consider the cumulative impacts of all three projects.

[8] While the QIN motion refers only to the Westway MDNS, QIN's arguments on this issue, and the responses filed by the Respondents, apply equally to the Imperium MDNS. While there are factual differences between the two proposals, these facts are not material to the analysis on this issue.

a. Cumulative Impacts Standard

SEPA requires that "[a]n environmental impact statement (the detailed statement required by RCW 43.21C.030(2)(c)) shall be prepared on proposals for . . . major actions having a probable significant, adverse environmental impact." RCW 43.21C.031(1). The Washington State Supreme Court, in interpreting this requirement, has stated:

> RCW 43.21C.031 mandates that an EIS should be prepared when significant adverse impacts on the environment are "probable," not when they are "inevitable."

King Cnty. v. Washington State Boundary Review Bd. for King Cnty., 122 Wn. 2d 648, 663, 860 P.2d 1024, 1032 (1993). A state or local agency must make a "threshold determination" as to whether an EIS is required, based on whether a project will have a significant adverse environmental impact. RCW 43.21C.031, 033.

As explained in Ecology's SEPA rules, "'Significant' as used in SEPA means a reasonable likelihood of more than a moderate adverse impact on environmental quality." WAC 197-11-794(1). "Impacts" are defined as ". . . the effects or consequences of actions." WAC 197-11-752. "Probable" means:

> . . .likely or reasonably likely to occur, as in 'a reasonable probability of more than a moderate effect on the quality of the environment' (see WAC 197-11-794). Probable is used to distinguish likely impacts from those that merely have a possibility of occurring, but are remote or speculative. This is not meant as a strict statistical probability test.

WAC 197-11-782.

Ecology's SEPA rules provide further guidance on the environmental review process. See WAC 197-11-060. WAC 197-11-060(1) states that, "Environmental review consists of the

range of proposed activities, alternatives, and impacts to be analyzed in an environmental document, in accordance with SEPA's goals and policies." The SEPA rules direct that consideration of environmental impacts include impacts that are likely, and not merely speculative. WAC 197-11-060(4)(a). The rules direct agencies to "carefully consider the range of probable impacts, including short-term and long-term effects. Impacts shall include those that are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer." WAC 197-11-060(4)(c). A proposal's effects include "direct and indirect impacts caused by a proposal." WAC 197-11-060(4)(d). The rules further clarify that the range of impacts to be analyzed in an EIS include direct, indirect, and cumulative impacts. WAC 197-11-060(4)(e).

When making the threshold determination, WAC 197-11-330(3) requires that agencies take into account that "[s]everal marginal impacts when considered together may result in a significant adverse impact" and that "[a] proposal may to a significant degree . . .[e]stablish a precedent for future actions with significant effects."

Based on the SEPA statute and Ecology's SEPA rules, agencies are required to consider the effects of a proposal's probable impacts combined with the cumulative impacts from other proposals. This interpretation is consistent with the interpretation of the requirement for cumulative impacts under the federal National Environmental Policy Act (NEPA). Washington uses NEPA provisions and case law interpreting NEPA to discern the meaning of SEPA and its implementing regulations. *Pub. Util. Dist. No. 1 of Clark Cnty. v. Pollution Control Hearings*

Bd., 137 Wn. App. 150, 158, 151 P.3d 1067, 1070 (2007). The regulations interpreting NEPA define cumulative impact as:

> [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7.

This definition, referred to as the "reasonably foreseeable" standard, has been construed and applied in several federal court cases. These cases have concluded that projects need not be final before they are reasonably foreseeable, but that there must be enough information available to permit meaningful consideration. *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1078 (9th Cir. 2011); *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv*., 451 F.3d 1005, 1014 (9th Cir. 2006).

All of the parties, with the exception of Imperium, agree that the standard applicable to the issue of cumulative impacts is whether the future project is reasonably foreseeable.[9] This standard comes from the SEPA statute, RCW 43.21C.031 (mandating preparation of an EIS for major actions having a *probable* significant environmental impact), the SEPA rules, WAC 197-11-782 (defining "probable" to mean "reasonably likely to occur" as opposed to being "remote or speculative") and the definition of *cumulative impact* under NEPA regulations, 40 C.F.R. ¶ 1508.7 (incremental impact of the action when added to "reasonably foreseeable future actions").

[9] Westway states the standard as "reasonably likely to occur." Westway's response to QIN, p. 2.

Imperium argues, however, that the standard for consideration of cumulative impacts under SEPA is narrower than the reasonably foreseeable standard. It contends that there is:

> . . . a whole body of Washington law that suggests that [under SEPA] cumulative impact analyses need only occur when there is some evidence that the project under review will facilitate future action that will result in additional impact, or when the project is dependent on subsequent proposed development.

Imperium's Response to Motions for Partial Summary Judgment, p. 11, 12, citing several Washington cases, the most recent of which is *Gebbers v. Okanogan Cnty. Pub. Util. Dist. No. 1*, 144 Wn. App. 371, 380, 183 P.3d 324, 328 (2008), *rev. denied* 165 Wn.2d 1004, 183 P.3d 324 (2008). While there is support for Imperium's argument in these cases, the Board concludes that this approach to cumulative impacts analysis conflates two separate and distinct SEPA concepts: "cumulative impacts" and "connected actions."

The SEPA rules define "connected actions" as "proposals or parts of proposals which are closely related." WAC 197-11-792(2)(a)(ii). Connected actions are narrowly prescribed to be proposals that:

> (i) Cannot or will not proceed unless the other proposals (or parts of proposals) are implemented simultaneously with them; or
> (ii) Are interdependent parts of a larger proposal and depend on the larger proposal as their justification or for their implementation.

WAC 197-11-060(3)(b). The SEPA rules direct agencies to discuss connected actions in the same environmental document. WAC 197-11-060(3)(b).

The SEPA rules, on the other hand, do not offer a definition of "cumulative impacts."[10] While the directive to evaluate "impacts" is clear, and the concept that "impacts" includes "cumulative" as distinct from "direct and indirect impacts" is clear, a precise definition of "cumulative impacts" is missing. WAC 197-11-060(4), WAC 197-11-792(2)(c). The SEPA rules, however, plainly set out connected actions and cumulative impacts as two distinct concepts. See WAC 197-11-060(3)(b) and WAC 197-060(3), (4).

The Ninth Circuit offers a succinct explanation of "cumulative impacts" and "connected actions" in *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 896 (9th Cir. 2002), a decision involving the review of a timber sale under NEPA. In *Native Ecosystems*, the Court stated:

> The obligation to wrap several cumulative action proposals into one EIS for decision making purposes is separate and distinct from the requirement to consider in the environmental review of one particular proposal, the cumulative impact of that one proposal when taken together with other proposed or reasonably foreseeable actions.

Id. at 896, n. 2.

Other decisions, however, have muddied the distinction between these two concepts. In *Gebbers*, a case heavily relied on by Imperium, the Court was asked to review a final EIS, which was prepared to evaluate the impacts from a proposal to build a transmission line and substation between Pateros and Twisp. *Gebbers*, at 376, 377. A citizens group argued that the EIS was deficient because it failed to include an analysis of rebuilding the new line. *Id.*, at 380. In a holding which intertwines the concepts of connected actions and cumulative impacts analysis, the Court states that "When, like here, any future project [the rebuilding of the existing line] is

[10] Because the SEPA statute and/or rules do not define "cumulative impacts," it is appropriate to look to the federal definition of cumulative impacts for guidance. *See PUD No. 1*, at 158.

not dependent on the proposed action [building of a new connection line], no cumulative impacts analysis is required." *Id.* at 386. In rejecting what it referred to as a "cumulative impacts analysis," the court was referring only to the lack of interconnection between the proposal for the new transmission line and future rebuilds of that line (i.e., that there had been no piecemealing or improper segmentation of the proposal analyzed in the EIS), such that its impacts should have been analyzed as a single proposal in a single environmental document. The *Gebbers* court, after noting that SEPA does not define "*cumulative impacts*," turns to the NEPA "reasonably foreseeable" definition to fill the definitional gap. *Gebbers*, at 380.

Gebbers, however, does not support the notion that a cumulative impact analysis of past, present, and reasonably foreseeable future actions is not required. *Id.* at 381. Simply put, in *Gebbers*, future updates to the proposed transmission line were neither part of the transmission line proposal nor reasonable foreseeable future actions. Hence, they did not violate SEPA's piecemealing rule nor require a cumulative impact analysis. *Cheney v. City of Mountlake Terrace*, 87 Wn.2d at 338, 343-45, 552 P.2d 184 (1976) (evaluation of impacts from a possible future development of a parcel of property was not required in the EIS prepared for the permit to construct the road, when the road was independent of the development, because this did not involve improper segmentation); *SEAPC v. Cammack II Orchards*, 49 Wn. App. 609, 614, 615, 744 P.2d 1101 (1987) (EIS need not consider impacts of subsequent phases when initial phase is substantially independent and would be constructed without regard to future developments, consistent with the SEPA rule allowing for phased environmental review). Neither these nor the

Gebbers court rejected the use of the reasonably foreseeable standard for evaluation of cumulative impacts from multiple unrelated projects.

The Board is not convinced, based on this line of cases, that Washington courts have adopted the narrow standard for evaluation of cumulative impacts argued for by Imperium. A close reading of *Gebbers* does not support this conclusion. NEPA's use of the reasonably foreseeable standard for cumulative impacts makes it unlikely, in the Board's view, that the Legislature intended the cumulative impacts analysis under SEPA to be triggered only by connected actions. The connected actions standard proposed by Imperium is less protective of the environment than the reasonably foreseeable NEPA standard, a result that is contrary to the "considerably stronger" policy statement in SEPA than in NEPA. *ASARCO, Inc. v. Air Quality Coal*, 92 Wn.2d 685, 709, 601 P.2d 501 (1979). While projects may not be sufficiently related to require analysis as connected actions and part of the same proposal, their individual cumulative impacts must be analyzed together in order to make a significance determination. The Board concludes that the standard for evaluation of cumulative impacts under SEPA is whether the other project(s) is reasonably foreseeable.

b. <u>USD project is reasonably foreseeable.</u>

The evidence in the record establishes that the USD project is reasonably foreseeable. USD entered into an 'access agreement' with the Port in September 2012 that allowed USD to conduct feasibility studies more easily at Terminal #3. Boyles Decl., Ex. G. USD sent its completed feasibility study to the Port on February 28, 2013. Boyles Decl., Ex. N. On March 12, 2013, USD provided an updated briefing to the Port on its "Proposed Terminal 3 Facility."

Boyles Decl., Ex. K. Subsequent to completing the feasibility study, USD entered an Option to Lease the site from the Port subject to obtaining necessary permits and other approvals. Boyles Decl., Ex. L. USD has participated in community workshops put on by the Port of Grays Harbor on crude-by-rail. In those community workshops, the USD project has been identified as one of three crude-by-rail proposals. Boyles Decl., Ex. J, U. The Port's website and publications also provide descriptions of, and fact sheets for, the three crude-by-rail proposals. Boyles Decl., Ex. B, D, L, M, O. The totality of this undisputed evidence supports the conclusion that the USD project is reasonably foreseeable.

There is also undisputed evidence in the record to conclude that the project is sufficiently defined to allow for meaningful review. USD's feasibility study, which it sent to the Port in February, 2013, included estimates of the maximum receiving capacity of the proposed operation (less than 50,000 barrels per day); the total crude capacity of the tanks (six to eight above-ground tanks with combined storage of 800,000-1,000,000 barrels); the anticipated increase in ship traffic due to the operation (facility will support five vessel calls per month); and the anticipated increase in train traffic (facility designed to receive and off-load a maximum of one full unit train every two days on average). Boyles Decl., Ex. N. This information was sufficient to allow the Co-leads to evaluate the potential increase in vessel and train traffic from the three proposals, as well as to consider the greater risk of oil spills.

While the Respondents[11] do not contest the facts established in the record on summary judgment, they do argue that the facts are insufficient to meet the legal standard of reasonably foreseeable or reasonably likely to occur, and that the information on USD's proposal is insufficient to provide the Co-leads with a basis to evaluate the potential for cumulative impacts from the proposal. They argue that the evidence presented by QIN shows only that USD is exercising due diligence in exploring the feasibility and economics of proposing an additional oil terminal at Grays Harbor. They point to statements in the record from the Ecology SEPA lead that the Port officials characterized the USD project as "not certain" and that the USD project was still in a conceptual stage because it was undergoing changes as evidenced by communication from EFSEC regarding changes in the USD project. 2nd Butorac Decl., ¶ 13 and Ex. E. Therefore, they argue, the project is far from being inevitable, and in fact remains speculative.

"Inevitable," however, is not the standard. The Ninth Circuit Court of Appeals has recognized that even reasonably foreseeable projects have some level of speculation. *N. Plains Res. Council*, at 1078-79. In that case, the Court said that well-drilling estimates extending 20 years into the future and involving a wide range of number of wells (between 10,000 and 26,000 coal bed methane wells and between 250 and 975 conventional oil and gas wells) had reasonably

[11] Ecology does not separately brief this issue, although it does join in the other parties' briefing. During the SEPA process, the Ecology Spills Program reached the conclusion that the cumulative impacts of the three projects should be evaluated together. In a memo from the Ecology Spills Project Manager to Ecology's Southwest Regional Office SEPA leads, the manager stated: "Based on our understanding of the similarity of the three proposals, Westway, Imperium, and U.S. Development Corporation; we believe that the effect of all facility operations together should be assessed, thus warranting a programmatic review of these projects' impacts. From a spills point of view, it is important to assess spill risk from increased vessel traffic, oil handling, and transfer operations as [a] whole." Boyles Decl., Ex. CC.

foreseeable impacts. Similarly, the court in *Environmental Protection Information Center* concluded that a timber sale, while not initially reasonably foreseeable, became reasonably foreseeably when "although the proposal was still not firm, enough was then known to permit a general discussion of effects." *Environmental Protection Center* at 1015. Here, although the USD project is not completely firm, or inevitable, it is reasonably foreseeable.

The Co-leads know enough about the USD project to make a general discussion of its potential impacts, in combination with the other two pending proposals, meaningful. They know its location on Grays Harbor, which is the same harbor as the other two facilities. They know its purpose, which is the same as the Westway and Imperium expansions, is to receive multiple grades of crude-by-rail, store it in terminals, and transfer it to vessels. They know its maximum capacity of proposed liquid storage, along with the daily maximum capacity of liquids it can handle. They know the number of anticipated rail unit trains and vessels visiting the planned new facility. This information is sufficient to merit its inclusion in the consideration of cumulative impacts from all three projects.

Here, based on uncontroverted facts in the record, the Board concludes that the USD project is reasonably foreseeable, and that the project is sufficiently defined to allow for meaningful review. Therefore, the Co-leads should have considered the cumulative impacts from the USD project along with the cumulative impacts from Westway and Imperium in making their threshold determination. Their failure to do so makes the MDNS clearly erroneous. The Board grants summary judgment to QIN and FOGH on this portion of Issue 1.

3. SEPA analysis of impacts from increases to rail and vessel traffic from Westway alone, and Westway and Imperium cumulatively (Parts of Issue A.1 and A.6)

QIN raises a second challenge to the validity of the Westway MDNS, contending that the consideration of rail and vessel impacts both from the Westway project alone, and the Westway and Imperium projects combined, was inadequate. One key aspect of this challenge is that the applicant was not required to submit information necessary for consideration of these impacts (both individually and collectively) until after the issuance of the MDNS and approval of the SSDP. The Board agrees with QIN that this process does not comply with the requirements of SEPA.

Unlike their approach in handling potential impacts from USD, Ecology and the City correctly recognized that they needed to consider potential impacts from the Imperium proposal when evaluating the environmental impacts for the Westway project. The MDNS for the Westway project contains the following explanation of the Co-leads decision to address the Imperium project:

> As allowed in SEPA regulations (WAC 197-11-060) the Co-lead Agencies recognize this is one of two similar crude oil terminal proposals in the Grays Harbor area that have been submitted for review. The agencies have considered the aggregate impacts of the existing Westway operations and proposed operations and the cumulative impacts of the Westway proposal and the Imperium crude oil proposal during this evaluation. The proposals are not being considered a single course of action under WAC 197-11-060. They are not interdependent and each proposal can be implemented on its own. The potential vessel and rail traffic impacts from the Imperium proposal are being considered because of the potential for indirect or cumulative impacts resulting from the two proposals using the same transportation pathways and constructed in a similar timeframe (WAC 197-11-792).

Boyles Decl., Ex. C, p. 4.

Both the Westway amended checklist and the Imperium checklist provide information on numbers of additional trains and vessels, in categories of the checklist identifying impacts to air and transportation. Butorac Decl., Ex. C; Boyles Decl., Ex. Q. The MDNS for the Westway project uses the numbers from both the Westway and Imperium checklist and combines them into a chart.[12] Boyles Decl., Ex. C, p. 9. Based on the chart, the number of vessels per year into and out of Grays Harbor will increase from a 2012 level of 168 vessels to a projected level of 688 vessels. The number of trains per year into and out of the Port of Grays Harbor will increase from a 2012 level of 730 unit trains to a projected level of 1,703 unit trains. After charting these numbers, the Co-leads reach the conclusion, without further analysis or explanation, that they do not expect the trains from just the Westway project to significantly impact existing traffic patterns at two places where the trains cross roads (the Olympic Gateway shopping center and the Port Industrial Road).

The conclusions of the MDNS are problematic for two reasons. First, while the chart includes numbers from both the Westway and Imperium proposals, the Co-leads apparently based the threshold determination on the Westway traffic additions alone. *Compare* Boyles Decl., Ex. C, p. 10 ("Two additional unit trains shall transit through the Aberdeen/Hoquiam area . . .every three days but are not expected to significantly impact existing traffic patterns. . . ." *with id.* at p. 10 (Westway/Imperium totals of approximately 18 additional trains per week)). There is no analysis provided of the increase in rail traffic from the combined proposals.

[12] The MDNS for the Imperium project uses the same approach. *See* Zultoski Decl., Ex. 39, p. 11.

Second, the Co-leads rely on the yet-to-be-completed RTIA and VTIA to generate information to determine the potential for impacts from the two proposals and any improvements or mitigation needed. The MDNS states "[t]he RTIA *will determine the potential for impacts* directly caused by changes and increases in rail traffic on local vehicular traffic and other rail commodities." Boyles Decl., Ex. C., p. 10 (emphasis added). A similar requirement is imposed for vessel traffic, with a similar purpose ("The VTIA *will determine the potential for impacts* that may result from changes or increases in vessel traffic in Grays Harbor.") *Id.* (emphasis added). The information the applicants will develop in the RTIA and VTIA is the information that the Co-leads should have before they make their threshold determination, not afterward. To wait until after the SEPA threshold determination is made, and the SSDP is issued, to obtain information that identifies whether potential impacts from vessel and train increases will be significant and whether mitigation is necessary, does not comply with the mandate of SEPA to "provide consideration of environmental factors at the earliest possible stage to allow decisions to be based on complete disclosure of environmental consequences." *King Cnty. v. Washington State Boundary Review Bd. for King Cnty*., 122 Wn.2d 648, 663, 860 P.2d 1024, 1033 (1993).

The Respondents respond to this argument through both legal and factual arguments. In their legal argument, they contend that it is acceptable to rely on future environmental studies and cite two appellate cases and one Shorelines Hearings Board case in support of their argument.[13] In *West 514, Inc. v. Spokane Co.*, 53 Wn. App 838, 848-49, 770 P.2d 1065 (1989),

[13] The Co-leads also cite *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568, 601-02, 90 P.3d 659 (2004)(approving conditions on a CWA §401 certification that required submission of revised studies, plans, and

rev. denied 113 Wn. 2d 1005(1989), the Court upheld an MDNS issued in connection with the approval of a site development plan for a shopping mall which required compliance with a future study. The West court stated "when a governmental agency makes a negative threshold determination, it must show it considered environmental factors 'in a manner sufficient to amount to prima facie compliance with the procedural requirements of SEPA.'" *West 514* at 848-49 *(citations deleted).* The Court in *West 514* concluded this standard was satisfied by the MDNS issued in that case, even though it contained a condition requiring compliance with a future study, because the SEPA responsible officials issued the MDNS only after they had adopted the pertinent parts of a prior EIS detailing the impacts expected from a similar abandoned project at the same site. *Id.* at 849. Hence, this case is not relevant to the present case.

In *Anderson v. Pierce Cnty*., 86 Wn. App. 290, 304-05, 936 P.2d 432, 440 (1997), the second case relied upon by the Respondents, the Court affirmed an MDNS which, while including a condition to submit a final mitigation plan, was issued only after the impacts of the project had been determined. The Court in that case described the threshold determination process as follows:

> Our review of the record indicates that PALS [the Pierce County Planning Department] thoroughly considered appropriate environmental factors in analyzing RPW's CUP application and environmental checklist, reviewing comments from other state agencies, and formulating 54 mitigation measures included in the MDNS. After accepting comments and analyzing the proposal, PALS initially determined that the RPW Project was reasonably likely to have a "significant adverse environmental impact." WAC 197–11–330(1)(b). PALS

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reports in the future.) This is not a case involving a SEPA threshold determination, and therefore is not applicable here.

> and RPW then worked cooperatively to reduce the project's significant adverse environmental impacts. WAC 197–11–350(2). RPW altered its plans, and PALS imposed substantial mitigating measures. These mitigation measures reduced all significant adverse environmental impacts below the threshold level of significance, such that an EIS was no longer required. WAC 197–11–350(5).

Anderson, at 304-05 (footnote omitted). Thus, the impacts had been clearly identified, as well as the needed mitigation; the submission of the final mitigation plan would merely reflect them. This case is not relevant to the present case.

In the Shoreline Hearings Board case cited by Respondents, *Overaa v. Bauer*, SHB No. 10-015 (2011), the Board addressed a situation in which future studies, included as conditions in an MDNS, were not expected to reveal any new significant adverse impacts. The Board concluded that the county had the information necessary to determine whether the project would have significant environmental impact at the time it issued the DNS, and that the study would not provide pertinent information. *Id.* at CL 18. The Board, in fact, remanded the MDNS and ordered the county to either modify or eliminate the future study condition because the results were not necessary for the threshold determination. *Id.* at Order.

Here, unlike *West 514*, there has been no prior EIS completed to provide information regarding the impacts from this level of increase in rail and vessel traffic. Unlike *Anderson*, there have been no major changes made to the proposal prior to the issuance of the MDNS to reduce the identified impacts. Unlike *Overaa*, the RTIA and VTIA studies are fundamental and vital to the determination of whether the rail and vessel increases that will result from these two projects, individually and cumulatively, will create significant adverse impacts.

The Co-leads argue as a factual matter that they determined that there were not going to be probable significant adverse impacts from the increase in rail and vessel traffic from these two proposals. They state they were ". . . told by the subject matter experts, the Port, and the rail company, that there would be no probable significant impacts." They explain that they required the RTIA and VTIA studies, merely to ". . . verify that there would be no probable significant impacts and also, for safety and clarity, to document the information on how things would be done in Grays Harbor." Toteff Decl., ¶¶ 5, 6. While the Co-leads may have reached the conclusion that there was not likely to be more than a moderate environmental impact from 520 additional vessel transits per year in Grays Harbor, and 973 unit trains per year to the Port of Grays Harbor, they did not share the basis for that conclusion in any of the SEPA documents. Further, the Co-leads' after-the-fact explanation as to why they required the preparation of the RTIA and VTIA, after they had already concluded there would not be impacts, is not supported by the required scope of the RTIA and VTIA analysis. The scoping documents for the RTIA and VTIA clearly focus on evaluating potential adverse impacts. Toteff Decl., Ex. B, Contract and Scope of Services document for Westway, p. 1, 2 ("Two of the mitigation measures required in the MDNS as currently published includes the need to further evaluate potential adverse impacts of the proposal by conducting a Rail Transportation Impact Analysis (RTIA) and a Vessel Transportation Impact Analysis (VTIA) that would identify potential transportation impacts for both modes of travel in and around Grays Harbor.") The objective of Task 1 is stated as "Evaluate the potential adverse impacts to existing railroad and roadway traffic along the rail route resulting from projected rail traffic as defined by the traffic table provide above. The

analysis and potential mitigation measures included in the analysis will be for trains during both peak and non-peak traffic hours along the rail route from Centralia to the facility." *See also*, Toteff Decl., Ex. A, Contract and Scope of Services document for Imperium.

Based on the information in the MDNS issued for the Westway project, the Co-leads' factual statements in the declarations filed in support of these motions, and the responsibilities imposed on SEPA responsible officials when making a threshold determination, the Board is left with a firm and deep conviction that the Co-leads clearly erred in concluding that there would not be probable significant impacts to the environment from the increases in rail and vessel traffic prior to receipt of the RTIA and VTIAs. The Board grants summary judgment to QIN on those parts of issue A.1 and A.6 pertaining to the lack of pre-approval analysis of rail and shipping impacts.

4. <u>SEPA analysis of other individual and cumulative impacts and failure to require pre-approval analysis (Remainder of Issues A.1and A.6)</u>

The Petitioners raise other factual challenges to the MDNS. They contend that the Westway MDNS failed to adequately consider the cumulative risks posed by the Westway and Imperium proposals, and to require sufficient pre-approval analysis of, potential impacts from oil spills, seismic and tsunami events, greenhouse gas emissions, impacts on marine life, impacts on recreational uses, and impacts to archeological and cultural resources. If the Board were not invalidating the MDNS on other grounds, these challenges would need to proceed to an evidentiary hearing. They are highly factual, and there has been a sufficient showing made of disputed issues of fact to require a hearing. However, because the Board is invalidating the

MDNS and remanding it back to Ecology and the City, it is unnecessary to conduct a hearing on the remaining issues pertaining to the MDNS.

Although these matters will not proceed to hearing at this time, the Board notes that there are areas of the existing SEPA review, in addition to the failure to consider cumulative impacts from USD, and the failure to require the RTIA and VTIA prior to the issuance of the MDNS, that it finds troubling. In particular, the current record before the Board presents troubling questions of the adequacy of the analysis done regarding the potential for individual and cumulative impacts from oil spills, seismic events, greenhouse gas emissions, and impacts to cultural resources prior to making the threshold determination. The pre-threshold determination analysis of cultural resources, for example, appears incomplete. Despite information from the Department of Archeology and Historic Preservation (DAHP) that the project area has a high potential for containing archeology resources, and their recommendation that a professional archaeological survey of the project area should occur before ground breaking activities, the MDNS reaches the conclusion that a condition requiring construction to be halted in the vicinity of any potentially historical objects or other resources found during construction, adequately mitigates any potential for impact. Boyles Decl., Ex. C, p. 9. While the Co-leads argue that the information from DAHP was conclusory, and that prior construction on the site revealed no historic or cultural resources, they cite no evidence for this statement. Ecology and City's Reply, pp. 7-8. The Co-leads might have been able to prove at hearing that there would not be a potential for impact to archeological resources, however, the Board is not convinced by the record on summary judgment alone that this is the case.

The Board also encourages the inclusion of more analysis in the SEPA documents, so that the public and future reviewing bodies can be confident that the Co-leads analyzed all potential impacts. As an example, the Co-leads acknowledge that different types of crude oil could have different characteristics when spilled, and that the MDNS does not analyze or address the difference. Ecology and City Response, p. 10. They then go on to explain in briefing that they relied on current regulatory requirements regarding oil spills to address any potential impacts from any types of spills. *Id.* at 10-14. While the Co-leads might have been able to prove at a hearing that other regulatory requirements are sufficient to mitigate for impacts from spills of any type of oil, the Co-leads do not provide this information in the SEPA documents themselves.[14] Although SEPA may not require "explicit" mention of every minor potential impact in a decision document, as argued by the Co-leads, certainly an impact with the potential to "wipe out generation(s) of a livelihood of work they [the shellfish folks or agricultural families, or tribes and local communities] have enjoyed and are skilled to do" should be explicitly addressed. 3rd Boyles Decl., Ex. JJ.

5. <u>Consideration of alternatives, reliance on existing laws, and adequate conditions (Issue A.3).</u>

The Petitioners attack the validity of the Westway MDNS on two other legal grounds.[15] First, they contend that the MDNS is invalid because it does not consider alternatives to the

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[14] As is apparent from record on summary judgment, the Ecology Spills Program had concerns. See 3rd Boyles Decl. Exs. II, Washington 's oil movement evolution: Talking points 02-12-2103 (draft) at 4-5, Ex. JJ, Email from Dale Jensen, Ecology Spills Program, Re: Aberdeen media on Crude By Rail Public Meeting -250 attend meeting (Feb. 1, 2013): "Crude or refined products have not been moved out of the Grays Harbor in the large quantities as is being proposed . . .ever. . . Crude oil . . . no matter the makeup, behaves differently than the refined product . . . ."

[15] The third part of issue A.3 is whether the MDNS is adequately conditioned and/or mitigated. Because the Board has invalidated the MDNS on other grounds, and therefore the SEPA process will need to redone, the Board concludes that the question of the validity of these conditions on the MDNS is now moot.

proposal. Secondly, they contend that it incorrectly relies on state and federal laws as mitigation. The Respondents move for summary judgment on both of these contentions.

The Respondents argue that there is no requirement in SEPA that SEPA officials consider alternatives to a proposal prior to preparation of an EIS. See RCW 43.21C.030(2)(c)(iii) (requiring in every EIS, consideration of alternatives to the proposed action.) Neither the Environmental Petitioners nor QIN cites to any such requirement, nor does the Board know of any. In fact, QIN concedes this portion of Issue A.3. *See* QIN's Response Brief, p. 10, n. 9. The Board grants summary judgment to the Respondents on this issue, noting that this does not mean it is inappropriate to consider alternatives at the threshold determination stage – just that it is not explicitly required by SEPA.

The second contention, that the Co-leads incorrectly relied on state and federal law as mitigation, is not as straightforward. The Respondents correctly state, and QIN concedes, "Reliance on state and federal legal requirements in an MDNS plainly is appropriate." City and Ecology's Motion, p. 13, citing WAC 197-11-330(1)(c)(in making threshold determination, lead agency should consider mitigation required by other environmental laws); QIN response brief, p. 11. The issue, however, as recognized by all parties, is whether the Co-leads supported their reliance on existing laws and regulations with sufficient analysis. The Board concludes that the evaluating agency cannot "simply list generally-applicable laws that a project must by law comply with and, without more, conclude that compliance will be sufficient to render impacts insignificant." QIN Response Brief, p. 12.

Here, the MDNS does more than just list the applicable laws. A good example of this can be seen in section 7 of the MDNS where spill prevention is addressed. Boyles Decl., Ex. C., pp. 6-8. The MDNS states that Washington State has strong oil spill prevention, preparedness and response regulations, and then goes on to generally discuss those requirements. It does not, however, address the potential impacts from oil spills from these proposals (including quantities and types of oil, locations of potential spills, and impacts to resources). In their summary judgment material, Ecology and the City provide more information regarding the information the Co-leads considered in determining that existing laws were adequate mitigation for the potential for impacts from oil spills. 2nd Butorac Decl., ¶¶ 8-10. This analysis, however, is absent from the SEPA documentation.

Here again, the Board concludes that a factual hearing would be necessary to rule on whether the MDNS's extensive reliance on existing laws was appropriate. When, in response to this opinion, the Co-leads take a second look at the SEPA MDNS, the Board encourages the Co-leads to identify potential impacts and then analyze how existing laws will mitigate for those impacts. The SEPA documents themselves should reflect this analysis.

The Board grants summary judgment to Respondents on the legal questions of whether alternatives must be analyzed in a threshold determination and whether an MDNS can rely on existing laws for mitigation. However, on the factual question of whether the Westway MDNS inappropriately relied on existing laws without sufficient analysis, the Board declines to rule, given the invalidity of the MDNS on other grounds.

6. Compliance with RCW 88.40.025 (Issue A.7 and B.4)

RCW 88.40.025 requires a facility to demonstrate financial responsibility in an amount determined by Ecology to compensate the affected state and local counties and cities for damages from a worst case spill of oil into the waters of the state. The statute directs Ecology to consider various factors such as the amount of oil that could be spilled, the costs of response, damages, operations at the facility, and affordability of financial responsibility. RCW 88.40.025. RCW 88.46.040(2)(a) requires that a spill prevention plan include any applicable state or federal financial responsibility requirements.

Issues A.7 and B.4 pose the question of whether the MDNS and the SSDP for the Westway facility are invalid because neither requires that Westway demonstrate financial responsibility. The Respondents move for summary judgment on these issues, contending that financial responsibility guarantees are unrelated to potential environmental impacts, and that the SMA and local shoreline master program (SMP) do not require evaluation of this statute when reviewing an SSDP.

In response, Petitioners point out that the MDNS relies, in part, on the requirement that Westway comply with an Ecology-approved spill prevention plan as mitigation for the potential impacts from oil spills. The statute requires that a spill prevention plan show compliance with financial responsibility requirements. *See* RCW 88.46.040(2)(a). They contend that this means that Westway must show financial responsibility as part of the SEPA process and that its failure to do so to date invalidates the MDNS.

After consideration of Petitioners arguments, the Board concludes that an appropriate evaluation of SEPA impacts by the Co-leads did not require Westway to make a showing of compliance with RCW 88.40.025. As pointed out by the Respondents, the spill prevention plan is not yet required, and therefore it is premature to contend that Westway is out of compliance with one of the plan's requirements by not having made a showing of financial responsibility. If Westway fails to establish a showing of financial responsibility at the time it submits a spill plan, it will be subject to enforcement and penalty sanctions. WAC 173-180-670, 173-180-065. Spill plans, along with the required showing of financial responsibility, will be required before the facilities can begin operations. Butorac Decl., Ex. G, p. 3. Importantly, as pointed out by Ecology, regardless of any financial assurances, a responsible party is strictly liable for unlimited oil spill costs and damages. RCW 90.56.360, 370.

Further no party points to any requirements in the SMA or local SMP requiring a showing of compliance with RCW 88.40.025 prior to approval of an SSPD, and the Board is not aware of any such requirement. The Board grants summary judgment to Respondents on Issues A.7 and B.4.

7. <u>Compliance with Ocean Resources Management Act (Issues A.8 and B.3)</u>

The Ocean Resources Management Act (ORMA), ch. 43.143 RCW, adopted in 1989, requires local governments adjacent to certain defined coastal waters to incorporate policies, guidelines, and project review criteria for "ocean uses" into their shoreline master programs. Ecology has implemented ORMA through the adoption of WAC 173-26-360, which includes a definition of the critical term "Ocean uses". WAC 173-26-360(3) provides:

> Ocean uses defined. Ocean uses are activities or developments involving renewable and/or nonrenewable resources that occur on Washington's coastal waters and includes their associated off shore, near shore, inland marine, shoreland, and upland facilities and the supply, service, and distribution activities, such as crew ships, circulating to and between the activities and developments. Ocean uses involving nonrenewable resources include such activities as extraction of oil, gas and minerals, energy production, disposal of waste products, and salvage. Ocean uses which generally involve sustainable use of renewable resources include commercial, recreational, and tribal fishing, aquaculture, recreation, shellfish harvesting, and pleasure craft activity.

Hoquiam's Shoreline Master Program includes provisions mirroring these statutory and regulatory requirements. HMC 11.04.030(20), 11.04.180(6).

Ocean uses, as defined in WAC 173-26-360(3), are "activities or developments" involving "renewable/and or non-renewable resources that occur on Washington's coastal waters." The definition goes on to clarify that "Ocean uses involving nonrenewable resources include such activities as extraction of oil, gas and minerals, energy production, disposal of waste products, and salvage." From this definition, it is clear that Ecology understands that the Legislature designed ORMA to address facilities directly engaged in resource exploration and extraction activities in Washington waters.

As further clarification of this purpose, the regulation defines specific categories of ocean uses. "Oil and gas uses and activities" are those that "involve the extraction of oil and gas resources from beneath the ocean." WAC 173-26-360(8). Ocean uses that are considered "transportation uses" are those that "originate or conclude in Washington's coastal waters or are transporting a nonrenewable resource extracted from the outer continental shelf off Washington." WAC 173-26-360(12). The proposed Westway terminal does not fall within these definitions.

Westway does not intend to extract or otherwise service the extraction of crude oil or any other resources *from Washington waters*. It is not transporting oil from *beneath the ocean*. Rather, the Project will facilitate the movement of crude oil from and to areas outside the Washington border.

Petitioners argue for a very broad interpretation of "ocean uses" based on the policy goals of ORMA. Their proposed interpretation, however, would expand ORMA's reach and require ORMA analysis for every transportation project in ports along the Washington coast, regardless of whether those projects transport extracted materials from the outer continental shelf. The Petitioners offer no evidence that ORMA, which has been in place in Washington for 24 years, has ever been interpreted in this manner nor that this interpretation is consistent with its stated purposes and administration by the agency primarily responsible for its administration, Ecology.

The critical term "ocean uses" has been defined by Ecology, the agency charged with implementation of ORMA through the SMA, in WAC 173-26-360. The City has further implemented this definition through its SMP. The Board must apply that regulatory definition. Based on the plain language of WAC 173-26-360, the Westway facility is not a facility involved in an "ocean use" as defined by Ecology regulation. WAC 173-26-360. *See also* HMC 11.04.065, 11.04.180(6).

Because Westway is not proposing an ocean use, its facility is not subject to the provisions of ORMA, through the provisions of the SMA and the local SMP. Further, there is no requirement that the SEPA Co-leads consider the provisions of ORMA when reaching a

threshold determination for the same reason: Westway proposes no ocean use. The Board grants summary judgment to the respondents on issues A.8 and B.3.

8. Issue A.9, and B.8, 9 and 10 are now moot

Issue A.9 raises challenges to procedural aspects of the SEPA MDNS, such as notice, consideration of comments, and obtaining sufficient information. Because the Board is invalidating the MDNS on other grounds, and the City and Ecology will need to go through another SEPA process in adopting a new threshold determination, a challenge to the process on the existing MDNS is now moot. Similarly, Issue B.10, which raises challenges to the SSDP based on alleged procedural errors, is also moot. Other challenges to the MDNS and SSDP's validity based on compliance with the SMA, the local SMP, the Coastal Zone Management Act, and critical areas ordinances are also moot because of the invalidity of the MDNS on other grounds.[16] The Board declines to address these moot issues.

Based on the foregoing analysis, the Board enters the following:

ORDER

1. Summary judgment is granted to Petitioners on Issues A.1 and parts of A.6 as set forth in this Order.

2. Summary judgment is granted to Respondents on parts of Issue A.3, and all of issues A.7, A.8, B.3, and B.4.

[16] The Board does note that the Coastal Zone Management Act is applicable only to projects requiring a federal license or permit. 16 U.S.C. § 1456(c)(3)(A). There is no indication in the record that such federal authorization is required for the Westway project.

3. The City's approvals of the Westway and Imperium SSDPs are reversed based on the invalidity of the underlying MDNSs. This matter is remanded to the City for further SEPA analysis consistent with this opinion.

SO ORDERED this 9th day of December, 2013.

SHORELINES HEARINGS BOARD

TOM MCDONALD, Chair,

KATHLEEN D. MIX, Member

JOAN MARCHIORO, Member

PAMELA KRUEGER, Member

-See Dissent and Partial Concurrence-
GRANT BECK, Member

-See Dissent and Partial Concurrence-
JOHN BOLENDER, Member

Kay M. Brown, Presiding
Administrative Appeals Judge

SHORELINES HEARINGS BOARD
STATE OF WASHINGTON

QUINAULT INDIAN NATION, FRIENDS OF GRAYS HARBOR, SIERRA CLUB, SURFRIDER FOUNDATION, GRAYS HARBOR AUDUBON, and CITIZENS FOR A CLEAN HARBOR, Petitioners, v. CITY OF HOQUIM, STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY and WESTWAY TERMINAL CO. LLC, Respondent. and IMPERIUM TERMINAL SERVICES, LLC, Respondent Intervenor.	SHB No. 13-012c PARTIAL CONCURENCE and DISSENT

The majority granted summary judgment to the QIN on issue 1 as identified in the pre-hearing order as follows:

> Is the Mitigated Determination of Non-Significance ("MDNS") issued by the City of Hoquiam and Washington Department of Ecology invalid because the responsible officials failed to adequately consider the direct, indirect, and cumulative impacts of three proposed crude-by-rail terminals in Grays Harbor (Westway, Imperium, and U.S. Development)?

We disagree with the majority on this decision for the following reasons.

Summary judgment is proper only when there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. CR 56(c), *Peterson v. Groves*, 111 Wn. App. 306, 310, 44 P.3d 894 (2002). Summary judgment is appropriate if reasonable minds could reach but one conclusion from all the evidence. *Harberd v. City of Kettle Falls*, 120 Wn. App. 498, 507, 84 P.3d 1241 (2004), *rev. denied* 152 Wn. 2d 1025 (2004). Further, the decision of the Responsible Official is entitled to substantial weight on appeal. RCW 43.21C.075 (3)(d). As stated by the majority, "[t]he Board reviews the City and Ecology's SEPA threshold determination under a 'clearly erroneous' legal standard . . . and [a] 'finding is 'clearly erroneous' when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed.'" Majority decision, p. 15 (*citations deleted)*.

Here, the City of Hoquiam and Ecology acted as co-lead agencies on the SEPA process and issuance of the MDNS. Ecology is an agency with environmental expertise in the areas of air quality, water quality, and energy production, transmission, and consumption. See WAC 197-11-920. The City and Ecology concluded based on their review of the facts that:

> The U.S. Development project was still in a conceptual stage with significant differences in the various projects, as noted in the April 23, 2013 letter from EFSEC. Ecology also consulted with the Port of Grays Harbor officials, asking whether they believed U.S. Development was committed to a project at the Port; the Port officials replied that the project was not certain.

2nd Butorac Decl., ¶ 13 and Ex. E.

Reasonable minds have clearly reached differing opinions as to whether the U.S. Development project was reasonably foreseeable, and therefore should have been considered in

evaluating the cumulative impacts from the Westway and Imperium projects. This is especially true given the deference owed to the SEPA-responsible officials' decision making, and the Board's clearly erroneous standard of review. Therefore, in our opinion, this issue should proceed to a factual hearing. We do not think that summary judgment on this issue is appropriate.

For the same reasons (contested issues of fact and deference to the SEPA-responsible official), we do not think that summary judgment on the issue of whether the issuance of a Mitigated Determination of Non-significance was clearly erroneous due to the potential cumulative impacts from increases to rail and vessel traffic from the Westway and Imperium projects was appropriate.

We do concur with the majority, however, on their analysis and conclusion that the correct standard for evaluation of cumulative impacts under SEPA is whether the other project is reasonably foreseeable. We also concur with the majority's analysis and conclusions on Issues A. 7 and B.4, pertaining to financial responsibility, and Issues A.8 and B.3, pertaining to ORMA.

DATED this 12th day of November, 2013.

SHORELINES HEARINGS BOARD

GRANT BECK, Member

JOHN BOLENDER, Member

Clean Rivers Cooperative
and
Maritime Fire and Safety Association

Partnerships ▪ Response Capabilities ▪ Regulatory Compliance

Port of Vancouver
Board of Commissioners
May 14, 2013

A Strategic Partnership

In 1992, Maritime Fire and Safety Association, Columbia River Steamship Operators Association, and Clean Rivers Cooperative entered into a partnership to share expenses and resources to provide spill response coverage for the Lower Columbia and Willamette River System.

Merchants Exchange, as general service contractor, provides specified administrative and managerial services to MFSA and Clean Rivers today.

Clean Rivers Cooperative, Inc.

CLEAN RIVERS
COOPERATIVE, INC.

What is Clean Rivers?

- Founded in 1971 as a nonprofit membership-based Oregon cooperative corporation
- Acts as the Oil Spill Response Organization (ORSO) providing mutual aid to a variety of companies whose facilities handle oil on the Columbia and Willamette Rivers
- Membership has grown to 23 member companies from the petroleum, shipping and wood products industries with the passing of the Oil Pollution Act of 1990 and similar state oil pollution laws
- Expanded duties to provide OSRO services to MFSA in 1992

Clean Rivers Membership

- BP
- Columbia Pacific Bio Refinery
- Chevron
- Phillips 66
- Exxon Mobil
- Foss Maritime
- Georgia-Pacific (Camas)
- ICTSI Oregon, Inc.
- Kinder Morgan Energy Partners
- Longview Fibre Co.
- NuStar Terminals (Portland)
- NuStar Terminals (Vancouver)
- Olympic Pipe Line Co.
- Owens Corning Sales LLC
- Paramount Petroleum
- Portland General Electric
- Pacific Terminal Services
- Shell Oil Products US
- Tesoro Refining & Marketing
- Tidewater Barge Lines
- Vigor Industrial LLC
- Weyerhaeuser Paper Co.

Maritime Fire and Safety Association (MFSA)

MFSA History

M.V. Protector Alpha - 1982

What is the Maritime Fire and Safety Association (MFSA)?

A *not-for-profit* membership association established in 1983, consisting of Public Ports, Private Terminals, and the Columbia River Steamship Operators Association (“CRSOA”)

Promotes safety, fire protection and enhanced navigation on the Lower Columbia and Willamette Rivers.

Originally formed with the purpose of training and equipping land-based firefighters for facility and vessel firefighting response.

Expanded to address communication and oil spill response needs for all vessels.

Clean Rivers and MFSA: A Strategic Partnership

MFSA and Clean Rivers entered into a formal Oil Spill prevention and response partnership in 1992.

- Drills
  - equipment
  - tabletop
- Equipment
- Response
- Training

Master Oil Spill Contingency Response Plan

Developed in 1992 in cooperation with Columbia River Steamship Operators Association (CRSOA) and State Agencies to meet State regulations for oil spill response for self-propelled vessels over 300 gross tons and oil barges.

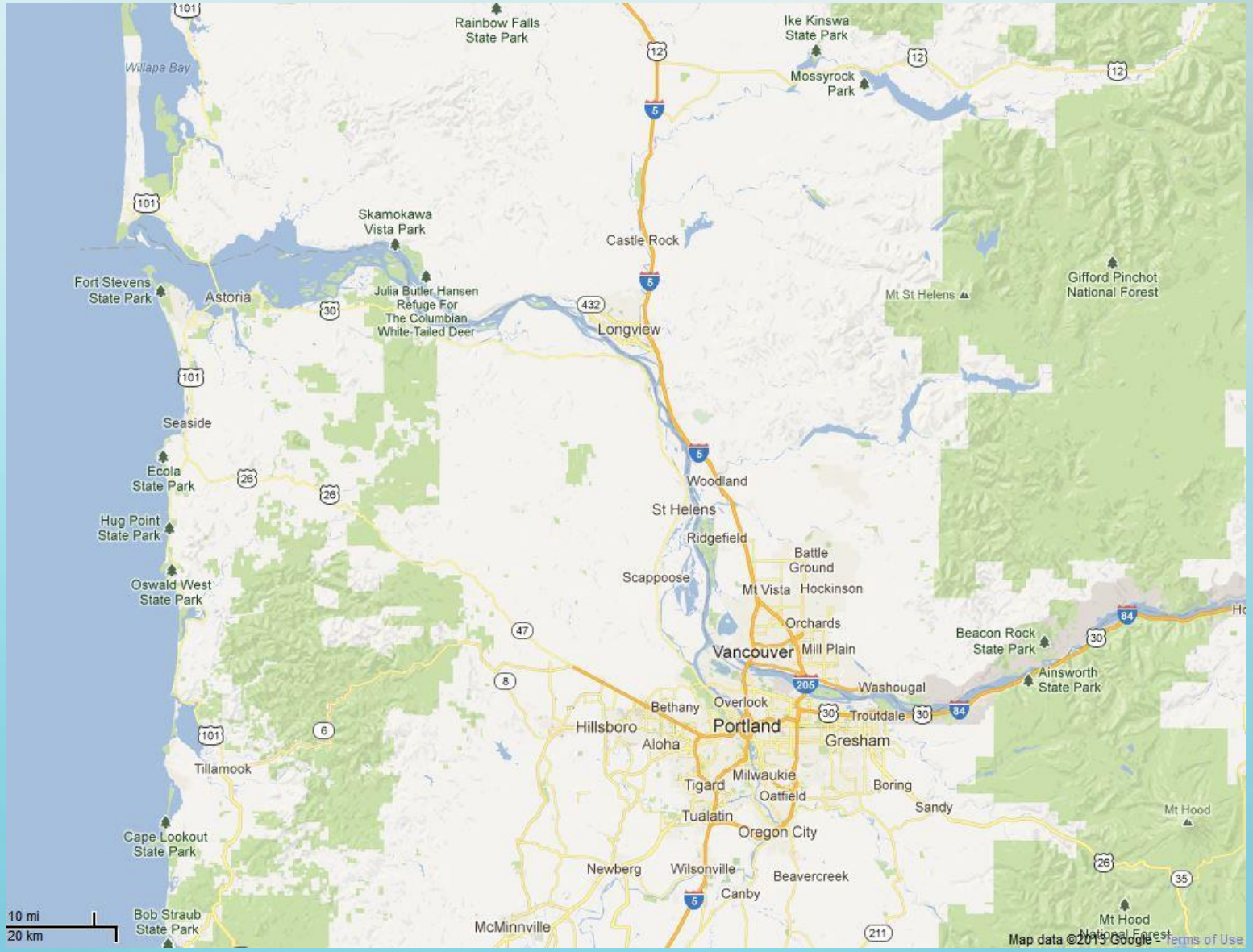
- Oregon State Bill 242
- Washington House Bill 1027
- Oil Pollution Act of 1990 (Tank Vessels)

- Covers vessels calling the ports of the Columbia and Willamette Rivers.
- Continuous State approval.
- Achieve participation in regulatory process.
- Meets local stakeholder needs.

Sample Planning Standards – for Vessels in Vancouver, WA

Time (hours)	Boom/Assessment	Minimum Oil Recovery Rate % of WCS volume per 24 hours	Minimum Storage Volume
2	Safety assessment 1,000 feet of boom		
3	Additional 2,000 feet of boom, or 4 times the length of the largest vessel whichever is less.		
6	Additional 6,000 feet of boom	Capacity to recover up to12,000 barrels per day	An amount equal to recovery rate
12	Additional 20,000 feet of boom.	Capacity to recover up to36,000 barrels per day	1.5 times the recovery rate
24	Additional 20,000 feet of boom.	Capacity to recover up to 48,000 barrels per day	2 times the recovery rate
48	More boom as necessary for containment, recovery or protection.	Capacity to recover up to 60,000 barrels per day	More as necessary to not slow the response.

MFSA/Clean Rivers Area of Coverage



Clean Rivers/MFSA Equipment

- Co-own one of the largest inventories of oil spill response equipment on the Columbia and Willamette River System valued at $4.1 million
- Equipment is dedicated to the Lower Columbia and Willamette River System
- Equipment is strategically staged, meeting regulatory planning standards to ensure a quick and efficient response

Boom

- 11,400 ft of 12 in.
- 1,000 ft of 40 in.
- 45,400 ft of 20 in.
- 700 ft of 30 in.

62,600 total feet in boom

OSRVs

- HW Zarling
- Mark O. Hatfield
- MFSA 1
- Clean Rivers 1

All are 34-foot Kvichak boats with an EDRC of 3,720 bbls/day per vessel.

Clean Rivers/MFSA Equipment

Portable Skimmers

34 portable skimming devices that have a total EDRC rating of 58,573.

Land-Based Storage Capacity

Ten 1,000 gallon Portable Fast tanks and millions of barrels of storage made available by member facilities.

Mobile Equipment

Fully stocked wildlife care trailer, injured wildlife transport vehicle, generator system, portable net-pens and Mobile Command Unit.

On-Water Storage Capacity

Six Shallow Water Recovery Barges equipped with Lori Skimmers having an EDRC of 2,473 per barge, five Shallow Water Barges and seven 2,500 gallon Towable Bladders available for use to store spilled product.

Clean Rivers Response Personnel

Service agreements are maintained with independent spill response contractors to provide clean-up services to Clean Rivers member facilities and MFSA enrolled vessels.

NRC Environmental Services

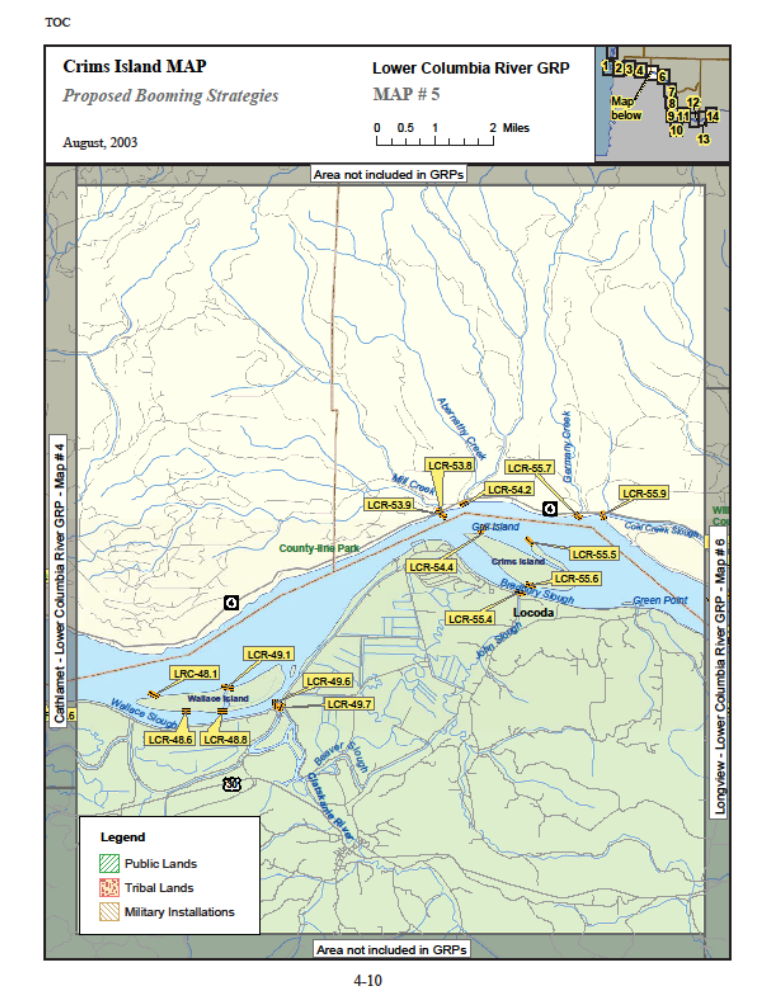
- Offices in Portland, Oregon as well as Seattle, Tacoma, Pasco and Spokane, Washington
- Provides over 48 trained responders to operate our equipment including additional responders as available in the NW and California

International Bird and Rescue Center Provides 25 trained wildlife response personnel and responders, and a 4-hour dispatch of initial teams.

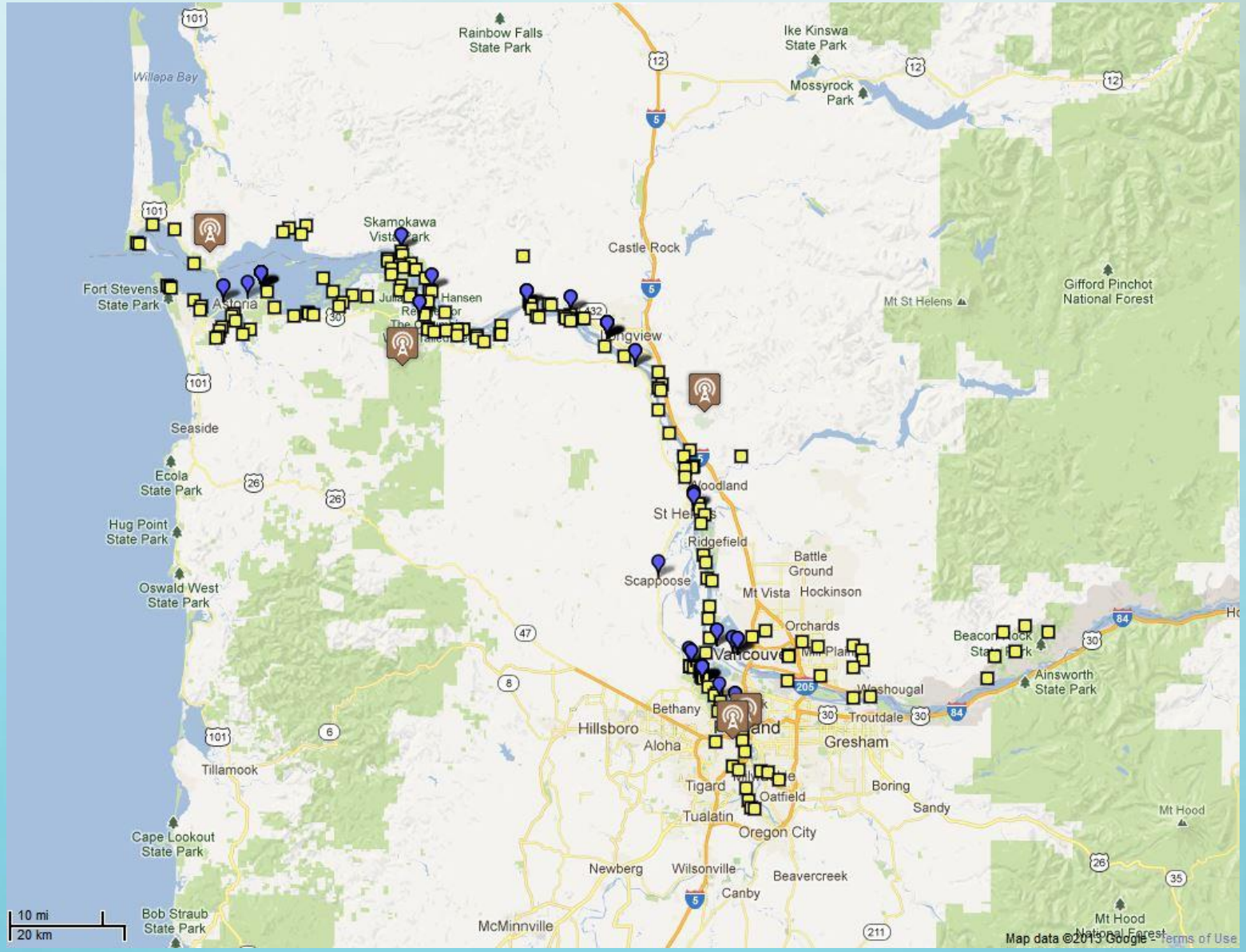
24/7 Call Center
Merchants Exchange houses a 24/7 call center to facilitate rapid, effective response.

Geographic Response Plans

- MFSA's Contigency Plan and Clean River's equipment cache have been based on the historical movement of refined petroleum products – gasoline, diesel, bunker.
- **Geographic Response Plans (GRPs)** are pre-identified, detailed strategies to deflect, collect and recover spilled petroleum products as well as strategies to protect environmentally sensitive areas.



MFSA / Clean Rivers Resource Locations



MFSA/Clean Rivers Research

- **Oil Sands Products (OSP) Forum** MFSA and Clean Rivers attended this two-day meeting in April to learn more specific details on the products and how they behave in a spill as well as to bring the Columbia River presence.

- **Agency Interaction**
  The various regulatory agencies have been working with industry to understand the risks related to this product movement, as evidenced by the OSP forum as well as Northwest Area Committee (NWAC) Task Forces created to investigate the topic.

Conclusion

- Maritime Fire & Safety Association and Clean Rivers Cooperative - Partnership in Oil Spill Prevention and Response since 1992
- Equipment and trained personnel strategically placed throughout area of coverage for prompt response
- Ongoing research through outreach in the industry
- Always learning and growing to accommodate the needs of our constituents

Contact Information

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  (503) 220-2099

- **Ernie Quesada,** Clean Rivers Cooperative General Manager

  quesada@pdxmex.com

  (503) 220-2087

Port of Vancouver

BNSF Railway – Hazardous Material Transportation Preparedness and Response

June 4th, 2013

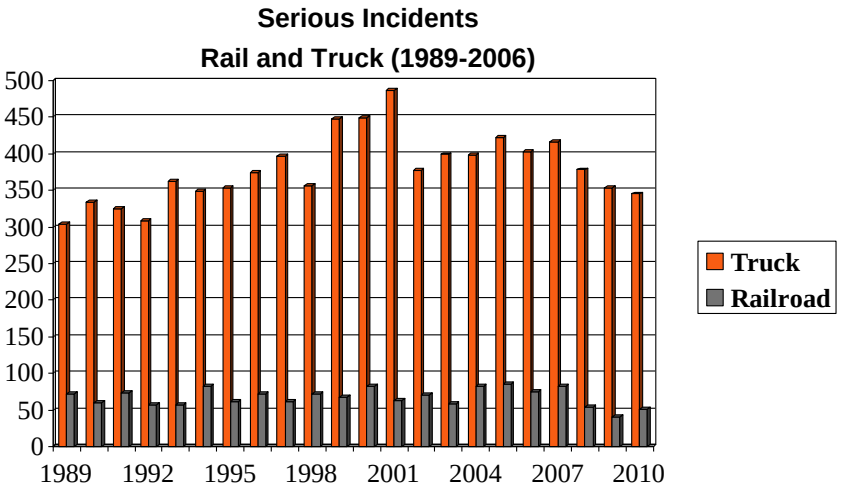
Hazardous Materials

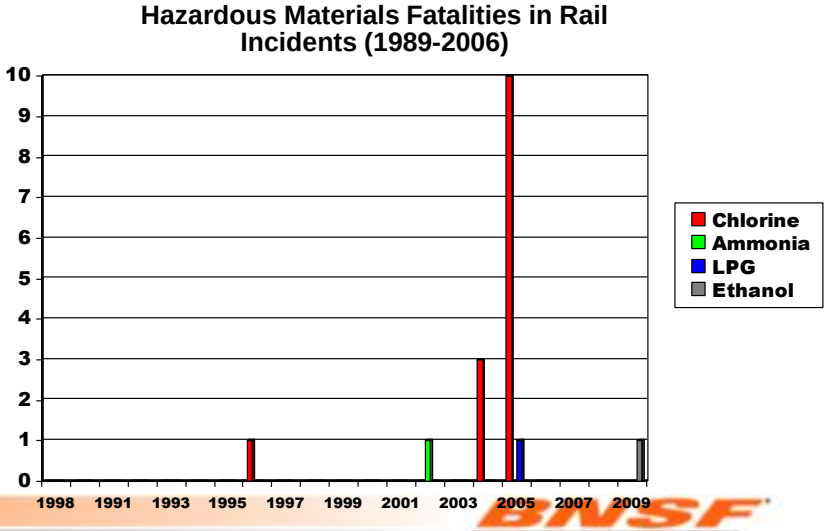
- ***For US Railroads Hazardous Materials Account for:***
  - 5% of total U.S. freight rail carloads
  - 5% of tonnage
  - 6% of ton-miles
- **68% of rail hazmat travels in tank cars**
- **28% on intermodal flat cars; the remainder in covered hoppers, gondolas, and other car types**
- **The most potentially hazardous materials, termed toxic inhalation hazards (TIH) are nearly all transported in tank cars. TIH materials constitutes only about 0.3 % of all rail carloads. In 2012 TIH shipment declined about 15% as safer alternatives are developed and transported.**

Hazardous Materials Transport

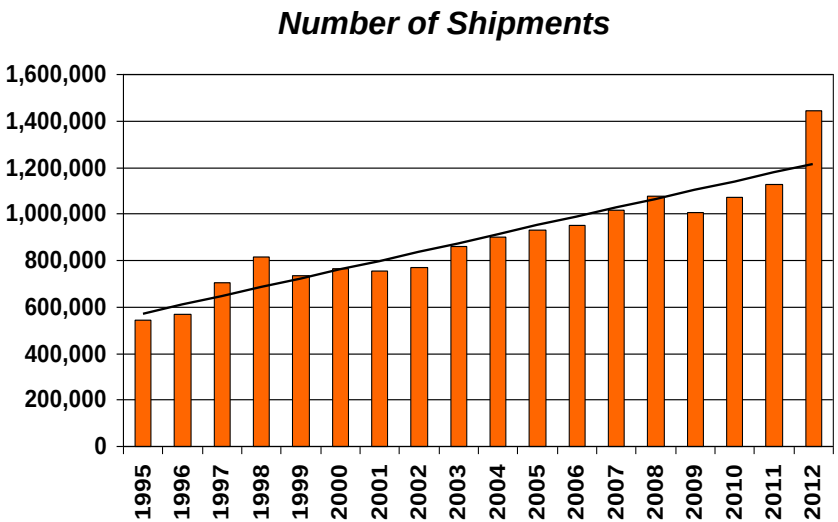
As common carriers, railroads are required under federal law to move hazardous materials

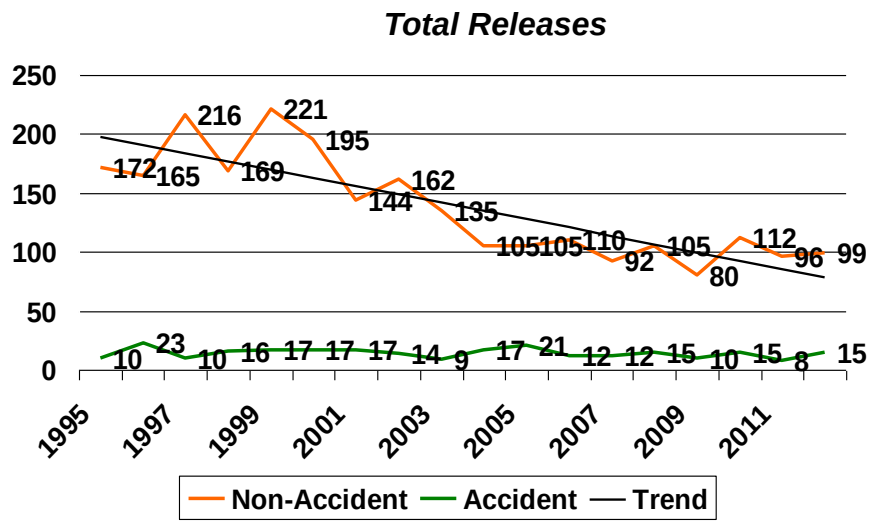
- **Virtually all are shipped without incident (99.998%)**
- **Hazmat accident rates have declined by 90% since 1980 and nearly 50% since 1990**
- **Moving hazardous materials by rail is 16 times safer than moving them on the roads**
- **Railroads incurred 17 fatalities since 1989 while trucks average nearly 11 annually. BNSF had none.**





BNSF Hazardous Materials Transportation





Examples of Types of Releases

Any identifiable release is reportable under DOT regulations

Non-Accident Release

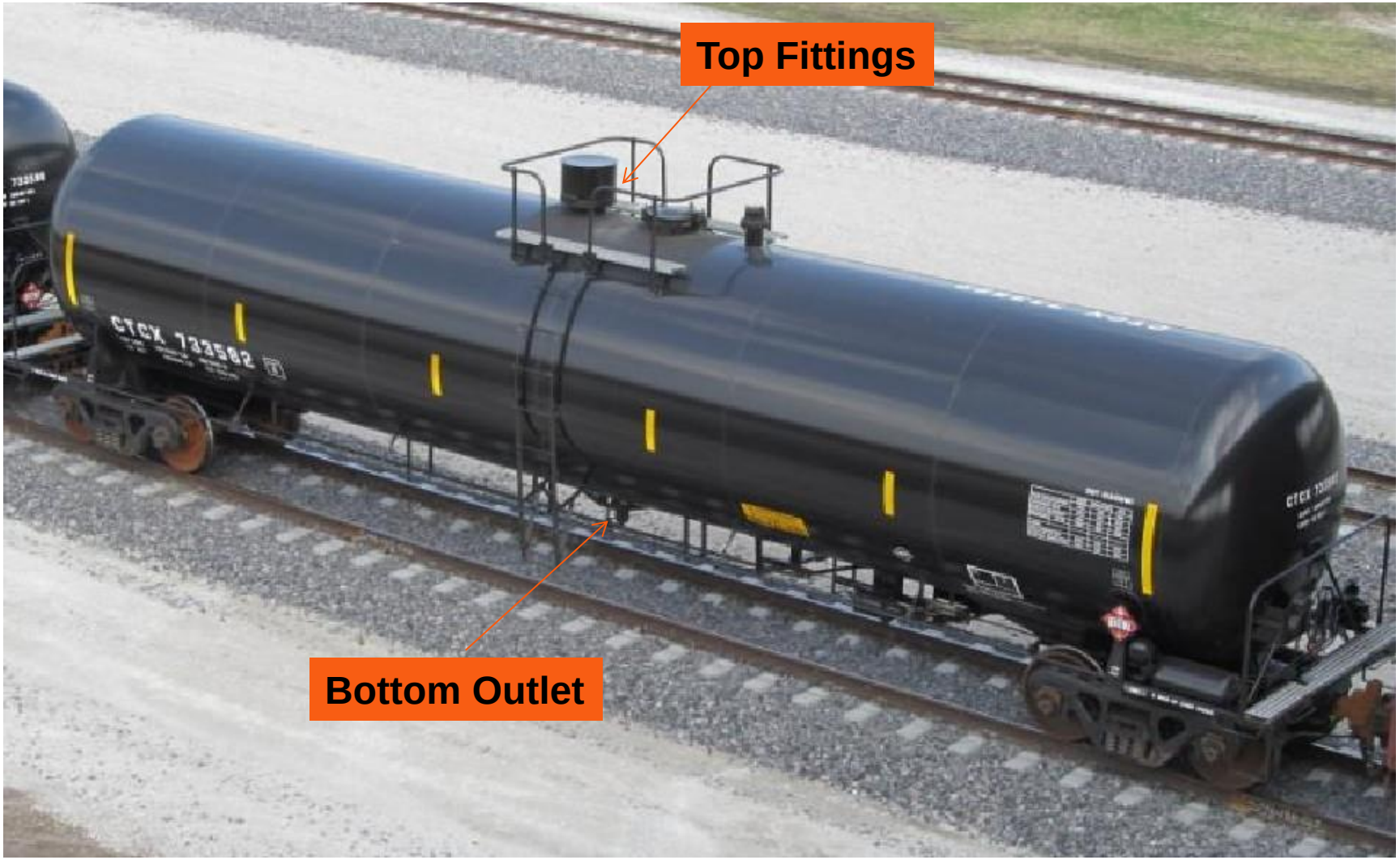
Accident Release

BNSF Washington State Crude Oil Transportation

- Currently for BNSF, US "Crude by Rail" consists of mainly transportation from various Shale oil sources (i.e Bakken, Eagle Ford, Permian Basin etc).
- In 2012 - 3,632 shipments of petroleum crude oil (PCO) came to WA State
- In Q1 2013 – over 3,700 of PCO came into WA State

	BNSF Crude Oil Transport		
Year	LDD SHPMTS	RESIDUE SHPMTS	TOTAL SHPMTS
2011	38,312	39,514	77,826
2012	152,926	162,678	315,604
% Change	299.16%	311.70%	305.53%

Low Pressure Tank Car – DOT 111A100W1



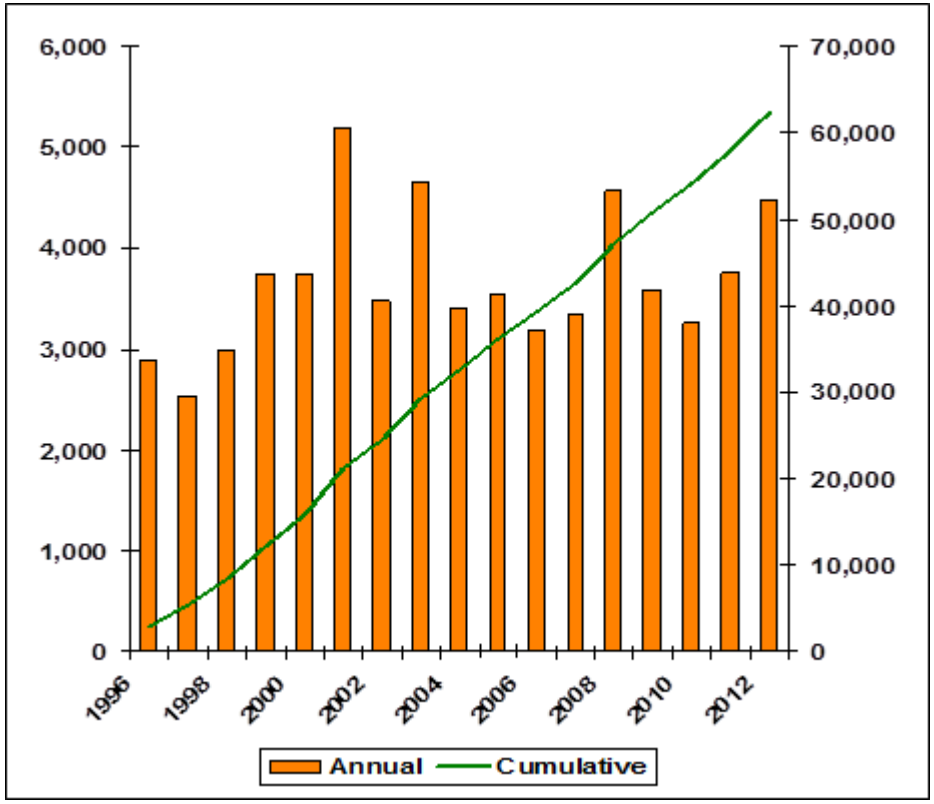
Preparedness: Community Training

Community focus is on training responders and providing interpretative information. Training is available via instructor lead or computer based training.

Training topics include:

- Train list / shipping papers
- Placards
- Equipment
- Incident Assessment
- *Hands-on equipment in field – Instructor lead*
- ***Commodity Flow Study***

Number of Responders Trained



Emergency Preparedness and Planning

System Emergency Response Plan

- **Identifies how BNSF responds to incidents throughout our system**
- **Includes:**
  - LRP's (Local Reaction Plans)
  - LERP's (Local Emergency Response Plans)
  - Notification Procedures
  - Outlines Roles and Responsibilities

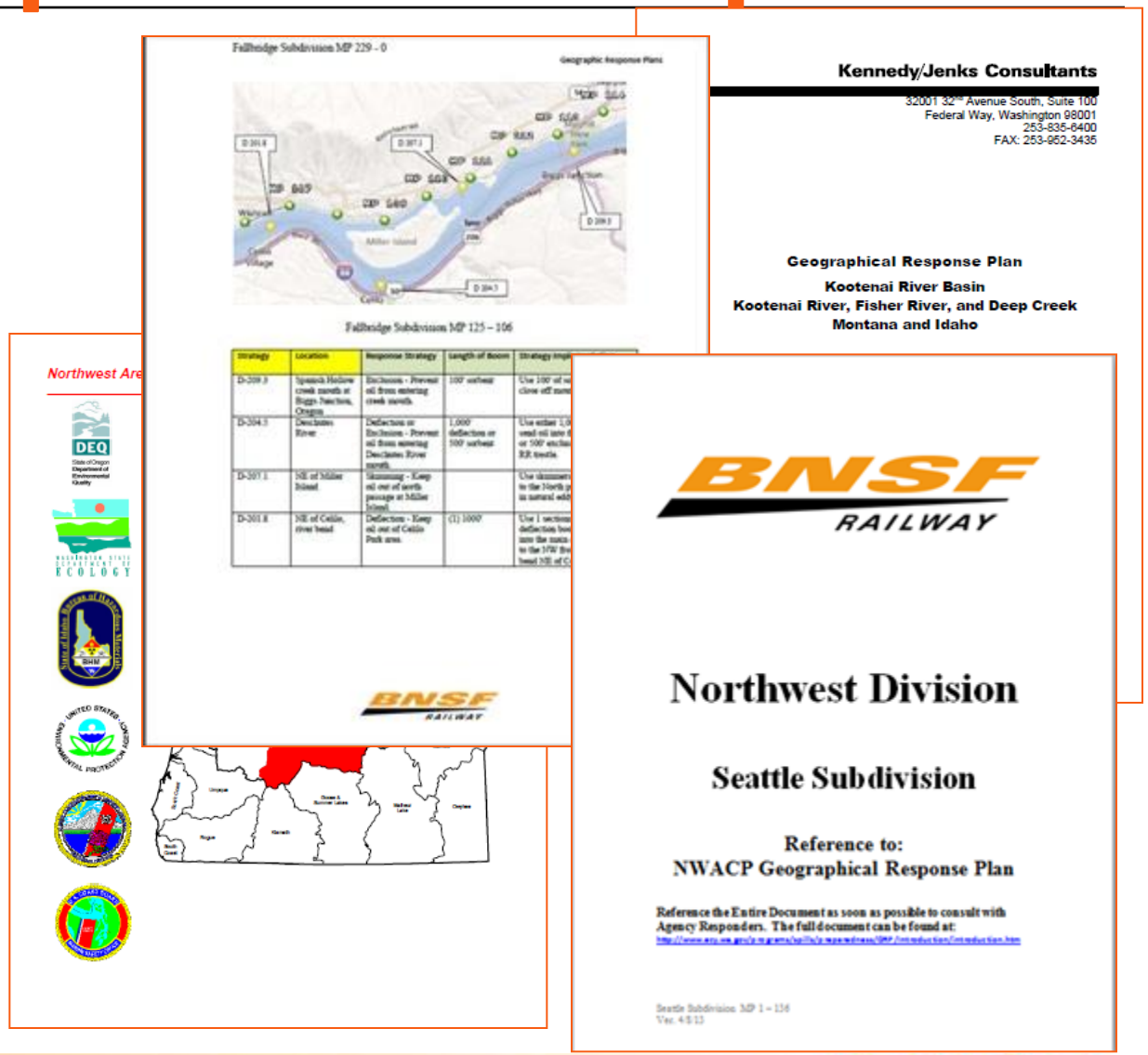
Geographical Response Plan Support/Development – Water Response

Public Plans

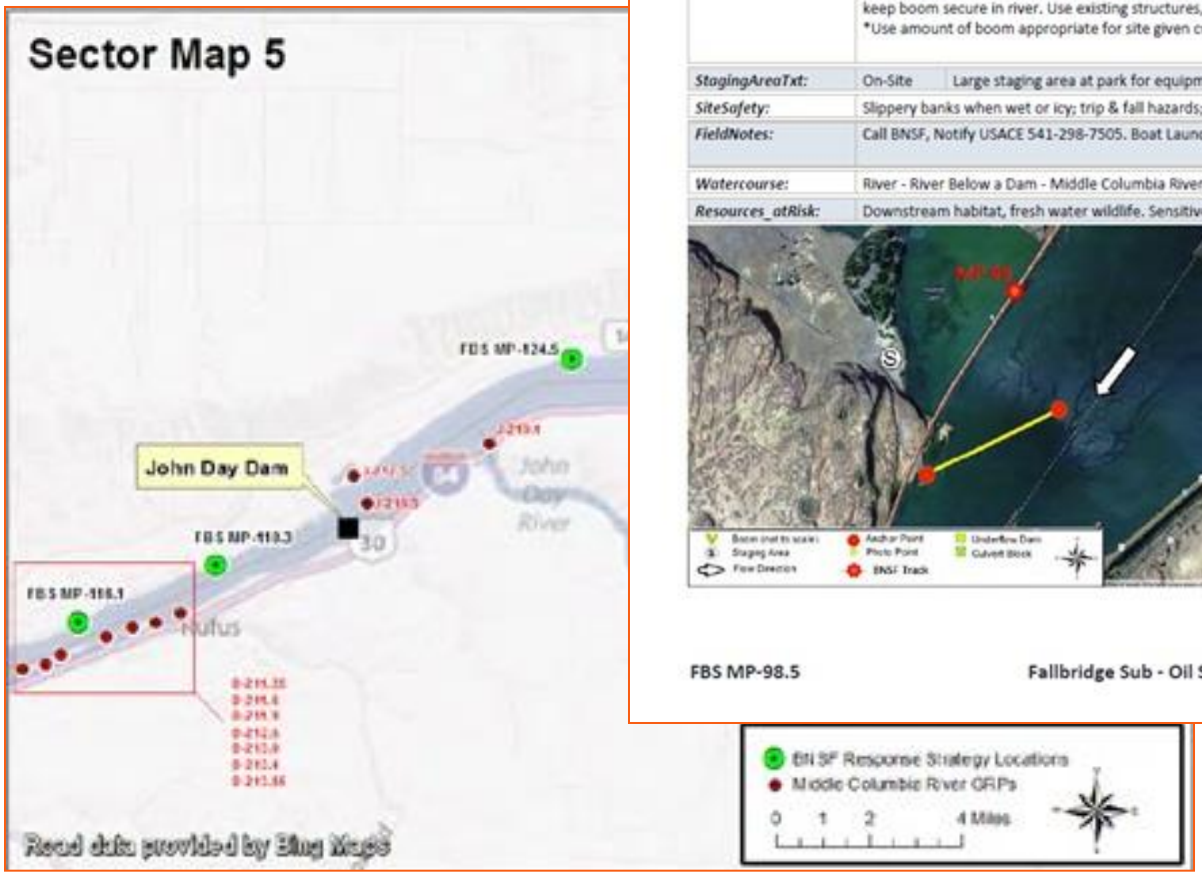
- Northwest *(w/ additional quick access reference documents)*
- Coastal
- Mississippi River
- Working w/ EPA + others on Plans in ND, MT, WY

Rail Specific

- Kootenai River (MT)
- Columbia River CCP's
- Colorado River (CO)
- Wind River (WY)
- Middlefork Flathead/Glacier Park – In development (MT)



BNSF Company Control Points



RM 194.2 - Horsethief Lake State Park — FBS MP-98.5

Position - Location:	45.63991	-121.103485	Lyle, WA (Klickitat County)
StrategyObjectiveTxt:	Collection	Collect oil moving downstream from upstream source	
Implementation:	Anchor boom end to river bank near 45.639909,-121.103485. With FRV, tow remaining boom end upstream towards NE or ENE and anchor in place, as appropriate, based on environmental conditions and river speed. Use additional anchor systems as needed to keep boom secure in river. Use existing structures, anchor posts, or trees to secure boom to river bank. *Use amount of boom appropriate for site given current conditions, angle as appropriate and needed.		
StagingAreaTxt:	On-Site	Large staging area at park for equipment. Good recovery access but only 80-70bbl able to fit at recovery location.	
SiteSafety:	Slippery banks when wet or icy; trip & fall hazards; water hazards; active railway hazards.		
FieldNotes:	Call BNSF, Notify USACE 541-298-7505. Boat Launch is available at recovery location for smaller skiffs/FRVs.		
Watercourse:	River - River Below a Dam - Middle Columbia River - The Dalles Pool Area - Lake Celilo		
Resources_atRisk:	Downstream habitat, fresh water wildlife. Sensitive resouces nearby.		

Recommended Equipment		
1000	Feet	River Boom (or other appropriate type)
1	Each	Workboat (FRV)
1	Each	Anchor Post Driver(s)
2	Each	Anchor Post(s)
4	Each	Anchor systems (anchor, lines and floats)
1	Each	Towing bridal (sized for boom)
1	Each	Vac Truck(s) (with Truck Operator) - 70bbl or 80bbl only
1	Each	Nearshore skimming system (with storage)

Recommended Personnel	
1	Supervisor(s)
3	Laborer(s)
1	Boat Operator(s)

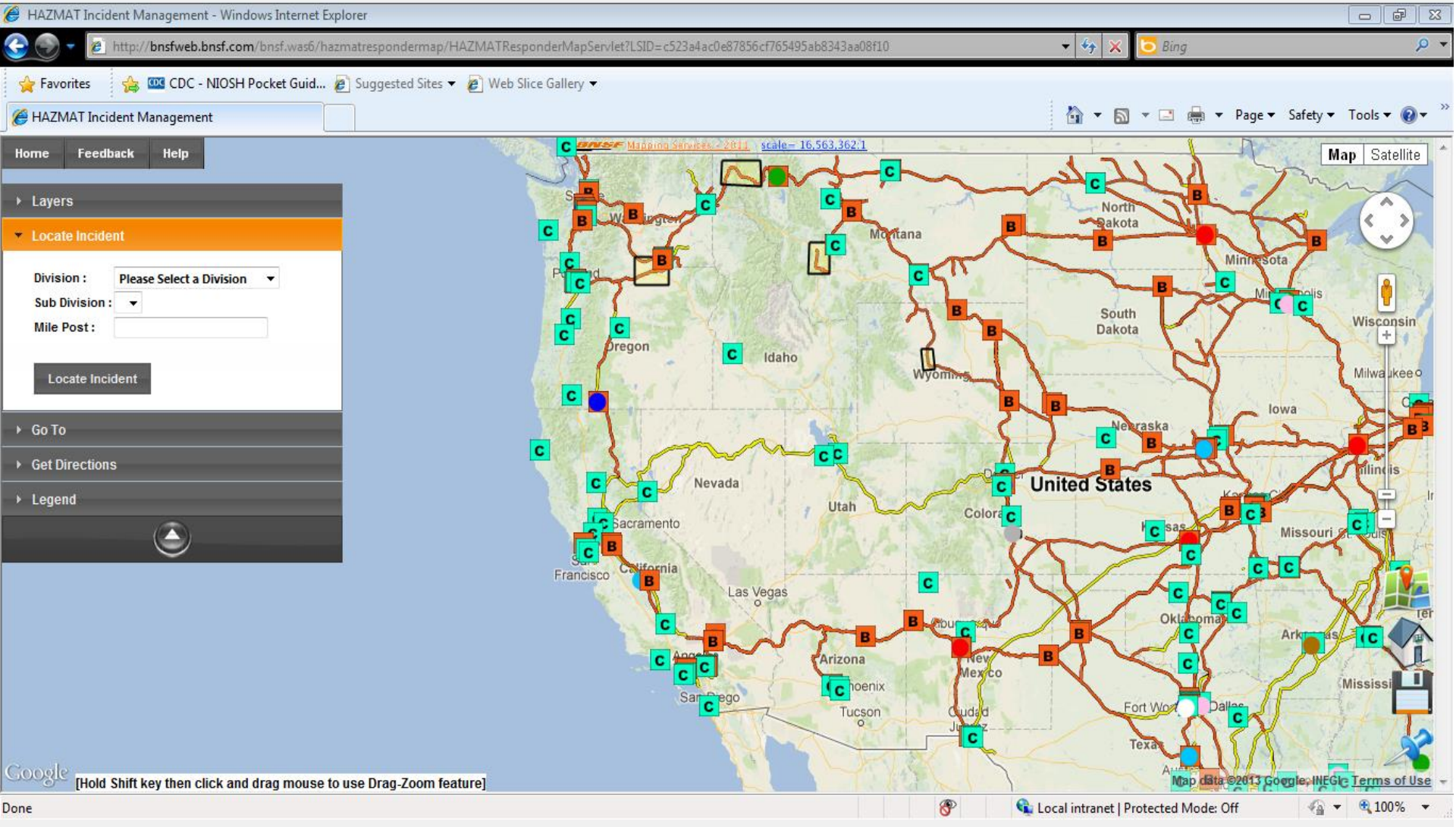
FBS MP-98.5 Fallbridge Sub - Oil Spill Control Points (CCPs) 4-57

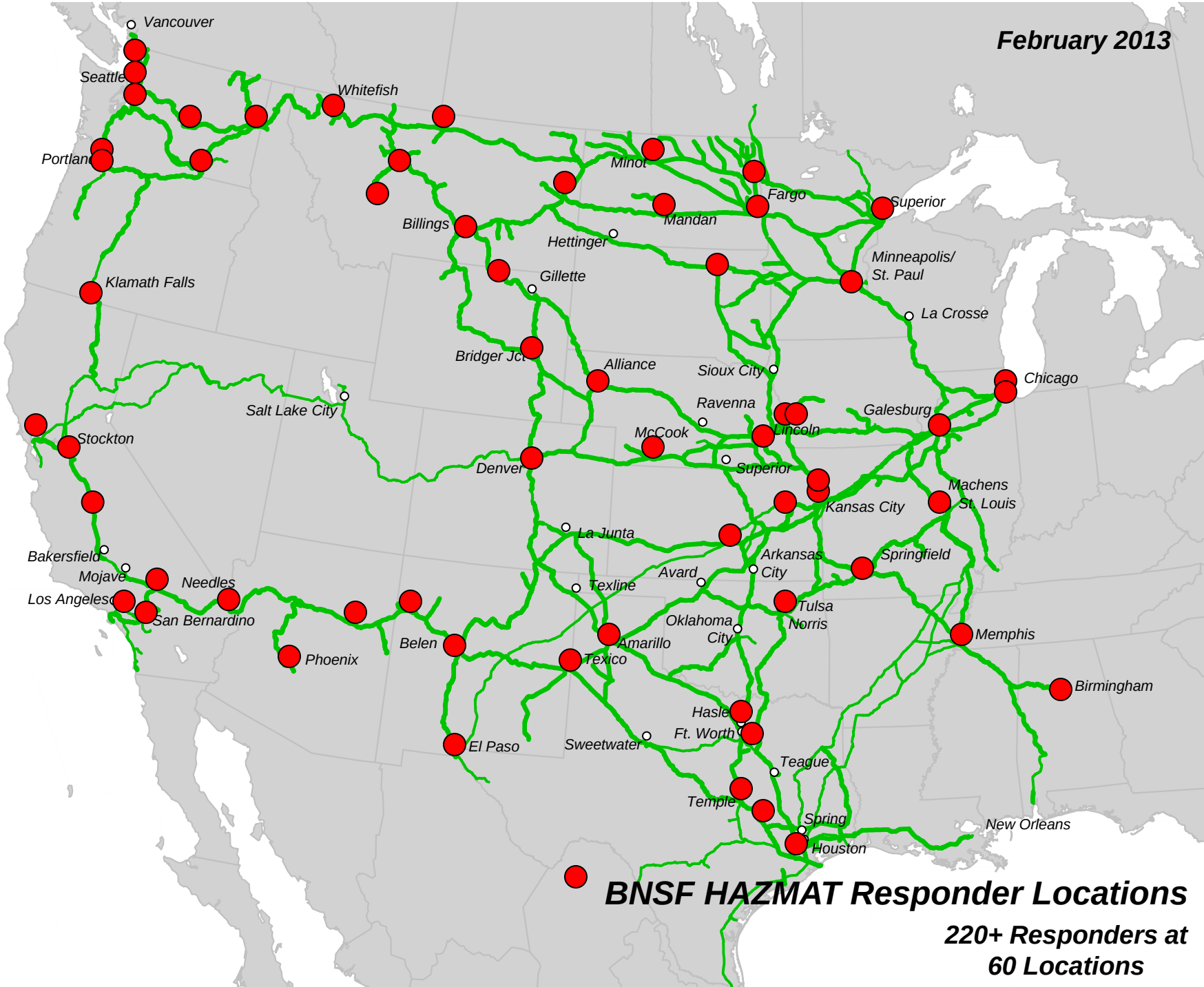
NIMS Incident Command System

- **BNSF Railway will initiate, manage and maintain a rapid, aggressive, well coordinated, and effective response**

- **BNSF hazardous material responders, contractors, operations supervisors and train crews will work within the Unified Incident Command Structure**

Response: Hazmat GIS




February 2013
Vancouver
Seattle
Portland
Whitefish
Minot
Fargo
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Mandan
Billings
Hettinger
Minneapolis/
St. Paul
Gillette
Klamath Falls
La Crosse
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Salt Lake City
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Denver
Superior
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St. Louis
Kansas City
La Junta
Bakersfield
Mojave
Arkansas
City
Springfield
Needles
Avard
Texline
Los Angeles
San Bernardino
Tulsa
Norris
Oklahoma
City
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Belen
Amarillo
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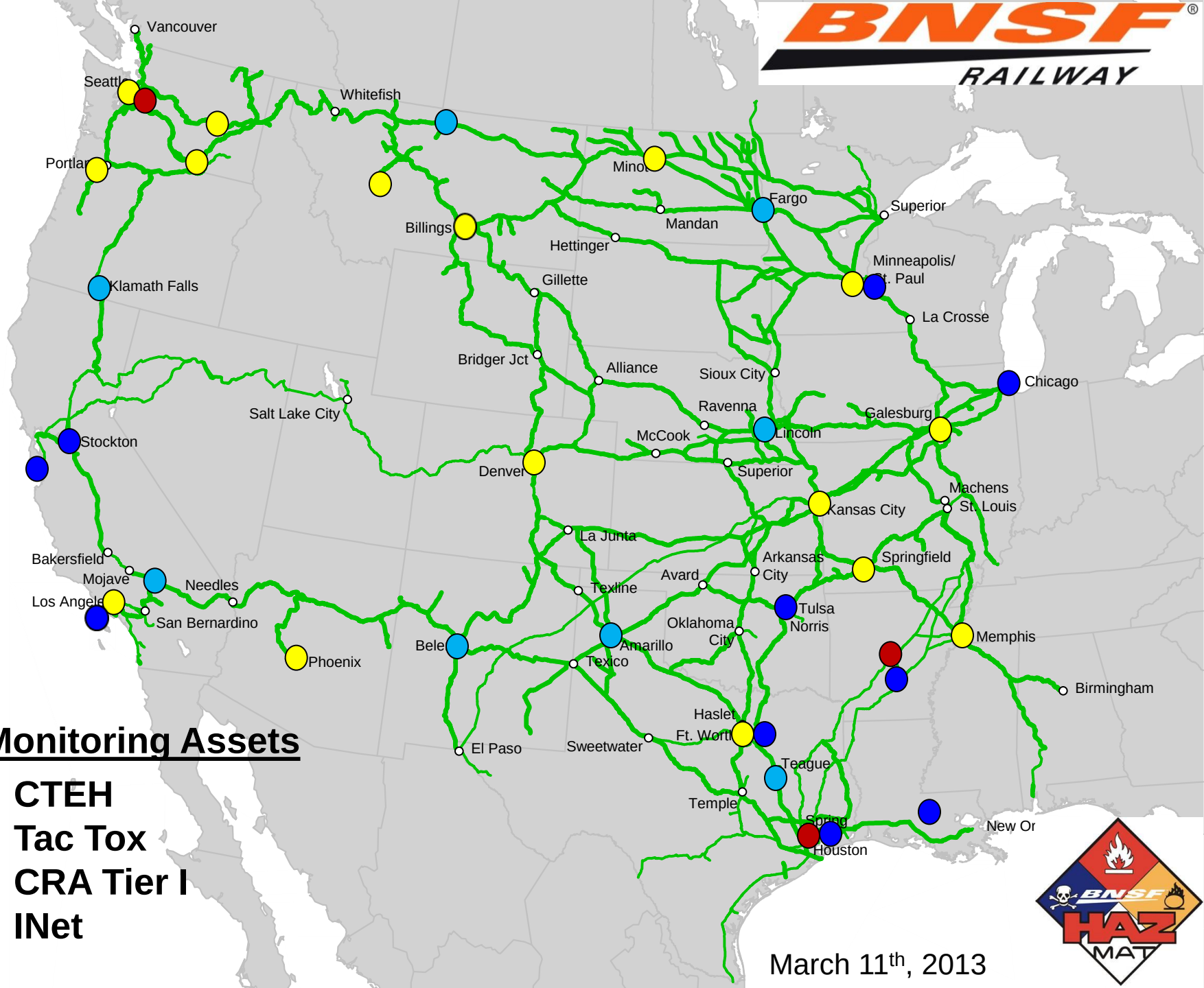
Birmingham
Hasle
Ft. Worth
El Paso
Sweetwater
Teague
Temple
Spring
New Orleans
Houston
BNSF HAZMAT Responder Locations
220+ Responders at
60 Locations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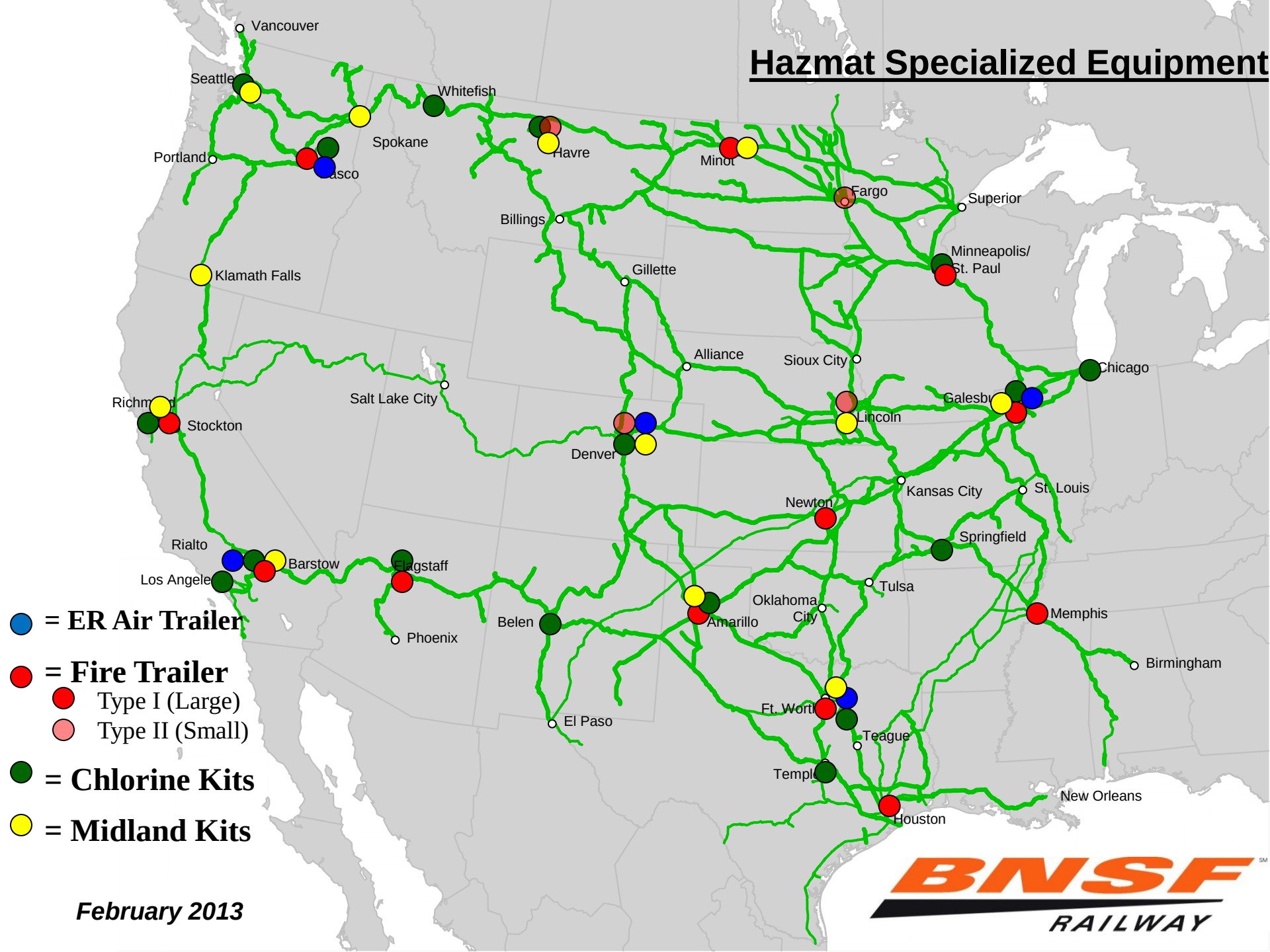
March 11th, 2013

Hazmat Specialized Equipment



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Great Northern Corridor

Colleen Weatherford

Public Private Partnerships

Port of Vancouver

Vancouver, Washington

June 11, 2013

BNSF is a Leading U.S. Railroad

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- 41,000 employees
- Approximately 7,000 locomotives
- 13,100 bridges and 87 tunnels
- Moves one-fourth of the nation's rail freight
- Operates over 1,400 freight trains per day
- Serves over 40 ports
- Leads rail industry in technological innovation
- Unlike other forms of transportation, BNSF trains operate on an infrastructure financed almost entirely by the railroad

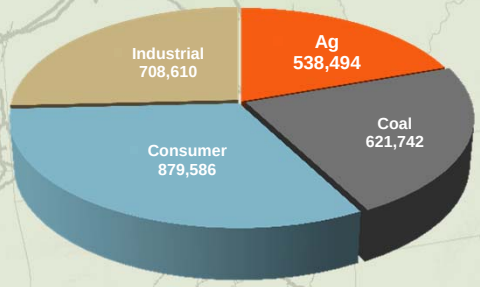
We Focus on Safety

- **BNSF's goal is to operate an injury-free and accident-free railroad**
- **BNSF partners with employees and continually invests in new technologies**
- **BNSF has helped the industry reduce grade-crossing collision rates by 81%, employee injury rates by 82% and train accident rates by 77% since 1980**

About the Great Northern Corridor

- **Serves 8 States and 3 Canadian Provinces**
- **Over 27 million people and nearly 12.5 million jobs - $1.45T GDP**
- **Over 203 million tons moved in 2011**
- **Nearly $650 million in capital expenditures in 2012**
- **Active corridor coalition**

2.75 Million Units - 2011



PORT OF VANCOUVER
Rail Safety Briefing

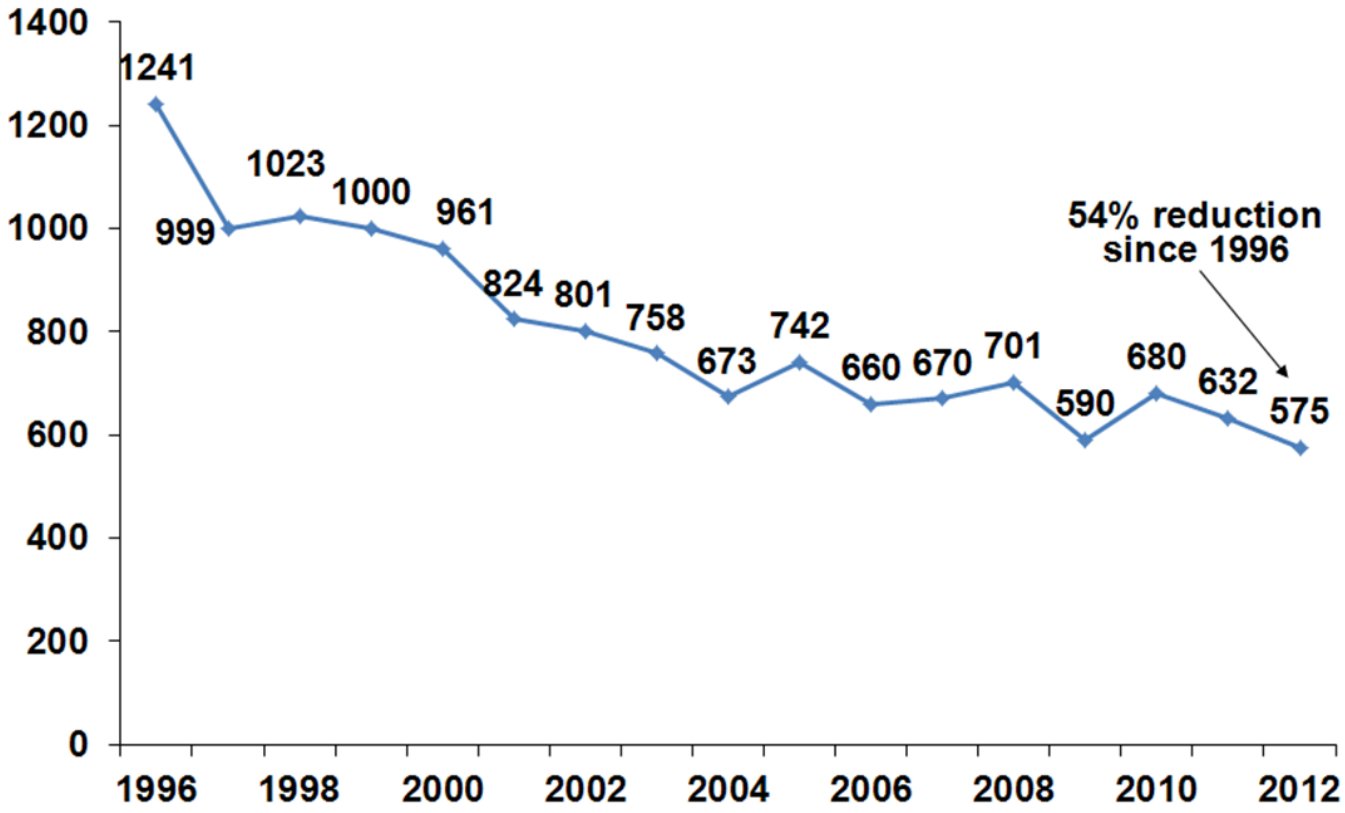
FEDERAL RAILROAD ADMINSTRATION

REGION 8-HAZARDOUS MATERIALS

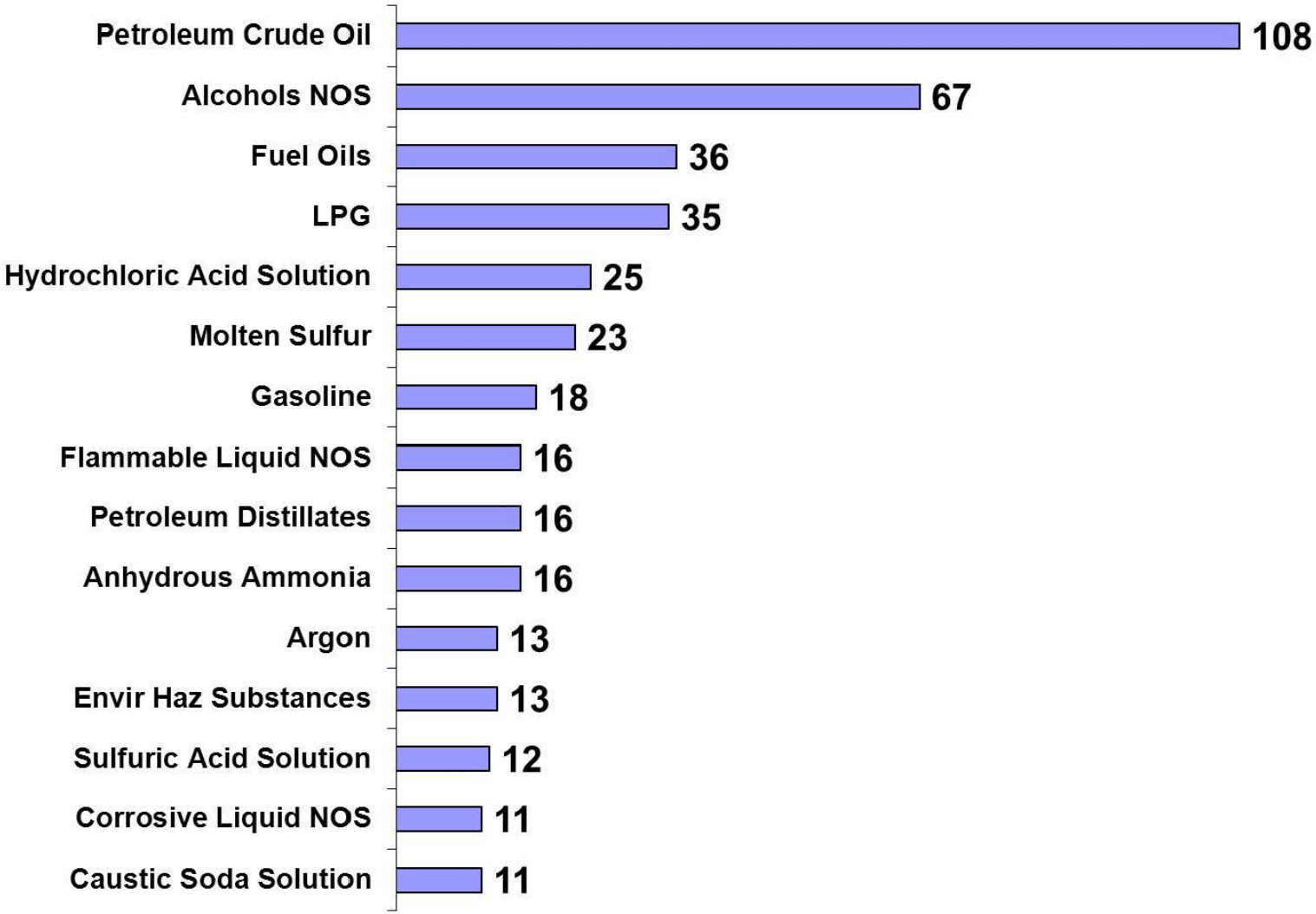
VANCOUVER , WA

Tesoro/Savage Terminal
Anacortes, WA

Tank Cars with NARs by Year
US & Canada

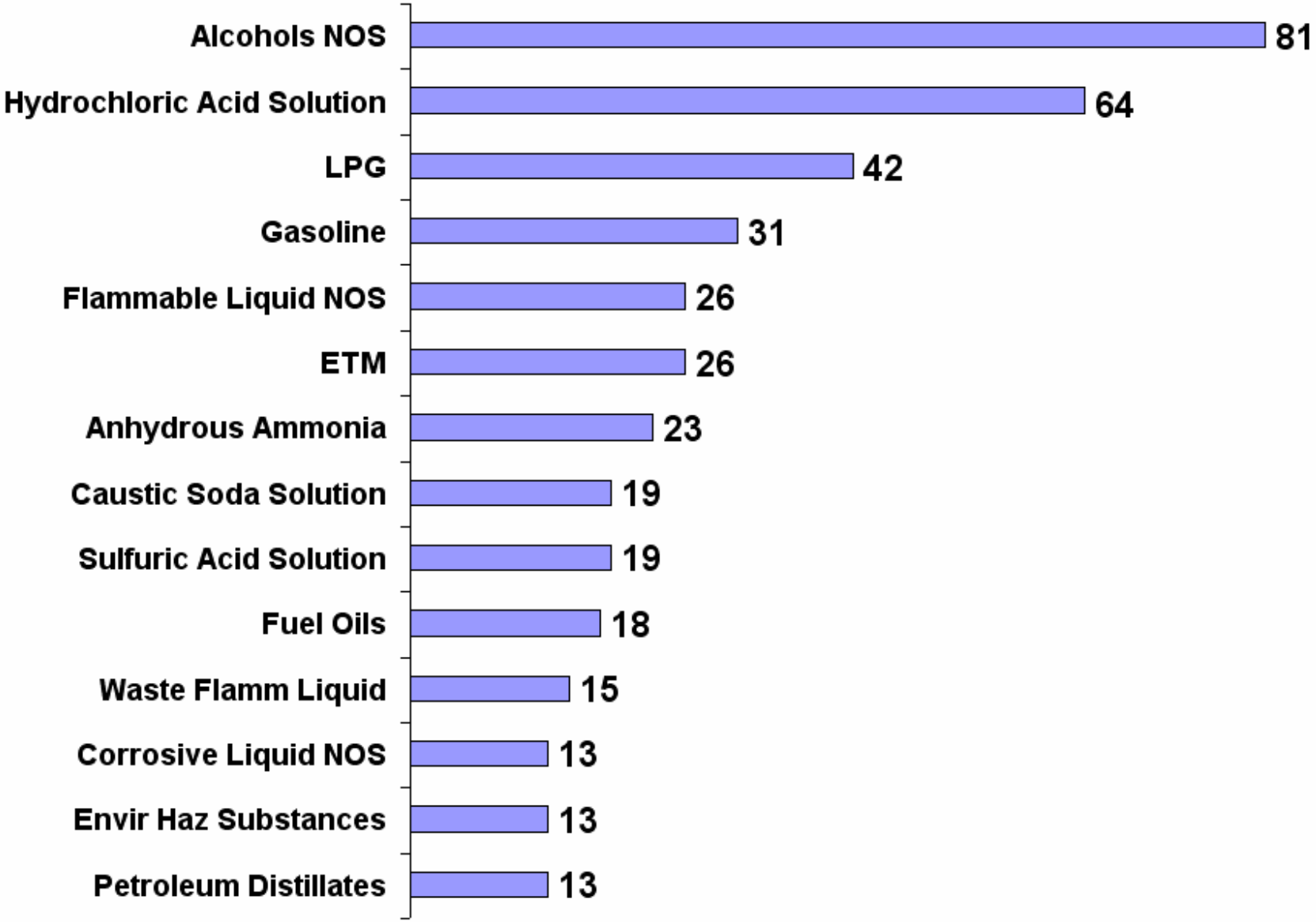


Top Commodities for NARs 2012 US & Canada

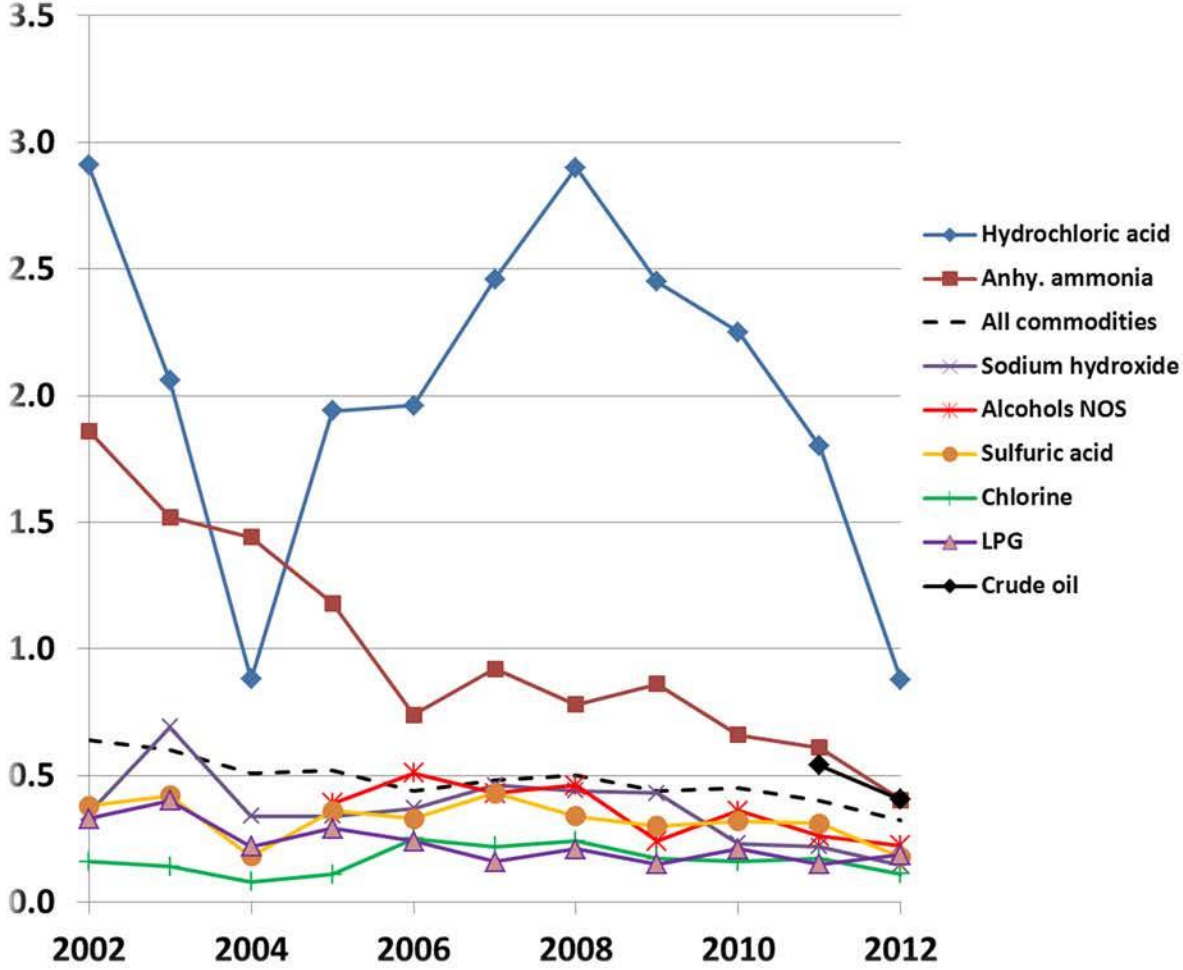


Source: AAR/BOE NAR data

Top Commodities for NARs 2010



NARs per 1,000 Originations Selected Commodities



Source: AAR/BOE Annual Hazmat Reports

Federal Railroad Administration
Inspection & Enforcement

U.S. Department of Transportation
Federal Railroad Administration
Office of Safety Assurance and Compliance
Hazardous Materials Division

The Federal Railroad Administration (FRA) is one of several Administrations within USDOT responsible for transportation safety and security.

The role of the FRA is to ensure the safe and secure transportation of hazardous materials transported in commerce by rail within the United States.

Federal Railroad Administration
Office of Safety Assurance and Compliance

The Federal Railroad Administration's Washington D.C. headquarters office includes the Office of Safety Assurance and Compliance consisting of 5 divisions to match 5 disciplines.

The 5 disciplines are Signal & Train Control, Track Operating Practices, Motive Power & Equipment and Hazardous Materials.

The FRA has 8 regional offices with a staff of discipline supervisory specialists, chief inspectors and railroad safety inspectors.

Hazardous Materials (HM) Division

The FRA Hazardous Materials Division's goal is to reduce societal risks associated with the transportation of hazardous materials by rail through the enforcement of the Federal Hazardous Materials Regulations (HMR).

Achievement of this goal is cultivated through a variety of compliance tools consisting of education, site-specific inspections, Railroad System Oversight (RSO) and ultimately enforcement.

HM Regulations & Enforcement Personnel

FRA Hazardous Materials Personnel and
State Hazardous Materials Inspectors
monitor for compliance with
Title 49, Code of Federal Regulations (CFR)
Parts 100 – 185.

- FRA Hazardous Materials Personnel.
  1 HM Staff Director & 7 HM Specialists at headquarters.
  8 HM Supervisory Specialists & 2 Tank Car Specialists in the 8 regions.
  Over 50 HM Inspectors in the 8 regions, to include 3 RAM Inspectors.
  1 HM Safety Improvement & Development Team (SIDT) Trainer.

- About 20 State Participation HM Inspectors in 14 States.

Who will Receive a FRA HM Enforcement Inspection ?

FRA/State Hazardous Materials Inspectors

Activities of a FRA Hazardous Materials Inspector include:

- Site-specific inspections;
  Railroads
  Shippers and Consignees
  Tank Car Facilities
  Vessel/Trucking Operators
  Freight Forwarders
  Importers and Brokers

- Railroad System Oversight (RSO);
  Partnership with rail management and labor to focus on non-regulated issues impacting safety, and focus on systematic compliance issues.

FRA Hazardous Materials Inspections

Additional activities are:

- Focused enforcement;
  Railroads
  Shippers and Consignees

- Investigate HM incidents and derailments;
  Railroads
  Shippers and Consignees

- Handle complaints;
  Railroads, Shippers and Consignees
  General Public

- Provide training;
  Railroads, Shippers and Consignees
  Emergency Responders

What will be Reviewed during a FRA HM Enforcement Inspection?

- Hazmat Certificate of Registration
- Communication Requirements
- Emergency Response Information
- Training
- Security Plans
- Packaging
- Loading and Unloading
- Handling of placarded rail cars
- Tank Car Facility Quality Assurance

How do we Notify Persons of an Unsafe and Non-complying Condition during a FRA Enforcement Inspection?

Notification to persons who offer or transport HM shipments determined to be unsafe and not in compliance with the HMR include;

- Notification of deficiencies (no penalty)
  Form FRA F 6180.96

- Notice of Probable Violation (civil)
  Form FRA F 6180.67

- Notice to Individual Regarding Violation
  Form FRA F 6180.80

- Referral for Prosecution (criminal)
  Department of Justice

Washington State Rail Plan

Public Review Draft

September 30, 2013

Washington State Department of Transportation
Rail Division

With funding support from U.S. Department of Transportation Federal Railroad Administration

Americans with Disabilities Act (ADA) Information
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www.wsdot.wa.gov/equalopportunity

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www.wsdot.wa.gov/equalopportunity

Washington State Rail Plan
Public Review Draft

Washington State Department of Transportation

Lynn Peterson, Secretary

Ron Pate, Rail Director

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Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the Federal Railroad Administration and/or U.S. DOT.

The Washington State Rail Plan was prepared by Washington State Department of Transportation Rail Division, the state rail transportation authority that will also maintain, coordinate and administer the plan. Funding is provided by the state and Federal Railroad Administration.

The plan complies with federal requirements of 49 CFR 266.15 and state requirements of RCW 47.76.220, 47.06.080, 47.06.090, 47.79.040 and 47.04.280. It builds upon previous rail plans and is consistent with the Washington Transportation Plan (2007 and 2010).

The plan is a collaborative effort of WSDOT, railroads, Amtrak, state and local agencies, citizen's groups, other rail stakeholders and members of the public. WSDOT worked closely with Oregon Department of Transportation to coordinate rail planning efforts, and British Columbia also participated in the process.

Timing	**Work Products**	**Outreach Activities**
Fall 2012 – Winter 2013	Vision, goals and objectives System inventory Baseline conditions and future forecasts	Project Briefings Stakeholder Advisory Committee Meeting State Rail Plan Workshops Stakeholder Interviews
Spring 2013	Needs and opportunities Recommendations	Project Briefings Stakeholder Advisory Committee Meeting Regional Rail Workshops
Summer/Fall 2013	Draft rail plan	Project Briefings Stakeholder Advisory Committee Meeting Project Briefings Regional Rail Workshop
October 1 through November 30, 2013	Public Review Draft: Washington State Rail Plan	Project Briefings Open House/Virtual Open House
December 2013	Transportation Secretary Lynn Peterson approves Final Draft Washington State Rail Plan. Document submitted to Federal Railroad Administration for review and acceptance.	Project Briefings
March 2014	Final Washington State Rail Plan	

Executive Summary

Washington's rail system is an integral part of the multimodal transportation system that keeps people and business moving in Washington state. The system provides efficient transportation of both freight and passengers and is critical to maintaining our economy, environment and quality of life. This plan details some of the significant challenges and opportunities the rail system in Washington is facing.

Washington is a trade-dependent state, and much of the freight moving into, out of, within and through Washington is carried by rail. Rail lines provide access to ports, and are critical to the vitality of major industries including aircraft manufacture, forest products and agriculture.

Growing population, rapid development, and traffic congestion—along with environmental concerns—have led to increasing demand for passenger rail service. Much of Washington's passenger rail service operates on privately owned rail-lines, which complicates planning, funding, project delivery and performance of passenger trains.

State Role and Interest

The state has an interest in maintaining quality freight and passenger rail service in Washington to benefit both business and citizens. Although the majority of the rail network is privately owned, the state has an interest in moving people and goods in the most efficient and effective manner.

A number of Washington industries depend on the rail system for shipping bulk and heavy commodities. Without this vital connection, these industries may have trouble competing in global markets. The presence of rail service also makes Washington attractive to potential new industry, which fuels economic development and brings jobs and revenue to the state.

As part of a robust multimodal system, rail helps Washington to be flexible and resilient in the face of changing markets, natural and political disruptions, or shifts in modal economics due to factors such as energy costs.

About this Plan

The State Rail Plan articulates long-term goals, principles and policy recommendations to achieve Washington's vision for the rail system. The project list associated with this plan is illustrative, and includes projects that are underway and those that are found in adopted public plans. By reference, it also includes projects that will be found in the upcoming Freight Mobility Plan. The projects are identified here to illustrate the breadth of needs identified by railroads and rail stakeholders. Other

projects that address the priority needs identified in the State Rail Plan and are included in adopted transportation plans may be incorporated into the list as appropriate. The project list is included in Appendix D: Illustrative Project List.

Outreach

The State Rail Plan was developed with the active participation of dedicated stakeholders, tribes and members of the public. Success of the plan requires strong and ongoing collaboration among the critical parties involved.

Vision Statement: State Rail Plan

As an integral part of Washington's multimodal transportation network, the rail system provides for the safe, reliable and environmentally responsible movement of freight and passengers to ensure the state's economic vitality and quality of life.

Key Issues from Stakeholder Meetings

Major themes that emerged from outreach efforts (meetings, interviews and workshops):

- **Preservation**: Emphasize preservation of existing facilities for freight and passenger rail. Use existing resources before investing in new ones.
- **Capacity & Congestion**: Address capacity issues and system congestion in spots that have the greatest impact on operations of passenger and freight rail services.
- **Connectivity**: Facilitate farm to market movements, connections to ports, and transitions between rail, marine, and trucks.
- **Community Impacts:** Address traffic congestion and safety at at-grade crossings. Evaluate opportunities for freight and passenger rail to contribute to local economic development.
- **Environment:** Communicate the environmental benefits of rail such as greenhouse gas reductions and reducing congestion on highway corridors. Address negative impacts such as noise and delay at at-grade crossings.
- **Mode Share:** Maximize rail use to reduce demand on other modes such as highway and aviation. Evaluate opportunities for expanding passenger rail service. Expand development of high-speed rail.
- **Financial Resources:** Pursue sustainable funding for rail transportation.

- **Collaboration and partnerships:** Facilitate cooperation and leverage resources between government and the private sector.
- **Criteria for decision making:** Benefits such as economic, environmental, safety, efficiency, and mobility benefits of rail should be recognized when making decisions.
- **Coordination with other plans**: State transportation plans such as the state Freight Mobility Plan, the Highway System Plan, the Washington Transportation Plan, and others should be coordinated.
- **State's role:** Stakeholders suggest that the state's role includes providing funding, advocating for rail, and facilitating partnerships.
- **Safety:** Ensure a safe rail transportation system.

This feedback underlies the analysis and direction in this plan. It informs strengths, challenges, needs and recommendations.

Strengths and Challenges

Serving freight and passengers, the state's rail system provides efficient transportation critical to maintaining our economy, environment and quality of life. Along with these strengths, there are also challenges for the rail system.

- Economic and demographic growth will increase demand for passenger and freight rail services, challenging the capacity of the private rail network over which passenger and freight trains operate. Emerging trends, such as proposals to construct new export facilities in the state, suggest the potential for even more acute demands for access to rail infrastructure.
- The state's public and private short-line railroads, which provide valuable access to the national freight rail network to Washington communities and shippers, face infrastructure investment challenges in order to preserve these important services.
- Federal passenger rail policy has provided capital funding to expand frequency and reliability of intercity passenger rail, but also requires Washington to bear more costs of operating these services.

Needs and Recommendations

The State Rail Plan identifies rail system needs and recommends actions for the state to address the needs. The following needs and recommendations are detailed in the plan.

Table ES.1 Needs and Recommendations Summary Table

Group	Needs	Recommendations
Rail Infrastructure and Service (Group A)	Address capacity constraints in order to meet future passenger and freight rail demands	The state's involvement in the rail system should be focused on actions that improve the state's interests, including a thriving and diverse economy, environmental efficiency, resiliency and safety.
		The state should take an active leadership role to build on existing multistate coalitions to address rail system and corridor needs across the Pacific Northwest.
		WSDOT should continue to pursue the incremental implementation of passenger rail service.
		Statewide rail stakeholders should work through regional and state transportation planning on a regular basis to ensure that their needs and opportunities are understood, and are used to inform any state rail investments or planning efforts.
		WSDOT should improve recognition of rail-related needs in its highway engineering activities.
	Preserve existing rail capacity and infrastructure.	Work with short line railroads and short line rail stakeholders to assess short-line rail needs, and create a statewide short-line rail needs inventory.
		WSDOT should consider the stewardship and upkeep history of any potential rail improvement project.
		WSDOT should seek to address rail needs in the most cost-effective manner possible.
		WSDOT should consider strategic state interest when examining the impacts of the loss of rail infrastructure.
	Enhance the efficiency and reliability of existing rail services.	WSDOT should periodically re-evaluate its passenger system plans and adjust them as necessary to achieve operational improvements in pursuit of transportation system goals.
		WSDOT should adopt a formal policy on adding or consolidating stops on Amtrak Cascades.
		The state should ensure that passenger and freight rail metrics are in place that can appropriately evaluate the performance of mobility, efficiency, safety, reliability and environmental compatibility of proposed new projects.
Rail's Role in Economic Development (Group B)	Support economic development by providing access to people and industry.	The state should support efforts to identify those intermodal and multimodal connectors that provide "first and last mile" connectivity to businesses and locations that generate freight and passenger demand. This designation should be included in the project prioritization process.
	Preserve access to global markets by ensuring access to Washington's ports.	The Washington State Freight Mobility Plan should include projects that enhance or support connectivity to Washington's deep water, river and inland ports.

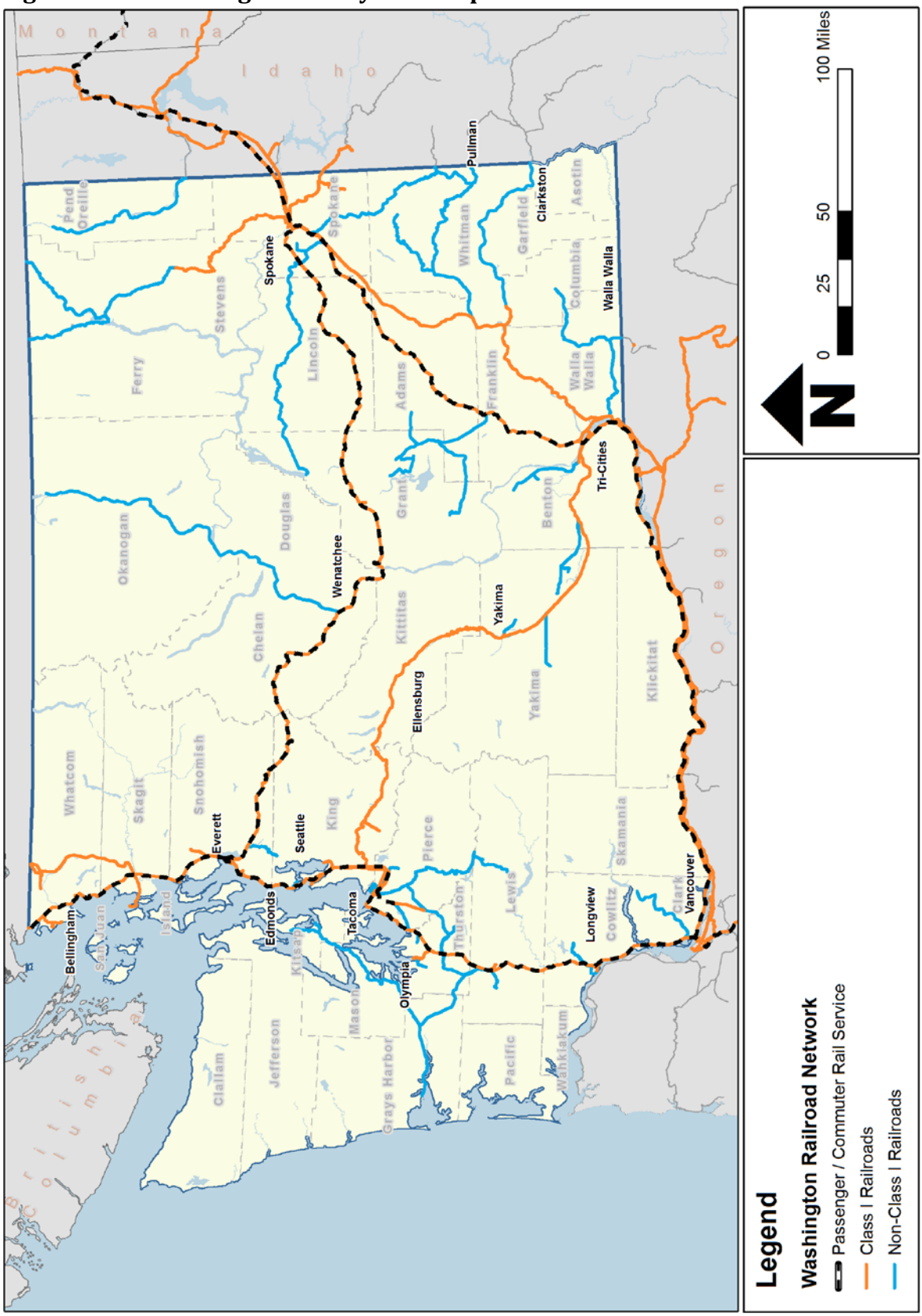
Group	Needs	Recommendations
Rail System Priorities and Goals (Group C)	Employ cost-effective strategies when investing public funds in the state's rail system.	WSDOT should use performance metrics to evaluate its passenger and freight rail programs, and ensure that the program funding is aligned with demonstrated need.
		The state should seek innovative funding and financing sources to leverage public funds and provide more value with limited resources.
		WSDOT will focus on the specific requirements of Amtrak Cascades service to minimize public costs and operate the system in the most efficient manner possible.
	Strengthen rail to maximize the positive benefits, while minimizing the potential negative impacts to communities and the environment.	The state should facilitate discussions about community concerns or questions about rail benefits and impacts, and help coordinate with communities, the railroads and other rail stakeholders.
		Railroads and public agencies should continue to use WSDOT reports, studies and other materials to clearly communicate the benefits of the rail system to Washington residents.
	Continue to support passenger and freight rail safety and security.	The state should continue to support rail safety and security.
		WSDOT should continue to coordinate pedestrian access in and around Amtrak Cascades stations in order to meet safety performance goals.

Conclusion

The State Rail Plan describes a vision for the rail system and provides an assessment of what is working well and what can change to achieve the vision. Priorities are identified for public investment in the system, and actions are identified to make the state rail vision a reality. This plan builds on a foundation provided by many years of thoughtful rail planning and is informed by extensive technical analysis and public outreach. The plan highlights critical needs and outlines recommendations to address them.

Publishing this State Rail Plan is not an ending point. Instead, the plan can guide and inform continuing public investment and action on the rail system over the next five years and the next 20 years.

Figure ES.1. Washington Rail System Map



Source: WSDOT, BNSF, UP and Amtrak

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Chapter 1. Introduction

Rail is an integral part of the multimodal transportation system that keeps people and businesses moving in Washington state. Serving freight and passengers, the state's rail system provides efficient transportation critical to maintaining our economy, environment and quality of life. The Washington State Rail Plan comes at an interesting time for rail transportation in Washington state. The significant challenges facing Washington's rail transportation network in the future include the following:

- Economic and demographic growth will increase demand for passenger and freight rail services, challenging the capacity of the private rail network over which passenger and freight trains operate. Emerging trends, such as proposals to construct new export facilities in the state, suggest the potential for even more acute demands for access to rail infrastructure.
- The state's public and private short-line railroads, which provide valuable access to the national freight rail network to Washington communities and shippers, face infrastructure investment challenges in order to preserve these important services.
- Federal passenger rail policy has provided capital funding to expand frequency and reliability of intercity passenger rail, but also requires Washington to bear more costs of operating these services.

Years of collaborative, consistent planning and substantial state investment prepared WSDOT to compete for and ultimately secure nearly $800 million in federal funds for passenger rail improvements.

The purpose of the Washington State Rail Plan is to outline a strategy for addressing these changes and provide a blueprint for ensuring the continued movement of people and goods on the rail system in support of a healthy economy. Consistent with federal and state requirements, the plan describes what is working well, identifies the challenges, highlights policy priorities and sets a course for state action and investment to ensure that these vital services continue to meet transportation needs in the future.

1.1 Background and Context

This plan combines freight and passenger rail planning into a single, integrated plan. The plan builds on many years of previous planning efforts that have led to positive results.

Statutory Requirements

There are several state and federal requirements that pertain to rail planning in Washington state. This State Rail Plan is a single plan that meets all these requirements, is integral to the Washington State Department of Transportation's (WSDOT) rail program, and is consistent with other state and regional transportation planning documents.

The federal requirements for a state rail plan are outlined in the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). This federal law requires states to take a more active role in setting statewide rail policy and complete a state rail plan that includes inventories and proposed improvements for freight and passenger rail systems, an examination of how freight and passenger systems function together, and a detailed long-range investment program.[1]

There are three separate state requirements for WSDOT to develop rail plans. This is the first rail plan that combines all of these requirements into one plan, building upon previous efforts, including:

- 2008 Washington State *Amtrak Cascades Mid-Range Plan* (one-time requirement from state legislature to develop this addition to the Intercity Passenger Rail Plan.)
- *2010-2030 Washington State Freight Rail Plan* (Freight Rail Plan required in RCW 47.06.080 & State Rail Plan required in RCW 47.76.220)
- 2006 Washington State *Long-Range Plan for Amtrak Cascades* (Intercity Passenger Rail Plan required in RCW 47.06.090)

1.2 Importance of Rail to Washington State

Washington is a trade dependent state. In 2007, approximately 83 million tons and 41 percent of all interstate freight associated with a Washington origin or destination was hauled by rail.[2] Washington ports play a pivotal role in handling this traffic, by serving as the international gateway for a broad range of commodities ranging from consumer electronics to heavy bulk goods. For example, Washington is the fourth largest producer of wheat in the United States, producing over 167 million bushels in 2011. Harvested wheat is taken by farmers' trucks to either on-farm storage or commercial grain elevators. After the wheat is sold, it is transferred by truck to regional rail or barge loading facilities. According to the Washington Grain Commission, about 27 percent of wheat is transported by rail at some point. Rail is also critical to the ongoing vitality of the state's major industries including aircraft manufacturing, forest products and other agricultural products. Increasing market share for Washington products is a state goal and rail plays an important role.

Passenger rail service, once almost gone in the early 1970s, has regained importance in the throughout the Pacific Northwest. A growing population, rapid development and worsening highway congestion in the

In many respects, rail has achieved a stature in this second decade of the 21st Century that it has not had in over fifty years. Rail has become central to a multimodal strategy that provides efficient transportation, supports broad-based economic growth, and does so at a smaller environmental footprint than the other major modes.

[1] www.fra.dot.gov/eLib/details/L02692.

[2] Federal Highway Administration Freight Analysis Framework Version 3.3. On an overall basis, including intrastate traffic, rail accounted for approximately 100 million tons and 20 percent of total volume.

I-5 corridor, coupled with environmental concerns, led to public demands for expanded passenger rail service in the region. The result has been a growing public commitment to developing intercity passenger service along the Pacific Northwest Rail Corridor (PNWRC) between Vancouver, British Columbia (B.C.) and Eugene, Oregon, as well as development of commuter rail in the Puget Sound region. From 1994 onward, when Washington became actively involved in developing the PNWRC, ridership on Washington sponsored Amtrak Cascade services has grown from less than 200,000 in 1996 to over 560,000 in 2012, while Sound Transit's Sounder commuter rail went from startup in 2000 to over 2.8 million riders in 2012. Amtrak's two long-distance trains that serve the state—the Coast Starlight and the Empire Builder—have also had significant gains in ridership in the last 20 years.

Benton-Franklin Council of Governments Workshop Feedback: Investments in the rail system can lead to new business opportunities.

Whereas highway, air, and water infrastructure are generally owned and maintained at public expense and accessible to any licensed operator, rail carriers not only move the freight, they commonly also own, maintain and control the physical infrastructure. Washington's passenger services are reliant on this privately owned system, without which it would not be possible to provide cost-effective service. While this arrangement complicates planning, funding, service delivery and performance management, it also offers the potential for partnerships, including leveraging of public investment.

The benefits of maintaining quality rail service in Washington are significant. Rail is generally the most cost-effective mode for shipping bulk and heavy commodities overland. A number of Washington industries fit this profile and would cease to be competitive if rail service was to decline or cease outright. Similarly, the presence of rail service enhances the ability to attract new industry, a relationship that has been found to exist in studies of rail service and economic development in other regions.[3] Looking ahead, a broadly multimodal transportation system that is flexible and resilient will be even more necessary, whether as a result of changes in markets, natural and political disruptions, or shifts in modal economics brought about by large factor cost increases such as energy. Finally, the fact that the state owns and manages some elements of freight and passenger rail service further elevates the state's interests in making rail central part of a state's transportation strategies, and this rail plan reflects both the great opportunities that are present, as well as the associated complexities.

Rail is critical to the ongoing vitality of major industry that is located in Washington, notably forest products and agriculture, and even some high-tech sectors such as aircraft manufacturing.

[3] See, for example, National Association of Development Organizations (NADO) Research Foundation Center for Transportation Advancement and Regional Development, Short Line Railroads: Saving an Endangered Species of Freight Transport. Case Studies, Experiences and Lessons Learned from Regional Development Organizations (available at http://www.nado.org/pubs/shortline.pdf)

1.3 Outreach

Rail transportation is dependent on many partnerships between government agencies, private industry and other stakeholders. The State Rail Plan was developed with the active participation of dedicated stakeholders and will not be successful without strong and ongoing collaboration.

WSDOT connected with stakeholders, tribes and members of the public in a variety of ways. In addition to interviewing stakeholders, convening an advisory committee and providing numerous small group briefings, WSDOT held three workshops at the beginning of the process to solicit input into development of the vision and goals for the plan. In addition, several Regional Transportation Planning Organizations and Metropolitan Planning Organizations in the state invited WSDOT to conduct additional workshop sessions. These were designed to provide community members with opportunities to provide a local/regional perspective on the State Rail Plan. Workshops were held in Kennewick and Blaine, and one is scheduled for September 30, 2013, in Centralia.

Callout boxes throughout the report draw attention to rail issues that are important to individuals and institutions throughout the state.

Citizen and Stakeholder Feedback: WSDOT solicited feedback from individuals, groups and stakeholders throughout the state. Feedback from these meetings can be found in boxes like this one.

1.4 Approach

The State Rail Plan articulates long-term goals, principles and policy recommendations to achieve Washington's vision for the rail system. WSDOT followed a deliberate process designed to identify and describe the rail system and the state's interest in it, identify potential public actions to improve the rail system, and recommend policies for state action.

The State Rail Plan report summarizes key findings and highlights priorities for state action. Technical analysis and other details are provided in a series of technical notes that accompany the plan. A list of these technical notes can be found in the Appendices.

First, WSDOT developed the plan's vision statement through public participation using state transportation planning goals and previous rail policies as a basis. A set of goals are associated with this vision. The vision and goals established for the State Rail Plan provide several themes to guide policymakers and the decision-making process. The vision and policy foundations (including evaluation criteria) for the plan are described in Chapter 3.

Vision Statement: State Rail Plan
As an integral part of Washington's multimodal transportation network, the rail system provides for the safe, reliable and environmentally responsible movement of freight and passengers to ensure the state's economic vitality and quality of life.

With the vision in mind, the rail system was then evaluated for strengths and weaknesses. This evaluation included technical analysis of infrastructure and usage with an understanding of demographic characteristics and economic trends that influence rail system demand, as well as stakeholder interviews and public outreach. The strengths and weaknesses reflect the perspectives from a range of stakeholders with varying responsibilities involved with planning, operations and investment decisions. This work provides an assessment of how the rail system is performing to serve the transportation needs of Washington state. Results of this evaluation are described in Chapter 4.

Based on the evaluation of the rail system, a set of needs were developed. These needs include the essential requirements for a functioning rail system—aspects that are both working well and will need improvement to achieve the rail system vision in the future.

Recommendations to policy makers are associated with each of these identified needs. The following considerations serve as evaluation criteria and provide a framework for analysis of the rail system's strengths and challenges and provide the basis for the recommendations outlined in this chapter:

- Consistency with state policy.
- Response to well-defined need.
- Distinguish between public and private benefit.
- Demonstrate efforts to optimize service and implement lower-cost improvements first.

Priority needs and recommendations are outlined in Chapter 5.

The path forward for overcoming challenges and reaching the vision is culminated in implementation and investment. Possible actions include policies, programs, operational changes and capital projects. Along with financing, these are discussed broadly in Chapter 6.

The project list associated with this plan is illustrative, and includes projects that are underway and those that are found in adopted public plans. By reference, it also includes projects that will be found in the upcoming State Freight Mobility Plan (scheduled for 2014). The projects are identified here to illustrate the breadth of needs identified by railroads and rail stakeholders. Other projects that address the priority needs identified in the State Rail Plan and are included in adopted transportation plans may be incorporated into the list as appropriate. The project list is included in Appendix D: Illustrative Project List.

Chapter 2. Rail System Overview

Washington's rail system is a central part of a multimodal transportation strategy that provides choices, supports broad-based economic growth and offers an environmentally efficient transportation option. The rail network is categorized into freight services and passenger services. This categorical division is reflected throughout the structure of this document. Yet, both freight and passenger services share the same infrastructure and operate as an integrated rail system.

This chapter provides an overview of the rail system in Washington state. It describes rail infrastructure and services, the institutional structure that governs rail, and funding programs administered by the state in the last ten years. Additional detail on the rail system and the issues associated with each element can be found in Chapter 4 and in the Appendices.

2.1 Rail System Elements

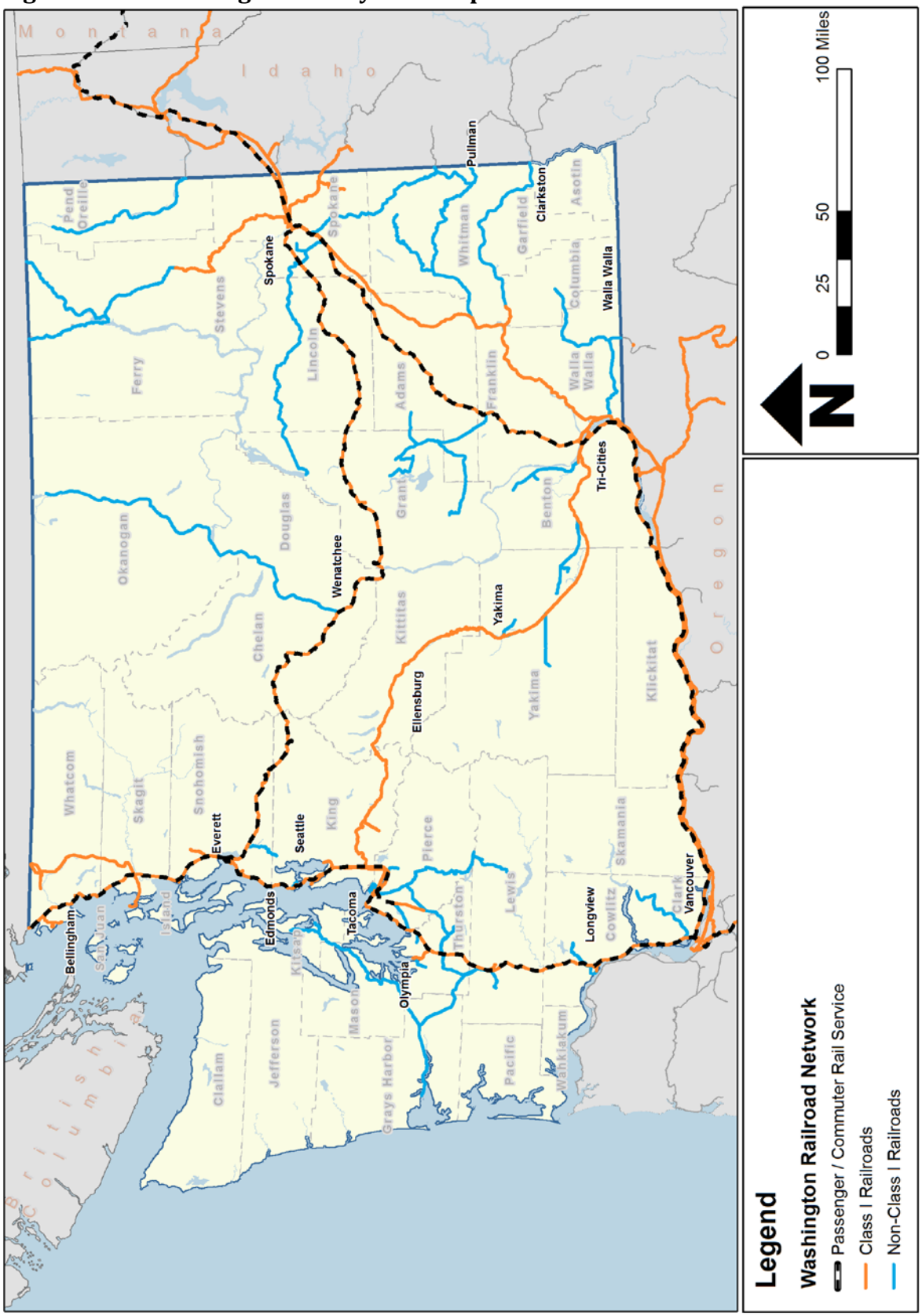
Many Parts – One System

The rail system is part of a larger transportation network that includes many transportation modes (roadway, air, sea) to move people and goods. Rail can play different roles in these trips by serving as the primary mode of transportation, providing only a single leg of the journey, or acting as a mode that expands transportation choice and provides resilience.

Likewise, the rail system is made of different parts, or elements, each with specific roles and purpose. This system connects communities within Washington to each other and to other communities throughout North America and around the world.

The rail system in Washington consists of both freight and passenger rail elements as shown in Figure 2.1. The freight rail system consists of an expansive network of main lines, branch lines, yards and terminals. The passenger rail system consists of long-distance, intercity and commuter rail services operating mostly on freight rail lines.

Figure 2.1. Washington Rail System Map



Source: WSDOT, BNSF, UP, and Amtrak

Freight Rail

Freight rail in Washington includes two Class I railroads, one regional railroad, various short-line railroads and intermodal[4] facilities. The freight railroads are categorized in a three-tiered structure established by the federal Surface Transportation Board (STB), based on annual operating levels:

- **Class I: Annual operating revenue of more than $433.2 million.** BNSF Railway (BNSF) and the Union Pacific Railroad (UP) are the only Class I railroads in the state. These two Class I railroads provide the majority of rail service in terms of total commodity tonnages handled, as well as total track-miles operated in the state.
- **Class II: Annual operating revenue between $34.7 million and $433.2 million.** Class II railroads are also commonly referred to as regional railroads by the Association of American Railroads (AAR). The only Class II railroad with rail operations in Washington is Montana Rail Link.[5] Montana Rail Link operates in Washington solely as a tenant of BNSF, and is not further addressed in the body of this report.
- **Class III: Revenues of less than $34.7 million and are engaged in line-haul[6] transportation.** There are a total of 24 Class III railroads in Washington. This includes **short-line** (or local) railroads and **switching** or **terminal** railroads. The STB considers switching and terminating railroads (i.e. railroads that primarily engage in switching and/or terminal services for other railroads) to be Class III carriers, irrespective of their operational or revenue characteristics.

Freight rail highlights:

- **Washington has over 3,000 miles of railroad line[7] that provide mobility for goods moving into, out of, within and through the state.** The movement of these goods is accomplished using a system of main lines, branch lines, industrial spurs and rail yards

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4 Intermodal, for the purpose of this document, refers only to freight shipped in containers and highway trailers. Multimodal, on the other hand, refers to any transportation using more than one mode.

5 While they do not have rail operations in Washington, the Alaska Railroad is a Class II railroad that operates a barge service from Seattle, Washington, which connects to its own main line at Whittier, Alaska.

6 For carload service, the line-haul represents the portion of a trip between yards where cars are sorted and/or staged for delivery or pick-up from line-side industries and transloading facilities. For trailer/container intermodal service, the line-haul portion of a trip comprises the segment between intermodal terminals at origin and destination.

7 www.aar.org/keyissues/documents/railroads-States/Rankings-2010.pdf.

operated by a variety of carriers. On the rail system, most of the key main lines discussed in this State Rail Plan are also designated by the Freight Mobility Strategic Investment Board (FMSIB) as Washington's *Strategic Freight Corridors*, and are therefore eligible for FMSIB grants. These are defined as "freight corridors that enhance the state's competitive position through regional and global gateways."[8]

- **The state's freight railroads are a vital mode of transportation that supports Washington's freight intensive industries, such as manufacturing, construction, agriculture, forest products, and wholesale and retail trade.** In Washington state, these industries employ more than 1.2 million people, or 40 percent of the state's total employment. In terms of contribution to the Gross Domestic Product (GDP), freight intensive industries provided about 41 percent of the state's total GDP in 2010, or about $106 billion. Manufacturing accounted for approximately $36 billion of this amount, retail trade $23 billion, and wholesale trade $16 billion.[9]

- **Washington's two Class I railroads—BNSF and UP—together own 60 percent of the rail network by mileage, and carry in excess of 1.9 million carloads of freight each year.** With over 3,700 employees and a combined payroll of $260 million in Washington for the year 2011, these two railroads handled the vast majority of rail freight into, out of, within and through Washington. The two railroads are roughly similar in size, with system wide gross revenues in 2012 amounting to $20.5 billion for BNSF and $20.9 billion for UP. These two Class I railroads provide the majority of track-miles operated in the state. Class I railroads connect Washington to trading partners throughout the United States, Canada and Mexico.

- **There are 24 Class III railroads in Washington (18 local railroads, and six switching and terminal railroads), which provide vital transportation links between industries and their markets, in particular, in the state's rural regions.** Each of these railroads is unique—they vary in size from one mile to over 100 miles of track, and are owned by a variety of public and private entities.[10] Ten out of the 24 railroads are owned by a holding company, eight are owned by public agencies, five are owned by a single private entity, and one is owned by a Class I

[8] www.fmsib.wa.gov/reports/annuals/20130129FMSIB2012annualreport.pdf.
[9] Technical Note 3a: Freight Rail Demand, Commodity Flows and Volumes.
[10] WSDOT Railroad GIS Data; Short-Line Railroad Websites.

parent company.[11] This ownership structure reflects the history of short-line railroads in the state, and the fact that the state has at times intervened to acquire short-line railroads that were threatened with abandonment.

Short-line railroads are shown in Table 2.1. There are about 1,450 miles of short-line railroad track in Washington, representing 40 percent of the total rail mileage in the state.

Table 2.1 Class III Railroads in Washington

Class	Name	SCAC*	Parent Company	Public ROW Ownership	Miles Operated in Washington
Local	Cascade and Columbia River Railroad	CSCD	Genesee & Wyoming Company		148
Local	Central Washington Railroad	CW	Temple Ind.		80
Local	Chehalis-Centralia Railroad	POCH	Port of Chehalis	Port of Chehalis	10
Local	Columbia and Cowlitz Railway	CLC	Patriot Rail Company, LLC		9
Local	Columbia Basin Railroad	CBRC	Temple Ind.		86
Local	Eastern Washington Gateway	EWG	Independent	Washington	108
Local	Eastside Rail	EAST	Port of Seattle	Port of Seattle	11
Local	Great Northwest Railroad	GRNW	Watco Co.		69
Local	Kettle Falls International Railway	KFR	Omnitrax		142
Local	Palouse River and Coulee City Railroad	PCC	Independent	Various	169
Local	Pend Oreille Valley Railroad	POVA	Port of Pend Oreille	Port of Pend Oreille	61
Local	Portland Vancouver Junction Railroad	PVJR	Temple Industries	Clark County	33
Local	Puget Sound and Pacific Railroad	PSAP	Genesee & Wyoming Company		108

[11] Note that railroads can be owned and operated by different companies. For example, a publicly-owned railroad can be operated by a private entity.

Class	Name	SCAC*	Parent Company	Public ROW Ownership	Miles Operated in Washington
Local	Royal Slope Line[a]	RS		Washington	26
Local	Washington and Idaho Railroad	WIR	Washington, tracks only)	Washington	87
Local	Western Washington Railroad, LLC	WWR	Independent	City of Tacoma	18
Local	Yakima Central Railroad	YCR	Public	Yakima County	21
Switching and Terminal	Ballard Terminal Railroad	BDTL	Independent		3
Switching and Terminal	Longview Switching Company	LVSW	Class I (UP and BNSF)		17
Switching and Terminal	Meeker Southern Railroad	MSN	Independent		5
Switching and Terminal	Mount Vernon Terminal Railway	MVT	Independent		1
Switching and Terminal	Tacoma Rail[b]	TMBL/ TRMW	Tacoma Public Utilities	City of Tacoma	185
Switching and Terminal	Tri-City and Olympia Railroad	TCRY	Independent	Port of Benton	31
Total					**1,458**

Source: WSDOT Railroads GIS Data; Short-line railroad web sites; *2010 – 2030 Freight Rail Plan*.

* SCAC – Standard Carrier Alpha Code.

[a] Line currently not in operation.

[b] Tacoma Rail Tidelands/Capital Division (TMBL) and Tacoma Rail Mountain Division (TRMW) are counted as two railroads in the summary, with the latter as a short-line (local) railroad.

- **Terminals provide transfer points between rail, truck and marine modes, and are key links in supply chains using the state's ports.** The transfer can take place in the form of shifting an intact container or truck trailer holding goods from one mode to another, or moving the contents between a truck or vessel and a railcar. Common commodities that are transferred in this manner include bulk goods (dry or liquid), such as grain, cement, vegetable oil, and pellets made of plastic; assembled motor vehicles; and project cargoes, such as electrical transformers and windmill parts. Washington produce and processed foods are often transported by rail, such as apples, wheat and frozen potatoes. The upcoming

Washington State Freight Mobility Plan will provide more detailed information about these multimodal terminals.

Facilities where trailers and containers are transferred intact between modes are typically called intermodal terminals, and are a specific example of multimodal terminals. There are several different types of intermodal terminals, each serving a different purpose (see Table 2.2). On-dock rail terminals handle international containers directly moving from ship to rail and vice versa, while near-dock terminals can handle both port-related and highway traffic. Inland terminals[12] generally handle the transfer of containers and highway trailers between truck and rail.

Table 2.2 Intermodal Facilities in Washington

Name	Type	Rail Service Provider
Port of Seattle Intermodal Terminals	On Dock	BNSF/UP
Port of Tacoma Intermodal Terminals	On Dock	BNSF/UP
Tacoma South Intermodal Facility	Near Dock	UP
Seattle International Gateway	Near Dock	BNSF
Argo Intermodal Facility	Near Dock	UP
South Seattle Intermodal Facility	Off Dock	BNSF
Port of Quincy Intermodal Terminal	Inland	BNSF
Spokane Intermodal Terminal	Inland	BNSF
Port of Pasco Intermodal Terminal[a]	Inland	BNSF

Source: WSDOT, Cambridge Systematics analysis.
[a] Port of Pasco processes intermodal container traffic, but is not identified as an intermodal facility on BNSF's network map.

Passenger Rail

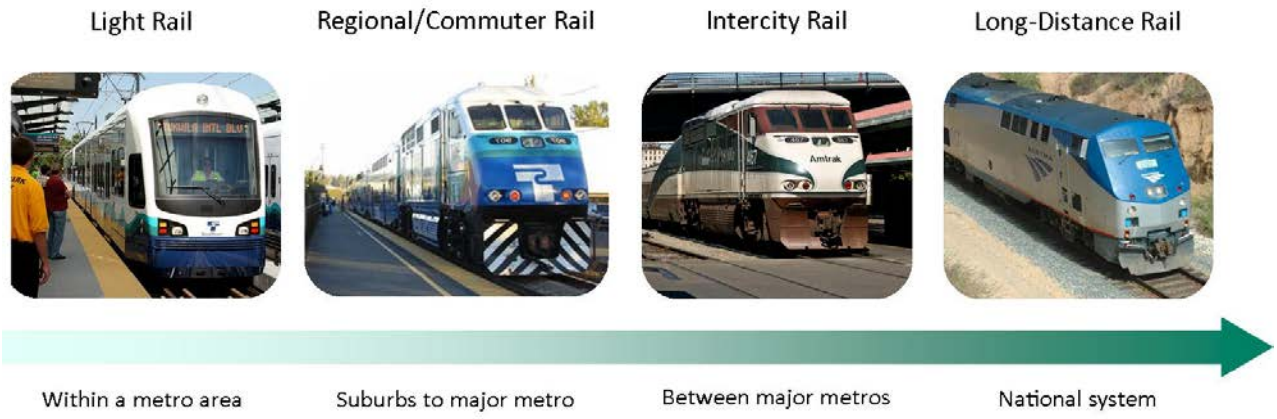
Washington's passenger rail services link cities and regions throughout the state, supporting commuter, business and leisure travel needs while promoting economic activity and providing an alternative to travel on the state's highways. In addition to the local, regional and statewide importance of these services, the Pacific Northwest Rail Corridor (PNWRC), on which Amtrak Cascades service travels, is one of 11 federally-designated high-speed rail corridors in the country. Passenger service in Washington operates mainly on freight rail infrastructure. Federal definitions for passenger rail systems are:

[12] In North America there is presently no active use of the inland waterway system for handling intermodal trailers and/or containers on river vessels and barges. However, elsewhere in the world, particularly in Europe this is a common practice.

- **Long-distance service** with routes of more than 750 miles between endpoints operated by Amtrak. Two long-distance services operate in Washington: Empire Builder and Coast Starlight.
- **Intercity rail service** passenger service, except commuter, is shorter than 750 miles. Amtrak Cascades, sponsored by Washington and Oregon, is the intercity passenger rail service operating in the Pacific Northwest.
- **Commuter rail passenger transportation** in metropolitan and suburban areas usually having reduced fare, multiple-ride, commuter tickets, and morning and evening peak period operations (49 USCS § 24102). In Washington, Sound Transit's Sounder is the sole commuter rail service that shares tracks with freight rail.[13]

These types of passenger rail services are shown in Figure 2.2.

Figure 2.2 Passenger Rail Service Types



Tourist railroads do not have passenger transportation as a primary purpose, and are therefore not included in the passenger rail system. They are classified as Class III railroads by the Federal Railroad Administration (FRA). Washington has several active tourist trains, which provide scenic rides and often showcase historical trains or routes. Though these services are explored briefly in Technical Note 2: *Freight and Passenger Rail Inventory*, they are not otherwise explored in the body of this report.

Passenger rail highlights:

- **The State Rail Plan focuses on three types of passenger rail services in Washington**. Amtrak provides long-distance service

[13] Light rail, street cars and similar services also transport commuters, but operate on different tracks from freight rail and are not discussed in this plan. Light rail will be addressed in WSDOT's Public Transportation Plan.

on two routes: the Empire Builder and the Coast Starlight. The Washington State Department of Transportation (WSDOT), Oregon Department of Transportation (ODOT) and Amtrak provide intercity service on Amtrak Cascades. Sound Transit provides commuter rail service between Everett and Seattle, and Seattle and Lakewood in the central Puget Sound area.

- **WSDOT is expanding Amtrak Cascades service in Washington with $800 million in federal funding for capital improvements throughout the corridor.** These federal funds will provide an additional two round trips between Portland and Seattle, improved on-time performance and schedule reliability and shorter travel times.
- **Effective October 2013, the federal government will shift responsibility for funding Amtrak Cascades services to the states, in accordance with the Passenger Rail Investment and Improvement Act of 2008 (PRIIA)**. This will increase operating costs for states. Currently, Washington and Oregon jointly fund 80 percent of Amtrak Cascades' operating costs. Under the provisions of PRIIA, Washington and Oregon must absorb direct costs for operating Amtrak Cascades that had previously been paid by Amtrak.
- **Sounder is expanding service as part of Sound Transit 2 (ST2).** The ST2 ballot measure was approved in 2008, and outlines long-term improvements, expansions, and funding to commuter rail and other transit services in the Sound Transit service area (urban areas of King, Pierce and Snohomish Counties).

2.2 Institutional Structure of Rail

The institutional structure of rail influences how the State Rail Plan is implemented. As noted previously, Washington's rail system is distinct from its roadway, transit, aviation and water transportation networks in that the vast majority of the infrastructure is owned by private companies, such as BNSF and UP. Each firm functions as an integrated business, including marketing and pricing services, operating and dispatching trains, maintaining assets, and allocating capital for rolling stock and infrastructure. Washington state has several venues for interaction and participation with the freight railroads. In general, overlap between public policy and private railroad decision-making occurs in five areas: state-sponsored and state-owned assets, taxation, grade crossings, rail safety and economic incentives.[14] The cumulative influence of these five policy areas can serve to improve the rates of return of railroad investments made in a

[14] AASHTO Freight Rail Bottom Line Report: www.camsys.com/pubs/FreightRailReport.pdf.

state by creating a more favorable business climate for railroad development.

- **State-Sponsored and State-Owned Assets.** Washington state is a sponsor of the Amtrak Cascades passenger rail service, owns track on two short lines—the Palouse River and Coulee City Railroad (PCC) and the Royal Slope (RS), and manages the Grain Train and Produce Car Rail Pool programs.
- **Taxation**. Freight railroads are significant property owners (BNSF and UP have $19 billion in assessed property value in Washington, according to the Washington Department of Revenue), and therefore a state's method of assessment and distribution of property taxes can impact a railroad's willingness to invest capital in their property. Washington's property tax process uses a valuation method that does not penalize railroad improvements.
- **Grade Crossings**. The most common interaction by the public with railroads is where roads and rail lines physically intersect at-grade, which the FRA typically refers to as a highway-rail grade crossings.[15] State and local governments do not regulate or otherwise control the frequency, schedule or type of rail traffic using the crossings. Since 1987, the federal highway safety program requires states to dedicate a portion of their federal safety funds on grade crossing protection devices, which the railroads are then obligated to maintain.
- **Rail Safety.** Rail safety regulation is the responsibility of the FRA. FRA's role is to ensure consistent enforcement in the interests of interstate commerce. States are authorized to enforce federal rail safety regulations under a program in which state rail safety inspectors are trained and certified by the FRA. The Washington Utilities and Transportation Commission (UTC), a state agency, has four inspectors, one each in the safety disciplines of track, operating practices, hazardous materials and signal and train controls.
- **Economic Incentives**. States may offer economic incentives to railroads and other organizations to improve infrastructure, expand capacity or build out rail access to a new or expanding industry. The purpose of these incentives typically is to boost local economic activity and increase employment. These incentives can be offered in the form of property or sales tax exemptions or reductions for infrastructure improvements and rolling stock

State and local governments do not regulate or otherwise control the frequency, schedule or type of rail traffic using highway rail crossings.

[15] A road that crosses a railroad at the same elevation is referred to as an at-grade crossing, while a location where the road and railroad are separated by a bridge structure is referred to as a grade separation.

acquisition. Some states offer direct funding programs for rail infrastructure improvements, similar to Washington programs like the Freight Mobility Strategic Investment Board's (FMSIB) grant program, and WSDOT's assistance programs. State funding assistance, either in direct grants, loans or tax policy, can increase the effective rate of return for freight railroad investments, making the state a more attractive place for businesses using rail service. Incentives for private carriers and shippers should be tailored to match the economic benefits accruing to local communities in terms of expanded employment, increased household incomes and improving tax revenues.

Federal Rail Involvement

Several different federal agencies regulate intercity and commuter passenger rail, including the FRA, the Federal Transit Administration (FTA) and the STB. Urban transit systems not connected to the freight rail network, such as light rail systems, are administered solely by the FTA. Freight railroads, which by definition are in the business of interstate commerce, are exempt from most state and local regulation. Instead, they are regulated by a variety of federal departments, agencies, and boards.

The primary agencies overseeing railroads are the FRA for safety, and the STB for economic regulations. Other agencies within the U.S. Department of Transportation (the parent agency to the FRA, FTA, and FHWA, among others) also have significant involvement, both directly with the carriers and indirectly in conjunction with the state departments of transportation and regional jurisdictions. Table 2.3 summarizes the purposes and responsibilities of the agencies that are most involved with management of freight and passenger rail services.

Table 2.3 Federal Agencies Involved in Rail Regulation

Agency	Scope of Activity	Authorities/Responsibilities
Federal Railroad Administration (FRA)	Train/Track Safety	• Develops and enforces basic operating rules for train safety, tank car safety, railroad industrial hygiene, rail equipment safety, and grade crossing safety and trespass prevention. • Oversees employee hours of service regulations and signal and train control regulations. • Inspects and audits railroad track. • Tracks rail movement of spent nuclear fuel and radioactive waste. • Manages the Rail Safety Improvement Act of 2008 (RSIA).

Agency	Scope of Activity	Authorities/Responsibilities
	Rail Funding/ Financing	• Oversees Railroad Rehabilitation and Improvement Financing program (RRIF). • Manages the Passenger Rail Improvement and Investment Act of 2008 (PRIIA). • Manages American Recovery and Reinvestment Act (ARRA) as it relates to intercity passenger and freight railroads. • Administers intercity passenger rail grants through various programs.
	Guidance	• Provides guidance and analysis of intercity passenger rail and high-speed rail services. • Produces the National Rail Plan, outlining national priorities for freight and passenger rail networks, incorporating input from state rail plans.
Federal Transit Administration (FTA)	Rail Funding/ Financing	• Oversees grants to transit providers, and ensures grant recipients are managing their programs in accordance with federal, statutory and administrative requirements. • Funds rolling stock and infrastructure for commuter rail services.
	Technical Assistance	• Provides technical assistance and guidance to state and local commuter rail providers.
	Safety	• Administers program to coordinate system safety among all transit providers, including heavy rail and light rail.
Surface Transportation Board (STB)	Administrative Authority	• Settles railroad rate and service disputes. • Reviews proposed railroad mergers, acquisitions, abandonments and new line construction. • Mediates conflicts between passenger operators (including Amtrak and other intercity and commuter rail operators) and host railroads. • Investigates causes of poor on-time performance (OTP) or other intercity passenger rail service quality deficiencies caused by the operator, host railroad or managing entity.
Pipeline and Hazardous Material Safety Administration (PHMSA)	Hazardous Materials Safety	• Regulates and enacts rules that ensure safe movement of hazardous materials. • Tracks data on hazardous materials. • Permits, inspects, and enforces safety of hazardous materials.

Agency	Scope of Activity	Authorities/Responsibilities
Department of Homeland Security (DHS)	Security	• Establishes requirements for national rail security strategy and risk assessment. • Tracks hazmat shipments. • Creates railroad requirements for developing institutional risk assessments. • Conducts programs for rail security training. • Conducts rail security research and development (R&D).
Environmental Protection Agency (EPA)	Environmental Regulation	• Regulates and establishes locomotive emission standards. • Enforces the National Environmental Policy Act (NEPA) that requires environmental review for proposed rail projects.
U.S. Army Corps of Engineers	Construction Permitting	• Manages permitting for construction on waterways and wetlands
USDHS: U.S. Coast Guard	Construction Permitting and Funding	• Manages permitting for structures crossing navigable waterways • Administers Truman-Hobbs Act, which funds bridge projects over navigable waterways

Source: Agency web sites.

State Agencies Involved in Freight Rail

With the federal preemption for interstate commerce, states have little involvement in the regulation of railroads from an economic and safety standpoint. Nevertheless, states are engaged in many other aspects of the rail industry, particularly in the realm of planning, coordination, investment, and, to some degree, safety. The key Washington agencies involved in these topics are described below. Regional agencies involved in prioritizing freight projects are included in Table 6.2 in Chapter 6.

WSDOT

WSDOT is the steward of a large and robust transportation system, and is responsible for ensuring that people and goods move safely and efficiently. In addition to building, maintaining, and operating the state highway system, WSDOT is responsible for the state ferry system, and works in partnership with others to maintain and improve local roads, railroads, airports, and multimodal alternatives to driving. WSDOT is responsible for managing and directing the state's rail programs (both freight and passenger; and both capital and operating), the state's freight grants and loans programs, and developing the State Rail Plan. WSDOT sponsors Amtrak Cascades and the PCC. WSDOT is the designated state

rail transportation authority that maintains, coordinates and administers the State Rail Plan. WSDOT also develops the State Freight Mobility Plan in cooperation with the Freight Mobility Strategic Investment Board's Freight Advisory Committee.

Freight Mobility Strategic Investment Board (FMSIB)

FMSIB is a governor-appointed board that offers public grants to leverage private investments for freight projects. The projects must be located on a designated strategic freight corridor[16] that meets the criteria established in state law (chapter 47.06A RCW) and rule (title 226 WAC). FMSIB's roles include designating strategic freight corridors on state highways, city streets, county roads, railroads, and waterways based on WSDOT's research; developing criteria for projects; administering project grants; and submitting status reports to the state legislature. Recently, FMSIB convened the state's Freight Advisory Committee consistent with MAP-21(federal surface transportation act) to provide expert advice to WSDOT and the Transportation Commission in the development of their respective planning and policy efforts.

Utilities and Transportation Commission (UTC)

The UTC is a governor-appointed commission whose mission is "to protect consumers by ensuring that utility and transportation services are fairly priced, available, reliable and safe." The UTC's Railroad Safety Section ensures public safety by monitoring operation of the 25 railroad companies offering service in Washington. The section conducts safety inspections of various aspects of railroad operation. Under state authority, staff inspects crossings and walkways and evaluates, investigates and recommends to the commission whether company-filed petitions related to crossing changes and close clearances should be approved. Working with the Federal Railroad Administration, commission staff conducts inspections of company operating practices, hazardous materials handling, crossing signals and track. The section provides education and outreach services as part of the Operation Life Saver program. It also investigates accidents and complaints from the public, and partners with local, state and federal agencies to implement safety awareness and improvement programs. The commission administers the Grade Crossing Protective Fund.

Washington Community Economic Revitalization Board (CERB)

A statutorily authorized board, CERB is the state's strategic economic development resource, focused on creating and retaining jobs in partnership with local governments, and financing public infrastructure that encourages new development and expansion in targeted areas.

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[16] A strategic freight corridor carries at least 4 million gross tons on state higways, city streets or county roads; 5 million gross tons on railroads; or 2.5 million net tons on waterways. See RCW 47.06A.010

State Agencies Involved in Passenger Rail

Passenger rail services in Washington consist of long-distance passenger rail service (Empire Builder and Coast Starlight), intercity passenger rail service (Amtrak Cascades), and regional commuter rail service (Sounder). While the long-distance passenger rail lines are managed by Amtrak at the federal level, the intercity passenger rail service (Amtrak Cascades) is administered at the state level, and the commuter rail service is managed at the local level. Table 2.4 summarizes the roles and responsibilities of the key players in administering, planning, operating and funding these services.

Table 2.4 Passenger Rail Roles and Responsibilities

Roles/ Responsibilities	Empire Builder/Coast Starlight	Amtrak Cascades[a]	Sounder Commuter Rail
Operations Funding	Amtrak	WSDOT, ODOT	Sound Transit
Capital Funding	Amtrak	WSDOT, ODOT, Amtrak	Sound Transit
Operator	Amtrak	Amtrak	BNSF
Equipment Ownership	Amtrak	WSDOT, ODOT, Amtrak	Sound Transit
Equipment Maintenance	Amtrak	Amtrak and Talgo on behalf of WSDOT, Amtrak and ODOT (beginning 2013)	Amtrak
Planning	Amtrak	WSDOT, ODOT, Amtrak	Sound Transit
Other Partners	Various Host Railroads, Communities for Station Facilities	BCMoTI[b], Amtrak, track and station owners, border control agencies	Various Host Railroads

Source: Consultant analysis.

[a] The roles of WSDOT, ODOT and Amtrak will change in October 2013, with the states assuming a greater role in the delivery of intercity passenger rail. States are responsible for 100 percent of direct route costs. The table reflects roles after the transfer to the states.

[b] British Columbia Ministry of Transportation and Infrastructure.

2.3 Rail Transportation Funding History in Washington

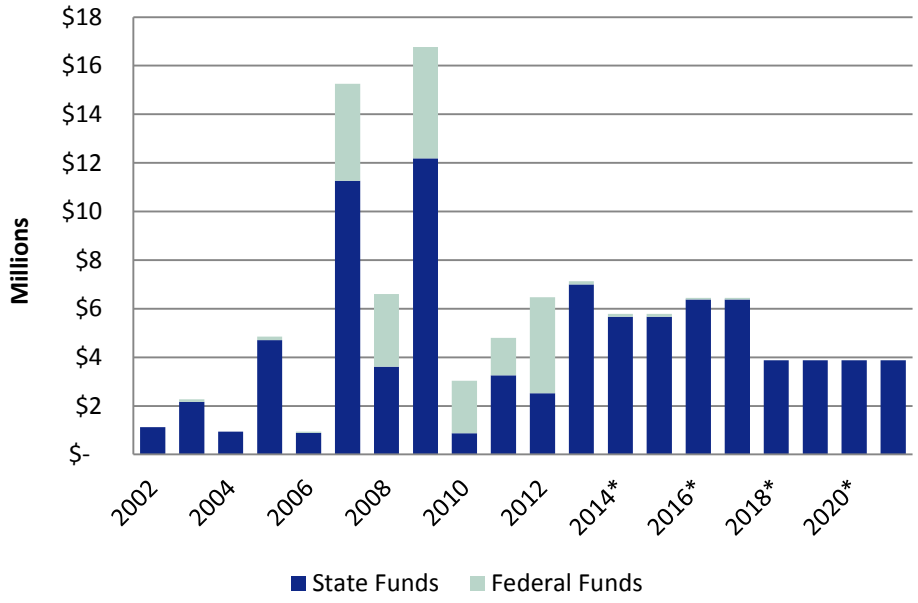
Freight Rail

The vast majority of investments in Washington's rail system are made by the private freight railroads, and BNSF and UP in particular. However, state and federal funding has played a role in supporting infrastructure investments on short lines and terminal facilities. During fiscal years 2002 through 2011, these investments totaled $72.9 million, with $57 million

provided by the state and $15.6 million by the federal government, respectively[17] (Figure 2.3). Peak expenditures in 2007 and 2009 occurred as a result of funding for specific projects passed by the legislature in 2003 and 2005.

In 2005 the legislature established a recurring revenue stream for rail projects with baseline funding for the Freight Rail Assistance Program (FRAP) and the Freight Rail Investment Bank (FRIB) program. FRAP provides grants to publicly- and privately-owned railroads, shippers or receivers and port districts for purposes of rehabilitation, infrastructure preservation or economic development. FRIB is a loan program for publicly-owned railroad systems, ports, counties and cities. Both programs are administered by WSDOT.

Figure 2.3 Freight Rail Capital Funding, State Fiscal Years 2002 to 2021



Source: WSDOT
* Proposed funding amounts

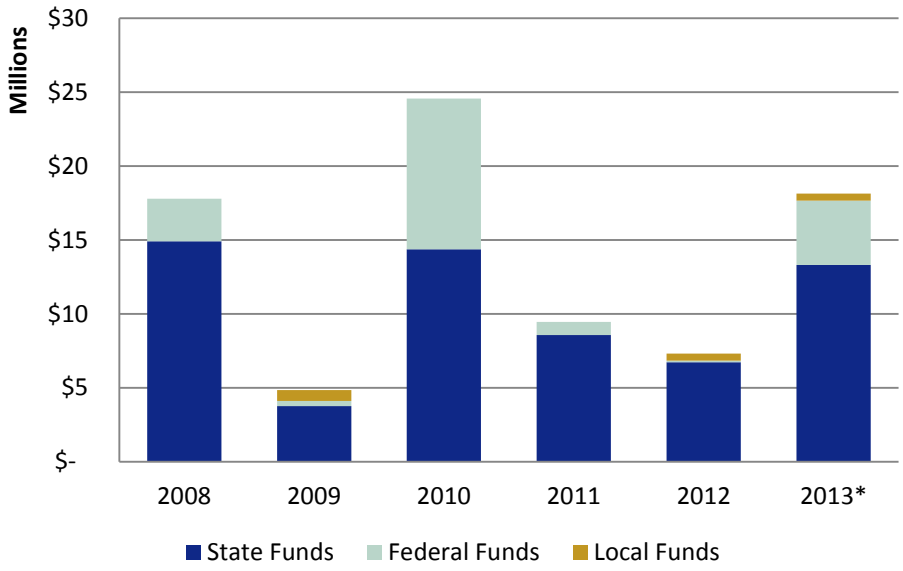
Freight Mobility

Another source of funding for multimodal freight transportation projects is FMSIB, an independent freight board that prioritizes and recommends freight projects for funding. Cumulative investments from FMSIB from 2002 to 2012 were $64 million, including $48.3 million in state funds, $14.4 million in federal funds, and $1.2 million in local funding (Figure 2.3). Funding for FMSIB is used for multimodal freight

[17] This amount does not include Palouse River & Coulee City Railroad (PCC) purchase and rehabilitation.

transportation projects, including truck and rail projects in individual cities, at Washington ports, or in coordination with WSDOT.

Figure 2.4 Freight Mobility Strategic Investment Board Funding, State Fiscal Year 2008 to 2013



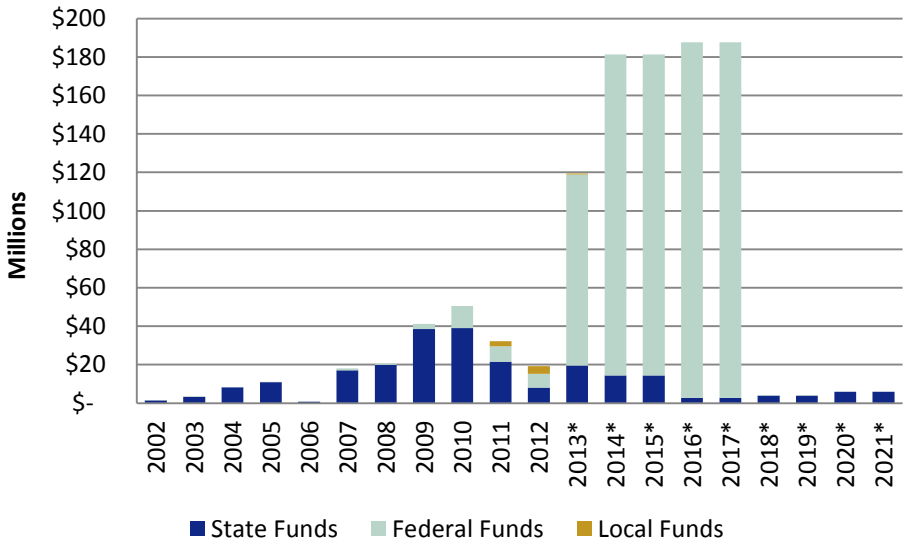
Source: WSDOT
* Projected
Note: $29.5 million in funding is appropriated for 2014-2015. This includes $28.6 million for capital projects as selected by FMSIB.

Passenger Rail

Passenger rail has historically been funded primarily through state and federal sources (as well as passenger farebox revenues). Cumulative passenger rail capital funding from state and federal sources for state fiscal years 2002 to 2011 was $188.1 million, of which the state contribution was $160.7 million and the federal contribution was $24.7 million (Figure 2.5)[18].

[18] Reported expenditures for 2012 are based on actuals; however, the state biennium has not closed out for State Fiscal Year (SFY) 11-13. For years 2013 and beyond, the amounts are derived from the Transportation Executive Information System (TEIS) based on the projected funding from the state legislature.

Figure 2.5 Passenger Rail Capital Funding, State Fiscal Year 2002 to 2021



Source: WSDOT
* Projected funding amounts. Federal funds are secured.

Chapter 3. Rail Vision and Policy

The Washington state transportation system connects us to our families, friends, neighbors, jobs and communities. Transportation is the key to economic development, connecting businesses with customers and suppliers and connecting Washington to the global economy.[19]

Planning and investment in the state's rail system is guided by the vision of the Washington State Department of Transportation (WSDOT) to keep people and business moving by operating and improving the state's transportation systems vital to taxpayers and communities. The State Rail Plan is consistent with the Transportation System Policy Goals adopted by the state legislature. The plan's emphasis on improving mobility as part of a strategy to support Washington's economy is consistent with *Results Washington*, [20] Governor Inslee's data-driven performance management and continuous improvement system.

Combined, these policy frameworks provide the context for how the state approaches its involvement in the rail system. They were also instrumental in forming the vision statement that drove the technical work completed in this rail plan. This plan incorporates vision and guidance from previous planning efforts including the *Cascades Rail Corridor Management Workplan* (2013), *2007-2026 Washington Transportation Plan*, *Washington Transportation Plan 2030*, Washington State *2010-2030 Freight Rail Plan*, and the Sound Transit 2005 *Long-Range Plan* for regional transit.

The vision and goals set the direction for what the plan achieves. They helped identify and prioritize needs. The objectives and implementation strategies describe how the plan will achieve the vision and goals by identifying recommended future state investment in Washington's passenger and freight rail system. The State Rail Plan will be a reference for other states and will contribute to the National Rail Plan.

3.1 Major Themes from Outreach

Outreach efforts, including workshops, briefings and interviews, highlighted issues that were of primary importance to government agencies, private industry and other rail stakeholders. The major themes we heard were:

- ***Economic development:*** Address the importance of rail transportation in moving people and goods for a vital state

[19] 2007-2026 Washington Transportation Plan (WTP).
[20] www.results.wa.gov

economy by recognizing that Washington industries rely on a competitive freight rail system in North American and global trade.

- ***Preservation of existing facilities for freight and passenger rail:*** Preservation of existing assets should be prioritized over expansion or new construction by: completing track maintenance and preservation activities on schedule; preventing loss of rail right of way; pursuing land use compatibility; and using existing resources before investing in new, such as existing right of way and infrastructure.
- ***Rail capacity and system congestion:*** Understand which chokepoints and congested spots have the greatest impact on the operations of the state's passenger and freight rail services. Address key chokepoints on the rail line, accompanying infrastructure (rail yards, etc.) and at terminals. Chokepoints may also include insufficient railcar supply to meet shipping needs. Recognize that the amount of volume that can be accommodated depends not only on infrastructure, but also on the railroad's scheduling strategy, use of technology and many other business decisions. Because capacity is dynamic, it should not be used as a sole measure for decision making.
- ***Connectivity:*** Facilitate farm to market movements (short line); connections to international markets—via the Ports of Seattle, Tacoma and others—including product transfer between rail, marine and truck. Strengthen connections between intercity rail and public transit. Improve transitions between rail and non-motorized transportation to encourage biking and walking.

- ***Community impacts:*** Address the potential that increased rail traffic may affect traffic congestion and safety at at-grade crossings. Evaluate opportunities for freight and passenger rail service to contribute to local economic development.
- ***Environment:*** Communicate the environmental benefits of rail transportation, such as greenhouse gas reduction and reduced need

for highway expansion. Identify and address negative impacts, such as noise and delay at at-grade crossings.

- ***Mode share:*** Maximize use of freight and passenger rail to reduce demand on highways and air transportation and to reduce greenhouse gas emissions. Consider rail in multimodal planning for high-capacity transportation corridors. Identify and evaluate opportunities to expand passenger rail service to population centers in eastern Washington. Continue and expand development of high-speed rail.
- ***Financial resources:*** Pursue sustainable funding for rail transportation.
- ***Agency collaboration and public-private partnerships:*** Facilitate cooperation and leverage resources between various levels of government and the private sector, in particular for freight rail or short-line rail expansion projects. This includes state, provincial, regional and local partners in the Pacific Northwest Region (Washington, Oregon, Idaho, British Columbia). These partnerships may be leveraged to share information, fund capital projects or improve service.
- ***Criteria for decision making:*** Recognize that the state's rail system can yield significant benefits to Washington state passengers and industries. These impacts can include economic, environmental, safety, efficiency and mobility benefits. These benefits should be recognized within any decision-making framework. Consider cost effectiveness and monitor success of any project using public money.
- ***Coordination with other plans and current policies:*** There needs to be coordination between state transportation plans, such as the Washington State Freight Mobility Plan, the Highway System Plan, the Washington Transportation Plan (WTP), and other plans.
- ***State's role:*** Stakeholders suggest that the state's role includes providing funding, serving as an advocate for rail and facilitating partnerships. Participants mentioned the need for a long-term vision (50 years) as well as practical plans for the near and mid-term.
- ***Safety:*** Ensure a safe rail transportation system.

3.2 Vision for Washington's Rail System

The Washington State Rail Plan's vision statement is, "As an integral part of Washington's multimodal transportation network, the rail system provides for the safe, reliable and environmentally responsible movement of freight and passengers to ensure the state's economic vitality and quality of life." This vision provides a blueprint for future rail planning

and investment activities. It was created in a collaborative process with freight and passenger stakeholders through a series of workshops, advisory committee meetings and one-on-one stakeholder interviews.

A comprehensive, multimodal planning approach that considers rail along with highways and public transportation, and incorporates land use considerations, is essential to achieving this vision.

Vision Statement: State Rail Plan
As an integral part of Washington's multimodal transportation network, the rail system provides for the safe, reliable and environmentally responsible movement of freight and passengers to ensure the state's economic vitality and quality of life.

3.3 The State's Rail Policy

WSDOT's activities to implement the rail vision are guided by the six transportation system policy goals established by the legislature, as well as recommendations developed in the 2006 Washington State Transportation Commission (WSTC) *Statewide Rail Capacity and System Needs Study*. Washington's Transportation System Policy Goals are listed in Table 3.1.

Table 3.1 Washington's Transportation System Policy Goals (Chapter 47.04.280 RCW)

Goal	Content
Economic Vitality	To promote and develop transportation systems that stimulate, support and enhance the movement of people and goods and ensure a prosperous economy.
Preservation	To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.
Safety	To provide for and improve the safety and security of transportation customers and the transportation system.
Mobility	To improve the predictable movement of goods and people throughout Washington state.
Environment	To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.
Stewardship	To continuously improve the quality, effectiveness and efficiency of the transportation system.

Pacific Coast Collaborative Leaders Forum – Governments of Alaska, British Columbia, California, Oregon and Washington Vision for High Speed Rail:
"Rail, particularly high-speed rail, can deliver significant benefits to the region including advancing climate change goals, energy conservation, congestion reduction, and job creation for the citizens of the region."

3.4 Evaluation Criteria

The vision and goals established for the State Rail Plan point to several themes to guide decision making. These criteria, described below, served as a framework for the analysis of rail system strengths and challenges, and provide the basis for the policy recommendations.

- Consistent with federal and state goals and policies.
- Fulfills a need identified through the technical work, stakeholder outreach or review of previous studies conducted during this State Rail Plan.
- Distinguishes between public and private benefits.
- Demonstrates efforts to optimize service and implement lower cost improvements first.

Individual funding programs each have their own criteria used to evaluate and rank applications and award funds.

3.5 Alignment with Other Plans

This State Rail Plan is a component of a comprehensive transportation planning program in the state that aims to improve mobility using multimodal approaches. Table 3.2 lists Washington transportation plans and their connections to the State Rail Plan. Metropolitan and regional transportation plans developed by Metropolitan Planning Organizations and Regional Transportation Planning Organizations also inform the plan.

Table 3.2 Recent Transportation Plans and Studies

Year	Title/Agency	Relation to State Rail Plan
2006	Statewide Rail Capacity and System Needs Study WSTC	Capacity analysis consulted, projects considered, key issues and bottlenecks considered.
2006	Long-Range Plan for Amtrak Cascades WSDOT	Long-range vision and plans for the Amtrak Cascades corridor between Vancouver, B.C. and Portland.
2008	Washington Transportation Plan Update Freight Movement WSDOT	One-time update to the WTP. Additional source for consideration of projects.
2008	Amtrak Cascades Mid-Range Plan WSDOT	Underpins the planning for Amtrak Cascades route planning.
2009	2010-2030 Freight Rail Plan WSDOT	Physical inventory data, historical information.

Year	Title/Agency	Relation to State Rail Plan
2010	Washington Transportation Plan 2030 WSTC	Recommends policies for the statewide transportation system.
2010	High-Speed Rail on the Pacific Coast Pacific Coast Collaborative	Examination of opportunities to supplement and leverage existing and planned high-speed rail investments to fully connect the region from San Diego through Portland and Seattle to Vancouver, British Columbia.
2011	Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment Washington Public Ports Association	Consideration in freight projections, rail to port connectivity, alternative demand scenarios.
Soon	State Freight Mobility Plan WSDOT	State Rail Plan will provide rail-related content for Freight Mobility Plan.
Soon	Highway System Plan WSDOT	Identify highway capacity constraints that may be relieved by rail, and identify at-grade crossings improvements on the state highway system.
Soon	Washington Transportation Plan WSTC	Multimodal transportation plan incorporating rail, highway, ferry, aviation, marine and river, public transportation, bicycle facilities, and pedestrian walkways. This plan will include recommendations from the State Rail Plan.
Soon	USDOT Planning Efforts FRA, FTA, FHWA	PRIIA and MAP-21 include provisions for agencies to develop strategies, guidance, and/or plans for freight, rail, public transportation, and highways. These efforts impact the states' transportation systems.

Chapter 4. Rail System Strengths and Challenges

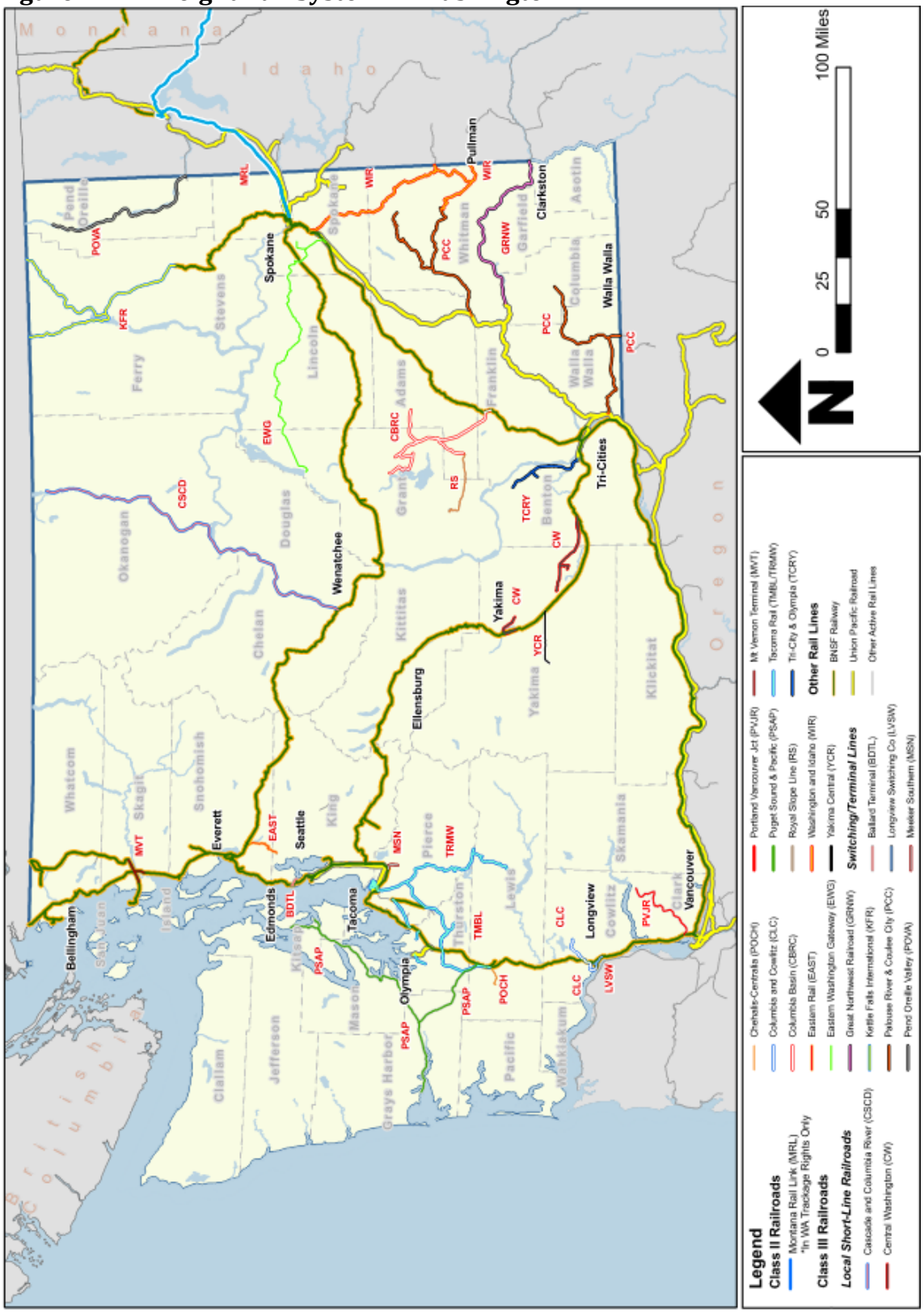
In order to identify needs and opportunities for the rail system, it is important to understand what is working well and identify the challenges. To make this assessment, the project team developed a system inventory, engaged in discussions with rail stakeholders (including operators and system users), analyzed existing conditions, and anticipated future conditions. The results are described in extensive detail in technical reports that accompany the State Rail Plan.

This chapter highlights key findings most relevant to identifying needs and developing plan recommendations. Each element of the rail system is analyzed for existing and future conditions, areas that are working well, areas that need improvement, and other key issues. The discussion of strengths and challenges is organized as follows:

- *4.1 Freight Rail page 32*
  - 4.1.a Class I Railroads
  - 4.1.b Short-line Railroads
  - 4.1.c Terminals and Yards
- *4.2 Passenger Rail page 57*
  - 4.2.a Long Distance – Coast Starlight and Empire Builder
  - 4.2.b Intercity Passenger Rail – Amtrak Cascades
  - 4.2.c Regional/Commuter Rail – Sounder
- *4.3 Integrated Rail System page 73*
  - 4.3.a Multimodal Connectivity for Freight Rail
  - 4.3.b Multimodal Connectivity for Passenger Rail
  - 4.3.c Safety and Security

4.1 Freight Rail

Figure 4.1 Freight Rail System in Washington



Source: WSDOT; Short-line railroads web sites; *2010 to 2030 Freight Rail Plan.*

The main routes of the Class I railroads are the arterials of Washington's rail network, handling the vast majority of rail traffic in the state. These routes handle traffic that may start and end its trip anywhere on the North American rail network. This could be an industry served directly by rail, an intermodal terminal, a Class I branch line, a short-line railroad, or a private terminal. Thus, the discussion of rail demand and capacity in the state is provided in the context of the Class I railroads, which carry the majority of traffic on the rail system.

4.1.a Class I Railroads

The two Class I freight railroads that operate in Washington state are BNSF Railway (BNSF) and the Union Pacific Railroad (UP). Together, they own 60 percent of the rail infrastructure by mileage, and carry millions of carloads of commodities each year. These two railroads are responsible for moving the vast majority of freight handled by rail into, out of, within and through Washington. Combined within Washington, they employed over 3,700 people in 2011, with a net payroll of $260 million.[21]

BNSF is the largest rail operator in Washington, handling a total of 1.367 million carloads in 2011 over a 1,633-mile network in the state. The primary network consists of three east-west lines and one north-south line. The Everett to Spokane line, which passes through the Cascade Tunnel under Stevens Pass, is BNSF's primary route for intermodal traffic. The Auburn to Pasco route crosses the Cascade Range through the Stampede Pass Tunnel. The third route follows the north bank of the Columbia River from Vancouver, Washington (WA) to Pasco. The three east-west routes are linked by the north-south I-5 rail corridor, which runs the length of the state from the Canadian border at Blaine through Bellingham, Everett, Seattle, and Tacoma to Vancouver, WA and Portland. It is the backbone of Washington's rail network, linking the transcontinental routes and the large economic centers along the Pacific coast. In Washington, this route is owned by BNSF, with UP holding trackage rights between Portland and Tacoma. Amtrak's long-distance services operate between Portland and Everett, Amtrak Cascades provides intercity rail over the entire route, and Sounder commuter rail uses the line in the Central Puget Sound region.

UP is the second largest rail operator in Washington by mileage and volume. It operates on 532 miles of track, 260 miles of which are through trackage rights on other railroads. In 2010, the total number of carloads handled on its routes in Washington amounted to about 550,000.[22]

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[21] UP statistics from UP Factsheet, Form 10K for Washington, 2011; BNSF statistics from BNSF Factsheet, Form 10K for Washington, 2011.

[22] Union Pacific Washington State Statistics Report, 2011.

UP's primary east-west corridor serving Washington is actually in Oregon, running between Portland and Hinkle on the south bank of the Columbia River. At Hinkle (near Hermiston, Oregon), the line forks: one line runs northeast from Hinkle to Spokane, linking up with the Canadian Pacific near Eastport, Idaho; and the other line runs southeast from Hinkle to Granger, Wyoming and Ogden, Utah, connecting with UP's historic Central Corridor that links the San Francisco Bay Area with Salt Lake City, Omaha and Chicago. Along the I-5 corridor, UP uses its own rails between Seattle and Tacoma, trackage rights over BNSF between Tacoma and Vancouver, WA, and its own rails southward through Oregon and California.

State Role and Interest – Class I Railroads Form the Backbone of the Rail System

BNSF and UP are important to Washington state by virtue of the volume of freight traffic hauled, the rail infrastructure that serves freight (and passenger) rail traffic in the state, the economic impact of these two Class I railroads and the benefits they provide to the economy. The two railroads connect short-line railroads to the national rail network, and host most of the passenger rail service.

A well-functioning rail system provides considerable benefits to Washington's economy. For example, availability of reliable rail service contributes to increase the attractiveness of Washington ports for discretionary cargo, and could help improve competitiveness for the ports located in the Pacific Northwest. A decline in rail service may produce a shift in traffic to truck for high-value goods that are typical of the manufacturing and retail sectors. This would have several negative impacts to the state's economy. Taxpayers would bear the costs for increased wear and tear and congestion on Washington's roadways, and those increased costs could lead to rising prices or loss of trade and industry.

Existing and Future Conditions

Class I railroads hold critical importance for rail operations throughout the state. This section provides a high-level overview of current and projected use of the system for handling freight. This includes a summary of commodities handled, the direction of traffic flows, and trends that may influence or change the future development of rail in Washington.

Private railroads typically do not release network-level data on train volumes, so an analysis of commodities carried by rail within the state provides a basis for analysis of present and future rail demand. This demand directly influences the type of freight service and level of investment that the railroads will undertake. For the state, anticipated patterns of freight flows and demand for intercity travel will affect multimodal transportation policy and investment strategy to address the mobility needs of the state's residents and shipping public.

Strengths of Class I Railroads – Meeting Current Demands

The rail system is working well today by providing sufficient capacity to meet demand for rail transportation. The highest utilization[23] of the Class I freight rail network occurred on BNSF's Pasco-Spokane subdivision at approximately 87 percent of the practical line capacity. BNSF's Portland, Vancouver, WA to Pasco subdivision follows at 71 percent of practical line capacity. Since 2012, BNSF's directional running of empty bulk trains on the Stampede Pass route (Auburn-Pasco via Yakima) has vastly enhanced rail capacity over the previous bidirectional rail operation—by almost 300 percent—from about 10 trains per day to 39 trains per day. At present, this route handles approximately 4-6 trains per day.

Summary of Future Demand for Rail Transportation

How will the system operate in the future? The Federal Railroad Administration (FRA) requires state rail plans include a rail system capacity analysis. This broad analysis is meant to show what a future rail system would look like with the anticipated freight and passenger rail growth, if no additional capacity or operational improvements were made.

In reality, it is anticipated the Class I railroads (BNSF and UP) and other infrastructure owners will likely address key capacity issues as they emerge. Therefore, the 2035 capacity assessment is included here to illustrate the magnitude of growth anticipated for Washington's rail system, to underscore the need for continued planning and action to address capacity and mobility concerns throughout the system.

Washington's rail system is expected to handle more than 260 million tons of cargo by 2035—more than double the volume carried on the system in 2010. This represents a compound annual growth rate of 3.4 percent for all commodities carried on the rail system. As a result, and as shown in Figure 4.3, several rail segments are expected to require operational changes and/or capital improvements to manage anticipated freight rail volumes.

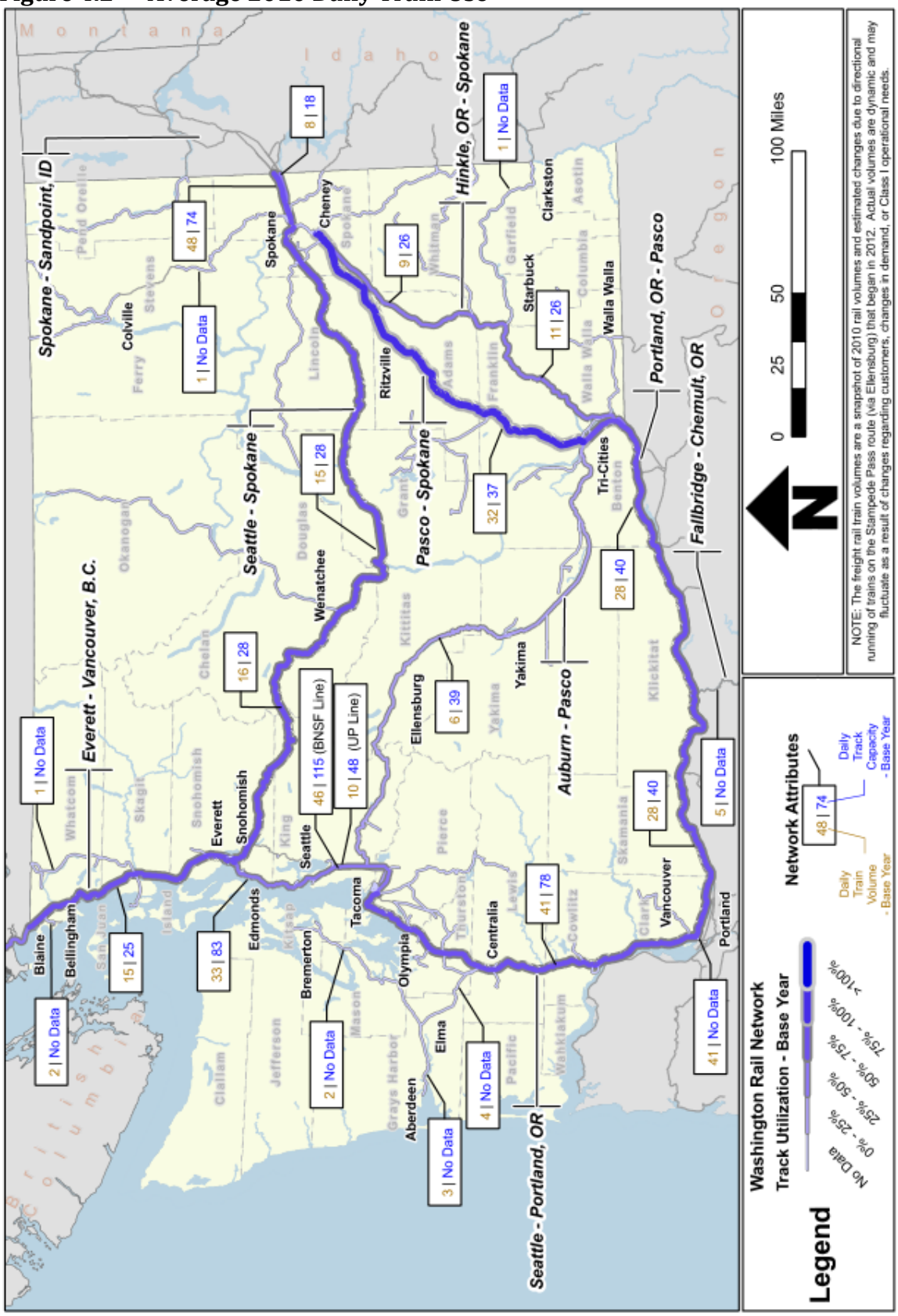
[23] Utilization is defined as the ratio of demand to available capacity.

This analysis suggests the following conditions by 2035:

- Pasco-Spokane at 170 percent utilization.
- Seattle-Spokane via Wenatchee at 150 percent utilization.
- Spokane-Hauser Junction, Idaho at 150 percent utilization.
- Vancouver-Pasco at 140 percent utilization.
- Seattle-Portland and Everett-Burlington are just under the 100 percent utilization mark, which would make it difficult to handle variations or additional traffic without adding excessive delays.

The State Rail Plan provides a demand and capacity analysis based on industry-standard methodology using best available data. This analysis represents just one perspective on how freight rail volumes will change over time. Other freight rail forecasts, such as the Washington Public Ports Association's 2011 *Marine Cargo Forecast* and the U.S. Energy Information Administration's *International Energy Outlook 2013*, project different volumes, particularly for specific commodities such as coal. If growth occurs more rapidly than forecast, then the primary change is that projected volumes would be reached sooner.

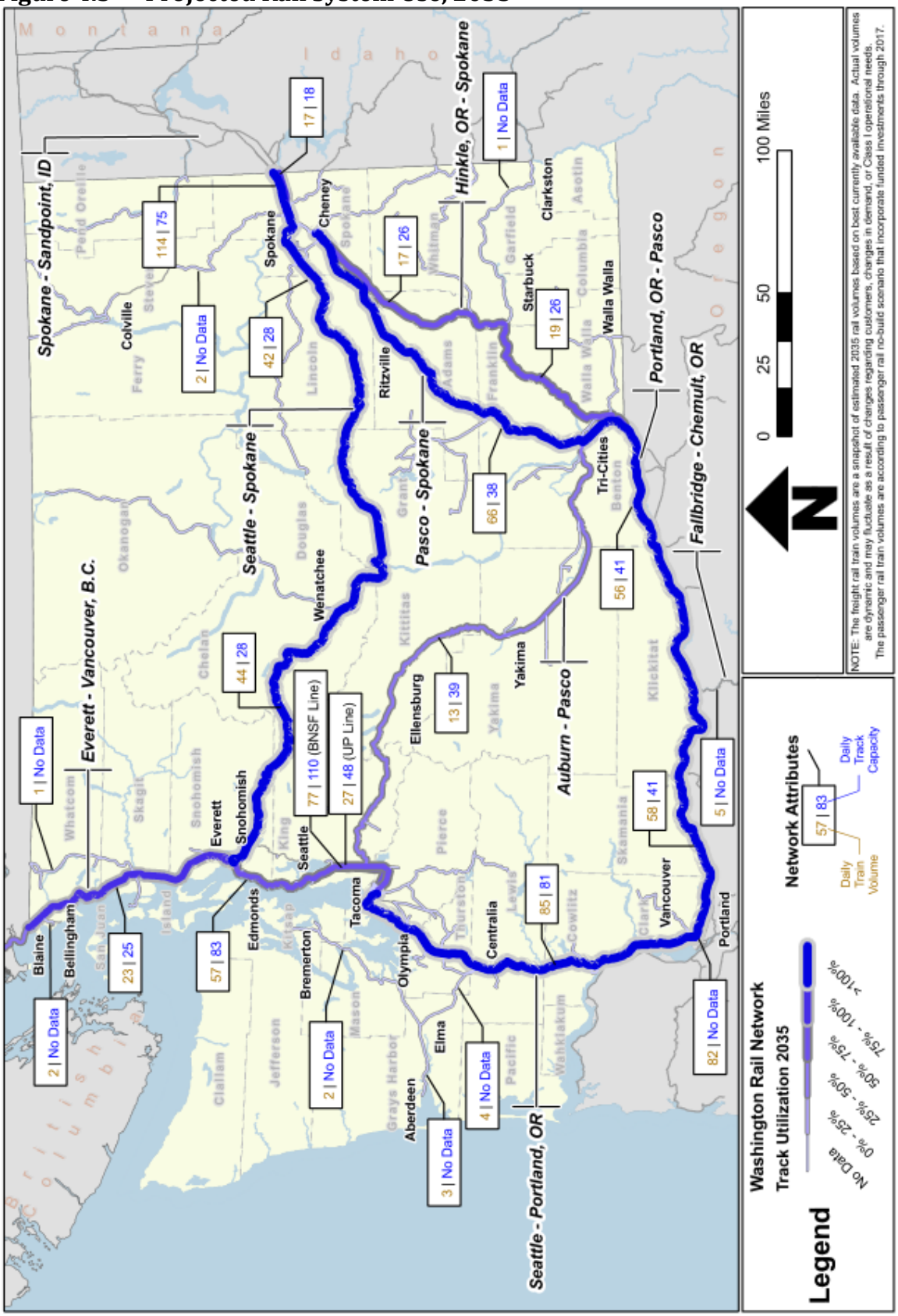
Figure 4.2 Average 2010 Daily Train Use



Sources: BNSF 2010 Train Counts Data; UP 2012 Q1 Train Counts Data for Spokane-Eastport, Idaho corridor; and Cambridge Systematics' Estimation of 2010 Train Volumes using 2010 STB's Confidential Waybill Sample Data and TransCAD Model of ORNL's Rail Network.

Note: Reflects directional running of trains on the Stampede Pass route (Auburn-Pasco via Yakima), which was implemented by BNSF in 2012.

Figure 4.3 Projected Rail System Use, 2035



Sources: BNSF 2010 Train Counts Data for Washington; UP 2012 Q1 Train Counts Data for Spokane-Eastport, Idaho corridor; Cambridge Systematics' Estimation of growth factors between 2010 and 2035 for Train Volumes using a TransCAD Model of ORNL's Rail Network; and Capacity Analysis using the 2011 BNSF Northwest Division timetable data, 2011 BNSF R 1 report data and Washington Rail Plan GIS data.

Note: Reflects directional running of trains on the Stampede Pass route (Auburn-Pasco via Yakima), which was implemented by BNSF in 2012.

Freight Movement Definitions

Inbound: freight that is brought into the state by rail, shifts mode to boat at a Washington port, and then exported from the state.

Outbound: freight that leaves the state by rail. Includes movement of Washington agricultural products to the eastern U.S. as well as goods brought to Washington by ship, transferred to rail at a marine port in Washington, and then transported east or south to other markets.

Through: freight that is brought into Washington by rail, and is carried by rail outside the state.

Intrastate: freight that is starts its rail journey in Washington and also ends its rail journey in Washington.

Demand and Capacity Analysis Methodology

The discussion in this section about current and future freight demand and its impact on Washington's rail network utilizes a standard methodology that relies largely on publicly available data. The primary sources are the Surface Transportation Board's 2010 Carload Waybill Sample, a detailed historical record of freight traffic; the FHWA's Freight Analysis Framework 3.3 (FAF 3.3), a dataset containing historical and projected freight flows for all major modes; and, the FRA/Oak Ridge rail networks, which describe the physical attributes of the rail network. Additional key inputs, including train counts, were provided by the railroads.

Underlying the analysis of future freight demand in 2035 is an economic forecast that is incorporated into FAF3.3. Developed by IHS, this forecast reflects long-term macroeconomic and demographic trends as of the second quarter of 2010. As such, it offers a general perspective on future economic activity, and can serve as a baseline against which future rail network utilization and capacity needs can be examined. The forecast does not take into account specific known or potential developments, such as the scheduled closure of a coal-fired generating station, construction of new terminals for shipping coal and crude oil, or shifts in container shipping economics arising from the adoption of new technologies.

Train volumes are dynamic and have changed since the 2010 data was published. For example, operational changes in mid-2012 led to increases in volume over the Seattle-Pasco Stampede Pass route; the base year map shown in Figure 4.2 reflects this change.

Characteristics of Washington's Freight Traffic

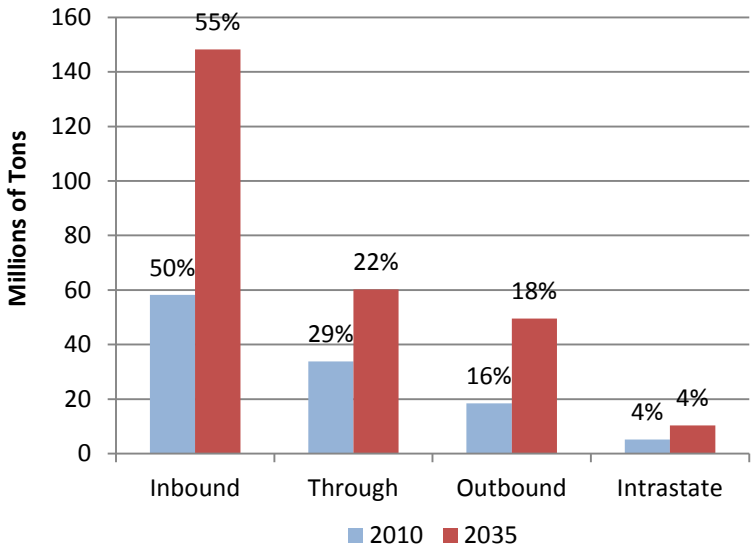
The freight handled on Washington's rail network reflects the industrial base of the state, its demographics, domestic and international trade that flows through the state, and the characteristics of rail and competing modes. Notably, Washington's economy is driven by trade with other states and countries. Freight volumes are indicative of this characteristic, for which rail plays a central role. In 2007, rail handled approximately 41 percent and 83 million tons of all interstate tonnage where Washington was either an origin or a destination. [24] Much of this traffic consists of high volume bulk goods and manufactured products in international trade, the characteristics of which are highly suitable for rail transport.

Consistent with Washington's trade-oriented economy is the nature of rail flows by direction of travel, shown in Figure 4.4, as well as the commodities handled by rail, shown in Figure 4.5. On a tonnage basis, half of all rail traffic with a Washington destination in 2010 came from out-of-state. The vast majority of this volume was associated with bulk commodities, notably various field crops and agricultural products. Most of this traffic, which arrives from the Upper Midwest in unit trains, is

[24] FHWA Freight Analysis Framework 3. On an overall basis, including intra-state traffic, rail accounted for approximately 100 million tons and 20% of total volume.

destined for export through the Central Puget Sound region[25] and Peninsula/Southwest region ports. For example, the Port of Seattle's *Century Agenda* envisions the addition of 100,000 jobs in the next 25 years by growing its annual container volume to more than 3.5 million TEUs. By 2035, inbound traffic is projected to become even more dominant, accounting for 55 percent of all rail traffic and an increase to 150 million tons.

Figure 4.4 Rail Volumes by Direction of Travel, 2010 and 2035



Source: Cambridge Systematics' 2035 Freight Rail Flows Forecasting.
Note: Direction of travel is given from the perspective of the rail system. Thus, inbound traffic includes freight that is brought into the state by rail, shifts mode to boat at a Washington port, and then exported from the state. Likewise, outbound traffic includes shipment of Washington agricultural products by rail to the eastern U.S., as well as goods brought to Washington by ship, transferred to rail at a marine port in Washington, and then transported east or south to other markets.

Outbound traffic represented 16 percent of all rail traffic and approximately one-third of inbound volume in 2010. This volume is associated with imported consumer goods in containers, assembled motor vehicles, forest products, agricultural products and various specialty cargoes. By 2035, outbound volumes, led by increased intermodal traffic, are projected to grow in relative importance, from 16 to 18 percent of all traffic.

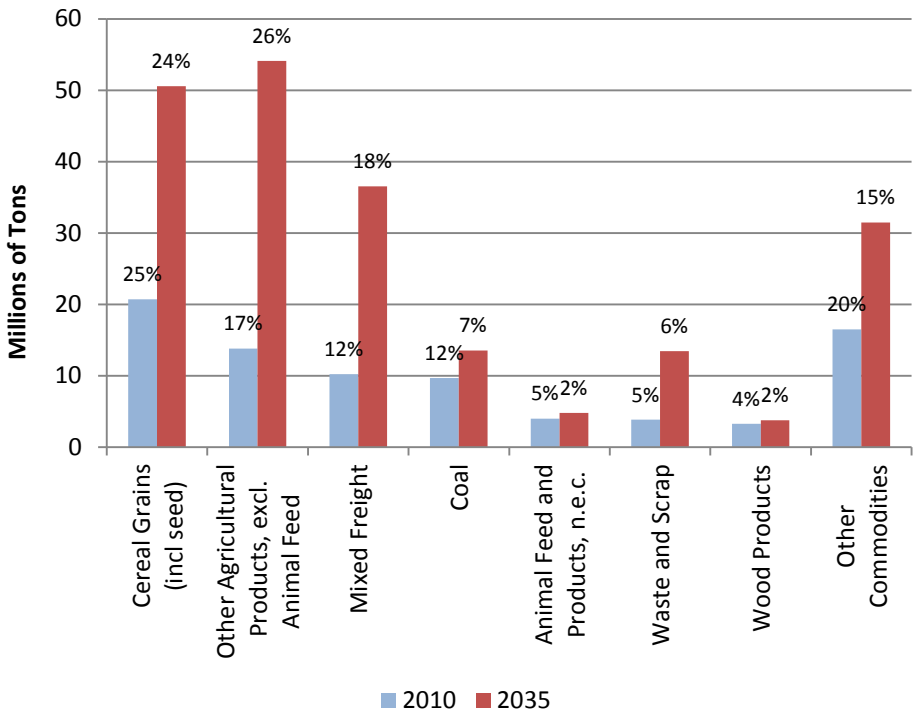
[25] Definitions of regions in Washington are located in Technical Note 3a: *Freight Rail Demand, Commodity Flows, and Volumes,* an Appendix to this document.

Representing 29 percent of the volume in 2010, the second largest category of traffic had neither an origin nor a destination in the state. This reflects the geographic location of Washington in the Pacific Northwest, and the alignment of BNSF's Northern Transcon route, which funnels all traffic associated with the Pacific Northwest through Washington.

The smallest category, intrastate, amounted to less than 4 million tons in 2010 and 4 percent of all rail traffic. This includes 1.7 million tons of waste and scrap, and 1.2 million tons of cereal grains.[26] In general, railroads favor long-haul movements with a high density of traffic, with moves of less than 500 miles tending to be less desirable operationally and financially. By 2035, volumes are projected to remain small, but nevertheless doubling to 8 million tons. Perhaps the outcomes in this category may be the most variable, given that this market is most sensitive to relative shifts in modal competitiveness, regional economic development, and state transportation policy.

New coal export terminals proposed for construction in Washington state and elsewhere in the Pacific Northwest (including British Columbia) are not specifically included in the forecast. If completed, these projects could further increase the demands placed on the state's rail system and accelerate the rate of growth so that capacity limits on the existing system will be met sooner.

Figure 4.5 Top Rail Commodities by Tonnage, 2010 and 2035
Originated and/or Terminated in Washington State



Source: Cambridge Systematics' 2035 Freight Rail Flows Forecasting.
Note: n.e.c. = not elsewhere classified. Commodity classification based on 2-Digit Standard Classification of Transported Goods (SCTG).

[26] Ibid.

Trends that May Affect Freight Rail Demand

The State Rail Plan provides a demand and capacity analysis based on industry-standard methodology using best available data. This analysis represents just one perspective on how freight rail volumes will change over time. Other freight rail forecasts project different volumes, particularly for specific commodities such as coal. If growth occurs more rapidly than forecast, then the primary change is that projected volumes would be reached sooner.

Factors that could significantly affect future rail volumes include:

- ***New bulk exports*.** The most significant near-term development facing Washington's rail system is the introduction of additional coal traffic that would be exported from the Pacific Northwest to Asia. The source of this coal would be the Powder River Basin, which now has an excess of production capacity following declines in domestic demand. Currently, several proposals are under consideration to enhance port capacity, including two potential sites in Washington: Cherry Point and Longview. The development of these terminals, or similar facilities in Oregon and British Columbia, will increase train volumes in Washington. For example, the development of a bulk export facility at Cherry Point in Whatcom County, if developed as planned, could add up to eight coal trains and one train handling other dry bulk products each day to the Seattle to Everett segment (each one arriving full and leaving empty for the return trip). More information is expected to emerge during the environmental review processes currently underway.

  Parallel to the development of new coal export capacity, discussions are underway to develop high-capacity transfer and storage facilities for crude oil. This oil would come from the Bakken formation in North Dakota and Saskatchewan, and shipped to West Coast refineries by ship from ports in the Pacific Northwest. At present, U.S. produced oil can only be refined at U.S. refineries, while the Canadian oil could be exported.

  Increased demand for other bulk exports, such as potash, ore, grain and other dry bulk cargos could also contributed to freight rail volumes that exceed current forecasts.

- ***Volatility in global sourcing*.** For many years, a consistent story has been the shift in manufacturing from western countries to Asia, China in particular. The primary basis for this trend was inexpensive labor and cheap transportation. Rapid increases in Chinese production costs, along with other factors such as growing transportation costs, are leading to more diversified sourcing

strategies. These include relocation of some manufacturing to the North American Free Trade Agreement (NAFTA) region, as well as to other regions of the world. These shifts will impact how and where goods enter the U.S., their volumes and thus the use of the transportation system.

- ***Adoption of larger container ships and expanded capacity on the Panama Canal.*** Washington's container ports compete with other Pacific Coast ports for traffic destined for inland locations, and minor changes in container vessel operating economics, port costs, and inland service offerings can shift traffic from one port to another. The relative stability of recent years in this arena may undergo a major upheaval in the coming decade as the adoption of larger container ships reduce the number of ports on-call, and the expanded canal lowers the costs for all water service to the U.S. Gulf and East Coast ports. Opinions on the impacts of these changes are mixed.

- ***Shifting modal economics between rail and truck.*** In recent years, the relative costs for trucking have risen more rapidly than rail, primarily due to increased operating costs brought about by driver qualification requirements, tightening of the Hours of Service regulations, labor shortages, increased highway congestion, as well as an increase in underlying costs, particularly for fuel. These increases have allowed the rail industry to achieve modest market share gains in certain segments, while also improving financial returns and expanded capital programs. Many industry analysts argue that these trends are likely to continue.[27] However, these potential gains could be more than offset by proposed increases in the federal truck size and weight limits, which would provide productivity gains to trucking firms that will tilt modal economics towards highway transport. Short-line railroads are likely to be affected disproportionately, given their heavy orientation towards small volume carload traffic hauling commodities that are most readily divertible to truck.

- ***Fluctuating fuel costs and potential conversion to alternative sources of energy.*** Presently, fuel comprises over 20 percent of rail operating costs, and over 40 percent of motor carrier costs, making transportation costs very sensitive to fuel prices. The advent of low cost natural gas offers a potential savings on an equivalent energy basis of as much as 70 percent. For example, rapidly falling costs of liquefied natural gas (LNG), which is now approximately one-third the cost of diesel fuel, have encouraged a new look at using

[27] www.nears.org/images/Tony%20Hatch-ABH%20Consulting.pdf.

this fuel for powering trains. In 2013 BNSF reported that it will begin testing a small number of locomotives using LNG. While the incentive to convert is strong at present, technological hurdles for both railroads and long-haul trucking are substantial.

Challenges and Other Issues for Class I Railroads

Potential Responses to Increased Demand for Rail

The future year projections of freight volumes suggest that several primary Class I rail corridors in Washington state will require capital improvements and/or operational changes to accommodate growing volumes while maintaining reliable service. Information about some of the improvements planned by the Class I railroads is provided in Technical Note 5: *Rail Investment Plan*.

Stakeholders voiced concern about how growing rail volumes will affect access to the Class I railroad system by Washington industries and passenger rail services. As common carriers,[28] the railroads move people and goods as part of their business model as well as in response to federal law. Providing capacity to serve customer demand is part of their business and is accomplished with various strategies, including capital improvements, operational changes, as well as marketing and pricing actions.

It is important to understand that rail capacity is not static. The volume of traffic that can be accommodated depends not only on infrastructure, but also on the railroad's operating strategies, traffic mix, use of technology and many other business decisions.

As an illustration, consider a congested roadway intersection. Widening the roadway to add through lanes and turn lanes is one way to address capacity, but it's not the only way. Engineers can employ turn restrictions, signal timing optimization and signal coordination to improve efficiency. Several other factors affect throughput, including the types of vehicles (passenger cars, semi-trucks) and travel speed.

Similarly, railroads typically respond to growth in freight demand with concurrent impacts on their infrastructure through a mix of operational strategies and capital improvements including:

- Operation of longer trains.

[28] Common carriers are defined as any company or person who is transporting property other than household goods for compensation within the state of Washington. www.utc.wa.gov/regulatedIndustries/transportation/commonCarriers/Pages/default.aspx.

- Schedule and train speed adjustments.
- Where multiple routes are available, segregation of traffic by direction and/or type (e.g. separate bulk from intermodal, etc.).
- Application of advanced traffic management systems that improve meet/pass planning, management of train speeds and a reduction in headways.
- Construction of additional main track, new and/or lengthened passing sidings.
- Expansion of industry, yard and terminal facilities.
- Installation of signals and/or improvements to existing signal systems, including the installation of Centralized Traffic Control (CTC).[29]

As private businesses, railroads seek a Return on Investment (ROI) on their capital investments that exceeds a threshold, which varies based on the cost and availability of capital at the time the investment is being considered. Often, the risks associated with a new investment exceed the likely benefits, and the railroads will choose to make business adjustments instead. These include selective price and service level changes, which directly impact capacity needs. Most commonly, these take the form of pricing actions, service frequency and provisioning of cars for loading, if they are supplied by the railroad. The impact of these decisions can negatively affect shippers and short-line connections by increasing their direct and indirect costs.

The state can influence potential capital investments by BNSF and UP by participating as a funding partner in capital improvement projects. A key policy question is what interest and role the state has in the rail networks in Washington. Ultimately this boils down to the analysis of potential public benefits relative to the proposed public investments and/or involvement in the Class I rail system in Washington. The State Rail Plan addresses policy relating to public private partnerships in Chapter 6.

With regard to passenger service, there are agreements in place that govern how passenger service may be affected by growing freight volumes. Service Outcome Agreements, signed by BNSF and WSDOT, guarantee 88 percent on-time performance reliability for all Amtrak Cascades scheduled passenger service for both the Seattle to Portland and

[29] CTC is a form of railway signaling that consolidates train routing decisions that were previously carried out by local operations.

Seattle to Vancouver, B.C. segments by 2017. These agreements support passenger rail system performance related to the high-speed rail projects.[30]

Other agreements held by BNSF with Amtrak and Sound Transit reserve capacity for other passenger rail service in Washington. These agreements remain in effect regardless of any new freight rail demand. Additional passenger rail service would require new negotiations with host railroads, likely resulting in requirements for additional public investment.

Corridor Partnerships as Models for Collaboration

Efforts elsewhere on the west coast to improve transportation corridors can serve as models to maintain and improve upon Washington's current successes. Maintaining and improving reliable rail service could increase the attractiveness of Washington ports for discretionary cargo, and could contribute to increased competitiveness for Washington state ports. Importers and exporters have flexibility in their choice of port, and could use the ports in Vancouver, B.C., Prince Rupert, or California to reach interior markets. In addition, the newly expanded Panama Canal,[31] once completed, could create new demand for Pacific Rim trade at ports along the U.S. Eastern Seaboard (including Miami, Savannah, Norfolk and others).

If surface transportation capacity or efficiency is harmed, Washington ports could become less attractive to ocean carriers, leading to a loss of business and export opportunities. To ensure this does not happen, bottlenecks at intermodal terminals and on the trunk network must be addressed.

East-West Capacity Constraints Will Need to be Addressed

Capacity constraints along the state's three east-west rail corridors have been a recurring issue, as they affect the competitive position of the Puget Sound ports as well as the region's freight shippers and short-lines. While the combination of diminished freight volumes and actions by BNSF to implement directional running over Stampede Pass have deferred the immediate need for more extensive action, ensuring the availability of adequate east-west capacity is vital to the future of rail service in the Puget Sound region. Previous examinations of this issue have identified a range of solutions with greatly varying costs and potential benefits. These should be revisited.

Relationships Between Communities and Class I Railroads

Anticipated increases in Class I freight rail traffic will result in increased delays at grade crossings and increasing noise through these communities.

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[30] The WSDOT-BNSF-Amtrak Service Outcome Agreement imposes requirements through 2037.

[31] www.pancanal.com/eng/expansion/.

These impacts can be addressed through a variety of potential operational measures and capital investments that could involve state participation. Further discussion and recommendations for a potential state role in addressing increased Class I freight rail traffic is provided in Chapter 5 of this plan.

4.1.b Short-line Railroads

Short-line railroads (Class III railroads have revenues of less than $34.7 million) provide a vital link to the two Class I railroads in Washington state and provide access to the national freight rail network. Switching or terminal railroads (i.e., railroads that engage primarily in switching and/or terminal services for other railroads) are also considered short-line railroads.

Seattle Workshop Feedback: Additional public private partnerships could be beneficial to Washington's rail system.

There are about 1,458 miles of short-line railroad track in Washington, about 40 percent of the total rail mileage in the state. By mileage, roughly 50 percent of the short-line railroad infrastructure in Washington state is publicly owned. In addition to state ownership of over 300 miles of track, a number of counties, cities and ports also own rail infrastructure. Some of these lines have been in public ownership for many years, while others were more recently acquired in reaction to a potential abandonment. In addition to the initial investment in the purchase, a systematic, preservation and maintenance plan by the owner is imperative to ensure long-term sustainability.

State Role and Interest – Connecting Communities to the National System

Short-line railroads provide transportation options that enable economic development opportunities not otherwise available to cities, counties and shippers of agricultural products, forest products and manufactured goods. Thus, Washington's short-line railroads are tied to the economies of the region in which they operate, including industries of great importance to the state, such as agriculture, food processing, forestry and industrial manufacturing.

Spokane Workshop Feedback: Many small businesses rely on short lines. There is a public and economic incentive to invest in them.

Washington State Law directs WSDOT to invest in the short-line rail system to address a number of transportation needs. Most important is the fact that, in the absence of short-line railroads, freight currently carried on rail would likely be diverted to more trucks using Washington's roads. This would increase wear and tear and associated roadway maintenance costs, as well as increase the safety concerns caused by potential truck/vehicle interactions. In addition, short-line rail provides cost-effective service to important industries, in particular, those in rural areas or with limited road access. Finally, in some areas, they provide a competitive service to trucking, which can improve the cost effectiveness and reliability of shipping.

Existing and Future Conditions

Strengths of Short-Line Railroads – Serving Washington

Short-line railroads are often noted for providing personalized services and being proactive at resolving service issues. Short-line railroads are

also noted for being innovative and actively involved in economic development efforts in the regions in which they operate.

Provide Transfers and First and Last Mile Connectivity

Short-line railroads often provide first and last mile connectivity,[32] not only for the national rail network, but also to multimodal connectors. According to the American Shortline and Regional Railroad Association, regional and short-line railroads originate or terminate one out of every four carloads moved by rail in the United States. Anecdotal information suggests that rail-served industrial sites are a limited and valuable resource throughout the state. In some cases, these sites have been redeveloped into retail centers or truck-oriented industrial parks, essentially eliminating the opportunity for new rail freight generating or rail freight receiving businesses moving in at a later date. Providing rail access via short-line connections or rail spurs to industrial sites can help to attract existing businesses, and therefore may be an economic and employment growth tool.

Short-line railroads increasingly connect to trucks and the Columbia/Snake River system, usually through terminals and ports that allow goods to be transferred between rail and other modes, such as container ships or trucks. These connections provide shippers with decreased costs and greater flexibility to meet customer requirements. The Washington Grain Train moves wheat from the Palouse region of Washington to a grain elevator on the Columbia River, where it then moves by barge from Wallula to one of the lower Columbia River ports for export.[33]

Class I railroads provide shippers, located on short-line railroads or within port districts, critical connectivity to the entire North American rail system as well as connectivity to other modes of transportation.

Challenges and Other Issues

Modernization and Compatibility with Class I Railroads

Class I railroads encourage efficiency and modernization by providing shippers with incentives to ship larger quantities of product. While increasing efficiency is a long-term benefit, it requires short-line railroads to make costly improvements to bridges or track in order handle the increased tonnage. This can be seen in the adoption of 286,000-pound capacity rail equipment. Only a portion of the state's short-line rail

[32] First and last mile connectivity means providing a link in the supply chain connecting shippers to point of origin and destination. Typically, short lines connect origin and destination to the Class I network.

[33] www.wsdot.wa.gov/Freight/Rail/GrainTrain.htm.

infrastructure can handle these heavier cars. It will be critical for the future success of Washington state short-line railroads to make these improvements. In addition, Class I railroads often influence the rates short-line railroads can charge to customers. Class I railroads also often supply equipment and control the condition or quantity of rail equipment available to short-line railroads. Bottlenecks can form when Class I railroads change or place limitations on the interchange or connection between the short-line railroad and the Class I. Class I railroads often require that short lines, or the shippers located on them, have an ability to originate or terminate bulk trains up to 110 railcars in length.

Challenges of Deferred Maintenance and Low Volumes

Many short-line railroads were created from lines that were determined as no longer being viable by their previous Class I owners. Some short-line railroads continue to struggle to overcome decades of deferred maintenance along their right of way. Maintenance needs often compound over time, making deferred repairs more costly than if they had been addressed in a timely manner. In addition, substandard or nonexistent maintenance programs do little to instill confidence in attracting new businesses or encouraging past shippers to return to rail transportation.

Some short-line railroads rely on public funding for all or a part of their maintenance and preservation programs. Historically these programs, including WSDOT's Freight Rail Assistance Program (FRAP) and the Freight Rail Investment Bank (FRIB), have received applications for funds that far exceeded the dollars available. A description of these programs will be discussed in Chapter 6.

The future of Washington state's short-line railroads is very much tied to the success of the state's Class I railroads and the entire national rail network. Successful short-line railroads will align with Class I railroads in implementing new technology, and increasing efficiency and streamlined marketing. This can only be achieved if short-line railroads are able to overcome the deferred maintenance of their infrastructure and succeed in profitably growing their businesses.

Abandonments Threaten Some Rail Corridors

While abandonments and rail banking[34] of surplus rail infrastructure have slowed in recent years, short-line railroads, with a history of deferred maintenance and marginal growth opportunities, remain at risk of eventual abandonment. The loss of this infrastructure would add costs to shippers and limit economic growth potential in the cities and counties along the impacted right of way.

[34] Preserving rail corridors that are not presently needed by way of a federal program. These corridors are often repurposed to other uses, such as bike trails, until needed.

Rail Abandonments

Railroad consolidations and abandonments continue to this day, in particular on short-line railroads that are unprofitable or seeing a declining number of customers. Abandonment of a rail line can mean the loss of a valuable transportation asset, and can be economically challenging to industries or cities that rely on it. A loss of rail service can also result in greater impact to local roads and state highways. Thus, there may be public benefit to preserving rail infrastructure. Washington already has two dedicated programs for investment in rail: FRIB and FRAP.

A rail line is abandoned when a rail carrier has filed for abandonment with the federal STB, and subsequently ends its obligation to operate service. In general, abandonments reached their peak in the mid-1980s, after the Staggers Rail Act deregulation, which allowed Class I railroads to dispose of underperforming lines more easily. In order to improve their financial performance, the railroads sold some of their lines, which had low traffic density. While the most marginal lines were abandoned, many were sold or leased to short-line operators. Subsequently, these operators either succeeded in improving the lines' financial performance through lower operating costs and improved service, or were eventually forced to cease operations. Thus, where abandonment applications were once primarily a Class I phenomenon, in recent years, a growing portion of line abandonments has been filed by short lines.[35]

According to the STB, most abandonment applications are filed by the rail carrier who is the owner of the track in question. The most frequent types of abandonment request the STB receives are from a railroad stating that the track has not been used for two years or more ("Notice of Exemption") or that the track has so little traffic on it that it is clear that the carrier could not be making a profit on it ("Petition for Exemption").[36]

In Washington, a total of 1,975 miles of rail lines were abandoned between 1953 to 1998. Between 1998 to 2011 a total of 74.8 miles of railroad right of way were filed for abandonment, of which 59.3 miles (79 percent) are currently rail banked.[37] Throughout this latter time period there were more filings by short lines than by the Class I railroads, with 52 miles filed by various short-line railroads and only 22.8 miles of rail right-of-way abandonments by BNSF. The Washington state abandonments and rail banked lines as of 2011 are shown in Figure 4.6.

There are two main issues of abandonments. The first is loss of transportation options to current and potential industries. The loss of a rail line (similar to the loss of any transportation resource) means less connectivity to the transportation system, which is counter to the vision of Washington's freight transportation system. The loss is not limited only to existing industries, but also potential new industries. Thus, a well-designed regional economic development strategy will often try to capture business from new industries.[38]

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35 Source: Cambridge Systematics; Reworded text from Washington State Freight Rail Plan, 2010.

36 Source: www.stb.dot.gov/stb/public/resources_abandonment.html.

37 This data source is the 2012 WSDOT Railroad GIS layer. The term "rail banking" is a method by which lines proposed for abandonment can be preserved for future rail use through interim conversion to trail use. It is discussed more in Technical Note #2: *Freight and Passenger Rail Inventory*.

38 See for example the Pennsylvania Joint Rail Authority's Study: www.sedacograil.org/Pages/Home.aspx.

The second issue is that once abandoned, a rail line is very difficult to reconstruct. For one, the line is often physically removed, meaning that it would have to be rebuilt to be used. In addition, right-of-way encroachments have often worsened to the point that rail service would be seriously impeded by the encroachments (uses such as houses or other sensitive land uses have grown closer to the rail right or way, making the conversion back to active rail service a potential source of community opposition). Finally, alternative uses such as rail-to-trail have very strong political constituencies, which can make it very difficult to convert the right of way back to active use.[39]

It is very difficult to calculate the economic impact of these abandonments. In some cases, the impacts may be small—for example, if businesses are easily able to switch to a different transportation mode. In other cases, the impacts may be severe, and result in significantly higher transportation costs and accompanying rising costs of business. Some states have conducted rail abandonment impact studies to quantify the effect of short-line rail abandonments through a benefit-cost analysis. For instance, Kansas Department of Transportation estimated that abandonment of short-line railroads in the state resulted in $58 million in road damage costs, $20 million in transportation and handling costs and $1.3 million in incremental highway safety costs. If Kansas farmers were to absorb these costs, the farm income would decline by $20.5 million. Based on such figures, different recommendations are proposed to avoid such costs and save short-line railroads in a systematic manner.[40]

CW Branch of the PCC

Washington state's 2007 purchase of the CW Branch, part of the Palouse River and Coulee City Railroad System, is an example of a short-line rail project where public benefit justified public participation. In this case, the previous owner determined that existing traffic volumes were insufficient to provide for the very large costs of deferred maintenance. The line was therefore threatened with abandonment. However, grain growers in eastern Washington appealed to the state for assistance, citing the fact that they would incur higher shipping costs by truck if the rail line were abandoned. In response, Tthe state agreed that the social cost of adding trucks to the road justified the maintenance of the CW Branch, and purchased the line in 2007. It is now operated by Eastern Washington Gateway Railroad (EWG), under a lease agreement with WSDOT. The CW Branch saw record carloads in 2011 and again in 2012 showing shippers are benefiting from the state's investment.

BNSF Railway's Eastside Rail Line

In 2003, the BNSF Railway indicated that it was considering the abandonment of service on most portions of this rail line

A regional effort by the PSRC determined that there was a public interest in preserving the BNSF Eastside corridor and that it had value for potential multiple uses, including rail and trail functions.

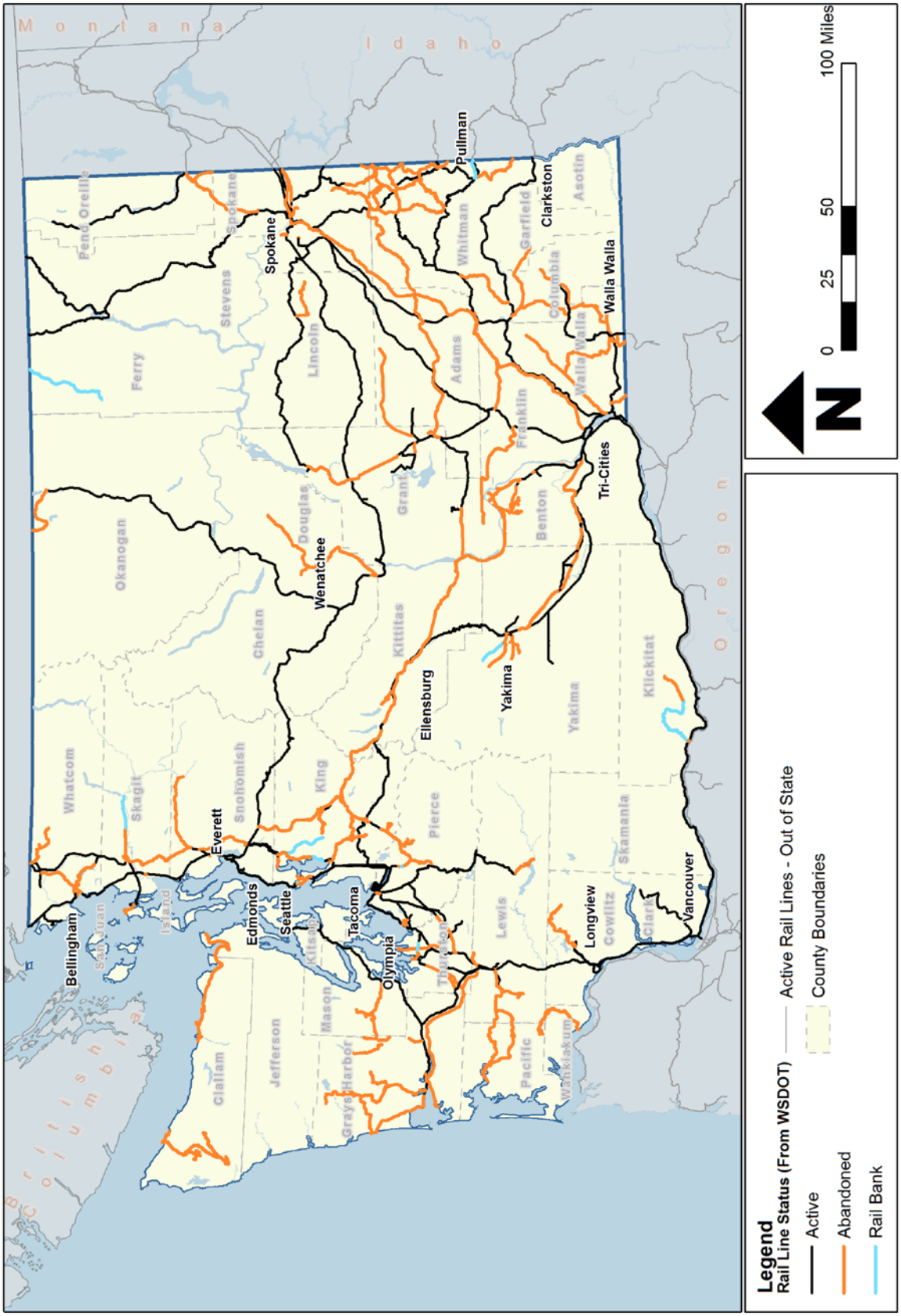
In 2009, the BNSF Railway sold the Eastside corridor to the Port Seattle. The Port of Seattle in turn negotiated a Memorandum of Understanding with Puget Sound Energy, King County, Sound Transit, the Cascade Water Alliance and cities of Kirkland and Redmond, whereby these entities would purchase portions of this corridor from the Port. As a result of the Port/local entity MOU, the Port sold an easement to King County, which has expressed interest in developing a multi-use trail along the Woodinville to Bellevue portion of the rail line. The city of Kirkland also purchased a portion of the

[39] Reworded from Washington State Freight Rail Plan, 2010.
[40] www.ksdot.org/burrail/rail/publications/Impact2003.pdf.

BNSF Rail line through its jurisdictional boundaries. The city has secured funding to remove railroad track and construct a multi-use trail that will serve the city and a newly developed Google Company office park.

There is existing freight rail service that operates on the north-end of the corridor between Woodinville and Snohomish. The Eastside Rail operates service on Woodinville-Snohomish portion of the line several times per week or as required by customer demands. There is no freight rail service south of Woodinville provided by Eastside Rail or any other operator.

Figure 4.6 Active, Abandoned and Rail Banked Infrastructure in Washington



Source: WSDOT

4.1.c Terminals and Yards

Railway terminals and yards serve different functions, including:

- Terminals provide access to the rail system, typically through a transfer between highway or water and rail. The transfer can take place in the form of shifting an intact container or truck trailer holding goods from one mode to another, or moving the contents from a truck or vessel to a railcar. Common commodities that are transferred in this manner include bulk goods (dry or liquid), such as grain, cement, vegetable oil, and pellets made of plastic; assembled motor vehicles; and project cargoes, such as electrical transformers and windmill parts. Washington produce and processed foods are often transported by rail, such as apples, wheat and frozen potatoes. Facilities where trailers and containers are transferred intact between modes are typically called intermodal terminals. The Washington State Freight Mobility Plan (scheduled for 2014) will provide more detailed information about these multimodal terminals.
- System, local and industry yards serve various functions in the handling of carload rail traffic. As a rail car travels across the rail network from origin to destination, it goes through a series of rail yards, where trains are separated into single railcars or blocks of cars and sorted by subsequent destination, which could range from a train serving nearby industry to a yard thousands of miles away.

Multimodal Example:
Port of Quincy acts as a terminal for Cold Train LLC and BNSF. Cold Train schedules trucks around Washington State to pick up perishable fruits and vegetables. These trucks arrive at Quincy and are loaded onto railcars for transportation to consumers in the Midwest and Eastern US.

State Role and Interest – Key Links in Supply Chains

Terminals and yards facilitate the movement of freight by providing essential functions in support of other carriers.

As one example, intermodal terminals are key links in supply chains that use Washington's ports. They serve as the primary means of providing access to the U.S. interior. Intermodal terminals are especially important for Washington as they support the growing intermodal container trade of the Puget Sound region, which is expected to grow at a rate of 5 percent annually from 2010 to 2035.[41]

Another example is the Railex facility in Wallula. Port of Walla Walla acts as a terminal for Railex and UP. Added in 2006, this distribution center serves as a node for truckloads of perishable fruits and vegetables to transport on the national rail network. These loads are containerized for ease of transfer.

[41] Source: Analysis of STB Waybill Data by Cambridge Systematics, included as appendices to this State Rail Plan, in particular *Technical Note 3a: Freight Rail Demand, Commodity Flows, and Volumes;* and *Technical Note 4a: Freight Forecasts and Capacity Analysis.*

Strengths of Terminals and Yards – Working Well

Analysis conducted with the State Rail Plan suggests that Washington state's rail system is managing current intermodal traffic well. The demand for intermodal rail service and its share of the total rail revenue generated has been growing over the past several decades. This trend has been driven by the continually improving competitiveness with over-the-road trucking, containerization of freight and declining direct access to the rail network for carload shipping.[42] In Washington, intermodal traffic accounts for 16.6 million tons, or 14 percent of the total commodity flows.

Challenges of Terminals and Yards – Road Impacts

Serving as a connection point for freight movement, intermodal terminals and yards attract considerable rail and truck traffic. The impact to highways and local roads surrounding intermodal terminals can be significant. In congested areas, freight trucks join many other types of traffic competing for limited capacity on the surface transportation system. Even more significantly, heavy vehicles are a major cause of pavement damage. To handle this traffic effectively, routes serving intermodal facilities must either be constructed to more robust standards or be rehabilitated more frequently than other facilities. In either case, heavy truck routes require significant additional investment.

[42] "Intermodal Trends: What Should We Expect in the International Supply-Chain System?" www.areadevelopment.com/specialPub/ldw07/ldwIntermodal.shtml.

4.2 Passenger Rail

Figure 4.7 Passenger Rail in Washington

Source: U.S. Depaterment of Transportation, Bureau of Transportation Statistics, Washington, D.C. (2010). National Transportation Atlas Database 2010.

Note: Stations are only shown for long-distance and intercity services. The more frequent stations for Sounder regional/commuter rail are, from south to north:

Passenger rail services provide high capacity transportation between locations served along their respective routes. Within the borders of Washington, these passenger services operate on tracks owned predominantly by BNSF (discussed in the previous section on freight rail). Each of the service classifications (long distance, intercity and regional/commuter) provides a unique role within the system for the respective routes.

4.2.a Long Distance – Coast Starlight and Empire Builder

Long-distance, multistate passenger rail services are provided by Amtrak's Empire Builder and Coast Starlight. These services have many things in common, and a few differences based on geography and markets served.

The trains are operated by Amtrak, using tracks owned by BNSF, UP and other railroads outside Washington and Oregon. These routes are funded by ridership revenue and federal subsidies, and are managed by Amtrak with no WSDOT involvement.

The Coast Starlight is a long-distance north-south train with one daily departure that travels 1,377 miles from Los Angeles in the south to Seattle in the north, with major stops in Oakland, Sacramento, Klamath Falls, Eugene-Springfield, Portland, Tacoma, and Seattle. The Coast Starlight serves six stations in Washington: Seattle, Tacoma, Olympia/Lacey, Centralia, Kelso/Longview, and Vancouver.

With one daily departure, the Empire Builder links Chicago with Seattle and Portland through Milwaukee, St. Paul/Minneapolis, Fargo, Havre, and Spokane. The route splits in Spokane, Washington, with the northern leg continuing west across Washington through Wenatchee and Everett to Seattle, while the southern leg heads southwest through Pasco and the Columbia River Gorge to Portland, Oregon. The Seattle to Spokane segment spans 326 miles while the Portland to Spokane segment spans 376 miles. The two trains meet in Spokane and continue 1,879 miles to Chicago. The Empire Builder calls at 11 stations in Washington, including Seattle, Edmonds, Everett, Leavenworth, Wenatchee, Ephrata, Spokane, Pasco, Wishram, Bingen-White Salmon, and Vancouver.

State Role and Interest – Connections beyond the Pacific Northwest

The National Railroad Passenger Corporation (Amtrak) is a federal corporation with direct oversight by the FRA, and has private contracts with freight rail infrastructure owners within Washington. Therefore, the state of Washington has a limited role and limited involvement with Amtrak's long-distance services.

Long-distance trains, including the Empire Builder and the Coast Starlight services, have played in important role in supporting the development of

regional intercity services. Their presence has allowed for the implementation of new intercity services, where it otherwise would be extremely difficult. The Pacific Northwest Rail Corridor (PNWRC) is one such example. Furthermore, by providing national connectivity, the long-distance trains feed traffic into the regional intercity services, and as these regional services grow, long-distance services stand to benefit, and vice versa.

One area where the state directly interacts with the long-distance trains is at train stations. Stations were once typically the responsibility of the owning railroad and perhaps Amtrak, in recent years the responsibility for stations has largely fallen on the communities. In Washington, the state has provided financial assistance for station projects served exclusively by Amtrak long-distance trains. One recent example is on the route of the Empire Builder at Leavenworth, where a new station was completed in 2009.[43]

Existing and Future Conditions

Ridership: Existing and Future

A common performance metric for passenger services is ridership. Historical and projected Empire Builder and Coast Starlight ridership is provided in Figure 4.8.

Overall volume trends have been positive since the early 2000s, and there is some evidence that growth would be higher if a static fleet had not suppressed demand. Nationally, Amtrak's intercity service also provides a mobility need, as it is the only scheduled passenger transportation option available in 51 mostly rural communities, and 174 communities that are outside the service areas of even the smallest "hub" commercial airport.

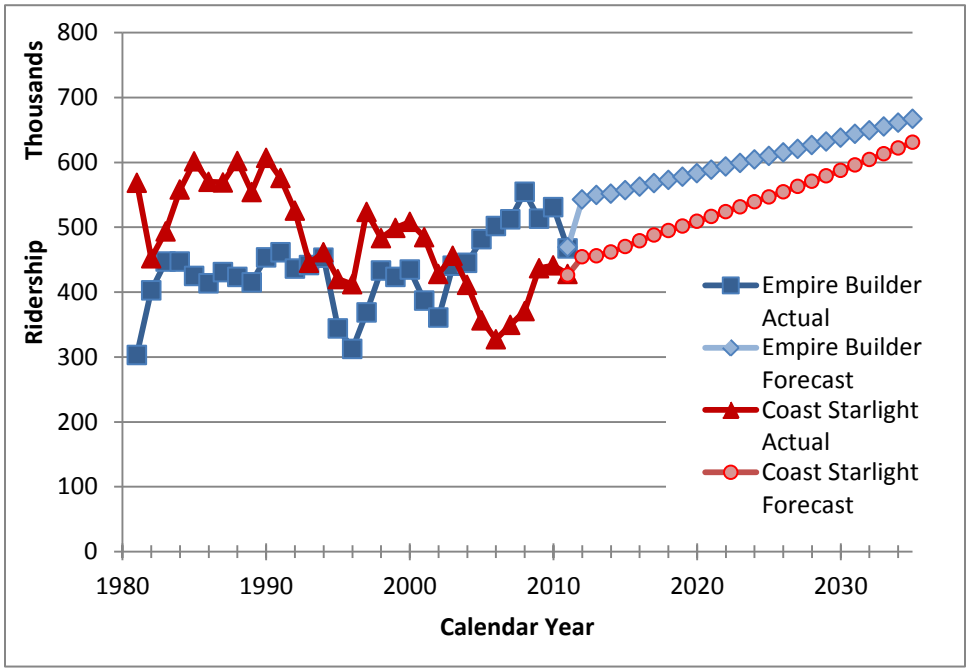
Ridership trends on Coast Starlight and Empire Builder were similar until 2004, when the Empire Builder ridership continued to increase and Coast Starlight ridership declined. The Coast Starlight's ridership peaked in the 1990s with approximately 607,000 passengers; Empire Builder's ridership peaked in 2008 with approximately 555,000 passengers. Both routes also saw a decline in ridership during the recent recession.

Despite a decline in observed ridership in 2011, overall ridership is expected to increase steadily through 2035 for both the Empire Builder and Coast Starlight (see Figure 4.8). Annually, ridership at Washington stations and the Portland, Oregon station contribute over 30 percent to route ridership on average for both routes. Ridership on the Empire Builder is projected to total 1.3 million in 2035, with 404,000 either

[43] www.greatamericanstations.com/Stations/LWA.

boarding or alighting from Washington stations and Portland. Coast Starlight ridership is estimated at 1.2 million with 395,000 from Washington stations and Portland. Each station is forecast to grow between one and two percent annually.

Figure 4.8 Empire Builder and Coast Starlight Ridership, 1981 to 2035



Source: Amtrak recorded ridership for 1981 through September 2012, Amtrak forecasts October 2012 through September 2017, and Cambridge Systematics calculations for October 2017 through 2035.

Variations in long-distance ridership have multiple causes, including general economic conditions, demographic trends, competitive options, frequency, service performance, available capacity and marketing strategy. Each of these factors has varied considerably over the years, thereby complicating efforts to draw substantive conclusions from the ridership trends.

Strengths of Long-Distance Passenger Service – Popular Services

The Empire Builder and Coast Starlight complement and enhance Washington's passenger transportation network. Amtrak reports that of the national long-distance routes, the Empire Builder and Coast Starlight have the highest ridership of the long-distance routes for the 2011 and 2012 reporting periods.

Challenges and Other Issues

Financial Challenges

Primary concerns affecting Amtrak's long-distance trains have been cost and use of the service when compared with other travel options. Frequencies on the national long-haul network are generally only daily, which limits travel options and thus the pool of potential users. Furthermore, reliability has been highly variable and speeds are modest, generally auto-competitive at best.

Cost recovery on the long-distance network has trended negatively in recent years, in part due to Amtrak rejoining the national operating rail labor agreements in 2005, limited seat capacity and an aging fleet of train cars and locomotives. A critical hurdle will arise in the next decade when the original Superliner fleet, which was built between 1978 and 1981, is due for replacement.

Unfavorable Schedules in Eastern Washington

WSDOT received feedback from stakeholders citing concerns about Empire Builder service to eastern Washington—in particular, arrival and departure times. This long-distance service is designed to serve anchor cities like Seattle, Portland and Chicago at optimal times. Arrivals and departures from other destinations are scheduled around these major markets. This results in late service to Spokane: arrivals and departures occur between midnight and 3 a.m.

More favorable arrival and departure times would boost ridership at Spokane and other locations in eastern Washington.

4.2.b Intercity Passenger Rail – Amtrak Cascades

Amtrak Cascades is a multi-frequency intercity service linking Vancouver, British Columbia (B.C.) with Eugene, Oregon (OR) via Seattle and Portland (467 miles). The route generally parallels I-5, calling at a total of 18 stations, 12 of which are in Washington. King Street Station in downtown Seattle and Portland's Union Station serve the largest number of passengers. Many stations also serve light rail, bus and pedestrian facilities, which provide multimodal connections for travelers.

State Role and Interest – State Sponsorship

As a state-sponsored asset, Amtrak Cascades is part of the state's strategy to provide a multimodal transportation system to move people and goods. Intercity passenger rail plays an especially important role in providing travel options that reduce reliance on single-occupancy vehicles along the I-5 corridor.

Existing and Future Conditions

Strengths of Amtrak Cascades – Growing Service

Annual ridership on Amtrak Cascades has grown from just over 180,000 in 1994 to more than 836,000 in 2012. Keys to success of the program include:

- Incremental approach
  - Adding service in steps to match development of the passenger rail market.
  - Project development to create eligible funding pieces.
- Collaborative planning and stakeholder engagement.
- Supportive Governor and legislative champions.
- Use all funding sources available (state and/or federal).
- Strategic rail plans.

Complex Operating Environment – Many Partners

WSDOT relies on many partnerships to deliver the service. These relationships are constantly evolving and will experience significant shifts as the states assume more responsibility for the service due to changes in federal law. WSDOT and Oregon Department of Transportation (ODOT) are beginning to manage the service as a single corridor to leverage resources and maximize benefits for the service. Washington and Oregon will pursue opportunities to strengthen British Columbia's participation through ongoing work of the Pacific Coast Collaborative and Washington-British Columbia Joint Transportation Executive Council.

To reach the vision for Amtrak Cascades, improvements will need to be made along the entire Pacific Northwest Rail Corridor, including locations in Oregon and British Columbia.

In addition to ODOT, Washington also works with public and private entities that take part in different aspects of Amtrak Cascades' operations. These partners are reimbursed by WSDOT and ODOT for their direct role in intercity service, often through agreements with Amtrak. Amtrak operates the service under agreement with WSDOT and ODOT. Talgo is responsible for equipment maintenance, also under agreement with the state agencies. The Class I railroads, BNSF and UP, own and dispatch for most of the corridor; BNSF is the primary track owner within Washington. U.S. and Canadian customs and border control agencies are responsible for maintaining and monitoring border security. WSDOT works with Sound Transit to coordinate schedules, deliver capital improvements and serve travelers with the RailPlus program. Other partners in Washington state include station owners, cities, counties, and public and private transit entities.

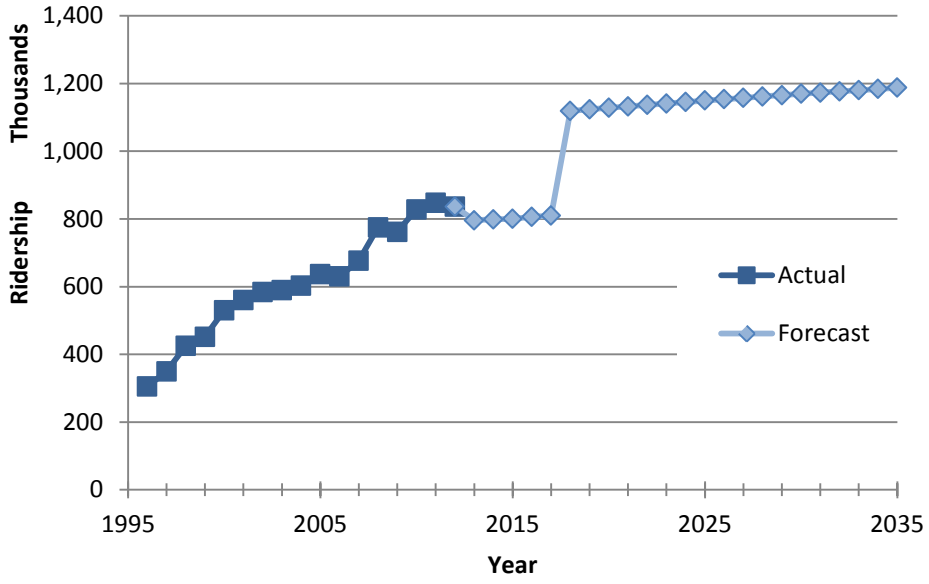
Ridership: Existing and Future

Passenger rail ridership is driven by a number of factors, including population and population density, average income, the type of rail service offered, the presence of competing transportation options (such as intercity air service, bus or highways), travel time, schedule reliability and travel costs. Figure 4.9 shows the Amtrak Cascades ridership from 1996 to 2035.

Total ridership on Amtrak Cascades has nearly tripled since 1996, with significant growth in the late 1990s as new services and equipment were added. In 2012 the most recent year for which complete data are available, total ridership was approximately 836,000.[44] Ridership is also highest during the summer tourist season in the second and third quarter of each year.

[44] This includes data for the entire Amtrak Cascades route; not just the state-supported trains.

Figure 4.9 Amtrak Cascades Ridership, 1996 to 2035



Source: WSDOT historical data and ridership model for Amtrak Cascades. Additional detail and forecast methodology found in Technical Note 4b: *Passenger Rail Ridership Forecasts*.

While underlying demographics and economics are drivers in future growth, the most significant growth for Amtrak Cascades is historically derived from service improvements. The anticipated jump in ridership from 2017-2018 (Figure 4.9) is associated with the completion of WSDOT's capital construction program in 2017. Currently rail provides only a fraction of intercity travel demand along the I-5 corridor. Therefore, the trend of large growth in ridership associated with service improvements (frequency, travel time, reliability) is expected to continue for the foreseeable future.

Finances and Farebox Recovery

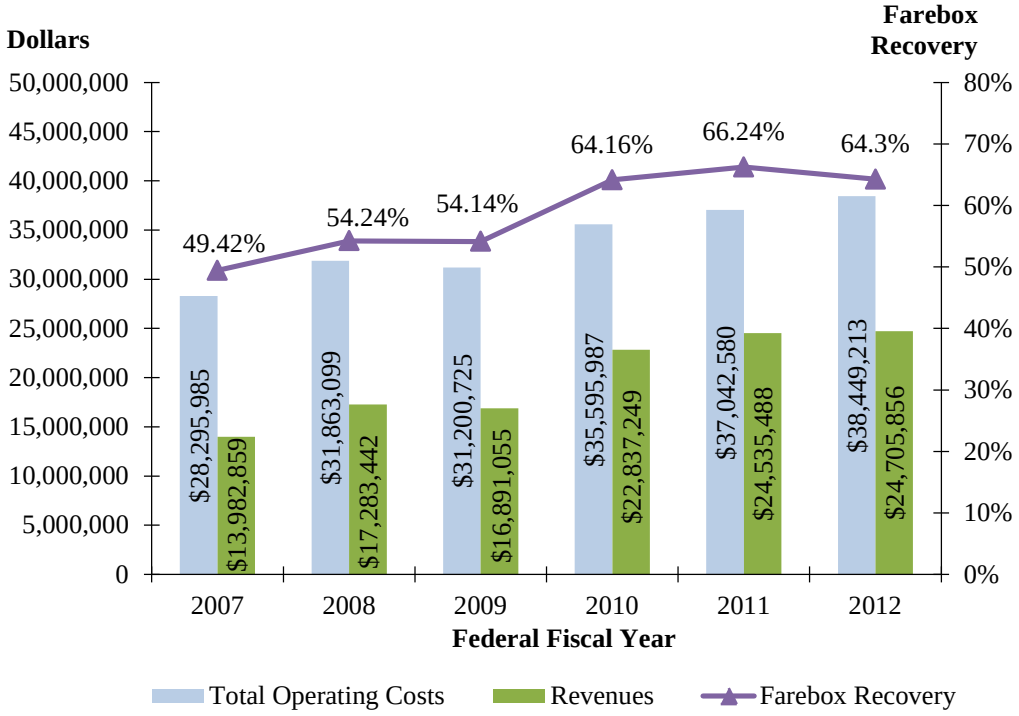
Amtrak Cascades is currently sponsored by Washington, Oregon and Amtrak. In 2012, ticket revenues supported approximately 64 percent of WSDOT's operating costs. The remaining costs are provided through public subsidy.

Congress enacted the Passenger Rail Investment and Improvement Act (PRIIA) in 2008. The law makes significant changes to intercity passenger rail service and the role of states in providing that service. As a result, states of Washington and Oregon will take on 100 percent of direct route costs for Amtrak Cascades daily routes starting in October 2013, which will increase both the revenues and operating costs for the states.

Comparing passenger rail revenues to operating costs yields a farebox recovery ratio, a relative measure of how much the state-supported

Amtrak Cascades service revenues compare to costs, as shown in Figure 4.10. The farebox recovery ratio has increased from 49 percent to 64 percent from 2007 to 2012. This measure compares favorably to California state-supported intercity passenger rail routes, which measure from 49 to 60 percent.

Figure 4.10 Washington-Sponsored Amtrak Cascades Trains Total Operating Cost, Revenue and Farebox Recovery Rate



Source: WSDOT Rail Division - Based on financial billing data from Amtrak.
Note: Amtrak Cascades farebox recovery ratio for FFY 2012 reached 64.3 percent, a drop from FFY 2011. The total revenue increased 0.7 percent while ridership dropped 1.4 percent and costs increased 3.8 percent.

Equipment Fleet: Locomotives and Trainsets

The Amtrak Cascades fleet currently consists of seven trainsets (sets of passenger train cars), which hold 270 passengers per trainset on average. Three trainsets are owned by WSDOT, two are owned by ODOT and two are owned by Amtrak.

WSDOT has received federal funds to procure new locomotives and trainsets or train cars. The FRA, in cooperation with states and other partners are developing standards for "next generation" high-speed passenger train equipment. To be eligible for federal funds, future acquisition of equipment for Amtrak Cascades must fulfill demonstrated operational needs and be consistent with federal standards.

Working Towards Faster, More Frequent Service

WSDOT is investing nearly $800 million in federal funds to deliver critical rail infrastructure improvements that will position the Amtrak Cascades for further growth and greater relevance as a mobility option. Once completed in 2017, the investment will produce the following outcomes:

- Two additional round trips between Seattle and Portland; for a total of six daily round trips (not including Amtrak's Coast Starlight).
- Improved on-time performance/schedule reliability.
- Shorter travel times between Portland and Seattle by 10 minutes.

Types of Improvements:

- Additional track capacity at multiple locations, such as the Point Defiance Bypass, which separates passenger traffic from the majority of freight traffic southeast of Tacoma.
- Upgrades to signal systems.
- Corridor reliability improvements, which include work to help stabilize slopes and reduce the frequency and extent of service interruptions caused by landslides along the Pacific Northwest's only north-south passenger rail corridor.
- Safety-related improvements.
- Station upgrades.
- Eight new locomotives, one new trainset.
- Multiple upgrades to existing track throughout the corridor.

Additional planning is needed to identify the next set of upgrades beyond those currently funded and set for completion in 2017. An initial look at ridership potential is provided in Technical Note 4b: *Passenger Rail Ridership Forecasts*, and more detailed planning will be conducted in the Service Development Plan.

WSDOT is investing nearly $800 million in federal grant funds to deliver critical rail infrastructure improvements that will position the Amtrak Cascades for further growth and greater use as a mobility option.

Challenges and Other Issues

Increase Ridership

Annual ridership on Amtrak Cascades has grown from just under 200,000 in 1994 to more than 836,000 in 2012. What factors have contributed to that success, and what will it take to increase ridership in the future? A market analysis completed by WSDOT in Spring 2013 emphasizes the importance of the basics: improve on-time performance, reduce travel time and add round trips. Improving other aspects of the customer experience can also be beneficial—for example, improving interconnectivity with

complementary transportation modes and pursuing business partnerships to improve service and attract new riders.

Long-Term Goals – High Speed Rail

Current operations are at 79 miles per hour (mph), with efforts underway to increase the maximum operating speed to 90 mph for limited portions of the route. This 11 mph increase in maximum speed can be accomplished once the current infrastructure investment program and installation of Positive Train Control (PTC) has been completed along the PNWRC.

Stakeholder feedback provided throughout the planning process revealed broad support for maintaining the long-range vision for Amtrak Cascades service to better serve customers and increase ridership:

- Thirteen round trips between Seattle and Portland (1-hour frequency during peak travel times) with a travel time of two hours and 30 minutes (2:30).
- Four round trips between Seattle and Vancouver, B.C. with a travel time of two hours and 37 minutes (2:37).

These service goals would require a maximum operating speed of up to 110 mph for most of the corridor. This long range vision would establish Amtrak Cascades as Regional High Speed Rail if fully implemented. There is support for continuing the incremental approach to improving Amtrak Cascades that has served the program well in the last two decades.

Passenger Rail Service Types

HSR[45] – Express. Frequent, express service between major population centers 200 to 600 miles apart, with few intermediate stops. Top speeds of at least 150 mph on completely grade-separated, dedicated rights of way (with the possible exception of some shared track in terminal areas). Intended to relieve air and highway capacity constraints.

HSR – Regional. Relatively frequent service between major and moderate population centers 100 to 500 miles apart, with some intermediate stops. Top speeds of 110 to 150 mph, grade-separated, with some dedicated and some shared track (using positive train control technology). Intended to relieve highway and, to some extent, air capacity constraints.

Emerging HSR. Developing corridors of 100 to 500 miles, with strong potential for future HSR Regional and/or Express service. Top speeds of up to 90 to 110 mph on primarily shared track (eventually using positive train control technology), with advanced grade crossing protection or separation. Intended to develop the passenger rail market, and provide some relief to other modes.

[45] High Speed Rail.

Conventional Rail. Traditional intercity passenger rail services of more than 100 miles with as little as one to as many as 7 to 12 daily frequencies; may or may not have strong potential for future high-speed rail service. Top speeds of up to 79 mph to as high as 90 mph generally on shared track. Intended to provide travel options and to develop the passenger rail market for further development in the future.

* Corridor lengths are approximate; slightly shorter or longer intercity services may still help meet strategic goals in a cost-effective manner.

Source: Vision for High-Speed Rail in America, www.fra.dot.gov/eLib/Details/L02833.

There are limitations and challenges associated with passenger rail and freight rail sharing the same corridor. Historically, and for the foreseeable future, Amtrak Cascades shares track with BNSF freight operations for the vast majority of the route through Washington and British Columbia. The state has pursued a strategy of incremental increases in service to achieve higher speeds, additional frequency, and implement efforts to improve reliability. BNSF and UP have indicated that there are practical limitations to maximum operating speed and the additional capacity required to accommodate passenger trains on the same route as slower freight train operations.

Landslides and Corridor Reliability

Amtrak Cascades operates more than 4,000 trains each year. The service is popular in the northern segment between Seattle and Vancouver B.C., carrying 234,000 passengers in 2012.[46] This rail corridor is also shared with Empire Builder and Sounder trains.

During long periods of heavy rain, rail line owner, BNSF, temporarily suspends passenger rail service to ensure safety when a landslide occurs or a high-level threat of landslide exists. Alternate passenger transportation is provided when rail service is suspended by landslides.

Between November 2012 and early January 2013, landslides cancelled a record number of daily trips. WSDOT is working with government and private rail partners to review recent slope studies and historical slide data, with a goal of determining all factors contributing to landslides. These partners include BNSF, Sound Transit, Amtrak, the National Oceanic Atmospheric Administration (NOAA), Snohomish County, city of Everett, city of Mukilteo, city of Shoreline, Governor's Office of Regulatory Assistance, town of Woodway, Seattle Public Utilities, Washington State Department of Ecology, Washington State Department of Natural Resources, and city of Edmonds.

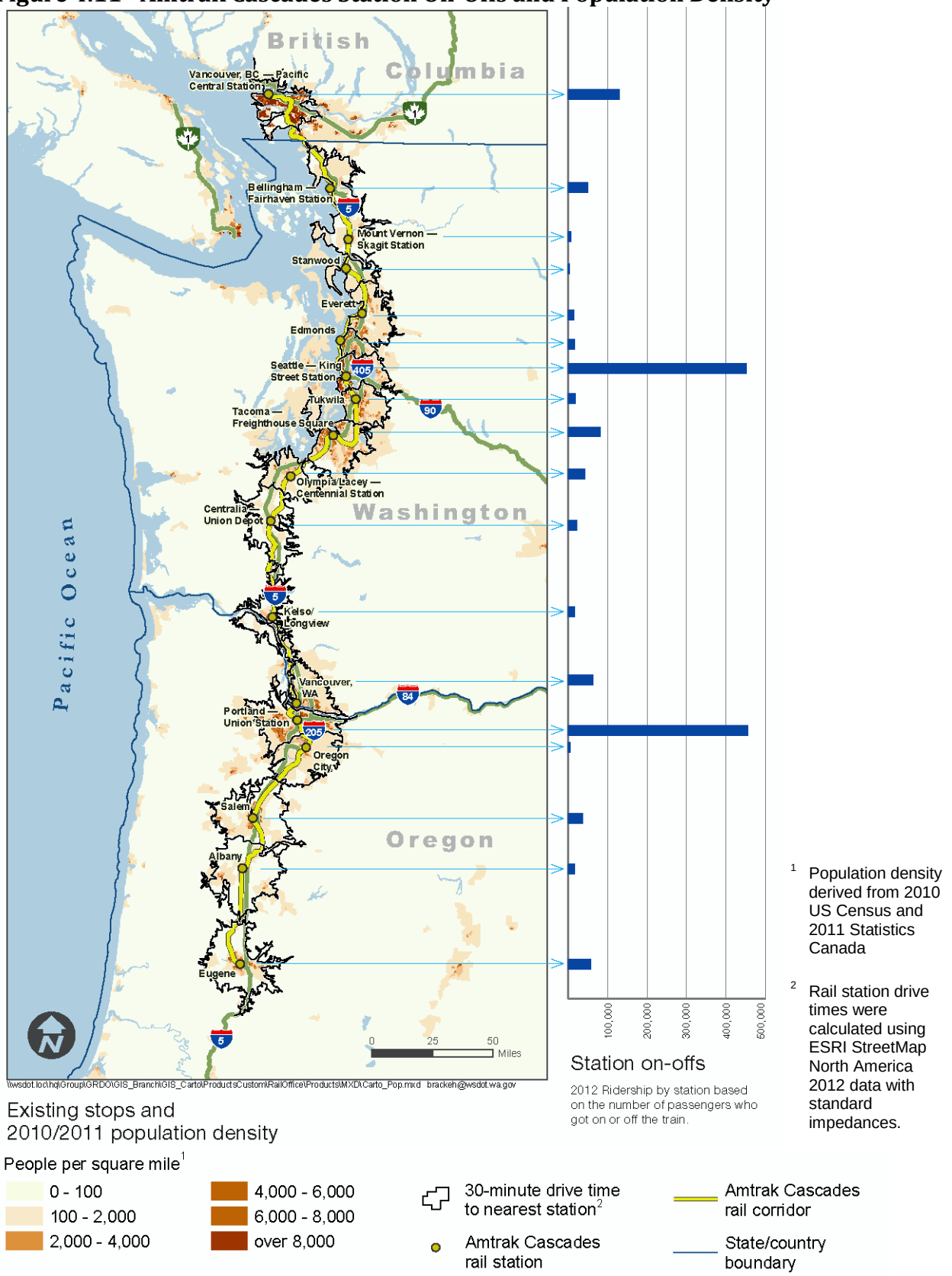
[46] www.wsdot.wa.gov/Projects/Rail/slidemanagement

Construction on a $16.1 million federally funded project began in August 2013. The project, which helps stabilize slopes above the rail line near Everett, represents the first step in an ongoing effort to address landslides and keep passenger rail service moving. Other approaches include developing educational materials for property owners and considering revisions to city and county ordinances.

Serving the Right Stations

Determining station stops involves a delicate balancing act. There is a need to provide travelers with sufficient access to the service, while at the same time maintaining a total travel time that is attractive to customers. The average stop adds approximately five minutes to the schedule. Two stations have been added in Washington since the Amtrak Cascades service began; there are now a total of 12 station stops in Washington. Other communities have expressed interest in being added. In 2012, the Washington Legislature directed WSDOT to study the potential benefits of adding a stop in Auburn. A key finding from that study indicates that potential ridership gains from adding stations can be outweighed by travel time impacts, which result in incremental losses to larger markets traveling through the station. The goals for Amtrak Cascades involve improving service, and changes consistent with those goals should be pursued. For further details, see the *New Stop Evaluation – Auburn* study for Amtrak Cascades, which is included by reference to the State Rail Plan. An interim policy is presented as recommendation A3.2 in Chapter 5.

Figure 4.11 Amtrak Cascades Station On-Offs and Population Density



[1] Population density derived from 2010 US Census and 2011 Statistics Canada

[2] Rail station drive times were calculated using ESRI StreetMap North America 2012 data with standard impedances.

4.2.c Regional/Commuter Rail – Sounder

Commuter rail systems typically offer passenger service within a single region, and occasionally between regions. In Washington, commuter service is provided by the Central Puget Sound Regional Transit Authority (Sound Transit) with its Sounder train service. Sounder operates on an 82-mile route between Everett in the north and Lakewood[47] in the south, providing morning and evening rush hour service during the week, with occasional weekend service for special events.

Sounder is divided into two routes—a North Line between Everett and Seattle and a South Line between Lakewood and Seattle. The South Line calls at nine stations: Lakewood, South Tacoma, Tacoma, Puyallup, Sumner, Auburn, Kent, Tukwila, Seattle (south to north). The North Line calls at four stations: Everett, Mukilteo, Edmonds, and Seattle (north to south).

Sound Transit is a regional transit and taxing authority established to provide transit service, and includes regional bus, light rail and commuter train. Currently, Sound Transit is funded by local taxes including a motor vehicle excise tax, a sales, use tax and a rental car tax, along with farebox revenues, grants and interest earnings. The Sound Transit taxing district generally follows the urban growth boundaries created by each of the member counties, King, Pierce and Snohomish. Voters within the district boundary vote to approve up to nine-tenths of one percent sales tax and an employer tax of $2 per employee per month.[48]

Sound Transit manages the service and owns the passenger cars and locomotives, and contracts with BNSF for operating crews and Amtrak for maintaining the equipment. Infrastructure access was gained by Sound Transit through the acquisition of operating easements between Everett and Tacoma over BNSF's track along the I-5 corridor. The line between Tacoma and Lakewood was acquired by Sound Transit from BNSF, and thus is under the full control of Sound Transit.

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[47] Service to Lakewood began in 2012.

[48] Source: Sound Transit, Long Range Plan. All taxes collected by Sound Transit are subject to a public vote. Voters within the district supported a sales tax increase to 0.9 percent in 2008. Sound Transit may also levy and employee head tax of $2 per employee per month with voter approval.

State Role and Interest – Congestion Relief in the Puget Sound

Sounder provides high-capacity public transportation that increases travel options and relieves congestion. The service helps fulfill state objectives for reducing vehicle miles traveled and greenhouse gas emissions. WSDOT coordinates train schedules with Sound Transit for mutual benefit of Amtrak Cascades and Sound Transit's commuter services in the Puget Sound Region. The state has contributed funds to Sounder projects that also provide benefits for other rail users. Sound Transit has invested in excess of $700 million in track and signal improvements between Everett and Lakewood, providing much needed capacity, safety and speed improvements to the corridor. The benefits of these improvements are shared by freight rail and intercity passenger rail including WSDOT sponsored service.

Existing and Future Conditions

Sounder is Safe and Reliable

On-time performance (OTP) through September 2012 was 95.9 percent, with 98.9 percent of scheduled trips operated. Through the third quarter of 2012, Sounder also has experienced a significant reduction in complaints per 100,000 boardings relative to last year. Furthermore, Sounder has also reported zero preventable accidents from 2010 to present day.

Sound Transit integrates its services, and works with other transit agencies to optimize connections within the Puget Sound region. Sound Transit's multimodal stations serve a park and ride function in residential areas. Sound Transit is looking at ways to improve access by all modes to stations through its station access policy and parking pilot program.

Ridership: Existing and Future

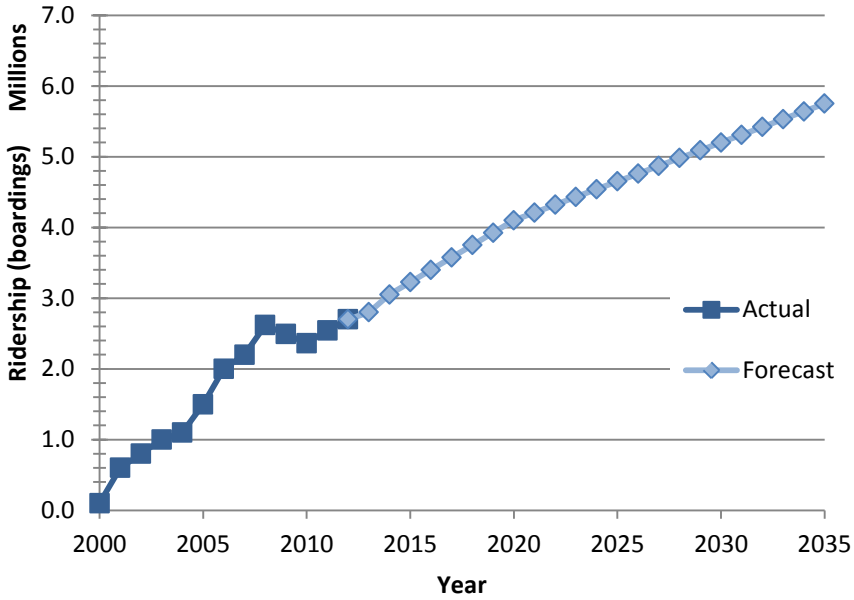
Like all passenger services, commuter rail ridership is driven by a number of factors, including demographic and economic factors, the type of rail service offered, the presence of competing transportation options (such as bus or highways), travel time and travel costs.

Ridership on Sounder (Figure 4.12) has grown steadily from about 100,000 riders per year (North and South route combined) in 2000 to just over 2.5 million riders per year (North and South route combined) in 2008. Following a decline in ridership from 2008 to 2010, Sounder ridership rebounded in 2011 and 2012, with combined North and South route ridership of approximately 2.8 million passengers for 2012. According to Sound Transit, a slowly recovering economy and higher gasoline prices appear to be the main factors contributing to an increase in ridership.[49]

[49] Sound Transit, Quarterly Performance Report, Second Quarter 2012.

By 2035, it is estimated that Sounder will serve nearly 5.8 million annual riders. The majority of these passengers are anticipated to use the South Line, accounting for approximately 5.1 million riders (about 88 percent of the total).

Figure 4.12 Sounder Ridership, 2000 to 2035



Source: Sound Transit with Cambridge Systematics projections for 2031 through 2035.
Note: Forecast values provided by Sound Transit for 2012 through 2030 are rounded to the nearest 100,000. Linear growth rate used to calculate ridership levels through 2035.

Challenges and Other Issues

Strengths of Sounder – Building on Success

Sounder has the highest reliability (on-time performance) of Washington's passenger train services. Sounder complements and enhances Washington's passenger transportation network. Sound Transit is implementing the Sound Transit 2 (ST2) ballot measure, which received voter approval in 2008. Expansions and improvements to Sounder are included in ST2.

With the strength of high reliability, cancellations due to landslides are a challenge on the northern route. Efforts to improve (reduce) the number of cancellations between Seattle and Everett are underway. Additional information on this issue can be found in Section 4.2.b Intercity Passenger Rail – Amtrak Cascades.

4.3 Integrated Rail System

As described in Chapter 2, the elements of the rail system work together. The following section addresses issues that are common to and affect the entire rail system.

4.3.a Multimodal Connectivity for Freight Rail

Connections from rail to other modes are important for freight rail. Reliable and efficient access to the rail system throughout the state increases attractiveness of Washington ports and helps make Washington goods more competitive in the global market. Given the potentially severe consequences of degraded rail service, the importance of a functioning rail system is underscored in this State Rail Plan.

State Role and Interest – Efficient Movement of Goods

In light of anticipating growth in international trade, the state's rail system must provide high-quality, efficient and reliable connectivity to the state's ports, terminals, and yards. Freight rail provides vital linkages to the economy by linking shippers to ports for export, and by allowing goods to reach consumers.

Stakeholder Feedback: Limited connections to intermodal terminals in the Puget Sound region are an essential resource.

A special kind of multimodal transportation, intermodal terminals provide key links in supply chains that use Washington's ports. They serve as the primary means of providing access to the U.S. interior, and their efficiency affects the overall competitiveness of the region's ports, for which the volume is expected to grow at a rate of five percent annually from 2010 to 2035.[50]

In addition, "last mile connectivity" means the ability to connect cargo from the national freight system (Class I rail, highway, or air cargo) to its final destination at a customer loading dock, manufacturing facility, or other industrial site. Industrial site rail access is thus another important aspect to consider when dealing with connectivity.

Many recent or planned projects address intermodal terminal access. For example, the Port of Seattle and its partners completed the East Marginal Way Grade Separation in 2012, a project that improves road and rail access to Port terminals, BNSF and UP intermodal rail yards, and regional manufacturing/distribution facilities.[51] Similarly, the SR 509/East D Street Slip Ramp project will construct a new interchange to help link the

[50] Source: Analysis of STB Waybill Data by Cambridge Systematics, included as appendices to this State Rail Plan, in particular Technical Note 3a: *Freight Rail Demand, Commodity Flows, and Volumes;* and Technical Note 4a: *Freight Forecasts and Capacity Analysis.*

[51] www.portseattle.org/Supporting-Our-Community/Regional-Transportation/Pages/East-Marginal-Way-Grade-Separation.aspx.

Tideflats area and the BNSF intermodal yard, as well as increase area safety and mobility near the Port of Tacoma.[52]

Opportunities for Multimodal Planning for Freight

Land Use Plans

Regional Transportation Plans

Corridor Plans

State Freight Mobility Plan

Highway System Plan

Washington Transportation Plan

Challenges: Preservation of Rail-Served Industrial Sites

Stakeholders report several instances of lost opportunities following the closure of a rail-served industry.

State law requires Seattle and Tacoma to include a *Container Ports Element* in their respective comprehensive plans to address transportation and land use near rail and other port infrastructure. Clark County designated *industrial railroad base zones* near some rail lines. The designation is appropriate for land uses that require and take advantage of rail access for industrial and manufacturing purposes such as manufacturing, assembly, fabrication, processing, and bulk handling and storage (warehousing).

[52] www.cityoftacoma.org/Page.aspx?nid=1103.

4.3.b Multimodal Connectivity for Passenger Rail

Connections from rail to other modes are important for passenger rail. Reliable and efficient access to the rail system throughout the state enhances the convenience and attractiveness of passenger rail services to the traveling public.

Multimodal Planning:

Land Use Planning

Regional Transportation Planning

Corridor Planning

Highway System Plan

Washington Transportation Plan

State Role and Interest – Passenger Train Stations Are Transportation Hubs

Access to passenger rail train stations by car, bike, transit or walking is called multimodal connectivity. Passenger rail becomes more attractive and easier to use as access to and from train stations becomes more multimodal, frequent and efficient. A primary component of connectivity that must be considered is "first and last mile" connectivity: the idea that a passenger is able to conveniently and efficiently access the rail station and system to begin their journey and/or conveniently and efficiently reach their final destination through transit connections, walking, biking or a personal vehicle.

Multimodal Hub Example: Everett Station

Everett Station is an example of an intermodal hub. This facility, owned and managed by city of Everett, serves as a transportation hub as well as a higher education and career development center.

Transportation services include:

- Rail: Amtrak Empire Builder, Amtrak Cascades, Sounder.
- Intercity bus: Greyhound, Northwest Trailways.
- Public transportation: Skagit Transit, Island Transit, including the "Tri-County Connector" serving Skagit, Whatcom and Island Counties; Sound Transit, Community Transit and Everett Transit.
- Bike lockers and racks, rental car telephone, parking

Everett Station also houses WorkSource and WorkForce programs, retail, community room rental and public art.

Measures used to evaluate connectivity include roadway access, ease of parking, number of parking spaces at stations, direct connection to other transit, and integrated ticketing with other transit services. Washington's rail services offer the following connections to support "last mile" connectivity":

- Amtrak Empire Builder stops at 11 stations in Washington. Nine of these have dedicated parking spaces and eight have connections to transit service. Transit connections include intercity and Greyhound bus, taxi, light rail, and Washington State Ferries.
- Amtrak Coast Starlight stops at six stations within Washington. Five of these have dedicated parking facilities and all six have connections to transit service. Transit connections include intercity and Greyhound bus, Washington State Ferries.
- Amtrak Cascades stops at 12 stations within Washington. Eleven stops have dedicated parking and all 12 have connections to transit service. Transit connections include intercity and Greyhound bus, taxi, and Washington State Ferries.
- The Sounder service stops at 12 stations in Washington. Eleven have dedicated parking facilities and all 12 have transit connections to intercity and Greyhound buses, as well as Amtrak rail service.

Because many of the rail stations serve multiple services, there are opportunities for Amtrak, WSDOT and Sound Transit to partner on elements such as co-located parking.

Challenges and Other Issues

Schedule Coordination between Services

The passenger rail services coordinate their schedules to make passenger operations as smooth as possible. This includes train schedules of long-distance routes, Amtrak Cascades and Sounder, as well as bus extensions

of train routes to improve connections outside stations. Bus routes are one way to build passenger ridership on corridors.

Shared Passes

The RailPlus program allows Sound Transit passengers to use Amtrak Cascades trains at Seattle's King Street Station, Edmonds and Everett by purchasing an Amtrak RailPlus ticket. Tickets can be purchased with an ORCA card, ORCA Passport card, or at the regular Amtrak ticket rate. This opportunity strengthens both services.

Amtrak Cascades added more bicycle racks due to their popularity.

4.3.c Safety and Security

Though rail is already considered a safe, efficient mode of transportation, continued work is needed to maintain and improve this status. Therefore, WSDOT and its partners should remain focused on providing and operating safe rail infrastructure. If and when passenger rail ridership increases, there may be increased strain on existing safety features of the systems. As planning and development of facilities is undertaken, detailed attention should be given to maintaining and enhancing rail safety.

State Role and Interest – Safety is for Everyone

Given the potentially severe outcomes of rail incidents when they do occur, rail safety is a serious consideration for state and federal agencies. Rail safety and security is regulated through several different federal and state agencies, including the FRA, the Washington Utilities and Transportation Commission (UTC), and the Department of Homeland Security (DHS). WSDOT serves primarily as a public educator as well as point of contact in the event of an incident, complaint or other safety concern.

Table 4.1 provides a summary of 2011 and 2012 rail incidents/accidents in Washington as compared to national information for the same period. As shown, the total incident frequency in Washington comprises 2 percent of the total number of incidents nationally

Table 4.1 Washington Rail Incidents/Accidents Compared to U.S. Totals, 2011 and 2012

Accident / Incident Type[a]	2011		2012		Washington as % of U.S. Totals	
	WA	U.S.	WA	U.S.	2011	2012
Train accidents (Excluding highway-rail incidents)	40	2,020	32	1,734	2%	2%
Highway-rail[b]						
Incidents	32	2,060	31	1,967	2%	2%
Fatalities	8	251	2	233	3%	1%
Injuries	10	1,038	18	936	1%	2%
Other incidents[c]	138	7,372	133	7,179	2%	2%
Total accidents/incidents	210	11,452	196	10,880	2%	2%

Source: FRA Office of Safety Analysis, retrieved from website on September 23, 2013.
[a] Excludes trespassing incidents.
[b] Incidents, Fatalities, Injuries listed below are highway-rail incidents only.

[c] Other incidents include events, other than train accidents or crossing incidents, that caused a death or nonfatal condition to any person. This can include stumbling, tripping, or getting on and off equipment.

Table 4.2 Federal and State Agencies Involved in Regulating Freight and Passenger Rail Safety and Security

Agency	Scope of Activity	Authorities/Responsibilities
Federal Railroad Administration (FRA)	Train/Track Safety	• Develops and enforces basic operating rules for train safety, tank car safety, railroad industrial hygiene, rail equipment safety, and grade crossing safety and trespass prevention. • Oversees employee hours of service regulations and signal and train control regulations. • Inspects and audits track. • Tracks rail movement of spent nuclear fuel and radioactive waste. • Manages the Rail Safety Improvement Act of 2008 (RSIA).
Department of Homeland Security (DHS)	Rail Security	• Establishes requirements for national rail security strategy and risk assessment. • Tracks hazardous materials (hazmat) shipments. • Creates railroad requirements for developing institutional risk assessments. • Conducts programs for rail security training. • Conducts rail security research and development (R&D).
Utilities and Transportation Commission (UTC)	Rail Safety	• Oversees rail operations and conducts physical inspections in coordination with FRA. • Inspects railroad crossings and investigate complaints or accidents. • Resolves complaints (Quiet Zones and trespassing complaints, for example). • Ensures employee safety through employee regulations. • Funds rail safety projects through the Grade Crossing Protective Fund. • Promotes public awareness as a partner in the Operation Lifesaver Program.
Washington State Department of Transportation (WSDOT)	Rail Safety	• Publishes general rail safety principles and "rules to remember." • Funds grade crossing protection improvements from federal highway dedication (Section 130). • Distributes information online for public education, including the contact information for the Washington UTC, the BNSF and UP railroads, and the Surface Transportation Board. • Promotes public awareness through participation in the Operation Lifesaver Program

Source: Cambridge Systematics, 2013.

Trespassing is a Growing Concern Nationwide

Accidental or purposeful trespassing occurs regularly on active rail lines. The UTC publishes rail trespass fatalities in Washington state each year. Ten fatalities occurred in 2012, 22 fatalities occurred in 2011, 15 in 2010, and 12 fatalities in 2009.[53] Though not all of these incidents occurred near passenger rail stations, they did occur in places where pedestrians were easily able to walk on or near rail infrastructure. According to 2012 national trespassing statistics, there were 11 trespassing fatalities in Washington compared to 434 national trespassing fatalities (2.5 percent).[54] While this is a relatively low percentage, there remains opportunity to improve conditions. Trespassing can be reduced through adopting prevention strategies, such as enhancing existing barriers or building new physical barriers, and better indication of escape routes. WSDOT publishes some "Rules to Remember,"[55] targeted at reducing the incidence of trespassing, and reminding the public that trespassing is a dangerous, illegal activity.

At-Grade Rail Crossing Safety Concerns

At-grade rail crossing concerns tend to focus on the potential for train/roadway vehicle conflicts, the potential for disrupted emergency vehicle response time, congestion caused during "gate down time," and air quality concerns from vehicles idling at grade crossings. For these reasons, at-grade crossing safety is a priority concern for the community, UTC, FRA, WSDOT and to the railroads themselves. The dual pressures of growing populations (and thus growing requirements for land), coupled with increasing rail traffic, are bringing at-grade crossing concerns to the forefront of the statewide rail planning process in many states.

Like many aspects of rail security and safety, WSDOT's role in providing rail at-grade crossing safety is fairly limited on the rail side. Safety at state-owned at-grade crossings are prioritized with other intersection safety projects. WSDOT focuses its efforts on public education, through the Operation Lifesaver program, public service announcements and web-based information related to rail safety principles and "rules to remember." WSDOT also funds a limited number of grade crossing protection improvements through the Federal Highway Administration's (FHWA) Section 130 program. Actual tracking of rail at-grade crossing accident data, and linking improvements to data, is the responsibility of the UTC and FRA.

The UTC and FRA track aggregate incident/accident data across the nation. There were 1,967 highway-rail incidents nationally in 2012, of

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53 www.utc.wa.gov/publicSafety.
54 http://safetydata.fra.dot.gov/officeofsafety/default.aspx.
55 www.wsdot.wa.gov/Rail/TrainSafety

which 31 (2 percent) were in Washington. The UTC tracks these accidents, and also keeps a rail grade crossing database comprised of all the rail grade crossings in the state. Additionally, the UTC offers Grade Crossing Protective Fund Grants, a competitive process where railroads, local governments, and other agencies can apply for assistance to make safety improvements at a railroad crossing or along a railroad right of way. The selection process includes the severity of the hazard, the safety benefits resulting from the project, the total costs to implement a project, geographic diversity, and funds available for the program.[56]

[56] www.utc.wa.gov/publicSafety/railSafety/Pages/gradeCrossingProtectionFundGrants.aspx

Chapter 5. Rail System Needs and Recommendations

Overall, Washington's rail system provides a safe and efficient transportation option to support the movement of people and goods throughout the state. However, there are challenges that must be addressed for the system to continue to function well as demand for rail transportation grows in the future. Though many of those challenges will be the responsibility of the private-sector rail stakeholders who own or operate over rail infrastructure, the state also has an interest in ensuring that there is a viable system to support movement of people and goods.

The following pages articulate some of the high-priority needs facing today's rail system, as well as recommended actions for the state to take. These needs and recommendations draw from the analysis of rail system strengths and challenges completed during this State Rail Plan process, as well as extensive public input solicited throughout the effort. The approach to developing can be found in Section 1.4 Approach.

Needs and recommendations of the State Rail Plan are organized into three categories:

A. *Rail Infrastructure and Service:* includes needs relating to the main goals of the state's passenger and freight rail system, including the approach to maintaining its capacity and efficiency. These needs and recommendations address ***what*** the high-priority elements of the system include.

B. *Rail's Role in Economic Development:* includes needs and opportunities relating to rail's role in providing mobility and economic development to Washington's industries and citizens. These needs and recommendations address ***why*** the state has an interest in the rail system.

C. *Rail System Priorities and Goals:* includes the fiscal, environmental and safety performance goals of the state's rail system as outlined in the vision statement. These needs and recommendations address ***how*** the system should function.

A reference list is provided in Table 5.1.

Table 5.1 Needs and Recommendations Summary Table

Group	Needs	Recommendations
Rail Infrastructure and Service (Group A)	Address capacity constraints in order to meet future passenger and freight rail demands	The state's involvement in the rail system should be focused on actions that improve the state's interests, including a thriving and diverse economy, environmental efficiency, resiliency and safety.
		The state should take an active leadership role to build on existing multistate coalitions to address rail system and corridor needs across the Pacific Northwest.
		WSDOT should continue to pursue the incremental implementation of passenger rail service.
		Statewide rail stakeholders should work through regional and state transportation planning on a regular basis to ensure that their needs and opportunities are understood, and are used to inform any state rail investments or planning efforts.
		WSDOT should improve recognition of rail-related needs in its highway engineering activities.
	Preserve existing rail capacity and infrastructure.	Work with short line railroads and short line rail stakeholders to assess short-line rail needs, and create a statewide short-line rail needs inventory.
		WSDOT should consider the stewardship and upkeep history of any potential rail improvement project.
		WSDOT should seek to address rail needs in the most cost-effective manner possible.
		WSDOT should consider strategic state interest when examining the impacts of the loss of rail infrastructure.
	Enhance the efficiency and reliability of existing rail services.	WSDOT should periodically re-evaluate its passenger system plans and adjust them as necessary to achieve operational improvements in pursuit of transportation system goals.
		WSDOT should adopt a formal policy on adding or consolidating stops on Amtrak Cascades.
		The state should ensure that passenger and freight rail metrics are in place that can appropriately evaluate the performance of mobility, efficiency, safety, reliability and environmental compatibility of proposed new projects.
Rail's Role in Economic Development (Group B)	Support economic development by providing access to people and industry.	The state should support efforts to identify those intermodal and multimodal connectors that provide "first and last mile" connectivity to businesses and locations that generate freight and passenger demand. This designation should be included in the project prioritization process.
	Preserve access to global markets by ensuring access to Washington's ports.	The Washington State Freight Mobility Plan should include projects that enhance or support connectivity to Washington's deep water, river and inland ports.

Group	Needs	Recommendations
Rail System Priorities and Goals (Group C)	Employ cost-effective strategies when investing public funds in the state's rail system.	WSDOT should use performance metrics to evaluate its passenger and freight rail programs, and ensure that the program funding is aligned with demonstrated need.
		The state should seek innovative funding and financing sources to leverage public funds and provide more value with limited resources.
		WSDOT will focus on the specific requirements of Amtrak Cascades service to minimize public costs and operate the system in the most efficient manner possible.
	Strengthen rail to maximize the positive benefits, while minimizing the potential negative impacts to communities and the environment.	The state should facilitate discussions about community concerns or questions about rail benefits and impacts, and help coordinate with communities, the railroads and other rail stakeholders.
		Railroads and public agencies should continue to use WSDOT reports, studies and other materials to clearly communicate the benefits of the rail system to Washington residents.
	Continue to support passenger and freight rail safety and security.	The state should continue to support rail safety and security.
		WSDOT should continue to coordinate pedestrian access in and around Amtrak Cascades stations in order to meet safety performance goals.

5.1 Rail Infrastructure and Service (Group A)

Need A1: Address capacity constraints in order to meet future passenger and freight rail demands.

Future year passenger ridership and freight volumes will be dictated by a variety of demand drivers including population and industry growth, increasing per capita income and growing international and domestic trade activity. With many of these drivers anticipated to grow rapidly by 2035, increased demand for freight and passenger rail is expected.

A capacity assessment performed for this State Rail Plan suggests that, unless rail system infrastructure is enhanced, this future growth could overwhelm rail system capacity, due to shortcomings such as passenger/freight conflicts, height limitations on rail tunnels and bridges, inadequate siding lengths or bridge capacity. (Please see Figure 4.3 on page 38, which provides a graphical snapshot of 2035 rail system capacity.) Publicly-sponsored passenger rail faces additional capacity challenges in operations, including inadequate number and frequency of trips and the limitations of fleet equipment.

In order to stay nationally and internationally competitive, Washington state (WA) must ensure, along with its freight and rail stakeholders, that rail service is comparable or better than its rivals. Since people have other options for personal travel for shipping goods, a well-functioning rail system will protect and grow the use of rail compared to other travel modes. For example, maintaining and improving our reliable rail service could increase the attractiveness of Washington ports for discretionary cargo, and could contribute to increased competitiveness for Washington state ports. Additionally, the increased movement of manufactured and retail products by rail helps to minimize congestion on the state's highways, providing additional positive benefits to the state's economy. Taxpayers could benefit from the decreased wear and tear on Washington's roadways and efficiencies in rail service could lead to lower prices and increased industrial business opportunities.

Recommendation #A1.1: The state's involvement in the rail system should be focused on actions that improve the state's interests, including a thriving and diverse economy, environmental efficiency, resiliency and safety.

The state's approach to the rail system should be guided by the state's interests and roles, as embodied in documents such as the state Transportation System Policy Goals (RCW 47.04.280). When investments or planning activities are considered, they should be evaluated against their impact on the state's interests, using clearly defined performance metrics. (Please see Recommendation A3.3.) The state should seek to create and update a list of priority projects and needs based on these performance metrics. State entities, including the Washington State

Approaches to Capacity Needs – Examples:

Capital Projects: Add and lengthen sidings, such as the underway Kelso Martin's Bluff – New Siding project.

Capital Projects: Improve track segments to allow for more efficient movement of trains, such as the underway King Street Station Track Improvements project.

Operational Strategies: Implement one-way routing to optimize throughput – such as the directional running over Stampede Pass implemented in 2012.

Policy/Program Changes: Develop strategic plans to identify capital improvement needs and support grant applications. The *Washington State Amtrak Cascades Mid-Range Plan* is an example of a plan that identified necessary infrastructure and project needs.

Department of Transportation (WSDOT), the Freight Mobility Strategic Investment Board (FMSIB), Department of Commerce and the Washington Utilities and Transportation Commission (UTC), should coordinate to ensure that the project list reflects high-priority rail system needs.

Recommendation #A1.2: The state should take an active leadership role to build on existing multistate coalitions to address rail system and corridor needs across the Pacific Northwest.
Washington should continue to develop strong ties to Oregon (OR), British Columbia (B.C.), Idaho and California, through existing agreements and new planning initiatives. Key issues motivating these ties include cross border rail crossings and corridor-level improvement opportunities. This includes strengthening WSDOT's involvement in existing agreements with Oregon Department of Transportation (ODOT) to manage Amtrak Cascades service, as well as strengthening ties to planning initiatives with the B.C./WA Joint Transportation Executive Council and Working Group. Other examples include corridor planning groups such as the Great Northern Corridor Coalition, the Inland Pacific Hub project, Pacific Northwest Gateway Coalition and International Mobility and Trade Corridor project (IMTC). Also included is the need for Washington, Oregon and British Columbia to work collaboratively on cross-jurisdictional planning efforts such as corridor improvement and capital project funding, consistent with direction from the Pacific Coast Collaborative.

Recommendation #A1.3: WSDOT should continue to pursue the incremental implementation of passenger rail service.
The 2030 Washington Transportation Plan sets a goal for rail service, "Connect regional economies by improving north-south and east-west round trip passenger train service between major metropolitan areas." This rail plan confirms the long-term vision for intercity passenger rail based on strategic planning and set in earlier plans (*Long-Range Plan for Amtrak Cascades*, 2006; and *Amtrak Cascades Mid-Range Plan*, 2008):

- Portland, OR to Seattle, WA: 13 daily round-trip trains; 2 hours, 30 minutes total travel time.
- Seattle, WA to Vancouver, B.C.: four daily round-trip trains; 2 hours, 37 minutes total travel time.
- Vancouver, B.C. to Portland, OR: 5 hours, 22 minutes total travel time.

The planning horizon for the Amtrak Cascades vision identified in the long-range plan is extended to 2035. A more detailed implementation strategy, including identification of specific infrastructure needs attached

to the next package of service improvements, will be determined in the state's Service Development Plan.

The state has and will continue to use an incremental approach to achieving this long-term vision for Amtrak Cascades, focusing on enhancements and expansion efforts that provide immediate benefits for the public.

Major capacity enhancements (such as consideration of dedicated track for passenger rail, or an Amtrak Cascades-style east-west passenger rail service) could be advanced gradually and as dictated by need. WSDOT should continue to develop intercity passenger rail forecasting tools to predict passenger rail demand based on demographic, economic and social factors.

Recommendation #A1.4: Statewide rail stakeholders should work through regional and state transportation planning on a regular basis to ensure that their needs and opportunities are understood, and are used to inform any state rail investments or planning efforts.

Already, there are many opportunities for rail stakeholders to actively participate in rail planning activities, especially through the metropolitan and regional transportation planning processes. Ongoing rail stakeholder participation in these programs is essential to ensure that rail is an integrated part of multimodal transportation planning. In addition, these forums allow stakeholders to highlight rail capacity needs, help clarify the benefits of rail improvements for the multimodal transportation system, serve as mechanisms to identify projects for potential public funding, and serve to further an integrated and holistic approach to public investment. WSDOT should support rail stakeholders and metropolitan and regional transportation planning organizations to facilitate discussion and enhance communication.

Recommendation #A1.5: WSDOT should improve recognition of rail-related needs in its highway engineering activities.

As part of its multimodal planning and context sensitive design approach, WSDOT should take into consideration existing and future rail system needs when highway projects are being designed. Examples include providing adequate overpass clearances and considering the potential need for a second track along a line that is currently single track. Railroads, rail operators and other stakeholders should support these efforts by providing information for and participating in corridor planning and project scoping.

Need A2: Preserve existing rail capacity and infrastructure.

Procuring new rail right of way and building new rail infrastructure is expensive, time consuming, and may involve complicated land use or political decisions. Therefore, emphasis should be placed on preservation,

Approaches to Preservation Needs – Examples:

Capital Projects: King Street Station seismic retrofit and renovation.

Capital Projects: Renovation of trainsets to ensure ongoing safety / operations.

Capital Projects: Replace worn rail/ties based on regular schedule.

Operational Strategies: Perform regular maintenance to support the longevity and reliability of infrastructure and equipment.

maintenance and optimization of existing rail system infrastructure as well as preservation of critical industrial lands served by rail. Examples, which highlight the need to preserve rail infrastructure, include:

- Deferral of even modest maintenance spending can lead to equipment and track deterioration that requires substantial investment to repair. Short-line operators named bridge repairs as one of their highest priorities.
- Failure to update track to handle modern rolling stock hurts connectivity by limiting the ability of customers to access newer, heavier cars (more efficient and cost effective cars), which have become an industry standard.
- The 2008 *Container Ports Initiative* declares key freight transportation corridors that serve qualifying marine port facilities to be "transportation facilities and services of statewide significance." Urban development near rail facilities limits the ability to purchase new right of way and modify operations to accommodate increasing volumes.
- Abandonment of a rail line can mean the permanent loss of a valuable transportation asset resulting in economic losses to industries or cities that rely on it and precluding any future rail service.

Recommendation #A2.1: Work with short-line railroads and short-line rail stakeholders to assess short-line rail needs, and create a statewide short-line rail needs inventory.

Benton-Franklin Council of Governments Workshop Feedback:
It is cheaper to maintain rail infrastructure now, so don't wait until later.

Assessments about short-line railroad conditions in this plan are mostly based on anecdotal information. Complete, consistent data are needed to provide a quantitative assessment of needs that could be used to justify future requests for additional funding. WSDOT should work with the short-line rail owners and operators to establish a system inventory. As an example, WSDOT should request bridge management plans from short-line railroads**.** Under the Rail Safety Improvement Act of 2008, short-line railroads are now required to provide bridge management plans to the Federal Railroad Administration (FRA). The inventory should use established, consistent performance metrics (please see recommendation A3.2) to evaluate the fitness, safety and efficiency of each short-line system. The focus should be on metrics that are transparent, quantifiable and where data sources are readily available to WSDOT and the short-line railroads. As an example, for its own short-line rail system, WSDOT currently measures the percentage of the system that meets FRA Class 2 track standards, which enables 25 mph operations. WSDOT also measures the percentage of the system approved to handle rail equipment weighing 286,000 pounds gross weight.

Recommendation #A2.2: WSDOT should consider the stewardship and upkeep history of any potential rail improvement project.
WSDOT should consider status of repair before granting funds for rail improvements. The state should only consider becoming involved in rail system improvement or upkeep in limited conditions, where the owner of the system has demonstrated good stewardship of the infrastructure, and there is a demonstrated public benefit. When seeking state funds, railroads should demonstrate their commitment to a strategic maintenance and preservation program. In these situations, the state should seek the most cost-effective approach. In some situations, upkeep and maintenance may be sufficient to improve the safety or efficiency of the rail infrastructure, and can reduce or remove the necessity of capital improvements. WSDOT's project selection criteria should recognize the potential of operations and maintenance projects to alleviate issues, as well as the owner's history of upkeep and stewardship. WSDOT should rely on the needs inventory established in Recommendation A2.1 to determine if a history of stewardship has been demonstrated.

Recommendation #A2.3: WSDOT should seek to address rail needs in the most cost-effective manner possible.
The state should seek the most cost-effective approach when investing funds in rail system improvements. In some situations, operational changes may be sufficient to improve the safety or efficiency of rail infrastructure, and can reduce or remove the necessity of capital improvements. WSDOT's project selection criteria should recognize the potential of operations projects to alleviate problems and improve performance.

Recommendation #A2.4: WSDOT should consider strategic state interest when examining the impacts of the loss of rail infrastructure.
The state plays a role in preserving essential rail service by providing short-line railroads with financial assistance for maintenance, upkeep and improvement of existing infrastructure. Grants and loans are awarded based on public benefits and contributions to economic development. This is a proactive approach to preventing the loss of rail service where there is a state interest. Rail abandonment and rail banking are federal processes designed to address situations where the owner of the track is no longer able or willing to provide service. Rail banking preserves rail right of way for future use, while rail abandonment results in a permanent loss of rail service. If a rail line becomes susceptible to abandonment, the state should consider whether there is a strategic state interest and determine if public benefits or disadvantages warrant the creation of a more formal state policy.

Approaches to Efficiency and Reliability Needs – Examples:

Policy/Program: Enter service outcome agreement with host railroad including payment for specific outcomes, such as improved reliability.

Capital Projects: Upgrade signal systems to allow more efficient operations.

Need A3: Enhance the efficiency and reliability of existing rail services.

Passenger and freight rail transportation should be a viable transportation option that contributes to overall statewide mobility goals, helps to alleviate congestion and roadway wear and tear, and offers cost-effective service to Washington's shippers and industries.[57] In order to do so, it must be a reliable and efficient transportation option. Rail use, in many cases, is discretionary. Passengers who choose rail often have other options, including car, bus, airplane or even not taking the trip. Freight shippers can, in some cases, shift to truck or barge. Predictable performance and reliability is needed to ensure that rail remains a viable part of Washington's balanced multimodal transportation system.

Recommendation #A3.1: WSDOT should periodically re-evaluate its passenger system plans and adjust them as necessary to achieve operational improvements in pursuit of transportation system goals.

The state's intercity passenger rail service is intended to support transportation system performance goals such as: reducing roadway vehicle miles traveled (VMT), providing mobility to the public, pursuing environmentally and sustainable transportation options, and maximizing public benefits from investment of public funds. Over time, changes in operational strategies may be needed to achieve these goals. For example:

- WSDOT should continue to work with British Columbia Ministry of Transportation to urge the U.S. and Canada to implement preclearance, which would allow U.S. Customs and Border Protection to conduct all immigration and custom inspection activities at Pacific Central Station in Vancouver, B.C. eliminating the southbound stop at the border. This change would reduce scheduled travel time by 10 minutes and eliminate additional delay risks associated with the additional stop.

- WSDOT should periodically re-examine arrival and departure times, the frequency of rail service to each station and other operational characteristics as needed to optimize the service. The state should work with service partners, stakeholders and communities to consider "express" or "limited" service models and formalize policies based on: *New Stop Evaluation – Auburn* study; and the *2012 Cascades Rail Corridor Management Workplan.*

[57] NCHRP Report 586: *Rail Freight Solutions to Roadway Congestion – Final Report and Guidebook.* Final Report and Guidebook. 2007: www.nap.edu/catalog.php?record_id=14098.

Recommendation #A3.2: WSDOT should adopt a formal policy on adding or consolidating stops on Amtrak Cascades.

WSDOT is pursuing numerous strategies to manage costs and increase ridership in order to maintain service levels without additional taxpayer subsidy. These efforts are consistent with state policy that directs WSDOT and other state agencies to implement Lean Management methods and tools to create more value for customers with fewer resources. This guidance points to the need for WSDOT to focus on the specific requirements of Amtrak Cascades customers and service, and to achieve the goal of faster, more frequent service with schedule reliability. Establishing a transparent, fair process for evaluating new stop proposals is an important part of implementing that guidance for the benefit of the Amtrak Cascades service, interested communities and Washington taxpayers.

Interim Policy:

- Washington and Oregon are working to manage their respective services together as a unified corridor. WSDOT and ODOT's operating budgets are both very constrained: the WSDOT operating budget for Amtrak Cascades was cut by $1 million in 2013-2015. The agencies will work together to reduce station costs and implement other cost saving alternatives.
- WSDOT and ODOT will evaluate proposals to add station stops based on benefits and disadvantages for the entire service. Evaluation criteria include: consistent with State Rail Plan, operational feasibility, customer demand, station suitability, interconnectivity benefits and fiscal viability.
- The addition of a station stop should not degrade service or add cost for WSDOT, ODOT, Sound Transit, BNSF Railway (BNSF), Union Pacific (UP), Amtrak or other partners in intercity passenger rail service.
- Rail planning budgets at WSDOT and ODOT are not sufficient to complete new stop studies without additional funds. Proponents should provide funding for new stop evaluation studies.
- Major service changes will not be implemented until after 2017, due to construction and service outcome agreement commitments.

WSDOT will continue working on evaluation criteria in cooperation with Oregon, British Columbia and other corridor partners to ensure a fair, objective process for considering requests for new stops. Together with ODOT, WSDOT will initiate a public process in late 2014 to formalize a new stop policy for the corridor after both states' rail plans are complete.

Approaches to Public Private Partnerships – Examples:

Capital and Policy-Program

Service Outcome Agreement: Amtrak, BNSF Railway and WSDOT signed an agreement that outlines how rail investments will be made based on service outcomes and passenger rail performance benchmarks on rail lines shared by freight and passenger rail, such as on-time performance, faster travel times and frequency of service. The effect of the agreement is a guarantee that capital projects will result in specific service improvements.

Recommendation #A3.3: The state should ensure that passenger and freight rail metrics are in place that can appropriately evaluate the performance of mobility, efficiency, safety, reliability and environmental compatibility of proposed new projects.
Performance metrics and the corresponding targets should be used during the project selection and prioritization process to help ensure that rail projects and strategies help achieve the state's transportation system policy goals, as well as needs identified in the State Rail Plan. Finally, the use of statewide performance metrics can ensure that projects contribute to overall statewide goals (as opposed to individual local goals).

5.2 Rail's Role in Economic Development (Group B)

Need B1: Support economic development by providing access to people and industry.

One of Washington's state transportation policy goals is to ensure that the transportation system supports economic vitality. For the passenger and freight rail system, economic benefits include job creation, support of freight-dependent industries and tourism. In addition, rail provides a transportation alternative to passenger vehicle or truck, which can lead to reduced demand for roadway space, and reduces associated impacts of congestion and pavement wear and tear.[58]

Maximizing these potential benefits requires a rail system that offers connectivity to people and industries. Because much of the passenger rail traffic in the state is discretionary (meaning that passengers have other transportation options including driving, flying, taking the bus or not making the trip), an increase in connectivity or reliability of the system could improve the attractiveness of passenger rail and potentially contribute to higher ridership and revenue.

Similarly, freight rail connectivity is crucial to support international trade through Washington's deep water, river and inland ports,[59] as well as the linkages to rural industries and agricultural producers.[60] Improvements in rail connectivity may avoid additional shifts to truck; thereby reducing business costs and associated impacts to Washington's roads, congestion,

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58 The Environmental Benefits of Moving Freight by Rail. Association of American Railroads. www.aar.org/keyissues/Documents/Background-Papers/The-Environmental-Benefits-of-Rail.pdf.

59 *Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment, Final Report.* BST Associates, December 2011. www.wsdot.wa.gov/NR/rdonlyres/E1743FB8-9376-4A4C-8316-14283E42A5F7/0/PNW2011PortRailForecastFinalReport.pdf.

60 www.wsdot.wa.gov/Freight/Rail/GrainTrain.htm.

air quality and road safety.[61] Improvements in rail can increase the transportation modal options that are available to shippers.

Recommendation #B1.1: The state should support efforts to identify those intermodal and multimodal connectors that provide "first and last mile" connectivity to businesses and locations that generate freight and passenger demand. This designation should be included in the project prioritization process.

"First and last mile" connectivity refers to the ability of the state's rail system to connect to the people and industries who use (or want to use) rail. The Washington Freight Mobility Plan may identify first and last mile connectors consistent with federal guidance.

"First and last mile" connectivity for passenger rail includes the availability of the passenger to reliably connect to other modes of travel. This means there are transit, bicycle and pedestrian facilities, airports, ferry terminals, or other passenger services within a reasonable walking distance and that have compatible service schedules. "First and last mile" connectivity for freight rail includes short-line or intermodal connectors that allow for the transfer of goods off of the Class I system. First and last mile connectors enhance the efficiency of the state's rail system by increasing the ability to reach the maximum number of potential passenger and freight users.

Approaches to Connectivity Needs – Examples:

Policy/Program: Conduct periodic re-evaluation of bike storage capacity on Amtrak Cascades and adjust as needed in response to customer demand.

Need B2: Preserve access to global markets by ensuring access to Washington's ports.

International trade contributes significant economic benefits for the state of Washington.[62] According to the Office of Trade and Industry

Approaches to International Trade Support Needs – Examples:

Capital Projects: Reconstruct port/Class I main line interchange to improve throughput and minimize delay.

[61] *The Impact of Truck Congestion on Washington State's Economy- Executive Summary.* WSDOT, 2012. www.wsdot.wa.gov/NR/rdonlyres/4D53B6C5-D1DF-4A3C-9B67-FD90D4847A66/0/June2012_Impact_Freight_Congestion.pdf.

Information, export-supported jobs linked to manufacturing account for an estimated 8.6 percent of Washington's total private-sector employment.[63] Combined, $111 billion of goods were imported or exported into Washington in 2011[64]—an amount that is anticipated to grow. Much of these exports were comprised of Washington products, including agricultural and manufacturing products. International trade depends heavily on rail—and in fact international trade-related goods currently make up almost one-third (29 percent) of total rail tonnage in Washington.[65] The amount of rail tonnage associated with international trade is anticipated to grow substantially—by 2035, it is anticipated to comprise almost 43 percent of total rail tonnage.[66]

In light of this anticipated growth, the state's rail system must provide high-quality, efficient and reliable connectivity to the state's ports. Maintaining and improving our reliable rail service could increase the attractiveness of Washington ports for discretionary cargo, and could contribute to increased competitiveness for Washington State ports.

Recommendation #B2.1: The Washington State Freight Mobility Plan should include projects that enhance or support connectivity to Washington's deep water, river and inland ports.

As part of ongoing freight mobility planning efforts, WSDOT and FMSIB should work to periodically communicate with the port community and Washington-based shippers to understand their rail transportation needs and concerns. Similar to the "first mile, last mile" connectors, these concerns should be recognized in the project prioritization and selection process. This will recognize the economic importance of international and domestic trade to the state's economy within the project prioritization criteria.

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62 *Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment, Final Report.* BST Associates, December 2011. www.wsdot.wa.gov/NR/rdonlyres/E1743FB8-9376-4A4C-8316-14283E42A5F7/0/PNW2011PortRailForecastFinalReport.pdf.

63 www.trade.gov/mas/ian/statereports/states/wa.pdf.

64 TradeStats Express, International Trade Administration, U.S. Department of Commerce.

65 FHWA Freight Analysis Framework Commodity Flows Database, FAF3.3 Data. The international trade percentage of the total tonnages (all modes included) was computed excluding the through flows; that is flows neither originating nor terminating in Washington.

66 Ibid.

5.3 Rail System Priorities and Goals (Group C)

Need C1: Employ cost-effective strategies when investing public funds in the state's rail system.

The continuing global recession, coupled with limited federal and state transportation budgets, means that public and private transportation funding sources are increasingly scarce and competitive. These limited resources mean that WSDOT should, in every case, seek the most cost efficient solutions to alleviating rail bottlenecks, maintain track to provide for optimal efficiency, or alleviate other rail infrastructure and operational concerns.

State policy provides guidance for achieving these efficiencies, providing frameworks for making transparent, cost-effective decisions that keep people and goods moving and support a healthy economy, environment and communities.

Recommendation #C1.1: WSDOT should use performance metrics to evaluate its passenger and freight rail programs, and ensure that the program funding is aligned with demonstrated need.

Building on Recommendation A3.3, WSDOT should work with rail stakeholders to align funding programs with demonstrated needs by developing performance measures and making funding recommendations. Performance measures can enable cost-effective decision making in several ways. For example, WSDOT should evaluate the existing short-line rail assistance programs by focusing on the magnitude of demonstrated need (as established in Recommendation A2.1), and recommending program changes if warranted.

Recommendation #C1.2: The state should seek innovative funding and financing sources to leverage public funds and provide more value with limited resources.

Recognizing that capital improvements will eventually be necessary to add rail service and that railroads are primarily responsible for managing capacity on their own infrastructure, WSDOT will first identify lower-cost, non-capital approaches to improving service and managing costs before considering investment in the rail system. However, when capital projects become necessary, the state should seek to share the costs with other partners where there is sufficient public benefit. For example, the state should consider expanding the use of public-private partnerships on the rail system; the state legislature refers to these as Transportation Innovative Partnerships in RCW 47.29. Examples to consider include alleviating key freight bottlenecks and chokepoints.

There are many models available to guide public investments in the private rail system. The 2006 *Rail Capacity and System Needs Study* by the Washington State Transportation Commission provides a framework

for evaluating such investments. ODOT's *Connect*Oregon program combines selection criteria and an extensive public process to assess public benefits likely to result from investment in the private system.

Recommendation #C1.3: WSDOT will focus on the specific requirements of Amtrak Cascades service to minimize public costs and operate the system in the most efficient manner possible.
WSDOT should continue to work with service partners and stakeholders to re-examine roles and responsibilities for funding to identify efficiencies and formalize policies . Distinguish between "needs"- features required to provide a safe and efficient transportation option; and "enhancements"- features that may be desired to support other objectives, such as other passenger rail services and community development goals. Essential components could be supported with state funds; the extras could be implemented by WSDOT's partners if they are willing to assume the costs of construction and ongoing maintenance. For example, station costs are an important part of this strategy. Amtrak Cascades currently stops at 18 stations between Vancouver, British Columbia and Eugene, Oregon. Those stations are owned by a number of different entities and support passenger rail and other transportation services. The Amtrak Cascades program contributes either in part or in full to the cost of these stations, and WSDOT has identified station costs as an opportunity to significantly reduce operating expenses.

Need C2: Strengthen rail to maximize the positive benefits, while minimizing the potential negative impacts to communities and the environment.
Rail is considered by many to be an environmentally-friendly, efficient and safe transportation mode. There is evidence that rail can help to remove roadway congestion, can be less polluting than truck on a ton-mile basis, and can reduce wear and tear on roads and highways.[67] It is particularly important in Washington state, which is dependent on global trade that relies on rail transportation. However, there also are potential negative impacts from moving goods by rail. For example, rail movement can involve dust, sound, vibrations and emissions; all of which, if not mitigated, can have negative impacts on surrounding communities. Therefore, the challenge is to maximize the positive benefits of rail transportation, while minimizing the impacts to communities and the natural environment.

Recommendation #C2.1: The state should facilitate discussions about community concerns or questions about rail benefits and

[67] The Environmental Benefits of Moving Freight by Rail. Association of American Railroads. www.aar.org/keyissues/Documents/Background-Papers/The-Environmental-Benefits-of-Rail.pdf.

impacts, and help coordinate with communities, the railroads and other rail stakeholders.

This State Rail Plan describes the importance of rail transportation for supporting and growing the state economy, but also acknowledges that there are concerns by communities located near rail infrastructure. As well as noise, lighting and air quality concerns, some communities have concerns regarding the safety or congestion impacts of rail grade crossings, and other safety or environmental questions. With rail volumes projected to grow, it is possible that these community concerns will also grow. The state's role should be bring together communities, railroads and necessary stakeholders in the event that action is needed.

Recommendation #C2.2: Railroads and public agencies should continue to use WSDOT reports, studies and other materials to clearly communicate the benefits of the rail system to Washington residents.

WSDOT materials should continue using data and performance measures to communicate the positive benefits of rail in its publications. This type of communication to the public can help explain the important role of rail in the multimodal transportation network in Washington state. Those communications can also illustrate the benefit of the state's financial participation in rail, and help to build community support for new passenger or freight rail projects. Benefits should focus on cost effectiveness, mobility for passengers and freight, environmental and air quality benefits, job creation, and other easily understood metrics that resonate with the public.

Need C3: Continue to support passenger and freight rail safety and security.

Public investment in rail should support achievement of the safety policy goal to "provide for and improve the safety and security of transportation customers and the transportation system." [68] WSDOT's role in securing safety and security performance for rail travel is very limited. For the most part, rail safety and security are regulated and enforced by the FRA, Utilities and Transportation Commission (UTC), and Department of Homeland Security (DHS). WSDOT's role has traditionally been in public education, as well as supporting communications in the event of accident, complaint or other safety concern.

Recommendation #C3.1: The state should continue to support rail safety and security.

The UTC, FRA, and DHS are responsible for rail safety and security. WSDOT should continue to support grade crossing safety and public safety programs. This includes WSDOT's work supporting "Operation

Approaches to Safety and Security Needs – Examples:

Policy/Program: Operation Lifesaver.

Policy/Program: Support Implementation of Preclearance.

Capital Projects: Repair damaged or degraded track to remove derailment hazard.

[68] RCW 47.04.280 (1) (c).

Lifesaver," a national nonprofit with coordinators in each state that raise awareness of highway-rail crossing issues. Operation Lifesaver's volunteer speakers and trained instructors offer free rail safety education programs. Their efforts are consistent with the Strategic Highway Safety Plan: Target Zero, which emphasizes education as one of four key approaches to safety (including engineering, enforcement and emergency medical services).

Recommendation #C3.2: WSDOT should continue to coordinate pedestrian access in and around Amtrak Cascades stations in order to meet safety performance goals.

As WSDOT continues to invest in expanding intercity passenger rail service, they should continue to work with station owners, UTC, the FRA and local communities to identify and meet safety performance for pedestrian access to and from rail stations. This could include signage, fencing, barriers, and controlled pedestrian grade crossings of active passenger rail tracks.

Chapter 6. Implementation and Investment Plan

This plan establishes needs and recommendations for a rail system that has a complex mix of private and public ownership. This section identifies priorities for public investment as well as projects railroads plan to undertake with private funds. The policy recommendations outlined in Chapter 5 provide the framework for identifying these strategies.

Project priorities identified in adopted transportation plans are shown in Appendix D: Illustrative Project List. Most are unfunded or have secured only partial funding. They are identified here to illustrate the breadth of needs identified by railroads and rail stakeholders. Other projects that address the priority needs identified in the plan may be incorporated into the list as appropriate.

Funding and implementation of this plan will rely on a mix of private and public action. This chapter provides five and 20-year implementation and investment strategies, with an in-depth discussion of state-sponsored assets. This section also describes the limited funding sources currently available and contains information about options for funding future improvements.

6.1 Near-term (5-year) Investment and Implementation Plan

All indications show that the next five years will be a time of great change for the rail system in Washington state. Freight rail volumes are expected to grow and community discussions about potential impacts related to increasing rail traffic will continue. Passenger rail service will improve significantly as the Washington State Department of Transportation (WSDOT) and Sound Transit complete capital projects to support Amtrak Cascades and Sounder. The following section highlights capital projects and policy and program changes anticipated in the next five years.

Statewide Highlights

Capital improvements:
The following are examples of funded projects that will be constructed before 2018. New sources of funding for additional projects have not been identified for the near term.

- WSDOT capital program for Amtrak Cascades (federal grants, High Speed Intercity Passenger Rail Program).

- Sound Transit 2 plan projects for Sounder (regional taxing authority, federal grants).
- Projects funded through Freight Rail Investment Bank (FRIB) program and Freight Rail Assistance Program (FRAP) (state grants and railroad funding).
- Port projects (local, state and federal funds)
- BNSF Railway (BNSF) and Union Pacific Railroad (UP projects. This includes positive train control, funded in large part by the Class I railroads.

Policy and program initiatives:

- Incorporate rail system findings in the Washington Transportation Plan, Washington State Freight Mobility Plan and other relevant state and regional transportation plans.
- Facilitate state-level discussion about funding strategies to address local community impacts resulting from increased rail traffic at at-grade crossings.
- Short-line Railroad Plan: Collect data and develop state performance measures for short-line railroad infrastructure to guide FRIB and FRAP programs.
- Multimodal regional planning: Examples in the central Puget Sound include the city of Seattle Freight Master Plan and the Port of Seattle Container Terminal Access Study.
- Consider climate change in transportation plans and design efforts: Since 2009, WSDOT has directed project teams to consider climate change during environmental review under the national and state environmental policy acts (NEPA and SEPA).

Implementation Plan for State-Sponsored Assets

Project concepts and priorities emerge from more detailed analysis conducted at the corridor or site-specific level. Railroads, ports, and other stakeholders engage in these efforts individually and with their partners. The following describes more detailed planning and project development efforts WSDOT will undertake to address state-sponsored and state-owned rail assets in the near-term.

Amtrak Cascades Implementation Plan

WSDOT will deliver the current capital program in 2017, and work within budgetary allotments to maximize customer value. This includes continually working to maintain and improve funded service for passengers through policy, agreements, operations and capital projects.

Beyond the current capital and operational investment efforts already underway with federal funds, WSDOT will identify next steps to achieve incremental improvement towards the Amtrak Cascades vision:

- Meet Amtrak Cascades operating agreements and funding goals.
- Strengthen Pacific Northwest Rail Corridor partnerships and develop joint corridor plans—Washington, Oregon and British Columbia (B.C.).
- Explore new operating models for Amtrak Cascades that optimize schedules to increase ridership and manage costs. Include consideration of marketing, customer service improvements and cost management.
- Develop station stop policy for Amtrak Cascades to guide funding decisions concerning proposals for new stations as well as existing stops.
- Complete Service Development Plan and Fleet Management Plan for Amtrak Cascades to identify specific operational, equipment and infrastructure needs to achieve the long-range vision. This effort should include coordination with Oregon and British Columbia to identify needs along the entire corridor. Consider strategies to increase round trips, improve reliability (on-time performance, number of train cancellations and major delays) and additional schedule-time savings and higher operating speeds.
- Employ customer experience enhancements to increase the attractiveness of Amtrak Cascades for customers.
- Continue to work with transit partners and others to strengthen multimodal connections to Amtrak Cascades.

State-Sponsored Freight Railroad Implementation Plan

The state owns track for the largest short-line rail system in eastern Washington, the Palouse River and Coulee City Railroad (PCC). In addition to providing funding for the PCC from 2005 through 2008, the Washington State Legislature provided additional funds for immediate rehabilitation and maintenance needs. The state's investment in PCC through state fiscal year 2013 is up to $26 million. Additional funds are budgeted for the future to continue rehabilitation and maintenance of the track.

WSDOT has interest in protecting this investment, and keeping the line functioning well so that it can carry Washington wheat and other Washington-grown crops such as barley and legumes, as well as lumber and propane.

WSDOT and the PCC Rail Authority will develop a strategic plan to articulate priorities. The plan will identify key sections of the system that will benefit from the capability to handle railcars with a load-bearing capacity of 286,000 pounds; and develop a grade-crossing and bridge management evaluation and prioritization plan. It is likely that improvements identified in the PCC Strategic Plan will exceed available funding. Additional revenue would be required to fully address those needs. Options include investing state funds and developing the railroad business in order to move toward sustainable funding for the program.

Example Projects and Maintenance Activities

Rail projects take many shapes and forms depending on their purpose and the needs of the company or agency implementing the project. The following are examples of types of work, which may appear in projects—either individually or in combination—to allow the rail transportation system to function.

Regular maintenance of way – remove brush, clean drainage, regular track work
Regular maintenance of way promotes efficient use of the transportation system, and is necessary to maintain rail functions. Rail owners are responsible for maintaining their infrastructure.

Restore/rehabilitate drainage features, or install new drainage features
These projects can address chronic problems or restore functionality lost through deferred maintenance. Rail owners are responsible for maintaining their infrastructure.

Lifecycle replacement – replace ties, replace rail
Rail infrastructure ages, and periodically requires replacement to maintain functionality. Rail owners are responsible for maintaining their infrastructure.

Replace ballast
Ballast supports ties and rails. Replacing ballast can be performed as part of track upgrades, or to address subgrade problems, which could limit speeds or capacity. Rail owners are responsible for maintaining their infrastructure.

Bridge rehabilitation or replacement
Rail infrastructure ages, and periodically requires replacement to maintain functionality. Bridge replacement and rehabilitation is cited as a top priority for short-line railroads operating in the state. Rail owners are responsible for maintaining their infrastructure.

Maintain, replace, install new fencing
Fencing delineates property and separates rail uses from adjacent land use. Fence owners are responsible for maintaining fencing. Rail safety and security are regulated and enforced by the Federal Railroad Administration (FRA), Utilities and Transportation Commission (UTC), and the Department of Homeland Security (DHS).

Install new crossovers and switches or upgrade crossovers/switches
Switches help reduce delays and increase capacity by allowing more efficient operation of available track. Rail owners are responsible for their own infrastructure.

Add or extend sidings
Sidings help reduce delays and increase capacity by allowing more efficient operation of available track. Extending existing sidings can magnify the benefits of those sidings, with degree of benefit depending on context. Rail owners are responsible for their infrastructure.

Add additional main lines/install bypasses
Primarily adds capacity. Rail owners are responsible for their infrastructure.

Install passive crossing signs at roadway-rail intersections
Provides identification of railroad locations for roadway users and pedestrians. Rail owners are responsible for their infrastructure. Rail safety and security are regulated and enforced by the FRA, UTC, and DHS.

Install flashing light signals at roadway-rail intersections
Flashing light signals provide advanced warning for roadway users that are activated by train. Rail safety and security are regulated and enforced by the FRA, UTC, and DHS.

Install or upgrade crossing gates at roadway-rail intersections
Crossing gates provide a physical barrier between roadways and train tracks that intersect. Varieties of crossing gates are appropriate for various situations, and may include crossing arms, or even fully restricted gates. Rail safety and security are regulated and enforced by the FRA, UTC, and DHS.

Install grade separations at rail intersections
Grade separations completely separate rail movements from roadway movements. They may also be installed to separate rail movements from other rail movements. Rail safety and security are regulated and enforced by the FRA, UTC, and DHS.

Upgrade or replacement of locomotives
While the highest capital demands are typically associated with maintaining the fixed infrastructure, the locomotive fleet often is in second place. The usual short-line locomotive is old, inefficient, polluting and costly to operate. Several states, including Texas and California have programs that aid railroads in acquiring or rebuilding locomotives to meet current standards for emissions. The public gains from the greatly reduced emissions, while the short line benefits from less fuel consumption and improved performance.

6.2 Long-term (20-year) Investment and Implementation Plan

The freight forecasts in the State Rail Plan[69] project that freight rail tonnage on the state's system will double by 2035. Passenger rail service is also expected to increase and expand to achieve the state's vision for additional daily round trips and shorter travel times. Increases in coal and crude oil shipments, and development of new terminals on the west coast, could accelerate the rate of growth. Substantial operational and capital improvements will be needed to accommodate these changes.

The following serve as examples of the types of capital projects and policies and programs that may be pursued in the future to address these needs. These projects are representative of many throughout the state that have been identified by railroads, ports, transit agencies and others; and they are reflected in adopted transportation plans. Needs and associated projects identified in adopted transportation plans far exceed funds that can reasonably be expected to be available through existing revenue sources. Private investment and private-sector champions for public-private partnerships—such as those engaged in the Inland Pacific Hub effort—will be needed to address the needs. Additional detail is provided in Technical Note 4c: *Statewide Freight and Passenger Rail Needs and Opportunities*.

Capital improvements (unfunded):

The following are examples of the types of projects that have been identified to address rail system needs in the next 20 years. Funding sources to support these improvements have not been identified.

- Short-line railroad maintenance, preservation and modernization.
- Bridge and trestle reconstruction and expansion.
- Short-line/Class I interchange improvements.
- Amtrak Cascades equipment and service upgrades.
- Track improvements to accommodate passenger service, such as new bypass tracks to add capacity and upgrades to warning signal systems.
- Port/rail connectivity projects.
- New sidings and siding extensions.
- Multiple mainlines.

[69] See Technical Note 4a: Freight Forecasts and Capacity Analysis.

Policy and program initiatives:

- Investigate Amtrak Cascades service expansion, such as long-term planning for dedicated facilities for high-speed rail and increased service between Seattle and metropolitan areas in eastern Washington.

6.3 Existing Federal and State Rail Funding Sources

Railroads are responsible for maintaining and improving their own infrastructure. The following section describes some of the public funding programs that are available to public agencies and private railroads to support those activities.

Limited federal funding sources are available to support the implementation of freight and passenger rail projects. They include a small number of discretionary grant programs, including:

- 2009 American Recovery and Reinvestment Act (ARRA).
- 2008 Passenger Rail Investment and Improvement Act (PRIIA), FRA grants.
- Transportation Investment Generating Economic Recovery (TIGER) grants.

Within FRA, the grant programs include:

- Rail Line Relocations and Improvement Capital Grant.
- Disaster Assistance Program.
- High-Speed Intercity Passenger Rail Program (HSIPR).
- Railway-Highway Crossing Hazard Elimination in High-Speed Rail Corridors.
- Amtrak Capital Grants.

Some of the key projects that have been funded through these programs include the West Vancouver Freight Access Project, the North Spokane Corridor Railroad Realignment Project, and the Point Defiance Bypass Project.

In addition, there are a limited number of loan and credit programs available to finance rail projects. In the case of loans, a project sponsor borrows funds directly from a state department of transportation (DOT) or the federal government under the condition that the funds will be repaid. Credit enhancement involves the state DOT or the federal government making the funds available on a contingent, or standby, basis. An example of this is a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan guarantee. TIFIA provides federal credit assistance to nationally or regionally significant surface transportation projects, including highway, transit and rail projects. The program is a low-cost debt program (borrowing tool) that may be accessed by the private sector (and in some cases the public sector). This can help to decrease the overall financing costs of the program. “Moving Ahead for Progress in the 21st Century” (MAP-21) increased the funding for TIFIA to $750 million for

FY 2013. Table 6.1 lists and summarizes the loans and tax credit programs and their intended use.

While much of the public funding for rail projects in Washington state is provided through WSDOT, other agencies also have a role. For example, UTC has limited funds available to support grade crossing improvement programs, and the Freight Mobility Strategic Investment Board (FMSIB) evaluates and ranks projects and awards grant funds.

Funding is sometimes provided and/or prioritized at a local or county agency, MPO, or other agencies such as economic development entities or ports. Local revenues can come from a number of sources, such as property tax for road projects and sales tax for transit projects. Other revenues include street use permits, gas tax, utility permits, impact fees, frontage improvement agreements and what the state refers to as a "latecomer fee." Several regional partnerships such as the Freight Action STrategy (FAST), the International Mobility and Trade Corridor program (IMTC) and Inland Pacific Hub have formed to focus on the needs of specific regions and pursue funding opportunities. These sources and strategies for funding rail projects are summarized in Table 6.2.

Table 6.1 Summary of Federal Loans and Tax Credits

Program	Code	Projects Funded	Funding
Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA)	23 USC 181-189 (U.S. Code)	Large surface transportation projects of national significance	Loans and guarantees, contingent federal loans
Railroad Rehabilitation and Investment Financing (RRIF) program	TEA-21 Section 7203 (Transportation Equity Act for the 21st Century)	Acquisition, improvement, or rehabilitation of freight and passenger rail facilities, also refinance existing debt	Direct loans and loan guarantees to public and private entities
Railroad Track Maintenance Credit Program	IRC Title 26 (Internal Revenue Code)	Railroad tracks	Tax credits to an amount equal to 50 percent of qualified railroad maintenance expenditures up to a maximum credit of $3,500 per mile of track
State Infrastructure Banks (SIB)	National Highway System (NHS) Designation Act Section 350	Transportation projects	Subordinate loans, interest rate buy downs on third-party loans, loan guarantees, and line of credit
Private Activity Bonds (PAB)	SAFETEA-LU Section 11143 (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users"	Surface transportation projects	National capacity of liability $15 billion; PAB allocations approved by U.S. DOT total over $4.2 billion supporting six projects

Table 6.2 Washington State Rail Funding and Financing Programs

Agency	Program	Projects Funded/Program Description	Funding
WSDOT	Freight Rail Investment Bank (FRIB)	Has been used to fund small capital rail projects with at least 20% funding match.	$5.0 million for eligible projects in 2013-2015.
	Freight Rail Assistance Program (FRAP)	WSDOT will prioritize the applications using criteria developed by WSDOT for freight rail assistance.	$2.75 million for projects in 2013-2015.
	Grain Train Revolving Fund	A self-sustaining program that supports farmers, short-line railroads and rural economic development, through the use of a fee to use a state-owned grain car.	The funds are generated based on a combination of miles traveled and number of days on BNSF track.
	Produce Rail Car Program	Operates 25 refrigerated rail cars to assist the agricultural community and ensure the availability of necessary equipment.	This program was funded with $2 million in federal grants and $200,000 in state transportation funds.
	2005 Transportation Partnership Program (TPA)	35 projects that include highways, local roadways and rail systems.	Freight mobility and economic projects are allocated $542 million.
	2003 Legislative Transportation Package	Improvements to assist freight transportation on rail systems and local roadways.	$12 million was invested in freight mobility and economics.
	Multimodal Transportation Programs	Projects such as intercounty service, rush hour transit service and capital projects that improve the connectivity and efficiency of the regional mobility system.	N/A
State Treasury Rail Assistance Programs	Essential Rail Assistance Account	The freight rail projects are prioritized based on eligibility requirements under the rail preservation program.	Loan program to promote rail.
	Transportation Infrastructure Account	Building surface transportation facilities representing critical mobility or economic development needs and involving various transportation modes.	Loans, grants or other means of assistance can be provided in equal amounts or as part of the cost to public or private agencies.
	Transportation Innovative Partnership Account	This account will include moneys from the Transportation Innovative Partnership Program to support transportation projects. State can use moneys under this account that are related to an established subaccount.	Loan guarantees, extension of credit, bonds, etc.

Agency	Program	Projects Funded/Program Description	Funding
Washington State Freight Mobility Strategic Investment Board (FMSIB)		Its purpose is to review, prioritize, and recommend freight mobility transportation projects that are of strategic importance to Washington. Projects include grade separations, pedestrian overpasses and Intelligent Transportation Systems (ITS) projects.	
Utilities and Transportation Commission (UTC)		The UTC administers the Grade Crossing Protective Fund (GCPF) to provide grants to railroads, local governments and other agencies that propose safety improvements at railroad crossings.	Fund awards projects between $250 and $20,000.

Source: WSDOT, State Treasury, FMSIB and UTCweb sites.

6.4 New and Innovative Funding Sources

The number of rail projects identified as needs[70] suggest that even within the 5-year timeframe, there are significant gaps in funding to match project needs. For freight rail, WSDOT would have approximately $3.9 million per year (or $85 million total) available to award to projects between 2014 and 2035 if program funding levels remain the same. This falls short of the freight rail needs identified in regional plans and for the PCC rail system. For passenger rail, there are no pre-existing funds through WSDOT that are available for passenger rail projects.

Thus, to match the funding levels required to implement projects in the 5-year and 20-year illustrative projects, it will be necessary to explore new opportunities for funding through MAP-21, and to consider non-traditional and innovative means of funding. These two groups of funding opportunities are summarized below.

MAP-21 Funding Sources

Congress reauthorized the federal surface transportation program in July 2012. The legislation, called MAP-21, replaces the previous legislation: SAFETEA-LU. Overall, MAP-21 maintains current federal transportation funding levels at just over $105 billion for fiscal years 2013 and 2014[71] (adjusted for inflation). Based on these authorization levels it is likely that Washington will continue to receive federal transportation funds for the next several years at levels consistent with what has been received under the previous transportation bills. However, MAP-21 did extend several programs that have been used, in the past, to fund passenger and freight rail projects, and raised the funding levels of several other important programs. For example MAP-21 expanded the funds available through the TIFIA from $122 million in FY 2009 to $750 million in FY 2013, to $1 billion by FY 2014. The different programs under MAP-21 are summarized in Table 6.3.

[70] See Appendix L: Technical Note 5: *Rail Investment Plan and Project List.*
[71] www.fhwa.dot.gov/map21/.

Table 6.3 MAP-21 Freight and Passenger Rail Program

Program	Type[a]	Code/Agency	Funding Use	Funding Source/ Allocation	Funding Levels
Significant Freight Provisions	New – Formula Program	MAP-21 Sections 1115-1118, 1201-1203, 1510-1511, 32801-32802	Establishment of national freight policy, national freight network, national freight strategic plan, DOT freight plans, performance reports and so on.	Federal share generally 80%	~ $2B
Surface Transportation Program (STP)	Restructured – Formula Program	MAP-21 Section 1108/ FHWA	Provides flexible funding that may be used for projects to preserve and improve highway, bridge, tunnel projects as well as transit capital projects.	Federal share is 80%	2013 – $10B, 2014 – $10.1B
Congestion Mitigation and Air Quality Program (CMAQ)	Restructured – Formula Program	MAP-21 Section 1113/ FHWA	Provide funding for projects to help meet requirements of Clean Air Act, including purchase of natural gas vehicles, diesel retrofits, etc. On occasion, CMAQ funding has been used to pay for intercity rail service, including Maine's Downeaster train.	Federal share generally 90%	2013 – $2.21B; 2014 – $2.23B
Rail-Highway Crossings Program (RHCP)	Set-aside from Highway Safety Improvement Program (HSIP) – Formula Program	MAP 21 Section 1519 (USC Section 130)/ FHWA	Funds safety improvements to reduce the number of fatalities, injuries and crashes at public grade crossings.	Federal share is 90%	2013 – $220M, 2014 – $220M
Projects of National and Regional Significance (PNRS)	Carried Over – Discretionary Program	MAP-21 Section 1120/ FHWA	Projects of national significance (rail, highway or any project eligible under 23 USC).	Federal share is 80%	2013 – $500M
Transportation Alternatives Program (TAP)	New – Formula Program	MAP-21 Section 1122/ FHWA	New program that provides funds for various alternative transportation projects, including conversion of abandoned rail for other uses.	Federal share generally 90%	2013 – 809M; 2014 – 820M
Fixed Guideway Capital Investment Grants (New Starts)	Carried Over – Discretionary Program	MAP-21 Section 20008/ FTA	Provides grants for new and expanded rail, bus rapid transit and ferry systems; defined new category of projects known as core capacity projects.	Maximum federal share is 80%	2013 – $1.9B, 2014 – $1.9B
State of Good Repair Grants	New – Discretionary Program	MAP-21 Section 20027/ FTA	Repair and upgrade the nation's rail transit systems along with high-intensity motor bus systems that use high-occupancy vehicle lanes.	Federal share is 80%	2013- $2.1B, 2014 – $2.2B

Source: U.S. DOT, FHWA, FTA, FRA web sites.

[a] For MAP-21 programs, "Carried- over" means the program is carried over from SAFETEA-LU, "New" means the program is a newly established program, and "Restructured" means the program is SAFETEA-LU, but is re-organized or consolidated.

Potential Future Revenue Sources for Washington to Consider

State level rail funding programs are usually replenished with money from a combination of revenue sources, mostly associated with motor vehicles. Currently, Washington's state revenue sources for rail are derived primarily from a combination of fees and taxes on driver's licenses, light vehicle weight fees and a portion of the sales tax on automobiles and rental car taxes. While some of these mechanisms are used by many states, some fees are only levied by a few other peer states.

State Funded Allocation Example: Oregon state's *Connect*Oregon program provides one example of a state-funded program that is able to provide grants and loans to the private sector. Several rail stakeholders endorsed this type of program as a desirable model to allow for-profit companies to compete for infrastructure investment funds.

There are also several other revenue sources that are in use in other states that may be appropriate for WSDOT to consider in the future. These revenue sources would require additional vetting and study to determine their feasibility and applicability for the Washington context. However, they may be worth considering for rail planning and project implementation in the future. Table 6.4 provides a summary of the potential revenue sources, their key benefits and drawbacks.

Table 6.4 Potential Future Public Revenue Sources for States to Consider

Name	Key Benefits	Key Drawbacks for Washington State
Road Usage Charge (Vehicle Miles Traveled-Based Fee)	• Provides a long-term, sustainable, and substantial source of revenue that replaces an old and ineffective structure.	• High administrative and legislative burden. • Long timeframe for implementation (post 2017). • May meet with public opposition. • Would face considerable competition for funding from highway/roads, multimodal and non-motorized transportation modes.
Sales Tax on Motor Fuels	• Relatively stable source once established.	• State constitution currently restricts motor fuel taxes for highway purposes.[72] • Revenue sources that can be generated are minor and diminishing. • Has traditionally met with coordinated opposition in Washington.

[72] www.wsdot.wa.gov/Finance/fueltaxes.htm.

Name	Key Benefits	Key Drawbacks for Washington State
Lottery Proceeds and other non-transportation related general funding sources	• Proven allocation of funds for intermodal improvement (modeled after *Connect*Oregon). • A significant source of rail project revenue that is dedicated.	• Need legislative approval and can face significant barriers to compete with money for education and other current lottery beneficiaries. • Would face considerable competition for funding from highway/roads, multimodal and non-motorized transportation modes.
Special Districts	• Potential for high revenue yield. • Enforcement and collection mechanism relatively easy to establish.	• Politically challenging to create a large, new district that is multijurisdictional. • High relative administrative burden.
Railroad Property Tax Reallocation	• Railroad property taxes would be used only for railroad improvements.	• Rural counties may lose disproportional share of their tax revenues. • Class I railroads may oppose using their taxes to support short-line or competitor railroads.
Railroad Tax Credit	• Incentivizes private investment from railroads, which can bring jobs and regional growth. • Relatively easy to adopt.	• Not a stand-alone rail revenue strategy. Still need to be used in conjunction with other options above.

Source: Cambridge Systematics, Inc.

In addition, Washington can also consider public-private partnerships (PPPs) for funding rail projects. This concept has assisted in the funding of several large infrastructure projects, including: the Alameda Corridor in Los Angeles, the CREATE program in Chicago, the Heartland Corridor and the National Gateway, and the FasTracks Transit Program in Denver. These projects represent different forms of PPPs, including third-party finance, public financing with private contributions, concessions and so on. Of particular interest to Washington are branding strategies, which can generate revenue through features such as naming rights, advertisements and development rights. For instance, Tampa's TECO Streetcar receives private money from TECO Energy in exchange for streetcar naming rights; and the Grand Central Terminal in New York partnered with Apple, Inc. to open a 23,000-square foot retail space in the terminal.[73] In Washington, the Amtrak Cascades has already experimented with

[73] http://web1.ctaa.org/webmodules/webarticles/articlefiles/RAIL_29_Tour.pdf.

branding, most recently with the "King Tut" train in 2012 and Seattle Sounders Football Club.[74]

PPPs can be a viable means of facilitating project-specific funding, thereby reducing the pressure on other funding mechanisms. The major value of PPPs is not in providing capital that would otherwise be inaccessible, but in facilitating more rapid capital investment at a comparable or even lower financing cost.

In Washington, PPP projects are harder to implement because RCW 47.29.060 requires that "any debt issued to pay for the transportation project must be issued by the state treasurer," effectively requiring legislative approval for private financing. This legislative restriction means that PPP project approvals can be complex, slow and costly, which can thwart smaller projects from becoming PPPs. However, given current funding situations, perhaps more innovative PPP financing mechanisms can be considered, especially given that rail projects usually already involve multiple partners with shared interests (both public and private).[75]

[74] http://amtrakcascades.com/News_06252012.htm.
[75] www.leg.wa.gov/JTC/Documents/Studies/P3/P3FinalReport_Jan2012Web.pdf.

Chapter 7. Conclusion

The purpose of the Washington State Rail Plan is to describe a vision for the rail system, assess what is working well and what needs to change to achieve that vision, and identify priorities for public investment and action to make that vision a reality. Based on the foundation provided by many years of thoughtful rail planning and informed by extensive technical analysis and public outreach, the resulting plan highlights critical needs facing the system and outlines a series of recommendations to address them. Many of the near-term priorities focus on improving efficiencies to get the most value possible out of the existing system and doing the preparation work needed to successfully secure improvement funds in the future. The Investment and Implementation Plan outlines priority actions for the next five years as well as in the next 20 years.

So, what happens next? The State Rail Plan is not an end point. Instead, the plan is meant to guide and inform continuing public investment and action on the rail system:

- Deliver funded capital projects to improve rail service.
- Incorporate results of the State Rail Plan into State Freight Mobility Plan and Washington Transportation Plan.
- Continue collaborative planning with stakeholders and partners to refine and focus investment priorities.
- Initiate scoping and project development to prepare for future funding opportunities.

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Appendix A: List of Technical Reports

State Rail Plan Technical Notes

Reports are available by request. Please contact the WSDOT Rail Division at rail@wsdot.wa.gov or 360-705-7900.

- Technical Note 1: *Vision and Goals*
- Technical Note 2: *Freight and Passenger Rail Inventory*
- Technical Note 3a: *Freight Rail Demand, Commodity Flows, and Volumes*
- Technical Note 3b: *Passenger Rail Usage and Impacts of the Rail System on Washington State*
- Technical Note 4a: *Freight Forecasts and Capacity Analysis*
- Technical Note 4b: *Passenger Rail Ridership Forecasts*
- Technical Note 4c: *Statewide Freight and Passenger Rail Needs and Opportunities*
- Technical Note 5: *Rail Investment Plan*
- Technical Note 6: *Institutional Framework and Funding Sources for Rail*

Reference Reports

Available at www.wsdot.wa.gov/Rail/Plans

- *New Stop Evaluation – Auburn* (Amtrak Cascades study)
- *Washington-Oregon Corridor Management Workplan*
- *Cascades Corridor Station Design Criteria*
- Previous Plans:
    - *Amtrak Cascades Mid-Range Plan* – December 2008
    - *Amtrak Cascades Mid-Range Plan Appendices* – December 2008
    - *Washington State Long-Range Plan for Amtrak Cascades* – February 2006
    - *Washington 2010-2030 Freight Rail Plan*

Appendix B: Crosswalk Between the FRA State Rail Plan Guidance and the State Rail Plan Format

FRA Guidance Sections	FRA Titles	State Rail Plan Chapter Number	State Rail Plan Chapter Name
1.0	The Role of Rail in Statewide Transportation	1	Introduction
1.1 1.2 1.5		3	Rail Vision and Policy
1.3 1.4		2	Rail System Overview
2.0	The State's Existing Rail System	2	Rail System Overview
2.1 2.2 2.3 2.4 2.6 2.7		4	Rail System Strengths and Challenges
2.5		2 6	Rail System Overview Implementation and Investment Plan
3.0	Trends and Forecasts	4	Rail System Strengths and Challenges
4.0	Rail Service Needs and Opportunities	5	Rail System Needs and Recommendations
5.0	Proposed Passenger Rail Improvements and Investments	6	Implementation and Investment Plan
6.0	Proposed Freight Rail Improvements and Investments	6	Implementation and Investment Plan
7.0	The State's Long-Range Rail Service and Investment Plan	6	Implementation and Investment Plan
8.0	Coordination and Review	Technical Note	Technical Note 1: *Vision and Goals*

Appendix C: Acronyms

Acronym	Term
AADT	Annual Average Daily Traffic
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ABS	Automatic Block Signaling
ADA	Americans with Disabilities Act
Amtrak	National Railroad Passenger Corporation (*Am*erican *Trac*k)
ARRA	American Recovery and Reinvestment Act of 2009
B.C.	British Columbia
B/C	Benefit Cost
BCMoTI	British Columbia Ministry of Transportation and Infrastructure
BDTL	Ballard Terminal Railroad
BNSF	BNSF Railway
BTU	British Thermal Unit
CAGR	Compound Annual Growth Rate
CBO	Congressional Budget Office
CBRC	Columbia Basin Railroad
CERB	Community Economic Revitalization Board
Class I	Railroad with annual operating revenue of more than $433.2 million.
Class II	Railroad with annual operating revenue between $34.7 million and $433.2 million. Also known as regional railroads.
Class III	Railroad with revenues of less than $34.7 million and engaged in line-haul transportation; also known as short-line railroads. Switching and terminal railroads are classified as Class III regardless of revenue.
CLC	Columbia and Cowlitz Railway
CMAQ	Congestion Mitigation and Air Quality Program
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
COFC	Container on Flat Car

Acronym	Term
CSCD	Cascade & Columbia River Railroad
CTC	Centralized Traffic Control
CW	Central Washington Railroad
DHS	Department of Homeland Security
DOR	Department of Revenue
DOT	Department of Transportation
EAST	Eastside Rail
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESHB	Engrossed Substitute House Bill
EWG	Eastern Washington Gateway Railroad
FAF3.3	FHWA Freight Analysis Framework Version 3.3
FAK	Freight All Kinds
FAST	***F***reight ***A***ction ***St***rategy
FC	Football Club
FHWA	Federal Highway Administration
FMSIB	Freight Mobility Strategic Investment Board
FRA	Federal Railroad Administration
FRAP	Freight Rail Assistance Program
FRIB	Freight Rail Investment Bank
FTA	Federal Transit Administration
FY	Fiscal Year
g	grams
gCO_2e	Emissions per Ton Mile
GCPF	Grade Crossing Protective Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GRNW	Great Northwest Railroad
GSP	Gross State Product
HSIRP	High-Speed Intercity Rail Program

Acronym	Term
HSR	High-Speed Rail
ID	Idaho
IHP	Inland Pacific Hub
IMTC	International Mobility and Trade Corridor
IRC	Internal Revenue Code
ITS	Intelligent Transportation Systems
KFR	Kettle Falls International Railway
LCV	Long Combination Vehicles
LNG	Liquefied Natural Gas
LTL	Less than Truck Load
LVSW	Longview Switching Company
MAP-21	Moving Ahead for Progress in the 21st Century Act
MP	Mileposts
MPO	Metropolitan Planning Organization
MRL	Montana Rail Link
MSN	Meeker Southern Railroad
MT	Main Line Track
MVET	Motor Vehicle Excise Tax
MVT	Mount Vernon Terminal Railway
NAFTA	North American Free Trade Agreement
NAICS	North American Industry Classification System
n.e.c.	Not elsewhere classified
NEPA	National Environmental Policy Act
NHS	National Highway System
NOx	Nitrous Oxides
ODOT	Oregon Department of Transportation
OPEB	Other Post-Employment Benefits
OR	Oregon
ORCA	One Regional Card for All
ORNL	Oak Ridge National Laboratory

Acronym	Term
OTP	On-Time Performance
PAB	Private Activity Bonds
PAW	Patriot Woods Railroad
PCC	Palouse River and Coulee City Railroad
PHMSA	Pipeline and Hazardous Material Safety Administration
PIERS	Port Import Export Reporting System
PM	Particulate Matter
PNRS	Projects of National and Regional Significance
PNWRC	Pacific Northwest Rail Corridor
POCH	Chehalis-Centralia Railroad
POVA	Pend Oreille Valley Railroad
PPP	Public-Private Partnerships
PRB	Powder River Basin
PRIIA	Passenger Rail Investment and Improvement Act of 2008
PSAP	Puget Sound & Pacific Railroad
PSRC	Puget Sound Regional Council
PTC	Positive Train Control
PVJR	Portland-Vancouver Junction Railroad
R&D	Research and Development
RCW	Revised Code of Washington
RHCP	Rail-Highway Crossings Program
ROI	Return on Investment
RRB	Railroad Retirement Board
RRIF	Railroad Rehabilitation and Improvement Financing
RS	Royal Slope Line
RSIA	Rail Safety Improvement Act of 2008
RTPO	Regional Transportation Planning Organization
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SCAC	Standard Carrier Alpha Code (Railroad Reporting Mark)
SCTG2	Standard Classification of Transported Goods

Acronym	Term
Sea-Tac	Seattle-Tacoma International Airport
SEPA	State Environmental Policy Act
SFY	State Fiscal Year
SIB	State Infrastructure Banks
SoDo	South of Downtown (in Seattle)
Sound Transit	Central Puget Sound Regional Transit Authority
ST2	Sound Transit 2
STB	Surface Transportation Board
STP	Surface Transportation Program
Talgo	Patentes Talgo, S.A. of Madrid, Spain
TAP	Transportation Alternatives Program
TCRY	Tri-City and Olympia Railroad
TCS	Traffic Control System
TEA-21	Transportation Equity Act for the 21st Century
TEIS	Transportation Executive Information System
TEU	Twenty-Foot Equivalent Units
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TMBL	Tacoma Rail Capital/Tidelands Division
TOFC	Trailer on Flat Car
TPA	Transportation Partnership Program
TRMW	Tacoma Rail Mountain Division
TWC	Track Warrant Control
UP	Union Pacific Railroad
URCS	Uniform Rail Costing System
U.S.	United States
USC	U.S. Code
UTC	Utilities and Transportation Commission
UW	University of Washington

Acronym	Term
WA	Washington
WIR	Washington and Idaho Railroad
WSDOT	Washington State Department of Transportation
WSTC	Washington State Transportation Commission
WTO	World Trade Organization
WTP	Washington Transportation Plan
YCR	Yakima Central Railroad

Appendix D: Illustrative Project List *(List updated 10/3/2013)*

This appendix provides a listing of rail-related improvements that have been identified and programmed through various state and regional plans. Some of these projects are fully funded and underway, while others are illustrative of what should be accomplished to achieve desired outcomes in terms of capacity, system preservation, safety, community impacts and other aspects. Such "illustrative" projects are the result of an organized and rigorous planning process, and may be included in regional and state plans even though financial resources have not been identified. Beyond that, the order of the projects listed is not indicative of their relative merit or potential funding priority.

This appendix consists of three tables:

- Table D.1 lists the intercity passenger and commuter rail projects. This includes planned projects along the entire Pacific Northwest Rail Corridor, including Oregon and British Columbia.

- Table D.2 lists freight-related projects located on Class I and short-line railroads, as well as multimodal and other rail projects. The type of project is identified in the first column labeled Type. Class I projects are labeled with a 'C', short-line with an 'S', multimodal with an 'MM', and other with an 'O'.

- Table D.3 lists rail-highway grade crossing improvements. These projects consist of grade separations, where level crossings will be eliminated through construction of rail or highway bridges, and improvements to at-grade crossings through installation of improved crossing systems, separate pedestrian crossing arms and signals, etc.

For intercity passenger service improvements, WSDOT's 2006 *Long-Range Plan for Amtrak Cascades* describes a long-term program to achieve a set of service outcomes by 2023. These projects are shown in the listings. Some of the projects identified in that plan are now underway as part of the $800 million program funded by ARRA. In light of these investments, changing needs and funding options, and shifting priorities. An updated Service Development Plan for Amtrak Cascades will be completed in 2014.

The tables do not typically include costs for projects other than those for which funding has been fully committed. The plans from which the lists have been compiled vary greatly in age and level of detail, and thus would not allow comparisons among the various projects.

Table D.2 includes only a few projects on Class I freight railroads that do not involve public involvement. With a planning horizon that is typically

five years or less, the Class I railroads use their own financial resources to undertake improvements that provide a direct financial return. Listed short-line projects address the needs of state-owned properties, as well as some specific infrastructure needs on private lines.

For each project, information is provided on following key elements:

- *Location.* Geographic location of project.
- *Project Name.* Short name of project.
- *Source*. Adopted plan in which project is listed. For some funded improvements, the grant announcement has been used. For Amtrak Cascades improvements, most are drawn from the WSDOT Rail Division Project List that can be found on the WSDOT web site at www.wsdot.wa.gov/projects/rail. Others are drawn from WSDOT's 2006 *Long-Range Plan for Amtrak Cascades.*
- *Description*. Brief description of the project, and the benefits that will be achieved upon completion.
- *Projected completion date*. Year in which the improvement is expected to be completed.
- *Funding sources*. If the project funding has been identified, this column identifies the source of funds. In addition to various state funds, many projects currently underway are receiving federal funds provided by the American Recovery and Reinvestment Act of 2009 (ARRA), the High-Speed Intercity Passenger Rail (HSIPR) program, and five generations of Transportation Investment Generating Economic Recovery (TIGER) discretionary grants.
- *Areas of impact*. Anticipated primary benefits associated with each project are identified by key area, such as system capacity, system preservation, safety and security, etc. This arrangement permits classifying projects by benefit area.

Table D.1 Intercity Passenger and Commuter Rail Projects

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
Funded													
Kelso	Kelso Martin's Bluff - Kelso to Longview Jct.	WSDOT Rail Division Project List	This project will upgrade existing track and add a third main track between Kelso and Longview Junction. This will separate freight and passenger rail traffic, allowing trains to move around each other, ultimately improving the reliability and on-time performance of Amtrak Cascades trains.	2017	ARRA		✓	✓					
Kalama	Kelso Martin's Bluff - New Siding	WSDOT Rail Division Project List	This project will upgrade approximately 3.8 miles of railroad siding track near the Port of Kalama. The new and upgraded siding track will allow freight trains to move on and off the mail line tracks at higher speeds, resulting in fewer delays to Amtrak Cascades passenger trains.	2017	ARRA	✓		✓					
Kalama	Kelso Martin's Bluff - Toteff Siding	WSDOT Rail Division Project List	This project will extend approximately one mile of siding track near the south end of the Port of Kalama and construct a new roadway bridge over the railroad tracks at Toteff Road. This project will also upgrade switch components in the tracks. Extending the siding track, along with other improvements, will eliminate delays for cars and trucks at crossings, adds capacity and reduces conflicts between passenger and freight trains.	2017	ARRA	✓		✓					✓
Mt. Vernon	Mt Vernon Siding Extension	WSDOT Rail Division Project List	This project will extend the Mount Vernon Siding track to accommodate longer freight trains, improving capacity of the railroad for intercity passenger rail operations. The siding extension will provided improved for freight trains and increase rail safety as well as reliability of Amtrak Cascades.	2014	2003 Legislative Transportation Package (New & Used Vehicle Sales Tax) - $2.12M; 2010 HSIPR grant - $3.3M; Additional state funds - $5.2M	✓		✓					
Vancouver	Vancouver - Rail Bypass and W. 39th Street Bridge	WSDOT Rail Division Project List and \http://www.portvan	This project will add a new bypass tracks in the rail yard that will allow passenger trains to bypass congestion caused by freight trains. In addition, the new vehicle/pedestrian/bicycle bridge over the railroad	2016	State 03 MMA ($53.7M), State MMA $51.4M), FHWA ($13.6M), Local	✓		✓		✓		✓	✓

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
		usa.com/wvafa/funding/	tracks at the West 39th Street crossing will enhance safety. This project will reduce freight and passenger congestion, increase safety, and help Amtrak's on-time performance.		($999k),								
Amtrak Cascades Corridor in Washington	Corridor reliability Supplemental Work	WSDOT Rail Division Project List	This project will identify, design and construct slope stabilization needs along tracks between Vancouver, WA and the Canadian border to prevent service disruptions due to mudslides and enhance safety as well.	2013	ARRA		✓	✓			✓		✓
Amtrak Cascades Corridor in Washington	Corridor Reliability Upgrades North	WSDOT Rail Division Project List	Will address deficiencies along the corridor by improving by upgrading track infrastructure between Everett and U.S./Canadian border at Blaine with better technology and equipment. This will include cleaning ditches to improve drainage, grading and modifying areas where water is collecting, cleaning and replacing ballast, removing and replacing ties, and relaying and resurfacing rail.	2016	ARRA		✓	✓				✓	✓
Amtrak Cascades Corridor in Washington	Corridor Reliability Upgrades South	WSDOT Rail Division Project List	This project will address deficiencies along the corridor by improving track quality, reliability, and passenger ride comfort by upgrading track infrastructure between Nisqually and the Columbia River with better technology and equipment. Includes cleaning ditches to improve drainage, grading and modifying areas where water is collecting, cleaning and replacing ballast, removing and replacing ties, and relaying and resurfacing rail.	2016	ARRA		✓	✓				✓	✓
Amtrak Cascades Corridor in Washington	New Locomotives	WSDOT Rail Division Project List	Washington state is purchasing new passenger coaches and eight locomotives. This "next generation" rail equipment will feature better fuel efficiency, added passenger comfort, travel conveniences and safety upgrades.	2016	ARRA	✓	✓	✓			✓	✓	✓
Tacoma	Tacoma - Bypass of Point Defiance	WSDOT Rail Division Project List	This project proposes to reroute passenger trains to an existing rail line along the west side of I-5 through south Tacoma, Lakewood, and DuPont. It will reconnect back to the BNSF Railway main line near	2017	ARRA	✓	✓	✓					

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
			Nisqually, on the east side of I-5. The end result will be more frequent, reliable, and faster Amtrak Cascades service.										
Vancouver	Vancouver - New Middle Lead	ARRA	Consists of a second connecting or "lead" track approx. 1,300 feet long located approximately between MP 135.9 on BNSF's Seattle Subdivision and about MP 10.2 on the BNSF Fallbridge Subdivision. This new lead track will extend around the south end of the BNSF Vancouver Yard, in Vancouver, WA, and support freight train speeds of 25 mph. The lead track will increase capacity on and off the north-south main line.	2016	ARRA	✓		✓	✓	✓			✓
Vancouver	Vancouver - Yard Bypass Track	ARRA	This project is a phase of the larger Vancouver- Rail Bypass and West 39th Street Bridge project. Constructs approximately 15,200 foot long bypass track between the BNSF Railway's Seattle Subdivision and Fallbridge Sub in Vancouver, WA, allowing freight traffic to clear the north-south main tracks quickly.	2016	ARRA	✓		✓					✓
Tacoma, Lakewood	Commuter Rail Project: Tacoma/ Lakewood	Sound Transit	Implementation of commuter rail service between Tacoma and Lakewood, through design and construction of facilities and equipment (including track and signal) on 7 miles of track and two stations with parking, bus/transfer, pedestrian and bicycle facilities and maintenance/storage/layover. In addition, the project includes environmental documentation and preliminary engineering-design to construct a rail grade separated overcrossing at Pacific Avenue and South 26th Street in downtown Tacoma. This project is coordinated with affected local agencies, including TAC-73 for the feasibility study and pre-design. This project has received 2009 ARRA funds.	2013	HSR, ARRA, and Various State Funds			✓				✓	
Rail track between the Tacoma Dome Station and	Reservation Junction Track & Signal (Tacoma Trestle	Sound Transit	Design and construction of additional track and new structures along an approximately 0.65 mile section of track between the existing Tacoma Dome Station and the vicinity of M Street in Tacoma.			✓							✓

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
vicinity of M St, Tacoma	Replacement)												
Tukwila: south of Longacres Way and west of BNSF tracks	Tukwila Station Sound Transit and WSDOT	WSDOT Rail Division Project List	Preliminary engineering, design, right-of-way acquisition and eventually construction work for a permanent commuter rail station in Tukwila. The station will be located south of Longacres Way and west of the BNSF railroad tracks. The station may include two platforms with canopies, parking, a bus transfer facility, and bike lockers. This project received 2009 ARRA funds.	2014	ST2 and WSDOT ARRA			✓				✓	
Seattle-Lakewood	Commuter Rail Project: Seattle/Tacoma Sound Transit	Sound Transit	Implementation of commuter rail between Seattle and Tacoma serving seven stations. Project includes improvements to stations, platforms, track/signals, CCTV, layover/storage and related equipment. Commuter rail service along this corridor began in September 2000, Sound Transit continues to improve service and operations along this corridor. This project's P/E, ROW and construction phases have also been funded previously in the amount of $1,424,889,903.	2013				✓				✓	
Blaine	Blaine Swift Customs Facility Siding	WSDOT Rail Division Project List	This project constructs 9000 ft main track on Cascades line near Blaine and converts existing main track into a second siding. Work includes track, ties and ballast. Project will reduce freight/passenger conflict, reduce congestion, adds capacity and eliminates bottleneck, shorten travel time and improve reliability	2015	ARRA- $5M; State - $3.5M	✓		✓		✓	✓		
Planned													
Cowlitz/ Lewis County	Kelso to Chehalis - High Speed Main Tracks	WSDOT Long Range Plan for Amtrak Cascades	This project would design, permit, purchase right-of-way, and construct a 34-mile high-speed alignment from just north of Kelso to just south of Chehalis that can be operated at up to 150 mph. This will require 15 corridor miles of new alignments away from the BNSF Railway main line near Castle Rock, Vader, Winlock, and Napavine. Realign the BNSF main tracks in five locations between north of Kelso and Castle Rock. The	>5 years		✓		✓	✓				

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
			corridor will have a single high-speed main track over the entire distance with another 18 miles of second high-speed main at the south end. It will also bypass, close, or grade separate 25 highway-rail at-grade crossings.										
Whatcom County	Bellingham to Blaine High-Speed Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 101.5 to 117.1. Project entails construction of a high-speed track and associated facilities. The purposed of the project is to allow passenger trains to operate at 110 mph, providing part of the travel time reduction needed between Seattle and Vancouver, BC to achieve WSDOT's service goal.	>5 years		✓		✓	✓				
Whatcom County	Bellingham Siding Extension	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 92.2 to 97.9. Will allow passenger and freight trains to pass each other. Current siding at this location is not long enough to accommodate most freight trains.			✓		✓					
Whatcom County	Bellingham GP Update	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 96 to 97. Rehabilitation to improve the track so that it can handle higher speeds. This improvement is needed because the current condition of the existing track does not meet FRA standard for increased speeds.					✓					
Whatcom County	Burlington to Bellingham High-Speed Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 72.2 to 86.5. Entails construction of fourteen miles of high-speed track and associated facilities. The project is to allow passenger trains to operate at 110 mph, providing part of the travel time reduction needed between Seattle & Vancouver, BC to achieve WSDOT's service goal.	>5 years		✓		✓	✓				
Whatcom County	Marysville to Mount Vernon High-Speed Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 39.19 to 67.5. Entails construction of twenty-eight miles of high-speed track and associated facilities. Will allow passenger trains to operate at 110 mph, providing part of the travel time reduction needed between Seattle and Vancouver, BC to achieve WSDOT's service goal.	>5 years		✓		✓	✓				
King County	Ballard Bridge Speed Increase	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 6.2 to 6.4. Current speed on bridge is twenty miles per hour. Increasing the Talgo speed limit to forty-five miles per hour and the freight speed limit			✓		✓					

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
			to thirty-five miles per hour improves service and increases capacity and reliability.										
King County	King Street Station Track Improvements	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 0.2 to 0.5. New tracks and platforms at King Street Station will accommodate the planned increase in intercity, commuter, and freight trains.	2015	2005 Partnership Funding (weight Fees)			✓					
King County	Seattle Maintenance Facility - Phases III and IV	WSDOT Long Range Plan for Amtrak Cascades	A new Amtrak maintenance facility is being constructed south of downtown Seattle, near Safeco Field. This facility will be the primary maintenance and repair site for current and future Sounder commuter train, Amtrak Cascades trains & Amtrak's long-distance trains.					✓					
King County	Auburn South Third Main Track	Sound Transit	Rail milepost 20.9 to 24.2. Sound Transit will construct a third main line between Auburn and south of Kent. Extending the third main track to the south end of Auburn Yard provides a configuration that allows movement from either track without slowing commuter trains making the Auburn station stop.			✓		✓					
King County	Seattle to Kent Third Main Track	City of Seattle Freight Mobility Strategic Action Plan, June 2005	Complete full third track between Seattle and Tacoma to increase capacity and reduce conflicts. Part of agreement between BNSF and Sound Transit.			✓		✓					
Pierce County	Reservation to Stewart Third Main Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 38.2 to 33.9. A new main line will be built next to the existing double track. The purpose of this track is to provide a dedicated track for lower speed freight trains that originate, terminate, or stop at Tacoma.			✓		✓		✓			
Pierce County	Hannaford to Nisqually Third Man Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 51.39 to 24.5. A new twenty-six mile-long main line will be built next to the existing double track between Nisqually and the Lewis/Thurston county border, and a second new main line track will be built between rail milepost 36.2 and rail milepost 51. To allow passenger trains to operate at 110 mph.			✓		✓					
Lewis County	China Creek Crossover	WSDOT Long Range Plan for	Rail milepost 53.5 to 53.6. Construction of this crossover provides flexibility for trains to move			✓		✓					

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
		Amtrak Cascades	between tracks when entering Centralia's Union Depot, which ensures that passengers can exit the train on the west side of the rail line, adjacent to the station.										
Lewis County	Chehalis to Hannaford Third Main Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 49.49 to 51.39. A new main line will be built next to the existing double track. This track will provide sufficient capacity for reliable passenger train operations. This project will also construct a second platform at Centralia's Union Depot, giving passengers trains a choice of two tracks.			✓		✓					
Lewis County	Chehalis Siding	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 56.8 to 58.3. This area often gets congested because industry trains are using the main lines for switching and idling. Construction of a new siding off the main line would allow freight trains to wait and switch on the siding, thus freeing up the main line.			✓		✓					
Lewis County	Chehalis Junction Crossover	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 58.5 to 58.8. The new set of crossovers in Chehalis will allow faster Amtrak Cascades trains to move around slower freight trains, at speeds up to 50 mph. This project will provide improved Amtrak Cascades on-time performance and faster, more frequent Amtrak Cascades service.			✓		✓					
Lewis County	Newaukum Crossover	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 60.6 to 60.8. Construction of this crossover provides flexibility for trains to move between tracks. This project will provide increased reliability and capacity.			✓		✓					
Lewis County	Winlock to Chehalis Third Man Track	WSDOT Long Range Plan for Amtrak Cascades	The purpose of this project is to allow passenger trains to operate at 110 mph, providing part of the travel time reduction needed between Seattle and Portland, OR to achieve WSDOT's service goal. This project is needed because of current physical condition of the track and the current track geometry in this location does not allow trains to travel at high speed.			✓		✓					
Lewis County	Ostrander to Winlock Third and Fourth Main Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 95.03 to 72. The purpose of this project is to allow passenger trains to operate at 110 mph, providing part of the travel time reduction needed			✓		✓					

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
			between Seattle and Portland, OR. This project is needed because the current physical condition of the track and the current track geometry in this location (because of terrain) do not allow trains to travel at high speed.										
Lewis County	Woodland Siding	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 115.3 to 117.1. Construction of a new siding would allow freight trains to wait and switch, thus freeing up the main line. This project will increase capacity and reliability.			✓		✓					
Lewis County	Felida to MP 114 Third Man Track	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 130.45 to 112.2. A new eighteen mile-long main line will be build adjacent to the existing double track. The purpose of this project is to allow passenger trains to operate at 110 mph, providing part of the travel time reduction needed between Seattle and Portland, OR to achieve WSDOT's service goal.			✓		✓					
Lewis County	Columbia River Bridge	WSDOT Long Range Plan for Amtrak Cascades	Rail milepost 9.61 to 10.14 The Portland - Spokane route junction at the north end of the Columbia River Bridge has a 10 mph speed restriction. Construction of an additional bridge and modification of the existing bridge would provide better movement of traffic and reduce the effect of bridge openings on rail traffic.			✓		✓					
Entire Corridor	Advance Signal System	WSDOT Rail Division Project List	Advanced signal system allowing passenger rail speeds over seventy-nine mph. Will meet FRA requirements for high speed passenger trains; ensure continued safe operation of Amtrak Cascades trains as speeds are increased.			✓		✓					
British Columbia	Greater Vancouver Terminal (Scott Road Station)	WSDOT Long Range Plan for Amtrak Cascades	Construct new passenger rail station			✓		✓					
British Columbia	Vancouver Terminal Control System	WSDOT Long Range Plan for Amtrak Cascades	Installation of new traffic control system			✓		✓					
British Columbia	Still Creek to CN Junction	WSDOT Long Range Plan for	New siding			✓		✓					

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
		Amtrak Cascades											
British Columbia	Sperling-Willingdon Junction Siding	WSDOT Long Range Plan for Amtrak Cascades	New siding			✓		✓					
British Columbia	Willingdon Junction	WSDOT Long Range Plan for Amtrak Cascades	Grade separation			✓		✓					
British Columbia	Brunette-Piper Siding	WSDOT Long Range Plan for Amtrak Cascades	New siding			✓		✓					
British Columbia	Fraser River Bridge	WSDOT Long Range Plan for Amtrak Cascades	Replace or improve existing bridge			✓		✓					
British Columbia	Colebrook to Brownsville High-Speed Tracks (north of White Rock)	WSDOT Long Range Plan for Amtrak Cascades	High speed track, continuation of White Rock bypass			✓		✓					
British Columbia	Colebrook Siding	WSDOT Long Range Plan for Amtrak Cascades	New siding			✓		✓					
British Columbia	White Rock Bypass	WSDOT Long Range Plan for Amtrak Cascades	High speed rail bypass			✓		✓					
Sound Transit	Seattle to Everett	Sound Transit	Various capacity improvements			✓		✓					
Sound Transit	Seattle to Tacoma to Lakewood	Sound Transit	Installation of Centralized Traffic Control system and additional trackage			✓		✓					
Sound Transit	Argo to Black River (south Seattle)	Sound Transit	Reconfiguration of existing yard and main line tracks/Costs included above			✓		✓					
Oregon	Columbia River Bridge (joint	WSDOT Long Range Plan for	New bridge			✓		✓					

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
						System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
	Washington and Oregon project)	Amtrak Cascades											
Oregon	North Portland Junction to Kenton (north of Portland's Union Station)	WSDOT Long Range Plan for Amtrak Cascades	Reconfiguration of existing tracks and new second main line			✓		✓					
Oregon	East St. Johns Siding and Main Track Relocation	WSDOT Long Range Plan for Amtrak Cascades	Construction of a new siding and change in configuration of yard tracks			✓		✓					
Oregon	Lake Yard North Leads	WSDOT Long Range Plan for Amtrak Cascades	Install high speed yard leads			✓		✓					
Oregon	Portland Union Station	WSDOT Long Range Plan for Amtrak Cascades	Construct new turnout and construct new main line			✓		✓					
Seattle-Lakewood	Commuter Rail Project: Seattle to Lakewood Sound Transit	Sound Transit	Includes agreements and easements with the BNSF for operating commuter rail service between Seattle and Lakewood. Up to four additional commuter rail easements on Sounder for service between Seattle and Lakewood.	2013	Various state funds			✓				✓	
City of Mukilteo	Pedestrian Bridge at Mukilteo Commuter Rail Station		Construction of a pedestrian bridge at the Mukilteo Commuter Rail Station linking two commuter rail platforms located on either side of the BSNF tracks with the Sounder Commuter Rail Station.	2014	FTA and Various State Funds			✓					✓
Mukilteo	Mukilteo Multimodal Terminal	WSDOT Rail Division Project List	Remove existing ferry terminal and build a multimodal transportation terminal at a more advantageous location.	2017	Various State Funds	✓		✓			✓		

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Table D.2 Planned & Programmed Class I (C), Short-Line (S), Multimodal (MM) and Other (O) Rail Projects

Type	Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
							System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
Funded														
C	Port of Vancouver	Port of Vancouver Rail Tie to Mainline	FMSIB	Construct a concrete rail trench in Columbia River near BNSF rail bridge providing new access to the port. It will eliminate at-grade crossings, reduce delays, congestion and improve port operations.	2015	FMSIB - $2.94 HSIPR $15.0	✓		✓	✓	✓		✓	✓
C	Spokane	North Spokane Corridor Railroad Realignment	TIGER IV Project	Continued construction of the US 395 North Spokane Corridor (NSC). It relocates 7.5 miles of railroads. Benefits will mostly accrue on the highway side, but there may be rail safety benefits from the track relocation.	2015	Tiger IV - $10 Million		✓					✓	✓
C	Cheney	Cheney Siding Extension Union Pacific Railroad	Washington State 2010 - 2030 Freight Rail Plan, UP	Add Track - increased fluidity	5-year plan	UP	✓		✓		✓	✓		
C	Wallula	Sun Harbor New Siding	UP	Increased fluidity	5-year plan	UP	✓		✓		✓	✓		
C	Various	CTC Islands - Ayer Sub	UP	Increased fluidity	5-year plan	UP	✓		✓		✓	✓		
C	Seattle	Seattle Sub Phase III	UP	Increased fluidity	5-year plan	UP	✓		✓		✓	✓		
MM	Port of Vancouver	West Vancouver Freight Access	Washington State 2010 - 2030 Freight Rail Plan, RTPOs (Forward Washington, and http://www.portvanusa.com/wvafa/funding/	This project consists of 21 independent elements, which includes construction of a new dual carrier rail access into the port, enhancement to rail system, relocation of facilities and utilities and improvements to roadways.	2017	Port of Vancouver ($173.3M), Tenants ($46M), WSDOT HSIPR grant ($15M), FMSIB grant ($13.5M), Tiger II grant ($10M), BNSF Railway ($8.1M), FRA grant ($3.8M), ARRA	✓		✓	✓	✓			✓

Type	Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
							System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
						2009 grant ($2.5M), FHWA grant ($1.6M), WSDOT FRAP grant ($0.5M)								
S	Centralia	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail	Short-line railroad host	Build a new connection between Tacoma Rail and PSAP at Blakeslee Junction, and associated track re-alignment. Will reduce congestion for both rail and automobile traffic in the area.	NA	Phase 1A - 2005 Partnership Funding (Weight Fees) - $7.4 million; Phase 1B - Multimodal Transportation Account - $1.5 million; Phase 1B - Federal Funds - $3.9 million	✓	✓	✓	✓				
Planned														
S	Vancouver	Columbia Shores (S. of SR 14)	Short-line railroad host	Rail Trestle, Widen Portal	2020-2035			✓						✓
C	Fife	Fife Siding Extension	UP	Port of Tacoma - Additional Capacity	5-year plan	UP	✓		✓		✓	✓		
MM	Seattle	Port of Seattle's Argo Yard Truck Roadway (East Marginal Way Truck Crossover)	FMSIB	This project provides safe truck access to the gate of UP's Argo Yard from a newly designed intersection, eliminating difficult weaving maneuver.	2014	FMSIB - $0.995M								✓
MM	Port of Pasco	Big Pasco Rail Rehabilitation	RTPO's / Forward Washington	Reconstruct 5 miles of rail at Big Pasco, an industrial center, to help improve access to agricultural and industrial shippers which can in turn attract business to the port. A 4 Phase intermodal facility improvements project was completed in 2010.	2021-2035		✓							
O	Grays Harbor	Rail Car Storage		Design and construction of a rail car storage	2013		✓		✓	✓	✓	✓	✓	

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Type	Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact							
							System Capacity	System Preservation	Efficiency & Reliability	Economic Development	International Trade	Cost-Effective Investments	Environment & Community	Safety & Security
	County			yard to relieve rail conflicts in downtown Aberdeen from train switching movements across at-grade street crossings. Construct two new rail sidings.										
O	Cowlitz County	SR 432 Corridor Improvements	WSDOT Project List	Rail and highway improvements. Short-term elements: Preliminary analysis, final design, environmental, engineering for rail and highway. Long-term: ROW and CN - Single point urban interchange and rail improvements	2019		✓		✓	✓			✓	
S	Spokane/Whitman County	P&L Bridge Replacement & Repair - Phase II	PCC Strategic Plan 2013	In coordination with over $21 million in private investment to build a new grain terminal by McCoy Grain Terminal LLC, Phase II of this project would replace or repair 15 bridges along the first 32 miles of the P&L branch of the PCC Rail System.		TIGER 5 application submitted		✓	✓	✓	✓			
S	Spokane County	CW Line Rail Relay & Rehabilitation - Phase I	PCC Strategic Plan 2013	Would replace worn rail, rebuild right-of-way and improve aged at-grade highway/rail grade crossings along 6.9 miles of the CW Branch of the PCC Rail System. Will enable load-bearing weight capacity up to 315,000 pounds and allow 25 miles-per-hour over the rebuilt rail segment.		TIGER 5 application submitted		✓	✓	✓	✓			
O	Quincy	Port of Quincy Intermodal Terminal	Port of Quincy Comprehensive Plan	A project to expand the intermodal terminal to serve perishable agricultural commodities.			✓			✓				
O	Moses Lake	Port of Moses Lake	WSDOT Project List	Project is to provide rail service to lands designated for industrial development in the northern part of the City of Moses Lake as well as to the south and east of the Grant County International Airport (GCIA), to enhance opportunities for economic development, and to attract new rail-dependent businesses to those areas.						✓				

Table D.3 Planned & Programmed Grade Crossing Improvements

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact				
						System Capacity	Efficiency & Reliability	International Trade	Environment & Community	Safety & Security
Funded										
Auburn	M Street SE Grade Separation	FMSIB	This project will eliminate the at-grade crossing of the Stampede Pass Line at M Street SE by creating an underpass. Benefits will mostly accrue to roadway users, but there may be rail safety and efficiency benefits from the grade separation.	2013	Local - $6M, FMSIB - $6M, Federal - $1M, Ports - $1.5M, BNSF - $0.5M, King County - $0.24M				✓	✓
Kent	Willis St (SR 516) Grade Separations	FMSIB	Grade separate Willis St from BNSF and UP railways to provide link thru the warehouse/industrial center of Kent. Project will reduce delays, eliminate at-grade conflicts and allow increased train speeds. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2022	City of Kent - $9.4M, FMSIB-$4M, TIB-$10M, BNSF&UP – $5.35m, FAST-$17M, Ports - $5M, Other - $6.25M		✓		✓	✓
Yakima	Yakima Grade Separated Rail Crossing	FMSIB	Construct 2 underpasses under BNSF mainline. It will be critical to improve truck freight movement, emergency vehicles and vehicles into/out of downtown area. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2014	FMSIB - $7M				✓	✓
37th St NW, Auburn	37th & B ST NW Railroad Crossing Safety Improvements	City of Auburn	Design, coordination, permitting and construction of improvements at the 37th St NW BNSF Railroad crossing. Include construction of a pre-signal and related signal modification at B St NW, advanced railroad pre-emption, and traffic monitoring cameras.	2014	Federal safety grant.		✓			✓
Various citywide, Marysville	Citywide Intersection Safety Improvements	WSDOT City Safety Program: http://www.wsdot.wa.gov/LocalPrograms/Traffic/CitySafetyFunded.htm	The Citywide Intersection Safety Improvement Project will upgrade pedestrian signal displays, retroflective backplate tape to signal heads, upgrade mast arm signage, add intersection lighting and improve railroad preemption at various signalized intersections within the City of Marysville.		HSIP (Federal Highway Safety Improvement Program)		✓			✓
Sedro-Woolley	Construction of BNSF RR Bridge - SR 20 Corridor Freight Mobility &	City of Sedro Woolley	Construct a new BNSF railroad bridge connecting John Liner Road with Jones Road. Benefits will mostly accrue on the highway side, but there may be rail safety benefits from the track relocation.	2015	Skagit County, WSDOT, TIB Urban Arterial Program funds, Skagit Transit				✓	✓

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Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact				
						System Capacity	Efficiency & Reliability	International Trade	Environment & Community	Safety & Security
	Revitalization Project Phase 2B				funds, private developer.					
Vancouver	Jefferson Street/Grant Street	City of Vancouver	Reconstruct and grade separate	2012	Local Funding - $10M				✓	✓
Kent	South 212th St Grade Separation	FMSIB	This project will construct RR grade separation at the BNSF and UP rail line. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2017	FMSIB - $10M				✓	✓
Planned										
Spokane Valley	Barker Road/BNSF Grade Separation	FMSIB / City of Spokane Valley	This project reconstructs Barker Rd to pass over three BNSF tracks and SRS 290. This will allow the City to petition to close Flora Rd crossing. Benefits will mostly accrue to roadway users, but there may be rail safety benefits from the grade separation.	Unknown	FMSIB - $10; Project is currently delayed due to incomplete funding				✓	✓
S. 228th St. to Union Pacific Railroad tracks, Kent	S 228th St Grade Separation Phase III	FMSIB	Grade separation between the Union Pacific Railroad tracks at S. 228th Street via an over-crossing. To accommodate the over crossing, associated improvements will include driveway improvements for the adjacent businesses, to accommodate access, concrete curbs, gutters, and sidewalks, storm drainage improvements, geogrid reinforced block walls, and new lighting.	2015	STPD-1216(004)					✓
Kent	South 228th St BNSF /UP Grade Separation Phase III	FMSIB	This is the phase III of a project to grade separate 228th St from UP mainline traffic. It will decrease congestions, enhance safety, improve mobility, and provide connection to 40M sq. ft of industrial spaces. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2017	FMSIB -$3.25m; Kent - $2.0M; Federal - $3.12m; Unfunded (anticipated) $16.63M				✓	✓
Pierce County	Canyon Road Northerly Extension / BNSF Railway Overcrossing	FAST Corridor	This project will construct a new overpass of the BNSF Railway mainline from Pioneer Way to 62nd Avenue East. Also arterial roadway extension of Canyon Road from Pioneer Way across the Puyallup River. Will increase capacity for roadway freight and goods movement and provide a more direct route to the Port of Tacoma from the manufacturing and industrial businesses in Fredrickson and	2017	Pierce Co. - $10.2m; FMSIB - $2.0m; Fed. $3.2m; "Anticipated" / unfunded $24.2M	✓		✓		✓

Location	Project Name	Source	Description	Completion Date	Funding Source(s)	Areas of Impact				
						System Capacity	Efficiency & Reliability	International Trade	Environment & Community	Safety & Security
			elsewhere in Pierce County.							
Washougal	27th St Extension and RR overpass	RTPO's / Forward Washington	RR grade separated overpass, bike lanes and sidewalk. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2011-2017	No evidence of secured funding				✓	✓
Vancouver	Esther Street at R Xing	FAST Corridor	Railroad Undercrossing, new road. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2014					✓	✓
Ridgefield	Extend Pioneer St. (SR501 to Port)	City of Ridgefield	Railroad Overcrossing, new road. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2018					✓	✓
Cowlitz County	Yew Street Grade Separation	City of Kelso	Provide safe crossing along BNSF rail line. Benefits will mostly accrue to roadway users, but there may be community and rail safety benefits from the grade separation.	2017					✓	✓
Seattle	Dearborn and Spokane Streets Grade Separation	City of Seattle Department of Transportation	Construction of highway bridge over BNSF main line between Dearborn and Spokane Streets.	2030				✓	✓	✓
Seattle	Lander Street Grade Separation	City of Seattle Department of Transportation	A proposed bridge over BNSF Railway Tracks, connecting First Avenue South and Fourth Avenue South. This project was placed on hold as of March 2008 due to funding limitations. The future schedule of the project is unknown at this time, though this project remains a priority for SDOT.					✓	✓	✓

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Washington State

2010-2030
Freight Rail Plan

December 2009

Washington State
Department of Transportation

For more information, contact:

- Call the WSDOT State Rail and Marine Office at (360) 705-7900;
- Write to the WSDOT State Rail and Marine Office at P.O. Box 47407, Olympia, WA 98504-7407;
- Fax your comments to (360) 705-6821; or
- E-mail your comments to rail@wsdot.wa.gov

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Washington State 2010-2030 Freight Rail Plan

Prepared by

Washington State Department of Transportation State Rail and Marine Office

December 2009

Washington State Department of Transportation

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Washington State requires a robust rail system that will provide effective and efficient transportation critical to maintaining our economy, environment and quality of life. Our vision for the future is to enhance our economic vitality and mobility while safeguarding the environment, by continually improving our transportation system.

The *Washington State 2010-2030 Freight Rail Plan* is an update of the *Washington State Freight Rail Plan 1998 Update*. This plan will provide guidance for rail initiatives and investments in Washington State that will:

- Support Washington's economic competitiveness and economic viability.
- Preserve the ability of Washington's freight rail system to efficiently serve the needs of its customers.
- Facilitate freight system capacity increases to improve mobility and reduce congestion.
- Take advantage of freight rail's modal energy efficiency to reduce the negative environmental impact of freight movement in Washington.

The Washington State Freight Rail Plan complies with the Federal Railroad Administration (FRA) requirements that the state establishes, updates, and revises a rail plan in order to receive federal assistance. The Freight Rail Plan also fulfills state requirements, under the Revised Code of Washington (RCW) 47.76.220 and RCW 47.06.080, that the Washington State Department of Transportation (WSDOT) prepare and periodically revise a state rail plan that identifies, evaluates, and encourages essential rail services.

This plan is a product of broad participation from rail industries, ports, shippers, local entities, tribes, transportation communities, interest groups, and the general public. It develops the vision, goals, and strategies to provide reliable, accessible, cost-effective, energy efficient and environmentally friendly freight rail services. It presents a compilation of statewide freight rail needs. Currently a National Rail Policy is being developed by the FRA and is anticipated to be released in 2010. Washington's plan will be updated and revised as necessary to maintain consistency with the National Rail Plan.

The Washington State Freight Rail Plan is intended to serve as a blueprint for investment in our rail system and to prepare us to capture the emerging opportunities from economic recovery that is on the horizon. With effective and responsible improvements to our rail system we will serve the economic development, transportation, social and environmental goals of Washington State and its citizens.

Paula J. Hammond, P.E.
Secretary of Transportation

Washington State
Department of Transportation

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Washington State
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Executive Summary

Introduction

Washington State's (state) economy needs a vibrant, competitive rail network. This network must provide a reliable, accessible, and cost-effective freight service to shippers and customers across the state. At the same time, the freight rail system must co-exist with a high-quality, fast, frequent and reliable passenger rail service between major cities across the state that is competitive with automobile and air travel times. This plan focuses on the freight side of this equation. It must be recognized that both systems are interconnected and must be planned accordingly to meet both freight and passenger needs as an integrated rail network.

The future of the state freight rail system is envisioned by the State Freight Rail Plan Advisory Committee to meet the following six goals:

- **Economic Competitiveness and Viability:** Support the state's economic competitiveness and economic viability through strategic freight partnerships.
- **Preservation**: Preserve the ability of the state's freight rail system to efficiently serve the needs of its customers as well as preserve the potential of the system in the future.
- **Capacity**: Coordinate the freight rail system capacity increases to improve mobility, reduce congestion, and meet the growing needs of the state's freight rail users, when economically justified.
- **Energy Efficiency and Environmental**: Take advantage of freight rail's modal energy efficiency to reduce the negative environmental impacts of freight movement in the state.
- **Safety and Security**: Address the safety and security of the freight rail system and make enhancements, where appropriate.
- **Livability**: Encourage livable communities and family-wage jobs through the freight rail system and its improvements.

The *Washington State 2010-2030 Freight Rail Plan* is an update of the *Washington State Freight Rail Plan 1998 Update*. This update complies with Federal Railroad Administration (FRA) requirements that the state establishes, updates, and revises a rail plan in order to receive federal assistance. The freight rail plan also fulfills state requirements, under Revised Code of Washington (RCW) 47.76.220 and RCW 47.06.080, that the Washington State Department of Transportation (WSDOT) prepare and periodically revise a state rail plan that identifies, evaluates, and encourages essential rail services. This plan and its recommendations are

intended to be a living document that will be updated and revised as future conditions require. Currently a National Rail Policy is being developed by the FRA and is anticipated to be released in 2010. Washington's plan will be updated if a revision is required to maintain consistency with the National Rail Plan.

This plan will provide guidance for rail initiatives and investments in the state. Results from this plan will be included in the *Statewide Multimodal Transportation Plan*. WSDOT intends this next update to meet state and federal transportation planning requirements, thus maintaining the state's eligibility to receive federal surface transportation funding.

The freight rail plan also reflects strategies to:

- Increase the effectiveness of the rail program.
- Broaden understanding of rail issues for all stakeholders.
- Provide a framework to implement rail initiatives in the state.
- Support WSDOT in federal funding opportunities, such as Transportation Investment Generating Economic Recovery and American Recovery and Reinvestment Act of 2009 (ARRA).
- Implement the rail benefit/cost analysis required by the legislature.
- Fulfill new federal requirements for state rail plans.

2030 Vision for Freight Rail in Washington State

The Washington State freight rail system is:

- ***Reliable.***
- ***Cost effective.***
- ***Energy efficient.***
- ***Environmentally-friendly transportation mode for domestic and international cargo deliveries.***

As a critical part of Washington's multimodal transportation system, the rail system leverages intermodal connections:

- ***To provide a seamless system for cargo deliveries to customers.***
- ***To improve the mobility of people and goods.***
- ***To support Washington's economy by creating and sustaining family-wage jobs and livable communities.***

Freight rail has increasing importance that fosters economic growth and livable communities for the state and its citizens. The rail system is a critical part of the multimodal transportation system that supports national and international trade flows through the state and provides critical gateway opportunities for other cargo to move through the state. It is a vital system that supports state ports and the regional economies bringing

state goods to national and international markets. Freight rail in the state can be considered as a fundamental utility supporting the retail and wholesale distribution system.

Rail System in Washington State

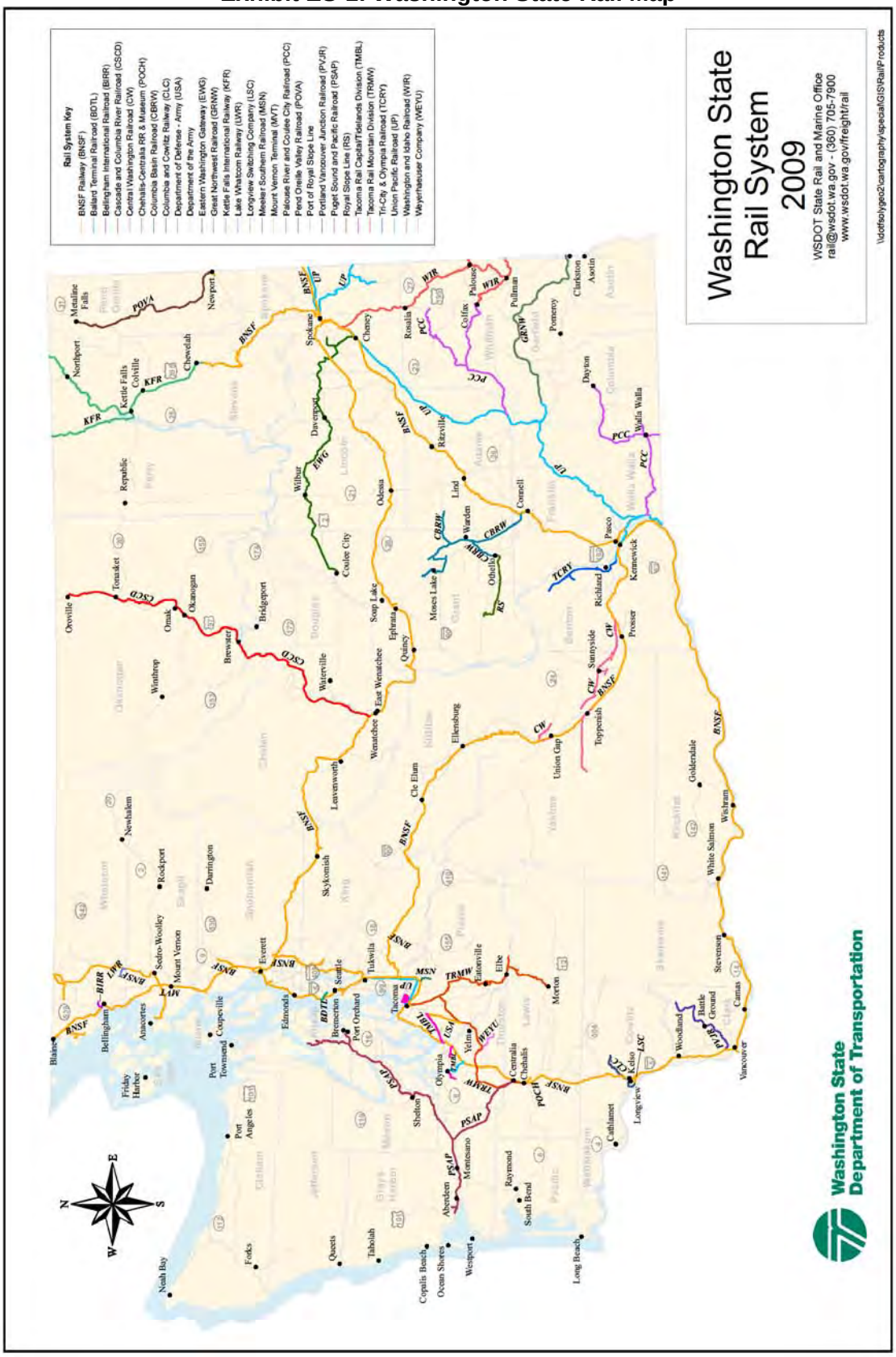
The state's rail network has evolved over the last century to serve a wide range of passenger and freight markets and has extended across many parts of the state. Thirty-two of the state's 39 counties are served by one of the state's freight railroads (Exhibit ES-1). The rail network in the state has three distinct types of rail services: intercity passenger, commuter, and freight.

The Class I railroad system primarily serves the inland transportation component of the supply chain for large volumes of import and export cargo moving through state ports. This Class I railroad system is supported locally by the short-line network consisting of many small railroads, many of which evolved from abandonments of the Class I railroads.

The state's mainline railroad system is comprised of two Class I railroads: the BNSF Railway (BNSF) and the Union Pacific Railroad (UP). Both operators have invested in improvements and upgrades to their rail systems, including new locomotives, new traffic control systems, and rolling stock substantial infrastructure improvements. The Class I railroads are supported by one Class II and 19 active Class III short-line railroads. This brings the total number of active freight railroads in the state to 22.

There are three major rail corridors in the state. First, the north-south corridor is the I-5 rail corridor running from Portland, Oregon (OR) to Vancouver, British Columbia (B.C.). There are two east-west corridors: the Columbia River Gorge—running from Vancouver, Washington (WA) to the east—and Stevens Pass running from Everett to Spokane. These three corridors carry the majority of the current freight rail volumes and are supported by other less dense mainline routes as well as the short lines that feed into the mainlines, such as Stampede Pass running from Auburn to Pasco.

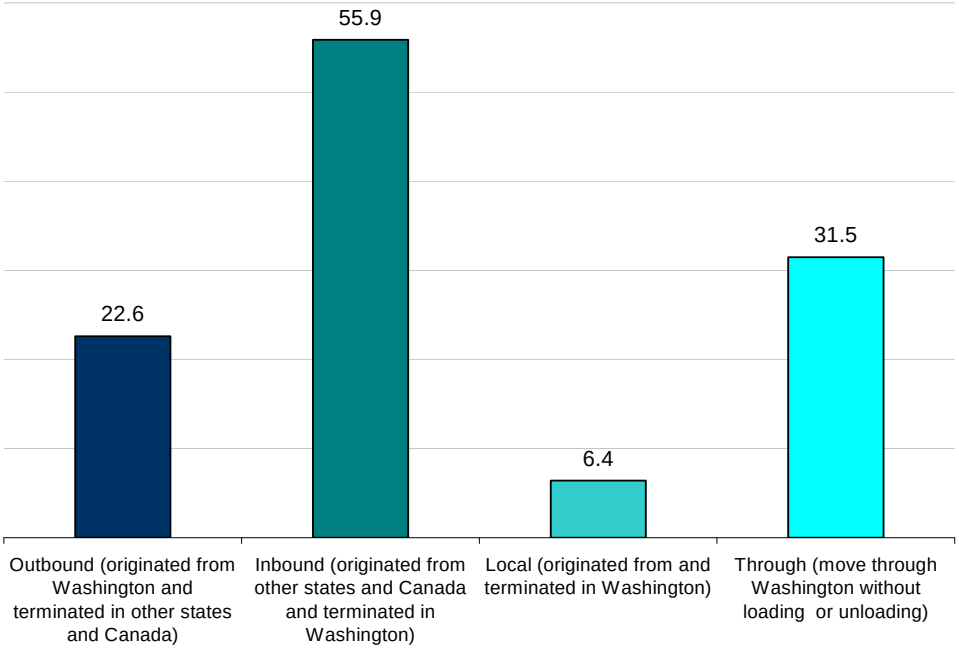
Exhibit ES-1: Washington State Rail Map



Economic Impact

Freight rail transportation is a fast growing service. In 2007 the state rail system carried 116 million tons of freight, compared with 64 million tons in 1991, for an annual growth rate of 3.8 percent. Among the 116 million tons of rail freight, 56 million tons arrived in the state from 44 other states and Canada, while almost 23 million tons were shipped from the state ports and industries to 46 other states and Canada. Over 6 million tons of local rail freight moved within state borders and Almost 32 million tons of rail freight moved through the state without loading and unloading (Exhibit ES-2).

Exhibit ES-2: Washington State Rail Freight Directional Flows – 2007
(Million Tons)



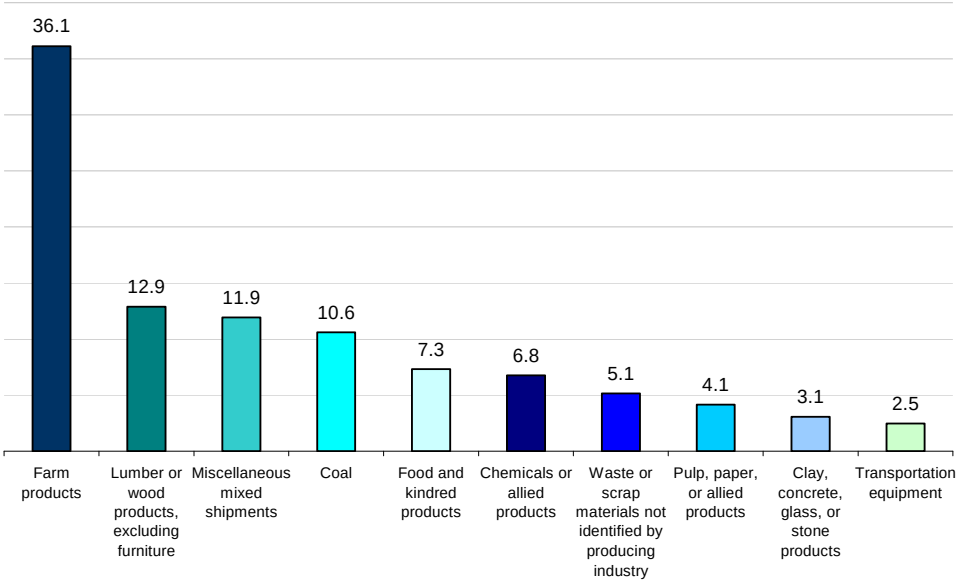
Source: WSDOT State Rail and Marine Office – 2007 Surface Transportation Board (STB) Waybill Sample Data Analysis

The economic vitality of the state requires a robust rail system capable of providing its businesses, ports, and farms with competitive access to North American and overseas international markets. The state is well known for its agricultural products, such as apples, wheat, fruit, and potatoes. Freight rail plays an important role to underpin the state's agriculture sector. Lumber and wood product producers, manufacturers, waste management, and mining also rely on rail transportation to move heavy, bulky products to markets in a cost-effective manner.

Farm products (36.1 million tons) were the top commodity by weight moved on the state's rail system, followed by lumber and wood

(12.9 million tons), miscellaneous mixed shipments (11.9 million tons), and coal (10.6 million tons) (Exhibit ES-3). In 2007, 86 percent of the freight moved on state rail lines was from the top ten commodities.

Exhibit ES-3: Top 10 Commodities Shipped by Rail
Washington State 2007 (Million Tons)



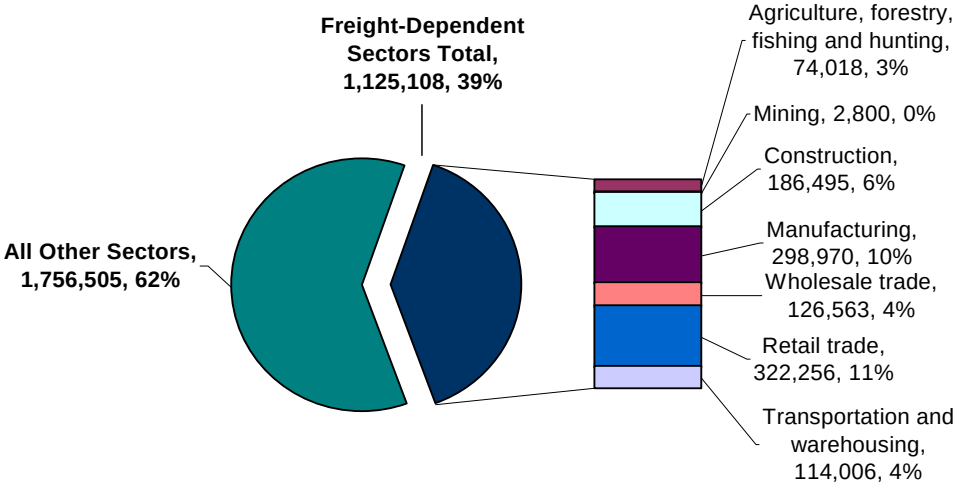
Source: WSDOT State Rail and Marine Office – 2007 STB Waybill Sample Data Analysis

Rail freight transportation has significant economic impacts. In 2007 total rail freight revenue, including rail only and rail intermodal, amounted to $1.2 billion.[1] Freight rail employed 4,207 people in the state and contributed $533 million directly to the state's Gross Domestic Product (GDP).

A large part of the state's economy depends on freight for its competitiveness and growth. The state's freight rail system, as an integrated part, also supports freight-dependent sectors of the economy. Freight-dependent sectors, in general, include agriculture, mining, construction, manufacturing, wholesale, retail, transportation, and warehousing. In 2008 freight-dependent sectors accounted for 33 percent of the state's GDP, 71 percent of business income, and 39 percent of state's employment (Exhibit ES-4).

[1] Rail intermodal refers to double-stack container trains that move as a unit train and has one or more modes to move a shipment from origin to destination.

Exhibit ES-4: Freight-Dependent Sectors Employment
Washington State 2008 First Quarter
Freight-Dependent Sectors: 1.125 Million Jobs
All Sectors: 2.881 Million Jobs



Source: Washington State Employment Security Department 2008, compiled by WSDOT State Rail and Marine Office

Societal Impact

Transportation is one of the largest greenhouse gases (GHG) sources in the state. Transportation GHG sources includes light- and heavy-duty (on-road) vehicles, aircraft, rail engines, and marine engines. Carbon dioxide (CO_2) accounts for about 98 percent of transportation GHG emissions from fuel use. Most of the remaining GHG emissions from the transportation sector are due to nitrogen oxide (NOx) emissions from gasoline engines. Rail is a more environmentally-friendly transportation mode (Exhibit ES-5). Increasing the use of rail transportation can contribute to a reduction in GHG.

Exhibit ES-5: Greenhouse Gas Emissions by Mode
(grams/ton-mile)

	Road	Rail	Air
Carbon Dioxide (CO_2)	235.33	40.00	1,469.33
Nitrogen Oxide (NOx)	1.99	0.74	6.31
Particulate Matter (PM_{10})	0.47	0.05	0.80
Carbon Monoxide (CO)	1.21	0.42	6.26
Sulfur Dioxide (SO_2)	0.30	0.12	2.27

Source: Environmental Science Technology, 2007, 41, 7138-7144

Publicly- and privately-owned railroads are implementing cleaner fuels and working to achieve increased fuel efficiency by retrofitting existing

engines and purchasing newer cleaner engine technologies on new equipment, as well as continuing to make operational efficiency improvements.[2]

Increasing the use of rail for both the movement of freight and passengers can help the state make progress towards its GHG emissions reduction goals. On a national level, freight demand is projected to almost double in the next 35 years. Without improvements in freight rail capacity, this increase in demand would need to be accommodated by trucks using the roadway network.

In the case of moving freight from trucks to trains, a net decrease in GHG emission reductions is tied to a permanent change in mode split: freight volumes are forecast to grow, and if trucks shift one commodity to rail simply to haul another commodity on the road, there will not be a net decrease in GHG emissions.

Rail Infrastructure Needs and Investment Program

Currently, the Class I railroads are meeting the existing long-haul traffic demands, but are experiencing capacity limitations during peak volumes on some of their routes. It must be noted that the majority of the state's passenger rail services run on rail owned by these Class I railroads. Thus, infrastructure improvements and operational changes will be needed to accommodate projected growth in freight and passenger traffic, and to support a competitive rail freight environment.

An assessment of the freight needs was completed as part of this plan. The assessment is based on data provided directly by the state's freight railroads, ports, public agencies, and other key stakeholders. In total, this needs assessment identifies 109 short- and long-term capital improvement projects and other initiatives. The total cost for the requested projects, where cost estimates are available, is $2.0 billion. Other issues that need to be considered in the development of this plan are: proposed rail abandonments and at-risk lines, port access, intermodal connectors, and emerging issues that face freight rail in this state. The state needs to develop a comprehensive system to prioritize these projects, using a cost benefit approach, to obtain the maximum benefit for the public's investment into any private infrastructure that is clearly measurable.

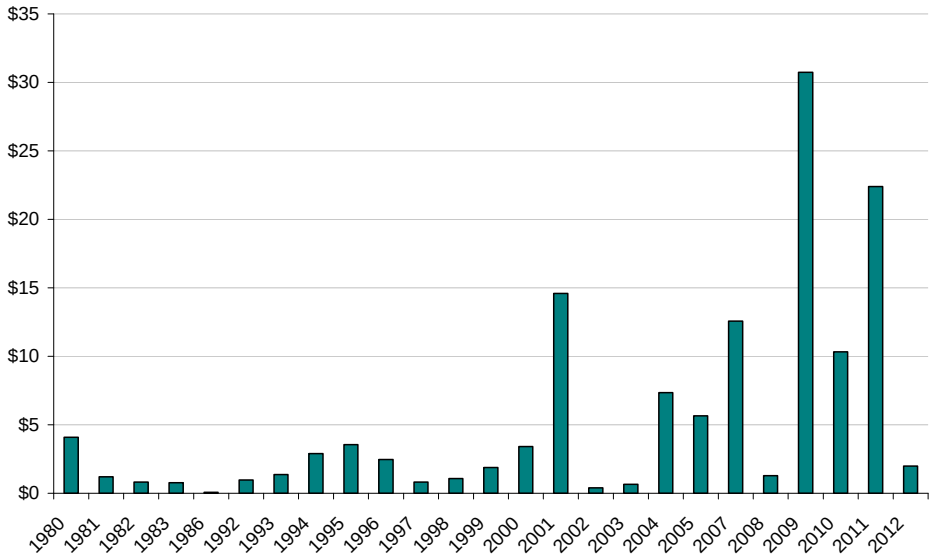
Preservation of At-Risk Railroads

The state has one of the best rail preservation and development programs in the country. The state has invested $99 million in its rail freight

[2] www.maritimeairforum.org/news/NW_Ports_Clean%C2%ADAirStrategy_Draft.pdf.

infrastructure since 1980. An additional $35 million in investment is anticipated from 2010 to 2012 (see Exhibit ES-6).

Exhibit ES-6: Washington Rail Investments (in Millions)



Source: WSDOT State Rail and Marine Office

These investments include the Freight Rail Assistance Program ($6 million 2007-2011), and Freight Rail Investment Bank Program (Rail Bank) loans. The Rail Bank has made $7.5 million in funding available from 2007-2011, with a maximum loan of $250,000. All of these investments have been in regional and small railroads, in recognition of the fact that these railroads are a vital component of the state's transportation system and economic well-being.

Port Access

Port access to rail is very important to the vitality of local, state, and national economies. As economic development agencies, ports are a fundamental part of the state's infrastructure. State ports face substantial competition from other ports and shipping routes. The majority of the cargo that comes through state ports is discretionary cargo (i.e., containers, autos, grain, dry bulks, and break-bulk cargoes) that can shift to other gateways, if shipping through these other ports becomes more efficient or cost effective than using state ports. To be competitive, ports must have good rail access[3] and connect effectively to the rest of the system. As an added benefit, rail is a community-friendly mode, as it is a safe, energy-efficient way to move goods along major corridors.

[3] Good rail access means that trains can get in and out of a rail facility without delay to the facility, the train, or other rail operations on a rail line.

The state has 75 ports, not all with water access, as shown in Exhibit ES-7. The state has 11 deep-draft ports, a tremendous asset for the state's economy.[4] This is an asset because these ports can berth most of the cargo ships on the ocean due to the ability to handle ships that draw up to 40 feet of draft. Seven of these ports are on the Puget Sound. The largest ports, the Ports of Seattle and Tacoma, together comprise the third largest container load center in the nation—behind the complexes at Los Angeles/Long Beach and New York/New Jersey. One deep-draft port, the Port of Grays Harbor, is located on the coast; and three are located on the Columbia River. Together, these ports comprise a seamless network that sends state goods to a global market, and imports goods from other countries, bound for state stores.

Vital to the continued success of state ports is capitalizing on our inherent competitive advantage—a shorter ocean trade route to the Asia/Pacific Rim through the state's gateways. However, if these critical gateways, which handle a majority of the state's freight rail tonnage, lead to a system that is slow and unreliable, they will be noncompetitive and the flow of trade may shift. This could result in added costs to shippers.

Thus, state ports are only a part of the freight rail picture. Each part of the system needs to contribute to the success of the whole. Investment of public dollars needs to follow a prioritized plan that will deliver the maximum system benefit.

The Columbia/Snake River Inland Waterway system stretches 365 miles inland from the Pacific Ocean. The three deep-draft ports along this system—Longview, Kalama, and Vancouver—are major shipping centers for the state. Upstream, the Ports of Klickitat, Pasco, Kennewick, and Benton are served by barge along the Columbia River. The Ports of Garfield, Whitman County, Walla Walla, and Clarkston are served by barge along the Snake River.

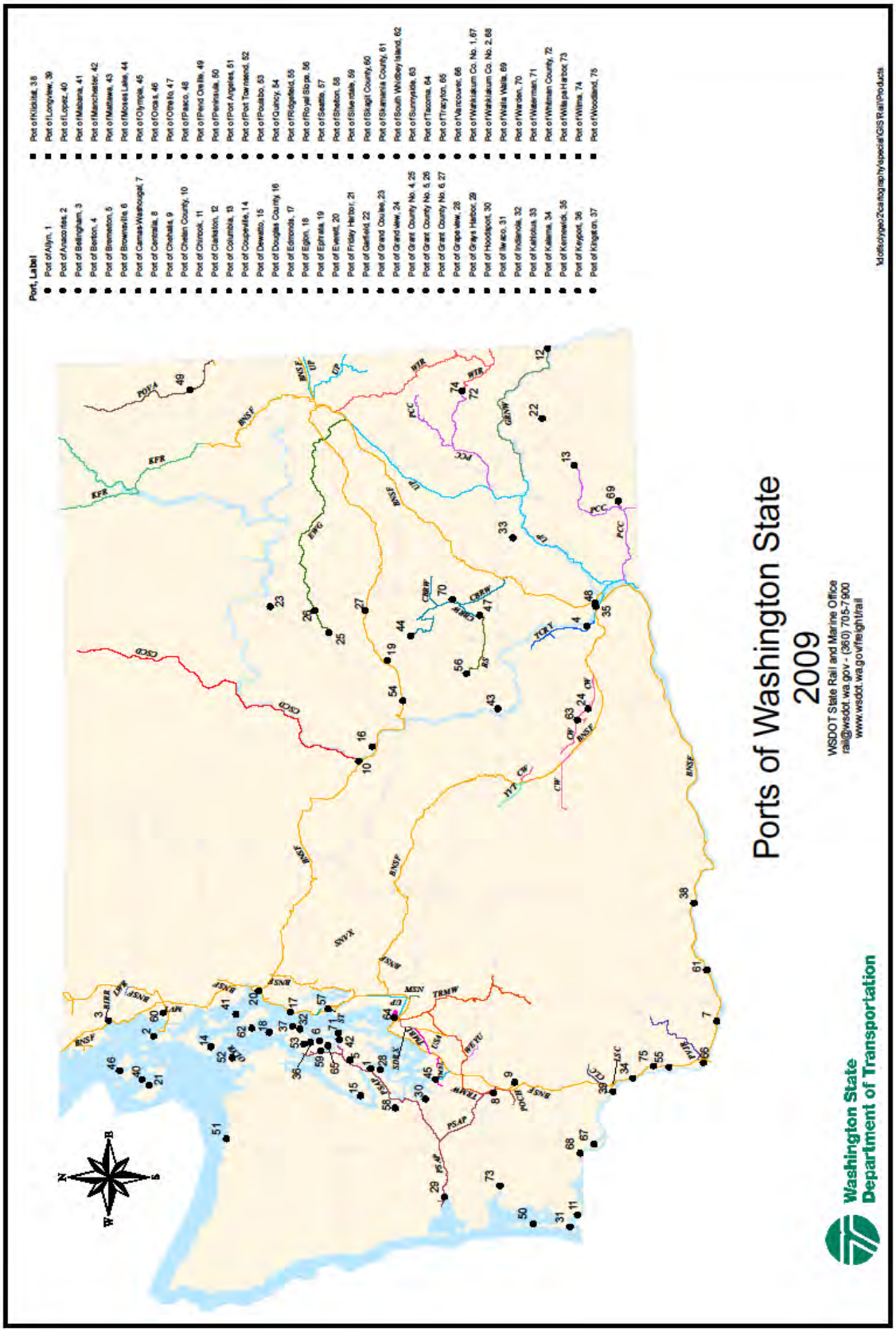
Although there are many ways to classify ports in the state, this plan has selected four classifications for ports that are rail served:

- **Intermodal (Container) Ports[5] –** Seattle and Tacoma.

[4] A deep draft Port is a port that can receive a ship with a laden draught of 40 feet or less. A very deep draft port is one that can handle a laden draught of 45 feet or less, which are most container ships and other large ships including military ships. http://www.globalsecurity.org/military/systems/ship/container-types.htm/.

[5] Intermodal ports are those ports that move containers from ship to rail, producing unit trains of containers to be transported to the inland destinations.

Exhibit ES-7: Ports of Washington State



- **Agricultural and Bulk Ports –** Clarkston, Garfield, Grays Harbor, Longview, Kalama, Seattle, Tacoma, Vancouver (WA), Walla Walla, and Whitman County.
- **Rail-Dependent Break-Bulk and Industrial Ports –** Anacortes, Everett, Garfield, Grays Harbor, Kalama, Longview, Olympia, Seattle, Tacoma, and Vancouver (WA).
- **Rail-Serviced Industrial Ports –** Benton, Bremerton, Chelan, Clarkston, Columbia, Ephrata, Garfield, Kennewick, Mattawa, Moses Lake, Othello, Pasco, Quincy, Ridgefield, Royal Slope, Shelton, Sunnyside, and Whitman County 3 & 4.

Each of these categories has different access needs and challenges, although efficient and timely rail service is mandatory to all these ports. Port access issues are more closely related to location than to type of port.

Nearly all of the state's deepwater ports are located adjacent to the Interstate 5 (I-5) corridor, or are on short-line railroads that branch off the I-5 corridor. As a result, rail connectivity issues for the ports and capacity issues on the I-5 rail corridor are necessarily tied. Along the corridor there are five main areas where mainline capacity needs and connectivity issues intersect, including: Vancouver (WA), Kalama to Longview, Centralia, Tacoma, and Seattle. Each of these is examined in more detail in Chapter 5 of the plan.

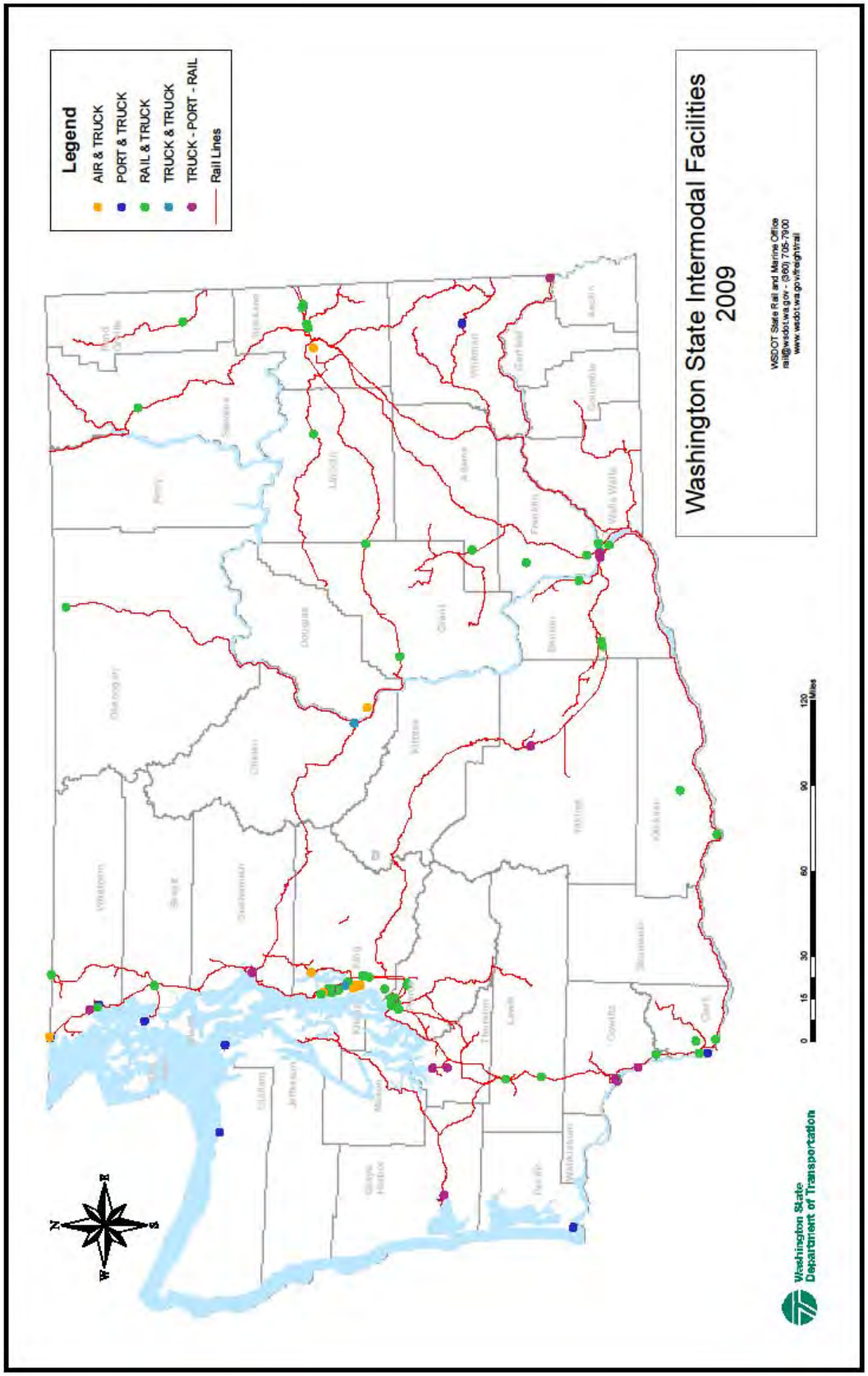
Intermodal Connectors

Intermodal connectors are a location where two modes meet and the cargo moves from one mode to another.[6] In most cases this is moving a piece of cargo from a truck to a train or vice versa. Two examples are inland ports and on-dock intermodal yards. Exhibit ES-8 shows major intermodal facilities located in the state by type of connector.

Rail access is a significant element of port competitiveness. By providing an inland port service, a seaport can (in theory) make intermodal rail service available to a broader range of customers. There must be efficient rail service to both the seaport and the inland port for the model to work. If priced competitively, the inland port service can offer cost savings to container shippers and thereby increase the port's competitiveness.

[6] The intermodal connectors shown are those identified by the USDOT BTS Intermodal Facility database.

Exhibit ES-8: Intermodal Freight Connectors in Washington State



In addition to rail served inland ports, the two most prominent alternatives that involve rail transportation are on-dock intermodal and near-dock intermodal. Examples of these intermodal yards can be seen at the Ports of Seattle and Tacoma. There are other types of intermodal connectors, such as rail-to-barge, truck-to-grain elevators, rail-to-bus, as well as airports. In most cases airports are not supported by rail, although for freight there is the truck-to-plane intermodal connector.

Freight System Issues and Needs

Capacity/Bottlenecks

The benefits that the state can obtain from a robust rail system are threatened because the system is nearing capacity. Service quality is strained and rail rates are going up for many state businesses.

The pressure on the rail system will increase in the next decades, as a result of increased population and demand, economic globalization, and continued containerization. The total freight tonnage rail system is expected to increase by about two to three percent annually over the next 20 years. To accommodate this growth, many more rail lines within the state will be operating at or above their practical capacity.

Growth in rail traffic and rail congestion issues are also affecting state communities by increasing delays for automobile and truck drivers at rail-highway crossings. Increased noise, congestion, and safety problems exist at these crossings. Dealing with these problems in an uncoordinated fashion on a case-by-case basis is often frustrating for both the communities and the railroads.

Competition

State ports are facing competition not only from the southern California ports, but also increased competition from western Canadian ports, including Prince Rupert. There is also the concern that once the Panama Canal is expanded for the larger container ships that the cargo may go ‘all water’ to the East Coast through the canal instead of by rail from the West Coast. At this point, there are many studies predicting potential outcomes of the larger canal, but there is not a consensus on the effect it will have on the state. This plan includes strategies to favorably position the state in the changing competitive marketplace.

Emerging Issues

North-South High Capacity Corridor

The fluidity of the I-5 rail corridor is mandatory for the economic health of the state. This corridor can be classified as extending from Portland, OR to Vancouver, B.C. A north-south corridor, supporting the east-west movements of the majority of the cargo moving through the state, is required to keep the rail network flowing. The BNSF I-5 corridor carries both freight and passenger rail traffic. As the projections of cargo and passenger volumes are met, it will be especially important that attention is kept on the health of this north-south corridor.

It is important to note that the mainline in the I-5 corridor, from Vancouver (WA) to Vancouver, B.C., is owned by BNSF. Amtrak has rights to operate passenger service on this mainline. UP has rights to run on this rail line from Vancouver (WA) to Tacoma. From Tacoma to Seattle, both Class I railroads have their own rail lines and operate separately on their respective rail.

Currently, BNSF has no public plans, other than those announced to support intercity passenger train volumes, to increase capacity over the route. From a freight perspective, BNSF believes sufficient capacity exists for the foreseeable future. Indeed, BNSF's planning staff sees nothing in this corridor as "freight driven" with the current volumes at this time. Increased volumes may require capacity improvements.

In the future, it will be very important to monitor the capacity versus demand of this corridor and prepare capacity improvements to meet the growth projections. This will require coordination between all stakeholders and partners to ensure that capacity is available for this corridor and its communities to meet their respective needs. This may require a true public-private partnership including regional agencies (such as metropolitan planning organizations), Sound Transit, Amtrak, rail freight customers, ports, local communities, as well as other stakeholders. Public funding could include safety improvements, such as grade separations.[7] Private railroad funding could include improvements, such as longer sidings or additional mainline tracks. BNSF has stated that the funding of these longer sidings and additional mainline tracks should not be the exclusive responsibility of the private railroads, when the need is driven by passenger rail service or the need to preserve freight rail service due to increasing passenger rail service.

[7] A grade separation is when an at-grade road that crosses a rail line is separated from the rail line by elevating the road as an overpass over the rail line or the rail line on a trestle.

East-West High-Capacity Freight Rail Corridor

For the state to stay competitive, a strong coalition of stakeholders must build an integrated plan to develop the necessary capacity to retain the state's rail freight market share. A high-capacity rail corridor should be maintained and improved upon from the Puget Sound to Chicago, Illinois. A national cohesive effort needs to be developed by both the public and private partners in order to achieve the economic growth that is required to keep the state competitive.

A compelling business case for proposed improvements to this corridor should be developed. This corridor will require infrastructure and operational improvements as well as improved cooperation between BNSF and the UP. An agreement on priorities needs to occur and a funding program developed. It is important to the state's economy to have healthy railroads competing for business in the state. This competitive positioning influences the Class I railroads' investment within the state. BNSF and UP capital investment decisions and strategies are based upon Return on Investment. Capacity must be available to attract more volume and new customers. To encourage the Class I railroads to invest in this state, it is critical that public investment dollars are available for projects with public benefit.

To hold the Class I railroad's attention to the state, the state's economy must be growing, the ports efficient, and the stakeholders must understand how important the rail system is both to the economy and ports. There must be consensus on the priority of projects and the funding mechanism to get the improvements built. Thus, there needs to be a prioritization of the freight rail projects that have a clear economic benefit to the state. This priority list needs the support of all stakeholders in order for the high priority projects to get done.

Dedicated High-Speed Passenger Rail Track

On August 24, 2009, WSDOT submitted their High-Speed Intercity Passenger Rail Program application to the FRA. This is the first step to the development of a dedicated high-speed passenger rail track along the I-5 corridor from Portland, OR to Vancouver, B.C. This will allow the separation of lower speed freight trains from the higher speed passenger trains and allow for increased service levels for both freight and passengers.

WSDOT applied for nearly $435 million in ARRA funding in this first round under Track 1 projects. The primary focus of Track 1 projects is to help speed economic recovery through construction of "ready-to-go" intercity passenger rail projects. WSDOT has a total of 20 capital rail projects that qualify for Track 1 consideration. When completed, these

projects will add an additional daily Amtrak *Cascades* round trip between Seattle and Portland, improve on-time reliability, reduce rail congestion, and provide enhanced service without affecting freight capacity.

Without the necessary improvements on the I-5 rail corridor, the available capacity on the segment will be exceeded by about 2018, at even the lowest freight recovery scenario. Consequently, it should be expected that BNSF will not allow growth in passenger operations without a clearly defined set of capacity improvements. These improvements would protect freight performance regardless of how the economy recovers over the next few years.

Impacts of Dam Breaching or Loss of the Columbia-Snake Inland Waterway System

The current Columbia-Snake Inland Waterway System is very efficient for moving cargo. This system provides shippers with an alternative to shipping by rail, supplies price competition to the railroads, and imposes sufficient capacity to absorb substantial fluctuations in grain shipments, especially during peak export months and years.

Due to the fear that numbers of Chinook salmon and steelhead in the Snake River would continue to decline, the possibility of breaching (removing) the four Snake River dams was examined in a report issued by the US Army Corp of Engineers in 2002.[8] The discussion on removing the dams continues to this day.

In addition to the effect that dam breaching would have on the system, transportation impacts would also be shifted to the road and rail systems in the region. The mainline rail system, short-line rail system, and state and county road systems could all be expected to bear an increased share of the freight now shipped by barge. This could cause some capacity constraints to be reached.

Statewide Information and Data Needs

Currently, there is not enough rail and freight data collected for statewide rail planning and rail operations. The U.S. Department of Transportation (USDOT) expects that the state rail plan from each state will provide detailed insight into the concerns facing state transportation systems and set forth state visions of how rail transportation can address those issues. One of the elements that USDOT views as necessary includes multimodal transportation, especially ways in which modes can be leveraged to serve transportation customers more effectively and efficiently.

[8] www.efw.bpa.gov/IntegratedFWP/DamBreachingFacts.pdf.

States are in a unique position to provide information on local rail bottlenecks and resultant road and rail traffic congestion. The lack of this information can negatively affect the larger transportation network. Resolution of such issues can improve transportation flows and positively affect the movement of goods and people far beyond state borders.

States can also provide information on projects that they are planning to develop, which may have repercussions beyond state borders, and hence should be considered in the National Rail Plan.[9]

States need greater information management capacity to assess statewide demand, analyze utilization data, and develop and maintain asset inventories and rail system physical and condition inventories.

The Partners

In this state there are numerous partners or players in the rail freight system: first and foremost is the owner of the asset—the railroads—as well as the customers served; second, the ports who are logistics and transportation partners in moving the cargo from ship-to-rail or barge-to-rail; and finally, the regulators and partial funders of the system—the state and federal governments are partners in this system. Other stakeholders included local communities, planning organizations, and tribes. The State Freight Rail Plan Advisory Committee represented these stakeholders in the development of this plan and some are encouraging that the committee stays intact.

Investment Prioritization and Project Evaluation

Freight rail has many benefits. With its cost effectiveness, fuel efficiency, safety records, and lower environmental impacts, freight rail is a viable option that can be included in policy aimed at solving economic, social, and environmental problems with integrated solutions.

Although predominantly privately owned, the freight rail system provides many public benefits that warrant taxpayer participation in improvements at both federal and state levels. The common public benefits associated with freight rail include stimulating the state's economy, supporting local communities and businesses with jobs and revenues, reducing congestion, improving public safety, offering a transportation choice for shippers, reducing environmental pollution, and saving energy.

For rail-related investment, private benefits have typically accrued to rail carriers, shippers, rail property owners, and other non-governmental

[9] See page 1-4 in Chapter 1 for more detail on the National Rail Plan.

groups. Public benefits are broadly assigned to government agencies that represent taxpayers.

Priorities and Criteria

WSDOT developed a benefit/cost methodology and uses it to evaluate state projects against six legislative priorities:

- Economic, safety, or environmental advantages of freight movement by rail compared to alternative modes.
- Self-sustaining economic development that creates family-wage jobs.
- Preservation of transportation corridors that would otherwise be lost.
- Increased access to efficient and cost-effective transport to market for the state's agricultural and industrial products.
- Better integration and cooperation within the regional, national, and international systems of freight distribution.
- Mitigation of impacts of increased rail traffic on communities.

Financing the Needs

The need for expansion to meet future demand can only be achieved through involvement of both the public and private sectors. The state, as well as private rail owners, has invested vigorously in the rail systems in the recent years. Although federal transportation funding in the United States has remained at 1 percent over the last 20 years, more federal investment in the state's freight rail system is needed.

There should be a national freight policy and a dedicated consistent funding stream for freight rail transportation. There has been movement at the federal level in this area, with efforts by the FRA, to develop the National Rail Plan, which should then provide input into a National Freight Policy.

State Role

This plan describes the state's role and investment policies for freight rail that should be used as a guideline for the state's future freight infrastructure investments. Funding the necessary investments in the freight rail system should be shared among those that receive benefits from the system in proportion to those benefits received.

A consistent investment program that maintains and improves the state freight rail system is critical. This will create an outline for the state's funding that meets the public benefit criteria. These should include improvements that divert truck traffic from overburdened highways, including many of the vertical clearance limitations. Priority should be

made on investments that leverage weight carrying abilities of rail to increase efficiencies, as well as increasing safety at rail-highway crossings.

Conclusion

This plan will address the goals and strategies of improving freight rail service within the state. The plan will be updated on a regular basis to respond to the changing economic climate. The completion of the National Rail Plan at the federal level may require a revision to this plan to meet any new requirements directed to the states. In addition, any future studies will be incorporated into appendices as new information becomes available.

The greatest obstacle to implementation of this plan is the lack of a dedicated reoccurring funding source at both the state and federal levels. With 90% of the $2.0 billion in rail needs identified in this plan unfunded, the state will have to pursue federal funding, as well as boost state spending, and establish public-private partnerships to close the gap between available resources and freight rail needs.

The second largest obstacle will be determining the priority of the projects and which projects should be implemented first to gain the maximum benefit to the system as a whole.

Washington State
Department of Transportation

Chapter 1: Plan Purpose and Authority

Purpose of the State Freight Rail Plan

The *Washington State 2010-2030 Freight Rail Plan* is an update of the *Washington State Freight Rail Plan 1998 Update*. These plans fulfill the Federal Railroad Administration's (FRA) requirements that a state must establish, update, and revise a rail plan in order to receive federal funds. This plan also reflects strategies to:

- Increase the effectiveness of the rail program.
- Broaden understanding of rail issues for all stakeholders.
- Provide a framework to implement rail initiatives in Washington State (state).
- Support the Washington State Department of Transportation (WSDOT) in federal funding opportunities, such as the Transportation Investment Generating Economic Recovery/American Recovery and Reinvestment Act grants.
- Implement the rail benefit/cost analysis required by the legislature.
- Fulfill new federal requirements for state rail plans.

Washington State Department of Transportation

WSDOT is the steward of the state's interstate, highway, and ferry systems. WSDOT directly manages the planning, design, project delivery, and operations for over 18,000 lane miles of state highway and more than 3,600 bridges, as well as operates the largest ferry fleet in the United States. In addition to building, maintaining, and operating the state highway system and state ferry system, WSDOT works in partnership with others to maintain and improve local roads, railroads, airports, and multimodal facilities and programs that offer alternatives to driving alone. WSDOT also own 323 miles of rail and operates 297 miles of these rail lines.

WSDOT's State Rail and Marine Office

WSDOT's State Rail and Marine Office is responsible for managing and directing the state's freight and passenger rail capital and operating programs. It enacts the direction of the legislature as it impacts rail and marine initiatives and manages rail system improvements that support economic development, move people and goods, relieve road and airport congestion, and reduce greenhouse gas emissions. The State Rail and Marine Office works with railroads, ports, communities, and other

organizations to improve the state's rail system. This office is also responsible for rail project identification and assessment, strategic rail transportation planning, development of state rail and marine data, and state rail grant program administration.

State and Federal Legislative and Planning Requirements

WSDOT's rail planning efforts are implemented within the context of specific state and federal legislation and related planning requirements that are summarized below.

State Requirements

There are four requirements for a rail plan in state law. The two primary statutes are: the Revised Code of Washington (RCW) 47.76.220 that requires WSDOT to create a state rail plan and RCW 47.06.080 that requires WSDOT to create a freight rail plan. This plan satisfies both statutory requirements. Highlights of these and other pertinent statutes follow.

RCW 47.76.220 (state rail plan - contents) requires WSDOT to prepare and periodically update a state rail plan that identifies, evaluates, and encourages essential rail services. The plan must identify and evaluate mainline capacity issues, port and congestion issues, and address at-risk or abandoned lines. It must establish priorities to determine which rail lines should receive state support. Priorities should include anticipated benefits to the state and local economy, anticipated line impact to roads and highway improvements, financial viability of state-funded lines, and line impact on energy use and air pollution. It must identify, describe, and map the state rail system; identify and evaluate rail commodity flows and traffic types; identify rail banked or preserved lines or corridors; and identify and describe other issues affecting the state's rail traffic.

RCW 47.06.080 requires WSDOT to include a state freight rail plan as one of the state-interest components of the statewide multimodal transportation plan. This plan must fulfill the statewide freight rail planning requirements of the federal government, identify freight rail mainline issues, identify light-density freight rail lines threatened with abandonment, establish criteria for determining the importance of preserving the service or line, and recommend funding priorities. It must also identify existing intercity rail rights of way that should be preserved for future transportation use.

RCW 47.04.280 (Transportation System Policy Goals) states that all public investments in transportation, including transportation planning,

should support achievement of these five policy goals: preservation, safety, mobility, environment, and stewardship.

RCW 47.06.040 (statewide multimodal transportation plan) requires WSDOT to coordinate development of the *Washington State 2010-2030 Freight Rail Plan* with other transportation plans to ensure consistency with each other and with the state transportation policy plan.

Government-to-Government Tribal Consultation

WSDOT maintains government-to-government relations with 35 federally recognized tribal governments. The following policies and documents guide WSDOT:

- The **1989 Centennial Accord Between the Federally-Recognized Indian Tribes in Washington State and the State of Washington** was executed between the federally-recognized Indian tribes of Washington signatory to this Accord and the state of Washington through its Governor. The Accord provides a framework for a government-to-government relationship and implementation procedures to assure execution of that relationship.
- The **1999 Government-to-Government Implementation Guidelines** provide a consistent approach for state agencies and tribes to follow.
- The **2005 Governor's Executive Order 05-05, Archaeological and Cultural Resources** orders all state agencies to review capital construction projects and land acquisitions, which do not undergo Section 106 review under the National Historic Preservation Act of 1966, with the Department of Archaeology and Historical Preservation and affected tribes to determine potential impacts to cultural resources.
- The **2009 Washington State Secretary of Transportation Executive Order 1025.01, Tribal Consultation** reaffirms the commitment of WSDOT to provide consistent and equitable standards for working with the various tribes across the state. WSDOT recognizes that each federally recognized tribe is a distinctly sovereign nation. WSDOT's goal is to create durable intergovernmental relationships that promote coordinated transportation partnerships in service to all citizens. More information on specific consultation procedures is available in the *WSDOT Centennial Accord Plan*.

Federal Statutory Requirements

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) amends Title 49 of the United States Code to prevent railroad fatalities, injuries, and hazardous material releases, to authorize the Federal Railroad

Safety Administration, and for other purposes. It is known as Public Law 110-432 (PL 110-432) and was approved as House Resolution 2096.[1]

PL 110-432, Division B, Title 3, Section 303, Chapter 227 attempts to put rail on an equal footing with planning for other transportation modes by requiring state rail planning as the basis for federal and state rail investments within the state. State rail plans are comprehensive documents intended to lay out the state's vision, objectives, service goals, capital investment plans, and project funding priorities for all passenger and freight rail services. They are submitted to the U.S. Department of Transportation (USDOT) Secretary for review and approval and updated at least every five years for re-approval.

PL 110-432 requires designation of the state authority to prepare, maintain, coordinate, and administer the rail plan, and designation of the authority to approve the rail plan. The authority to prepare, maintain, coordinate, and administer the rail plan is the WSDOT State Rail and Marine Office. The authority to approve the rail plan is the WSDOT Secretary of Transportation.

See Appendix 1-A for the detailed state and federal requirements referenced in this plan.

Development of the State Freight Rail Plan

Federal Planning – the National Rail Plan

Under PRIIA Section 307, the USDOT is to develop a national rail plan that is consistent with approved state rail plans and national rail needs to promote an integrated, cohesive, efficient, and optimized national rail system for the movement of goods and people. The national rail plan will expand upon the vision of a national rail system, including identifying specific corridor goals and success measures. The plan will likely provide an opportunity to revise the high-speed rail designations, including a new category of approved corridors, i.e., those corridors for which a detailed corridor plan and institutional framework are in place to permit development of a successful corridor that meets the national rail goals.[2]

FRA and their stakeholders are discussing the following:

- What should be in America's national rail plan?

[1] HR 2096, pp 100-104, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h2095enr.txt.pdf.
[2] www.fra.dot.gov/downloads/rrdev/hsrstrategicplan.pdf.

- What is the best process to bridge from a preliminary national rail plan to the long-range national rail plan?
- What should be the interface between state and national plans?

The FRA preliminary plan sets forth a proposed approach for developing the long-range national rail plan, including goals and objectives for greater inclusion of rail in the national transportation system. The preliminary plan does not offer specific recommendations, but instead describes itself as the "springboard" for future discussions.

Relationship with Other Plans

The *Washington State 2010-2030 Freight Rail Plan* is related to statewide, regional, and tribal transportation plans that include multimodal components and are designed to meet federal and state requirements.

Washington State Freight Rail Plan 1998 Update

The *Washington State Freight Rail Plan 1998 Update* is the previous update. It was prepared by the WSDOT freight rail program to meet state and federal requirements to identify, evaluate, and encourage essential rail services.

Passenger Rail Plans

The *Long-Range Plan for Amtrak Cascades* (2006) and the *Amtrak Cascades Mid-Range Plan* (2008) are passenger rail planning counterparts of the *Washington State 2010-2030 Freight Rail Plan*.[3] They were developed by the WSDOT State Rail and Marine Office to meet federal and state requirements for passenger rail development. The long-range plan is the state's blueprint for the development of intercity passenger service—it identifies the needed improvements to the state's intercity rail system for the next 20 years. The mid-range plan identifies and develops options that outline the steps needed to achieve incremental Amtrak *Cascades* services in meeting demands of the next eight years.

Statewide Transportation Plans

The *Washington State 2010-2030 Freight Rail Plan* recognizes that rail passenger and freight services are critical to the state's transportation system. Cost-effective investment of the state's resources must consider other modes, including highways, aviation, and water. The preferred mode of transportation and investment is dependent on the type of traffic as well as the origin and destination of the cargo.

[3] www.wsdot.wa.gov/Freight/publications/PassengerRailReports.htm.

The *Washington State 2010-2030 Freight Rail Plan* is coordinated with these other transportation planning efforts.

- The *2007-2026 Washington Transportation Plan* (WTP) is the statewide multimodal transportation plan that meets state and federal planning requirements to guide investments in the entire transportation system. It includes investment strategies for state-owned facilities as well as descriptions of the state's interest in aviation, marine ports and navigation, freight rail, intercity passenger rail, bicycle and pedestrian walkways, and public transportation. WSDOT will update this plan after the federal transportation planning requirements are passed, at which time this plan will be renamed the *Statewide Multimodal Transportation Plan*. The *Washington State 2010-2030 Freight Rail Plan* is consistent with the 2007-2026 WTP.
- The Washington State Transportation Commission (WSTC) is preparing a *Washington Transportation Plan 2011-2030 Update* that meets state requirements for a statewide transportation plan that is consistent with the state's growth management goals and transportation system policy goals, reflects the priorities of government, addresses regional needs, and recommends policies to the Governor and legislature. This plan is due December 2010, and is updated every four years.
- The *2009-2015 WSDOT Strategic Plan*, *Business Directions*, identifies WSDOT's strategic direction for the 2009-2011 biennium and beyond. WSDOT has diverse responsibilities and many lines of business, and not everything WSDOT does is represented here. Instead, the plan focuses on what is believed to be the highest priorities for state citizens, now and into the future.

- For other transportation "modal" plans developed by WSDOT, please go to www.wsdot.wa.gov/planning/ModalPlans.htm.

Metropolitan Transportation Plans

A Metropolitan Planning Organization (MPO) is an organization of elected officials in urbanized regions with 50,000 or more population. MPOs are required by federal regulations to create metropolitan transportation plans and a list of proposed transportation improvements called a Metropolitan Transportation Improvement Program.

Regional Transportation Plans

Regional Transportation Planning Organizations (RTPO) are formed through a voluntary association of local governments within a county or contiguous counties. RTPOs create a regional transportation plan and a list of proposed transportation improvements called a Regional Transportation Improvement Program. RTPO members include WSDOT,

cities, towns, counties, tribes, ports, transportation service providers, private employers, and others.

If an MPO is within the boundary of an RTPO, then the RTPO is the lead agency for the MPO.

Federal Lands Highway Program Transportation Plans

The Office of Federal Lands Highway (FLH) works with numerous agencies. Approximately 30 percent of the land in the U.S. is under jurisdiction of the federal government. The federal land management agencies (FLMAs) are: the Bureau of Indian Affairs, U.S. Forest Service, National Parks Service, Fish and Wildlife Service, Bureau of Land Management, Military Surface Deployment and Distribution Command, U.S. Army, U.S. Army Corps of Engineers, Department of Defense, Tennessee Valley Authority, and the Bureau of Reclamation. The FLH also works closely with many state and territorial partners.

The Federal Lands Highway Program (FLHP) is subdivided into five core areas, namely, the Forest Highway Program, Park Roads and Parkways Program, Public Lands Highway Discretionary Program, Indian Reservations Roads Program, and the Refuge Roads Program. The FLHP is administered through partnerships and interagency agreements between the Federal Highway Administrations' FLH, FLMAs, and tribal customers. The FLHP also supports other important FLMA partners by providing funding (about $6 million per year total) for integrated transportation planning, bridge inspections, and other technical assistance activities.

State Freight Rail Plan Methodology

The strategy adopted by WSDOT to develop the *Washington State 2010-2030 Freight Rail Plan* is fact-based and data-driven. WSDOT strengthened its data collection and analytical capacity and developed improved databases and forecast models to better describe and articulate the needs of the freight rail system. Economic impact assessment, benefit/cost analysis, and cross modal comparison link investments to their effects on the economy and society. With this plan, policymakers and other users can address socioeconomic policy issues and integrate transportation solutions when considering funding freight rail projects.

Key References

The following are key references used in developing this plan:

- The *2009 AASHTO State Rail Planning Guidebook*, developed by the American Association of State Highway and Transportation Officials

(AASHTO), is designed to help states produce PRIIA-compliant state rail plans customized to the unique circumstances of each state. This plan was developed using this guidebook.

- The *Statewide Rail Capacity and System Needs Study* (2006)[4] is a key reference prepared by the WSTC. This comprehensive study was developed to address the key question asked by the legislature, "Should the state continue to participate in the freight and passenger rail system, and if so, how can it most effectively achieve public benefits?" The conclusion: the state should continue to participate in the freight and passenger rail systems, although each investment must be extensively evaluated for its cost and benefits to the state. **Because its components are similar to the *Washington State 2010-2030 Freight Rail Plan's* state and federal requirements, the study is referenced throughout this plan.**
- The *2009 Marine Cargo Forecast Technical Report*[5] is another key reference prepared by the Washington Public Ports Association and WSDOT. Its purpose is to assess the expected flow of waterborne cargo through Washington's port system and evaluate the distribution of cargo throughout the state's transportation network, including waterways, rail lines, roads, and pipelines.
- In order to keep stakeholders and citizens aware and involved in the plan development process, WSDOT provided this Web page: www.wsdot.wa.gov/Freight/Rail/WashingtonStateFreightRailPlan.htm.
- The WSDOT Web site, www.wsdot.wa.gov, provides public access to transportation-related information. It is a key communication tool used to meet state and WSDOT goals to be a high performance organization that is credible and accountable to the Governor, legislature, taxpayers, and transportation delivery partners across the state.[6]

Key Stakeholders

This plan was developed by WSDOT State Rail and Marine Office staff. The staff augmented their knowledge with the help of public involvement and assistance, primarily from the State Freight Rail Plan Advisory Committee (Advisory Committee).

The Advisory Committee consisted of self-selected, volunteer stakeholders from around the state. In May 2009, members of railroads,

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[4] *Statewide Rail Capacity and System Needs Study* (2006) by the WSTC, www.wstc.wa.gov/Rail/default.htm.
[5] *2009 Marine Cargo Forecast Executive Summary*, www.wsdot.wa.gov/NR/rdonlyres/270BB86A-FC7B-48F3-8546-8CB3A435A2B8/0/MCF2009ExecutiveSummary32309doc.pdf.
[6] WSDOT Accountability & Performance Information, www.wsdot.wa.gov/Accountability.

ports, shippers, industries, metropolitan planning organizations, regional transportation planning organizations, state and federal agencies, cities, counties, tribes, and other interest groups were invited to participate on the Advisory Committee. The role of this committee was to:

- Help develop the vision and goals of the state freight rail plan.
- Provide assistance to update information for the freight rail system, capacity, and needs.
- Help identify and assess port access and rail abandonment issues.
- Help assess and evaluate beneficial impacts of rail infrastructure improvements on society.
- Help WSDOT understand concerns of local communities and organizations.
- Share information.

Public Involvement Process

Public involvement and outreach was essential to the development of the *Washington State 2010-2030 Freight Rail Plan*. Public involvement and outreach included Advisory Committee meetings, a workshop, communication, Web interfaces (e-updates, Web pages, Web linkages), presentations, internal and external stakeholder meetings, press releases, and an open house.

See Appendix 1-B for more information about the public involvement, public participation, and documentation of these planning processes.

Environmental Review

Environmental documentation will be project-specific and comply with the State Environmental Policy Act (SEPA) and/or National Environmental Policy Act (NEPA), depending on the existing and anticipated source of project funding. The level of environmental documentation will be determined based on the potential environmental effects of the proposed projects.

Plan Organization

Chapter 1 introduces the *Washington State 2010-2030 Freight Rail Plan*, its state and federal statutory requirements, and its relationships with other plans. It discusses the purpose of the plan, describes the WSDOT State Rail and Marine Office, legislative, and planning requirements for the plan. The plan purpose and the methodology WSDOT adopted to develop the plan including public involvement is also described.

Chapter 2 discusses the overview of the rail system and macroeconomic environment. The vision statement, goals, and goal strategies are introduced in this chapter.

Chapter 3 defines the current freight rail systems in the state. It provides maps, a physical inventory of railroads and facilities, railroad profiles, descriptions of strategic intermodal sites, and addresses the need for a condition inventory of railroads and facilities.

Chapter 4 describes how the state's freight rail system supports the state's economy. It assesses commodity flows and industrial use of freight rail capacity. This includes the ancillary freight benefits that can be passed on to shippers and carriers as a result of passenger rail infrastructure development. It also describes the macroeconomic context of the state's freight rail system development. Components include economic vitality; mobility and congestion; environment, energy, and climate change; and safety and security.

Chapter 5 addresses the changing rail systems. It provides rail system maps and a database of recently abandoned rail lines. It identifies port access issues as well as intermodal connectors. It identifies and describes state, regional, local, and private rail projects.

Chapter 6 discusses the current state role, the players, and partnerships involved in state rail investments. It describes the current needs including data management and information capacities, statewide coordination, funding capacities, and strategic planning efforts.

Chapter 7 describes investment prioritization and project evaluation, including the decision-making process, a discussion on priority methods and criteria, and the benefit/cost methodology used to analyze freight rail projects.

Chapter 8 discusses the projects and current funding sources in the state, federal, local, and private arenas; the strategies of how funding should be acquired; and the vision of future funding options. Discussions include the public interest in private freight rail development and related federal and state legislation, financing, and funding strategies.

Chapter 9 concludes the plan with a discussion of next steps.

Washington State
Department of Transportation

Chapter 2: State Rail Vision

Introduction

Railroads carry a significant share of Washington State's (state) freight and make contributions to the state economy. The state freight rail system is part of the larger freight transportation network, providing businesses, ports, and farms with competitive access to North American and international markets.

Currently in Washington State, 53 percent of goods by weight are moved by truck, 18 percent by rail, 17 percent by pipeline, 10 percent by water, and 2 percent by air and other modes.[1] The trucking system is the railroad's biggest customer. Transportation modes do not operate in isolation, but generally operate together to provide an integrated system of movement. Little in the way of goods or people gets to their destination without the use of several modes of transportation. Consequently, the modal interchanges—in the case of freight, ports, transloading facilities, and distribution centers—are critical nodes in the system. These modal interchanges can function smoothly or create bottlenecks in the system. Chapters 3 and 5 discuss bottlenecks in more detail.

In addition to contributing to the state's economic vitality, rail transportation and investment could significantly alter the current transportation modes and practices of the way cargo has been historically moved. Rail can be used to relieve congestion in some urban areas, as well as provide redundancy within the transportation system. Rail is an energy-efficient and cleaner transportation alternative to many other modes.

The state's freight rail system is largely operated by the private sector. Because it is essential to the state economy and society, the Washington State Department of Transportation (WSDOT) has a public role to play under state and federal statutory requirements that guide public freight rail investments and development. Funding and delivery of freight mobility projects at the state level is primarily focused on two agencies: WSDOT and the Freight Mobility Strategic Investment Board (FMSIB).

[1] WSDOT State Rail and Marine Office – Analysis based on Federal Highways Administration (FHWA) Freight Analysis Framework (FAF) data and Surface Transportation Board (STB) Waybill Data.

The *Washington State 2010-2030 Freight Rail Plan* articulates the existing and future role of freight rail within a state multimodal transportation system. The plan establishes a vision and goals for statewide freight rail systems development, examines current and needed freight rail assets, and provides a clear path to implement rail improvements.

The state's multimodal transportation system is comprised of a mix of modes that are owned and operated by public and private entities. The transportation network includes: rail lines, highways, ferries, local roads, public transit systems, bicycle and pedestrian facilities, ports, waterways, airports, pipelines, and intermodal terminals. This integrated system supports the movement of people and goods within the state, facilitating economic vitality to business and residents. The state's freight network serves three functions:

1. It supports regional economies by bringing state goods to national and international markets as well as domestic products to the state.
2. It is also a fundamental local utility supporting the retail and wholesale distribution system.[2]
3. It serves as a global gateway to support national and international trade flows through the state, providing a competitive advantage for such sectors as logistics and trade, manufacturing, agribusiness, and timber/wood products sectors.

Freight mobility is critical to the state's economy. In 2007[3] the state's freight systems supported over one million jobs in state freight-dependent industry sectors, which produced $434 billion in Gross Business Income. This is 71 percent of the state's Total Gross Business Income of $627 billion.[4]

The rail industry is one of the most capital intensive businesses in the nation. Most available capital is used by the railroads to maintain their infrastructure and equipment with very little left for capacity improvements. To improve the margins, the Class I railroads[5] have increased their efficiencies by using a "hook and haul" operating method. Hook and haul refers to the model of having other entities (ports or short lines) prepare the train for long distance runs of 500 miles or more. Hook and haul operations with short lines provide continuation of service and often improve service levels to the industrial customers the short lines serve. Efforts to improve Class I railroad efficiencies include the

[2] Washington Transportation Plan (WTP) Freight Report, 2006.
[3] 2007 data is the most current year available.
[4] Gross Business Income is a measure of total revenues reported to the state.
[5] The classes of railroads are classified by revenue produced per year. Refer to Appendix 9 for definitions of Class I, Class II, and Class III railroads.

consolidation of shipments. It is understood that resulting cost efficiencies and savings are to be passed on to shippers.

Changes that improve Class I railroad efficiencies may hurt agricultural growers and other small shippers. This is in addition to the challenges these smaller customers have in gaining access to empty rail cars in a timely basis.

As private sector system owners, the Class I railroads have a need to achieve their own objectives. The lack of congruency in the two sets of goals raises conflicts between Class I railroads and the state. This is a dilemma for the state as it looks to a cleaner, more efficient hauler of goods. The challenge for the state is to develop a working relationship with Class I railroads that promotes the use of rail, while requiring private investment for private benefit. This includes determining what and when public benefit is achieved and investing public monies when this benefit is earned. A new approach needs to be crafted as rail dynamics shift. All stakeholders should work together as partners with the Class I railroads to develop strategies that meet the goals of the state and the needs of the railroads.

Another area of concern is the short-line system, which has largely been developed by the spin-off/sale of smaller unprofitable branch lines. These feeders or spurs are vital to the state's agriculture and small business owners. Many of the short lines are constantly struggling to perform and survive. This is a place where the state has focused its support in the past. This public support helps the smaller shippers in the rural areas continue to access the national rail systems via the short-line network.

Macroeconomic Environment

The state faces both challenges and opportunities resulting from the fundamental changes in the economy and society within a macroeconomic policy environment. Freight rail development, similar to passenger rail development,[6] was once viewed by the state as simply a means to move people and goods. Now such development is increasingly viewed and used as an integrated macroeconomic solution to achieve multiple ends.

Driving forces in the state's macroeconomic environment are trends in economic vitality, living-wage employment, transportation system efficiency, environmental sustainability, and safety and security. Challenges include economic globalization, population growth, capacity

[6] *Amtrak Cascades Mid-Range Plan*, (2008), www.wsdot.wa.gov/freight/publications/amtrakcascades.htm.

increases on rail corridors, higher fossil fuel prices, and global climate changes.

The state, including WSDOT, is increasing the monitoring, analytical, and policy efforts to increase efficiency, relieve congestion, and develop robust and resilient transportation systems.

The Washington State Legislature, in 2007, passed SSB 5412, which states that all public investments in transportation should support achievement of five transportation policy goals listed in the Revised Code of Washington (RCW) 47.04.280. Public investments in transportation should support achievement of these policy goals. This plan was developed around these five goals.

1. **Preservation:** To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services.
2. **Safety:** To provide for and improve the safety and security of transportation customers and the transportation system.
3. **Mobility:** To improve the predictable movement of goods and people throughout the state.
4. **Environment:** To enhance the state's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment.
5. **Stewardship:** To continuously improve the quality, effectiveness, and efficiency of the transportation system.

Changes in Transportation

Transportation has encountered many changes and pressures in the last decade. Some of these pressures are listed below.

Mobility and Congestion

The transportation system is increasingly stressed, manifesting itself in capacity and congestion problems at key regional gateways, intermodal transfer facilities,[7] and along critical transportation corridors. Population growth adds to the pressure on this already constrained infrastructure. It is increasingly difficult to balance freight mobility needs with environmental, social, and financial concerns. Rapidly rising infrastructure maintenance costs across all modes raises awareness that neither the public nor private sectors—acting independently—have the necessary resources to fully address rising transportation demands. Individually or collectively, these issues erode the efficiency and productivity of the region's transportation system. This leads to economic

[7] Intermodal transfer facilities are locations where freight is transferred between freight modes.

implications that reverberate locally, regionally, nationally, and internationally.[8]

Moving Washington[9] is WSDOT's program to realize a vision of congestion relief in the next decade. In the program are strategies to add capacity strategically, operate systems more efficiently, and provide more choices to help manage demand. The program's primary objective is to improve, which is one of the state legislature's five transportation priorities, along with preserving our transportation infrastructure, making the system safe for all, ensuring environmental sustainability, and practicing sound stewardship.

Moving Washington is also a 2-, 6-, and 10-year plan that focuses on the most troublesome corridors in Washington.

Over the next ten years we will:

- Improve travel times by 10 percent.
- Reduce collisions by 25 percent.
- Improve trip reliability by 10 percent.
- Provide choices for commuters in our major corridors.

Freight rail transportation is consistent with *Moving Washington*'s congestion relief strategies, if it can reduce long-haul truck traffic on the state highways.[10]

Environment, Energy, and Climate Change

In the state, transportation accounts for nearly half (47 percent) of the total greenhouse gas (GHG) emissions, including emissions from cars, trucks, trains, planes, and ships (Exhibit 2-1). The large amount of hydroelectric generation in the state leads to lower contribution of the electric sector to total emissions, compared with the national average.[11] WSDOT is developing effective, measurable, and balanced emission reduction strategies for all transportation modes, including rail, to protect public health and the environment.[12]

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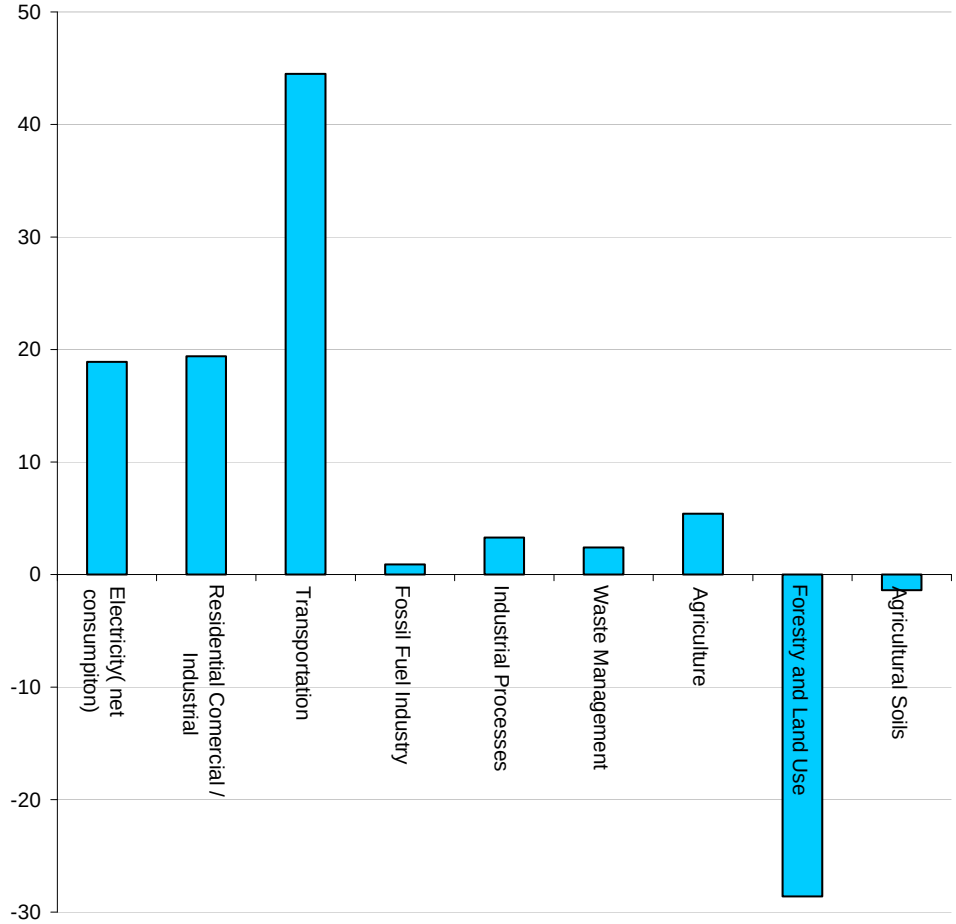
[8] *West Coast Corridor Coalition Trade and Transportation Study, Executive Summary*, www.camsys.com, April 2008.
[9] *Moving Washington* – A program to fight congestion, www.wsdot.wa.gov/movingwashington/.
[10] WSDOT, *Moving Washington with Rail Transportation*, folio, www.wsdot.wa.gov/movingwashington.
[11] Washington State GHG Inventory and Reference Case Projection, Center for Climate Strategies, Spring 2007. In 2005, Washington had a much larger fraction (47%) of the GHG emissions from transportation activities as compared to the US (28%).
[12] WSDOT Climate Change, www.wsdot.wa.gov/environment/climatechange/.

Exhibit 2-1: Washington 2005 GHG Emissions
(Millions Metric Tons CO_2)[13]



Source: Washington Department of Ecology

Transportation is one of the largest GHG source sectors in the state. The transportation sector includes light- and heavy-duty (on-road) vehicles, aircraft, railroad locomotive engines, and marine engines. Carbon dioxide (CO_2) accounts for about 98 percent of transportation GHG emissions from fuel use. Most of the remaining GHG emissions from the transportation sector are due to nitrogen oxide (NOx) emissions from gasoline engines. Rail emits fewer greenhouse gases than other transportation modes (Exhibit 2-2). Increasing the use of rail transportation may lead to a reduction in GHG from the transportation sector.

[13] Forestry and Land Use and Agricultural Soils are negative due to the fact that these two categories are effective in reducing GHG.

Exhibit 2-2: Greenhouse Gas Emissions by Mode
(grams/ton-mile)

	Road	Rail	Air
Carbon Dioxide (CO_2)	235.33	40.00	1,469.33
Nitrogen Oxide (NOx)	1.99	0.74	6.31
Particulate Matter (PM_{10})	0.47	0.05	0.80
Carbon Monoxide (CO)	1.21	0.42	6.26
Sulfur Dioxide (SO_2)	0.30	0.12	2.27

Source: Environmental Science Technology, 2007, 41, 7138-7144

Congress has proposed a bill that, if enacted, may create clean energy jobs, achieve energy independence, reduce global warming pollution, and transition to a clean energy economy.[14] For rail transportation, this means that more publicly- and privately-owned railroads will switch to cleaner fuels and increased fuel efficiency, retrofit existing engines, ensure that the best available engine technologies are purchased for new equipment, and continue to make operational efficiency improvements.[15]

Climate change is redefining transportation planning throughout the world with calls for additional data and measurement criteria and eventually recommending new policies.

In 2009 several bills were signed into state law related to transportation and climate change. E2SSB 5560 (Agency Climate Leadership) resulted in several state laws.

RCW 70.235.050 requires all state agencies to meet statewide GHG emission limits and report GHG emissions to the Department of Ecology.

RCW 43.21M.040 requires that agencies "shall consider" an integrated climate change response strategy when designing, planning, and funding infrastructure projects.

RCW 43.21M.010 directs the Departments of Ecology, Agriculture, Commerce, Fish and Wildlife, Natural Resources, and Transportation to develop an integrated climate change response strategy for state, local, and private businesses to prepare for, address, and adapt to the impacts of climate change.

[14] American Clean Energy and Security Act of 2009, www.opencongress.org/bill/111-h2454/show/.
[15] www.maritimeairforum.org/news/NW_Ports_Clean%C2%ADAirStrategy_Draft.pdf.

Governor Gregoire's Executive Order 09-05[16] directs the Department of Ecology to participate in the Western Climate Initiative and assist in developing a regional greenhouse gas emission reduction program. Under this executive order WSDOT is required to:

- Consult with state agencies, local governments, business, and environmental representatives to evaluate potential changes to the vehicle miles traveled benchmarks established in RCW 47.01.440.
- Report recommendations to the Governor by December 31, 2010.

Livable Communities

The use of rail for both freight and passenger transportation can increase a community's vitality and livability.

Livability is defined in many ways but the term typically describes a compact, mixed-use community or neighborhood that makes efficient use of existing public infrastructure, supports transportation choices, and provides affordable residential areas near shopping, work, and schools. Increased access to passenger rail supports the concept of livable communities. In addition, separating rail from vehicles and non-motorized transportation modes can increase a community's livability by increasing driver and pedestrian safety.

In the state's communities, as the rail system nears capacity due to economic growth, service quality can be strained. Rail rates are increasing for many businesses. Thus, the pressures on the rail system and its corridors are escalating.[17] Rail investments are generating jobs, as other family-wage jobs are lost to overseas operations and businesses reduce their workforce to survive.[18] Integrating rail and land use planning and policies that are consistent with the state's vision is a must, if livability in the form of sustainable communities is to be achieved. Building strong public-private partnerships that develop sound funding strategies will enable the enhancement of the existing rail infrastructures and corridors. These actions will allow for the maintenance and preservation of additional right of ways.

[16] 2009 Legislation and Governor's Climate Change Executive Order Summary www.wsdot.wa.gov/environment/climatechange/.
[17] Washington State Transportation Commission, December 2006, *Statewide Rail Capacity and System Needs Study: Final Report*, www.wstc.wa.gov/Rail/RailFinalReport.pdf.
[18] WSDOT, December 2008, folio, *Moving Washington with Rail Transportation*.

Vision of Rail Transportation in Washington State

Developing a long-term vision for rail transportation in the state takes many voices. These voices include many stakeholders, including Indian tribes; public entities—federal, state, and local agencies, ports and metropolitan/regional transportation planning organizations (MPOs/RTPOs)—; and private entities, such as rail industry representatives, shippers, various interest groups, and residents and businesses. The State Freight Rail Plan Advisory Committee (Advisory Committee) includes many of these stakeholders, who provided invaluable assistance and input into the planning process.

The vision statement development process began with knowledge gathered from the *Washington State Freight Rail Plan 1998 Update*, the *Statewide Rail Capacity and Systems Needs Study* (2006), and other resources. The WSDOT State Rail and Marine Office held a workshop with the Advisory Committee and other key stakeholders to create a vision statement and goals matrix. Workshop input was summarized and synthesized into draft documents that were further reviewed and refined. Key stakeholders also provided focused assistance in refining the vision and goals documents.

2030 Vision of Rail

The Washington State freight rail system is:

- ***Reliable.***
- ***Cost effective.***
- ***Energy efficient.***
- ***Environmentally-friendly transportation mode for domestic and international cargo deliveries.***

As a critical part of Washington's multimodal transportation system, the rail system leverages intermodal connections:

- ***To provide a seamless system for cargo deliveries to customers.***
- ***To improve the mobility of people and goods.***
- ***To support Washington's economy by creating and sustaining family-wage jobs and livable communities.***

The state is committed to work in partnership with all publicly- and privately-owned railroads in order to ensure a viable and positive future for freight rail in the state.

Goals, Objectives, Strategies, and Actions

WSDOT goals for freight rail service in the state are presented below with their respective objectives, strategies, and actions. These are aligned, as

appropriate, with the goals and strategies in existing state transportation plans and programs, such as the *2007-2026 Washington Transportation Plan*. Chapter 1 discusses the relationship of this plan with other plans.

These goals, objectives, strategies, and actions were developed in collaboration with many stakeholders, including the Advisory Committee and rail industry representatives, ports, government planners, and other interest groups. The responsibility for implementing these proposed strategies may lie with the public sector, the private sector, the private railroads, or jointly.

The Detailed Goal Matrix developed by the Advisory Committee at their workshops can be found in Appendix 2. The matrix reflects the relationships between the goals, objectives, strategies, and actions.

Economic Competitiveness and Viability

Goal: Support Washington's economic competitiveness and economic viability through strategic freight rail partnerships.

Objectives

- Identify the statewide industry needs for rail transportation.
- Increase integration of freight rail planning at all levels of government.
- Provide access to national markets for state products and cargo entering into the United States (U.S.) or being exported through state ports.
- Increase coordination with private sector partners.
- Identify barriers to the efficient use of freight rail in the state.
- Strategically prioritize the removal of these barriers.
- Improve public-private partnerships at the local, regional, corridor, national, and international levels, enabling a larger investment in freight rail infrastructure than any partner can make by themselves.
- Improve rail system/project assessment and evaluation processes that support state goals and assist the decision-making process.
- Understand the railroad system benefits and investments in transportation.

Strategies

- Increase understanding of the competitive positions of the state's shippers and ports using the state's freight rail system.
- Increase coordination of corridor-level freight rail planning within the state.
- Support multistate freight rail corridor strategic planning partnerships.
- Support and enhance economic partnerships between the state and the rest of the nation and its trading partners.

- Lead and coordinate with the state's ports, shippers, and industry on a continuing basis to identify infrastructure, regulatory, and administrative barriers to their efficient use of the freight rail system.
- Expand the state role to manage, coordinate, and facilitate strategic freight rail infrastructure improvements and investments that are in the public interest.
- Develop the criteria for corridor level freight rail transportation to integrate into the National Rail Plan.

Actions

- Carry out needs analysis to support emerging and existing industries to ensure the freight rail system supports the state's ports and rail-dependent industries.
- Work with the state's MPOs, RTPOs, and tribes to integrate freight rail into future regional transportation plans.
- Work with public and private sector partners in states along any appropriate national corridor to eliminate bottlenecks and improve capacity and velocity inside and outside of this state.
- Establish a process to work and communicate with the ports and industry representatives to coordinate activities at the regional, state, and national level on needed projects, programs, and policy decisions.
- On an ongoing basis and at designated intervals, update planning information with representatives from ports, shippers, railroads, and industry to identify constraints.
- Develop an action plan to address those issues where WSDOT has authority.
- Increase the state ability to develop and manage freight rail system information, research capacity, and data capacity that improves oversight and encourages funding for priority freight rail development.
- Increase public awareness of freight rail as a vital mode of transportation within the supply chain.
- Lead the planning effort to integrate investment decisions with the multiple partners.

Preservation

Goal: Appropriately preserve the ability of Washington's freight rail system to efficiently serve the needs of its customers and to ensure it is available to meet all likely future needs.

Objectives

- Preserve the functionality of the existing rail network.
- Provide access to mainline rail for small customers.
- Create sustainable funding sources for rail preservation and maintenance of low density lines.

- Support long-term economic vitality and diversity.
- Enhance the stewardship of the state-owned abandoned railroad corridor, returning it to active service as soon as feasible.
- Preserve the use of at-risk lines for future rail service.
- Preserve the use of at-risk lines for other public use of corridors (i.e. rails to trails).

Strategies

- Assist all classes of railroads' efforts to maintain and preserve the functionality of tracks, bridges, and rail yards.
- Assist short-line railroads in preserving efficient access to the Class I railroads, ensuring system viability and continuity.
- Ensure long-term preservation of existing industrial land, freight rail corridors, and rights of way for future use.

Actions

- Work with the Class I railroads and other partners to identify at-risk system components that can benefit from public support.
- Support the efforts of Class I railroads to compete for state and federal funding for major capacity preservation projects, when appropriate.
- Provide financial assistance to short-line railroads to maintain and preserve essential rail lines and prevent abandonment, when appropriate.
- Develop plans for at-risk rail corridor maintenance and preservation, including funding strategies.
- Integrate freight rail system development, land use planning and policies, public-private partnerships, and funding strategies consistent with the state vision and policy goals to protect and grow freight mobility.
- Work with ports and railroads to project the functionality and viability of existing connections between port terminals, intermodal rail yards, and mainline tracks.
- Work with short-line and mainline railroads to allow compatible interim use of rail corridor right of way (i.e. rail to trails) within statutory limits, until such time that the right of way is returned to active rail use.
- Acquire rail corridors scheduled for abandonment that have the potential to be reactivated in the future, when appropriate.

Capacity

Goal: Facilitate freight rail system capacity increases to improve mobility, connectivity, reduce congestion, and meet the growing needs of Washington's freight rail users, when economically justified.

Objectives

- Improve freight and passenger mobility.
- Improve connectivity to national and global economies.
- Understand future freight rail volume projections.
- Reduce railroad congestion, eliminating port access bottlenecks, and increasing reliability.
- Improve connectivity to other states and other countries, especially with the areas which Washington State has a competitive advantage.
- Make operational process improvements.
- Improve the overall safety of rail and roads.
- Increase public support for strategic public investment in the freight rail system.
- Increase state funding and implementation of priority projects.

Strategies

- Continue efforts to regularly evaluate freight rail capacity needs.
- Create additional capacity, improve connectivity, and improve operational efficiency by making or supporting targeted infrastructure investments.
- Pursue grade separation of roads and rails, where appropriate.
- Support the implementation of passenger rail projects where investments improve freight rail mobility.
- Use and update existing project assessment tools to include performance measures and benefit/cost analysis to prioritize projects.
- Promote public awareness of and support for freight rail investments that provide economic, mobility, safety, and environmental benefits.
- Support efforts to develop viable federal funding sources for freight rail projects with strategic public benefits.
- Support efforts to enhance state funding sources for freight rail projects with public benefits.

Actions

- Continue working with partners with an interest in freight rail capacity to determine future needs. Assess capacity and use the results to support prioritized investment in freight rail capacity improvements.
- Invest in infrastructure development projects that enable cost-effective, smooth, and efficient transport of freight through multimodal corridors and hubs (i.e. lines, ports, industrial areas).

- Identify and prioritize projects that improve mainline capacity, eliminate bottlenecks, and improve mainline access for ports and other freight rail traffic generators.
- Support the efforts of the state's freight rail providers to solicit state or federal funds for projects that provide needed new capacity, where strategically appropriate.
- Identify grade separation projects that should be included in national, tribal, state, regional, and local transportation plans.
- Work with passenger rail agencies and support funding of projects that support freight movement.
- Use and update the current freight rail project evaluation methodology to prioritize projects.
- Seek public input and develop public support for priority projects.
- Lead efforts to position the state's freight rail system for future federal funding with railroads, ports, shippers, and industry.
- Advocate for the East-West Rail Corridor to be designated by the Federal Government as a Corridor of National Significance.
- Coordinate with multistate stakeholders to obtain federal funding for priority projects along multistate corridors (Northern Tier).[19]
- Work with MPOs and RTPOs to facilitate inclusion of appropriate freight rail projects in metropolitan and regional transportation plans.
- Review programs such as the Freight Action Strategy corridor program and determine WSDOT's role in facilitating public-private partnerships in funding freight rail projects in the state.
- Develop a statewide freight rail advisory body to promote freight rail development.

Energy Efficiency and Environmental

Goal: Take advantage of freight rail's modal energy efficiency to reduce the negative environmental impacts from increased freight movement in Washington while maintaining economic viability.

Objectives

- Improve community health and the environment.
- Create a sustainable transportation system

Strategies

- Identify and implement freight rail projects that decrease targeted emissions, where economically viable.

[19] The Northern Tier refers to the rail corridor that runs through the eight neighboring states from the Pacific Northwest to Chicago. These neighboring states are Washington, Oregon, Idaho, Montana, North Dakota, Minnesota, Wisconsin, and Illinois.

- Encourage rail partners to invest in technologies to reduce their fuel consumption and related air emissions.

Actions

- Develop performance measurements and track achievements.
- Develop an analysis to determine the feasibility and factors that will enable minimizing GHG through modal change from truck to rail.
- Implement rail projects that reduce congested highway traffic, when economically feasible.
- Encourage increased use of locomotive anti-idling devices, electric support equipment, and reduction of wheel/track friction to decrease fuel consumption and air emissions.
- Encourage use of environmentally-friendly switching locomotives in port areas and other rail yards close to residential areas.
- Examine the use of locomotives powered by natural gas.
- Assess the effects of climate change where weather and climate events can impact rail infrastructure and operation.

Safety and Security

Goal: Address the safety and security of the freight rail system and make appropriate enhancements.

Objectives

- Reduce the number of rail-highway, rail-pedestrian, rail-rail, and trespassing incidents.
- Meet federal requirements.
- Improve pedestrian safety and reduce liability.
- Improve emergency recovery and prevention.
- Improve the security of the state rail system in its ability to deter or respond to attacks on rail facilities or domestic targets, while ensuring mobility for all users.
- Reduce the negative impacts from natural disasters.

Strategies

- Continue to identify new focus areas for enhancing rail transportation safety.
- Support the Class I railroads' efforts to meet the federal mandate to install positive train control systems on Class I railroads.
- Continue the Operation Lifesaver partnership to educate the public about rail safety.
- Enhance emergency management, operations, and strategies to be coordinated with Washington Emergency Management.
- Address improvements in rail system security and homeland security.

Actions

- Continue to support safety improvements of rail-highway crossings, signal systems, rail lines, and rail facilities.
- Expand education outreach to new and existing stakeholder groups.
- Continue coordination and support of positive train control systems development.
- Work with railroads and other partners to reduce pedestrian trespassing through educational efforts.
- Work with partners to address rail safety before, during, and after emergencies.
- Review best practices, consult with area experts, work with partners, and develop a list of temporary rail-highway grade crossing closures and alternative routes in the event of emergencies.
- Support railroads, Amtrak, local law enforcement agencies, and others to identify and implement rail security measures based on guidance from existing federal law (PL 110-432), by identifying partnerships and other funding sources to enhance rail system security.

Livable Communities

Goal: Encourage livable communities and family-wage jobs through freight rail system improvements.

Objectives

- Sustain communities through reduced congestion, preserved and expanded infrastructure, economic growth, and optimized safety, security.
- Reduce environmental impacts.

Strategies

- Continue to support local community development improvements that include freight rail options.

Actions

- Support strategic partnerships along the state's rail corridors that improve the quality of life for state residents.

Conclusion

The *Washington State 2010-2030 Freight Rail Plan* lays the foundation for an improved and sustainable freight rail system in the state. The plan does this by identifying a vision for the state's freight rail service and establishing goals, objectives, strategies, and actions to achieve that vision. This vision was accomplished by working with various stakeholders, including the rail industry, shippers, rail advocates, ports,

tribes, governments, elected officials, and many other concerned groups and individuals. This collaboration created a vision that reflects the needs of the community and ultimately to have a responsive, efficient, and sustainable rail transportation network.

Dedicated investment by all partners will be required to reach these goals and accomplish all of the rail improvements identified in this plan.

Washington State
Department of Transportation

Chapter 3: Rail System and Freight Rail Services in Washington State

Efficient transportation systems are critical to the economic vitality of the nation. Washington State (state), in particular, relies on multimodal and intermodal transportation for economic development and job creation. As the vital conduit for goods and people, transportation systems influence the long-term competitiveness, viability, and sustainability of economy and quality of life. At the same time, the state encompasses unique environmental richness and biological diversity, resulting in steadily increasing concerns about the impacts of development on vulnerable habitats and ecosystems. A rail system—with advantages from its potential for mass movement of people and goods, higher efficiency on energy use, and relatively lighter environmental emissions—could play an increasing role in development of a highly efficient and environmentally-friendly transportation system. Policies and decisions in transportation investment are embracing rail as a viable component and option to meet the challenges in transportation planning, design, construction, operation, maintenance, and regulation.

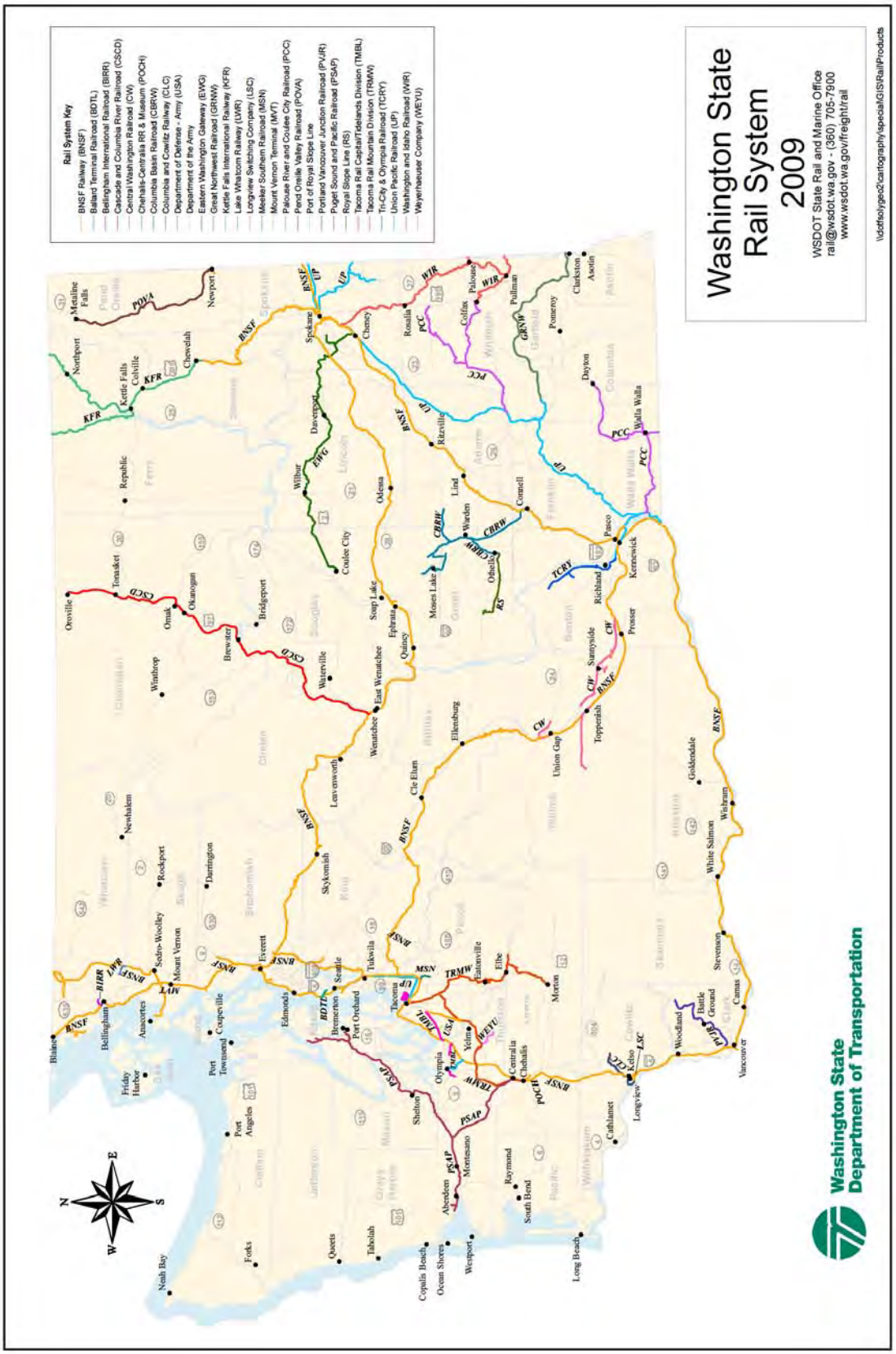
Overview of Washington State Rail System Services

From 1828 to present, the rail system in the United States (U.S.) has expanded and contracted to meet the needs of a growing nation, influenced by public and private interests. Mileage peaked in the 1920s at approximately 380,000 miles of track. Since then the rail network has been modernized and downsized to a core network that is less than half of its peak size. Appendix 3-B contains a brief history of national and state rail development.

The state's rail network has evolved over the last century to serve a wide range of passenger and freight markets and has extended across many parts of the state. Thirty-two of the state's 39 counties are served by one of the state's freight railroads. The rail network in the state has three distinct types of rail services: intercity passenger, commuter, and freight. There are two mainline freight railroads—the BNSF Railway Company (BNSF) and the Union Pacific Railroad (UP)—and 19 active short-line railroads operating in the state.

Exhibit 3-1 depicts the railroad network in the state.

Exhibit 3-1: Washington State Rail System



Rail transportation supports economic competitiveness and economic viability. In 2007 freight railroads operating in the state carried 116 million tons of freight over 3,647 operated route miles. It accounts for 19 percent of total freight in the state. Passenger rail services share rail lines with freight in the state. In 2008 intercity passenger rail, including the Amtrak *Cascades*, *Empire Builder*, and *Coast Starlight*, provided services to more than one million riders who leave, arrive, travel through, or travel within state. Since September 2000, Sound Transit's *Sounder* has provided commuter rail service in the Puget Sound area. In 2008 *Sounder's* ridership was 16.13 million.

Freight Service

The state freight rail system consists of mainlines, branch lines, industrial spurs and leads, and rail yards and terminals operated by a variety of public and private rail carriers (see Exhibit 3-1). The freight railroads operate over 3,647 miles of rail service in the state over 2,418 miles of rail lines.[1] Long-haul rail transportation is provided by two Class I railroads—BNSF and UP.[2] The BNSF owns and operates the most mileage in the state—1,604 in-state-operated miles, constituting 5 percent of the BNSF's total system mileage. The dominant position of BNSF in many of the state's rail markets has significant implications for the degree of leverage that the state, rail shippers, and communities have in influencing its business decisions.

Both of the Class I railroads are served by a number of smaller regional, short-line, and terminal railroads, which pick up and distribute rail cars to individual industrial and agricultural shippers and receivers. These railroads provide critical services, particularly in lower-density rail corridors and markets where the Class I railroads cannot operate cost-effectively. In most of cases, the short lines operate on branch lines that were previously owned and operated by the Class I railroads.

Freight Rail Volume and Flows

Freight rail transportation is a fast growing service. In 2007 the state rail system carried 116 million tons of freight, compared with 64 million tons

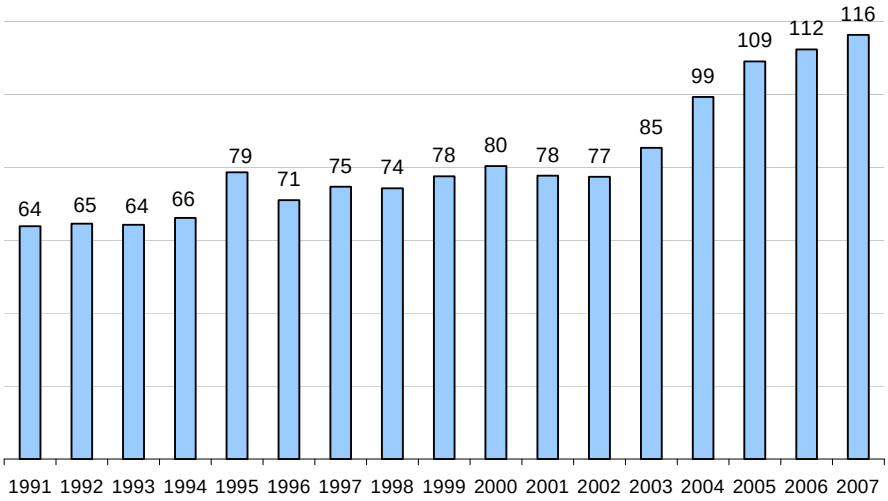
[1] Due to the fact that owner railroads lease operating rights over their lines to other railroads, operated miles are greater than owned miles. In a few areas, the U.S. Department of Transportation (USDOT) Surface Transportation Board (STB) has mandated provision of operating rights to ensure competition between railroads.

[2] The USDOT STB defines Class I railroads as having annual carrier operating revenues of $250 million or more. Class II railroads, often referred to as a regional railroad, have annual carrier operating revenues of less than $250 million but in excess of $20 million. Class III railroads, or short lines, have annual carrier operating revenues of $20 million or less. Switching or terminal railroads are railroads engaged primarily in switching and/or terminal services for other railroads.

in 1991, accounting for an average annual growth rate of 3.8 percent (Exhibit 3-2). However, the current economic recession has impacted freight transportation. Although current freight rail volumes are not available at the state level, other data indicates a sharp decline for 2008 and 2009. Therefore, the long-term growth rate is likely to be mild, in the range of 2 percent.

Exhibit 3-2: Washington State Rail Freight 1991 to 2007 (Million Tons)

Average Annual Growth Rate (1991 - 2007) = 3.8 %



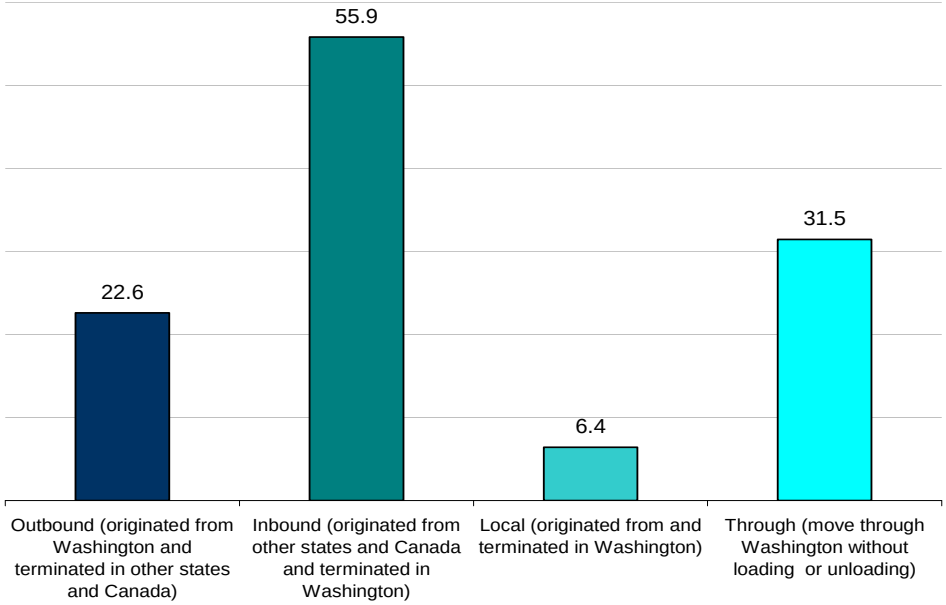
Source: Washington State Department of Transportation (WSDOT) State Rail and Marine Office and Association of American Railroads

Among the 116 million tons of rail freight, 56 million tons arrived in the state from 44 other states and Canada, while almost 23 million tons shipped from the state to 46 other states and Canada. Over 6 million tons of rail freight moved within the state's borders and almost 32 million tons of rail freight moved through the state without loading and unloading (Exhibit 3-3).

Of the 116 million tons of rail freight, 86 million tons, or 74 percent, is intermodal[3] traffic, while 30 million tons, or 26 percent, is rail only (single mode) traffic (Exhibit 3-4).

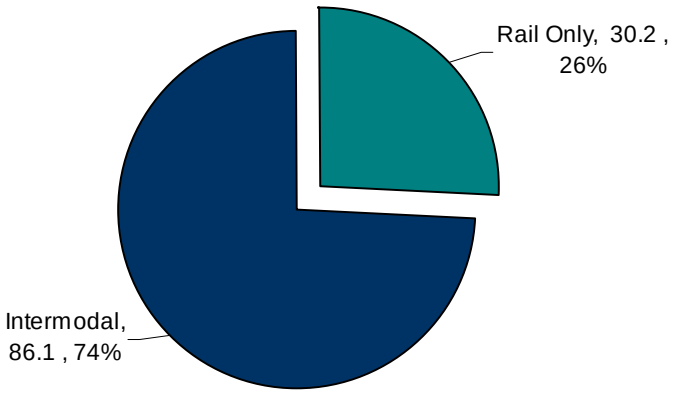
[3] Intermodal is using more than one transportation mode such as rail and truck. In this chapter the reference to intermodal is not limited to intermodal container traffic. It is all rail that also has another mode of transport used in the movement of the cargo.

Exhibit 3-3: Rail Freight Flows in Washington State – 2007
(Million Tons)



Source: WSDOT State Rail and Marine Office – 2007 STB Waybill Data Analysis

Exhibit 3-4: Freight Rail Intermodal Traffic – Washington State 2007
(Million Tons)



Source: WSDOT State Rail and Marine Office – 2007 STB Waybill Data Analysis

Washington State Freight Rail System Profiles

This section profiles the 22 active freight railroads operating in the state, along with one inactive railroad. This section also examines the mainline corridors where they operate and then the lower density corridors. The mainline corridors connect the state with the rest of the North American rail network, while the lower density corridors offer collection/distribution services and access to key industries. Finally, the principal terminals and yards impacting state rail traffic are described.

Railroad Classification

The state is served by two Class I freight railroads, BNSF and UP. These two railroads provide the primary connections between the state's ports, farmers, and industries and the rest of North America. This is done over a series of ten major rail corridors within the state; seven cross the state east-to-west, while the other three parallel Interstate 5 (I-5) on the western side of the state. The BNSF operates seven of these corridors, while the UP operates the remaining three corridors. These corridors are profiled in the BNSF and UP sections, respectively.

There is one Class II (regional) railroad operating in the state. The Montana Rail Link offers limited service in the state and only reaches Spokane over trackage rights on BNSF track from Idaho.

The 19 active Class III (short-line and terminal/switching) railroads in the state provide important collector/distributor services for the larger railroads and local rail services for state shippers. Their range varies from lines that operate over 100 miles in the state to switching railroads that connect ports to line-haul railroads inside a yard. Exhibit 3-5 is a list of the state's railroads and their mileage and class.

Track Mileage Inventory

Exhibit 3-5 also summarizes railroad mileage, including miles operated (owned track and trackage rights) and miles of road[4] owned in the state. BNSF[5] owns the most mileage in the state, but the 1,505 in-state miles represents only five percent of BNSF's total system mileage. In total, freight railroads operate over 3,647 miles and own 2,418 miles of trackage in the state.

[4] "Miles of road" is a linear measure of distance that does not consider the number of tracks.
[5] BNSF Railway Co. Annual Report to the Utilities and Transportation Commission (UTC), 2008.

Exhibit 3-5: Washington Freight Railroads, Mileage, and Class[6]

Name	Reporting Mark	Mileage in Washington State		Class
		Operated[a]	Owned	
Ballard Terminal Railroad	BDTL	3	0	III
BNSF Railway	BNSF[b]	1,604	1,505	I
Cascade & Columbia River Railroad	CSCD	135	135	III
Central Washington Railroad Company	CWA	83	0	III
Columbia & Cowlitz Railway	CLC	8.5	8.5	III
Columbia Basin Railroad	CBRW[c]	124	0	III
Eastern Washington Gateway RR	EWG	108	0	III
Great Northwest Railroad	GRNW	58	58	III
Kettle Falls International Railway	KFR	142	58	III
Longview Switching Company	LSC	17	0	III
Meeker Southern Railroad	MSN	5	5	III
Montana Rail Link	MRL	16	0	II
Mount Vernon Terminal Railroad	MVT	2	2	III
Palouse River & Coulee City Railroad	PCC	169	0	III
Pend Oreille Valley Railroad	POVA	61	61	III
Puget Sound & Pacific Railroad	PSAP[d]	178	109	III
Royal Slope Railroad (Inactive)	RS	26	26	III
Tacoma Municipal Belt Line	TMBL	72	36	III
Tacoma Rail Mountain Division	TRMW	134	134	III
Tri-City & Olympia Railroad	TCRY	56	0	III
Union Pacific Railroad	UP	558	280	I
Washington & Idaho Railway Inc.	WIR	87		III
Western Rail Switching	WRS			III
Total		**3,647**	**2,418**	

[a] Miles operated includes all owned track plus trackage rights.
[b] Per BNSF's report to the STB, December 31, 2008.
[c] Includes Portland Vancouver Junction Railroad's 33 miles of trackage rights.
[d] Includes U.S. Navy's Shelton-Bangor line.

Source: *Railroad Service in Washington*, Association of American Railroads, 2007. This information was then updated using BNSF timetables, UP timetables and charts, Amtrak charts, and STB filings for short-line railroads.

[6] Excludes standard gauge track operated as a light rail system.

Freight Rail Service Corridors

The state currently has ten major rail corridors and 12 low-density corridors. These corridors are defined and operated by BNSF and UP. Exhibit 3-6 lists all the corridors. Appendix 3-B has a description of each rail service corridor. While these rail corridors are defined by private railroads, the state has an interest in defining rail corridors in terms of public benefits. The Freight Mobility Strategic Investment Board is authorized to define strategic rail corridors and update them periodically. Some short-line routes are critical to the economic viability of local communities and certain industries. The state needs to develop criteria to define rail corridors in terms of their impacts on the state's economic and societal needs, as discussed in Chapter 5.

Exhibit 3-6: Rail Service Corridors in Washington State

Railroads	Major Corridors	Low-Density Corridors
BNSF	Seattle-Spokane	Tukwila-Snohomish
	Seattle-Portland, Oregon (OR)	Woodinville-Redmond
	Portland, OR-Pasco	Burlington-Sumas
	Auburn-Pasco	Sumas-Lynden
	Pasco-Spokane	Burlington-Anacortes
	Spokane-Sandpoint, Idaho (ID)	Intalco-Cherry Point
	Everett-Vancouver, British Columbia (B.C.)	Marysville-Arlington
		Lakeview-Roy
		Spokane-Chewelah
UP	Hinkle, OR-Spokane	Spokane-Plummer, ID; Manito-Fairfield
	Spokane-Eastport, ID	Ayer Junction-Riparia
	Tacoma-Seattle	Wallula-Kennewick

Source: *Statewide Rail Capacity and System Needs Study* (2006)

Railroad Profiles

Appendix 3-B also contains more information about the freight rail carriers in the state including descriptions, maps, revenue, and history.

Class I Railroads

BNSF Railway

BNSF, one of the four largest U.S. railroads, owns and operates track over seven major corridors and nine low-density corridors in the state. BNSF

operates almost 44 percent of the state's total system route miles.[7] Primary commodities include coal, agricultural products, intermodal (containers/ trailers), forest products, chemicals, metals, and minerals. According to BNSF's annual report, 2008 revenue totaled $17.5 billion.[8] In the state BNSF reported total interstate operating revenue of $1,040,184 and total gross intrastate operating revenue of $97,876,862, according to their 2008 Annual Report to the UTC.

Union Pacific Railroad

The UP is the largest railroad in North America. Primary commodities moving through the state include chemicals, coal, food and food products, forest products, grain and grain products, intermodal, metals and minerals, and automobiles and parts. The UP reported 2008 revenue as $18 billion.

Class II and Class III Railroads

Ballard Terminal Railroad

The Ballard Terminal Railroad (BDTL[9]) is a Class III railroad in Seattle. The BDTL reported total interstate operating revenue of $6,148 and $70,012 for total gross intrastate operating revenue in their 2008 Annual Report to the UTC.

Cascade and Columbia River Railroad

The Cascade and Columbia River Railroad (CSCD) is a Class III railroad that interchanges with the BNSF in Wenatchee and runs north to Oroville. Primary commodities are limestone, pulp wood and lumber products. CSCD reported total gross intrastate operating revenue of $1,614,149 in their 2008 Annual Report to the UTC.

Central Washington Railroad

The Central Washington Railroad (CWA) is a Class III railroad in the Yakima Valley. The CWA carries cattle feed, propane, paper products, plastic pellets, cheese, juice concentrate, lumber, apples, and other agricultural goods.[10] The CWA reported total interstate operating revenue of $1,436,210 and total gross intrastate operating revenue of $374,225 in their 2008 Annual Report to the UTC.

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[7] BNSF Railway 2008 Annual Report to the Utilities and Transportation Commission.
[8] www.bnsf.com/investors/investorreports/2Q_2009_Investors_Report.pdf
[9] BDTL is the reporting mark for Ballard Terminal Railroad. A reporting mark is a two-to-four-letter alphabetic code used to identify owners or lessees of rolling stock and other equipment used on the North American railroad network. The marks are stenciled on each piece of equipment, along with a one-to-six-digit number, which together uniquely identify every such rail car. This allows the cars to be tracked by the railroad they are traveling over, which shares the information with other railroads and customers.
[10] http://www.temple-industries.com/companies/central_washington_railroad.php/.

Columbia and Cowlitz Railway

The Columbia and Cowlitz Railway (CLC), a wholly-owned subsidiary of Weyerhaeuser Company, is a Class III railroad that moves freight from the Weyerhaeuser Company mill in Longview to the junction just outside the city limits of Kelso.[11] Primary commodities include forest products, steel, and chemicals. The CLC reported total gross intrastate operating revenue of $2,654,693 in their 2008 Annual Report to the UTC.

Columbia Basin Railroad

The Columbia Basin Railroad (CBRW) is a Class III railroad located near Moses Lake, serving Connell, Warden, Bruce, Schrag, and Othello. The CBRW hauls agricultural goods, inbound fertilizer, chemicals, and processed potatoes and vegetables. The CBRW reported total interstate operating revenue of $4,240,109 and total gross intrastate operating revenue of $787,720 in their 2008 Annual Report to the UTC.

The Portland Vancouver Junction Railroad (PVJR) is a newly formed, wholly-owned subsidiary of CBRW. It is owned by Clark County, serving the Vancouver area since 2004. The Chelatchie Prairie Railroad (BYCX), a tourist railroad, operates passenger excursions between Lucia and Yacolt on weekends and holidays.

Eastern Washington Gateway Railroad

The Eastern Washington Gateway Railroad (EWG) is a Class III railroad that operates a 108-mile branch line that extends from Cheney to Coulee City. Wheat and barley are the principle commodities shipped. It is one of three branch lines of the Palouse River & Coulee City Railroad System owned by the state. The EWG reported total interstate operating revenue of $1,803,601 in their 2008 Annual Report to the UTC.

Great Northwest Railroad

The Great Northwest Railroad (GRNW), a Class III railroad, moves freight between Lewiston, ID, Riparia, and Ayer, interchanging with both the BNSF and UP mainlines in Ayer. Primary commodities are forest products consisting of lumber, bark, paper and tissue, agricultural products, industrial and farm chemicals, scrap iron, and frozen vegetables. The GRNW reported total interstate operating revenue of $3,962,836 in their 2008 Annual Report to the UTC and reported total gross intrastate operating revenue of $113,584.

Kettle Falls International Railway

The Kettle Falls International Railway, LLC (KFR), a Class III railroad, moves freight from the BNSF interchange at Chewelah to Columbia Gardens, British Columbia (B.C.). A second line operates from Kettle Falls to Grand Forks, B.C. Primary commodities include lumber,

[11] http://en.wikipedia.org/wiki/Columbia_and_Cowlitz_Railway/.

plywood, wood products, minerals, metals, fertilizer, industrial chemicals, and abrasives.[12] KFR reported total interstate operating revenue of $4,319,638 and total gross intrastate operating revenue of $460,891 in their 2008 Annual Report to the UTC.

Longview Switching Company

The Longview Switching Company (LSC), a jointly-owned subsidiary of BNSF and UP, is a Class III railroad. The LSC switches trains approximately five miles from the railroad mainlines into the Port of Longview.[13] The LSC reported estimated annual revenue of $1,600,000 in 2008.

Meeker Southern Railroad

The Meeker Southern (MSN) is a 5-mile Class III railroad that connects Meeker Junction in Puyallup with an industrial park in McMillan. The MSN is a wholly-owned subsidiary of the Ballard Terminal Railroad. MSN reported no total gross intrastate operating revenue, but did report $181,796 in interstate operating revenue.

Montana Rail Link

Montana Rail Link (MRL) is a Class II regional railroad that connects with the BNSF at Spokane. MRL is an independently-owned unit of the Washington Companies, headquartered in Missoula, Montana.[14] MRL reported total intrastate revenue of $4,434,250 in 2008.

Mount Vernon Terminal Railway

The Mount Vernon Terminal Railway (MVT) is a Class III railroad providing service and interchanges with BNSF at Mount Vernon. The railroad consists of a 3-track wide yard used for storage and transloading. MVT reported total interstate operating revenue of $61,174 and no intrastate operating revenue.

Palouse River & Coulee City Railroad

The Palouse River and Coulee City Railroad Company (PCC), a subsidiary of Watco Companies operates this Class III railroad, which contains a total of 84 miles of mainline track. PCC reported total interstate operating revenue of $1,479,726 and $355,186 intrastate operating revenue.

Palouse River & Coulee City Railroad System

The Palouse River & Coulee City Railroad System is owned by the state. It is comprised of three Class III railroad lines: the PV Hooper (operated by PCC), CW (operated by EWG), and P&L (operated by WIR).

[12] http://www.omnitrax.com/rail_kfr.aspx/.
[13] http://en.wikipedia.org/wiki/Port_of_Longview/.
[14] http://www.montanarail.com/general_info.htm/.

Pend Oreille Valley Railroad

The Pend Oreille Valley Railroad (POVA) is a Class III railroad, moving freight between Metaline Falls, Newport, and Dover, Idaho on owned and leased trackage. POVA also hosts occasional tourist trains between Ione and Metaline Falls. POVA reported a total interstate operating revenue of $1,899,339 and total gross intrastate operating revenue of $506,001.

Puget Sound and Pacific Railroad

The Puget Sound and Pacific Railroad (PSAP) is a Class III railroad headquartered in Elma. Its main commodities include lumber, logs, and chemicals for the pulp and paper mills. PSAP reported interstate operating revenue of $8,115,618 and total gross intrastate operating revenue of $64,840.

The PSAP also operates on United States Government (Navy) trackage from Shelton to Bangor and on a spur to the U.S. Navy base at Bremerton.

Royal Slope Railroad

The Royal Slope Railroad (RS) is a Class III railroad owned by the state. It connects Royal City to the Columbia Basin Railroad at Othello. The line currently is inactive, but could play a role in future freight rail development.

Tacoma Rail

Tacoma Rail is comprised of two Class III railroads with three distinct and separate divisions—Tidelands Division, Mountain Division, and the Capital Division. The Tacoma Municipal Belt Line (TMBL), which includes the Tidelands and Capital Divisions, is owned by the city of Tacoma, Public Utilities. The Tacoma Rail Mountain Division (TRMW) is owned by the city of Tacoma and operated by Tacoma Rail. TMBL reported a total interstate operating revenue of $14,359,192 and total gross intrastate operating revenue of $785,908 in 2008. TRMW reported a total interstate operating revenue of $539,950 and total gross intrastate operating revenue of $118,641 in 2008.

Tri-City and Olympia Railroad

The Tri-City and Olympia Railroad (TCRY) is a Class III railroad that serves the Richland area, including the Port of Benton and the U.S. Department of Energy. In 2009 the Olympia line ceased operations. Major commodities include agricultural products, grain, feed stock, food and beverages, consumer products, wood products, paper, coal and minerals, building materials, machinery and equipment, vehicles, chemicals, fertilizer, waste and scrap, and nuclear waste as bulk goods, break bulk materials, and liquids.[15] The TCRY reported no total gross intrastate operating revenue in their 2008 Annual Report to the UTC.

[15] Tri-City and Olympia Railroad, www.tcry.com/.

Washington and Idaho Railway, Inc.

The Washington and Idaho Railway (WIR), a Class III railroad, operates the P&L Branch of the Palouse River and Coulee City Railroad System south of Spokane, connecting with BNSF in various locations. Primary commodities are fertilizer, beans and lentils, and forest products. The WIR reported total gross intrastate operating revenue of $824,945 in their 2008 Annual Report to the UTC.

Western Rail Switching

Western Rail Switching (WRS) is a switching and terminal railroad owned by Western Rail, Inc., a used locomotive seller located on the line. In 2004, Spokane County bought BNSF's Geiger Spur and designated WRS to operate it. In January 2009, realignment bypassed Fairchild Air Force Base, through which the spur had run. The west end of the spur now connects to the Eastern Washington Gateway Railroad (EWG) near Medical Lake. EWG now operates the Geiger Spur. WRS continues as an operating business.

Intermodal Facilities, Railroad Terminals, and Rail Yards

Freight terminals are facilities where freight cars are gathered up into trains or where trains are broken down so that cars can be distributed to shippers. Intermodal facilities are locations where freight containers or trailers are transferred between freight modes involved in the intermodal freight trip. Typically, this includes some combination of rail, truck, and water modes. Rail yards are facilities where individual rail cars are grouped together (blocked) by destination and then made up into trains containing many blocks of cars.

Intermodal Facility

The STB defines an intermodal facility as a site consisting of tracks, lifting equipment, paved and/or unpaved areas, and a control point for the transfer (receiving, loading, unloading, and dispatching) of trailers and containers between rail and highway and between rail and truck to/from marine modes of transportation.

There are three primary forms of containers for freight intermodal traffic between rail and highway modes:

- **RoadRailers®** – a specialized truck trailer where the trailer can be attached to rail wheels to haul along the railroad without the use of a separate rail flat car. At the intermodal facility, the trailer can be detached from the rail wheels and driven via truck to its final destination.

- **Trailer on flat car** – a standard truck trailer or container on a chassis loaded onto a flat rail car and hauled to a facility, where it is unloaded from the rail flat car and hauled by truck to its final destination.
- **Container on flat car** – a standardized container loaded onto a flat car or stack car, where it is moved by rail to an intermodal facility and unloaded from the rail car, placed on a rubber-tired highway chassis, and hauled by truck to its final destination.

Standardized containers facilitate the transition between modes of transportation. These standardized containers can be loaded onto and from an ocean-going vessel in a very efficient manner. These same containers can be attached to either a rail chassis or truck trailer chassis to be hauled by rail or truck to their final destination. Container sizes are 8 feet wide and typically 8 feet, 6 inches tall. "Hicube" containers are 9 feet, 6 inches tall. Lengths can vary from 20 feet to 56 feet. A limitation to the container lengths is the maximum allowable trailer lengths in the U.S.

There are 119 intermodal facilities in the state based on U.S. Bureau of Transportation Statistics data. There are 95 intermodal facilities that include freight rail mode. Exhibit 3-7 displays the sites of these intermodal facilities.

Appendix 3-C provides details of these intermodal facilities and commodities and shipments associated with these freight rail intermodal facilities.

Railroad Terminals and Yards

Terminals and yards serve many functions for the railroads. They originate and terminate traffic by building outbound trains and breaking down inbound trains. They are used to classify inbound cars for assignment to outbound trains for through traffic. Yards can offer refueling, crew change, storage, and maintenance functions. Given this key role in the rail network, a significant amount of rail capacity is impacted by the size and efficiency of the terminals and yards.

Exhibit 3-8 summarizes the major terminals and yards that have the most impact on state railroad movements. This table includes the owner, yard/terminal name, location, and function.

Exhibit 3-7: Rail Intermodal Facilities in Washington State

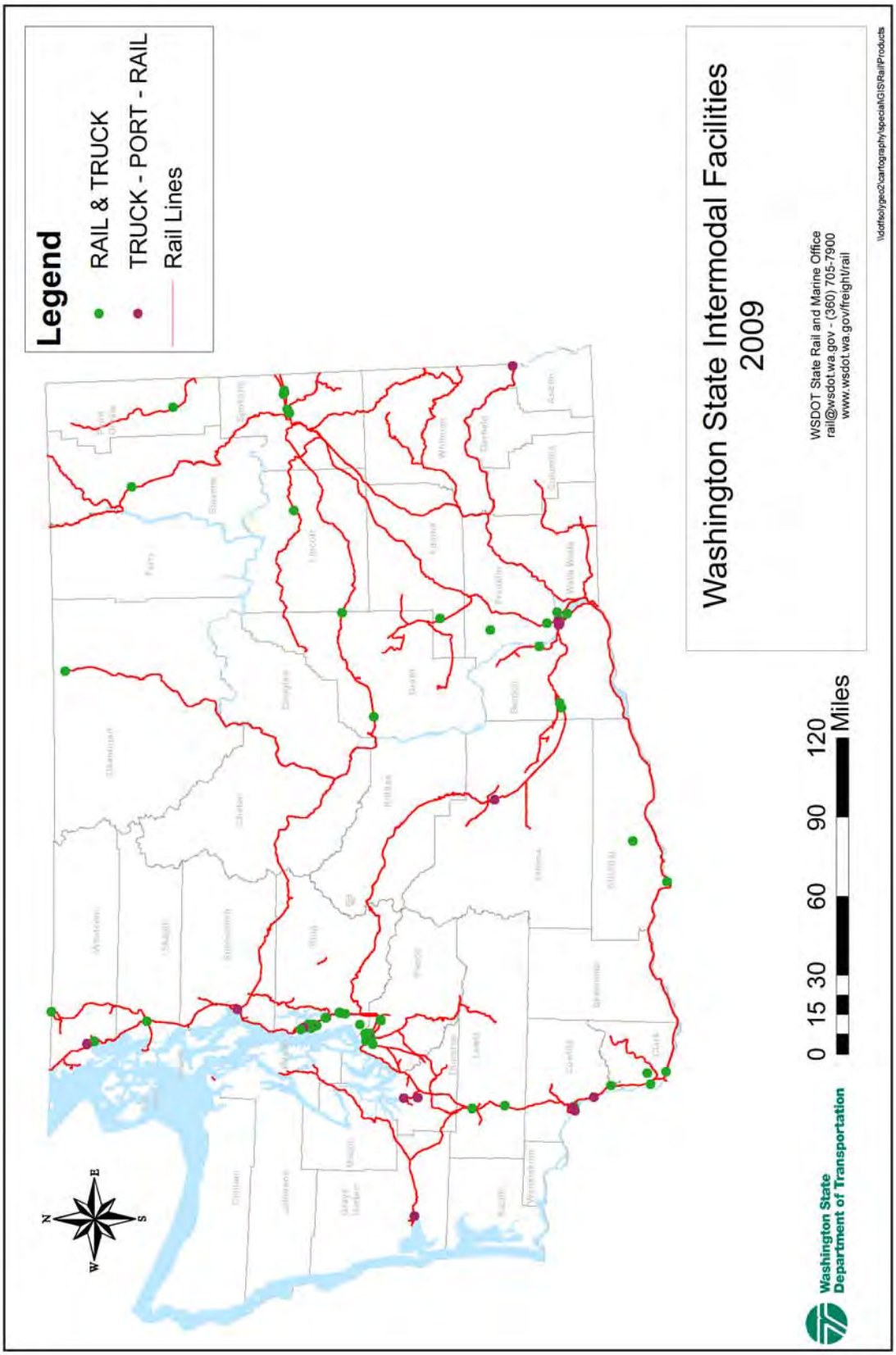


Exhibit 3-8: Railroad Terminals and Yards Impacting Washington State Rail Movements

Owner	Yard/Terminal	Location	Function
BNSF	Bayside/Delta Yards	Everett	Everett generates some traffic locally, but is principally a classification yard for through traffic. It is the southern endpoint for most through traffic on the Everett-Vancouver, B.C. route. Generally traffic from south and east of Everett arrives in Bayside Yard, where it is switched, and made up into trains for north of Everett. Traffic from north of Everett arrives in Delta Yard, where it is switched and made up into trains for south and east of Everett.
BNSF	Hauser Yard	Hauser, ID	Hauser Yard is not important as a terminal; however, it is important as a fuel station and crew change point. Westward trains stop for fuel, providing sufficient fuel for a trip to Seattle, Tacoma, Kalama, Longview, Vancouver, Washington (WA), Portland, Oregon (OR), or Pasco and return. Eastward trains stop for fuel, providing sufficient fuel to reach the next fueling station at Havre, Montana.
BNSF	Pasco Yard	Pasco	Pasco processes traffic to and from local industries and is the BNSF classification yard for carload traffic moving to and from Washington State. Virtually all traffic handled by Pasco Yard is originating from classified traffic or terminating for classification. Pasco also is a crew change point for through trains (generally grain and intermodal trains).
BNSF	East St. Johns	Portland, OR	East St. Johns processes traffic for local industries and is an interchange point for traffic moving between BNSF and UP. Traffic is a combination of through trains and transfers.
BNSF	Lake Yard	Portland, OR	BNSF Lake Yard is adjacent to the Portland Terminal Railroad Lake Yard. It is the BNSF intermodal terminal for the Portland area. Traffic is generally originating and terminating trains.
BNSF	Willbridge	Portland, OR	Willbridge processes traffic for local industries. Traffic is a combination of through trains and yard transfers.
BNSF	Balmer Yard	Seattle	Balmer Yard at Interbay is primarily a classification yard for the Portland-Seattle route. Traffic from the south is distributed to local industries or forwarded to Everett for further classification and forwarding. Traffic from the north is classified by destination station between Seattle and Portland and made up onto trains. Traffic processed by Balmer Yard is generally originating and terminating only. Interbay also is a crew change point for through trains that do not originate or terminate in Seattle terminal. The primary commodity at Balmer is grain hauled for Cargill.

Owner	Yard/Terminal	Location	Function
BNSF	Seattle International Gateway Terminal	Seattle	The Seattle International Gateway (SIG) is the BNSF international intermodal terminal in Seattle. Containers are drayed to and from the Port of Seattle terminals. This traffic is originating and terminating only.
BNSF	South Seattle Domestic Intermodal Yard	Seattle	The South Seattle Domestic Intermodal Yard processes domestic cargo traffic in 53-foot (vs. 40- to 48-foot) containers.
BNSF	Stacy Street Yard	Seattle	Stacy Street Yard is in the same physical location as SIG. Stacy Street Yard is the terminal used by most local industry traffic originating and terminating in Seattle. Traffic to and from Seattle industries south of King Street Station and in West Seattle is processed at Stacy Street Yard. Traffic is generally originating and terminating only.
BNSF	Yardley	Spokane	Yardley processes cars to and from local industries and is a block swap location for intermodal trains. Train traffic is a mixture of originating, terminating, and through trains, including through trains that stop for block swapping as well as setout or pickup. Yardley is a crew change point for through trains.
BNSF	Tacoma Yard	Tacoma	Tacoma Yard processes traffic for Tacoma industries in the Tideflats area west of the Puyallup River. It also is the classification yard for traffic originating and terminating in the Tacoma Rail yard. Traffic arrives in Tacoma from through or terminating trains and the Tacoma Rail traffic is delivered after the train has been switched (sorted). Carload traffic from Tacoma Rail is switched by destination and forwarded on the appropriate train. Traffic is a mixture of originating, terminating, and through.
BNSF	Vancouver Yard	Vancouver, B.C.	Vancouver Yard processes traffic to and from local industries in Vancouver, B.C., and the Port of Vancouver. Traffic is a combination of originating, terminating and through trains that set out and pick up cars.
BNSF	Vancouver Yard	Vancouver, WA	The Vancouver Yard has locomotive maintenance and fueling facilities. It serves as a major switching yard for BNSF railway in the Portland/Vancouver metro area. Vancouver also is a crew change point for through trains moving between the Portland-Seattle route and the Portland-Pasco route.
BNSF	Wenatchee Yard	Wenatchee	Wenatchee Yard processes cars to and from local industries and is the interchange point for traffic moving between BNSF and Cascade & Columbia River Railroad. Traffic is originating and terminating trains. Wenatchee also is a crew change point for through trains.

Owner	Yard/Terminal	Location	Function
Canadian National	Thornton Yard	Surrey, B.C.	This is the northern endpoint for virtually all through traffic on the Everett-Vancouver, B.C. route. Traffic is generally originating and terminating only.
Longview Switching Company	Longview Yard	Longview	Longview Switching Company (jointly owned by BNSF and UP) processes all traffic to and from the Port of Longview and local industries. All traffic is transfer movements between Longview Junction yard and Longview Yard.
Longview Switching Company	Longview Junction Yard	Longview	Longview Junction Yard is the interchange point among Longview Switching Company, BNSF, and UP. It also processes local industry traffic for Ridgefield, Woodland, and Kalama, and interchange traffic to and from Columbia & Cowlitz Railway in Rocky Point. Traffic is a combination of originations and terminations, and traffic arriving or leaving on through trains.
Port of Kalama	Kalama Export Company Terminal	Kalama	The Kalama Export grain terminal (also known as Peavey) can accommodate five grain trains of about 108 cars each and can unload six trains in 24 hours. Traffic is generally originating and terminating only.
Port of Kalama	Cenex-United Harvest Terminal	Kalama	The Cenex-United Harvest grain terminal can accommodate two grain trains of about 108 cars each and can unload two trains in 24 hours. Traffic is generally originating or terminating only.
Port of Portland	Port of Portland	Portland, OR	Port of Portland has several marine terminals and industrial sites that generate traffic directly related to Washington State rail operation. These facilities are connected to BNSF at North Portland Junction and to UP at Barnes. Traffic is a combination of complete trains and traffic to and from through trains.
Port of Seattle	Terminal 5 Intermodal Yard	Seattle	Terminal 5 Intermodal Yard is a Port of Seattle on dock international terminal. BNSF provides the switching service. UP currently has the contract for all traffic originating and terminating at this terminal. Traffic is originates and terminates in this yard.
Port of Tacoma	Port of Tacoma Intermodal Yard	Tacoma	Port of Tacoma has four intermodal yards supporting marine terminals in the Tideflats area. Trains originate or terminate directly in these yards.
Portland Terminal Railroad	Lake Yard	Portland, OR	Lake Yard processes traffic for local industries and serves as an interchange point for BNSF and UP. Traffic is generally originating and terminating trains and yard transfers.
Tacoma Rail (TMBL)	Tideflats Yard	Tacoma	Tideflats Yard switches traffic originating and terminating in the Tacoma Tideflats area east of the Puyallup River, adjacent to the Port of Tacoma intermodal terminals. Traffic is transfer movements between the Tideflats customers and the BNSF and UP.

Owner	Yard/Terminal	Location	Function
UP	Albina Terminal	Portland, OR	Albina processes traffic to and from Portland area industries on UP. It also is one of two UP intermodal terminals for the Portland area. Traffic is generally originating and terminating trains and yard transfers.
UP	Argo Yard	Seattle	Argo Yard also includes subyards Manar and Van Asselt. Argo is the UP intermodal terminal (domestic and international) in Seattle as well as a truck to rail transfer station for solid waste. Argo Yard is almost exclusively used for intermodal traffic and interchanges between BNSF and UP. Van Asselt and Manar yards are used for carload freight originating and terminating at industries on UP in Seattle and Tukwila. Traffic is generally originating and terminating only.
UP	Barnes	Portland, OR	Barnes processes traffic for local industries and the Port of Portland terminals and is an interchange point for traffic moving between BNSF and UP.
UP	Brooklyn Terminal	Portland, OR	Brooklyn is one of two UP intermodal terminals in Portland, Oregon. Traffic is generally through trains with setouts and/or pickups.
UP	Hinkle Yard	Hinkle, OR	Hinkle Terminal is located just southeast of the Tri-Cities in Oregon. It has a major classification yard for carload freight. UP also has a major diesel locomotive maintenance, repair, and fueling facilities in Hinkle. It is also a crew change point for UP trains.
UP	Spokane Yard	Spokane	Spokane Yard processes cars to and from local industries. Train traffic is generally originating and terminating trains. Spokane is a crew change point for through trains.
UP	Tacoma/Fife Yards	Tacoma	The UP Tacoma terminal is split between two yards. The Tacoma Yard processes carload traffic to and from the Tacoma Tideflats area west of the Puyallup River. The Fife Yard processes carload traffic for industries east of the Puyallup River and on Tacoma Rail. Traffic is a combination of originating/ terminating and traffic arriving or leaving on through trains.

Capacity of the Washington State Rail System

Exhibit 3-9 compares the average number of trains operated on each Class I railroad mainline to the practical capacity[16] of the line in 2008. Exhibit 3-10 shows the projected practical capacity for each line in 2028. The data for these maps were derived from the *Statewide Rail Capacity and System Needs Study*, the *2009 Marine Cargo Forecast Technical Report*, BNSF, and UP.

The two maps compare and contrast 20 years of demand growth with current capacity, identifying the gaps in capacity.

Stevens Pass

The Everett-Spokane line, which passes through the Cascade Tunnel at Stevens Pass, is the BNSF's major northern transcontinental route for double-stack intermodal container trains. It is heavily used, operated at about 70 percent of practical capacity in 2008.

Stampede Pass

The BNSF's Auburn-Pasco line, which passes through the Stampede Tunnel, operates today at a low level of practical capacity. The line cannot be used to relieve the Everett-Spokane line, because the ceiling of the Stampede Tunnel is too low to accommodate double-stack intermodal container trains. Grades over Stampede Pass also make it difficult to haul heavily-loaded unit grain trains along this line.

Columbia River Gorge

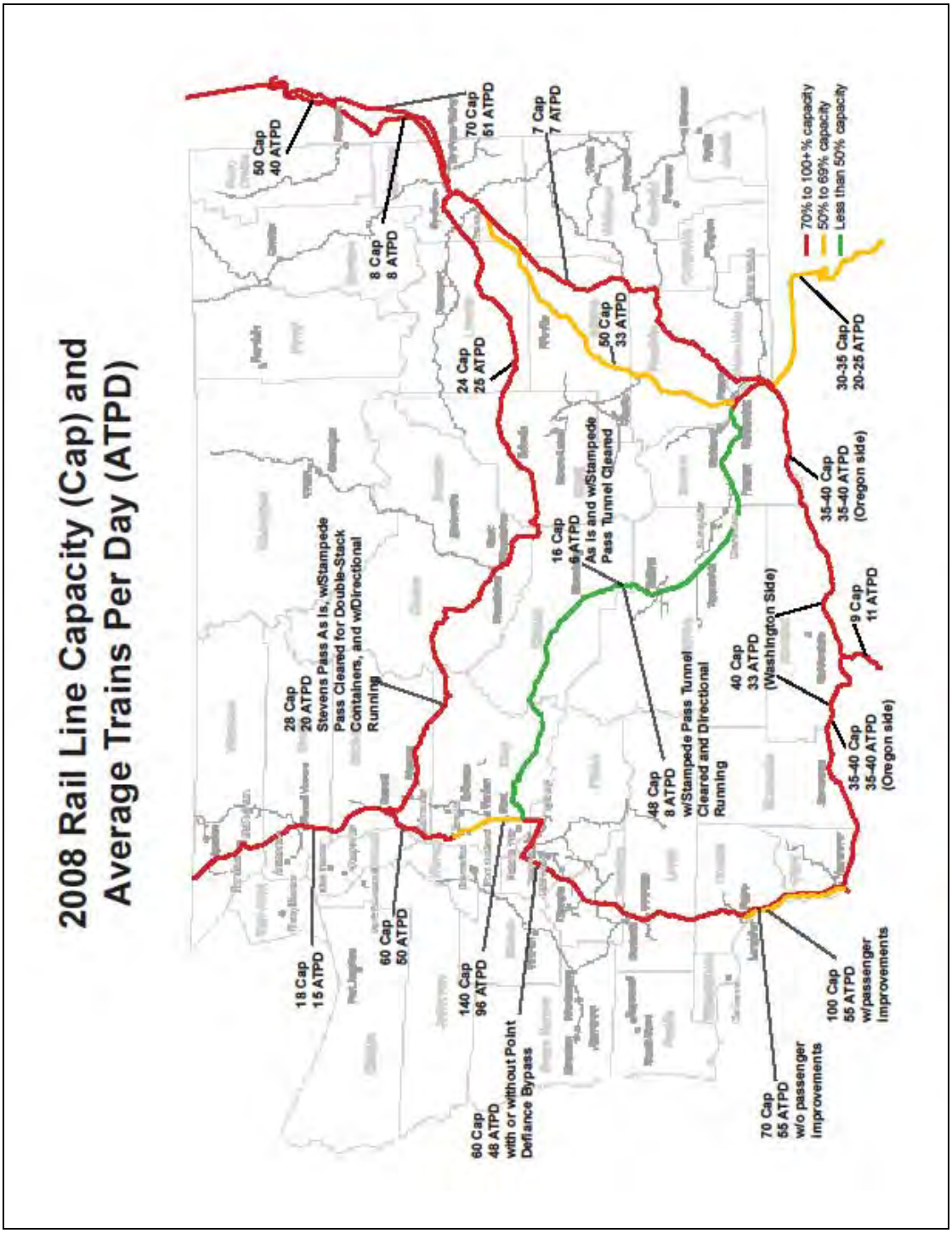
The BNSF's Vancouver-Pasco line, which follows the Columbia River along the north side of the Columbia River Gorge, is used by double-stack intermodal container trains moving east and grain trains moving west to the Puget Sound and Columbia River ports, and carload trains moving both east and west to serve state industrial and agricultural shippers. The line is operating today at about 80 percent of practical capacity.

Interstate 5 (I-5) Corridor

The I-5 corridor rail line runs the length of the state from the Canadian border, through Bellingham, Everett, Seattle, and Tacoma to Vancouver (WA) and Portland. It is the backbone of the state rail system, controlling access to the east-west lines. Most of the line is owned by the BNSF, but the BNSF shares operating rights over significant portions of the line with

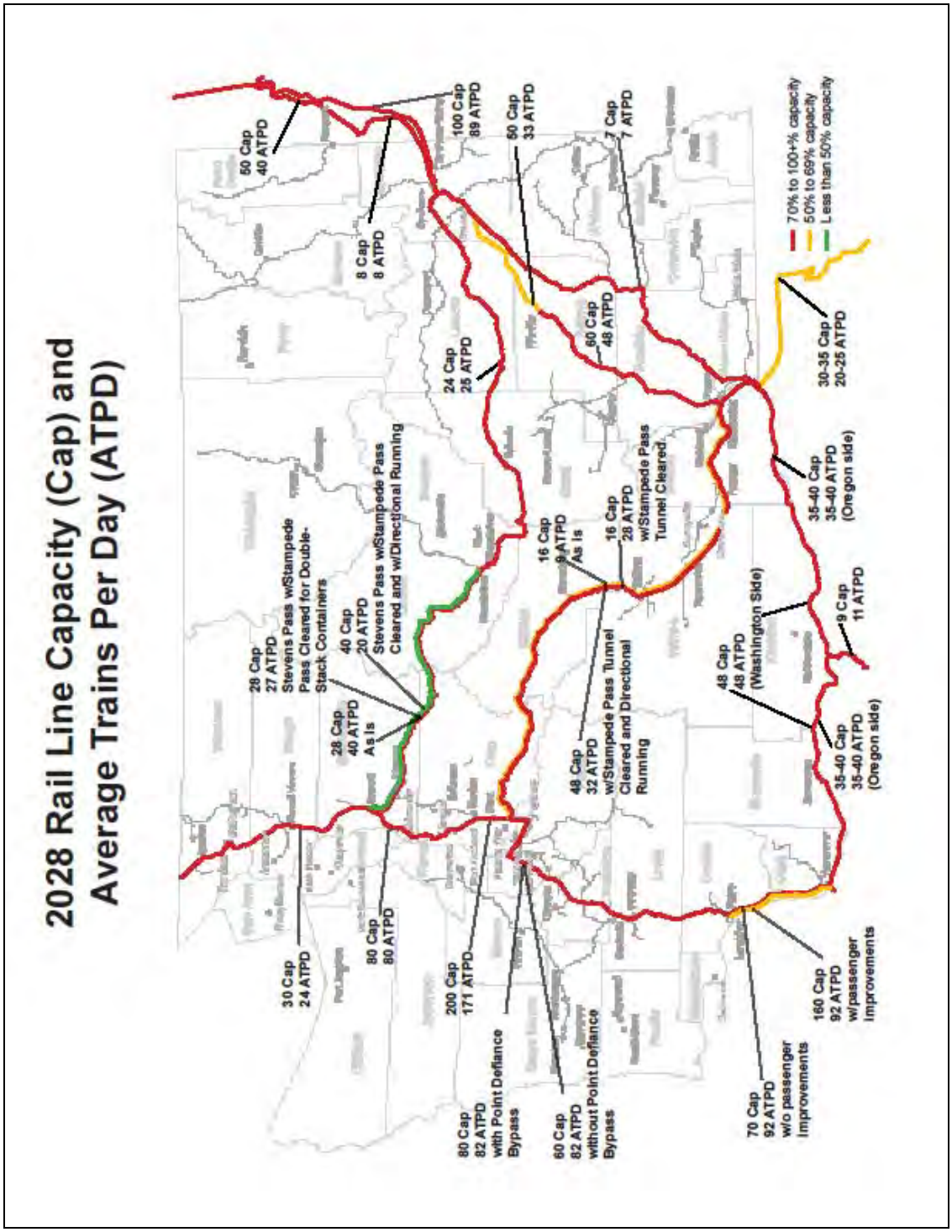
[16] Practical capacity is the highest activity level that a line can operate with an acceptable degree of efficiency, taking into consideration unavoidable losses of productivity.

Exhibit 3-9: 2008 Rail Line Capacity[17]



[17] Train volumes (average trains per day) reflect business activities that are fluctuated sharply and sensitive to economic climate. Although the long-term trend is upward, the short-term trend could drop significantly. The information in this map reflects the long-term forecast results. These numbers were derived based on the best knowledge of the researchers and information available at the time of the research. The recent recession impacts may not be captured by this map.

Exhibit 3-10: 2028 Rail Line Capacity



the UP, Amtrak's intercity rail services, and the *Sounder* commuter rail operations. The line operates at between 40 and 60 percent of practical capacity in most sections, but is subject to frequent stoppages when trains enter and exit the many ports, terminals, and industrial yards along the corridor. Some half dozen sections are chronic chokepoints, causing delays that ripple across the entire state and Pacific Northwest rail system.

Rail Bottlenecks

Exhibit 3-11 locates the major rail bottlenecks by type across the state rail system.

Exhibit 3-11: Railroad Bottlenecks

Bottleneck	Type of Bottleneck
Portland – Vancouver (WA)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
Vancouver (WA)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation
Ridgefield	Yard Infrastructure
Woodland – Castle Rock	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation
Vader – Chehalis	Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation Geography, Geology, Topography, Regulation
Chehalis	Yard Infrastructure
Centralia	Yard Infrastructure Signal and Traffic Control Systems Passenger Operation
Centennial	Passenger Operation
Nelson Bennett – Ruston	Main Line Infrastructure (Except Signal and Traffic Control)
Ruston – Reservation	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition
Reservation – Puyallup	Yard Infrastructure Signal and Traffic Control Systems
Auburn	Yard Infrastructure Infrastructure Condition
Tukwila – Argo	Main Line Infrastructure (Except Signal and Traffic Control)

Bottleneck	Type of Bottleneck
Argo – South Portal (Seattle)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
Tacoma – Tukwila (UP)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation
South Portal (Seattle) – MP 8 (Ballard)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation Infrastructure Condition Geography, Geology, Topography, Regulation
MP 8 (Ballard) – Edmonds	Main Line Infrastructure (Except Signal and Traffic Control)
Edmonds	Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation Infrastructure Condition
Edmonds – Mukilteo	Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control)
Mukilteo	Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation Infrastructure Condition
Everett Jct. – PA Jct.	Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition
PA Jct. – Delta Jct.	Yard Infrastructure Signal and Traffic Control Systems Passenger Operation Infrastructure Condition Geography, Geology, Topography, Regulation
Marysville	Infrastructure Condition Geography, Geology, Topography, Regulation
English – Bow	Main Line Infrastructure (Except Signal and Traffic Control)
Bow – Swift	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation

Bottleneck	Type of Bottleneck
Swift – Thornton Yard (Surrey, BC)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation
Vancouver (WA) – Wishram	Main Line Infrastructure (Except Signal and Traffic Control)
Wishram – Pasco	Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
Auburn – Ellensburg	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation
Ellensburg – Pasco	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation
Everett – Wenatchee	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation
Wenatchee – Spokane	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition Geography, Geology, Topography, Regulation
Pasco – Spokane	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
Spokane – Athol, ID (BNSF)	Main Line Infrastructure (Except Signal and Traffic Control)
Hinkle, OR – Spokane	Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition
Spokane – Eastport, ID	Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Infrastructure Condition
Vancouver (WA) (BNSF)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation
Kalama (BNSF)	Yard Infrastructure

Bottleneck	Type of Bottleneck
Tacoma (BNSF)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control)
Tacoma (Tacoma Rail)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control)
Fife (UP)	Yard Infrastructure Main Line Infrastructure (Except Signal and Traffic Control)
Argo (UP)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
Port of Seattle (BNSF & UP)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
SIG/Stacy (BNSF)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Geography, Geology, Topography, Regulation
Interbay (BNSF)	Yard Infrastructure Signal and Traffic Control Systems Main Line Infrastructure (Except Signal and Traffic Control) Passenger Operation Infrastructure Condition Geography, Geology, Topography, Regulation
Everett (BNSF)	Yard Infrastructure Signal and Traffic Control Systems Passenger Operation Infrastructure Condition Geography, Geology, Topography, Regulation
Wishram (BNSF)	Yard Infrastructure
Arco (Cherry Point; BNSF)	Yard Infrastructure
Longview Jct. (BNSF & UP)	Yard Infrastructure Signal and Traffic Control Systems
Pasco (BNSF)	Yard Infrastructure
Centralia (BNSF & UP)	Yard Infrastructure Signal and Traffic Control Systems Passenger Operation
Spokane (BNSF)	Yard Infrastructure

Source: Washington State Transportation Commission (WSTC) *Statewide Rail System and Capacity Study*, 2006

Rail Capacity

Exhibit 3-12 lists the rail segments where mainline practical capacity will be exceeded within 20 years, even with the additional capacity gained by operating longer trains and implementing better scheduling.[18] The existing bottlenecks will persist and worsen, some more quickly than others.

Nationally, rail capacity is not keeping pace with demand. The rail industry today is stable, productive, and competitive with enough business and profit to operate, but it is not yet attracting capital fast enough to replenish its infrastructure quickly or keep pace with demand and public expectations. This trend has been documented in several recent reports.[19]

Examples of capacity constraints:

Stevens Pass. With the Everett-Spokane line nearing its maximum capacity, the BNSF has been routing more intermodal trains south along the I-5 rail corridor to Vancouver (WA) and then east. This has added considerable volume to the Vancouver-Pasco line along the Columbia River Gorge, and made the scheduling of train moves through the Gorge and along the I-5 rail corridor more complex.

I-5 Corridor. The on-time performance of the Amtrak *Cascades* service has dropped, and delays for both BNSF and UP freight trains have increased, although recent changes in freight operating practices have improved performance somewhat. The problem is particularly acute in the Portland/Vancouver (WA) area, where the railroads' north-south and east-west routes intersect. Rail simulation studies (i.e. grain trains bound for the ports, intermodal trains running through, industrial carload trains serving local industries, and intercity passenger trains shuttling up and down the I-5 corridor) show that the delay hours per train moving through the Portland/Vancouver area are greater than the delay hours for trains in the Chicago area, one of the nation's most congested rail hubs.[20] Railroading is one of the most capital intensive industries in the U.S., and investment in fixed assets can be a risky proposition.

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[18] Demand is total demand not just traffic of the owner.

[19] See for example: American Association of State Highway and Transportation Officials, *Freight-Rail Bottom Line Report*, Washington, D.C., 2003; and United States Government Accountability Office, *Freight Railroads: Industry Health Has Improved, But Concerns About Competition and Capacity Should Be Addressed*, Washington, D.C., October 2006.

[20] "Freight, Intercity Passenger and Commuter Rail," PowerPoint presentation to the Portland-Vancouver I-5 Transportation and Trade Partnership on May 21, 2002; and "Final Strategic Plan: June 2002," prepared by Willard F. Keeney and HDR, Inc. for the Portland-Vancouver I-5 Transportation and Trade Partnership.

Exhibit 3-12: Rail Lines in Washington State Exceeding Practical Capacity 2008 and 2028

(Based on Peak Day Train Volumes and Assuming Operation of 8,000-Foot Trains)

Rail Segment	RR	2008 Capacity	2008 Demand	2008 Utilization as % of Capacity	2028 Capacity	2028 Demand	2028 Utilization as % of Capacity
Everett to Seattle	BNSF	60	48	80%	80	80	100%
Seattle to Tacoma	BNSF	140	80	57%	200	171	86%
Tacoma to Kalama/Longview w/Point Defiance Bypass	BNSF	60	62	103%	80	82	103%
Tacoma to Kalama/Longview w/o Point Defiance Bypass	BNSF	60	62	103%	60	82	137%
Kalama/Longview to Vancouver, WA w/Passenger Improvements	BNSF	100	55	55%	160	92	58%
Kalama/Longview to Vancouver, WA w/o Passenger Improvements	BNSF	70	55	79%	70	92	131%
Everett to Wenatchee, as is	BNSF	28	16	57%	28	40	143%
Everett to Wenatchee Stevens Pass as is, w/Stampede Pass cleared for double-stack countainers	BNSF	28	16	57%	28	26	93%
Everett to Wenatchee Stevens Pass as is, w/Stampede Pass cleared for double-stack countainers, and w/directional running	BNSF	28	16	57%	40	20	50%
Wenatchee to Spokane	BNSF	24	18	75%	24	25	104%
Auburn to Pasco, as is	BNSF	16	6	38%	16	9	56%
Auburn to Pasco w/o Stampede Pass Tunnel Cleared	BNSF	16	6	38%	16	28	175%
Auburn to Pasco w/Stampede Pass Tunnel Cleared and directional running	BNSF	48	8	17%	48	32	67%
Vancouver, WA to Pasco	BNSF	40	32	80%	48	48	100%
Vancouver, WA to Pasco	UP	40	40	100%	40	40	100%
Pasco to Spokane	BNSF	50	32	64%	60	48	80%
Pasco to Spokane	UP	7	7	100%	7	7	100%
Spokane to Sandpoint, ID	BNSF	70	45	64%	100	89	89%
Spokane to Sandpoint, ID	UP	8	7	88%	8	8	100%

Blue shows lines that are at or are projected to be at 100 percent or more of capacity by 2028.

Source: 2009 Marine Cargo Forecast

During the 1990s, when railroads found themselves with excess capacity and profits were down, Wall Street downgraded bond ratings and railroad stock prices fell. In the last several years, this trend has reversed and Class I railroads are reinvesting heavily to maintain and add capacity to their systems. However, much of this investment is replacing existing infrastructure and maintaining existing capacity, because rail traffic places

enormous wear and tear on rails, bridges, tunnels, and locomotives. To reduce longer-term financial risk, both the BNSF and the UP have investment strategies that emphasize increasing capacity through operations first and infrastructure expansion last.

To manage demand while new capacity is being added, the railroads are using pricing to turn aside lower-profit carload freight in favor of intermodal and coal traffic, which can be handled more cost-effectively and profitably in unit or destination-specific trains. In some markets and corridors, international intermodal traffic is squeezing out industrial and low-density agricultural carload traffic. Shippers, who are used to being price setters, are now price takers.

Furthermore, the national capacity crunch is focusing more rail traffic and railroad investment on the Pacific Southwest at the expense of the Pacific Northwest and the state. Continuing high levels of growth and the competition between BNSF and UP for the lucrative southern California rail market have made southern California the key focal point of investment for both railroads.

Capacity shortfalls will complicate the improvement of intercity passenger rail service. As a condition of the deregulation of the railroad industry in 1980, federal law requires that freight railroads share the use of their lines with intercity passenger rail providers and give passenger trains priority over freight trains. But the differing needs of the passenger and freight railroad create tension between the needs of the passenger rail operators and the needs of freight rail operators as each tries to maximize the performance of their respective operations.

In general, frequent passenger rail service, especially frequent high-speed rail service, requires relatively wide time-space slots on the mainline to ensure that the passenger trains do not overtake slower-moving carload freight trains.[21]

Recent Major Policy Changes Impacting the Rail System in Washington State

Safety Regulation

The state has very little safety jurisdiction over rail operations, except for public highway-rail crossings. States can conduct inspections in various

[21] Intermodal trains are also significant consumers of rail capacity, because they are long, move at speeds similar to passenger trains, and require priority of movement. The railroads market these trains as premium services, and they generate substantial revenue for the railroads.

safety disciplines as part of a state-federal participation program, but any enforcement is done by the Federal Railroad Administration (FRA) in the areas of hazardous materials, track, signals, and operating practices.

Appendix 3-B discusses rail safety regulation, including rail employee safety, remote control operations, community notice, blocked crossings, train speeds, grade crossing protective zones, housekeeping, quiet zones, crossing consolidation/closure, and Operation Lifesaver—an international organization promoting rail safety and awareness.

Positive Train Control[22]

Positive Train Control (PTC) refers to technology that is capable of preventing train-to-train collisions, over-speed derailments, and casualties or injuries to roadway workers. PTC systems vary widely in complexity and sophistication based on their level of automation, functionality, system architecture (i.e., non-signaled, block signal, cab signal), and degree of control.

Prior to October 2008, PTC systems were being voluntarily installed by various carriers. However, the Rail Safety Improvement Act of 2008 (RSIA), signed by the President Bush on October 16, 2008 as Public Law 110-432, has mandated the widespread installation of PTC systems by December 2015.

Currently, all of the affected railroads are aggressively developing PTC implementation plans as required by the RSIA and adapting their PTC systems to maximize interoperability.[23] The FRA is supporting all rail carriers that have statutory reporting and installation requirements to install PTC, as well as rail carriers that are continuing to voluntarily implement PTC through a combination of regulatory reform, project safety oversight, technology development, and financial assistance.

On March 7, 2005, FRA published regulations regarding performance standards for processor-based signal and train control systems per Title 49 Code of Federal Regulations Part 236, Subpart H. A working group of the Railroad Safety Advisory Committee first developed these performance-based regulations versus traditionally prescriptive regulations. The new performance-based regulations require that a railroad demonstrate with a high degree of confidence, that the risks associated with a new product

[22] http://www.fra.dot.gov/us/content/1265.
[23] The BNSF, UP, Norfolk Southern Railway, and CSX Transportation are leading the interoperability effort for technologies based on the Electronic Train Management System for rail traffic outside of the Northeast Corridor. The National Passenger Rail Corporation (Amtrak) is undertaking similar action for rail traffic in the NEC using the Advanced Civil Speed Enforcement System.

being implemented are less than or equal to the risks associated with the product that is being replaced.

After extensive participation and contributions by railroads, rail labor, suppliers, and other agencies, including the National Transportation Safety Board, the performance-based regulations became effective on June 6, 2005. The Subpart H regulations support the voluntary introduction of innovative technology, including systems using computers and radio data links, to accomplish PTC functions. In addition to supporting advancement of PTC systems, these regulations also facilitate the ever-growing use of processor-based equipment and functioning in otherwise conventional signal and train control systems.

FRA is working to develop a new performance-based regulation to address the various statutory requirements of RSIA and to better support railroads that must install PTC systems. This new regulation is being crafted to ensure system safety while reducing the administrative overhead.

There are currently 11 different PTC pilot projects in varying stages of development and implementation, involving nine different railroads in at least 16 different states, and consisting of over 4,000 track miles. These pilot projects are not only allowing railroads to continue to advance the various technologies used to implement PTC systems, but are providing the railroads valuable experience on installation and test procedures required to meet the 2015 deployment completion date.

Washington State
Department of Transportation

Chapter 4: Freight Rail Services – Effects on the Economy and Society

Functions of Freight in Washington's Economy

Washington State's (state) multimodal transportation system supports economic vitality and quality of life in the state and region. The smooth functioning of highways, railways, ports, pipelines, and airports allows businesses and consumers to trade and purchase the goods necessary to sustain business and daily life. With coordinated planning and strategic investments, the state and its partners can provide a transportation system that meets the challenges and opportunities ahead. Including statewide freight rail into statewide transportation planning and investment decisions is increasingly important.

The three components of the state's freight activities are:

Made in Washington – Regional Economies Rely on the Freight System

The state's manufacturers and farmers rely on the freight system to ship Washington-made products to local customers, big United States (U.S.) markets in California and on the east coast, and worldwide. The state's producers generate wealth and jobs in every region in the state.

Delivering Goods to You – The Retail and Wholesale Distribution System

The state's distribution system is a fundamental local utility; without it state residents would have no food to eat, clothes to wear, books to read, spare parts, fuel for their cars, or heat for their homes. In other words, the economy of the region would no longer function. The value and volume of goods moving in these freight systems is huge and growing.

Global Gateways – International and National Trade Flows Through Washington

This is a gateway state, connecting Asian trade flows to the U.S. economy, Alaska to the Lower 48, and Canada to the U.S. West Coast. About 70 percent of international goods entering the state's gateways continue on to the larger U.S. market. Thirty percent become part of the state's manufactured output or are distributed in the state's retail system (Exhibit 4-1).

Exhibit 4-1: Washington State Is a Global Gateway

Source: Washington State Department of Transportation (WSDOT) Geographic Services and Strategic Analysis and Program Development, 2004

These components underpin our national and state economies, support national defense, directly sustain hundreds of thousands of jobs, and distribute the necessities of life to every resident of the state every day.

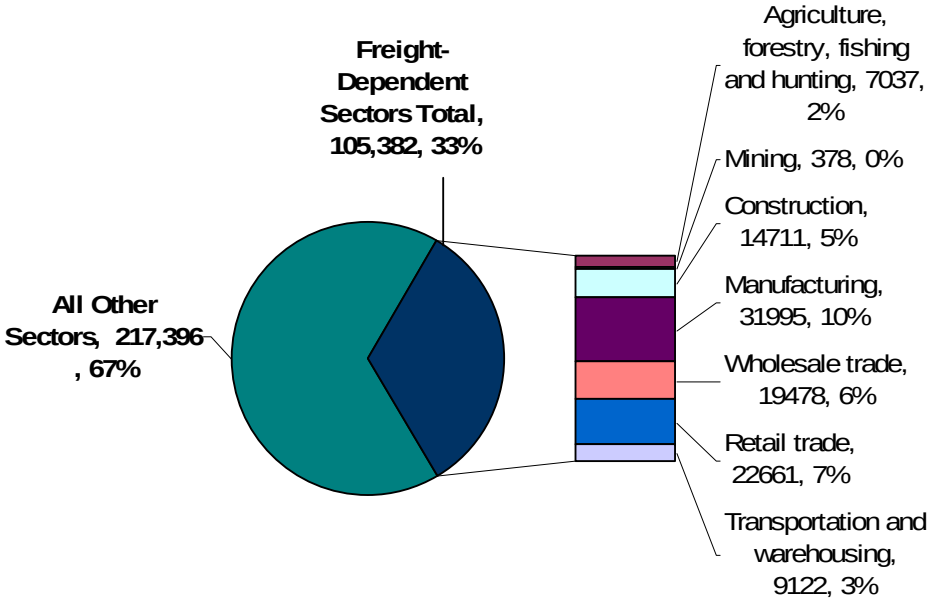
A large part of the state's economy depends on freight for its competitiveness and growth. The most highly freight-dependent sectors include agriculture, mining, construction, manufacturing, wholesale, retail, transportation, and warehousing. In 2008 freight-dependent sectors accounted for 33 percent of the state's Gross Domestic Product (GDP), 71 percent of business income, and 39 percent of state employment (Exhibits 4-2, 4-3, and 4-4).

Freight Rail in Washington's Economy

Rail provides critical transportation for manufacturers, agricultural producers, lumber and wood product producers, the food products industry, and the ports and international trade sector—all important sectors of the state economy. Freight rail, in terms of tonnage, accounted for 19 percent of total freight in the state in 2007.

Exhibit 4-2: Freight-Dependent Sectors GDP
Washington State 2008 ($ Millions)

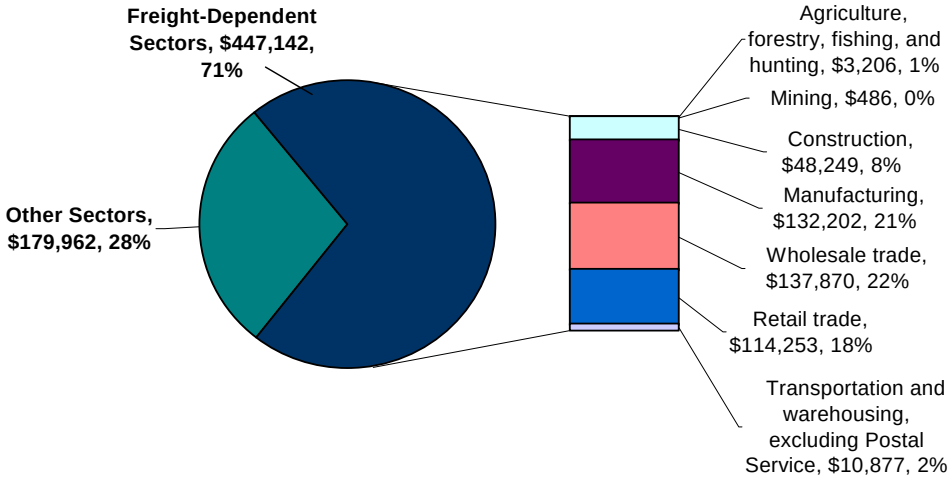
Freight-Dependent Sectors: $105,382
All Sectors: $217,396



Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis, compiled by WSDOT State Rail and Marine Office

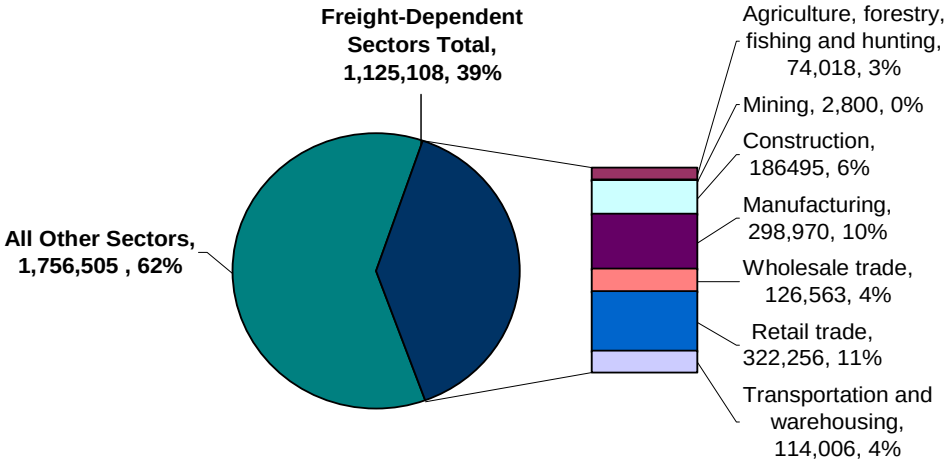
Exhibit 4-3: Business Incomes of Freight-Dependent Sectors
Washington State 2008 ($ Millions)

Freight-Dependent Sectors: $447,142
All Sectors: $627,104



Source: Washington State Department of Revenue, compiled by WSDOT State Rail and Marine Office

Exhibit 4-4: Freight-Dependent Sectors Employment
Washington State 2008 First Quarter
Freight-Dependent Sectors: 1.125 Millions Jobs
All Sectors: 2.881 Millions Jobs

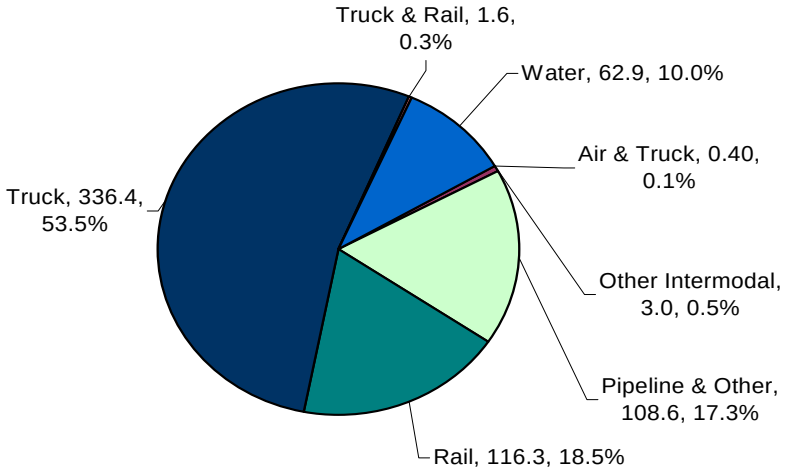


Source: Washington State Employment Security Department 2008, compiled by WSDOT State Rail and Marine Office

Freight Rail Flows

Freight rail provides shippers with cost-effective transportation, especially for heavy and bulky commodities, and can be a critical factor in retaining and attracting industries that are central to state and regional economies (Exhibit 4-5).

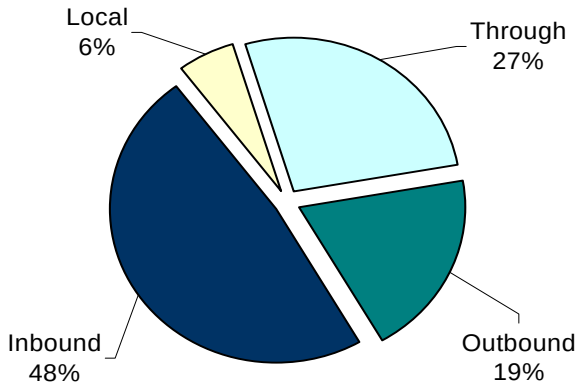
Exhibit 4-5: Freight by Mode – Washington State 2007
(Million Tons)



Source: WSDOT State Rail and Marine Office – Analysis based on Federal Highway Administration (FHWA) Freight Analysis Framework (FAF) Data and 2007 Surface Transportation Board (STB) Waybill Data

In 2007 the state's freight railroads moved more than 116 million tons of freight, an almost 40 percent increase from 83 million tons in 1996. Cargo moving on rail inbound was 48 percent—originating from other states or Canada and terminating in the state. The second largest flow type at 27 percent was cargo moving through the state without loading or unloading. Local cargo, which originated and terminated within the state, comprised six percent of the total rail cargo. Outbound cargo—originating in the state and terminating in another state or Canada—was 19 percent of total state rail freight (Exhibit 4-6).

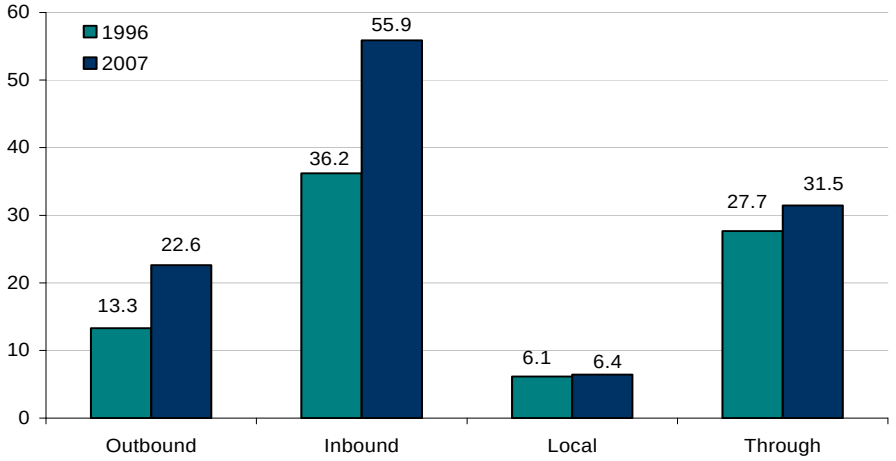
Exhibit 4-6: Rail Freight Flows – Washington State 2007[1]



Source: WSDOT State Rail and Marine Office – 2007 Surface Transportation Board Waybill Analysis

The largest increase in percentage terms is outbound with a 70 percent increase, followed by inbound with a 54 percent increase (Exhibit 4-7).

Exhibit 4-7: Growth of Rail Freight Flows
Washington State 2007 versus 1996 (Million Tons)

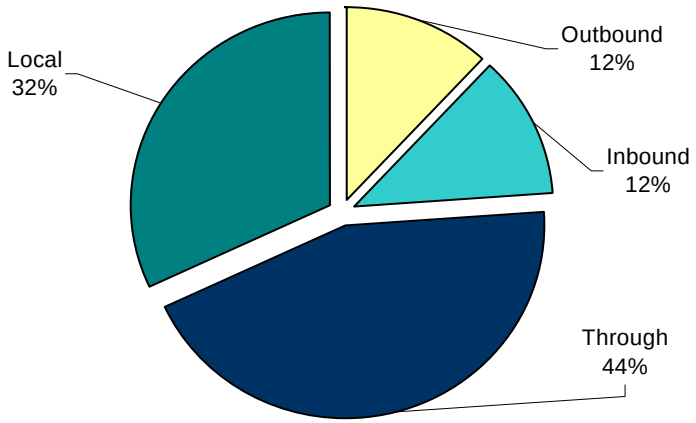


Source: WSDOT State Rail and Marine Office – 2007 Surface Transportation Board Waybill Analysis

[1] Federal Waybill data is available for 2007. 2008 data is not available until early 2010.

As can be seen by comparing Exhibit 4-6 and Exhibit 4-8, the state is much more dependent on inbound cargo than the average state, which has only 12 percent inbound cargo that is moved by rail. In other states approximately one third of the freight rail traffic is local. Local moves by rail in this state are only 6 percent of the total rail freight. The state is truly a Global Gateway for the U.S. Due to this being a coastal state, its through traffic of 31.5 million tons (27 percent) is considerably below the average of all states' through traffic of 44 percent.

Exhibit 4-8: Directional Rail Freight Flows
Average of Other States in U.S. 2007



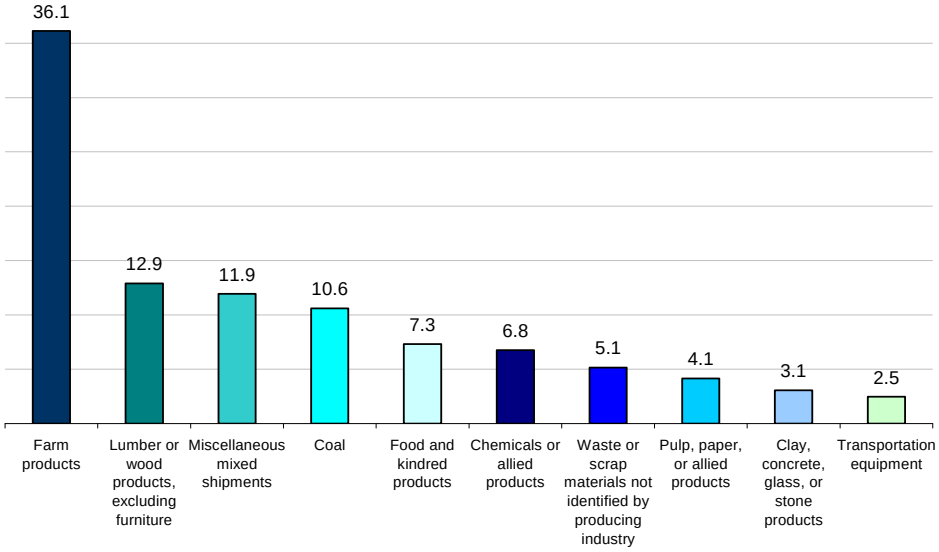
Source: WSDOT State Rail and Marine Office – 2007 Surface Transportation Board Waybill Analysis

Major Commodities Shipped by Rail

The economic vitality of the state requires a robust rail system capable of providing its industries, ports, and farms with competitive access to North American and overseas international markets. The state is well known for its agricultural products such as apples, wheat, soft fruits, and many other agricultural products. Freight rail plays an important role in the state's agriculture sector. Lumber and wood product producers, manufacturers, waste management, and mining also rely on rail transportation to move heavy, bulky products to markets cost-effectively.

Farm products, primarily wheat and grain (36.1 million tons), were the largest commodity moved on our rail system in 2007, followed by lumber and wood (12.9 million tons), miscellaneous mixed shipments (11.9 million tons), and coal (10.6 million tons). In 2007, 100.4 tons (almost 86 percent) of freight moved on state rail was from the top ten commodities (Exhibit 4-9).

Exhibit 4-9: Top 10 Commodities Shipped by Rail
Washington State 2007 (Million Tons)



Source: WSDOT State Rail and Marine Office – 2007 Surface Transportation Board Waybill Analysis

Trade Partners

The state's rail freight supports regional, national, and international trade and economies. In 2007 more than 55 million tons of goods arrived in the state from 42 other states and Canada by rail for export and in-state consumption. Meanwhile, 23 million tons of goods were exported from the state to 45 other states and Canada by rail. Exhibits 4-10 and 4-11 provide details of inbound and outbound flows that reflect the state's trades with its partners.

The state itself plays an important role in support of trade and economy. One example is the Produce Rail Car program operated by WSDOT with leveraged federal grant funds. This program maintains economic viability in farming areas of the eastern side of the state by supporting produce exports through a lower shipping cost. Exhibit 4-12 shows the estimated 2008 economic impacts of this program.

If rail service deteriorates, these businesses may shift their freight to trucks, but this could increase their transportation costs and may increase the road maintenance costs for state and local governments. In some cases, the loss of rail service could drive businesses to relocate or close. Rail service deterioration would also contribute to more congestion, higher green house gas emissions, higher energy use, and a negative impact on safety.

Exhibit 4-10: Inbound Rail Freight Flows

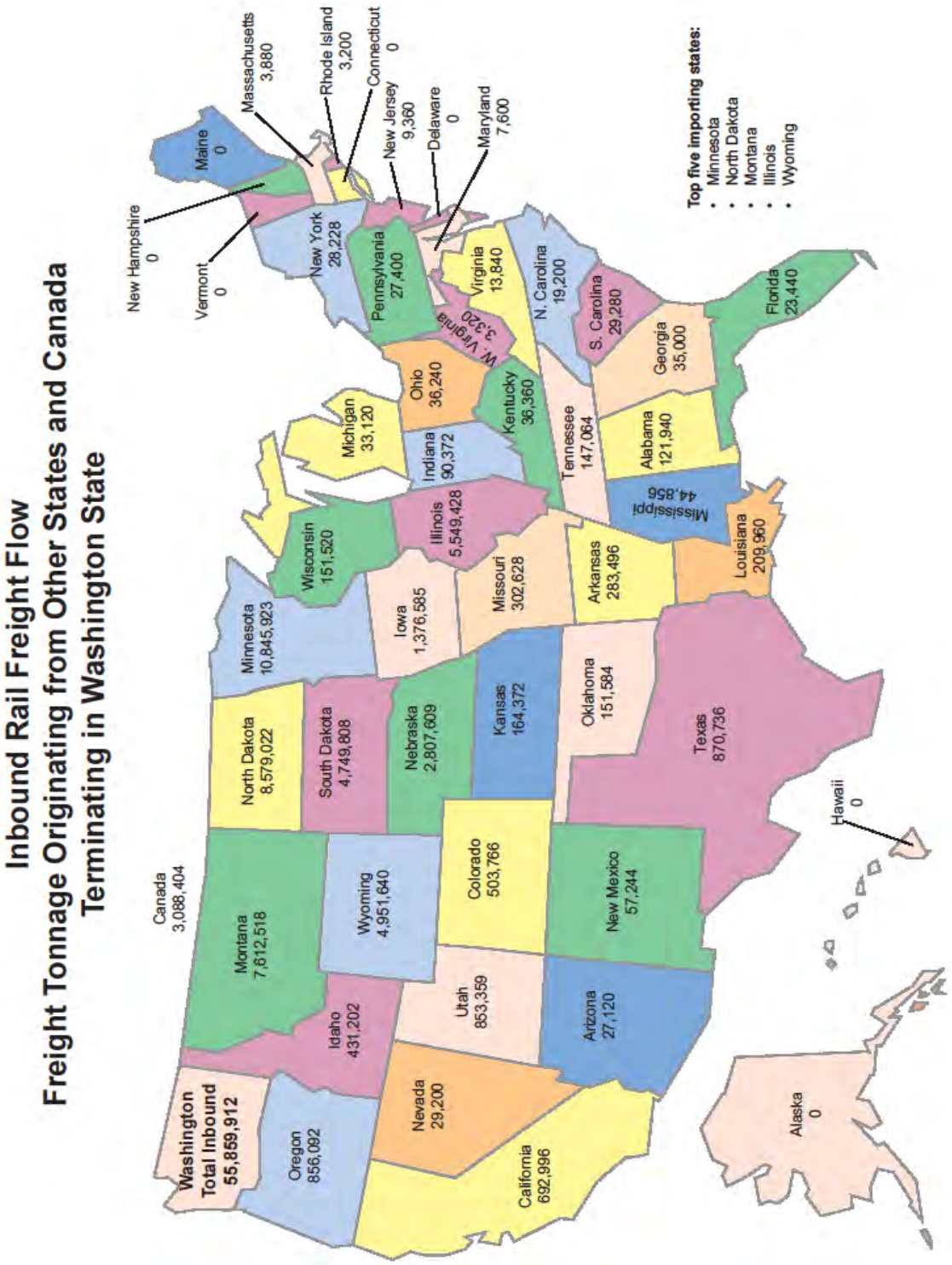


Exhibit 4-11: Outbound Rail Freight Flows

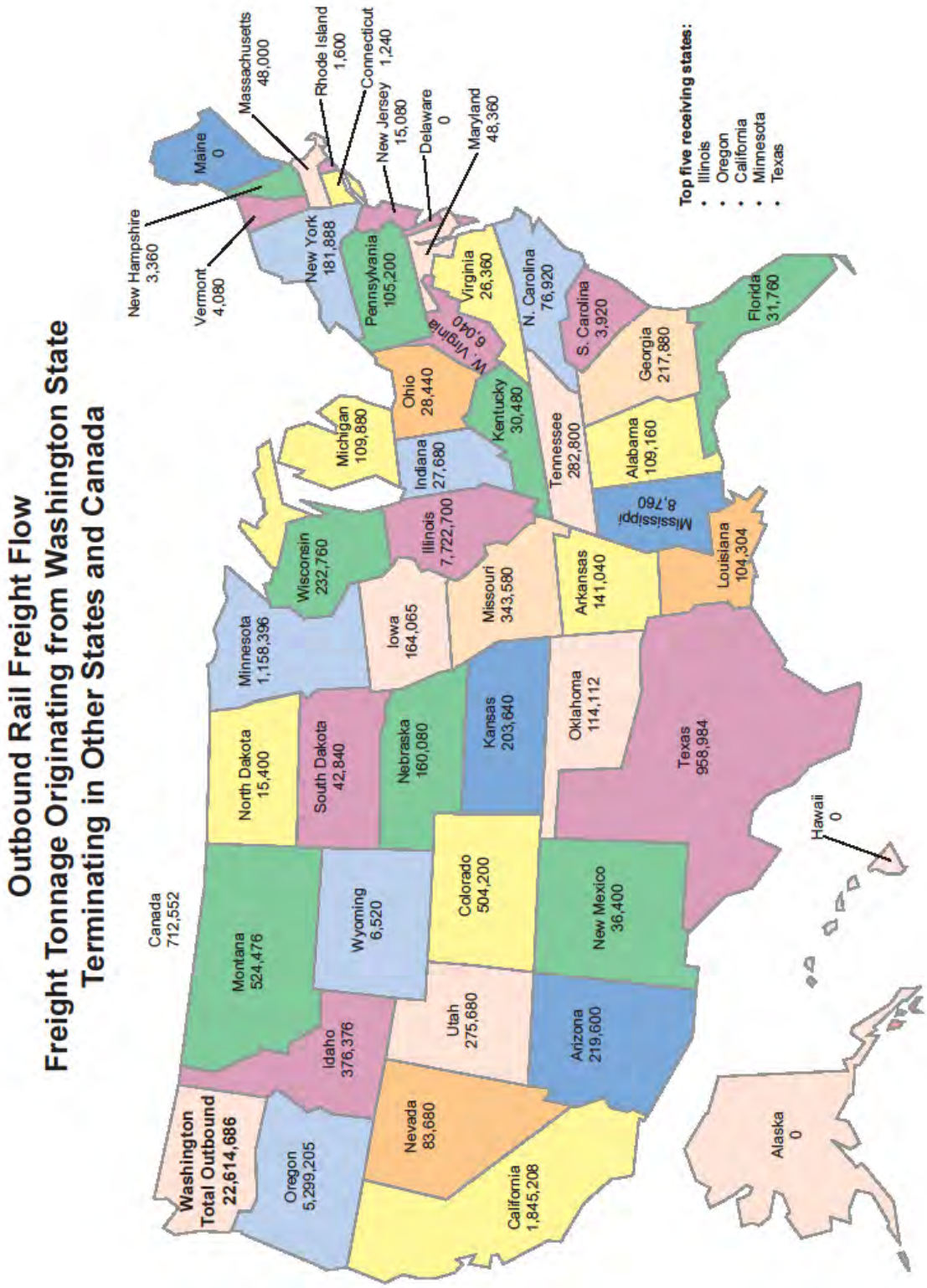


Exhibit 4-12: Economic Output and Employment Supported by Produce Rail Car Program* – Year 2008

Impacts**	Direct	Indirect	Induced	Total
Economic Output ($ Million)	$30	$17	$18	$66
Employment (Jobs)	409	133	151	693
Value Added* ($ Million)**	$13	$8	$11	$32

Source: WSDOT State Rail and Marine Office - IMPLAN Input-Output model for Washington State and its local areas.

* Economic impacts are assessed using the IMPLAN Input-Output model for Washington State and its local areas. Using classic input-output analysis in combination with regional specific Social Accounting Matrices and Multiplier Models, IMPLAN provides a highly accurate and adaptable model for its users. The IMPLAN database contains county, state, zip code, and federal economic statistics which are specialized by region, not estimated from national averages, and can be used to measure the effect on a regional or local economy of a given change or event in the economy's activity.

** Direct impact is measured as the jobs, outputs, and value added within farming industries and shippers supported by the produce rail car program. Indirect impact is measured as the jobs, outputs, and value added occurring within other industries that provide goods and services to the directly affected industries. Induced impact is the change in jobs, outputs, and value added resulting from household spending of income earned either directly or indirectly from the shippers industry's spending.

*** Difference between the total sales revenue of an industry and the total cost of components, materials, and services purchased from other firms within a reporting period (usually one year). It is the industry's contribution to the GDP.

The following section discusses rail-intensive industries in the state and their impacts on the state's economy and dependence on freight rail.

Rail Intensive Sectors and Industries in Washington State

Agriculture and Food Products Industry/Bulk and Specialized Carload Shippers[2]

Agriculture and food product manufacturers are important economic sectors in the state, generating 2.9 percent of the gross state product[3] and accounting for 4.1 percent of 2008 employment.[4] The state agricultural and food manufacturing production was valued at over $13.6 billion in

[2] The section is adopted from the Washington State Transportation Commission's (WSTC) *Statewide Rail Capacity and System Needs Study* (2006).
[3] USDOC Bureau of Economic Analysis.
[4] Employment Security Department.

2008.[5] Agriculture is the primary source of employment in many of the state's rural counties.

Agricultural rail traffic outbound from the state is expected to grow at a compound annual growth rate of 3.3 percent over the next 20 years. The state also has an expanding food products industry with particular strengths in frozen foods (7.3 percent of U.S. output) and wine production.[6]

However, most of the agricultural tonnage moving on the state rail system is midwestern grain moving to the Lower Columbia River and Puget Sound ports for export. And because midwestern grain is moving long distances by unit train, it is generally more attractive for the railroads than local state agricultural shipments, which must move shorter distances for export and may require specialized handling.

The Class I railroads are asking state agricultural shippers to consolidate their shipments at new facilities, and this may be economical for those shippers who can accommodate the changes. However, these changes can also lead to un-served and underserved markets where shippers have difficulty finding efficient transportation. These changes could affect the short lines, which may see declines in their markets; operators of small grain elevators along the short lines who also stand to lose business; and the remaining shippers on the short lines who could see reductions in service and increased costs. The challenge faced by state agriculture is to maintain competitive rail service as it focuses on higher-value added crops and produce that may not generate the volumes that are attractive to the Class I railroads. This need to consolidate carloads for more efficient rail service is a prime situation where state funding could make sense. This has been done very successfully in Oregon.

Ports and International Trade Sector/Intermodal Container Shippers[7]

The state's ports and international trade industry depend on rail to export grain and other agricultural products, and to import intermodal containers of consumer goods. Although in 2007 rail only accounts for 19 percent of total freight in the state in terms of tonnage, it accounts for 42 percent of marine cargo.[8] If the rail system cannot deliver high-quality transportation services, especially for intermodal cargo that is not destined

[5] Department of Revenue.
[6] WSTC – *Statewide Rail Capacity and System Needs Study* (2006).
[7] The section is developed based on 2006 WSTC *Statewide Rail Capacity and System Needs Study* and WSDOT/Washington Public Ports Association (WPPA) *2009 Marine Cargo Forecast*.
[8] WSDOT/WPPA *2009 Marine Cargo Forecast*, STB Waybill data 2007, and United States Department of Transportation (USDOT) FAF 2008.

for this state, shippers may shift to other ports. This could affect port-supported economic sectors. In addition, export trade plays a major role in the state economy. Rail frequency and quality affects the frequency and array of service offered by shipping lines. Without good rail connections to support both import and export trade, state ports would become less attractive to ocean carriers, and ultimately, the state would become a less attractive location for export businesses.

About 40 percent of the state's rail traffic is related to port activity. The amount moving to state ports by rail is forecast to increase from the current 42 million tons to 66 million tons in 2030.[9] The state's ability to meet this opportunity will depend on the investments made to expand and improve rail operations and infrastructure.

International trade generates large flows of intermodal containers through the Ports of Seattle and Tacoma. Between 1999 and 2008, container traffic grew at an average annual rate of 2.9 percent from 2.76 million Twenty-Foot Equivalent Units[10] (TEUs) to 3.57 million TEUs at Puget Sound ports.[11] Much of the container traffic consists of merchandise and retail goods imported from Asia through the ports, and then transferred to rail for shipment to Midwestern and eastern U.S. markets. Businesses and consumers across the U.S. benefit from this international trade, but healthy deepwater ports also provide benefits to the state.

The state is among the top export states due to the strong market for Boeing aircraft. While many state exporters do not use the rail system to deliver goods to state ports, the existence of a healthy rail system is important, because it brings more traffic to the ports and more shipping services that can be used by state exporters. Strong long-haul rail services allow ocean carriers to access larger and more distant inland markets. Local export shipments help to balance import and export flows for the carrier. Thus, a strong rail system helps attract ocean carrier services to state ports and makes the state a more attractive location for national, regional, and local export businesses.

Manufacturers/Industrial Carload Shippers[12]

Manufacturing and industrial product industries are among the largest rail-using state businesses, and they primarily use rail carload services. Shippers include producers of metals, machinery, transportation equipment (including aircraft), wood and paper, petroleum, and plastic

[9] WSDOT/WPPA *2009 Marine Cargo Forecast.*
[10] Twenty-Foot-Equivalent Unit. The 8-foot by 8-foot by 20-foot intermodal container is used as a basic measure in many statistics.
[11] Port of Seattle and Port of Tacoma.
[12] The section is adopted from *Statewide Rail Capacity and System Needs Study*.

products. In 2008 the largest tonnage volumes of outbound shipments from these industries were waste and scrap materials; pulp, paper, and allied products; transportation equipment; primary metal products; and chemicals and allied products.[13] Inbound manufactured or industrial products included coal; chemicals; clay, concrete, glass, and stone; pulp and paper; and primary metal products.[14]

The volume of shipments of manufacturing goods is expected to grow steadily. However, many of the shippers reported that they were paying higher prices, were getting lower quality service, and were often having business turned away by the railroads.[15] These shippers will substitute truck for rail when they can, but for shippers of bulky, semi-finished products, or primary materials, trucking may not be feasible or cost effective. Hence, there is a risk that the state will lose some of the businesses, such as coal and gravel that depend on carload shipments, to relocation or closure.

A key feature of rail is the ability to move heavy and high/wide manufacturing products that cannot be moved via truck.

Economic Impacts of Freight Rail

Freight rail has significant economic impacts. In 2007 total state rail freight revenue, including rail-only and rail intermodal, amounted to $2 billion. Freight rail employed 4,207 people in the state and contributed $533 million to the state's GDP directly. The state's freight rail system also supports other economic sectors. Exhibit 4-13 provides an overview of the economic impacts of freight rail in the state.

Major Drivers in Freight Rail Demand

There are four major drivers that determine freight demand:

- Population size and trends; demographic changes.
- Economic activity, both domestic and international.
- Trade activity, both domestic and international.
- Supply chain practices.

[13] Goods shipped from this state to other states and countries by rail.
[14] Goods shipped from other states and countries to this state by rail. Do not confuse this with state import.
[15] Shippers' survey conducted by researchers of *2006 Statewide Rail Capacity and System Needs Study*.

Exhibit 4-13: Economic Impacts of Freight Rail Transportation – Washington State 2007

Impact Category	Direct*	Indirect**	Total
Employment (Jobs)	4,207	6,057	10,264
Business Revenue ($ Million) ***	$1,154	$884	$2,038
Employee Compensation ($ Million)	$417	$259	$676
GDP ($ Million) ****	$533	$383	$916
Tax Impact ($ Million)	N/A	N/A	$271

* Directly related to freight rail transportation industry.

** Jobs that support freight rail transportation but not hired by rail transportation industry.

*** Business revenue of an industry is total sales of all business in the industry.

**** GDP is value-added or the difference between the value of its output and the value of its input. GDP of an industry is measured as sum of values added by all businesses in the industry. It is sales of goods minus purchase of intermediate goods to produce the goods sold.

Sources: Association of American Railroads, WSDOT State Rail and Marine Office - IMPLAN Input-Output model for Washington State and its local areas.

Population Growth and Trade Growth

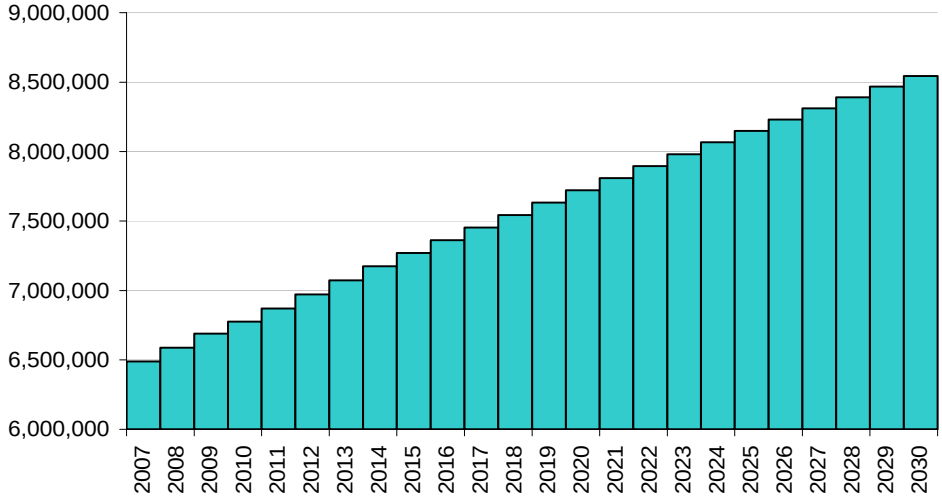
As Exhibit 4-14 shows, the population of the state is projected to grow at 1.2 percent a year. However, freight rail demand in the state is tied both to U.S. population growth and to state population growth, due to the fact that the state is one of the major global gateway states and plays an important role in the national economy and international trade. Therefore, freight rail demand grows faster in Washington State than the national average.

It is estimated that one in four jobs in the state is trade related.[16] Thus, for the import side of the equation, it is the growth in the total U.S. population and their consumption that drives the demand for freight rail in this state. On the export side of the equation, the demand is built on world population growth of developing countries in Asia and their need to feed their people. U.S. imports grew at an annual pace of 8.8 percent between

[16] www.washingtonports.org and www.portjobs.org/.

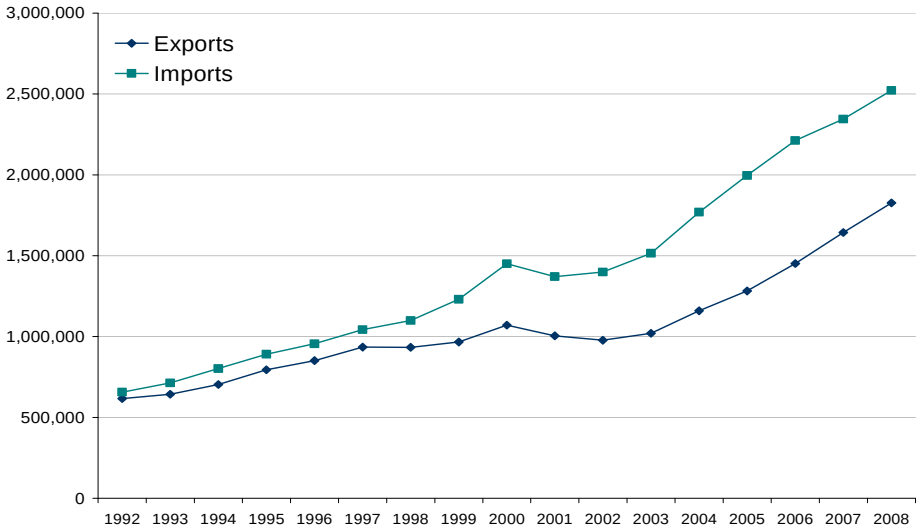
1992 and 2008, and U.S. exports grew at 7.0 percent during the same period (Exhibit 4-15).

Exhibit 4-14: Population Growth – Washington State 2007-2030



Source: Washington State Office of Financial Management

Exhibit 4-15: U.S. Export and Import, 1992 to 2008
($ Million)



Source: U.S. Census Bureau, Foreign Trade Division

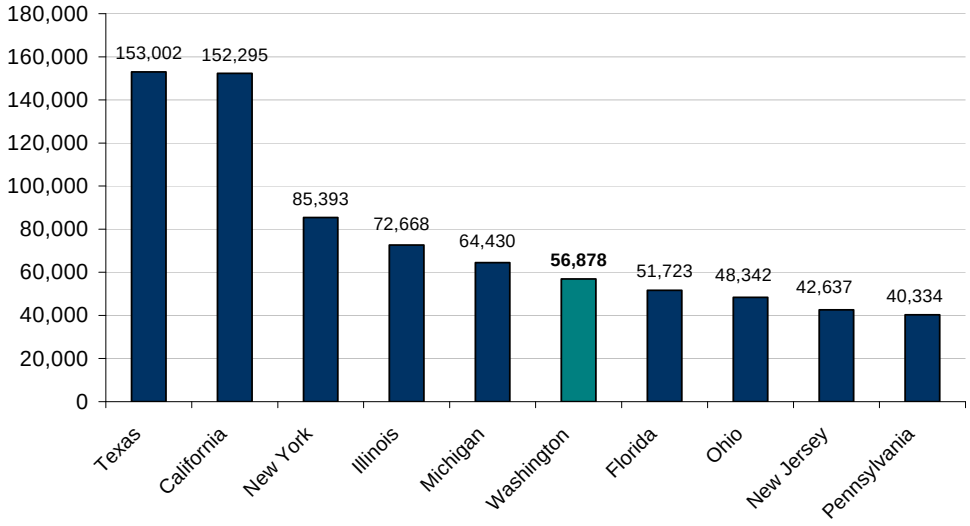
Most trade forecasters agree that the degree of foreign trade dependency on the world's major economies will continue to grow. That is the U.S. and its major trading partners will continue to become more "open" economies. This trend will continue because the developing world continues to offer increasingly advantageous locations for production. Economic efficiency is the driver for economic globalization. As a consequence, the ability to produce lower cost goods and services in

different locations leads to more trade and transportation. While the past growth rate is not expected to be sustainable, it is believed the trend of imports and exports is likely to continue to grow at a slow but steady pace.

The state, as a major global gateway state, shared a significant portion of such growth in 2008, ranking sixth in exports (Exhibit 4-16).

Imports drive the demand for rail service in the state as the fast growth of international container traffic through state gateways to U.S. markets continues. However, the trend has been slowing lately and future growth is likely to continue at a slower pace (Exhibit 4-17).

Exhibit 4-16: Top Ten Export States in the United States – 2008
($ Millions)

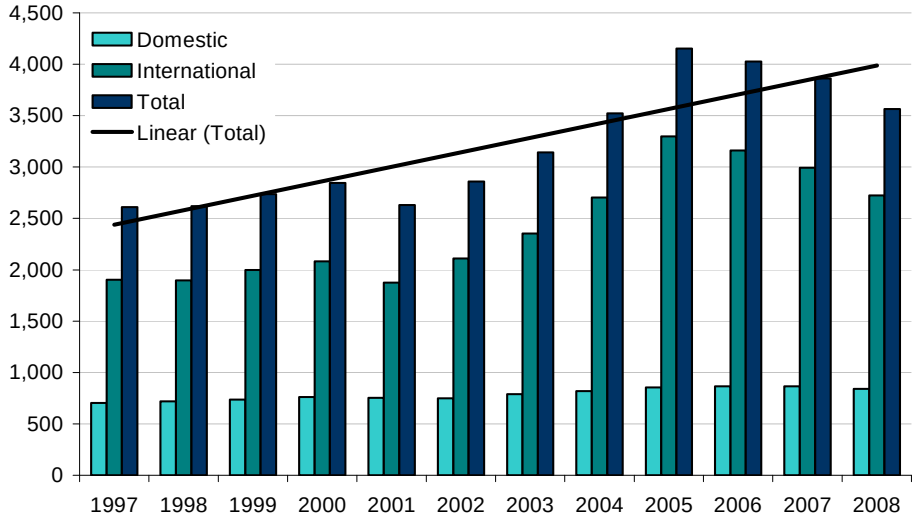


Source: U.S. Census

Economic Growth

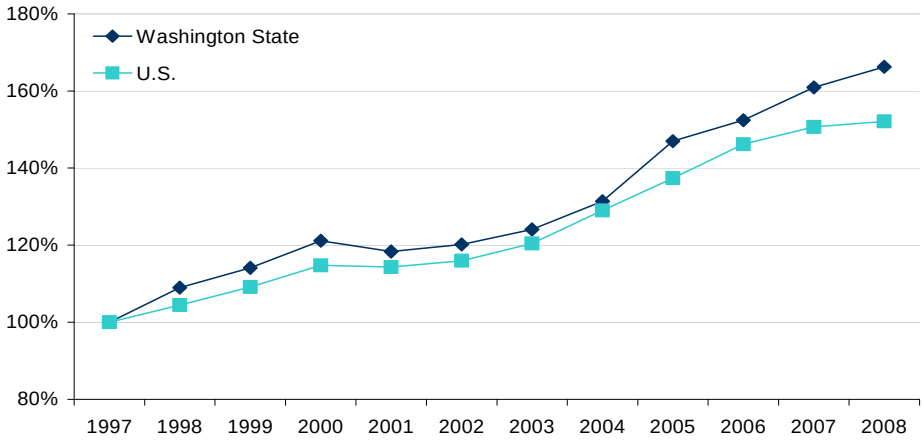
The economic growth of many sectors of the state economy is dependent on freight. Most of these freight-dependent sectors at some point depend on the rail system within the state to move their goods. The growth of freight dependent sectors in the state is faster than that of the U.S. (Exhibits 4-18 and 4-19).

Exhibit 4-17: Container Traffic Through Puget Sound Ports 1998–2008 (1000 TEUs)



Source: Port of Seattle and Port of Tacoma

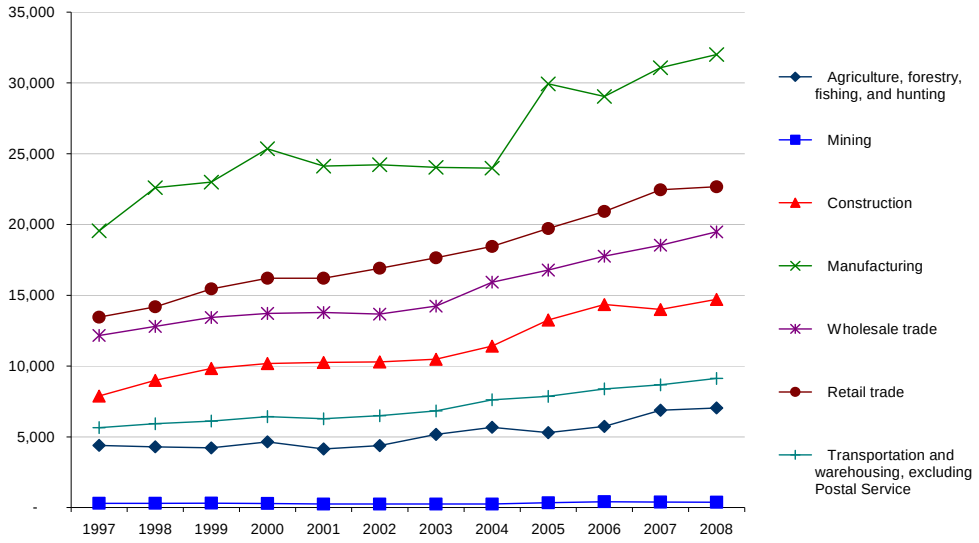
Exhibit 4-18: GDP Growth of Freight-Dependent Sectors – Washington State vs. United States, 1997 to 2008



Note: Freight-dependent sectors include agriculture, mining, construction, manufacturing, wholesale, retail and transportation, and warehousing.

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Exhibit 4-19: GDP Growth by Freight-Dependent Sectors – Washington State 1997 to 2008 ($ Million)



Source: U.S. Bureau of Economic Analysis

Future Demand – Washington State Rail Forecast

Sources

Future demand of rail freight services are assessed based on five main studies (Appendix 4):

- Washington State Transportation Commission (WSTC): *Statewide Rail Capacity and System Needs Study – Freight Transportation Demand Forecasts* (2006).
- USDOT Federal Highway Administration: *2007 Updates of Freight Analysis Framework Forecast*.
- WSDOT/WPPA: *2009 Washington State Marine Cargo Forecast*.
- U.S. STB: *2007 Rail Waybill Sample Data*.
- American Association of State Highway and Transportation Officials (AASHTO): *Freight Demand and Logistic Bottom Line Report* (Draft), 2006.

Methodology and Forecasts

The WSDOT State Rail and Marine Office adopted the forecast results from the above sources. For rail mode related forecasts, 2007 Waybill data are used as a base for projections, since data for 2008 was not available at the time of forecasting.

However, the 2008 and 2009 recession has had profound impacts on the U.S. and world economies and many effects are likely to take many years

to understand. Therefore, the results of the forecasts in this plan could be slightly optimistic from a long-term forecast perspective. The forecasts will be updated as necessary as the data for 2008 and 2009 become available.

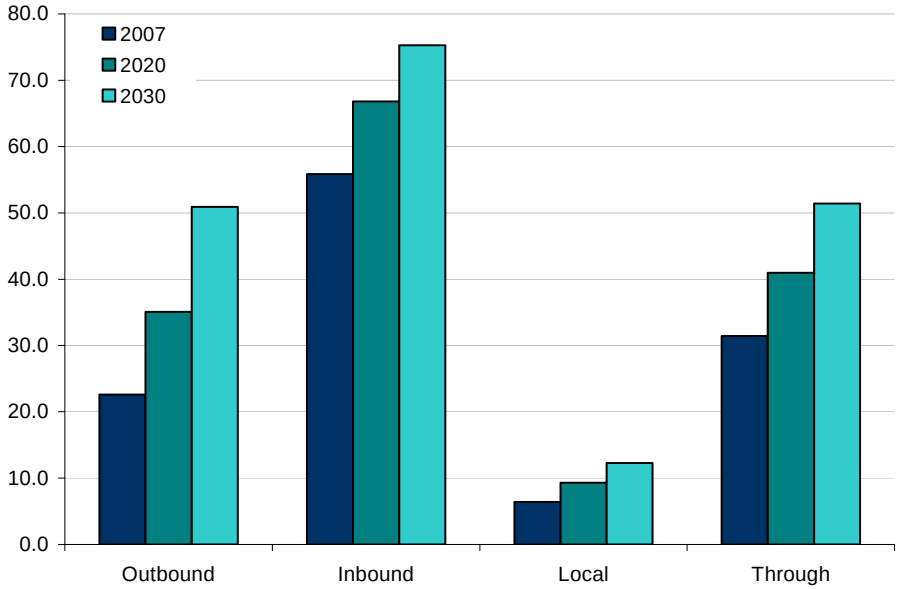
While the most recent recession data for freight is not available and therefore not incorporated into most of the analytical models, the sources used for the forecasts are long-term data. Historical data used in those models reflect the effects of previous recessions. In addition, while the economy went into recession in 2008, state port-related imports and exports started to decline in 2007. Rail traffic in 2007 was not as strong as the economy itself in that year. Therefore, the correction factor of this recession to the forecast results may not be dramatic, but could be significant when the data are incorporated into the long-term trends.

Summary of Rail Freight Forecast

The state's mainline freight rail demand can expect continued growth over the next 10 to 20 years. The railroads are expected to need to move more than 152.1 million domestic tons of freight in 2020, up from 116.3 million in 2007, a 2.1 percent compound annual growth rate. In 2030, it is projected that there will be close to 189.9 million tons needing to be moved, a 2.2 percent annual growth over the 10 years from 2020 to 2030, and a steady 2.2 percent growth rate over the 23 years between 2007 and 2030. Exhibit 4-20 shows the growth of rail tonnage in the forecast years. While local and inbound traffic continue to grow, they will slow to slightly lower levels of growth from 2020 to 2030 compared to 2007 to 2020 growth levels. Outbound and through traffic will both grow at higher rates in the more distant future as compared to the next 10 years.

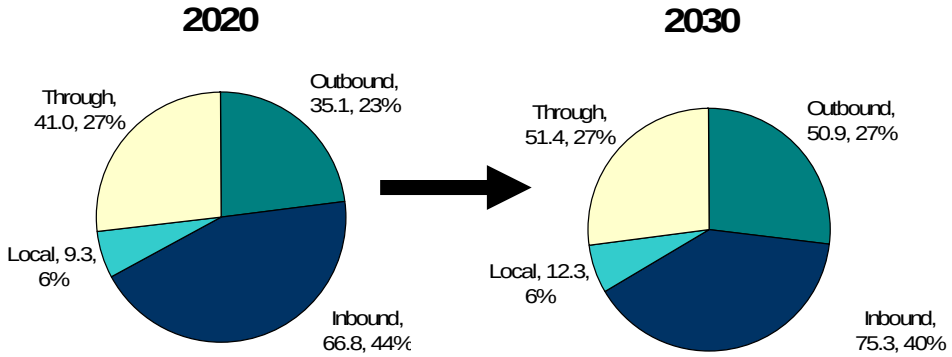
Exhibit 4-21 shows the projected distribution of the inbound, outbound, through, and local shares of the state's total freight rail tonnage for both forecast years of 2020 and 2030. Of all shares, outbound traffic is projected to continue to grow the most between 2020 and 2030, growing from 23 percent to 27 percent between 2007 and 2020, and expanding to 35 million tons. Local and through traffic is projected to continue to maintain approximately 6 percent and 27 percent of the tonnage, respectively, over the next 10 and 20 years. Inbound traffic is projected to encompass a smaller percent of the traffic, as it will claim 44 percent of the tonnage in 2020 and only 40 percent in 2030.

Exhibit 4-20: Washington State Rail Freight 2007, 2020, and 2030 (Million Tons)



Source: WSDOT State Rail and Marine Office

Exhibit 4-21: Rail Freight Distribution (Million Tons)



Source: WSDOT State Rail and Marine Office

The distribution of traffic tonnage by commodity through the forecast years is shown in Exhibit 4-22. Farm products shipped by rail are projected to continue to be a significant tonnage commodity group, growing to more than 64.7 million tons in 2030, up from 36.1 million tons in 2007. Miscellaneous mixed shipments, primarily in the form of imports, are projected to increase from 11.9 million tons in 2007 to 14.3 million in 2020 and 17.6 million in 2030.

Exhibit 4-22: Projected Rail Freight Growth of Top 10 Commodities – Washington 2007-2030 (Million Tons)

Commodity	Year					
	2007	2010	2015	2020	2025	2030
Farm products	36.1	38.8	42.8	48.1	55.2	64.7
Lumber or wood products, excluding furniture	12.9	12.8	12.0	11.2	10.2	9.2
Miscellaneous mixed shipments	11.9	12.6	13.4	14.3	16.0	17.6
Coal	10.6	11.0	12.7	14.8	17.1	19.9
Food and kindred products	7.3	7.2	7.9	9.3	11.0	13.2
Chemicals or allied products	6.8	7.8	8.2	8.7	9.1	9.5
Waste or scrap materials not identified by producing industry	5.1	5.1	5.8	6.6	7.6	8.9
Pulp, paper, or allied products	4.1	4.1	4.2	4.2	4.2	4.3
Clay, concrete, glass, or stone products	3.1	3.4	3.9	4.5	5.1	6.0
Transportation equipment	2.5	2.5	2.3	2.3	2.5	2.8
State Total	**116.3**	**122.2**	**131.9**	**145.7**	**161.9**	**183.0**

Source: WSDOT State Rail and Marine Office - Analysis and forecast based on FHWA Freight Analysis Framework Data and 2007 Surface Transportation Board Waybill data.

2009 Marine Cargo Forecast

In 2009 the WPPA and WSDOT jointly conducted a 5-year update of the *2004 Marine Cargo Forecast*. These two organizations have been providing joint cargo forecasts since 1985. The purpose is to assess the expected flow of waterborne cargo through the state port system and to evaluate the distribution of cargo through the rest of the state's transportation network. The current report is a 20-year forecast of trade (2008 to 2030) moving through the state by water, rail, roads, and current capacity of transportation infrastructure.

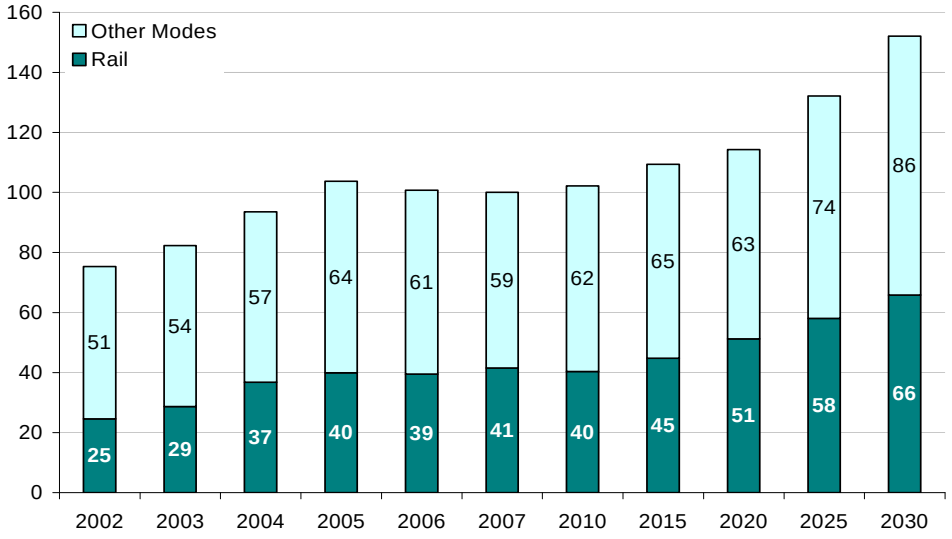
The Marine Cargo study found that rail freight is likely to play an increasingly important role in marine cargo movement. As Exhibit 4-23 and Exhibit 4-24 demonstrate, rail freight demand is expected to account for a larger share of marine cargo movement in the future, due to a higher growth rate than other modes over the forecast period.

Three factors drive increased marine cargo growth. First, U.S. consumption increases as population and living standards increase.

Second, economic globalization makes countries more specialized in production to achieve efficiency. As a result of this globalization, exports and imports increase. Last, containerization of the transportation industry generates more intermodal traffic that demands rail services.

However, the recent economic recession is likely to have impacts on long-term growth potential. Forecast results presented in this section, which did not include the data of this severe recession, are likely to be optimistic. This plan will be updated as the new data and forecast results become available.

Exhibit 4-23: Marine Cargo Trends – Rail vs. Other Modes 2002 to 2030 (Million Tons)

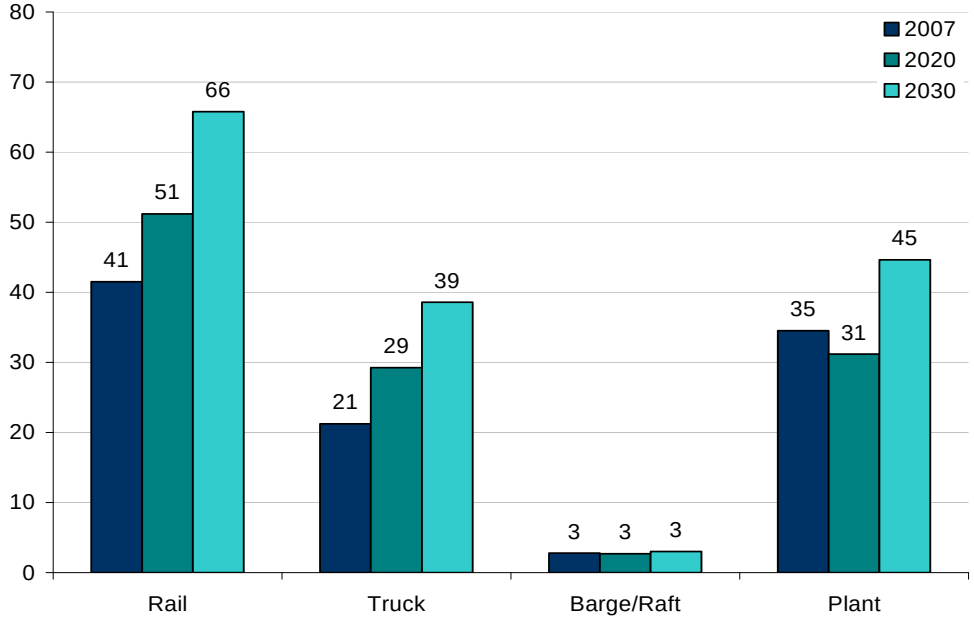


Source: 2009 WPPA/WSDOT Marine Cargo Forecast

Findings identified by the 2009 Marine Cargo Forecast are as follows:

- State public ports have experienced strong and steady growth during the past quarter of a century. State ports have experienced the following increases over the last 16 years:
  - Almost all cargo types have shown substantial gains, with the exception of timber.
  - Cargo volumes at deep water ports have tripled.
  - Containerized cargo has increased 500 percent.
- The study suggests that strong growth can be anticipated into the future. The state's waterborne commerce is expected to grow at slightly less than 2 percent per year through 2030. Growth is anticipated within all cargo categories, although it will vary by commodity type.

Exhibit 4-24: Marine Cargo Port Modal Distribution
Washington State 2007, 2020, and 2030 (Million Tons)



Source: 2009 WPPA/WSDOT Marine Cargo Forecast

Highlights of the forecast include the following:

- **Containers are projected to continue to be the fastest growing cargo type.** State ports can expect continued competition, but the growth opportunities are projected to remain positive for the next 20 years. Container traffic grew from nearly 2.9 million TEUs in 2002 to nearly 3.9 million TEUs in 2007. Puget Sound containerized trade is projected to grow by an average of 4.1 percent per year in the forecast period, reaching 9.7 million TEUs in 2030, given the three drivers (population growth, globalization, and containerization) explained in the previous section.
- **Auto imports will experience rapid growth.** Auto imports are expected to more than double from 690,000 units in 2007 to approximately 1.5 million units in 2030. Competitive rail service will be essential to meeting this demand, as three quarters of auto imports currently move to inland locations by rail.
- **Log exports will level off.** After decades of decline, log exports are expected to level off and remain flat through the forecast period. The loss of log exports has affected many ports, which have responded with successful diversification programs. Many have found niche opportunities, such as importing wind energy equipment.

- **Break-bulk cargo volumes will grow slowly.**[17] Metal, forest products, and other break-bulk cargo will grow slowly due to containerization and structural changes in the industries that produce these cargoes. Much of the expansion will occur as ports diversify. As a result, break-bulk traffic through state ports is projected to grow from 2.3 million metric tons in 2007 to around 3.0 million metric tons in 2030.
- **Grain shipments will expand moderately.** After increasing substantially in recent years, grain shipments are likely to grow modestly in the face of significant domestic and international competition, maximum yields per acre, and maximum acres in production.
- **Dry bulk trends will continue.** Some stalwart cargoes (such as bauxite) have decreased while others (such as petroleum coke) have increased. These trends will continue.
- **Liquid bulk will shift from domestic to foreign.** Both crude oil and petroleum product imports will shift from domestic to foreign sources as Alaskan production tapers off.

Update on National Trends

The demand for freight rail services will grow because the rail freight is driven by three factors (population growth, globalization, and containerization). Assuming moderate rates of economic growth, the tonnage of freight moved in the U.S. is likely to increase three quarters in 30 years (2006 to 2035) (Exhibit 4-25). This rate of growth is about the same as the last 20 years and roughly tracks growth in the U.S. Gross Domestic Product. The following section first looks at the projected growth in the demand for freight traffic (both total and for rail) and then discusses the rail industry response to this demand growth.

The growth in freight tonnage is expected to continue at 2.5 percent to 3 percent per year at least through 2035. The demand for freight rail services is projected to increase by a total of 73 percent based on tons through 2035, assuming continued investment in the rail system to handle growth. Despite this, the rail share of national freight shipments is shrinking slightly. By 2035 rail's share of total freight tonnage is expected to decline from 9.7 percent to 9.5 percent, and rail's share of value could decline from 2.9 percent to 2.8 percent. Exhibit 4-26 shows freight modal distribution in 2006 and 2035.

[17] Break-bulk cargo is cargo that is too big or too heavy to fit into a container or traditionally cannot be vacuumed out of a ship.

Exhibit 4-25: U.S. Shipments by Mode – 2006 and 2035 (Millions of Tons)

Mode	2006				2035			
	Total	Domestic	Exports[3]	Imports[3]	Total	Domestic	Exports[3]	Imports[3]
Total	20,974	18,985	620	1,369	(R) 37,212	33,668	(R) 1,112	(R) 2,432
Truck	12,659	12,389	169	101	22,814	22,231	262	320
Rail	2,040	1,905	41	95	3,525	3,292	57	176
Water	688	582	48	58	1,041	874	114	54
Air, air & truck	15	5	4	6	(R) 61	10	(R) 13	(R) 38
Intermodal[1]	1,503	194	353	956	2,598	334	660	1,604
Pipeline & unknown[2]	4,068	3,909	6	153	7,172	6,926	5	240

[1] Intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations, except air and truck.

[2] Pipeline and unknown shipments are combined because data on region-to-region flows by pipeline are statistically uncertain.

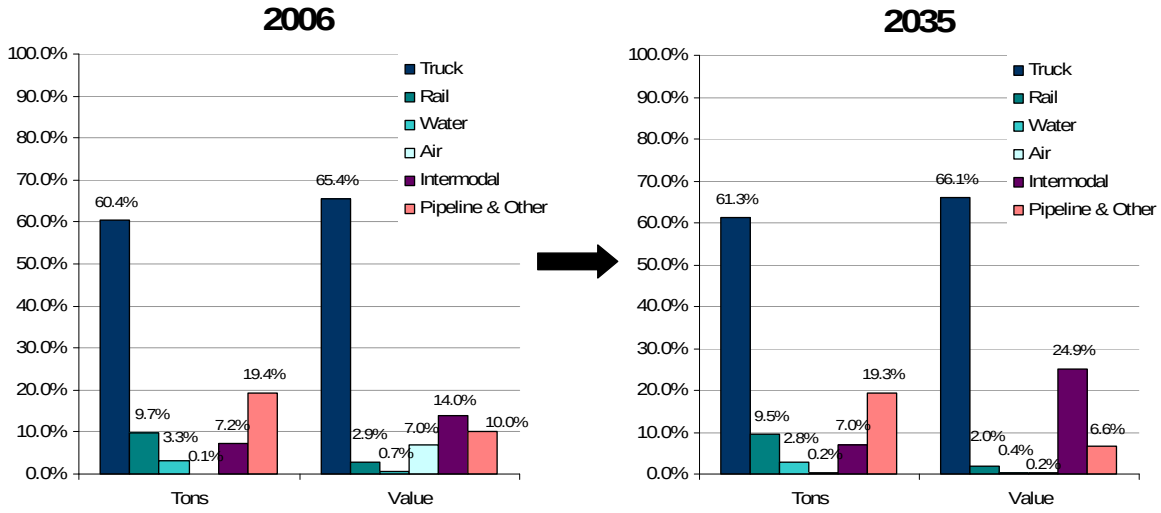
[3] Data do not include imports and exports that pass through the U.S. from a foreign origin to a foreign destination by any mode.

(R) Revised

Note: Numbers may not add to total due to rounding.

Source: USDOT, FHWA, Office of Freight Management and Operations, FAF, Version 2.2, 2007

Exhibit 4-26: U.S. Freight Tons and Value by Mode, 2006 and 2035



Source: USDOT FHWA, FAF, 2007

Rail market share is also shrinking in part because of structural changes in the economy. The U.S. is producing and shipping more value-added products and fewer heavy manufactured goods. Freight shipments are

lighter, less bulky, and higher in value, making them better suited to highway container transport or truck than rail. This trend is expected to continue, with the value per ton going up over the next decade, suggesting more growth in high-value commodities than low-value commodities and more demand for trucking services.

Rail market share also may be shrinking because of the slow pace of rail investment. The industry is purposefully operating near capacity because of its capital intensity, and it is using demand management as well as investment to respond to traffic volumes. This means that some customers are not well served by the market. Railroads, like all private industry, will continue to make capital decisions based on private financial returns, and public benefits will be just an incidental part of the decision unless public capital plays a role. Demand for rail transportation is driven by the commodity markets it serves, as well as by carrier performance. Almost three-quarters of the current national rail tonnage and revenue come from four market groups: coal, farm and food products, chemicals and petroleum, and the intermodal business (listing them in order of tonnage size). Some 40 percent of the physical volume is in coal alone, but the revenue picture is different and more balanced: intermodal and coal each comprise about 20 percent of the revenue (with intermodal somewhat the larger), while the farm and food group and the chemicals and petroleum group comprise about 15 percent each. Roughly 60 percent of all new rail tonnage is attributable to coal and intermodal, and although the top four markets remain the same, by 2035 intermodal should be second only to coal in terms of physical volume, and will be substantially the most important source of rail revenue. The intermodal business is projected to maintain a 3.8 percent compound annual growth rate over the next three decades, causing it to more than triple in size, primarily because of its role in carrying containerized imports for the globalizing economy. Traffic in transportation equipment will also grow at an above-average pace, expanding by 2.6 percent per year and more than doubling in volume by 2035. This business is chiefly automotive products.

Bulk services are dedicated unit trains hauling a single bulk commodity, such as coal or grain. Intermodal services, as defined by the rail industry, are trains hauling international and domestic containers and trailers. All other rail freight, such as chemicals, forest products, and automobiles, move as general merchandise. The long-term prospects of national growth for selected rail commodities through the year 2035 are:[18]

- **Coal** – Rail should remain its primary mode of transport, with a 62 percent cumulative growth in national rail tonnage by 2035.

[18] Forecasts developed by Global Insight and obtained from the AASHTO Freight Demand and Logistic Bottom Line Report (Draft), 2006

- **Farm and Food Products** – Modest growth of slightly less than 1 percent per year, with cumulative growth in 2035 projected to be 21 percent larger than today.
- **Chemical and Petroleum** – Slow growth of less than 1 percent per year and accumulating to a 27 percent increase by 2035.
- **Lumber and Forest Products** – Slow growth around or just above 1 percent per year, and a total increase in rail shipments of 40 percent to 49 percent by 2035.
- **Transportation Equipment** (Automobiles) – Solid growth of 123 percent in tonnage through 2035.
- **Intermodal** – Prospects for rail intermodal business are robust, with tonnage volumes rising 213 percent by 2035.

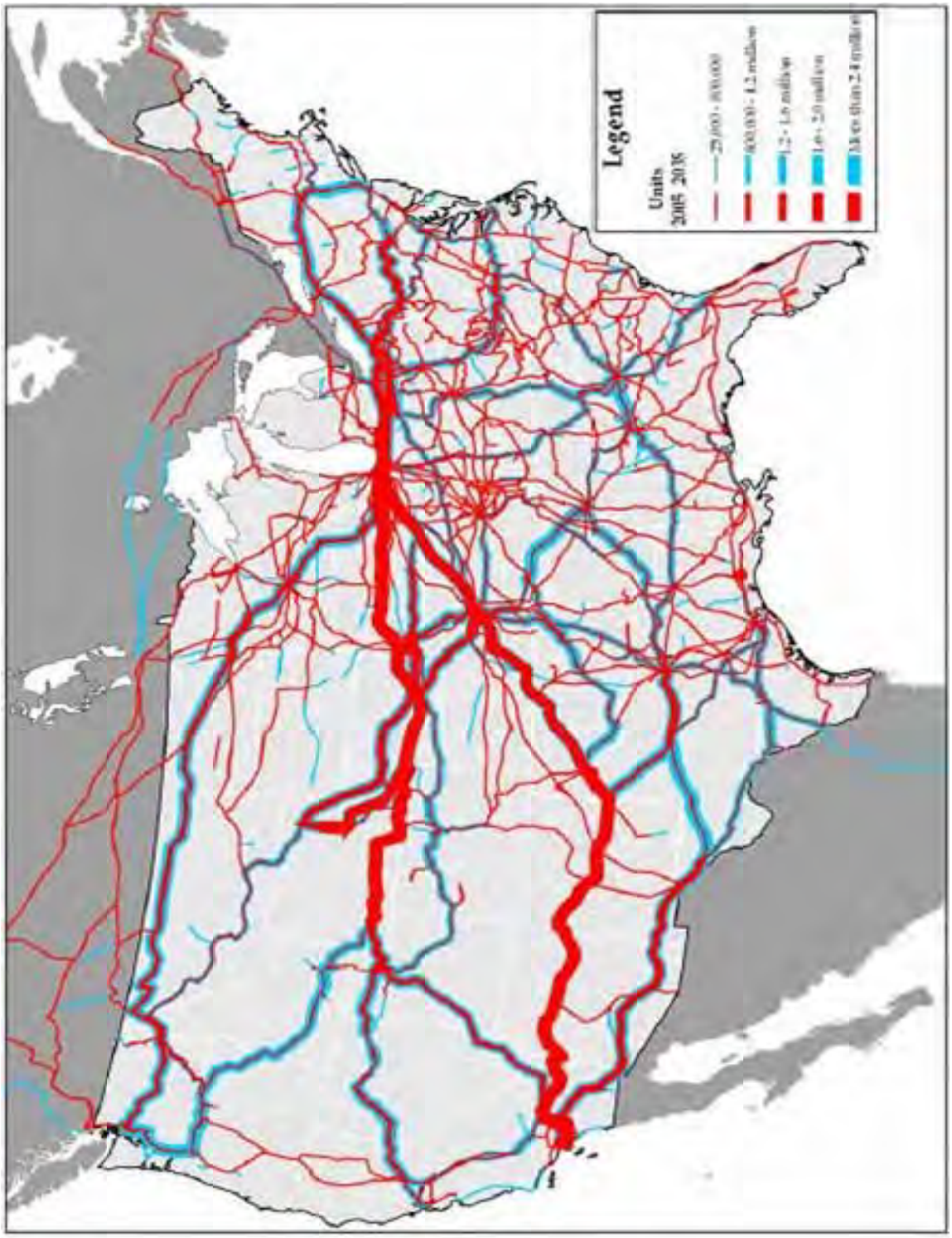
Exhibit 4-27 demonstrates the projected growth demand for rail in the U.S. between 2005 and 2035. More capacity will have to be developed in the rail network in this state. This topic will further be explored in Chapter 5.

Impacts of Freight Rail on Society

All transportation modes (motor vehicles, rail, air, barge, and so on) produce externalities—unintended consequences or indirect effects that are created by some activity. The costs associated with these externalities are not directly charged to any specific individual, but are borne by society as a whole. The negative health impacts associated with air pollution are a classic example of such an externality. Although travel by air, car, or rail creates air pollution impacts, riders, in general, are not charged for their contribution to decreasing air quality. How are these externalities assessed to society? This can be explained by a classic theory in benefit/cost analysis or project investment analysis—with or without analysis—as shown in Exhibit 4-28.

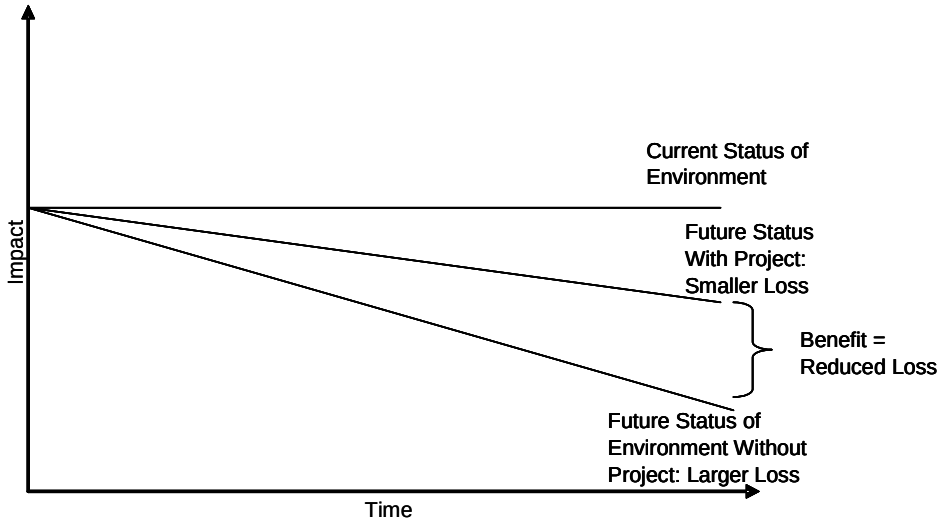
As the chart shows, pollution is likely to increase over time because of current practices. With a project that could lead to less pollution created, society gets benefits by having fewer negative impacts. The reduction in cost of loss would be the benefits of the project invested. This principle applies to freight rail investment. In general, rail has less negative impacts on society. Since rail generates fewer emissions per ton-mile, using rail as an option to ship heavy goods helps reduce pollution. This emission reduction would be the benefit of investment in freight rail.

Exhibit 4-27: Comparison of Total Rail Flow Railcars per Year – 2005 and 2035



Source: AASHTO Freight Demand and Logistic Bottom Line Report (Draft), 2006

Exhibit 4-28: Principle of With/Without Analysis



There are multiple benefits associated with freight rail. The magnitude of benefits received by the people of this state depends on how freight rail will be integrated into the policies. These policies should embrace integrated solutions for interconnected problems. In general freight rail has been identified by many studies to have four categories of societal impacts: transportation benefits; economic impacts; safety, energy, and environmental impacts; and land use impacts.

Transportation Benefits

Low Shipping Costs

Rail provides shippers of heavy materials or large volumes of materials with a transportation option that can be significantly cost effective. Depending on the density of the commodity, one railcar may move the same weight or volume as four or five trucks. For such shippers, rail is usually the low-cost option, and rail rates have been dropping. On average, it costs 29 percent less to move freight by rail today than in 1981, adjusted for inflation. The associated cost savings (in the billions of dollars annually) are vital to the viability of these businesses. The availability of rail service can be an important factor for states and municipalities interested in retaining and attracting these types of businesses. Availability of freight rail can improve the competitiveness of our economy by reducing overall shipping costs.

Intermodal Connectivity and International Trade

Freight-rail service provides a critical link in the nation's intermodal freight transportation system, serving the trucking and maritime shipping industries, and supporting the nation's international trade and global competitiveness. The rail and trucking industries are competitors, but they are also partners. Unless a rail move is "door-to-door," it begins or ends

with a truck move. This could involve the transfer of an intermodal container or the transfer of bulk and carload commodities via transload or transflow operations. Rail and trucking companies are partnering to provide integrated door-to-door intermodal services that optimize the relative strengths and efficiencies of each mode.

Congestion Relief

As the economy and population continue to grow, freeway traffic congestion problems, particularly in the I-5 corridor, will increase. Freight rail can help share some incremental demand, which otherwise would be picked up by trucks. However, the substitutability between highway freight and rail freight is limited. The potential of freight rail as part of the solution for congestion needs further examination.

Transportation Choice

Freight rail provides shippers another transportation option, especially for long-distance and intermodal shipping.

Economic Benefits

Supports Local Communities

Freight rail construction projects bring jobs and revenue to local communities and businesses.

Supports Economic Viability

Freight rail that serves an underserved market can help maintain economic viability of local economies.

Generates Tax Revenues for Public Programs

Rail supports growth of many businesses in various industries that pay business taxes to governments.

Safety, Energy, and Environmental Benefits

Public Safety

Rail transportation has a strong safety record with a lower national accident fatality rate. Freight rail provides an option for policymakers who would like to improve public safety.[19]

Energy Benefit

Freight rail is much more efficient than airplanes and motor vehicles in terms of energy use per ton hauled. Increasing rail capacity will reduce

[19] Government statistics show that freight rail is safer in terms of both fatality and injuries. See Texas Transportation Institute: A Modal comparison of domestic freight transportation effects on the general public. 2007.

the growth of other energy-inefficient modes and help tackle the energy dependence problems.

Pollution Reduction

Emission reduction is an important environmental issue facing transportation operators. The environment plays a fundamental role in determining quality of life and economic well-being for state citizens. The level of released toxic substances and greenhouse gas emissions for freight rail is low.[20] Increasing the use of rail for long-haul freight is an option that would help reduce environmental pollution.

Land Use and Community Impacts

Rail helps reduce land use impacts because it uses less right of way than highway for the same carrying capacity. It also requires less land for yards than the trucking industry based on per ton-mile freight. Rail also releases fewer harmful substances into the environment.

State land use planning authority primarily resides within local government. WSDOT, local governments, and regional governments have a shared responsibility to enhance the quality of life and economic vitality for all state residents while providing a safe and efficient transportation network. Because land use decisions and patterns of land development can significantly influence the safety and efficiency of the transportation system, local government land use decisions, both individually and collectively, are matters of critical importance to WSDOT and freight owners. The Growth Management Act, the Shorelines Management Act, and the State Environmental Policy Act provide WSDOT with opportunities to coordinate and communicate with local governments as they draft plans and regulations that may affect the state transportation system. These acts ensure the needs of both the communities and the freight owners are met.

[20] AASHTO: Railroads provide significant environmental benefits. The U.S. Environmental Protection Agency estimates that for every ton-mile, a typical truck emits roughly three times more nitrogen oxides and particulates than a locomotive. Related studies suggest that trucks emit six to 12 times more pollutants per ton-mile than do railroads, depending on the pollutant measured. According to the American Society of Mechanical Engineers, 2.5 million fewer tons of carbon dioxide would be emitted into the air annually if 10 percent of intercity freight now moving by highway were shifted to rail.

Washington State
Department of Transportation

Chapter 5: The Changing Rail System – Issue Discussion and Needs Assessment

Overview of Issues and Needs Assessment

This section presents short- and long-term freight rail needs in Washington State (state). The assessment is based on data provided directly by the state's freight railroads, ports, public agencies, and other key stakeholders. In total, this needs assessment identifies 109 short- and long-term capital improvement projects and other initiatives. Several freight rail needs have been included in this total, even though they have not progressed to the point of having full solutions and cost estimates. The total cost for the projects, where cost estimates are available, is $2.0 billion.[1]

Key Issues

The key issues addressed in this section are rail system needs, abandonment, port access and competitive needs of the ports, intermodal connectors, and emerging issues and data needs. Each of these topics is described in detail in this chapter.

Purpose of the Needs Assessment

The primary purpose of the needs assessment is to develop a reasonably comprehensive list of necessary or desired freight rail improvements. This list will allow the Washington State Department of Transportation (WSDOT) to gauge the condition of the system and assess potential public involvement. Railroad needs, for the purposes of this rail plan, are restricted to capital needs and do not include operating expenses or subsidies. A need for this plan is defined as a need regardless of whether it is privately- or publicly-funded or remains unfunded. Thus, the needs included in this assessment should be considered "unconstrained" needs and not a funding commitment.

WSDOT will review and evaluate these needs when determining appropriate levels of public support for a project. Inclusion of a need in the *Washington State 2010-2030 Freight Rail Plan* does not constitute a commitment on the part of WSDOT or the state to provide funding. As comprehensive as this plan attempts to be, it must be noted that this document does not include all freight rail needs.

[1] Twenty-one projects did not report a cost for their project.

The freight railroads are private, for-profit businesses and in some cases did not submit all their capital needs for inclusion in this public document. This is especially true in cases where private capital is available to fully fund planned improvements. Traditionally, railroads are less likely to submit projects where the railroads believe that public involvement in specific projects is less likely or where disclosure of a need could adversely affect their strategic business ventures. Therefore, the needs that are listed in this section are only those projects that have been specifically submitted for inclusion in this list of projects.

Methodology

WSDOT compiled a list of needs for the state's freight rail system from prior studies, a survey, and a set of interviews and reviews with key stakeholders. Specifically, the freight railroads, the ports, and other stakeholders were engaged in this effort. The needs range from well developed plans that have been through a full planning and design process, to new concepts, to a wish list of projects. This is why not all projects have full information in the list contained in Appendix 8-A. The only restrictions on the needs submitted for inclusion in the list were:

- The needs focus on freight rail projects, since passenger rail needs continue to be identified in other studies. Although some passenger rail needs were included, especially when they also impact freight operations, this list should not be considered a comprehensive list of passenger rail needs.
- The needs focus on projects that improve the movement of rail freight. For example, improvement of a road-rail grade crossing to help mitigate highway congestion is not a freight rail need; it is generally classified as a safety issue.
- The needs focus on capital improvements, and do not include operating expenses for the freight railroads. The freight rail system is dynamic and driven by customer demands and trends.

Therefore, needs continually change. The needs in this plan are current through October 2009, and were assembled with the procedure outlined in Exhibit 5-1 below.

Exhibit 5-1: Procedure for Collecting Freight Rail Needs

Timeframe	Activity
June 2009	Held initial stakeholder meeting.
August 2009	Requested railroads, ports, and other stakeholders fill out survey of needs.
September 2009	Conducted initial in-person interviews with some of the railroads and ports.
October 2009	Reviewed the list of needs for duplicates and incomplete information. Followed up with reminder telephone calls and clarified any questions.
November 2009	Sent out to the railroads, ports, and stakeholders for final review, and conducted final round of follow-up questions as necessary.

Rail Abandonments: Recent, Proposed, and At-Risk Lines

Abandoned Rail Lines

Current Abandoned Lines

Exhibit 5-2 shows the abandoned rail lines 1998 and before, and the current abandoned rail lines (1999 to 2009) in the state.

As of the *Washington State Freight Rail Plan 1998 Update*, there had been a total of 1,975 miles of rail lines (132 segments) abandoned from 1953 to 1998. Since 1998 there has been an additional 70.23 miles abandoned. A list of abandonments from 1953 to 2009 can be found in Appendix 5-A.

This state has one of the best state rail preservation and development programs in the country. The state has invested $99 million in its rail freight infrastructure since 1980. An additional $35 million in investment is anticipated from 2010 to 2012 (see Exhibit 5-3).

These investments include the Freight Rail Assistance Program ($6 million 2007-2011) and Freight Rail Investment Bank Program (Rail Bank) loans. The Rail Bank has $7.5 million in funding available from 2007-2011, with a maximum loan of $250,000. All of these investments have been in regional and small railroads, in recognition of the fact that these railroads are a vital component of the state's transportation system and economic well-being.

Exhibit 5-2: Abandoned Rail Lines

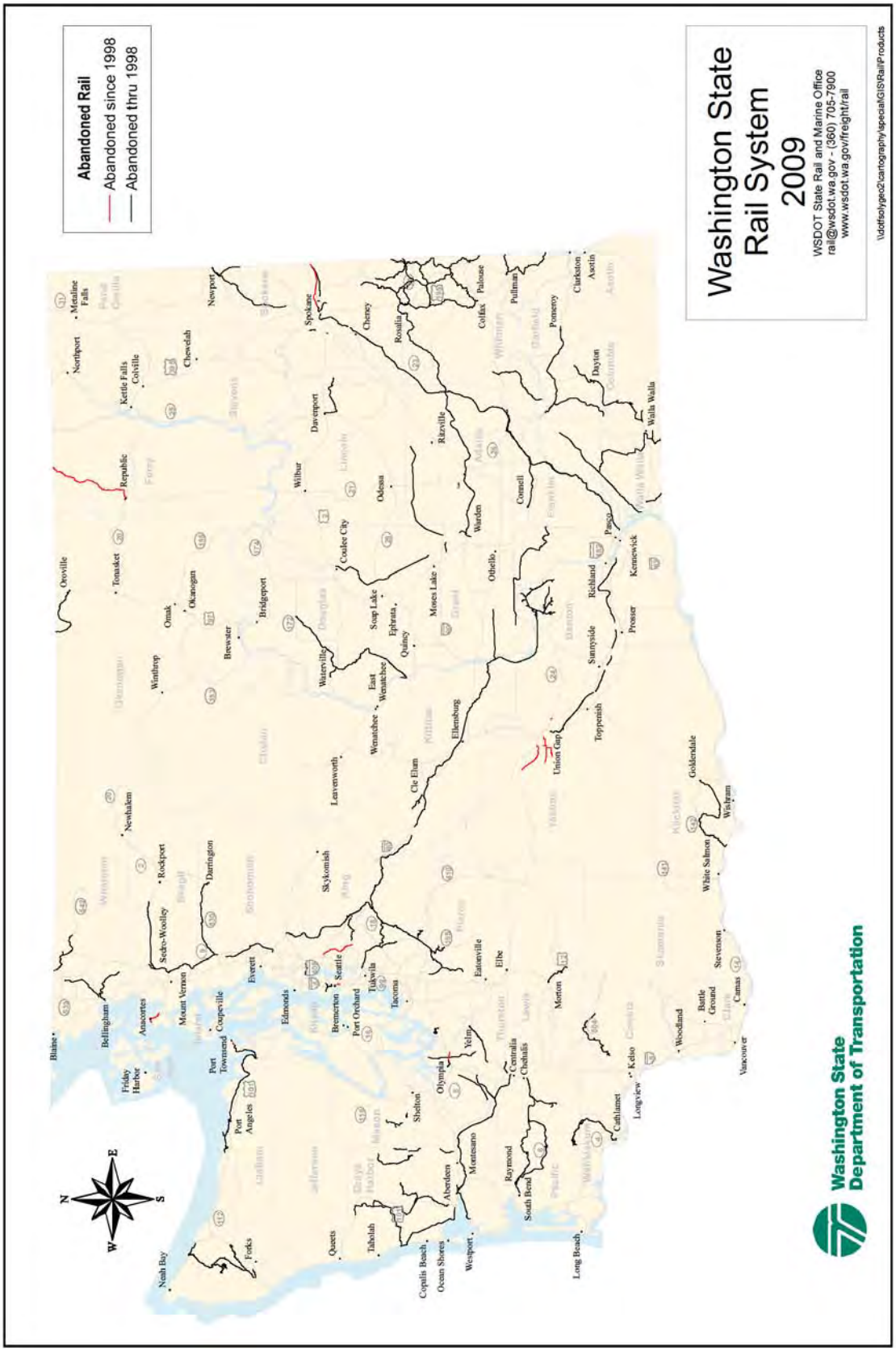
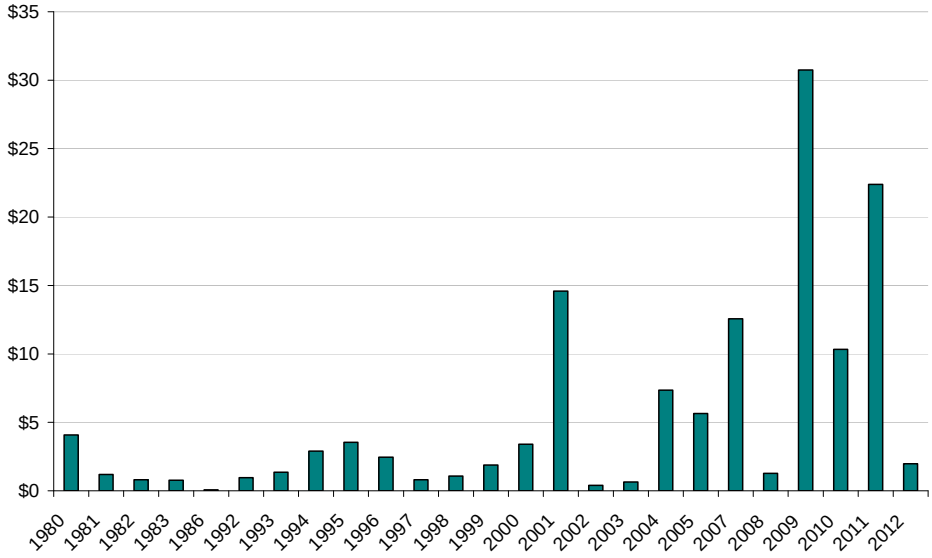


Exhibit 5-3: Washington Rail Investments ($ Millions)



Source: WSDOT State Rail and Marine Office

Rail abandonments have been widespread in the United States (U.S.) since the passage of the national railroad reform legislation, ending most federal regulation of railroads, over 20 years ago. Given a greater opportunity to control costs and generate revenues, Class I railroads sold, abandoned, or leased their less profitable lines. This proved to be an opportunity for others; a great many short-line railroads were formed to operate lines divested by Class I railroads. In other cases, rail lines were abandoned and the real estate was used for other purposes.

The state's rail abandonment program is assisted by the federal government through the Local Rail Freight Assistance program. The state has been one of several states that has worked to preserve rail infrastructure. This program has preserved and developed rail lines that would otherwise have been abandoned. This has been very important in meeting present and future transportation needs.

Many of the short lines around the nation and in the state were created from branch or light density lines of the larger Class I railroads. These lines were either abandoned or sold by the Class I railroads during their industry restructuring of the 1980s and 1990s. Most of the lines sold through the abandonment process by Class I railroads were in poor[2] physical condition at the time of abandonment. Many of these branch lines have sections of lighter rail than is necessary for today's new railcar load limits and weight-restricted bridges.

[2] Poor physical condition is track that is in disrepair from wear and tear or has deteriorated due to lack of maintenance.

As illustrated in Exhibit 3-5 in Chapter 3, there are 19 active short-line railroads operating in the state. The majority of these railroads operate on light density lines that were divested by the Class I (mainline) railroads. They are located throughout the state and play a critical role in moving a wide variety of products, including agricultural products, frozen foods, lumber, gravel, and petroleum products. Often locally-owned and operated, many short-line railroads in the state keep hundreds of small businesses and communities connected to the national mainline rail system.

Many of these branch lines were sold by the Class I railroads because they could not make a profit operating these light density lines. Nearly every short-line railroad began its existence with track that had received little investment under previous owners. Whether they are municipally or privately held, many short lines are in need of infrastructure funding for rehabilitation or improvement.

These existing lines present an opportunity to the state. In many cases, improvements for the state's short lines involve upgrades to existing infrastructure, rather than capacity expansion projects that involve more significant environmental issues. They should therefore be able to move more readily from planning to construction. A review of the most recent WSDOT short-line funding proposals indicates that most of these projects involve improvements to existing infrastructure. In many cases these improvements involve increasing track capacity maximums from 263,000 pounds per car to 286,000 pounds per car to meet Class I railroad requirements. Upgrading track to handle the heavier cars may make economic sense, if it results in an increase in the amount of traffic on a line. However, if cargo volumes remain the same, but the number of carloads decreases due to the heavier loading, the benefit is less clear. This is especially the case if the contract between the short-line operator and the Class I railroad is on a per-car basis, in which case the reduced number of cars would result in reduced revenue. Some short lines are more successful than others, and the viability of each depends on its own particular circumstances. Those short lines that have faced ongoing problems with cash flow and capital for infrastructure improvements are the ones most at risk. WSDOT has been able to assist many of the short lines with project funding, but these infrastructure investments may not be sufficient to make each short line economically viable. However, even if lines are marginal, there may be a compelling state interest in supporting these lines in order to reduce truck traffic or to maintain jobs, among other reasons that serve the public interest.

To determine future potential abandonments, the WSDOT State Rail and Marine Office surveyed the rail industry with the results below in Exhibit 5-4. The exhibit shows the results of the survey taken in summer

2009, which reported that there are four potential future abandonments and one anticipated re-opening.

Exhibit 5-4: Abandonment Survey List – Likely Abandonments

Submitted by	Railroad Owner	Railroad Operator	Location
Port of Grays Harbor	PSAP	PSAP	West of Hoquiam River
Port of Othello	State of WA/ Columbia Basin RR	Closed	Reopen Milwaukee Line
Port of Seattle	BNSF	BNSF	Eastside Line: Woodinville/Renton and Woodinville/ Redmond
Union Pacific	UP	None	Yakima Industrial Lead, MP 57.3 to MP 58.75
Union Pacific	UP	None	Yakima Industrial Lead, MP 62.75 to MP 63.55

Projection of Future Abandonments and Their Impacts, Capacity, and Needs Forecasts

When a rail line is abandoned, it is critical that the integrity of the right of way be maintained. If an abandoned line ends up parceled off piece by piece, it would be extremely difficult, if not impossible, to reconstruct the line for a future transportation use. Given the limited opportunity to expand the highway system, an abandoned railroad right of way represents an extremely valuable transportation resource.

As a result of the decrease in route miles, many of the state's communities no longer have access to rail service. To counter that trend and support economic development initiatives of the state, the WSDOT State Rail and Marine Office has implemented a rail line preservation initiative to retain the potential of rail service along these abandoned routes.

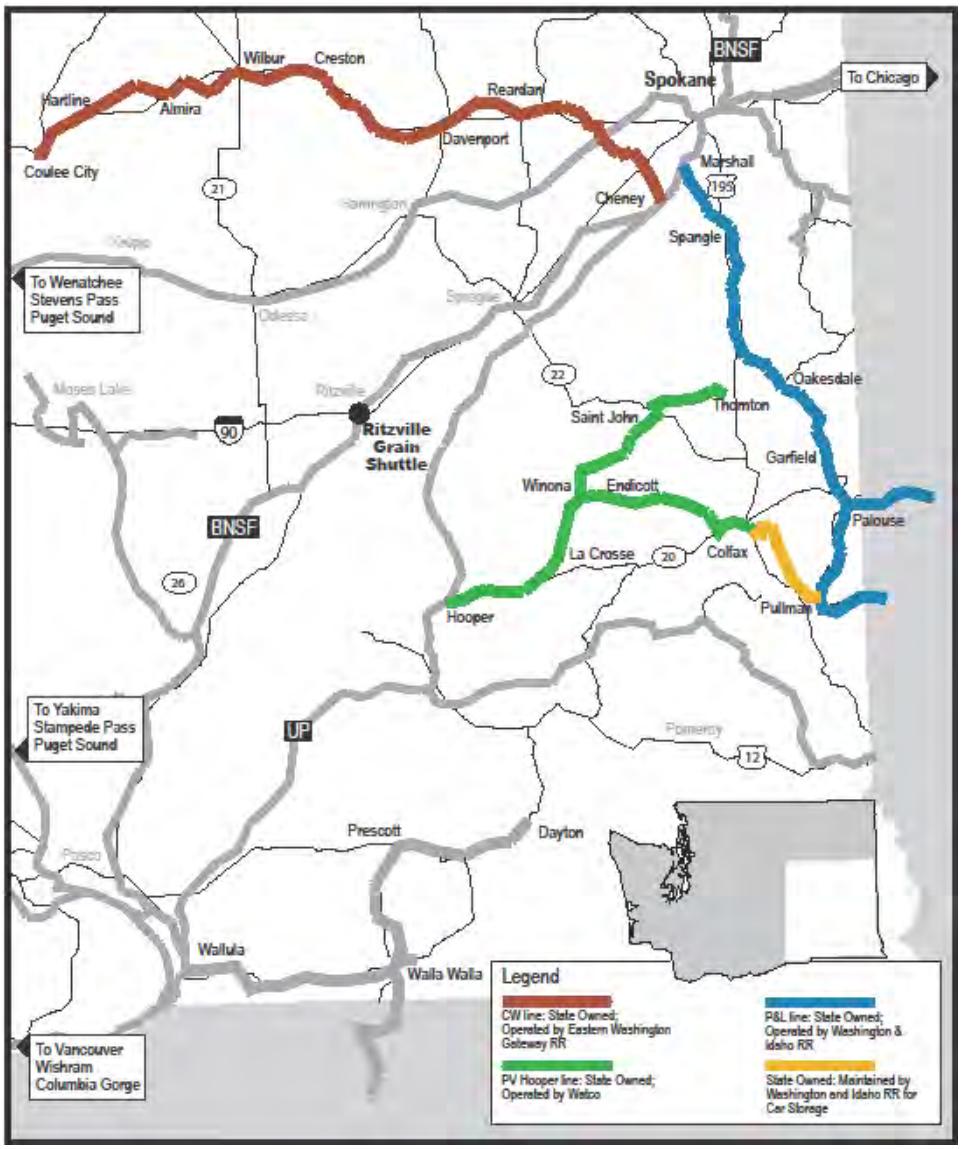
Examples of Successes

Purchase of the Palouse River and Coulee City Rail System

The state currently owns the former Palouse River and Coulee City Rail System, which consists of three branches (see Exhibit 5-5). WSDOT purchased the rights of way and rail on the P&L Branch and PV Hooper Branch of the rail system in November 2004. WSDOT purchased the CW Branch and the remaining rights in the other two branches in May 2007.

WSDOT contracted with private railroads to operate each of the branches. The Palouse River and Coulee City Railroad operates the PV Hooper Branch; the Eastern Washington Gateway Railroad operates the CW Branch; and the Washington and Idaho Railway operates the P&L Branch.

Exhibit 5-5: Palouse River and Coulee City Rail System



WSDOT oversees the facilities and regulatory portions of the operating leases. The Palouse River and Coulee City Rail Authority (an intergovernmental entity formed by Grant, Lincoln, Spokane, and Whitman Counties) oversees the business and economic development portions of the operating leases.

The Palouse River and Coulee City Rail System currently provides local rail service to grain shippers and other businesses in Whitman, Lincoln,

Grant, and Spokane Counties. The three lines require rehabilitation to remain commercially viable.

Public ownership of the Palouse River and Coulee City Rail System capital assets provides an opportunity for private operators to provide economically viable rail service to shippers along the lines. Rehabilitation is needed to correct the effects of decades of deferred maintenance. Many places along the lines must be operated at a speed lower than would be allowed if the lines had been properly maintained on an ongoing basis. Rehabilitation will prevent further deterioration, help raise operating speeds in some locations, and make the operation of the lines more efficient and commercially viable.

Rail Banking

Rail banking is used by the state when the state has an interest in retaining rail lines that have been abandoned, should they become economically viable at a future date. If it appears that a line could become economically viable within ten years, the line may be rail banked or purchased by the state to prevent its loss as a rail corridor. A rail banked line may be used as a trail on an interim basis. Maintenance or other changes on a rail banked line used as a trail must preserve the ability to use the line as a railroad in the future.

A good example of this is the Milwaukee Road Corridor (Milwaukee Road). In the 1980s, the state acquired the abandoned Milwaukee Road and, through legislation, gave much of the line to the Washington State Parks and the Department of Natural Resources. Both segments are managed by their respected departments as a recreation trail. Washington State Parks created a trail along the railbed with their part of the line. It is now known as part of the John Wayne Trail. In its heyday, the Milwaukee Road was a vital trade link between Seattle and the Midwest and was the world's longest electric rail line at the time. The railroad bed follows I-90 across Snoqualmie Pass. The 100-mile portion from Cedar Falls (near North Bend) to the Columbia River near Vantage has had the tracks removed and the area has been turned into a state park, known as Iron Horse State Park. On average, the trail is about a half mile from the highway and about 300 feet higher. The trail follows the former railbed of the Chicago, Milwaukee, St. Paul, and Pacific Railroad two-thirds of the way across the state. The gravel pathway offers hikers, bicyclists, equestrians, and cross-country skiers a chance to travel along the historic Milwaukee Road right of way on a gentle, easy-to-negotiate grade. In 2006 WSDOT was given the authority to enter into a franchise agreement for a rail line over the portions of the Milwaukee Road between Ellensburg and Lind by July 1, 2019.[3]

[3] RCW 79A.05.120.

Port Access

Port access to rail service is very important to the vitality of the ports in the state. As economic development agencies, ports are a fundamental part of the state's economy. State ports face substantial competition from other ports and shipping routes. The majority of the cargo that comes through state ports is discretionary cargo (i.e., containers, autos, grain, dry bulks, and break-bulk cargos) that can shift to other gateways, if shipping through these other ports becomes more efficient or cost effective than using state ports. To be competitive, ports must have good rail access. As an added benefit, rail is a community-friendly mode, as it is a safe, energy-efficient way to move goods along major corridors.

Washington State Ports

The state has 75 ports, not all with water access, as shown in Exhibit 5-6. The state has 11 deep-draft ports, a tremendous asset for the state's economy. Seven of these ports are on the Puget Sound. The largest ports, the Ports of Seattle and Tacoma, together comprise the third largest container load center in the nation—behind the load center complexes of Los Angeles/Long Beach and New York/New Jersey. One deep-draft port, the Port of Grays Harbor, is located on the coast; and three are located on the Columbia River. Together, these ports create a seamless network that sends goods to global markets, and imports goods from other countries, bound for in-state stores and other destinations across the U.S.

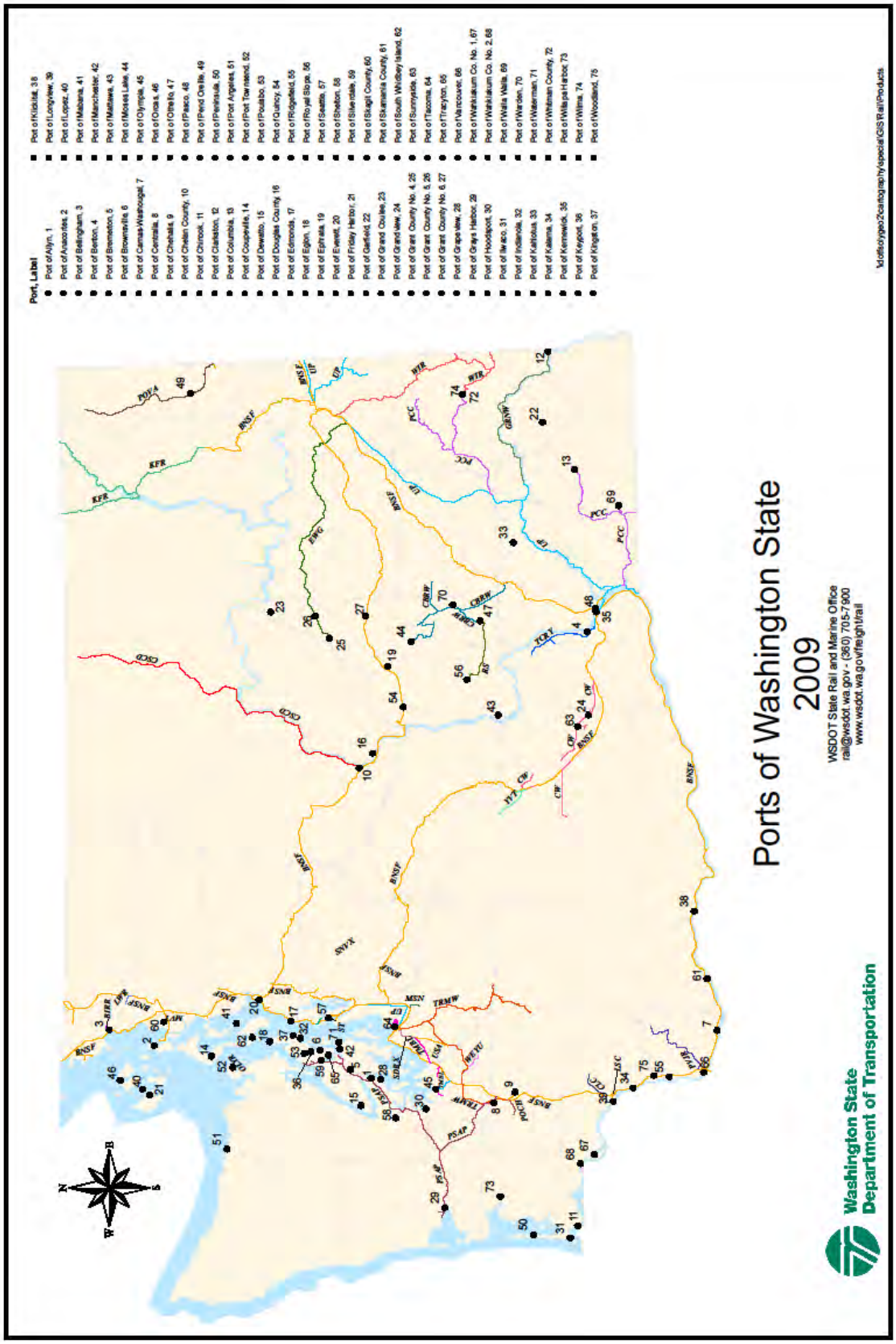
The Columbia/Snake River system stretches 365 miles inland from the Pacific Ocean. The three deep-draft ports along this system—Longview, Kalama, and Vancouver, Washington (WA)—are major shipping centers for the state. Upstream, the Ports of Klickitat, Pasco, Kennewick, and Benton are served by barge along the Columbia River. The Ports of Whitman County, Walla Walla, and Clarkston are served by barge along the Snake River.

Although there are many ways to classify ports in the state, this plan has selected four classifications:

- Intermodal Ports.
- Agricultural and Bulk Ports.
- Rail-Dependent Break-Bulk and Industrial Ports.
- Rail-Serviced Industrial Ports.

The following is a listing of ports by category. It should be noted that some of the larger ports will be listed multiple times depending on their diversity.

Exhibit 5-6: Washington State Ports



Intermodal (Container) Ports – Seattle and Tacoma

These ports have on-dock and off-dock intermodal rail yards, where containers are loaded directly from ships to rail, removing the need for truck drayage. The cargo is transported from ship to rail either by truck or yard equipment (in the case of on-dock rail). Unit trains of containers are built by destination and usually depart within 24 hours of ship arrival. The majority of these containers are destined for the Midwest and Upper East Coast regions.

Agricultural and Bulk Ports, (primarily grain elevator facilities) – Garfield, Grays Harbor, Longview, Kalama, Seattle, Tacoma, Vancouver (WA), Snake River Elevators: Almota, Clarkston, Lewiston, Walla Walla, Whitman, and Wilma

By tonnage, 36 percent of all state agricultural shipments move by rail. Agricultural rail traffic outbound from this state is expected to grow at a compound annual growth rate of 3.3 percent over the next 20 years. The state also has a growing food products industry with particular strengths in frozen foods (7.3 percent of U.S. output) and wine production.

Agriculture and food product manufacturers are an important economic sector in the state, generating 3 percent of the gross state product and accounting for 6 percent of the employment. Agriculture is the major source of employment in many of the state's rural counties.

However, most of the agricultural tonnage moving on the state rail system is Midwestern grain moving to the Lower Columbia River and Puget Sound ports for export. And because Midwestern grain is moving long distances by unit train, the Midwest grain is generally more profitable for the railroads than local state agricultural shipments, which often are moving shorter distances for export or require specialized handling. Products such as wheat, corn, and soybeans, from the Midwest and eastern Washington, also travel by barge and rail to these Lower Columbia seaports.

The Class I railroads are asking state agricultural shippers to consolidate their shipments at new facilities (such as the Ritzville loader), and this may prove economical for those shippers who can accommodate the changes. These changes may affect the short lines, which could see declines in their market share. There is a concern by the operators of small grain elevators along the short lines, who also stand to lose business. The remaining shippers on that line could also experience reductions in service and increased costs.

The challenge faced by the Department of Agriculture, the Agriculture Commission and the WSDOT State Rail and Marine office is to maintain

competitive rail service as it focuses on higher value-added crops and produce that may not generate the volumes that are attractive to Class I railroads.

Rail-Dependent Break-Bulk and Industrial Ports – Anacortes, Everett, Garfield, Grays Harbor, Kalama, Longview, Olympia, Seattle, Tacoma, and Vancouver (WA)

Break-bulk cargo is too big or too heavy to fit into a container or traditionally cannot be vacuumed out of a ship. There are, however, exceptions, such as "identity preserved" or "designer" bulk grain that is blown into containers for transportation in order to keep the origin of the crop separated from other production sources. Historically, the major commodity groups moved in break-bulk form to and from Pacific Northwest ports have included apples and other fruit, metals, and forest products. Apples were at one time one of the most important break-bulk cargos, but they have essentially become 100 percent containerized. Some cargos that move in break-bulk form can also move in containers (so-called "swing" cargos), and the differences in pricing between the two modes can lead to cargo shifting from one to the other, while others have moved completely to containers. Although a number of factors influence whether swing cargos are shipped in break-bulk or containerized form—such as westbound trans-Pacific container rates, frequency of sailings, and the size of overseas orders—price is probably the most significant factor. Shipping lines have added so much container ship capacity to satisfy demand for U.S. imports from Asia that there has been substantial excess westbound capacity. This resulted in a decrease in westbound container rates, which attracted break-bulk swing cargos. Another general trend impacting break-bulk cargos has been a continuing decline in exports of forest products. This decline has been offset by the increase in imports of metal products.

Here are examples of break-bulk cargos moved by the different ports:

- The Port of Port Angeles serves as a gateway for logs and lumber.
- The Port of Anacortes exports logs, chemicals, and petroleum coke from the Anacortes oil refinery.
- The Port of Bellingham handles break-bulk and liquid-bulk commodities.
- The Port of Everett handles fruit, logs, general break-bulk, and some containers.
- The Port of Olympia specializes in handling break-bulk, ro-ro (roll-on, roll-off), bulk, forest products, and containerized cargos.
- Port of Tacoma break-bulk includes wide and heavy cargos such as farm machinery, large factory/production parts for the Canadian Oil Sands, large motorized vehicles.

- Port of Vancouver, USA handles a large volume of wind energy components and has developed a successful "land bridge" rail strategy for moving these components to the U.S. Midwest and western Canadian destinations in addition to other break bulk commodities.

Rail-Serviced Industrial Ports – Benton, Bremerton, Chelan, Clarkston, Columbia, Ephrata, Garfield, Kennewick, Mattawa, Moses Lake, Othello, Pasco, Quincy, Ridgefield, Royal Slope, Shelton, Sunnyside, and Whitman County 3 & 4

The above-named ports have rail-served industrial property. In many cases these ports do not have water access although, through their economic development capacities, these ports are able to provide land and facilities that are rail-served, enabling the local community to have rail access.

Port access issues are more closely related to location than to type of port. Some of the current access challenges and related projects are summarized below. It should be noted that several of the ports have significant rail projects currently underway or scheduled for the near future.

The Military and Rail

Another area of break-bulk cargo that is sometimes forgotten is the U.S. military cargo that moves through the state annually via multiple break-bulk ports. The growth of the state's bases is due in part to the freight infrastructure system's ability to support the U.S. military's readiness and operational movements.[4] Military facilities in the state are important contributors to the U.S. defense and national security system. This state is home to the largest Army base on the West Coast, two Air Force bases, six critical Navy facilities, and two military medical centers. The military's ability to efficiently move freight in and through the state is dependent on an effectively functioning intermodal freight movement system. Specific freight mobility issues for the military in the state are summarized below.

Puget Sound seaports have a strategic role in support of Fort Lewis as the only Power Projection Platform—for gathering, staging, and mobilizing forces and material—on the West Coast. If a major military conflict were to trigger mobilization activity, inbound cargo needed for that mobilization would travel by road and rail from across the U.S. to Fort Lewis, for shipment through the Port of Tacoma to points outside the country.

[4] Surface Deployment and Distribution Command – Transportation Engineering Agency: 2004. This information is provided to the state for planning purposes.

Under such a scenario, it is expected that the Port of Tacoma would need to handle daily volumes of up to 600 containers, 350 rail cars, and 1,100 wheeled vehicles. This volume could create truck bottlenecks at the Interstate 5 (I-5)/Port of Tacoma Road exit and rail chokepoints at Bullfrog Junction in the Port of Tacoma tideflats.

In 2004 the military also began using the Port of Olympia for shipments out of Fort Lewis. The efficient movement of cargo may be hindered because of needed rail capacity enhancements at the ports. There has been a five-fold increase in the number of rail cars that have passed through the Port of Olympia since 2002. At that time 168 cars came through the Port of Olympia. It increased to 876 in 2004. The return of Army shipments related to the Iraq War accounted for about 17 percent of rail volume. In response, the Port of Olympia spent $1.4 million to add a rail line on its docks closer to where ships berth.[5]

The Port of Seattle also has as a role in supporting overseas military logistics. The Port of Seattle has been designated as a sustainment port, one that will be used to ship consumable supplies to troops in the event of a major overseas conflict. Under this scenario, 300 to 600 containers of supplies could arrive on 100 to 350 rail cars on a typical day, with a peak of up to 1,100 containers per day. Military logistics officials have expressed concern about potential bottlenecks when accessing Terminals 5, 18, and 46 at the intersection of East Marginal Way and South Spokane Street, and the single railroad track access under the Spokane Street Bridge to the Port's terminals. The Port of Seattle is working to solve this problem through an East Marginal Way grade separation.

In addition to the ports named above, there are Ordnance Transport Requirements for Bangor, provided by the state rail system. Ordnance is delivered to the Port Hadlock Naval Ordnance Center via rail car to Bangor on the Hood Canal, and then trucked to Port Hadlock.

Autos and Rail

Fully assembled autos are imported primarily through the Ports of Tacoma and Vancouver (WA). These are discharged from the ports on rail and truck. In order for these ports to keep these auto accounts, reliable rail service is a must; there is also a competitive advantage compared to San Pedro Bay in Los Angeles, California as the Pacific crossing is one day less.

[5] As reported by Szymanski, Jim, *Rail cargo business chugs along at port*. The Olympian. Sunday, February 27, 2005. Retrieved as of February 2005 from: www.theolympian.com/home/news/20050227business/96117.shtml.

Key Needs of Ports

Nearly all of the state's deep-water ports are located adjacent to the I-5 corridor, or are on short-line railroads that branch off the I-5 corridor. As a result, rail connectivity issues for the ports and capacity issues on the I-5 corridor are necessarily tied. Along the corridor there are five main areas where mainline capacity needs and connectivity issues intersect, including:

- Vancouver (WA).
- Kalama to Longview.
- Centralia.
- Tacoma.
- Seattle.

Each of these is examined in more detail in Appendix 5-B.

WSDOT, as the state agency that administers state and federal transportation funds that are spent on rail projects in the state, works closely with port districts to improve freight rail access throughout the state. These rail projects help the state's business community gain better access to rail transportation. As referenced in other areas of this plan, examples of past WSDOT projects include purchases of grain hopper cars, rehabilitation of short lines, purchase of branch lines, and preservation of abandoned rail right of way.

Intermodal Connectors

These are locations where two modes meet and the cargo moves from one mode to another. In most cases this involves transferring a piece of cargo from a truck to a train or vice versa.

Within this label, intermodal connectors can be seen in many different types of facilities. The following describes some of these facility types.

Inland Ports

Rail access is a significant element of port competitiveness strategy. By providing an inland port service, a seaport (in theory) can make intermodal rail service available to a broader range of customers. If priced sufficiently low, the inland port service can offer cost savings to container shippers and thereby increase the port's competitiveness.

Inland ports have become an increasingly popular concept as the drive for transportation efficiency continues. Inland ports are perceived to reduce congestion, improve transit times and reliability, while at the same time

decreasing costs and promoting economic development. For a detailed discussion of inland ports, see Appendix 5-C.

Other Intermodal Connectors Within the State

In addition to rail-served inland ports, the two most prominent alternatives for rail transportation are on-dock intermodal and near-dock intermodal.

On-Dock Intermodal

Port of Seattle

Terminals 5 and 18 have on-dock intermodal facilities within the terminal footprint (see Exhibit 5-7). Both on-dock intermodal yards can load international containers from the ship without using a public street.

Port of Tacoma

The Port of Tacoma has four intermodal yards; three are on-dock and one near-dock. These four yards are served by Tacoma Municipal Belt Line, the short line that serves the Tacoma Tideflats area. All four of these intermodal yards were built by the Port over the years to meet customer needs (see Exhibit 5-8).

Near-Dock Intermodal

South Intermodal Yard in the Port of Tacoma is a near-dock intermodal facility located on Milwaukee Avenue near the entrance of the APM terminal. It is operated by a third-party operator, Pacific Rail Services, under the direction of the Port of Tacoma. It has direct street access and has the capability of loading or unloading directly to road-ready trucks.

Seattle is supported with two near-dock international intermodal facilities, the BNSF Railway's (BNSF) Seattle International Gateway and the UP's Argo Yard. Both facilities are located less than two miles from Terminals 5 and 18 and directly across from Terminals 46 and 30. Both yards have direct access to the mainlines for each railroad.

Mainline Domestic Intermodal Terminals

In addition to the on-dock international intermodals yards, both BNSF and UP have intermodal yards in the Puget Sound that cater to domestic intermodal cargo. This is cargo that is in larger domestic containers, which are usually a 53-foot box that mirrors the domestic trucks used by the large retailers, such as Safeway, Target, or Wal-Mart. Due to the length of the domestic container, this type of train requires dedicated rail cars that will hold these longer boxes.

Exhibit 5-7: Seattle Freight Network

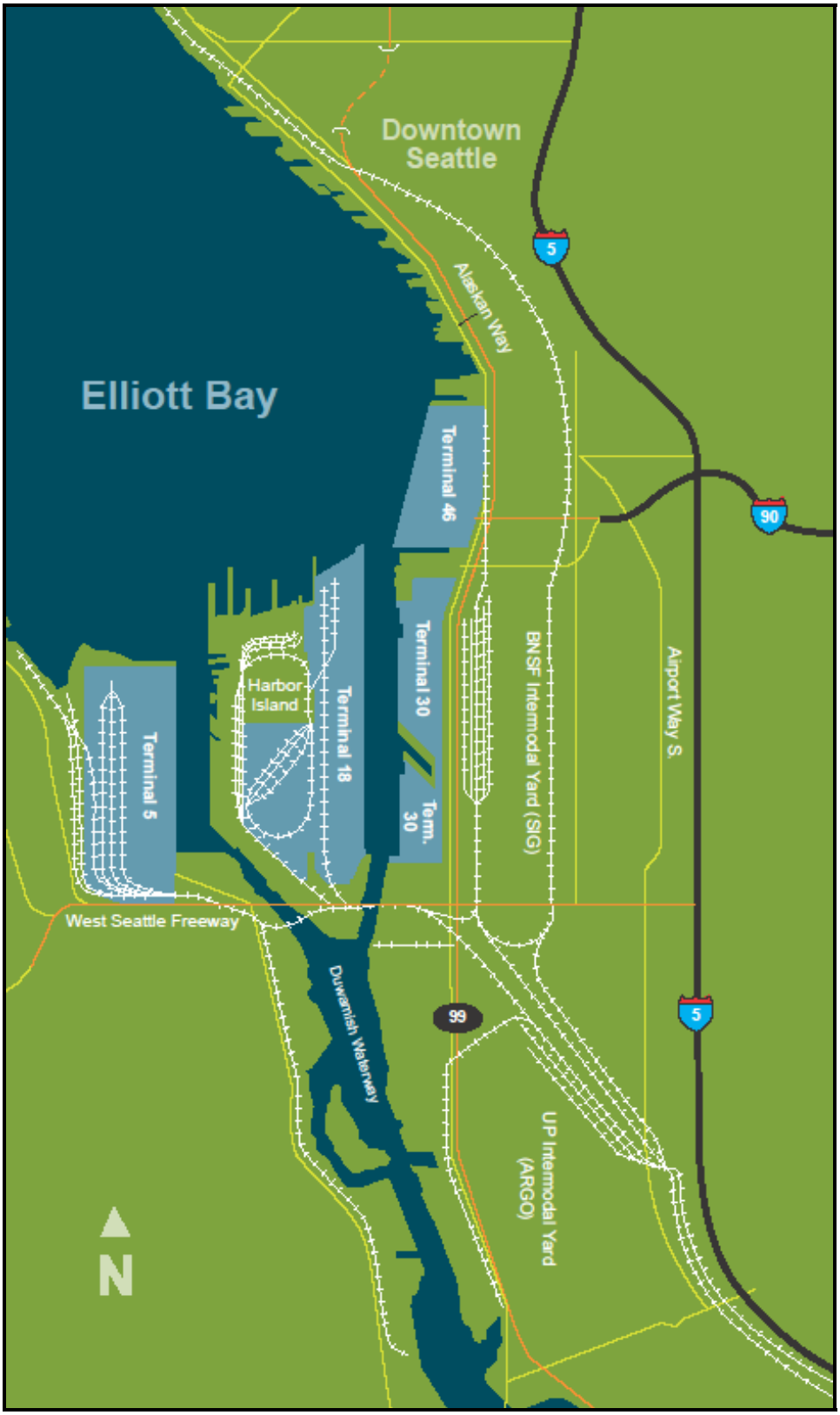


Exhibit 5-8: Tacoma Freight Network

BNSF has their South Seattle yard located near the south end of Boeing field.

UP loads domestic containers at both their Seattle Agro facility and their new Domestic Yard in Tacoma, co-located in the South Intermodal Yard.

Intermodal Connections

There are other types of intermodal connectors such as rail-to-barge, truck-to-grain elevators, rail-to-bus, as well as airports. In most cases airports are not supported by rail, although for freight there is the truck-to-

plane intermodal connector. Exhibit 5-9 shows all intermodal connections in Washington State. Exhibit 5-10 shows intermodal facilities in the Puget Sound area. Exhibit 5-11 shows intermodal facilities that include the rail mode. Appendix 3-C provides a detailed commodity description for these intermodal facilities.

Many smaller-size intermodal facilities are not included in BST's database. But, these intermodal facilities are important to the state's economy and should be identified. A study is needed to expand the database to include all intermodal connections.

Rail Freight System Issues and Needs

Mainline Freight Issues

Capacity/Bottlenecks

The benefits that the state can obtain from a robust rail system are threatened because the system is nearing capacity. Service quality is strained and rail rates are going up for many state businesses. The examples of rail lines that are currently running at capacity or near capacity are discussed in Chapter 3.

The pressure on the rail system will increase in the next decades. To accommodate this growth, many more rail lines within the state will be operating at or above their practical capacity.

Growth in rail traffic and rail congestion issues are also affecting state communities by increasing delays for automobile and truck drivers at rail-highway crossings, creating noise[6] and safety problems, and disrupting communities and environmentally sensitive areas with construction projects. Dealing with these problems in an uncoordinated fashion on a case-by-case basis is often frustrating for both the communities and the railroads.

[6] The Final Horn Rule was promulgated by the Federal Railroad Administration and published in the Federal Register on April 27, 2005. The rule required trains to sound a horn or whistle when approaching a highway railroad grade crossing. The intent was to develop a mechanism for a public authority to authorize a whistle/horn ban at a crossing(s) with the authority jurisdiction under the context of an existing state law or modified state law.

Exhibit 5-9: All Intermodal Freight Connectors in Washington State

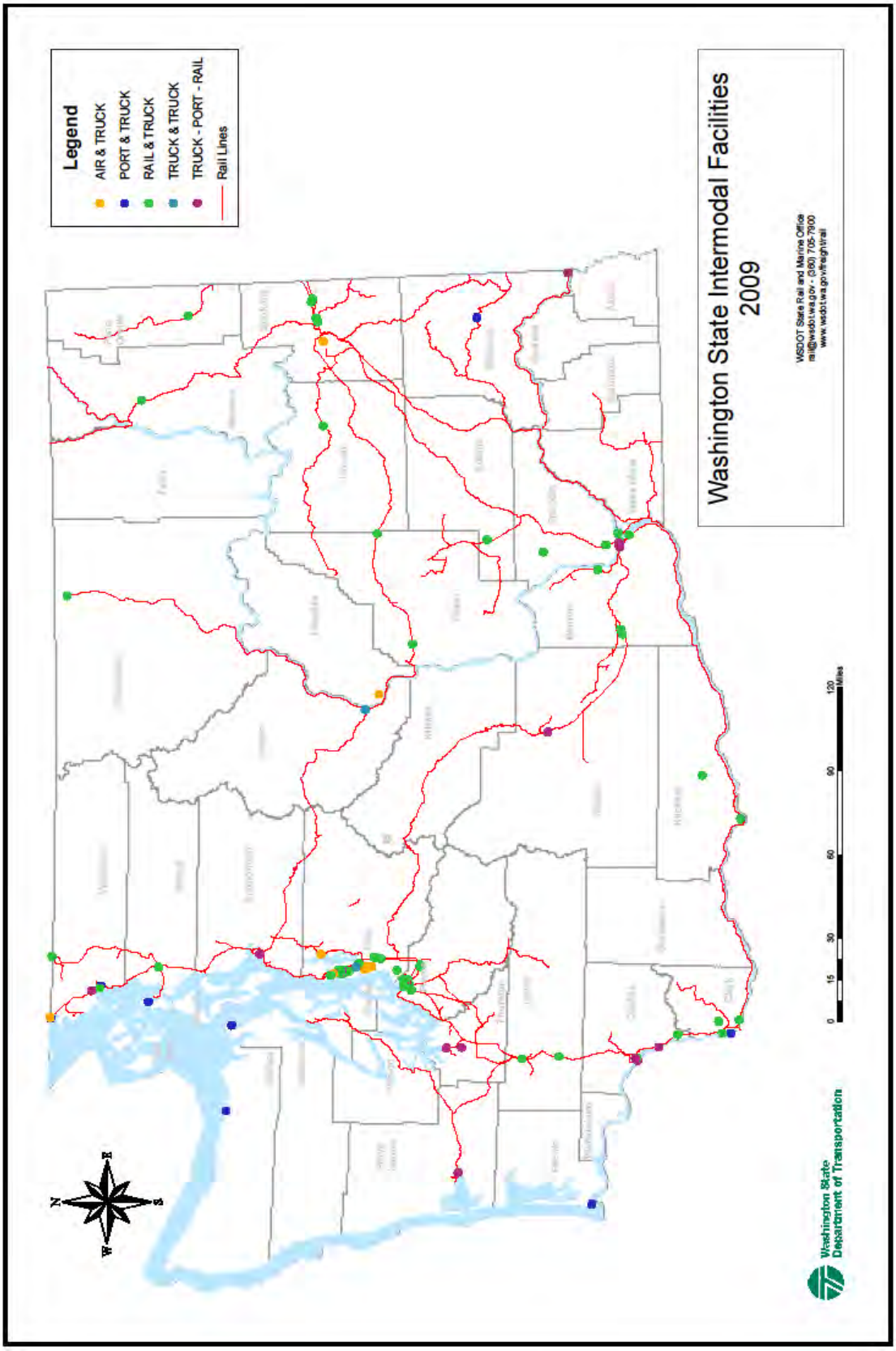


Exhibit 5-10: All Intermodal Freight Connectors in the Puget Sound Region

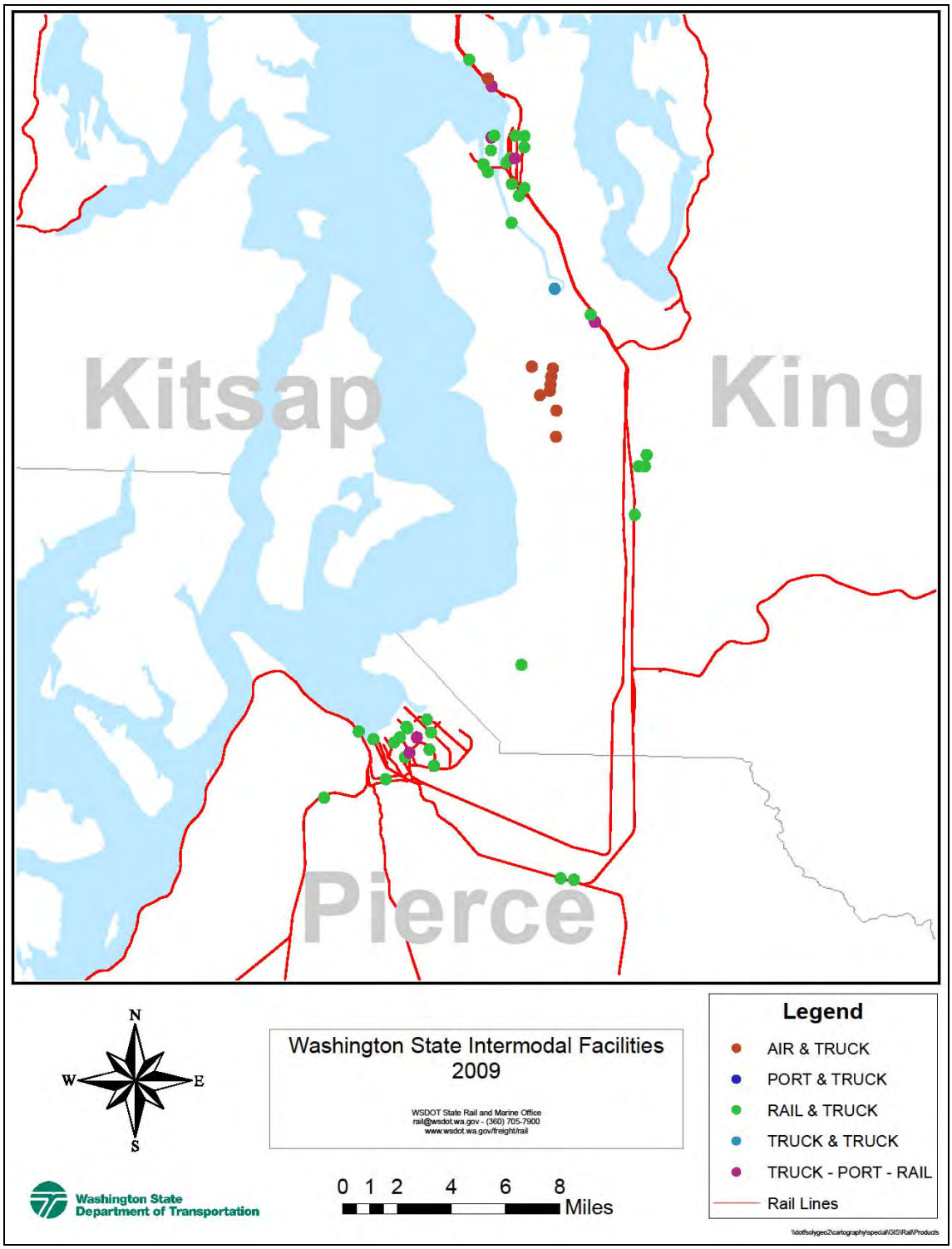
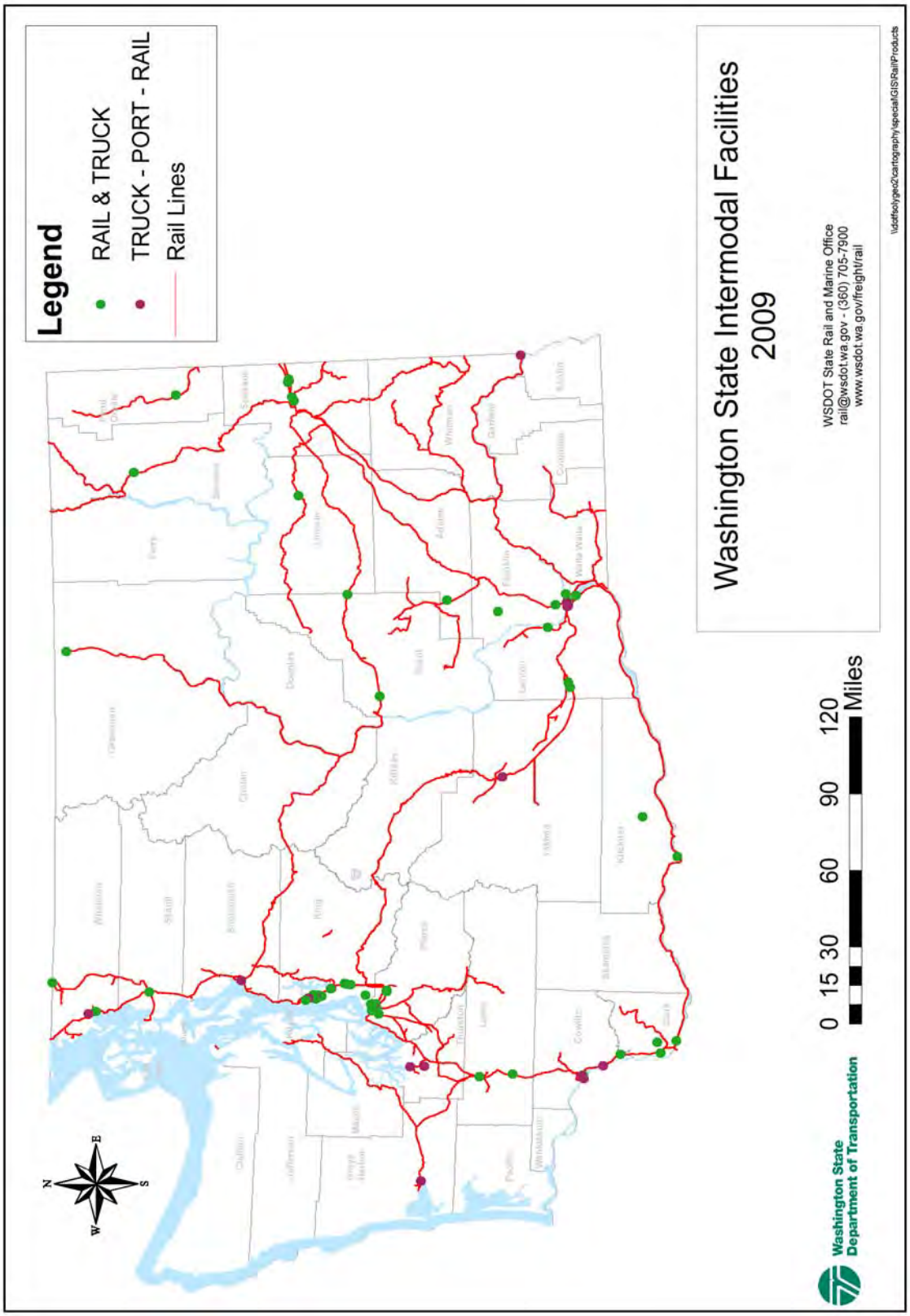


Exhibit 5-11: Rail Intermodal Freight Connectors in Washington State



Clearances

As referenced earlier in Chapter 3, the Stampede Pass route is limited to single-stack trains due to the clearance restrictions of that line, as it can not handle the height of double-stack trains. There are also height limitations caused by the Chuckanut tunnels on the I-5 rail corridor between Everett and Bellingham.

Freight and Passenger Mainline Issues

As freight and passenger trains compete for time and space on the rail system, the capacity constraints may also frustrate the service and ridership plans for the state's passenger rail program. The cost of resolving the rail chokepoints in the I-5 corridor to meet passenger service and ridership goals is increasing. WSDOT continues to look for funding solutions to these issues. Currently, WSDOT has $1.3 billion of grant applications into the federal government under the American Recovery and Reinvestment Act of 2009 (ARRA) programs. Current grant requests are described later in this chapter under High-Speed Passenger Rail in the Emerging Issues section.

Without capacity improvements, rail will not meet the demand of the state freight market, rail shipping prices will increase, and service reliability will deteriorate for many of the state's industrial and agricultural shippers.

Freight and Commuter Issues

Sound Transit provides *Sounder* commuter rail services in the Puget Sound region, with weekday peak-period service between Seattle and Tacoma and between Seattle and Everett. Both services operate over BNSF tracks.

The ongoing improvements at King Street Station in Seattle have contributed to more efficient combined freight and passenger operations between the Seattle Tunnel and Argo Interlocking. As with the Vancouver (WA) to Tacoma segment of the I-5 corridor, BNSF has no capacity expansion plans in its 5-year capital investment plan for this segment beyond that being driven by increases in intercity and commuter passenger growth plans.

Sound Transit and BNSF are currently in discussions to update the operating and volume agreement between Tacoma and King Street Station in Seattle. These discussions are focusing on an agreement similar to the one now in place between King Street Station and Everett. Under this scenario, Sound Transit would purchase additional train slots rather than paying for specific physical improvements. Assuming an agreement is reached, this arrangement would ultimately result in 15 round-trip

commuter trains per day between Seattle and Tacoma. In return, BNSF would be expected to construct the capacity improvements necessary to ensure that passenger and freight movements continue to operate efficiently. Ports are concerned that improvements are made in a timely manner, before the service starts, to avoid disrupting freight service when the additional commuter trips begin.

Short-Line Freight Issues

As regulatory changes allowed for Class I railroads to rationalize their networks by selling off unprofitable lines, more new enterprising, innovative, and customer-oriented rail companies emerged. Although some have failed, many more have lowered the cost structures of marginal, neglected rail lines and turned them into prosperous operations. Short lines now comprise 37 percent of the active rail network in the state in terms of operational miles.

However, the short-line railroads still have challenges. Some of these are capacity issues at interchange points with the Class I mainline and handling heavier weighted rail cars. In the case of the interchange the issue may only affect the short lines and may not impact Class I mainline capacity.

In general short lines have lower operating speeds and track conditions in comparison to Class I railroads. Further, it is clear that the need for capacity improvements are not limited to the Class I railroads. Prior to being sold to a short line, the "excess" sidings and yard tracks of a Class I-owned branch line were often removed to minimize maintenance costs and real property tax liabilities. Those actions made business sense under the regulatory and tax framework at the time. However, today, under the management of short-line operators, rail traffic has returned to these branch lines; the lack of runaround sidings, yard tracks, and interchange tracks can cause inefficient operations that increase the railroad's cost to serve shippers or can decrease safety.

Heavy-Axle Load Rail Cars

In the 1970s, many coal-originating railroads increased rail car weight limits for coal cars from 263,000 pounds to 286,000 pounds, as a result of heavier track structures being implemented at that time. In 1994 the Association of American Railroads (AAR) approved the same increase in weights for covered hopper cars. The latter change had a much bigger impact because covered hopper cars circulate throughout the North American rail system, hauling a variety of commodities on Class I railroads, as well as on short-line railroads.

A lengthy and costly effort was undertaken by the Class I railroads and some of the short lines to upgrade their lines to carry the heavier cars. However, track and bridge structures of many of the short lines are still incompatible with the interline standard of 286,000 pounds. Unfortunately, these are the railroads that are the least able to afford the high cost of upgrading their tracks to this standard.

Most recently, the Class I railroads across the nation are now carrying some 315,000-pound cars on main routes that have been certified for this new weighted car. Again, it is unlikely that short lines will be able to afford to upgrade their track to handle such cars in the near future. Even if they are able to upgrade the capacity of the track, it is unlikely that the bridges will be upgraded to this new standard. Thus, this incompatibility has forced bulk cargo either into less efficient cars or on to the highways.

System Preservation

Many of the short-line railroads are owned by private operators, making information on system conditions difficult to compile. Indications are that short-line rail tracks are facing large rehabilitation needs, and may be at least partly unfunded. Worsening track conditions could lead to further abandonment.

There is a no more fundamental transportation capital investment than system preservation to keep the physical infrastructure in good condition.[7] As transportation facilities age and are used, a regular schedule of rehabilitation, reconstruction, and replacement is needed to keep the system usable. Timing is important: if preservation investment is deferred, costs increase dramatically, leading to the saying "Pay me now, or pay me more—significantly more—later."

"Asset management" is a term that describes a proactive approach to investing in preservation at the right time to optimize rail condition. Asset management includes having comprehensive inventories of transportation facilities; a system for measuring and reporting system condition; predictive condition models that anticipate rehabilitation or replacement needs; and an investment program that ensures that the right investments are made at the right time.

In 2002 and 2003, the legislature reinforced this state's commitment to asset management. Legislation specifically required maintenance and preservation to be included in state plans for highways, ferries, and rail, and required cities, counties, and transit agencies to manage and report system condition. These requirements will help ensure that more

[7] Good condition is defined as not needing repair or maintenance.

consistent condition information will exist in the future about all transportation assets.

This chapter later discusses information needs in more detail; however the list below is an example of needed data and analysis related to abandonments and short-line railroad development.

1. **Abandonment** – What service area did these lines serve? Have they been banked or converted?
2. **Inventory** – What are the current short-line facilities and conditions?
3. **Assessment** – What is the short-line economic impact to the state? What is the short-line economic impact of the preservation or abandonment?

Underserved Markets (Grain Trains and Produce Cars)

Grain Trains

In the early 1990s, a national shortage of rail covered hopper cars made it difficult and expensive for state farmers to get grain to market. To help alleviate this shortage of grain cars, the Washington State Energy Office and WSDOT used federal funds to purchase 29 used grain cars in 1994 to carry wheat and barley from loading facilities in eastern Washington to export facilities in western Washington and Oregon. The Washington Grain Train currently has 89 grain cars in the fleet (71 are owned by the state, and 18 are owned by the Port of Walla Walla). The UP, BNSF, and state short-line railroads operate the cars and carry the grain to market. WSDOT is currently in the process of purchasing an additional 29 cars mandated by the state legislature.

Serving over 2,500 cooperative members and farmers in one of the most productive grain-growing regions in the world, the Washington Grain Train helps carry thousands of tons of grain to deep-water ports along the Columbia River and Puget Sound for transport to ships bound for Pacific Rim markets.

The Washington Grain Train produces a number of important public benefits, including:

- Helps move state products reliably and efficiently to domestic and international markets.
- Helps preserve the state's short-line railroads by generating revenues that may be used to upgrade rail lines and support the railroad's long-term infrastructure needs.
- Helps support a healthy rail network that may maintain and attract new businesses in rural areas of the state.

- Saves fuel over shipping by truck.
- Supports air quality improvement initiatives.
- Helps reduce wear and tear on local roadways by using rail.
- Supports the users by using equipment not subject to market based premiums.

The Washington Grain Train was started with federal "seed" money and operates without any taxpayer subsidy. WSDOT, the Port of Walla Walla, the Port of Moses Lake, and the Port of Whitman County all manage the Washington Grain Trains. WSDOT oversees the entire program, and the port districts collect monthly payments from the railroads for the use of the cars. The ports can use up to one percent of the payments they receive from the railroads for fleet management services.

The Washington Grain Train collects wheat and barley from grain elevators in eight cities in eastern Washington. These are: Warden, Schrag, La Crosse, Prescott, Endicott, Willada, St. John, and Thornton. The grain is transported to export facilities in Kalama, Tacoma, Seattle, Vancouver (WA), and Portland, Oregon.

Since its beginning, the Washington Grain Train program has carried over 9,000 carloads totaling more than 900,000 tons of grain from the state to national and international markets. Total carloads for the second quarter of 2009 increased 5.4 percent over the second quarter of 2008. There were 412 carloads shipped in the second quarter of 2009, compared with 391 in the second quarter of 2008. In 2008, a total 1,332 carloads were shipped compared to 1,822 carloads in 2007.

Produce Cars

In 2003 the state legislature enacted legislation (RCW 47.76.400) that authorized WSDOT to established a pool of refrigerated railcars to transport perishable agricultural goods. This legislation was in response to the state's agricultural community's inability to secure an adequate supply of refrigerated railcars during peak seasons from the railroads.

WSDOT started operation of the Washington State Produce Rail Car Program in 2006. Federal fund appropriations of $2 million and $200,000 from the state for startup operations and contract monitoring enable the railcar pool program to start.

On August 18, 2006, WSDOT signed a contract with Rail Logistics, LC to lease up to 50 refrigerated railcars and to manage the fleet. This contract was renewed in June 2009 for two additional years. The program is intended to provide the opportunity to open new markets for Washington State produce while maintaining economic viability for Washington's

agricultural community. The public benefit is that these rail cars minimize the added wear and tear on state roadways caused each year by thousands of heavy truckloads.

New Services

In October 2007, the partnership of UP, RailEx, and CSX Transportation initiated a new twice weekly unit train service carrying perishables (fresh fruit and vegetables) from Wallula, WA to Schenectady, New York. The cross-country trip takes 128 hours, a time that is very competitive with an over-the-road truck.

The 55-car train has next generation refrigerated boxcars that have the most efficient insulation, uses an environmentally-friendly and energy-efficient refrigeration unit, and has a global positioning system to monitor the "health" of the refrigeration unit and the temperature in the car.

Each train carries about the same amount of produce and perishable items that would have been moved by more than 200 over-the-road trucks. With the produce moving by rail instead of truck, 100,000 fewer gallons of diesel fuel are used each time the produce unit train operates.

Emerging Issues

Following is a discussion of four major emerging issue categories:

- Freight Rail Capacity and Competition.
- Positive Train Control Implementation.
- Impacts of Dam Breaching or Loss of Columbia-Snake Inland Waterway System.
- Statewide Information and Data Needs.

Freight Rail Capacity and Competition

Challenges that the state faces to achieve continued economic growth include:

- Increased rail competition for the Pacific Northwest (PNW) from other regions in the U.S. and Canada.
- East-west rail capacity issues.
- PNW ports serve discretionary traffic that can easily move to another gateway.
- Panama Canal expansion.
- Increasing competition from Pacific Southwest and Canadian Ports.
- Highway congestion.
- Restoration of Puget Sound.

On a per ton basis, trucking uses over 10 times more energy on average to transport freight than rail transportation. However, the average truck carries just less than six tons of freight, while the average rail car carries a load of 46 tons, reflecting the heavier, bulky commodities that railroads generally haul. Thus, when comparing energy intensity on a per-vehicle-mile or per-car-mile basis, the difference between the two modes is significantly reduced. It should be noted that rail is still less energy intensive.

The *National Rail Freight Infrastructure Capacity and Investment Study*, performed by AAR, assumes the Class I railroads will be able to generate approximately $96 billion of the $135 billion cumulative in the 28-year investment indentified through increased earnings from revenue growth, higher freight volumes, and productivity improvements. This would leave a national gap of approximately $39 billion or $1.4 billion per year to be funded from other sources in order to achieve performance improvements, while meeting the demand of the current rail market for freight shipments.

BNSF's capacity investment plan for the state over the next five years does not include any significant expenditure due to the current reduction of traffic volumes other than participation in siding extensions at Mount Vernon and Stanwood, and construction of a new customs inspection siding at Swift (Blaine) between Everett and the Canadian border.

In the meantime, competition from other ports on the west coast of North America continues to grow. Ports in southern California continue to attract a large portion of the West Coast international trade due to the huge local market they serve, and Oakland, while often considered less of a competitive threat, has continued to develop new properties as they have become available, and has seen growth in its international trade.

Of special importance for state ports, however, is competition from the Canadian ports of Vancouver, British Columbia (B.C.) and Prince Rupert; substantial investments are being made at both of these ports in order to improve their competitive positioning. Port Metro Vancouver (PMV), in particular, is developing ambitious plans for container facilities that could increase capacity by a factor of four over the next dozen years. The Port of Prince Rupert (PPR) also has ambitious plans to increase container throughput four-fold over the foreseeable future.

Both PMV and PPR have and are receiving significant support from the federal and provincial governments for their efforts to expand and improve freight mobility. That support will potentially involve government investment exceeding $1 billion (Canadian) for projects currently identified and under consideration. In addition, at least in

PMV's case, the ports have taken a proactive role in moving a variety of freight mobility projects forward.

The widening of the Panama Canal also provides shippers improved alternative routes to U.S. midwestern and eastern destinations. It is currently unknown the actual impacts that this expansion will have on state ports. There are numerous studies available on the subject without a consistent conclusion on the effects on the West Coast ports. There are many criteria that will be evaluated in a shipper's decision to use or not route their cargo through the expanded canal. Some of these include time to destination, fully loaded cost of the transport, customer service of the transportation vendors, etc. The newer, larger, more efficient ships will be able to use the expanded canal. Passage through the Panama Canal is currently limited to Panamax ships, which are no wider than 106 feet.[8] The challenge for the shipper is that although the larger ships can transit the canal, port facilities that are capable of berthing these larger ships are limited in number. Many West Coast ports are capable of handling these larger ships, but many of the gulf and East Coast ports have depth or height limitations at their ports that may prevent these larger ships from berthing. Various ports are in the process of making improvements in order to handle the larger ships.

The recent economic downturn has resulted in both Class I railroads serving the state (BNSF and UP) to reduce planned 2009 capital expenditures by $100 to $200 million in pure capacity expansion projects. This brings concerns that the Class I railroads could delay capacity enhancements in an attempt to control capacity, which could affect the competitiveness of the state as compared to other states. The capacity expansion projects that remain are those where previous commitments have been made including BNSF's intended improvements on the "Transcon" between southern California and Chicago (Abo Canyon double-track) and UP intended double-tracking on the "Sunset Route" between southern California and El Paso, Texas.

The positive side is that both BNSF and UP plan on continuing to invest in maintenance of existing track and purchase of locomotives—both are key components in maintaining capacity capability over existing track infrastructure. This capital investment, with a view to the long term, provides a good example of the path that the state should pursue in funding rail improvements, especially for those projects where the long-term interests of the state are clearly identifiable and the project timelines are long.

[8] A Panamax ship is no larger than a ship that can carry the equivalent of 3000 Twenty foot Equivalent Units (TEU). A TEU is a measure used in the marine industry to measure a container into equivalent units of 20 feet long, 8 feet wide, and 8 feet high.

For the state to stay competitive, a strong coalition must be developed among the stakeholders. This coalition must develop an integrated plan to develop the needed capacity to retain the state's rail freight market share. In this chapter the needs as well as risks have been identified. It will be detrimental to this state if a cohesive rail network is not maintained.

Some suggest that a High-Capacity Freight Corridor be developed. This High-Capacity Freight Corridor has been referenced by some stakeholders as the Northern Corridor and by others as the Hi-C. These two concepts have slight variations, but are built on the same assumption concept that a high-capacity rail corridor must be maintained and improved upon from the Puget Sound to Chicago, Illinois. This is not currently supported by either BNSF or UP. Perhaps the designation as a Corridor of National Significance will meet the goal. No matter which name or design is chosen, a national cohesive effort needs to be developed by both the public and private partners in order to achieve the economic growth that benefits the state's competitive position. The corridor will require infrastructure and operational improvements as well as cooperation between the BNSF and UP. An agreement on the priorities would need to occur and a funding program developed. Below is a selection of highly visible projects that need to be considered as the competitive strategy is developed.

Class I Railroad Competition

It is important to the state's economy to have healthy railroads competing for business in the state. This competitive environment will influence how aggressive is the rate structure offered and the level of investments the Class I railroads are willing to make within the state to increase their network capacity.

BNSF and UP capital investment decisions and strategies are based upon capacity needs and positioning their network to be more attractive to the customer. Class I railroads normally spend approximately half of their annual budgets for maintenance of their physical network (e.g., rail, ties, ballast, bridges, etc.). With capital expenditures for UP and BNSF amounting to $3 billion per year over the last few years, a significant portion of both railways' capital expenditures has been for maintenance of existing track. This expenditure is very important to the efficiency of the system since deferred or reduced maintenance can result in lower throughput on deteriorating track.

Similarly, BNSF and UP continue to make significant investments in locomotives. Trains that are under-powered often cannot maintain the maximum allowable speed, consuming more capacity than trains that have

sufficient power to maintain track speed. Both railroads continue to purchase locomotives that are much cleaner in emissions and more fuel efficient than older generations of locomotives. For instance, the required use of "green" locomotives in the Los Angeles Basin has caused the railroads to replace older locomotives with the newer more environmentally-friendly engines. In addition to locomotives, capital expenditures for new or improved signal systems on existing networks also enhance the capacity of a segment of track.

Both BNSF and UP allocate 10 percent to 12 percent of annual capital spending to expansion of their physical networks. This normally amounts to capacity expansion expenditures between $200 and $300 million spread across their respective 30,000 plus mile systems; though this expenditure accelerated somewhat in the period from 2005 to 2007. The emphasis of both railways was in constructing double track on the single-track segments for their respective mainline routes into and out of southern California. For example, BNSF's project to construct the 3rd main track over Cajon Pass was a project that took four years to complete at a total cost of approximately $90 million. The new mainline is 16 miles long and is projected to increase total train capacity by 50 trains per day to approximately 150 trains per day.

In addition to physical capacity expansion projects—such as constructing new main track, building new meet/pass sidings, and extending sidings—capacity expansion dollars are also used for expanding or constructing new yard and intermodal facilities. Consequently, competition for expansion capital is intense each year and the railroads normally focus those expenditures in locations they consider to be competitively sensitive or have the highest return on investment.

To focus BNSF and UP on the state's rail needs, the following things must happen:

- The state's economy must be growing.
- State ports must be efficient.
- Stakeholders must demonstrate their understanding of how important the rail system is to both the economy and ports.
- Rail operator's business needs must be acknowledged.

Another issue is the potential for Canadian National (CN) and Canadian Pacific (CP) to gain access to the state through either their current agreements with the BNSF and UP or through future agreements. This would again change the competitive landscape of the PNW. Depending on the agreement, this may be very positive or very detrimental to the state's ports and their competitiveness compared to other ports.

Finally, there must be consensus on what are the priority projects and the funding mechanism to get the improvements built.

East-West Issues

Northern Corridor/Northern Tier/High-Capacity Freight Rail Corridor

It is important for the economic growth of this state to have efficient, well-connected east-west rail corridors leading to other population centers in the U.S., especially the Midwest and upper northeast regions. As has been noted in Chapter 4, the state is dependent on freight movements in and out of the state to other mega regions where the goods are consumed or produced. The concept of the Northern Corridor is built upon the current routes of the Class I railroads along the Northern Tier from Washington to Illinois. This corridor links the two economic regions of the Pacific Northwest and the Great Lakes. Unfortunately, there are limited numbers of markets between Spokane and Minneapolis-St. Paul. Thus, the majority of the container trains leaving the state are direct trains with their first destination as St. Paul, before moving on to the Chicago area, where the train is either unloaded or switched to an eastern railroad for movement to the eastern or southern populated regions of the U.S. This route handles a magnitude of cargo types, such as intermodal containers, automobiles, agricultural products, and bulk commodities, such as minerals and coal. This corridor is of national significance and needs to be designated as such; and is essential to the competitiveness of the state's ports and other industries that drive economic growth within the state. It competes with six other transcontinental corridors extending from the Pacific to the East Coast.

The importance of the Northern Corridor should be recognized as one that connects Asian and North American markets together. This corridor competes with the central and southern U.S. rail corridors. In addition, the Canadian, Mexican, and Panamanian corridors provide effective alternatives for transportation of goods to all U.S. markets.

To achieve this, a coordinated approach between the corridor states and the private sector is needed to ensure that this corridor gets the same attention and funding as other parallel corridors. The obvious partners in the Northern Corridor include the states of Washington, Oregon, Idaho, Montana, North Dakota, South Dakota, Wyoming, Minnesota, Wisconsin, Indiana, and Illinois. This is the broad band of states that encompass the I-90 and I-95 highway corridors. The improvements in this corridor must

include the improvements required at the eastern end of this corridor, primarily Chicago and the CREATE[9] project.

While this corridor has experienced satisfactory maintenance and modernization, no large scale capacity improvements are currently scheduled, unlike competing corridors in the Southwest.

Regardless of the method chosen to improve capacity, there have been three barriers that are addressed in Chapter 8: identifying funding sources, developing participation across the states within the corridor from all stakeholders, and reaching agreement with the private owners of the rail infrastructure (i.e. the mainline railroads) on the priority of necessary improvements. Federal, tribal, state, local, and port governments all have a stake in the successful operations of railroads in the Northern Corridor.

Potential railroad benefits of the high-capacity freight corridor are:

- Increase east-west train capacity.
- Improve crew utilization/reduces labor costs.
- Improve fuel savings and locomotive use.
- Improve mainline train velocity across the state.
- Allow increase in train length for intermodal trains in the eastward direction from 7,000 feet to 8,000 feet without distributive power.

Potential public benefits are:

- Provide east-west rail capacity needed for port growth enabling a strong local economy.
- Mitigate for increased train traffic.
- Bypass major eastern Washington cities.
- Tie into the WSDOT-owned short lines in eastern Washington.
- Provide short-haul capacity to eastern Washington growers.
- Remove trucks from I-90.
- Spur economic development in eastern Washington.
- Improve air quality through reduced emissions.
- Improve national security.

WSDOT State Rail and Marine Office should lead the organization of the corridor coalition to make sure the development of the coalition and corridor meet the needs of the state and its stakeholders. The partnership should be formed and the cost and benefits analyzed. The following must be determined:

[9] CREATE stands for Chicago Region Environmental and Transportation Efficiency Program. This is a $1.5 billion project to improve freight rail connections in and around Chicago, Illinois.

- What is considered a public benefit to be funded by public funds?
- Which improvements are private and need private funding?

Once the coalition is organized these neighboring states can develop a joint plan to encourage and facilitate more service to the shippers along the Northern Tier.

Stampede Pass Clearance and Signal Systems

In the *Washington Public Ports Association (WPPA) Rail Capacity Study – 2004*, an analysis was performed on two scenarios that involved rerouting of traffic from Stevens Pass to Stampede Pass. The first anticipated the "clearing" of the Stampede Pass tunnels for double-stack rail cars in order to relieve capacity pressure on Stevens Pass.[10] The second analysis involved directional running of trains between Spokane and the Puget Sound, with westbound trains operating via Stevens Pass and eastbound trains operating via Stampede Pass.[11] 'Clearing" the Stampede Pass tunnel will significantly increase the capacity over Stevens Pass. But, BNSF has no capital investment allocated for clearing the tunnel in its current 5-year plan.

The issue of directional running is more problematic. This is an operational consideration for the private entities and cannot be enforced by the state. Directional running requires a one-way westbound route and a separate one-way eastbound route. Because of the grade issues on the two passes, it is thought that Stevens Pass would be the westbound route and Stampede Pass would be the eastbound direction. The re-routing of trains eastbound over Stampede Pass would add 82 miles to the trip. The longer distance and the lower speed per mile on the Stevens Pass route to Spokane require an additional crew shift to be added. The additional crew is due to labor rules restricting the number of hours a crew can work. This extra labor cost is in addition to other operational issues this route presents. Re-opening the Ellensburg to Lind cut-off would reduce the number of miles traveled since it would eliminate the need to go through Pasco. It could also alleviate some of these operational issues. However, the timing of these improvements is subject to various long-term issues that can't be forecast with any sense of confidence. The more significant questions, from a capacity demand perspective, are when will growth frequently stress the capacity on Stevens Pass and how will BNSF address the issue.

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[10] Clearing refers to the crowning of a tunnel to allow taller rail cars to pass through or "clear" under the ceiling of the tunnel.

[11] Directional running is the concept that trains are routed only one direction on a corridor so that operational capacity is increased due to the fact that all trains move in the same direction not unlike a one-way street.

Both the *WPPA Rail Capacity Study – 2004* and the *Statewide Rail Capacity and Systems Needs Study* (2006) projected that as daily capacity demand on Stevens Pass reached daily sustainable capacity, overflow BNSF trains would be rerouted to or from the Puget Sound, either via Stampede Pass or the I-5 corridor to Vancouver (WA) and the Columbia River Gorge route.

Finally, additional capacity may be achieved if some bulk trains can be rerouted over Stampede Pass versus their current routing along the Columbia River Gorge. Currently testing is underway using mid-train helpers to enable heavy trains to climb steep grades. Should the distributed power (i.e. mid-train helper[12]) test prove to be productive, BNSF will have the ability to allocate additional trains to Stampede Pass that would otherwise operate via the Columbia River Gorge between Pasco and Vancouver (WA).

Bridging the Valley (Spokane to Athol)

A series of rail and road improvements jointly referred to as the "Bridging the Valley" project, have been planned between Spokane, WA and Athol, Idaho to separate vehicle traffic from train traffic. Where there are currently 75 railroad/roadway crossings, this project will construct approximately 19 grade-separated crossings within the BNSF corridor. The UP mainline will be relocated to an alignment within BNSF's mainline corridor to eliminate all mainline at-grade crossings on the UP line between Spokane and Athol, Idaho. However, the BNSF has indicated that capacity on this segment is sufficient. BNSF supports the grade separations envisioned, but does not support the relocation of UP onto the BNSF line. The railroad currently sees no value in participating in the project due to the fact that conjoining the two railroads on one line could damage the BNSF franchise significantly.

North-South Issues

North-South Corridor (I-5 Corridor Including Access to Canada)

As discussed in earlier chapters, the fluidity of the I-5 rail corridor is mandatory for the economic health of the state. This corridor can be classified as extending from Portland, Oregon to Vancouver, B.C. A north-south corridor supporting the east-west movement of cargo moving through the state is required to keep the rail network flowing. As the projections of cargo and passenger volumes are met, it will be especially important that attention is kept on the health of this north-south corridor.

[12] Distributed power or mid-train helpers are engines that are placed in the middle of the train. These additional engines help "power" a long or heavy train by distributing the load of the train between the front engines and those in the middle of the train.

Currently, BNSF has no public plans, other than those proposed to support intercity passenger train volumes, to increase capacity over the route. From a freight perspective, BNSF believes sufficient capacity exists for the foreseeable future. Indeed, BNSF sees nothing in this corridor as "freight driven." BNSF indicated it will construct additional capacity in the corridor only as driven by growth in passenger train volumes.

In the future, it will be very important to monitor the capacity and needs of this corridor and advocate capacity improvements to meet the growth projections. This will require coordination between all stakeholders and partners to assure the capacity is available for this corridor and its communities to meet their respective needs. This may require a true public-private partnership including regional agencies such as metropolitan planning organizations, Sound Transit, Amtrak, rail freight customers, ports, local communities, as well as other stakeholders. Public funding could include safety improvements, such as grade separations. Private railroad funding could include improvements, such as longer sidings or additional mainline tracks. One of the options to eliminate passenger freight conflicts and to enhance capacity for both is to create a dedicated high-speed passenger rail track.

In addition to the above improvements, BNSF recently constructed a 10,000-foot clear siding at Colebrook, B.C. Colebrook is located where the British Columbia Railway (BCRC)[13] Port Subdivision from Roberts Bank merges with BNSF's mainline to New Westminster and is approximately halfway between Swift and Brownsville. Prior to constructing the new Colebrook siding, BNSF had no meet/pass locations between the border and Brownsville.

Dedicated High-Speed Passenger Rail Track

This is an emerging issue in the United States as 11 high-speed rail corridors have been identified, with projects in various stages of development. One of the most ambitious, California's high-speed rail system, eventually will connect San Diego with San Francisco and Sacramento.

Here in Washington, the concept of dedicating tracks solely for high-speed passenger rail is under discussion. There are many differing opinions that are not fact based. Typically high-speed passenger rail is defined as trains that are capable of moving at a rate of speed between 150 to 180 mph. Currently our rail lines are limited to a maximum of 79 mph. As has been discussed in this plan, the I-5 rail corridor is currently shared with passenger rail (both commuter and intercity) through the state from

[13] BCRC is a class II regional railroad owned by the British Columbia provincial government until it was sold to CN in 2004.

Vancouver, WA to Vancouver, B.C. The potential speed differential burdens both freight and passenger operations.

Thus, the high-speed concept needs to be explored in more detail to determine the true pros and cons of a dedicated corridor. One of the advantages of the concept of freight rail is that freight could re-gain rail capacity on the I-5 corridor rail line if passenger rail has its own dedicated rail line in that corridor.

An example of separating freight from passenger within a corridor is the Pt. Defiance Bypass project. This project plans to separate passenger trains from freight trains by re-routing passenger trains to an inland route that runs parallel to the I-5 highway from Tacoma to DuPont. The line will be extended to reconnect with the BNSF mainline in Nisqually.

The improvements will allow passenger trains to use the bypass route without being delayed by freight trains. This will result in:

- Improved passenger rail reliability.
- Provide faster and more frequent Amtrak *Cascades* service. Speeds will be increased up to 79 mph.
- Allow increased freight rail service around Pt. Defiance and along southern Puget Sound by eliminating passenger trains from the BNSF mainline.

Eastside Line

BNSF is in the process of abandoning this corridor and the Port of Seattle has committed to acquiring it through the federal abandonment process and rail banking two of the lines. The future use of the corridor has been discussed among various groups in the region for many years.

The Eastside Rail Corridor consists of a 42-mile rail corridor stretching from the city of Renton to the city of Snohomish, with an 8-mile rail spur running between the cities of Woodinville and Redmond. The rail corridor passes through the cities of Newcastle, Renton, Bellevue, Kirkland, Woodinville, Maltby, Snohomish, and Redmond.

In fall 2003, BNSF indicated its intent to divest roughly 42 miles of railroad corridor in east King and south Snohomish Counties from its operational rail lines. BNSF asked if there was public interest in maintaining/preserving this extensive corridor for transportation purposes. The Puget Sound Regional Council (PSRC) took on the question of "public interest" and conducted a series of discussions with the eight jurisdictions along the corridor plus WSDOT, Sound Transit, and several of the regions' environmental/bicycling interests. The resulting

recommendation to preserve the corridor for future transportation uses was endorsed by PSRC's Executive Board, who unanimously agreed that this regional rail corridor should be preserved for future transportation uses and communicated this regional interest to BNSF in July 2004.

The final PSRC recommendations, completed in 2007, proposed transportation uses over different time periods such as short, medium, and long term. The findings include:

- This unique corridor should be preserved.
- It is not a strategic regional or state freight rail corridor.
- Freight rail access to Boeing's Renton plant needs to be preserved.
- Prior regional public transit studies in north-south Eastside Corridor need to be respected.
- "Medium-term" timeframe is needed to achieve long-term passenger rail objectives.
- The cost effectiveness of trail development should be optimized.

Port of Seattle is currently in the final acquisition stages to purchase this corridor. It is anticipated that this transaction will close by early 2010. The Eastside Corridor has two portions: the northern portion, between Snohomish and Woodinville, and the southern portion, which stretches from Woodinville to Renton and includes the Redmond spur. Under the terms of the acquisition agreement, BNSF agreed to select a third-party rail operator to maintain the operation. The operator will pay the Port of Seattle for the rights to use the land and will provide freight rail service for shippers in Snohomish County.

Positive Train Control Implementation

Both the BNSF and the UP face a new capital expenditure requirement as a result of the recent Federal Railroad Administration (FRA) and Congressional decision that mandates that Positive Train Control (PTC) be implemented on all mainline corridors that carry both freight and passenger trains. The legislation, passed in the wake of a head-on collision in California between a UP freight train and a Metrolink commuter train, requires the installation of PTC by the end of 2015. The legislation also requires that PTC be installed on all routes that handle certain hazardous materials.

As a practical matter, this means that the U.S. freight railways will be required to install PTC on virtually all mainline corridors. Nationwide, it has been estimated that implementation of PTC will cost billions. The capital requirements needed to meet the PTC mandate is likely to place further pressure on discretionary capital spending for capacity expansion

The major U.S. railroads, including BNSF, UP, CSX Corporation, Norfolk Southern, and Kansas City Southern, have been in various stages of testing PTC for a number of years. One of the significant issues the railroads have been dealing with is inter-operability, or the ability of the PTC systems of each railroad to communicate with another railroad's system when locomotives are operating on another railroad. As a result of the recent legislation, the railroads have initiated an effort to develop a system that will work across all of the railroads.

Impacts of Dam Breaching or Loss of the Columbia-Snake Inland Waterway System

Transportation System Impacts

The current Columbia-Snake Inland Waterway System is efficient for moving cargo. This system provides shippers with an alternative to shipping by rail, imposes price competition on the railroads, and supplies sufficient capacity to absorb substantial fluctuations in grain shipments, especially during peak export months and years. The major components of the existing barge transportation system include:

- Barge terminals and river elevators.
- Access roads to the barge terminals and river elevators.
- Navigation channel.
- Locks.
- Barge fleet.
- Export elevators.[14]

To complicate this issue is the fact that the waterway is owned and controlled by the Army Corp of Engineers.

Siltation has been problematic in the McNary Dam pool, which is the first Columbia River dam below the Snake River. If the Snake River dams were to be breached (removed), much of the grain (and other commodities) that is now barged on the Snake River could be expected to shift to loading or unloading facilities in the McNary Dam pool. Elimination of barge transportation on the lower Snake River will result in a less efficient system for moving freight.

In addition to the effect that dam breaching would have on the barge system, transportation impacts would also be shifted to the road and rail systems in the region. The mainline rail system, short-line rail system, and state and county road systems could all be expected to carry an increased share of the freight now shipped by barge. Depending on the

[14] Export elevators are elevators that can load export ships directly from the elevator.

closure all grain currently shipped by barge may be shifted to rail. This could cause capacity constraints to be reached.

The short-line rail system can also be expected to handle an increased volume of grain if the Snake River dams are breached. Unfortunately, the short-line railroads that currently operate in the grain-producing region of eastern Washington only generate enough revenue to cover operating costs, and are not generally able to finance capacity upgrades. Rail-served grain elevators may also require substantial capital improvements, if they are to handle the grain expected to shift from barge transportation. Many of these elevators have not been used for rail loading in years, and the condition of their equipment is unknown. Additionally, the rail sidings at many of these elevators are only long enough for three cars, while the current standard for sidings is a minimum of 25 or 26 cars.

The highway system will also face increased costs, due to shifting transportation patterns. Roads that were not designed and constructed to handle large volumes of truck traffic can be expected to face increased maintenance costs.

Other issues to be considered in this discussion are:

- The need for the eastern Washington producers to continue to move containerized commodities such as peas and lentils.
- The need to move products from the coast to eastern Washington that barges will not handle, such as fertilizers.
- The cost of long distance trucking as compared to either rail or barge.
- The transportation of products that do not have access to a waterway.
- Rail competitiveness as compared to barge and truck.

Rate Impacts

The fact that the region served by the Snake River barge system is also served by railroads means that neither mode of transportation is able to charge monopoly rates for service. Breaching the Snake River dams, however, would decrease competition and would likely lead to rate increases. According to the National Corn Growers Association, “it has been demonstrated numerous times that areas throughout the country that do not have access to barge transportation have higher rail rates.” The Tennessee Valley Authority examined the effect of barge transportation on rail rates on the upper Mississippi River, and concluded that “the continued availability of water transport appears to have a significant impact on the pricing behavior of other surface transportation modes—at least when these modes are reasonably close to the river. In particular,

there is a large body of economic literature, which suggests that available barge transportation effectively constrains railroad pricing for the transportation of commodities that are moved by barge. These barge-constrained rail prices have come to be called 'water-compelled' rates."

Statewide Information and Data Needs

The United States Department of Transportation (USDOT) and FRA are aware that statewide information and data is needed by the states in order to develop statewide rail plans. In these plans, the states set policies for freight and passenger rail transportation within their boundaries, establish priorities and implementation strategies that enhance rail service in the public interest, and serve as the basis for federal and state rail investments within the state. Currently, there is not enough data collected by the states or for the states in order for the analysis to be done to meet all of these expectations.

It is recognized that not only does the data need to be available but this data needs to be centralized into a designated office within state Departments of Transportation. The USDOT expects that these state rail plans will provide detailed insight into the concerns facing state transportation systems and set forth state visions of how rail transportation can address those issues. An element that the USDOT views as necessary includes multimodal transportation, especially ways in which modes can be integrated to serve transportation customers more effectively and efficiently.

States are in a unique position to provide information on local rail bottlenecks and resulting traffic congestion. Such information can affect the movement of goods and people, not only in that location but throughout the rest of the corridor as well. This lack of information can negatively affect the larger transportation network. Resolving such issues can improve transportation flows and positively affect the movement of goods and people far beyond state borders.

The current lack of a centralized point of data collection and retention limits the depth of the analysis that can occur on the system as a whole. As discussed throughout this plan, it is critical that the rail within the state and the nation be viewed as a total system and not individual ownerships or projects. Rail is one mode in the U.S. transportation system and it must be viewed as a part of the whole transportation system that must adequately and efficiently move both goods and people.

An example of the lack of critical information needed for decision makers is adequate data on short-line railroads within the state.

Short-line railroads (approximately 2,000 operating miles) are essential to the state economy, yet the state has virtually no physical condition information about these railroads. Most short-line railroads have no detailed condition inventory, while others have not updated their detailed condition inventory for many years.

A detailed, physical condition inventory of the state short-line railroad lines and facilities is needed to guide state investments for rail projects, specifically in the areas of project level analysis, infrastructure delivery planning, and decision making about rail infrastructure improvements. The condition inventory is estimated to cost between $1 million to $2 million, depending on level of detail and inclusivity required in the inventory.

A Statewide Rail Information Center Is Needed

A Statewide Rail Information Center would enable transportation planning and policy development to incorporate rail information to better support economic development and societal needs to address unexpected and disruptive events. A great deal of rail information and data exists at national, state, and regional levels. However, such data and information were not systematically organized and normalized to meet the needs of transportation planning and regional socioeconomic development.

The fact that rail information and data was not developed in a consistent way over time becomes a barrier for integrating rail information in transportation decision making. Gaps exist between availability of rail data and information and the needs for such data and information. This center would be able to develop needed data systematically and consistently to meet WSDOT's needs.

Regional economic planning organizations, transportation planning organizations, local communities, private industries, and information producers have a strong need for a statewide information center. This information center would assist these stakeholders to meet the challenges of systematically and consistently collecting, developing, and distributing freight information and data.

Summary

To retain the state's ability to compete in the complex world of goods movement, the state and its partners must position the state to provide efficient rail transportation. In order to accomplish this goal, the partners must work together to collect data that can be used to identify the chokepoints in the system. Those chokepoints must then be evaluated to determine their costs and benefits to both public and private stakeholders. A priority list must be developed based upon this analysis so that

policymakers can make educated decisions on the improvements that need to be funded and when. Working together the state can build an efficient rail network to support it citizens, businesses, and customers.

Washington State
Department of Transportation

Chapter 6: State Roles and Partners

Washington State's Current Roles

Transportation planning is an ongoing collaborative process to develop a multimodal transportation system that:

- Supports sound transportation investment decisions as evidenced in the overall program and its elements.
- Supports economic vitality.
- Increases safety and security.
- Increases accessibility and mobility options.
- Protects the environment and improves quality of life.
- Enhances system integration and connectivity.
- Promotes efficient system management and operation.
- Emphasizes system preservation.[1]

"Moving Washington" articulates Washington State's (state) vision for transportation. The vision focuses on improving freight rail capacity, promoting public safety, maintaining economic viability, and enhancing environmental sustainability. State roles support this vision through varied legislative statutes.

Four groups within the state government have legislatively mandated roles and responsibilities for oversight, management, and implementation of the state's interest in passenger and freight rail. They are the Washington State Department of Transportation (WSDOT), the Freight Mobility Strategic Investment Board (FMSIB), the Utilities and Transportation Commission (UTC), and the Washington Community Economic Revitalization Board (CERB).

Washington State Department of Transportation

WSDOT is charged with planning, funding, implementing, constructing, and maintaining the multimodal transportation system in this state. As such, it is the conduit for state and federal transportation dollars. Freight and passenger rail programs are housed within the State Rail and Marine Office. See Chapter 1 for authorizing statutes.

WSDOT is the steward of a large and robust transportation system, and is responsible for ensuring that people and goods move safely and efficiently. In addition to building, maintaining, and operating the state

[1] WSDOT Planning Office, www.wsdot.wa.gov/planning/.

highway system, WSDOT is responsible for the state ferry system, and works in partnership with others to maintain and improve local roads, railroads, airports, multimodal transportation facilities, and promote programs that encourage citizens to use alternatives to driving alone.

WSDOT works towards supporting the following statewide transportation policy goals established by the state legislature for all public investments in transportation:

- Safety.
- Preservation.
- Mobility.
- Environmental quality.
- System stewardship.

State Rail Transportation Authority

WSDOT is the agency that oversees multimodal planning, including rail, at a statewide level. The WSDOT State Rail and Marine Office provides project management, oversight capacity, and editorial control over the *Washington State 2010-2030 Freight Rail Plan*.

State Rail Approval Authority

The WSDOT Secretary of Transportation is the state-designated approving authority for the *Washington State 2010-2030 Freight Rail Plan*.

State Freight Rail Plan Advisory Committee

The State Freight Rail Plan Advisory Committee serves as the external rail advisory body for the *Washington State 2010-2030 Freight Rail Plan.*

Internal Advisory Group

The WSDOT Strategic Planning and Programs Office coordinates statewide multimodal transportation planning, priorities, and issues, including programming and financial planning.

WSDOT State Rail and Marine Office

The State Rail and Marine Office, which is part of the WSDOT Freight Systems Division, has a strategic leadership role for freight rail investment that is essential to manage the state's freight and passenger rail capital programs and operations.

Strategic Planning

The State Rail and Marine Office coordinates with public and private sector partners to develop strategic rail plans, policies, and legislative proposals that guide strategic investment in freight rail transportation. The office conducts legislative-directed policy and legislation analyses and strategic investment assessments. It develops and uses benefit/cost tools that reflect legislative priorities and stakeholder interests to prioritize freight projects and evaluate funding requests. It also develops strategic plans, such as the *Washington State 2010-2030 Freight Rail Plan*.

Program and Project Management

The State Rail and Marine Office manages freight rail programs and projects (i.e. capital construction projects, Freight Rail Investment Bank, Freight Rail Assistance Program, Grain Train program, Produce Railcar program, and state-owned rail lines discussed in Chapters 3, 5, and 8) that promote the goals of the freight rail system. Some increase public safety by reducing at-grade crossings with high accident potential (WSDOT/FMSIB projects), while others enhance capacity or leverage federal funding sources that enhance economic viability to meet the needs of the overall state economy.

Statewide Freight Rail System Utilization Data and Information

The State Rail and Marine Office helps stakeholders build an understanding of the issues and think about the potential of freight rail as part of a strategic multimodal transportation system. The office conducts research and analyses for freight policies and legislations. It develops and provides statewide freight rail system utilization data and information that is essential for regional and local freight planning and operations. Examples include freight rail system databases, physical and condition inventories, maps, needs assessment analysis, capacity studies, commodity flow and socioeconomic impact analyses, and freight modeling to forecast future capacity and needs.

Public Outreach

The State Rail and Marine Office provides outreach consistent with state and federal policies to increase public awareness and to broaden the understanding of railroad system costs, benefits, and investments necessary to form a cohesive and efficient multimodal transportation network.

In the past 18 years, the State Rail and Marine Office has used its powers and authorities under Chapter 47.79 RCW (high-speed ground transportation), Chapter 47.76 RCW (rail freight service), and Chapter 47.06 RCW (statewide transportation planning) in the following ways:

- To develop the Amtrak *Cascades* service as part of its high-speed intercity rail program.
- To acquire and preserve rail lines and rights of way abandoned by Class I railroads (and other railroads).
- To provide assistance to short-line railroads to maintain service for shippers and receivers who do not have access to mainline rail service.
- To lease specialized railcars (e.g. hopper cars for the Washington Grain Train program, refrigerated cars for the Produce Rail Car program) to ensure an adequate pool of equipment for state growers.
- To develop Amtrak *Cascades* long-range and mid-range plans, and coordinate with other statewide planning efforts.
- To develop a benefit/cost methodology to evaluate projects for potential investment.

The State Rail and Marine Office is currently managing more than 50 capital rail projects that are proposed, funded, or underway, and support freight and passenger rail mobility in the state. When completed, these rail projects will result in improved freight mobility, improved safety, reduced rail congestion, upgraded tracks, and improved frequency of Amtrak *Cascades* passenger rail service.

The State Rail and Marine Office follows a rail improvement strategy for state participation that is consistent with the Washington State Constitution. There are a number of provisions in the constitution that limit the state's involvement in the private rail system. The guidelines outlined in Article VIII of the constitution, "State, County, and Municipal Indebtedness," limit the extent to which the state, counties, or cities can give or loan credit to corporations. The provisions of RCW 47.76.250 (essential rail assistance account - purposes) address this limitation by clarifying how a state may participate in projects with private ownership. This RCW also allows private entities that meet minimum eligibility criteria to receive grant funds, if contractual consideration is provided in return. At a minimum, such contractual consideration shall consist of defined benefits to the public with a value equal to or greater than the grant amount, and where the grant recipient provides the state a contingent interest adequate to ensure that such public benefits are realized.

Freight Mobility Strategic Investment Board

FMSIB was created by the Washington State Legislature in 1998 and is established as a rule-making board by RCW 47.06A.030. Its purpose is to administer projects and strategies that lessen the impacts of freight movement on local communities and facilitate efficient and profitable freight movement in the state. The 10-member board has representatives from state ports, railroads, cities, counties, WSDOT, the Governor's Office, truckers, marine operators, and private citizens. Periodically,

FMSIB issues a call for projects in order to maintain a 6-year list of active projects. FMSIB's past rail funding has primarily supported grade separation and crossing improvement projects.

Utilities and Transportation Commission

The UTC protects consumers by ensuring that utility and transportation services are fairly priced, available, reliable, and safe. The UTC is responsible for railroad safety under Title 81 RCW (transportation). The rail group is part of the UTC Safety and Consumer Protection Division, but separate from the Transportation Safety Group, which covers persons and property traveling on state roads. A primary responsibility of the rail group is to work with the Federal Railroad Administration (FRA) to inspect rail shipments of hazardous materials. There are more than 300 inspection points throughout the state, including shippers' facilities, railroad yards, and terminals.

Washington Community Economic Revitalization Board

CERB is a statutorily authorized state board. CERB is the state's strategic economic development resource, focused on creating and retaining jobs in partnership with local governments, and financing public infrastructure that encourages new development and expansion in targeted areas. It receives administrative support from the state Department of Commerce. It issues grants and loans that will retain existing jobs and create new ones, boosting business growth across the state. CERB can provide funding for rail projects that promote industrial development and has done so in the past. An example of this type of project was its $1,000,000 low-interest loan to the Port of Longview to help construct a second rail line and rail spurs serving a planned new facility for processing newly imported cars.[2]

Summary

Each of these groups within state government has knowledgeable staff that carries out its mandates effectively. However, the lack of a central point of contact and coordination makes it difficult for businesses, communities, and the railroads to work with the state. In some cases, it weakens the state's negotiating position.

The existing statutes, in Appendix 1-A, define the state interest in freight and passenger rail, assign roles and responsibilities for the oversight of the state's interest in rail, and establish a number of specific passenger and freight investment programs. The statutes provide a broad foundation for continued state participation in the preservation and improvement of the

[2] *Statewide Rail Capacity and System Needs Study, Final Rail Study Report*, Section 4.3, pp. 36-37, 2006.

rail transportation system, where there are public benefits to the state, its businesses, and its communities.

Washington's Strategic Partners

The state has a leadership role to encourage and build strong partnerships within the public and private sectors that ensures future economic competitiveness and viability among the railroads, ports, shippers, governments, communities, and other key stakeholders. Such partnerships are built on common interests, common understandings, and existing relationships. Appendix 6 contains a list of WSDOT freight partnerships. Some of these partners and partnerships are discussed below.

Freight Railroads

Freight railroads are business ventures. Their motivation to work with the state originates from the possibility of improved financial return. They increasingly recognize their important role in meeting public goals, such as improved air quality. Freight rail projects and policies that simultaneously boost a railroads' bottom line and advance the public interest may merit greater attention and resources from the state during the planning processes as railroads are more likely to reciprocate. Chapter 3 describes the state's railroads in more detail.

Ports

Ports are the only public agencies whose primary mission is to promote economic development, and the related businesses and jobs.[3] According to the Washington Public Ports Association (WPPA), there are 75 port districts in the state that were originally authorized in 1911 to provide maritime shipping facilities and rail/water transfer facilities. Since then, many additional authorities have been granted, such as building and operating airports (1941); establishing industrial development districts (1955); developing trade centers (1967); and developing economic development programs and promoting tourism (1980s). Ports provide the public a direct way to own and manage important community assets such as waterfront land and airport facilities. Chapter 5 describes the state's ports in more detail.

Shippers

Shippers are the public and private sector customers of the statewide rail system. They move a wide variety of goods, including raw materials, finished goods, and waste, from origin to destination, using rail and other modes of transportation. Top shippers are the manufacturers/industrial

[3] WPPA, Commissioner Resource Guide, www.washingtonports.org/downloads/commissionerresourceguide.pdf/.

carload shippers, the ports and international trade sector/intermodal container shippers, and the agricultural and foods products industry/bulk and specialized carload shippers.[4] Chapters 3 and 4 describe shipping demand and rail freight services in more detail.

Other Partners

Federal Railroad Administration

The FRA was created by the Department of Transportation Act of 1966 (49 United States Code 103, Section 3(e)(1)). The purpose of the FRA is to promulgate and enforce rail safety regulations; administer railroad assistance programs; conduct research and development in support of improved railroad safety and national rail transportation policy; provide for the rehabilitation of Northeast Corridor rail passenger service; and consolidate government support of rail transportation activities. Today, the FRA is one of ten agencies within the United States Department of Transportation (USDOT) concerned with intermodal transportation. It operates through seven divisions under the offices of the Administrator and Deputy Administrator.[5]

The federal government, through the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), requires coordination of the state rail plan with state transportation planning goals and programs. It also requires coordination of rail transportation roles within the state transportation system. Under the "Intergovernmental Coordination" section of PRIIA, the state should also review freight and passenger service activities and initiatives with regional planning agencies, regional transportation authorities, and municipalities.

Regional Planning Organizations

There are two types of transportation planning organizations in the state with coordination and development roles for projects and programs by region. A Metropolitan Planning Organization (MPO) is comprised of elected officials in an urbanized region with 50,000 or more in population. MPOs provide a forum for local decision making on transportation issues of a regional nature. Under the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the policy for the metropolitan planning process is to promote consistency between transportation improvements and state and local planned growth and economic development patterns.[6]

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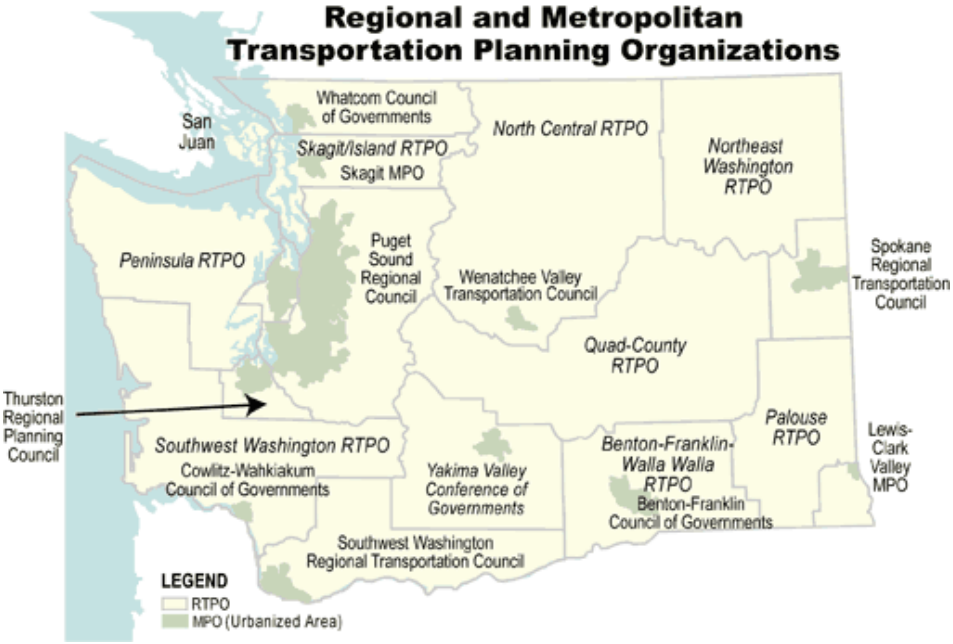
[4] *Statewide Rail Capacity and System Need Study*, Tech Memo 10.1, Analytical Plan, pages 4-5, 2006.
[5] FRA, www.fra.dot.gov/.
[6] MPO, www.wsdot.wa.gov/planning/metro/.

A Regional Transportation Planning Organization (RTPO) is formed through a voluntary association of local governments within a county or contiguous counties. RTPO members include cities, counties, WSDOT, tribes, ports, transportation service providers, private employers, and others. RTPOs were authorized by the state as part of the 1990 Growth Management Act to ensure local and regional coordination of transportation plans.[7]

MPOs and RTPOs are organized by function into executive, boards, policy boards, and technical assistance committees with supporting staff. Exhibit 6-1 is a map of the MPO and RTPO coverage across the state.

Exhibit 6-1: Regional and Metropolitan Transportation Planning Organizations



The MPO/RTPO Coordinating Committee includes a representative from each MPO and RTPO. It also includes a representative of the Tribal Transportation Planning Organization (TTPO). The TTPO is an advisory committee comprised of designated transportation planners from each tribe along with state and federal government representatives. The TTPO serves in a technical assistance and advisory capacity for tribal, state, and federal governments.

[7] RTPO, www.wsdot.wa.gov/planning/Regional/.

Tribal Governments

WSDOT maintains government-to-government relations with 35 federally recognized tribal governments. Twenty-nine tribes are located in the state; the additional six tribes have reservations outside the state, but have traditional homelands, treaty rights, or other interests within the state. Tribes may have public and private interests in freight rail development through the community and economic development arms of their governments.

Many tribes, including Chehalis Confederated Tribes, Colville Confederated Tribes, Kalispel Tribe, Nisqually Indian Tribe, Puyallup Tribe, Squaxin Island Tribe, Swinomish Tribe, Tulalip Tribes, and Yakama Nation, have reservation lands that are on or near railroad main lines or spurs. WSDOT will work with tribes to develop any potential rail-related projects and develop a detailed map that shows tribal reservation boundaries in relation to rail access.

WSDOT is committed to working with tribes to build durable intergovernmental relationships that promote coordinated transportation partnerships in service to all citizens. The *WSDOT Centennial Accord Plan* was created in accordance with the *1989 Centennial Accord* and the *1999 Centennial Accord Implementation Guidelines*. The *Centennial Accord* mandated that each state agency must have a procedure to implement effective government-to-government relations. The *WSDOT Centennial Accord Plan* includes the WSDOT Secretary's Executive Order on Tribal Consultation, a Dispute Resolution Policy, and detailed descriptions of the programs, services, and funding available to tribes from key WSDOT divisions and offices.[8]

Public-Private Partners

With funding limited for any infrastructure project, future investments may require involvement in public-private partnerships. Public-private partnerships are defined as a cost-sharing method of funding a project between public and private entities based on expected benefits. They may use a combination of funding sources and may include an integration of tax exempt bond financing (when available), state and federal loan guarantees, grants, or contributions from the railroads, as well as dedicated funding sources. Public ports use public-private partnerships, for example, in their lease arrangements for joint development of a terminal or facility. Ports transfer the future services rendered by a fixed

[8] WSDOT *Centennial Accord Plan*, March 2009, www.wsdot.wa.gov/tribal/Centennial_Accord.htm/.

asset (e.g., a container crane or other terminal facility) to a private organization, while retaining the title to that fixed asset.[9]

Strategic Rail Corridor Network

The Railroads for National Defense (RND) Program ensures the readiness capability of the national railroad network to support defense deployment and peacetime needs. The RND Program, in conjunction with the FRA, established the Strategic Rail Corridor Network (STRACNET) to ensure that FRA minimum rail needs are identified and coordinated with appropriate transportation authorities. STRACNET is a nationwide, interconnected, and continuous rail line network serving defense installations. STRACNET works with the FRA and USDOT's Surface Transportation Board, state departments of transportation, American Association of Railroads, American Railway Engineering and Maintenance of Way Association, Railway Industrial Clearance Association, and individual railroad companies to protect this railroad infrastructure.[10]

West Coast Corridor Coalition

The West Coast Corridor Coalition (WCCC) is a partnership of state departments of transportation, regional and local transportation agencies, ports, and related transportation organizations (both public and private) from Alaska to California. The WCCC has begun to identify regional, system-wide issues and develop a foundation allowing the coalition and its members to address issues and chokepoints that cross jurisdictional interests and financial boundaries.[11]

Strategic Planning

The State Rail and Marine Office recently participated in an FRA meeting as part of the development of a preliminary national rail plan. The issues discussed were summarized in the *2009 Preliminary National Rail Plan* (below).[12]

- Collaboration and stakeholder agreements.**
- Implementation timeline and evaluation criteria.***
- Need for public education/outreach.*
- Livability issues.
- Interconnectivity.*
- Sustainable federal funding.**

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[9] *Statewide Rail Capacity and System Needs Study*, Tech Memo 6, p, 25, 2006.
[10] RND, www.tea.army.mil/DODProg/RND/default.htm/.
[11] *West Coast Corridor Coalition Trade and Transportation Study*, www.wsdot.wa.gov/NR/rdonlyres/5A019EA4-50EF-4286-96F9-05398B52608A/0/_DR1_WCCC_TradeandTransportationStudy_COMPLETEweb.pdf.
[12] *2009 Preliminary National Rail Plan*, page 32.

- Sustainable state funding.*
- National equipment standards.**
- Environmental processes.
- Positive Train Control.*

* Issue was briefly discussed at the Seattle meeting.
** Issue was raised multiple times/discussed in greater detail at the Seattle meeting.
*** Most prominent issue discussed at the Seattle meeting.

The *2009 Preliminary National Rail Plan* addresses the need to rebalance the transportation system by strategically aligning the state rail plans and the national rail plan. It requires states to provide key leadership in developing common understandings, aligning goals, and taking actions that further state and national policy goals.

PRIIA (PL 110-432, Division B, Section 303) contains a legislative mandate that directs the FRA to develop a long-range national rail plan consistent with state-approved plans. PRIIA requires states to establish or designate a state rail transportation authority. This authority is responsible for:

- Developing statewide rail plans and policies for freight and passenger rail transportation within their boundaries.
- Establishing priorities and implementing strategies that enhance rail service in the public interest.
- Serving as the basis for federal and state rail investments within the state.

The FRA expects state rail plans to provide detailed insight into the concerns facing state transportation systems and to set forth their vision of how rail transportation can address those issues.

In addition to PRIIA requirements, the *2009 Preliminary National Rail Plan* provides the states with a framework of elements that the FRA views as necessary for creating a viable national rail plan. The FRA encourages states to collaboratively raise additional issues and provide other relevant information. States need to consider all other modes of transportation, especially ways in which modes can be leveraged to serve transportation customers more effectively and efficiently.

The National Rail Plan will examine passenger and freight corridors running through and between states, and coordinate the states' plans into a blueprint for an efficient national system, thereby meeting both regional and national goals. The majority of the infrastructure is owned and

maintained by the freight railroads. Therefore, the FRA will continue to work with states to develop plans that contain proposals or initiatives for partnering with freight carriers and other stakeholders in the development of plans and objectives.

The National Rail Plan will likely encourage rail development and growth, much like the model of the interstate highway system. The plan will also recognize that the traffic flow of passengers and freight rely on the connectivity of regional corridors that pass through several states.

Future Roles

Washington State

The *Statewide Rail Capacity and System Needs Study* (2006) made the following recommendations about building and aligning existing state powers and authorities to further the state interest in the rail system (some recommendations have been implemented):

- Influence the investment decisions of the Class I railroads to resolve rail chokepoints of critical importance to key rail user groups in the state and, thereby, provide more capacity for state rail users. This will generally involve public-private partnerships in which the state is a minority partner, but the state's investment can influence the timing and priority of the Class I railroads' investment decisions.
- Increase advocacy for a federal program that addresses critical national rail capacity needs. Many of the key capacity chokepoints in the state rail system affect the national economy and shippers outside of the state. The state should look for federal action and funding to address these chokepoints.
- Work with rail users in industrial and agricultural markets to assist in the transition to rail service models that preserve high quality, reasonably priced, rail service options. The state can help ensure that these transitions occur in a timely fashion before the lack of action has negative economic consequences for the state.
- Work with third-party service providers and advocate for innovative operations practices and services that support the economic development goals of the state and its communities.
- Establish local governance models that allow shippers and affected communities to be involved directly in the resolution of short-line problems.
- Support cost-effective intercity passenger rail options that improve the overall balance and performance of the state's highway and air passenger systems.

- Create a more effective, centralized, rail management function within state government with authority to advocate and negotiate state interests with the railroads.[13]

The study recommended that the state continue to participate in the preservation and improvement of the freight and passenger rail transportation system where there are public benefits to state businesses and communities. The study also recommended that state decisions to participate in projects, programs, and other rail initiatives be based on a systematic assessment and comparison of benefits and costs across users and across modes.

State Rail and Marine Office

Based on recommendations of this study and previous studies, the State Rail and Marine Office should continue to preserve and improve the rail transportation system, guided by the following general principles.[14]

1. Emphasize operations and nonfinancial participation in projects before capital investment.
2. Preserve and target competition.
3. Encourage private investment that advances state economic development goals.
4. Leverage state participation by allocating cost responsibility among beneficiaries.
5. Require projects to have viable business plans.

The State Rail and Marine Office should be designated by legislation as the single entity to coordinate and direct the state's participation in the preservation and improvement of the rail transportation system. The office should have the authority to negotiate directly with the railroads.

As a single entity performing these duties, the State Rail and Marine Office should be able to:

1. Represent the interests of multiple stakeholders in negotiations with rail carriers more effectively than individual stakeholders by themselves.
2. Develop strategic packages of projects and actions across the state that would effectively promote state interest and be more attractive to the rail carriers than dealing with projects on a case-by-case basis.

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[13] *Statewide Rail Capacity and System Needs Study*, Final Rail Study Report, Section 4.4 through Section 5.6, pp. 37-55, 2006.
[14] *Statewide Rail Capacity and System Needs Study*, Final Rail Study Report, Section 4.4 through Section 5.6, pp. 51-52, 2006.

3. Better serve the interests of multiple communities in resolving common rail issues.
4. Work more effectively with partners in other states and at the national level.

The State Rail and Marine Office should continue its leadership role to influence and shape state and national level development of rail policies and programs, including the coordinated development of multistate coalitions to address rail system needs across the Pacific Northwest.

The State Rail and Marine Office should continue its leadership role to work with the railroads to identify, prioritize, and implement the most cost-beneficial regional improvements.

The State Rail and Marine Office should also implement an asset management plan to govern investment and management decisions for state-owned rail assets. Guiding principles should include:

1. Decisions based on a business-case analysis of the goals and objectives for each class of assets.
2. Clear performance measures and a monitoring system to determine how assets are performing.
3. Benchmarks for each performance measure based on industry standards.
4. Development and use of an inventory management system, including information about condition and disposition of assets.

Continued Statewide Coordination and Partnerships

Public-public, public-private, and private-private partnerships of the future will increase in importance and include new financing mechanisms that involve multistate, multimodal coordination. The *Statewide Rail Capacity and System Needs Study* (2006) includes examples of innovative partnerships, such as rural rail transportation districts, multistate consortiums, statewide strategic partnership board, and rail operations forums. Rail operations forums, for example, are meetings of public and private sector rail stakeholders that are held on a monthly or quarterly basis. At the meetings, stakeholders discuss, plan, and implement operational actions that can improve the efficiency or velocity of the rail operations of the group.[15]

Investments in big projects with statewide public benefits will require public leadership and partnerships driven by public interest. With the American Recovery and Reinvestment Act of 2009 Track 3 and 4 grant

[15] *Statewide Rail Capacity and System Needs Study*, Tech Memo 10.3, pp. 1-8, (2006).

applications, for example, the lead agency of each project would need to develop a funding plan and partnership profile in order to demonstrate the 50 percent funding match and leverage funds for public funding support. To enable effective corridor-level system development with impacts beyond the confines of state boundaries, multistate multimodal coalitions and plans are needed. Such coalitions and partnerships, using a sound benefit/cost methodology based on goals and legislative priorities, will provide input into the state prioritization and investment processes to prioritize projects in the statewide public interest. The state will have an important leadership role to encourage partnerships that succeed in meeting future rail infrastructure priority needs.

Conclusion

The WSDOT State Rail and Marine Office has an increasing strategic planning role in statewide passenger rail and freight rail development. Clarification is needed to align the office's role and authority with the vision and goals developed earlier in this plan. To be in alignment with other state plans, the state passenger and freight rail plans should be combined into a "one-rail" plan and updated frequently in the future.

Washington State
Department of Transportation

Chapter 7: Investment Prioritizing and Project Evaluation

Freight rail has many benefits. With its cost effectiveness, fuel efficiency, safety records, and lower environmental impacts, freight rail is a viable option to help solve economic, social, and environmental problems with integrated solutions.

The freight railroads in Washington State (state) are owned mainly by private entities and for-profit companies. Despite primarily private ownership, freight rail transportation provides public benefits that warrant taxpayer participation in improvements at both federal and state levels. The common public benefits associated with freight rail include stimulating the state's economy, supporting local communities and businesses with jobs and revenues, reducing congestion, improving public safety, offering a transportation choice for shippers, reducing environmental pollution, and saving energy.

Investment policies in freight rail are developed by both public and private policymakers. However, the benefits and costs from public perspectives are very different than those from private perspectives. Therefore public investment priorities, criteria, and decision-making processes are also different from those of private investment.

Decision makers of public investment include federal agencies, state agencies, tribal agencies, and regional and local public entities, such as counties, cities, and ports. Private investment decision makers include private entities and individuals, such as railroads.

Public and Private Benefits

For rail-related investment, private benefits have typically accrued to rail carriers, shippers, rail property owners, and other non-governmental groups. Public benefits are broadly assigned to government agencies that represent taxpayers.

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA)[1] definitions of public and private benefit are described below:

[1] PRIIA (Public Law No. 110-432, Division B, enacted Oct. 16, 2008, Amtrak/High-Speed Rail).

Private Benefit

Private benefit is a benefit accrued to a person or private entity, other than Amtrak, that directly improves the economic and competitive condition of that person or entity through improved assets, cost reductions, service improvements, or any other means as defined by the Secretary.

Public Benefit

Public benefit is a benefit accrued to the public, in the form of enhanced mobility of people or goods, environmental protection or enhancement, congestion mitigation, enhanced trade and economic development, improved air quality or land use, more efficient energy use, enhanced public safety or security, reduction of public expenditures due to improved transportation efficiency or infrastructure preservation, and any other positive community effects as defined by the Secretary.[2]

Federal Requirements

The new law (PRIIA) requires the project list, in states' long-range service and investment programs, to document the anticipated public and private benefits and the public investment benefit-cost correlation for each project. PRIIA also specifies that states consider additional economic and societal impacts of investment projects (Exhibit 7-1).

Exhibit 7-1: Federal Requirements for Benefit Assessment and Documentation

Required Documentation for Each Project	**Anticipated private benefits**	• Economic competitiveness • Cost reductions • Improved assets • Service improvements
	Anticipated public benefits	• Congestion mitigation • Enhanced trade and economic development • Improved air quality • Improved land use • Enhanced public safety • Enhanced public security • Reduction in public expenditures • Community effects
	Correlation between public funding contributions and public benefits	***Statement and/or benefit/cost ratio***

Source: American Association of State Highway and Transportation Officials (AASHTO) *State Rail Planning Guidebook September 2009*

[2] *2009 AASHTO State Rail Planning Guidebook*

State Requirements

Under ESHB 1094, the Washington State Legislature required the Washington State Department of Transportation (WSDOT) to develop and implement the benefit/impact evaluation methodology recommended in the *Statewide Rail Capacity and System Needs Study*, which was published December 2006.

The study recommended that three categories of public benefits should be included in benefit/cost (B/C) analysis (Exhibit 7-2).

The study also recommended that the state measure benefits in terms of each user group. The measures that best describe the potential benefits and impacts to each group are presented in Exhibit 7-3.

Freight Rail Investment Analysis in Washington State

Priorities and Criteria

Projects should be evaluated using the same methodology that would provide consistent and objective comparisons to federal grants, state funds, local public entities, and private partners. The value of a standard methodology, or at least broadly accepted factors or parameters, is to establish mutually acceptable benefits vernacular for evaluating the projects side-by-side.

Priorities and criteria for evaluation reflect public investment policies and determine how the evaluation will be performed.

Benefit evaluation in this state will follow both federal and state priorities and criteria. PRIIA does not specifically require states to prioritize projects, but it does require a prioritization of options to increase intermodal connectivity. State legislation requires that WSDOT develop a B/C methodology and use it to evaluate state projects based on six clearly specified legislative priorities:

- Economic, safety, or environmental advantages of freight movement by rail compared to alternative modes.
- Self-sustaining economic development that creates family-wage jobs.
- Preservation of transportation corridors that would otherwise be lost.
- Increased access to efficient and cost-effective transport to market for the state's agricultural and industrial products.
- Better integration and cooperation within the regional, national, and international systems of freight distribution.
- Mitigation of impacts of increased rail traffic on communities.

Exhibit 7-2: Variables for the State Benefit/Cost Analysis

Variable Description	Explanation
Transportation and Economic Benefits	
Avoided maintenance costs	If the project preserves rail service, the no-action alternative may put more trucks on the highway. This may produce a net positive or negative benefit, to be evaluated based on the type of road affected and the cost of maintaining the rail line.
Reduction in shipper costs (for shipments originating in state) – freight only	Benefits are derived from lower logistical costs to the shippers, which ultimately can lead to lower consumer prices.
Reduction in automobile delays at grade crossings	Benefits result from improving grade crossings and decreasing automobile delays.
Economic Impacts	
New or retained jobs	Jobs that a particular project/action may keep from moving out of the state (e.g., by construction of a rail spur serving a factory or warehouse, etc.), or new jobs that are created within the state. Also to be considered are changes in job quality and pay levels (e.g., adding, losing, or changing union jobs). This measure accounts for both retained and new jobs.
Tax increases from industrial development	A rail action/project may foster industrial development that results ultimately in increased industrial property taxes to the state.
External Impacts	
Safety improvements	By diverting truck freight to rail, savings on highway safety improvements can occur.
Environmental benefits	Railroads are on average three or more times more fuel efficient than trucks. The state can benefit from savings due to environmental improvements.

Source: *Statewide Rail Capacity and System Needs Study* (2006)

Exhibit 7-3: Benefit and Cost Measures

Rail User	Benefit and Cost Measures
State	• Jobs created/retained (private sector, public sector, and impact on rail-related union jobs). • Tax benefits (through new or retained businesses). • Contribution to transportation system efficiency/balance (measured in terms of reduced travel delays, improved system reliability, or system redundancy as appropriate). • Environmental benefits (air pollution and water quality impacts). • Safety benefits (reduced property damage, injuries, and fatalities). • Availability of partner funding. • Cost to state. • B/C ratio (using recommended B/C analysis methodology)
Shippers	• Business cost impact (through impact on cost of service). • Access to service (does project increase rail/transportation service options). • Service reliability (on-time performance). • Transit time.
Passengers	• Rail capacity for passenger trains. • Travel costs. • Travel time. • Increased modal choice/access.
Railroads	• System velocity improvements. • Hours of train delay. • Yard dwell time. • Increased revenue traffic. • Equipment availability.
Ports	• Throughput. • Market share.
Communities (similar to state)	• Environmental benefits. • Safety benefits. • Reduced roadway delays and truck/auto delay at grade crossings. • Local jobs created or retained.

Source: *Statewide Rail Capacity and System Needs Study* (2006)

These priorities are in order of relative importance specified by the legislature. This requirement also directed WSDOT to evaluate rail project benefits compared to alternative modes.

Understanding Principles in Assessing Public Investment

Investment analysis in the public sector is very different from private sector analysis. There are several principles that must be understood in analyzing public investment and public benefits.

Discounting

Discounting addresses the problem of translating values from one time period to another. The larger the discount rate, the more weight that is placed on benefits and costs in the near-term, over benefits and costs in the future. Long-term benefits, such as environmental quality, are important public policymaking criteria. Consequently, public investment analysis usually uses a relatively lower discount rate than the private sector.

Leveraging

Public projects usually involve multiple sources of investment and partnership. While the analysis of such an investment assesses the efficiency, it also assesses the effectiveness of public investment only. In other words, a measure of the effectiveness of public investment is how much additional investment a public investment can bring into a specific project. This measure is called leveraging.

Distributional Benefits

Many public investment projects provide distributional benefits to the public by transferring public resources to where they are needed most. Such a transfer payment is not a traditionally defined benefit. It could be measured as a public benefit, if it helps reach the goal of public policy to benefit the targeted public group.

With/Without Principle

Many public investment projects provide benefits to the public by mitigating negative impacts. While such investment does not create positive value, it reduces the negative value. The difference between the larger negative value and the smaller negative value is defined as a benefit based on the with/without principle. For example, a freight rail capital project could lead to removal of some trucks from a highway. This will reduce environmental emissions since rail, in general, has less emission per ton-mile. Without such an investment project, societal loss due to higher emissions would be much larger. The reduced societal loss would be the benefit of the investment project.

Period of Analysis

The length of a period used for analyzing benefits and costs is very important. Many public benefits last for a long period of time, while investment occurs in early stages of a project life. Therefore, a full lifecycle is preferred in public investment analysis.

Evaluation Strategies and Methods

PRIIA-Defined Benefits and Potential Project Evaluation Strategies

Exhibit 7-4 outlines each of the PRIIA-defined benefits and potential project evaluation strategies for these benefits.

Exhibit 7-4: PRIIA-Defined Benefits and Evaluation Strategies

Benefits	Source of Benefits or Impacts	Potential Measurement
Economic competitiveness	Improved assets and service reliability or frequency allows companies to do business more efficiently.	Lower business costs (e.g., savings resulting from faster travel time and other improvements) increase the competitiveness and business attraction to the state.
Improved assets	Infrastructure, rolling stock, or facilities improvements.	Lower costs for capital maintenance of assets.
Cost reductions	Time savings provides unit cost reductions (labor, inventory, etc.) accruing to carriers, shippers, and passengers.	Lower total business costs (from all categories) and lower personal travel costs (e.g., less auto maintenance and gasoline; fewer hours of highway delay).
Service improvements	Time savings, improved reliability, new access, increased frequency, added capacity.	Time savings due to increased speed, reliability, and frequency accruing to rail passengers, carriers, and shippers.
Enhanced mobility of people and goods	Improved mode choice options and services.	Reduced distance to passenger stations or freight terminals and improved intermodal linkages.
Environmental protection or enhancement	This consideration is closely related to air quality effects (below) but could measure other benefits to water quality, wildlife, noise, historic resources, or other factors outlined in National Environmental Policy Act (NEPA).	States should use existing study information from Environmental Impact Statements (EIS), Environmental Assessments (EA), or other resources and customize to the unique characteristics of the project.

Benefits	Source of Benefits or Impacts	Potential Measurement
Congestion mitigation	Highway-to-rail diversion of passengers and freight decreases highway congestion. Investment in rail capacity decreases rail congestion.	Some statewide or multi-state highway models can predict change in hours of delay. Other tools, including FHWA's HPMS or HERS can be used to estimate delay effects. Rail carriers can predict similar measures.
Enhanced trade and economic development	Similar to the economic competitiveness measure with benefits originating from improved travel time, capacity, or improved access or connectivity.	Estimated increase in tonnage or value of commodities due to rail improvement.
Improved air quality	Changes in mode share are the chief drivers of air quality benefits. On a per-passenger-mile and per-ton-mile basis, rail generally produces more savings than other modes.	Use the change in miles traveled by mode to estimate the net reduction in emissions from standard factors for pollutants produced on a per-mile basis for passengers or freight.
Improved land use	Better coordination of transportation and land use.	Percentage of residents and businesses with good access to rail facilities/stations. Cost savings by reducing average trip distance to rail by auto or commercial vehicle.
Enhanced public safety	Reduced highway vehicle miles traveled (VMT) for truck and auto, lowering crash exposure.	Savings resulting from lower medical care, vehicle repair, highway delay, and legal costs associated with crashes. Standard cost of crash rates per mile.
Enhanced public security	Protecting the public from crime or terrorist events results in public cost savings similar in scope to those associated with safety.	Reduced risk of security incident resulting from investment in surveillance, physical barriers, or other measures.
Reduction in public expenditures	Improved transportation efficiency or infrastructure preservation from decreased highway VMT.	Savings from lower maintenance and safety directly resulting from lower auto and truck VMT.
Community effects	Enhanced livability provided by expanded transportation options, including intermodal linkages, walk-ability, and local commerce.	New or improved linkages between modes, high-density development, and non-motorized transport (e.g., walking paths, bike trails).

Source: *AASHTO State Rail Planning Guidebook* September 2009

Methods Recommended in the *Statewide Rail Capacity and System Needs Study* (2006)

The Washington State Transportation Commission (WSTC) *Statewide Rail Capacity and System Needs Study* used several sources of information to determine the variables to measure public benefits in the state, including the following:

- Best practices review of rail B/C methodologies used by other states and organizations.
- Consultation with area experts—including shippers, community association representatives, ports, railroads, and others—who are members of the Washington State Rail Study Technical Resource Panel.
- Metrics derived from established state policy as captured in the Revised Code of Washington and in previous case studies of state participation in the rail system.

The study recommended that B/C ratio be applied to all projects, both passenger and freight. The B/C ratio would enable state decision makers to evaluate cost-benefit tradeoffs and not focus solely on benefits. The precise calculation methodology for the B/C ratio is left to WSDOT to finalize and may vary depending on the project type and the level of investment. The study also recommended that the three category benefits (in Exhibit 7-2) are quantified in the benefit/impact methodology to be developed by WSDOT.

However, the B/C ratio is only one of the measures used to evaluate benefits and impacts to the state. Some of the other measures are also included within the B/C calculation, but they are also broken out separately so that decision makers can weight these more heavily when making decisions than they would be in a true B/C ratio. The framework does not recommend a specific weighting procedure, but leaves this decision to the legislature or the WSTC.

The study also recommended user group benefit assessment. Measures that best represent public benefit are determined for each user group. The metrics to characterize and measure the public benefit of a rail action are presented in Exhibit 7-3. The metric selection reflects the stakeholder involvement process in WSTC's study. Benefits and impacts of individual projects or groups of projects are evaluated for each of four groups of affected parties: 1) the state; 2) users (shippers and passengers); 3) carriers (railroads and ports); and 4) communities (affected by rail service to or through the community). The idea of the framework is to determine whether the impacts of the project or package on each group is positive or negative, and if the impact is high, medium, or low, relative to the needs

of that group. The results of this evaluation tell whether other parties should be involved in the project and what type of partnership arrangement is most appropriate. The evaluation of a project as having high, medium, or low benefits/impacts is always based on a comparison with some other action—at least a no-action scenario, but preferably at least one other option that may or may not involve providing the transportation service by another mode (Exhibit 7-5).

Exhibit 7-5: Possible Methodology to Measure Public Benefit in Washington State

	Measures	No action	Alternative A	Alternative B
State	Jobs			
	Tax/Fee Benefits			
	System Efficiency			
	Environmental Benefits			
	Safety Benefits			
	Partner Funding			
	Cost to State			
	Benefit/Cost			
	Transit Time			
	Summary State			
Shippers	Business Cost Impacts			
	Access to Service			
	Service Reliability			
	Summary Shippers			
Passengers	Rail Capacity for Passenger Trains			
	Travel Costs			
	Travel Time			
	Increased Modal Choice/Access			
	Summary Passengers			

	Measures	No action	Alternative A	Alternative B
Railroads	System Velocity Improvements			
	Hours of Train Delay			
	Yard Dwell Time			
	Increased Revenue Traffic			
	Equipment Utilization			
	Summary Railroads			
Ports	Throughput			
	Market Share			
	Summary Ports			
Communities	Environmental Benefits			
	Safety Benefits			
	Reduced Roadway Delays			
	Local Jobs			
	Summary Communities			
National	Percent Benefits in Washington State			
	Other States Benefiting			
	Summary National			

Source: WSTC *Statewide Rail Capacity and System Needs Study* (2006)

Rail Benefit/Impact Evaluation Methodology – Description

The benefit/impact evaluation method was developed in 2007, based on legislative direction and priorities specified by the legislature.

Stakeholder Involvement

WSDOT formed an advisory group that includes a broad range of stakeholders to guide the development of Rail Benefit/Impacts Methodology. The Advisory Committee consisted of the Freight Mobility Strategic Investment Board, Department of Commerce, Department of Agriculture, WSTC, labor, mainline railroads, short-line private railroads, representatives from cities and counties, various ports, legislative and Governor's staff, and WSDOT staff.

Guiding Principles

The Advisory Committee developed six guiding principles for the development process:

- Provide a benefit/impact evaluation methodology and supporting tools as recommended in the *Statewide Rail Capacity and System Needs Study* (2006).
- Develop a benefit/impact evaluation methodology that includes the priorities set forth in ESHB 1094.
- Develop a benefit/impact evaluation methodology that includes measurable public benefits.
- The *Statewide Rail Capacity and System Needs Study* (2006) recommends using only a few good measures, including applying qualitative analysis techniques.
- This document is dynamic and proposed alternative evaluation methods should be reviewed for incorporation or used as supplements.
- Decision makers will take into account the public interest and good, going beyond analysis of single stakeholder interests.

Rail Benefit/Impact Evaluation Methodology

The Rail Benefit/Impact Evaluation Methodology is comprised of the following components:

- Rail Benefit/Impact Evaluation Methodology (Guidance Document)
- Proposal Application
- Rail Benefit/Impact Evaluation Workbook
  - Legislative Priority Matrix
  - Project Management Analysis
  - User Benefit Levels Matrix
  - Benefit/Cost Analysis Calculator
  - Benefit/Cost Analysis Summary Sheet
  - Benefit/Impact Evaluation Summary Sheet

The components of the methodology are intended to assist the decision maker in the evaluation and recommendation process. The level of rigor applied to the use of any tool should recognize the type, size, and complexity of project and expectations of results.

Application Process

The application for a rail grant or loan is the document that gathers the initial information that will be evaluated for possible selection. The application needs to collect enough information to effectively start the evaluation and selection process. It also needs to contain information for follow-up calls to users and applicants.

Since calls for projects may be driven by a variety of factors and limitations, there needs to be clear communication on the application document to ensure the right information is gathered. A standard application may not fit all calls for projects; therefore the application may need to be modified to gather the appropriate information.

At other times, a project may simply be assigned without an application process through legislation. Such a project still requires that a benefit/impact evaluation be conducted and the results and recommendations shared with the appropriate parties to validate the project or show the level of impacts and alternatives.

Benefit/Cost Calculator

The B/C Analysis is a major component of the Rail Benefit/Impact Evaluation Methodology that will be used when evaluating rail projects. The calculation (B/C ratio) produced will also be supplemented with an assessment of other benefit categories. That supplemental information will be generated by the requested project information in the application form. The major categories for B/C Analysis will be:

- Transportation and economic benefits.
- Economic impacts.
- External impacts.

The Benefit/Cost Analysis Calculator was created to assist in a fast evaluation of benefits as specified in the previous section. The Benefit/Cost Analysis Calculator is a spreadsheet with areas of benefit, equations for calculations, and benefit parameters to calculate the B/C ratio for a given project or action on a project.

The defined equations and input areas in the calculator are based on documented standards, research, and common practice. These equations will be periodically reviewed and updated with changes in industry practices, price indexes, and new accepted standards. The input values must be verified based on actual data and verifiable field information in consideration of expected project results, freight logistics, user logistics, local economic influences, current costs, impacts to industries, and historical data. The Benefit/Cost Analysis Calculator uses default values that are included in the equations contained in the Benefit/Cost Instruction sheet. They are used to calculate a dollar value for benefits. These default values are based on generally accepted practices and some may need to be adjusted for project specific goals and objectives. For more detailed information on the application of values to specific project objectives and

goals, a review of *NCHRP Report 586* should be done.[3] WSDOT economists will update these default values every biennium.

Legislative Priority Matrix

This qualitative evaluation tool was also developed to help policymakers understand the results and effects of proposed investment. One of these qualitative matrices is Legislative Priority Matrix. The Legislative Priority Matrix worksheet is intended to help the evaluator determine how a project aligns with the legislative priorities. The priorities were provided in a relative order of importance. Each priority area is weighted based on that order.

The benefit measures that have been identified for each priority are to be used as a baseline of measures. In the future, there may need to be other or different measures considered for a project. As the new measures and their parameters are identified and proven, they should be included for use on future projects. This matrix is used to aid benefit/impact evaluation in terms of state priorities and to provide additional information based on expert and value judgments to determine a project's public value.

Project Management Assessment Matrix

The Project Management Assessment Matrix is intended to help determine the current status of the project and how likely it can successfully be delivered within the constraints of scope, schedule, and budget. The scores are compiled to determine a project management score. The comment box should note how a score was determined.

User Benefit Levels Matrix

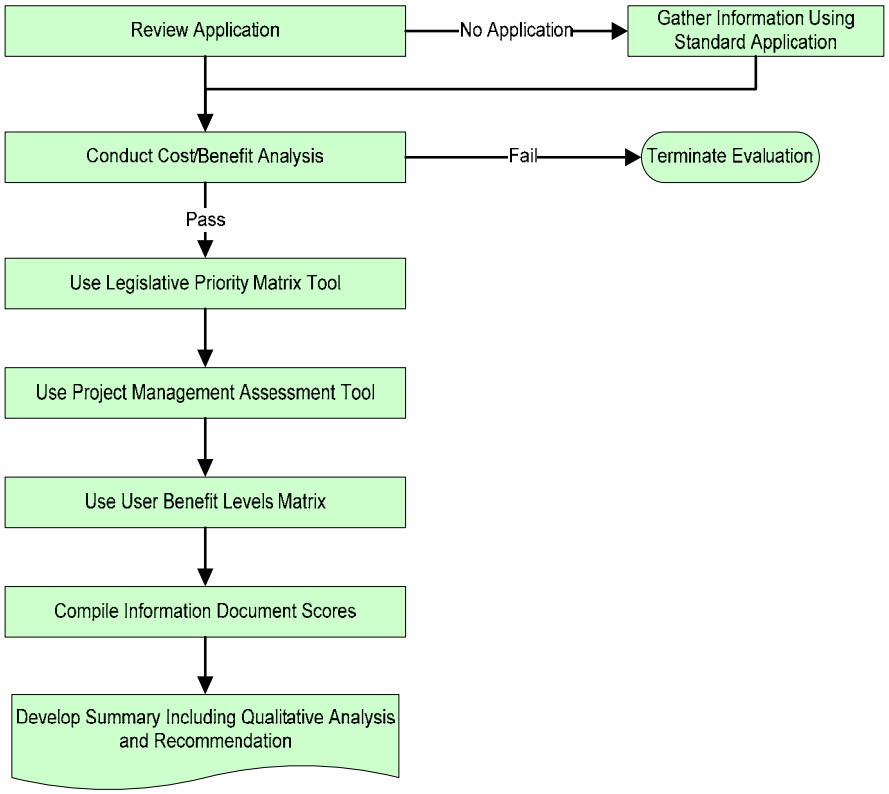
The User Benefit Levels Matrix is intended to help determine who benefits from the project and at what level. Each measure of the matrix is to be completed by assigning a percentage that represents the amount of benefit for each user. The percentage of benefits is then added for each user and divided by the number of measures used, to provide an overall project benefit for each user.

Project Evaluations

A project evaluation may begin with a proposal application or by a request from the legislature. Both will require evaluation steps to be completed as indicated in Exhibit 7-6 and as described below:

[3] TRB NCHRP Report 586: Rail Freight Solutions to Roadway Congestion - Final Report and Guidebook.

Exhibit 7-6: Benefit Impact Evaluation Process



1. Review the application or obtain information to conduct the evaluation. If there is no application, use the current general project application, eliminating superfluous questions. This is a tool to identify what information is needed from the project stakeholders.
2. Next, the WSDOT State Rail and Marine Economist will compile data for a B/C analysis and use the Benefit/Cost Analysis Calculator. Any additional data or information necessary to analyze the true benefits and costs will be included. This may require a qualitative analysis and summary.
3. If the Benefit/Cost Analysis Calculator indicates a ratio greater than one, then the Legislative Priority Matrix should be used. The evaluator should use the tool as indicated in its guidance for each priority measure. Once complete, justification for selections and a score will become part of the project documentation.
4. The evaluator will use the Project Management Assessment Matrix. If the evaluator has questions on any of the project management assessment areas, they should contact one of the State Rail and Marine Office Project Managers. This will ensure consistent interpretation with adopted standard operating procedures.
5. The final tool to be used is the User Benefit Levels Matrix. This tool helps determine which users are receiving a benefit and at what level.

6. Once a project has been through the above steps, the evaluator needs to compile all of the information to generate a score and to develop a recommendation. Depending on the project, a qualitative summary may need to be included to convey benefits that are not easily quantifiable.
7. If there are multiple recommendations, a summary should be written to incorporate all recommendations for easy review.

Decision Documentation

While the workbook spreadsheets provide documentation and justification for the decisions made, there may be additional documentation requirements. Documentation on value judgments that are qualitative rather that quantitative will need to have supporting information about the decision. When required, the decision documentation package should include:

1. Summary of spreadsheet determinations including alternatives.
2. Additional social or economical values considered.
3. Justification for value judgment determinations.
   a. Benefits and impacts reviewed.
   b. How the reviewed benefits and impacts apply.
   c. Determination considerations.
   d. Justification documentation.

Appendix 7 provides more details about the benefit/impact methodology.

Limitations and Future Improvements

Limitations

The Rail Benefit/Impact Evaluation Methodology has limitations:

- While this tool is a way to consistently evaluate proposed projects in a fast-paced legislative decision process, it is more suitable for smaller size projects that need decision support information in a short timeframe. Large investment projects need customized B/C analysis and socioeconomic impact assessment specifically designed for the project, based on both federal and state requirements and other specific considerations.
- While default benefit values built into the model can provide consistent and fast analyses to present valuable information, these values, in general, reflect an average of those benefits. Some projects deviate greatly from the average situation and might find that the benefit evaluation from the tool is not accurate. Again, large

investment projects need a customized B/C analysis and socioeconomic impact assessment to justify the size of the investment.

- The evaluation of societal impacts is standard in this tool. This might not reflect true societal impacts of some rail projects. Large investment projects need a more detailed assessment of societal impacts of the rail project.

Future Needs and Improvements

The methodology was developed primarily based on state requirements and federal requirements before PRIIA. The new federal requirements to evaluate and document project benefits have not yet been incorporated into the methodology. WSDOT is prepared to update the methodology when federal guidelines become available.

The Rail Benefit/Impact Evaluation Methodology and tools have been developed with the ability to expand future versions. One such expansion will be the inclusion of the information from the Statewide Rail Data and Analytic Program. This new information will be part of all project evaluations once it is available. Incorporation of this data into project evaluations will generate recommendations consistent with statewide freight strategic goals.

In addition, as changes in the economy and state goals occur, the methodology will need to be updated to ensure the correct benefits and measures are being used. The methodology addresses the need to use lessons learned for improvement as well as being dynamic enough to stay current. A technical work group will be put in place to periodically review baseline evaluation results and the latest evaluation results to ensure that the correct measures and benefits for the current freight conditions are being used.

Washington State
Department of Transportation

Chapter 8: Financing Washington's Freight Rail System

This chapter reviews the needs of Washington State's (state) freight rail system as identified by the stakeholders and Washington State Department of Transportation (WSDOT) staff. The project list is discussed followed by a synopsis of funding sources. The chapter concludes with the vision of future funding for state freight rail investments.

Needs for Investment

This section presents short- and long-term freight rail needs in the state. The needs assessment is based on unconstrained capital projects submitted directly by the state's railroads, ports, public agencies, and other key stakeholders. The needs assessment identifies 109short- and long-term statewide capital improvement projects and initiatives. The total investment needed for the projects, where cost estimates are available, is $2.0 billion.

Driven by customer demands and changing trends, freight rail needs constantly change. The primary purpose of the needs assessment is to develop a comprehensive project list of unconstrained, current priority freight rail improvements as identified by the stakeholders. This list will allow WSDOT to gauge the condition of the system and assess potential public involvement. The freight railroad system needs include both private and public sector capital improvement projects.

Inclusion of a need/project in the *Washington State 2010-2030 Freight Rail Plan* does not constitute a commitment on the part of WSDOT or the state to provide funding.

Exhibit 8-1 describes the needs identification process to develop the project list.

Exhibit 8-1: Needs Identification Process

Timeframe	Activity
March through June 2009	Develop the Projects Survey (online and PDF file formats) based on American Association of State Highway and Transportation Officials (AASHTO) guidelines, model rail plans, and key stakeholder interviews.
	Introduce the needs assessment and survey tool at the June 11 Advisory Committee kick-off meeting.
July through December 2009	E-mail the Projects Survey to Advisory Committee, railroads, ports, shippers, Metropolitan Planning Organizations (MPO)/Regional Transportation Planning Organizations (RTPO) Coordinating Committee, and associated organizations.
	Use e-mail, Web site, and e-newsletter to promote the survey and encourage responses.
	Open the survey to maximize responses. The survey was originally opened from July 31 to August 19, extended to August 21, then left open.
	Review survey responses and clarify any questions. Present a project list summary for discussion and suggestions at the September 30 and October 6 Advisory Committee meetings.
	Augment the project list and needs assessment based on suggestions, prior studies, sources, and knowledge of WSDOT project team.
	Evaluate and analyze the project list for inclusion in the plan.
	Review the project list with stakeholders as part of the overall plan review process.

Source: WSDOT State Rail and Marine Office

The plan does not include all of the statewide freight rail needs for several reasons. First, the freight railroads are private, for-profit businesses. In some cases, they did not submit all their capital needs for inclusion in this public document. This is especially true in cases where private capital is available to fully fund planned improvements, where railroads believe that public involvement in specific projects is less likely, and where disclosure of a need could adversely affect strategic business ventures. Second, the

outreach effort to develop the needs assessment/project list was limited due to resources available. Increased outreach to stakeholders could encourage respondents (i.e. more interviews, more rounds of review) to identify more projects. Therefore, the needs/projects list in this plan represents those projects that have been submitted and do not involve speculation or rumors.

The project list includes project information about the organization and railroad, project type, public benefits, private benefits, and project estimates and funding details. Projects range from well-developed projects to new concepts. Chapter 5 includes a discussion of large-scale emerging projects that are not included in the project list.

Projects Survey

The project list contains the detailed needs submitted by freight stakeholders participating in developing the *Washington State 2010-2030 Freight Rail Plan*. Appendix 8-A contains the project list that was generated by the Projects Survey with the following data collection fields:

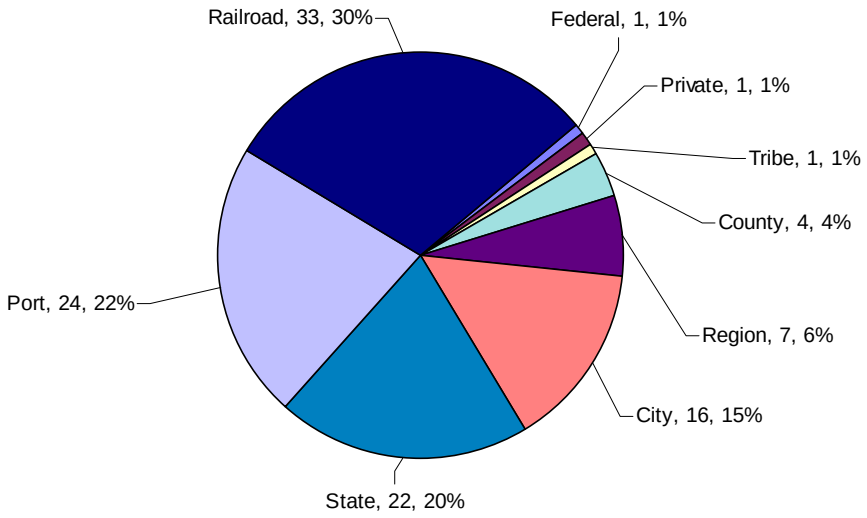
- **Respondent Information.** Organization, name, title (optional), e-mail address, and phone number.
- **Project Information.** Railroad owner (list of railroads was provided), railroad operator (list of railroads was provided), and any others involved in the project (optional).
- **Project Details.** Project name, location, description (optional).
- **Project Benefits.** Project type (list of project types was provided), public benefits (list of public benefits was provided, optional), and private benefits (list of private benefits was provided, optional).
- **Project Estimates and Funding Details.** Estimated total project cost, cost breakdown (preliminary engineering, right-of-way, construction, unknown), committed funds (federal, state, local, tribal, private, other), additional funds needed (federal, state, local, tribal, private, other), start dates (preliminary engineering, right-of-way, construction), and estimated project completion date.

The project list has been edited for length and clarity, but otherwise represents the extent of information provided by the stakeholder participants in the needs identification process. Thus, some cells are blank and, for some needs, there is a lack of cost estimates and other information that may become available in the future. The amount of detail provided varies by stakeholder. For example, a railroad may have included milepost information as part of the location description while another stakeholder may have referenced only the county.

Project Summaries

A general project assessment is provided below. Exhibit 8-2 shows the project respondents. Note that top respondents are ports, railroads, and the state.

Exhibit 8-2: Survey Respondents



Source: WSDOT State Rail and Marine Office

Estimated Completion Dates

Exhibit 8-3 shows a summary of projects and their project completion dates. Note that most of the reported project completion dates are 2010 and 2011.

Exhibit 8-3: Estimated Completion Dates

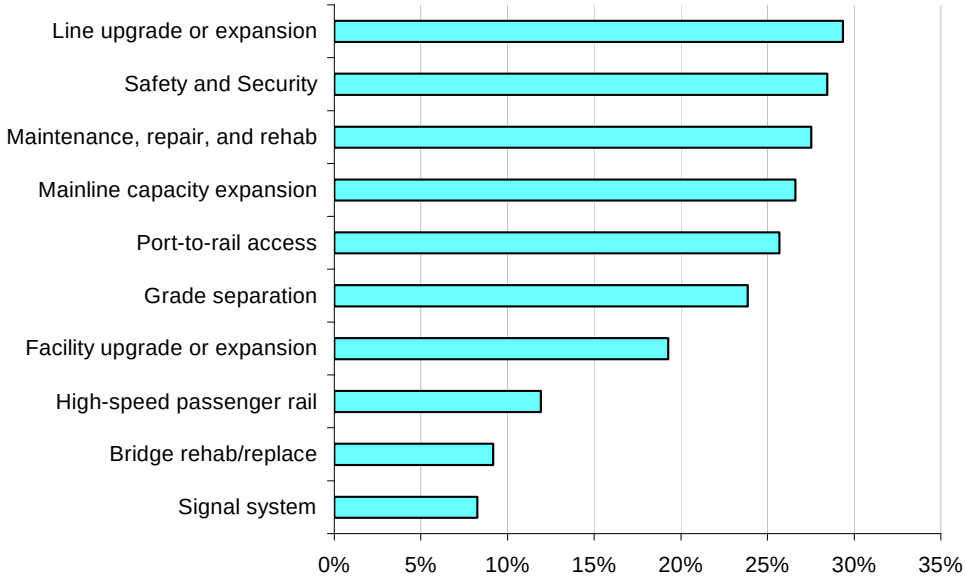
Year of Expected Completion	Number of Projects
2010	12
2011	21
2012	5
2013	4
2014	6
2015	2
2016	2
2018	1
2020	2
Not Specified	54

Source: WSDOT State Rail and Marine Office

Project Types

Exhibit 8-4 shows a summary of projects that reported project types (multiple choices are possible). Note that the top project types are line upgrade or expansion; safety and security; maintenance, repair and rehab; mainline capacity expansion, port-to-rail access, and grade separation projects.

Exhibit 8-4: Project Types

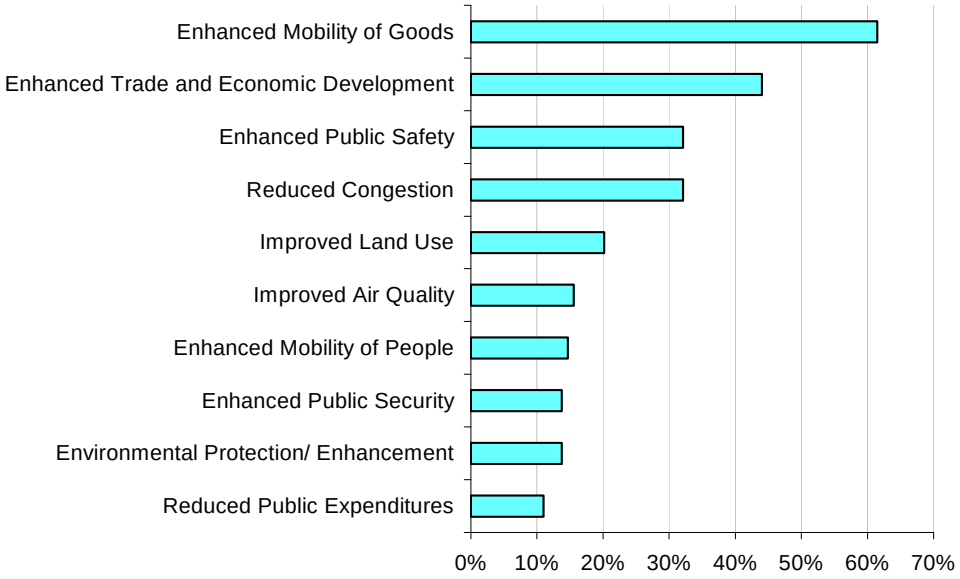


Source: WSDOT State Rail and Marine Office

Public Benefits

Exhibit 8-5 shows a summary of projects that reported public benefits (multiple choices are possible). The most common public benefit is enhanced mobility of goods, followed by enhanced trade and economic development, enhanced public safety, and reduced congestion.

Exhibit 8-5: Public Benefits

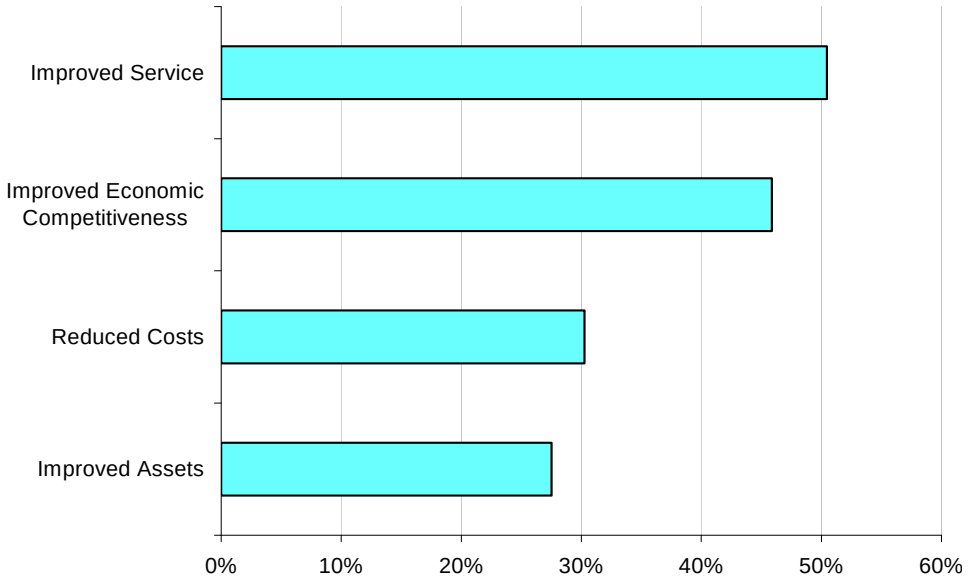


Source: WSDOT State Rail and Marine Office

Private Benefits

Exhibit 8-6 shows a summary of projects that reported private benefits (multiple choices are possible). The top benefit is improved service, followed by improved economic competitiveness, reduced costs, and improved assets.

Exhibit 8-6: Private Benefits



Source: WSDOT State Rail and Marine Office

Mainline Summary

Class I railroad owner or operator projects that reported project type (multiples are possible) are primarily mainline capacity upgrade and safety and security projects. The top public benefits are moving goods, trade and economic development, and safety and security. The top private benefits are economic competitiveness and improved service.

Short-Line Summary

Class II or Class III railroad owner or operator projects (not in the summary above) that reported project type (multiples are possible) are primarily maintenance and rehab, line upgrade, and facility upgrade projects. The top public benefit is moving goods. The top private benefits are economic competitiveness, reduced costs, and improved service.

Port-to-Rail Projects Summary

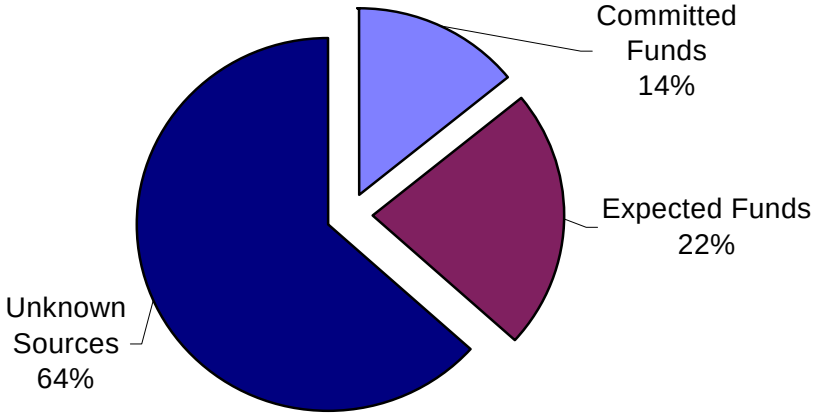
Of the reported projects, 26 percent listed port-to-rail access as one of the project types.

Funding Needs Summaries

Funding Needs by Commitment

Of the projects that report funding needs, only 14 percent are reported as committed funds, 22 percent are reported as funds expected from various sources, and 64 percent are reported as needs that have no identified sources (Exhibit 8-7).

Exhibit 8-7: Funding Needs by Commitment

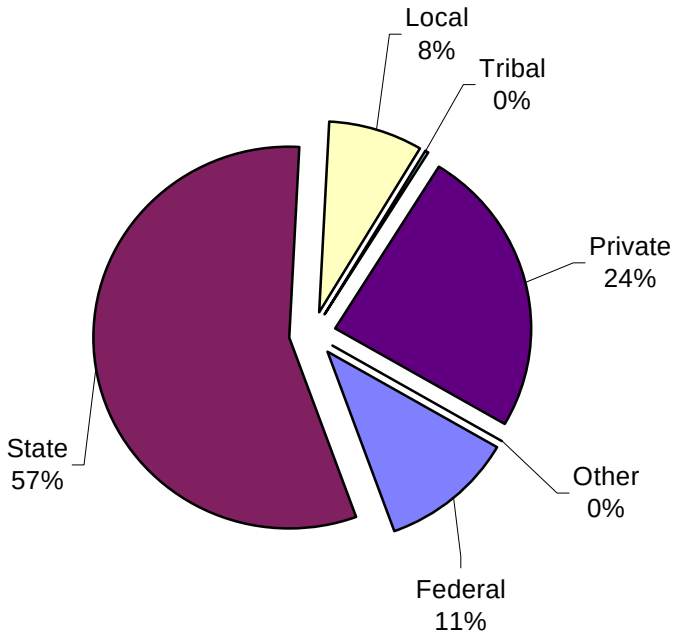


Source: WSDOT State Rail and Marine Office

Committed Funds by Source

Breaking down the committed funds portion further shows that of those projects that reported committed funds, 57 percent reported as state funds, 24 percent reported as private funds, 11 percent was reported as federal funds, 8 percent reported as local funds, and 2 percent reported tribal funding needs (Exhibit 8-8).

Exhibit 8-8: Committed Funds by Source



Source: WSDOT State Rail and Marine Office

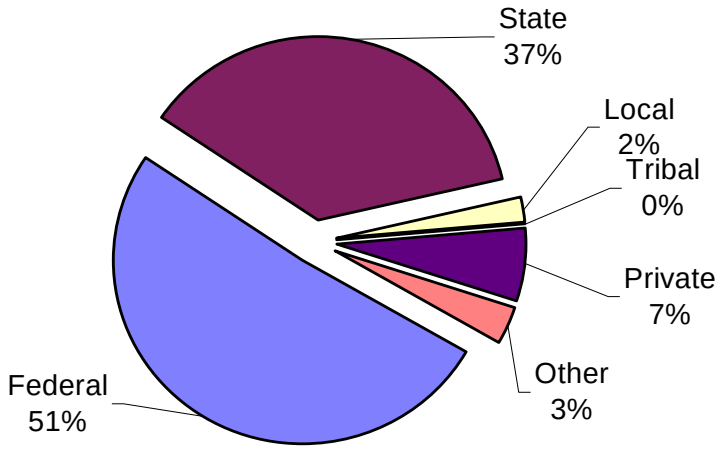
Expected Funds by Source

Of the projects that reported expected funds, 51 percent are expected from federal sources, 37 percent are expected from state, 7 percent are expected from private sources, 2 percent are expected from local funds, and 3 percent are expected from other sources (Exhibit 8-9).

The expectation of a 51 percent share from federal sources is very optimistic. This is 11 percentage points higher than the average federal aid of 40 percent for highway capital expenditure projects over the last 50-year history of that program.[1]

[1] TRB Special Report 297, Funding Options for Freight Transportation Projects, November 2009 pg 25.

Exhibit 8-9: Expected Funds by Source

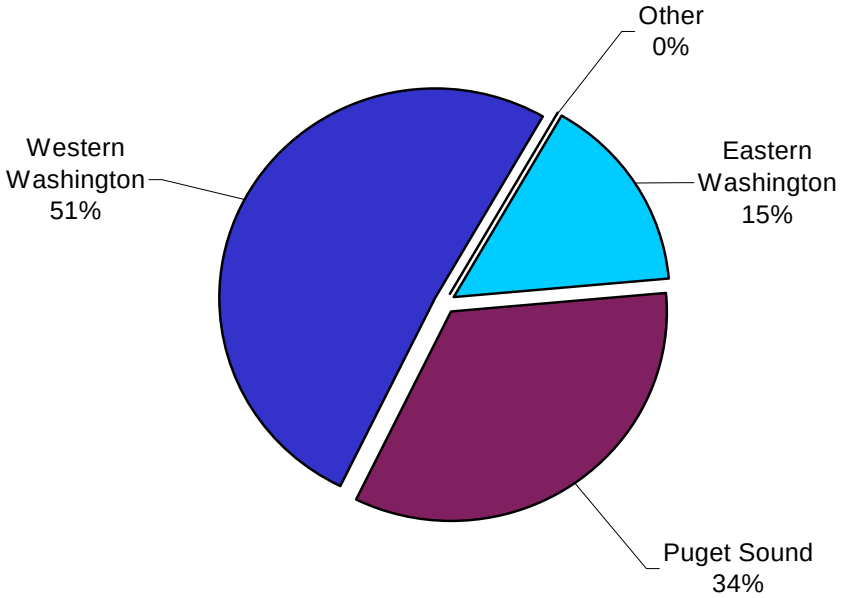


Source: WSDOT State Rail and Marine Office

Funding Needs by Area

In Exhibit 8-10, about half of the projects are located in western Washington, one-third is located in Puget Sound area, and most of the remaining projects are located in eastern Washington.

Exhibit 8-10: Funding Needs by Area



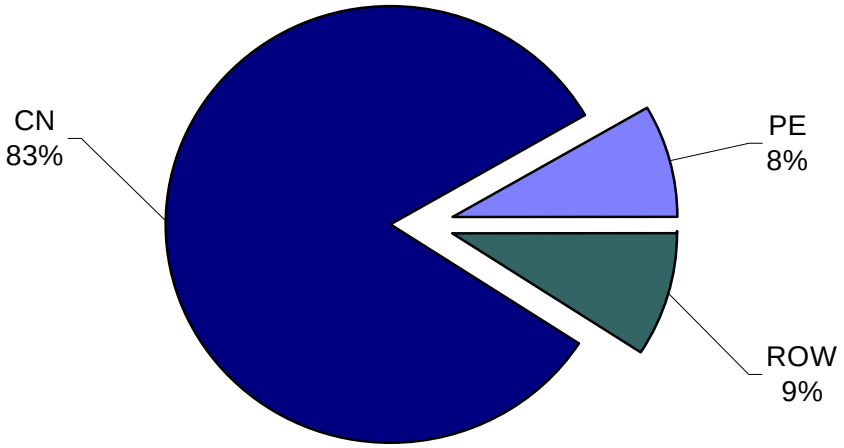
Source: WSDOT State Rail and Marine Office

Funding Needs by Phase

Of the projects reporting funding needs by project phase, 83 percent of the funding needs are associated with the construction (CN) phase of development. Right-of-way (ROW) and preliminary engineering (PE)

phases have funding needs of 9 percent and 8 percent, respectively, as shown in Exhibit 8-11.

Exhibit 8-11: Funding Needs by Phase



Source: WSDOT State Rail and Marine Office

The summaries above are very rough indicators, in part, due to the limited amount of data processing completed at this stage of freight rail statewide needs assessment. However, they do provide some value and insight into statewide need. The State Rail and Marine Office will continue to work with stakeholders to further clarify statewide need, improving the quality and quantity of the project information and analysis.

Funding for Freight Rail

All state and federal governments must address the needs for rail within the United States (U.S.). At the federal level, there has not been a dedicated nor consistent source of funds for rail development. This has resulted in rail receiving only 1 percent of the governmental expenditures as compared to the other transportation modes as shown in Exhibit 8-12 below. From 1995 to 2006, overall actual government funding for all modes has increased by 40 percent, with air transport doubling. Governmental support of rail expenditures remained at 1 percent of the total expenditure. Highway funding, as the largest sector at $99 billion, lost expenditure shares over a 10-year period, dropping from 63 percent of the total down to 50 percent.

Exhibit 8-12: Governmental Transportation Expenditure by Mode
($ Millions)

Mode	1995	% of Total	2006	% of Total
Highway	$90,075	63%	$99,784	50%
Transit	25,460	18%	44,097	22%
Rail	1,049	1%	1,548	1%
Air	19,250	13%	41,195	21%
Water	6,623	5%	10,888	5%
Pipeline	24	0%	91	0%
General Support	775	1%	1,795	1%
Total	**$143,256**	**100%**	**$199,398**	**100%**

Note: Percentages may not add correctly due to rounding.

Source: U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics, 2009

Numerous studies have identified the need for increased rail investment nationwide. Many of these studies called for the federal government to become a stronger rail investment partner.

On the passenger rail side, the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) authorized slightly more than $13 billion over a 5-year period to Amtrak and states to encourage the development of new and improved intercity rail passenger services. The American Recovery and Reinvestment Act of 2009 (ARRA) provides the ability for states to apply for funds to design and build high-speed rail corridors for passenger movement.

In addition to the high-speed rail grants, there are $27 billion of highway infrastructure funds available to states for "shelf" ready highway projects. States will receive the funds and will have 120 days to allocate those funds—each state has a large degree of freedom on what projects to fund. The $27 billion constitutes the majority of the funds destined for highway infrastructure spending under the stimulus act.

A third source of grant funds under ARRA is Transportation Investment Generating Economic Recovery (TIGER) grants. Eligible projects for this grant program include highway or bridge work normally funded under programs like the Surface Transportation Program; public transportation projects, such as those funded by the New Starts or Small Starts program;

passenger and freight rail infrastructure projects; and port infrastructure projects.

Eligible TIGER grantees include state, local, tribal, and territorial government entities, such as transit agencies, port authorities, and multijurisdictional coalitions. Award amounts will range from a minimum of $20 million to a maximum of $300 million, though the USDOT may waive the minimum threshold in the case of small projects.

These are examples of a substantially increased role of the federal government in funding the nation's passenger rail network. At the state level, the state funding has been accomplished through small funding sources that need to be reauthorized every couple of years.

Within the state the majority of the rail lines are privately owned and the majority of the passenger rail movements share these rail lines with freight. The efforts of the federal government has helped leverage other limited resources to improve our rail systems. But the needs for these rail system improvements always exceed the funding available for these improvements.

The state has had a longstanding involvement in passenger rail service, investing heavily to develop the Amtrak *Cascades* intercity passenger rail service. Since 1994 it has also provided emergency funding to failing short-line railroads and purchased specialized freight cars to ensure that agricultural shippers in the state have access to service and equipment.

The Washington State Transportation Commission prepared and submitted the *Statewide Rail Capacity and System Needs Study* in 2006. The key question asked by the legislature of this study was: "Should the state continue to participate in the freight and passenger rail system, and if so, how can it most effectively achieve public benefits?" The conclusion was that the state should continue to participate in freight and passenger rail systems.

The study concludes that the economic vitality of the state requires a robust rail system capable of providing its businesses, ports, and farms with competitive access to North American and overseas international markets. However, it also concludes that the mainline rail system is nearing capacity. Service quality is strained and rail rates are going up for many state businesses. The pressure on the rail system will increase as the state economy grows over the long term. It is recognized that although the long-term trend increases over time, there are major fluctuations year to year in the growth pattern. The total freight tonnage moved over the state rail system is expected to increase by 2 to 3 percent per year for the next

20 years. The state's role is necessarily shaped by the fact that nearly all freight railroads are privately-owned, for-profit companies.

The major freight railroads are investing to add capacity and improve service in the state, but their business practices and investment priorities are understandably driven primarily by the railroads' national-level needs and competition. The needs of state businesses and communities are just one part of the railroads' considerations. Additional investment and incentives for investment are needed to ensure a robust rail system that meets the state's economic needs, as well as the railroads' business needs.

A carefully planned program of state investments, and other actions that are consistent with the policies recommended by that study, will allow the state to realize a higher level of public benefits—in economic growth, jobs, tax revenues, and reduced community impacts—from the rail system than would be obtained without state participation. However, the state should invest only when it has been demonstrated that projects will deliver public benefits to the citizens and businesses of this state, and when it has been demonstrated that there is a low likelihood of obtaining those benefits without public involvement.

Advances towards a national rail policy and funding framework were more modest in the federal Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)[2] than many had hoped for. However, there is a growing recognition that multistate coalitions and the federal government will play a role in the future of the nation's rail system because the scale of the rail system transcends state boundaries. Recently, there has been emphasis in national transportation policy discussions of the need for a national rail policy to ensure that there is adequate investment to eliminate critical rail chokepoints and add needed capacity. The emphasis has increased as states have considered the difficulties of accommodating more truck traffic on highways and as shippers and motor carriers face increased fuel costs and labor shortages.

WSDOT is very active with the Federal Railroad Administration (FRA) in the development of the mandated National Rail Plan. This participation at the national level will enable the state to influence the plan development so that the state's needs are supported as well as the corridors and markets that are connected to the state's economy.

[2] SAFETEA-LU was the federal surface transportation authorization act that provides federal funding to state transportation agencies. SAFETEA-LU was enacted in 2005 and expired in 2009.

Current Funding Sources

State

The state provides several funding sources for priority freight rail investment projects that provide statewide public benefits. They are described by agency below.

Each of these agencies has knowledgeable and effective staff, and each carries out its mandates effectively; however, the lack of a central point of contact and coordination makes it difficult for businesses, communities, and the railroads to deal with the state, and in some cases, weakens the state's negotiating position.

Washington State Department of Transportation

WSDOT has the following funding programs:

Freight Rail Investment Bank Program

This grant program is managed by the State Rail and Marine Office. The Governor and legislature provided $5 million for the Freight Rail Investment Bank (Rail Bank) grant program for the 2009-2011 biennium. It is anticipated the Washington State Legislature will continue allocating $5 million for Rail Bank projects in the following biennia. The goal of the Rail Bank is to assist with the funding of smaller capital rail projects. Funds will be available for up to $250,000 and must be matched by at least 20 percent of funds from other sources.

The Governor and legislature expect these projects to be prioritized using the following priorities, in order of relative importance:

1. Economic, safety, or environmental advantages of freight movement by rail compared to alternative modes.
2. Self-sustaining economic development that creates family-wage jobs.
3. Preservation of transportation corridors that would otherwise be lost.
4. Increased access to efficient and cost-effective transport to market for the state's agricultural and industrial products.
5. Better integration and cooperation within the regional, national, and international systems of freight distribution.
6. Mitigation of impacts of increased rail traffic on communities.

Prior to 2009 the Rail Bank program was open to public sector participants only, participants such as publicly-owned railroads, port districts, rail districts, and local governments. However, in 2009 the legislature opened the loan program to eligible private sector organizations with projects that will further the state interest.

Eligible projects must have one or more of the following state benefits:

- Advance the state economic development goals.
- Leverage state participation by allocating cost responsibilities among beneficiaries.
- Demonstrate that there is a low likelihood of obtaining public benefits without public involvement.

Project examples include:

- Strategic multimodal consolidation centers. Project proponents to provide:
  - Service agreement from the BNSF Railway and/or the Union Pacific Railroad.
  - Volume commitment from shippers.
  - Business analysis of value offered.
- Rail rolling stock purchases (powered or unpowered).
- Intermodal transfer or transload facilities or terminals, including attached fixtures and equipment used exclusively for this facility.
- Terminals, yards, roadway buildings, fuel stations, or railroad wharves or docks, including attached fixtures and equipment used exclusively in the facility.
- Railroad signal, communication, or other operating systems, including components of such systems that must be installed on locomotives or other rolling stock.
- Siding track.
- Railroad grading or tunnel bore.
- Track including ties, rails, ballast, or other track material.
- Bridges, trestles, culverts, or other elevated or submerged structures.

Freight Rail Assistance Program

This is a grant program where the Washington State Legislature authorized WSDOT to provide grants to:

- Support branch lines and light density rail lines.
- Provide or improve rail access to ports.
- Maintain adequate mainline capacity.
- Preserve or restore rail corridors and infrastructure.

As required by Revised Code of Washington Chapter 47.76, projects must be shown to maintain or improve the freight rail system in the state and benefit the state's interests. Project proposals may be submitted if they include one or more of the following benefits to the state:

- Improve freight mobility.

- Increase economic development opportunities.
- Increase domestic and international trade.
- Preserve or add jobs.
- Reduce roadway maintenance and repair costs.
- Reduce traffic congestion.
- Improve port access.
- Enhance environmental protection.
- Enhance safety.
- Support economic viability of branch lines or light density lines.
- Maintain adequate mainline capacity.
- Preserve or restore rail corridors and infrastructure.

Project examples include:

- Rehabilitate tracks or restore tracks that were removed.
- Upgrade tracks to handle heavier rail cars and/or improve system velocity.
- Provide a rail connection to existing industries not currently served by rail.
- Develop rail infrastructure that can be proven essential to attract new businesses.
- Repair damaged rail infrastructure.
- Increase rail system capacity and/or velocity in general.
- Preserve a rail corridor.
- Improve connections to a port or transload facility.
- Construct transload or other facilities.
- Purchase or rehabilitate railroad equipment.

The Washington State Legislature has allocated $2.75 million for freight rail assistance projects in 2009-2011. The legislature will determine how those funds will be spent based upon the applications submitted through WSDOT. Appendix 8-B shows a list of historical and planned projects managed by WSDOT.

Two other boards that were created by the Washington State Legislature as mentioned in Chapter 6 are the Freight Mobility Strategic Investment Board (FMSIB) and Washington Community Economic Revitalization Board. Both agencies have grant programs for qualified projects.

Grain Train Revolving Fund

This revolving fund is a financially self-sustaining transportation program that supports Washington's farmers, short-line railroads, and rural economic development. The Washington State Grain Train Program operates without taxpayer subsidy. Operations of the Grain Train began in 1994 and it has grown to a 89-grain car fleet (71 are owned by the state,

and 18 are owned by the Port of Walla Walla). Currently, WSDOT is in the process of acquiring an additional 29 cars.

The grain train's day-to-day business operations support a unique revolving fund that pays for fleet expansion. It is an excellent example of a self-sustaining state financing model. The expansion financing is set up as follows:

- The grain shippers pay the railroads a haulage fee for the grain movement to the deepwater ports. The Class I railroads and the short lines share these haulage fees.
- The Class I railroads then pay the short line a "rental" fee for the use of the publically-owned grain hopper cars. These rental fees are deposited directly into the accounts managed by each of the three port districts; a portion of these funds are used for grain car maintenance, a portion is set aside for eventual car replacement (estimated 20-year life), and the rest is set aside and used as a "revolving' fund that is periodically tapped for fleet expansion.
- Once the revolving fund has grown large enough to purchase used grain hopper cars (a standard 26-car set plus three extras), a process is put into place to locate and purchase the said cars.

Federal

The funding sources described in this section are continuations of existing programs or were newly created by the SAFETEA-LU legislation. There had been high hopes that Congress would take a bolder stance on funding flexibility as part of the reauthorization process and allow funding of rail projects from highway provisions as was done for transit; however, this did not happen. There were successes, including the new provisions for Transportation Infrastructure Finance and Innovation Act (TIFIA) loans that allowed funding of freight projects. However, there continues to be a lack of diversity of funding sources for freight projects. This continues to be an obstacle to a major national funding program for rail. Highway agencies, much of the trucking industry, and portions of the construction industry are opposed to changing federal law to allow the Highway Trust Fund to be used for investments in non-highway projects, fearing that this will aggravate the current and expected shortfalls in investments in highways.

Another disappointing aspect of the 2005 federal surface transportation reauthorization process was the degree to which promising new programs were subject to project earmarks and how little discretion the USDOT was given in implementing these programs. This was particularly true of the National Corridor Infrastructure Improvement Program, the Projects of National and Regional Significance, and the Freight Intermodal

Distribution Pilot Grant Program. Almost all funds in those programs were earmarked by Congress to specific projects.

Nonetheless, the Federal Highway Administration (FHWA) is preparing regulations for these programs with the intent of influencing the character of the projects that were earmarked by Congress. While this might seem to be of little importance, it may still be beneficial for the state to comment on the regulations and to meet with the FHWA staff to influence the regulations for these programs and their future directions. This could set the stage for a more favorable outcome in the next reauthorization (as well as ensure that any project earmarks received by the state can be implemented consistent with the state's rail policies).

Congestion Mitigation and Air Quality Program

The Congestion Mitigation and Air Quality (CMAQ) Program was created in 1991 by the Intermodal Surface Transportation Efficiency Act. CMAQ was created to provide innovative funding for transportation projects that improve air quality and help achieve compliance with national air quality standards set forth by the Clean Air Act. CMAQ funds are often used for freight and passenger projects, including priority control systems for transit vehicles, intermodal facilities, rail track rehabilitation, and new rail sidings. CMAQ funds also can be used for construction activities that benefit private companies; if it can be shown that the project will improve air quality by removing trucks off the road. SAFETEA-LU provided $8.6 billion for the CMAQ program for the FY2006 through FY2009 period. The funds were fully allocated to the individual states. The state received approximately $153.241 million for FY2004 to FY2009.

Because CMAQ funds are allocated to states based on the population of local areas in the state that are in noncompliance, or seeking to maintain compliance with national standards for ozone and carbon monoxide, there is little that the state can do to increase its share. However, it can estimate its next CMAQ allotment and make plans for packaging funds with other sources to create the largest benefit to the rail system. Projects that will result in either maintaining or adding to the amount of traffic diverted from autos and trucks to rail would be particularly well suited for these funds.

Capital Grant Program for Rail Line Relocation and Improvement Projects

The Capital Grant Program for Rail Line Relocation and Improvement Projects was created under Section 9002 of SAFETEA-LU to fund local rail line relocation and improvement projects. States were eligible to receive grant funds from this program for the following types of rail projects:

- Rail line improvement projects serving the purpose of mitigating the impacts of rail traffic on safety, motor vehicle traffic flow, community quality of life, and/or economic development.
- Rail line relocation projects involving a lateral or vertical relocation of any portion of the rail line.

Section 9002 of SAFETEA-LU[3] authorized, but did not appropriate, $350 million per year for the FY2006 through FY2009 period. According to the grant allocation requirements slated under this program, at least 50 percent of the grant funds awarded under this program in a fiscal year must have been provided as grant awards, not to exceed $20 million each. The state or non-federal entity receiving the grant was required to pay at least 10 percent of the total cost of the project being funded by this grant program.

Projects of National and Regional Significance Program

The Projects of National and Regional Significance (PNRS) Program was created by Section 1301 of SAFETEA-LU to provide grant funds for high-cost projects of national or regional significance. Projects eligible for funding under this program included any surface transportation project authorized under 23 United States Code (USC) for assistance, including freight rail projects. In addition, projects must have had a total eligible project cost greater than or equal to the minimum of $500 million; or 75 percent of the total federal highway funds apportioned to the state where the project was located (in the most recent fiscal year). Federal shares for this program were generally 80 percent of total project cost.

Eligible project activities included development phase activities, right-of-way acquisition, construction, reconstruction, rehabilitation, environmental mitigation, construction contingencies, equipment acquisition, and operational improvements. Funds were allocated to projects based on a competitive evaluation process based on the ability of projects to satisfy criteria that included, but were not limited to, generating national economic benefits, reducing congestion, and improving transportation safety.

SAFETEA-LU authorized $1.602 billion for this program from FY2006 to FY2009. In the future, the state should consider positioning several of the larger rail infrastructure projects for PNRS funding, if available under the next transportation funding authorization. The state also should consider supporting projects under this program that are located in other states, but have significant benefits to this state.

[3] SAFETEA-LU authorization ended September 2009; no reauthorization has been passed at this time.

Freight Intermodal Distribution Pilot Grant Program

The Freight Intermodal Distribution Pilot Grant Program was created under Section 1306 of SAFETEA-LU to provide grant funds to states to facilitate and support the development of intermodal freight transportation initiatives at the state and local levels. This Pilot Grant program was for congestion reduction and safety enhancements, and to provide capital funds to address freight distribution and infrastructure needs at intermodal freight facilities and inland ports. This was a pilot program and Congress earmarked all the grant funds from this program, totaling $30 million, to five states (Alaska, California, Georgia, North Carolina, and Oregon) for six projects, with each project receiving $1 million for the five years from FY2005 through FY2009.

United States Department of Commerce Economic Development Administration Funds

The United States Department of Commerce's Economic Development Administration (EDA) provides grants for economic development projects in economically distressed industrial sites. A critical objective of the program is to promote job creation and/or retention in the region. Eligible projects must be located within an EDA-designated redevelopment area or economic development center. Freight-related projects that are eligible for funding from this program include industrial access roads, port development and expansion, and railroad spurs and sidings.

Evidence of the economic distress that the project is intended to alleviate is required of the grantees. The program provides grant assistance up to 50 percent of a project cost; however, it can provide up to 80 percent of cost for projects located in severely depressed areas. During the fiscal year 2008, the EDA awarded 146 grants for $281 million. EDA funds have been used as a funding source by at least one rail project in the state in the past.[4] This funding source should be considered for state rail improvement projects, such as industrial rail spurs and sidings in industrial areas, that can be shown to support employment growth and contribute to economic development.

U.S. Department of Agriculture Community Facilities Program

The U.S. Department of Agriculture Community Facilities Program provides three types of funding for the construction, enlargement, extension, or improvement of community facilities in rural areas and towns with a population of 20,000 or less. The three programs are:

[4] D St. Project in Tacoma, WA.

1. Direct Community Facility Loans.
2. Community Facility Loan Guarantees.
3. Community Facility Grant Program.

Grant assistance is available for up to 75 percent of project cost. Rail-related community facilities eligible for funding from this program include rail spurs serving industrial parks, and other railroad infrastructure in the region, such as yards, sidings, and mainline tracks.

The Community Facility Program amounted to $297 million in direct loans, $208 million in loan guarantees, and $17 million in grants for FY2007. The average loan, loan guarantee, and grant amounts are estimated to be $442,000, $860,000, and $32,000, respectively. This funding source could be used by the state for rail improvement projects in rural agricultural and industrial regions.

Produce Rail Car Program

This project, modeled on the successful Washington Grain Train project, provides refrigerated rail cars to help address the critical shortage of railcars for Washington farmers and agricultural shippers. These farmers and shippers need to move perishable commodities like fruit and vegetables to ports and other markets.

In 2001, the Washington State Potato Commission and Washington Potato & Onion Association proposed the program because rail-car shortages were becoming an annual problem for perishable product shippers.

Washington legislators passed a produce rail car law in 2003. Senator Murray secured $2 million in funding from the 2004 and 2005 omnibus appropriation bills to make this project fully operational.

Federal Rail Assistance Program

This is a state administered federal matching program for projects associated with light density rail lines that is currently not funded. The program was originally established in 1973 to provide financial assistance to states for the continuation of rail freight service on abandoned light density lines in the Northeast. The Railroad Revitalization and Regulatory Reform Act of 1976 expanded the program to all states and to lines threatened with abandonment. Funding for this program has not been re-authorized since 1989. However, some states used Local Rail Freight Assistance Program funds to create revolving loan programs, which permitted new loans to be made as existing loans were repaid.

Federal Loans and Tax Credits

The funding programs described in this section include both loans and credit enhancement programs. In the case of loans, a project sponsor borrows funds directly from a state Department of Transportation (DOT) or the federal government under the condition that the funds will be repaid. Credit enhancement involves the state DOT or the federal government making the funds available on a contingent, or standby, basis. An example of this is a TIFIA loan guarantee. This type of credit enhancement helped to reduce the risk to investors and, thus, allowed the project sponsor to borrow at lower interest rates.

Several loan and credit programs that can be used to finance freight rail projects at the state level were created or changed substantially in SAFETEA-LU. These include:

- The Railroad Rehabilitation and Investment Financing Program (RRIF), which saw a tenfold increase in funding, from $3.5 billion to $35 billion between 2000 and 2006.
- TIFIA, which widened the definition of eligible projects to include freight rail projects. Eligible projects included projects that improved/facilitated public or private freight rail facilities that provided benefits to highway users, intermodal freight transfer facilities, and port terminals and port access.
- Private Activity Bonds (PABs) were established as a new source of funding in SAFETEA-LU. This reauthorization of the surface transportation bill amended the Internal Revenue Service (IRS) code to allow use of PABs for highway and freight transfer facilities. PABs, otherwise known as tax-exempt facility bonds, were qualified bonds, which meant that interest on the bonds was excluded (not subject to income reporting) for federal income tax purposes in the gross income of recipients. With this qualified status and the resulting tax benefit to investors, exempt facility bonds was offered at lower interest rates, reducing the cost of financing projects for the bond issuer.

These three actions helped to widen the pool of funding available to freight rail projects. They are explained in greater detail below.

Railroad Rehabilitation and Investment Financing Program

Section 9003 of SAFETEA-LU amended the RRIF program, which was created originally under Section 7203 of the 1998 Transportation Equity Act for the 21st Century (TEA-21). The RRIF program, administered by the FRA, provided financial assistance in the form of direct loans and loan guarantees to eligible recipients for the following types of rail projects:

- Acquisition, improvement, or rehabilitation of freight (intermodal or carload) and passenger rail equipment and facilities, including tracks, yards, bridges, etc.
- Refinancing of outstanding debt incurred in the acquisition, improvement, or rehabilitation of freight and passenger rail equipment and facilities.
- Development of new freight and passenger rail facilities.

The RRIF program did not provide financial assistance for rail operating expenses. Recipients eligible for direct loans and/or loan guarantees from the program included public and private entities, railroads, joint ventures (including at least one railroad), limited-option freight shippers (e.g., shippers who owned a plant or facility served by no more than a single railroad), and interstate compacts consented to by Congress under Section 410(a) of the Amtrak Reform and Accountability Act of 1997. Thirteen loans, totaling $517 million, have been issued since 2002. The smallest and largest loans approved were $2.1 million for the Mount Hood Railroad and $233 million for the Dakota, Minnesota, and Eastern Railroad.

Direct loans from the program were used to finance 100 percent of the total project cost, while loan guarantees were made for up to 80 percent of the cost of a loan, for terms up to 35 years. The program required applicants to cover the subsidy costs through payment of a "credit risk premium" equal to a fraction of the loan amount calculated based on the financial viability of the applicant and the value of the collateral provided to secure the debt.

Transportation Infrastructure Finance and Innovation Act

TIFIA was created in 1998 by TEA-21. The strategic goal of this program was to leverage limited federal resources and stimulate private capital investment by providing credit assistance (up to one-third of the project cost) for major transportation investments of national or regional significance. The program had a project cost threshold for eligibility, which is the lower of $50 million or 33 percent of a state's annual federal-aid apportionment for highway projects.

SAFETEA-LU expanded TIFIA eligibility to certain private rail projects. Eligibility for freight facilities included the following:

- Public or private freight rail facilities providing benefits to highway users.
- Intermodal freight transfer facilities.
- Access to freight facilities and service improvements, including capital investments for Intelligent Transportation Systems.

- Port terminals, but only when related to surface transportation infrastructure modifications to facilitate intermodal interchange, transfer, and access into and out of the port.

The TIFIA credit program offered three distinct types of financial assistance: secured (direct) federal loans to project sponsors; loan guarantees by the federal government to institutional investors; and standby lines of credit in the form of contingent federal loans.

Federal credit assistance from this program could not exceed 33 percent of the total project cost. SAFETEA-LU authorized $122 million per year to pay the subsidy costs of supporting federal credit under TIFIA. There was no limit on amount of credit assistance that was provided to borrowers in a given fiscal year. Repayment of TIFIA loans came from tolls, user fees, or other dedicated revenue sources. As of July 2006, TIFIA assistance amounted to $3.2 billion, leveraging $13.2 billion of investment in 14 transportation projects.

TIFIA has been a promising funding source that should be reviewed for applicability by the state during authorization of the successor bill to SAFETEA-LU.

State Infrastructure Bank

The State Infrastructure Bank (SIB) program was started as a pilot program that was authorized under Section 350 of the National Highway System Designation Act of 1995 (NHS). SIBs are revolving infrastructure investment funds, which are established and administered by states and are eligible for capitalization with federal-aid highway apportionments and state funds. The purpose of SIBs is to provide innovative and flexible financial assistance to states for rail, highway, and transit projects in the form of loans and credit enhancements. The state should consider establishing an SIB. Financial assistance is available to public and private entities through SIBs. The assistance includes below market rate subordinate loans, interest rate buy-downs on third-party loans, loan guarantees, and line of credit. Law makers should be encouraged to include this program in reauthorization packages. The following federal transportation funds may be used to capitalize SIBs:

- **Highway Account.** Up to 10 percent of the federal-aid highway apportionments to the state for the NHS program, Surface Transportation Program, Highway Bridge Program, and the Equity Bonus.
- **Transit Account.** Up to 10 percent of the federal funds for transit capital projects under Urbanized Area Formula Grants, Capital Investment Grants, and Formula Grants for other than Urbanized Areas.

- **Rail Account.** Federal funds for rail capital projects under Subtitle V (Rail Programs) of Title 49 USC.

A state that sets up and uses an SIB is obliged to match the federal SIB capitalization funds on an 80 to 20 federal/non-federal basis. The exception is funds from the highway account, where a sliding-scale matching provision applies.

Railroad Track Maintenance Credit

The Railroad Track Maintenance Credit authorized under Section 45G of the IRS Code provides tax credits to qualified taxpayers for expenditures on railroad track maintenance on railroad tracks owned or leased by a Class II or a Class III railroad.

The amount of tax credit provided equals 50 percent of the qualified railroad track maintenance and rehabilitation expenditures. Qualified railroad track expenditures include all expenditures towards maintenance and rehabilitation of railroad track, including roadbed, bridges, and related track structures.

Eligible taxpayers qualifying for this credit include any Class II or Class III railroad, and any person transporting property on a Class II or a Class III railroad facility, or furnishing railroad-related property or services to a Class II or a Class III railroad on miles of track assigned to such person by the Class II or Class III railroad. The maximum credit allowed under this program is $3,500 per mile of railroad track owned or leased by an eligible taxpayer, or railroad track assigned to the eligible taxpayer by a Class II or a Class III railroad that owns or leases the railroad track. This credit program, which was released in 2004, was for a 3-year period from December 31, 2004 to December 31, 2007.

However, for eligible taxpayers not having enough taxable income to make full use of the credit, the credits can be carried forward for a 20-year period.

Ports

Ports have multiple external financing options. One of these is the ability to issue private activity bonds.

Private Activity Bonds (Tax Exempt Bonds)

Title XI Section 11143 of SAFETEA-LU amended Section 142(a) of the IRS Code to allow the issuance of tax-exempt private activity bonds for highway and freight transfer facilities. States and local governments were

allowed to issue tax-exempt bonds to finance highway and freight transfer facility projects sponsored by the private sector.

SAFETEA-LU included a cap of $15 billion on private activity bonds. Passage of the private activity bond legislation reflected the federal government's desire to increase private sector investment in U.S. transportation infrastructure. Providing private developers and operators with access to tax-exempt interest rates lowered the cost of capital significantly, enhancing investment prospects. Increasing the involvement of private investors in highway and freight projects also generated new sources of money, ideas, and efficiency.

A tax-exempt bond is an obligation issued by a state or local government, where the interest received by the investor is not taxable for federal income tax purposes. Because of the exception of federal income tax on the interest earned, these bonds have a lower cost of financing compared to taxable bonds. Section 11143 of SAFETEA-LU created a new type of exempt facility eligible to be financed with tax-exempt bonds—the qualified highway or surface freight transfer facility. The new type of exempt facility bonds could be used to finance certain projects for surface transportation, projects for certain international bridges or tunnels, or facilities to transfer freight from truck to rail or rail to truck, provided the project or facility received federal assistance. In general, the law limited the total amount of such bonds to $15 billion and directed the Secretary of Transportation to allocate this amount among qualified facilities.

Section 142(m) 1) defines "qualified highway or surface freight transfer facilities" as:

(A) Any surface transportation project that receives federal assistance under Title 23 USC (as in effect on August 10, 2005, the date of the enactment of Section 142(m));
(B) Any project for an international bridge or tunnel for which an international entity authorized under federal or state law is responsible and which receives federal assistance under Title 23 USC (as so in effect); or
(C) Any facility for the transfer of freight from truck to rail or rail to truck (including any temporary storage facilities directly related to such transfers) that receives federal assistance under Title 23 or Title 49 as so in effect.

Private

Other Funding Sources

The other source of funding for freight rail projects that must not be overlooked is investments by the railroads. In 2006 U.S. Class I freight railroads spent more than $8.3 billion laying new track, buying new equipment, and improving infrastructure. This was a 21 percent increase from 2005 and represented record levels of investment.[5] Much of this money went toward maintenance of existing facilities, but there was significant double-tracking and siding construction to expand freight rail capacity along several high-density routes.

The emergence of both the public and private sectors to enter into new partnerships, such as the Alameda Corridor in southern California and the Chicago Region Environmental and Transportation Efficiency (CREATE) project in Chicago, are the most likely scenario of the future funding for large-scale rail projects. Multistate coalitions, such as those pioneered by the I-95 Corridor Coalition with its Southeastern Rail Operations Study (SEROps), hold promise as models for how states and private freight railroads can work together in the future. AASHTO's new *Freight Bottom Line Report* is attempting to define directions for national rail freight policy, recognizing the need to define a national rail network and better understand the chokepoints in this network. Recent funding increases proposed for Amtrak and the strong role that a number of states have taken in intercity passenger rail also suggest directions for future public funding of the passenger rail system.

The state continues to take an aggressive position in promoting an appropriate role for the public sector in shaping the future of the private rail system. By clearly defining when and how the public sector should play a constructive role in partnership with the private sector to advance rail system goals, this state is a leader in the national rail policy discussion. By examining emerging directions in this national discussion, the state also can position itself effectively to take advantage of emerging funding opportunities and offer itself as a model for the rest of the nation. As growth in trade and passenger travel put increasing pressure on the state's rail system, the necessity of protecting, maintaining, and growing the system will be viewed as a crucial aspect of the state's economic well being.

[5] Association of American Railroads, "Major Freight Railroads to Invest $8.3 Billion in Infrastructure in 2006," March 16, 2006, retrieved from www.aar.org/Index.asp?NCID=3582.

Public-Private Partnerships

Public-Private Partnerships (PPP) are contractual agreements formed between a public agency and a private-sector entity that allow for greater private-sector participation in the delivery of transportation projects. Expanding the private-sector role allows the public agencies to tap private-sector technical, management, and financial resources in new ways to achieve certain public agency objectives, such as greater cost and schedule certainty, supplementation of in-house staff, innovative technology applications, specialized expertise, or access to private capital.

To address future capacity issues from the growth in freight, the freight railroads have indicated an interest in participating in PPPs that provide tangible benefits for both the public and private sectors. As referenced above, the Alameda corridor is an example of a PPP—it is a $2 billion, 20-mile rail expressway connecting the Ports of Los Angeles and Long Beach with rail yards near downtown Los Angeles. Some other successful freight rail related PPPs are:[6]

- **CREATE** – a $1.5 billion project to improve rail freight connections involving the state of Illinois, city of Chicago, and major freight and passenger railroads serving the region.
- **Heartland Corridor** – a $200 million multistate partnership with Norfolk Southern to increase the flow of goods between the East Coast and Chicago.
- **Reno Trench** – a multimillion-dollar project that separates trains running through downtown Reno, Nevada from motor vehicle traffic.

Strategies

State Rail and Marine Office actions should be guided by the general principles in the *Statewide Rail Capacity and System Needs Study* (2006). These principles should be followed when sufficient public benefits are identified to justify public participation in the preservation and improvement of the rail transportation system:

- **Emphasize operations and nonfinancial participation in projects before capital investment.** The state should give priority to preserving and improving rail transportation through leadership, planning, permitting, maintenance, and operations that leverage existing rail infrastructure and services rather than through capital investment.

[6] Association of American Railroads, "Public-Private Partnerships for Freight Rail Infrastructure Projects", February 2008.

- **Preserve and encourage competition.** Investment in one railroad's infrastructure can change the competitive balance among railroads to the detriment of the overall system. Before making an investment that directly benefits only one rail company, the state should conduct a comprehensive analysis of competitive impacts on other rail carriers and users.
- **Target actions to encourage private investment that advances the state's economic development goals.** State actions should influence railroad investment decisions so that rail improvements generate greater benefits to the state than could be achieved if the state did not invest.
- **Leverage state participation by allocating cost responsibility among beneficiaries.** The state should not invest in the private rail system unless the railroads and other beneficiaries participate in proportion to their benefits and risks.
- **Require projects to have viable business plans.** Funding from the state should be contingent upon demonstration that the project proponent has rail service and customer agreements in place in order to make the project financially viable.

Additional strategies that WSDOT should consider are:

- **Establish a State Infrastructure Bank.** Refer to page 8-24 for more information on the State Infrastructure Bank program.
- **Continue as a leader in the development of the National Rail Plan.** This leadership role is an important asset for the state as the development of the plan can be influenced to make sure that the final plan supports the needs of the state, the corridors that carry the state's cargo, as well as the markets that are the foundation for the state's economy.
- **Maximize the use of federal funding available through federal transportation funding programs**. This is especially true for intercity passenger rail and for multistate initiatives. Federal funding support for freight rail investments has traditionally been offered through a mixture of grants, loans, and credit enhancement programs.
- **Be active in the development of the authorization of the next surface transportation bill** advocating for programs that benefit Washington State' rail programs. Position WSDOT for any pilot projects that become available in the authorization, such as the state of Oregon involvement in the Freight Intermodal Distribution Pilot Grant Program under SAFETEA-LU.
- **Continue to engage the railroads in public-private partnerships**, with a goal of sustaining a freight and passenger rail system that provides benefits to both.

- **Remain active in regional and national rail issues, to ensure that state investments achieve maximum value, and to ensure that efficient access to and from the state is maintained.** States have been very effective at supporting and funding improvements on short-line railroads and funding spot improvements on Class I lines solely within their jurisdictions, but states have been less effective at funding corridor-scale rail improvements that cross state boundaries. The Class I railroads long ago reorganized themselves to invest and operate at the regional and national scale. The states and the federal government have not built comparable institutional mechanisms to plan, negotiate, and finance large multistate rail projects. WSDOT should pursue multistate projects that sufficiently benefit the state.
- **Strengthen coordination with state economic development agencies to ensure that rail investments are supporting and spurring the desired economic growth.** Evaluation of rail investments need to consider the type of business, so focus is placed on industries important to the state's current economy, or are targeted as important to sustain the state's future economy. These include, but are not limited to, agriculture, international trade, energy, and construction.
- **Continue to support maintenance and modernization of the rail system to enhance local freight and passenger rail service, when public benefits to the state, residents, and shippers can be demonstrated.** It also includes supporting new technologies, especially when those technologies support WSDOT long-term transportation goals.
- **Support investment in freight and passenger rail projects that enrich quality of life and support responsible environmental stewardship.** This includes projects that reduce transportation delays, improve transportation safety, improve air quality, reduce noise, and reduce other negative transportation impacts to communities.
- **Develop a strategy for passenger rail services in the state outside the intercity (Amtrak *Cascades*) and Sound Transit areas.** This would address the growing requests and needs and establish a methodology for integrating this into future rail plans.

Vision for Future Funding

For the state rail system to serve the many roles described in this plan, the system must be maintained and expanded when and where necessary. As the past has shown, leaving this funding responsibility to the private railroads alone may not result in a rail system that meets the needs of the state and the nation. These needs include the ability to compete in the global economy by improving the intermodal connectivity and assuring both public and private benefits to all stakeholders. The responsibility for funding the necessary investments for the rail system to serve both state

and interstate commerce should be shared, where appropriate, among the private railroads that own much of the rail infrastructure and the various levels of government.

There needs to be a stable, predictable funding partnership consisting of the railroads (including Amtrak), the federal government, and state government to invest in rail transportation. This is in parallel to funding mechanisms for other modes of transportation, such as highways, transit, and aviation. The state's investment policy supports sharing of project funding among the partners in relation to the benefits received. The share of funding for specific projects will differ based upon the specific type of investment and benefit attributes. The funding package must be developed on the demonstrated benefits received by all parties.

Federal

The enactment of PRIIA and ARRA are examples of the expansion of the federal role in this partnership. These two authorizations are examples of good models that should be expanded into the freight rail funding arena. These models would provide infusion of federal funding for freight rail investments that benefit interstate commerce, the environment, and the public. Funding infrastructure projects—such as the removal of network bottlenecks that impede interstate commerce, last mile access to ports of entry, and constructing rail-truck or rail-barge intermodal transfer facilities—have these interstate commerce and public benefits.

Funding from government should be dedicated and predictable so that rail investments can be adequately included in transportation plans and programs. New federal funding programs should be multi-year and not depend on annual appropriations from Congress. A dedicated, predictable funding source for future rail investments is needed at both the federal and state level. Continuing and supplementing state funding with a dedicated funding source for rail will provide an advantage to the state in the ability to leverage future federal aid as well as leverage longer-term commitments from the private railroads.

State

The current dependency on bi-annual appropriations from state government makes funding for longer-term rail investments difficult to predict. In addition, similar to capital program development for other modes, rail projects start as proposals and require planning and engineering during the early project development process in order to result in a specific project with detailed cost and schedule. A dedicated funding source needs to be indentified and implemented.

This plan contains the results of the survey of the rail industry's 20-year needs for freight-related infrastructure improvements and presents the WSDOT State Rail and Marine Office's rail investment strategy for freight rail infrastructure improvements. The strategy presented in Chapter 4 is intended as a guide for WSDOT in selecting future freight projects.

Freight rail investments identified in the rail needs survey total more than $2.0 billion over the next 20 years. The project sponsors as a whole have only identified committed funds for 10 percent of the total need. Thus, 90 percent of the $2 billion, or $1.8 billion, is needed to complete the funding packages of the identified projects. Many of the projects do not even have a targeted funding plan.

In addition,the listing is an underestimate of the total need, due to the fact that it does not include projects that are private in nature or are joint investments that benefit both freight and passenger service. It should be noted that the list does not include the cost of Mega projects, such as the crowning of Stampede Pass tunnel, or the investments required to develop the multistate national corridor from the Puget Sound to Chicago.

Traditionally, the state, through WSDOT's State Rail and Marine Office and FMSIB, has assisted the freight railroads in improving their infrastructure where there is a clear public benefit. Projects that improve the railroads' ability to divert truck traffic from overburdened highways, construct intermodal facilities, reduce vehicle emissions, and increase safety rail-highway crossings all have public benefits. Many rail investments have significant economic development benefits such as port access improvements. While many projects have public benefits, the rail freight infrastructure investments will continue to be a primary benefit to the railroads and their stakeholders and should be funded as such.

This rail plan recommends that the state continue to support freight rail infrastructure improvements that have demonstrated public benefit. Future federal funding programs to increase investment in freight service should also be implemented.

Summary

There are existing funding programs at the federal and state levels that provide some opportunity of funding freight rail projects. However, these programs are relatively small or narrowly focused, while there is a rapidly growing need to increase investment in rail transportation. The enactment of PRIIA is an excellent example of a multi-year authority for Amtrak and creates new federal funding programs for intercity passenger rail. PRIIA authorizes a rail passenger funding program for states to use to improve

and expand passenger rail service, similar to federally funded programs for other transportation modes. A comparable program for freight rail should be enacted at the federal level.

Additional investment from both public and private sources will be needed in the future to address existing freight rail infrastructure needs and allow for growth in freight rail systems to serve the economy.

Chapter 9: Challenges and Opportunities

The proceeding chapters of this plan have indentified and discussed a number of freight rail issues in Washington State (state). The majority of the issues concern rail capacity of the rail system and funding for the needed infrastructure improvements. The challenges are summarized below followed by an action plan formulated around the six goals that have been developed by the State Rail and Marine Office in conjunction with the State Freight Rail Advisory Committee (Advisory Committee).

Transportation Challenges

This chapter is developed as guidance for future Washington State Department of Transportation (WSDOT) actions. The following trends were taken into consideration:

Population Growth

The state's growth puts pressure on all aspects of the state's infrastructure, especially the transportation system. A growing population not only needs to move people, it also increases the economic activities required to support this growth and generates freight requirements to support this expanded population base. Thus, this population growth challenges our transportation capacity, with the demands to move people and goods.

Safety and Security

The state puts a high priority on the safety and security of its transportation system. However, as the demand for mobility grows, so does the incident of accidents. To this end, it is beneficial to move as much freight and people as economically feasible as possible on rail. As more goods and people are moved on our rail system, it will be even more important to retain the high level of safety and security the system currently achieves.

Preservation and Maintenance

As documented in earlier chapters there is a significant level of investment needed in the state rail system for both expansion and maintenance of the current system. It is mandatory that the system is kept up to modern standards, especially the supporting short lines. In addition, as rail corridors are abandoned or freight services suspended, it is important that the state plan for long-term preservation of these rail corridors and rights of way for future use.

Rail's Role in the State's Economy

A large part of the state's economy depends on freight for its competitiveness and growth. Freight-dependent sectors, in general, include agriculture, mining, construction, manufacturing, wholesale, retail, transportation, and warehousing. In 2008 freight-dependent sectors accounted for 33 percent of the state's Gross Domestic Product, 71 percent of business income, and 39 percent of the state's employment. These sectors will demand faster and more reliable transportation options in the future for both their employees and their freight. Significant increases in freight are forecast both for the state and nationally. Although trucks will continue to handle the majority of the freight, highway congestion, climate concerns, and energy costs will influence more freight to be moved by rail within the state.

Capacity Constraints in the Transportation System

The urban and interregional highway corridors are currently heavily congested during peak periods and are forecast to be increasingly congested over the next 20 years. Significant additional capacity is required at our ports to meet the future forecasts for international cargo flows. Freight rail capacity will have to grow to meet this demand, if the state wants to retain their competitive edge as a gateway to the Midwest and Upper East Coast of the United States.

Rising Cost of Transportation

Although the current economic downturn has resulted in a very competitive cost environment in which to provide transportation infrastructure, it is forecast that these costs will rise in the future. As energy costs rise and state revenues decline, transportation budgets are strained during the same time that capacity improvements are needed.

Energy Efficiency and Climate Change Concerns

The Governor's 2008 Climate Action Team – Transportation Implementation Working Group (Climate Team) identified that emissions from transportation related activities account for nearly half of the total greenhouse gas (GHG) emissions in the state. The Climate Team stated that achieving significant reductions related to GHG emissions is critical for the state and will require meeting the short- and long-term vehicle miles traveled benchmark. The challenge is compounded by the paradox that transportation funding is dependent on the gas tax, while the goal of the Climate Team is to reduce the amount of miles traveled. The ultimate goal is to build, operate, and maintain a transportation infrastructure that is efficient and effective at moving people and goods. To achieve this vision, the state must reexamine how investments in transportation infrastructure and services are made. The state needs to make funding decisions and

pursue revenue generating strategies that stimulate behaviors that support climate change solutions and discourage behaviors that contribute to the problem. One of the solutions recommended by the Governor's Climate Action Team is rail transportation, as it is one of the most energy-efficient ways to move people and goods along major corridors.

Balancing Transportation and Community Livability

The balance between transportation and community livability continues to be a challenge in this state. As demand for mobility of people and freight continues to increase and choices for locating new development in or near urban areas becomes more constrained, investing in rail creates an opportunity. Rail transportation can be the solution to meeting mobility needs while promoting and retaining livable communities.

Transportation Funding

The Governor has announced that there is a transportation funding crisis in this state. As mentioned above the state budget is under pressure from reduced revenues, not only from gas taxes but all general fund revenues. This is a challenge both for the state as it attempts to meet citizen and business needs, but also as it pursues funding from other sources that require matches from the state.

Transportation Opportunities: Implementation of the Plan

Economic Competitiveness and Viability

Goal: Support Washington's economic competitiveness and economic viability through strategic freight rail partnerships.

Next Steps:

- WSDOT's State Rail and Marine Office should prepare a "needs" analysis on the project list to determine which infrastructure improvements can be financially supported.
- The State Rail and Marine Office needs to lead the planning effort to integrate individual plans into a system plan by:
  - Working with the state's Metropolitan Planning Organizations (MPOs), Regional Transportation Planning Organizations (RTPOs), and tribes to integrate freight rail into future regional transportation plans.
  - Working with the Department of Commerce and Department of Agriculture to develop a coordinated economic development approach, including infrastructure funding options for economic viability programs, such as grain trains and produce rail cars.

  - Working with the federal government to get the Northern Tier route designated as a National Rail Corridor.
  - Developing a plan to eliminate bottlenecks and improve capacity and velocity inside and outside of the state. The office needs to work with public and private sector partners in states along the I-5 rail corridor as well as newly designated East/West national corridor.
  - Using the Advisory Committee to enhance communication with the railroads, ports, shippers, industry representatives, and local communities and coordinate activities at the regional, state, and national level on needed projects, programs, and policy decisions.
- The State Rail and Marine Office should create a Rail Data Center to improve the state capacity to develop and manage freight rail system information, research capacity, and data capacity that support federal and state decision making and policy development in freight rail, enhance state and local freight rail planning and statewide coordination, and evaluate funding priorities of freight rail development.
- State agencies need to increase awareness of freight rail, when appropriate, as a vital mode of transportation within the supply chain through a public education process coordinated with other freight partners.

Preservation

Goal: Preserve the ability of Washington's freight rail system to efficiently serve the needs of its customers.

Next Steps:

- WSDOT's State Rail and Marine Office should confirm the at-risk system components that can benefit from public support.
- The State Rail and Marine Office should support the efforts of Class I railroads to compete for state and federal funding for major capacity preservation projects, when appropriate.
- The state should provide financial assistance to short-line railroads to maintain and preserve essential rail lines and prevent abandonment, when appropriate.
- The state should lead the coordination of plans involving rail corridor maintenance and preservation, including the identification of funding strategies for implementation of these plans.
- State agencies should integrate freight rail system development, land use planning and policies, public-private partnerships, and funding strategies consistent with the state vision and policy goals to protect and grow freight mobility.

- The State Rail and Marine Office should work with ports and railroads to project the functionality and viability of existing port access connections between port terminals, intermodal rail yards, and mainline tracks.
- The State Rail and Marine Office should create criteria to be used to evaluate at-risk rail corridors for public investment.
- The State Rail and Marine Office should consider acquiring rail corridors scheduled for abandonment that have met public investment criteria and have the potential to be reactivated in the future.
- The State Rail and Marine Office should work with short-line and mainline railroads to enable compatible interim use of a rail corridor right of way (i.e. rail/trails) within statutory limits, until such time that the right of way is returned to active rail use.

Capacity

Goal: Facilitate freight rail system capacity increases to improve mobility, reduce congestion, and meet the growing needs of Washington's freight rail users, when economically justified.

Next Steps:

- The state should designate a single entity to coordinate and direct the state's participation in the preservation and improvement of the rail transportation system. This entity should have the authority to negotiate directly with the railroads.
- WSDOT's State Rail and Marine Office should develop a comprehensive strategy to increase the state's east/west and north/south rail capacity in partnership with Class I railroads, ports, communities, and the federal government.
- The State Rail and Marine Office should continue to pursue passenger rail funding for the north/south Interstate 5 (I-5) corridor at the federal level that either maintains or creates freight rail capacity, such as the American Recovery and Reinvestment Act of 2009 application for a dedicated high-speed rail corridor.
- The State Rail and Marine Office should develop a comprehensive strategy for the coordination and support of positive train control systems development within the state.
- WSDOT should develop data and information, through a Statewide Rail Information Center, for freight rail demand, rail capacity constraints, and capacity use information needed for statewide planning and operation to enhance freight capacity.
- The State Rail and Marine Office should continue pursuance of funding for a rail facility inventory to include assessments for location of rail facilities and condition of physical assets.

- The State Rail and Marine Office should provide technical assistance to public and private entities such as the Freight Mobility Strategic Investment Board, Puget Sound Regional Council, and local communities for evaluation and prioritization of freight rail projects.

Energy Efficiency and Environmental

Goal: Take advantage of freight rail's modal energy efficiency to reduce the negative environmental impact of freight movement in Washington.

Next Steps:

- WSDOT should implement rail projects that reduce truck traffic, when economically feasible.
- The state should encourage use of environmentally-friendly equipment to decrease fuel consumption and air emissions such as:
  - "Green" switching locomotives in port areas and other rail yards close to residential areas, including the use of locomotive anti-idling devices.
  - Technologies that reduce wheel/track friction.
- The state should assess the effects of climate change on the rail system and identify where weather and climate events can impact rail infrastructure and operation. The state should coordinate these findings with the capacity needs and prioritization of improvements.
- The Department of Ecology and the State Rail and Marine Office should provide assistance in evaluating benefits of reducing environmental emissions and energy savings of rail-mode based options in intermodal and multimodal transportation planning.

Safety and Security

Goal: Address the safety and security of the freight rail system and make enhancements, where appropriate.

Next Steps:

- The state should expand education outreach to new and existing stakeholder groups, such as working with railroads and other partners to reduce pedestrian trespassing through joint public awareness efforts.
- The state should continue to support safety improvements of rail-highway crossings, signal systems, rail lines, and rail facilities, through regulations and partnership.
- WSDOT should review best practices, consult with area experts, work with partners, and develop a list of temporary rail-highway grade crossing closures and alternative routes in the event of natural and man-made disasters.

- WSDOT's State Rail and Marine Office should work with partners to plan for rail safety measures and routing before, during, and after emergencies.
- The State Rail and Marine Office should support railroads, Amtrak, local law enforcement agencies, and others to identify and implement rail security measures based on guidance from existing federal law (PL 110-432), identifying partnerships and other funding sources to enhance rail system security.

Livable Communities

Goal: Encourage livable communities and family-wage jobs through freight rail system improvements.

Next Steps:

- The state should support strategic partnerships along the state's rail corridors that improve the quality of life for the state's citizens.
- The state should encourage rail partners to implement projects on the project list that would improve the livability of a community by reducing emissions and noise.
- The state should encourage rail partners to implement projects that provide wages and jobs for local economies and communities.
- The state should encourage rail partners to involve local communities in program planning and project implementation processes.
- The state should encourage private investment that advances state economic development goals.

Conclusion

The *Washington State 2010-2030 Freight Rail Plan* lays the foundation for an improved and sustainable freight rail system in the state by identifying a vision for the state's freight rail service and establishing goals, objectives, strategies, and actions to achieve that vision. This has been accomplished by working with various stakeholders, including the rail industry, rail advocates, ports, governments, elected officials, and many other concerned groups and individuals. This collaboration is essential to creating a vision that reflects the needs of the community and ultimately to having a responsive, efficient, and sustainable rail transportation network.

Dedicated investment by government and the private railroads will be required to reach these goals and accomplish all of the rail improvements identified in this plan.

Washington State

2010-2030
Freight Rail Plan
Appendices

December 2009

Washington State
Department of Transportation

For more information, contact:

- Call the WSDOT State Rail and Marine Office at (360) 705-7900;
- Write to the WSDOT State Rail and Marine Office at P.O. Box 47407, Olympia, WA 98504-7407;
- Fax your comments to (360) 705-6821; or
- E-mail your comments to rail@wsdot.wa.gov

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Washington State 2010-2030 Freight Rail Plan
Appendices

Prepared by

Washington State Department of Transportation State Rail and Marine Office

December 2009

Washington State Department of Transportation

Washington State
Department of Transportation

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Appendix 1-A: State and Federal Requirements

State Requirements

RCW 47.76.220
State rail plan – Contents.

(1) The department of transportation shall prepare and periodically update a state rail plan, the objective of which is to identify, evaluate, and encourage essential rail services. The plan shall:

(a) Identify and evaluate mainline capacity issues;

(b) Identify and evaluate port-to-rail access and congestion issues;

(c) Identify and evaluate those rail freight lines that may be abandoned or have recently been abandoned;

(d) Quantify the costs and benefits of maintaining rail service on those lines that are likely to be abandoned;

(e) Establish priorities for determining which rail lines should receive state support. The priorities should include the anticipated benefits to the state and local economy, the anticipated cost of road and highway improvements necessitated by the abandonment or capacity constraints of the rail line, the likelihood the rail line receiving funding can meet operating costs from freight charges, surcharges on rail traffic, and other funds authorized to be raised by a county or port district, and the impact of abandonment or capacity constraints on changes in energy utilization and air pollution;

(f) Identify and describe the state's rail system;

(g) Prepare a state freight rail system map;

(h) Identify and evaluate rail commodity flows and traffic types;

(i) Identify lines and corridors that have been rail banked or preserved; and

(j) Identify and evaluate other issues affecting the state's rail traffic.

(2) The state rail plan may be prepared in conjunction with the rail plan prepared by the department pursuant to the federal Railroad Revitalization and Regulatory Reform Act.

Federal Requirements

Passenger Rail Investment and Improvement Act of 2008
PL 110-432

H. R. 2095
One Hundred Tenth Congress of the United States of America
AT THE SECOND SESSION
Begun and held at the City of Washington on Thursday, the third day of January, two thousand and eight
An Act
To amend title 49, United States Code, to prevent railroad fatalities, injuries, and hazardous materials releases, to authorize the Federal Railroad Safety Administration, and for other purposes.
Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DIVISION B—AMTRAK
SEC. 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This division may be cited as the "Passenger Rail Investment and Improvement Act of 2008".

(b) TABLE OF CONTENTS.—The table of contents for this division is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Amendment of title 49, United States Code.
Sec. 3. Definition.

TITLE I—AUTHORIZATIONS

Sec. 101. Authorization for Amtrak capital and operating expenses.
Sec. 102. Repayment of long-term debt and capital leases.
Sec. 103. Authorization for the Federal Railroad Administration.

TITLE II—AMTRAK REFORM AND OPERATIONAL IMPROVEMENTS

Sec. 201. National railroad passenger transportation system defined.
Sec. 202. Amtrak board of directors.
Sec. 203. Establishment of improved financial accounting system.
Sec. 204. Development of 5-year financial plan.
Sec. 205. Restructuring long-term debt and capital leases.
Sec. 206. Establishment of grant process.
Sec. 207. Metrics and standards.
Sec. 208. Methodologies for Amtrak route and service planning decisions.
Sec. 209. State-supported routes.
Sec. 210. Long-distance routes.

Sec. 211. Northeast Corridor state-of-good-repair plan.
Sec. 212. Northeast Corridor infrastructure and operations improvements.
Sec. 213. Passenger train performance.
Sec. 214. Alternate passenger rail service pilot program.
Sec. 215. Employee transition assistance.
Sec. 216. Special passenger trains.
Sec. 217. Access to Amtrak equipment and services.
Sec. 218. General Amtrak provisions.
Sec. 219. Study of compliance requirements at existing intercity rail stations.
Sec. 220. Oversight of Amtrak's compliance with accessibility requirements.
Sec. 221. Amtrak management accountability.
Sec. 222. On-board service improvements.
Sec. 223. Incentive pay.
Sec. 224. Passenger rail service studies.
Sec. 225. Report on service delays on certain passenger rail routes.
Sec. 226. Plan for restoration of service.
Sec. 227. Maintenance and repair facility utilization study.
Sec. 228. Sense of the Congress regarding the need to maintain Amtrak as a national passenger rail system.

TITLE III—INTERCITY PASSENGER RAIL POLICY

Sec. 301. Capital assistance for intercity passenger rail service.
Sec. 302. Congestion grants.
Sec. 303. State rail plans.
Sec. 304. Tunnel project.
Sec. 305. Next generation corridor train equipment pool.
Sec. 306. Rail cooperative research program.
Sec. 307. Federal rail policy.

TITLE IV—MISCELLANEOUS PROVISIONS

Sec. 401. Commuter rail mediation.
Sec. 402. Routing efficiency discussions with Amtrak.
Sec. 403. Sense of Congress regarding commuter rail expansion.
Sec. 404. Locomotive biofuel study.
Sec. 405. Study of the use of biobased technologies.
Sec. 406. Cross-border passenger rail service.
Sec. 407. Historic preservation of railroads.

TITLE V—HIGH-SPEED RAIL

Sec. 501. High-speed rail corridor program.
Sec. 502. Additional high-speed rail projects.

TITLE VI—CAPITAL AND PREVENTIVE MAINTENANCE PROJECTS FOR WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Sec. 601. Authorization for capital and preventive maintenance projects for Washington Metropolitan Area Transit Authority.

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SEC. 303. STATE RAIL PLANS.

(a) IN GENERAL.—Part B of subtitle V is amended by adding at the end the following:
"CHAPTER 227—STATE RAIL PLANS
"Sec.
"22701. Definitions.
"22702. Authority.
"22703. Purposes.
"22704. Transparency; coordination; review.
"22705. Content.
"22706. Review.
"§ 22701. Definitions
"In this subchapter:
"(1) PRIVATE BENEFIT.—
"(A) IN GENERAL.—The term 'private benefit'—
"(i) means a benefit accrued to a person or private entity, other than Amtrak, that directly improves the economic and competitive condition of that person or entity through improved assets, cost reductions, service improvements, or any other means as defined by the Secretary; and
"(ii) shall be determined on a project-by-project basis, based upon an agreement between the parties.
"(B) CONSULTATION.—The Secretary may seek the advice of the States and rail carriers in further defining this term.
"(2) PUBLIC BENEFIT.—
"(A) IN GENERAL.—The term 'public benefit'—
"(i) means a benefit accrued to the public, including Amtrak, in the form of enhanced mobility of people or goods, environmental protection or enhancement, congestion mitigation, enhanced trade and economic development, improved air quality or land use, more efficient energy use, enhanced public safety or security, reduction of public expenditures due to improved transportation efficiency or infrastructure preservation, and any other positive community effects as defined by the Secretary; and
"(ii) shall be determined on a project-by-project basis, based upon an agreement between the parties.

"(B) CONSULTATION.—The Secretary may seek the advice of the States and rail carriers in further defining this term.
"(3) STATE.—The term 'State' means any of the 50 States and the District of Columbia.
"(4) STATE RAIL TRANSPORTATION AUTHORITY.—The term 'State rail transportation authority' means the State agency or official responsible under the direction of the Governor of the State or a State law for preparation, maintenance, coordination, and administration of the State rail plan.
"§ 22702. Authority
"(a) IN GENERAL.—Each State may prepare and maintain a State rail plan in accordance with the provisions of this chapter.
"(b) REQUIREMENTS.—The Secretary shall establish the minimum requirements for the preparation and periodic revision of a State rail plan, including that a State shall:
"(1) establish or designate a State rail transportation authority to prepare, maintain, coordinate, and administer the plan;
"(2) establish or designate a State rail plan approval authority to approve the plan;
"(3) submit the State's approved plan to the Secretary of Transportation for review; and
"(4) revise and resubmit a State-approved plan no less frequently than once every 5 years for reapproval by the Secretary.
"§ 22703. Purposes
"(a) PURPOSES.—The purposes of a State rail plan are as follows:
"(1) To set forth State policy involving freight and passenger rail transportation, including commuter rail operations, in the State.
"(2) To establish the period covered by the State rail plan.
"(3) To present priorities and strategies to enhance rail service in the State that benefits the public.
"(4) To serve as the basis for Federal and State rail investments within the State.
"(b) COORDINATION.—A State rail plan shall be coordinated with other State transportation planning goals and programs, including the plan required under section 135 of title 23, and set forth rail transportation's role within the State transportation system.
"§ 22704. Transparency; coordination; review
"(a) PREPARATION.—A State shall provide adequate and reasonable notice and opportunity for comment and other input to the public, rail carriers, commuter and transit authorities operating in, or affected by rail operations within the State, units of local government, and other interested parties in the preparation and review of its State rail plan.
"(b) INTERGOVERNMENTAL COORDINATION.—A State shall review the freight and passenger rail service activities and initiatives by regional planning agencies, regional transportation authorities, and municipalities within the State, or in the region in which the State is

located, while preparing the plan, and shall include any recommendations made by such agencies, authorities, and municipalities as deemed appropriate by the State.

"§ 22705. Content

"(a) IN GENERAL.—Each State rail plan shall, at a minimum, contain the following:

"(1) An inventory of the existing overall rail transportation system and rail services and facilities within the State and an analysis of the role of rail transportation within the State's surface transportation system.

"(2) A review of all rail lines within the State, including proposed high-speed rail corridors and significant rail line segments not currently in service.

"(3) A statement of the State's passenger rail service objectives, including minimum service levels, for rail transportation routes in the State.

"(4) A general analysis of rail's transportation, economic, and environmental impacts in the State, including congestion mitigation, trade and economic development, air quality, land use, energy-use, and community impacts.

"(5) A long-range rail investment program for current and future freight and passenger infrastructure in the State that meets the requirements of subsection (b).

"(6) A statement of public financing issues for rail projects and service in the State, including a list of current and prospective public capital and operating funding resources, public subsidies, State taxation, and other financial policies relating to rail infrastructure development.

"(7) An identification of rail infrastructure issues within the State that reflects consultation with all relevant stakeholders.

"(8) A review of major passenger and freight intermodal rail connections and facilities within the State, including seaports, and prioritized options to maximize service integration and efficiency between rail and other modes of transportation within the State.

"(9) A review of publicly funded projects within the State to improve rail transportation safety and security, including all major projects funded under section 130 of title 23.

"(10) A performance evaluation of passenger rail services operating in the State, including possible improvements in those services, and a description of strategies to achieve those improvements.

"(11) A compilation of studies and reports on high-speed rail corridor development within the State not included in a previous plan under this subchapter, and a plan for funding any recommended development of such corridors in the State.

"(12) A statement that the State is in compliance with the requirements of section 22102.

"(b) LONG-RANGE SERVICE AND INVESTMENT PROGRAM.—

"(1) PROGRAM CONTENT.—A long-range rail investment program included in a State rail plan under subsection (a)(5) shall, at a minimum, include the following matters:
"(A) A list of any rail capital projects expected to be undertaken or supported in whole or in part by the State.
"(B) A detailed funding plan for those projects.
"(2) PROJECT LIST CONTENT.—The list of rail capital projects shall contain:
"(A) a description of the anticipated public and private benefits of each such project; and
"(B) a statement of the correlation between—
"(i) public funding contributions for the projects; and
"(ii) the public benefits.
"(3) CONSIDERATIONS FOR PROJECT LIST.—In preparing the list of freight and intercity passenger rail capital projects, a State rail transportation authority should take into consideration the following matters:
"(A) Contributions made by non-Federal and non-State sources through user fees, matching funds, or other private capital involvement.
"(B) Rail capacity and congestion effects.
"(C) Effects on highway, aviation, and maritime capacity, congestion, or safety.
"(D) Regional balance.
"(E) Environmental impact.
"(F) Economic and employment impacts.
"(G) Projected ridership and other service measures for passenger rail projects.
"§ 22706. Review
"The Secretary shall prescribe procedures for States to submit State rail plans for review under this title, including standardized format and data requirements. State rail plans completed before the date of enactment of the Passenger Rail Investment and Improvement Act of 2008 that substantially meet the requirements of this chapter, as determined by the Secretary, shall be deemed by the Secretary to have met the requirements of this chapter."
(b) CONFORMING AMENDMENT.—The chapter analysis for subtitle V is amended by inserting the following after the item relating to chapter 223:
Chapter 227, § 22701 Definitions.

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Appendix 1-B: Public Participation and Stakeholder Involvement

The Washington State Department of Transportation (WSDOT) benefits from broader interaction with the public and rail stakeholders. The public participation and stakeholder involvement component of this plan meets state and federal requirements. It educates citizens and rail stakeholders about the role of rail in a balanced transportation system. And it collects and synthesizes comments from the public and rail stakeholder groups to assist in developing the vision, projects, prioritization, financing, and implementation of the state rail plan.

In the development of the plan, an advisory committee was formed, involving as many stakeholders as possible. Three advisory committee meetings were held, along with one workshop and one public open house. Progress reports and opportunities for public comments and discussion were provided. After the advisory committee meetings, the draft plan was available for two weeks of public review and comment.

State Freight Rail Plan Advisory Committee

WSDOT is required by federal and state statutes to provide "adequate and reasonable notice and opportunity for comment and other input to the public, rail carriers, commuter and transit authorities operating in, or affective by rail operations within the state, units of local government, and other interested parties in the preparation and review of the state rail plan." Ideally much of the opportunity for comment and review takes place through the State Freight Rail Plan Advisory Committee (Advisory Committee), which is the rail advisory body for this planning project.

The Advisory Committee is a group of key stakeholder representatives focused on plan development. The Advisory Committee roles are:

1. To help develop a vision for the freight rail plan.
2. To provide assistance to update information for the freight rail system, capacity, and needs.
3. To help identify and assess port access and rail abandonment issues.
4. To help WSDOT understand concerns of local communities and organizations.
5. To facilitate information sharing.

Stakeholders invited to participate in the Advisory Committee included Class I railroads, short-line railroads, other carriers, public transportation

providers, rail operators, rail logistics, rail and other transportation mode advocates, rail research, ports, cities, towns, counties, tribes, federal and state agencies, WSDOT offices, regional planning organizations (e.g. MPO/RTPOs), shippers, and labor. A list of Advisory Committee member organizations that accepted the invitation for participation in this plan is provided in Exhibit 1B-1.

Exhibit 1B-1: Advisory Committee Member Organizations

AgVentures NW, LLC	Port of Tacoma
All Aboard Washington	Port of Vancouver
Ballard Terminal RR. (BDTL)	Portland Vancouver Junction RR (PVJR)
Benton-Franklin Council of Gov.	Puget Sound & Pacific RR (PSAP)
BNSF Railway (BNSF)	Puget Sound Regional Council (PSRC)
Brotherhood of Locomotive Engineers and Trainmen	Rail Management, Inc. (RMI)
CWCOG/SWRTPO	Spokane Regional Trans. Council
City of Richland	SW WA Regional Trans. Council
Clark County	Tacoma Rail
Columbia Basin Railroad (CBRW)	Thurston Regional Plan Council (TRPC)
Cowlitz Indian Tribe	Tulalip Tribes
Eastern Washington Gateway Railroad (EWG)	Union Pacific Railroad UP
Eastside Transportation Assoc.	Utilities & Transportation Comm. (UTC)
Freight Mobility Strategic Investment Board (FMSIB)	Washington Dept. of AHP (DAHP)
ILWU Puget Sound Dist. Council	Washington Dept. of Commerce
Kalispel Tribe	Washington Legislature
Lummi Nation and TTPO	Washington Public Ports Assoc. (WPPA)
McGregor Company	Washington St. Dept. of Ag. (WSDA)
Meeker Southern Railroad	WA St. Transportation Comm. (WSTC)
Nisqually Tribe	Whatcom Council of Governments
NW Grain Growers	Woodland Trail Greenway Assoc
NW Tribal Technical Assist. Pgm.	WSDOT – Budget Office
Pacific Northwest Farmers Coop	WSDOT – Environmental Svcs.
Parsons Brinckerhoff	WSDOT – Freight Systems Div.
Port of Everett	WSDOT – Government Relations
Port of Grays Harbor	WSDOT – Hwys. & Local Pgms. (H&LP)
Port of Kalama	WSDOT – Northwest Region
Port of Moses Lake	WSDOT – Public Transportation (PTD)
Port of Olympia	WSDOT – South Central Region
Port of Ridgefield	WSDOT – State Rail and Marine Office
Port of Royal Slope	WSDOT – Strat. Planning & Pgms
Port of Seattle	WSDOT – Urban Planning Office (UPO)
	YVCOG

Three Advisory Committee meetings were held:

- June 11 at WSDOT Headquarters in Olympia.
- September 30 at WSDOT Headquarters in Olympia.
- October 6 in Moses Lake.

In addition, a workshop was held with Advisory Committee participants and other stakeholders on August 5 at WSDOT Headquarters in Olympia.

The Advisory Committee participants for the meetings are shown in Exhibits 1B-2, 1B-3, and 1B-4.

Electronic Communication Standards

WSDOT uses a standard set of electronic communication tools for communication and outreach that includes a project Web page (www.wsdot.wa.gov/Freight/Rail/WashingtonStateFreightRailPlan.htm), e-mail, and a monthly e-newsletter. The State Freight Rail Plan Web page includes information and links to the meeting information, the surveys, and contacts. E-mail is the primary communication tool between WSDOT and stakeholders; e-mail is sent as early as possible to provide ample response time. Mail is used occasionally. The WSDOT State Rail and Marine Office monthly e-newsletter provides planning project updates to registered subscribers.

Outreach Activities

Outreach activities offer additional opportunities to engage a larger group of stakeholders as well as the general public and receive their feedback.

Key Stakeholder Interviews and Presentations

WSDOT State Rail and Marine Office staff and management conducted a limited amount of interviews to collect specific information about the state freight rail plan. Phone and in-person interviews included key external stakeholders (Port of Tacoma, Tacoma Rail, Port of Seattle, Benton-Franklin-Walla Walla Regional Transportation Planning Organization) and internal stakeholders (WSDOT Freight Systems Division, WSDOT Strategic Planning and Programs Office). WSDOT management also gave presentations to internal and external organizations (WSDOT Executive Team, American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Rail Transportation, Western Freight Roundtable) about the planning project. Documentation about these interviews and presentations is provided later in this appendix.

Exhibit 1B-2: June 11, 2009 Advisory Committee Meeting Attendees

Attendee	Organization
Lloyd H. Flem	All Aboard Washington
James Forgette	BDTL
Terry Finn	BNSF
Rosemary Siipola	CWCOG/SWRTPO
John Howell	EWG
Steve Gibson	EWG
Karen Schmidt	FMSIB
Gary Nelson	Port of Grays Harbor
Mindi Linquist	Port of Kalama
Brent Grening	Port of Ridgefield
Dan Burke	Port of Seattle
Brian Mannelly	Port of Tacoma
Mike Reilly	Port of Tacoma
Wayne Harner	Port of Tacoma
Todd Coleman	Port of Vancouver
Kevin Spradlin	PSAP
Sean Ardussi	PSRC
Eric Temple	PVJR
Steve Murray	RMI
Lynda David	RTC
Dale King	Tacoma Rail
Richard Myers	WPPA
Brad Avy	WSDA
Eric Hurlburt	WSDA
Elizabeth Phinney	WSDOT
Jeff Schultz	WSDOT
Julie Rodwell	WSDOT
Kevin Jeffers	WSDOT
Megan Beeby	WSDOT
Mike Rowswell	WSDOT
Aaron Butters	WSDOT – H&LP
Jerry Ayres	WSDOT – PTD
Thomas Noyes	WSDOT – UPO
WSDOT State Rail and Marine Office Staff	
Andrew Wood	Lynn Scroggins
Brent Thompson	Scott Witt
Brian Calkins	Teresa Graham
George Xu	

Exhibit 1B-3: September 30, 2009 Advisory Committee Western Washington Meeting Attendees

Attendee	Organization
Terry Finn	BNSF
Mike Elliott	Brotherhood of Locomotive Engineers & Trainmen
Fred Abraham	Clark County
Russ Holter	DAHP
Will Knedlik	Eastside Transportation Assoc.
Mark K. Ricci	Endeavors Consulting
Jeff Davis	ILWU
Jim Longley	Nisqually Tribe
Mike Zachary	Parsons Brinkerhoff
Gary Nelson	Port of Grays Harbor
Mark Wilson	Port of Kalama
Jim Knight	Port of Olympia
Clare Gallagher	Port of Seattle
Dan Burke	Port of Seattle
Sean Eagan	Port of Tacoma
Wayne Harner	Port of Tacoma
Alan Hardy	Tacoma Rail
Jailyn Brown	TRPC
Brock Nelson	UP
Eric Johnson	WPPA
Eric Hurlburt	WSDA
Jerry Ayres	WSDOT – PTD
Thomas Noyes	WSDOT Urban Planning
WSDOT State Rail and Marine Office Staff	
George Xu	Scott Witt
Lynn Scroggins	Teresa Graham

Exhibit 1B-4: October 6, 2009 Advisory Committee Eastern Washington Meeting Attendees

Attendee	Organization
Len Pavelka	Benton-Franklin COG
Scott Williams	CBRW
Tim Kelly	CBRW
John Howell	EWG
Dave Gordon	Northwest Grain Growers
Norm Ruhoff	PNW Farmers Coop
Craig Baldwin	Port of Moses Lake
Alan Schrom	Port of Royal Slope
Steve Murray	RMI
Glenn Miles	SRTC
John Gruber	WSDOT South Central
WSDOT State Rail and Marine Office Staff	
George Xu	Teresa Graham
Lynn Scroggins	

Surveys

WSDOT designed and conducted two surveys in Web-based and PDF formats to collect information about statewide needs for freight rail capital improvements (Projects Survey) and to identify railroad lines at-risk of abandonment (Abandonment Survey). Notices and links were sent to the Advisory Committee and key stakeholders using WSDOT electronic communication standards that included e-mail, Web page links, and e-newsletter. The surveys were also promoted at Advisory Committee and other key stakeholder meetings. Chapter 5 contains Abandonment Survey result summaries. Chapter 8 contains project list summaries that were based, in part, on the Projects Survey.

Public Open House

WSDOT held a public open house on October 22, 2009, to meet federal and state requirements and to provide information about the freight rail plan to stakeholders and the general public. The event included displays from past Advisory Committee meetings, handouts, sample documents, and comment sheets. In addition to electronic communication, the open house was advertised in Seattle, Vancouver, Olympia, Spokane, and Tri-Cities newspapers. WSDOT State Rail and Marine Office staff and management were on-hand to answer questions and discuss the planning project. The list of attendees is shown in Exhibit 1B-5.

Exhibit 1B-5: October 22, 2009 Open House Attendees

Attendees	
Adele McCormick	Jailyn Brown
Cathrine Martin	Jerry Ayres
Cecelia Jenkins	Jim Amador
Cliff Hall	Jim Zabel
Curtis Shuck	Kari Qvigstad
Cyndi Booze	Kathy Murray
David Smelser	Mike Beehler
Don Miller	Mindi Linquist
Edward Berntsen	Paula Connelley
Ernest W. Combs	Russell Holter
Forest Sutmiller	Scott Mills
Frank Kirkbride	Teri Hotsko
George L. Barner, Jr.	Thomas Hume
Greg Roche	Tom Palmateer
J. T. Wilcox	Virginia Stone

Workshop

WSDOT held a workshop on August 5, 2009, at WSDOT Headquarters in Olympia to help develop the vision statement and goals matrix for the state freight rail plan. The Advisory Committee and other key stakeholders were invited to participate in the workshop. The workshop attendees are shown in Exhibit 1B-6.

FRA Reporting

WSDOT submitted three progress reports and will submit the final plan to the United States Department of Transportation (USDOT) Federal Railroad Administration (FRA) for review. The progress reports documented activity to date and sought guidance and feedback.

Government-to-Government Tribal Consultation

The WSDOT Secretary's Executive Order requires WSDOT employees to consult with tribes on all decisions that may affect tribal rights and interests. Per tribal protocol, WSDOT mailed two sets of letters to statewide tribal leaders and their planning managers informing them about the State Freight Rail Plan, inviting their participation, and announcing meetings. WSDOT also offered to meet with tribes individually to discuss their comments or concerns with the plan. Chapter 6 contains information about tribal governments.

Exhibit 1B-6: August 5, 2009 Advisory Committee Workshop Attendees

Attendee	Organization
Lloyd H. Flem	All Aboard Washington
Terry Finn	BNSF
Rosemary Siipola	CWCOG/SWRTPO
Russ Holter	DAHP
Win Knedlik	Eastside Transportation Assoc.
John Howell	EWG
Steve Gibson	EWG
Karen Schmidt	FMSIB
Jeanine Viscount	Parsons Brinkerhoff
Carl Wollebek	Port of Everett
Mark Wilson	Port of Kalama
Mindi Linquist	Port of Kalama
Craig Baldwin	Port of Moses Lake
Jim Amador	Port of Olympia
Christine Wolf	Port of Seattle
Clare Gallagher	Port of Seattle
Brian Mannelly	Port of Tacoma
Sean Egan	Port of Tacoma
Curtis Shuck	Port of Vancouver
Eric Temple & kids	PVJR
Lynda David	RTC
Glenn Miles	SRTC
Dale King	Tacoma Rail
Jailyn Brown	TRPC
Brock Nelson	UP
Eric Johnson	WPPA
Brad Avy	WSDA
Jerry Ayres	WSDOT – PTD
John Gruber	WSDOT – South Central
WSDOT State Rail and Marine Office Staff	
George Xu	Scott Witt
Lynn Scroggins	Teresa Graham

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Appendix 2: Detailed Goal Matrix

The detailed goals matrix includes the goals, objectives, strategies, and actions necessary to achieve the vision of the *Washington State 2010-2030 Freight Rail Plan*. It was developed in the stakeholder and public involvement process described in Chapter 2.

Please Note: The detailed goals matrix in this appendix is an *interim document*. The final set of goals, objectives, strategies, and actions are described in Chapter 2.

Goal 1: Support Washington's economic competitiveness and economic viability through strategic freight rail partnerships.		
Objectives	**Strategies**	**Actions**
To better understand the statewide industry needs for rail transportation.	Increase understanding of the competitive positions of the state's shippers and ports using Washington's freight rail system vs. other modes of transportation.	Carry out needs analysis to support emerging and existing industries to ensure the freight rail system supports Washington's ports and rail-dependent industries, where financially supported.
To better integrate freight rail planning at all levels of government.	Increase coordination of corridor-level freight rail planning within Washington State.	Work with Washington's MPOs, RTPOs, and Tribes to integrate freight rail into future regional transportation plans.
To provide access to national markets for Washington products and cargo entering the US through Washington ports.	Support multistate freight rail corridor strategic planning partnerships.	Work with public and private sector partners in states along any appropriate national corridor to eliminate bottlenecks and improve capacity and velocity inside and outside of Washington State.
To better coordinate with private sector partners.	Support and enhance economic partnerships between Washington State and the rest of the nation and its trading partners.	Establish a process or committee to work and communicate with the ports and industry representatives to coordinate activities at the regional, state, and national level on needed projects, programs, and policy decisions.
To better address barriers to efficient use of freight rail in Washington.	Lead and coordinate with Washington's ports, shippers and industry on a continuing basis to identify infrastructure, regulatory, and administrative barriers to their efficient use of the freight rail system.	On an ongoing basis and at designated intervals, update information with representatives from ports, shippers, railroads, and industry to identify constraints. Develop an action plan to address those issues over which WSDOT has authority.
To have a strategic prioritization of barriers to efficient use of freight rail in Washington State, with stonger public-private partnerships and freight rail infrastructure at the local, regional, corridor, national, and international levels.	Expand the state role to manage, coordinate, and facilitate strategic freight rail infrastructure improvements and investments that are in the public interest.	Increase the state capacity to develop and manage freight rail system information, research capacity, and data capacity that improves oversight and encourages funding for priority freight rail development.
To improve system and project assessment and evaluation processes to support state goals and assist the decision-making process.		
To have a broader understanding of railroad system benefits and investments.		Increase public awareness of freight rail as a vital mode of transportation within the supply chain.
To have an integrated plan that is recognized within the National Rail Plan.	Develop the criteria for corridor level freight rail transportation to integrate into the National Rail Plan.	Lead the planning effort to integrate with partners.

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Goal 2: Preserve the ability of Washington's freight rail system to efficiently serve the needs of its customers.		
Objectives	**Strategies**	**Actions**
To preserve the functionality of the existing system.	Assist the Class 1 railroads' efforts to maintain and preserve the functionality of mainline tracks, bridges, and rail yards.	Work with the Class 1 railroads and other partners to identify those system components at risk that can benefit from public support.
		Support the efforts of Class 1 railroads to compete for state and federal funding for major capacity preservation projects, when appropriate.
To continue to provide access to the mainline rail system.	Assist short-line railroads in preserving efficient access to the mainline, ensuring system viability and continuity.	Provide financial assistance to short-line railroads, maintaining and preserving essential rail lines to prevent abandonment, when appropriate.
To create sustainable funding sources for rail preservation and maintenance		Lead the development of rail corridor maintenance and preservation plans that include funding strategies
To support long-term economic vitality and diversity.	Work with stakeholders and partners to ensure long-term preservation of existing industrial land, freight rail corridors, and rights of way for future use.	Integrate freight rail system development, land use planning and policies, public-private partnerships, and funding strategies consistent with the state vision and policy goals to protect and grow freight mobility.
To retain industrial lands and the jobs needed to support them.		Work with ports and railroads to protect the functionality and viability of existing connections between port terminals, intermodal rail yards, and mainline tracks.
To better manage state-owned railroad corridors, returning them to active service as soon as feasible.		Work with short-line and mainline railroads to allow compatible interim use of rail corridor right of way (i.e. rail trails) within statutory limits, until such time that the right of way is returned to active rail use.
To preserve opportunities of abandoned lines for future rail service.		Acquire rail corridors scheduled for abandonment that have the potential to be reactivated in the future.
To preserve opportunities of abandoned lines for other public use of corridors (i.e. rail trails).		

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Goal 3: Facilitate freight rail system capacity increases to improve mobility, reduce congestion, and meet the growing needs of Washington's freight rail users, when economically justified.		
Objectives	**Strategies**	**Actions**
To better understand future freight rail demands.	Continue efforts to regularly evaluate freight rail capacity needs.	Continue working with partners with an interest in freight rail capacity to determine future needs. Assess capacity and use the results to support prioritized investment in freight rail capacity improvements.
To continue reducing congestion, eliminating port access bottlenecks, and increasing reliability and mobility.	Create additional capacity, improve connectivity, and improve operational efficiency by making, or supporting targeted infrastructure investments.	Invest in infrastructure development projects that enable cost effective, smooth, and efficient transport of freight through multimodal corridors and hubs (i.e. lines, ports, industrial areas).
		Identify and prioritize projects that improve mainline capacity, eliminate bottlenecks and improve mainline access for ports and other freight rail traffic generators.
To continue making process improvements.		Support the efforts of Washington's freight rail providers to solicit state or federal funds for projects that provide needed new capacity, where strategically appropriate.
To reduce idling of cars and trucks and improve overall safety on rail and roads, where appropriate.	Pursue grade separation of roads and rails, where appropriate.	Identify grade separation projects that should be included in national, tribal, state, regional, and local transportation plans.
To improve freight and passenger rail mobility.	Support the implementation of passenger rail projects where investments also improve freight rail mobility.	Work with passenger rail agencies and support funding of projects that support freight movement.
To increase public support for public investment in the freight rail system.	Utilize and update existing project assessment tools to include performance measures and benefit-cost analysis to prioritize projects.	Utilize and update the current freight rail project evaluation methodology to prioritize projects.
	Promote public awareness of and support for freight rail investments that provide economic, mobility, safety, and environmental benefits.	The process should include an effort to seek public input and develop public support for priority projects.
To increase federal freight rail funding and increase ability to develop multi-year projects.	Support efforts to develop viable federal funding sources for freight rail projects with public benefits.	Lead efforts to position Washington's freight rail system for future federal funding with railroads, ports, shippers, and industry.
		Coordinate with multistate stakeholders to obtain federal funding for priority projects along multistate corridors (Northern Tier).
		Work with MPOs to facilitate inclusion of appropriate freight rail projects in regional transportation plans.
		Review programs like the FAST corridor program and determine WSDOT's role in facilitating public-private partnerships in funding freight rail projects in Washington.
To increase state funding and implementation of priority freight rail projects.	Support efforts to enhance state funding sources for freight rail projects with public benefits.	Develop a statewide freight rail advisory body to promote freight rail development

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Goal 4: Take advantage of freight rail's modal energy efficiency to reduce the negative environmental impact of freight movement in Washington.		
Objectives	**Strategies**	**Actions**
To improve community environment and health.	Identify and implement freight rail projects which will reduce truck trips and decrease targeted emissions, where economically viable.	Implement rail projects that reduce truck traffic when ecnomically feasible.
	Encourage rail partners to invest in technologies to reduce their fuel consumption and related air emissions.	Encourage increased use of locomotive anti-idling devices, electric support equipment and reduction of wheel/track friction to decrease fuel consumption and air emissions.
		Encourage use of environmentally friendly switching locomotives in port areas and other rail yards close to residential areas.

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Goal 5: Address the safety and security of the freight rail system and make enhancements, where appropriate.		
Objectives	**Strategies**	**Actions**
To reduce numbers of rail-highway incidents.	Continue to identify new areas of focus to enhance rail transportation safety.	Continue to support safety improvements of rail-highway crossings, signal systems, rail lines, and rail facilities.
To reduce the numbers of rail-highway, rail-pedestrian, rail-rail, and trespassing incidents.		Expand outreach and education to new and existing stakeholder groups.
To meet federal requirements.	Partner with the Class 1s' efforts to meet the federal mandate and a support railroad requirement to install positive train control systems on mainlines	Continue coordination and support of positive train control systems development.
To improve pedestrian safety and reduce liability.	Continue the Operation Lifesaver partnership to educate the public about rail safety.	Work with railroads and other partners to educate the public and reduce pedestrian trespassing.
To improve emergency recovery and prevention.	Continue emergency management development.	Work with partners to address rail safety before, during, and after emergencies.
		Review best practices, consult with area experts, and develop a list of temporary rail-highway grade crossing closures and alternative routes in the event of natural and man-made disasters.
To improve the security of the state rail system in its ability to deter or respond to attacks on rail facilities or domestic targets, while ensuring mobility for all users.	Address rail system security and homeland security.	Support railroads, Amtrak, and local law enforcement agencies to identify and implement rail security measures based on guidance from existing federal law (PL 110-432). Identify partnerships and other funding sources to enhance rail system security.
To reduce the negative impacts from storm-related emergencies.		Assess the effects of climate change where weather and climate events can impact rail infrastructure and operation.

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Goal 6: Encourage livable communities and family-wage jobs through freight rail system improvements.		
Objectives	**Strategies**	**Actions**
To sustain communities through reduced congestion, preserved and expanded infrastructure, economic growth, and optimized safety, secruity, and environmental impacts.	Continue to support local community development improvements that consider feight rail development options.	Support strategic partnerships along Washington's rail corridors that improve the quality of life of Washington's citizens.

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Appendix 3-A: Passenger Rail Service and Ridership in Washington State – A Brief

Passenger rail, once used as a means to address only mobility problems, is increasingly viewed and used, at both national and regional levels, as an integrated part of robust and resilient multimodal transportation systems. Such transportation systems will help policymakers achieve multiple policy ends, including economic viability, societal mobility, environmental sustainability, and public safety.

Amtrak Intercity Passenger Rail

Amtrak, partnered with the states of Washington and Oregon and the Province of British Columbia, provides intercity rail passenger service in the Pacific Northwest. Passenger rail services operate exclusively over rail lines owned by freight railroads. Sound Transit serves the Puget Sound urban area with commuter rail services. Along the I-5 corridor, passenger intercity passenger rail services share track with freight on the BNSF Railway (BNSF) mainline. The Union Pacific Railroad (UP) also has operating rights on this mainline from Vancouver, Washington (WA) to Tacoma. Between Tacoma and Everett, Sound Transit commuter rail operates on the BNSF tracks. Freight, intercity passenger, and commuter operations share common infrastructure to meet their customers' needs. Exhibit 3A-1 shows the ridership of the three intercity passenger rail services in 2008.

Amtrak *Cascades*

Since 1994 the Washington State Department of Transportation (WSDOT) has partnered with Amtrak, the state of Oregon, the Province of British Columbia, the railroads, and others to provide fast, reliable, and more frequent intercity passenger rail service along the 466-mile Pacific Northwest Rail Corridor (PNWRC). As one of 11 federally designated corridors, the PNWRC extends from Eugene, Oregon (OR) to Vancouver, British Columbia (B.C.). The service, known as Amtrak *Cascades*, provides travelers with a viable transportation alternative for their intercity trips.

Exhibit 3A-1: Ridership of Intercity Passenger Rail Service – Washington State 2008

Rail Service	Description	Ridership
Amtrak *Cascades*	Arrive in Washington State from Oregon or Vancouver, B.C.	245,531
	Departure from Washington State to Oregon or Vancouver, B.C.	239,547
	Travel Within Boundaries of Washington State	189,916
	Travel Through Washington State Without Stopping in State	0
	Total Riders	**674,994**
Coast Starlight	Arrive in Washington State from Oregon or Vancouver, B.C.	51,565
	Departure from Washington State to Oregon or Vancouver, B.C.	62,707
	Travel Within Boundaries of Washington State	9,007
	Travel Through Washington State Without Stopping in State	0
	Total Riders	**123,279**
Empire Builder	Arrive in Washington State from Oregon or Vancouver, B.C.	68,791
	Departure from Washington State to Oregon or Vancouver, B.C.	70,177
	Travel Within Boundaries of Washington State	37,562
	Travel Through Washington State Without Stopping in State	46,464
	Total Riders	**222,994**
Total Intercity Passenger Rail Riders		**1,021,267**

Note: A state intercity passenger rail rider is defined as a passenger rail rider who arrives, departs, travels within and travels through the state using intercity passenger rail services, including Amtrak *Cascades, Coast Starlight*, and *Empire Builder*.

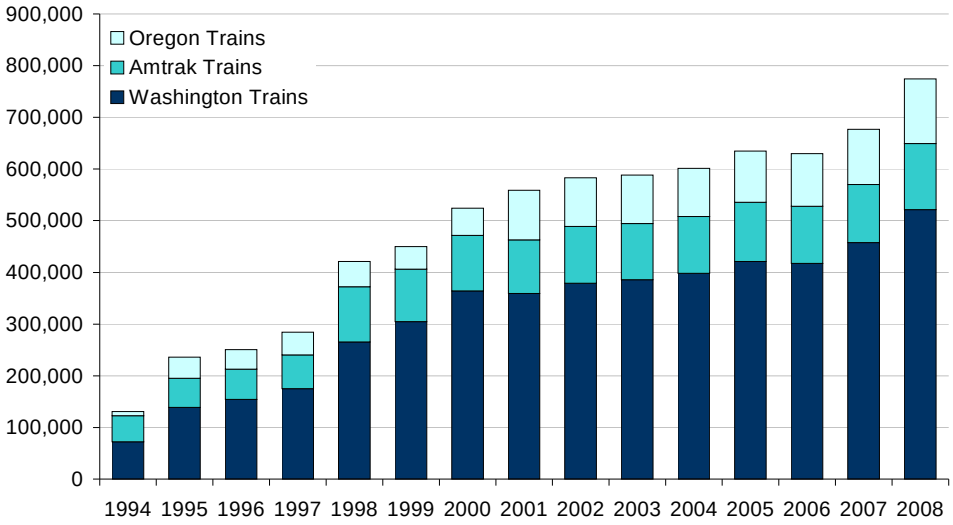
Source: WSDOT State Rail and Marine Office

Amtrak *Cascades* intercity passenger rail service in the state is operated over the BNSF mainline. Amtrak *Cascades* intercity passenger rail service in Oregon is operated over the UP mainline. The alignment roughly parallels Interstate 5 (I-5) and runs through western Washington and western Oregon. The Washington portion includes nine counties: Clark, Cowlitz, Lewis, Thurston, Pierce, King, Snohomish, Skagit, and Whatcom. In addition, a number of cities and towns are also traversed by the rail line, including Vancouver (WA), Kelso/Longview, Centralia, Olympia/Lacey, Tacoma, Tukwila, Seattle, Edmonds, Stanwood, Everett, Mt. Vernon, and Bellingham. In Oregon, the alignment travels through Portland, Oregon City, Salem, Albany, and Eugene. The corridor is diversely populated and contains a mixture of farmlands, small communities, natural habitats, and large metropolitan areas. Corridor development is a cooperative effort between the states of Oregon and Washington, BNSF, UP, Amtrak, Sound Transit, the Province of British Columbia, ports, local communities, passengers, and the general public.

Ridership for Amtrak *Cascades* on the PNWRC has been increasing. The following paragraphs highlight the changes in ridership between 1994 and 2008.

Amtrak *Cascades* ridership has risen steadily on the PNWRC from Eugene, OR to Vancouver, B.C., from less than 200,000 annual passengers in 1994 to 774,536 passengers in 2008. A complete history of the Amtrak *Cascades* annual ridership is shown in Exhibit 3A-2.

Exhibit 3A-2: Amtrak *Cascades* Annual Ridership – 1994 to 2008



Source: WSDOT State Rail and Marine Office

Since 1994 when Washington State began financially supporting Amtrak service, consumers have responded to the increased frequency of daily train service. In every case when or where the supply of passenger train capacity increased higher ridership has quickly followed. Ridership increases are most significant between Seattle and Portland, with four daily Amtrak *Cascades* regional round trips.

Commuter Rail

Sound Transit provides *Sounder* commuter rail service in the Puget Sound area. *Sounder* commuter rail is a regional rail service operated by BNSF on behalf of Sound Transit. Service operates Monday through Friday during peak hours from Seattle, north to Everett and south to Tacoma. As of 2008, schedules serve the traditional peak commutes, with most trains running inbound to Seattle in the morning and outbound in the afternoon. Two daily round trips run the "reverse commute" to and from Tacoma. Additional *Sounder* trains operate on some Saturdays and Sundays for travel to and from Seahawks games at Qwest Field and Mariners games at Safeco Field. Both stadiums are a short walk from King Street Station.

Ridership has steadily increased year after year with the addition of new service. In 2008 *Sounder's* ridership was 16.13 million, up 17 percent over 2007. One of the key benefits to *Sounder* travel has been the on-time performance of the trains. Performance has reached the level of 99.85 percent in 2008.

Washington State
Department of Transportation

Appendix 3-B: Railroad History, Profiles, Service Corridors, and Safety Regulatory History

This appendix contains a brief national and state freight rail history, Washington State (state) freight railroad profiles and service corridors, and a summary of safety regulations and history.

National Freight Rail History[1]

Construction of the nation's rail network started in 1828. The system expanded rapidly in the late 1800s and early 1900s. System mileage peaked in the 1920s at approximately 380,000 miles of track. Since then the rail network has been downsized and modernized to a core network whose route system is descended directly from its 19th century design.

The Class I railroad system today has 160,734 miles of track, less than half the number of miles it had in the 1920s.[2] The reduced size of the nation's freight rail network is the result of three factors: competition with the trucking industry, deregulation, and railroad efficiency.

Private businesses face stiff rate competition from trucks and shareholder pressure to generate profits. As a result, the nation's major railroads have divested in lines and services with insufficient traffic density to adequately cover their operating and maintenance costs. To improve productivity and profitability, they have invested in double-stack cars, larger hopper and tank cars, and higher boxcars and auto-rack cars, which in turn require investment in high-clearance tunnels, higher-weight-capacity track, and stronger bridges. The high cost of these improvements has limited railroads to upgrading only the highest volume and most profitable lines. Other lines have been downgraded or abandoned.

Abandonment has also occurred as a result of mergers and consolidations among railroads, which have led to duplicative or redundant lines. The merger trend began in the mid-19th century as railroads struggled to build networks and access profitable routes and markets.

Railroad abandonments began in the 1920s and continued steadily up to 1980, when many of the railroads were spiraling into bankruptcy. The Staggers Act of 1980 deregulated the railroad industry, helping railroads continue the process of merging, restructuring, and reorganizing. Since

[1] AASHTO, Transportation – Invest in America: Freight Bottom Line Report (2001), pp. 32-33.
[2] Association of American Railroads, www.aar.org/.

railroad deregulation in 1980, the pace of abandonments has slowed as more lines have been sold to create short-line and regional railroads. The result of these changes is a modern, efficient "core" network geared towards profitably serving today's freight-rail markets. But this efficiency has come at a cost. Railroad service has been withdrawn from many areas, forcing businesses to relocate or shift to truck service.

Washington State Rail History

In 1851 the first "railroad" in Washington Territory appeared along the north bank of the Columbia River near present-day Stevenson and used mule power to pull flatcars along six-inch square wooden rails topped with strap iron. This line covered a distance of roughly two miles and was later expanded to six miles.

Two years later Congress authorized the United States (U.S.) Army to conduct five transcontinental railway surveys to find a feasible route to the Pacific Ocean. Isaac I. Stevens led the northern survey, which headed west from St. Paul, Minnesota, looking for a suitable crossing of the Cascade Mountains. Isaac Stevens later became the first Governor of Washington State.

Abraham Lincoln and the Northern Pacific Railroad

In 1864 Congress and President Abraham Lincoln used the findings of the Army's northernmost survey to charter the Northern Pacific Railroad. The route loosely followed that of Lewis and Clark's 1804-1806 Corps of Discovery expedition to the Pacific Northwest. The Northern Pacific was charged with "constructing a railroad and telegraph line from Lake Superior to Puget Sound," in order to "secure the safe and speedy transportation of the mail, troops, munitions of war, and public stores." The Northern Pacific Railroad used the sale of huge federal land grants to finance its construction.

In 1870 the Northern Pacific began construction on its first set of tracks in Washington Territory, near present-day Kalama on the Columbia River. A fierce competition to determine where the tracks would connect to the Puget Sound ensued, and the communities of Olympia, Steilacoom, Seattle, and Whatcom, on Bellingham Bay, were all considered by the railroad. In July 1873, the railroad's Board of Directors selected Tacoma as its western terminus.

In 1874 regular train service began between Kalama and Tacoma. Despite major financial setbacks, the vision for a northern transcontinental railroad was kept alive and small portage railroads[3] along the southern shore of the

[3] Car ferries were used to cross the river from one track to another.

Columbia River were linked together to create a continuous set of tracks. In September 1883, Portland, Spokane Falls, and the cities of the upper Midwest were linked by rail for the first time when the final spike on the Northern Pacific mainline was driven near Gold Creek in Montana.

In 1873 residents of Seattle—upset with the Northern Pacific Railroad's selection of Tacoma as its western terminus—announced their intention to build a railroad to Walla Walla. Though Seattle's effort only made it to the western foothills of the Cascade Mountains, the declaration caused the owners of the Northern Pacific to take another look at a direct rail line between the eastern segment of Washington Territory and Puget Sound. When Congress indicated that the railroad would have to construct a direct route from the mouth of the Snake River to Tacoma—or risk losing large segments of its original land grant—the Northern Pacific began construction west from present-day Pasco through the Yakima Valley. At the same time, track work began near Tacoma in an easterly direction. The two rail lines were to meet at Stampede Pass.

Stampede Tunnel and Statehood

In May 1888, the 1.8-mile-long Stampede Pass tunnel was completed. The completion of the Northern Pacific's rail line between Pasco and Tacoma supported Washington's application for statehood.

In November 1889, Washington became the nation's 42nd state. Railroads now connected growing communities like Tacoma, Seattle, Ellensburg, North Yakima, Pasco, and Spokane with the rest of the nation. The new rail crossing of the Cascade Mountains also reduced the total freight costs for many American businesses trading in the Far East, which led to more port activity, business development, and population growth in Puget Sound.

The Great Northern Railway Comes to Washington

In the early 1890s, Nelson Bennett used some of the money he had earned overseeing the construction of the Stampede Tunnel to form the Fairhaven and Southern Railway on Bellingham Bay. The new rail line stretched north into British Columbia and south into the Skagit Valley. It was hoped that this rail line would lure the westward reaching Great Northern Railway to the Bellingham area.

At the same time, the Seattle, Lakeshore, and Eastern Railway began to build north from Seattle toward the Canadian border. The owners intentionally constructed the line several miles inland from Puget Sound (the part of the route is now the Burke Gilman Trail in Seattle) to prevent other speculators from building new port facilities along Puget Sound that would compete with Seattle. The line extended across the Skagit River to

Sedro-Woolley and on to Sumas City on the Canadian border. In August 1891, the line connected with the Canadian Pacific Railway, Canada's first transcontinental railroad.

The Great Northern Railway reached Spokane in 1892, continued west through Wenatchee, and completed a series of switchbacks across the Cascades Mountains near Stevens Pass. The railroad purchased the Fairhaven and Southern Railway, built tracks to Everett, and reached Seattle in 1893. In 1900, the Great Northern Railway completed their first Cascades Tunnel at Stevens Pass, which cut the travel time between Seattle and the rest of the nation by several hours.

At the turn of the twentieth century, the people of the state had rail access to commercial centers across North America. Passengers and freight came to the new state on the Canadian Pacific, the Northern Pacific, the Great Northern, and the Union Pacific railroads. The state's population continued to grow as immigrants from around the world came to work the land, the forests, the waters, and in thousands of small businesses across the state.

More Railroads and New Stations

In 1908 the Spokane, Portland, and Seattle Railway (SP&S) completed a new rail line along the north bank of the Columbia River, connecting Vancouver, Pasco, and Spokane. Later that same year, the railroad finished construction of a rail bridge across the Columbia River just west of the business district of Vancouver. The new steel bridge created a continuous rail link between Portland, Tacoma, Seattle, and British Columbia for the first time.

In 1909 the last of the major transcontinental railroads reached Seattle and Tacoma. The Chicago, Milwaukee, St. Paul, and Pacific (Milwaukee Road) completed track work and began operating trains across Snoqualmie Pass. The first Milwaukee Road train arrived in Seattle on June 14, 1909, and terminated at the temporary station at Washington Street and Railroad Avenue.[4] The arrival of the Milwaukee Road further intensified the railroads' competition for freight and passengers. The Milwaukee Road operated transcontinental passenger trains to both Seattle and Tacoma and operated transcontinental freight service into Tacoma, where their main freight yard was located.

The Milwaukee Road's line across Snoqualmie Pass and all lines in the state were embargoed[5] in 1979, and the last Milwaukee Road freight train

[4] Milwaukee Road Historical Association *The Milwaukee Railroader* – Volume 39, Number 3/Third Quarter 2009 – White River Productions.
[5] An embargo is a complete ban on economic exchange.

left Tacoma on March 15, 1980. The rail line across Snoqualmie Pass was sold to the Burlington Northern Railroad, but was ultimately abandoned and the trackage was removed by the end of 1987. This line is now part of the John Wayne Trail owned by Washington State Parks. Several portions of the old Milwaukee trackage in Moses Lake and in eastern/northeastern Washington have been picked up and operated by short-line or regional railroads. However, most of the old Milwaukee Road rail line across the state has been abandoned.

The Decline of Passenger Rail Service in Washington

In the early 1920s, automobile and truck transportation began to become very popular. The Washington Department of Highways and local highway districts often followed travel corridors developed by the railroads as they paved new roads between major cities. The completion of the first Pacific Highway between Seattle and Portland in 1924 lured away more passengers and freight traffic from the rails. For many people, this shift was inspired by the fact that automobile and truck transportation provided a greater degree of flexibility and freedom than was available with rail transportation. Travelers and shippers were no longer dependent upon the schedules and rates offered by the railroads.

The completion of the original Pacific Highway in western Washington caused the Great Northern, the Northern Pacific, and the Union Pacific railroads to pool their passenger services between Seattle and Portland and reduce the number of trains from 22 to 12 trains per day.

The federal government, which had required the railroads to continue to provide passenger service to communities across the nation, finally agreed to relieve the railroads from this obligation. In exchange, the railroads gave most of their old passenger equipment to the newly formed National Railroad Passenger Corporation, more commonly known as Amtrak (for *Am*erican *tra*vel by trac*k)*. Operating agreements between the private railroads and Amtrak were finalized, and national service began on May 1, 1971.

For more information about passenger rail history, see the *Amtrak Cascades Mid-Range Plan*, Appendix 3A.[6]

The following railroad profiles contain freight railroad history, descriptions, and maps for each railroad in Washington State.

[6] 2008 *Amtrak Cascades Mid-Range Plan* Appendix 3A, www.wsdot.wa.gov/Freight/publications/PassengerRailReports.htm.

Class I Railroad Profiles

BNSF Railway

On March 3, 1970, the Great Northern; Northern Pacific; the Spokane, Portland, and Seattle; and the Chicago, Burlington, & Quincy Railroads merged and become the Burlington Northern Railroad.

In 1980 the Staggers Rail Act deregulated rail transportation in the U.S. causing the largest railroads to sell off branch lines to smaller railroad companies. In 1983 the Burlington Northern Railroad discontinued rail service across the Stampede Pass. In 1995 the Burlington Northern Railroad merged with the Santa Fe Railroad and became the Burlington Northern and Santa Fe Railway, which later became the BNSF Railway Company (BNSF). And in 1996 the BNSF repaired and reopened the Stampede Pass line.

The BNSF is one of the four largest railroads operating in the U.S. (the largest U.S. railroad by 2009 revenue). BNSF, as it stands today, is the product of some 390 different railroad lines that merged or were acquired over more than 150 years.

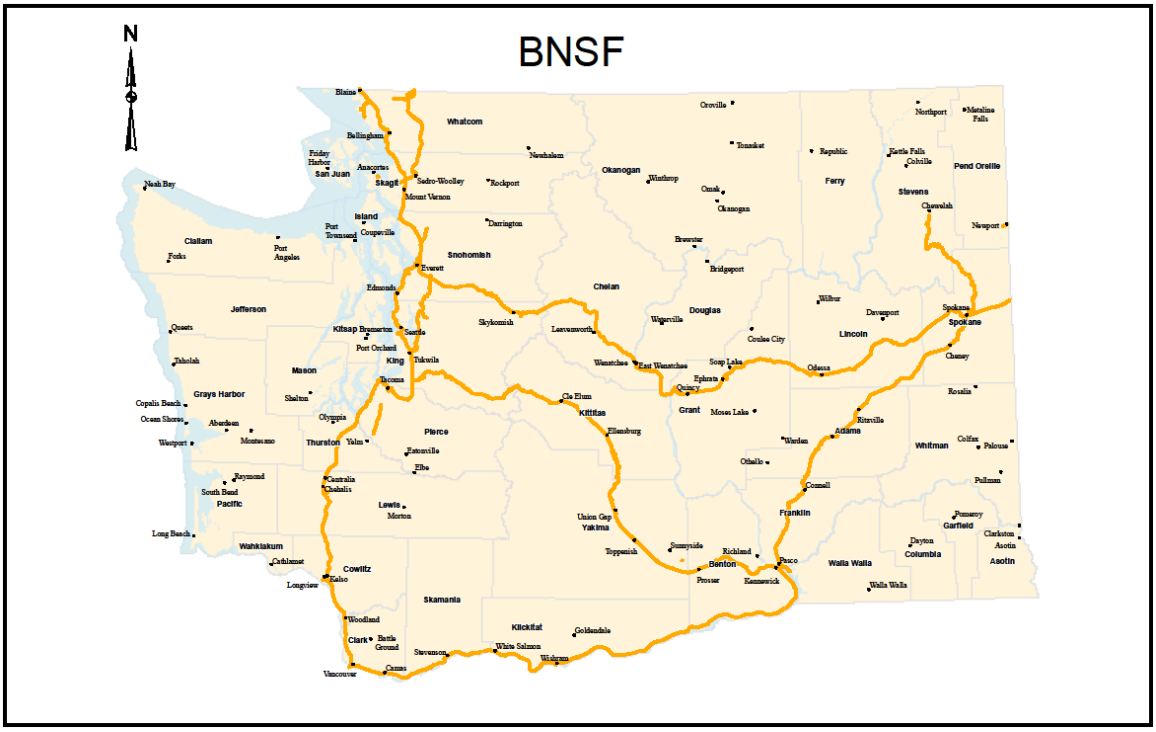
Service is provided over seven major corridors, and nine low-density corridors. The major corridors provide the primary conduits to the North American rail network, while the low-density corridors offer collection/distribution services. The major corridors are:

- Seattle-Spokane
- Seattle-Portland, OR
- Portland, OR-Pasco
- Auburn-Pasco
- Pasco-Spokane
- Spokane-Sandpoint, ID
- Everett-Vancouver, B.C.

BNSF operates over 1,640 miles in Washington State, which represents almost ten percent of their total system route miles operated.

An average of 220,000 rail cars operates on the BNSF network daily. Primary commodities include coal, agricultural products, intermodal (containers/trailers), forest products, chemicals, metals, and minerals. BNSF is one of the largest haulers of agricultural products. Chemicals hauled by the BNSF include propane, lube oil, petroleum, and asphalt.

According to the BNSF 2008 Annual Report to the UTC, revenue totaled $17.5 billion.[7] BNSF reported total interstate operating revenue of $1,040,184 and total gross intrastate operating revenue of $97,876,862.



Union Pacific Railroad

The Union Pacific Railroad (UP) was originally founded through the passage of the Pacific Railroad Act of 1862. This act designated the first transcontinental railroad line across the United States and chartered the UP and Central Pacific Railroads to build this line. The nation's first transcontinental railroad line was completed on May 10, 1869, when the UP and Central Pacific Railroads met at Promontory Summit, Utah.

The first UP line arrived in the Washington Territory in 1881 in the form of the Oregon Railway and Navigation Company (O-WR&N) with a line from Bonneville, Oregon (OR) to Walla Walla, Washington Territory. This line was extended further into Washington Territory with connections to Dayton in 1882, Riparia/Moscow in 1885, and Colfax and Spokane by 1890.[8] Line extensions were also built from Walla Walla to Pasco and ultimately Yakima/Selah and Sunnyside. The O-WR&N was sold in foreclosure to the Oregon-Washington Railway and Navigation Company, which became a fully-owned subsidiary of the UP in 1936.

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[7] www.bnsf.com/investors/investorreports/2Q_2009_Investors_Report.pdf

[8] *Encyclopedia of Western Railroad History* – Volume III Oregon – Washington, Donald B. Robertson, The Caxton Printers Ltd. 1995

The UP considered building a parallel north-south mainline from Portland to Tacoma/Seattle in the early 1900s. However the UP ended up negotiating trackage rights over the Northern Pacific Railway mainline between Portland, OR and Tacoma, Washington (WA) through its O-WR&N subsidiary. The Union Pacific's O-WR&N subsidiary constructed a joint line with the Chicago, Milwaukee, St. Paul, and Pacific Railroad between Tacoma Junction and Black River Junction, near Seattle, providing access to the Seattle area. Further access to downtown Seattle was provided via trackage rights on the Northern Pacific and the Pacific Coast Railway. The UP/O-WR&N and the Milwaukee Road passenger trains called at Union Station in Seattle, which opened in 1911.

The Spokane International Railroad Company built a railroad line from Spokane up to the Canadian border at Eastport, ID and commenced operations on November 1, 1906. The Spokane International Railroad entered bankruptcy in 1933 and was re-organized as the Spokane International Railroad (SI). The UP acquired full control of the SI in 1958, and presently operates the Spokane to Eastport, ID line as part of the UP system. The UP operates a number of run-through international trains with the Canadian Pacific Railway via the connection at Eastport, ID.

The UP and the Southern Pacific Railroads (SP) merged on September 11, 1996. The SP only operated as far north as Portland, OR and never came into Washington State. The merger allowed the UP to offer some longer distance one-railroad routings, such as Seattle to Los Angeles and Seattle to San Francisco Bay area. The UP/SP merger also re-configured some of their adjacent terminal operations in Portland. This merger then resulted in the largest Class I railroad in the U.S., as measured by total route miles.

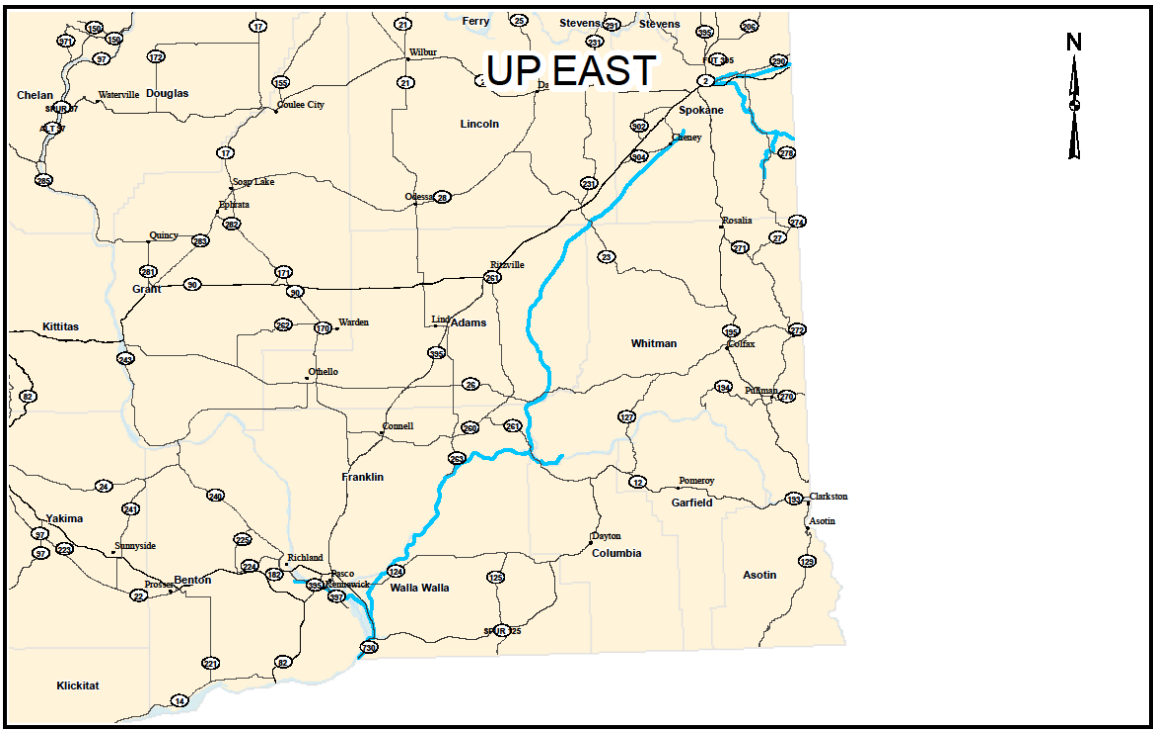
The railroad is still the largest railroad in North America by trackage, serving 23 states, operating over 32,000 miles in the western U.S., linking every major West Coast and Gulf Coast port, and providing east-west service through four major gateways (Chicago, St. Louis, Memphis, and New Orleans) with the eastern railroads. UP also operates key north-south corridors with several connections at the Mexican and Canadian borders.[9]

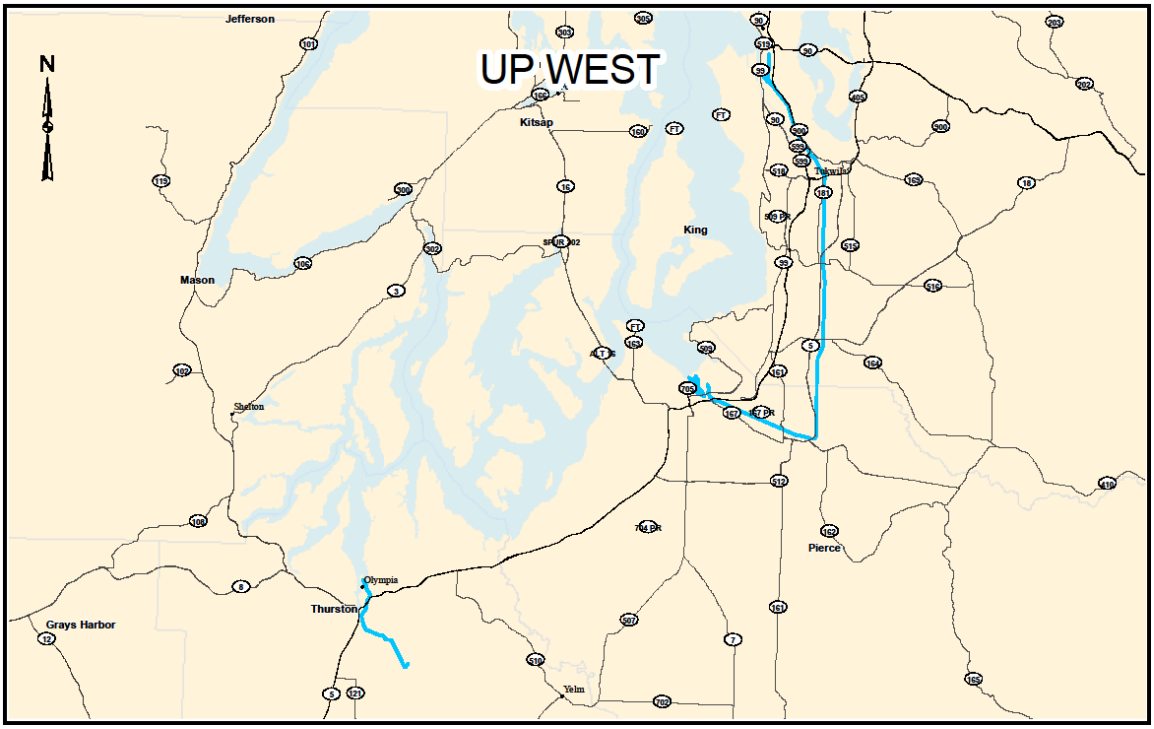
The UP operates on 678 route miles in the state with operating rights on BNSF tracks between Portland and Tacoma, and between Tukwila and the Port of Seattle. It operates on its own right-of-way between Tacoma and Tukwila. In eastern Washington, UP operates on its own tracks between Hinkle, OR and Spokane, and also to the "funnel" between Spokane and Sandpoint, ID.

[9] Introductory material adapted from www.up.com/.

The UP transports many commodities including chemicals, coal, food and food products, forest products, grain and grain products, intermodal, metals and minerals, and automobiles and parts. The UP is also one of the largest intermodal carriers (containers and trailers).

Revenue in 2008 totaled $18 billion per UP's 2008 Report to the UTC.





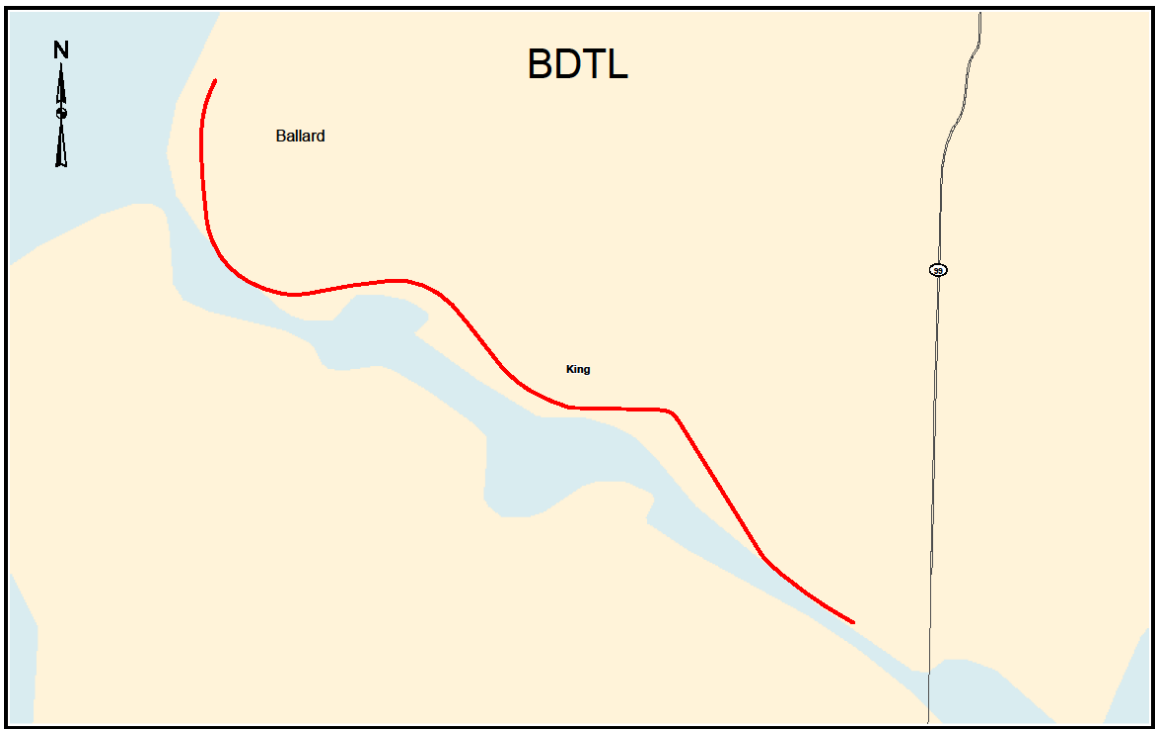
Class II and Class III Railroad Profiles

Ballard Terminal Railroad

The Ballard Terminal Railroad (BDTL[10]), a Class III railroad in Seattle, was formed in 1997 to operate trains on three miles of track on the north side of Salmon Bay. The BDTL runs from NW 40th Street and 6th Avenue NW, just south of its Bright Street Yard and on the edge of Fremont Avenue, northwest toward Ballard proper. There, it passes the Hiram M. Chittenden Locks and runs along Seaview Avenue NW to its Shilshole Yard, where it joins the BNSF mainline just north of NW 68th Street. Most of the railroad was originally part of the Great Northern Railway's mainline, which moved to the west when the Lake Washington Ship Canal was built.[11]

The BDTL reported total interstate operating revenue of $6,148 and $70,012 for total gross intrastate operating revenue in their 2008 Annual Report to the Utilities and Transportation Commission (UTC).

[10] BDTL is the reporting mark for Ballard Terminal Railroad. A reporting mark is a two-to-four-letter alphabetic code used to identify owners or lessees of rolling stock and other equipment used on the North American railroad network. The marks are stenciled on each piece of equipment, along with a one-to-six-digit number, which together uniquely identify every such rail car. This allows the cars to be tracked by the railroad they are traveling over, which shares the information with other railroads and customers.
[11] http://en.wikipedia.org/wiki/Ballard_Terminal_Railroad/.

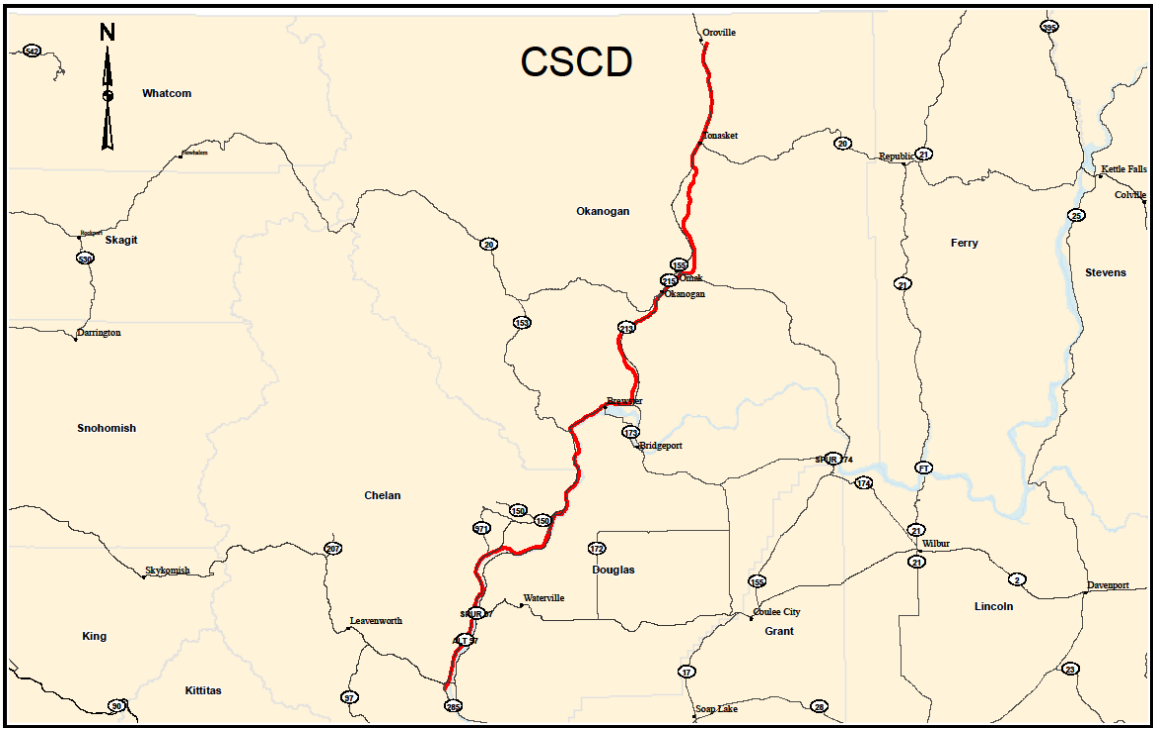


Cascade and Columbia River Railroad

The Cascade and Columbia River Railroad (CSCD) is a Class III railroad that interchanges with BNSF in Wenatchee and runs north to Oroville. This line was originally built in 1914 by the Great Northern Railroad to link the mainline at Wenatchee to the Washington & Great Northern/ Vancouver, Victoria & Eastern line at Oroville. The major commodities carried on the CSCD are limestone, pulpwood, and lumber products. The CSCD offers transload locations on its line to assist customers in getting their lumber to specific customers that may not be rail served or need additional services provided by these facilities. The CSCD operates 148 miles of track and moves over 5,200 cars per year to or from this area in the state. The CSCD has trackage rights over six miles of BNSF's Oroville Spur to Wenatchee for the purpose of performing interchange at Wenatchee Yard.[12]

CSCD reported total gross intrastate operating revenue of $1,614,149 in their 2008 Annual Report to the UTC.

[12] http://www.railamerica.com/RailServices/CSCD.aspx/.



Central Washington Railroad

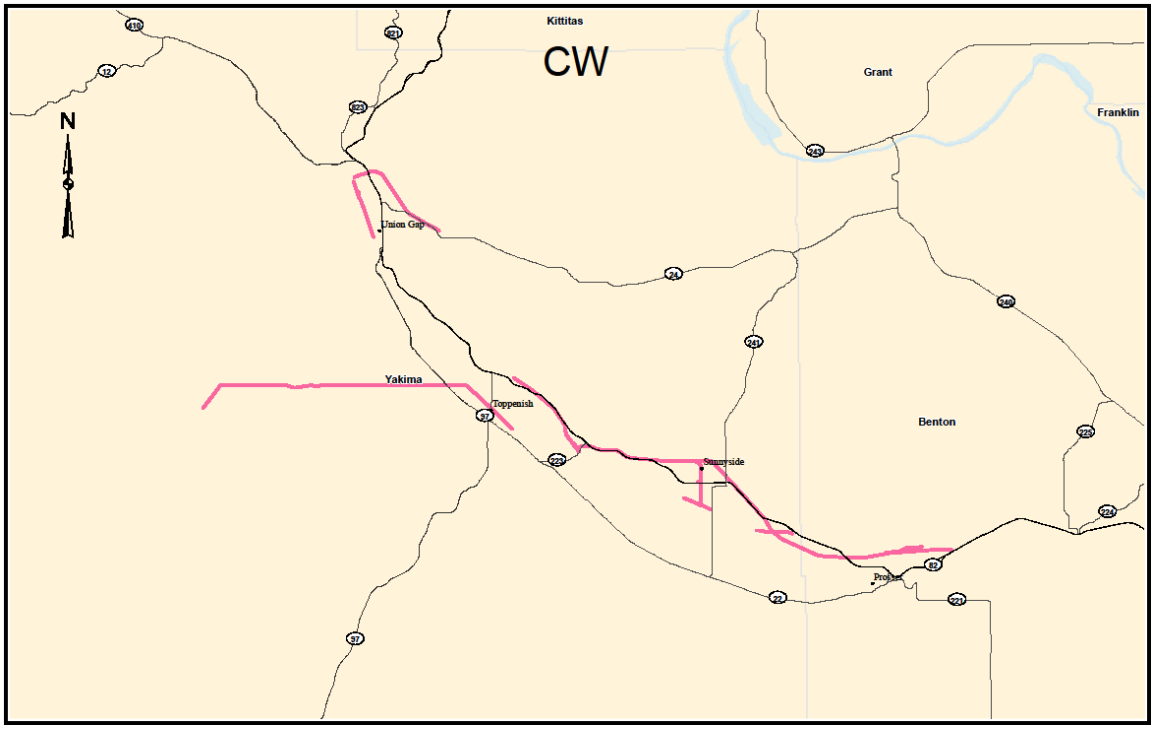
The Central Washington Railroad (CWA), a wholly-owned subsidiary of the Columbia Basin Railroad (CBRW), serves with a series of former BNSF and UP branch lines in central Washington. The CWA, a Class III railroad, consists of approximately 60 miles of track located in the Yakima Valley. The CWA serves the communities of Yakima, Union Gap, Moxee, Granger, Sunnyside, Grandview, and Prosser. These include:

- Former North Yakima & Valley Railway (NY&V, acquired by the Northern Pacific in 1914) from Yakima to Moxee City, 8.6 miles acquired from BNSF in 2005.
- Former NY&V from Yakima to Fruitvale, three miles acquired from BNSF in 2005.
- Former NP from Gibbon to Granger, 30 miles acquired from BNSF in 2005.
- Numerous short stretches of former NCRR trackage between Grandview and Zillah, 15.6 total miles of trackage rights assigned by BNSF over UP-owned lines in 2005.

Commodities hauled on this line include feed, propane, paper products, plastic pellets, cheese, juice concentrate, lumber, apples, and other agricultural goods.[13]

[13] http://www.temple-industries.com/companies/central_washington_railroad.php/.

The CWA reported total interstate operating revenue of $1,436,210 and total gross intrastate operating revenue of $374,225 in their 2008 Annual Report to the UTC.

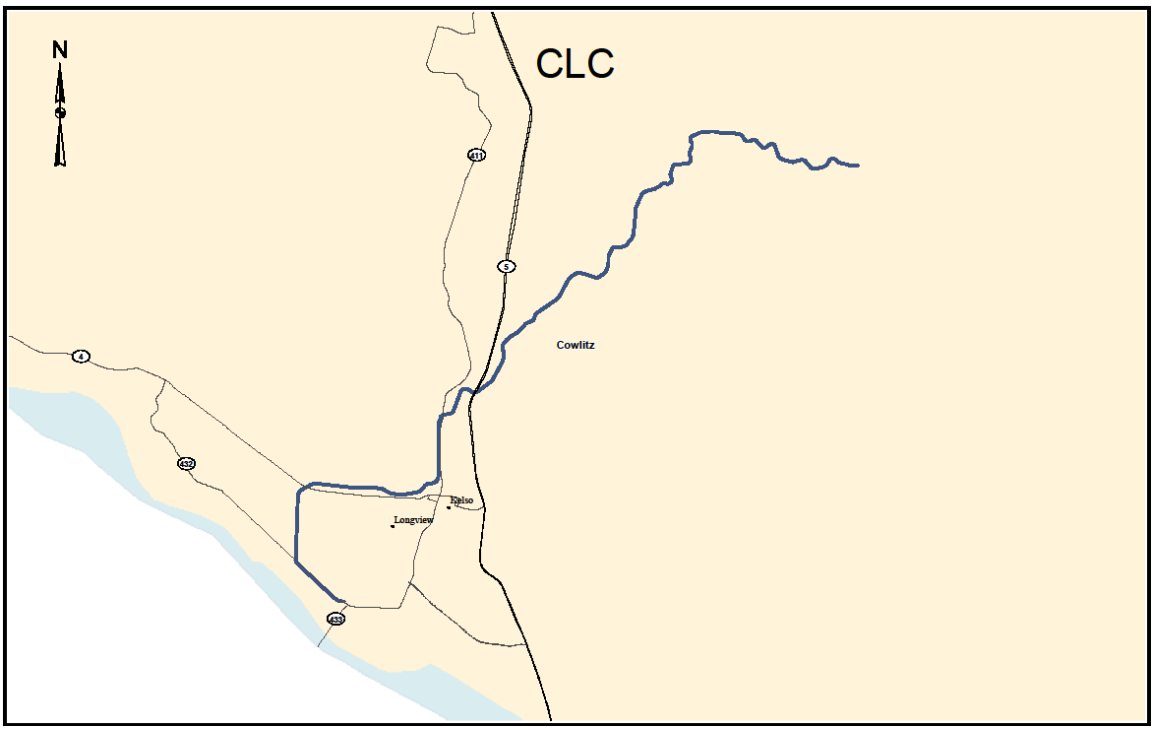


Columbia and Cowlitz Railway

The Columbia and Cowlitz Railway (CLC), a Class III railroad, is a wholly-owned subsidiary of Weyerhaeuser Company, and is headquartered in Longview, WA. The railroad serves an 8.5-mile public route from the Weyerhaeuser Company mill in Longview to the junction just outside the city limits of Kelso.[14] It also connects to a private route to serve Weyerhaeuser properties. The line was completed in 1928 and hauls forest products, steel, and chemicals.

The CLC reported total gross intrastate operating revenue of $2,654,693 in their 2008 Annual Report to the UTC.

[14] http://en.wikipedia.org/wiki/Columbia_and_Cowlitz_Railway/.

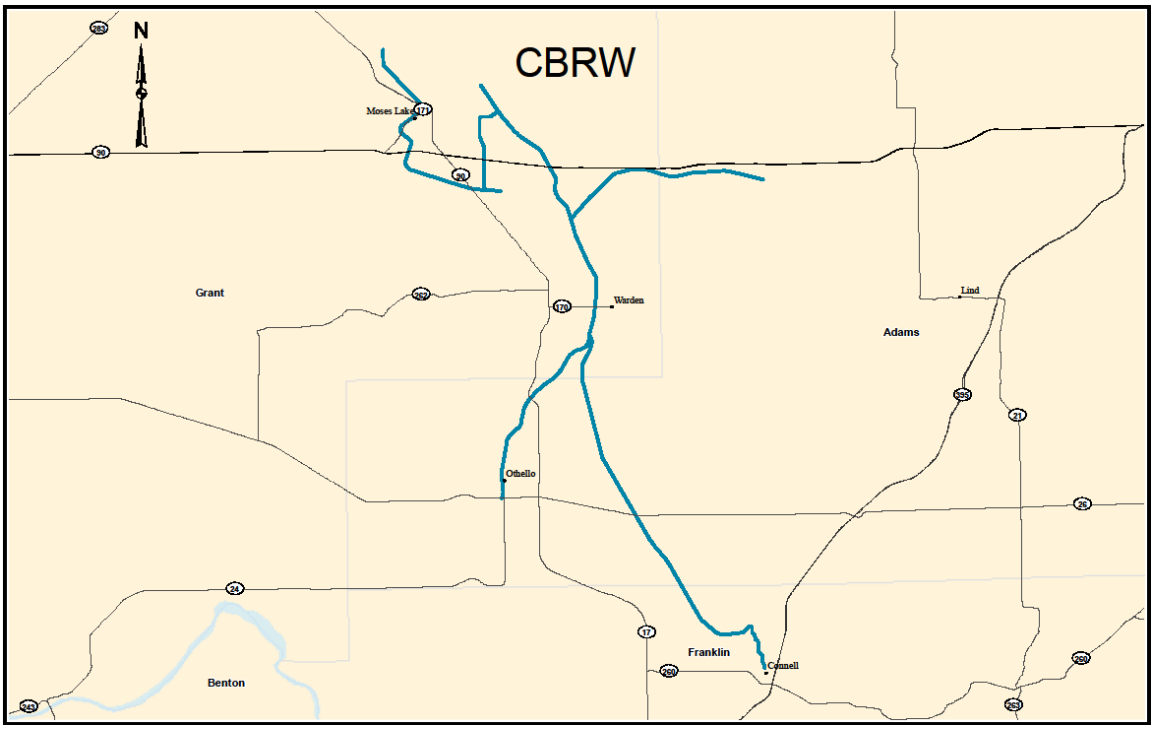


Columbia Basin Railroad

The Columbia Basin Railroad (CBRW) is a Class III railroad located in the Columbia Basin region of the state. Interchanging with the BNSF in Connell, the line runs north crossing I-90 before reaching Moses Lake. Along the route, the CBRW also serves Warden, Bruce, Schrag, and Othello. In total, the line consists of 86 track miles: 73 miles are owned by the CBRW and the other 13 track miles are on a long-term lease from the BNSF. Presently, the main commodities hauled on this line are agricultural goods, in-bound fertilizer, chemicals, and processed potatoes and vegetables.

The CBRW reported total interstate operating revenue of $4,240,109 and total gross intrastate operating revenue of $787,720 in their 2008 Annual Report to the UTC.

The Portland Vancouver Junction Railroad (PVJR) is a newly formed subsidiary of CBRW. It is owned by Clark County, serving the Vancouver (WA) area since 2004. The Chelatchie Prairie Railroad (BYCX), a tourist railroad, operates passenger excursions between Lucia and Yacolt on weekends and holidays.

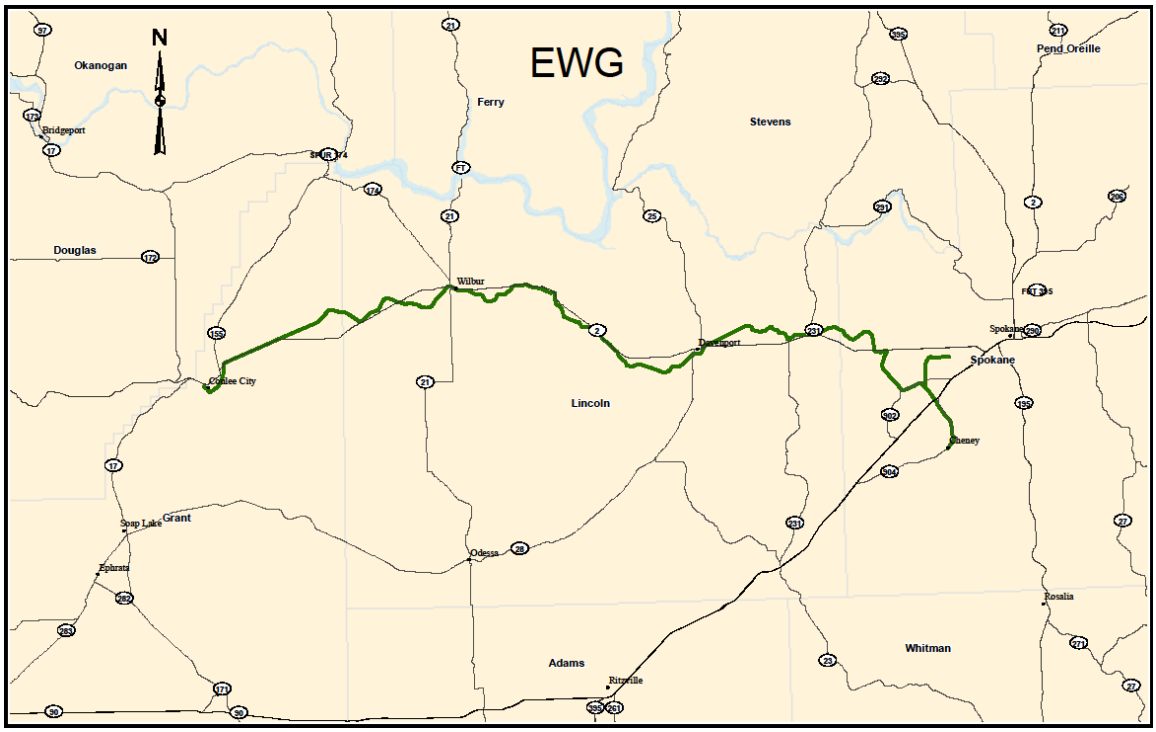


Eastern Washington Gateway Railroad

The Eastern Washington Gateway Railroad (EWG) operates a 108-mile Class III railroad that extends from Cheney to Coulee City. It is one of three state-owned branch lines of the Palouse River & Coulee City Railroad System. The primary customer is a grain cooperative, which ships barley and wheat from facilities located on the western portion of the branch. Other grain shippers transport grain by rail to a lesser extent. Most of the grain cars travel all of the way to the coast for shipment overseas. Other cars are taken in a 60-car shuttle operation to a loading operation in Ritzville, where the grain is placed in a 110-car shuttle train to the coast.

In January 2009, a new connecting track to the existing Geiger Spur in Airway Heights was opened. Formerly operated by Western Rail Switching (WRS) and owned by Spokane County, Geiger Spur customers include three metal fabricators and a locomotive parts reseller. Studies suggest that new industrial development in the greater Spokane area, including intermodal transload, will likely occur in the area served by the Geiger Spur.

The EWG reported total interstate operating revenue of $1,803,601 in their 2008 Annual Report to the UTC. WRS, in their last year of operation of the Geiger Spur, reported total interstate operating revenue of $58,500 in their 2008 report to the UTC.



Great Northwest Railroad

The Great Northwest Railroad (GRNW), a Class III railroad, is located in the Idaho Panhandle near the state line and consists of approximately 77 mainline miles. From Lewiston, ID, the railroad heads west to Riparia, WA. The GRNW interchanges with both the BNSF and UP at Ayer, WA, approximately 85 miles west of Lewiston.

The Camas Prairie Railroad Company was formed in 1909, jointly owned and operated by the former Northern Pacific Railway, now BNSF, and the former Oregon-Washington Railroad and Navigation Company, now UP. The GRNW is a wholly-owned subsidiary of Watco Companies, which purchased the line in 2004, renaming it the GRNW.[15]

Primary commodities are forest products consisting of lumber, bark, paper and tissue, agricultural products, industrial and farm chemicals, scrap iron, and frozen vegetables.

The GRNW reported total interstate operating revenue of $3,962,836 in their 2008 Annual Report to the UTC and reported total gross intrastate operating revenue of $113,584.

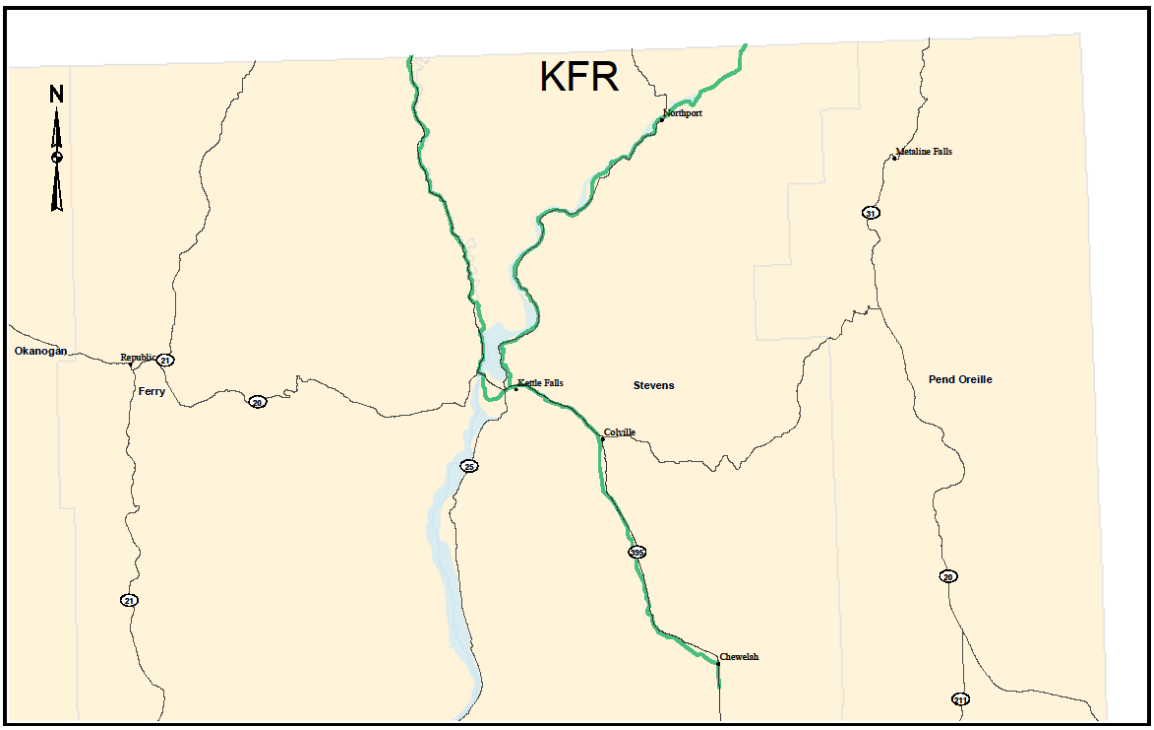
[15] http://www.watcocompanies.com/railroads/gnr/grnw.htm

Kettle Falls International Railway

The Kettle Falls International Railway, LLC (KFR) owns and operates over 160 miles of former BNSF trackage in northeastern Washington State and southeastern British Columbia (B.C.). KFR operates from the BNSF interchange at Chewelah, WA to Columbia Gardens, B.C. A second line operates from Kettle Falls to Grand Forks, B.C. KFR has a diverse traffic base, including lumber, plywood, wood products, minerals, metals, fertilizer, industrial chemicals, and abrasives.[16]

KFR reported total interstate operating revenue of $4,319,638 and total gross intrastate operating revenue of $460,891 in their 2008 Annual Report to the UTC.

[16] http://www.omnitrax.com/rail_kfr.aspx



Longview Switching Company

The Longview Switching Company (LSC), a Class III railroad, is a jointly owned subsidiary of BNSF and UP that performs terminal switching duties at the Port of Longview. LSC was once known as the Longview, Portland & Great Northern Railway (LP&N). The LP&N was owned by International Paper. Like Weyerhaeuser, International Paper owned its own railroads. The original LP&N went from Longview north to Ryderwood, but was later cut back to operate between Longview and a connection to the Northern Pacific (now BNSF) at Longview Junction. As International Paper built more mills in other parts of the northwest, they built more railroads as well, and all these railroads were part of the LP&N. When International Paper's Longview Mill closed, the railroad, which still served other customers, was sold to become Longview Switching. Longview Switching is a private company categorized under Railroad Switching and located in Longview. It was incorporated in 1971.[17]

The BNSF and UP mainlines run parallel to I-5, approximately five miles from the Port. The Longview Switching Company switches trains from the railroad mainlines into the Port. From there, Port locomotives move trains and rail cars to the marine terminals and industrial locations. The LSC operates on 17 miles of track owned by BNSF and UP.[18]

[17] http://people.msoe.edu/~westr/wtcx.htm
[18] http://www.manta.com/company/mtvr3mg

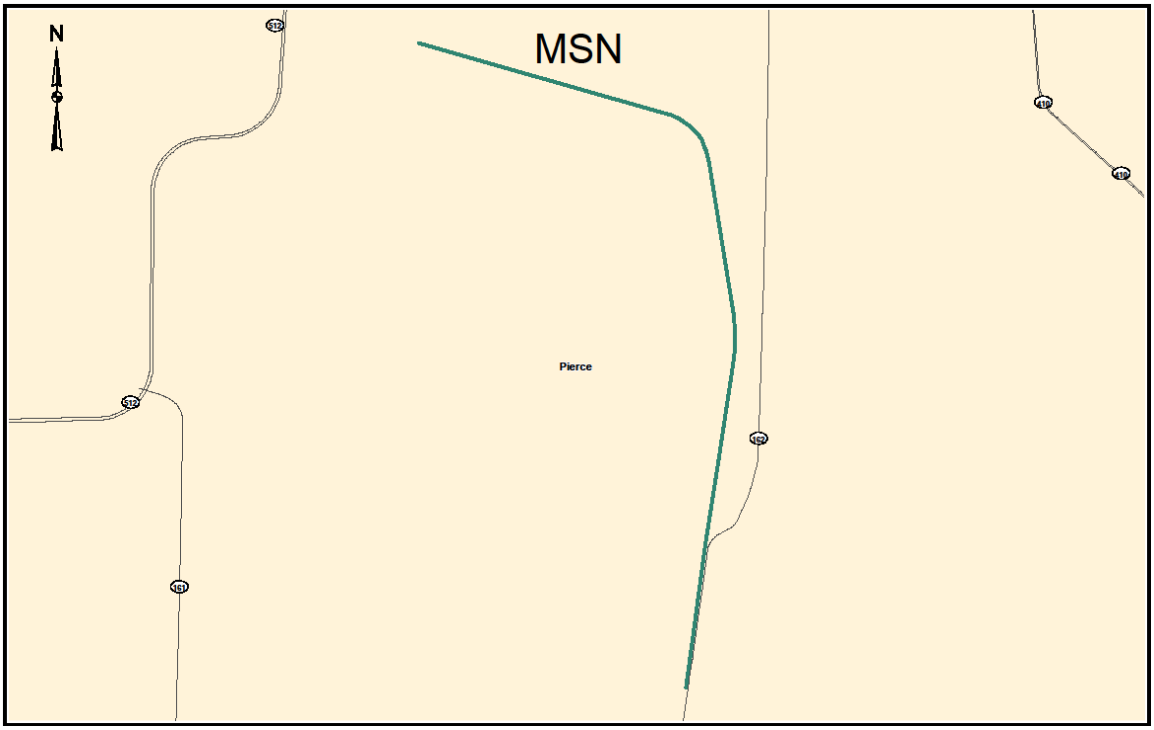
LSC reported estimated annual revenue of $1,600,000 in 2008.

Meeker Southern Railroad

The Meeker Southern (MSN) is a Class III railroad that connects Meeker Junction (Puyallup, WA), with an industrial park in McMillan, WA. The MSN is a wholly-owned subsidiary of the BDTL. The line is approximately 5 miles long, which is owned by MSN.

The commodities hauled on this line are fiberboard, building materials, and steel products.

MSN reported no total gross intrastate operating revenue, but did report $181,796 in interstate operating revenue.



Montana Rail Link

Montana Rail Link (MRL) is a Class II regional railroad with more than 900 miles of track serving 100 stations in Montana, Idaho, and Washington. MRL connects with the BNSF at Spokane, and at Laurel and Helena, Montana.

MRL hauls a variety of commodities including agriculture, chemicals, fertilizers, hazardous materials, lumber, coal, scrap iron, and paper.

MRL operates on 16 miles of track owned by BNSF from the Idaho border into Spokane.

MRL reported total intrastate revenue of $4,434,250 in 2008.

Mount Vernon Terminal Railway

The Mount Vernon Terminal Railway (MVT), a Class III railroad serving Mount Vernon, was formed in 1933 by acquisition of track from the Pacific Northwest Traction Company. The railroad expanded in 1939, when it acquired trackage abandoned by the Puget Sound & Cascade Railway. The railroad provides as-needed service and interchanges with BNSF at Mount Vernon. The railroad consists of a 3-track wide yard. It is used for storage and transloading, no on-line customers.

MVT reported total interstate operating revenue of $61,174 and no intrastate operating revenue.

Palouse River & Coulee City Railroad System

The Palouse River & Coulee City Railroad System is owned by the state. It consists of three Class III railroads operating on 279 miles of mainline track and 18 miles of former mainline track that is now used for rail car storage. The system is divided into the following branches:

CW Branch

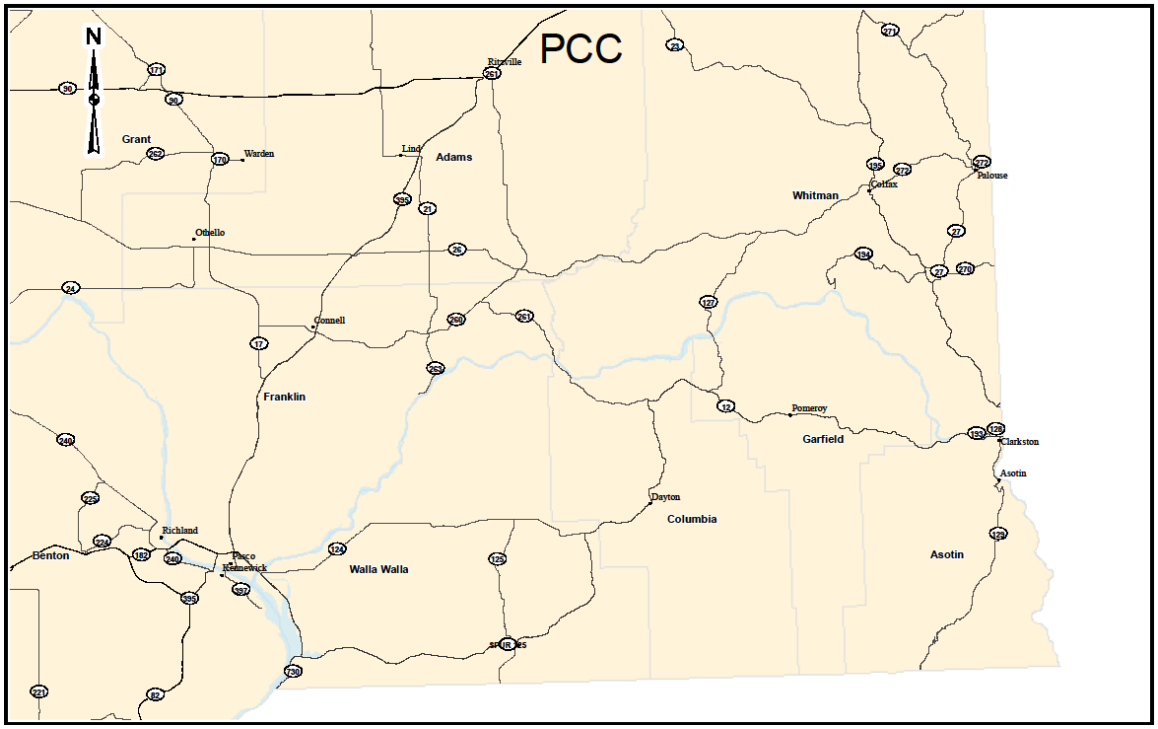
The Eastern Washington Gateway Railroad (EWG) operates this 108-mile-long branch that extends from Cheney to Coulee City. The primary customer is a grain cooperative, which ships wheat from facilities located on the western portion of the branch. Other grain shippers transport grain by rail to a lesser extent. Some of the grain cars travel all the way to the coast for shipment overseas. Other cars are taken in a 52-car shuttle operation to a mega-loader operation in Ritzville where the grain is placed in a 110-car shuttle train to the coast.

PV Hooper Branch

The PCC Railroad Company (PCC), a subsidiary of Watco Companies operates this branch, which contains a total of 84 miles of mainline track. Fertilizer products are brought into a facility located in Mockonema. However, grain is the primary commodity. Grain is taken to a transload facility in Wallula where it is loaded onto barges for transport to the coast. The Hooper sub-branch extends from Colfax to Hooper. The PV Hooper sub-branch extends from Thornton to Winona where it connects to the Hooper sub-branch.

P & L Branch

The Washington and Idaho Railway, Inc. (WIR) operates this branch, which contains a total of 87 miles of mainline operating track. Grain is also the primary commodity shipped on the branch. Fertilizer and lumber are also shipped. The branch extends from Marshall through Pullman to Moscow, ID. A small spur extends from Palouse to the Idaho border directly to the east where it continues to Princeton, ID under private ownership. The operator also stores cars on an 18-mile section that extends from Pullman to a river crossing near Colfax where a bridge burned that severed the section from the PV Hooper Branch.

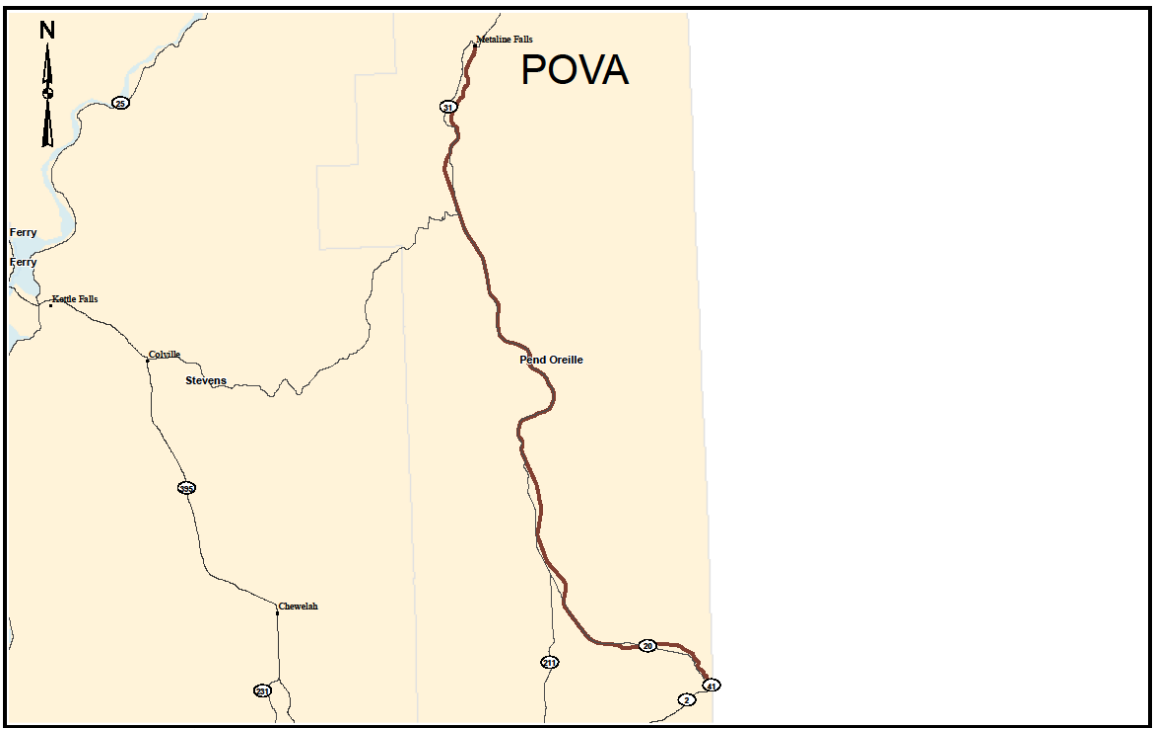


Pend Oreille Valley Railroad

The Port of Pend Oreille owns and operates the Pend Oreille Valley Railroad (POVA), a Class III railroad. Located in northeastern Washington, POVA-owned tracks run from Metaline Falls to Newport. POVA leases trackage from BNSF from Newport to Dover, ID.[19] Most of the POVA customers are located near the south end of the line, and the north end hosts occasional tourist trains between Ione and Metaline Falls.

POVA reported a total interstate operating revenue of $1,899,339 and total gross intrastate operating revenue of $506,001.

[19] http://www.povarr.com/



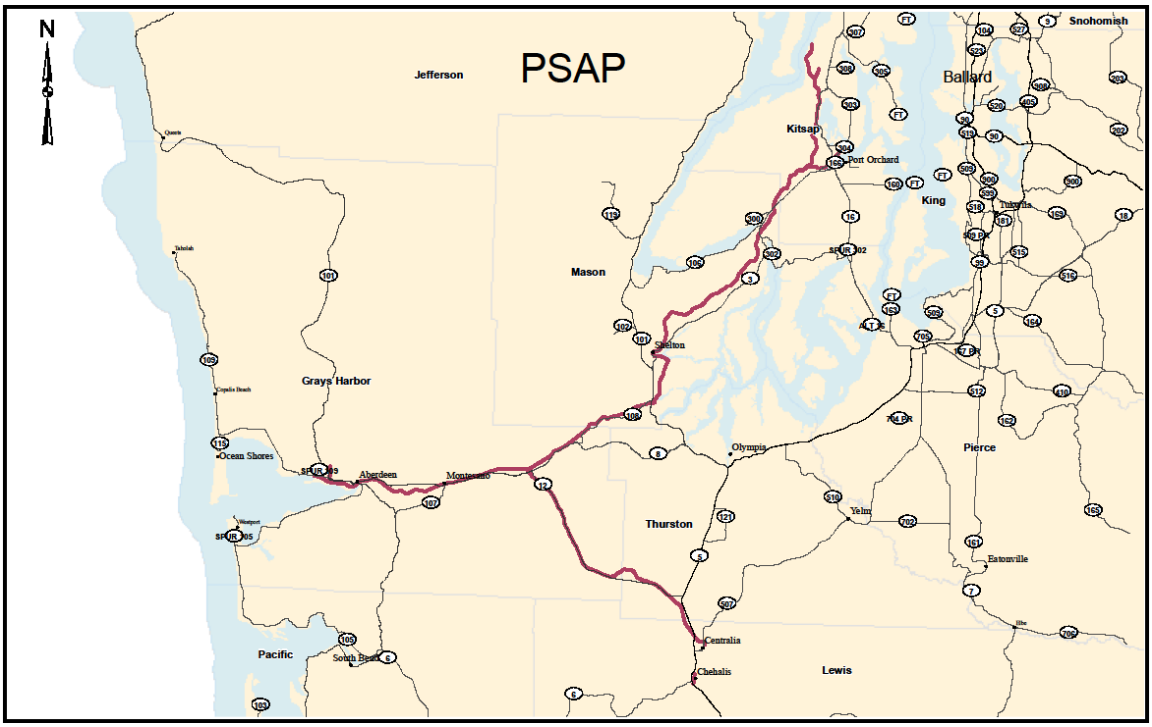
Puget Sound and Pacific Railroad

The Puget Sound and Pacific Railroad (PSAP), a Class III railroad, is headquartered in Elma, WA. PSAP interchanges with the BNSF and UP Class I railroads. PSAP runs through forest lands and serves major lumber customers. PSAP owns 109 miles of track and operates on 178 miles of track in Washington.

The line consists of the following segments: 1) Centralia to Elma to Aberdeen-Hoquiam, which connects with the Port of Grays Harbor; 2) Elma to Shelton, which connects with the U.S. Navy line that PSAP operates from Shelton to Bremerton and Bangor; and 3) Centralia to Chehalis to Curtis. The Port of Chehalis owns the section between Chehalis to Curtis. PSAP provides switching and haulage for UP at Aberdeen, Hoquiam, Grays Harbor, Shelton, and McCleary via Centralia.

The major commodities include lumber, logs, chemicals for the pulp and paper mills forest products, scrap metal, grains, aluminum, chemicals, and military cargo.

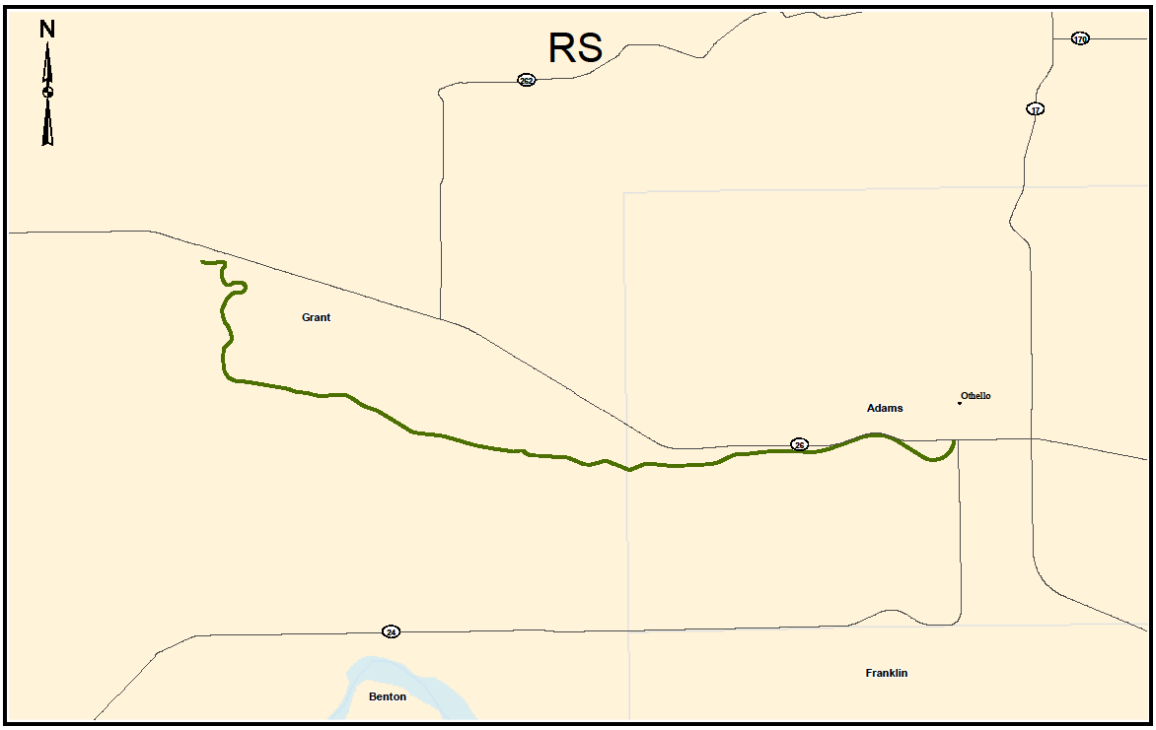
PSAP reported interstate operating revenue of $8,115,618 and total gross intrastate operating revenue of $64,840.



Royal Slope Line

The 26-mile WSDOT-owned Royal Slope Line (RS) is a remnant of the former Chicago, Milwaukee, St. Paul, and Pacific Railroad (Milwaukee Road). The eastern 20.5 miles were constructed as part of the "Pacific Extension," which was built between 1906 and 1909. The northwestern 5.5-mile spur was built by the Milwaukee Road in 1967. The line connects Royal City to the CBRW at Othello. The line currently is dormant, but could play important roles in two projects under consideration by the state:

- **Construction of a freight bypass between Ellensburg and Lind.** This project would rebuild the abandoned Milwaukee Road mainline to increase capacity on BNSF's Auburn-Pasco route and avoid the slow, circuitous routing through the Yakima River Valley. Some mitigation efforts would be necessary due to the line's passage through the Yakima Firing Range and steep grades on the original route.
- **Redevelopment of the Hanford Site as a large industrial complex.** If the federal government decides to redevelop the site as a large industrial complex, an alternative to reconstructing the original Milwaukee Road line between Beverly and Lind may be a bypass. The bypass would travel through the Hanford Site to Pasco, opening up the site to direct Class I rail service and addressing the capacity and environmental issues that affect the existing BNSF Ellensburg-Yakima-Pasco mainline.



Tacoma Rail

Tacoma Rail is a municipally held Class III and terminal switching railroad which is comprised of three distinct and separate divisions—Tidelands Division, Mountain Division, and the Capital Division.

Tacoma Municipal Belt Line

The Tacoma Municipal Belt Line (TMBL) is an operating division of the Tacoma Public Utilities. The Tidelands and Capital Divisions are under the governance of the Tacoma Public Utility Board.

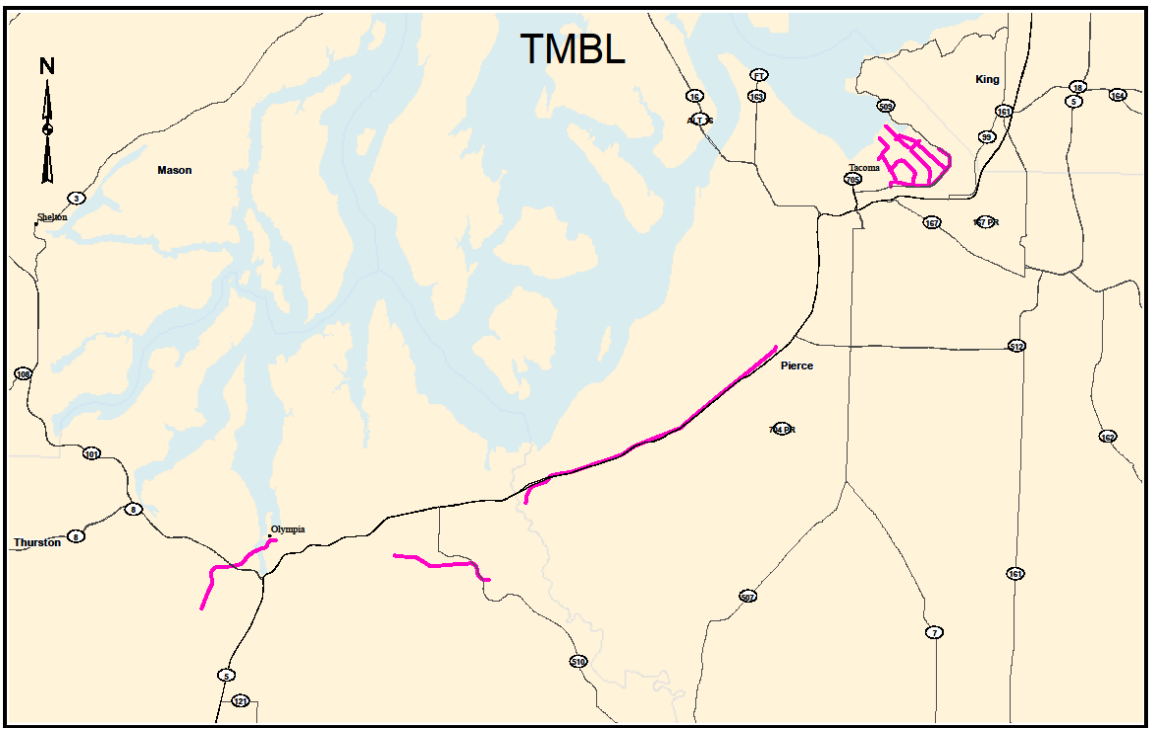
Tacoma Rail does the switching for TMBL's Tidelands Division, which includes the Port of Tacoma.

In 2004 TMBL formed its Capital Division by leasing three miles of BNSF's Lacey Spur (St. Clair-Quadlok) and 10 miles of the remaining original Northern Pacific mainline (Olympia-Belmore), in conjunction with obtaining a freight service easement over seven miles of BNSF's Lakeview Subdivision (South Tacoma-Lakeview) and 11 miles of BNSF's Lakeview Spur (Lakeview-Nisqually).

BNSF retains trackage rights over these lines to access the portion of the Lakeview Subdivision south of Lakeview that it still serves.

In addition to containerized cargo, TMBL's freight includes chemicals, automobiles, scrap metal, feed, grain, frozen food, lime, petroleum products, and lumber products.

TMBL had total interstate operating revenue of $14,359,192 and total gross intrastate operating revenue of $785,908 in 2008.



Tacoma Rail Mountain Division

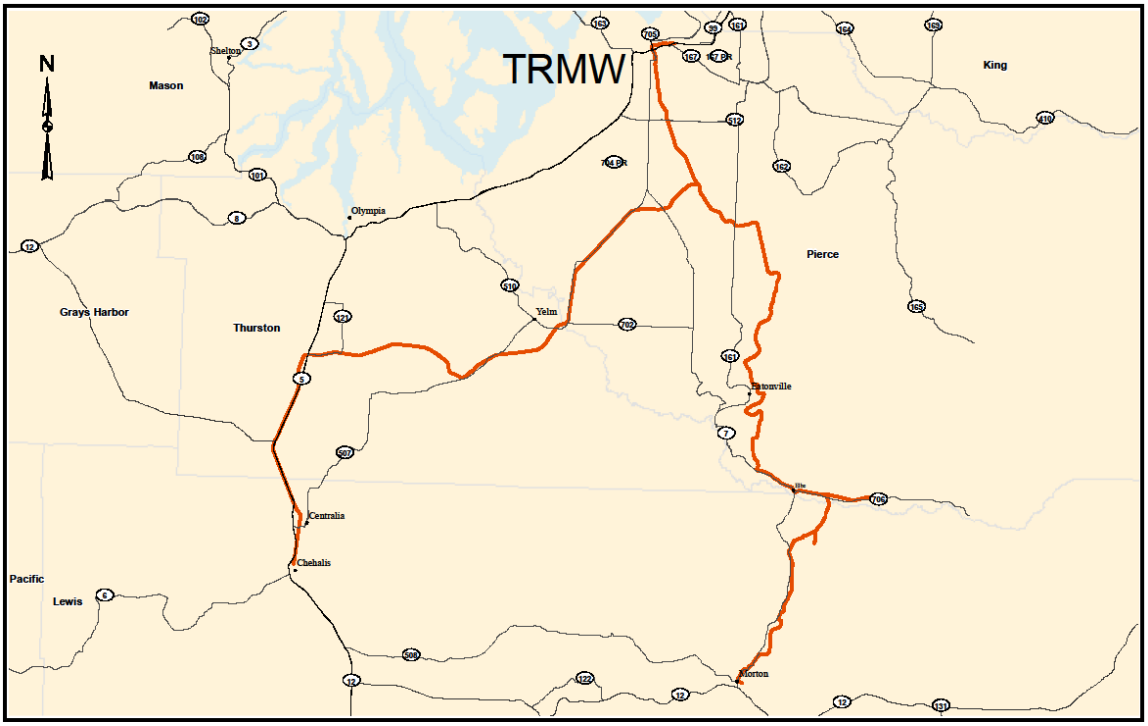
The Tacoma Rail Mountain Division (TRMW) is owned by the city of Tacoma, Public Works and operated by Tacoma Rail under the governance of the Tacoma City Council.

Tacoma Rail started operating the Mountain Division in November 1998 to provide freight rail service along the 132 miles of track connecting Tacoma with Frederickson in South Pierce County, Morton, and Chehalis.

It's called Mountain Division because the rail grade from Freighthouse Square up the gulch and south through the McKinley District is considered mountain grade. The 3.3 percent grade means the rail gains three and a third feet in altitude for every 100 feet in distance.

Current customers include Boeing, Hardie Building Products, MacMillan-Piper, Medallion Foods, and Harris Rebar. The Mountain Division also provides storage services for BNSF and UP. Commodities handled include forest products, chemicals, and airplane components.

TRMW reported a total interstate operating revenue of $539,950 and total gross intrastate operating revenue of $118,641 in 2008.



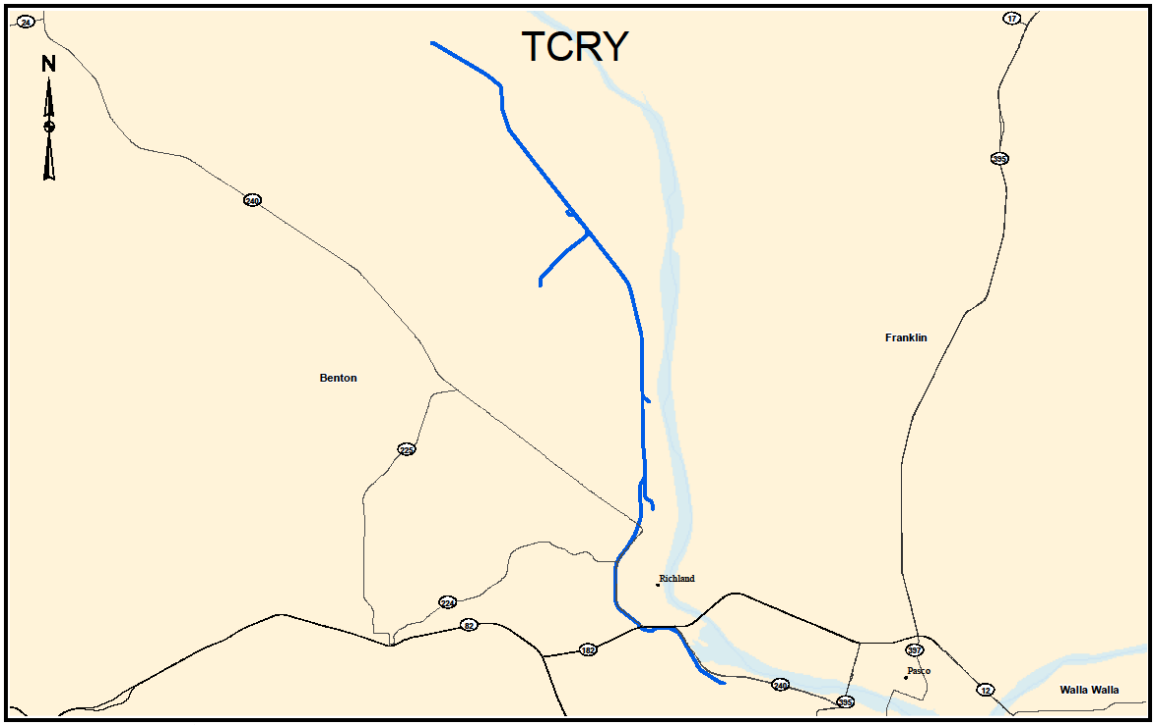
Tri-City and Olympia Railroad

The Tri-City and Olympia Railroad (TCRY) is a Class III railroad company that operates near Richland serving the Port of Benton and the U.S. Department of Energy, interchanging with BNSF and UP railroads in Richland. In 2009 TCRY ceased its Olympia operation. The TCRY provides repair shop services, on-site freight car switching, and rail-related services.

The TCRY transports many commodities including food, produce, military equipment, nuclear waste, feed, consumer products, beverages, agricultural commodities, grain, wood products, paper, coal and minerals, building materials, machinery and equipment, vehicles, chemicals, fertilizer as bulk goods, break bulk materials, feed stock, waste and scrap, liquids.[20]

The TCRY reported no total gross intrastate operating revenue in their 2008 Annual Report to the UTC.

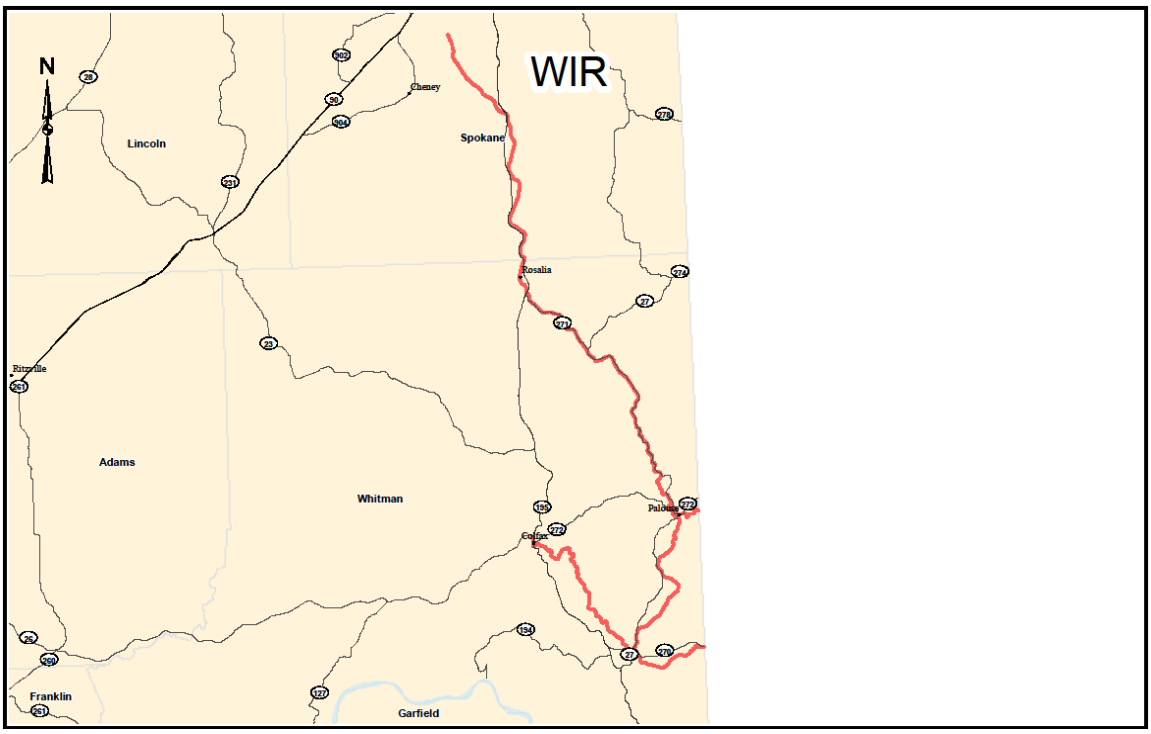
[20] http://www.tcry.com



Washington and Idaho Railway, Inc.

The Washington and Idaho Railway (WIR) is a Class III railroad that operates in the area south of Spokane, WA, connecting BNSF at Marshall to Palouse, WA, Harvard, ID, and Moscow, ID. It began operations in 2006 on ex-Northern Pacific Railway and Washington, Idaho and Montana Railway trackage.

The WIR reported total gross intrastate operating revenue of $824,945 in their 2008 Annual Report to the UTC.



Western Rail Switching

Western Rail Switching (WRS) is a switching and terminal railroad owned by Western Rail, Inc., a used locomotive seller located on the line. In 2004, Spokane County bought BNSF's Geiger Spur and designated WRS to operate it. In January 2009, realignment bypassed Fairchild Air Force Base, through which the spur had run. The west end of the spur now connects to the Eastern Washington Gateway Railroad (EWG) near Medical Lake. EWG now operates the Geiger Spur. WRS continues as an operating business.

Rail Service Corridors

The state currently has ten major rail corridors and 12 low-density corridors. These corridors are defined and operated by BNSF and UP. Exhibit 3B-1 lists all these corridors. While these rail corridors are defined by private railroads, the state has an interest to define rail corridors in terms of public benefits. The Freight Mobility and Strategic Investment Board (FMSIB) is authorized to define strategic rail corridors and update them periodically. Some short-line routes are critical to the economic viability of local communities and certain industries. The state needs to develop criteria to define rail corridors in terms of their impacts on the state's economic societal needs. A brief description of each rail service corridor is shown after the exhibit.

Exhibit 3B-1: Rail Service Corridors in Washington State

Railroads	Major Corridors	Low-Density Corridors
BNSF	Seattle-Spokane	Tukwila-Snohomish
	Seattle-Portland, Oregon (OR)	Woodinville-Redmond
	Portland, OR-Pasco	Burlington-Sumas
	Auburn-Pasco	Sumas-Lynden
	Pasco-Spokane	Burlington-Anacortes
	Spokane-Sandpoint, Idaho (ID)	Intalco-Cherry Point
	Everett-Vancouver, British Columbia (B.C.)	Marysville-Arlington
		Lakeview-Roy
		Spokane-Chewelah
UP	Hinkle, OR-Spokane	Spokane-Plummer, ID; Manito-Fairfield
	Spokane-Eastport, ID	Ayer Junction-Riparia
	Tacoma-Seattle	Wallula-Kennewick

BNSF Rail Service Corridors

BNSF operates over 1,604 miles in the state, which represents almost ten percent of their total system route miles operated. Service is provided over seven major corridors, and nine low-density corridors (Exhibit 3B-1). The major corridors provide the primary conduits to the North American rail network, while the low-density corridors offer collection/distribution services.

Seattle-Spokane Mainline

This 331-mile corridor consists of BNSF's Scenic Subdivision (Seattle-Everett-Wenatchee) and Columbia River Subdivision (Wenatchee-Spokane). The line traverses the longest railroad tunnel in the United States, the 7.8-mile Cascade Tunnel under the summit of Stevens Pass. Between Seattle and Everett, there are an average of 50 trains per day, with 25 per day operating between Everett and Spokane. Four Amtrak *Cascades* trains operate daily between Seattle and Everett, along with eight *Sounder* commuter trains each weekday. Amtrak's *Empire Builder* connecting Seattle and Chicago, operates once each way per day along the length of the corridor.

The line over Stevens Pass was completed in 1893 by the James Hill's Great Northern Railway (GN), creating a single-carrier link between Seattle and St. Paul, Minnesota. The GN later acquired control of the Chicago, Burlington, and Quincy Railroad (CBQ) to provide a direct

connection between the Northwest and Chicago, the railroad hub of the nation. Today, the line serves the same role for BNSF, conveying their highest-priority traffic to and from the west coast ports.

With only a few local exceptions, the corridor is controlled entirely by Centralized Traffic Control (CTC).[21] The portion of the line between Seattle and Everett is mostly two main tracks, and the majority of the Everett-Spokane segment is single-tracked. Maximum passenger train speed is 79 mph, maximum track speeds for freight trains are 60 mph between Wenatchee and Spokane and 50 mph between Seattle and Wenatchee, and railcars weighing up to 143 tons are permitted. The traffic base is primarily bridge movement of intermodal, agricultural and forest products, chemicals, automobiles, and other merchandise between the Northwest and the Midwest.

Seattle-Portland Mainline

BNSF's 177-mile Seattle Subdivision, connecting Seattle with Portland, OR, is the most heavily trafficked rail line in Washington State, conveying BNSF and UP trains (the latter via trackage rights) to and from the major Pacific Coast ports. The corridor hosts an average of 58 freight trains each day, with eight Amtrak *Cascades* trains operating daily, and 18 *Sounder* commuter trains connecting Seattle and Tacoma on weekdays. Amtrak's *Coast Starlight*, connecting Seattle and Los Angeles, operates once each way per day along the length of the corridor.

The portions of the corridor from Vancouver to Tenino and Tacoma to Seattle were completed by the Northern Pacific Railway by 1877, with the Oregon-Washington Railroad and Navigation Company obtaining trackage rights over the line. These segments were connected with the construction of the Port Townsend Southern Railroad along the shore of Puget Sound, with service beginning in 1914. It is this route via Point Defiance that carries the contemporary joint BNSF and UP mainline, with the Tenino-Yelm-Lakeview segment no longer hosting through traffic.

The entire corridor is two main tracks controlled by CTC, with the exception of short stretches in the Tacoma and Seattle terminals. Maximum train speeds are 79 mph for passenger and 60 mph for freight, with 143-ton-capacity cars permitted. Freight traffic includes intermodal, forest and agricultural products, refuse, chemicals, and finished automobiles.

[21] Railroad signaling systems are discussed in Chapter 5.

Portland-Pasco Mainline

The 233-mile BNSF Fallbridge Subdivision connects Portland, OR with Pasco—the junction with mainlines to Seattle and Spokane and location of an important classification yard. The line closely follows the Columbia River for its entire length, connecting with the Oregon Trunk Subdivision (BNSF's sole connection between the Northwest and California) at Wishram. An average of 31 freight trains traverse the line daily, with the Portland section of Amtrak's *Empire Builder* running once each way per day.

Seeking a water-level line to the Pacific coast to complement his Cascade crossings at Stampede and Stevens Passes, James Hill constructed the Spokane, Portland and Seattle Railway along the north bank of the Columbia River, completing the line between Pasco and Portland in 1908. The line is essentially level, with a maximum eastward grade of 0.20 percent, and today continues to be a vital link in BNSF's national network.

The Fallbridge Subdivision is almost entirely single-track mainline, with short stretches of two main tracks around Portland and Wishram. Traffic control over the entire line is via CTC. Passenger trains are permitted to operate at 79 mph and freight trains at 60 mph; the maximum allowable railcar weight is 143 tons. Annual freight traffic consists of intermodal, forest and agricultural products, refuse, coal, chemicals and finished automobiles.

Auburn-Pasco Mainline

BNSF's 227-mile mainline across central Washington consists of the Stampede Subdivision between Auburn and Ellensburg, and the Yakima Valley Subdivision connecting Ellensburg and Pasco. The Stampede Subdivision crosses the Cascade Mountains at Stampede Pass, entering the height-restricted Stampede Tunnel at the summit. The Yakima Valley Subdivision traverses the twisting Yakima River Canyon, which limits train velocity and line capacity. An average of six trains a day use this freight-only corridor.

Required by the federal government to connect Puget Sound to its eastern lines, or face the consequence of losing land grants, the Northern Pacific completed its link between Tacoma and Pasco in 1888. Decades later, after a merger which combined the Northern Pacific; Great Northern,; Spokane, Portland, and Seattle Railway; and Chicago, Burlington, and Quincy Railroad to form the Burlington Northern, and in response to the declining rail traffic of the early 1980s and the high cost of maintaining three mainlines across the state, Burlington Northern moth-balled the line over Stampede Pass in 1982; the majority of the corridor was sold to the

Washington Central Railroad. The line lay essentially dormant until the mid-1990s, when a period of unexpected growth stretched to the limit the capacity of BNSF's Stevens Pass and Columbia River routes, culminating in the decision to reacquire and reopen the line to allow the diversion of low-priority traffic from the vital intermodal corridors.

The corridor is almost entirely single track, except for a short stretch of two main tracks at Easton. Traffic control is via Track Warrant Control (TWC), with CTC islands in place at passing sidings. Maximum permitted train speed is 49 mph, and railcar weights up to 143 tons are allowed. Freight traffic includes forest, agricultural, and chemical products.

Pasco-Spokane Mainline

The 149-mile BNSF Lakeside Subdivision is a vital line connecting Pasco and Spokane, and its eastern 12 miles also hosts UP trains operating between Hinkle, OR, and Spokane. The line traverses rolling farmland as it skirts north of the Palouse Region. Approximately 33 BNSF freight trains operate on the line daily, along with a daily average of 11 UP trains on the shared line near Spokane. In addition, the Portland section of Amtrak's *Empire Builder* runs once each way per day.

The Lakeside Subdivision was Northern Pacific's original mainline from the east, completed between Spokane and Wallula in 1882. After the Burlington Northern merger of 1970, the line was operated in tandem with the parallel Spokane, Portland, and Seattle Railway route between Pasco and Spokane, before the latter was abandoned in the early 1990s in favor of the Northern Pacific route. The line currently is a vital link in BNSF's east-west network.

The corridor is primarily single-track, with short stretches of two main tracks in the vicinity of Spokane, Beatrice, and Pasco. Except for a short segment of Automatic Block Signaling (ABS) at Pasco, the entire line is controlled by CTC. Passenger trains are permitted to operate at 79 mph and freight trains at 60 mph; the maximum allowable railcar weight is 143 tons. Annual freight traffic consists of intermodal, forest and agricultural products, coal, chemicals and finished automobiles.

Spokane-Sandpoint, Idaho Mainline

BNSF's Kootenai River Subdivision between Spokane and Sandpoint, ID, commonly known as the "Funnel," is the second-busiest rail corridor in the state. The 69-mile line hosts an average of 46 freight trains each day, along with daily operation of Amtrak's *Empire Builder* service connecting Seattle and Portland to Chicago. Sandpoint also is the western end of the

Montana Rail Link (MRL) system; the MRL has operating rights over BNSF into Spokane.

The Funnel was part of the original Northern Pacific mainline, completed to Spokane in 1881. After the 1970 Burlington Northern merger, the Northern Pacific route was selected over the parallel ex-Great Northern route as the primary mainline from the east into Spokane, a function that it retains today for BNSF. Portions of the original Great Northern route continue under operation as segments of the Pend Oreille Valley Railroad and BNSF's Kettle Falls Subdivision, but abandonments have rendered that line no longer viable as a through route.

As the corridor experienced substantial growth in recent years, BNSF began to increase capacity by adding a second main track. As of April 2005, only 20 miles remained under single-track operation. Except for a short stretch in Spokane, the entire line is controlled by CTC. Annual freight traffic consists of intermodal, forest and agricultural products, coal, chemicals, and finished automobiles.

Everett-Vancouver, British Columbia Mainline

The 152-mile corridor spanning the Bellingham and New Westminster Subdivisions is the only remaining mainline link between the Washington State rail network and Canada (low-volume connections are served by BNSF at Sumas and KFR at Columbia Gardens, B.C.). An average of 23 freight trains operates on the line daily, with approximately 12 running through to Vancouver, B.C. Four daily Amtrak *Cascades* trains run between Everett and Vancouver, B.C.

This stretch of U.S. and Canadian railroad was completed by the Great Northern in 1891. From Blanchard to Bellingham, the line closely follows the shores of Samish and Bellingham Bays, a condition that limits both train speed and the ability to increase capacity without incurring great expenses. Additional delays are encountered while passing through Customs at the Blaine/White Rock border crossing. BNSF also operates a 2-mile stretch of former Milwaukee Road trackage in Bellingham that is owned by the Bellingham International Railroad (BIRR); the BIRR was formed for the purpose of preventing an industry from losing service on a line that BNSF intended to abandon.

The corridor is single-track CTC from Everett to New Westminster, with the exception of a few short stretches of Automatic Block Signaling/ Occupancy Control System (ABS/OCS). From New Westminster to Vancouver, the line is double-track CTC. Maximum train speeds are:

- Everett to Delta Junction: Talgo[22] 50 mph, passenger 35 mph, freight 15 mph.
- Delta Junction to Blaine: Talgo 79 mph, passenger 79 mph, freight 60 mph.
- Blaine to Vancouver, B.C.: Talgo 60 mph, passenger 60 mph, freight 40 mph.

Freight traffic includes intermodal, forest and agricultural products, refuse, chemicals, and finished automobiles.

Tukwila-Snohomish Branch Line

BNSF's 51-mile Woodinville Subdivision traverses the east side of the Seattle metropolitan area, connecting Tukwila, Renton, Bellevue, Woodinville, and Snohomish. BNSF operates one round-trip local on weekdays that serves industrial customers along the line, including delivery of 737 fuselages to Boeing's assembly plant in Renton.

The Woodinville Subdivision is a remnant of the former Northern Pacific (NP) mainline from Seattle to Sumas. The line to Sumas and a connection with the Canadian Pacific Railroad was completed by the Seattle, Lake Shore, & Eastern Railroad (SLS&E) in 1891; the SLS&E was subsequently absorbed into the NP in 1901. In the wake of the 1970 Burlington Northern merger, the Sumas line from Snohomish Junction to Sedro-Woolley was abandoned. In 2006 a study was conducted on the segment from Tukwila to Snohomish to consider potential future uses, including a parallel bicycle/pedestrian trail, mass transit, and as an emergency bypass route for freight traffic normally operating via Interbay, Edmonds, and Everett.

Traffic on the Woodinville Subdivision operates via TWC. Maximum permitted train speeds are 30 mph for passenger and 25 mph for freight. Railcar weights up to 143 tons can be operated from Snohomish Junction to Woodinville, while the remainder of the line is restricted to 134 tons. Tukwila-Woodinville freight corridor traffic consists of aircraft fuselages, forest products, and chemicals.

[22] Talgo, Inc. manufactures high-speed articulated trains. These operate as a set, with adjacent cars sharing axles and wheels and functioning as a single unit. This technology increases stability and improves safety and the smoothness of the ride. Talgo trains were initially allowed into the United States on a temporary basis and were leased for use in the Pacific Northwest from 1994 through 1998. Today, five trains built by Talgo operate in the Pacific Northwest and British Columbia as the Amtrak *Cascades* service.

Woodinville-Redmond Branch Line

Splitting from the Woodinville Subdivision at Woodinville, BNSF's Issaquah Spur runs seven miles to Redmond. There is rarely a demand for service, and trains operate on an as-needed basis.

The line was constructed by the SLS&E to compete with NP's line to Tacoma, but construction towards Snoqualmie Pass stalled in 1890 at North Bend, and the focus of the SLS&E was adjusted to continue its efforts to build to Sumas. The east end of the line, between Snoqualmie and North Bend, has been maintained as a tourist railroad (the Snoqualmie Valley Railroad) since 1957 by The Northwest Railway Museum. The remaining trackage between Snoqualmie and Redmond has been abandoned.

BNSF operates the line via TWC, with permitted track speeds of 25 mph for passenger and 10 mph for freight. The line is restricted to 134-ton railcars.

Burlington-Sumas Branch Line

BNSF's Sumas Subdivision connects Burlington and Sumas via Sedro-Woolley. It is served by a daily round-trip to and from Everett, and a local that switches on-line industries. The 4.7 miles between Burlington and Sedro-Woolley are the easternmost surviving segment of a former Great Northern branch that connected Anacortes and Rockport; the remaining 40 miles of the subdivision are formed from the north end of the NP's ex-SLS&E line from Seattle to Sumas. BNSF interchanges with Canadian Pacific Railway and the Southern Railway of British Columbia at Sumas.

Train operation on the line is via TWC, with a maximum permitted train speed of 40 mph. The line is restricted to 134-ton railcars from Burlington to Lawrence, but 143-ton cars are permitted from Lawrence to Sumas. Freight traffic includes forest and agricultural products, and chemicals.

Sumas-Lynden Branch Line

Breaking off the Sumas Subdivision at Sumas, BNSF operates a short stretch of former Bellingham Bay & British Columbia Railway trackage southwest to Lynden. The Lynden Spur, constructed in 1889, is served as-needed by the road switcher based at Sumas. Track speed on the TWC-controlled line is 10 mph, with cars limited to 131.5 tons.

Burlington-Anacortes Branch Line

The Anacortes Spur of BNSF's Bellingham Subdivision extends 12.4 miles west from Burlington to serve a Texaco refinery at Fidalgo, and hosts daily rail service. This line segment is the westernmost surviving

segment of a former Great Northern branch that connected Anacortes and Rockport.

The line is operated as an industrial track with a speed limit of 10 mph, and railcars up to 134 tons are permitted. Traffic includes petrochemicals.

Intalco-Cherry Point Branch Line

BNSF's Cherry Point Subdivision splits off the Bellingham Subdivision at Intalco, near the town of Custer, and runs southwest to serve a collection of industries at Cherry Point. BNSF operates two daily round trips on the line.

The Cherry Point Subdivision is operated by TWC, with a speed limit of 25 mph and a maximum railcar weight of 143 tons. The line was built in 1965 to serve the Intalco aluminum smelter, and later a series of petroleum-related industries were constructed on the line. Traffic includes metals and petrochemicals.

Marysville-Arlington Branch Line

Breaking off the Bellingham Subdivision at Kruse Junction, BNSF's Arlington Spur connects Arlington to the national rail network, and is classified by BNSF as an industrial spur. The line is served twice weekly by a road switcher based in Everett. Track speed on the line is 10 mph, and 143-ton railcars are permitted.

Lakeview-Roy Branch Line

Although BNSF sold freight rights on the north end of its Lakeview Subdivision and the entire length of the connecting Lakeview Spur to Tacoma Rail in 2004, it retained the remainder of the Lakeview Subdivision from Lakeview to Roy. The customers on the line are the U.S. Army's Fort Lewis, which occasionally ships or receives military equipment, and Wilcox Farms, which receives feed at Roy twice a week. Track speed on the line is 10 mph, and 143-ton railcars are permitted; however, as of spring 2006, the only connection to the rest of the BNSF network, via the Lakeview Spur and Nisqually, is restricted to 134-ton railcars.

Spokane-Chewelah Branch Line

BNSF's Kettle Falls Subdivision was constructed in 1889 by the Spokane Falls and Northern Railway, and came under control of James Hill's Great Northern in 1898. In late 2004, BNSF sold the Kettle Falls and San Poil Subdivisions north of Kettle Falls to OmniTRAX's Kettle Falls International Railway (KFR), and leased the Kettle Falls-Chewelah segment to the KFR; the two railroads interchange daily at the latter

location. BNSF's remaining Kettle Falls Subdivision trackage, between Spokane and Chewelah, is rated at 40 mph with 143-ton railcar weights, and is controlled by TWC.

UP Service Corridors

Union Pacific (UP) operates over 678 miles in the state, which represents less than three percent of their total system route miles. Service is provided over two major corridors, and three low-density corridors. The major corridors provide the primary conduits to the nationwide rail network, while the low-density corridors offer collection/distribution services. These corridors are summarized in Exhibit 3B-1.

Hinkle, OR-Spokane Mainline

UP's 171-mile Ayer Subdivision connects Hinkle Yard in Hermiston, OR to the Spokane terminal. At Fish Lake, the north end of the line, UP uses trackage rights on BNSF's Lakeside Subdivision to access Spokane. The Ayer Subdivision hosts an average of 11 freight trains per day, and does not have passenger service.

The "Washy" line is comprised of four segments:

1. Hinkle, OR to milepost (MP) 201 was completed in 1951 by the Oregon-Washington Railroad and Navigation Company.
2. MP 201 to Wallula (MP 215) was constructed by the U.S. government and completed in 1952.
3. Wallula to MP 264 (near Ayer) was completed by the Snake River Valley Railroad Company in 1899, with much of the line being rebuilt by the U.S. government in the 1960s as a result of their Snake River Dam projects.
4. MP 264 to Fish Lake (MP 355) was completed in 1914 by a joint venture between the Oregon-Washington Railroad and Navigation Company and the North Coast Railroad.

BNSF has trackage rights over the line from Pasco to Ayer Junction, and then down the Riparia Subdivision to its namesake city, for the purposes of interchange with the Great Northwest Railroad.

The Ayer Subdivision is operated by CTC from Hinkle, OR to Page and for four miles between Ayer Junction and Joso; the remainder of the line is controlled by TWC/ABS. Maximum permitted train speed is 40 mph, except for a 30-mile stretch of 50 mph trackage between Page and Ayer Junction. Maximum railcar weights are 158 tons between Hinkle, OR and Wallula Junction, and 143 tons between Wallula Junction and Spokane. Freight traffic is primary forest and agricultural products, potash, and chemicals.

Spokane-Eastport, Idaho Mainline

The Spokane Subdivision of UP roughly parallels BNSF's Kootenai River Subdivision for 74 miles from Spokane to Sandpoint, ID then heads north to Eastport, ID. Since this line is not an essential component of UP's transcontinental mainline, quite unlike the parallel BNSF route, UP operates an average of only seven trains per day east of Spokane.

Completed in 1906 by the Spokane International Railroad and acquired by UP in 1958, the route retains a reminder of its origins through the commonly used "SI" nickname. Train operation on the single-track line is via TWC, with infrequent sidings. To address slow-speed issues, UP performed upgrades, added a siding just east of Spokane, and added CTC islands at existing passing sidings.

Freight traffic is primary overhead tonnage connecting with Canadian Pacific Railway at Eastport, ID, and includes forest and agricultural products, potash, and chemicals.

Tacoma-Seattle

UP travels over BNSF track between Portland, OR and Tacoma. From Tacoma, the UP switches to its own rail line to reach Seattle. This corridor was once owned by the Milwaukee Road and purchased by UP.

Spokane-Plummer, Idaho & Manito-Fairfield Branch Lines

UP operates two branch lines southeast of Spokane. The 45-mile Wallace Subdivision runs from Spokane to Plummer, ID, crossing the state line five miles east of Manito. Interchanges with the St. Maries Railroad (STMA) are performed at Plummer. The 13-mile Fairfield Industrial Lead departs the Wallace Subdivision at Manito and heads south to its namesake town.

The Spokane-Manito and Manito-Fairfield segments were constructed in 1888 to 1889 by the Washington & Idaho Railroad, while the Manito-Plummer segment was constructed between 1909 and 1914 by the Idaho & Western Railway (which was merged into the Chicago, Milwaukee, & Puget Sound Railway in 1912). These two branch lines serve the agricultural region of eastern Washington and western Idaho.

Ayer Junction-Riparia Branch Line

UP's 11-mile Riparia Subdivision connects the Ayer Subdivision to the Great Northwest Railroad (GRNW) at Riparia. BNSF has trackage rights over this line for the purpose of interchange with the GRNW, and the GRNW has trackage rights to MP 267.1 on the Ayer Subdivision to perform interchanges at Ayer (see the GRNW section for more

background information). The line was constructed in 1899 by the Snake River Valley Railroad, and was relocated in 1968 by the U.S. government.

Wallula-Kennewick Branch Line

The 19-mile UP Kalan Industrial Lead extends from the junction with the Ayer Subdivision at Wallula to the connection with the Tri-City & Olympia Railroad at Richland Junction. The line, which once extended west to Yakima, was completed in 1911 by the Oregon-Washington Railroad and Navigation Company and the North Coast Railroad.

Safety Regulatory History[23]

The state has very little safety jurisdiction over rail operations, except for public highway-rail crossings. In 1980 Congress passed sweeping legislation, which essentially pre-empted states from most areas of safety regulation (as well as rates and service regulation). States can conduct inspections in various safety disciplines as part of a state-federal participation program, but any enforcement is done by the FRA. Washington currently employs four FRA-certified state inspectors. They are certified in hazardous materials, track, signals, and operating practices.

Any changes in regulation, through legislation or rulemaking at the state level, is therefore fairly limited and generally handled through the Washington Utilities and Transportation Commission (UTC).

Rail Employee Safety

For the most part, safety regulation of railroad employees is done at the federal level. The state does have some limited jurisdiction, which is split between the UTC and the Washington State Department of Labor and Industries (L&I) by a Memorandum of Understanding (MOU). In 2000 the UTC completed a rulemaking on safety in rail yards. The primary emphasis was on walking surfaces or "walkways," where there was strong evidence of injuries to employees from uneven, unstable, or muddy walkways in the rail yards and around switches. The UTC also addressed other tripping/falling hazards such as excess debris laying around, overgrown vegetation, and other obstructions that got in the way of employees doing their jobs safely.[24]

Remote Control Operations

In the late 1990s, railroad companies developed technology for operating locomotives from remote locations with no engineers or other employees

[23] Utilities and Transportation Commission, Paul Curl, email dated 9/24/2009.
[24] The Washington Administrative Code (WAC) 480-60-035 addresses railroad company employee walkways.

on board. For the most part, remote control operations are conducted in rail yards to move equipment around, but the UTC had concerns about operations over public highway-rail grade crossings. The UTC completed a rulemaking in 2001 to address these issues.[25]

Community Notice

In the late 1990s, the UTC heard from a number of cities and towns that railroad companies were shutting down grade crossings, or otherwise disrupting traffic flow for routine construction and maintenance work, without any advance notice. The UTC addressed this issue with a rulemaking in 2001.[26]

Blocked Crossings

Another issue that came up in the late 1990s was blocked crossings. The UTC received a high number of citizen and local government complaints about trains blocking grade crossings for long periods of time. The UTC addressed this issue with a rulemaking in 2001.[27]

Train Speeds

Throughout the 1990s and early 2000s, the UTC reviewed petitions from railroads that wanted to increase speeds in certain areas to expand capacity and improve service. The UTC had, over the years, issued orders limiting train speeds in 162 communities around the state. Some of the orders dated back to the 1940s. The process for speed limit changes was extremely burdensome for the railroads, and local governments and their constituents had unrealistic expectations on what the UTC could do. Essentially, state law was obsolete and had not kept up with modern rail operations, safety improvements, changed circumstances, and federal law. In 2006 the UTC assisted the railroads in successful legislation that addressed the issue. The new law[28] established a procedure for changing speed limits in cities and towns that was substantially streamlined, but retained notice and opportunity to be heard for local governments and the public. The new law also effectively canceled the 162 speed limit orders in effect at that time.

Grade Crossing Protective Fund

The UTC had administered a grant program for upgrading and improving safety at public grade crossings since the 1960s. The program had been

[25] WAC 480-62-320 addresses railroad company remote controlled operations.
[26] WAC 480-62-305 addresses railroad company accident reports.
[27] WAC 480-62-220 addresses public grade crossings blockages (i.e. crossings shall not be blocked for more than ten consecutive minutes, if reasonably possible).
[28] RCW 81.48.040, transportation law specifying a procedure to fix or change speed limits.

successful, but was essentially declining by the late 1990s due to changes in federal funding, eligibility for funding, and limited purpose. In 2003 the UTC successfully proposed legislation that changed the eligibility to any public or private entity and expanded the purpose to include any rail safety related project. The program has been revitalized and since 2003, the UTC has awarded grants for hundreds of projects that would not have otherwise been done. Examples include trespass prevention, private crossing improvements, education, and sign replacement.[29]

Statutes Housekeeping

In 2007 the UTC successfully proposed legislation to clean up the statutes related to railroads. Many of the state laws were obsolete, pre-empted, or otherwise useless and confusing. Some of these laws had been on the books since the early 1900s. While this legislation appears mundane, it has proven useful in reflecting current reality and making it clear to the railroads, public, and local governments what the UTC can and cannot do.

Quiet Zones

As communities have grown, especially along the railroad tracks, many people have complained about the noise of train horns at rail crossings. Many rail lines run right along Puget Sound and the Columbia River where new homes have been built. As rail traffic increased, the noise became a significant issue in some communities where the horn sounds 24 hours a day. No reasonable alternative existed, even though the noise was bothersome, because the train horns at crossings were an important safety feature. In 2006 the FRA adopted a rule which allowed communities to establish "quiet zones," where railroads would be prohibited from blowing the horn except in an emergency.[30] In order to establish a quiet zone, the community is required to ensure continued safety at the affected crossings. While the rule is federal, the UTC has a role in the process of making sure the crossings meet federal guidelines, as well as suggesting changes and improvements to the crossings.

Crossing Consolidation/Closure

Since about 1994, the FRA, Federal Highway Administration (FHWA), railroads, and state regulatory agencies have encouraged closure or consolidation of both private and public grade crossings. The theory is that the safest grade crossing is no grade crossing and the UTC has

[29] RCW 81.53.281 and WAC 480-62, addressing railroad crossings and operations.
[30] The Final Horn Rule was promulgated by the FRA and published in the Federal Register on April 27, 2005. The rule required trains to sound a horn or whistle when approaching a highway railroad grade crossing. The intent was to develop a mechanism for a public authority to authorize a whistle/horn ban at a crossing(s) with the authority jurisdiction under the context of an existing state law or modified state law.

participated in projects over the last 15 years to close or consolidate crossings in Washington. Nationally some 40,000 grade crossings have been closed over the last 15 years. During that time, the UTC has been supportive of the effort and BNSF has been the most aggressive of any railroad in the country in eliminating grade crossings, including in Washington. In the last few years, the UTC has taken a more proactive approach to crossing closures and the UTC now has specific goals for crossing closures in their 2009-2011 strategic plan.

Operation Lifesaver

Operation Lifesaver, Inc. (OLI) is a national non-profit organization dedicated to providing education and outreach on rail safety issues. The UTC has strongly supported OLI efforts over the years and currently a UTC employee serves as the Washington State Operation Lifesaver coordinator.

Washington State Department of Transportation

Appendix 3-C: Intermodal Facility Commodity Descriptions

The following information was gathered from the USDOT Bureau of Transportation Statistics, its National Transportation Atlas Database 2009 and Intermodal Terminal Facilities data sets.

Name	Type	Mode Type	Commodity Description
Alaska Airlines	Air	Air & Truck	• Meat, Fish, and Preparations
Americold Logistics, Inc., Burlington, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Meat, Fish, and Preparations • Other Crops • Other Prepared Food Stuffs
Americold Logistics, Inc., Pasco, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Meat, Fish, and Preparations • Other Crops • Other Prepared Food Stuffs
Apex Cold Storage, Kent, WA	Rail	Rail & Truck	• Alcoholic Beverages • Animal Feed, Pet Food, and Products of Animal Orig • Articles of Stone, Ceramic, Or Glass • Forest Products • Gravel and Crushed Stone • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Prepared Food Stuffs • Wood Products
Atlas Columbia Warehouse, Inc., Tacoma, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Metal, and Articles of Metal • Plastics and Rubber • Pulp, Newsprint, Paper, and Paperboard • Waste and Scrap • Wood Products
Bellingham Cold Storage, Bellingham, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Prepared Food Stuffs
Blaine Harbor	Port	Port & Truck	• Meat, Fish, and Preparations
BNSF, Tacoma Blair, WA	Rail	Truck - Port - Rail	• Meat, Fish, and Preparations • Other Crops

Name	Type	Mode Type	Commodity Description
Bulk Service Transport/James J. William's, Spokane, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Basic Chemicals • Fertilizers • Metallic Ores • Natural Sands Except Metal-Bearing • Non-Metallic Mineral Products N.E.C. • Waste and Scrap
Cascade Warehouse Co., Inc., Chehalis, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Non-Metallic Mineral Products N.E.C. • Plastics and Rubber • Wood Products
Columbia Colstor, Inc., Kennewick, WA	Rail	Rail & Truck	• Alcoholic Beverages • Other Prepared Food Stuffs
Columbia Colstor, Inc., Quincy, WA	Rail	Rail & Truck	• Furniture and Furnishings • Meat, Fish, and Preparations • Other Prepared Food Stuffs
Columbia Colstor, Inc., Woodland, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Prepared Food Stuffs
Continental Grain Temco, Tacoma, WA	Rail	Rail & Truck	• Cereal Grains • Other Crops
CSX Intermodal, Tacoma, WA	Rail	Truck - Port - Rail	• Meat, Fish, and Preparations • Other Crops
Daybreak Dispatch and Rail Transfer	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Other Metal, and Articles of Metal • Wood Products
Desticon Transportation Services, Inc., Sumas, WA	Rail	Rail & Truck	• Forest Products
Devries Moving, Packing, Storage, Spokane, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Furniture and Furnishings • Mechanical Machinery • Non-Metallic Mineral Products N.E.C. • Other Metal, and Articles of Metal • Pulp, Newsprint, Paper, and Paperboard
Gary Hamilton Trucking, Inc., Puyallup, WA	Rail	Rail & Truck	• Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Other Metal, and Articles of Metal • Wood Products
GATX Terminals Corporation, Seattle, WA	Rail	Rail & Truck	• Coal • Refined Petroleum Products N.E.C.

Name	Type	Mode Type	Commodity Description
Inland Empire Distribution Systems, Spokane, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Electrical Machinery and Equipment • Fertilizers • Furniture and Furnishings • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Non-Metallic Mineral Products N.E.C. • Other Crops • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Precision Instruments and Apparatus • Refined Petroleum Products N.E.C. • Wood Products
Kenyon Zero Storage, Inc., Prosser, WA	Rail	Rail & Truck	• Alcoholic Beverages • Animal Feed, Pet Food, and Products of Animal Orig • Meat, Fish, and Preparations • Other Crops • Other Prepared Food Stuffs
Kinder Morgan Bulk Terminals, Inc., Vancouver, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig Articles of Stone, Ceramic, Or Glass • Coal Fertilizers • Gravel and Crushed Stone • Monumental Or Building Stone • Natural Sands Except Metal-Bearing • Non-Metallic Mineral Products N.E.C. • Other Metal, and Articles of Metal • Refined Petroleum Products N.E.C.
Konoike Pacific Tacoma Terminals, Inc., Tacoma, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Furniture and Furnishings • Iron and Steel In Primary Forms and Basic Shapes • Meat, Fish, and Preparations • Mechanical Machinery • Milled Grain Products and Preparations and Bakery • Miscellaneous Manufactured Products • Non-Metallic Mineral Products N.E.C. • Other Crops • Other Prepared Food Stuffs • Plastics and Rubber • Precision Instruments and Apparatus • Pulp, Newsprint, Paper, and Paperboard • Wood Products
Lile Logistics Service, Kent, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Engines, Parts, and Accessories For Motor Vehicles • Furniture and Furnishings • Mechanical Machinery • Pulp, Newsprint, Paper, and Paperboard • Textiles, Leather, and Articles • Wood Products

Name	Type	Mode Type	Commodity Description
MacMillan, Piper, Seattle, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Meat, Fish, and Preparations • Mechanical Machinery • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard • Wood Products
MacMillan, Piper, Seattle, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Articles of Stone, Ceramic, Or Glass • Basic Chemicals • Fertilizers • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Wood Products
MacMillan, Piper, Tacoma, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Meat, Fish, and Preparations • Mechanical Machinery • Metallic Ores • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard • Wood Products
Mid-Columbia Warehouse, Inc., Pasco, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Converted Paper and Converted Paper Products • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Pulp, Newsprint, Paper, and Paperboard • Waste and Scrap • Wood Products
Morgan Trucking, Inc., Tacoma, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Plastics and Rubber • Wood Products

Name	Type	Mode Type	Commodity Description
Oroville Bin and Pallet, Oroville, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Electrical Machinery and Equipment • Furniture and Furnishings • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Non-Metallic Mineral Products N.E.C. • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Wood Products
Pacific Coast Container Northwest, Harbor Island, WA	Rail	Truck - Port - Rail	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Motor Vehicles • Other Crops • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard • Wood Products
Pacific Coast Container Northwest, Tacoma, WA	Rail	Truck - Port - Rail	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Motor Vehicles • Other Crops • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard
Pacific Coast Container Northwest Seattle, WA	Rail	Truck - Port - Rail	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Motor Vehicles • Other Crops • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard
Pacific Terminals Limited, Seattle, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Iron and Steel In Primary Forms and Basic Shapes Mechanical Machinery • Metallic Ores • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Pulp, Newsprint, Paper, and Paperboard • Refined Petroleum Products N.E.C.
Pellissier Trucking, Inc., Dallasport, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Electrical Machinery and Equipment • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Other Metal, and Articles of Metal • Plastics and Rubber • Pulp, Newsprint, Paper, and Paperboard • Wood Products

Name	Type	Mode Type	Commodity Description
Pend Oreille Valley Railroad, Usk, WA	Rail	Rail & Truck	• Meat, Fish, and Preparations • Other Crops
Port of Anacortes	Port	Port & Truck	• Crude Petroleum • Forest Products • Meat, Fish, and Preparations • Metallic Ores • Other Crops • Refined Petroleum Products N.E.C.
Port of Bellingham	Port	Port & Truck	• Articles of Stone, Ceramic, Or Glass • Basic Chemicals • Forest Products • Meat, Fish, and Preparations • Metallic Ores • Non-Metallic Mineral Products N.E.C. • Other Crops • Wood Products
Port of Clarkston	Port	Truck - Port - Rail	• Forest Products
Port of Everett	Port	Truck - Port - Rail	• Basic Chemicals • Engines, Parts, and Accessories For Motor Vehicles • Forest Products • Gravel and Crushed Stone • Meat, Fish, and Preparations • Mechanical Machinery • Metallic Ores • Miscellaneous Manufactured Products • Motor Vehicles • Natural Sands Except Metal-Bearing • Other Crops • Transportation Equipment N.E.C. • Wood Products
Port of Grays Harbor	Port	Truck - Port - Rail	• Articles of Stone, Ceramic, Or Glass • Cereal Grains • Chemical Preparations N.E.C. • Converted Paper and Converted Paper Products • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Meat, Fish, and Preparations • Mechanical Machinery • Metallic Ores • Motor Vehicles • Other Crops • Other Metal, and Articles of Metal • Refined Petroleum Products N.E.C. • Wood Products
Port of Kalama	Port	Truck - Port - Rail	• Articles of Stone, Ceramic, Or Glass • Basic Chemicals • Cereal Grains • Chemical Preparations N.E.C. • Forest Products • Meat, Fish, and Preparations • Mechanical Machinery • Metallic Ores • Motor Vehicles • Other Crops • Pulp, Newsprint, Paper, and Paperboard • Wood Products

Name	Type	Mode Type	Commodity Description
Port of Longview	Port	Truck - Port - Rail	• Basic Chemicals • Motor Vehicles • Non-Metallic Mineral Products N.E.C. • Pulp, Newsprint, Paper, and Paperboard • Wood Products
Port of Olympia	Port	Truck - Port - Rail	• Forest Products • Fuel Oils Including Aviation Turbine • Gasoline • Metallic Ores • Other Crops • Refined Petroleum Products N.E.C. • Wood Products
Port of Pasco	Port	Truck - Port - Rail	• Meat, Fish, and Preparations • Refined Petroleum Products N.E.C.
Port of Port Angeles	Port	Port & Truck	• Pulp, Newsprint, Paper, and Paperboard • Wood Products
Port of Port Townsend	Port	Port & Truck	• Meat, Fish, and Preparations
Port of Seattle	Port	Truck - Port - Rail	• Articles of Stone, Ceramic, Or Glass • Cereal Grains • Gravel and Crushed Stone • Iron and Steel In Primary Forms and Basic Shapes • Meat, Fish, and Preparations • Milled Grain Products and Preparations and Bakery • Monumental Or Building Stone • Motor Vehicles • Natural Sands Except Metal-Bearing • Non-Metallic Mineral Products N.E.C. • Other Crops • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard • Refined Petroleum Products N.E.C. • Waste and Scrap • Wood Products
Port of Tacoma	Port	Truck - Port - Rail	• Animal Feed, Pet Food, and Products of Animal Orig • Basic Chemicals • Cereal Grains • Coal • Crude Petroleum • Engines, Parts, and Accessories For Motor Vehicles • Forest Products • Gravel and Crushed Stone • Meat, Fish, and Preparations • Mechanical Machinery • Metallic Ores • Miscellaneous Manufactured Products • Motor Vehicles • Natural Sands Except Metal-Bearing • Non-Metallic Mineral Products N.E.C. • Refined Petroleum Products N.E.C. • Textiles, Leather, and Articles • Waste and Scrap • Wood Products

Name	Type	Mode Type	Commodity Description
Port of Tacoma Alumina Handling Facility Terminal	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Cereal Grains • Forest Products • Metallic Ores • Motor Vehicles • Wood Products
Port of Vancouver, USA	Port	Port & Truck	• Articles of Stone, Ceramic, Or Glass • Basic Chemicals • Cereal Grains • Fertilizers • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Meat, Fish, and Preparations • Mechanical Machinery • Metallic Ores • Motor Vehicles • Natural Sands Except Metal-Bearing • Non-Metallic Mineral Products N.E.C. • Other Crops • Other Metal, and Articles of Metal • Pulp, Newsprint, Paper, and Paperboard • Waste and Scrap • Wood Products
Port of Wilma	Port	Port & Truck	• Cereal Grains • Pulp, Newsprint, Paper, and Paperboard • Wood Products
Puget Sound International, Tacoma, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Electrical Machinery and Equipment • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Pulp, Newsprint, Paper, and Paperboard • Textiles, Leather, and Articles • Wood Products
Puget Sound Packaging, Seattle, WA	Rail	Rail & Truck	• Alcoholic Beverages • Articles of Stone, Ceramic, Or Glass • Gravel and Crushed Stone • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Motor Vehicles • Non-Metallic Mineral Products N.E.C. • Other Crops • Other Prepared Food Stuffs • Waste and Scrap
Rainier Cold Storage, Seattle, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Other Prepared Food Stuffs

Name	Type	Mode Type	Commodity Description
Seafreeze Cold Storage, Seattle, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Other Prepared Food Stuffs
Seattle Tacoma International Airport	Air	Air & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Furniture and Furnishings • Meat, Fish, and Preparations • Other Crops • Other Prepared Food Stuffs
Skog Loading, Inc., Winlock, WA	Rail	Rail & Truck	• Forest Products • Wood Products
Tidewater Terminal Co., Pasco, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Basic Chemicals • Chemical Preparations N.E.C. • Coal • Fertilizers • Mechanical Machinery • Refined Petroleum Products N.E.C. • Waste and Scrap
Tidewater Terminal Co., Pasco, WA	Rail	Rail & Truck	• Basic Chemicals • Chemical Preparations N.E.C. • Fertilizers • Fuel Oils Including Aviation Turbine • Refined Petroleum Products N.E.C.
Tri Pak, Tacoma, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Gravel and Crushed Stone • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Natural Sands Except Metal-Bearing • Non-Metallic Mineral Products N.E.C. • Other Metal, and Articles of Metal • Plastics and Rubber • Pulp, Newsprint, Paper, and Paperboard • Waste and Scrap • Wood Products
Tri-City Railroad Company, Richland, WA	Rail	Rail & Truck	• Alcoholic Beverages • Articles of Stone, Ceramic, Or Glass • Cereal Grains • Electrical Machinery and Equipment • Forest Products • Furniture and Furnishings • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Miscellaneous Manufactured Products • Other Crops • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Plastics and Rubber • Precision Instruments and Apparatus
Trimax, Ltd (Weyerhaeuser), Tacoma, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Forest Products • Gravel and Crushed Stone • Non-Metallic Mineral Products N.E.C. • Plastics and Rubber • Wood Products

Name	Type	Mode Type	Commodity Description
Trimax, Ltd (Weyerhaeuser), Tacoma, WA	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Forest Products • Gravel and Crushed Stone • Non-Metallic Mineral Products N.E.C. • Plastics and Rubber • Wood Products
United Motor Freight, Inc., Seattle, WA	Rail	Rail & Truck	• Electrical Machinery and Equipment • Forest Products • Iron and Steel In Primary Forms and Basic Shapes • Mechanical Machinery • Other Metal, and Articles of Metal
United Warehouse, Kent, WA	Rail	Rail & Truck	• Alcoholic Beverages • Articles of Stone, Ceramic, Or Glass • Cereal Grains • Chemical Preparations N.E.C. • Mechanical Machinery • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard
United Warehouse, Seattle, WA	Rail	Rail & Truck	• Alcoholic Beverages • Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Mechanical Machinery • Other Metal, and Articles of Metal • Other Prepared Food Stuffs • Pulp, Newsprint, Paper, and Paperboard
Up, Seattle, WA	Rail	Rail & Truck	• Meat, Fish, and Preparations • Other Crops
Vanport Warehousing, Inc.	Rail	Rail & Truck	• Articles of Stone, Ceramic, Or Glass • Chemical Preparations N.E.C. • Forest Products • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Metal, and Articles of Metal • Pulp, Newsprint, Paper, and Paperboard • Wood Products
Washington Cold Storage, Inc., Kent, WA	Rail	Rail & Truck	• Animal Feed, Pet Food, and Products of Animal Orig • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Prepared Food Stuffs
Washington Cold Storage, Inc., Puyallup, WA	Rail	Rail & Truck	• Alcoholic Beverages • Animal Feed, Pet Food, and Products of Animal Orig • Furniture and Furnishings • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Prepared Food Stuffs
Weatherproof Reload and Storage, Spokane, WA	Rail	Rail & Truck	• Iron and Steel In Primary Forms and Basic Shapes • Meat, Fish, and Preparations • Mechanical Machinery • Other Crops • Other Metal, and Articles of Metal • Waste and Scrap

Name	Type	Mode Type	Commodity Description
Western Warehousing Services, Tacoma, WA	Rail	Rail & Truck	• Alcoholic Beverages • Articles of Stone, Ceramic, Or Glass • Furniture and Furnishings • Miscellaneous Manufactured Products • Other Prepared Food Stuffs • Plastics and Rubber • Wood Products
Weyerhaeuser Company Wood Chip Facility, Tacoma, WA	Rail	Rail & Truck	• Forest Products • Wood Products

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Appendix 4: Freight Forecast

Sources

Future demand of rail freight services are assessed based on five main studies, including three major data sources recommended by the *2009 American Association of State Highway and Transportation Officials (AASHTO) Rail Planning Guidelines*: *2007 Surface Transportation Board Waybill Sample Data*, United States Department of Transportation (USDOT) Freight Analysis Framework (FAF), and Global Insight. In addition, the Washington State Transportation Commission (WSTC) *Statewide Rail Capacity and System Needs Study* and Washington State Department of Transportation (WSDOT) and Washington State Public Port Association (WPPA) *2009 Marine Cargo Forecast* provide information and data that are specific for Washington State.

- WSTC: *Statewide Rail Capacity and System Needs Study – Freight Transportation Demand Forecasts*, 2006.
- USDOT Federal Highway Administration: 2006 Updates of *Freight Analysis Framework Forecast.*
- WPPA/WSDOT: *2009 Washington State Marine Cargo Forecast.*
- United States (U.S.) Surface Transportation Board (STB): *2007 Rail Waybill Sample Data.*
- AASHTO: *Freight Demand and Logistic Bottom Line Report* (Draft), 2006.

Methodology and Forecasts

In general, the WSDOT State Rail and Marine Office adopted the forecast results from the above sources. For rail mode related forecasts, 2007 Waybill Data was used as a base for projection since data for 2008 was not available as we conducted the forecasts.

The 2008-2009 recession had profound impacts on U.S. and world economies and many effects are likely to take many years to understand. Therefore, the forecast results in this plan could be slightly optimistic from the perspective of a long-term forecast. The forecasts will be updated as the data for 2008 and 2009 become available.

While the most recent recession data for freight is not available and, therefore, not incorporated into most of these analytical models, the sources of forecast used in this plan are long-term data. Historical data used in those forecasts reflect the effects of previous recessions. In addition, while the economy went into recession in 2008, state port-related

imports and exports started to decline in 2007. Rail traffic in 2007 was not as strong as the economy itself in that year. Therefore, the correction factor of this recession to the forecast results would not be dramatic, but could be significant when the data are incorporated into to the long-term trends.

Statewide Rail Capacity and System Needs Study – Freight Transportation Demand Forecasts (2006)

This study was conducted by Cambridge Systematics. The researchers examined recent economic and trade forecasts for the state, the Pacific Northwest, and the United States focusing on four primary sectors—agriculture and foods products, merchandise trade and retail, manufacturing, and lumber and wood products. In addition, two other sectors of unique interest—military and municipal solid waste—were also examined. Particular attention was paid to the Pacific Rim trade that will account for much of the volume of import containers and exports (grains, fertilizers, food products, wood products, etc.) that is expected to move by rail in the state.

Among the forecasts reviewed was the *2009 Marine Cargo Forecast* for the WPPA, which used economic and trade forecasts developed by consulting team member, Global Insight, as well as individual trade forecasts developed for the Port of Tacoma and the Port of Seattle. Also reviewed were the Lower Columbia River cargo forecasts produced for the Port of Vancouver, Washington, and the Port of Portland, Oregon; and the Oregon State Commodity Flow forecasts produced for the Oregon Department of Transportation.

Global Insight used its own forecasts and local sources to develop and adapt economic forecasts for industries that are domestic and local rail shippers. From these and other relevant forecasts, Global Insight synthesized economic growth conditions and trend projections, making adjustments and extensions where appropriate, to bracket the most likely growth rates and freight forecasts for the state. The resulting forecasts are annual long-term forecasts capturing the path of growth for 20 years, as well as the forecast endpoint level of projected economic activity and trade.

Forecast data for the years 2015 and 2025 was created by routing the rail traffic and other modes across the respective modal networks. The carload and IMX forecast synthesizes economic growth conditions and trend projections, making adjustments and extensions, where appropriate, to bracket the most likely growth rates and freight forecasts for the state. The resulting forecast projects the long-term growth through 2025.

Washington State's freight railroads can expect continued growth over the next 10 and 20 years. Rail freight is projected to grow at 2.2 percent compound annual growth rate to 2015 and at a 2.3 percent annual growth from 2015 to 2025. This is a steady 2.2 percent growth rate over the next 20 years. Exhibit 4A-1 shows the growth of rail tonnage in the forecast years. While local and inbound traffic continue to grow, they will slow to slightly lower levels of growth after 2015. Outbound and through traffic will both grow at higher rates in the more distant future as compared to the next 10 years.

Exhibit 4A-1: Projected Rail Freight Traffic Growth Rates

Growth Rates of Rail Traffic by Tonnage			
Class	**2004-2015**	**2015-2025**	**2004-2025**
Through	1.90%	2.30%	2.10%
Local	3.30%	2.30%	2.80%
Inbound	1.50%	1.20%	1.40%
Outbound	3.20%	3.80%	3.50%
Total	**2.20%**	**2.30%**	**2.20%**

Source: Cambridge Systematics, 2006

WSDOT State Rail and Marine Office adapted the rail traffic growth rate to project future growth. The rail freight data from the 2007 STB Waybill Sample is used as a base. While the economy went into recession in 2008, port related imports and exports started to decline in 2007. Rail traffic in 2007 was not as strong as the economy in that year. The state's freight railroads activity can expect continued growth over the next 10 and 20 years. The railroads are expected to move more than 152.1 million domestic tons of freight in 2020, up from 116.3 million in 2007, a 2.1 percent compound annual growth rate. In 2030, it is projected that there will be close to 189.9 million tons moved, a 2.2 percent annual growth over the 10 years from 2020 to 2030, and a steady 2.2 percent growth rate over the 23 years between 2007 and 2030.

Exhibit 4A-2 shows the growth of rail tonnage in the forecast years. While local and inbound traffic continue to grow, they will slow to slightly lower levels of growth from 2020 to 2030 compared to 2007 to 2020 growth levels. Outbound and through traffic will both grow at higher rates in the more distant future as compared to the next 10 years.

Exhibit 4A-2: Washington State Rail Freight 2007, 2020, and 2030 (Million Tons)

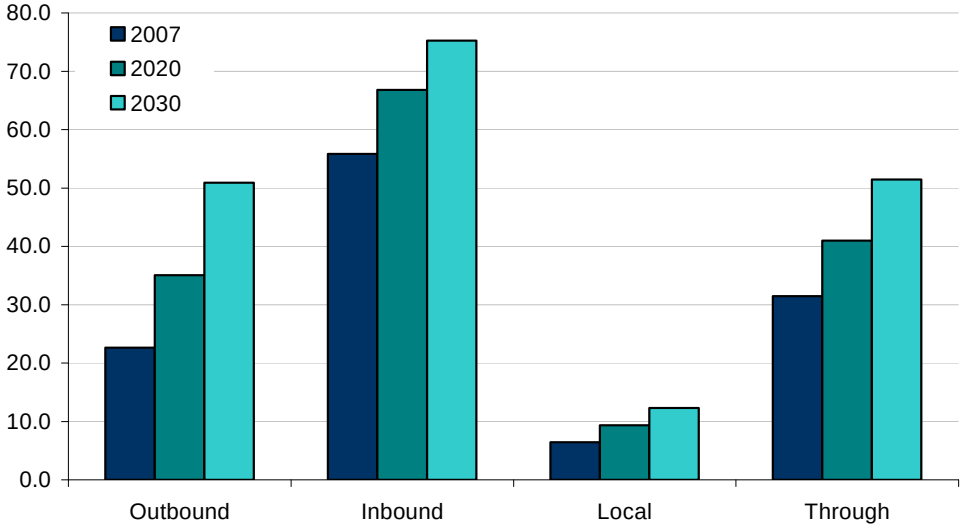
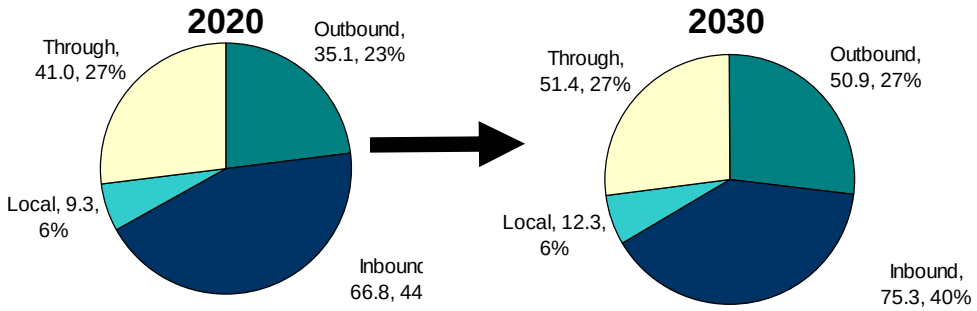


Exhibit 4A-3 shows the projected distribution of the inbound, outbound, through, and local shares of the state's total freight rail tonnage for both forecast years of 2020 and 2030. Of all shares, outbound traffic is projected to continue to grow the most between 2020 and 2030, growing from 23 percent to 27 percent between 2007 and 2020, and expanding to 35 million tons. Local and through traffic is projected to continue to maintain approximately 6 percent and 27 percent of the tonnage, respectively, over the next 10 and 20 years. Inbound traffic is projected to encompass a smaller percent of the traffic as it will claim 44 percent of the tonnage in 2020 and only 40 percent in 2030.

Exhibit 4A-3: Rail Freight Distribution (Million Tons)



Source: WSDOT State Rail and Marine Office

The projected distribution of traffic tonnage by commodity through the forecast years is shown in Exhibit 4A-4. Farm products are projected to continue to be a significant tonnage commodity group, growing to more than 64.7 million tons in 2030, up from 36.1 million tons in 2007. Not surprisingly, miscellaneous mixed shipments, primarily in the form of

imports, are projected to increase from 11.9 million tons in 2007 to 14.3 million in 2020 and 17.6 million in 2030.

Exhibit 4A-4: Projected Rail Freight Growth of Top 10 Commodities – Washington 2007-2030 (Million Tons)

Commodity	Year					
	2007	2010	2015	2020	2025	2030
Farm products	36.1	38.8	42.8	48.1	55.2	64.7
Lumber or wood products, excluding furniture	12.9	12.8	12.0	11.2	10.2	9.2
Miscellaneous mixed shipments	11.9	12.6	13.4	14.3	16.0	17.6
Coal	10.6	11.0	12.7	14.8	17.1	19.9
Food and kindred products	7.3	7.2	7.9	9.3	11.0	13.2
Chemicals or allied products	6.8	7.8	8.2	8.7	9.1	9.5
Waste or scrap materials not identified by producing industry	5.1	5.1	5.8	6.6	7.6	8.9
Pulp, paper, or allied products	4.1	4.1	4.2	4.2	4.2	4.3
Clay, concrete, glass, or stone products	3.1	3.4	3.9	4.5	5.1	6.0
Transportation equipment	2.5	2.5	2.3	2.3	2.5	2.8
State Total	**116.3**	**122.2**	**131.9**	**145.7**	**161.9**	**183.0**

Source: WSDOT State Rail and Marine Office – Analysis and forecast based on FHWA Freight Analysis Framework data and 2007 Surface Transportation Board Waybill data.

USDOT Federal Highway Administration: *2006 Updates of Freight Analysis Framework Forecast – Commodity Origin-Destination Database: 2002-2035*

FAF estimates commodity flows and related freight transportation activity among states, sub-state regions, and major international gateways. It also forecasts future flows among regions and relates those flows to the transportation network. FAF includes an origin-destination database of commodity flows among regions, and a network database in which flows are converted to truck payloads and related to specific routes.

The FAF commodity origin-destination database includes tons and value of commodity movements among regions by mode of transportation and type of commodity. Data sources documented in various papers are available at www.ops.fhwa.dot.gov/freight/freight_analysis/faf. FAF statistics do not match those in mode-specific publications, primarily due to different definitions that were used to avoid double counting. Methods in developing the 2002 base year data are transparent; and it has been

expanded to cover all modes and significant sources of shipments. Future projected data covers years from 2010 to 2035 with a 5-year interval. The approach/general procedure and assumptions used by the modeling packages have been documented and are available for download at www.ops.fhwa.dot.gov/freight/freight_analysis/faf. Detailed methods about modeling are available at www.ops.fhwa.dot.gov/freight/freight_analysis/faf/faf2_reports/report3/index.htm.

The forecasts built in the FAF database were developed based on long-term growth perspectives and did not reflect the new challenges presented by the current recession. Again, the growth rates could be optimistic and the forecasts of this plan will be updated as the new data becomes available. The WSDOT State Rail and Marine Office adapted the rail traffic growth rate to project future growth of the top ten state commodities shipped by rail. The rail freight data from 2007 STB Waybill Sample is used as the base. National growth forecasts are directly adopted from FAF database.

The national demand for freight rail services are driven by three factors: population growth, globalization, and technology (primarily, containerization). Assuming moderate rates of economic growth—between 2.5 to 3 percent a year—the tonnage of freight moved in the United States is likely to increase 75 percent in 20 years (2006 to 2035) (Exhibit 4A-5). This rate of growth is about the same as the last 20 years and roughly tracks growth in the U.S. Gross Domestic Product. The problem is that no provisions have been made to accommodate this growth, and the nation is in the early stages of a freight transportation capacity crisis. This section first looks at the projected growth in the demand for freight traffic (both total and for rail) and then discusses the rail industry response to this demand growth.

The growth in freight tonnage is expected to continue at 2.5 percent to 3 percent per year at least through 2035. The demand for freight rail services is projected to increase by a total of 73 percent based on tons and through 2035, assuming continued investment in the rail system to handle growth. Despite this, the rail share of national freight shipments is shrinking slightly. By 2035 rail's share of total freight tonnage could decline from 13.3 percent to 12.9 percent and rail's share of value could decline from 4.2 percent to 2.9 percent.[1] Exhibit 4A-6 shows freight modal distribution in 2035.

[1] All forecasts in this section were developed by Global Insight and were obtained from the AASHTO *Freight Bottom Line Report*, 2006.

Exhibit 4A-5: U.S. Shipments by Mode – 2006 and 2035 (Millions of Tons)

Mode	2006				2035			
	Total	Domestic	Exports3	Imports3	Total	Domestic	Exports3	Imports3
Total	20,974	18,985	620	1,369	(R) 37,212	33,668	(R) 1,112	(R) 2,432
Truck	12,659	12,389	169	101	22,814	22,231	262	320
Rail	2,040	1,905	41	95	3,525	3,292	57	176
Water	688	582	48	58	1,041	874	114	54
Air, air & truck	15	5	4	6	(R) 61	10	(R) 13	(R) 38
Intermodal[1]	1,503	194	353	956	2,598	334	660	1,604
Pipeline & unknown[2]	4,068	3,909	6	153	7,172	6,926	5	240

Key: R = revised

[1] Intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations, except air and truck.

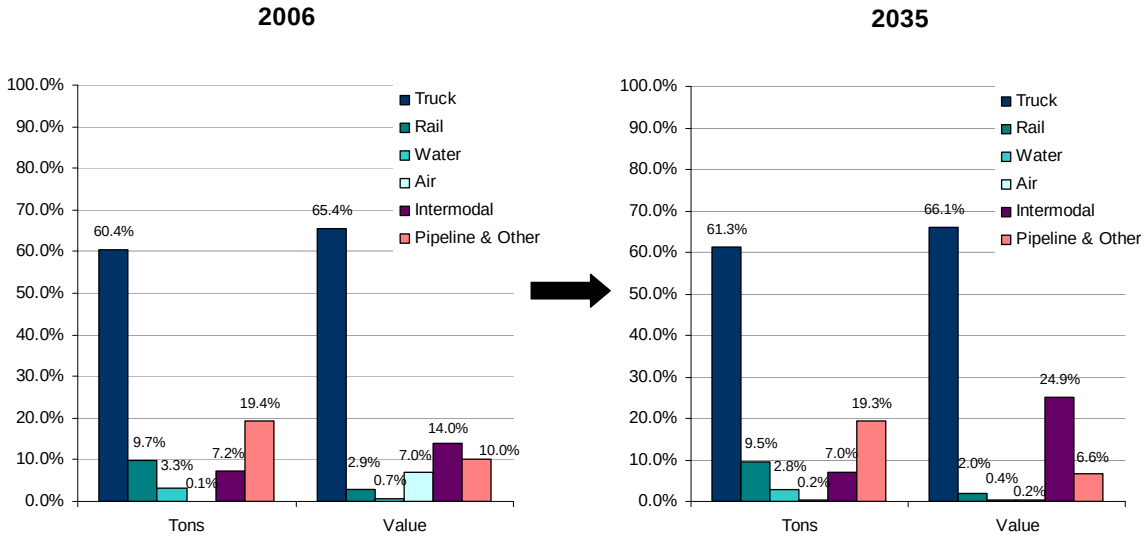
[2] Pipeline and unknown shipments are combined because data on region-to-region flows by pipeline are statistically uncertain.

[3] Data do not include imports and exports that pass through the U.S. from a foreign origin to a foreign destination by any mode.

Note: Numbers may not add to total due to rounding.

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, Version 2.2, 2007.

Exhibit 4A-6: Freight Tons, Value, and Ton-Miles by Mode, 2006 and 2035



Source: USDOT FHWA Freight Analysis Framework, 2007

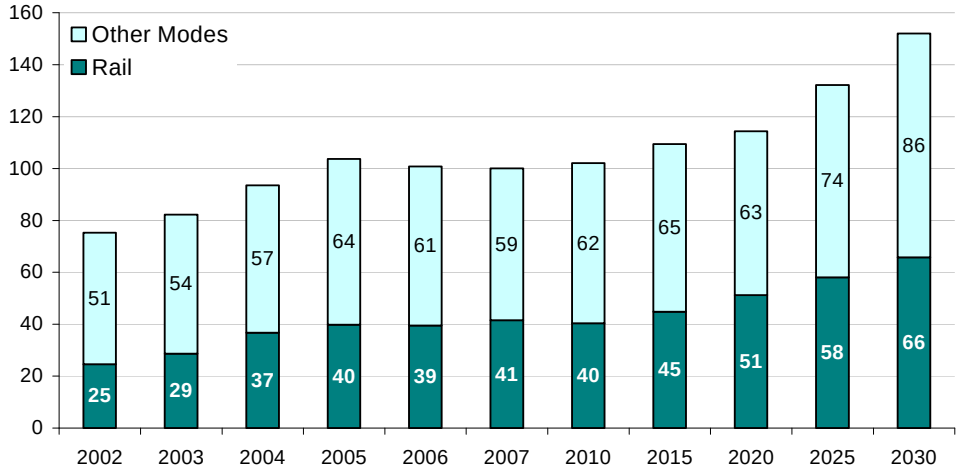
WSDOT/WPPA: *2009 Washington State Marine Cargo Forecast*

In 2009 the WPPA and WSDOT jointly conducted a 5-year update of the 2004 Marine Cargo Forecast. These two organizations have been providing joint cargo forecasts since 1985. This report fulfills statutory requirements. The purpose is to assess the expected flow of waterborne cargo through the state's port system and to evaluate the distribution of cargo through the rest of the state's transportation network. The current report is a 20-year forecast of trade (2008 to 2030) moving through the state by water, rail, roads, and pipelines. It forecasts future demands not limited by the rail infrastructure capacity.

The approach used for this forecast is based on historic data trends and growth factor analysis of anticipated future changes. With the assistance of the technical advisory group, the BST consultants developed growth factors to project the growths. Many macro factors available at the forecast time were analyzed.

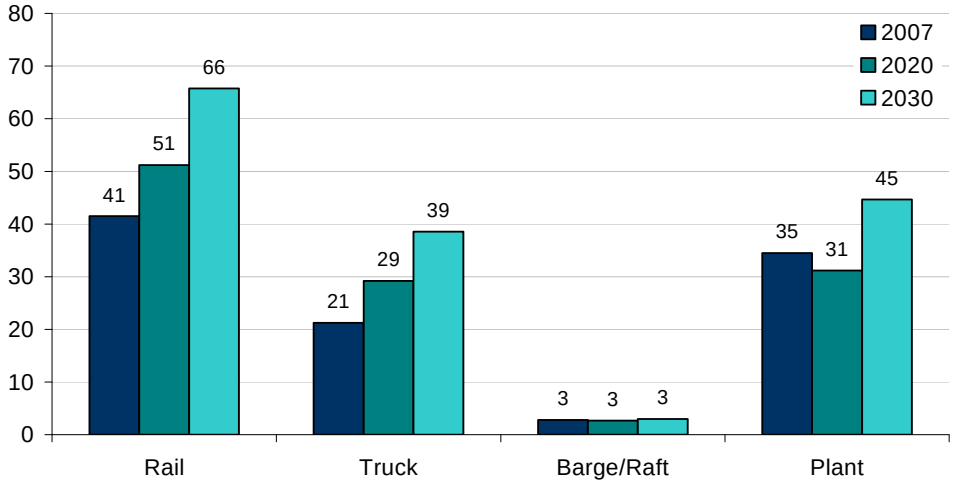
The Marine Cargo report found that rail freight is likely to play an increasingly important role in marine cargo movement. As Exhibit 4A-7 and Exhibit 4A-8 demonstrate, in the future rail freight may account for a larger share of marine cargo movement due to a higher growth rate than other modes over the forecast period.

Exhibit 4A-7: Marine Cargo Trends – Rail vs. Other Modes 2002 to 2030 (Million Tons)



Source: WPPA/WSDOT Marine Cargo Forecast 2009

Exhibit 4A-8: Marine Cargo Port Modal Distribution
Washington State 2007, 2020, and 2030 (Million Tons)



Source: WPPA/WSDOT Marine Cargo Forecast 2009

There are three factors that drive fast marine cargo growth. First, U.S. consumption increases as population and living standards increase. Second, economic globalization makes countries more specialized in production to achieve efficiency. As a result of this globalization, exports and imports increase dramatically. Last, containerization of transportation industry drives more intermodal traffic that demands rail services.

However, the recent economic recession slowed down this growth and is likely to have impacts on long-term growth potential. Economists are debating the long-term effect of this recession and many of them expect a slower growth for the next 20 years. Therefore, forecast results presented in this section are likely to be optimistic, given that recent recession data have not been integrated into the forecast processes. This plan will be updated as the new data and forecast results become available.

AASHTO: *Freight Demand and Logistic Bottom Line Report* (Draft), 2006

This study was done by Cambridge Systematics and freight demand forecasts were conducted by Global Insight. The forecasts for each mode are driven by the growth in the commodities that they handle. Growth in freight demand, combined with forecast growth in passenger movement, will contribute to increased congestion and reduced performance of the nation's transportation system. However, the impacts on each mode will be different.

Rail market share also is shrinking because of its pace of investment. The industry is purposefully operating near capacity because of its capital intensity, and it is using demand management as well as investment to

respond to traffic volumes. This means low to higher profitability as business is being turned away to make room for more profitable business. Railroads, like all private industry, will continue to make capital decisions based on private financial returns, and public benefits will be just an incidental part of the decision, unless public capital plays a role. Demand for rail transportation is driven by the commodity markets it serves, as well as by carrier performance. Almost three-quarters of the current rail tonnage and revenue come from four market groups: coal, farm and food products, chemicals and petroleum, and the intermodal business (listing them in order of tonnage size). Some 40 percent of the physical volume is in coal alone, but the revenue picture is different and more balanced: intermodal and coal each are about 20 percent of the traffic (with intermodal somewhat the larger), while the farm and food group and the chemicals and petroleum group are about 15 percent each. Roughly 60 percent of all new rail tonnage is attributable to coal and intermodal, and although the top four markets remain the same, by 2035 intermodal should be second only to coal in terms of physical volume, and will be substantially the most important source of rail revenue. The intermodal business is projected to maintain a 3.8 percent compound annual growth rate over the next three decades, causing it to more than triple in size, primarily because of its role in carrying containerized imports for the globalizing economy. Traffic in transportation equipment also grows at an above-average pace, expanding by 2.6 percent per year and more than doubling in volume by 2035. This business is chiefly automotive products, for which rail offers a very successful service that should be able to keep abreast of an evolving market in the years ahead. Rail services fall into three distinct categories: bulk, general merchandise, and intermodal.

Bulk services are dedicated unit trains hauling a single bulk commodity, such as coal or grain. Intermodal services, as defined by the rail industry, are trains hauling international and domestic containers and trailers. All other rail freight, such as chemicals, forest products, and automobiles move as general merchandise. The long-term prospects for selected rail commodities through the year 2035 are:[2]

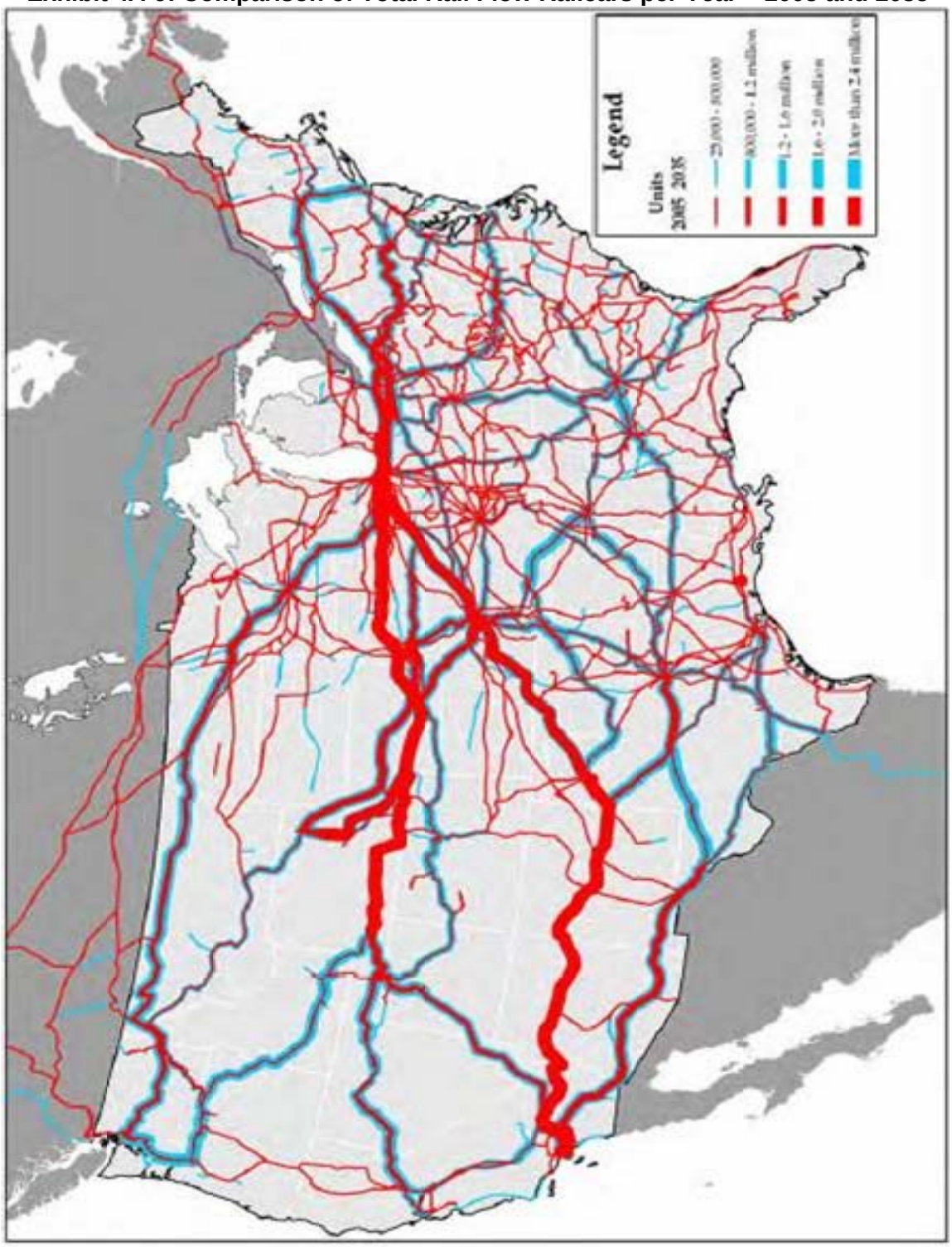
- **Coal** – Rail should remain its primary mode of transport, with a 62 percent cumulative growth in rail tonnage by 2035.
- **Farm and Food Products** – Modest growth of slightly less than 1 percent per year, with cumulative growth in 2035 projected to be 51 percent larger than today.
- **Chemical and Petroleum** – Slow growth of less than 1 percent per year and accumulating to a 27 percent increase by 2035.

[2] Forecasts developed by Global Insight and obtained from the *AASHTO Freight Bottom Line Report*, 2006.

- **Lumber and Forest Products** – Slow growth around or just above 1 percent per year, and a total increase in rail shipments of 40 percent to 49 percent by 2035.
- **Transportation Equipment** – Solid growth of 123 percent in tonnage through 2035.
- **Intermodal** – Prospects for rail intermodal business are very robust, with tonnage volumes rising 213 percent by 2035.

Exhibit 4A-9 demonstrates the projected growth demand using FAF data for rail in the U.S. between 2005 and 2035. Looking at the state, it can be observed that units moved on mainline railroads increase multifold to the 10 to 20 million unit designation. More capacity will have to be developed in our rail network in the state to meet this forecasted demand. This topic is further explored in Chapter 4.

Exhibit 4A-9: Comparison of Total Rail Flow Railcars per Year – 2005 and 2035



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Appendix 5-A: Washington Historical Rail Abandonments

Washington Historical Rail Abandonments		
Year	Miles	Segments
1953	9.35	1
1964	0.06	1
1966	1.80	1
1969	32.58	3
1970	9.72	2
1971	30.79	3
1972	61.65	10
1974	79.22	3
1976	15.54	2
1977	21.51	4
1978	76.93	5
1979	81.28	3
1980	458.26	15
1981	44.89	4
1982	38.10	5
1983	107.77	9
1984	179.54	17
1985	147.74	12
1986	104.41	9
1987	72.66	3
1988	12.37	2
1989	130.00	1
1990	37.38	1
1991	75.28	3
1992	94.43	2
1993	132.13	6
1994	3.57	1
1995	-104.65	1
1996	11.20	1
1997	1.18	1
1998	12.45	1
2003	0.41	2
2004	18.14	4
2005	0.80	1
2006	32.11	4
2007	1.06	2
2008	12.55	1
2009	5.15	3

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Appendix 5-B: Port Access Projects

Port Access Points

The reduction of bottlenecks at port access points is very important to keep the rail systems flowing. As a result, rail connectivity issues for the ports and capacity issues on the Interstate 5 (I-5) corridor are necessarily tied. Along the corridor there are five main areas where mainline capacity needs and connectivity issues intersect:

1. Vancouver, Washington (WA).
2. Kalama to Longview.
3. Centralia.
4. Tacoma.
5. Seattle.

Vancouver (WA)

Vancouver (WA) is a major point of congestion in Washington State's (state) rail system for several reasons:

- The I-5 corridor ties to the Columbia River Gorge rail corridor (Vancouver to Pasco) in Vancouver.
- Port of Vancouver rail traffic moves through the area, and the BNSF Railway (BNSF) operates a yard in Vancouver.
- East/west traffic crosses north/south traffic at-grade, while local traffic moving at slow speeds consumes mainline capacity, slowing the more than 100 trains that pass through the Vancouver Rail Yard every day.

Two projects are planned or under construction to alleviate these conflicts. The first of these projects is the Vancouver Bypass. The Vancouver Bypass will provide a new mainline track around the Vancouver Yard that allows through trains to avoid moving through the yard. It also provides a grade separation between West 39th Street and the yard, improving vehicle and pedestrian safety. Construction of the siding tracks along the west side of the rail yard began in January 2009, and construction of the 39th Street Bridge began in May 2009, anticipated to be completed by mid-2011. Full funding for the remaining rail elements of the plan is not yet in place.

The Port of Vancouver Freight Access Project would separate port traffic from mainline traffic by grade-separating the primary route into the port. This would reduce the number of trains crossing the mainlines at grade. With port-related traffic exiting the Columbia River Gorge route farther

east, the project would also improve flow through the Vancouver Terminal area. Finally, a new configuration of yard tracks and leads within the port will increase the ability of the facility to handle additional and longer trains.

Kalama and Longview

In the 10-mile stretch between Kalama and Longview, local traffic consumes mainline capacity in two ways. First, grain trains exiting or entering the mainlines at Kalama must move relatively slow on or off the main, which delays through traffic moving along the mainline. Second, local operations working from the Longview Junction rail yard must make some moves on the mainline, and these also move relatively slow. The plan to alleviate the problems in this area involves construction of a third mainline between Kalama and Longview. Construction is planned to begin in the 2013-2015 biennium and to be completed by mid-2017.

Centralia

At Centralia the short-line railroad serving the Port of Grays Harbor, Puget Sound and Pacific Railroad (PSAP), branches off of the BNSF I-5 corridor mainline. The Tacoma Rail Mountain Division (TRMW) line parallels the I-5 corridor mainline through Centralia, crossing the PSAP line at Blakeslee Junction. The TRMW and PSAP/Centralia project will reconfigure Blakeslee Junction to provide TRMW access on the PSAP between Blakeslee Junction and the BNSF mainline, and will reconfigure and upgrade the PSAP line between Blakeslee Junction and the mainline. Once complete, the TRMW line through downtown Centralia will be removed. Further phases of the project will add rail capacity in Centralia, a second connection between PSAP and TRMW in Grand Mound, and additional storage track. Funding has not yet been secured for the full project. Only partial funding for the Blakeslee Junction to mainline is currently in place.

Tacoma

In Tacoma, train movements for BNSF and the Union Pacific Railroad (UP) between the mainlines, yards, and port terminals are somewhat inefficient. Two proposals to mitigate this have been considered in the past. The first is construction of a new rail bridge linking Bullfrog Junction on the Tideflats to the mainlines at Reservation Interlocking. The second is implementation by BNSF and UP of co-production[1] between Tacoma and Tukwila. Under the co-production proposal, UP port traffic to and from the south would use the BNSF line to connect through Bullfrog Junction, while BNSF port traffic to and from the south

[1] Co-production is where two railroads share the same track.

would use the UP connection at Reservation Interlocking, and would also use the UP mainline between Tukwila and Reservation Interlocking. To this point, the railroads have not agreed to such an arrangement, although dialog has taken place off and on over the last few years.

Seattle

In Seattle, neither the BNSF nor the UP has a direct route between the mainlines and on-dock intermodal facilities. BNSF international container traffic first moves through the Seattle International Gateway/Stacy Yard, which increases transit time. The UP line to the on-dock facilities is essentially a switching lead that extends through the Argo Yard, which significantly impacts operations at Argo. In addition, intermodal trains cross East Marginal Way at-grade, creating long roadway vehicle delays.

One project designed to ease part of this problem is the East Marginal Way Grade Separation. This project will construct an overpass that routes vehicle traffic up and over railroad tracks, eliminating delays on East Marginal Way caused by trains crossing at grade. Another concept for improving rail access to Port of Seattle facilities is the Duwamish Rail Corridor, which would essentially create a double-track connection between the UP Argo Interlocking and the Harbor Island line using one UP yard track and a BNSF track. However, this project has not moved beyond initial discussions.

Other Access Issues

There are two additional areas (Everett and Bellingham) along the I-5 rail corridor that may need improvements in the future and one 5-phase project in Pasco that is currently underway.

Everett

In Everett, rail access is not currently an issue. The single-track Everett Tunnel, which is located through Everett on the mainline south of the convergence of the Stevens Pass mainline and the mainline to Blaine, is handling an increasing number of passenger trains. The increase of passenger traffic impacts freight capacity through the tunnel. A solution to this conflict is the proposed Bayside Bypass that would extend a line from Delta Junction down the Bayside industrial track and connect back into the Seattle mainline at Everett Junction. In the future the BNSF may construct the Bayside Bypass route, but this project is unlikely to cause access problems to port properties.

Bellingham

In Bellingham, the city and Port of Bellingham are developing plans to convert the former Georgia Pacific industrial site into a mixed use waterfront development. As part of this project, a sharp curve in the BNSF mainline track near the site will be removed and the tracks moved further to the east. The relocated tracks will allow passenger and freight trains to travel at a slightly higher speed through this area.

Port of Pasco Projects

In Pasco, the Port of Pasco is making a series of improvements to the network of railroad tracks that serve the Big Pasco Industrial Center. These improvements include upgrading older track to handle heavier and longer trains, adding container terminal tracks along the Columbia River, improving road/rail crossings, and a second connection to the BNSF mainline. Three of five phases have been completed, with Phase 4 slated for construction to start in late 2009.

Appendix 5-C: Inland Port Concepts

Rail access is a significant element of port competitiveness strategy. By providing an inland port service, a seaport (in theory) can make intermodal rail service available to a broader range of customers. If priced sufficiently low, the inland port service can offer cost savings to container shippers and thereby increase the port's competitiveness.

Inland Ports

Inland ports have become an increasingly popular concept as the drive for transportation efficiency continues. Inland ports are perceived to reduce congestion, improve transit times and reliability, while at the same time decreasing costs and promoting economic development.

Inland ports have several dimensions. In the narrowest sense, an inland port is an inland container transfer facility that performs many of the cargo processing functions that are performed at seaports, including customs clearance. Intermodal containers are moved from the seaport to the inland port, often in bond, thus freeing valuable land at the port for maritime activity. In effect, the inland port serves as an extension of the seaport, although at a remote location, typically close to either a key market or principal components of the highway system. If rail is used to transport the cargo to the inland port, trucks are removed from the highways and roadway congestion near the water port can be reduced. This possibility has also led to the concept of moving cargo to a remote point outside of the immediate seaport area by a rail shuttle service and then returning it to truck on less congested highways.

A broad array of multimodal facilities that support international trade can also be defined as inland ports. An often-cited example of such a development is the Alliance Texas Logistics Park, a 15,000-acre development 15 miles north of Fort Worth that includes air, rail, and highway connections, a foreign trade zone, an enterprise zone, inventory tax exemption, and business parks, distribution areas, and other facilities.

Rail Intermodal Transportation Moves

Rail intermodal transportation moves involve high-fixed costs but low-variable costs. By contrast truck transport involves high-variable costs but lower-fixed costs. Generally rail intermodal moves are considered to have a low line-haul cost per mile. The challenge in Washington State (state) is that the railroads want a haul of at least 500 miles based upon their cost structure and available rail capacity. Since the fixed costs need to be

defrayed over a large number of miles, railroads do not typically market intermodal services for short distances.

Another complication is that depending on the port, these containers may have to be drayed to and from the intermodal facilities, and these short truck movements add significant costs. Furthermore, intermodal facilities are expensive to build and to operate. The cost of building a small starter-size facility is estimated to be around $25 million and one that would handle a significant volume is estimated at $70 to $80 million. In addition, if these terminals are operated as a shuttle service, rail intermodal equipment may have to be acquired, since it may be captive to the service.

Status

Due to the cost versus delivery time equation, the inland port concept has not come to fruition in many states, especially in Washington State. There have been attempts at the concept in both Quincy and Maytown. The Quincy facility is challenged by the current cost structure of rail versus truck. The potential Maytown development got caught up in a political struggle among stakeholders.

In the future, such developments could provide the base volume to generate the level of public benefits necessary to help justify the cost of a shuttle-type rail service to and from a port. The feasibility will depend on a number of variables, including access, what facilities are actually available at a port to transfer containers to rail and inland terminals, and capital and operating cost provisions.

Studies

Multiple studies in other states have concluded that the cost premium of the truck/rail transportation was particularly high for the shorter intermodal rail moves to inland port locations close to deepwater coastal ports.

A multi-year study[1] to determine if and how inland port concepts could be applied to reduce drayage miles and generate other public benefits was conducted in southern California. This study reached similar conclusions, namely the cost would be substantial, and an operating subsidy would be required. The results of the study's cost analysis suggested it would amount to at least $200 per container at current cost levels (2008).[2]

[1] The Tioga Group, Railroad Industries, Inc, and Iteris, *Inland Port Feasibility Study, Project No. 06-023, Tasks 3-5Draft Report*, prepared for the Southern California Council of Governments, June 5, 2008.
[2] Ibid, p.4

Inland port terminals may not be justified from direct transportation savings, but could perhaps be with the inclusion of public benefits. Benefits estimated in the study equated to a range of 5 to 70 percent of the estimated transportation cost difference depending on inland terminal location and estimated cost differential range.

Based on the analyses performed in other states, an inland terminal provides the greatest proportional share of public benefits when it is located near a large concentration of port customers. It is estimated that a starter intermodal facility requires an initial volume of 20,000 to 30,000 containers per year to be viable.

Success of Inland Ports

Under current economic conditions, trucking continues to be less costly and a quicker alternative within the state as compared to rail. It is believed that in the future this cost structure will change as fuel and environmental costs of trucking drastically increase. At that point, inland ports may develop in the state as they have in other parts of the country.

There are a number of factors that are key to the success of an inland port that need to be analyzed, as the inland ports concept is considered as a component of the transportation network in the future. Among these are:

Location

An inland port should intercept major container flows and provide easy access to rail and interstate highway networks that connect it with key markets.

Functions

The inland port should perform a range of functions including intermodal transfers, storage/warehousing, staging, inspections, parking, service, etc.

Institutional Arrangements

Arrangements must be made with rail carriers and port operators to establish the rail service, as well as the container consolidation and rail car loading at the port.

Scheduled and Reliable Service

Using the inland port cannot cause an excessive delay, either due to train scheduling, transfers, or the nature of the train service.

Costs

The capital and operating costs of an inland port must not exceed the expected benefits of the service. This does not necessarily mean that the service would operate without subsidies, only that the subsidies should not exceed the public benefit of the facility.

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Appendix 6: WSDOT Freight Partnerships

The Washington State Department of Transportation (WSDOT) works in partnership with a variety of freight sectors.[1] Below is a list of WSDOT's freight partners:

- AASHTO Freight Transportation Network
- Amtrak
- Commercial Vehicle Information Systems and Networks
- Federal Highway Administration
- Federal Motor Carrier Safety Administration
- Federal Railroad Administration
- Freight Action Strategy Corridor
- Freight Mobility Strategic Investment Board
- International Mobility & Trade Corridor
- Puget Sound Maritime Air Forum
- TransNow (regional university transportation center administered by USDOT)
- Transportation Improvement Board
- USACE Waterborne Commerce Statistics Center
- USDOT Bureau of Transportation Statistics
- USDOT Hazardous Materials
- University of Washington Global Trade, Transportation, and Logistics Studies
- University of Washington Intelligent Transportation System
- Washington Public Ports Association
- Washington State Department of Ecology (Air Quality)
- Washington State Patrol, Commercial Vehicle Division
- Washington State Transportation Research Center
- Washington State University Strategic Freight Transportation Analysis
- Washington Trucking Associations
- Washington Utilities and Transportation Commission
- West Coast Collaborative (public-private partnership to reduce diesel emissions)
- West Coast Corridor Coalition

[1] www.wsdot.wa.gov/freight/partnerships/.

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Washington State
Department of Transportation

Appendix 8-A: Project List

This project list meets the current federal requirement to identify the statewide rail system need; it is not a funding list. The federal government is currently developing program requirements for future project lists, which will likely be linked to funding. The Washington State Department of Transportation (WSDOT) will respond with a development process after the next federal development occurs. WSDOT will also address emerging federal funding opportunities after information becomes available.

The project list is shown in different exhibits to better show different aspects:

- Exhibit 8A-1: Project List by Area, Location, and Organization
- Exhibit 8A-2: Project List by Location, Area, and Organization
- Exhibit 8A-3: Project List by Organization, Location, and Area
- Exhibit 8A-4: Project List by Project Types
- Exhibit 8A-5: Project List by Public Benefits
- Exhibit 8A-6: Project List by Private Benefits
- Exhibit 8A-7: Project List by Cost Estimates
- Exhibit 8A-8: Project List by Committed Funds

The areas listed in the exhibits are:

- EW – Eastern Washington
- NC – Non-Capital
- PS – Puget Sound
- SW – Statewide
- WW – Western Washington

Exhibit 8A-1: Project List by Area, Location, and Organization

Area	Location	Organization	Project Name	Estimated Project Cost	Estimated Completion
EW	Airway Heights	Spokane County	Geiger Spur Rehabilitation	$880,000	5/1/2013
EW	Bingen	SW Washington RTPO	Bingen Point Rail Crossing	$15,000,000	
EW	Cheney	Eastern Washington Gateway Railroad	Cheney Siding	$580,000	2/1/2012
EW	Cheney	Union Pacific Railroad	Extend Cheney Siding	$0	
EW	Cheney	Union Pacific Railroad	Install Centralized Train Control	$0	
EW	Cheney	Union Pacific Railroad	Power Operate Manual Sidings	$0	
EW	Creston	Eastern Washington Gateway Railroad	Webb Siding Extension	$297,000	
EW	Creston	WSDOT	Lincoln Co. PDA/Creston - New Rail Spur	$346,000	
EW	Davenport	Eastern Washington Gateway Railroad	CW Branch Rail Renewal	$64,860,000	10/1/2018
EW	Ellensburg	BNSF Railway	Ellensburg-Lind Corridor Reactivation	$0	
EW	Ephrata	WSDOT	Port of Ephrata/Ephrata Spur Rehab Phase II	$363,000	1/1/2010
EW	Kennewick	BNSF Railway	Vista Siding Extension	$0	
EW	Moses Lake	Columbia Basin Railroad	Bridge upgrades for 286K	$0	1/1/2016
EW	Moses Lake	WSDOT	Port of Moses Lake/Northern Columbia Basin - Railroad Engineering and Environmental	$29,650,000	6/30/2013
EW	Newport	Port of Pend Oreille dba Pend Oreille Valley Railroad	Tacoma Creek Bridge	$125,000	7/31/2010
EW	Othello	Port of Royal Slope	Royal Rail Line Rehabilitation Project	$1,750,000	
EW	Pasco	BNSF Railway	Pasco Bridge Span Replacement	$0	
EW	Pasco	Port of Pasco	BPIC Intermodal Hub Rail Development, Phase 4 and 5	$3,100,000	
EW	Quincy	Port of Quincy	Port of Quincy Rail Loop	$0	
EW	Reardon	WSDOT	CW Line/Lincoln County - Grade Crossing Rehab	$371,000	10/31/2010
EW	Richland	Richland	SR240 & SR224 Interchange & Grade Crossing	$9,300,000	
EW	Spokane	Spokane	SR27-Pines Rd BNSF Grade Separation	$11,720,000	
EW	Spokane	Spokane County	Park Rd BNSF Grade Separation	$32,382,000	

Area	Location	Organization	Project Name	Estimated Project Cost	Estimated Completion
EW	Spokane	City of Spokane	Havana St. - BNSF Crossing	$26,700,000	10/1/2011
EW	Spokane	WSDOT	Palouse River and Coulee City Railroad - Rail Authority-Sponsored Rehab	$8,600,000	6/1/2011
EW	Spokane	WSDOT	Geiger - New Transloader	$4,400,000	1/1/2014
EW	Spokane, Whitman, Lincoln and Grant Counties	WSDOT	PCC Rail System Rehab	$100,000,000	
EW	Stampede Pass	BNSF Railway	Ellensburg-Lind Corridor Reactivation	$0	
EW	Stampede Pass	BNSF Railway	Stampede Pass Project	$0	
EW	Stevenson	City of Stevenson	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901	$505,000	7/1/2011
EW	Sunnyside	Port of Sunnyside	Port of Sunnyside	$0	10/1/2014
EW	Walla Walla	City of Walla Walla	13th Avenue Improvements	$2,100,000	
EW	Walla Walla	PCC Railroad	Riparia tie and surface project	$880,000	8/1/2011
EW	Wallula	WSDOT	Port of Columbia/Wallula to Dayton - Track Rehab	$11,000,000	10/31/2015
EW	Wenatchee	Wenatchee Valley Transportation Council	Wenatchee Hawley Street Grade Separation	$22,000,000	11/1/2011
EW	Wishram	BNSF Railway	East Leg of Wishram Wye	$0	
EW	Yakima	City of Yakima	Yakima Grade Separated Rail Crossing	$42,774,000	10/1/2011
NC	Statewide	WSDOT	Statewide - Washington Produce Rail Car Pool	$1,974,000	12/31/2014
NC	Statewide	WSDOT	Statewide - Rail Bank	$0	
NC	Statewide	WSDOT	Statewide - Freight Rail Assistance Program	$0	
PS	Auburn	Auburn	M St SE Grade Separation Project	$26,230,000	
PS	Everett	City of Everett	East Everett Ave Crossing	$16,520,000	
PS	Everett	Port of Everett	Port of Everett Existing Rail Upgrades	$170,000	12/1/2013
PS	Everett	Port of Everett	South Terminal Freight Rail Improvements	$770,000	6/1/2012
PS	Everett	Port of Everett	Lehigh Cement Rail Extension	$0	
PS	Fife	Fife	Fife 70th Ave Grade Separation	$17,500,000	
PS	Fife	Union Pacific Railroad	Fife Yard Improvements	$0	
PS	Fife	Union Pacific Railroad	Fife Yard Improvements	$0	

Area	Location	Organization	Project Name	Estimated Project Cost	Estimated Completion
PS	Kent	City of Kent	Kent S 212th St Grade Separations	$83,170,000	10/1/2015
PS	Kent	City of Kent	Kent S 228th St Corridor Project - Phases II & III Grade Separations	$45,600,000	7/1/2012
PS	Kent	City of Kent	Kent Willis St Grade Separations	$81,700,000	6/1/2016
PS	Kent	Union Pacific Railroad	Kent Siding Extension	$0	
PS	Puyallup	City of Puyallup	Puyallup Shaw Road Extension	$24,600,000	8/31/2010
PS	Puyallup	Pierce County	Puyallup N Canyon Rd Ext-BNSF Overcrossing	$25,000,000	
PS	Renton	City of Renton	Renton Strander Blvd-SW 27th St Connection	$12,320,000	
PS	Seattle	Ballard Terminal Railroad	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL	$2,000,000	
PS	Seattle	Ballard Terminal Railroad	Re-rail 4.5 miles of mainline track on the MSN	$4,500,000	1/1/2010
PS	Seattle	BNSF Railway	BNSF Seattle PNW Shop Projects	$0	
PS	Seattle	BNSF Railway	Ballard Bridge Moveable Span Replacement	$0	
PS	Seattle	BNSF Railway	South Seattle Domestic Intermodal Facility Improvements	$0	
PS	Seattle	BNSF Railway	Bullfrog Junction Improvements	$0	
PS	Seattle	City of Seattle	South Lander Street Grade Separation	$152,000,000	On hold
PS	Seattle	Port of Seattle	Duwamish Corridor	$12,000,000	
PS	Seattle	Port of Seattle	East Marginal Way Grade Separation	$49,000,000	6/1/2011
PS	Seattle	WSDOT	SR519 Intermodal Access Project (Phase 2)	$0	
PS	Tacoma	Port of Tacoma	Lincoln Avenue Grade Separation	$53,200,000	4/1/2011
PS	Tacoma	Tacoma Rail	Bridge Rehabilitation	$0	
PS	Tacoma	WSDOT	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion	$1,570,000	6/30/2011
PS	Tacoma	WSDOT	Tacoma Rail/Tacoma - New Refinery Spur	$825,000	4/1/2011
SW	Statewide	BNSF Railway	BNSF Positive Train Control Improvements	$0	
SW	Statewide	BNSF Railway	BNSF Siding Extensions and Double Track Improvements	$0	
WW	Aberdeen	Grays Harbor COG	Rail Car Storage East of Aberdeen	$4,300,000	
WW	Aberdeen	Grays Harbor COG	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail	$15,000,000	
WW	Aberdeen	Port of Grays Harbor	Port Grays Harbor Terminal 2 Grain Storage Facility	$69,000,000	6/30/2011
WW	Aberdeen	Port of Grays Harbor	Port of Grays Harbor Terminal 4 Rail Upgrade	$8,000,000	
WW	Battle Ground	WSDOT	Clark County-Owned Railroad/Vancouver - Track Rehab	$403,000	4/1/2011

Area	Location	Organization	Project Name	Estimated Project Cost	Estimated Completion
WW	Battle Ground	WSDOT	Clark County/Chelatchie Prairie Railroad/Battle Ground to Vancouver - Track Rehab	$1,000,000	4/1/2011
WW	Battleground	Clark County	Chelatchie Prairie railroad rehabilitation - Phase 1	$23,000,000	9/1/2011
WW	Bellingham	Port of Bellingham	Bellingham Shipping Terminal Rail Spur Replacement	$2,000,000	
WW	Bellingham	WSDOT	Bellingham - Waterfront Restoration	$44,602,000	7/2/2010
WW	Bremerton	US Navy	Repair Railroad Bridges	$2,500,000	10/1/2013
WW	Burlington	City of Burlington	BNSF Skagit River Bridge Replacment for Flood Risk Reduction	$59,800,000	9/1/2014
WW	Centralia	BNSF Railway	Centrailia Steam Plant Switch Upgrade	$0	
WW	Centralia	WSDOT	Tacoma Rail and Puget Sound and Pacific Railroad/Centralia - Reconfigure Rail	$17,500,000	6/302021
WW	Centralia	WSDOT	Tacoma Rail and Puget Sound and Pacific Railroad/Centralia - Reconfigure Rail Phase 1B	$9,500,000	6/302021
WW	Chehalis	Port of Chehalis	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	$2,650,000	1/1/2012
WW	Chehalis	Port of Chehalis	Rail spur & reload for styrofoam recycler	$1,075,000	9/1/2010
WW	Deming	Nooksack Indian Tribe	Expansion on First Street	$250,000	
WW	Frederickson	WSDOT	Tacoma Rail/Frederickson to Morton - Track Rehab	$1,485,000	12/31/2011
WW	Kelso/Longview	Cowlitz-Wahkiakum COG	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	$117,000,000	
WW	Kelso/Longview	Port of Kalama	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing	$0	3/1/2011
WW	Kelso/Longview	Port of Kalama	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation	$0	12/15/2010
WW	Kelso/Longview	Port of Kalama	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks	$47,000,000	4/1/2010
WW	Kelso/Longview	Port of Kalama	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road	$28,000,000	9/1/2010
WW	Longview	BNSF Railway	Interstate Yard	$0	
WW	Longview	BNSF Railway	Longview Junction Bypass	$0	
WW	Longview	Cowlitz-Wahkiakum COG	SR 432/433 Grade Separation & Rail Improvements	$180,000,000	11/1/2011
WW	Longview	Port of Longview	Port of Longview Rail Loop Construction	$900,000	7/1/2011
WW	Longview	Swanson Bark & Wood Products	Swanson Bark Rail Spur	$2,385,000	1/31/2010
WW	Mt Vernon	BNSF Railway	Mt Vernon Bridge Replacement	$0	
WW	Olympia	Port of Olympia	Port of Olympia and East Olympia Freight Rail Enhancement Project	$40,000,000	12/31/2014

Area	Location	Organization	Project Name	Estimated Project Cost	Estimated Completion
WW	Ridgefield	Port of Ridgefield	Ridgefield Rail Overpass	$12,500,000	6/30/2014
WW	Roy/Yelm	WSDOT	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur	$1,928,000	6/30/2011
WW	Roy/Yelm	WSDOT	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab	$755,000	4/1/2011
WW	Sumner	Union Pacific Railroad	Extend Sumner Siding	$0	
WW	Vancouver	Port of Vancouver	West Vancouver Freight Access Schedule 2-4	$137,500,000	5/1/2010
WW	Vancouver-Clark County	Portland Vancouver Junction Railroad	Clark County Railroad Rehab	$29,000,000	12/1/2011
WW	Washougal	Port of Camas-Washougal	Rail Enhancement Project	$1,000,000	
WW	Woodland	Cowlitz-Wahkiakum COG	Scott Avenue Railroad Overcrossing/Grade Separation	$62,000,000	2/1/2012

Exhibit 8A-2: Project List by Location, Area, and Organization

Location	Area	Organization	Project Name	Estimated Project Cost	Estimated Completion
Aberdeen	WW	Grays Harbor COG	Rail Car Storage East of Aberdeen	$4,300,000	
Aberdeen	WW	Grays Harbor COG	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail	$15,000,000	
Aberdeen	WW	Port of Grays Harbor	Port Grays Harbor Terminal 2 Grain Storage Facility	$69,000,000	6/30/2011
Aberdeen	WW	Port of Grays Harbor	Port of Grays Harbor Terminal 4 Rail Upgrade	$8,000,000	
Airway Heights	EW	Spokane County	Geiger Spur Rehabilitation	$880,000	5/1/2013
Auburn	PS	Auburn	M St SE Grade Separation Project	$26,230,000	
Battle Ground	WW	WSDOT	Clark County-Owned Railroad/Vancouver - Track Rehab	$403,000	4/1/2011
Battle Ground	WW	WSDOT	Clark County/Chelatchie Prairie Railroad/Battle Ground to Vancouver - Track Rehab	$1,000,000	4/1/2011
Battleground	WW	Clark County	Chelatchie Prairie railroad rehabilitation - Phase 1	$23,000,000	9/1/2011
Bellingham	WW	Port of Bellingham	Bellingham Shipping Terminal Rail Spur Replacement	$2,000,000	
Bellingham	WW	WSDOT	Bellingham - Waterfront Restoration	$44,602,000	7/2/2010
Bingen	EW	SW Washington RTPO	Bingen Point Rail Crossing	$15,000,000	
Bremerton	WW	US Navy	Repair Railroad Bridges	$2,500,000	10/1/2013
Burlington	WW	City of Burlington	BNSF Skagit River Bridge Replacment for Flood Risk Reduction	$59,800,000	9/1/2014
Centralia	WW	BNSF Railway	Centrailia Steam Plant Switch Upgrade	$0	
Centralia	WW	WSDOT	Tacoma Rail and Puget Sound and Pacific Railroad/Centralia - Reconfigure Rail	$17,500,000	6/302021
Centralia	WW	WSDOT	Tacoma Rail and Puget Sound and Pacific Railroad/Centralia - Reconfigure Rail Phase 1B	$9,500,000	6/302021
Chehalis	WW	Port of Chehalis	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	$2,650,000	1/1/2012
Chehalis	WW	Port of Chehalis	Rail spur & reload for styrofoam recycler	$1,075,000	9/1/2010
Cheney	EW	Eastern Washington Gateway Railroad	Cheney Siding	$580,000	2/1/2012
Cheney	EW	Union Pacific Railroad	Extend Cheney Siding	$0	
Cheney	EW	Union Pacific Railroad	Install Centralized Train Control	$0	
Cheney	EW	Union Pacific Railroad	Power Operate Manual Sidings	$0	

Location	Area	Organization	Project Name	Estimated Project Cost	Estimated Completion
Creston	EW	Eastern Washington Gateway Railroad	Webb Siding Extension	$297,000	
Creston	EW	WSDOT	Lincoln Co. PDA/Creston - New Rail Spur	$346,000	
Davenport	EW	Eastern Washington Gateway Railroad	CW Branch Rail Renewal	$64,860,000	10/1/2018
Deming	WW	Nooksack Indian Tribe	Expansion on First Street	$250,000	
Ellensburg	EW	BNSF Railway	Ellensburg-Lind Corridor Reactivation	$0	
Ephrata	EW	WSDOT	Port of Ephrata/Ephrata Spur Rehab Phase II	$363,000	1/1/2010
Everett	PS	City of Everett	East Everett Ave Crossing	$16,520,000	
Everett	PS	Port of Everett	Port of Everett Existing Rail Upgrades	$170,000	12/1/2013
Everett	PS	Port of Everett	South Terminal Freight Rail Improvements	$770,000	6/1/2012
Everett	PS	Port of Everett	Lehigh Cement Rail Extension	$0	
Fife	PS	Fife	Fife 70th Ave Grade Separation	$17,500,000	
Fife	PS	Union Pacific Railroad	Fife Yard Improvements	$0	
Fife	PS	Union Pacific Railroad	Fife Yard Improvements	$0	
Frederickson	WW	WSDOT	Tacoma Rail/Frederickson to Morton - Track Rehab	$1,485,000	12/31/2011
Kelso/Longview	WW	Cowlitz-Wahkiakum COG	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	$117,000,000	
Kelso/Longview	WW	Port of Kalama	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing	$0	3/1/2011
Kelso/Longview	WW	Port of Kalama	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation	$0	12/15/2010
Kelso/Longview	WW	Port of Kalama	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks	$47,000,000	4/1/2010
Kelso/Longview	WW	Port of Kalama	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road	$28,000,000	9/1/2010
Kennewick	EW	BNSF Railway	Vista Siding Extension	$0	
Kent	PS	City of Kent	Kent S 212th St Grade Separations	$83,170,000	10/1/2015
Kent	PS	City of Kent	Kent S 228th St Corridor Project - Phases II & III Grade Separations	$45,600,000	7/1/2012
Kent	PS	City of Kent	Kent Willis St Grade Separations	$81,700,000	6/1/2016
Kent	PS	Union Pacific Railroad	Kent Siding Extension	$0	

Location	Area	Organization	Project Name	Estimated Project Cost	Estimated Completion
Longview	WW	BNSF Railway	Interstate Yard	$0	
Longview	WW	BNSF Railway	Longview Junction Bypass	$0	
Longview	WW	Cowlitz-Wahkiakum COG	SR 432/433 Grade Separation & Rail Improvements	$180,000,000	11/1/2011
Longview	WW	Port of Longview	Port of Longview Rail Loop Construction	$900,000	7/1/2011
Longview	WW	Swanson Bark & Wood Products	Swanson Bark Rail Spur	$2,385,000	1/31/2010
Moses Lake	EW	Columbia Basin Railroad	Bridge upgrades for 286K	$0	1/1/2016
Moses Lake	EW	WSDOT	Port of Moses Lake/Northern Columbia Basin - Railroad Engineering and Environmental	$29,650,000	6/30/2013
Mt Vernon	WW	BNSF Railway	Mt Vernon Bridge Replacement	$0	
Newport	EW	Port of Pend Oreille dba Pend Oreille Valley Railroad	Tacoma Creek Bridge	$125,000	7/31/2010
Olympia	WW	Port of Olympia	Port of Olympia and East Olympia Freight Rail Enhancement Project	$40,000,000	12/31/2014
Othello	EW	Port of Royal Slope	Royal Rail Line Rehabilitation Project	$1,750,000	
Pasco	EW	BNSF Railway	Pasco Bridge Span Replacement	$0	
Pasco	EW	Port of Pasco	BPIC Intermodal Hub Rail Development, Phase 4 and 5	$3,100,000	
Puyallup	PS	City of Puyallup	Puyallup Shaw Road Extension	$24,600,000	8/31/2010
Puyallup	SW	Pierce County	Puyallup N Canyon Rd Ext-BNSF Overcrossing	$25,000,000	
Quincy	SW	Port of Quincy	Port of Quincy Rail Loop	$0	
Reardon	EW	WSDOT	CW Line/Lincoln County - Grade Crossing Rehab	$371,000	10/31/2010
Renton	PS	City of Renton	Renton Strander Blvd-SW 27th St Connection	$12,320,000	
Richland	EW	Richland	SR240 & SR224 Interchange & Grade Crossing	$9,300,000	
Ridgefield	WW	Port of Ridgefield	Ridgefield Rail Overpass	$12,500,000	6/30/2014
Roy/Yelm	WW	WSDOT	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur	$1,928,000	6/30/2011
Roy/Yelm	WW	WSDOT	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab	$755,000	4/1/2011
Seattle	PS	Ballard Terminal Railroad	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL	$2,000,000	
Seattle	PS	Ballard Terminal Railroad	Re-rail 4.5 miles of mainline track on the MSN	$4,500,000	1/1/2010
Seattle	PS	BNSF Railway	BNSF Seattle PNW Shop Projects	$0	
Seattle	PS	BNSF Railway	Ballard Bridge Moveable Span Replacement	$0	

Location	Area	Organization	Project Name	Estimated Project Cost	Estimated Completion
Seattle	PS	BNSF Railway	South Seattle Domestic Intermodal Facility Improvements	$0	
Seattle	PS	BNSF Railway	Bullfrog Junction Improvements	$0	
Seattle	PS	City of Seattle	South Lander Street Grade Separation	$152,000,000	On hold
Seattle	PS	Port of Seattle	Duwamish Corridor	$12,000,000	
Seattle	PS	Port of Seattle	East Marginal Way Grade Separation	$49,000,000	6/1/2011
Seattle	PS	WSDOT	SR519 Intermodal Access Project (Phase 2)	$0	
Spokane	EW	City of Spokane	Havana St. - BNSF Crossing	$26,700,000	10/1/2011
Spokane	EW	Spokane	SR27-Pines Rd BNSF Grade Separation	$11,720,000	
Spokane	EW	Spokane County	Park Rd BNSF Grade Separation	$32,382,000	
Spokane	EW	WSDOT	Palouse River and Coulee City Railroad - Rail Authority-Sponsored Rehab	$8,600,000	6/1/2011
Spokane	EW	WSDOT	Geiger - New Transloader	$4,400,000	1/1/2014
Spokane, Whitman, Lincoln and Grant Counties	EW	WSDOT	PCC Rail System Rehab	$100,000,000	
Stampede Pass	EW	BNSF Railway	Ellensburg-Lind Corridor Reactivation	$0	
Stampede Pass	EW	BNSF Railway	Stampede Pass Project	$0	
Statewide	NC	WSDOT	Statewide - Washington Produce Rail Car Pool	$1,974,000	12/31/2014
Statewide	NC	WSDOT	Statewide - Freight Rail Investment Bank	$0	
Statewide	NC	WSDOT	Statewide - Emergent Freight Rail Assistance Project	$0	
Statewide	SW	BNSF Railway	BNSF Positive Train Control Improvements	$0	
Statewide	SW	BNSF Railway	BNSF Siding Extensions and Double Track Improvements	$0	
Stevenson	EW	City of Stevenson	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901	$505,000	7/1/2011
Sumner	WW	Union Pacific Railroad	Extend Sumner Siding	$0	
Sunnyside	EW	Port of Sunnyside	Port of Sunnyside	$0	10/1/2014
Tacoma	PS	Port of Tacoma	Lincoln Avenue Grade Separation	$53,200,000	4/1/2011
Tacoma	PS	Tacoma Rail	Bridge Rehabilitation	$0	
Tacoma	PS	WSDOT	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion	$1,570,000	6/30/2011

Location	Area	Organization	Project Name	Estimated Project Cost	Estimated Completion
Tacoma	PS	WSDOT	Tacoma Rail/Tacoma - New Refinery Spur	$825,000	4/1/2011
Vancouver	WW	Port of Vancouver	West Vancouver Freight Access Schedule 2-4	$137,500,000	5/1/2010
Vancouver-Clark County	WW	Portland Vancouver Junction Railroad	Clark County Railroad Rehab	$29,000,000	12/1/2011
Walla Walla	EW	City of Walla Walla	13th Avenue Improvements	$2,100,000	
Walla Walla	EW	PCC Railroad	Riparia tie and surface project	$880,000	8/1/2011
Wallula	EW	WSDOT	Port of Columbia/Wallula to Dayton - Track Rehab	$11,000,000	10/31/2015
Washougal	WW	Port of Camas-Washougal	Rail Enhancement Project	$1,000,000	
Wenatchee	EW	Wenatchee Valley Transportation Council	Wenatchee Hawley Street Grade Separation	$22,000,000	11/1/2011
Wishram	EW	BNSF Railway	East Leg of Wishram Wye	$0	
Woodland	WW	Cowlitz-Wahkiakum COG	Scott Avenue Railroad Overcrossing/Grade Separation	$62,000,000	2/1/2012
Yakima	EW	City of Yakima	Yakima Grade Separated Rail Crossing	$42,774,000	10/1/2011

Exhibit 8A-3: Project List by Organization, Location, and Area

Organization	Location	Area	Project Name	Estimated Project Cost	Estimated Completion
Auburn	Auburn	PS	M St SE Grade Separation Project	$26,230,000	
Ballard Terminal Railroad	Seattle	PS	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL	$2,000,000	
Ballard Terminal Railroad	Seattle	PS	Re-rail 4.5 miles of mainline track on the MSN	$4,500,000	1/1/2010
BNSF Railway	Centralia	WW	Centrailia Steam Plant Switch Upgrade	$0	
BNSF Railway	Ellensburg	EW	Ellensburg-Lind Corridor Reactivation	$0	
BNSF Railway	Kennewick	EW	Vista Siding Extension	$0	
BNSF Railway	Longview	WW	Interstate Yard	$0	
BNSF Railway	Longview	WW	Longview Junction Bypass	$0	
BNSF Railway	Mt Vernon	WW	Mt Vernon Bridge Replacement	$0	
BNSF Railway	Pasco	EW	Pasco Bridge Span Replacement	$0	
BNSF Railway	Seattle	PS	BNSF Seattle PNW Shop Projects	$0	
BNSF Railway	Seattle	PS	Ballard Bridge Moveable Span Replacement	$0	
BNSF Railway	Seattle	PS	South Seattle Domestic Intermodal Facility Improvements	$0	
BNSF Railway	Seattle	PS	Bullfrog Junction Improvements	$0	
BNSF Railway	Stampede Pass	EW	Ellensburg-Lind Corridor Reactivation	$0	
BNSF Railway	Stampede Pass	EW	Stampede Pass Project	$0	
BNSF Railway	Statewide	SW	BNSF Positive Train Control Improvements	$0	
BNSF Railway	Statewide	SW	BNSF Siding Extensions and Double Track Improvements	$0	
BNSF Railway	Wishram	EW	East Leg of Wishram Wye	$0	
City of Burlington	Burlington	WW	BNSF Skagit River Bridge Replacment for Flood Risk Reduction	$59,800,000	9/1/2014
City of Everett	Everett	PS	East Everett Ave Crossing	$16,520,000	
City of Kent	Kent	PS	Kent S 212th St Grade Separations	$83,170,000	10/1/2015
City of Kent	Kent	PS	Kent S 228th St Corridor Project - Phases II & III Grade Separations	$45,600,000	7/1/2012
City of Kent	Kent	PS	Kent Willis St Grade Separations	$81,700,000	6/1/2016
City of Puyallup	Puyallup	PS	Puyallup Shaw Road Extension	$24,600,000	8/31/2010
City of Renton	Renton	PS	Renton Strander Blvd-SW 27th St Connection	$12,320,000	
City of Seattle	Seattle	PS	South Lander Street Grade Separation	$152,000,000	
City of Spokane	Spokane	EW	Havana St. - BNSF Crossing	$26,700,000	10/1/2011

Organization	Location	Area	Project Name	Estimated Project Cost	Estimated Completion
City of Stevenson	Stevenson	EW	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901	$505,000	7/1/2011
City of Walla Walla	Walla Walla	EW	13th Avenue Improvements	$2,100,000	
City of Yakima	Yakima	EW	Yakima Grade Separated Rail Crossing	$42,774,000	10/1/2011
Clark County	Battleground	WW	Chelatchie Prairie railroad rehabilitation - Phase 1	$23,000,000	9/1/2011
Columbia Basin Railroad	Moses Lake	EW	Bridge upgrades for 286K	$0	1/1/2016
Cowlitz-Wahkiakum COG	Kelso/Longview	WW	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	$117,000,000	
Cowlitz-Wahkiakum COG	Longview	WW	SR 432/433 Grade Separation & Rail Improvements	$180,000,000	11/1/2011
Cowlitz-Wahkiakum COG	Woodland	WW	Scott Avenue Railroad Overcrossing/Grade Separation	$62,000,000	2/1/2012
Eastern Washington Gateway Railroad	Cheney	EW	Cheney Siding	$580,000	2/1/2012
Eastern Washington Gateway Railroad	Creston	EW	Webb Siding Extension	$297,000	
Eastern Washington Gateway Railroad	Davenport	EW	CW Branch Rail Renewal	$64,860,000	10/1/2018
Fife	Fife	PS	Fife 70th Ave Grade Separation	$17,500,000	
Grays Harbor COG	Aberdeen	WW	Rail Car Storage East of Aberdeen	$4,300,000	
Grays Harbor COG	Aberdeen	WW	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail	$15,000,000	
Nooksack Indian Tribe	Deming	WW	Expansion on First Street	$250,000	
PCC Railroad	Walla Walla	EW	Riparia tie and surface project	$880,000	8/1/2011
Pierce County	Puyallup	PS	Puyallup N Canyon Rd Ext-BNSF Overcrossing	$25,000,000	
Port of Bellingham	Bellingham	WW	Bellingham Shipping Terminal Rail Spur Replacement	$2,000,000	
Port of Camas-Washougal	Washougal	WW	Rail Enhancement Project	$1,000,000	
Port of Chehalis	Chehalis	WW	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	$2,650,000	1/1/2012
Port of Chehalis	Chehalis	WW	Rail spur & reload for styrofoam recycler	$1,075,000	9/1/2010
Port of Everett	Everett	PS	Port of Everett Existing Rail Upgrades	$170,000	12/1/2013
Port of Everett	Everett	PS	South Terminal Freight Rail Improvements	$770,000	6/1/2012
Port of Everett	Everett	PS	Lehigh Cement Rail Extension	$0	

Organization	Location	Area	Project Name	Estimated Project Cost	Estimated Completion
Port of Grays Harbor	Aberdeen	WW	Port Grays Harbor Terminal 2 Grain Storage Facility	$69,000,000	6/30/2011
Port of Grays Harbor	Aberdeen	WW	Port of Grays Harbor Terminal 4 Rail Upgrade	$8,000,000	
Port of Kalama	Kelso/Longview	WW	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing	$0	3/1/2011
Port of Kalama	Kelso/Longview	WW	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation	$0	12/15/2010
Port of Kalama	Kelso/Longview	WW	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks	$47,000,000	4/1/2010
Port of Kalama	Kelso/Longview	WW	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road	$28,000,000	9/1/2010
Port of Longview	Longview	WW	Port of Longview Rail Loop Construction	$900,000	7/1/2011
Port of Olympia	Olympia	WW	Port of Olympia and East Olympia Freight Rail Enhancement Project	$40,000,000	12/31/2014
Port of Pasco	Pasco	EW	BPIC Intermodal Hub Rail Development, Phase 4 and 5	$3,100,000	
Port of Pend Oreille dba Pend Oreille Valley Railroad	Newport	EW	Tacoma Creek Bridge	$125,000	7/31/2010
Port of Quincy	Quincy	EW	Port of Quincy Rail Loop	$0	
Port of Ridgefield	Ridgefield	WW	Ridgefield Rail Overpass	$12,500,000	6/30/2014
Port of Royal Slope	Othello	EW	Royal Rail Line Rehabilitation Project	$1,750,000	
Port of Seattle	Seattle	PS	Duwamish Corridor	$12,000,000	
Port of Seattle	Seattle	PS	East Marginal Way Grade Separation	$49,000,000	6/1/2011
Port of Sunnyside	Sunnyside	EW	Port of Sunnyside	$0	10/1/2014
Port of Tacoma	Tacoma	PS	Lincoln Avenue Grade Separation	$53,200,000	4/1/2011
Port of Vancouver	Vancouver	WW	West Vancouver Freight Access Schedule 2-4	$137,500,000	5/1/2010
Portland Vancouver Junction Railroad	Vancouver-Clark County	WW	Clark County Railroad Rehab	$29,000,000	12/1/2011
Richland	Richland	EW	SR240 & SR224 Interchange & Grade Crossing	$9,300,000	
Spokane	Spokane	EW	SR27-Pines Rd BNSF Grade Separation	$11,720,000	
Spokane County	Airway Heights	EW	Geiger Spur Rehabilitation	$880,000	5/1/2013
Spokane County	Spokane	EW	Park Rd BNSF Grade Separation	$32,382,000	
SW Washington RTPO	Bingen	EW	Bingen Point Rail Crossing	$15,000,000	
Swanson Bark & Wood Products	Longview	WW	Swanson Bark Rail Spur	$2,385,000	1/31/2010
Tacoma Rail	Tacoma	PS	Bridge Rehabilitation	$0	

Organization	Location	Area	Project Name	Estimated Project Cost	Estimated Completion
Union Pacific Railroad	Cheney	EW	Extend Cheney Siding	$0	
Union Pacific Railroad	Cheney	EW	Install Centralized Train Control	$0	
Union Pacific Railroad	Cheney	EW	Power Operate Manual Sidings	$0	
Union Pacific Railroad	Fife	PS	Fife Yard Improvements	$0	
Union Pacific Railroad	Fife	PS	Fife Yard Improvements	$0	
Union Pacific Railroad	Kent	PS	Kent Siding Extension	$0	
Union Pacific Railroad	Sumner	WW	Extend Sumner Siding	$0	
US Navy	Bremerton	WW	Repair Railroad Bridges	$2,500,000	10/1/2013
Wenatchee Valley Transportation Council	Wenatchee	EW	Wenatchee Hawley Street Grade Separation	$22,000,000	11/1/2011
WSDOT	Battle Ground	WW	Clark County-Owned Railroad/Vancouver - Track Rehab	$403,000	4/1/2011
WSDOT	Battle Ground	WW	Clark County/Chelatchie Prairie Railroad/Battle Ground to Vancouver - Track Rehab	$1,000,000	4/1/2011
WSDOT	Bellingham	WW	Bellingham - Waterfront Restoration	$44,602,000	7/2/2010
WSDOT	Centralia	WW	Tacoma Rail and Puget Sound and Pacific Railroad/Centralia - Reconfigure Rail	$17,500,000	6/302021
WSDOT	Centralia	WW	Tacoma Rail and Puget Sound and Pacific Railroad/Centralia - Reconfigure Rail Phase 1B	$9,500,000	6/302021
WSDOT	Creston	EW	Lincoln Co. PDA/Creston - New Rail Spur	$346,000	
WSDOT	Ephrata	EW	Port of Ephrata/Ephrata Spur Rehab Phase II	$363,000	1/1/2010
WSDOT	Frederickson	WW	Tacoma Rail/Frederickson to Morton - Track Rehab	$1,485,000	12/31/2011
WSDOT	Moses Lake	EW	Port of Moses Lake/Northern Columbia Basin - Railroad Engineering and Environmental	$29,650,000	6/30/2013
WSDOT	Reardon	EW	CW Line/Lincoln County - Grade Crossing Rehab	$371,000	10/31/2010
WSDOT	Roy/Yelm	WW	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur	$1,928,000	6/30/2011
WSDOT	Roy/Yelm	WW	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab	$755,000	4/1/2011
WSDOT	Seattle	PS	SR519 Intermodal Access Project (Phase 2)	$0	
WSDOT	Spokane	EW	Palouse River and Coulee City Railroad - Rail Authority-Sponsored Rehab	$8,600,000	6/1/2011
WSDOT	Spokane	EW	Geiger - New Transloader	$4,400,000	1/1/2014

Organization	Location	Area	Project Name	Estimated Project Cost	Estimated Completion
WSDOT	Spokane, Whitman, Lincoln and Grant Counties	EW	PCC Rail System Rehab	$100,000,000	
WSDOT	Statewide	NC	Statewide - Washington Produce Rail Car Pool	$1,974,000	12/31/2014
WSDOT	Statewide	NC	Statewide - Rail Bank	$0	
WSDOT	Statewide	NC	Statewide - Freight Rail Assistance Program	$0	
WSDOT	Tacoma	PS	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion	$1,570,000	6/30/2011
WSDOT	Tacoma	PS	Tacoma Rail/Tacoma - New Refinery Spur	$825,000	4/1/2011
WSDOT	Wallula	EW	Port of Columbia/Wallula to Dayton - Track Rehab	$11,000,000	10/31/2015

Exhibit 8A-4: Project List by Project Type

Area	Project Name	High-Speed Pass Rail	Mainline Capacity Expan	Port-to-Rail Access	Maint, Repair, and Rehab	Signal System	Line Upgrade or Expan	Facility Upgrade or Expan	Safety and Security	Grade Sep	Bridge Rehab or Replace
EW	13th Avenue Improvements				X					X	
EW	Bingen Point Rail Crossing								X	X	
EW	BPIC Intermodal Hub Rail Development, Phase 4 and 5			X			X	X			
EW	Bridge upgrades for 286K							X			X
EW	Cheney Siding		X				X	X	X		
EW	CW Branch Rail Renewal		X	X	X		X	X			
EW	CW Line/Lincoln County - Grade Crossing Rehab				X				X		
EW	East Leg of Wishram Wye										
EW	Ellensburg-Lind Corridor Reactivation		X		X		X			X	X
EW	Ellensburg-Lind Corridor Reactivation										
EW	Extend Cheney Siding		X								
EW	Geiger - New Transloader							X			
EW	Geiger Spur Rehabilitation		X	X	X						
EW	Havana St. - BNSF Crossing									X	
EW	Install Centralized Train Control	X				X					
EW	Lincoln Co. PDA/Creston - New Rail Spur										
EW	Palouse River and Coulee City RR - Rail Authority-Sponsored Rehab				X				X		
EW	Park Rd BNSF Grade Separation									X	
EW	Pasco Bridge Span Replacement										X
EW	PCC Rail System Rehab		X		X		X				X
EW	Port of Columbia/Wallula to Dayton - Track Rehab				X						
EW	Port of Ephrata/Ephrata Spur Rehab Phase II				X		X		X		

Area	Project Name	High-Speed Pass Rail	Mainline Capacity Expan	Port-to-Rail Access	Maint, Repair, and Rehab	Signal System	Line Upgrade or Expan	Facility Upgrade or Expan	Safety and Security	Grade Sep	Bridge Rehab or Replace
EW	Port of Moses Lake/Northern Columbia Basin - RR Engineering and Environmental			X	X		X		X		
EW	Port of Quincy Rail Loop										
EW	Port of Sunnyside										
EW	Power Operate Manual Sidings		X			X					
EW	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901					X			X		
EW	Riparia tie and surface project				X						
EW	Royal Rail Line Rehabilitation Project			X	X		X				
EW	SR240 & SR224 Interchange & Grade Crossing									X	
EW	SR27-Pines Rd BNSF Grade Separation									X	
EW	Stampede Pass Project										
EW	Tacoma Creek Bridge		X		X				X		X
EW	Vista Siding Extension		X				X				
EW	Webb Siding Extension		X				X	X			
EW	Wenatchee Hawley Street Grade Separation								X		
EW	Yakima Grade Separated Rail Crossing						X			X	
NC	Statewide - Freight Rail Assistance Program										
NC	Statewide - Rail Bank										
NC	Statewide - Washington Produce Rail Car Pool										
PS	Ballard Bridge Moveable Span Replacement										
PS	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL				X		X				

Area	Project Name	High-Speed Pass Rail	Mainline Capacity Expan	Port-to-Rail Access	Maint, Repair, and Rehab	Signal System	Line Upgrade or Expan	Facility Upgrade or Expan	Safety and Security	Grade Sep	Bridge Rehab or Replace
PS	BNSF Seattle PNW Shop Projects										
PS	Bridge Rehabilitation			X	X				X		X
PS	Bullfrog Junction Improvements										
PS	Duwamish Corridor		X	X							
PS	East Everett Ave Crossing									X	
PS	East Marginal Way Grade Separation			X					X	X	
PS	Fife 70th Ave Grade Separation									X	
PS	Fife Yard Improvements		X	X							
PS	Fife Yard Improvements		X	X							
PS	Kent S 212th St Grade Separations									X	
PS	Kent S 228th St Corridor Project - Phases II & III Grade Separations									X	
PS	Kent Siding Extension		X							X	
PS	Kent Willis St Grade Separations									X	
PS	Lehigh Cement Rail Extension			X							
PS	Lincoln Avenue Grade Separation						X		X	X	
PS	M St SE Grade Separation Project									X	
PS	Port of Everett Existing Rail Upgrades			X	X						
PS	Puyallup N Canyon Rd Ext-BNSF Overcrossing									X	
PS	Puyallup Shaw Road Extension					X			X	X	
PS	Renton Strander Blvd-SW 27th St Connection						X	X			
PS	Re-rail 4.5 miles of mainline track on the MSN				X		X				
PS	South Lander Street Grade Separation			X			X			X	
PS	South Seattle Domestic Intermodal Facility Improvements										
PS	South Terminal Freight Rail Improvements			X			X	X			

Area	Project Name	High-Speed Pass Rail	Mainline Capacity Expan	Port-to-Rail Access	Maint, Repair, and Rehab	Signal System	Line Upgrade or Expan	Facility Upgrade or Expan	Safety and Security	Grade Sep	Bridge Rehab or Replace
PS	SR519 Intermodal Access Project (Phase 2)									X	
PS	Tacoma Rail/Tacoma - New Refinery Spur			X				X			
PS	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion				X		X	X			
SW	BNSF Positive Train Control Improvements	X	X			X					
SW	BNSF Siding Extensions and Double Track Improvements	X	X				X				
WW	Bellingham - Waterfront Restoration	X					X				X
WW	Bellingham Shipping Terminal Rail Spur Replacement			X	X						
WW	BNSF Skagit River Bridge Replacment for Flood Risk Reduction							X	X		X
WW	Centrailia Steam Plant Switch Upgrade	X	X		X			X	X		
WW	Chelatchie Prairie railroad rehabilitation - Phase 1				X				X		
WW	Clark County Railroad Rehab	X	X		X	X	X	X	X		
WW	Clark County/Chelatchie Prairie RR/Battle Ground to Vancouver - Track Rehab				X						
WW	Clark County-Owned RR/Vancouver - Track Rehab				X						
WW	Expansion on First Street								X		
WW	Extend Sumner Siding		X								
WW	Interstate Yard		X	X			X				
WW	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation	X	X						X	X	
WW	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing	X	X						X		

Area	Project Name	High-Speed Pass Rail	Mainline Capacity Expan	Port-to-Rail Access	Maint, Repair, and Rehab	Signal System	Line Upgrade or Expan	Facility Upgrade or Expan	Safety and Security	Grade Sep	Bridge Rehab or Replace
WW	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks	X	X						X		
WW	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	X	X	X					X	X	
WW	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road	X	X						X		
WW	Longview Junction Bypass										
WW	Mt Vernon Bridge Replacement										
WW	Port Grays Harbor Terminal 2 Grain Storage Facility			X				X			
WW	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component			X			X	X			
WW	Port of Grays Harbor Terminal 4 Rail Upgrade			X	X		X	X			
WW	Port of Longview Rail Loop Construction		X	X				X			
WW	Port of Olympia and East Olympia Freight Rail Enhancement Project			X	X	X	X	X	X		
WW	Rail Car Storage East of Aberdeen						X		X		
WW	Rail Enhancement Project				X			X	X		
WW	Rail spur & reload for styrofoam recycler			X			X	X			
WW	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail			X			X		X		
WW	Repair Railroad Bridges				X				X		X
WW	Ridgefield Rail Overpass	X							X	X	
WW	Scott Avenue Railroad Overcrossing/Grade Separation	X	X	X				X	X	X	

Area	Project Name	High-Speed Pass Rail	Mainline Capacity Expan	Port-to-Rail Access	Maint, Repair, and Rehab	Signal System	Line Upgrade or Expan	Facility Upgrade or Expan	Safety and Security	Grade Sep	Bridge Rehab or Replace
WW	SR 432/433 Grade Separation & Rail Improvements	X	X	X		X	X		X	X	
WW	Swanson Bark Rail Spur				X			X	X		
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail		X	X		X	X		X		
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail Phase 1B						X				
WW	Tacoma Rail/Frederickson to Morton - Track Rehab				X		X				X
WW	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur						X				
WW	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab				X						
WW	West Vancouver Freight Access Schedule 2-4		X	X			X				

Exhibit 8A-5: Project List by Public Benefits

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
EW	13th Avenue Improvements			X			X	X			X
EW	Bingen Point Rail Crossing		X	X		X	X		X	X	X
EW	BPIC Intermodal Hub Rail Development, Phase 4 and 5			X			X				X
EW	Bridge upgrades for 286K						X				X
EW	Cheney Siding						X		X		X
EW	CW Branch Rail Renewal	X	X		X	X	X				X
EW	CW Line/Lincoln County - Grade Crossing Rehab				X		X		X		
EW	East Leg of Wishram Wye										
EW	Ellensburg-Lind Corridor Reactivation						X				X
EW	Ellensburg-Lind Corridor Reactivation										
EW	Extend Cheney Siding						X				
EW	Geiger - New Transloader						X				X
EW	Geiger Spur Rehabilitation		X								X
EW	Havana St. - BNSF Crossing			X			X				X
EW	Install Centralized Train Control						X				
EW	Lincoln Co. PDA/Creston - New Rail Spur						X				X
EW	Palouse River and Coulee City RR - Rail Authority-Sponsored Rehab				X		X		X		
EW	Pasco Bridge Span Replacement						X				
EW	PCC Rail System Rehab				X		X		X		X
EW	Port of Columbia/Wallula to Dayton - Track Rehab						X				X
EW	Port of Ephrata/Ephrata Spur Rehab Phase II						X		X		

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
EW	Port of Moses Lake/Northern Columbia Basin - RR Engineering and Environmental	X	X	X		X	X		X	X	X
EW	Port of Quincy Rail Loop										
EW	Port of Sunnyside										
EW	Power Operate Manual Sidings						X				
EW	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901					X			X		X
EW	Riparia tie and surface project										
EW	Royal Rail Line Rehabilitation Project	X		X			X		X		X
EW	Stampede Pass Project										
EW	Tacoma Creek Bridge						X		X		
EW	Vista Siding Extension										X
EW	Webb Siding Extension						X				X
EW	Wenatchee Hawley Street Grade Separation		X	X		X	X	X	X	X	X
EW	Yakima Grade Separated Rail Crossing			X			X	X	X		X
EW	Park Rd BNSF Grade Separation										
EW	SR240 & SR224 Interchange & Grade Crossing										
EW	SR27-Pines Rd BNSF Grade Separation										
NC	Statewide - Freight Rail Assistance Program										
NC	Statewide - Rail Bank										
NC	Statewide - Washington Produce Rail Car Pool						X				

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
PS	Ballard Bridge Moveable Span Replacement										
PS	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL										
PS	BNSF Seattle PNW Shop Projects										
PS	Bridge Rehabilitation										
PS	Bullfrog Junction Improvements										
PS	Duwamish Corridor			X			X				
PS	East Everett Ave Crossing										
PS	East Marginal Way Grade Separation	X		X			X				X
PS	Fife 70th Ave Grade Separation										
PS	Fife Yard Improvements						X				
PS	Fife Yard Improvements						X				
PS	Kent S 212th St Grade Separations			X							
PS	Kent S 228th St Corridor Project - Phases II & III Grade Separations			X			X		X		X
PS	Kent Siding Extension						X				
PS	Kent Willis St Grade Separations			X							
PS	Lehigh Cement Rail Extension										
PS	Lincoln Avenue Grade Separation			X			X		X		X
PS	M St SE Grade Separation Project										
PS	Port of Everett Existing Rail Upgrades						X				
PS	Puyallup N Canyon Rd Ext-BNSF Overcrossing										
PS	Puyallup Shaw Road Extension			X			X	X	X		X

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
PS	Renton Strander Blvd-SW 27th St Connection										
PS	Re-rail 4.5 miles of mainline track on the MSN										
PS	South Lander Street Grade Separation			X			X		X		X
PS	South Seattle Domestic Intermodal Facility Improvements										
PS	South Terminal Freight Rail Improvements	X					X				X
PS	SR519 Intermodal Access Project (Phase 2)										
PS	Tacoma Rail/Tacoma - New Refinery Spur			X			X				
PS	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion										
SW	BNSF Positive Train Control Improvements						X	X	X	X	
SW	BNSF Siding Extensions and Double Track Improvements			X		X	X	X	X	X	X
WW	Bellingham - Waterfront Restoration					X					
WW	Bellingham Shipping Terminal Rail Spur Replacement					X	X				X
WW	BNSF Skagit River Bridge Replacment for Flood Risk Reduction		X		X				X		X
WW	Centrailia Steam Plant Switch Upgrade	X		X							
WW	Chelatchie Prairie railroad rehabilitation - Phase 1	X	X	X	X	X	X		X		X

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
WW	Clark County Railroad Rehab	X	X	X	X	X	X	X	X	X	X
WW	Clark County/Chelatchie Prairie RR/Battle Ground to Vancouver - Track Rehab				X		X				
WW	Clark County-Owned RR/Vancouver - Track Rehab				X		X				
WW	Expansion on First Street								X		
WW	Extend Sumner Siding						X				
WW	Interstate Yard						X				
WW	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation						X	X	X		X
WW	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing						X	X	X		X
WW	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks						X	X	X		X
WW	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation			X	X	X	X	X	X	X	X
WW	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road						X	X	X		X
WW	Longview Junction Bypass										
WW	Mt Vernon Bridge Replacement										
WW	Port Grays Harbor Terminal 2 Grain Storage Facility	X		X		X	X				X
WW	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	X	X	X		X	X				X

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
WW	Port of Grays Harbor Terminal 4 Rail Upgrade	X		X	X	X	X				X
WW	Port of Longview Rail Loop Construction	X		X		X	X				X
WW	Port of Olympia and East Olympia Freight Rail Enhancement Project	X	X	X		X	X		X		X
WW	Rail Car Storage East of Aberdeen			X					X		
WW	Rail Enhancement Project						X		X		X
WW	Rail spur & reload for styrofoam recycler	X	X	X	X	X	X				X
WW	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail		X	X					X		
WW	Repair Railroad Bridges								X	X	
WW	Ridgefield Rail Overpass	X	X	X		X	X	X	X	X	X
WW	Scott Avenue Railroad Overcrossing/Grade Separation					X	X		X	X	X
WW	SR 432/433 Grade Separation & Rail Improvements	X	X	X	X	X	X		X	X	X
WW	Swanson Bark Rail Spur	X	X	X		X	X		X	X	X
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail			X			X	X		X	
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail Phase 1B									X	
WW	Tacoma Rail/Frederickson to Morton - Track Rehab										

Area	Project Name	Improve Air Quality	Enviro Protect/ Enhance	Reduce Congest	Reduce Public Expense	Improve Land Use	Enhance Mobility of Goods	Enhance Mobility of People	Enhance Public Safety	Enhance Public Security	Enhance Trade and Econ Develop
WW	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur						X				
WW	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab						X	X			
WW	West Vancouver Freight Access Schedule 2-4			X			X				X

Exhibit 8A-6: Project List by Private Benefits

Area	Project Name	Improved Economic Competitiveness	Improved Assets	Improved Service	Reduced Costs
EW	13th Avenue Improvements		X		X
EW	Bingen Point Rail Crossing	X		X	
EW	BPIC Intermodal Hub Rail Development, Phase 4 and 5	X	X	X	
EW	Bridge upgrades for 286K	X	X	X	X
EW	Cheney Siding	X	X	X	X
EW	CW Branch Rail Renewal	X		X	X
EW	CW Line/Lincoln County - Grade Crossing Rehab	X		X	X
EW	East Leg of Wishram Wye				
EW	Ellensburg-Lind Corridor Reactivation				
EW	Ellensburg-Lind Corridor Reactivation				
EW	Extend Cheney Siding	X		X	
EW	Geiger - New Transloader	X			X
EW	Geiger Spur Rehabilitation	X	X		X
EW	Havana St. - BNSF Crossing				
EW	Install Centralized Train Control	X		X	
EW	Lincoln Co. PDA/Creston - New Rail Spur	X		X	X
EW	Palouse River and Coulee City RR - Rail Authority-Sponsored Rehab	X		X	X
EW	Park Rd BNSF Grade Separation				
EW	Pasco Bridge Span Replacement	X	X	X	X
EW	PCC Rail System Rehab	X		X	X
EW	Port of Columbia/Wallula to Dayton - Track Rehab	X			X
EW	Port of Ephrata/Ephrata Spur Rehab Phase II	X		X	X
EW	Port of Moses Lake/Northern Columbia Basin - RR Engineering and Environmental				
EW	Port of Quincy Rail Loop				
EW	Port of Sunnyside				
EW	Power Operate Manual Sidings	X		X	
EW	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901	X			
EW	Riparia tie and surface project				
EW	Royal Rail Line Rehabilitation Project	X	X	X	X
EW	SR240 & SR224 Interchange & Grade Crossing				

Area	Project Name	Improved Economic Competitiveness	Improved Assets	Improved Service	Reduced Costs
EW	SR27-Pines Rd BNSF Grade Separation				
EW	Stampede Pass Project				
EW	Tacoma Creek Bridge	X		X	
EW	Vista Siding Extension	X		X	
EW	Webb Siding Extension	X		X	X
EW	Wenatchee Hawley Street Grade Separation	X	X	X	
EW	Yakima Grade Separated Rail Crossing	X		X	
NC	Statewide - Freight Rail Assistance Program				
NC	Statewide - Rail Bank				
NC	Statewide - Washington Produce Rail Car Pool				
PS	Ballard Bridge Moveable Span Replacement				
PS	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL	X	X	X	X
PS	BNSF Seattle PNW Shop Projects				
PS	Bridge Rehabilitation				
PS	Bullfrog Junction Improvements				
PS	Duwamish Corridor	X		X	
PS	East Everett Ave Crossing				
PS	East Marginal Way Grade Separation			X	
PS	Fife 70th Ave Grade Separation				
PS	Fife Yard Improvements	X		X	
PS	Fife Yard Improvements	X		X	
PS	Kent S 212th St Grade Separations				
PS	Kent S 228th St Corridor Project - Phases II & III Grade Separations				
PS	Kent Siding Extension	X		X	
PS	Kent Willis St Grade Separations				
PS	Lehigh Cement Rail Extension				
PS	Lincoln Avenue Grade Separation				
PS	M St SE Grade Separation Project				
PS	Port of Everett Existing Rail Upgrades		X		
PS	Puyallup N Canyon Rd Ext-BNSF Overcrossing				
PS	Puyallup Shaw Road Extension				

Area	Project Name	Improved Economic Competitiveness	Improved Assets	Improved Service	Reduced Costs
PS	Renton Strander Blvd-SW 27th St Connection				
PS	Re-rail 4.5 miles of mainline track on the MSN	X	X	X	X
PS	South Lander Street Grade Separation			X	
PS	South Seattle Domestic Intermodal Facility Improvements				
PS	South Terminal Freight Rail Improvements	X	X	X	
PS	SR519 Intermodal Access Project (Phase 2)				
PS	Tacoma Rail/Tacoma - New Refinery Spur	X		X	X
PS	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion		X	X	
SW	BNSF Positive Train Control Improvements				
SW	BNSF Siding Extensions and Double Track Improvements	X	X	X	X
WW	Bellingham - Waterfront Restoration				
WW	Bellingham Shipping Terminal Rail Spur Replacement	X		X	X
WW	BNSF Skagit River Bridge Replacment for Flood Risk Reduction		X	X	X
WW	Centrailia Steam Plant Switch Upgrade	X	X	X	X
WW	Chelatchie Prairie railroad rehabilitation - Phase 1	X	X	X	X
WW	Clark County Railroad Rehab	X	X	X	X
WW	Clark County/Chelatchie Prairie RR/Battle Ground to Vancouver - Track Rehab			X	
WW	Clark County-Owned RR/Vancouver - Track Rehab			X	
WW	Expansion on First Street				
WW	Extend Sumner Siding	X		X	
WW	Interstate Yard				
WW	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation				
WW	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing				
WW	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks				
WW	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	X	X	X	X
WW	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road				
WW	Longview Junction Bypass				
WW	Mt Vernon Bridge Replacement				
WW	Port Grays Harbor Terminal 2 Grain Storage Facility	X	X	X	X
WW	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	X	X	X	X

Area	Project Name	Improved Economic Competitiveness	Improved Assets	Improved Service	Reduced Costs
WW	Port of Grays Harbor Terminal 4 Rail Upgrade	X		X	X
WW	Port of Longview Rail Loop Construction	X	X	X	X
WW	Port of Olympia and East Olympia Freight Rail Enhancement Project	X	X	X	X
WW	Rail Car Storage East of Aberdeen				
WW	Rail Enhancement Project	X	X	X	
WW	Rail spur & reload for styrofoam recycler	X	X	X	X
WW	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail			X	
WW	Repair Railroad Bridges		X		
WW	Ridgefield Rail Overpass				
WW	Scott Avenue Railroad Overcrossing/Grade Separation	X	X	X	
WW	SR 432/433 Grade Separation & Rail Improvements	X	X	X	X
WW	Swanson Bark Rail Spur	X	X	X	X
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail				
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail Phase 1B				
WW	Tacoma Rail/Frederickson to Morton - Track Rehab				
WW	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur			X	
WW	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab	X		X	
WW	West Vancouver Freight Access Schedule 2-4			X	

Exhibit 8A-7: Project List by Cost Estimates

Area	Project Name	Estimated Total Project Cost	Preliminary Engineering	Right-of-Way	Construction	Unknown
EW	13th Avenue Improvements	$2,100,000	$1,500,000	$500,000	$13,000,000	$0
EW	Bingen Point Rail Crossing	$15,000,000	$0	$0	$0	$0
EW	BPIC Intermodal Hub Rail Development, Phase 4 and 5	$3,100,000	$0	$0	$0	$4,300,000
EW	Bridge upgrades for 286K	$0	$1,800,000	$0	$58,000,000	$0
EW	Cheney Siding	$580,000	$1,000,000	$300,000	$27,700,000	$0
EW	CW Branch Rail Renewal	$64,860,000	$3,000,000	$0	$6,186,000	$0
EW	CW Line/Lincoln County - Grade Crossing Rehab	$371,000	$0	$0	$371,000	$0
EW	East Leg of Wishram Wye	$0	$0	$0	$0	$0
EW	Ellensburg-Lind Corridor Reactivation	$0	$0	$0	$0	$0
EW	Ellensburg-Lind Corridor Reactivation	$0	$0	$0	$0	$0
EW	Extend Cheney Siding	$0	$0	$0	$0	$0
EW	Geiger - New Transloader	$4,400,000	$400,000	$0	$4,000,000	$0
EW	Geiger Spur Rehabilitation	$880,000	$2,500,000	$500,000	$9,500,000	$0
EW	Havana St. - BNSF Crossing	$26,700,000	$1,300,000	$8,400,000	$17,000,000	$0
EW	Install Centralized Train Control	$0	$0	$0	$0	$0
EW	Lincoln Co. PDA/Creston - New Rail Spur	$346,000	$0	$0	$346,000	$0
EW	Palouse River and Coulee City RR - Rail Authority-Sponsored Rehab	$8,600,000	$0	$0	$0	$0
EW	Pasco Bridge Span Replacement	$0	$0	$0	$0	$0
EW	PCC Rail System Rehab	$100,000,000	$1,500,000	$0	$98,500,000	$0
EW	Port of Columbia/Wallula to Dayton - Track Rehab	$11,000,000	$1,000,000	$0	$10,000,000	$0
EW	Port of Ephrata/Ephrata Spur Rehab Phase II	$363,000	$0	$0	$363,000	$0
EW	Port of Moses Lake/Northern Columbia Basin - RR Engineering and Environmental	$29,650,000	$1,509,000	$0	$28,141,000	$0
EW	Port of Quincy Rail Loop	$0	$0	$0	$0	$0
EW	Port of Sunnyside	$0	$0	$0	$2,100,000	$0
EW	Power Operate Manual Sidings	$0	$0	$0	$0	$0
EW	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901	$505,000	$1,000,000	$0	$14,000,000	$0
EW	Riparia tie and surface project	$880,000	$35,000	$0	$845,000	$0
EW	Royal Rail Line Rehabilitation Project	$1,750,000	$10,000	$0	$468,000	$0

Area	Project Name	Estimated Total Project Cost	Preliminary Engineering	Right-of-Way	Construction	Unknown
EW	Stampede Pass Project	$0	$0	$0	$0	$0
EW	Tacoma Creek Bridge	$125,000	$0	$0	$1,000,000	$0
EW	Vista Siding Extension	$0	$0	$0	$0	$0
EW	Webb Siding Extension	$297,000	$0	$0	$0	$0
EW	Wenatchee Hawley Street Grade Separation	$22,000,000	$0	$0	$0	$0
EW	Yakima Grade Separated Rail Crossing	$42,774,000	$5,264,000	$4,400,000	$33,110,000	$0
EW	Park Rd BNSF Grade Separation	$32,382,000	$0	$0	$0	$0
EW	SR240 & SR224 Interchange & Grade Crossing	$9,300,000	$0	$0	$0	$0
EW	SR27-Pines Rd BNSF Grade Separation	$11,720,000	$0	$0	$0	$0
NC	Statewide - Freight Rail Assistance Program	$0	$0	$0	$0	$0
NC	Statewide - Rail Bank	$0	$0	$0	$0	$0
NC	Statewide - Washington Produce Rail Car Pool	$1,974,000	$0	$0	$0	$0
PS	Ballard Bridge Moveable Span Replacement	$0	$0	$0	$0	$0
PS	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL	$2,000,000	$0	$0	$0	$0
PS	BNSF Seattle PNW Shop Projects	$0	$0	$0	$0	$0
PS	Bridge Rehabilitation	$0	$0	$0	$0	$0
PS	Bullfrog Junction Improvements	$0	$0	$0	$0	$0
PS	Duwamish Corridor	$12,000,000	$0	$0	$0	$6,200,000
PS	East Everett Ave Crossing	$16,520,000	$0	$0	$0	$0
PS	East Marginal Way Grade Separation	$49,000,000	$7,500,000	$12,000,000	$29,400,000	$0
PS	Fife 70th Ave Grade Separation	$17,500,000	$0	$0	$0	$0
PS	Fife Yard Improvements	$0	$0	$0	$0	$0
PS	Fife Yard Improvements	$0	$0	$0	$0	$0
PS	Kent S 212th St Grade Separations	$83,170,000	$8,550,000	$0	$58,620,000	$16,000,000
PS	Kent S 228th St Corridor Project - Phases II & III Grade Separations	$45,600,000	$3,900,000	$10,400,000	$26,400,000	$4,900,000
PS	Kent Siding Extension	$0	$0	$0	$0	$0
PS	Kent Willis St Grade Separations	$81,700,000	$7,700,000	$1,000,000	$53,000,000	$20,000,000
PS	Lehigh Cement Rail Extension	$0	$0	$0	$0	$0
PS	Lincoln Avenue Grade Separation	$53,200,000	$5,800,000	$5,100,000	$42,300,000	$0
PS	M St SE Grade Separation Project	$26,230,000	$0	$0	$0	$0

Area	Project Name	Estimated Total Project Cost	Preliminary Engineering	Right-of-Way	Construction	Unknown
PS	Port of Everett Existing Rail Upgrades	$170,000	$0	$0	$0	$0
PS	Puyallup N Canyon Rd Ext-BNSF Overcrossing	$25,000,000	$0	$0	$0	$0
PS	Puyallup Shaw Road Extension	$24,600,000	$3,200,000	$3,200,000	$18,200,000	$0
PS	Renton Strander Blvd-SW 27th St Connection	$12,320,000	$790,000	$0	$11,530,000	$0
PS	Re-rail 4.5 miles of mainline track on the MSN	$4,500,000	$90,000	$0	$800,000	$10,000
PS	South Lander Street Grade Separation	$152,000,000	$8,300,000	$32,800,000	$110,900,000	$0
PS	South Seattle Domestic Intermodal Facility Improvements	$0	$0	$0	$0	$0
PS	South Terminal Freight Rail Improvements	$770,000	$2,000,000	$3,500,000	$25,000,000	$0
PS	SR519 Intermodal Access Project (Phase 2)	$0	$0	$0	$0	$0
PS	Tacoma Rail/Tacoma - New Refinery Spur	$825,000	$0	$0	$825,000	$0
PS	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion	$1,570,000	$0	$0	$367,000	$0
SW	BNSF Positive Train Control Improvements	$0	$0	$0	$0	$0
SW	BNSF Siding Extensions and Double Track Improvements	$0	$0	$0	$0	$0
WW	Bellingham - Waterfront Restoration	$44,602,000	$4,507,000	$4,975,000	$35,121,000	$0
WW	Bellingham Shipping Terminal Rail Spur Replacement	$2,000,000	$0	$0	$0	$0
WW	BNSF Skagit River Bridge Replacment for Flood Risk Reduction	$59,800,000	$400,000	$0	$1,600,000	$0
WW	Centrailia Steam Plant Switch Upgrade	$0	$0	$0	$0	$0
WW	Chelatchie Prairie railroad rehabilitation - Phase 1	$23,000,000	$0	$0	$80,000	$0
WW	Clark County Railroad Rehab	$29,000,000	$0	$0	$4,500,000	$0
WW	Clark County/Chelatchie Prairie RR/Battle Ground to Vancouver - Track Rehab	$1,000,000	$0	$0	$1,000,000	$0
WW	Clark County-Owned RR/Vancouver - Track Rehab	$404,000	$5,000	$0	$399,000	$0
WW	Expansion on First Street	$250,000	$0	$0	$0	$0
WW	Extend Sumner Siding	$0	$0	$0	$0	$0
WW	Interstate Yard	$0	$0	$0	$0	$0
WW	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation	$0	$15,000	$0	$155,000	$0
WW	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing	$0	$150,000	$150,000	$4,200,000	$0
WW	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks	$47,000,000	$500,000	$0	$7,500,000	$0
WW	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	$117,000,000	$0	$0	$0	$0

Area	Project Name	Estimated Total Project Cost	Preliminary Engineering	Right-of-Way	Construction	Unknown
WW	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road	$28,000,000	$35,000	$65,000	$800,000	$0
WW	Longview Junction Bypass	$0	$0	$0	$0	$0
WW	Mt Vernon Bridge Replacement	$0	$0	$0	$0	$0
WW	Port Grays Harbor Terminal 2 Grain Storage Facility	$69,000,000	$5,000,000	$0	$64,000,000	$0
WW	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	$2,650,000	$150,000	$0	$2,000,000	$0
WW	Port of Grays Harbor Terminal 4 Rail Upgrade	$8,000,000	$0	$0	$0	$0
WW	Port of Longview Rail Loop Construction	$900,000	$35,000	$65,000	$800,000	$0
WW	Port of Olympia and East Olympia Freight Rail Enhancement Project	$40,000,000	$0	$0	$0	$0
WW	Rail Car Storage East of Aberdeen	$4,300,000	$0	$0	$0	$0
WW	Rail Enhancement Project	$1,000,000	$2,700,000	$0	$0	$0
WW	Rail spur & reload for styrofoam recycler	$1,075,000	$50,000	$25,000	$1,000,000	$0
WW	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail	$15,000,000	$0	$0	$0	$0
WW	Repair Railroad Bridges	$2,500,000	$0	$0	$2,500,000	$0
WW	Ridgefield Rail Overpass	$12,500,000	$0	$0	$12,500,000	$0
WW	Scott Avenue Railroad Overcrossing/Grade Separation	$62,000,000	$275,000	$0	$22,675,000	$0
WW	SR 432/433 Grade Separation & Rail Improvements	$180,000,000	$25,000	$0	$555,000	$0
WW	Swanson Bark Rail Spur	$2,385,000	$150,000	$85,000	$2,150,000	$0
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail	$17,500,000	$700,000	$6,700,000	$13,000,000	$0
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail Phase 1B	$9,500,000	$0	$400,000	$9,000,000	$0
WW	Tacoma Rail/Frederickson to Morton - Track Rehab	$1,485,000	$0	$0	$1,485,000	$0
WW	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur	$1,928,000	$250,000	$200,000	$1,478,000	$0
WW	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab	$755,000	$0	$0	$755,000	$0
WW	West Vancouver Freight Access Schedule 2-4	$137,500,000	$7,250,000	$20,250,000	$110,000,000	$0

Exhibit 8A-8: Project List by Committed Funds

Area	Project Name	Federal	State	Local	Tribal	Private	Other
EW	13th Avenue Improvements	$0	$0	$0	$0	$0	$0
EW	Bingen Point Rail Crossing	$0	$0	$0	$0	$0	$0
EW	BPIC Intermodal Hub Rail Development, Phase 4 and 5	$0	$0	$0	$0	$0	$0
EW	Bridge upgrades for 286K	$0	$0	$600,000	$0	$0	$0
EW	Cheney Siding	$0	$1,366,000	$129,000	$0	$0	$0
EW	CW Branch Rail Renewal	$0	$0	$0	$0	$0	$0
EW	CW Line/Lincoln County - Grade Crossing Rehab	$0	$371,000	$0	$0	$0	$0
EW	East Leg of Wishram Wye	$0	$0	$0	$0	$0	$0
EW	Ellensburg-Lind Corridor Reactivation	$0	$0	$0	$0	$0	$0
EW	Ellensburg-Lind Corridor Reactivation	$0	$0	$0	$0	$0	$0
EW	Extend Cheney Siding	$0	$0	$0	$0	$0	$0
EW	Geiger - New Transloader	$0	$790,000	$0	$0	$0	$0
EW	Geiger Spur Rehabilitation	$0	$0	$3,500,000	$625,000	$0	$0
EW	Havana St. - BNSF Crossing	$0	$0	$0	$0	$0	$0
EW	Install Centralized Train Control	$0	$0	$0	$0	$0	$0
EW	Lincoln Co. PDA/Creston - New Rail Spur	$0	$346,000	$0	$0	$0	$0
EW	Palouse River and Coulee City RR - Rail Authority-Sponsored Rehab	$0	$8,600,000	$0	$0	$0	$0
EW	Pasco Bridge Span Replacement	$0	$0	$0	$0	$0	$0
EW	PCC Rail System Rehab	$0	$0	$0	$0	$0	$0
EW	Port of Columbia/Wallula to Dayton - Track Rehab	$0	$252,000	$0	$0	$0	$0
EW	Port of Ephrata/Ephrata Spur Rehab Phase II	$0	$363,000	$0	$0	$0	$0
EW	Port of Moses Lake/Northern Columbia Basin - RR Engineering and Environmental	$0	$4,000,000	$0	$0	$0	$0
EW	Port of Quincy Rail Loop	$0	$3,684,000	$0	$0	$0	$0
EW	Port of Sunnyside	$0	$0	$0	$0	$0	$0
EW	Power Operate Manual Sidings	$0	$0	$0	$0	$0	$0
EW	Quiet zone application at the Russell Avenue Crossing, Crossing No. 0901	$0	$0	$3,000,000	$0	$0	$0
EW	Riparia tie and surface project	$0	$0	$0	$0	$0	$0
EW	Royal Rail Line Rehabilitation Project	$0	$363,000	$116,000	$0	$0	$0
EW	Stampede Pass Project	$0	$0	$0	$0	$0	$0
EW	Tacoma Creek Bridge	$0	$0	$50,000	$0	$0	$0

Area	Project Name	Federal	State	Local	Tribal	Private	Other
EW	Vista Siding Extension	$0	$0	$0	$0	$0	$0
EW	Webb Siding Extension	$0	$0	$0	$0	$0	$0
EW	Wenatchee Hawley Street Grade Separation	$0	$0	$0	$0	$0	$0
EW	Yakima Grade Separated Rail Crossing	$0	$0	$0	$0	$0	$0
EW	Park Rd BNSF Grade Separation	$0	$7,000,000	$0	$0	$0	$0
EW	SR240 & SR224 Interchange & Grade Crossing	$0	$0	$0	$0	$0	$0
EW	SR27-Pines Rd BNSF Grade Separation	$0	$0	$0	$0	$0	$0
NC	Statewide - Freight Rail Assistance Program	$0	$0	$0	$0	$0	$0
NC	Statewide - Rail Bank	$0	$0	$0	$0	$0	$0
NC	Statewide - Washington Produce Rail Car Pool	$1,974,000	$0	$0	$0	$0	$0
PS	Ballard Bridge Moveable Span Replacement	$0	$0	$0	$0	$0	$0
PS	Ballard Terminal RehabRe-rail 2 miles of mainline track on the BDTL	$0	$0	$0	$0	$0	$0
PS	BNSF Seattle PNW Shop Projects	$0	$0	$0	$0	$0	$0
PS	Bridge Rehabilitation	$0	$0	$0	$0	$0	$0
PS	Bullfrog Junction Improvements	$0	$0	$0	$0	$0	$0
PS	Duwamish Corridor	$0	$0	$0	$0	$0	$0
PS	East Everett Ave Crossing	$0	$0	$0	$0	$0	$0
PS	East Marginal Way Grade Separation	$0	$0	$0	$0	$0	$0
PS	Fife 70th Ave Grade Separation	$0	$0	$0	$0	$0	$0
PS	Fife Yard Improvements	$0	$0	$0	$0	$0	$0
PS	Fife Yard Improvements	$0	$0	$0	$0	$0	$0
PS	Kent S 212th St Grade Separations	$0	$0	$0	$0	$0	$0
PS	Kent S 228th St Corridor Project - Phases II & III Grade Separations	$0	$0	$0	$0	$0	$0
PS	Kent Siding Extension	$0	$0	$0	$0	$0	$0
PS	Kent Willis St Grade Separations	$0	$0	$0	$0	$0	$0
PS	Lehigh Cement Rail Extension	$0	$1,200,000	$0	$0	$0	$0
PS	Lincoln Avenue Grade Separation	$0	$0	$0	$0	$0	$0
PS	M St SE Grade Separation Project	$0	$0	$0	$0	$0	$0
PS	Port of Everett Existing Rail Upgrades	$0	$4,000,000	$0	$0	$0	$0
PS	Puyallup N Canyon Rd Ext-BNSF Overcrossing	$0	$0	$0	$0	$0	$0
PS	Puyallup Shaw Road Extension	$10,500,000	$6,000,000	$7,500,000	$0	$750,000	$0
PS	Renton Strander Blvd-SW 27th St Connection	$0	$0	$0	$0	$0	$0
PS	Re-rail 4.5 miles of mainline track on the MSN	$0	$400,000	$0	$0	$500,000	$0

Area	Project Name	Federal	State	Local	Tribal	Private	Other
PS	South Lander Street Grade Separation	$0	$0	$0	$0	$0	$0
PS	South Seattle Domestic Intermodal Facility Improvements	$0	$0	$0	$0	$0	$0
PS	South Terminal Freight Rail Improvements	$0	$4,000,000	$200,000	$0	$0	$0
PS	SR519 Intermodal Access Project (Phase 2)	$0	$0	$0	$0	$0	$0
PS	Tacoma Rail/Tacoma - New Refinery Spur	$0	$420,000	$0	$0	$405,000	$0
PS	Tacoma Rail/Tacoma - Rail Servicing Facility Upgrade & Expansion	$0	$337,000	$160,000	$0	$0	$250,000
SW	BNSF Positive Train Control Improvements	$0	$0	$0	$0	$0	$0
SW	BNSF Siding Extensions and Double Track Improvements	$0	$0	$0	$0	$0	$0
WW	Bellingham - Waterfront Restoration	$0	$5,000,000	$0	$0	$0	$0
WW	Bellingham Shipping Terminal Rail Spur Replacement	$0	$0	$0	$0	$0	$0
WW	BNSF Skagit River Bridge Replacment for Flood Risk Reduction	$0	$0	$0	$0	$0	$0
WW	Centrailia Steam Plant Switch Upgrade	$0	$0	$0	$0	$0	$0
WW	Chelatchie Prairie railroad rehabilitation - Phase 1	$0	$0	$0	$0	$0	$0
WW	Clark County Railroad Rehab	$0	$0	$0	$0	$200,000	$0
WW	Clark County/Chelatchie Prairie RR/Battle Ground to Vancouver - Track Rehab	$0	$1,000,000	$0	$0	$0	$0
WW	Clark County-Owned RR/Vancouver - Track Rehab	$0	$367,000	$37,000	$0	$0	$0
WW	Expansion on First Street	$0	$0	$0	$0	$0	$0
WW	Extend Sumner Siding	$0	$0	$0	$0	$0	$0
WW	Interstate Yard	$0	$0	$0	$0	$0	$0
WW	Kelso to Martin's Bluff - 3rd Main Line and Grade Separation	$0	$0	$0	$0	$0	$0
WW	Kelso to Martin's Bluff - 3rd Main Line and Ped Crossing	$0	$0	$0	$0	$0	$0
WW	Kelso to Martin's Bluff - 3rd Main Line and Storage Tracks	$0	$0	$3,000,000	$0	$5,000,000	$0
WW	Kelso to Martin's Bluff - 3rd Main Line, Kelso to Longview Junction, Yew Street pedestrian access, Hazel Street grade separation	$0	$0	$0	$0	$0	$0
WW	Kelso to Martin's Bluff - new siding terminating just north of Toteff Road	$0	$0	$0	$0	$0	$100,000
WW	Longview Junction Bypass	$0	$0	$0	$0	$0	$0
WW	Mt Vernon Bridge Replacement	$0	$0	$0	$0	$0	$0
WW	Port Grays Harbor Terminal 2 Grain Storage Facility	$0	$0	$3,000,000	$0	$60,000,000	$0
WW	Port of Chehalis Regional Rail Reload and Freight Processing Facility - Rail component	$0	$0	$0	$0	$0	$0
WW	Port of Grays Harbor Terminal 4 Rail Upgrade	$0	$0	$0	$0	$0	$0
WW	Port of Longview Rail Loop Construction	$0	$0	$100,000	$0	$0	$0

Area	Project Name	Federal	State	Local	Tribal	Private	Other
WW	Port of Olympia and East Olympia Freight Rail Enhancement Project	$0	$0	$0	$0	$0	$0
WW	Rail Car Storage East of Aberdeen	$0	$0	$0	$0	$0	$0
WW	Rail Enhancement Project	$0	$0	$0	$0	$0	$0
WW	Rail spur & reload for styrofoam recycler	$0	$0	$0	$0	$0	$0
WW	Relocate Rail Line South of Port Industrial Road and/or Create Loop Rail	$0	$0	$0	$0	$0	$0
WW	Repair Railroad Bridges	$0	$0	$0	$0	$0	$0
WW	Ridgefield Rail Overpass	$12,500,000	$0	$0	$0	$0	$0
WW	Scott Avenue Railroad Overcrossing/Grade Separation	$0	$1,366,000	$129,000	$0	$0	$0
WW	SR 432/433 Grade Separation & Rail Improvements	$0	$0	$0	$0	$0	$0
WW	Swanson Bark Rail Spur	$0	$0	$0	$0	$1,385,000	$0
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail	$0	$7,400,000	$0	$0	$0	$0
WW	Tacoma Rail and Puget Sound and Pacific RR/Centralia - Reconfigure Rail Phase 1B	$3,915,000	$1,500,000	$0	$0	$0	$0
WW	Tacoma Rail/Frederickson to Morton - Track Rehab	$1,485,000	$0	$0	$0	$0	$0
WW	Tacoma Rail/Roy - New Connection to BNSF and Yelm-Owned Spur	$0	$525,000	$0	$0	$0	$0
WW	Tacoma Rail/Tacoma to Morton and Yelm - Track Rehab	$755,000	$0	$0	$0	$0	$0
WW	West Vancouver Freight Access Schedule 2-4	$0	$0	$0	$0	$0	$0

Washington State Department of Transportation

Appendix 8-B: Freight Rail Investments – Historical and Planned – Managed by WSDOT

Year	Location	Project Type	Funding	Description
1980	Newport to Metaline Falls	Rail line rehabilitation	$4,086,000	Supported several businesses after Milwaukee Road abandoned the line. State funds added in 1989.
1981	Othello to Royal City	Rail line acquisition and rehabilitation	$1,196,000	Maintained rail access after Milwaukee Road abandonment.
1982	Hampton to Lynden	Rail line rehabilitation	$815,714	Maintained rail access from Sumas line to Lynden.
1983	Port Townsend	Transfer bridge rehabilitation	$773,000	Repair of bridge near Port Townsend; railroad scrapped in 1984.
1986	Ronald to Cle Elum	Rail line relocation	$70,000	Line relocation.
1992	Centralia	Line acquisition and rehabilitation	$281,794	Rail spur to industrial park.
1992	Rye to Battle Ground	Rail line rehabilitation	$674,900	Supports service on the Lewis and Clark Railway.
1993	Othello to Royal City	Rail line acquisition and rehabilitation	$400,000	Further improvements to abandoned Milwaukee Road segment. A 2009 WSDOT assessment determined repair requirements to reopen this line.
1993	Toppenish to White Swan	Rail line acquisition	$348,100	Maintains service to the Yakama Indian Reservation.
1993	Whitman County	Operating and MOW equipment acquisition	$410,000	Equipment leased by Port to the Blue Mountain Railroad. Two locomotives leased by Port to the Blue Mountain Railroad.
1993	Yelm to Tenino	Rail line acquisition	$200,000	Rail Banked; 14.6-mile line for corridor preservation.
1994	Mt. Vernon	Rail line rehabilitation	$177,000	Repairs to 1.8-mile rail line.
1994	Port of Walla Walla	Grain car acquisition - first Grain Train	$719,500	29 cars; Uses Stripper Well overcharge funds. Serves co-ops in Prescott, Thornton, St. John, and Endicott. State funds used for car painting.
1994	Terrace Heights to Moxee	Rail line rehabilitation	$779,700	Maintains service to large manufacturer in Moxee. Line reverted to BNSF ownership in 1997.

Year	Location	Project Type	Funding	Description
1994	Walla Walla to Dayton	Rail line rehabilitation	$1,227,649	Maintains access to food processor and wheat elevator in Prescott.
1995	Blue Slide Tunnel	Tunnel repairs	$297,500	Phase 1 of 2. Prevents tunnel collapse, loss of rail service to shippers on the line, and damage to SR 20.
1995	Tacoma to Centralia	Rail line acquisition	$3,250,000	Acquisition of former Milwaukee Road. Line runs between Tacoma and Centralia and Frederickson and Graham.
1996	LaCrosse to Winona	Track rehabilitation	$330,640	Maintains essential service to major agricultural areas.
1996	Rye to Vancouver Junction	Line rehabilitation	$824,500	Flood damaged portion of BNSF line donated to county upon receipt of state assistance.
1996	Whitman, Walla Walla, and Columbia Counties	Flood damage repairs	$1,300,000	Emergency bridge and washout repairs. One-time grant directly from the WA Legislature.
1997	Cheney to Coulee City	Rail line rehabilitation	$810,170	Keeps grain hauling lines open.
1998	Seattle	Line rehabilitation	$450,000	Supports several businesses located long the rail line.
1998	Tacoma to Graham	Rail line rehabilitation	$626,846	Supports several businesses located long the rail line.
1999	Columbia County	Rail line rehabilitation	$254,846	Maintains service to communities and the Port. Kept county's biggest employer from closing.
1999	Hoquiam	Construct spur track & loading facility	$433,102	This project helps make the terminal more attractive to businesses considering relocating to Grays Harbor.
1999	Naches	Rail line rehabilitation	$516,369	Repairs approximately 11 miles of rail line.
1999	Olympia	Additional track capacity	$269,052	Maintains, with potential to increase, business for the Port, Tumwater, and Lacey.
1999	Yelm	Rail line acquisition	$411,500	Preserves rail service. Local funds include non-LRFA federal development grant.
2000	Blue Slide Tunnel	Tunnel repairs	$505,000	Phase 2 of 2. Prevents tunnel collapse, loss of rail service to shippers on the line, and damage to SR 20.

Year	Location	Project Type	Funding	Description
2000	Hoquiam	Marine terminal spur track	$485,500	This project helps make the terminal more attractive to businesses considering relocating to Grays Harbor.
2000	Hoquiam	Repair work to the Hoquiam River Bridge	$606,250	Repairs 90-year-old mechanical swing bridge. Bridge now capable of accommodating 286,000 lb. freight cars.
2000	Port of Moses Lake	2nd Grain Train - Acquire 36 used grain hoppers	$458,887	Purchased by revenues generated by first Grain Train. Generates additional business for endangered Palouse grain rail lines; protects grain hauling rate competition in eastern Washington. Expands total fleet of grain cars to 65 (47 WSDOT, 18 Port of Walla Walla).
2000	Toppenish	Equipment purchase (locomotive)	$65,000	Supports purchase of one used locomotive to replace under-powered and unreliable unit.
2000	Toppenish to White Swan	Track rehabilitation	$60,000	Maintains service to several businesses.
2000	Wenatchee	Washington Fruit Express (WFE) refrigerated express railcar design	$51,000	Design of new express refrigerated railcar. The Washington Fruit Express will carry WA produce behind Amtrak's *Empire Builder*. Helps local farmers and Amtrak.
2000	Whitman, Lincoln, Spokane & Grant Counties	Track rehabilitation	$1,170,000	Supports service to Grant, Lincoln, Spokane, & Whitman Counties.
2001	Aberdeen	Loop track construction	$10,000,000	Allows AgPro to construct a trans-shipment facility at the marine terminal for bulk meal and grains.
2001	Frederickson to Morton	Rail line reopening	$2,500,000	Reopens washed out freight line for the first time since 1979. Restores rail service to five communities. Local contribution includes non-LRFA federal funds.
2001	Oroville	286K track upgrades	$485,500	Replaces 2.5 miles of 68 lb. rail with 110 lb. rail for 286K railcar operation.

Year	Location	Project Type	Funding	Description
2001	Richland	Emergency bridge repairs	$500,000	Emergency grant to cover insurance deductible. Port of Benton had no rail service until fire-damaged bridge was repaired.
2001	White Swan	TS&W rail line extension	$1,100,000	Extends Toppenish, Simcoe & Western rail line to Yakama Nation Forest Products Sawmill.
2002	Puyallup	Construct siding, basic rehab of 4 miles of rail line, acquire used locomotive	$400,000	Supports several rail side businesses, who depend on rail for low shipping costs on heavy materials.
2003	Chehalis	Mainline spur construction	$350,000	Final element needed to open new plastic pipe plant.
2003	Port of Whitman County	3rd Grain Train - acquire 29 used grain hoppers	$290,000	Generate additional business for endangered Palouse grain rail lines; protect grain hauling rate competition in eastern Washington. Purchased with revenues from first and second Grain Trains.
2004	Airway Heights	Track repairs and upgrades		Helps maintain rail service at the Airway Heights Industrial Park.
2004	Eastern Washington	Rail line acquisition	$7,350,000	Public acquisition of the Palouse River and Coulee City RR (PCC); places RR under stable ownership and will be combined with a long-term rehabilitation plan.
2004	Frederickson to Eatonville (emergency repairs) and Tacoma to Morton	Track repairs and upgrades		Repairs damaged section of track and upgrades other sections to accommodate more traffic between Morton and Tacoma.
2004	Quincy	Spur and loop track construction		New intermodal facility at Quincy may help divert some I-90 and Puget Sound port truck traffic to rail.
2005	Lewis County	Lewis County rail spur	$800,000	Constructs approx. 4,000-ft. industrial rail spur from BNSF mainline to a new glass manufacturing plant outside Winlock.

Year	Location	Project Type	Funding	Description
2005	Pierce & Lewis Counties	Tacoma Rail Mountain Division Morton line repairs-Phase 2	$3,122,000	Phase 2 of Tacoma Rail Mountain Division's Morton line reconstruction to restore rail service after 1996 floods.
2005	Port of Quincy	Port of Quincy intermodal facility	$1,717,000	New transload facility.
2007	Clark County	Lewis & Clark RR rehab - Vancouver to Battle Ground	$300,000	Clark County will upgrade ties and ballast at critical points between Vancouver and Battle Ground.
2007	Olympia	Port of Olympia on dock rail spur	$375,000	Construct an on-dock track the length of the west moorage at Port of Olympia.
2007	Pasco	Port of Pasco - intermodal facility improvements	$5,400,000	Improvement of the east end connection for locomotives to access the port facility and track upgrades.
2007	Pend Oreille County	Port of Pend Oreille - 286K upgrades	$655,000	Two miles of rail replacement and general track rehab.
2007	Skagit County	Eastern Skagit Rail Study	$50,000	Examine the possibility of re-establishing rail service on former rail alignment that is not a trail.
2007	Snohomish County	Snohomish Riverfront redevelopment (rail)	$1,800,000	Relocates 1.5 miles of BNSF rail line and installs a new junction to support the redevelopment of the Snohomish River waterfront in Everett.
2007	Walla Walla	Port of Walla Walla Railex project	$3,985,000	Constructs a loop track around Port of Walla Walla property including five turnouts, potable water system, fire flow system, property acquisition, and relocation of irrigation water line.
2008	Cosmopolis	Port of Grays Harbor - rail access improvements	$741,000	Rail access improvements to increase capacity and allow rail traffic to move easily in the congested area.
2008	Grays Harbor	Port of Grays Harbor/Hoquiam - rail access improvements	$543,000	Improvements at the Port's industrial site as well as a spur connecting the site with the Puget Sound and Pacific Railroad.

Year	Location	Project Type	Funding	Description
2009	Airway Heights to Medical Lake	Geiger Spur/Airway Heights - new rail connection	$6,800,000	Connects Airway Heights industrial track to Palouse River & Coulee City Railroad at Medical Lake to avoid shutdown due to Fairchild AFB security issues.
2009	Benton County	Port of Benton – Freight Rail Investment Bank (FRIB) spur	$250,000	Spur track for transload facility.
2009	Chehalis	Port of Chehalis - track rehabilitation	$398,000	Matches FEMA funds for the rehabilitation of a rail line to Curtis, and provides rehabilitation funding for flood damage to the rail line to Curtis that is not FEMA-eligible.
2009	Eastern Washington	Palouse River and Coulee City RR - acquisition	$15,337,000	Purchase 296-mile PCC.
2009	Ephrata	Port of Ephrata/Ephrata - spur rehabilitation	$127,000	Upgrades and rehabilitates the Port's rail spur.
2009	Everett	Port of Everett - FRIB spur	$250,000	Rail spur for secondary access to BNSF mainline.
2009	Longview	Port of Longview/Longview - rail loop	$281,000	Constructs a rail loop that increases operational flexibility and eases congestion on the BNSF mainline.
2009	Morton	Morton Business Development Park	$1,181,000	Constructs improvements in Morton in support of operations of Tacoma Rail.
2009	Tacoma	City of Tacoma - FRIB locomotive facility	$250,000	Locomotive servicing facility.
2009	Tacoma	City of Tacoma - FRIB locomotive idling	$26,386	Locomotive idling improvement.
2009	Tacoma	Tacoma Rail/Tacoma - yard switching upgrades	$500,000	Automate the Tacoma Rail main yard switching operation at the Port of Tacoma, for increasing the yard capacity and through port to efficiently manage projected Port growth.
2009	Tacoma to Morton	Tacoma Rail/Tacoma to Morton - track rehab	$2,460,000	Track upgrades to facilitate the future operations of Tacoma's planned excursion train.

Year	Location	Project Type	Funding	Description
2009	Tacoma to Morton	Tacoma Rail/Tacoma to Morton - track rehab	1,230,000	Track upgrades to facilitate the future operations of Tacoma's planned excursion train.
2009	Toppenish to White Swan	White Swan/ Toppenish - Yakama Sawmill traffic upgrade	$637,000	Upgrades existing Toppenish Simcoe & Western line for increased traffic from Yakama Tribe sawmill.
2009	Vancouver	Lewis and Clark RR/Vancouver - rail improvements	$1,019,000	Rehabilitates a portion of the rail line; also environmental and permitting work needed to improve the interchange facilities between the Lewis and Clark Railroad and the BNSF Railway.
2010	Bellingham	Bellingham - waterfront restoration	$448,000	Environmental work for relocating a ¾-mile section of the track to allow the site to be redeveloped for recreational, residential, and commercial uses.
2010	Eastern Washington	Palouse River and Coulee City RR – rehabilitation	$3,600,000	Rehabs PCC track & bridges in Grant, Lincoln, Spokane, & Whitman Counties.
2010	Ephrata	Port of Ephrata - FRIB	$116,000	Rehabilitation of rail spur.
2010	Moses Lake	Port of Moses Lake/Northern Columbia Basin - RR environmental	$2,000,000	Develop the required environmental documents to build a more direct line to the airport.
2010	Olympia	Intermodal infrastructure enhancement project, Port	$2,663,000	Improves the intermodal infrastructure at the Port of Olympia's ocean terminal. Three separate earmarks were provided.
2010	Quincy	Port of Quincy – short-haul intermodal pilot project	$984,000	Purchase a rail container lift used to load/unload containers on to rail flat/stack cars, a forklift to position containers, essential computer and related communications equipment for business management, and upgrade the water and electrical service at the facility.
2010	Walla Walla to Dayton	Port of Columbia/Wallula to Dayton - track rehab	$522,000	Rehabilitate the 69-mile line from Wallula to Dayton and various spur tracks.

Year	Location	Project Type	Funding	Description
2011	Creston	Lincoln County PDA/Creston - new rail spur	$337,978	Builds a stub-end spur into the publicly-owned industrial park directly west of Creston, WA.
2011	Creston	New Creston livestock feed mill spur track	$30,000	Lincoln County PDA will construct 850` long railroad siding to connect to a new livestock feed plant.
2011	Eastern Washington	Palouse River and Coulee City RR Rail Authority - lines rehab	$8,600,000	Rail authority-sponsored rehab of state-owned rail lines in Grant, Lincoln, Spokane, & Whitman Counties.
2011	Ephrata	Port of Ephrata/Ephrata - additional spur rehab	$362,746	Replace additional 3,000 ties needed for a new shipper locating to the Port.
2011	Quincy	Port of Quincy - FRIB	$3,684,000	Construction of a rail loop.
2011	Frederickson to Morton	Tacoma Rail/Frederickson to Morton - track rehab	$1,485,000	Replaces lightweight rail with new rail to handle heavier 286,000-pound freight cars.
2011	Frederickson to Morton	Tacoma Rail/Tacoma to Morton and Yelm - track rehab	$755,000	Replaces rail and ties, which handles heavier 286,000-pound freight cars.
2011	Lincoln County	CW Line/Lincoln County - grade crossing rehab	$370,650	Rehabilitates and upgrades 11 deteriorated road/rail grade crossings on the CW Line, part of the state-owned former PCC, between Reardon and Wilbur.
2011	Everett	Port of Everett - FRIB	$1,200,000	New rail track to connect a cement loading facility to the mainline.
2011	Moses Lake	Port of Moses Lake/Northern Columbia Basin – track rehab and extension	$2,000,000	Extend and rehabilitate track that serves the industrial park to the east and north of the Grant County International Airport.
2011	Pasco	Port of Pasco - intermodal facility improvements	$882,000	Expands the facilities rail infrastructure, improving east end connection for locomotives access through the port facility.

Year	Location	Project Type	Funding	Description
2011	Roy	Tacoma Rail/Roy - new connection to BNSF and Yelm	$525,000	Construct approximately 4,300 ft. of new track, including a crossing of SR 507, to connect the Tacoma Rail line between Frederickson and Centralia with the BNSF branch line west of Roy.
2011	Tacoma	Tacoma Rail/Tacoma - improved locomotive facility	$366,813	This project reconfigures the tracks for better accessibility as well as increasing the servicing capabilities with the new facilities.
2011	Tacoma	Tacoma Rail/Tacoma - new refinery spur tracks	$420,000	Constructs a third rail spur, installs a new turnout and associated rail infrastructure to improve capacity and logistical capabilities.
2011	Vancouver	Chelatchie Prairie RR/Vancouver - track rehabilitation	$366,813	This project will continue rehabilitation of the track between Rye Junction and Battle Ground, resulting in a Class I status, increasing freight mobility and attracting shippers to the line. The project replaces ties, ballast, services rail joints, and replaces light weight rail.
2011	Vancouver	Clark County/Chelatchie Prairie RR - track rehab	$1,000,000	Rehabilitation of the 33-mile segment of track between Vancouver and Battle Ground along the Chelatchie Prairie Railroad owned by Clark County.
2012	Eastern and Western Washington	Statewide - Washington Produce Rail Car Pool	$1,974,000	There is a shortage of refrigerated railcars available to Washington growers during peak seasons. This project will create a fleet of refrigerated railcars. This will result in lower costs to growers and reduce the wear and tear on state roadways caused by heavy truckloads.

Note: This table is summarized in Chapter 5, Exhibit 5-3.

Source: WSDOT State Rail and Marine Office

Appendix 9: Glossary

AAR

Association of American Railroads

AASHTO

American Association of State Highway and Transportation Officials

ACSES

Advanced Civil Speed Enforcement System

Amtrak

*Am*erican *tra*vel by trac*k* – National Railroad Passenger Corporation

ARRA

American Recovery and Reinvestment Act of 2009

B.C.

British Columbia

B/C

Benefit/cost

BCRC

British Columbia Railway

BDTL

Ballard Terminal Railroad

BNSF

BNSF Railway Company

Break-bulk

Break-bulk cargo is cargo that is too big or too heavy to fit into a container or traditionally cannot be vacuumed out of a ship.

BTS

Bureau of Transportation Statistics

BYCX

Battle Ground Chelatchie Prairie Railroad

CBRW

Columbia Basin Railroad

CERB

Community Economic Revitalization Board

CFR

Code of Federal Regulations

CIA

Central Intelligence Agency

Class I Railroad

A railroad having annual carrier operating revenues of $250 million or more.

Class II Railroad

A railroad having annual carrier operating revenues of less than $250 million, but in excess of $20 million.

Class III Railroad

A railroad having annual carrier operating revenues of $20 million or less.

Classification

A sorting and grouping of rail cars according to destination point

CLC

Columbia and Cowlitz Railway

Clearing

Clearing refers to the crowning of a tunnel to allow taller rail cars to pass through or “clear” under the ceiling of the tunnel.

Climate Team

Governor's 2008 Climate Action Team – Transportation Implementation Working Group

CMAQ

Congestion Mitigation and Air Quality

CO

Carbon Monoxide

CO_2

Carbon Dioxide

CREATE Program

Chicago Region Environmental and Transportation Efficiency Program

CSCD

Cascade and Columbia River Railroad

CSX

CSX Corporation

CSXT

CSX Transportation

CTC

Centralized Traffic Control

CWA

Central Washington Railroad

DAHP

Department of Archaeology and Historical Preservation

Deep Draft Port

A deep draft port is a port that can receive a ship with a laden draught of 40 feed or less. A very deep draft port is one that can handle a laden draught of 45 feed or less, which are most container ships and other large ships including military ships.

Directional Running

Directional running is the concept that trains are routed only one direction on a corridor. Similar to a one-way street, operational capacity increases when all trains move in the same direction.

DOT

Department of Transportation

DPU

Distributed power units or mid-train helpers are engines that are placed in the middle of the train. These additional engines help "power" a long or heavy train by distributing the load of the train between the front engines and those in the middle of the train.

EA

Environmental Assessment

EDA

Economic Development Administration

EIS

Environmental Impact Statement

EPA

Environmental Protection Agency

ETMS

Electronic Train Management System

EWG

Eastern Washington Gateway Railroad

Export Elevators

Export elevators are elevators that can load export ships directly from the elevator.

FAF

Freight Analysis Framework

FAST Corridor

Freight Action Strategy Corridor

FGTS

Freight Goods and Transportation System

FHWA

Federal Highway Administration

FLH

Office of Federal Lands Highway

FLHP

Federal Lands Highway Program

FLMA

Federal land management agencies

FMSIB

Freight Mobility Strategic Investment Board

FRA

Federal Railroad Administration
Fish and Wildlife Service

FRIB

Federal Rail Investment Bank

GDP

Gross Domestic Product

GHG

Greenhouse Gases

Good Condition

Not needing repair or maintenance.

Good Rail Access

Trains can get in and out of a rail facility without delay to the facility, trains or other rail operations on a rail line.

Grade Separation

A grade separation is when an at-grade road that crosses a rail line is separated from the rail line by elevating the road as an overpass over the rail line or elevating the rail line on a trestle.

GRNW

Great Northwest Railroad

Gross Business Income

Gross Business Income is a measure of total revenue reported to the state.

HCT

High Capacity Transit

HIM

Hyundai Intermodal Terminal

HR

House Resolution

HSIPR

High-Speed Intercity Passenger Rail

I-5, I-90

Interstate 5, Interstate 90

ID

Idaho

Intermodal Facility

A site consisting of tracks, lifting equipment, paved and/or unpaved areas, and a control point for the transfer (receiving, loading, unloading, and dispatching) of trailers and containers between rail and highway and between rail and truck to/from marine modes of transportation.

Intermodal Ports

Intermodal ports are those ports that move containers from ship to rail, producing unit trains of containers to be transported to the inland destinations.

Intermodal Trains

Intermodal trains are significant consumers of rail capacity because they are long, move at speeds similar to passenger trains, and require priority of movement. The railroads market these trains at premium prices. They generate substantial revenue for the railroads.

Intermodal Transfer Facility

Intermodal transfer facilities are locations where freight is transferred between freight modes.

IRS

Internal Revenue Service

ISTEA

Intermodal Surface Transportation Efficiency Act

ITS

Intelligent Transportation System

KCS

Kansas City Southern

KFR

Kettle Falls International Railway

L&I

Labor and Industries

LRFA

Local Rail Freight Assistance Program

LRT

Light Rail Transit

LSC

Longview Switching Company

Mainline Switching

Mainline switching is the process of picking up and setting out individual cars or sets of cars for specific shippers and receivers while the train is "parked" on the mainline; this blocks the mainline and reduces line and system capacity.

Miles of Road

Miles of road is a linear measure of distance that does not consider the number of tracks. Track miles is greater than miles of road. For example, if a rail segment has two mainlines, then the number of track miles is double the number of miles of road.

MOU

Memorandum of Understanding

MP

Milepost

MPO

Metropolitan Planning Organization

MRL

Montana Rail Link

MSN

Meeker Southern Railroad

MVT

Mount Vernon Terminal Railroad

NEC

Northeast Corridor

NEPA

National Environmental Policy Act

NHS

National Highway System Designation Act of 1995

NIM

North Intermodal Yard

NOx

Nitrogen Oxide

Northern Tier

The Northern Tier refers to the rail corridor that runs through the eight neighboring states from the Pacific Northwest to Chicago. These states are Washington, Oregon, Idaho, Montana, North Dakota, Minnesota Wisconsin, and Illinois.

NS

Norfolk Southern Railway

NTSB

National Transportation Safety Board

ODOT

Oregon Department of Transportation

OLI

Operation Lifesaver, Inc.

Operated Miles

Operated miles include the miles leased by the owner railroad to another railroad that operates on the owned line. Operated miles are greater than owned miles.

OR

Oregon

O-WR&N

Oregon-Washington Railway and Navigation

PABs

Private Activity Boards

Panamax ships

Panamax ships are ships that are physically able to pass through the current width of the Panama Canal. These ships can not be any wider than 106 feet.

PCC

Palouse River and Coulee City Railroad

PIM

Pierce County Terminal Intermodal

PL 110-432

Public Law 110-432, approved as HR 2096

PLHD

Public Lands Highway Discretionary Program

PM_{10}

Particulate Matter

PMV

Port Metro Vancouver

PNRS

Projects of National and Regional Significance

PNW

Pacific Northwest

PNWRC

Pacific Northwest Rail Corridor

Poor Physical Condition

Track that is in disrepair from wear and tear or has deteriorated due to lack of maintenance.

POVA

Pend Oreille Valley Railroad

PPR

Port of Prince Rupert

Practical Capacity

Practical capacity is the highest activity level at which the line can operate with an acceptable degree of efficiency, taking into consideration unavoidable losses of productivity.

PRIIA

Passenger Rail Investment and Improvement Act of 2008

PRP

Program, Park Roads and Parkways Program

PSAP

Puget Sound and Pacific Railroad

PSE

Puget Sound Energy

PSRC

Puget Sound Regional Council

PTC

Positive Train Control

PTRR

Portland Terminal Railroad

PVJR

Portland Vancouver Junction Railroad

Rail Bank

Freight Rail Investment Bank Program

Railroad Switch

A mechanical installation enabling railway trains to be guided from one track to another at a railway junction.

RCW

Revised Code of Washington

Reporting Mark

A reporting mark is a two- to four-letter alphabetic code used to identify owners or lessees of rolling stock (e.g. rail car) and other equipment used on the North American railroad network. The marks are stenciled on each piece of equipment, along with a one- to-six-digit number, which together uniquely identifies every piece of equipment. For example, this allows rail cars to be tracked by the railroad they are traveling over, which shares the information with other railroads and customers.

RND

Railroads for National Defense

Ro-ro

Roll-on, roll-off

RoadRailers®

A specialized truck trailer where the trailer can be attached to rail wheels to haul along the railroad without the use of a separate rail flat car.

RR

Railroad

RRIF

Railroad Rehabilitation and Investment Financing

RS

Royal Slope Railroad (also known as the Royal Slope Line)

RSAC

Railroad Safety Advisory Committee

RSIA

Rail Safety Improvement Act of 2008

RTPO

Regional Transportation Planning Organization

SAFETEA-LU

Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users

SDDC

Military Surface Deployment and Distribution Command

SEPA

State Environmental Policy Act

SEROps

Southeastern Rail Operations Study

Short-Line Railroad

These are railroads that are regional or local (Class II and Class III) that provide service in support the Class I railroads. Many times the short-line railroads transport the cargo a short distance from the Mainline hub to its final rail destination on a specific spur or to a intermodal facility.

SI

Spokane International Railroad

SIB

State Infrastructure Bank

SIG

Seattle International Gateway

SIM

South Intermodal Yard

SO_2

Sulfur Dioxide

SP

Southern Pacific Railroad

SP&S

Spokane, Portland, and Seattle Railway

state

Washington State

STB

Surface Transportation Board

STRACNET

Strategic Rail Corridor Network (Department of Defense)

STP

Surface Transportation Program

Switching Railroad

A railroad engaged primarily in switching services for other railroads.

TCRY

Tri-City and Olympia Railroad

TEA-21

1998 Transportation Equity Act for the 21st Century

Terminal Railroad

A railroad engaged primarily in terminal services for other railroads.

TERR

Tacoma Eastern Railroad

TEU

Twenty-Foot Equivalent Unit measuring 20 feet long by eight feet high by eight feet wide.

TIFIA

Transportation Infrastructure Finance and Innovation Act

TIGER

Transportation Investment Generating Economic Recovery

TMBL

Tacoma Municipal Belt Line

TPA

Transportation Partnership Account

Train Volumes

Train volumes (average trains per day) reflect business activities that are fluctuated sharply and sensitive to economic climate. Although the long-term trend is upward, the short-term trend could drop significantly.

Transloading

The process of transferring a shipment from one mode of transportation to another.

Transloading facility

A facility where the transferring of a shipment from one mode of transportation to another takes place.

TRMW

Tacoma Rail Mountain Division

TTCI

Transportation Technology Center, Inc.

TTPO

Tribal Transportation Planning Organization

TWC

Track Warrant Control

UP

Union Pacific Railroad

U.S.

United States

USACOE

U.S. Army Corps of Engineers

USC

United States Code

USDOC

U.S. Department of Commerce

USDOT

U.S. Department of Transportation

USFS

U.S. Forest Service

UTC

Utilities and Transportation Commission

VMT

Vehicle MilesTraveled

WA

Washington

WAC

Washington Administrative Code

WCCC

West Coast Corridor Coalition

WIR

Washington and Idaho Railway, Inc.

WPPA

Washington Public Ports Association

WRS

Western Rail Switching

WSDOT

Washington State Department of Transportation

WSTC

Washington State Transportation Commission

WTP

Washington Transportation Plan

Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment

Final Report

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Chapter 1
Executive Summary

The Pacific Northwest economy is inextricably tied to domestic and international markets. Efficient performance of the inland transportation system, especially in its linkage to the public and private port system, is critical to the economic health of the region.

Approximately every five years the Washington Public Ports Association (WPPA) and Washington State Department of Transportation (WSDOT) sponsor an update to the Washington State Marine Cargo Forecast. The most recent forecast was completed in March 2009, and provided unconstrained forecasts of cargo projected to move through public and private marine terminals on Puget Sound, the Washington Coast, and the Lower Columbia River in Washington and Oregon.

In the past two decades an increasing percentage of the commerce moving through Pacific Northwest ports has been carried by rail. The most recent two Marine Cargo Forecast studies have also included analyses of rail capacity. These rail capacity analyses modeled the various mainline rail segments in Washington, taking into account the projected marine cargo volumes as well as growth in domestic train traffic and passenger train traffic. Key outputs of these analyses were prioritized lists of rail system projects that would help to solve existing and anticipated capacity constraints.

The most recent marine cargo forecast was completed in the middle of the 2009 economic recession, a time of unusually sharp declines in marine cargo and rail traffic. However, since that report was completed rail traffic has rebounded to pre-recession levels. In addition, many of the ports in the region are anticipating major increases in cargo, especially exports of dry bulk such as grain, minerals, ores, and other bulk commodities. The anticipated volumes of these new cargos could significantly impact the mainline rail system in the northwest, impacting the marine cargos as well as passenger traffic and domestic cargo.

BST Associates (BST) and MainLine Management (MLM) were retained to prepare the following 2011 update to the 2009 report. The purpose of this analysis is to update the marine cargo forecasts, to compare the projected level of rail traffic with the capacity of the various mainline segments in the region, and to produce a prioritized list of projects to alleviate anticipated capacity constraints. An important addition to the 2011 analysis is the inclusion of the mainline rail system in Oregon.

The report was prepared at the request of the Ports of Everett, Seattle, Tacoma, Grays Harbor, Longview, Kalama, Vancouver and Portland. Additional entities participated in the preparation, including the Washington State Department of Transportation, Oregon Department of Transportation, and Washington Public Ports Association. The Class I railroads also participated in a review of the analysis, but this is not a Class I railroad product.

Marine Cargo Forecasts

The marine cargo forecasts produced for this analysis are unconstrained, which assumes that the necessary marine terminals and rail capacity will be in place to meet market demand. The method for updating the 2009 forecast involved several steps.

- First, cargo volumes were updated by commodity and region using the most recent data available.
- Second, the forecasts provided in the 2009 Marine Cargo Forecast were then updated based upon adjusted trends and forecast growth rates. A key part of this step was the inclusion of potential market opportunities that are being evaluated by individual ports.
- Finally, the mode of inland transportation was estimated for each scenario by commodity, sub-region and growth scenario.

Potential new market opportunities included: ores, minerals, grain, containers and liquid bulks. For each of the commodity types two growth scenarios were projected: the high-growth forecast included all of the market opportunities currently under consideration, while the moderate growth forecast included a portion of the market opportunities (approximately one half).

A summary of cargo projections through the year 2030 is presented below

Commodity Forecasts

Containers

In the 2009 marine cargo forecast, container traffic was projected to reach 10.4 million TEUs in 2030, with an average annual growth rate of 5.2 percent between 2010 and 2030.

Under the revised moderate growth forecast, containers are projected to reach 8.3 million TEUs by 2030 (4.1 percent annual growth). Under the revised high growth forecast, containers are projected to reach 12.3 million TEUs by 2030 (6.1 percent annual growth).

Breakbulk/Neobulk

In the 2009 marine cargo forecast, these commodities were projected to increase by an average annual 1.5 percent, reaching 11.1 million tons in 2030.

Under the moderate-growth scenario, breakbulk/neobulk cargoes are expected to grow by an average annual rate of 1.2 percent from 2010 to 2030, reaching 10.5 million tons in 2030. Under the high growth forecast, breakbulk/neobulk cargoes grow by an average annual rate of 2.2 percent from 2010 to 2030, reaching 12.7 million tons 2030.

A key difference between the 2009 study and the current one is that log exports grew rapidly over the past year and are expected to remain strong through the mid-term (approximately five years).

Grain and Related Products

Pacific Northwest grain and oilseed exports have shown impressive growth over the past decade, growing from approximately 20 million metric tons in 2000 to 34 million metric tons in 2010. Wheat, corn and soybeans are the most important commodities, but other products such as soybean meal and dried distiller's grains (DDGS) have become increasingly important.

BST Associates forecasts that Pacific Northwest grain and oilseed exports will increase from 34.1 million metric tons in 2010 to 39.1 million tons (moderate growth scenario) and 53.3 million metric tons in 2030 (high growth scenario).

Dry Bulk Cargoes

The 2009 forecast projected relatively modest gains in bulk traffic, with volumes expected to reach 31.8 million tons in 2030, or at an average annual growth rate of approximately 1.0 percent between 2010 and 2030. However, the dry bulk forecast was based upon the existing commodity base and did not anticipate the strong interest in additional export cargo opportunities.

Under the revised moderate growth forecast, dry bulk cargoes are expected to reach 97.1 million tons in 2030 (average annual growth of 6.8 percent per year between 2010 and 2030). Under the revised high growth forecast, dry bulk cargoes could reach 155.3 million tons in 2030 (average annual growth of 9.3 percent per year between 2010 and 2030). Growth is driven by increasing mineral and ore exports, among other commodities.

Liquid Bulks

The liquid bulk trades in the Pacific Northwest, which is dominated by crude oil, is expected to gradually change as regional refineries shift their source from Alaska to other domestic and foreign suppliers. The 2009 forecast projected modest growth for liquid bulk traffic, expecting volumes to reach 48.4 million tons in 2030 (0.8 percent annual growth).

Under the revised moderate growth forecast, liquid bulk cargoes are expected to reach 42.4 million tons in 2030 (0.2 percent per year), reflecting the changed sourcing patterns. Under the high growth forecast, liquid bulks are expected to reach 51.6 million tons in 2030 (1.2 percent per year). The high growth forecast incorporates new LNG imports/exports.

Sub-Region Forecasts

Lower Columbia Oregon and Oregon Coast

The Lower Columbia Oregon and Oregon Coast sub-region is projected to reach 44.6 million tons in 2030 under the moderate growth forecast (2.6 percent annual growth from 2010 to 2030) and 70.5 million tons in 2030 under the high growth forecast (5.0 percent annual growth).

Rail traffic is projected to reach 26.3 million tons in 2030 under the moderate growth forecast, and 47.5 million tons in 2030 under the high growth forecast.

Lower Columbia Washington

The Lower Columbia Washington sub-region is projected to reach 49.4 million tons in 2030 under the moderate growth forecast (4.3 percent annual growth) and 82.5 million tons in 2030 under the high growth forecast (7.0 percent annual growth).

Rail traffic is projected to reach 43.0 million tons in 2030 under the moderate growth forecast, and 74.9 million tons in 2030 under the high growth forecast.

Puget Sound and Washington Coast

The Puget Sound and Washington Coast sub-region is projected to reach 141.0 million tons in 2030 under the moderate growth forecast (2.6 percent annual growth) and 192.3 million tons in 2030 under the high growth forecast (4.2 percent annual growth).

Rail traffic is projected to reach 84.8 million tons in 2030 under the moderate growth forecast, and 131.6 million tons in 2030 under the high growth forecast.

Rail Capacity Assessment

This section summarizes the rail capacity analysis. As noted above, rail volumes fell markedly during the recent recession, but they recovered strongly in 2010, reaching pre-recession levels. Coupled with this rapid pace of recovery, there are significant opportunities for growth in rail traffic, particularly in bulk train exports of minerals, ores and grain.

The rail forecasts include a projection of the number of trains under moderate and high growth scenarios, under both average and peak operating conditions. The rail forecasts are driven by the marine cargo forecast, but also include domestic freight traffic and passenger train volumes. Domestic traffic and passenger traffic was based on studies prepared for WSDOT and ODOT as well as on discussions with rail service providers.

The analysis assumes that existing trains absorb most of the growth in rail traffic before new trains are added. However, operational requirements sometimes necessitate new train starts, and this is included in the forecast. The capacity of the various main line segments was estimated based upon discussions with rail service providers, recent studies and consultant judgment.

Table 1-1 summarizes study results. Under the moderate growth scenario, the only segments that experience sustained capacity constraints are the Vancouver to Pasco and the Everett to Blaine lines. Under the high growth scenario, the constraints on the Vancouver to Pasco and the Everett to Blaine segments occur earlier. In addition, constraints are expected in the Pasco to Spokane, Vancouver to Kalama/Longview, and King Street Station to Everett lines. These results assume that a series of physical improvements are completed, and that certain operational protocols are changed.

Table 1-1: Anticipated Year of Capacity Constraint, by Line Segment

Line Segment	Moderate Growth Scenario		High Growth Scenario	
	Avg. Day	Peak Day	Avg. Day	Peak Day
Pasco, WA to Vancouver, WA (BNSF)				
Pasco, WA to Wishram, WA	2030	2025	2025	2020
Wishram, WA to Vancouver, WA	---	2030	2025	2024
Hinkle, OR to Portland, OR (UP)	---	---	---	---
Pasco, WA to Spokane, WA (BNSF)	---	---	2030	2025
Spokane, WA to Sand Point, ID (BNSF)	---	---	---	---
Hinkle, OR to Eastgate, ID (UP)	---	---	---	---
Vancouver, WA to Tacoma, WA (Joint Line)				
Vancouver, WA to Kalama/Longview, WA	---	---	---	2030
Kalama/Longview, WA to Tacoma, WA	---	---	---	---
Tacoma, WA to Seattle, WA (Joint line)				
Tacoma, WA to Auburn, WA	---	---	---	---
Auburn, WA to Seattle, WA	---	---	---	---
Seattle, WA to Everett, WA (BNSF)	---	---	2023	2020
Everett, WA to Vancouver, BC (BNSF)	---	2030	2025	2020
Everett, WA to Spokane, WA via Stevens Pass (BNSF)	---	---	---	---
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)	---	---	---	---

Source: MainLine Management

In order for rail capacity to meet the of projected freight volumes, the authors of this report recommend a series rail system improvements. These projects generally fall into two categories, mainline improvements and port access improvements. However, the projects labeled as port access improvements also provide benefits to the mainline system. Reducing the amount of time that it takes for trains to move between the port terminals and the mainline reduces delays on the mainline system, and thereby increases mainline capacity.

The recommended mainline projects include:

- **Peninsula Junction to North Portland Junction, Portland**. (Funding is in place to complete preliminary engineering and the NEPA analysis, but not construction.)
- **Vancouver, WA Freight Rail Bypass**. (Construction is under way, and is anticipated to be complete in 2013.)
- **Point Defiance Bypass, Tacoma to Nisqually**. (Construction of Phase 1 is under way; Phase 2 is anticipated to be complete 2016.)
- **Blakeslee Junction Improvements, Centralia. (**Phase 1A & 1B are partially funded, and the funds have all been moved to a future biennium. Phases 2-5 are not funded.)

- **Third main line Kalama to Kelso –WSDOT Passenger Plan Option 3.** (North portion is funded, engineering is under way).
- **Vancouver to Kelso - WSDOT Passenger Plan Option 4**. (funding is in place for several of these projects, engineering is under way)

The recommended port access projects include:

- **Port of Vancouver, WA Freight Access Project**. (First phases are finished, entire project is scheduled to be complete in 2017)
- **Unit Train Staging/Storage Yard near Woodland**. (No action currently under way.)
- **Cowlitz River Bridge – Longview**. (Partial funding is in place to begin preliminary engineering and the NEPA analysis, with remaining funding expected in January 2010. Construction not funded.)
- **Bullfrog Junction Realignment, Tacoma.** (Preliminary planning is complete, project proponents are seeking funding.)

Growth in the volume of export bulk trains is expected to increase the demands on existing rail capacity in the region, and even moderate growth will require BNSF and UP to assess the capacity requirements necessary to meet the growing demand. Both railroads have the ability to increase capacity through a combination of physical and operational improvements, and should be able to meet growing demand well into the future.

Chapter 2
Marine Cargo Forecasts

This section provides summary of the marine cargo forecast. These summaries are presented by commodity group and by sub-region in the Pacific Northwest. The marine cargo forecasts are unconstrained, which assumes that the necessary marine terminals and rail capacity will be in place to meet market demand.

The method for updating the 2009 forecast involved several steps. First, current cargo volumes were updated by commodity and region using the most recent data (2010 for commodities moving on international routes and 2009 for commodities moving on domestic routes). Volumes for 2011 were estimated based upon data from individual ports, the Pacific Maritime Association, U.S. Department of Agriculture, and other industry and government sources.

Commodity handling groups were defined to include:

- Containers,
- Neobulk/breakbulk cargoes – breakbulk, autos and logs,
- Grain and related products – wheat, barley, corn, soybeans, soy meal, beet pulp pellets and like products,
- Dry bulk cargoes – minerals, ores, chemicals, fertilizers, wood chips, manufactured products and like products,
- Liquid bulk cargoes – crude oil, petroleum products, chemicals and like products.

The forecasts include all public and private terminals, which were divided into the following sub-regions:

- Lower Columbia River Oregon and Oregon Coast,
- Lower Columbia River Washington,
- Puget Sound and Washington Coast.

Second, the forecasts provided in the 2009 Marine Cargo Forecast were updated based upon adjusted trends and forecast growth rates. In addition, a key effort in this update was to consider the potential market opportunities that are being evaluated by individual ports. This process included a discussion with participating ports and the Class I railroads and literature review of industry resources.

Potential new market opportunities included: ores, minerals, grain, containers and liquid bulks.

For each commodity group two growth scenarios were projected. The high-growth forecast included all of the market opportunities currently under consideration. The moderate growth forecast included a portion of the market opportunities (approximately one half).

Third, the inland mode of transportation was estimated for each growth scenario, commodity, and sub-region.

The results of the forecast are presented below.

Containers

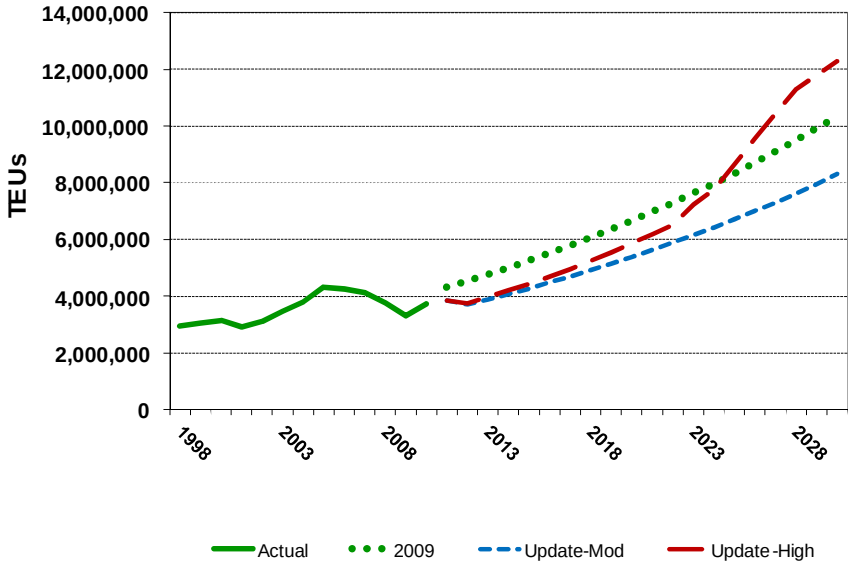
The revised Pacific Northwest container forecast is presented in Figure 2-1. The moderate-growth forecast is lower than the forecast presented in 2009 due to revised expectations about near-term growth and intensified competition from ports in Canada and on all-water routes (after completion of the Panama Canal improvements).

In the 2009 marine cargo forecast, containers were projected to reach 10.4 million TEUs in 2030, with average annual growth rate of 5.2 percent between 2010 and 2030. The revised forecast projects that container volumes will increase by:

- 4.1 percent under the moderate growth forecast, reaching 8.3 million TEUs, and,
- 6.1 percent under the high growth forecast, reaching 12.3 million TEUs,

Under the high growth forecast, container volumes are expected to increase at a slower rate than anticipated in the 2009 marine cargo forecast through 2020. However, the volumes expected for Puget Sound and Lower Columbia Oregon ports are comparable to the volumes expected in the prior forecast in 2030 (approximately 10 million TEUs). In the high growth scenario, container traffic is assumed to commence in Coos Bay in 2023 and increase to 2030.

Figure 2-1: Pacific Northwest Container Cargo Trends and Forecast



Source: Individual ports, BST Associates

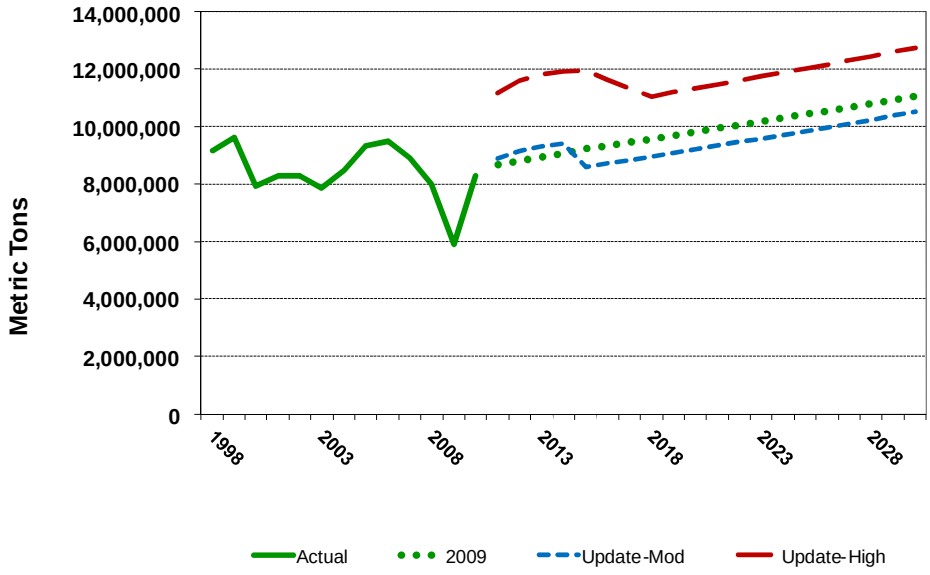
Break and Neobulk Cargoes

The revised forecast for Pacific Northwest breakbulk and neobulk cargoes is presented in Figure 2-2. In the 2009 marine cargo forecast, these commodities were projected to increase by an average annual 1.5 percent, reaching 11.1 million tons in 2030.

Under the moderate-growth scenario, the forecast is slightly higher in the near-term than in the 2009 forecast, mainly due to increased log exports, which are expected to be relatively robust and then decline as the domestic housing industry begins to recover. Under the moderate growth forecast, breakbulk/neobulk cargoes are expected to grow by an average annual rate of 1.2 percent from 2010 to 2030, reaching 10.5 million tons in 2030.

Under the high growth forecast, breakbulk and neobulk volumes are expected to remain at higher levels. Log exports are projected to continue at a more rapid rate through approximately 2018 and then level out. Under the high growth forecast, breakbulk/neobulk cargoes grow by an average annual rate of 2.2 percent from 2010 to 2030, reaching 12.7 million tons 2030.

Figure 2-2: Pacific Northwest Breakbulk and Neobulk Cargo Trends and Forecast



Source: BST Associates

Grain and Related Products

Pacific Northwest grain and oilseed exports have shown impressive growth over the past decade, increasing from approximately 20.1 million metric tons in 2000 to 34.1 million metric tons in 2010, or at an average annual growth rate of 5.4 percent per year.

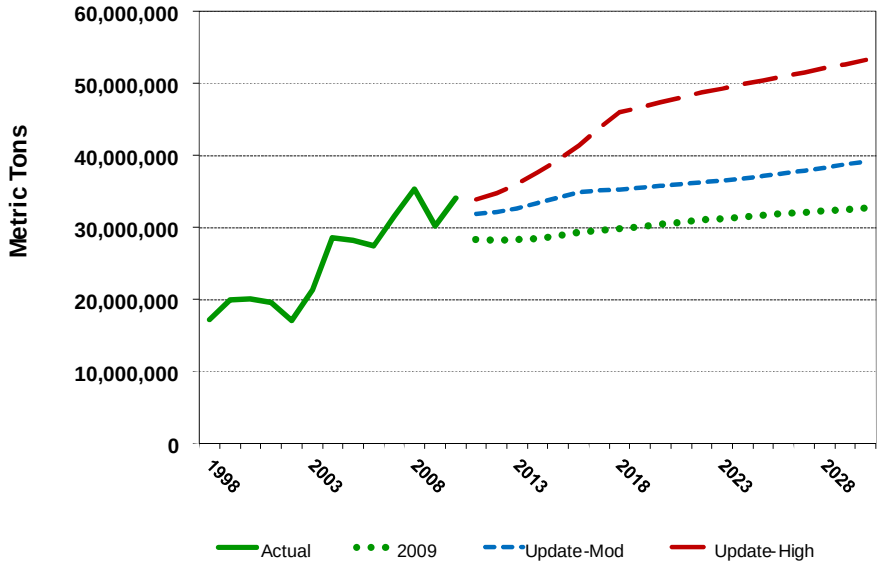
The 2009 forecast projected relatively modest gains in grain traffic, with volumes expected to reach 32.7 million tons in 2030. However, the forecast was based upon the reduced volumes in 2009 and did not anticipate the rapid increase in export volumes that occurred in 2010 (an increase of 4 million tons).

The revised Pacific Northwest forecast for grain and related products is presented in Figure 2-3. The new EGT elevator in Longview and expansion projects planned or under way in Portland, Vancouver, and Kalama will provide most of the capacity needed to absorb the forecast growth. The elevators in Seattle and Tacoma are operating at or near capacity and do not have expansion plans. Increased capacity is also being added at the AGP facility at the Port of Grays Harbor, and the proposed bulk port at Cherry Point north of Bellingham may include a grain facility.

Under the revised forecast, grain and related products are expected to reach:

- 39.1 million tons in 2030 under the moderate growth forecast, with average annual growth of 0.7 percent per year between 2010 and 2030,
- 53.3 million tons in 2030 under the high growth forecast, with average annual growth of 2.2 percent per year between 2010 and 2030.

Figure 2-3: Pacific Northwest Grain & Oilseed Trend and Forecast



Source: BST Associates, US Department of Commerce and WISERTrade data

Dry Bulk Cargoes

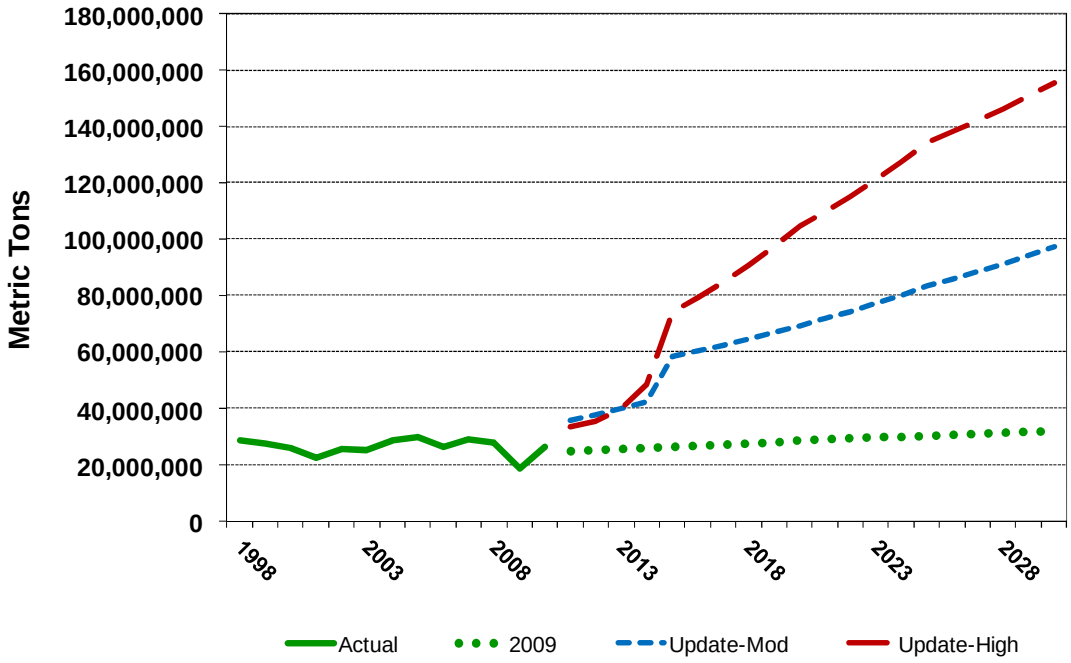
Dry bulk cargoes include a wide variety of products, such as woodchips, petroleum coke, potash, soda ash, gypsum, limestone, metal ores, and others. In addition, there is strong interest in coal, potash and ore exports. The revised Pacific Northwest forecast for dry bulk cargoes is presented in Figure 2-4.

The 2009 forecast projected 1.0 percent annual growth in bulk traffic, with volumes expected to reach 31.8 million tons in 2030. That forecast did not anticipate the rapid increase in dry bulk exports that actually occurred, where volumes jumped from 18.8 million tons in 2009 to 26.2 million tons in 2010.

Under the revised forecast, dry bulk cargoes are expected to reach:

- 97.1 million tons in 2030 under the moderate growth forecast, with average annual growth of 6.8 percent per year between 2010 and 2030,
- 155.3 million tons in 2030 under the high growth forecast, with average annual growth of 9.3 percent per year between 2010 and 2030.

Figure 2-4: Pacific Northwest Dry Bulk Cargo Trends and Forecast



Source: BST Associates

The expected growth in dry bulks is due to exports of potash, ores, coal and other commodities. Although there is uncertainty regarding volumes and export locations, the underlying basis of the export opportunity is sound for several reasons:

- there is strong international demand for these commodities,
- the regional transportation system is in place to move these commodities,
- the U.S. and Canada have substantial supplies of key commodities, and
- U.S. and Canadian exports can be delivered via Pacific Northwest ports at prices below the required delivered price.

Liquid Bulks

The liquid bulk trades in the Pacific Northwest are dominated by petroleum, including crude oil and refined petroleum products. Other important commodities include chemicals, fertilizers and other products.

The revised forecast for Pacific Northwest liquid bulk cargoes is presented in Figure 2-5. Under the revised forecast, liquid bulk cargoes are expected to reach:

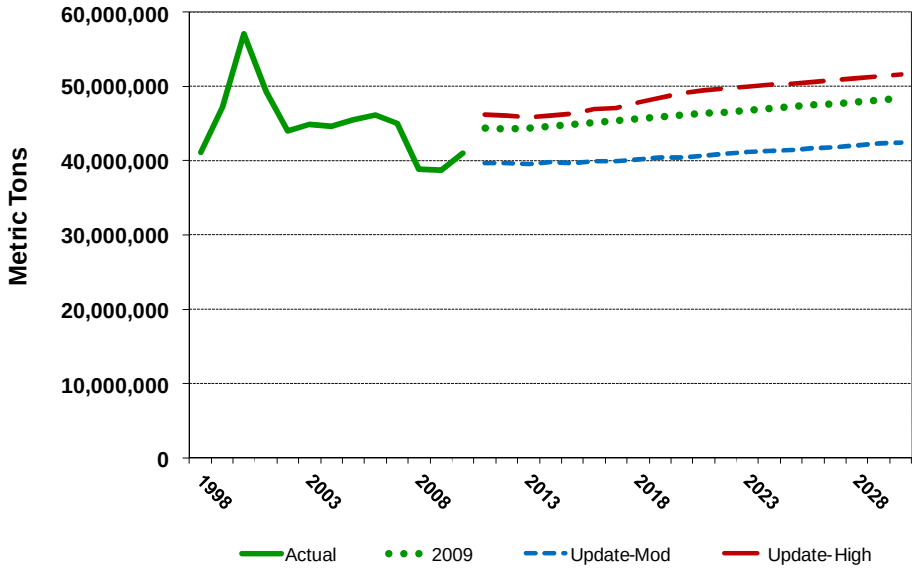
- 42.4 million tons in 2030 under the moderate growth forecast, with average annual growth of 0.2 percent per year between 2010 and 2030,
- 51.6 million tons in 2030 under the high growth forecast, with average annual growth of 1.2 percent per year between 2010 and 2030.

The 2009 forecast projected that liquid bulk traffic would reach 48.4 million tons in 2030, with average annual growth of approximately 0.8 percent between 2010 and 2030.

One significant change that is expected to impact liquid bulks is a shift in the source of crude oil for regional refineries. Under both the 2009 forecast and the current forecast the volume of crude oil from Alaska is expected to decline. The 2009 forecast assumed that the decline in domestic waterborne volumes from Alaska would be made up through a combination of waterborne foreign receipts and imports by pipeline. Under the current forecast the refineries in the region are also expected to begin receiving crude oil by rail from North Dakota, which may impact waterborne volumes. Under the moderate growth scenario, liquid bulk projections are lower to account for this shift.

New opportunities for liquid bulk cargo are also under consideration; most notably LNG imports (or perhaps exports) are being considered in Coos Bay and Astoria. The high growth scenario reflects these opportunities.

Figure 2-5: Pacific Northwest Liquid Bulk Forecast



Source: BST Associates

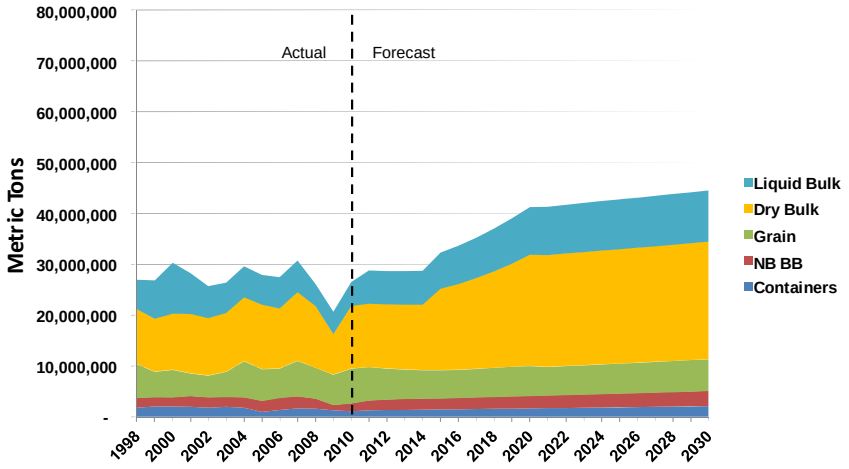
Regional Forecasts by Commodity

This section summarizes expected growth for each sub-region and commodity group.

Lower Columbia Oregon and Oregon Coast

Under the moderate growth forecast, the volume for the Lower Columbia Oregon region is projected to reach 44.6 million tons in 2030, with an average annual growth rate of 2.6 percent between 2010 and 2030. See Figure 2-6.

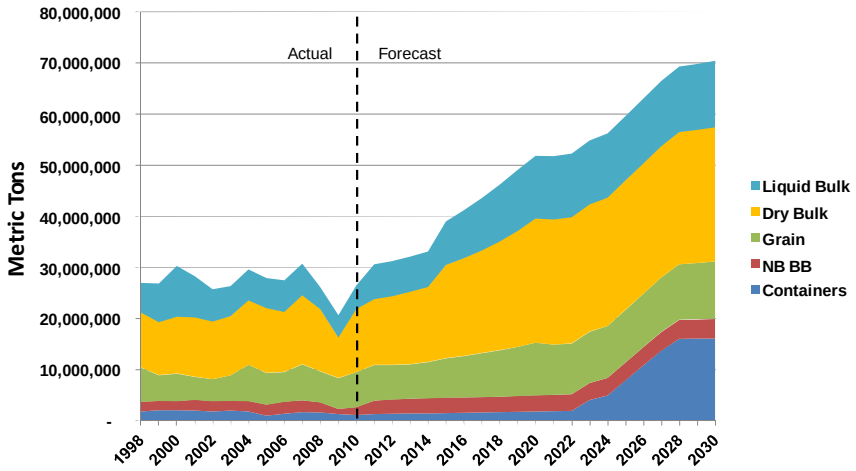
Figure 2-6: Lower Columbia Oregon and Oregon Coast Forecast Moderate Growth Scenario



Source: BST Associates

Under the high growth forecast, the volume for the Lower Columbia Oregon region is projected to reach 70.5 million tons in 2030, with an average annual growth rate of 5.0 percent between 2010 and 2030. See Figure 2-7.

Figure 2-7: Lower Columbia Oregon and Oregon Coast Forecast High Growth Scenario

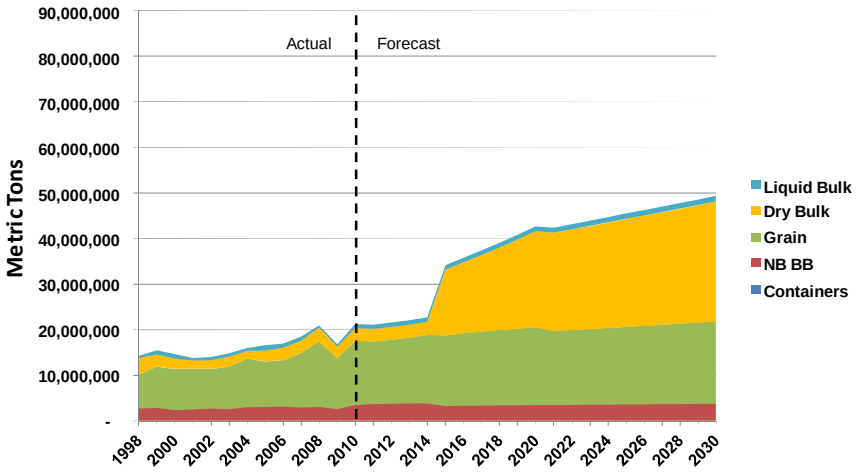


Source: BST Associates

Lower Columbia Washington

Under the moderate growth forecast, the volume for the Lower Columbia Washington region is projected to reach 49.4 million tons in 2030, with an average annual growth rate of 4.3 percent between 2010 and 2030. See Figure 2-8.

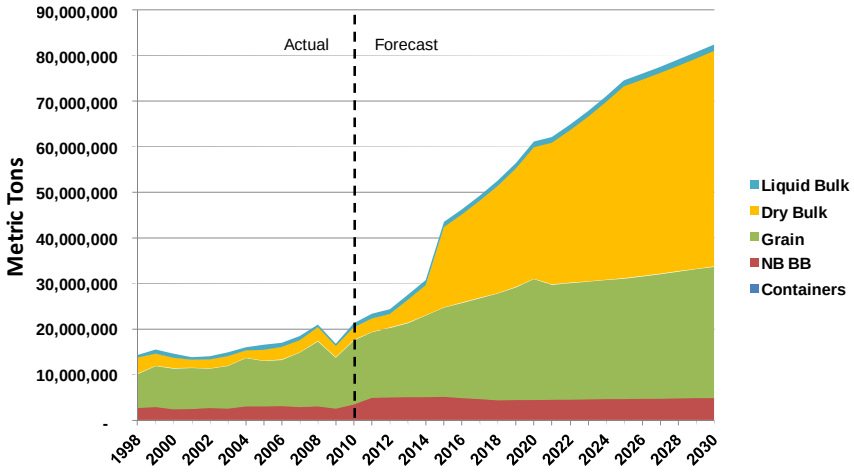
Figure 2-8: Lower Columbia Washington Forecast Moderate Growth Scenario



Source: BST Associates

Under the high growth forecast, the volume for the Lower Columbia Washington region is projected to reach 82.5 million tons in 2030, with an average annual growth rate of 7.0 percent between 2010 and 2030. See Figure 2-9.

Figure 2-9: Lower Columbia Washington Forecast High Growth Scenario

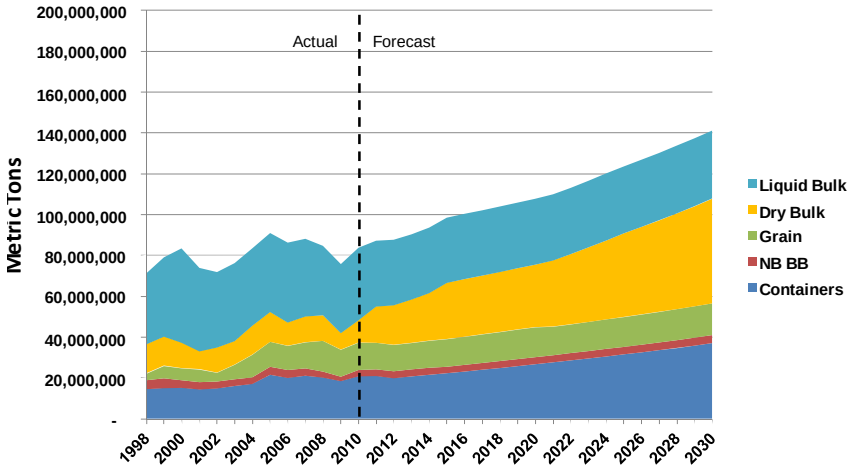


Source: BST Associates

Puget Sound and Washington Coast

Under the moderate growth forecast, the volume for the Puget Sound and Washington Coast region is projected to reach 141.0 million tons in 2030, with an average annual growth rate of 2.6 percent between 2010 and 2030. See Figure 2-10.

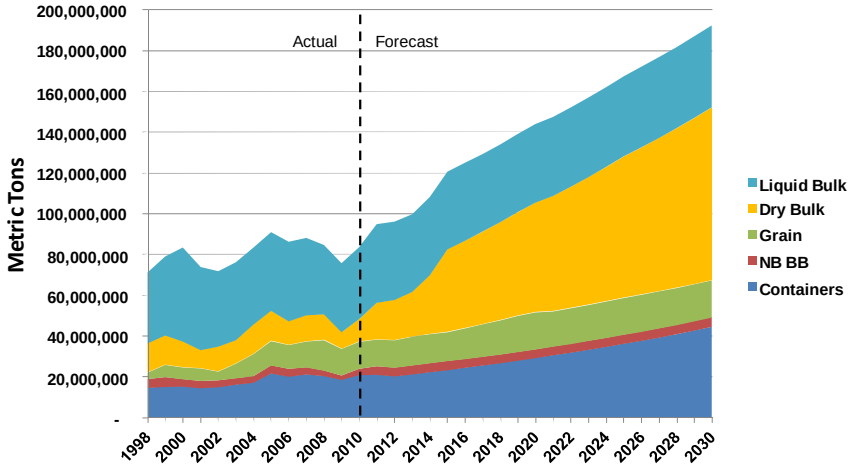
Figure 2-10: Puget Sound and Washington Coast Forecast Moderate Growth Scenario



Source: BST Associates

Under the high growth forecast, the volume for the Puget Sound and Washington Coast region is projected to reach 192.3 million tons in 2030, with an average annual growth rate of 4.2 percent between 2010 and 2030. See Figure 2-11.

Figure 2-11: Puget Sound and Washington Coast Forecast High Growth Scenario



Source: BST Associates

Rail Forecasts by Region

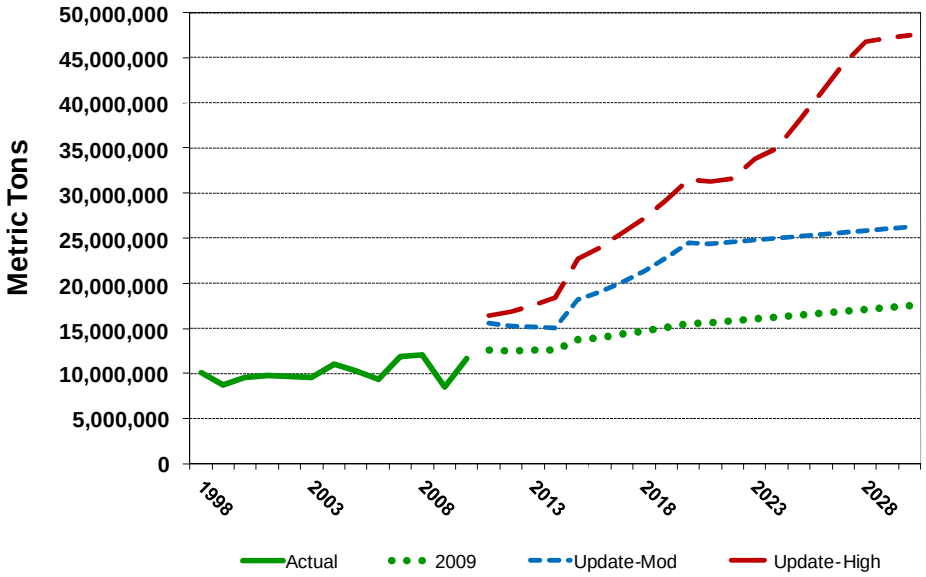
This section summarizes expected growth in rail traffic by sub-region.

Lower Columbia Oregon and Oregon Coast

Rail traffic in the Lower Columbia Oregon and Oregon Coast sub-region is projected to grow as follows:

- A rail traffic projection for Oregon ports was not undertaken in 2009. However, using a similar process as that undertaken for Washington state ports, marine-related rail volumes would have been expected to increase from 11.7 million tons in 2010 to 17.5 million tons in 2030, or at an average annual growth rate of 2.0 percent.
- Under the current moderate growth forecast, marine-related rail traffic in this region is projected to reach 26.3 million tons in 2030, with an average annual growth rate of 4.1 between from 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 47.5 million tons in 2030, with an average annual growth rate of 7.3 percent between 2010 and 2030. (See Figure 2-12)

Figure 2-12: Lower Columbia Oregon and Oregon Coast Rail Traffic Forecast



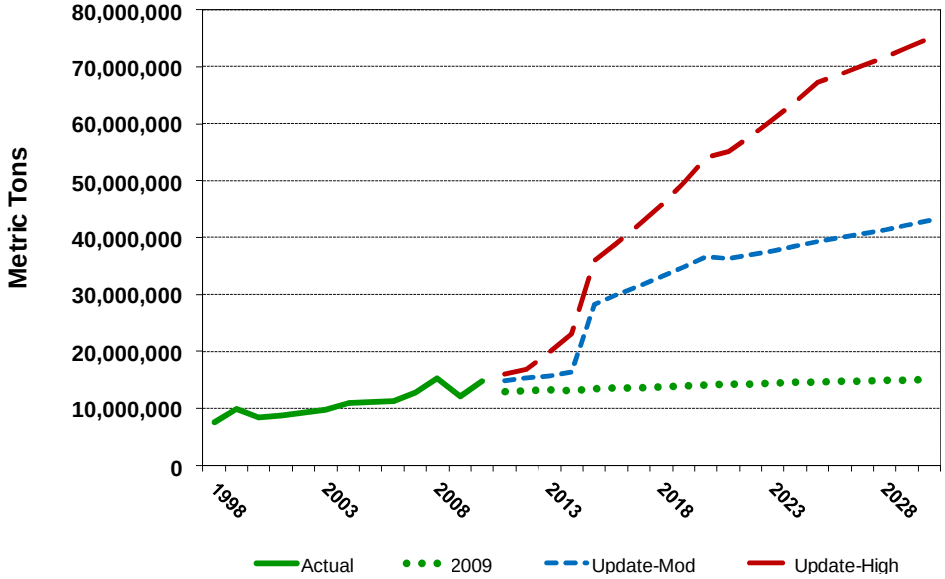
Source: BST Associates

Lower Columbia Washington

Rail traffic in the Lower Columbia Washington sub-region is projected to grow as follows:

- In the 2009 Marine Cargo Forecast, rail volumes were expected to increase modestly from 14.8 million tons in 2010 to 15.1 million tons in 2030, or at an average annual growth rate of less than 0.2 percent.
- Under the moderate growth forecast, marine-related rail traffic in this region is projected to reach 43.0 million tons in 2030, with an average annual growth rate of 5.5 percent between 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 74.9 million tons in 2030, with an average annual growth rate of 8.4 percent between 2010 and 2030. (See Figure 2-13)

Figure 2-13: Lower Columbia Washington Rail Traffic Forecast



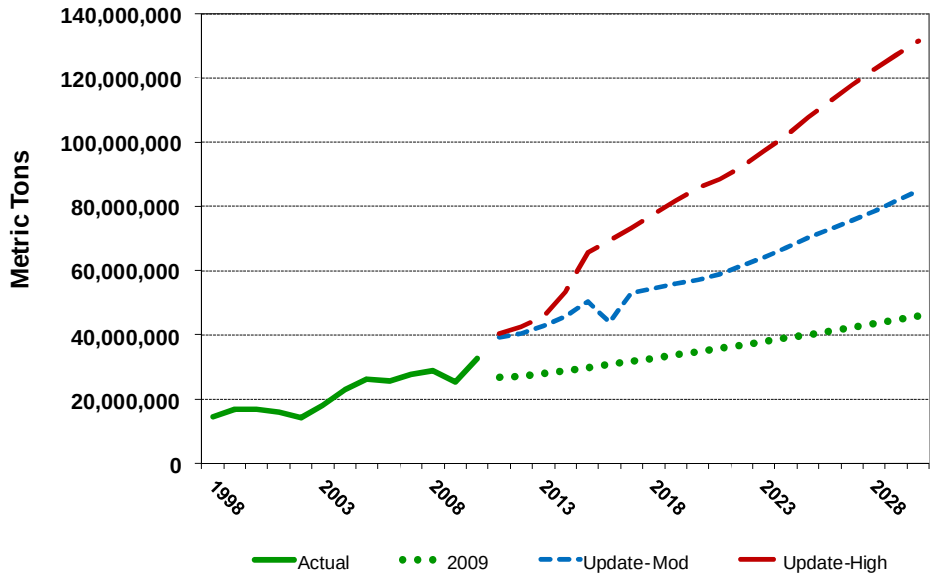
Source: BST Associates

Puget Sound and Washington Coast

Rail traffic in the Puget Sound and Washington Coast sub-region is projected to grow as follows:

- In the 2009 Marine Cargo Forecast, rail volumes were expected to increase from 32.6 million tons in 2010 to 45.9 million tons in 2030, or at an average annual growth rate of 1.7 percent.
- Under the moderate growth forecast, marine-related rail traffic in this region is projected to reach 84.8 million tons in 2030, with an average annual growth rate of 4.9 percent between 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 131.6 million tons in 2030, with an average annual growth rate of 7.2 percent between 2010 and 2030. (See Figure 2-14)

Figure 2-14: Puget Sound and Washington Coast Rail Traffic Forecast



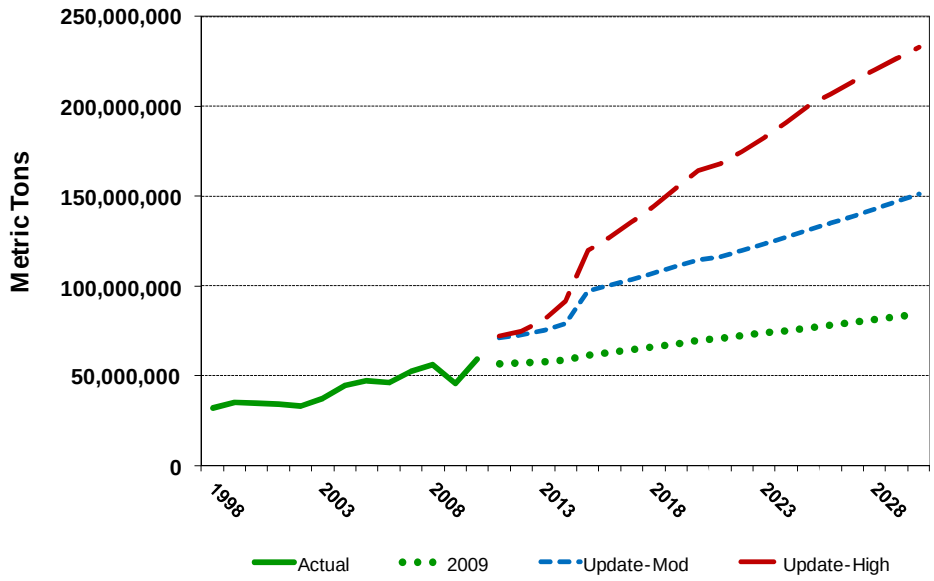
Source: BST Associates

Pacific Northwest Region

Rail traffic in the Pacific Northwest region is projected to grow as follows:

- In the 2009 Marine Cargo Forecast, rail volumes were expected to increase from 59.2 million tons in 2010 to 78.5 million tons in 2030, or at an average annual growth rate of 1.4 percent.
- Under the moderate growth forecast, marine-related rail traffic in this region is projected to reach 151.1 million tons in 2030, with an average annual growth rate of 4.8 percent between 2010 and 2030.
- Under the high growth forecast, marine-related rail traffic in this region is projected to reach 232.8 million tons in 2030, with an average annual growth rate of 7.1 percent between 2010 and 2030. (See Figure 2-15)

Figure 2-15: Pacific Northwest Rail Traffic Forecast



Source: BST Associates

Chapter 3
Assessment of Rail Capacity

The following chapter provides an assessment of rail capacity. A primary objective of the rail capacity update is to identify and prioritize capacity improvements that would help mitigate main line capacity conflicts as rail traffic grows. This chapter was prepared by MainLine Management (MLM).

Assumptions

Key assumptions about baseline conditions, train sizes and forecasts for domestic cargoes are summarized in the following section.

Baseline Conditions

Based on discussions with rail service providers, the rail traffic volumes in 2008 were considered representative of volumes occurring in 2010. More importantly, data was available for rail traffic operations for major rail line segments for 2008. As a result, 2008 was used as the baseline condition for 2010.

Train Sizes

Assumptions on train sizes are based upon discussions with rail providers, terminal operators and consultant experience:

- Unit grain sizes are expected to remain at approximately 110 cars.
- Unit coal trains are expected to remain at 115 to 120 cars.
- Export potash trains operate with 170 cars, approximately 8,500 feet in length.
- Container trains of 8,000 to 8,500 feet from the Puget Sound ports will continue to be operated as long as volumes are available and service requirements can be maintained. Otherwise, international container trains are sized to meet import demand and service requirements.
- Manifest trains will continue to operate at a maximum train size of approximately 7,000 feet.

Forecasts

The rail forecasts include a projection of the number of trains under moderate and high growth scenarios under both average and peak operating conditions.

The forecasts are driven by the marine cargo forecast, which is documented in Chapter Two. For other rail cargo (domestic traffic and passengers), the following assumptions were used:

- Forecasts for passenger trains were taken from studies prepared for WSDOT and ODOT.
- Merchandise trains are projected to grow at 2 percent annually.
- Domestic intermodal trains are projected to grow at 3.5 percent annually.

Figure 3-1: Map of Rail System

Absorption

Currently, many of the existing trains in the region do not run at their maximum potential length. It is assumed that traffic growth will usually be absorbed by existing trains before new trains are deployed. However, this assumption recognizes that service requirements sometimes necessitate new train starts even though existing trains are not running at maximum length.

Capacity by Mainline Segment

This section presents an assessment of the projected demand-capacity relationships at the key line segments over the study forecast period (through 2030). The line segments include:

- Pasco, WA to Vancouver, WA (BNSF)
- Hinkle OR to Portland, OR (UP)
- Pasco, WA to Spokane, WA (BNSF)
- Spokane, WA to Sand Point, ID (BNSF)
- Hinkle, OR to Eastgate, ID (UP)
- Vancouver, WA to Kalama/Longview, WA (Joint line)
- Kalama/Longview, WA to Tacoma, WA (Joint line)
- Tacoma, WA to Seattle, WA (Joint line)
- Seattle, WA to Everett, WA (BNSF)
- Everett, WA to Vancouver, BC (BNSF)
- Everett, WA to Spokane, WA via Stevens Pass (BNSF)
- Auburn, WA to Pasco, WA via Stampede Pass (BNSF)

In each of the following rail segment analyses, graphics are presented to illustrate the growth in rail traffic and growth in rail segment capacity. The increases in capacity indicated by the graphs reflect: 1) improvements that are currently planned or under way, and 2) other potential improvements that the consultants consider to be feasible. With the exception of projects that are contractually obligated under passenger rail plans, other improvements are up to the discretion of the individual railroads, and would likely be added only as needed to meet market demand.

Pasco, WA to Vancouver, WA (BNSF)

BNSF has undertaken several improvements along the section of mainline from Pasco to Vancouver. All meet/pass sidings between Pasco and Wishram (near the middle of the Columbia Gorge) are at least 8,000 feet in length. Between Wishram and Vancouver, six of 11 existing sidings are 8,000 feet in length or longer. BNSF has a priority plan to extend sidings that are not currently 8,000 feet in length, as demand requires.

Figures 3-2 and 3-3 illustrate the consultants' opinion of the capacity of this line segment as well as the projected train volumes under the moderate and high growth scenarios. The analysis implies that:

- Pasco to Wishram
    - Under the high growth scenario, capacity will be reached by 2020 (peak daily traffic) and 2025 (average daily traffic).
    - Under the moderate growth scenario, capacity will be reached by 2025 (peak daily traffic) and 2030 (average daily traffic).

- Wishram to Vancouver:
  - Under the high growth scenario, capacity will be reached by 2024 (peak daily traffic) and 2025 (average daily traffic).
  - Under the moderate growth scenario, capacity will be reached by 2030 (peak daily traffic).

However, the capacity on this route can be enhanced beyond previous study assumptions through a combination of siding extensions and revised operating protocols, as discussed below.

The Pasco to Vancouver route hosts Amtrak trains, and is subject to implementation of Positive Train Control (PTC), as mandated by Congress. Industry analysis of the implementation of PTC indicates that it may negatively impact capacity, especially on line segments in which "fleeting"[1] is used. This is because PTC requires a larger safety zone for following trains than is required under the existing Centralized Traffic Control (CTC).

BNSF is evaluating a plan that would change the traffic flows and volumes on this segment over time. Under this plan, full export bulk trains would move westbound through the Columbia River Gorge. Empty bulk trains from Portland and Vancouver would move eastbound through the Gorge, but empty export bulk trains from Kalama north (i.e., Longview, Grays Harbor, Tacoma, Seattle, etc.) would be routed to Auburn and then over Stampede Pass. Most of the other train types that currently use the Gorge would continue to do so.

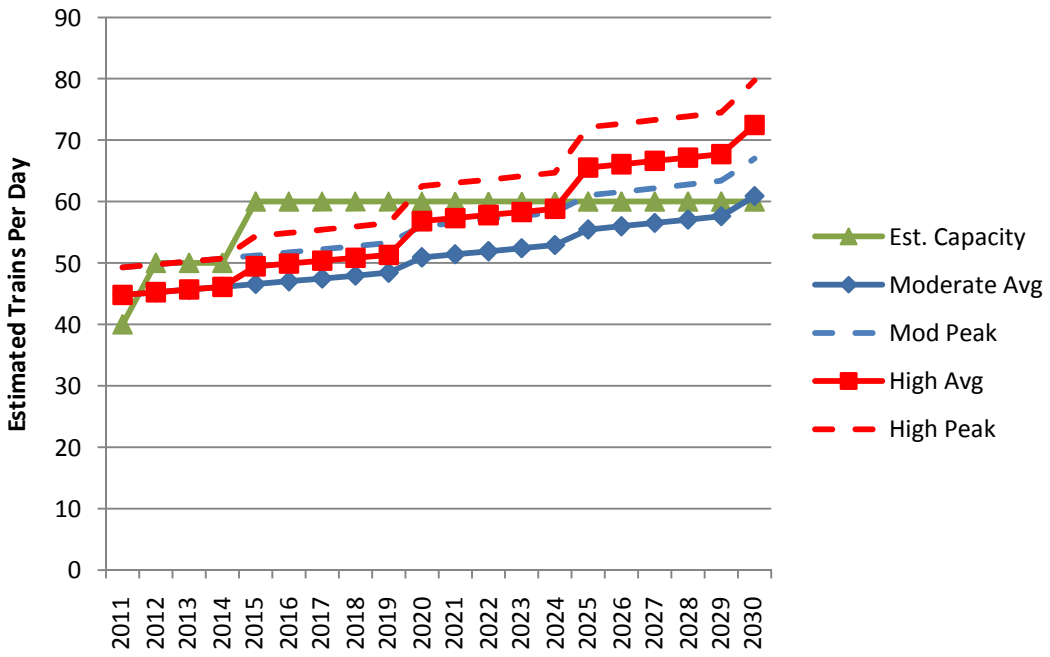
If implemented, this plan would create the opportunity for significant fleeting of westbound trains through the Columbia River Gorge.

One area of concern is the single track BNSF rail bridge over the Columbia River at Pasco. The estimated capacity in the segment analysis assumes that BNSF will be able to operate a sufficient number of trains over the bridge to meet the projected long-term demand. Congestion, however, could be expected to be a problem in near the end of the forecast period.

Two potential increases in capacity are illustrated in Figures 3-2 and 3-3. These include adoption of the new operating plan, connecting individual sidings into sections of double-track main line, and the addition of siding extensions.

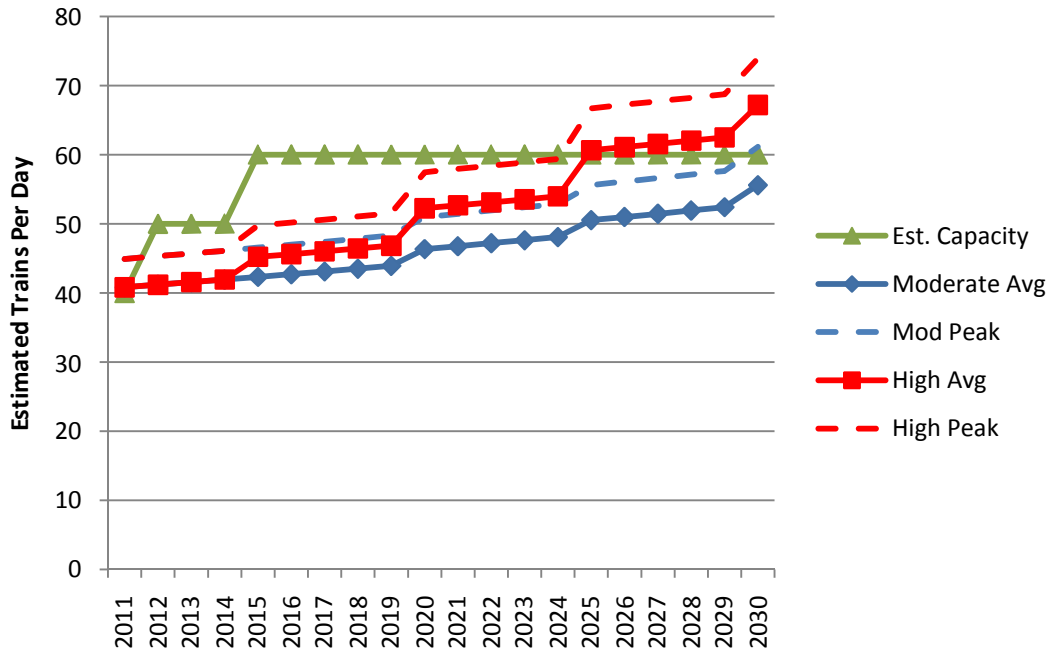
[1] "Fleeting" is a term used to describe train movements in which a series of trains are operated in one direction, and then in the other direction. This minimizes meet/pass requirements and can increase the practical capacity of a line segment.

Figure 3-2: Rail Corridor Capacity – Pasco to Wishram (BNSF)



Source: MainLine Management

Figure 3-3: Rail Corridor Capacity – Wishram to Vancouver BNSF



Source: MainLine Management

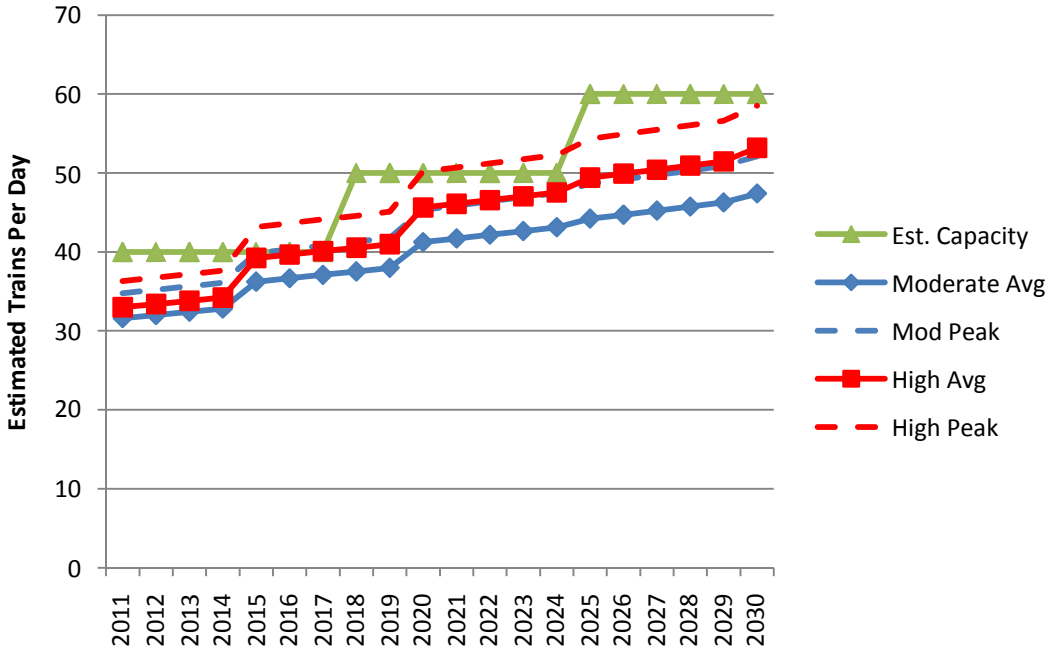
Hinkle, OR to Portland, OR (UP)

The UP main line runs along the Oregon side of the Columbia River between Hinkle and Portland, and is similar to the BNSF line on the Washington side of the Columbia River between Vancouver and Pasco.

Options for increasing capacity on this segment are similar to those for the BNSF. These include fleeting of trains, along with siding expansion where constructable.

As Figure 3-4 demonstrates, no capacity constraints are expected under either the moderate or high growth scenarios. The capacity improvements illustated in the graph are based on connecting individual sidings into sections of double-track main line, and the addition of siding extensions, and possible fleeting of trains.

Figure 3-4: Rail Corridor Capacity, Hinkle to Portland (UP)



Source: MainLine Management

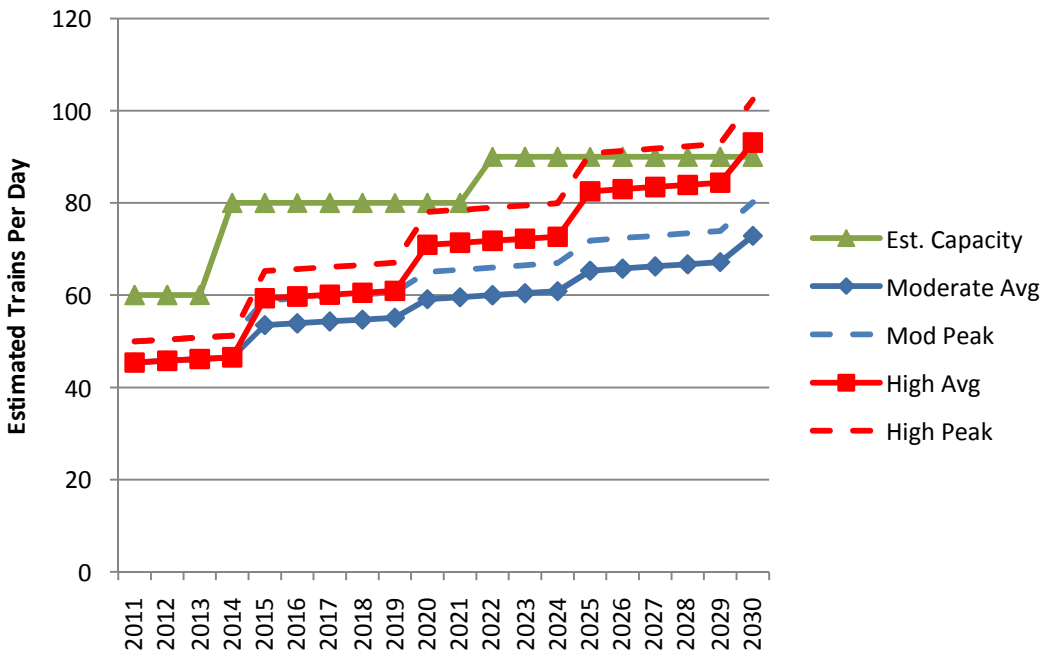
Pasco, WA to Spokane, WA (BNSF)

Between Pasco and Spokane all sidings are 8,000 feet in length or longer and capacity exists to operate several more trains in each direction on the segment. As a result of the projected growth in export traffic, BNSF is planning for capacity expansion on this segment. In the consultant's opinion, such an expansion would likely involve combining key sidings into long sections of double-track and adding high-speed crossovers to increase operational flexibility.

As shown in Figure 3-5, the analysis implies that the Pasco to Spokane segment will reach capacity by 2025 (peak) and 2030 (average) under the high growth scenario, but there are no capacity constraints under the moderate growth scenario.

Capacity increases illustrated in the graph result from connecting individual sidings into sections of double-track main line.

Figure 3-5: Rail Corridor Capacity – Pasco to Spokane (BNSF)



Source: MainLine Management

Spokane, WA to Sand Point, ID (BNSF)

There are two main line segments between Spokane, Washington and Sand Point, Idaho, one operated by the BNSF and one by the UP.

Most of the BNSF corridor features multiple main tracks, but there are short stretches of single track between Irvin and Otis Orchard, WA (3.1 miles), Rathdrum and Athol, ID (11.1 miles with a siding at Ramsey) and between Algoma and Cocolalla, ID (2 miles). It is likely that BNSF can increase the capacity of this segment to meet demand, primarily by double-tracking the remaining single track segments between Spokane and Sandpoint, although some of those sections present certain difficulties and enhanced costs.

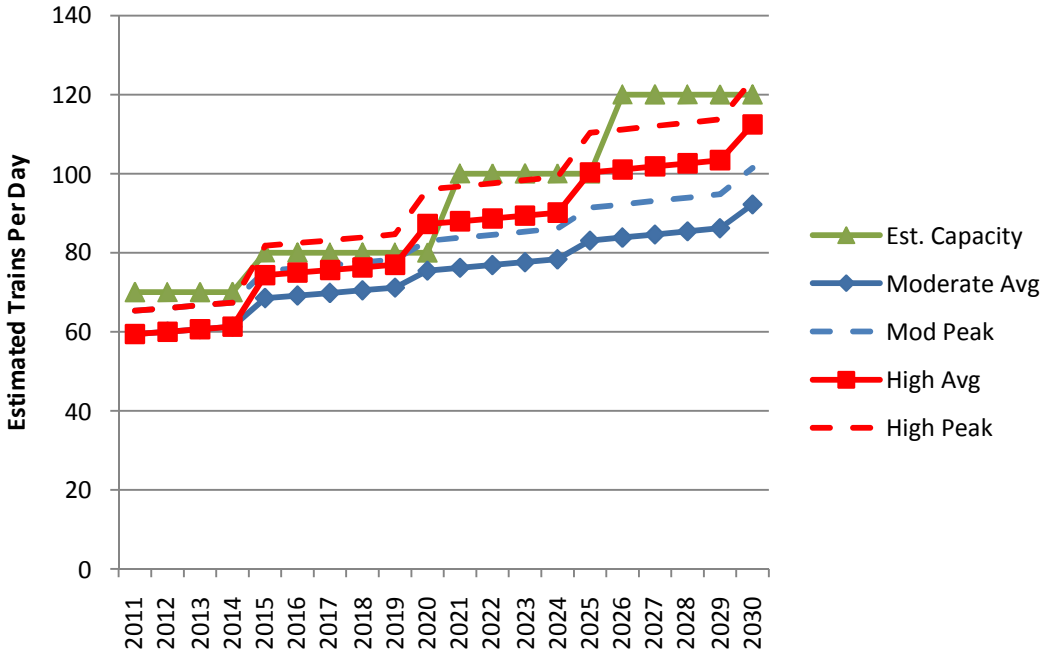
A capacity concern that may materialize over the long-term for BNSF is the single track bridge across Lake Pend Oreille. The train volumes indicated in the 2030 projections may require fleeting of traffic across the bridge. In addition, fleeting of trains may create the need for additional storage track on either side of the bridge to stage trains before crossing.

As shown in Figure 3-6, the analysis implies that the Sandpoint to Spokane segment has sufficient capacity under average conditions, but may be constrained under peak conditions. Under the moderate growth scenario, there are no sustained capacity constraints.

Capacity increases illustrated in the graph result from double-tracking three single-track segments, adding a third main line in key locations, and potentially adding staging tracks at either end of the Lake Pend Oreille Bridge.

The UP segment between Spokane and Sand Point is included in the next section of this chapter, Hinkle, OR to Eastgate, ID.

Figure 3-6: Rail Corridor Capacity – Spokane to Sand Point (BNSF)



Source: MainLine Management

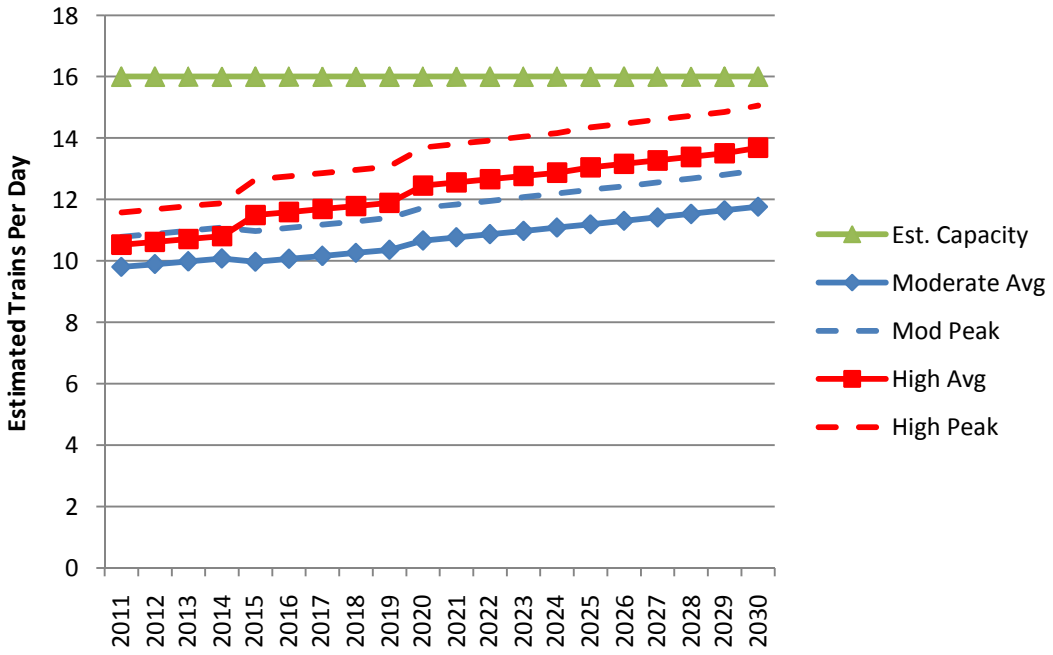
Hinkle, OR to Eastgate, ID (UP)

This segment of mainline is a key route for Canadian cargo exported through Pacific Northwest ports, such as potash, which originate on the Canadian Pacific Railway and are interchanged with the Union Pacific at Eastport, Idaho.

Much of this segment consists of a single track operation operated by Track Warrant Control, which is non-signalized. The distance between meet/pass sidings limits capacity, but current available capacity is sufficient to meet projected traffic volumes under both growth scenarios, as shown in Figure 3-7.

The UP may be able to increase capacity by constructing additional meet/pass sidings if warranted by growth in cargo traffic. However, these potential increases in capacity are not included in Figure 3-7.

Figure 3-7: Rail Corridor Capacity, Hinkle to Eastgate



Source: MainLine Management

Vancouver, WA to Tacoma, WA

Plans to increase volumes of intercity passenger rail have driven the infrastructure expansion proposals for this segment. The analysis of this segment is divided into two sections:

- Vancouver to Longview/Kelso, and
- Longview/Kelso to Tacoma.

The most significant capacity usage on this segment occurs in the Kalama/Longview area due to grain trains leaving/entering the main lines at Kalama and to yard operations at Longview Junction. In both cases, considerable main line capacity is consumed by trains slowly entering/departing the main lines to/from export grain facilities or while they are stopped to work in yard areas.

With the projected increase in loaded and empty bulk trains over this segment, it is possible that BNSF will consider fleeting loaded bulk export trains through the Gorge and running empty bulk trains eastbound over Stampede pass, as discussed above in the Vancouver to Pasco section. Empty and full export bulk trains on the UP system would continue to operate through the Gorge in both directions.

One potential capacity expansion project that may be revisited is the construction of a unit train staging/storage yard near Woodland. At one time this improvement was on the list of passenger-related improvements under consideration by WSDOT, but was cut when that plan was downsized. With the number of export bulk trains projected for this segment, an area for staging loaded bulk trains near Kalama may prove beneficial from a rail operating and service perspective.

Another potential project is to add a second single-track rail bridge to span the Cowlitz River or to replace the existing single-track Cowlitz River Bridge with a new double-track bridge. This bridge is located on the branch line that connects marine terminals at the Port of Longview as well as other industrial customers to the I-5 Corridor main line. The recent Port of Longview Master Plan demonstrated the need to for this project, and it was also identified in the SR432 Highway and Rail Improvement Project.

Passenger-related capacity improvements in the updated WSDOT *Amtrak Cascades Mid-Range Plan* focus on the Kalama/Longview area, and include adding a third main track that bypasses existing congestion points.

The following sections discuss the Vancouver to Tacoma segment in two parts, Vancouver WA to Kalama/Longview and Kalama/Longview to Tacoma.

Vancouver, WA to Kalama/Longview, WA (Joint Line)

Much of the congestion on this segment occurs at Vancouver, and between Vancouver and Kalama/Longview. At Vancouver, through traffic on intersecting main line routes compete for line capacity with operations at the Vancouver Yard, and with trains entering and leaving the Port of Vancouver. Additional passenger train operations are likely to aggravate these conflicts unless sufficient mitigation is constructed to improve efficiency for all train operations in the Vancouver Terminal area.

Between Vancouver and Longview numerous trains arrive and depart the main line to access marine terminals and other customers in the Kalama/Longview area. These trains arriving and departing the mainline move at slow speeds, aggravating congestion issues on this segment.

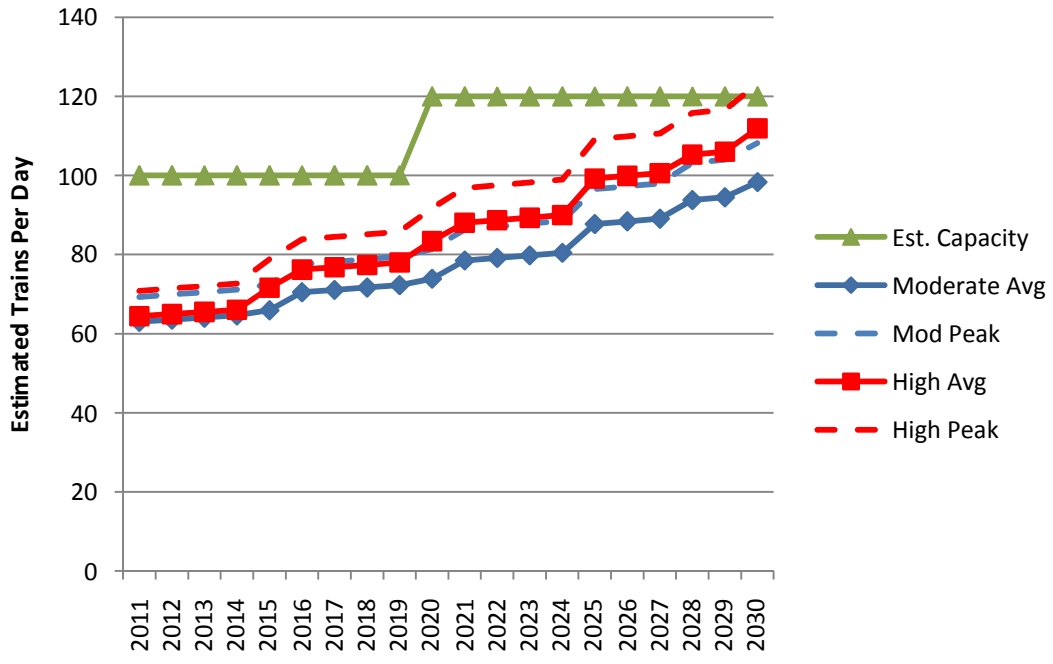
WSDOT's *Amtrak Cascades Mid Range Plan* (Options 3 and 4)[2] will continue to provide the rail capacity needed over time to ensure that intercity passenger growth can occur in conjunction with projected freight growth. The directional operation of loaded and empty bulk trains by BNSF, coupled with the planned passenger rail improvements, should reduce the impact of growing freight and passenger traffic.

In the consultants' opinion, the construction of a third main track through the Kalama/Longview area will be needed in the long-term, as well as construction of a bulk train staging and storage facility near Woodland.

As shown in Figure 3-8, the analysis implies that there is no capacity problem for the section of mainline from Vancouver to Longview under the moderate growth scenario. Under the high growth scenario, capacity is reached by 2030 during peak operations.

Capacity improvements reflected in this graph include completion of the Vancouver Bypass, the new Port of Vancouver Access Route, and the Option 3 passenger improvements (including construction of the third main track between Kalama and Kelso). Other improvements may include completion of third main track between Martin's Bluff and Rocky Point, and expansion of the Cowlitz River Bridge at Longview. In addition, construction of improvements at North Portland Junction will compliment these improvements, even though the junction is not located within this segment.

Figure 3-8: Rail Corridor Capacity – Vancouver (WA) to Kalama/Longview With Passenger Improvements



Source: MainLine Management

[2] For a full list of projects, please access the Amtrak *Cascades* Mid-Range Plan at http://www.wsdot.wa.gov/NR/rdonlyres/83B17378-CDC8-4D57-AA60-4CD64BAF6D94/0/AmtrakCascadesMidRangePlan.pdf

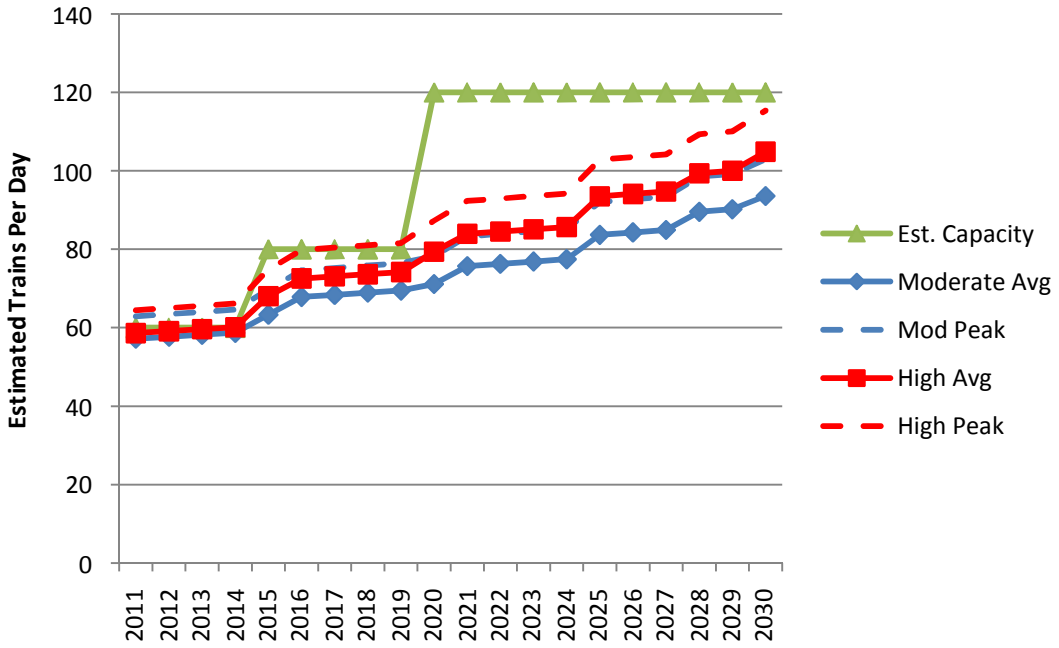
Kalama/Longview, WA to Tacoma, WA (Joint Line)

Two single track tunnels near Tacoma (Nelson-Bennett Tunnel and Ruston Tunnel) are the primary capacity constraints between Longview/Kalama and Tacoma. However, the Point Defiance Bypass, which is planned to be completed by 2017, will alleviate mainline capacity constraints by shifting passenger trains from the existing main line to an alternate route between Nisqually and Reservation Interlocking in Tacoma. In addition, planned CTC high-speed crossovers will provide additional flexibility for train operations across this segment.

Capacity improvements illustrated in Figure 3-9 include completion of the Point Defiance Bypass and the addition of high-speed crossovers. These two projects will allow the Longview/Kalama to Tacoma segment to operate at or below capacity over the 20-year forecast period under both the moderate and high growth scenarios.

In addition, the Blakeslee Junction rail project would allow faster access and egress between the mainline and the Puget Sound and Pacific Railroad branch at Centralia. This project was originally considered for WSDOT's Amtrak *Cascades* list of passenger-related capacity improvements. Completion of this project would also accommodate additional cargo opportunities at the Port of Grays Harbor.

Figure 3-9: Rail Corridor Capacity –Kalama/Longview to Tacoma With Point Defiance Bypass



Source: Mainline Management

Tacoma, WA to Seattle, WA (Joint Line)

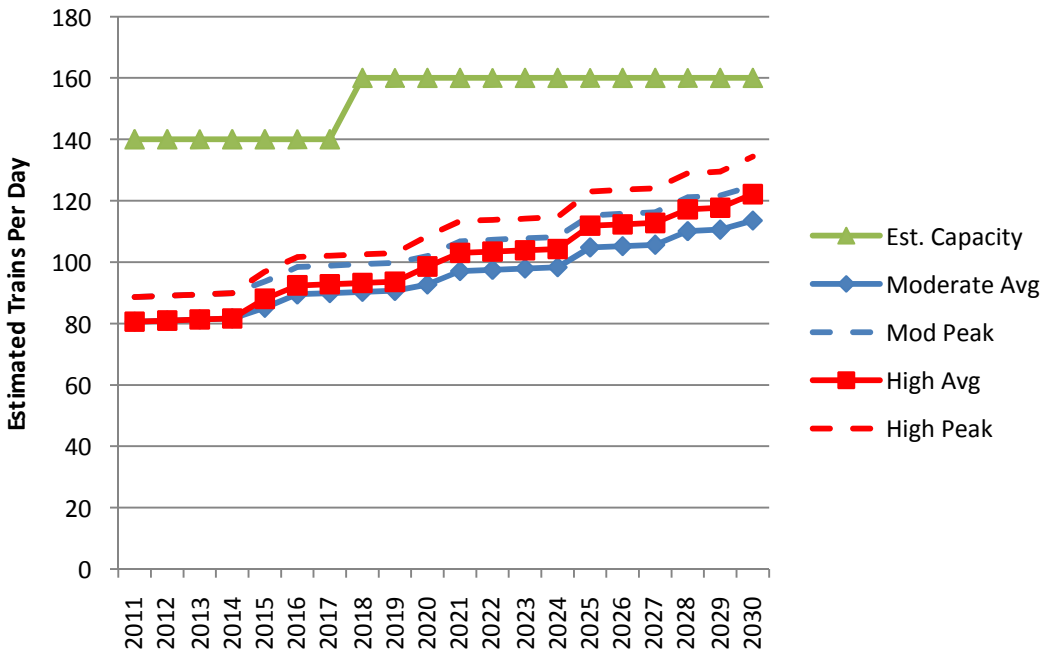
According to Sound Transit there are no conflicts between passenger and freight operations between Tacoma and Seattle, and the level of service provided by BNSF is very good. The Point Defiance Bypass project will further improve freight and traffic flows through Tacoma, and between Tacoma and Seattle.

Improvements at King Street Station in Seattle have improved the efficiency of freight and passenger operations in the Seattle area. BNSF is constructing a third main track approximately five miles long between Kent and Auburn. Approximately half of this track is on either side of the wye that accesses the Stampede Pass line. Presumably the purpose of this additional main line is to facilitate efficient freight operations between the existing main lines, Auburn Yard, and Stampede Pass. Given the potential to route empty bulk trains over Stampede pass, this additional track is needed to minimize the impact to current and projected commuter and intercity passenger trains.

The capacity of this segment was analyzed in two parts - Tacoma to Auburn and Auburn to King Street Station. The primary reason for splitting the analysis this way is that the traffic mix is likely to be different on each part if the BNSF routes empty bulk trains over Stampede Pass; the mix of loaded and empty bulk trains between Tacoma and Auburn would be slightly different than the mix north of Auburn.

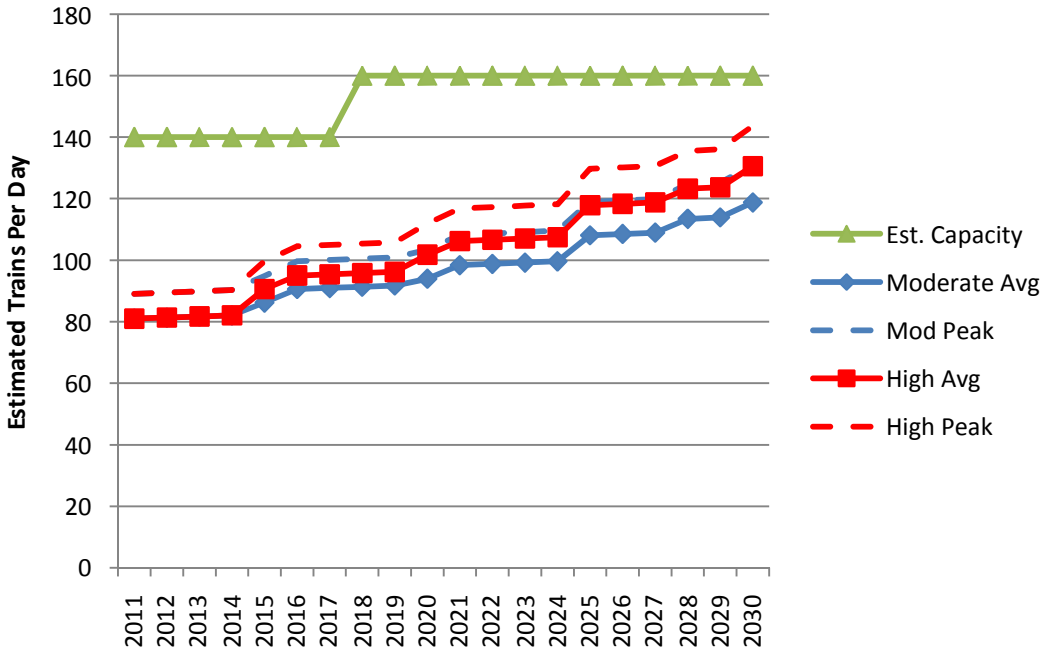
As shown in Figures 3-10 and 3-11, there are no capacity constraints under high-growth or moderate-growth scenarios.

Figure 3-10: Rail Corridor Capacity – Tacoma to Seattle
Joint Line Tacoma to Auburn



Source: MainLine Management

Figure 3-11: Rail Corridor Capacity – Tacoma to Seattle
Joint Line Auburn to Seattle



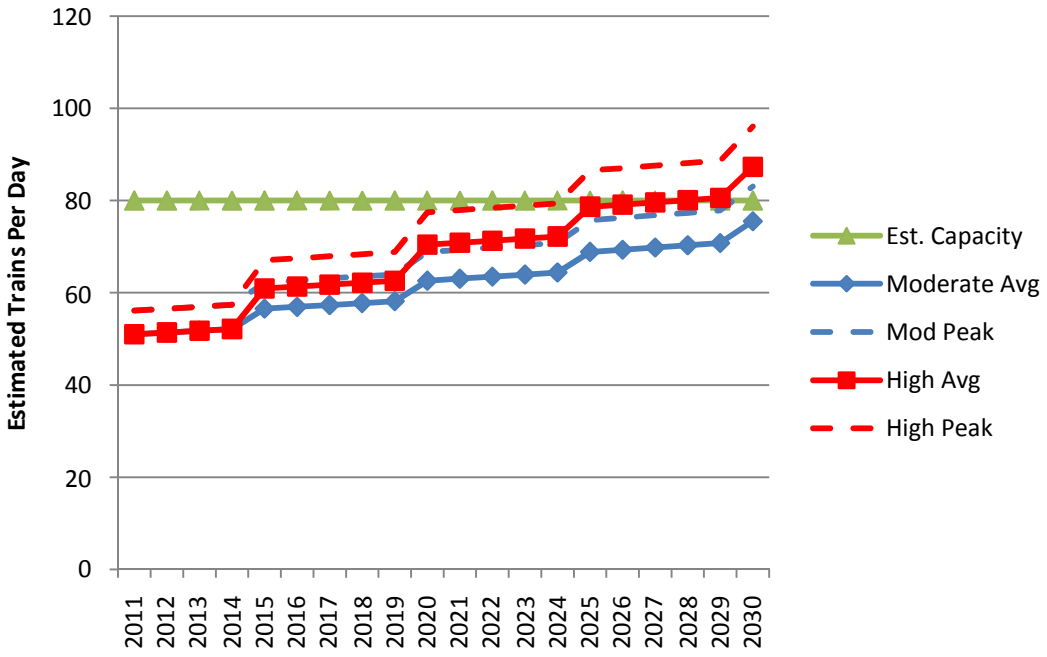
Source: MainLine Management

Seattle, WA to Everett, WA (BNSF)

Capacity expansion on this line segment is driven by passenger rail service requirements, with no freight-related improvements currently planned. Under the agreement between Sound Transit and BNSF for commuter train operations over this segment, Sound Transit purchased "slots", which guaranteed specific passenger volumes and service levels. Under this agreement BNSF must ensure that these passenger service requirements are met, regardless of freight demand.

As shown in Figure 3-12, however, growth in export bulk trains destined north of Everett could result in capacity constraints, starting between 2020 and 2023 under the high growth scenario. That may result in BNSF proactively constructing additional capacity improvements to meet the requirements of the slot purchase arrangement with Sound Transit. Under the moderate growth scenario, there are no capacity constraints until 2030 (under peak operations).

Figure 3-12: Rail Corridor Capacity – King Street Station to Everett



Source: MainLine Management

Everett, WA to Vancouver, BC (BNSF)

Capacity improvements currently planned for the Everett to Vancouver mainline segment are driven largely by passenger service. Three of the projects that are currently being designed or constructed include:

- Siding upgrade and extension at Stanwood,
- Siding upgrade and extension at Mount Vernon,
- Construction of a new siding at the Swift Customs Facility.

The siding extensions and upgrades at Stanwood and Mount Vernon would allow more efficient meet/pass operations involving freight and passenger operations. The new siding at Swift (Blaine) would allow additional capacity for freight train customs inspections while keeping the main line open for other train operations, including passenger.

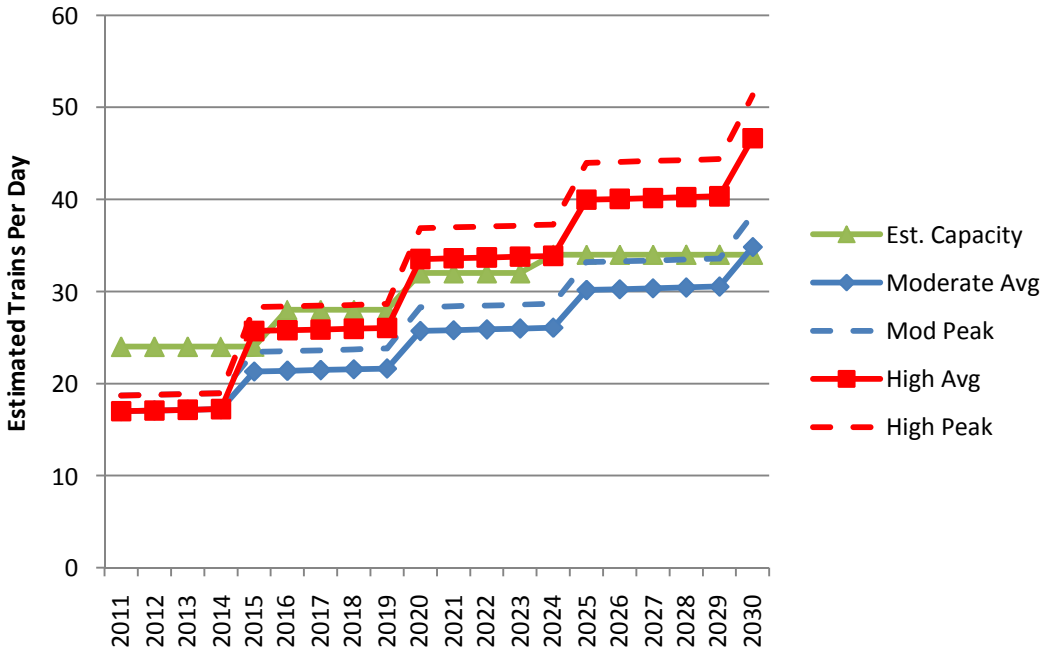
In addition to these improvements, BNSF recently constructed a 10,000 foot siding north of the border at Colebrook, BC. Colebrook is the location where the BNSF ties into the rail line that accesses the Deltaport and Westshore port facilities. Prior to construction of this siding BNSF had no meet/pass locations between the border and Brownsville, BC.

As shown in Figure 3-13, growth in export bulk commodities may lead to sustained capacity constraints along this segment. These constraints are projected to start between 2020 and 2025 under the high growth scenario, and between 2029 and 2030 under the moderate growth scenario.

The increases in sustainable capacity illustrated in Figure 3-13 reflect the consultants' view of potential improvements. Given the track profile of this segment, these potential improvements include the addition of new sidings and the extension of existing sidings.

In addition to the physical improvements, additional capacity improvements on this segment may be possible through the use of fleeting. Although this analysis does not assume a change in operating protocols, growth in the number of bulk trains may necessitate the use of fleeting operations. At lower traffic growth levels, targeted siding expansions would likely be able to accommodate traffic growth over the 20-year horizon.

Figure 3-13: Rail Corridor Capacity – Everett to Vancouver (BC)



Source: MainLine Management

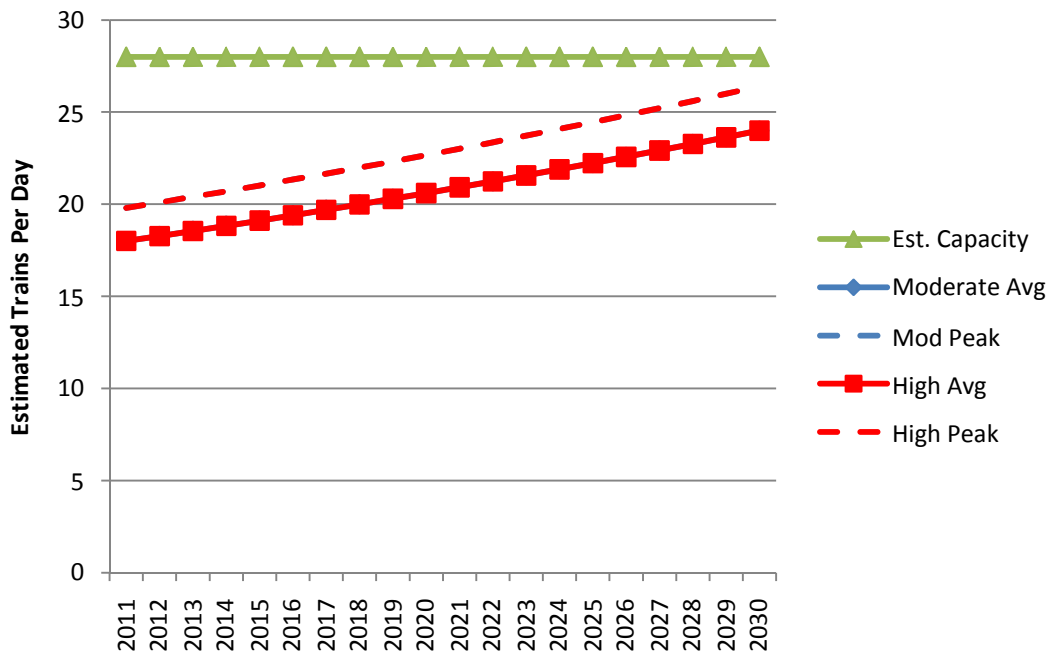
Everett, WA to Spokane, WA via Stevens Pass (BNSF)

The primary capacity constraints on this segment are the approaches to the Cascade Tunnel under Stevens Pass and the throughput of the tunnel. The approaches include heavy curvature and steep grades (i.e. 2.2 percent), which require slow operation. Additionally, the tunnel restricts capacity because the air in the tunnel must be flushed between trains. Flushing takes approximately 40 minutes following eastbound trains and 20 minutes following westbound trains. The maximum sustained capacity through the tunnel is estimated at approximately 28 trains per day, with surge capacity of 30 to 32 trains per day.

BNSF currently operates trains of up to 8,000 feet in length via Stevens Pass so long as they do not exceed 5,500 tons without Distributive Power (DPU)[3]. With DPU, trains via Stevens Pass can be increased to 7,000 tons, resulting in fewer trains. BNSF has indicated that Stevens Pass capacity will be reserved for intermodal traffic and Amtrak.

As shown in Figure 3-14, capacity of this line segment will likely not be exceeded over a 20-year horizon under the high growth scenario.

Figure 3-14: Rail Corridor Capacity – Everett to Spokane via Steven Pass (BNSF)



Source: MainLine Management

[3] With distributive power (DPU), remotely controlled helper engines are placed in the middle or at the end of trains.

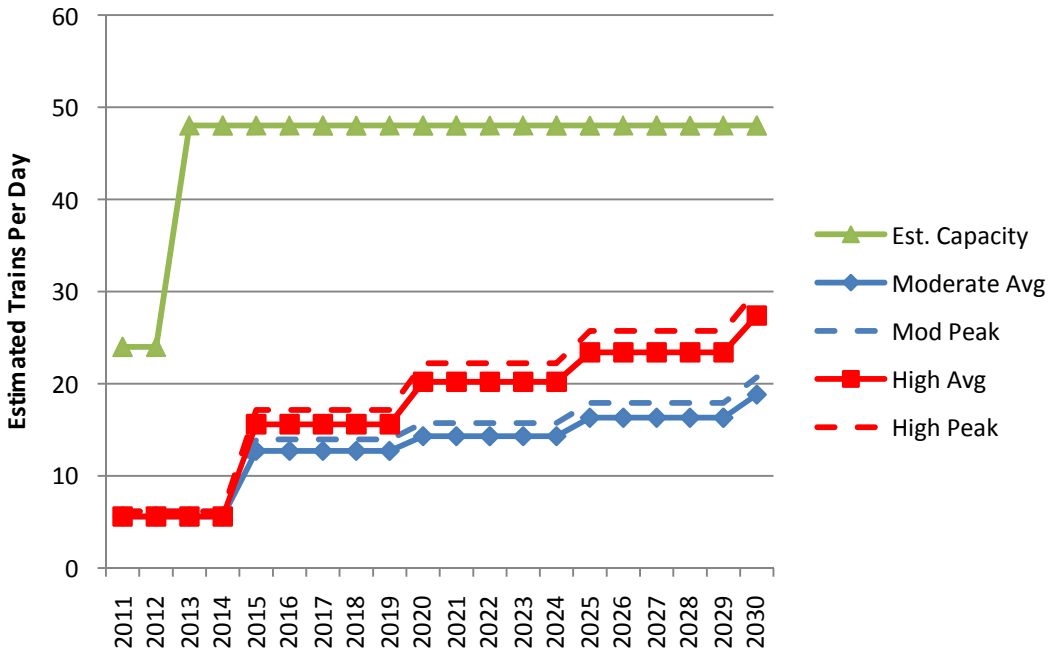
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)

As discussed in the Pasco to Vancouver segment analysis section, BNSF has indicated the potential for Stampede Pass being utilized as a "directional" route for empty bulk trains. The trains using the pass would be those generated on the BNSF system from Kalama north, thereby relieving the BNSF Columbia Gorge route of eastbound empty bulk trains, except for those originating in Portland and Vancouver. It is unclear when this routing protocol would occur, but it will likely be driven by route congestion on the Columbia Gorge segment. If the route does become an eastbound routing for empty BNSF bulk trains, it is also possible that BNSF would utilize the route for eastbound merchandise trains that originate from Everett, Seattle and Tacoma and are destined for the Pasco processing yard.

At some point, increased train operations will likely require upgrading the signal system on the Stampede Pass line to full CTC. The route currently has limited CTC but is predominantly dispatched utilizing Track Warrant Control (TWC). However, if the preponderance of traffic utilizing the route is eastbound only, TWC would likely be sufficient for some time into the future.

As Figure 3-15 demonstrates, use of Stampede Pass as described creates significant additional capacity. The increase in capacity reflects that, under the new operating protocol, the majority of trains using Stampede Pass will move eastbound.

Figure 3-15: Rail Corridor Capacity – Auburn to Spokane
Current Operations



Source: MainLine Management

Project Priorities

A key element of this analysis was the development of a prioritized list of system improvements that would allow the capacity of the regional rail system to match increasing demand.

These projects generally fall into two categories, mainline improvements and port access improvements. However, the projects labeled as port access improvements also provide benefits to the mainline system. Reducing the amount of time that it takes for trains to move between the port terminals and the mainline reduces delays on the mainline system, and thereby increases capacity.

Four projects recommended in the previous report are currently in the construction or detailed planning phase, with completion for each ranging from 2012 through the 2017/2018 timeframe. Completion of these four projects will provide a solid foundation for passenger and freight capacity in the Pacific Northwest. Three of these projects are primarily mainline improvements:

- Vancouver WA Freight Rail Bypass.
- Point Defiance Bypass, Tacoma to Nisqually.
- Third main line Kalama to Kelso (WSDOT Mid-Term Passenger Plan Option 3).

The fourth project is primarily a port access improvement:

- Port of Vancouver USA Freight Access Project.

In addition to these projects, certain main line segments will likely require additional capacity enhancements due to projected growth in rail traffic. Both the BNSF and UP likely have the ability to add the capacity needed through a combination of infrastructure expansion and changes to operations.

Six additional capacity improvement projects that would enhance overall rail operations under the moderate and high growth forecasts are listed below. Three of these projects are listed as mainline projects and three are port access. As described above, however, port access improvements also benefit mainline capacity. Descriptions of each of the projects are provided below the lists

The mainline projects include:

- Portland - Peninsula Junction to North Portland Junction,
- Vancouver to Kelso - WSDOT Passenger Plan Option 3 and 4,
- Centralia - Blakeslee Junction.

The **Peninsula Junction to North Portland Junction** project is a key series of improvements that are needed to improve both passenger and freight train capacity in the Portland area. Among other things, these projects would include reconfiguring the connection between the UP and BNSF at North Portland Junction and easing the curvature at Peninsula Junction. This would reduce congestion on the Columbia Gorge routes of both the BNSF and UP, as well as on the I-5 Corridor, and would allow for faster passenger train speeds. These improvements near the south end of the Columbia River Bridge would complement current projects at the north end of the bridge, including the Vancouver Bypass project, the West Vancouver Access project and upgrades of the main line in Vancouver. Funding is currently in place to complete preliminary engineering and the NEPA analysis, but not construction.

The improvements included in the **WSDOT Passenger Plan Options 3 and 4**[4] between Vancouver and Kelso include the completion of a third main line between Martin's Bluff and Rocky Point and a new siding near Kalama, which will be necessary to reach projected passenger train volumes.

The **Blakeslee Junction** project would improve access/egress efficiency between the I-5 Corridor main lines, and both the Puget Sound and Pacific Railway (PSAP) and Tacoma Rail lines at Centralia. Growth in the number of unit trains moving to and from the Port of Grays Harbor via the Puget Sound and Pacific has increased congestion at the interchange. This project includes a number of elements designed to increase the speed of trains through the interchange, and to increase the capacity of the Grays Harbor branch line. This will benefit both freight and passenger trains. The project is divided into five phases. Early planning has been completed on the project, but only partial funding for Phase 1A and 1B are available. Construction will require additional funding.

In addition, the Puget Sound and Pacific has recently obtained the necessary permits to construct a meet/pass siding on the Grays Harbor branch line. This siding should also improve capacity on the I-5 Corridor mainline through Centralia by providing a place off of the mainline for Grays Harbor trains to wait.

The additional port access projects that are recommended include:

- Unit Train Staging/Storage Yard near Woodland.
- Cowlitz River Bridge – Longview.
- Bullfrog Junction Realignment – Tacoma.

A **Unit Train Staging/Storage Yard near Woodland** would also increase the efficiency of both the BNSF and UP routes through the Columbia River Gorge routes and the I-5 Corridor. The BNSF currently stages unit grain trains in Pasco for movement to export terminals on the Lower Columbia River, Puget Sound, and Grays Harbor. The distance between the Pasco staging yard and the export terminals increases the potential for train delays. A storage yard in Woodland would reduce the distance to the export terminals. This project would also benefit passenger trains by reducing conflicts with slower-moving freight trains. This project is not currently in the planning phase.

The **Cowlitz River Bridge** provides access from the I-5 Corridor mainline at Longview Junction to most of the marine terminals and industrial customers in Longview. This single-track bridge is nearly 90 years old, and projected growth in traffic along the Longview branch line may require the addition of a second line. Options include adding a second single-track bridge or replacing the existing bridge with a new double-track bridge. This project would reduce congestion on the I-5 Corridor mainline (benefitting both passenger and freight trains) and increase the capacity of the Longview branch line. It was also identified in the recent Port of Longview Master Plan as a critical link. The project is estimated to cost $36 million; partial funding is in place for preliminary engineering and NEPA analysis, with the remaining funding expected in January 2012. Construction is not funded.

The **Bullfrog Junction Realignment** project would increase the efficiency of access/egress between the I-5 Corridor mainline and the Port of Tacoma. All of the rail lines serving industries and port facilities on the Tacoma Tideflats currently funnel through the Bullfrog Junction area,

[4] See footnote 2 on Page 30

seriously limiting the number of trains that can enter or leave the port area. In addition, yard activities in the area often use the mainline, reducing mainline capacity on the I-5 Corridor. The Bullfrog Junction area includes a number of chokepoints, including the junction itself, a single single-track bridge over the Puyallup River, and others. A preliminary plan for realignment was developed in 2006, and project proponents are now seeking funding for design and construction.

Conclusion

Growth in the volume of export bulk trains is expected to increase the demand on existing rail capacity in the region. Even moderate growth will require BNSF and UP to assess the capacity requirements necessary to meet the growing demand. Both railroads have the ability to increase capacity through a combination of physical and operational improvements, and should be able to meet growing demand well into the future.

Table 5-1: Current and Projected Number of Trains, by Line Segment

		Moderate Growth				High Growth			
	2011	2020		2030		2020		2030	
Line Segment	**Average**	**Average**	**Peak**	**Average**	**Peak**	**Average**	**Peak**	**Average**	**Peak**
Pasco, WA to Vancouver, WA (BNSF)									
Pasco, WA to Wishram, WA	45	51	56	61	67	57	62	72	80
Wishram, WA to Vancouver, WA	41	46	51	56	61	52	57	67	74
Hinkle, OR to Portland, OR (UP)	32	41	45	47	52	46	50	53	59
Pasco, WA to Spokane, WA (BNSF)	45	59	65	73	80	71	78	93	102
Spokane, WA to Sand Point, ID (BNSF)	59	75	83	92	101	87	96	112	124
Hinkle OR to Eastgate, ID (UP)	10	11	12	12	13	12	14	14	15
Vancouver, WA to Tacoma, WA (Joint line)									
Vancouver, WA to Kalama/Longview, WA	63	74	81	98	108	83	92	112	123
Kalama/Longview, WA to Tacoma, WA	57	71	78	94	103	79	87	105	115
Tacoma, WA to Auburn, WA (Joint line)	81	93	102	114	125	99	108	122	134
Auburn, WA to Seattle, WA (Joint line)	81	94	103	119	131	102	112	131	144
Seattle, WA to Everett, WA (BNSF)	51	63	69	75	83	70	77	87	96
Everett, WA to Blaine, WA (BNSF)	17	26	28	35	38	34	37	47	51
Everett, WA to Spokane, WA via Stevens Pass (BNSF)	18	21	23	24	26	21	23	24	26
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)	6	14	16	19	21	20	22	27	30

Note: Train numbers represent average daily volume. Short term peak volumes may exceed daily average by 10%. For all non-unit trains, growth is absorbed by existing trains before adding additional trains. Train volumes include locals, switchers and non-revenue movements.
Source: MainLine Management, BST Associates

Table 5-2: Summary of Capacity Improvements, by Line Segment

Line Segment
Pasco, WA to Vancouver, WA (BNSF)
Pasco, WA to Wishram, WA
- Siding extensions
- Connecting sidings into double track segments
- Westbound fleeting
Wishram, WA to Vancouver, WA
- Siding extensions
- Fleeting of trains westbound
Hinkle, OR to Portland, OR (UP)
- Siding extensions
- Connecting sidings into double track segments
Pasco, WA to Spokane, WA (BNSF)
- Connecting existing sidings into double track segments
Spokane, WA to Sand Point, ID (BNSF)
- Double tracking the existing single track segments
- Addition of third main track in key locations where available
- Staging tracks on both sides of the Lake Pend Oreille bridge
Hinkle, OR to Eastgate, ID (UP)
None
Vancouver, WA to Tacoma, WA (Joint line)
Vancouver, WA to Kalama/Longview, WA
- Completion of the Vancouver Bypass
- Completion of the new Port of Vancouver Access route
- Completion of WSDOT improvements for passenger plan Option 3, including construction of the 3rd main track between South Kalama and Kelso
- Additional improvements may include completion of 3rd main track between Martin's Bluff and Rock Point, expansion of the Skagit River Bridge at Longview
Kalama/Longview, WA to Tacoma, WA
- Completion of the WSDOT Option 3 and 4 improvements
- Addition of High-Speed crossovers
- Completion of Blakeslee Junction Project
- Completion of Point Defiance Bypass Project
Portland, OR to Vancouver, WA
- North Portland Junction and Peninsula Junction
Tacoma, WA to Seattle, WA (BNSF and UP)
- No projects specified. BNSF will meet passenger service agreements
Seattle, WA to Everett, WA (BNSF)
- No projects specified. BNSF will meet passenger service agreements
Everett, WA to Vancouver, BC (BNSF)
Siding extensions
Additional sidings
Everett, WA to Spokane, WA via Stevens Pass (BNSF)
None
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)
New operating protocol with empty eastbound grain trains using Stampede Pass

Source: MainLine Management, BST Associates