

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

Jay Inslee, Governor
Washington State
Olympia WA 98360

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DEC 24 2013

Dear Governor Inslee:

ENERGY FACILITY SITE
EVALUATION COUNCIL

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 should 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,


Edward Frank
(360) 573-3848

cc. *Kate Phoenix, P.H.*
Dept of Vancouver
✓ cc *Emergency Facilities Site Evaluation Council*
Olympia, WA

Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30932

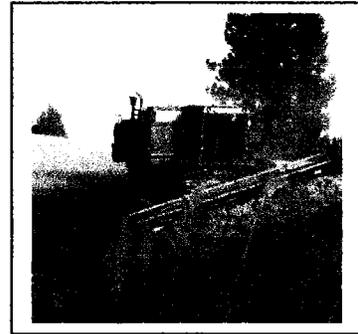
South West County Coalition
P.O. Box 127
Marshall, WA 99020
(509) 999-8513
patience5907@hotmail.com
December 16, 2013

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WASH. UT. & TP. COMM
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EFSEC
P.O. Box 43172
Olympia, WA 98504-3172

**ENERGY FACILITY SITE
EVALUATION COUNCIL**

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 vandalism. (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,

A handwritten signature in black ink, appearing to read "Matthew Smith". The signature is written in a cursive style with a large, sweeping initial "M".

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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DEC 17 2013

ENERGY FACILITY SITE
EVALUATION COUNCIL

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

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

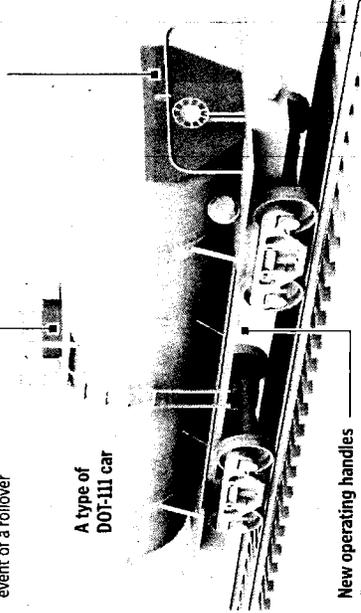
Upgrades for tankers carrying ethanol and crude oil

Stronger housing

Designed to prevent top-fitting damage in the event of a rollover

Head shields

Protect the head or end of the car from impacts

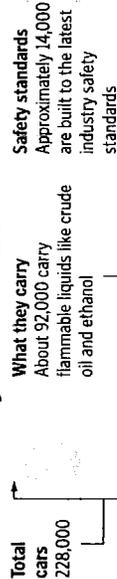


A type of DOT-111 car

New operating handles

(located under the car)
Designed to break free instead of opening in the event of a crash

DOT-111 cars by the numbers



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

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 investi-

gators 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

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.

These are my comments about the proposed oil terminal
in Vancouver, B.C. U.A. — Tedine Roos
06 NW 129th Ave Vancouver
Tesoro Savage CBR
Scoping Comment
#30934
Docket EF-131590

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 its 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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ENERGY FACILITY SITE
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.

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

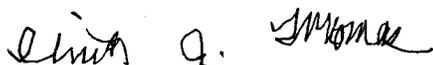
crude was nowhere near as explosive as the Bakken Shale oil slated for transport to, through, and from the Port of Vancouver. The clear and present threat of a high-magnitude earthquake here alone is reason enough to find the oil port unsuitable, though earthquakes only magnify the inherent safety threat. 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, unlike Quebec'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,
Citizen of 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

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

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**ENERGY FACILITY SITE
EVALUATION COUNCIL**

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



Heritagesc.com

- 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

UNIVERSITY LEGAL ASSISTANCE

721 North Cincinnati Street
P.O. Box 3528
Spokane, Washington 99220-3528
Phone (509) 313-5791
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JAMES P. CONNELLY
MARK E. WILSON
Of Counsel

Director
LARRY A. WEISER

Office Manager
JULIE CLAAR

December 18, 2013

VIA U.S. Mail

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

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DEC 24 2013

**ENERGY FACILITY SITE
EVALUATION COUNCIL**

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:

Mr. Stephen Posner
EFSEC Interim Manager
Energy Facility Site Evaluation Council
December 18, 2013
Page 2

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: $A \rightarrow B$. 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?

Mr. Stephen Posner
EFSEC Interim Manager
Energy Facility Site Evaluation Council
December 18, 2013
Page 3

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

A handwritten signature in black ink, appearing to read 'Andrew D. Woods', written over the typed name below.

Andrew D. Woods
Law Clerk

ADW/rke/vly



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: Pauline Druffel

Address: 930 S Cannon St. #13 Spokane WA 99204-4372
(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.

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 ^{primarily} I oppose the project because it just 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.



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

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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

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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 Cairo, 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 barrels of oil per every oil train. We ~~are~~ are safe with our trains and that protects the environment of the Northwest and the United States of America. Say Yes! to America...

Sincerely Yours

Steven A. Hat

Locomotive Eng'r - BNSF Railway



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

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Tesoro Savage Vancouver Energy Distribution Terminal
Informational & Scoping Comments

Place 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

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 Mans, Quebec. It could happen here.

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

over

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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.

The terminal would ship oil that would be obtained by fracking which is a very dirty way to produce a fossil fuel. It pollutes aquifers 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 time. 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.



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 Hussalo St, Portland, OR 97232
(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
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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

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,

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call (360) 664-1363, or e-mail efsec@utc.wa.gov.

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

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.



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 5 Scribner Rd Cheney Wa
(Please include your Zip!) 99004

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Please write any comments you have with respect to the
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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 sidings. Trains
pollution of air and water while
they idle. Diesel leaking in to
our aquifer lakes and creeks.
Sometime with 4 to 5 engines
pulling who knows what.
More tracks more congestion.
Definitely 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:
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call (360) 664-1363, or e-mail efsec@utc.wa.gov.

Volunteer fire department in
the area do not have the
know how to handle all of
the things that could go wrong.
Fire leakage and explosions.
The public interest not
private concerns should
come first.

Bad judgement now is
going to effect generations
to come.

Definitely more danger
to the public now.



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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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 'inaccessibility' to firefighters in this draw, the dry timber and grasses fueled by spilled oil or coal would wipe out hundreds of homes.



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 Thiel

Address: 3704 W. Lincoln Rd. Spokane, WA 99208
(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.

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 billions
of worthless ^{vehicles!} cars!

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

DO NOT APPROVE THE TESORO TERMINAL!!!

=====

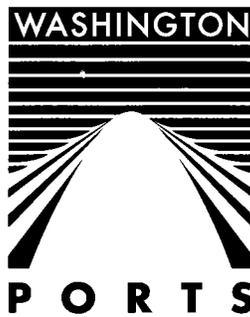
Use the back of this form if you need more room for your comments.

P.S. over

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.

O.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!



Docket EF-131590

Tesoro Savage CBR
Scoping Comment
#30945

December 16, 2013

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

ENERGY FACILITY SITE
EVALUATION COUNCIL

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

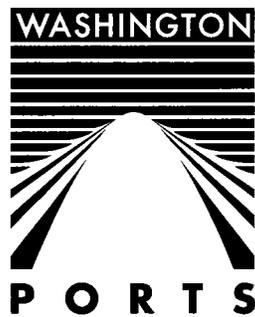
The Washington Public Ports Association (WPPA) offers the following comments regarding scoping of the Tesoro Savage Vancouver Energy Distribution Terminal. The WPPA was authorized by the state legislature in 1961 as the coordinating organization for all public port districts in the state. Ports seek 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

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A Trade Association Representing the 75 Public Port Districts of Washington State



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

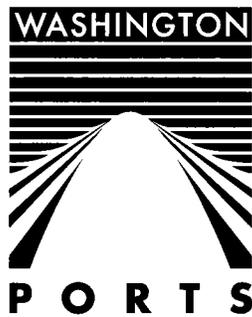
TRANSPORTATION

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

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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.

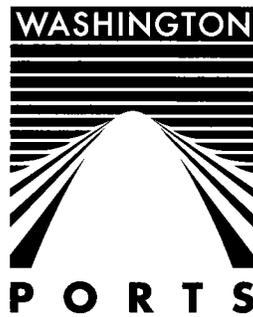
A recent study commissioned by WPPA (copy attached to these scoping comments), supports this point, demonstrating that the volume of existing or background traffic using the rail lines in Washington has varied substantially, depending on various trade and market conditions, not the least of which is 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

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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

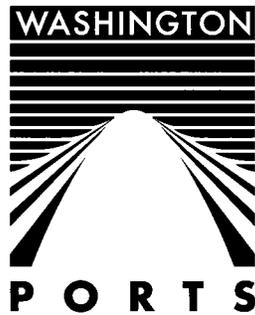
WPPA and its members acknowledge that greenhouse gas emissions are now recognized as appropriately within the purview of project environmental review. In fact, several port members are leaders in sophisticated consideration of emissions related to port operations and expansion. The Ports of Vancouver 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 you prepare the environmental documents.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric D. Johnson". The signature is fluid and cursive, with the first name "Eric" and last name "Johnson" clearly distinguishable.

Eric D. Johnson, Executive Director
Washington Public Ports Association

enclosure

Washington Public Ports Association

A Trade Association Representing the 75 Public Port Districts of Washington State

Pacific Northwest Marine Cargo Forecast Update and Rail Capacity Assessment

Final Report

Prepared By
BST Associates
PO Box 82388
Kenmore, WA 98028-0388

and

MainLine Management
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Lawrence, KS 66047

Prepared for
Pacific Northwest Rail Coalition

December 2011

BST Associates
Market Research & Strategic Planning



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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

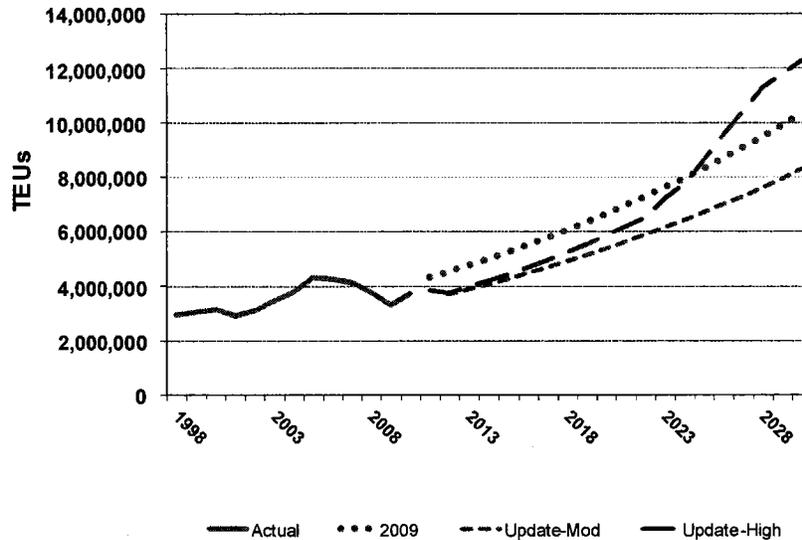
The revised Pacific Northwest container forecast is presented in Figure 2-1. The moderate-growth forecast is lower than the forecast presented in 2009 due to revised expectations about near-term growth and intensified competition from ports in Canada and on all-water routes (after completion of the Panama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

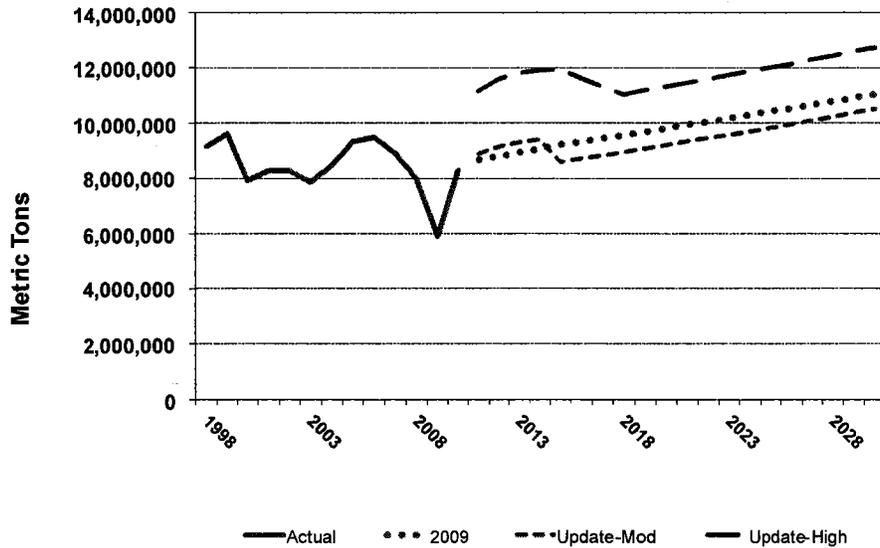
Break and Neobulk Cargoes

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.

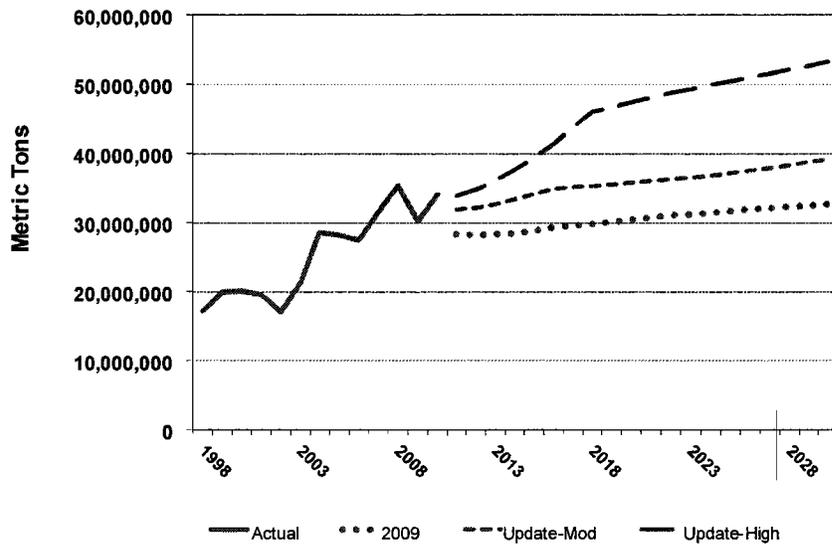
The 2009 forecast projected relatively modest gains in grain traffic, with volumes expected to reach 32.7 million tons in 2030. However, the forecast was based upon the reduced volumes in 2009 and did not anticipate the rapid increase in export volumes that occurred in 2010 (an increase of 4 million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

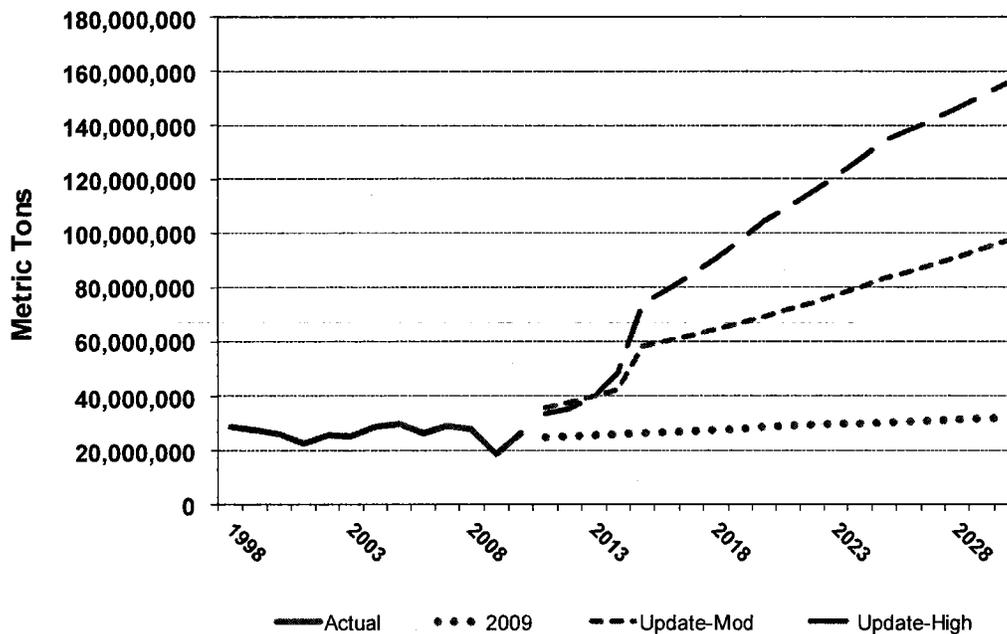
Dry bulk cargoes include a wide variety of products, such as woodchips, petroleum coke, potash, soda ash, gypsum, limestone, metal ores, and others. In addition, there is strong interest in coal, potash and ore exports. The revised Pacific Northwest forecast for dry bulk cargoes is presented in Figure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

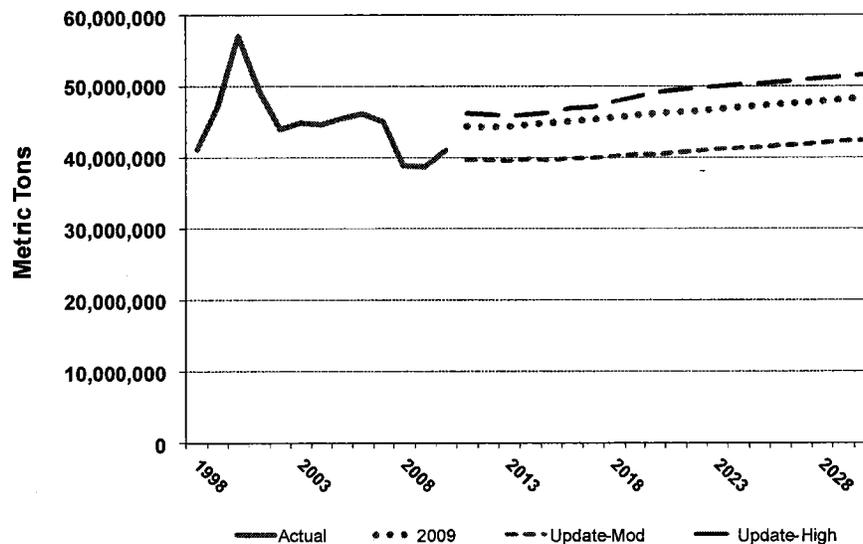
- 42.4 million tons in 2030 under the moderate growth forecast, with average annual growth of 0.2 percent per year between 2010 and 2030,
- 51.6 million tons in 2030 under the high growth forecast, with average annual growth of 1.2 percent per year between 2010 and 2030.

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

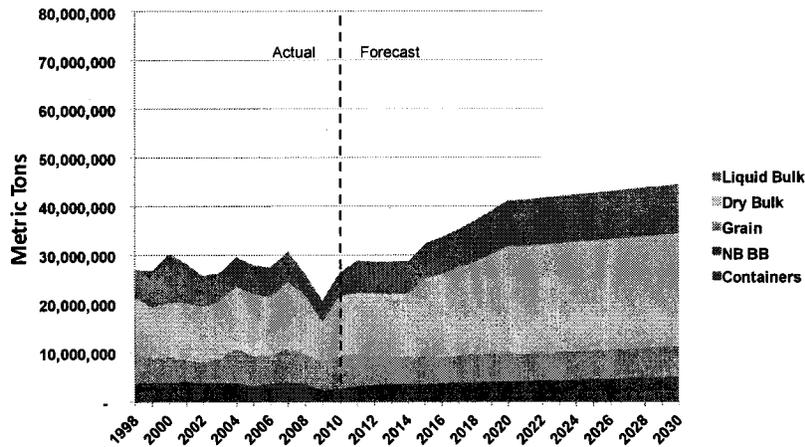
Regional Forecasts by Commodity

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.

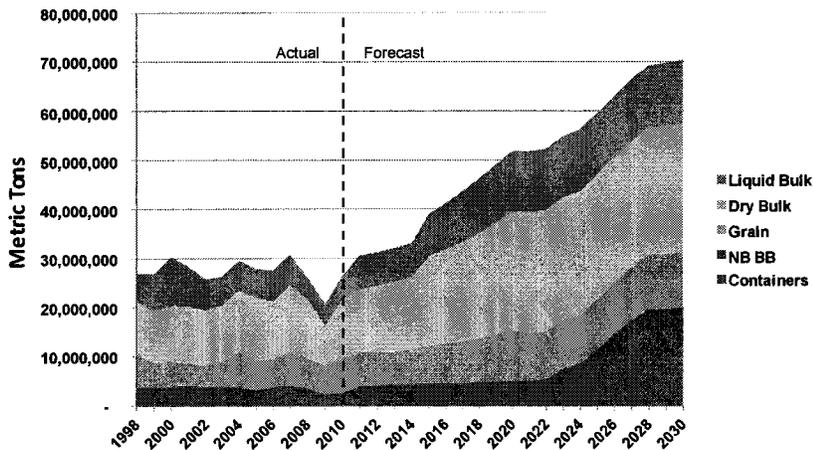
Figure 2-6: Lower Columbia Oregon and Oregon Coast Forecast Moderate Growth Scenario



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

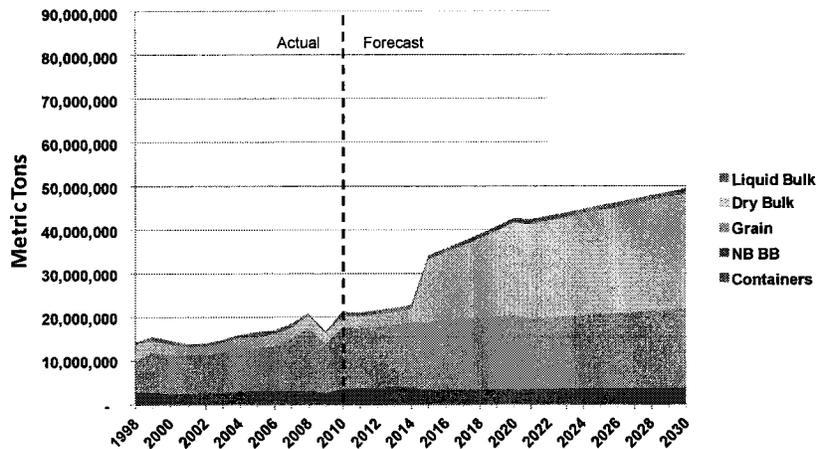


Source: BST Associates

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.

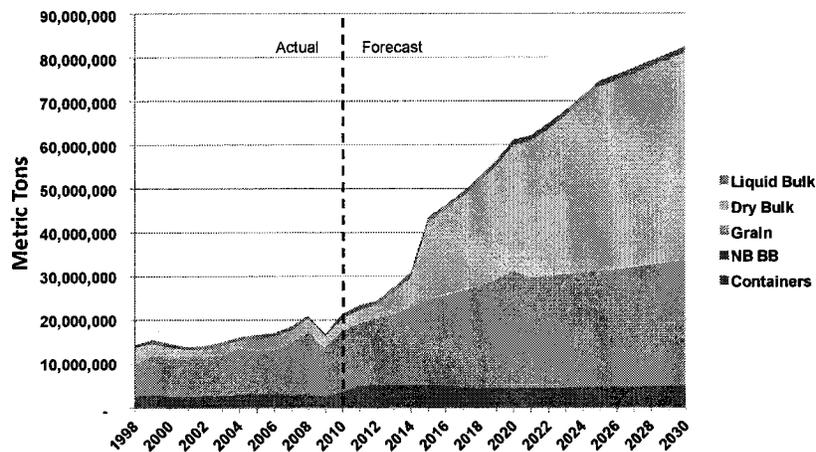
**Figure 2-8: Lower Columbia Washington Forecast
Moderate Growth Scenario**



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**

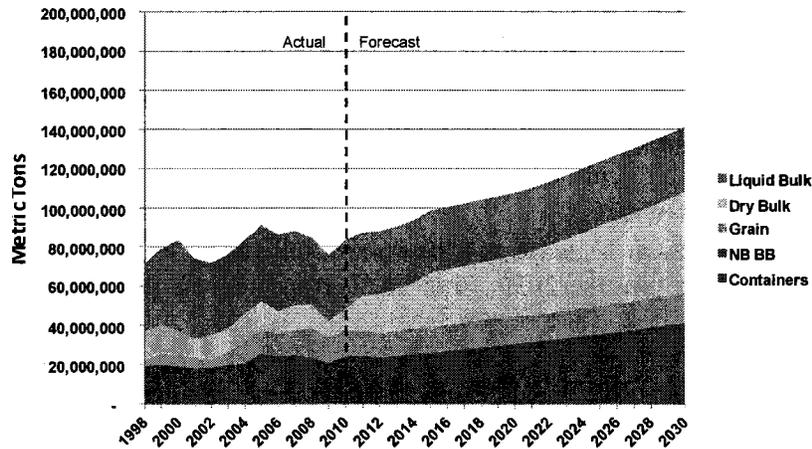


Source: BST Associates

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.

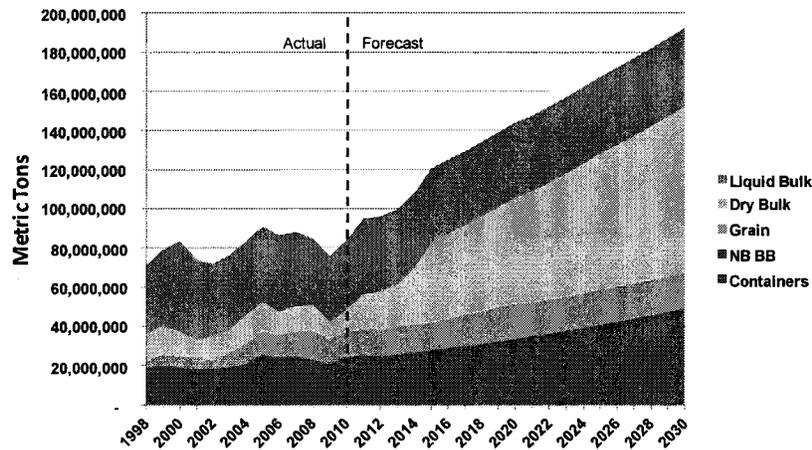
Figure 2-10: Puget Sound and Washington Coast Forecast Moderate Growth Scenario



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

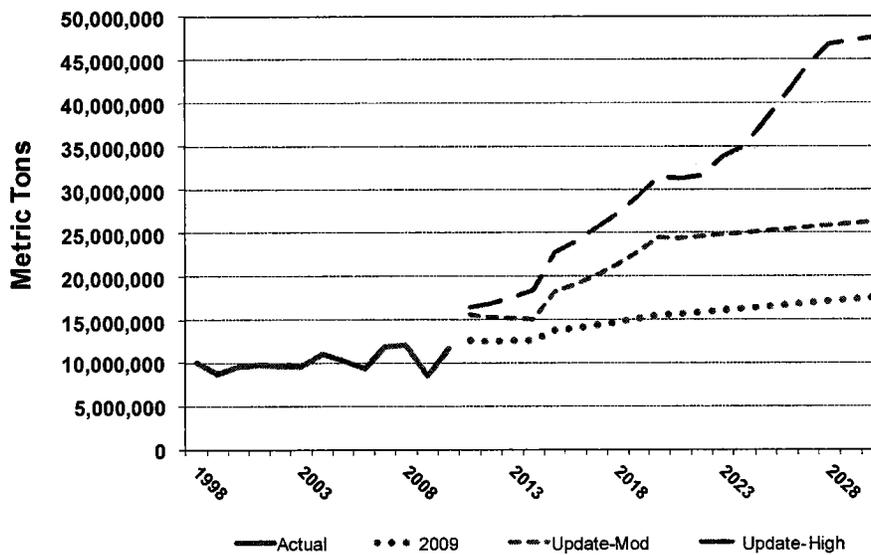
This section summarizes expected growth in rail traffic by sub-region.

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



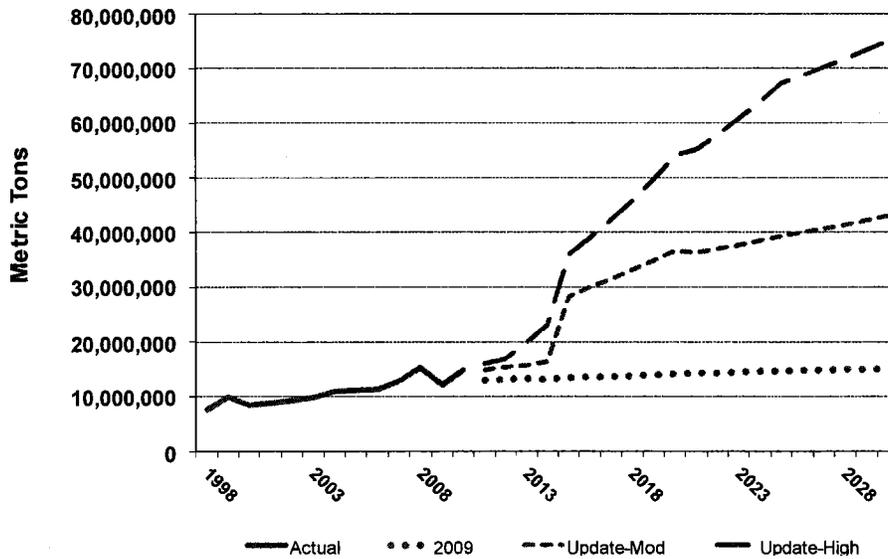
Source: BST Associates

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



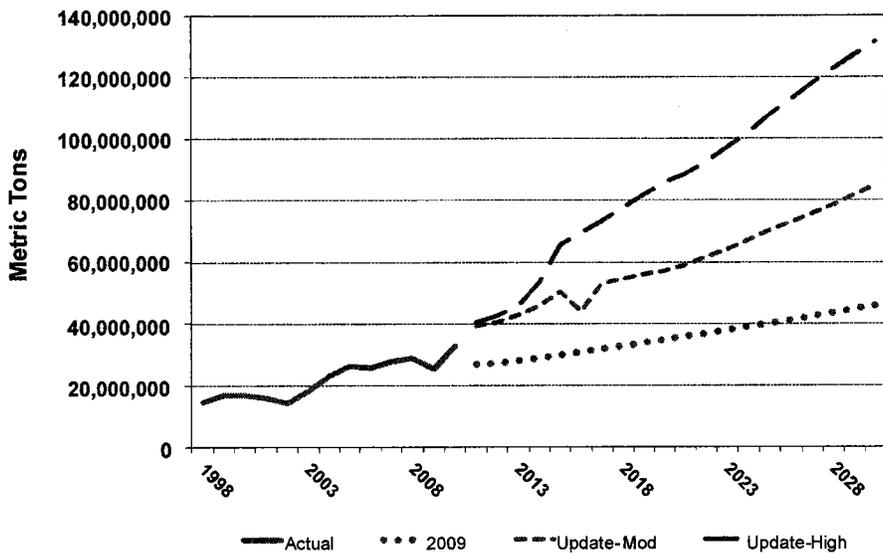
Source: BST Associates

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



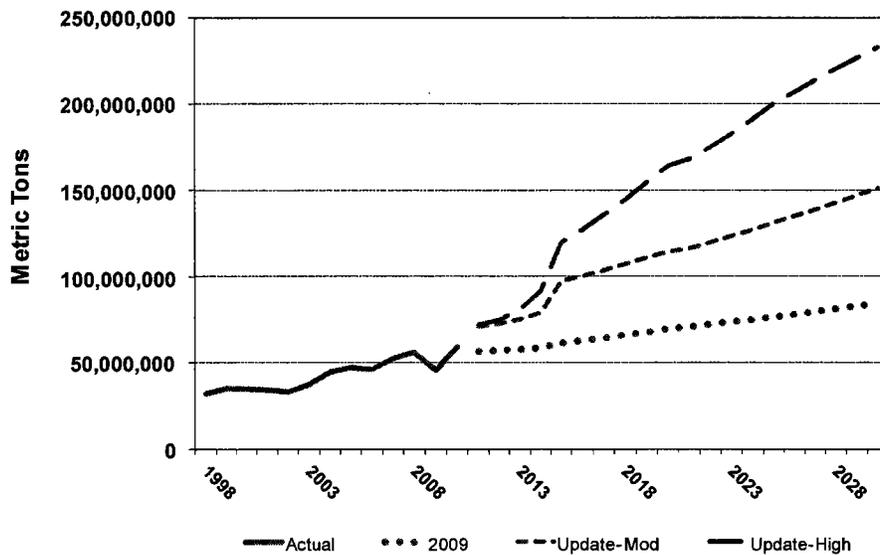
Source: BST Associates

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.

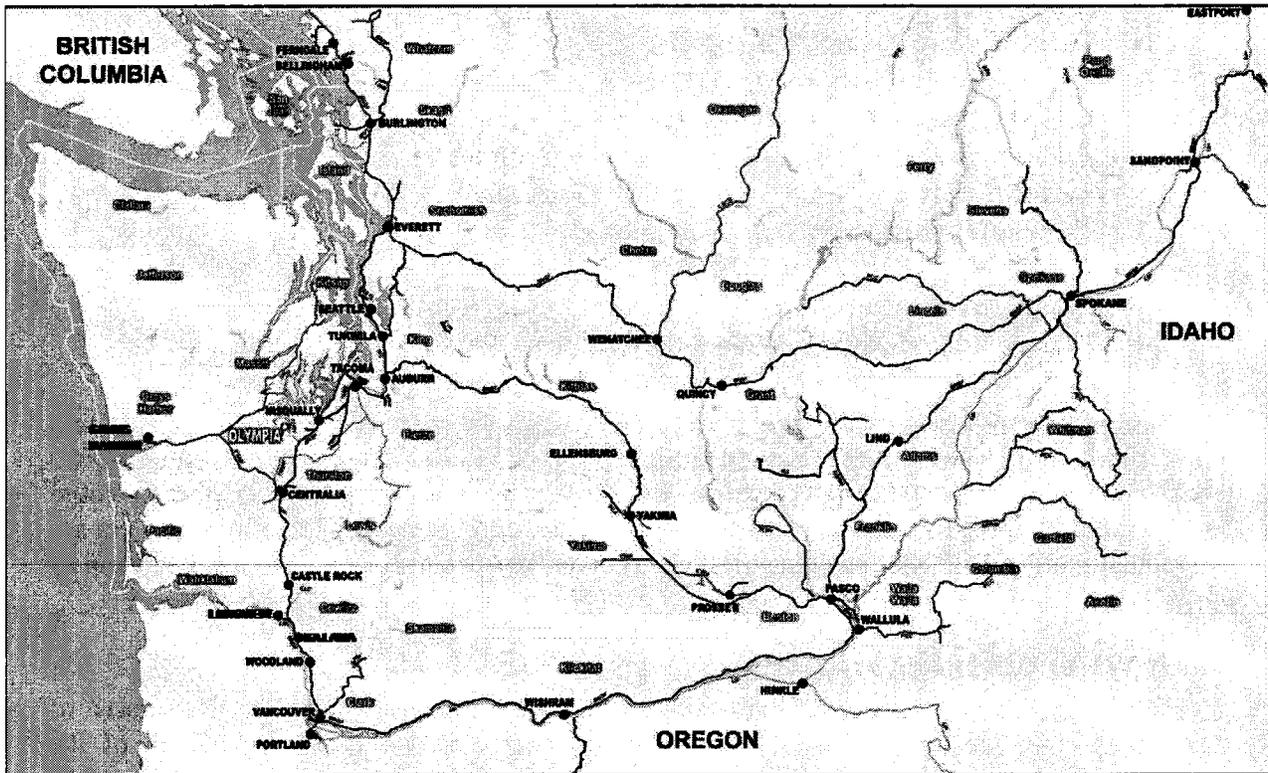
Forecasts

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.

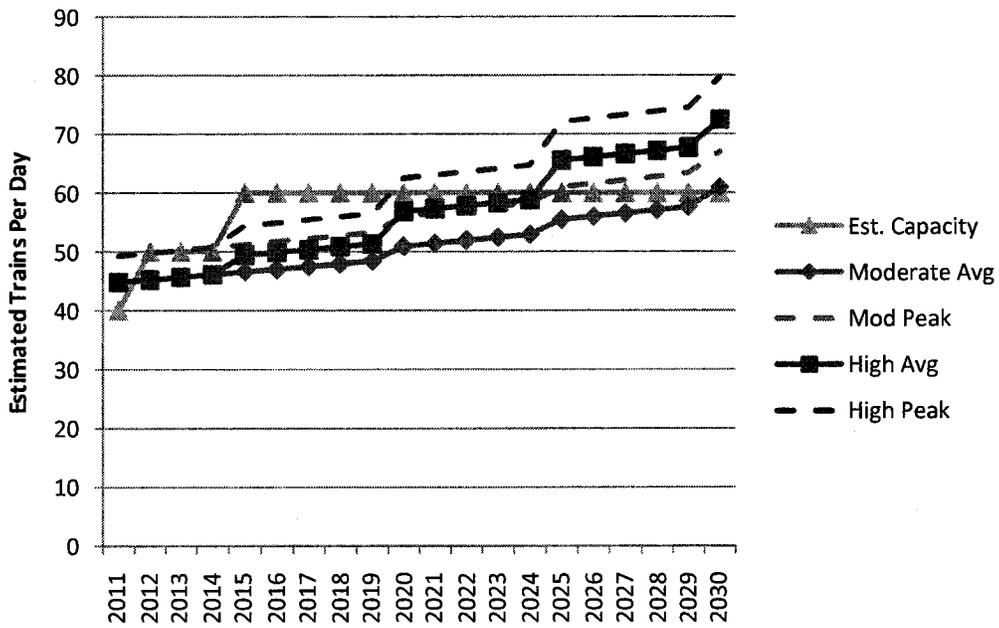
If implemented, this plan would create the opportunity for significant fleeting of westbound trains through the Columbia River Gorge.

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.

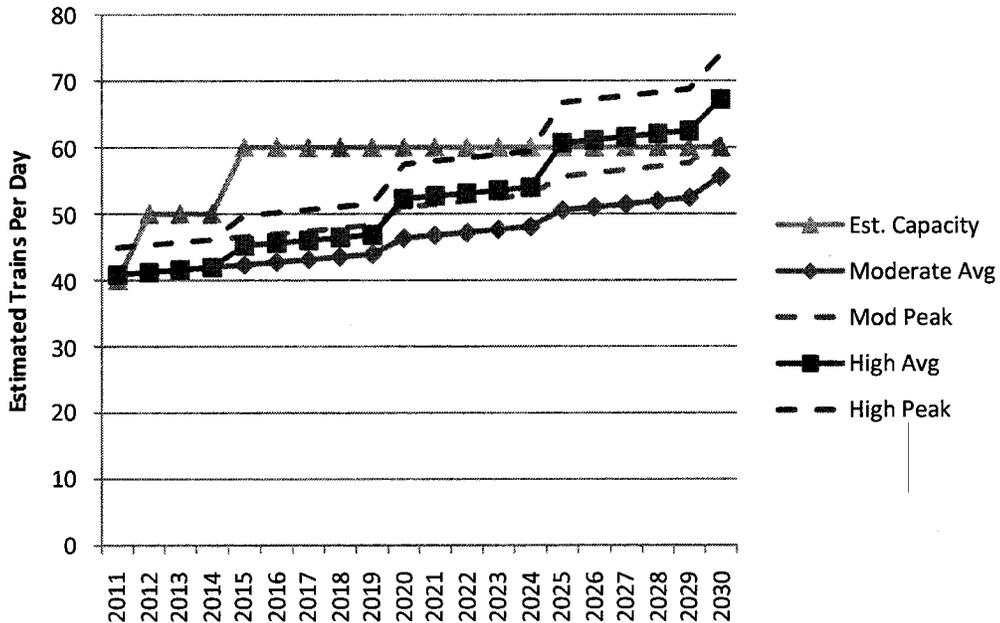
¹ "Fleeting" is a term used to describe train movements in which a series of trains are operated in one direction, and then in the other direction. This minimizes meet/pass requirements and can increase the practical capacity of a line segment.

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

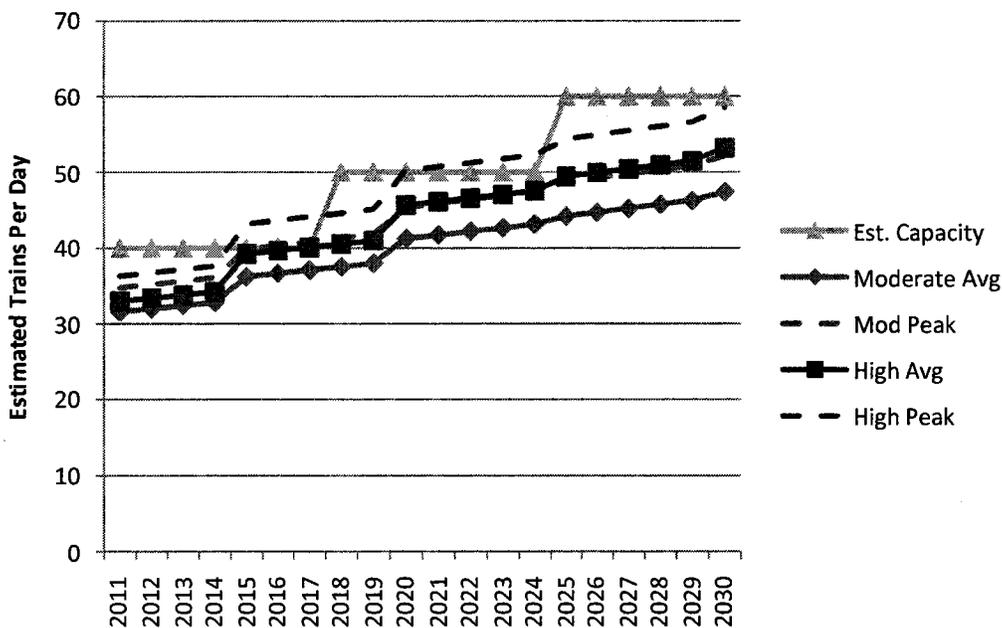
Hinkle, OR to Portland, OR (UP)

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 illustrated 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

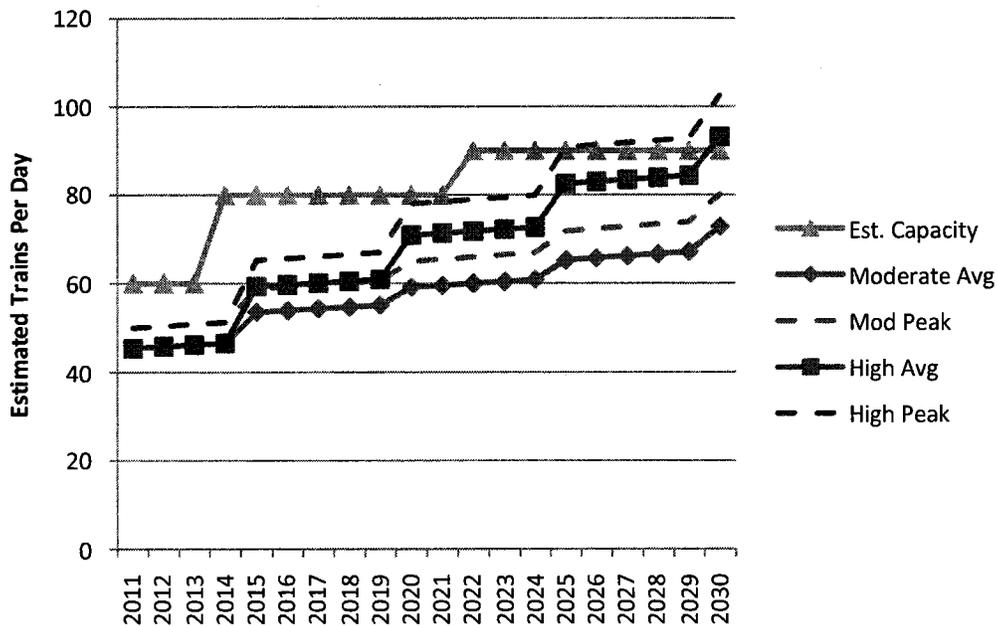
Pasco, WA to Spokane, WA (BNSF)

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.

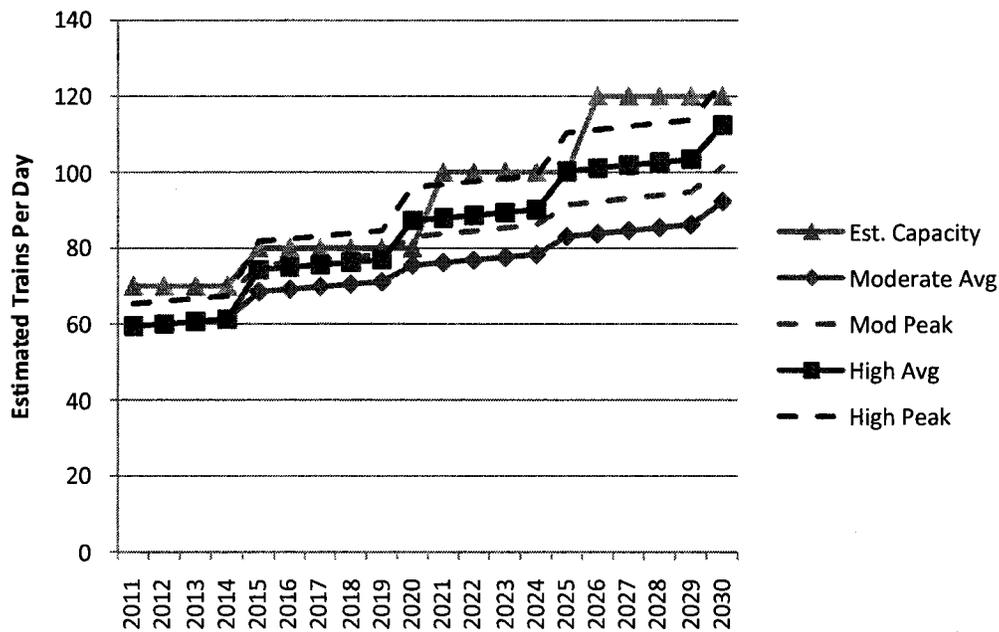
A capacity concern that may materialize over the long-term for BNSF is the single track bridge across Lake Pend Oreille. The train volumes indicated in the 2030 projections may require fleeting of traffic across the bridge. In addition, fleeting of trains may create the need for additional storage track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

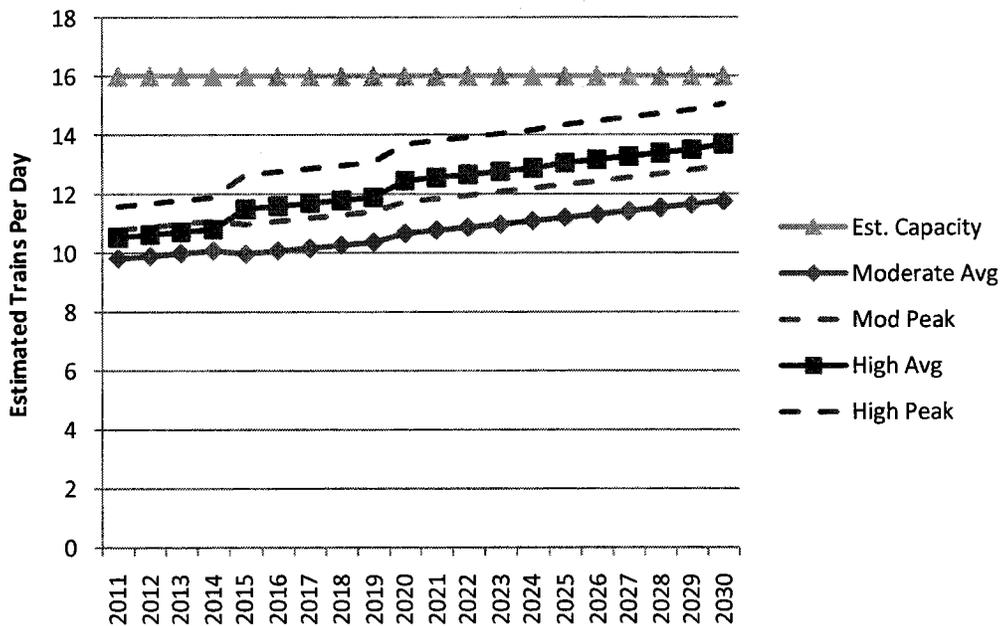
Hinkle, OR to Eastgate, ID (UP)

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.

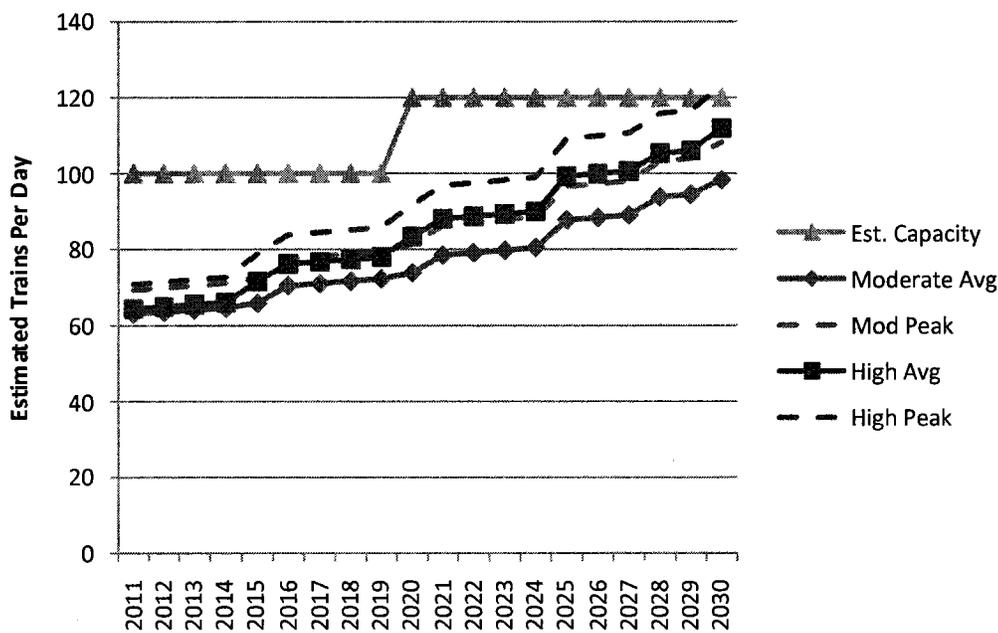
WSDOT’s *Amtrak Cascades Mid Range Plan* (Options 3 and 4)² will continue to provide the rail capacity needed over time to ensure that intercity passenger growth can occur in conjunction with projected freight growth. The directional operation of loaded and empty bulk trains by BNSF, coupled with the 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>

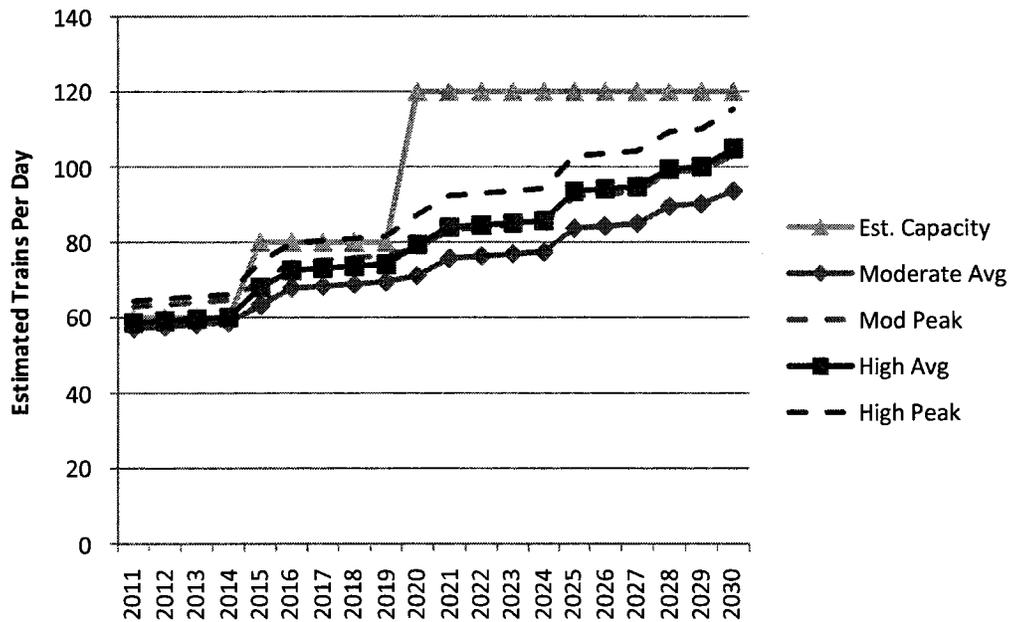
Kalama/Longview, WA to Tacoma, WA (Joint Line)

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)

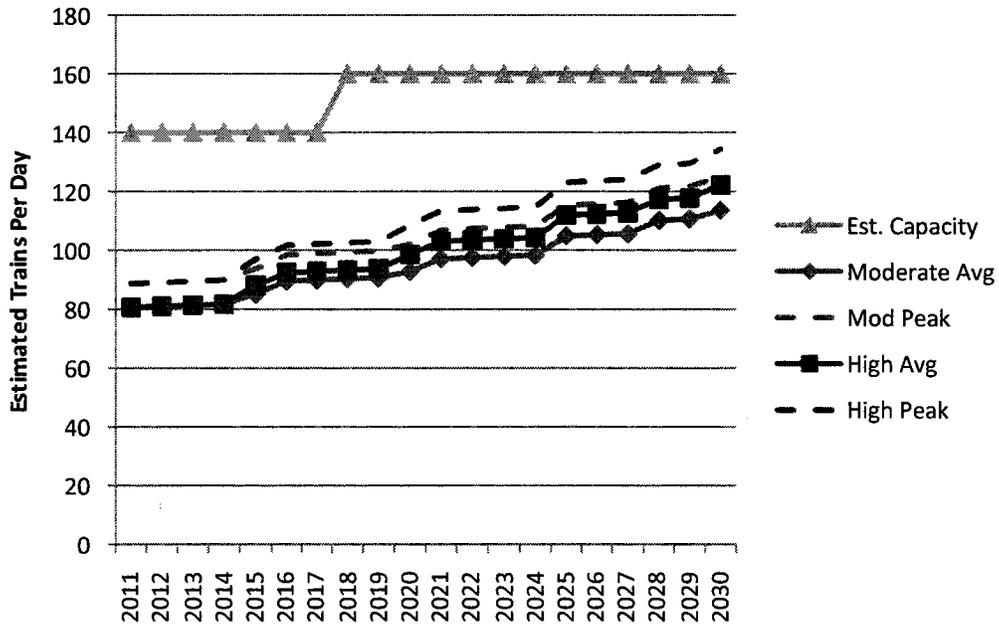
According to Sound Transit there are no conflicts between passenger and freight operations between Tacoma and Seattle, and the level of service provided by BNSF is very good. The Point Defiance Bypass project will further improve freight and traffic flows through Tacoma, and between Tacoma and Seattle.

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.

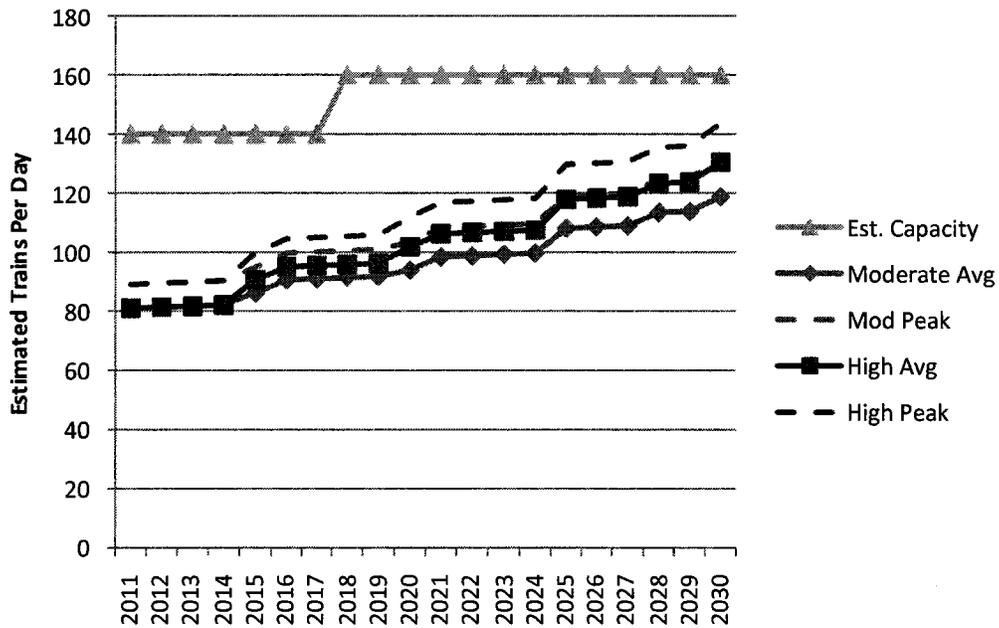
As shown in Figures 3-10 and 3-11, there are no capacity constraints under high-growth or moderate-growth scenarios.

**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**



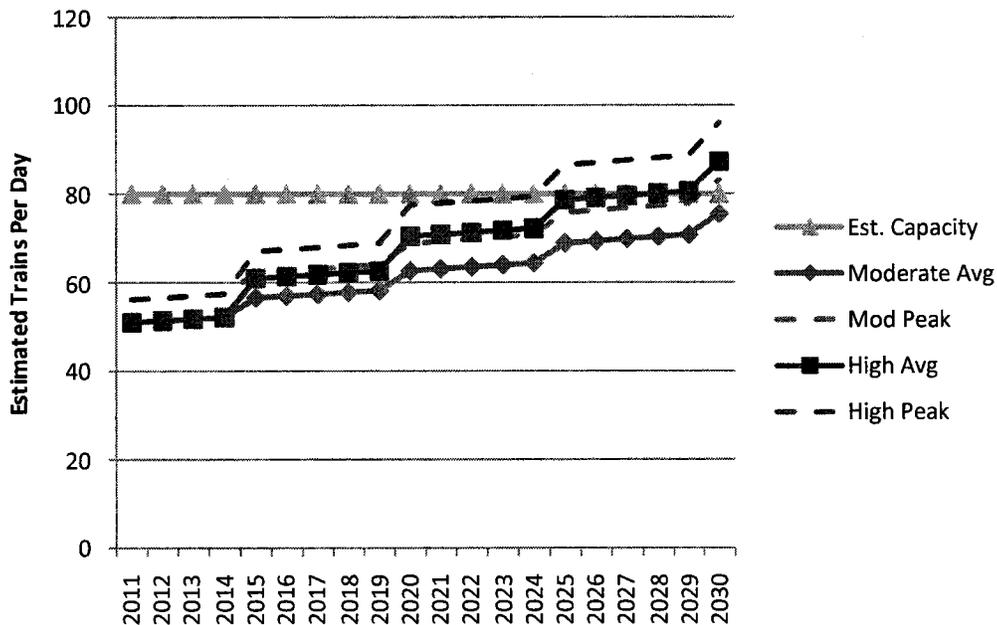
Source: MainLine Management

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.

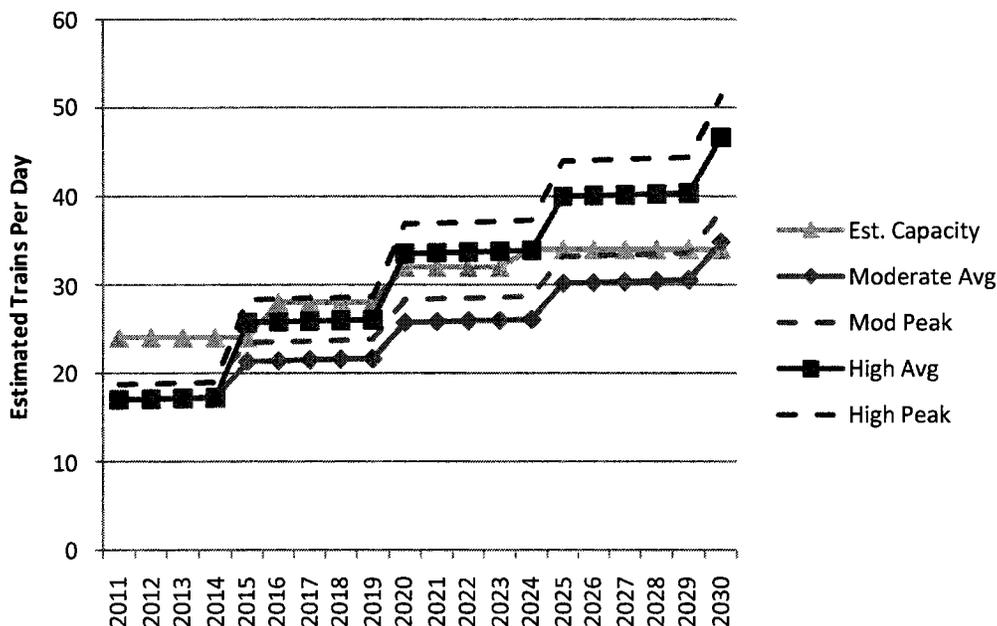
In addition to these improvements, BNSF recently constructed a 10,000 foot siding north of the border at Colebrook, BC. Colebrook is the location where the BNSF ties into the rail line that accesses the Deltaport and Westshore port facilities. Prior to construction of this siding BNSF had no meet/pass 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 fleetings. Although this analysis does not assume a change in operating protocols, growth in the number of bulk trains may necessitate the use of fleetings 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

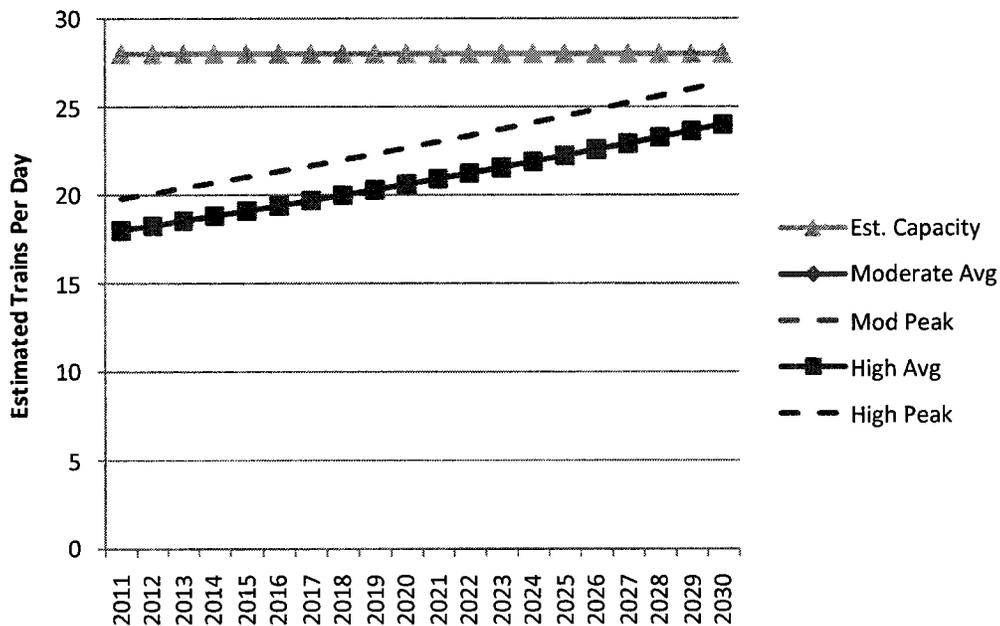
Everett, WA to Spokane, WA via Stevens Pass (BNSF)

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.

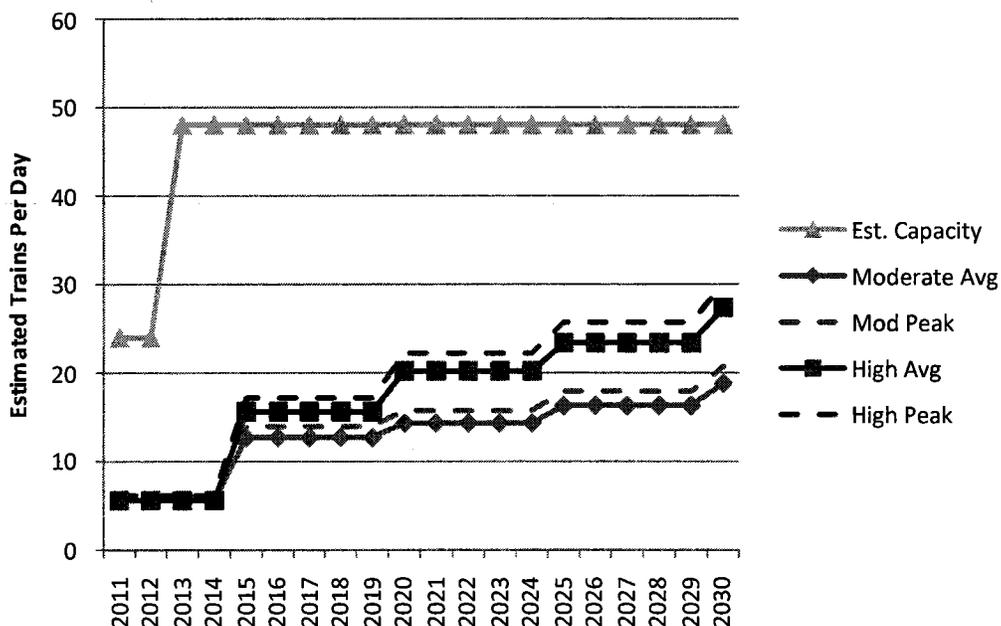
Auburn, WA to Pasco, WA via Stampede Pass (BNSF)

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 Tidelands 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

Line Segment	2011	Moderate Growth				High Growth			
		2020		2030		2020		2030	
	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