BEFORE THE STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of: Application No. 2013-01 TERSORO SAVAGE, LLC VANCOUVER ENERGY DISTRIBUTION TERMINAL	Case No.: 15-001 Declaration of DanMonaghan

I, Dan Monaghan, states as follows:

My name is Dan Monaghan. I am a Senior Project Manager of Patriot Technical Consultants. I have over 35 years of technical and administrative experience in emergency management, planning, training, exercise design, risk analysis, regulatory compliance, vulnerability/threat assessments and emergency response. I am regarded by local, state and federal public safety officials as a subject matter expert in the field of hazardous material (HazMat) and chemical, biological, radiological, nuclear, and explosives (CBRNE) emergency response and preparedness.

I have devoted the bulk of my career to serving in a wide variety of public safety related positions. From 1979 to 2007 I served within the fire service as a commissioned firefighter, station captain and chief officer. During this time I was assigned to numerous technical and management roles.

I retired from the City of Vancouver Fire Department (VFD) in 2007 as Chief of Special Operations and founded Monaghan Consulting, LLC. I joined Patriot in 2010 to provide senior-level support to Patriot's Homeland Security and Emergency Preparedness service area. I work for Patriot as a project manager for public sector clients. My resume is attached as Exhibit A.

I am familiar with the proposed Vancouver Energy Distribution Terminal (VEDT) proposal, and I have reviewed the VEDT's Draft Environmental Impact Statement (DEIS). Thank you for the opportunity to provide testimony on the VEDT adjudication. Here are my comments on behalf of Patriot for the City of Washougal.

1. Topic: Summary

Facts:

The City of Washougal provided comments on the VEDT Draft Environmental Impact Statement (DEIS), in which we noted the DEIS's lack of adequate study of the safety impacts regarding oil train shipments through the City of Washougal. We requested that additional studies and analyses be conducted and that appropriate mitigation measures be proposed. None of these additional studies have been completed, nor have additional mitigation measures proposed. Now the Washington State Energy Facilities Siting Evaluation Council (EFSEC), in its adjudication, must determine whether VEDT complies with the applicable laws without having an opportunity to review those studies and mitigation measures that could more accurately define and reduce the risk of the transport of crude oil-by-rail through the City of Washougal. In light of these failures, the VEDT has

not provided adequate proof that it meets EFSEC's standards to protect the health and safety of the citizens of Washington State.

The VEDT and the Port of Vancouver have the burden of proof that the proposed facility and associated transportation meets the following standards under Washington's Energy Facility Siting laws and regulations.

RCW 80.50.010:

(1) To assure Washington state citizens that, where applicable, operational safeguards are at least as stringent as the criteria established by the federal government and are technically sufficient for their welfare and protection.

(2) to preserve and protect the quality of the environment; to enhance the public's opportunity to enjoy the esthetic and recreational benefits of the air, water and land resources; to promote air cleanliness; and to pursue beneficial changes in the environment.

WAC 463-14-020:

(1) Ensuring through available and reasonable methods that the location and operation of such facilities will produce minimal adverse effects on the environment, ecology of the land and its wildlife, and the ecology of state waters and their aquatic life (emphasis added)

The VEDT's (DEIS) does not provide adequate proof of the sufficiency of its operational safeguards to protect the public health, safety and welfare of the citizens of Washougal. In

the absence of adequate study and specific, enforceable mitigation, EFSEC should recommend that this proposed project not be approved.

The greatest risk of the proposed action to public safety of the citizens of Washougal is involves a unit train accident/derailment in a populated area with a release of crude oil, resulting in a major explosion/fire. An incident of this type could have a catastrophic impact to the public health and safety of the citizens of Washougal, depending on the location of the incident. Such an event would quickly overwhelm the abilities of local first responders and could require mass evacuation of local residents, business and schools. The loss of human life is a real possibility. This risk is not just theoretical – these scenarios have occurred throughout the nation.

The VEDT DEIS (Exhibit 0051 hereinafter "DEIS") does not provide an adequate level of analysis of risks associated with unit train accidents and crude oil releases along the rail transportation corridor nor does it specify or require necessary risk mitigation actions that would reduce those risks to insignificant levels. Examples of factors that affect risk to the citizens of Washougal include unit train speeds, number of at-grade crossings, proximity to sensitive or vulnerable populations and sheer volume increases in the number of unit trains that pass through the city on a daily basis. These factors are addressed later in individual comments.

Crude oil unit trains other than those associated with the proposed action include existing traffic that transits through the rail transportation corridor and communities along the Columbia River Gorge. The Burlington Northern Santa Fe (BNSF) railroad has reported that an average of 18 unit trains of crude oil currently pass through the City of Washougal

each week (Exhibit 0064: Washington State 2014 Marine and Rail Transportation Study, Washington State Department of Ecology, Figure 17 on page 42 and Table 5 on page 43; March 1, 2015, https://fortress.wa.gov/ecy/publications/documents/1508010.pdf.

Additional proposed crude oil related projects within the region include: the Westway and Imperium Expansion Projects at the Port of Hoquiam, the NuStar facility at the Port of Vancouver and a refinery at the Port of Longview. Each of these proposed projects has been well publicized and is well known to the Washington State citizens who live near the Lower Columbia River. The addition of crude oil unit trains associated with the proposed action and the unit trains associated with these other proposed facilities will have a significant additive impact and will increase the risk of a rail incident. The public safety risk to the citizens of Washougal from an oil-by-rail incident will be elevated if this proposed action is approved. The DEIS does not provide an adequate analysis of cumulative impacts of the proposed action to Washougal and other population centers along the rail transportation corridor. The DEIS does not specify mitigation measures that would be required to bring the cumulative risk down to acceptable levels.

The level of analysis regarding public safety impact to the City of Washougal is substandard and unacceptable. Many of the following specific comments offered by the City of Washougal are based on this theme.

Conclusion:

The VEDT DEIS should have contained or been supported by a quantitative risk analysis related to crude oil-by-rail transport throughout the rail transportation corridor within Washington State. This would include a thorough analysis of cumulative impacts within

the rail transportation corridor, as required by the SEPA regulations. The EFSEC should have specified and required appropriate, realistic, and effective mitigation measures for transport of crude oil-by-rail throughout the rail transportation corridor so EFSEC and the public could determine whether risks have been reduced to an insignificant level. Therefore, the VEDT has not met its burden of proof that it meets the adjudication standards for the protection of the public health, safety and welfare.

2. Topic: Local Traffic Delays due to Increased Number of Unit Trains

Facts:

a. The VEDT DEIS addressed the issue of local traffic delays due to the proposed increased number of unit trains (Exhibit 0051 VEDT DEIS at Chapter 3.14.3.2). This chapter of the VEDT DEIS states that four (4) additional unit trains per day would increase traffic delays at grade level crossings in Washougal from the current daily average of 138 minutes, to 159 minutes, a 15 percent increase. These additional unit trains would increase the daily number of trains (all types) from 28 to 32 trains, which is approximately 80 percent of the rail line's maximum capacity.

b. Based on information contained in the VEDT DEIS, the annual average traffic volume for the 32nd Street crossing is 12,629 vehicles per day (Exhibit 0051: VEDT DEIS, Table 3.14-15). This is the highest traffic volume of any grade level crossing along the BNSF rail line between Spokane and Vancouver (Exhibit 0051 VEDT DEIS, Table 3.14-15).

c. The VEDT DEIS did not address or analyze the extent to which the proposed increase in the number of unit trains will have on public safety within the City of

Washougal, including the ability of emergency responders (e.g., fire, law enforcement and medical) to respond to life-threatening situations.

d. Figure 1 shows the location of rail crossings within the City of Washougal (Exhibit B: Patriot Technical Consultants VEDT DEIS review comments, Figure 1 on page 3, submitted to the City of Washougal, Washington on December 21, 2015).

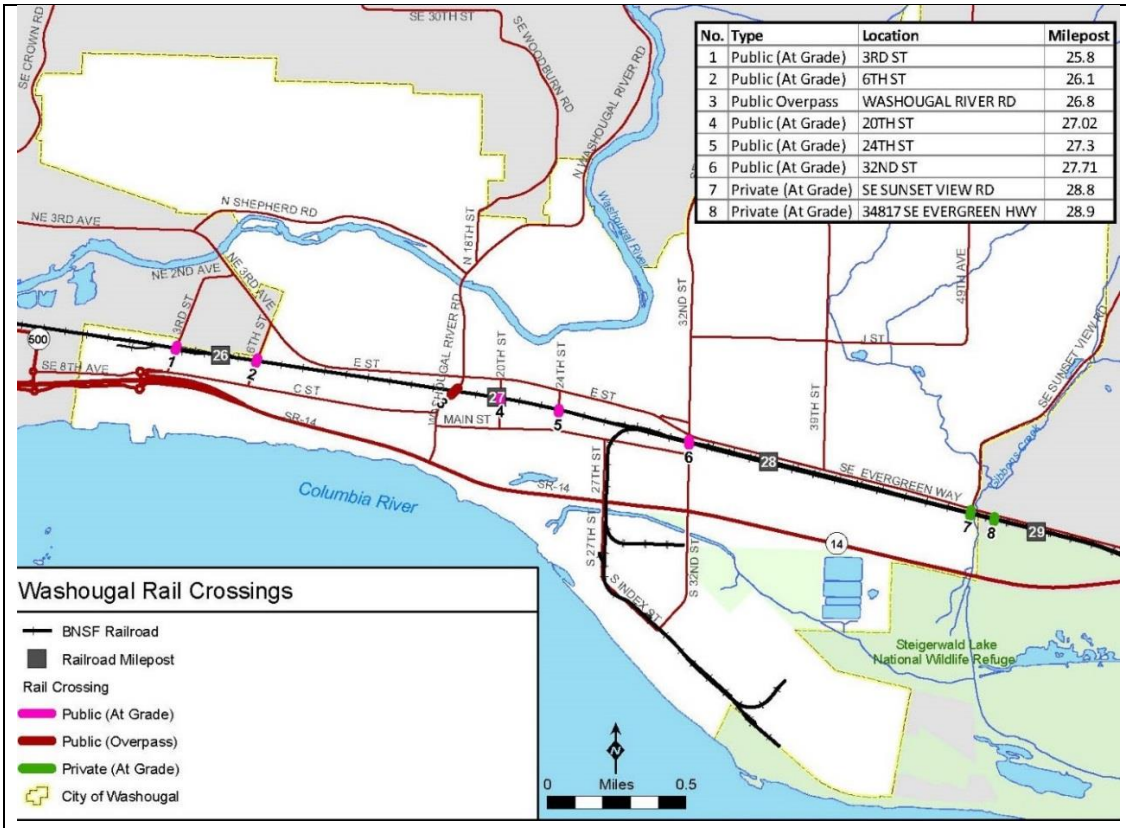


Figure 1. Washougal Rail Crossings

Conclusion:

The VEDT DEIS did not contain an adequate analysis of the impact of traffic delays at Washougal's heavily used 32nd Street grade level crossing. Facts identified in the VEDT DEIS and related source documents and communications with stakeholders and

knowledgeable individuals (see lists in Introduction) provided strong evidence that a significant impact to public safety could result from traffic delays due to the increased number of unit trains at the 32nd Street crossing. The VEDT DEIS did not meet EFSEC's standard for identifying adverse impacts and measures that could mitigate those impacts. A thorough analysis of the impact that additional traffic delays will have on the City of Washougal should be completed. This analysis should consider delays in response times for emergency responders and public safety officials. This analysis should identify significant adverse impacts and measures to mitigate those impacts. The analysis should consider funding to replace the grade level crossing at 32nd Street with an elevated crossing as a possible mitigating measure.

3. Topic: Traffic Studies and Mitigation Measures

Facts:

Chapter 3.14.5 of the DEIS (Affected Environment, Impacts and Mitigation Measures analysis) addresses transportation impact mitigation measures. It states: *"The design features and BMPs proposed by the Applicant to avoid or minimize environmental impacts during construction, operations, maintenance, and decommissioning are assumed to be part of the Proposed Action and have been taken into account during the analysis of environmental impacts to transportation in this Draft EIS. EFSEC has not identified mitigation measures specifically for the Applicant, but has identified the following studies as additional mitigation measures to reduce impacts to transportation that would require coordination with others:*

• *BNSF, UTC, WSDOT, and affected local jurisdictions should coordinate to identify the*

need for, and feasibility of, constructing new grade-separated railroad crossings in areas along the proposed rail routes where excessive gate downtimes and vehicular delays are anticipated.

• UTC, WSDOT, and affected local jurisdictions should coordinate to evaluate railroad crossing locations that are considered by WSDOT to be operationally sensitive to increases in train traffic, to identify appropriate mitigation measures, possibly including upgrading passive crossings to active safety crossings, rerouting high-traffic routes to use existing grade-separated crossings, adding U-turns to allow drivers to easily access alternate routes, and/or installing grade-separated crossings (bridge or underpass).

Both of these studies should be modeled after and coordinated with the study to be undertaken by the Washington State Legislature's Joint Transportation Committee (JTC) to investigate road-rail conflicts in Washington cities. The goal of the JTC study is to recommend a corridor-based process to prioritize projects addressing the impacts of increased rail traffic. The study is scheduled to be completed by December 1, 2016 (JTC 2015)."

A 2014 study conducted by the Washington State Department of Ecology (Ecology) stated that an average of 18 unit trains of crude oil currently pass through the City of Washougal each week. (Exhibit 0064: Washington State 2014 Marine and Rail Transportation Study, Washington State Department of Ecology, Figure 17 on page 42 and Table 5 on page 43; March 1, 2015, https://fortress.wa.gov/ecy/publications/documents/1508010.pdf.). This same study contained a projection that the number of unit trains using the rail transportation corridor could increase significantly if proposed crude oil facilities in Skagit

County, Grays Harbor, Longview and Vancouver go online. Exhibit 0064: Washington State 2014 Marine and Rail Transportation Study, Washington State Department of Ecology, Figure 19 on page 44 and Table 4 on page 40; March 1, 2015, https://fortress.wa.gov/ecy/publications/documents/1508010.pdf.) The cumulative impact of this increased rail traffic would be a significant risk factor for the City of Washougal. The DEIS does not contain an adequate analysis of the risk to the City of Washougal that would result from approval of the proposed action. Additional study was necessary and not done.

Conclusion:

To date, adequate studies have not been completed to identify potential rail transportation impacts within the City of Washougal or measures that could mitigate such impacts to a level of insignificant risk to the health and safety of the citizens of Washougal. At minimum, the two studies described in the DEIS, as stated above, should be completed and additional mitigation measures included prior to a recommendation for approval of this project.

4. Topic: Washougal Critical Infrastructure/Key Assets

Facts:

Chapter 3.15.1 of the DEIS (Affected Environment, Impacts and Mitigation Measures analysis) states: *"Since rail and vessel transportation would not affect non-emergency medical services, wastewater, water supply, solid waste, and communication utilities, impacts to these services and utilities were not included in the analysis."* Consequently, impacts on the City of Washougal utilities, including drinking water, wastewater management and other critical infrastructure were not included in the analysis.

Figure 2 identifies the City of Washougal's critical infrastructure and key assets (CI/KA) that reside within the one-mile wide rail corridor study area (Patriot Technical Consultants VEDT DEIS review comments, Figure 2 on page 6, submitted to the City of Washougal, Washington on December 21, 2015). Figure 2 clearly illustrates that much of the City's CI/KA are at risk and could be impacted should a crude oil unit train derailment occur within the City, including:

- Government administration facilities;
- Public safety facilities;
- Public works facilities;
- Drinking water well heads and fields;
- Storm water management system;
- Electric power and gas facilities; and
- Electric power and gas transmission lines.

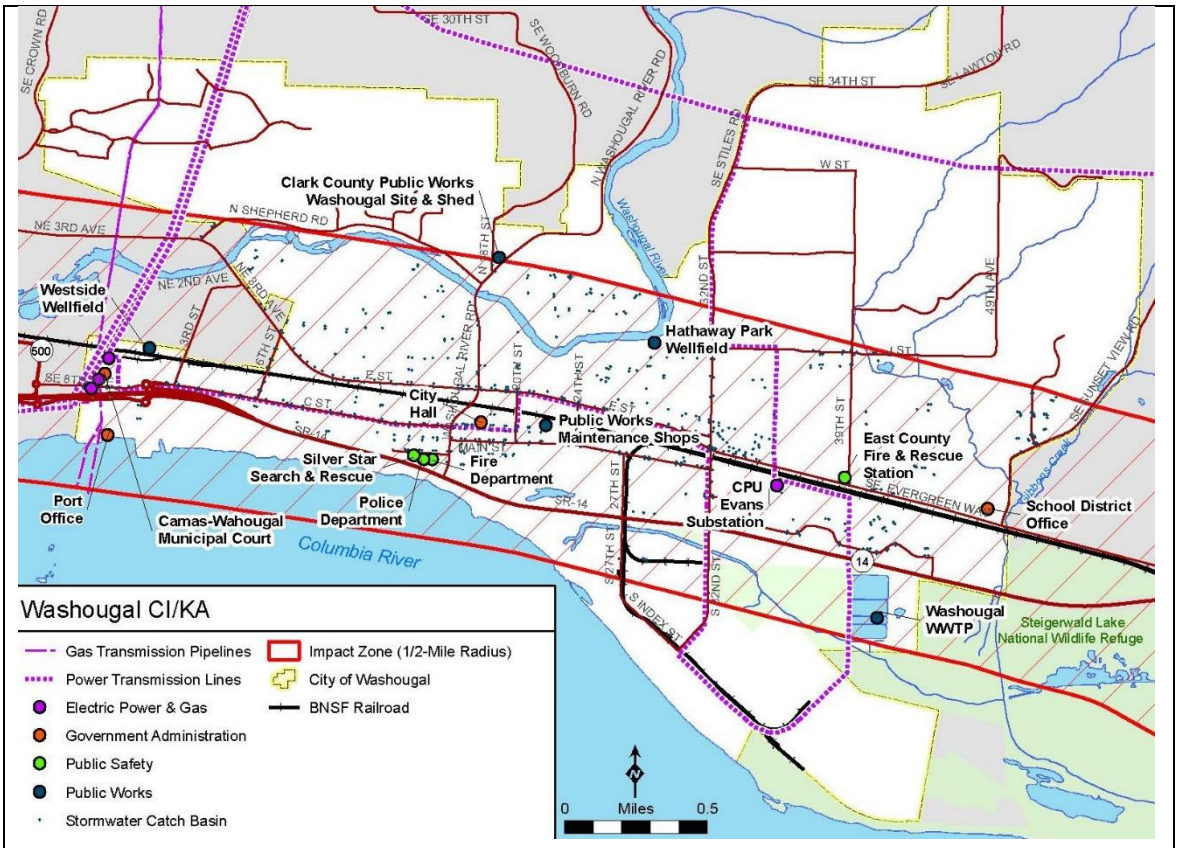


Figure 2. Washougal Critical Infrastructure/Key Assets

Conclusion:

The City believes its utilities, including drinking water, wastewater management and other CI/KA could be impacted by a crude oil unit train derailment and spill within its jurisdiction. These impacts were not adequately studied or mitigated by the VEDT. The City requests EFSEC require a risk assessment be done of its CI/KA, prior to any final decision on the VEDT adjudication. This study should include mitigation measures and identify feasible funding to pay for any mitigation measures.

5. Topic: Emergency Responder Capabilities on Rail Transportation Corridor

Facts:

Chapter 3.15.11 of the DEIS (Affected Environment, Impacts and Mitigation Measures analysis) states: "*The Applicant conducted an initial assessment of impacts to public services and utilities using information from websites, emergency response plans, emergency preparedness information, and land management plans published by the City of Vancouver, Clark County, the Port of Vancouver, VPD, VFD, North Dakota Department of Emergency Services, Montana Department of Environmental Quality, USCG, BNSF Railway, and Clark County Local Emergency Planning Committee. EFSEC reviewed and validated the results of the Applicant's initial analysis and supplemented the analysis with information obtained through meetings and correspondence with the VFD <u>and other emergency service and utility providers</u>.*"

This Chapter of the DEIS provides a good overview of the tactical, logistical and planning challenges that a worst case scenario crude oil unit train derailment would present. However, it does not analyze the actual capabilities of local emergency responders who must provide fire and rescue protection along the rail transportation corridor. The VEDT fails to provide a gap analysis regarding those capabilities or to recommended necessary mitigation measures for closing any gaps and reducing risks to the health and safety of Washington State citizens along the rail corridor to a "minimal" level.

Conclusion:

The VEDT has failed to provide a risk assessment and capabilities gaps analysis for all local fire agencies along the rail transportation corridor. Such an analysis should identify any potential gaps in emergency response capabilities and recommend sufficient mitigation measures for closing any gaps and reducing the risks these crude oil unit trains present.

This study should be done in coordination with BNSF and state emergency response agencies. Local emergency responders should be compensated by the applicant for their time to participate in this process. The absence of this study is a fatal flaw.

6. Topic: Traffic Studies and Mitigation Measures

Facts:

Chapter 3.15.2.2 of the DEIS (Affected Environment, Impacts and Mitigation Measures analysis) states: *"Delays to emergency response can result in harm to human health and property. Impacts to individuals and communities along rail corridors from delays in emergency response can result in deterioration in expected outcome for ambulance patients, worsening of fire damage from delayed fire truck response, reduced likelihood for apprehension of suspects from delayed police response, and additional stress for emergency responders and victims (FRA 2006). The additional four unit trains per day associated with the proposed Facility would increase gate downtime by between 15 and 26 percent along the Columbia River Alignment. While emergency service providers currently have the potential to be delayed by existing train traffic, an increase in delays could constitute a major impact to emergency responders."*

Conclusion:

As stated above, the two studies described in Topic 3 should be completed prior to the EFSEC adjudication decision to reduce the impacts to transportation.

7. Topic: Mitigation Measures to Reduce Risks Posed by Increased Number of Trains

Facts:

Chapter 3.15.5 of the DEIS (Affected Environment, Impacts and Mitigation Measures

analysis) states: *"The design features and BMPs the Applicant proposed to avoid or minimize environmental impacts during construction, operations and maintenance, and decommissioning are assumed to be part of the Proposed Action and have been taken into account during the analysis of environmental impacts to public services and utilities in this Draft EIS. EFSEC has identified the following additional mitigation measures to reduce impacts to public services and utilities that would require coordination with others:*

• Encourage BNSF to make SECURETRAK, (a real-time GIS tracking program for crude-by-rail trains for use by state and/or regional fusion centers,) available to emergency response vehicles in areas with at-grade crossings along the proposed rail route in Washington. BNSF should provide grants to those jurisdictions that would require technology upgrades and training in order to effectively use SECURETRAK.

• Investigate the need for and feasibility of constructing new grade-separated railroad crossings in cities along the proposed rail route to reduce impacts to emergency response times from increased train traffic and excessive gate downtimes. Such studies could be funded in part by BNSF as is currently being done for a mayor-appointed task force conducting a similar investigation in Edmonds, Washington (My Edmonds News 2015). Study participants should include BNSF, UTC, WSDOT, and affected local jurisdictions and emergency responders. See Section 3.14.5 for a discussion of mitigation for at-grade crossings. This study should be modeled after and coordinated with the JTC study to investigate road-rail conflicts in Washington cities scheduled to be completed by December 1, 2016."

BNSF has reported an average of 18 unit trains of crude oil currently pass through the City

of Washougal each week (Exhibit 0064: Washington State 2014 Marine and Rail Transportation Study, Washington State Department of Ecology, Figure 17 on page 42 and Table 5 on page 43; March 1, 2015, https://fortress.wa.gov/ecy/publications/documents/1508010.pdf. An increase of 4 unit trains per day, 28 per week, due to the proposed project could have a significant impact on emergency response vehicle response times within the City of Washougal.

Conclusion:

The City of Washougal strongly encourages EFSEC to require both of the mitigation measures specified in Chapter 3.15.5 of the DEIS prior to any adjudication decision. Public review of these studies and their mitigations are necessary to determine if the VEDT adequately mitigates the emergency response vehicle delay impacts that would be caused by the proposed project.

8. Topic: Unit Train Speed in Rail Transportation Corridor

Facts:

Chapter 4.2.4.2 of the DEIS describes the nationwide rail speed restrictions, but does not apply them to the Columbia River rail transportation corridor.

Conclusion:

The VEDT in its DEIS should have included speed limit mitigation for trains in the Columbia River rail transportation corridor, particularly in and around populated areas, such as the City of Washougal. They failed to do so. While EFSEC does not have authority to unilaterally establish reasonable crude oil unit train speed limits in these areas, EFSEC in its adjudication should refuse to approve the VEDT without reasonable, enforcable

speed limits with BNSF and the Applicant as a condition for recommended approval of the proposed project.

9. Topic: Training for First Responders in Rail Transportation Corridor

Facts:

Chapter 4.2.4.2 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) identifies rail industry safety standards and related federal regulations with which BNSF has agreed to comply. This section of the DEIS states that BNSF has offered to provide the following emergency response training and community outreach as mitigation measures to reduce the impact to emergency response agencies from unit trains of crude oil passing through their jurisdictions:

- *"Specialized Crude by Rail First Responder training at the Association of American Railroads Transportation Technology Center Inc. (TTCI) in Pueblo, CO;*
- *Tuition reimbursements to train emergency responders at TTCI; and,*
- *A near real-time geographic information system (GIS)–based tracking application (SECURETRAK) that allows federal, regional, state, and local emergency responders to access crude oil unit train locations."*

The City of Washougal believes these mitigation measures would help reduce the risk associated with crude oil unit trains passing through its jurisdiction. It is important that this emergency responder training support be on going so emergency responders are able to maintain the critical skills they would need when responding to a rail emergency.

Conclusion:

The City of Washougal believes that EFSEC, at a minimum, should require that the

applicant ensure that BNSF will continue to provide these mitigating measures to ensure emergency response agencies along the rail transportation corridor annually for as long as crude oil unit trains continue to use their track. Participating agencies should be reimbursed by BNSF for all costs related to attending this training, including employee overtime and backfill costs. The failure to provide specific, enforceable funding levels should be a condition precedent if the VEDT otherwise warrants approval.

10. Topic: Accident Prevention and Response Plans

Facts:

Chapter 4.3 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) lists the critical elements of an emergency response plan. It states: *"A contingency plan outlines the actions necessary to ensure a rapid, aggressive, and well-coordinated response to an oil spill. Critical elements of these plans include:*

- *Notification and callout procedures to ensure response teams and resources are activated immediately;*
- *Identification of spill management teams necessary to manage a spill or incident response;*
- *Analysis of the planning standards and worst-case spill volume to assess the necessary response needs;*
- *Identification of crude oil types and properties that could be involved in a system spill;*
- *Contracts with primary responders to provide response equipment and personnel necessary to respond; and*

- *Commitment for drills to test the plan.*

Response plans are designed to detail specific response actions for a range of spill scenarios, pre-identify sensitive resources at risk of injury from oil spills, and provide prioritized lists of tactical response strategies."

The City of Washougal agrees there is a critical need for a comprehensive and coordinated emergency response plan for crude oil unit trains that use the rail transportation corridor. The planning process should focus on the cities that lie along the rail corridor.

Conclusion:

EFSEC should require that the VEDT has a fully implemented and funded plan in conjunction with BNSF and in coordination with local and state emergency response agencies. This plan should include contracts with primary responders, including with local fire departments, to provide response equipment and personnel necessary to respond to an emergency. This plan should also include annual exercises to evaluate and update the plan. The plan should further require compensation of emergency providers by the Applicant for their time to participate in this planning and evaluation process. This fully funded and implemented plan is a necessary mitigation measure to reduce the risk these trains present to the City.

11. Topic: Capabilities Assessment of Fire Departments in Rail Transportation Corridor

Facts:

Chapter 4.3.8.4 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) states: *"The Applicant has begun consultation with local responders to identify gaps in existing firefighting equipment and would provide training opportunities*

at the nationally recognized Texas A&M Engineering Extension Service's Emergency Training Services Institute. The operation's Fire Prevention and Response Plan would be developed in compliance with WAC 296-24-567. The written plan would be kept in the workplace and made available for employee review."

This local emergency response agency gap analysis appears to include only the Vancouver Fire Department and does not include other fire departments along the rail transportation corridor. Chapter 4.3.9 provides a brief assessment of the BNSF fire response plan and capabilities for the rail transportation corridor.

Conclusion:

The DEIS did not include an adequate impact and capabilities gap analysis for all local fire agencies along the rail transportation corridor. The analysis addressed only the Vancouver Fire Department. This study should be done in coordination with BNSF and state emergency response agencies. Emergency responders should be compensated by the applicant for their time to participate in this planning and evaluation process. See Topic 10.

12. Topic: Risk Analysis of Unit Train Derailments Resulting in Fires and/or Explosions

Facts:

Chapter 4.4 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) states: *"The independent analysis also addressed concerns identified during scoping related to potential derailments and crude oil spills along the rail corridor and potential vessel crude oil spills along the vessel corridor. The independent analysis estimated the likelihood of incidents (derailments and vessel groundings, allisions, and*

collisions), the likely range of crude oil spill sizes that could result from these incidents, and the possible spread if a spill reached the water. These estimates have been used to assist in determining a range of potential spill scenarios for use in the impact analysis presented in Section 4.7. There is insufficient data on spill-related fires and explosions to support a meaningful statistical analysis of the likelihood of fire and/or explosion resulting from a spill or accident, and therefore fire and explosion risk was not addressed in the independent analysis. However, the response actions and potential impacts from such events are discussed in Sections 4.6 through 4.7.

The independent analysis also provided EFSEC with the likelihood of derailments along various geographic segments of the rail corridor based on track curvature, flash flood potential, detector spacing, and train speeds, presented in Appendix E. The results of this geographic analysis were not used in the impact analysis in Section 4.7; rather, it was conservatively assumed that impacts could occur at any location along the inbound rail corridor although potentially at different frequencies over time."

Thus, the DEIS did not quantify the likelihood of a spill and related fire and explosion resulting from a unit train derailment. The results from the independent analysis provided EFSEC with the likelihood of derailments along various geographic segments of the rail transportation corridor, but EFSEC chose not to use this information in its impact analysis. It is unclear whether or not a risk assessment has been done for the rail transportation corridor that passes through the City of Washougal.

Conclusion:

The City of Washougal believes rail transportation corridor risk assessments must be

specific to a particular geography and receptor population to be valid. The City believes there are significant risk factors associated with crude oil unit trains that pass through its jurisdiction. The City requests that EFSEC require completion of a geography and population specific risk assessment be conducted for the rail transportation corridor within its jurisdiction. Unless this assessment indicates that the health and safety risks to the citizens of Washougal are insignificant after appropriate mitigation measures are adopted, the proposed project should not be approved.

13. Topic: Analysis of Risks of Unit Train Accidents in Rail Transportation Corridor

Facts:

Chapter 4.4.2 of the DEIS bases the assessment of a derailment on historical data, which does not address the specifics of the Columbia River rail corridor, particularly in the City of Washougal. For example, train speed, which can affect derailment probability and consequences, was not considered. The City of Washougal understands that maximum crude oil-by-rail unit train speed is governed by the Federal Railroad Administration; however, this does not mean that the rail company cannot commit to maintain lower maximum speeds in populated areas.

Conclusion:

The derailment impact analysis should have addressed the train conditions specifically in cities along the rail transportation route, including Washougal. An analysis should be conducted of the risk of derailment or other types of accidents, using a series of maximum speeds in and around cities and at grade level crossings within the State of Washington. The VEDT should not be approved unless appropriate mitigation measures can be shown

to reduce the risk to the citizens of Washougal to insignificant levels.

14. Topic: Risk Analysis of Unit Train Derailments Resulting in Fires and/or Explosions

Facts:

Chapter 4.5.1.3 of the DEIS describes several types of fire and explosion events that can occur with the spill of crude oil, but does not describe the probability or consequences of such events in regard to public safety and emergency response capabilities.

Conclusion:

The DEIS did not describe the probability and consequences of fire and explosion events from crude oil train derailments in cities such as Washougal. The project should not be approved without this information.

15. Topic: Capabilities Assessment of Local Fire Departments in Rail Transportation Corridor

Facts:

Chapter 4.6.4.2 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) states: *"The availability of large quantities of foam and water and the ability to quickly apply and reapply foam to a crude oil fire is critical to maintaining an adequate foam blanket. For example, a single tank car fire may require 600 gallons of foam concentrate and 38,000 gallons of water applied at a target rate of 660 gallons per minute (gpm) for 15 minutes, and must be reapplied as necessary to extinguish the fire. To extinguish a three–tank car fire, responders may require 1,500 gallons of foam concentrate and 80,000 gallons of water applied at a target rate of 1,680 gpm for 15 minutes, and must reapply the foam blanket as necessary (Office of Fire Prevention &*

Control 2014). DOT regulations (49 CFR 179) require that tank cars be manufactured to withstand a minimum of 100 minutes in an oil pool fire without failure. To prevent the spread of fire from one tank car to the next, sufficient equipment and enough trained personnel must begin applying foam to affected cars prior to that 100-minute mark. Given the distance of some rural communities from mutual aid resources and the time it would take for state mobilization to occur, in some situations there may not be sufficient personnel in place in time to stop the original fire from spreading to the surrounding tank cars. A larger fire would demand more fire protection resources to ensure the safety of human life, property, and the environment. Besides the manpower needed to operate the equipment and handle logistics, backup support would be required to handle an extended operation due to the physically intensive nature of a large crude oil fire response. Even if the fire chief, or other Incident Commander, requests state mobilization, the local fire jurisdiction(s) would remain on the scene throughout the duration of the emergency response effort."

This chapter of the DEIS provides a good overview of the tactical and logistical challenges a worst case scenario crude oil unit train derailment would present, but it does not analyze the actual capabilities of local emergency responders or identify any potential gaps in those capabilities.

Conclusion:

To date, the VEDT has not provided a comprehensive gap analysis of emergency response capabilities of Camas/Washougal Fire Department and other fire departments along the rail transportation corridor. This analysis should have been a basic component of the VEDT

DEIS and should have focused on the necessary response capabilities for a rail emergency involving a crude oil unit train and should make recommendations on how to fill any capability gaps. The study should also have identified funding to pay for any mitigation measures. The VEDT project cannot be deemed adequately safe without this analysis.

16. Topic: Mitigation Measures for Unit Train Derailments

Facts:

Chapter 4.6.4.3 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) states: *"Unit trains typically move from one location (e.g., shipper's production facility or trans-loading facility) to a single destination (e.g., petroleum refinery). Given the usual length of these trains (over a mile long), derailments can cause road closures, create significant detours, and require response from more than one direction to access the scene of the incident. In the event of an incident that may involve the release of thousands of gallons of product and ignition of tank cars of crude oil in a unit train, most emergency response organizations will not have the available resources, capabilities or trained personnel to safely and effectively extinguish a fire or contain a spill of this magnitude (e.g., sufficient firefighting foam concentrate, appliances, equipment, water supplies). Responses to unit train derailments of crude oil will require specialized outside resources that may not arrive at the scene for hours; therefore it is critical that responders coordinate their activities with the involved railroad and initiate requests for specialized resources as soon as possible. These derailments will likely require mutual aid and a more robust on-scene Incident Management System than responders may normally use. Therefore, pre-incident planning, preparedness and*

coordination of response strategies should be considered and made part of response plans, drills and exercises that include the shippers and rail carriers of this commodity.

To help determine current preparedness of response personnel and equipment in the vicinity of the proposed Facility and along the rail corridor, EFSEC conducted discussions and surveys with fire departments in these areas. Of the 34 fire departments/fire protection districts invited to participate in EFSEC's survey, 12 responded, resulting in a 35 percent response rate. Of the responding jurisdictions, the majority are volunteer agencies, where at least 75 percent of the agency's firefighters are unpaid members of the community.

While the responding jurisdictions were evenly split in describing their service area as rural or urban, most (82 percent) answered that the railroad in their jurisdiction is located near populated areas. Despite this, the survey results indicate that less than half (42 percent) of responding jurisdictions currently have an ESF 10 plan that includes response to a train derailment with fire, and only 33 percent of jurisdictions currently have a plan for large-scale evacuations. Similar percentages were reported in Ecology's study (Ecology 2015a). One fire agency responding to EFSEC's survey noted that a plan to respond to a train derailment and associated fire is currently in development."

The DEIS survey provides a general overview of the emergency preparedness gaps identified by local emergency responders should they have to respond to a worst case scenario crude oil unit train derailment in their jurisdiction. It identifies the need for additional training, equipment and staffing for local fire departments along the rail transportation corridor. It does not provide any recommended mitigation measures to fill these gaps or how such measures might be funded.

Conclusion:

The City of Washougal strongly encourages EFSEC to require the mitigation measures identified in Chapter 4.9. These measures would help address emergency preparedness gaps.

17. Topic: Fire Department Capabilities Gap Analysis and Risk Reduction

Facts:

Chapter 4.7.16.2 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) states: "*In the event of a small to medium crude oil spill along the rail corridor, impacts to public services and utilities could range from minor to major depending on the location of the spill and the available resources of the responding service agencies. Impacts would be greater in areas where the mutual aid partners of a service agency are located farther away (rural areas), in areas where the derailment and/or associated crude oil spill restrict responder access to other parts of the service area, and in areas with denser population. Impacts would also be greater to service agencies with lower levels of training and existing response equipment needs. Major impacts to the City's fire protection services could occur in the event of a medium-sized or greater spill because of the proximity of the rail corridor to residences, commercial and industrial areas, and transportation corridors.*

Impacts to emergency fire, police, and medical services could occur if a derailed or stopped unit train blocked areas only accessible by at-grade crossings (see Section 4.7.9.2). In the event of a large to very large crude oil spill along the rail corridor, EFSEC survey results suggest that responding fire agencies would consider additional resources

beyond current personnel and equipment levels and additional responder training important to allow them to appropriately respond to the event while still maintaining capacity to respond to other potential calls for service within their service area. A large to very large crude oil spill in any location along the rail corridor would have major impacts to responding service agencies (Figure 3.15-1). While the local fire chiefs or other Incident Commanders would likely request state mobilization under these scenarios, the local fire jurisdiction(s) would remain on the scene throughout the entire duration of the incident. Because the local fire agency's resources would be engaged in an extended response operation, extended delays to response to service calls could occur, resulting in major service impacts.

As described in Section 4.6.4.2, a large fire and/or explosion along the rail corridor could require extensive response, resulting in moderate to major impacts to public services and utilities depending on the location, extent of the fire, force of the explosion, potential for additional fire and/or explosions, need for evacuation, and number of injuries requiring medical services. If the local fire agency's resources are engaged in an extended response operation, delays to fire protection and emergency medical response for other needs in the service area could occur, resulting in major temporary service impacts. Similarly, if local police are required to coordinate an evacuation and maintain a restricted area, delays in response to other needs in the service area could occur, resulting in major temporary service impacts. If a train derailment occurred in an area that restricted or delayed access to other areas potentially requiring fire, police, or medical services, moderate to major temporary impacts to service provision could occur in these areas."

This chapter of the DEIS provides an overview of the impacts from oil spills (both with and without a fire or explosion) to rural and urban areas along the rail transportation corridor, including the City of Washougal. The City agrees that major impacts to fire protection services could occur in the event of a medium-sized or greater spill because of the close proximity of the rail transportation corridor to residential, commercial and industrial areas. Unfortunately the VEDT has not prepared a detailed risk assessment or emergency response capabilities gap analysis for the City of Washougal or other cities along the rail corridor.

Conclusion:

The VEDT should have conducted a detailed risk assessment and emergency response capabilities gap analysis for all local fire agencies along the rail transportation corridor. This study should have identified any potential gaps in emergency response capabilities and recommend mitigation measures for closing any gaps and reducing risks these crude oil unit trains present. The assessment should have identified how any recommended mitigation measures would be funded. This study should have been done in coordination with BNSF and state emergency response agencies. Local emergency responders should have been compensated by the applicant for their time to participate in this process. Without this detailed study and identification of appropriate mitigation measures, all vetted by public review and hearing, the VEDT cannot meet its burden of proof that it is safe under EFSEC laws and regulations.

18. Topic: Required Mitigation Measures for Spills, Fires and Explosion of Crude Oil

Facts:

Chapter 4.9 of the DEIS describes several potential mitigation measures to address the risks of crude oil spill, fire and/or explosion related to unit train incidents. However, the DEIS did not specify which measures will be required and implemented.

Conclusion:

The DEIS should have described the required mitigation measures that will be implemented and their effectiveness so that the City of Washougal can understand the potential public safety impacts to its citizens. Thus, the VEDT has not met its burden of proof.

19. Topic: Required Mitigation Measures for Spills, Fires and Explosion of Crude Oil

Facts:

Chapter 4.9 of the DEIS (Crude Oil Safety Considerations, Potential Release Scenarios and Impact Analysis) states: *"Industry standards and measures committed to by the Applicant to avoid and minimize the risk of a crude oil spill, fire, and/or explosion are presented in Section 4.2.4. Because EFSEC has made no final decisions regarding the adequacy of the current mitigation proposals from the Applicant, additional mitigation could be identified during the site certification process, permitting activities, or further environmental review. EFSEC has identified the following additional mitigation measures for consideration by the state legislature, and other federal, state, and local agencies and private organizations to address the risk of and impacts from a crude oil spill, fire, and/or explosion:*

- *Coordinate with potentially affected first responder agencies and contribute support to implement a plan that would facilitate: 1.) Training for full-time and voluntary first responders with jurisdiction along the delivery rail route in*

Washington and in the vicinity of the Port in the appropriate methods for combating volatile crude oil fires and explosions. Training should be modeled after or coordinated with similar training programs to be developed by the University of Findlay, the International Association of Fire Chiefs, and the Center for Rural Development (in cooperation with the Security and Emergency Response Training Center in Pueblo, Colorado) using Assistance for Local Emergency Response Training (ALERT) grants awarded by PHMSA; 2.) Purchase of additional crude oil spill and crude oil fire and explosion response equipment to be stationed at appropriate locations along the delivery rail route and at the Port.

- *EFSEC and the Applicant should communicate with LEPCs along the rail corridor and in the vicinity of the proposed Facility to determine or update the following information: LEPC contact information (phone, email, and website), county/cities included in the LEPC plans, date of last LEPC plan update, regularity of LEPC meetings, LEPC funding status, LEPC emergency response training status, and components of LEPC emergency plan including dangers and/or responses specifically affecting low-income or minority populations in the LEPC area.*
- *EFSEC and the Applicant should coordinate with the State Fire Defense Committee to update the Washington State Fire Services Resource Management Plan to ensure that the plan can facilitate the provision of adequate mobilization of personnel trained to address crude oil spill, fire, and/or explosion incidents anywhere along the rail and vessel corridors and at the proposed Facility, and to ensure that the plan can facilitate the provision of adequate mobilization of personal protective*

equipment and response equipment for these incidents.

- *EFSEC, the Applicant, and the rail transporter of crude oil should coordinate with the State Fire Defense Committee, LEPCs, and local emergency responders along the rail corridor to ensure the development of specific evacuation plans for each residential community of greater than 50 residents within 0.25 mile of the rail route and within 1 mile of the proposed Project at the Port. This plan should include written instructions to all residents and emergency communication protocols for them to follow in the event of a crude oil spill, fire, or explosion event."*

Conclusion:

The mitigation measures identified above would be helpful in addressing the emergency preparedness gaps identified in Chapter 4.6.4.3. However, it is unknown if they are technically sufficient operational safeguards to protect the public health, safety and welfare of the citizens of the City of Washougal.

20. Topic: Quantitative Assessment of Crude Oil Transportation Risk to Public Safety

Facts:

Chapter 5.9.2 of the DEIS notes that the proposed action along with existing and future train traffic *"…has the potential to increase the rate of accidents and fatalities to pedestrian trespass or motorists at at-grade crossings along the rail corridor since a greater number of trains would mean a greater number of potential conflicts."* This general statement does not provide a basis for judging the magnitude of the impact. Chapter 5.9.2 of the DEIS refers the reader to mitigation measures described in Chapter 3.8.5 of the DEIS. These mitigation measures consist of very general categorical

statements of future plans that would be developed to lower the risks at the proposed Port of Vancouver facility. The mitigation measures proposed in Chapter 3.8.5 of the DEIS that would be taken to lower the risks to the rail transportation corridor consist of the following vague language:

- *"EFSEC recommends further discussions or a diagnostic review with BNSF, UTC, and affected local jurisdictions concerning crossings along the rail corridor within Spokane, Cheney, Lyle, Pasco, Mesa, Bingen, and White Salmon to determine if these crossings are protected at the appropriate level."*
- *"Appropriate measures should be implemented to prevent pedestrian and vehicular accidents, incidents, injuries, and fatalities at passenger stations or at-grade crossings along the inbound rail route in consultation with EFSEC. Such measures include installing signs, signals, or other visual devices to warn of approaching trains; installing infrastructure at pedestrian and vehicular crossings to improve the safety of crossing railroad tracks; potential closures of at-grade crossings and/or grade separation; and installing fences to prohibit access to railroad tracks."*

These proposed mitigation measures to protect the citizens of Washougal and other cities along the rail transportation corridor would put the work of developing specific measures well into the future, after the proposed project is approved and underway. There is no mention of how these optional mitigation measures would be funded. There is no assurance that any of these proposed measures would ever be implemented within the City of Washougal unless they are funded and undertaken solely by the City of Washougal.

This approach to specifying mitigation measures is unacceptable under the EFSEC standards.

Conclusion:

The DEIS should have calculated and described the magnitude of this increase in cities along the rail transportation corridor, including Washougal. This description should have been based on a quantitative assessment of risk, using a variety of proposed mitigation measures. This would have allowed the City of Washougal and the public to consider the levels of risk associated with the various mitigation scenarios and to provide more meaningful input to the review process.

The EFSEC adjudication process should require a detailed review and detailed mitigation actions that will bring the risk of a crude oil unit train accident within the rail transportation corridor to an insignificant level. The City of Washougal should be assured that all reasonable steps will be taken to protect its citizens. The funding source and schedule for implementation of each required mitigation action should be clearly stated. The failure to do so warrants denial of the VEDT.

21. Topic: Calculation of Risk from Increased Number of Unit Trains

Facts:

Chapter 5.19.2 of the DEIS states: *"An increase in the number of trains transporting crude oil associated with the Proposed Action and existing and foreseeable future actions could result in an increased risk of derailment, in turn causing an increased risk of spills, fires, or explosions simply because more trains would be transporting crude oil."*

This general DEIS statement does not provide a basis for judging the increased risk impact

of the VEDT. This DEIS statement also understates the potential of risk by using the word **"could"**. A responsible statement regarding risk would be *"…foreseeable future actions* ***will*** *result in an increased risk…"*.

Conclusion:

The VEDT should have described the magnitude of this increase in risk to cities such as Washougal. This description should be based on a quantitative risk methodology applied in the context of various proposed risk mitigation measures. The failure to do so warrants denial of the VEDT.

22. Topic: Assessment of Unit Train Risks and Fire Department Capabilities

Facts:

All risks associated with crude oil unit trains are assessed in detail within Appendix B, Chapter 7 of the DEIS, but only for that portion of the rail transport corridor that lies within the city limits of Vancouver. It fails to address the rail transport corridor that extends beyond this area. While emergency response capabilities of the Vancouver Fire Department are looked at, there is no assessment of the capabilities of other fire departments that would respond to a crude oil unit train emergency along the rail transportation corridor, including the Camas/Washougal Fire Department.

The analysis includes the following mitigation measures that would serve to reduce identified risks:

- *"It is recommended that a formal at-grade crossing study be undertaken to analyze these risks in a detailed manner and to identify appropriate recommendations.*
- *It is also recommended that a study be undertaken to determine if a reduction in*

train speeds would be warranted for crude oil trains traveling through at-risk areas within the VFD response area."

The VEDT does not include a comprehensive gap analysis of the response capabilities of the Vancouver Fire Department for a rail emergency involving a crude oil unit train or make recommendations on how to fill any capability gaps.

Conclusion:

VEDT should have prepared the two studies discussed in Topic 3. The scope of these studies should have included all urban areas along the rail transport corridor, including the City of Washougal, and should not have been limited to the City of Vancouver. These studies should be done in coordination with BNSF and appropriate state and local authorities.

The VEDT should have provided a comprehensive gap analysis of emergency response capabilities of the Vancouver Fire Department and other fire departments along the rail transportation corridor. This gap analysis should focus on the necessary response capabilities for a rail emergency involving a crude oil unit train and should include recommendations on how to fill any capability gaps. The study should also identify funding to pay for any mitigation measures that would help close identified gaps. Thus, the VEDT has not met it burden of proof that the proposal meets EFSEC standards.

23. Topic: Assessment of Unit Train Risks and Fire Department Capabilities

Facts:

The DEIS Appendix B, Chapter 9 states: *"The anticipated increase in crude oil trains operating within VFD's response area is a serious concern to the VFD. They have little*

direct experience with this type of response and have reported through survey responses and in meetings and communication during the preparation of this report that they would require considerable additional training, staffing, and equipment to be able to adequately respond to an incident involving a crude oil train. The Applicant and BNSF should provide VFD with this training, but it will take time and expense for VFD to free up staff and resources to acquire this training. It is not clear how this financing would be provided to VFD. The rail issues are by far the most serious issues to be dealt with by VFD, and this will require further communication with VFD, the Applicant, and involvement by BNSF."

The Camas/Washougal Fire Department has similar concerns as the Vancouver Fire Department about crude oil unit trains operating within its jurisdiction. This capabilities analysis clearly acknowledges that there are significant gaps in VFD emergency response training, equipment and staffing, but does not recommend appropriate measures for mitigating the risk. It suggests that further communication with the applicant and BNSF is required and that the studies identified previously be completed. The analysis makes no mention of having considered the capabilities of other fire departments.

Conclusion:

The applicant should have provided a comprehensive gap analysis of emergency response capabilities of the Vancouver Fire Department and other fire departments along the rail transportation corridor. This study should have focused on the necessary response capabilities for a rail emergency involving a crude oil unit train and should have made recommendations on how to fill any capability gaps. The study should also have identified funding to pay for any mitigation measures. Thus, the VEDT has not proven the proposal

meets EFSEC standards.

24. Topic: Mitigation Measures to Reduce Identified Risks of Crude Oil-by-Rail Transport

Facts:

The DEIS Appendix E, page 88-89 states: *"The various prevention measures may reduce the probability of incidents in which there is spillage or the potential for spillage, but it is still necessary to have sufficient response preparedness to mitigate the impacts of a spill. There are some specific issues of concern for response preparedness for CBR spills:*

- *Current regulatory thresholds on railroads in the US by FRA/PHMSA are such that there are no comprehensive oil spill response plans and no regulatory review, planning standards, exercises, training, or response organization management structure for these types of incidents.*
- *Contingency planning needs to take into account the remoteness and inaccessibility of some of the locations in which CBR spills might occur, though this challenge is similar to that for pipeline spills; areas with railroad lines in which there currently are inadequate response sources and planning may need to evaluate preparedness;*
- *Preparedness for the potential fires and explosions that might occur in populated areas is of particular concern due to the possibilities of human casualties;*
- *In instances in which a burning tank car(s) does not present an immediate danger to populated areas, fire officials may choose to allow the fire to burn rather than put first responders at undue risk; this may significantly reduce the amount of oil that is left in the environment, but may present a risk for ignition of wildfires;*
- *Responses to spills of Bakken crude and other more volatile shale oils, or to*

heavier bitumen blends should focus on the characteristics of these oils and their potential behavior when spilled in inland areas as well as into waterways or aquifers; spill responders are increasingly better trained to deal with incidents of this type; and

- *Bakken oil is not the only crude oil type that could burn in the event of a CBR derailment accident. Three recent incidents involving bitumen blends – dilbit and synbit – caused fires. The properties of the bitumen blends depend on the diluents used, which vary seasonally and regionally. More information about the potential flammability of these cargoes needs to be provided to spill responders.*

The challenges for response to CBR spills are not unlike those for pipelines with respect to remote and inaccessible locations, as well as populated, high-consequence areas. There are great differences, though, with respect to the oil types.

Because of the volatility of Bakken crude oil, the primary concern in the event of an actual or even a potential spill (e.g., a derailment) is the possibility of a fire and/or explosion in a highly populated area. Much of the attention for preparedness for Bakken crude spills has been focused on emergency response with respect to evacuations and firefighting.

Regions, such as the US states of Washington and New York, that have rather suddenly become CBR transport corridors, have determined that their first-responder emergency preparedness is severely insufficient in many cases local fire departments, which would generally be the first responders in a CBR derailment incident, are developing plans for massive evacuations and emergency responses to incidents that may occur in highly-populated areas."

This section of the analysis summarizes the very real risks that crude oil unit trains pose to urban areas such as the City of Washougal and the known gaps in emergency preparedness. Unfortunately it does not recommend specific mitigation measures to close these gaps and reduce the risk. Figures 3 and 4 below illustrate the significant risk to life the City is faced with due to these trains (Patriot Technical Consultants VEDT DEIS review comments, Figure 3 on Page 24 and Figure 4 on Page 25, submitted to the City of Washougal, Washington on December 21, 2015).

Conclusion:

The VEDT should have contained a risk assessment be completed for the City of Washougal. The assessment should identify and examine specific risks associated with crude oil unit trains that pass through the heart of the City. The risk assessment should focus on emergency preparedness and response actions that could be taken to protect the citizens of Washougal. The assessment should identify and recommend mitigation measures that will reduce the life risk crude oil trains pose to the City of Washougal. The study should also identify funding to pay for any mitigation measures. By these failures, the VEDT has failed to prove that the proposed project will have an insignificant impact to the health and safety of the citizens of Washington State, as required by the EFSEC regulations.

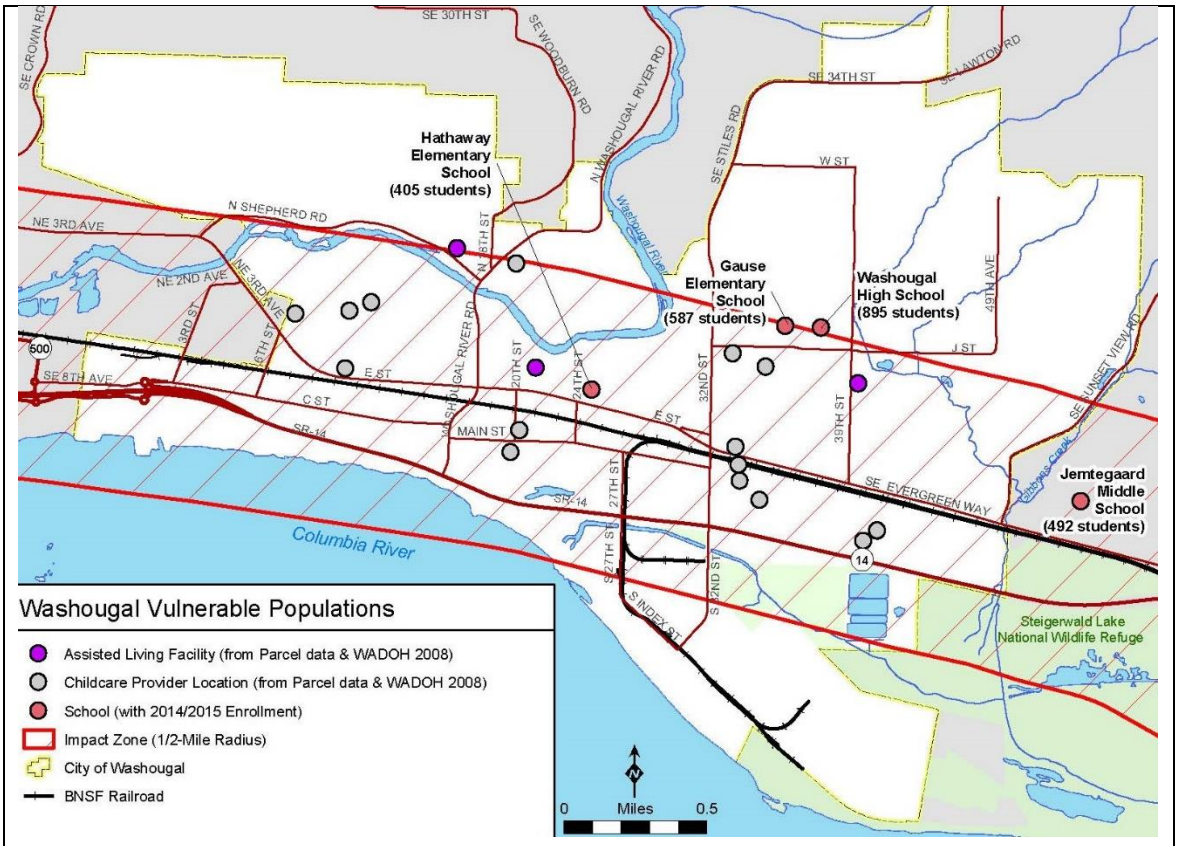


Figure 3. Washougal Vulnerable Populations

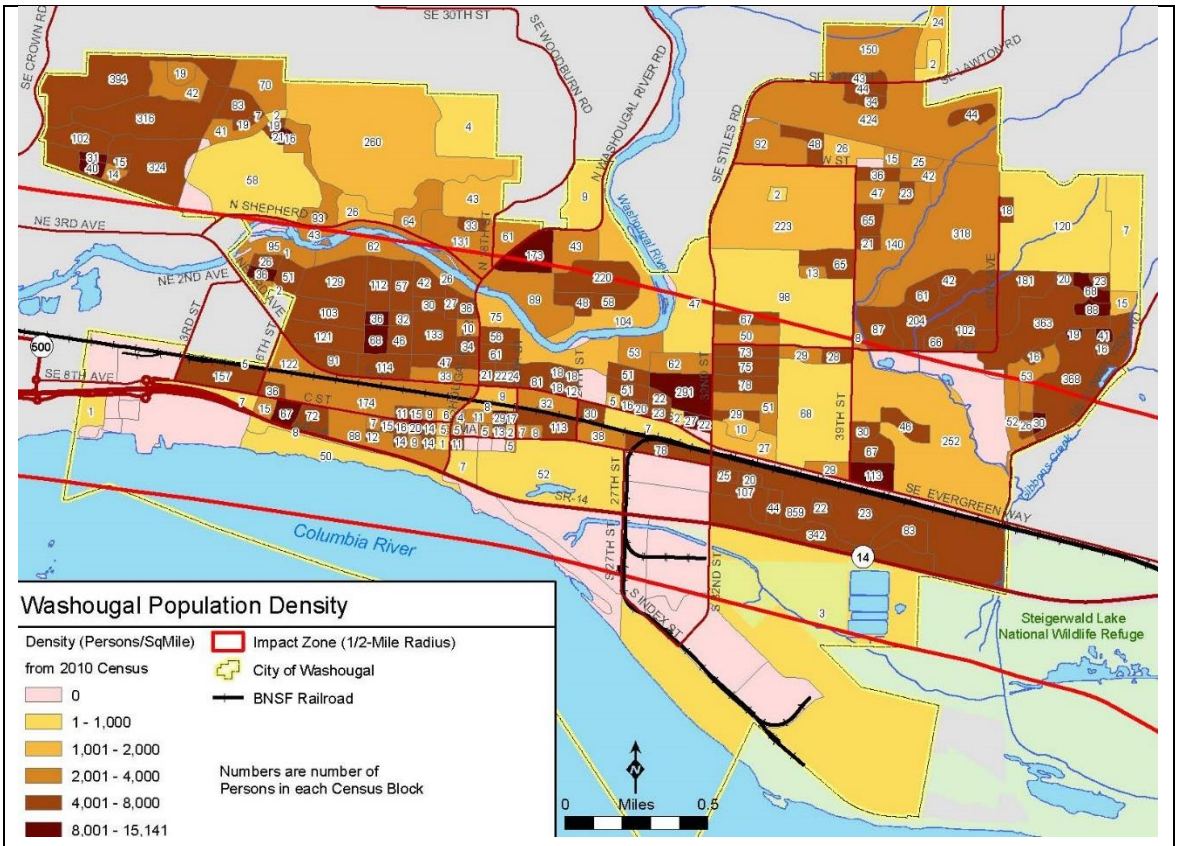


Figure 4. Washougal Population Density

25. Topic: Public Safety Impacts Along the Rail Transportation Corridor

Facts:

The rail spill risk analysis contained in the DEIS, Appendix E, only addresses environmental impacts. It does not analyze public safety impacts, as required by the SEPA and EFSEC regulations.

Conclusion:

A public safety rail spill risk analysis, with a similar level of detail as Appendix E, should be prepared for cities along the rail transportation corridor so cities such as Washougal can

judge the public safety and health impacts of the transport of crude oil-by-rail through their jurisdictions.

26. Topic: Malevolent Acts

Facts:

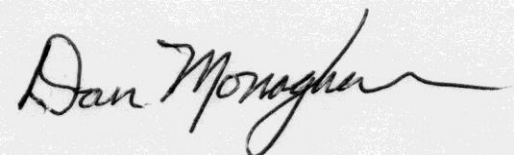
EFSEC's public safety regulations should be construed to require an analysis of the probability of malevolent or terrorist acts against the trains. It is clear that today's security environment and the wide range of threats to public safety cannot be ignored. The direct threat to the health and safety of the citizens of Washougal is based on potential incidents that involve the release of crude oil from rail cars, followed by fire or explosion. The cause of the release (accidental of malevolent act) is, to a large extent, irrelevant to the impact to citizens of Washougal and to the local emergency response capabilities.

Conclusion:

The EFSEC process should consider a range of credible, malevolent acts against crude oil unit trains as potential initiating events that could result in a release of crude oil and resulting fire or explosion that would endanger the citizens of Washougal and other cities along the rail transportation corridor. The probability of malevolent acts should be analyzed and appropriate mitigation measures should be proposed as part of the risk

assessment process. Barring such analysis and mitigation, the VEDT should be denied. I declare under the penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated this 13th day of May, 2016



Dan Monaghan for Patriot Technical Consultants

Attachments: Resume