



Introduction

In accordance with Federal and Washington Clean Air Acts requirements, the air quality in a given area is measured by the concentration of pollutants in the atmosphere. Air quality is a result of the types and amounts of pollutants in the atmosphere in addition to other factors such as surface topography and weather-related conditions. Air quality can directly and indirectly affect the environment and public health. Greenhouse gases (GHGs) are air pollutants that act to trap heat within the Earth's atmosphere. This fact sheet summarizes the potential impacts the proposed project would have on air quality and from GHGs.

What was studied?

The analysis considered the emissions of criteria air pollutants (such as particulate matter, volatile organic compounds (VOCs), and carbon monoxide) and GHGs related to the construction and operation of the proposed project. Additionally, emissions of criteria air pollutants and GHGs generated from the delay of vehicles near at-grade railroad crossings on the rail corridor (Anacortes Subdivision) were estimated. Criteria air pollutants are those for which a National Ambient Air Quality Standard (NAAQS) has been established, or pollutants that are precursors to the formation of other pollutants regulated by an NAAQS.

What was the study area?

Different study areas were used for the different types of emissions that were directly or indirectly related to the proposed project.

Direct Emission Analysis

- Proposed project site
- Proposed wetland mitigation site
- Proposed routes for delivery of construction materials
- Rail corridors in Washington, to and from the Shell Puget Sound Refinery (PSR)

See the Proposed Project Fact Sheet for a map of the site.

Indirect Emission Analysis

- Rail corridors (Anacortes Subdivision and Bellingham Subdivision from Burlington to the Skagit/Snohomish county line)

GHG Emissions Analysis

- Rail corridors from Shell PSR to the mid-continent area
- Existing marine vessel route to and from Alaska

How were impacts analyzed?

To assess the direct air quality impacts from the proposed project, the analysis estimated the emissions associated with construction activities. It also estimated the emissions from operations including train transport and fuel use. To assess the indirect air quality impacts from the proposed project, the analysis estimated emissions from idling vehicles delayed by trains near at-grade railroad crossings.

To assess the proposed project's impact to climate change, a GHG analysis estimated the increase in GHG emissions from using trains to transport crude and then estimated the decrease in emissions from marine vessels currently used to transport crude oil from Alaska. This analysis determined the net change in GHG emissions associated with the different methods of transporting crude oil.

What are the potential impacts?

Construction Impacts

During construction, the primary sources of emissions would be non-road construction equipment exhaust, fugitive dust from earthmoving operations, and on-road truck exhaust from hauling away and delivering materials to the project and wetland mitigation sites. Emissions would also result from workers' motor vehicles traveling to and from the construction sites.

Operation Impacts

The direct emissions associated with operation of the rail unloading facility would include a small amount of VOCs due to equipment leaks and wastewater treatment. No emissions of other criteria air pollutants are anticipated. The operational air emissions from the proposed project would not contribute enough air pollutant emissions to result in an exceedance of the NAAQS/Washington Ambient Air Quality Standards (WAAQS).

The operational air emissions from the proposed project would not contribute enough air pollutants to result in an exceedance of the NAAQS/WAAQS and, therefore, are not anticipated to result in public health effects. Emissions associated with delays at at-grade railroad crossings would be well below one ton per year for criteria pollutants. No direct emissions during operations are anticipated from the wetland mitigation site.

The proposed project would not affect GHG emissions from the Shell PSR. Emissions resulting from the refinement and consumption of products from the Shell PSR were not assessed because the refinery's operating capacity will not change as

a result of the proposed project. The crude oil shipped to the proposed unloading facility will replace deliveries from the Alaska North Slope currently delivered via marine vessel.

The transport of crude oil from the mid-continent area would result in a 93-percent increase of GHG emissions resulting from changing delivery of oil from tanker ships to rail. The annual emissions from oil tankers delivering oil to the Shell PSR is about 48,224 metric tons per year. The annual emissions from trains delivering oil to the Shell PSR would be about 93,211 metric tons per year. The net increase in GHG emission as a result of this change would be 44,987 metric tons per year.

Cumulative Impacts

The proposed project, combined with past, present, and reasonably foreseeable future actions, would have a cumulative impact on GHGs and nitrogen oxide (NOx) emissions. Reasonably foreseeable future actions that would increase rail traffic also increase the NOx emissions for all counties traversed by the trains. However, as of 2008, the U.S. Environmental Protection Agency (USEPA) has revised its emission standards for new and rebuilt locomotives that will lower emissions as older locomotives are replaced or rebuilt. Therefore, the emissions from each locomotive will decrease over time and overall NOx emissions would be anticipated to decrease.

GHG emissions as a result of proposed project operations would relate only to changes in the transport of materials to the facility, as throughput capacity of the Shell PSR is anticipated to remain the same. Because GHGs are a global issue that are transmitted within and beyond the state line, this increase in GHGs may need to be offset in other sectors to reach the state's goals. Therefore, from both global and state perspectives, the proposed project, combined with past, present, and reasonably foreseeable future actions, would contribute to a cumulative impact on GHG emissions.

What mitigation measures are proposed?

Avoidance and Minimization

Impacts to air quality could be minimized by the implementation of the best management practices recommended as part of various permitting processes.

PERMITS REQUIRED

- Order of Approval to Construct Air Permit
- Shoreline Substantial Development Permit

For example, during construction haul roads would be sprayed with water to reduce dust and particulate matter emissions.

Mitigation

Shell would assess and update its facility-wide anti-idling policy, as necessary, to include the rail unloading facility to reduce GHG emissions from construction and operation of the proposed project. Shell would provide equipment operators training on best practices for reducing fuel consumption. The anti-idling policy could include:

- Measures like reduced idling times for older vehicles and effective maintenance programs
- Various technologies like idle management systems or automatic shutdown features
- Alternative fuels and other fluids

The policy would define any exemptions where idling is permitted for safety or operational reasons, such as when ambient temperatures are below levels required for reliable operation. The plan would be submitted to Ecology's Air Program for review and approval.

Are there unavoidable significant adverse impacts?

No unavoidable significant adverse impacts were identified.

WHERE CAN I FIND MORE INFORMATION ABOUT THIS TOPIC?

Chapter 3.10 – Air Quality and Greenhouse Gases of the draft EIS

The information in this fact sheet summarizes content from the draft Environmental Impact Statement; please review the full document for more detailed and complete information.

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