

Appendix M

Air Quality Impact Analysis

September 2020

Chehalis River Basin Flood Damage Reduction Project

NEPA Environmental Impact Statement



APPENDIX M: AIR QUALITY IMPACT ANALYSIS

Methods

Construction

The analysis of construction emissions considered stationary and mobile emissions sources and compared them to the federal de minimis thresholds. As long as the estimated emissions are below the de minimis thresholds, there would not be the potential for a broader air quality impact.

Construction emissions were estimated for the single busiest year of construction. Equipment emissions were modeled for construction of the flood retention facility. Emissions were also estimated for construction of the Airport Levee Improvements and related on-site truck traffic. Assumptions are listed as follows:

- **Proposed flood retention facility.** The busiest year of construction at the flood retention facility would be when the vertical concrete structure would be built.
 - Emissions from mobile sources, such as haul trucks that would remain on the project site, such as pickup trucks, bulldozers, and loaders, were assessed using the NONROAD model. Equipment assumptions for this year are listed in Table 1. The tables following this appendix provide details on the model input assumptions and the outputs for the selected pollutants.
 - Truck trips to haul material from the concrete batch plant and quarry to the construction site at the flood retention facility were also modeled for the peak year. For the peak year, it was assumed that there would be 20 truck trips per day.
 - Construction activities would follow standard environmental controls and practices. Examples include use of best management practices, including dust control measures and use of equipment that meets all applicable federal and state requirements, including maintenance standards.
- **Airport Levee Improvements.** It was assumed the improvements would be constructed in the same year as the vertical concrete structure. This is a conservative assumption because it is possible that the improvements would not be constructed in the same year as the vertical concrete structure would be built.
 - Emissions from constructing the Airport Levee Improvements were not modeled but were conservatively assumed to be equal to those modeled for the busiest year of constructing the flood retention facility. This a conservative assumption because the Airport Levee Improvements construction would require fewer trucks and materials than the flood retention facility structure.
 - Construction activities would follow standard environmental controls and practices.

Table 1**Off-Road Construction Equipment Daily Use Assumptions for Flood Retention Facility Construction**

EQUIPMENT	HORSEPOWER	NUMBER OF EQUIPMENT	HOURS PER DAY ¹
Backhoe	120	2	9
Compactor (ground)	150	1	9
Dozer	120	2	9
Excavator	100	4	9
Front-end Loader	200	4	9
Generator	50	2	10
Generator	150	1	10
Pickup Truck	150	3	8
Rock Drill	206	1	8
Welding Machine	25	1	8
Haul Trucks		20	5 miles/day (one-way) per truck

Note:

1. It was assumed that construction equipment would operate every day of the year.

Emissions from stationary sources, such as the temporary concrete batch plant, were assessed qualitatively. This is in part because the specific equipment to be used will be determined in a later phase of design. In addition, the Applicant would be required to obtain all permits and approvals prior to construction to ensure emissions do not result in an unauthorized air quality impact.

Sources of dust include the movements of off-road construction equipment over dirt roads, earthwork and excavation, and blasting. Odors would be generated by vehicle and equipment exhaust. Potential impacts from dust and odors were qualitatively assessed.

Operation

Emissions during operation were qualitatively assessed. Emission sources would include vehicles and equipment used in ongoing operational and maintenance activities. The operational analysis also qualitatively considered the potential for emissions from vehicles being detoured around flooded roads in the Chehalis River 100-year floodplain downstream of the proposed flood retention facility site. Impacts from emissions are also discussed in terms of their temporary or long-term duration.