4 NORTH STUDY AREA ANALYSIS

4.1 INTRODUCTION

This chapter presents an analysis of the potential effects on the community and natural environment of the I-5 JBLM Vicinity Congestion Relief Project Build Alternative for the North Study Area. Each section within the chapter is devoted to a specific discipline that was identified as important to fully understanding potential impacts of the No Build and Build Alternatives. A description of the evaluation methodology used to assess impacts for a given discipline, existing conditions, and potential impacts, as well as possible measures to mitigate or avoid adverse impacts are also identified for each section. Impacts are categorized as:

- Direct impacts (short-term construction and long-term).
- Secondary or indirect impacts.
- Cumulative effects.

Direct impacts are effects that have a straightforward cause-and-effect relationship to the Build Alternative.

Secondary impacts, or **indirect impacts**, are reasonably foreseeable effects of the Build Alternative that could occur later in time or are further removed in distance from the direct effects of the Project. Indirect impacts are discussed along with cumulative effects in Section 4.18.

Cumulative effects are the incremental or additive effects of the Build Alternative in conjunction with other past, present, and future reasonably foreseeable actions, regardless of what agency or person undertakes such other actions. Cumulative effects are discussed along with indirect impacts in Section 4.18.

What Technical Disciplines are Addressed in this Chapter?

Technical experts on the Project team conducted more than a dozen studies and summarized their analysis in Discipline Reports or Technical Memoranda. This information was used as a basis for examining changes that can occur as a result of constructing the

What is a Discipline Report or Technical Memorandum?

A discipline report focuses on an environmental topic (discipline) of concern, such as air quality, noise, surface water, or other built or natural resources. It presents an analysis of the environment with respect to that discipline, how the project may affect that environment, and offers recommendations on how best to avoid or minimize adverse effects to that environment.

A technical memorandum is typically written in lieu of a discipline report when the potential environmental impacts are minimal for that particular discipline on a specific project.

proposed improvements along I-5, and illustrating how the Project might affect the built and natural environment of the area.

The following discipline reports or technical memoranda were prepared for the Project, as these disciplines were determined to be the most relevant and critical to a full understanding of the consequences of an alternative. Additional information regarding the complete discipline reports is located in Appendix B.

- *Air Quality Technical Memorandum*
- *Cultural Resources Assessment*
- *Fish, Wildlife and Vegetation Discipline Report*
- *Floodplain Resources Technical Memorandum*
- *Floodplains Technical Memorandum*
- *Geology and Soils Technical Memorandum*
- *Groundwater Technical Memorandum*
- *Hazardous Materials Analysis Report*
- *Noise Discipline Report*
- *Land Use Technical Memorandum*
- *Socioeconomic and Environmental Justice Discipline Report*
- *Surface Water Discipline Report*
- *Transportation Operations and Safety Summary Technical Memorandum*
- *Visual Impact Assessment*
- *Wetland and Stream Delineation Report*
- *Wetland Conceptual Mitigation Memorandum*

The study area for each discipline report or technical memorandum varies, depending on the geographic extent of the potential effects being evaluated and the type of data needed for the analysis. For example, the noise analysis required WSDOT to collect noise monitoring data at receivers along the corridor. The location of each monitoring site depended on its proximity to I-5 and local terrain which could influence how highway noise would carry over distance from the freeway. Land use data was collected for an area generally within a half mile of the Project limits to capture locations where potential effects would be experienced. To assess effects on social characteristics and environmental justice, WSDOT used Census information because these data include a wider geographic area around I-5 that could be influenced by the Project.

Analysis of effects associated with the Build Alternative includes a comparison with both existing baseline conditions and the No Build Alternative. The No Build Alternative assumes completion of several separate transportation improvements in the Project area as described in Chapter 3. By evaluating conditions with these improvements in place, the potential impacts of a No Build Alternative can be determined. A comparison can then be made of effects associated with the Build Alternative, and the environmental, social and economic changes associated with this alternative can be identified.

How Is This Chapter Organized?

This chapter is generally organized by technical discipline. Section 4.2 includes a summary of key short-term (construction) effects, long-term (operational) effects, and benefits associated with the No Build and Build Alternatives relative to each discipline.

Each discipline-specific section includes the following, in the order listed:

1. Discussion of the relevant regulations, standards and analysis methods appropriate for evaluating potential impacts associated with the discipline.
2. Description of existing conditions.
3. Summary of impacts that could be associated with the No Build and Build alternatives.
4. Discussion of possible actions to minimize or mitigate adverse impacts, and identification of any unavoidable adverse impacts.

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