

## CHAPTER 5

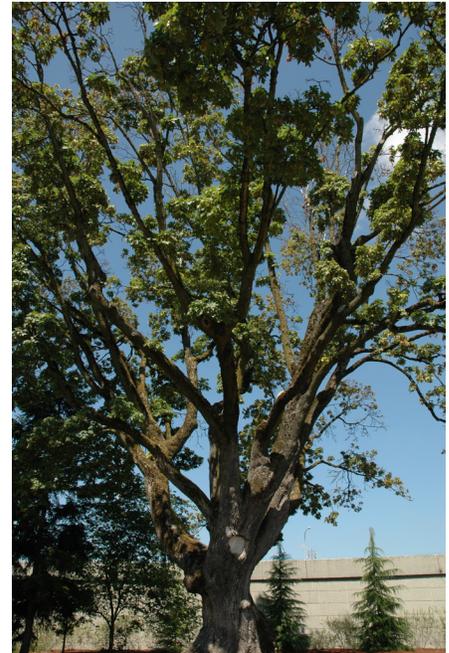
### How will the environment be affected?

*This chapter presents an analysis of the potential effects of the Renton to Bellevue Project on people and the environment. The WSDOT project team conducted 21 different studies and summarized their analyses in discipline reports to illustrate how the project might affect the area. We used this information to evaluate changes that can occur as a result of constructing improvements to I-405.*

#### **How did WSDOT analyze the Renton to Bellevue Project's effects on the environment?**

The WSDOT project team prepared the following discipline reports for the project. The complete discipline reports (listed below in alphabetical order) are found in Appendices F through AA on a CD included with this Environmental Assessment.

- Air Quality (Appendix S)
- Cumulative Effects (Appendix AA)
- Economic Elements (Appendix L)
- Energy (Appendix K)
- Environmental Justice (Appendix M)
- Fish and Aquatic Resources (Appendix X)
- Geology, Soils, and Groundwater (Appendix Y)
- Hazardous Materials (Appendix Z)
- Historic, Cultural, and Archaeological Resources (Appendix P)
- Land Use Patterns (Appendix J)
- Land Use Plans and Policies (Appendix I)
- Noise (Appendix H)
- Public Services and Utilities (Appendix Q)
- Section 4(f) Evaluation (Appendix O)
- Social Elements (Appendix N)



**Mature oak tree in Cedar River Park**

#### **What is a discipline report?**

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

- Surface Water and Floodplains (Appendix T)
- Transportation (Appendix G)
- Visual Quality (Appendix R)
- Water Quality (Appendix U)
- Wetlands (Appendix V)
- Wildlife and Vegetation (Appendix W)

**What are potential effects?**

Potential effects are impacts or changes that could occur as a result of a proposed action. The effects may be ecological, aesthetic, historic, cultural, economic, social, or health-related. Examples might include the encroachment upon nearby wildlife that occurs from widening a roadway; the improvement of fish passage from retrofitting a blocked culvert; or how increased noise levels from traffic flow might affect nearby residents.

The study area for each discipline report varied, depending on the geographic extent of the potential effects being evaluated and the type of data needed for the analysis. For example, the analysis of recreational facilities as evaluated in Section 4(f) required WSDOT to collect data on parks within 0.25 miles of the I-405 right of way. To assess effects on social characteristics, WSDOT used Census information and the Puget Sound Regional Council’s (PSRC) Forecast Analysis Zone data, because these data cover a wider geographic area around I-405.

***How was environmental information used to improve the project?***

Our project team collected environmental baseline data, and then identified places where project construction could have an effect on the environment. For example, to reduce effects to wetlands, we overlaid wetland locations on the preliminary design plans and made adjustments in the roadway alignment, roadside slopes, and location of stormwater facilities. Our team made several field visits to examine culvert crossings along the corridor and to propose ways of modifying the grading plan to avoid the need to extend culverts, and to minimize or avoid effects to streams. We also used information about the sole source aquifer protection area in Renton to modify the location of stormwater discharge points to avoid potential effects on water quality and aquifer recharge. We made similar efforts to reduce or avoid effects to visual quality, vegetation, and noise.

***How were potential effects evaluated?***

After making design modifications to minimize or avoid effects, our project team compared the project design to the baseline conditions. By making this comparison, we determined environmental, social, and economic changes that will result from the Renton to Bellevue Project compared to

the No Build Alternative. For example, we evaluated what can happen to water quality both during and after construction. Economists examined the effects of property acquisitions on social and economic conditions.

Our team members evaluated these and other aspects of the environment and documented their findings in separate discipline reports. The results of these analyses are summarized in this chapter.

For a cross reference of how discipline reports were grouped in this EA with respect to the NEPA Elements of the Environment, please see Appendix D.

