

Appendix A: Methodology

How did we collect information on geology and soils for this report?

The I-405 Corridor Team collected information for this technical memorandum by reviewing the following data sources:

- Previous investigations along I-405 and SR 167 conducted by Washington State Department of Transportation (WSDOT) and others, including the borehole logs for these investigations.
- I-405, Renton Nickel Improvement Project, Geotechnical Baseline Report.
- I-405, Renton Nickel Improvement Project, Soils, Geology and Groundwater Discipline Report.
- Public data such as LiDAR, stereographic aerial photographs, soil conservation service (now known as the National Resource Conservation Service) soil maps, geologic maps, coal mine maps, and liquefaction susceptibility maps.
- Published articles from the U.S. Geological Survey (USGS), local purveyor reports, Washington State Department of Ecology (Ecology), U.S. Environmental Protection Agency (EPA), King County and other agencies.
- Agency web sites for geology and soil conditions.
- Applicable WSDOT Standards, such as those contained in the revised WSDOT Geotechnical Design Manual.

A complete list of the sources that were reviewed for this report is provided in the References section. In addition to the literature review, we completed a site reconnaissance to observe physical features to aid with interpreting subsurface conditions and to “field truth” the information gleaned from the literature review to the extent possible.

Baseline Conditions Evaluation

Following our compilation of this information, we evaluated baseline conditions within the study area. Baseline conditions were evaluated directly from the data sources and by evaluating information from multiple sources using standard geologic and geotechnical principles. For example, identifying areas that will likely be underlain by soft soils by reviewing and compiling published information and evaluating boring logs from previous investigations.

Potential Effects Evaluation

The methods used to evaluate the project’s potential effects included:

- Reviewing the proposed project design concept and likely construction methods.
- Evaluating the potential effects of the geology and soils on the project based on the baseline site conditions and standard WSDOT practices.
- Evaluating the potential effects of the project on the geology and soils based on the baseline site conditions and standard WSDOT practices.

The evaluations are based primarily on our experience, our expert judgment, and WSDOT practices and sound engineering principles. WSDOT’s 2006 Geotechnical Design Manual discusses many WSDOT design and construction practices for various geological conditions.