



Transportation Transit

Client
Sound Transit

Location
Seattle, WA, USA



Central Link LRT Line Design

Project Highlights



- Designed 4.3 miles of an at-grade double-track guideway rail segment transit system
- Identified right-of-way limits throughout the project, while minimizing impacts to properties and businesses not designated for full acquisition
- Developed a single, comprehensive set of contract documents for public bid

Project Description

CH2M HILL developed the final civil engineering design for two segments of the Link Light Rail Transit System that will serve the Seattle area. The two segments—C730 and C740—comprise approximately 4.3 miles of an at-grade double-track guideway rail segment through the Rainier Valley. The project is part of a new light rail transit system (LRT) overseen by the Central Puget Sound Regional Transit Authority (Sound Transit) to provide an efficient alternative mode of transportation parallel to the I-5 corridor in King County. In its first phase of development, the LRT system will extend from Seattle's University District to the cities of Seattle/Tacoma. Objectives are to relieve traffic congestion and spur economic development in the neighborhoods served by the LRT.

Design work included road and track alignments, utility relocation, right-of-way plans, traffic signal and signage plans, light rail transit systems plans (including traction power, communications, duct banks, and station systems), station architecture, drainage plans, and intersection plans. Additional project activities included review and modification of standard plans and specifications, preparation of special provisions, development of milestone cost estimates, and implementation of a comprehensive quality assurance program. The design included three stations and pedestrian crossings in key locations to ensure maximum pedestrian access, mobility, and safety. One of the primary responsibilities of the design team was to identify the limits of right-of-way throughout the project, while maintaining full access and minimizing impacts on properties and businesses not designated for full acquisition.

Utility relocation was also a crucial project activity because the right-of-way serves as a corridor for major public and private utilities. CH2M HILL worked closely with the agency's utility coordinator, Seattle's Public Utilities Department, Seattle City Light, King County's Department of Natural Resources, and Puget Sound Energy to develop a comprehensive utility relocation plan to gain endorsement from property owners and regulatory agencies within the project schedule. CH2M HILL also coordinated the relocation and modification of overhead electric lines and other private utilities.



CH2M HILL also ensured that the design for stormwater drainage was in compliance with a new City of Seattle drainage ordinance, which had stricter retention and treatment requirements, parameters that had not yet been practically applied to the LRT system. The primary challenges were to locate and configure structures to minimize cost, earthwork, and property impacts, and to reduce the complexity of design and difficulty of construction, while meeting functional efficiency and ease of maintenance requirements.

CH2M HILL provided the final design and complete plans, specifications, and estimates.