



## Sustainable Development Solutions

### Client

Alaska Department of Transportation and Public Facilities

### Location

Alaska, USA

*"One word symbolizes what this means, and that word is 'access.' Alaskans and visitors will be able to enjoy the beautiful resources. They'll have an opportunity to experience a world-class type environment."*

Alaska Governor Tony Knowles



## Whittier Access Project Design & Construction

### Project Highlights

- Preventing environmental damage and preserving the aesthetic value of the corridor were major concerns of this project
- CH2M HILL's design used topographical features and a new
- 500-foot-long tunnel to screen the road and minimize visual impact
- Alignments and creek crossings were designed to minimize impact on sensitive plants, salmon spawning grounds, and other environmental features

### Project Description

The Alaska Department of Transportation and Public Facilities implemented the Whittier Access Project to meet the transportation needs of residents and visitors while respecting and protecting the environment.

Completed in the summer of 2000, the project provides the first highway access into Whittier since the city was founded more than 50 years ago. The benefits of highway access include emergency medical transport, opportunities for recreational and commercial tourism, travel, and commerce for the community. Planning began in 1993 for the components of the project, including a bridge over Portage Creek, a 500-foot tunnel, a bridge over Placer Creek, 4 miles of roadway, vehicle-staging areas, reconstruction and conversion of the 2.5-mile rail tunnel to a combined rail/highway tunnel, a bridge over Whittier Creek, and portal buildings for the tunnel openings.

CH2M HILL, which was responsible for the design of the three bridges and roadway, participated in public involvement activities and incorporated stakeholder concerns into the designs. The project corridor traverses the Chugach National Forest, and the area includes numerous environmental treasures, such as Prince William Sound, glaciers, fjords, mountains, and wildlife. Consequently, preventing damage to the environment and preserving the visual bounty through an aesthetic design were major concerns.

The conceptual design of the original roadway alignment had been developed by another firm as the preferred alternative in the Environmental Impact Statement (EIS). However, CH2M HILL modified the design, with the Department's approval, to preserve a glacial viewpoint. This was done after conducting visual impact analyses of the Portage Creek Bridge and roadway to identify an alignment and design that would minimize impacts. The modified road alignment uses topography and glacial moraine features to further screen the road, and a new 500-foot-long tunnel was constructed to screen the road from the visitor center.

In addition, the alignment avoided sensitive plants, the creek crossings were selected to avoid salmon spawning grounds, and drainage structures were



designed to accommodate fish passage. Other impact-minimizing features included:

- Using single-column piers to reduce in-water obstructions to boaters and decrease the overall visibility of the Portage Creek Bridge support structures.
- Sandblasting exposed girders to create a textured surface that blends with the background scenery.
- Designing a high rock cut and using blasting techniques to leave an irregular surface that resembles natural rock surfaces in the area, protecting the critical viewshed from Portage Lake.