Coal Creek Parkway—a complex design, construction management project

What's a $45 million highway and bridge project doing in the little town of Newcastle, Washington, population 9,000?

Improving safety, providing travel options, creating a context-sensitive transportation solution, providing real-time learning for project engineers—and exploring creative solutions to dealing with lots of water.

"Our work on Coal Creek Parkway involves risk management on so many levels," said Roger Mason, CH2M HILL's project manager. The site is located about 5 miles south of CH2M HILL's Bellevue office, east of Interstate 405.

"This small community has taken on the responsibility to fund this major regional project—requiring partnerships with federal, state, local, and private funding sources," said Mason. "We're employing creative solutions to ensure the project meets the city's budget and expectations."

This project completes the final gap along this 6-mile (9.7-kilometer), north-south corridor serving east King County. "We're widening the only road that parallels I-405, and when completed, it will serve as an effective corridor alternative and 'companion' to I-405," said Mason.

In addition to widening the old two-lane rural road into a modern, four-lane road, the project also includes bike lanes, sidewalks, traffic signals, lighting, stormwater facilities, wetland mitigation, retaining walls, and trail connections.

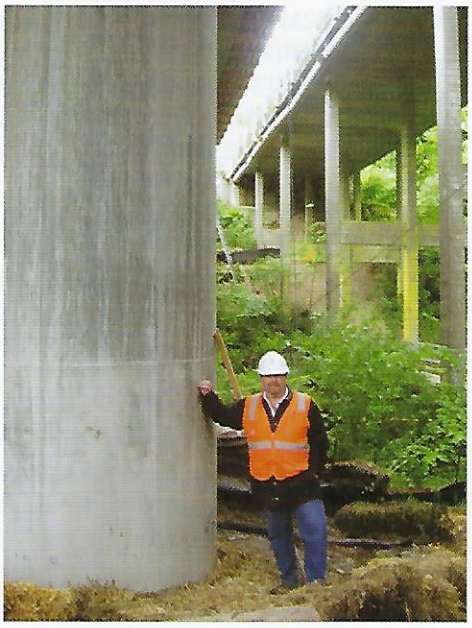
CH2M HILL will also replace the May Creek bridge—built in the 1950s—that spans protected salmon spawning waters. A major challenge for this task is designing and installing the bridge foundation in a location of poor soil stability and artesian conditions, which the geotechnical engineer discovered while drilling test holes to install concrete piers for the new bridge.

Craig Jackson, CH2M HILL's resident engineer at the project site, said, "When the drilling rig hit the artesian conditions approximately 50 feet below the ground surface, the driller was reluctant to continue for fear he might not be able to cap the well, resulting in water and sand flowing into May Creek." The creek lies within 10 feet of the test well and future bridge piers.

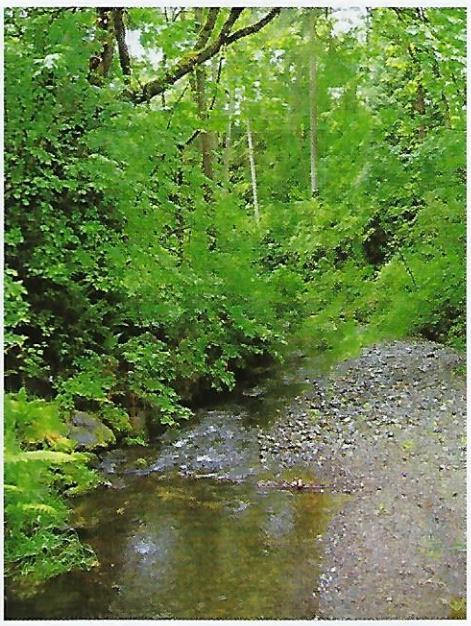
"Because we were the construction managers on a project we'd also designed, we were able to devise a solution that neutralized the artesian conditions and avoided potential environmental impacts. This very difficult phase of construction was accomplished on time, on budget, and without incident," Jackson said.

At the project site, the team is working toward a common goal: improving this section of highway while paying close attention to budgets, residents' concerns, and environmental issues—creatively working with lots and lots of water.

Craig Jackson, resident engineer for the Coal Creek Parkway project, leads lessons-learned classes for CH2M HILL employees on the project site.



Designing and installing the bridge foundation in less than perfect soils is one of the project's toughest challenges.



The May Creek bridge, one of the major components of the Coal Creek Parkway project, spans protected salmon spawning waters.

A hands-on, open-air classroom

Because the Coal Creek Parkway project is so close to CH2M HILL's Bellevue office, the project has become a field laboratory for engineers and design staff.

So far, more than 40 employees have taken a box lunch, piled into the van, and headed to the site. Every 2 to 3 weeks, Craig Jackson, resident engineer, teaches a lessons-learned class.

"It's a wonderful opportunity," said Jean Pippin, project assistant. "Watching the ideas in a blueprint come to life gives us new insights into project design and planning."

"I like to see projects implement site visits for staff," said Roger Mason, project manager. "The learning they take back to the office and then implement on their next project is invaluable."