



Project Summary

Organization
AECOM

Solution
Roads

Location
Austin, Texas U.S.A.

Project Objectives

- Compress design time by 50 percent for a complex highway project
- Enable a large design team throughout the US and Canada to work efficiently and complete the design on time and within budget
- Minimize project costs while completing the design on time and within budget

Products Used

- ProjectWise Integration Server
- ProjectWise Passports
- ProjectWise Caching Servers

Fast Facts

- AECOM was contracted by Central Texas Highway Constructors to design two segments of a 27-mile, four-lane divided tolled facility
- The new highway would reduce traffic congestion and support continued urban growth and cross-border trade in the area
- AECOM used ProjectWise to complete the design project 50 percent faster than would typically be required for a complex project, and delivered the design on time and under budget

ROI

- Saved \$850,000 through travel reduction and productivity gains
- Realized a return on investment worth 12 times the initial investment in the software
- Ensured high quality and profitability by using ProjectWise to leverage the best and most profitable resources to complete various aspects of the project

AECOM Uses ProjectWise to Complete a Complex State Highway 50 Percent Faster and Under Budget

By Compressing Design Time, Eliminating Travel, and Increasing Design Team Efficiency, AECOM Saved \$850,000

A New Alternative for Safe and Efficient Travel

AECOM, ranked by ENR as the top transportation firm in the world, provides professional technical and management support services to a wide range of global markets. A leader in all of its key markets, including transportation, facilities, environmental, energy, water, and government, AECOM's 45,000 employees serve clients in nearly 130 countries.

When AECOM was contracted by Central Texas Highway Constructors to provide final design and plans, specifications, and estimates for two segments of a 27-mile, four-lane divided tolled facility from southeast Austin to San Marcos River, they turned to ProjectWise to deliver the project profitably and on time. "The Texas State Highway 130 project will help address the tremendous surge in truck traffic on the Interstate 35 (I-35) corridor brought on by the North American Free Trade Agreement," explained Larry Ehlers, project manager at AECOM. "I-35 is more congested between Georgetown and San Antonio than at any other point on its entire length from Canada to Mexico – so to support continued urban growth and cross-border trade, the state needed to create a new alternative for safe and efficient travel."

"Using ProjectWise, we could enable people to share work across distributed teams and collaborate simultaneously on one master version of the design."

— Fernando Gaytan, senior project manager, AECOM

Compressing Design Time by 50 Percent to Meet an Aggressive Schedule

For AECOM, the primary challenge was to complete the design within 18 months – an aggressive time frame, given that similar design projects typically take 36 months to complete. "The project included two multi-directional interchanges at SH 45/US 183 and US 183, 14 grade-separations with turnarounds, and 31 miles of

frontage road construction," explained Ehlers. "We also had to salvage existing US 183 pavement for use for the proposed southbound frontage road." AECOM was also responsible for design aspects such as roadway geometrics; turnarounds; mainlane and ramp toll sites; bridge layouts and details; urban storm sewer design; culvert design and analyses; retaining wall layouts; as well as schematic and construction documents.

For AECOM, the only way to compress design time by 50 percent was to engage more resources and enable them to work together quickly and efficiently. To achieve this, the first step was to establish a small, on-site location from which management could coordinate resources from 20 different offices throughout the US and Canada. This represented over 120 employees who would work on the project. AECOM also engaged six external contractors to assist with the project.

The second step was to deploy a document management and collaboration solution. "To meet the design deadline using so many different firms, offices, and employees, it was critical that everyone involved use one, integrated approach for design and document versioning and work from one version of the design," said Fernando Gaytan, senior project manager at AECOM. "With the right solution, we could do this and simultaneously minimize the need for costly travel. We didn't want to have to fly everyone to Austin repeatedly."

Searching for the Best Way to Boost Team Efficiency and Collaboration

Management explored numerous document management and collaboration solutions. Ultimately, they decided to deploy ProjectWise, which had already been used successfully at AECOM and met key requirements for this project. "Using ProjectWise, we could enable people to share work across distributed teams and collaborate simultaneously on one master version of the design," commented Gaytan. "In addition, our designers could work faster because they would spend far less time finding, validating, and accessing files. Equally important, the solution's automated version control features prevented people from accidentally overwriting or working on outdated files."

“With ProjectWise, the design process ran as smoothly and efficiently as we could have hoped for. And as a result, we completed a complex project 50 percent faster – on time and under budget.”

— Larry Ehlers, project manager,
AECOM

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Deploying ProjectWise to Support a Large, Distributed Design Team

Management worked with Bentley to deploy ProjectWise for its US and Canadian project teams. “We jumped in with both feet and didn’t have time for any technical problems,” noted Ehlers. “So we engaged Bentley to provide ongoing support – for example, for large data transfers, server maintenance, and user access management – and to train our end users on how to use ProjectWise.”

Accelerating the Design Process

Once deployed, the design team used ProjectWise for CAD file management, quality control, quality assurance and document control. All designers were linked to the design process via ProjectWise, which facilitated seamless, enterprise-level engineering content management and collaboration from a shared set of centrally managed documents. “With ProjectWise, we were able to integrate a large, distributed design team and accelerate information sharing and communications across project teams,” said Ehlers. “And as a result, we completed the design on time and under budget.”

Realizing the Benefits

ProjectWise helped AECOM meet its deadline by increasing productivity approximately 12 percent. This was based on improvements in three key metrics: reduced travel, which meant designers spent less time on airplanes and more time working; less time spent searching for and validating relevant



View of Texas State Highway 130.

files, which freed designers to get to work quickly and improved productivity by about 2 percent; and reduced rework and duplication of effort, by providing a single version of the design with extensive document locking, ensuring that work was not being duplicated (and thus eliminating the need for time-intensive reconciliation of work).

Altogether, AECOM saved \$850,000 – \$600,000 by eliminating travel costs and \$250,000 in other areas – while increasing overall project quality. “Instead of flying people between offices, we used ProjectWise to match up the best resources for each aspect of the project no matter where they were located,” explained Ehlers. “Everything ran as smoothly as we could have hoped for, and we delivered a strong design to our construction partner.”