Project Summary
Organization: City of Santa Barbara
Construction Manager: MNS Engineers, Inc.
Design Firm: Bengal Engineering
General Contractor: Lash Construction Inc
Location: Santa Barbara, California, United States
Project Objective: Replace a historic bridge alongside one of the busiest roads in Santa Barbara, California, while preserving the structure's architectural character.
Product Used: ProjectWise EADOC

Fast Facts
- The City of Santa Barbara needed to reconstruct the bridge's upstream and downstream areas as part of the Lower Mission Creek Flood Control Project.
- MNS had to maintain street access throughout the project lifespan due to the city's tourist-based economy and large numbers of daily visitors.

ROI
- Project managers improved transparency and team collaboration with EADOC's automated audit trail of all document and communication activity.
- The Cabrillo Bridge team saved time by linking workflow documents—such as RFIs and change orders—to other items such as locations and construction drawings.
- EADOC's centralized database provided 24/7 access to manage project documents, which saved time by eliminating the need to manually manage project communications.

Historic Architectural Character
The City of Santa Barbara needed to replace a structurally deficient, historic bridge along one of its busiest roads while maintaining its architectural character. Originally built in 1913—with additional reconstruction work performed in 1927 and 1977—the Cabrillo Boulevard Bridge spans Mission Creek, which drains into the Pacific Ocean next to Santa Barbara's iconic Stearn's Wharf. The challenge was reconstructing areas upstream and downstream as part of the Lower Mission Creek Flood Control Project in a busy location. This meant the structural and architectural scope of the project had to be carefully managed by the construction manager, MNS Engineers, Inc.

The bridge replacement project is being executed in three stages. It includes demolishing the existing bridge and adjacent channel walls and constructing a precast girder bridge structure, pedestrian sidewalks, concrete-lined creek and channel walls, embankments, and tidal habitat. The project scope includes transition walls, two abutments, a bent, barriers, a wider sidewalk, and a pedestrian bridge. To manage this multifaceted project, MNS implemented Bentley's ProjectWise EADOC cloud-based construction management software for contract administration and document control, and to coordinate the entire project team and stakeholders.

Stage one and two of construction, which included preliminary sitework and rebuilding the mountain side of the bridge, have been completed. Stage three will include the replacement of the beach side of the bridge, while keeping the mountain side open to car traffic and reopening a wider sidewalk on the mountain side. A temporary walkway over Mission Creek on the beach side of Cabrillo Boulevard will be erected during the third stage to accommodate nearly 6,000 pedestrians daily.

When complete, the new bridge will be 9 feet longer than the original and will meet new earthquake and structural safety standards. The project will also improve creek water flow and create a habitat for steelhead trout, tidewater goby, and other marine life. The new 9-foot-wide sidewalks will be twice the size of the old ones, and officials expect the entire project to be complete by 2017.

A Tight Squeeze
On the surface, the project looks like it could be a fairly straightforward bridge replacement, but its complexity lies in its location—the main thoroughfare through a town with a significant, tourist-based economy. The need to maintain street access to the popular tourist area prohibited the complete closure of the roadway and created the need for careful coordination of team members, equipment, temporary pedestrian walkways, and restricted traffic. “It would have been a lot easier if we could have just closed the roadway, but in order to keep the area’s tourist-based businesses open we needed to maintain access for the large number of daily visitors,” explained MNS Vice President of Construction Management Gregory Chelini.

Not a Second to Lose
Another complicating factor the team had to overcome was the seasonal restriction on certain construction activities. Due to environmental considerations regarding indigenous fish and marine life, the project’s permitting includes strict guidelines that only allow construction work within the waterway to occur from June through October.
“EADOC addresses the need for immediate access to information. The Web-based platform is great because you don’t need to be in your office to tap into your files. You can respond and receive information wherever you are.”

— Gregory Chelini, Vice President of Construction Management, MNS Engineers

Aside from being restricted to this five-month window, the project team must keep a portion of the Mission Creek channel open for tidal flows at all times. The challenge of keeping the tidal slough open throughout construction has added to the duration and complexity of the project.

“We had to replace the existing channel walls, which required us to install sheet piles and work behind cofferdams—and these had to be installed during the June through October time window. There’s a lot of work that needs to be done under tight site constraints and within a tight time window, and that requires close coordination between the general contractor, subs, environmental consultants, the City of Santa Barbara, and us as the construction manager,” explained Chelini. “We use the EADOC Web-based system to facilitate that coordination, and minimize the response times. For example, the dewatering and bridge demolition plans needed to be reviewed by multiple parties. The entire team and stakeholders all have log-ins to EADOC, because of its unlimited user license. This has sped up the review process and shaved days off traditional turnaround times. It also kept everyone informed about the status of submittals and responses. It’s not a black box; all the parties have visibility into the process.”

Automatic Tracking of Submittals and Daily Logs

The scope of the Cabrillo Bridge project called for a robust system for tracking project documents and communications. “EADOC is very helpful in solving day-to-day operations and problems like tracking submittals. It assists with daily logs for our inspectors, and it’s actually a quite useful tool in just managing the overall project,” explained MNS Senior Construction Manager Bill Callaghan.

Instead of tracking documents and communications by hand, the Cabrillo Bridge team is using EADOC to save the time that used to be spent processing, tracking, and accessing project information. “Prior to using EADOC, we had our own internal system with Excel files and Word files, and we actually manually tracked submittals, RFIs, and letters,” Callaghan said. “Those things were manually input to create a log of dates, and who has it, and when it was sent. With EADOC, it’s so simple to send and receive information, and it is right there at your fingertips.”

Rich Data Links

EADOC also helps MNS save time through its ability to link workflow documents—such as RFIs, submittals, and change orders—to items like locations, project assets, images, and other project documents. This creates a Web of rich data relationships, making it easier to find relevant information quickly. “When the contractor uploads a submittal, they can attach the relevant specification section,” explained Callaghan. “So, when the submittal comes in, and it’s referencing that specification section, there’s no need to

hunt for what the submittal is for. It makes the review of that submittal that much easier—especially when you’re distributing it to multiple parties in the system.”

Accountability and Transparency

EADOC records all actions performed on each document with a time/date stamp and user details, so the status and history of all documents is always available to project managers. The system can identify any outstanding documents—and who has them—to help keep all team members on track. “There’s never a question as to who has what, or when they opened it, or when they’ve seen it, because it all tracks the history of when things were viewed and when things are submitted. So, it’s really, really helpful as a team,” explained Callaghan.

Web-based System Provides Timely Data and Immediate Feedback

MNS uses EADOC to give its project managers timely information and feedback. “One of the biggest needs in the construction industry is getting immediate feedback and minimizing the delay in getting feedback. EADOC addresses the need for immediate access to information. The Web-based platform is great because you don’t need to be right there in your office to tap into your files. You can respond and receive information wherever you are,” said Chelini.

24/7 Access

MNS is meeting the unique challenges of the Cabrillo Bridge Replacement Project in Santa Barbara, California, with the help of the EADOC capital project management system. The firm has reduced the review time for RFIs and submittals, increased team collaboration and accountability, and minimized the time and expense of manually handling and tracking physical documents. “Whether it’s a shop drawing, a submittal, or a concrete mix design that we’re reviewing—it’s right there at your fingertips,” said Callaghan.