

Highway 101 Willits Bypass

Willits, CA

- ✓ Flatiron and DGC working together
Successful delivery by the joint venture
- ✓ High-profile project requiring a
committed, partnered approach with
Caltrans to meet delivery date
- ✓ 5.9 miles of highway construction
- ✓ Construction of two interchanges and
15 bridges
- ✓ Extensive environmental commitments
and compliance efforts
- ✓ Caltrans congestion reduction project



Provide Project Description and Describe Site Conditions:

DeSilva Gates – Flatiron West, a Joint Venture constructed a new bypass alignment for State Route 101 around the City of Willits, CA. Route 101 is the single north-south route serving the length of coastal California and is crucial in the commerce of northwestern California. Widening the existing highway in this area was not feasible as commercial development would have to be demolished to make room for the highway. The bypass, two lanes to be widened to four lanes under a separate future contract, relieved congestion, reduced delays, and improved safety for interregional traffic which passed through Willits, as well as eliminating the final stop light that remained on Highway 101.

The scope of work included constructing 5.9 miles of new freeway; two interchanges; 15 cast-in-place girder bridges, one of which is a 6,000-foot-long, 33-span viaduct over a flood plain; as well as two retaining walls; two box culverts; electrical, signals, lighting, traffic management system and CCTV; fencing, barrier, rock slope protection, overhead signs, and landscaping. Over the course of the project, crews moved almost 1.96 million cubic yards of earth as part of roadway excavation and pave 70,000 tons of asphalt.

The majority of the work was performed within an environmentally sensitive work area. The work within a riverine environment for this project included the temporary installation and removal of cofferdams and water diversions, and the associated dewatering and fish rescue operations for bridge foundation construction. Additionally, as part of the permanent features, Flatiron completed several stream and fish habitat improvements to restore historic migratory fish habitat as a part of the project's environmental mitigation plans.

i. Construction of projects of similar size, scope, and complexity

This high-profile, \$174 million Caltrans project on Highway 101 constructed 15 bridge structures and 5.9 miles of highway over an environmentally sensitive area involving numerous stakeholders and regulatory agencies.

ii. Accelerated construction of major elements common to this project

Foundation pile design - Due to owner permit issues with U.S. Army Corps of Engineers (USACE), which occurred later in the project, the redesign of the north interchange was required to reduce wetland take by three acres. As a result, DeSilva Gates – Flatiron West worked closely with the owner to facilitate the redesign of the entire interchange, including five structures, in a very short time, and in a sequential fashion to allow work to begin prior to 100% design approval. To mitigate additional delays, DeSilva Gates – Flatiron West brought forth the concept to design the foundation piles to accommodate down drag and eliminate the need for long settlement periods prior to installation, which would have otherwise extended the completion of the project.

iii. Implementation of complicated staging and traffic control handling

DeSilva Gates – Flatiron West had to tie the 7 mile bypass into existing Route 101 at each end of the project. The planned staging called for using the new on- and off-ramps for temporary Route 101 traffic utilizing stop signs at the intersections and running the traffic through active work zones. We proposed a modified traffic handling plan to Caltrans, which eliminated the stop signs and kept traffic out of the active work zones for most of the construction work. This change resulted in a safer work zone, less inconvenience to the traveling public and allowed the joint venture to build a higher quality finished product by constructing the work outside of the active traffic flow.

The joint venture had to haul a significant amount of roadway excavation from south end of the project through downtown Willits to north end of the project. This work was scheduled at night to reduce traffic impacts through the City of Willits.

iv. Coordination of complex public utility relocation as well as construction of municipal utilities

Power and phone lines had to be relocated at several locations to accommodate the new freeway alignment. The DeSilva Gates – Flatiron West team worked closely with Caltrans and the utility companies to coordinate these relocations in a manner that did not impact the construction schedule. The joint venture worked closely with the City of Willits to protect its water line that ran through the new highway alignment. This was the City's sole source of water it was critical that service was not interrupted. The joint venture designed and installed a protective equipment crossing over the water line and constructed the new work without any interruption to the City's water service.

v. Experience of team members working together as an integrated team

The project was delivered as a joint venture between Flatiron and DGC with Flatiron serving as lead joint venture partner, which is the same structure as proposed for the State Route 101 Managed Lanes Project. Each firm self-performed a significant portion of the scope, with Flatiron responsible for demolition, structures construction, earthwork, and electrical work, and DGC self-performing earthwork and paving. The firms worked together to plan, schedule, and execute the job and respond to challenges that arose with shared resources and expertise. The established JV management structure and project procedures will be applied to the State Route 101 Managed Lanes Project and benefit Caltrans in efficiency and improved communications.

vi. Construction/reconstruction using innovative designs, methods, and materials.

Flatiron and DGC located an alternate source of borrow for this project and was able to obtain the required permitting in record time. This resulted in a more environmentally friendly solution than using the Caltrans designated borrow source.

The joint venture was able to accelerate work at north end of the project to offset a nearly one year delay caused by permitting issues.

vii. Innovative soundwalls/retaining wall design to reduce construction timeline and impacts on mainline or frontage roads.

Not applicable to this project.

viii. Coordinating work and traffic control with adjacent contracts performing similar highway work.

Not applicable to this project.

ix. Compliance with environmental regulations and restrictive permit requirements

The majority of the project area was considered either “water of the state” or other environmentally sensitive area. The project required the most extensive and detailed mitigation plan in Caltrans’ history in order to resolve issues with evolving requirements from permitting agencies. The team took special care to stay compliant – for example, washing each piece of equipment carefully before mobilizing it to the job. In addition, equipment, materials, or waste products could not be stored within 150 feet of state waters.

The team employed new environmental processes in planning every operation. From creating an Environmental Hazard Analysis for better communication of environmental hazards to the pile driving crew, to integrating permit, wildlife and pollution concerns into the daily operations, environmental protection was a top priority.

The project utilized a SWPPP, and the start of the project was initially delayed by a prolonged regulatory agency review of the SWPPP. This became an enormous impact, such that clearing could not be completed before the bird-nesting season began. Rather than delay work from February through September, the team pushed forward and completed as much work as possible under the circumstances. A mile-long floodway viaduct significantly minimized wetland impacts and provided exceptional elevated views of the valley

For in-water work, endangered plant rhizomes were relocated, and over 2,000 adjacent acres of wetland/pasture/woodlands were restored, enhanced, and protected to mitigate for 80 acres of wetland impacts. This unprecedented effort will help restore the significant hydrologic functions and aquatic habitat of the scenic valley, which for more than a century have been altered by agricultural activities designed to drain it. Many severely degraded stream channels within the project footprint have been reconstructed and planted with native vegetation to restore historic migratory fish habitat and passage.

Fish removal and exclusion methods were utilized to complete in-water work without impact to sensitive species. Historic migratory fish habitat and passage have been restored through the reconstruction of many severely degraded stream channels within the project area.

x. Constructing controversial or highly sensitive public projects, including experience in coordination with local and regional agencies on similar sized projects

The environmentally sensitive nature of the project required extensive coordination with local, regional, federal agencies included the City of Willits, County of Mendocino, California Department of Fish and Game, USACE, National Marine Fisheries Service, United States Fish and Wildlife Services, North Coast Regional Water Quality Control Board.

When work started in 2013, protestors chained themselves to equipment and inhabited trees which needed to be cleared. Due to protestors, nesting bird buffers, and temporary buffers for archeological resource discoveries, the clearing, earthwork and drainage construction operations performed in 2013 were inefficient, but Flatiron West - DeSilva Gates persevered and kept working. As the operations geared up in 2014 and with the limited in-stream work window started, the project’s USACE permit was suspended, which effected the entire project. Simultaneously, the efforts to get borrow sites approved were unsuccessful due to lawsuits and regulatory agency interference. Reinstatement of the USACE permit was negotiated with the promise to redesign the north interchange to reduce wetland take by three acres. The entire interchange including five structures were redesigned in a short period of time and the foundation piles were redesigned to accommodate down drag and eliminate the need for fill settlement. An ambitious goal was set by the team to complete all bridges and earthwork by October 2015, recovering much of the delay caused by the agencies.

xi. Owner satisfaction of completed work and history of contract disputes

Despite the great number of challenges encountered throughout the construction phase, Caltrans and the project team remained committed to the project, negotiating acceleration measures to regain a full year and reaching an agreement to successfully complete the project with no unresolved potential claims. The team resolved conflicts and issues efficiently and

agreed on schedule improvements and additional resources needed to mitigate multiple delays to the work and meet progress goals

List Any Awards, Citations, and/or Commendations Received for the Project:	
2014 Caltrans Partnering Success in Motion Award – Gold, California Department of Transportation	
2016 Caltrans Excellence in Partnering Award – Gold, California Department of Transportation	
2017 Caltrans Excellence in Transportation Award – Highway (Rural), California Department of Transportation	
2017 Excellence in Partnering Award, Associated General Contractors of California	
Name of Client (Owner/Agency, Contractor, etc.): California Department of Transportation	
Address: P.O. Box 3700, 1656 Union Street, Eureka, CA 95502	
Contact Name: Geoffrey Wright	Telephone: 707.456.1900
Email: geoffrey.wright@dot.ca.gov	
Owner’s Project or Contract No.: 01-262004	Fax No.: 707.485.1035
Contract Value (US\$): \$107,968,215	Final Value (US\$): \$173,927,819
211 change orders totaling \$65,959,604 were issued. The cost increases were primarily due to unexpected law enforcement costs, accelerations, and changes in work character necessary to mitigate multiple regulatory agency delay impacts to the work and complete redesign of the Quail Meadow interchanged required by USACE to reduce wetland impacts.	
DeSilva Gates – Flatiron West worked proactively with Caltrans to integrate these changes, ensure the final delivery met all new requirements with the best value to Caltrans. A \$400,000 VCEP eliminating temporary drainage was also developed and implemented. As a result, the final cost of the project was the result of a fair and timely negotiated settlement that included multiple owner-approved change orders for design issues, delay impacts and schedule acceleration.	
Percent of Total Work Performed by Company:	Commencement Date: October 25, 2012
Flatiron performed 65% and DGC performed 32%	
Planned Completion Date: May 18, 2016	Actual Completion Date: December 16, 2016
A complete redesign of Quail Meadows interchange, protected wetlands, cultural resources and endangered species, local politics, heightened public interests, protests, law enforcement, and schedule delays caused by lawsuits, archaeological discoveries, nesting birds, protester interference/trespassing enforcement, storm damage, and regulatory permit issues extended the time of completion by 245 working days.	
Through partnering, issues were resolved, schedule improvements agreed upon, with additional resources identified to mitigate multiple delays to the work and meet progress goals. A risk register and CPM schedule were utilized to manage the project risks and focus extra team resources on the most critical issues and problems to solve.	
Amount of Claims: \$0	Any Litigation? Yes ___ No <u>X</u>
Project issues were identified and addressed using the partnering process and facilitated dispute resolution sessions to resolve negotiate fair and timely settlements. This process proved to be very effective in that, despite enormous numbers of issues and delays created by outside forces, this project ended with zero unresolved potential claims.	
There were 4 notices of potential claims that went to the DRB. The history and outcomes are provided below.	
<ul style="list-style-type: none"> • Lighting for Flaggers – DRB ruled in favor of JV • Testing Of Construction Water – DRB Ruled in Favor of JV • Payment for Standby Equipment in Roadway Excavation Change of Character CO – DRB Ruled in favor of the JV • Payment for Utility Conduit in Barrier Rail – DRB ruled against JV, and the NOPC was dropped. 	