



## Wawona Road Repaving — Yosemite National Park

*It all started as a repaving project, but before it was over, eight participants had taken part in what they now refer to as “The Wawona Death March.” But we’re getting ahead of the story.*

The initial project called for paving and updating (with curbs, drainage, etc.) a 27-mile length of the Wawona Road in Yosemite National Park. The section of road lies between the South Park entrance and Southside Drive. It was originally broken into four



The Wawona Road Project in Yosemite National Park underway.

projects, each 6.5 to 7 miles in length. The projects were to be completed over a four-year time frame, including the environmental clearances, with construction beginning in 2012.

Then, two things happened. First, Yosemite Park officials decided they would like to accelerate the project due to the deteriorating pavement conditions, and also to limit the amount of impact on park visitors as much as possible. The project start date was advanced from 2012 to 2010. Then the American Recover and Reinvestment Act (ARRA) arrived, which allowed funding for the project, but required yet another shift in the allowed time frame: only nine months would be allowed for design time (March to November 2009).

Before the project bid could be let, the current status of the entire length of road needed to be reviewed. When it was decided that the review team would walk the entire length of road, the Wawona Death March was set in motion.



The Wawona Death March participants

### **Not Just Another Walk In A Park**

Anita Gebbie-Deisch, the lead designer for the project, also worked closely as an assistant project manager to Project Manager, Pat Flynn. “To do the initial field visits, we had to get people into the Park, do the review, and get back home in only four-and-a-half days,” Gebbie-Deisch said. “We walked

the entire length of the project. We were going up and down, looking at culverts and all of the project's elements. And it was April...and it was cold!!”

“We really had the gamut of weather,” Gebbie-Deisch recalled. “One day there were even snow flurries and the whole deal. But it was also really beautiful.”

Gebbie-Deisch added that her birthday fell within the days of the ‘Death March.’ “I usually try to take my birthday off, but it didn’t work out that year,” she said.

The Wawona Road project included just over 24 miles of pulverization and resurfacing, using 91,371 tons of hot asphalt concrete pavement. There were also 64,400 lineal feet of curb installed on the resurfaced sections, along with drainage and signage improvements. The Engineer’s Estimate for the revised project was \$16,868,000.00. The A+B Bid (cost plus time) was set at \$3,300.00 per day.

Project bids came in at between approximately \$25.2 million and 420 days, and \$18.6 million and 190 days. The winning bid came from Granite Construction of Watsonville, California.

### **Contractor Deja Vu**

Interestingly, it turned out that Granite Construction had built the original Wawona Road under a National Recovery Act (NRA) contract in 1932, at the height of the Depression. During that first construction, workers were not allowed to work more than six hours per day or thirty hours per week, so that the project could employ more men. In order to complete the 1932 job within the allotted time frame, Granite Construction used a double-shift system, with the first shift working from 6:00AM to noon, and the second shift running from noon to 6PM.

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For the 2010 project, one challenge would be the huge influx of visitors to one of the nation’s most popular National Parks.

Yosemite had 3.94 million visitors in 2010; 1.89 million of those visitors arrived in the peak months between June and August. The Park agreed to allow flexible road closure hours and night work in order to accommodate the fast-track project; this arrangement would be a crucial component in the successful completion of the Wawona Road project.

However, the Park placed limitations on the schedule that still made it a challenging project. There would be no work on the weekends, and delays to park commuter traffic would need to be minimized. As it had done during the 1932 project, Granite again went to a system of two shifts, working around the two peak park commuter times.

Extended closures at night were allowed, so Granite Construction did the majority of the base prep work at night to lessen the impact on Park traffic. The 3-step process included pulverizing, grading and compacting, and a final grading right before the paving operation. Granite Construction had hoped to use warm mix asphalt, due to the long haul times required for hot mix asphalt, and the low temperatures at night in the high elevations. But test sections indicated that the asphalt would have to be delivered hot. Granite ended up laying between 2000 and 2,500 tons of asphalt per night during the paving operation.

### **Keys To A Successful Project**

Keys to successful project completion were a commitment by everyone involved to completing the job within a single season, and overcoming the syndrome of “this is how we usually do things.” Open communications between the Park, the project managers, and the contractor allowed for issues to be resolved quickly. Necessary changes were identified and the critical path schedule was modified as needed. And the around-the-clock schedule, including night work, allowed the Wawona Road project to be completed within a limited time frame and within the allotted budget.

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### **The Project Team**

The Wawona project team members included: Pat Flynn (FHWA); Anita Gebbie-Deisch (FHWA); Berwyn Wilbrink

and George Walton (Jacobs); Michael Pieper (Yosemite NP); Darin Thacker and Jason Hand (NPS, DSC); Michael Peabody, Darrell Harding and the CFL Materials Lab (FHWA); Richard Duvall, Ron Andresen and Joe Wilson (FHWA); Irene Chhor - SCEP and Meesa Otani - PDP (FHWA); Scott Wolfert (FHWA); Curtis Scott (FHWA); and Leo De Paula (FHWA). The contractor management team included Matt Hall (Granite Construction); Tom Hering, A&E Inspector (RockSol); and Justin Englert, A&E Inspector (CH2MHill).

