

Devil's Slide Project

TUNNELS EXCAVATION CELEBRATION



PROJECT TITLE: Devil's Slide Tunnels and Approaches

PROJECT FUNDING: 100% Federal Emergency Relief.

PROJECT DESCRIPTION:

The Devil's Slide Tunnels project is located on State Route 1 in San Mateo County between the town of Montara to the south and the city of Pacifica to the north. The project involves the creation of a separated two-lane road, one lane in each direction. This road will pass through twin tunnels, over twin bridges and connect with an existing non-separated two-lane road at each end. The new road will be approximately 6,500 feet long, made up of the roughly 4,000-foot twin tunnels, the 1,500-foot north approach road (which includes the 1000-foot parallel bridges), and the 1,000-foot south approach road. Upon completion, the new road will bypass geologically unstable portions of existing Route 1, sections of roadway subject to lengthy closures, high maintenance costs over the years, and risk of permanent failure.

The project is split into six contracts: the Tunnels, Bridge, South Rock Cut, an Offsite Mitigation, and two Onsite Mitigation Contracts. The largest of the six contracts, the Tunnels project will construct twin tunnels, approach roads, Operations and Maintenance Center (OMC) buildings, and public access features. Kiewit Pacific, the contractor for the Tunnels Contract, began preliminary work in preparation for excavation of the tunnels in January 2007. According to the current schedule, the tunnels will be opened to traffic in the winter of 2010 and the entire contract completed in the summer of 2011. (Table 1 lists current contract schedules and contractors for all of the Devil's Slide Tunnels project contracts.)

The tunnels' excavation will be accomplished using the New Austrian Tunneling Method (NATM), a sequential excavation and support, tunnel-mining technique that is tailored to the geological conditions at the site. The horse shoe-shaped tunnels will be excavated from south to north at about a 2% upward slope and will terminate near the southern abutments of the aforementioned twin bridges that are being constructed under a separate contract. The tunnel portals will be constructed using cut-and-cover methods. The tunnels will be 30 feet wide, 22 feet high and roughly 60 feet apart. Each tunnel will feature

two 4-foot emergency and maintenance walkways on either side, a single 12-foot traffic lane with 8-foot right and 2-foot left shoulders, 10 cross-passages (roughly 400 feet apart) for emergency egress, and three equipment chambers. In addition, each tunnel will be equipped with a state-of-the-art safety and communication system that includes eight pairs of jet fans for ventilation and fire protection, high quality tunnel lighting, and an operations control system. Once completed, the tunnels will normally be controlled and monitored from the Caltrans Oakland Traffic Management Center (TMC). However, the capability to control and monitor all systems will be duplicated at the OMC buildings, located south of the tunnels at the disposal site, for use during an incident. Finally, the project was designed to be context-sensitive to address the concerns of the public and honor the magnificent surrounding environment. For example, the OMC buildings will be set partially below ground and screened from State Route 1 with the aid of vegetative berms. Moreover, the OMC and fill disposal site will be contour-graded and re-vegetated with coastal scrub species. In addition, approximately 1.2 miles of the existing State Route 1 alignment will be relinquished to San Mateo County. Parking areas will be constructed at both ends of the relinquished highway, and the 1.2-mile stretch will be converted into a non-motorized public facility offering breathtaking views of the Pacific Ocean. For information on the project's remaining contracts, see below.

The Bridge Contract provides for construction of parallel twin bridges as part of the approach to the tunnels' north portals. This contract was awarded to Disney Construction, Inc, which began construction in March 2006 and is scheduled to complete the job by summer of 2008. The bridges will connect the existing highway to the north portals and will span an environmentally sensitive valley (habitat for the California-red-legged frog) at Shamrock Ranch. The completed **South Rock Cut Contract** constructed a retaining wall and access road that will allow the hauling of excavated materials from the tunnels to the disposal area without disrupting traffic on existing Route 1 during tunnel construction. In addition, this haul road will become the future approach road to the south portals. Gordon N. Ball Construction, Inc., the contractor for this work, started construction in April 2005 and completed it in June 2006. The **Offsite Mitigation**

Contract involved an area near the intersection of Route 1 and Second Street, across the highway from the Outrigger restaurant north of Montara. This contract created and restored wetlands to compensate for the project's unavoidable environmental impacts. Hanford ARC began construction in September 2005 and completed the site grading and planting of native vegetation in July 2007. This contract is currently in a monitoring and maintenance phase for plant establishment that is scheduled for completion in spring 2010. Lastly, the **Onsite Mitigation Contracts** will entail mainly landscape repairs to mitigate construction impacts resulting from the major contracts. This work will occur during and after the construction of the bridges and tunnels. The attached exhibit shows the locations of the major project elements.

BACKGROUND:

State Route 1 between San Francisco and the San Mateo County coastal region includes a short segment crossing Devil's Slide, an unstable ocean-facing cliff highly prone to rock falls and slippage. Since 1987, an injunction resulting from an environmental lawsuit suspended work to develop an inland surface bypass, as proposed in the 1986 Environmental Impact Statement (EIS). Public comments on the 1995 supplemental EIS requested further consideration of a tunnel alternative, and consequently a tunnel feasibility study was authorized by FHWA. The report, completed in 1996, determined a tunnel alternative to be reasonable and feasible. In November 1996, the Devil's Slide Tunnel Initiative (Measure T) was approved by 74% of the voters in San Mateo County. This Initiative amended the County's Local Coastal Plan to replace the inland highway bypass project with the tunnel and indicated the tunnel as the only permissible permanent repair alternative for State Route 1 at Devil's Slide.

The second supplemental environmental document (approved April 30, 2002) identified the tunnel as the preferred alternative and on September 13, 2002, FHWA issued the Record of Decision (ROD) authorizing the State to proceed with the final design of the tunnel alternative.

PUBLIC OUTREACH:

Caltrans involved the local communities and consulted with regulatory and permitting agencies very early in the design and permitting process, holding numerous meetings both large and small with stakeholders to discuss aesthetic and other elements of the Tunnels project. Caltrans and the community addressed issues such as design of the portals, appearance of the bridge railings, design of the OMC buildings, architectural elements of the retaining wall at the south portal, grading of the fill disposal site and the portals, access to parking, and revegetation of the site. Through such extensive collaboration, a context-sensitive design was developed that respects the concerns of the community and is considerate of the world-class natural setting. These collaborative efforts led to a project that minimizes physical impacts to the existing pristine landscape by protecting vegetation, drainage courses, wetlands, existing landforms, and open space. This context-sensitivity is clearly evidenced, for one, in the green building concepts governing the design of the OMC buildings. During construction, Caltrans continues to inform the local community and the traveling public through:

- Quarterly updates at local council meetings
- The project web site: <http://www.dot.ca.gov/dist4/dslide/>
- Project press releases
- Meetings of the Devil's Slide Tunnels Project Aesthetic Committee
- Meetings with the Devil's Slide Public Access Task Force

CONTRACTS, SCHEDULE, & CONTRACTOR (Table 1):

Contract	Status	Anticipated/ Actual Start Date	Anticipated/Actual Completion Date	Contractor
<i>Tunnels</i> (04-1123U4)	<i>Ongoing</i>	<i>January, 2007</i>	<i>Winter 2010*</i> <i>Summer, 2011**</i>	<i>Kiewit Pacific Company</i>
Bridge (04-1123K4)	Ongoing	April, 2005	Summer, 2008	Disney
South Rock Cut (04-1123C4)	Completed	April, 2005	June, 2006	Construction Gordon N. Ball
Offsite Mitigation (04-1123G4)	Ongoing	September, 2005	Summer, 2010	Hanford ARC
Onsite Mitigation #1 (04-1123H4)	Advertisement Pending	July, 2009	Summer, 2015	TBD
Onsite Mitigation #2 (04-1123J4)	Advertisement Pending	October, 2008	Summer, 2012	TBD

* Tunnel Opening

** Contract Completion