

Upcoming Projects

CALIFORNIA

Alameda County, Calif.

New Irvington Tunnel

San Francisco Public Utilities Commission

Constructing a tunnel parallel to the existing Irvington Tunnel, in Alameda County, Calif., will allow the San Francisco Public Utilities Commission to decommission the Irvington Tunnel for inspection and rehabilitation to improve the water delivery reliability. Located between the Calaveras and Hayward Fault Zones, the mixed-face tunnel is made up of interbedded layers of sandstone and shale, with several smaller fault zones. Adding more complications, the tunnel offers 700 ft of cover and high hydrostatic head with potential water inflows up to 1,000 gpm.

An 18,200-ft long excavation is proposed with the installation of a 10-ft inside diameter concrete liner. There will also be construction of a new access road to the Irvington Portal and a new Portal within the piping manifold. Additional isolation valves and connections to the Bay Division Pipelines, originating from the Irvington Tunnel site, will also be installed.

The total construction cost for the project is estimated at \$154 million. The bid date has been proposed for March 2009, with an estimated construction start around August 2009.

Berkeley-Orinda, Calif.

The Caldecott Tunnel Project

California Department of Transportation

The Caldecott Tunnel connects Alameda and Contra Costa Counties via State Route 24, and The Caldecott Improvement Project proposes to alleviate traffic congestion along Route 24 by constructing a fourth bore of the Caldecott Tunnel. The goals of the project are to improve mobility for motorists and emergency crews along State Route 24 via the Caldecott tunnels, reduce delays and improve travel times, eliminate the need for daily tunnel lane reversals and merges, enhance safety for the traveling public and Caltrans maintenance workers and respond to Regional Measure 2 and Contra Costa County Measure J.

The project is fully funded with a total production cost estimated at \$420 million. The design phase will be completed in summer 2008. Construction is planned to begin in the summer of 2009, with a completion in 2013 or 2014. It's proposed that excavation will be completed primarily by roadheader with around-the-clock activity from both sides. If the construction is limited to one side, the project's duration will be increased by 14 months, the cost will be increased by \$45 million and risks for serious delays will increase. A sound-isolating and sound-absorbing temporary wall will need to be built — 1,000 ft long and 35 to 40 ft high.

San Francisco, Calif.

Bay Tunnel

San Francisco Public Utilities Commission

Down by the Bay, the Bay Tunnel Segment of the new Bay Division Pipeline (BDPL) No. 5 will extend 5 miles from Newark. From there, it will cross under the San Francisco Bay and adjacent marshlands, ending in Menlo Park, Calif. Under the San Francisco Bay, it's a mix of sandy and silty clays of the San Antonio Formation, with one 500-ft section through the Franciscan Formation bedrock.

Using a pressurized-face tunnel boring machine, the construction of the 26,200-ft long tunnel will utilize bolted and gasket, pre-cast concrete segment initial lining and the installation of a 9-ft inside diameter welded steel pipe final liner. Two permanent shafts will also be constructed -- one 58-ft in diameter and 129 ft deep and one 28-ft in diameter with a depth of 83 ft. It's proposed that these will be constructed using either slurry wall or caisson methods.

The total construction cost is estimated at \$280 million. The bid date is proposed for August 2008, with an estimated construction start in January 2009.

San Mateo County, Calif.

New Crystal Springs Bypass Tunnel

San Francisco Public Utilities Commission

Beginning from the south and mostly through bedrock contained within the

Franciscan Complex, classified as Melange and sandstones, the New Crystal Springs Bypass Tunnel will provide system redundancy for the vulnerable Crystal Springs Bypass Pipeline and improve delivery reliability. The tunnel passes under San Mateo Creek near the north, where potential pre-grouting may be needed to strengthen the creek bed.

The excavation will measure 13-ft in diameter and 4,200-ft long. Installation of initial pre-cast concrete segmental lining will be needed to support the tunnel excavation, in addition to the installation of additional isolation valves, vaults and connections to the existing pipelines and/or tunnel ends. The tunnel will sport an 8-ft inside diameter welded steel pipe (WSP) final liner.

The total construction cost is estimated at \$57 million. The bid date will be set in April 2008, with an estimated construction start in October 2008.

FLORIDA

Miami, Fla.

Port of Miami Tunnel Project State of Florida Department of Transportation

As Miami-Dade County's second leading economic generator, providing 81,800 jobs, \$5 billion in wages and \$12 billion in economic output, according to Washington Economic Group Study, the Port of Miami needs a strong infrastructure. So, the proposed Port of Miami Tunnel (POMT) will play an integral role in improving SR-836 and I-395.

The project includes a tunnel under Government Cut, roadway work on Dodge and Winston Islands, MacArthur Causeway Bridge widening and a 42-ft tunnel boring machine, with an estimated year of excavation — six months in each direction. The Port of Miami Tunnel is being procured as a public-private partnership.

Under the POMT Concession contract, the concessionaire will finance the project based on the expectation of earning annual "availability payments" once the project opens for service. Essentially these will be payments from FDOT, contingent upon actual lane availability and service quality. Local partners in Miami-Dade

County are committed to share 50 percent of the capital cost of the project.

The estimated construction cost of the tunnel is \$1 billion.

MARYLAND

Prince George's/Montgomery County WSSC Bi-County Tunnel Washington Suburban Sanitary Commission

The study phase of the Bi-County Water Main project was completed in January 2006, and the design phase is continuing through 2007 with the construction phase planned to begin in mid 2008 and last three to four years, into late 2011. The tunnel itself will be approximately 100 to 260 ft below the finished grade, and requires a tunnel boring machine to cut through the bedrock.

Black and Veatch is the prime design engineer, while Jacobs Associates and EA Engineering, Jacobs Engineering, and Hatch Mott MacDonald are on the short list of primary construction management

firms. The design engineer will be providing technical review and performing miscellaneous services during construction. The WSSC is in the process of selecting an engineer to provide inspection, quality control and other services during construction. The estimated construction cost is between \$115 million and \$135 million.

NEW YORK

New York No. 7 Line Extension Metropolitan Transportation Authority

To redevelop the Hudson Yards area of Midtown West, the Metropolitan Transportation Authority proposed construction and operation of an extension of the No. 7 line. The MTA agreed on a \$2.1 billion expansion for the No. 7 train as part of the development of the MTA's rail yards on the West Side of Manhattan. Taking the subway further west from its current finishing point at Times Square, continuing along 41st Street and 11th Ave

and then south to a new terminal at 34th Street and 11th Ave.

Construction of the No. 7 Subway Extension would be accomplished by a variety of mining methods, including the use of a tunnel boring machine, conventional excavation, cut-and-cover, and drill-and-blast. The contract to dig the tunnels for the expansion is estimated at \$1.14 billion

The contracts will be bid and awarded in 2009.

LOOKING AHEAD

- **Muni Tunnel** (San Francisco, Calif.)
- **Las Vegas Outfall** (Las Vegas, Nev.)
- **Las Vegas Intake** (Las Vegas, Nev.)
- **University Link** (Seattle, Wash.)

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1	15	29	43	57	71	85	99	113	127	141
2	16	30	44	58	72	86	100	114	128	142
3	17	31	45	59	73	87	101	115	129	143
4	18	32	46	60	74	88	102	116	130	144
5	19	33	47	61	75	89	103	117	131	145
6	20	34	48	62	76	90	104	118	132	146
7	21	35	49	63	77	91	105	119	133	147
8	22	36	50	64	78	92	106	120	134	148
9	23	37	51	65	79	93	107	121	135	149
10	24	38	52	66	80	94	108	122	136	150
11	25	39	53	67	81	95	109	123	137	151
12	26	40	54	68	82	96	110	124	138	152
13	27	41	55	69	83	97	111	125	139	153
14	28	42	56	70	84	98	112	126	140	154