

# First-of-its-kind tunnel being mined under SF Bay

**Ken Miguel, KGO (San Francisco television), 4-27-12**

Eleven stories below sea level, workers are building a five-mile long tunnel under San Francisco Bay.

The first-of-its-kind tunnel is part of a massive civil engineering project designed to protect the Bay Area's water supply during an earthquake.

Last July, a 600-foot long digging machine started tearing through mud and muck. Today the \$10 million machine has tunneled two miles from Menlo Park heading towards Newark.

The project is currently ahead of schedule. The tunneling machine has been moving twice as fast as expected. On an average day, that's about a hundred feet of sand and dirt removed from beneath the Bay.

With underground work you never know what you're going to come across, said Bob Mues, the project's construction manager. "We don't think there will be any old ships down there so we'll be in pretty good shape," he added.

The new tunnel will replace old pipes built in 1925 and 1936. Engineers say the old pipes won't survive a major earthquake. A failure would jeopardize the water supply for millions of people from the East Bay to San Francisco. But the Bay Tunnel is designed to withstand a big quake on either the San Andreas or Hayward faults.

The money for the tunnel is part of a \$4.6 billion bond measure passed by voters in 2002 to fund a massive overhaul of the Hetch Hetchy Water System. The network of tunnels, pipes, dams and reservoirs delivers water 167 miles from Hetch Hetchy Reservoir in Yosemite National Park to the Crystal Springs Reservoir along I-280 in San Mateo County.

When complete, the Bay Tunnel will be the longest ever built under the Bay. The tunnel is scheduled to be completed by 2015 and will cost roughly \$313 million.

"This is actually a mined tunnel under the Bay, and we're under a hundred foot of water so it's a submarine-type tunnel, and it's five miles across the Bay with no shafts, no place to stop," Mues said.

While the TransbayTube for BART was made of a series of pre-constructed tunnels that rest on the bottom of the Bay, the new tunnel is actually carved out of the earth.

A series of conveyor belts and ladders move the mud to dry land overhead, making the job very dirty and dangerous for workers.

Five-thousand-pound slabs of concrete swing overhead. Each of the pieces will be rolled into the tunnel and bolted together, five feet at a time, as the tunneling machine moves forward.

"The whole machine works kind of like a submarine," said Ed Whitman, an engineer working on the project. There's a decompression chamber just in case workers experience the "bends." Still, the crew chalks it up to just another day's work.

"It doesn't really matter what it is like on the surface. When you are in the tunnel, you can't see the ground. It's a very safe tunneling method," said Whitman.